16-18 Mill Street
Residential Development

Transportation Impact Study

Prepared For: AGK Multi-Res

October 28th, 2024

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1.0 INTRODUCTION

BA Group is retained by AGK Multi-Res to provide a traffic impact study for the Official Plan Amendment and Zoning By-law Amendment applications at 16-18 Mill Street (the "Site") in Georgetown (Town of Halton Hills) in Halton Region. The proposed development consists of a 34-unit apartment building with 4 stories and 2 underground parking levels.

1.1 BACKGROUND

In December 2020, BA Group prepared a report titled "*16-18 Mill Street Residential Development Traffic Impact Study*" dated December 15, 2020, which was submitted to Halton Region and the Town of Halton Hills as part of the first engineering submission. The original study proposed a total floor area of 4,367 m^2 and consisted of a 52-unit apartment building with 6 stories and 2 parking levels.

Since the first submission, comments were received from stakeholders including the Town of Halton Hills, BrookMcIlroy, and Halton Region spanning February and March of 2021. As requested by the Town of Halton Hills, BA Group responded to the transportation related comments in a cover letter appended to a revised traffic impact study dated May 15, 2023. Since the original study was submitted, the Site plan was updated, demonstrating a reduction in the total floor area to 3,091 m^2, consisting of a 30-unit apartment building with 4 stories and 2 parking levels.

Halton Region and the Town of Halton Hills issued memorandums in response to the May 2023 submission, dated September 11th, 2023, and September 20th, 2023, respectively. This report amends the conclusions of the May 2023 report by addressing transportation related comments provided by the municipalities and reflecting the latest Site plan (dated October 28th, 2024) which proposes a total gross floor area of 3,211 m^2, consisting of a 34-unit apartment building with 4 stories and 2 parking levels.

The cover letter appended to the May 2023 report has been revised, consolidating comment responses from the prior submission with the current submission. Consolidated comment responses can be found in **Appendix A**.

1.2 THE EXISTING SITE

16 and 18 Mill Street are located on the northwest side of Mill Street between Guelph Street and McNabb Street. The Site is bounded by residential property on the southwest and northwest, and by greenspace and Silver Creek on the northeast.

The Site location and context are shown in **Figure 1**.

The Site is currently occupied by a 9-unit low-rise residential apartment building at 16 Mill Street and a triplex dwelling at 18 Mill Street. Each building is served by an access driveway. A parking lot wraps around the perimeter of the Site. A sidewalk on the northwest side of Mill Street provides connections for pedestrians along the Site boundary.

The Georgetown GO Station is located approximately 500 metres walking distance northeast of the Site. Georgetown GO is designated as an existing Major Transit Station in the Region Official Plan (ROP, Maps 1 and 3) and the Town has identified the GO station area at the top of its hierarchy of intensification areas.

The Site is designated by the Official Plan (OP) and the Georgetown GO Station Area Secondary Plan as a Medium Density Residential Area and Greenlands. Under Zoning By-law 2010-0050, the Site is zoned as Low Density Residential One.

The Site is located within the Mill Street Corridor Precinct which has recently undergone a neighbourhood study to identify opportunities for pedestrian, cyclist and road network improvements.

1.3 PROPOSED DEVELOPMENT

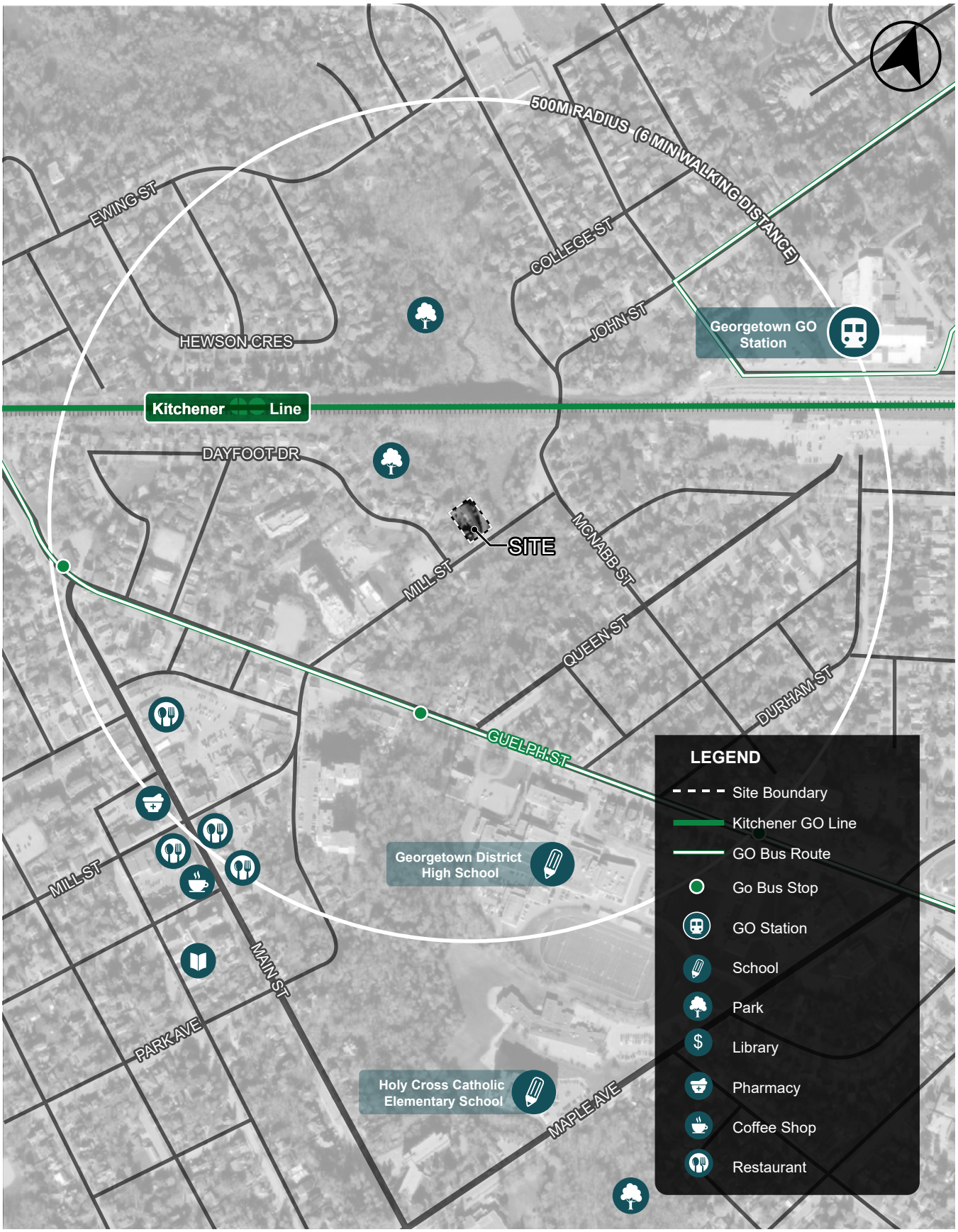
The proposed development consists of a 34-unit apartment building with 4 stories and 2 parking levels. The existing buildings on-site will be demolished to accommodate the proposed apartment building.

A total of 61 vehicular parking spaces are proposed for the Site, 3 spaces at-grade, 28 spaces on parking level P1 and 30 spaces on parking level P2. Among the 61 spaces, 5 barrier free spaces are provided.

A total of 38 bicycle parking spaces are proposed for the Site. 2 bicycle parking spaces will be provided for short-term usage on the ground floor in addition to 2 underground bicycle parking rooms which will supply a total of 36 bicycle parking spaces for long-term residential use.

The proposed Site driveway is located at the existing driveway for 18 Mill Street which provides vehicular access to the Site parking and loading areas from Mill Street.

The Site plan is shown in **Figure 2** and **Appendix B**.



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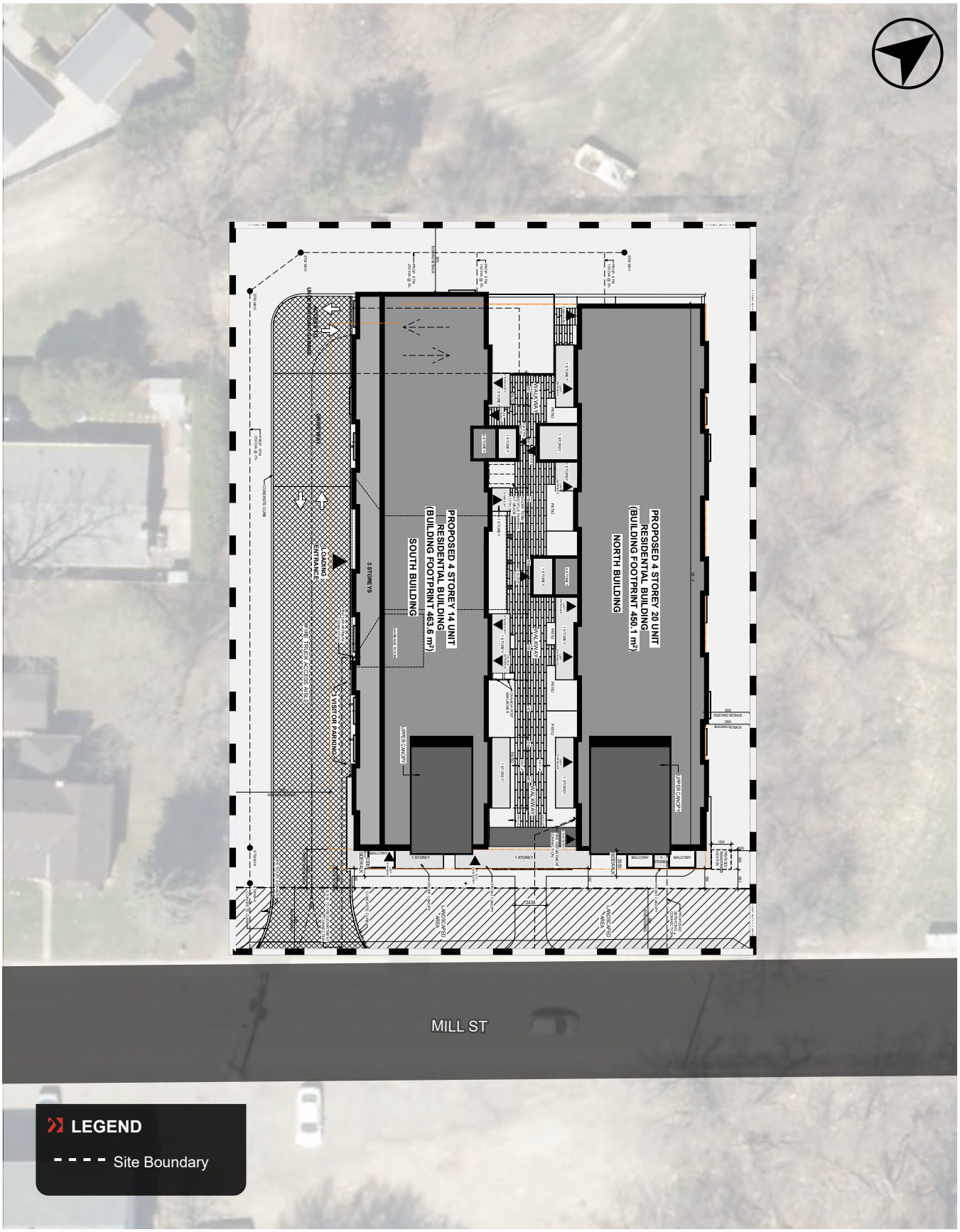
Aerial maps provided courtesy of: Esri, DigitalGlobe, GeoEye, Earthstar Geographies, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, the GIS User Community and/or Google Earth/Maps.

FIGURE 1 SITE LOCATION & CONTEXT



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

FIGURE 2 SITE PLAN

2.0 TRANSPORTATION CONTEXT

2.1 ROAD NETWORK

Mill Street is a local two-lane road, aligned in the northeast-southwest direction. Mill Street extends from Charles Street in the south to McNabb Street in the north.

Dayfoot Drive is a local two-lane road stretching from Mill Street to a cul-de-sac adjacent to Guelph Street. The intersection with Mill Street is a three-legged intersection with stop control on Dayfoot Drive.

Guelph Street (Hwy 7) is a major east-west road that connects Georgetown to Acton in the west and Brampton in the east. The Guelph Street / Mill Street intersection is signalized with pedestrian crossings on all four legs. Left turn lanes are provided for both directions on Guelph Street, in addition to a right turn channel to Mill Street on the westbound approach.

The Site is located within the Mill Street Corridor Precinct which has recently undergone a neighbourhood study to identify opportunities for pedestrian, cyclist and road network improvements.

The existing lane configurations for the road network are shown in **Figure 3**.

2.2 TRANSIT NETWORK

The Site is well served by the Georgetown GO station that is located within a 500-metre walking distance, providing frequent access to Toronto and the GTA via the Kitchener GO line. The route operates at intervals of approximately 30 minutes during the AM and PM peak hour.

Guelph Street is served by GO bus routes 31 and 33, including the Guelph St @ Mill St stop located 100 metres east of the intersection and a 400-metre walk from the Site. These routes operate offset from one another at intervals of approximately 1 hour each during the AM and PM peak hour; providing an average headway of 30 minutes between buses.

There is no formal provision of local transit services in the vicinity of the Site. The existing transit network is shown in **Figure 1.**

2.3 PEDESTRIAN AND CYCLING NETWORK

Sidewalks extend along Mill Street on both sides from Charles Street to Dayfoot Drive, where the east sidewalk ends, and the west sidewalk continues onward to McNabb Street.

Sidewalks are provided on both sides of Guelph Street, with pedestrian crossing signals at the Mill Street intersection.

The Site is located within the Mill Street Corridor Precinct which has undergone a neighbourhood study endorsed by Council in December of 2020 to identify opportunities for pedestrian, cyclist and road network improvements. As part of the study, changes to the existing Mill Street cross section between Dayfoot Drive and McNabb Street are to be implemented. The revised cross section consists of two 3.5 metre shared use lanes along with a 1.8 metre sidewalk on the west side and a 1.27 metre paved boulevard with planters. The total 10.07 metre width of the cross section can be accommodated within the existing right-of-way.

The Halton Hills Active Transportation Master Plan (ATMP) was endorsed by Council on October 26, 2020, and further identifies improvements to the active transportation network, including:

- a proposed On-Road Facility in the form of a Signed Bike Route with Sharrows along Mill Street. The ATMP identifies this facility for Short Term (0-5 years) implementation.
- a proposed Off-Road Facility along Silver Creek. The ATMP identifies this facility for Long Term (10+ years) implementation.

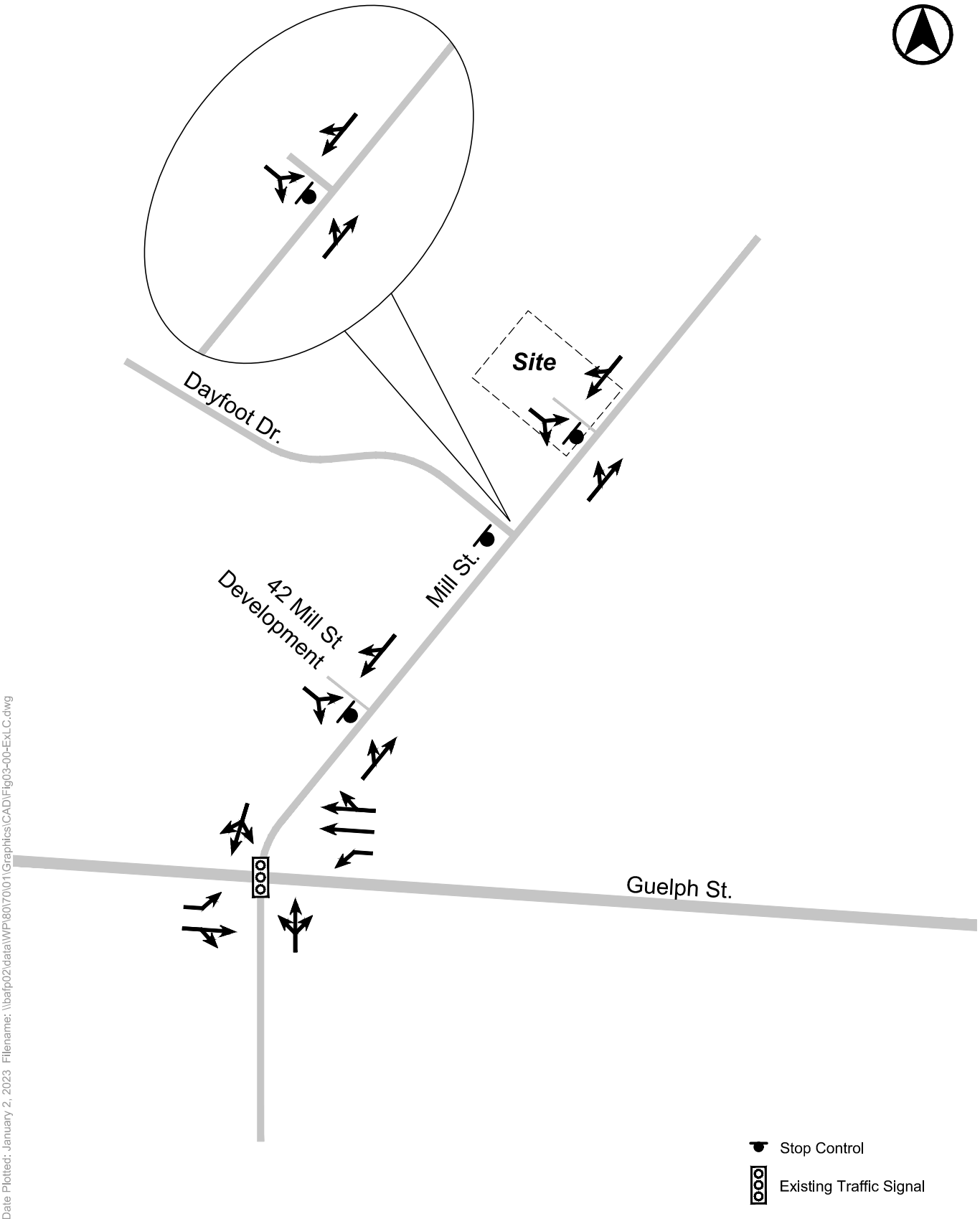

FIGURE 3 EXISTING LANE CONFIGURATION

3.0 PARKING CONSIDERATIONS

3.1 TOWN PARKING REQUIREMENTS

The Town of Halton Hills Zoning By-law 2010-0050 governs parking requirements for established zones, one of which being the Medium Density Residential Two zone (herein referred to as MDR2) which is applicable to the proposed developments Zoning By-law Amendment submitted alongside this report. The MDR2 zone permits the use of both Multiple Dwellings and Apartment Dwellings. Given the unique functionality of the proposed development, vehicular parking rates for both land uses have been considered for comparison purposes.

The Town of Halton Hills By-law 2005-0117 governs off-street parking regulations, including requirements for accessible parking. This By-law has most recently been amended by the Town of Halton Hills By-law 2024-0037 which was passed by Council on May 6th, 2024. Consideration is also made for the Accessibility for Ontarians with Disabilities Act (AODA) for comparison purposes.

Bicycle parking and loading spaces are not required for residential land uses under Zoning By-law 2010-0050.

3.1.1 Vehicular Parking Requirements for Multiple Dwellings

The Town of Halton Hills Zoning By-law 2010-0050 requires a vehicle parking supply rate of 2 residential spaces plus 0.3 visitor spaces for multiple dwelling units. The summary of required spaces, as applied to the current Site statistics, is shown in **Table 1**.

TABLE 1 TOWN OF HALTON HILLS ZONING BY-LAW 2010-0050 VEHICULAR PARKING REQUIREMENTS FOR MULTIPLE DWELLINGS

Use	Dwelling Units	Rate	Parking Spaces Required
Residential Spaces	34	2 spaces/unit	68 spaces
Visitor Spaces		0.3 spaces/unit	11 spaces
Total Required		**2.3 spaces/unit**	**79 spaces**

Notes:
1. Per Zoning By-Law 2010-0050 5.2.2 Where the minimum number of parking spaces is calculated on the basis of a rate or ratio, the required number of parking spaces shall be rounded to the next higher whole number.

3.1.2 Vehicular Parking Requirements for Apartment Dwellings

The Town of Halton Hills Zoning By-law 2010-0050 requires a vehicle parking supply rate of 1.5 residential spaces plus 0.25 visitor spaces for apartment dwelling units. The summary of required spaces, as applied to the current Site statistics, is shown in **Table 2**.

TABLE 2 TOWN OF HALTON HILLS ZONING BY-LAW 2010-0050 VEHICULAR PARKING REQUIREMENTS FOR APARTMENT DWELLINGS

Use	Dwelling Units	Rate	Parking Spaces Required
Residential Spaces	34	1.5 spaces/unit	51 spaces
Visitor Spaces		0.25 spaces/unit	9 spaces
Total Required		**1.75 spaces/unit**	**60 spaces**

Notes:
1. Per Zoning By-Law 2010-0050 5.2.2 Where the minimum number of parking spaces is calculated on the basis of a rate or ratio, the required number of parking spaces shall be rounded to the next higher whole number.

3.1.3 Barrier Free Vehicular Parking Requirements

Town of Halton Hills By-law 2005-0117 as amended by By-law 2024-0037 requires that a minimum 3 parking spaces be provided as accessible spaces, one of which being a Type A space. The By-law requires a Type A accessible space to have a minimum dimension of 5.8 metres long and 3.4-metres wide. A Type B accessible space is required to have a minimum dimension of 5.8 metres long and 2.4-metres wide. A 1.5-metre-wide access aisle next to each accessible space is required, which may be shared between two adjacent accessible parking spaces.

Accessibility for Ontarians with Disabilities Act (AODA) requires that a minimum 3 parking spaces be provided as barrier free (accessible). The 3 spaces must compose of a minimum of one Type A parking space, one Type B parking space and one additional space which may be Type B. A Type A accessible space has a standard length and a minimum width of 3.4 metres. A Type B accessible space has a standard length and a minimum width of 2.4 metres.

3.2 APPROPRIATENESS OF THE ZONING BY-LAW

The Town of Halton Hills has commented on the land use of the proposed development being considered Multiple Dwelling under the current zoning and arrangement of direct pedestrian access to outdoors (i.e., not entirely from a common external access door).

However, the parking garage below grade acts as a common element access for all residential parking spaces directly below the building units which are accessible to residential dwellings exclusively via a common corridor system (staircases and elevators). This configuration functions more similar to an apartment parking configuration and differs from at grade parking spaces typically found with Multiple Dwellings.

Further to the above, this Site's location within the Georgetown GO Station Area (Major Transit Station Area) makes it an appropriate location to consider a further reduction to the in-force by-law.

On the basis of the above, it is our opinion that the adaptation of the vehicular parking requirements for Apartment Dwellings would be appropriate for the proposed development in this context, which is consistent with the Town of Halton Hills direction towards a more sustainable transportation system.

3.3 PROPOSED PARKING FACILITIES

The Site is proposed to accommodate a total of 61 vehicular parking spaces, including 5 accessible spaces.

The residential vehicular parking supply meets the Zoning By-law 2010-0050 requirement for Apartment Dwellings of 51 residential spaces and 9 visitor spaces.

A total of 5 accessible parking spaces are provided, 4 for residents (2 Type A and 2 Type B) and 1 for visitors (Type B). The accessible parking supply exceeds the By-law 2005-0117 requirement and the AODA requirement of 3 accessible parking spaces. Dimensions of the 5 accessible parking spaces follow the By-law 2005-0117 requirements which are larger than that of the AODA.

Loading space requirements specified in Zoning By-law 2010-0050 were advised by the Town of Halton Hills to not apply to pure residential developments, however, the proposed development provides 1 loading space with a clear height of 6.5 metres which will accommodate private waste collection.

While not required in the Zoning By-law, a total of 38 bicycle parking spaces are provided. 2 short-term bicycle parking racks are provided on the ground floor in addition to 2 underground bicycle parking rooms within the parking structure which will supply a total of 36 bicycle parking spaces for long-term residential use.

Vehicle manoeuvring diagrams are attached in **Appendix C**, which demonstrate access into and out of the loading space.

3.4 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) strategies encompass a range of policies, tools, and programs designed to promote and facilitate the use of walking, cycling, public transit, telecommuting and carpooling as an alternative to single passenger vehicle travel. TDM strategies aim to reduce vehicle travel with the primary objective of:

- reducing demand on road infrastructure, thereby minimizing road and parking capital expenditures;
- increasing travel efficiency;
- reducing climate change emissions;
- improving air quality; and,
- improving overall health.

A TDM plan has been crafted to tailor to the future residents of the 16-18 Mill Street proposed development. The components of the proposed TDM plan are outlined in **Table 3**.

TABLE 3 PROPOSED TDM IMPLEMENTATION PLAN / TDM CHECKLIST

	Measure	Description
1	“Unbundle Parking”	Since multiple units are expected to be rentals, a sales program should be commenced which gives renters the option of leasing a parking space.
2	Visible Transit Information	The lobby of the building should have access to local and regional transit information to assist residents in taking transit.
3	Bicycle Parking	The proposed development shall meet and exceed the bicycle parking requirements of the site-specific zoning by-law to support and encourage bicycle use to and from the Site. Provide short-term bicycle parking in close proximity to major entrances and long-term bicycle parking in enclosed facilities for residents.
4	Transit Context	The Site is located within 500 metres of the Georgetown GO regional rail service. This existing measure will make transit use more attractive and accessible when used alongside other TDM measures.
5	Area Network Improvements	The Site is located within the Mill Street Corridor Precinct which has undergone a neighbourhood study endorsed by Council in December of 2020 to identify opportunities for pedestrian, cyclist and road network improvements. These measures will improve pedestrian and active transportation facilities.

4.0 TRAFFIC VOLUME PROJECTIONS

4.1 SCOPE

The study area for this Site comprises of three intersections:

- Mill Street / Site Access
- Mill Street / Dayfoot Drive
- Mill Street / Guelph Street

In accordance with Halton Region's TIS guidelines, a horizon period of 5 years was adopted for the future impact analysis. Traffic analysis was completed for the following scenarios during the weekday morning (AM) and afternoon (PM) peak hour:

- Existing Traffic Conditions
- 5-Year Future Background Traffic Conditions (2029)
- 5-Year Future Total Traffic Conditions (2029)

4.2 EXISTING TRAFFIC CONDITIONS

Existing peak hour traffic volumes at the Site driveways have been established based on traffic counts provided by the Town and supplemented by counts undertaken by Spectrum Traffic Data on behalf of BA Group. In addition to 2020 traffic counts, 2022 counts were performed by Spectrum. Video footage from 2022 indicates significant roadworks along Mill Street, affecting peak hour traffic patterns during that time. As such, 2020 Spectrum traffic counts were adopted alongside the Town's 2018 counts.

A summary of the counts undertaken is provided in **Table 4**. The corresponding turning movement counts are attached in **Appendix D**.

TABLE 4 EXISTING TRAFFIC DATA SOURCES

Intersection	Count Date	Count Times	Source
Guelph Street / Mill Street	Monday, November 5th, 2018	7:00 AM-9:00 AM 11:00 AM-2:00 PM 3:00 PM-6:00 PM	Town
Guelph Street / Mill Street	Tuesday, November 3rd, 2020	7:00 AM-9:00 AM 4:00 PM-6:00 PM	Spectrum Traffic Data
Mill St / Dayfoot Drive			

As the counts conducted by Spectrum were completed during the COVID-19 pandemic, it is anticipated that these counts reflect reduced traffic volumes compared to normal operations. To obtain a more accurate representation of existing conditions at Mill St / Dayfoot Dr, an adjustment factor was obtained by comparing the two-way volumes on the north leg of Guelph St / Mill St during the two count dates. The through volumes on Mill St were then balanced to obtain the final adopted volumes for existing conditions.

The adopted existing baseline area traffic volumes for the weekday AM and PM peak hour are provided in **Figure 4**.

4.2.1 Existing Site Trips

To remain conservative, it was assumed that the existing trips from the Site were negligible and did not warrant removal from the background traffic volumes.

4.3 FUTURE BACKGROUND TRAFFIC VOLUMES

4.3.1 Background Development Growth

Two background developments were identified by the Town within the vicinity of the Site, as summarized in **Table 5**.

TABLE 5 AREA BACKGROUND DEVELOPMENT

Location	Type	Development Description	Study	Status
42 Mill Street	Residential	Building 1: 6 storey condominium – 76 residential units	LEA Consulting Ltd (dated November 2016)	Under construction
	Residential	Building 2: 6-storey townhouses – 54 residential units		Under review
	Residential	Building 3: 5-storey condominium – 144 residential units		Under review
12, 22 and 24 Dayfoot Drive	Residential	6-storey condominium – 163 residential units	Nextrans Consulting Engineers (dated April 2023)	Under review

Trips generated by the 42 Mill Street development were determined from the site traffic volumes within the Transportation Impact Study prepared by LEA Consulting Ltd in November of 2016. Trips generated by the 12, 22 and 24 Dayfoot Drive development were determined from the site traffic volumes within the Transportation Impact Study prepared by Nextrans Consulting Engineers in April of 2023. The total vehicle trips generated from the background developments are summarized in **Table 6**.

TABLE 6 BACKGROUND DEVELOPMENT TRIP GENERATION

	Number of Units	AM Peak Hour			PM Peak Hour		
		In	Out	2 Way	In	Out	2 Way
42 Mill Street – Vehicle Trips[1]	274	35	75	110	95	55	150
12, 22 and 24 Dayfoot Drive – Vehicle Trips[2]	163	15	45	60	45	30	75
Total	**429**	**50**	**120**	**170**	**140**	**85**	**225**

Notes:
1. 42 Mill Street trips are determined from the site traffic volumes within the TIS prepared by LEA in November of 2016.
2. 12, 22 and 24 Dayfoot Drive trips are determined from the site traffic volumes within the TIS prepared by Nextrans in April of 2023.

4.3.2 Corridor Growth

Historical corridor growth rates for Mill Street and Guelph Street were estimated using seven traffic counts spanning a period between 2005 and 2020. Due to significant roadworks along Mill Street, 2022 traffic counts were omitted from the corridor growth analysis. As there was no discernible growth along either of the roads at this intersection, a growth rate of 0% was assumed as part of the May 2023 report. As requested by the Town of Halton Hills, the growth rate on Guelph Street has been revised to 2% per year.

The background developments identified above will contribute directly to growth not encompassed along Mill Street and in addition to the 2% growth rate assumed for Guelph Street.

Detailed corridor growth analysis charts are attached in **Appendix E**.

4.3.3 Future Background Traffic Volumes

Background traffic volumes, inclusive of background developments and corridor growth, are shown in **Figure 5**. Future background traffic volumes, determined by adding existing traffic volumes and background traffic volumes, are shown in **Figure 6**.

4.4 SITE TRAFFIC FORECASTS

4.4.1 Vehicle Trip Generation

The ITE Trip Generation Manual (11th Edition) was used to obtain a trip generation rate for the proposed development. The proposed development is categorized under Land Use Code 221 – Multifamily Housing (Mid-Rise). As part of the May 2023 report, a Land Use Subcategory of Close to Rail Transit was selected. According to ITE, a site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile (805 m) or less. This criterion is satisfied by the Georgetown GO station located within a 500-metre walking distance from the Site and as such, the close to rail trip generation rates were adopted. As requested by the Town of Halton Hills, trip generation rates have been revised in line with the Land Use Subcategory of Not Close to Rail Transit.

Based on the rates described above, the traffic volumes projected to be generated by the proposed development in the AM and PM peak hour are summarized in **Table 7**.

TABLE 7 SITE VEHICLE TRIP GENERATION

	Number of Units	AM Peak Hour			PM Peak Hour		
		In	Out	2 Way	In	Out	2 Way
Trip Rate Per Dwelling Unit	–	0.09	0.28	0.37	0.24	0.15	0.39
Vehicle Trips	30	5	10	15	5	5	10

On the basis of the above, it is estimated that the proposed development will generate **in the order of 15 and 10 two-way vehicle trips** during the AM and PM peak hours, respectively.

4.4.2 Vehicle Trip Distribution

Site generated traffic was assigned onto the area road network based on the trip distribution percentages summarized in **Table 8.** The distribution was determined through a TTS query for existing home-based vehicle trips in the area for the weekday peak periods. TTS queries are provided in **Appendix F**.

TABLE 8 SITE TRAFFIC DISTRIBUTION

Street	Direction	AM Peak		PM Peak	
		Inbound	Outbound	Inbound	Outbound
Guelph St	East	60%	60%	60%	60%
	West	10%	10%	10%	10%
Mill Street	North	20%	15%	20%	15%
	South	10%	15%	10%	15%
Total		**100%**	**100%**	**100%**	**100%**

4.4.3 Site Traffic Volumes

The projected Site traffic volumes are shown in **Figure 7**.

4.5 FUTURE TOTAL TRAFFIC VOLUMES

Future total traffic volumes are determined by adding the future background traffic volumes and the Site traffic volumes and are shown in **Figure 8**.

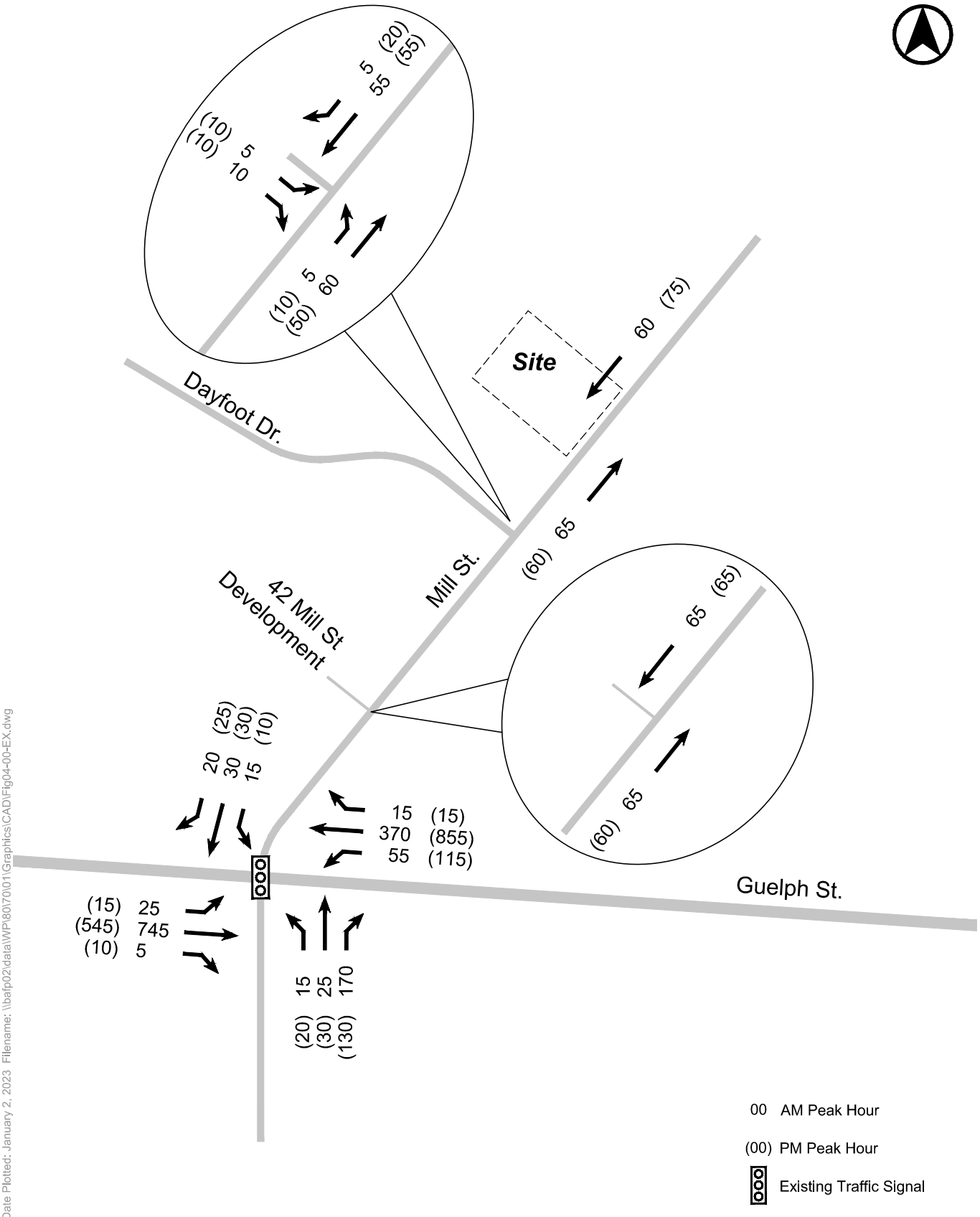

FIGURE 4 EXISTING TRAFFIC VOLUMES

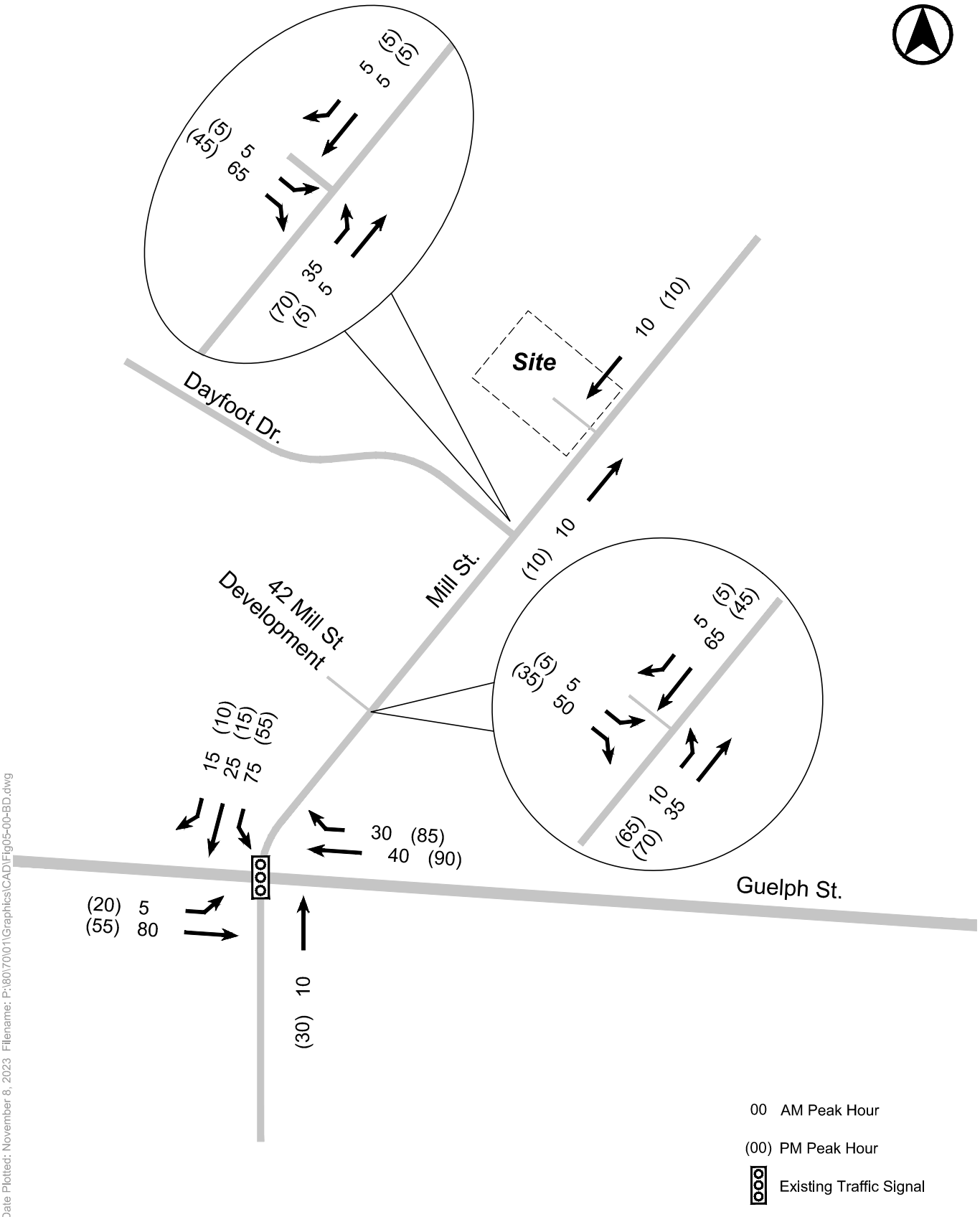

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FIGURE 5 BACKGROUND TRAFFIC VOLUMES

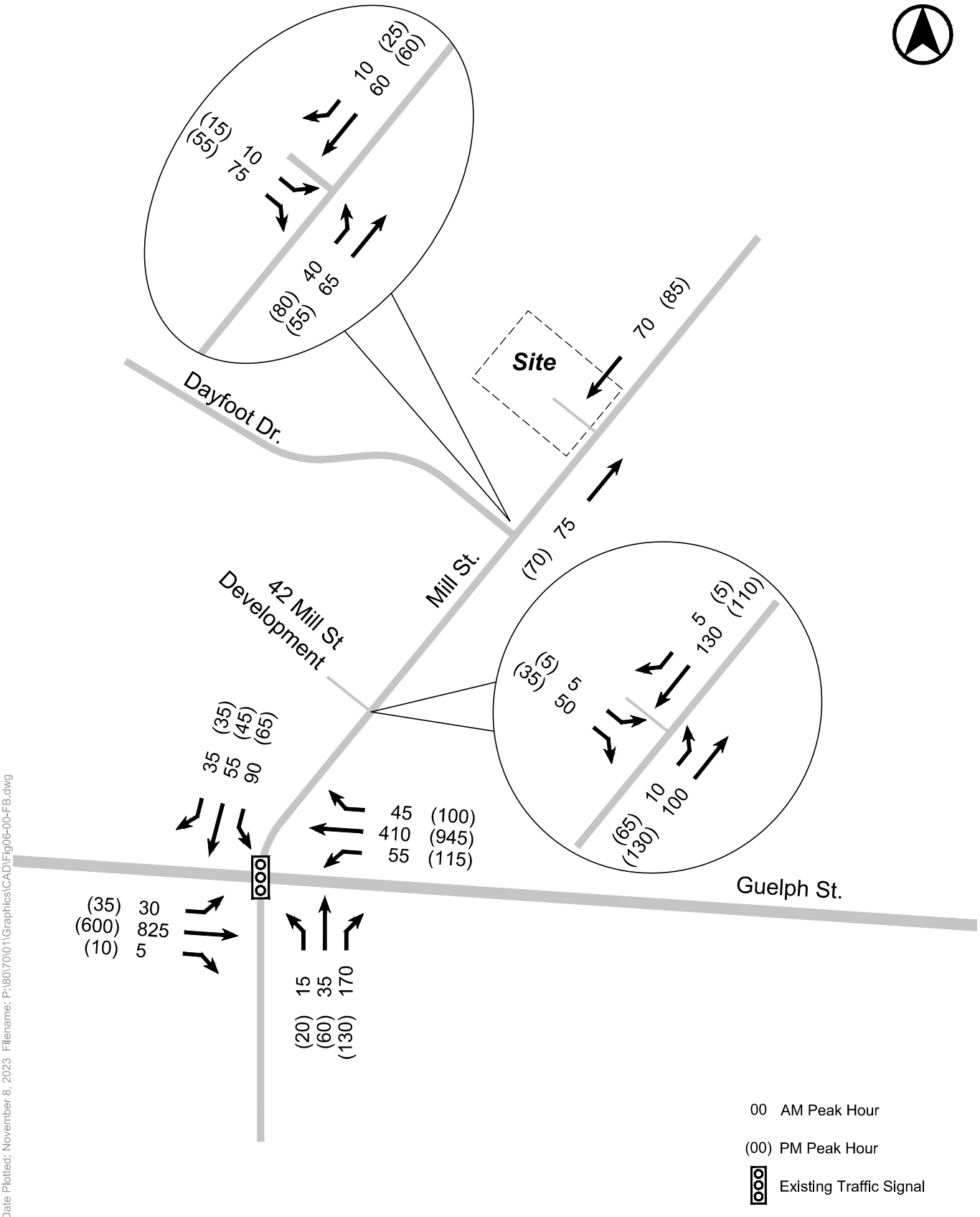

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FIGURE 6 FUTURE BACKGROUND TRAFFIC VOLUMES

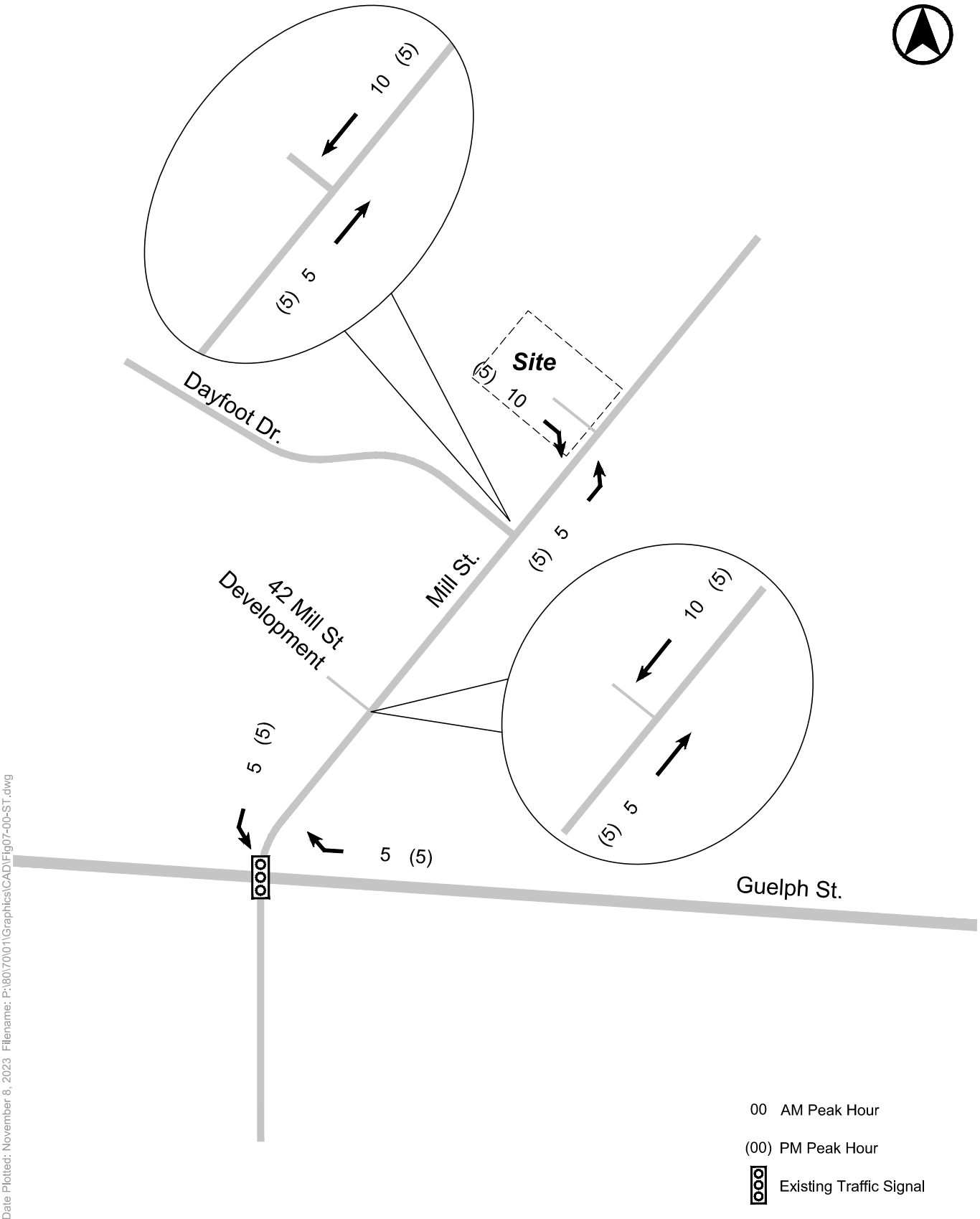

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FIGURE 7 SITE TRAFFIC TRAFFIC VOLUMES

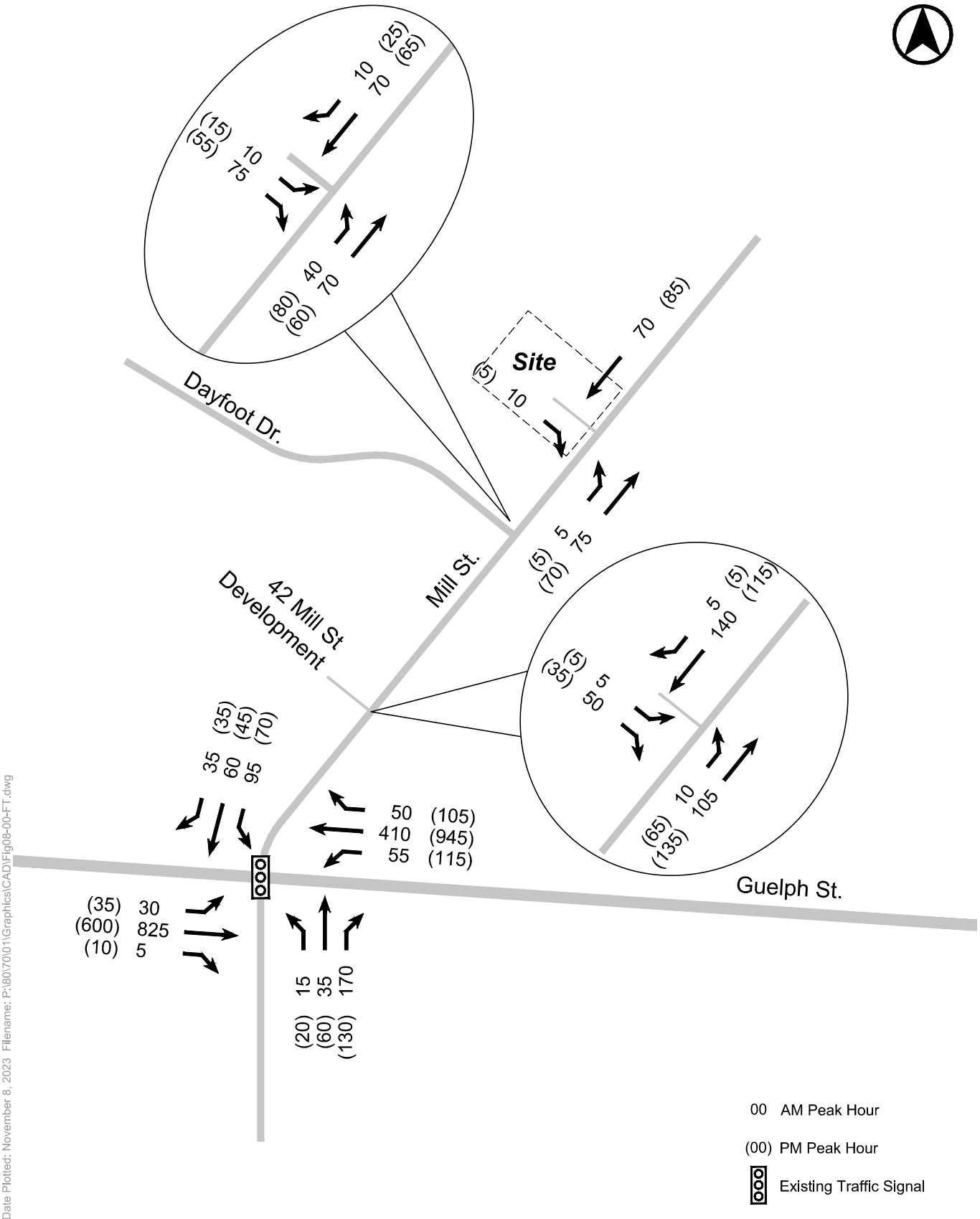


FIGURE 8 FUTURE TOTAL TRAFFIC VOLUMES

5.0 OPERATIONAL ANALYSIS

5.1 ANALYSIS METHODOLOGY

Synchro Version 11 and the Highway Capacity Manual (HCM) methodology were used to analyze the study area intersections.

For unsignalized intersections, 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.

For signalized intersections, the volume to capacity ratio (V/C ratio) is an indicator of the capacity utilization for the key movements in the intersection. A V/C ratio of 1.0 indicates that certain governing traffic movements through the intersection are operating at or near maximum capacity.

Detailed analysis worksheets are attached in **Appendix G**.

5.2 ANALYSIS AND ASSUMPTIONS AND PARAMETERS

Synchro analyses were performed to conform to the requirements of the Halton Region Transportation Impact Studies Guidelines (January 2015).

The existing signal timing plan for the Guelph St / Mill Street intersection was provided by the Town and used for existing conditions. Future background and future total traffic scenarios used optimized signal phasing and timing parameters to respond to changing traffic conditions as appropriate, whilst maintaining cycle lengths and flash don't walk times.

A base saturation flow of 1,900 vehicles per hour per lane and a peak hour factor of 0.92 were assumed for all streets in the study area road network. Heavy vehicle percentages were calculated based on existing traffic volume data extracted from the traffic counts utilized in this study.

5.3 OPERATIONS

5.3.1 Signalized Intersection

A summary of the traffic capacity analysis for the existing signalized Guelph Street / Mill Street intersection is provided in **Table 9** and the 95th percentile queues for the intersection are shown in **Table 10**.

TABLE 9 PEAK HOUR ANALYSIS RESULTS: GUELPH ST / MILL ST

Lane Group	Existing		Future Background		Future Total	
	V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS
EBL	0.05 (0.05)	A (A)	0.07 (0.16)	A (B)	0.07 (0.16)	A (B)
EBTR	0.69 (0.62)	A (B)	0.78 (0.67)	B (B)	0.78 (0.67)	B (B)
WBL	0.24 (0.28)	A (A)	0.34 (0.32)	A (A)	0.35 (0.32)	A (A)
WBTR	0.19 (0.38)	A (A)	0.23 (0.47)	A (A)	0.23 (0.48)	A (A)
NBLTR	0.27 (0.38)	B (C)	0.30 (0.50)	C (C)	0.30 (0.49)	C (C)
SBLTR	0.16 (0.16)	B (C)	0.68 (0.61)	C (C)	0.71 (0.62)	C (C)
Overall	**0.58 (0.55)**	**A (B)**	**0.75 (0.64)**	**B (B)**	**0.76 (0.65)**	**B (B)**

Notes:
1. xx (xx) – AM Peak (PM Peak)

TABLE 10 95TH PERCENTILE QUEUES: GUELPH ST / MILL ST

Lane Group	Existing Traffic	Future Background Traffic	Future Total Traffic	Storage Lane (m)
EBL	4.9 (5.1)	5.7 (10.4)	5.7 (10.8)	45 m
EBTR[2]	134.3 (120.1)	163.5 (142.5)	163.5 (146.7)	140 m
WBL	12.2 (14.8)	14.7 (15.8)	14.9 (16.5)	50 m
WBTR	21.4 (51.8)	24.5 (72.6)	24.6 (76.6)	200 m
NBLTR[3]	25.7 (36.2)	31.9 (56.2)	31.9 (56.6)	40 m
SBLTR	16.4 (18.8)	53.8 (51.4)	61.3 (54.1)	190 m

Notes:
1. xx (xx) – AM Peak (PM Peak).
2. Storage lane capacity has been measured from the stop bar at Mill Street to the nearest side street (Cross Street). The nearest signalized intersection conflicting this movement (Main Street S) is measured 265 m upstream of the stop bar.
3. Storage lane capacity has been measured from the stop bar at Guelph Street to the nearest side street (Back Street). The nearest signalized intersection conflicting this movement (Main Street S) is measured 235 m upstream of the stop bar.

5.3.2 Unsignalized Intersections

A summary of the traffic capacity analysis for the unsignalized intersections is provided in **Table 11**.

TABLE 11 PEAK HOUR ANALYSIS RESULTS: MILL ST / DAYFOOT DR

Lane Group	Existing		Future Background		Future Total	
	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Mill Street / Dayfoot Drive						
EBLR	8.9 (9.2)	A (A)	9.2 (9.7)	A (A)	9.3 (9.7)	A (A)
NBLT	0.6 (1.3)	A (A)	3.0 (4.7)	A (A)	2.9 (4.5)	A (A)
Mill Street / Site Access						
EBLR	-- (--)	-- (--)	-- (--)	-- (--)	8.7 (8.7)	A (A)
NBLT	-- (--)	-- (--)	-- (--)	-- (--)	0.4 (0.5)	A (A)

Notes:
1. xx (xx) – AM Peak (PM Peak).

Traffic operations at area signalized and unsignalized intersections are considered acceptable under both existing and future scenarios, considering the addition of area background traffic and Site traffic.

It is noted that the EBTR and NBLTR lane groups at Guelph Street / Mill Street experience 95th percentile queues under future background and future total conditions which extend beyond the nearest side street stop-controlled approaches, however, queues under future background and future total conditions remain below the available queue storage measured to the nearest upstream traffic signal. As such, existing and future queuing at Guelph Street / Mill Street can be readily accommodated within the existing area road network and turning lane storage.

6.0 GEOMETRIC GUIDELINES

6.1 SIGHT DISTANCES

Available sight lines were reviewed at the proposed driveway along the southeastern border of the development.

The sight line analysis was undertaken in accordance with the 2017 Transportation Association of Canada (TAC) methodology and a design speed of 60 kilometers per hour (10 kilometers per hour above an assumed posted 50 kilometers per hour speed limit as per Town of Halton Hills By-Law 84-1). An AutoCAD analysis was conducted based off the proposed development plan provided. Graphics are presented in **Appendix H** and a summary of the calculated sight distances and results are presented below:

2017 TAC Requirements

- Stopping Sight Distance (Table 2.5.2): 85 metres
- Case B1 – Left turn from the minor road (Table 9.9.4): 130 metres
- Case B2 – Right turn from the minor road (Table 9.9.6): 110 metres

Site Access / Mill Street

- A **right turning departing vehicle looking north** along Mill Street can see clear beyond the minimum turning sight distance requirement of 110 metres.

- A **left turning departing vehicle looking south** along Mill Street can see clear beyond the minimum turning sight distance requirement of 130 metres. Vehicles entering Mill Street from Dayfoot Drive are within the 130-metre sight distance, however, speeds are expected to be reduced while turning and the intersection of Dayfoot Drive / Mill Street is seen clearly from the Site access.

- A **left turning departing vehicle looking north** along Mill Street can see clear beyond the stopping sight distance of 85 metres and the minimum turning sight distance requirement of 110 metres.

Based on the foregoing, the sight distance at the proposed Site Access / Mill Street intersection is acceptable.

6.2 CORNER CLEARANCE

Corner clearance was reviewed for the proposed driveway relative to the nearby Dayfoot Drive / Mill Street intersection.

The corner clearance analysis was undertaken in accordance with the 2017 Transportation Association of Canada (TAC) methodology. The TAC requirement for an acceptable corner clearance of a residential driveway at a minor intersection is 11.0 metres: 6.0 metre minimum corner curb radius, 2.0 metre minimum tangent separation distance, and 3.0 metre minimum driveway curb radius (Figure 8.9.2). There are no nearby driveways on Mill Street to test corner clearances of adjacent driveways.

The proposed Site access on Mill Street has a corner clearance of approximately 40 metres from Dayfoot Drive, including a 6-metre corner curb radius at Dayfoot Drive and a 12-metre driveway curb radius. Based on the foregoing, the corner clearance at the proposed Site access relative to Dayfoot Drive is acceptable.

7.0 CONCLUSIONS

BA Group is retained by AGK Multi-Res to provide a traffic impact study for the Official Plan Amendment and Zoning By-law Amendment applications at 16-18 Mill Street (the “Site”) in Georgetown (Town of Halton Hills) in Halton Region. The proposed development consists of a 34-unit apartment building with 4 stories and 2 underground parking levels.

Existing Site and Transportation Context

1. The Site is currently occupied by a 9-unit low-rise residential apartment building at 16 Mill Street and a triplex dwelling at 18 Mill Street.

2. The Georgetown GO Station is located approximately 500 metres walking distance northeast of the Site. Georgetown GO is designated as an existing Major Transit Station in the Region Official Plan and the Town has identified the GO station area at the top of its hierarchy of intensification areas.

3. The Site is designated by the Official Plan (OP) and the Georgetown GO Station Area Secondary Plan as a Medium Density Residential Area and Greenlands. Under Zoning By-law 2010-0050, the Site is zoned as Low Density Residential One.

4. The Site is located within the Mill Street Corridor Precinct which has recently undergone a neighbourhood study endorsed by Council in December of 2020 to identify opportunities for pedestrian, cyclist and road network improvements.

5. The Halton Hills Active Transportation Master Plan (ATMP) was endorsed by Council on October 26, 2020, and further identifies improvements to the active transportation network, including a proposed On-Road Facility in the form of a Signed Bike Route with Sharrows along Mill Street and a proposed Off-Road Facility along Silver Creek.

Proposed Development

6. The proposed development consists of a 34-unit apartment building with 4 stories and 2 parking levels.

7. A total of 61 vehicular parking spaces are proposed for the Site, 3 spaces at-grade, 28 spaces on parking level P1 and 30 spaces on parking level P2. Among the 61 spaces, 5 barrier free spaces are provided.

8. A total of 38 bicycle parking spaces are proposed for the Site. 2 bicycle parking racks will be provided for short-term usage on the ground floor in addition to 2 underground bicycle parking rooms which will supply a total of 36 bicycle parking spaces for long-term residential use.

9. The proposed Site driveway is located at the existing driveway for 18 Mill Street which provides vehicular access to the Site parking and loading areas from Mill Street.

Traffic Volume Projections and Operations

10. Existing and future traffic operations have been reviewed in accordance with Halton Region's traffic impact study guidelines. As such, a horizon year of 5 years was adopted for future background and future total conditions.

11. Background development traffic allowances were made for the proposed developments at 42 Mill Street and 12, 22 and 24 Dayfoot Drive.

12. Historical corridor growth rates for Mill Street and Guelph Street were estimated to be negligible based upon a review of historical growth rates spanning 2005 and 2020. As requested by the Town of Halton Hills, the growth rate on Guelph Street has been revised to 2% per year.

13. The Site is estimated to generate **in the order of 15 and 10 two-way vehicle trips** during the weekday morning and afternoon peak hours, respectively.

14. Synchro Version 11 and the Highway Capacity Manual (HCM) methodology were used to analyze the operations and queuing of study area intersections. Based on the review, traffic operations at study area intersections are considered acceptable under both existing and future conditions. **No road network improvements are required to accommodate Site traffic volumes under future total conditions.**

Geometric Guidelines

15. Available sight lines and corner clearances were reviewed at the proposed Site driveway access with Mill Street.

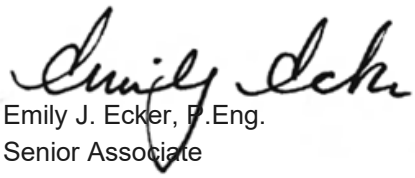
16. Both analyses were undertaken in accordance with the 2017 Transportation Association of Canada (TAC) methodology and a design speed of 60 kilometers per hour.

17. A stopping sight distance of 85 metres was used alongside a left turn from minor road sightline distance of 130 metres and a right turn from minor road distance of 110 metres. Based on the foregoing, the sight distance at the proposed Site Access / Mill Street intersection is acceptable.

18. The TAC requirement for an acceptable corner clearance of a residential driveway at a minor intersection is 11 metres. The proposed Site access on Mill Street has a corner clearance of approximately 40 metres from Dayfoot Drive which satisfies TAC's requirement.

We trust the foregoing provides an appropriate presentation of our analysis, as well as a satisfactory discussion of all relevant results and their implications. Please do not hesitate to contact us directly should you require any further information and/or clarification.

BA Consulting Group Ltd.



Emily J. Ecker, P.Eng.
Senior Associate

Anthony J. Latorre, EIT
Transportation Analyst

APPENDIX A:
Response to Transportation Comments

October 28th, 2024

Michael Kosziwka care of Egmond Associates Ltd
AGK Multi Res
(519) 217 – 2892
Michael@cleanwave.ca

RE: 16-18 Mill Street – Residential Development
Response to Transportation Comments

Dear Michael:

BA Group is retained by AGK Multi-Res to provide a traffic impact study (TIS) for the Official Plan Amendment and Zoning By-law Amendment applications at 16-18 Mill Street (the "Site") in Georgetown (Town of Halton Hills) in Halton Region. The proposed development has a total gross floor area of 3,211 m^2 and consists of a 34-unit apartment building with 4 stories and 2 underground parking levels.

The original study was prepared by BA Group on December 15, 2020, which proposed a total floor area of 4,367 m^2 and consisted of a 52-unit apartment building with 6 stories and 2 parking levels.

Since the first submission, comments were received from stakeholders including the Town of Halton Hills, BrookMcIlroy, and Halton Region spanning February and March of 2021. BA Group responded to the transportation related comments in a revised TIS dated May 15, 2023. As part of the resubmission, the Site plan was updated, demonstrating a reduction in the total gross-floor area to 3,091 m^2, consisting of a 30-unit apartment building with 4 stories and 2 parking levels.

Halton Region and the Town of Halton Hills issued memorandums in response to the May 2023 submission, dated September 11th, 2023, and September 20th, 2023, respectively. As requested by the Town of Halton Hills, this cover letter provides a consolidation of BA Group's responses to transportation related comments since that of the first submission. Comment responses have been revised to reflect the Site plan as of the current proposal (dated October 28th, 2024) and references to appendices and figures have been revised to account for the structure of the accompanying TIS prepared by BA Group and dated October 28th, 2024.

The following letters have been reviewed and responded to in the following sections:

- OPA & ZBA – First Submission, dated February 19, 2021, by the Town of Halton Hills
- 16-18 Mill St., Georgetown – OPA and ZBA Application Urban Design Peer Review, dated February 26, 2021, by BrookMcIlroy
- Regional Comments - Local Official Plan & Zoning By-law Amendments, dated March 1, 2021, by Halton Region
- D09OPA20.005 & D14ZBA20.014 – AGK MULTI-RES GP LTD. PROPOSED OFFICIAL PLAN & ZONING BY-LAW AMENDMENTS TO PERMIT THE DEVELOPMENT OF A 6-STOREY, 52-UNIT RESIDENTIAL APARTMENT BUILDING AT 16 & 18 MILL STREET, GEORGETOWN (GO STATION DISTRICT), dated March 1, 2021, by the Town of Halton Hills
- Regional Comments – Local Official Plan & Zoning By-law Amendments – Third Submission, dated September 11, 2023, by Halton Region
- 3rd Submission Deficiency Response Letter – D09OPA20.005 & D14ZBA20.014 – 16 & 18 Mill Street, dated September 20, 2023, by the Town of Halton Hills

Should you require any further information, please contact the undersigned.

Sincerely,
BA Consulting Group Ltd.

Emily J. Ecker, P.Eng.
Senior Associate

Anthony J. Latorre, EIT
Transportation Analyst

cc.
Steve Krossey, Principal – BA Group

1.0 RESPONSE TO TOWN OF HALTON HILLS COMMENTS

1.1 OPA & ZBA – FIRST SUBMISSION – FEBRUARY 19, 2021

A – Official Plan Amendment & Zoning By-law Amendment Comments

(1) Parking space loading rating in the ZBA Text needs to be updated to 1.35, currently it states 1.32 in the text which does match the analysis completed in the TIS for 70 parking spots. (Page 9 of the TIS, Table 2)

Response: The TIS has been updated to reflect the most recent proposed development of 61 parking spaces. The proposed parking rate is 1.79 spaces/unit which is greater than the requirement of 1.75 spaces/unit for apartment dwellings. **Section 3.2** of the TIS provides justification for the use of apartment dwelling rates.

1.2 D09OPA20.005 & D14ZBA20.014 – AGK MULTI-RES GP LTD. PROPOSED OFFICIAL PLAN & ZONING BY-LAW AMENDMENTS TO PERMIT THE DEVELOPMENT OF A 6-STOREY, 52-UNIT RESIDENTIAL APARTMENT BUILDING AT 16 & 18 MILL STREET, GEORGETOWN (GO STATION DISTRICT) – MARCH 1, 2021

A – Transportation Impact Study

(1) Section 2.0 Transportation Context – Please note that the Mill Street Neighbourhood Study has been finalized and endorsed by Council in December 2020.

Response: Noted in **Section 2.3** of the TIS.

(2) Section 2.2 Transit Network – More detail is to be provided regarding the transit headways during the peak hours.

Response: Refer to **Section 2.2** of the TIS. The frequency of nearby transit routes has been described and a context map is provided.

(3) Section 2.3 Pedestrian and Cycling Network – As mentioned, the Mill Street Neighbourhood Study is now complete, please review the document as it relates to identified active transportation enhancements/recommendations.

Response: Noted.

(4) Please remove the repeated discussion relating to the road widening of up to 5.0 metres in Section 2.3 Pedestrian and Cycling Network.

Response: Noted.

(5) The Town previously requested the submission of a Parking Justification Study through pre-consultation/development review committee meeting notes, held by the Town, and advised the proponent that should there be any shortage of parking supply to the existing Zoning By-law a Parking Justification Study with scope of work would be circulated prior to commencing the study. However, the Parking Justification Study was not scoped by the Town prior to the application submission. Please have the consultant circulate a scope of work, as there are concerns with the provided parking assessment.

Response: No longer applicable. The current application meets the parking minimum requirements in Zoning By-law 2010-0050 for apartment dwellings. **Section 3.2** of the TIS provides justification for the use of apartment dwelling rates.

(6) The site must provide the number of short-term secure bike parking spaces proposed in the TIS and this must clearly be shown on the plans. Please provide details (manufacturer, name, type, dimensions) of the proposed bike racks. All bike parking spaces must be shown and accounted for on the plans. The provision of additional bicycle parking spaces is strongly recommended to encourage active transportation.

Response: Refer to Site Plan drawings A2.1, A2.2 and A2.3 in **Appendix B** of the TIS for short and long-term bicycle parking spaces.

(7) Figure 6 (Background Development Traffic Volumes) – Appears to be underestimated to the future development traffic in the immediate study area. Please ensure that the background development is taken from the 42 Mill Street, Proposed Residential Development Transportation Impact Study dated November 2016 (pages 15-16). It appears that the projected future development volumes are under projected and provide an inaccurate traffic analysis. Please review and provide any further changes to the analysis as required.

Response: Background development traffic volumes have been updated. 42 Mill Street site traffic has been taken from the TIS prepared by LEA in November of 2016. 12, 22 and 24 Dayfoot Drive site traffic has been updated to reflect site traffic volumes presented in the TIS prepared by Nextrans Consulting Engineers in April of 2023.

(8) Based on the information, the proposed full built-out year of 2020 appears to be inaccurate. Please revise the full build-out year for the proposed development and make the necessary changes to the future horizon years accordingly.

Response: The current and horizon year have been updated to 2024 and 2029, respectively.

(9) Please note that as per the stated Terms of Reference, dated Oct 13, 2020, that as part of the trip distribution component, any external resources (TTS) used for the assumption of trip distribution must be appended to the report for our reference and review.

Response: Refer to **Appendix F** of the TIS.

(10) Please note that as per the stated Terms of Reference, dated Oct 13, 2020, that the TIS study shall provide detailed assessment of internal circulation. This assessment should include turning manoeuvres for passenger vehicles, emergency vehicles, delivery vehicles, and waste collection within and to/from the site. Provide AutoTurn drawings in the appendix to illustrate the feasibility of efficient turning manoeuvres.

Response: AutoTrack vehicle manoeuvring diagrams have been added to report **Appendix C**. Access route design for emergency vehicles adheres to the Ontario Building Code (Section 3.2.5.6) as demonstrated by the Site plan drawing A1.1 in **Appendix B** of the TIS. The parking garage adheres to parking standards outlined in Part 5 – Parking and Loading Standards of Zoning By-law 2010-0050.

(11) Please note that as per the stated Terms of Reference, dated Oct 13, 2020, that a review of the proposed site access to Mill Street will be required. Ensure that all TAC standards are adhered to include, but not limited to, sightlines, intersection spacing, corner clearances, road alignments, etc.

Response: Section 6.0 of the TIS addresses TAC standards including sight distances and a corner clearance for the proposed driveway.

1.3 3RD SUBMISSION DEFICIENCY RESPONSE LETTER – D09OPA20.005 & D14ZBA20.014 – 16 & 18 MILL STREET – SEPTEMBER 20, 2023

(1) It's unclear where the bicycle parking spaces are being proposed on the site plan. Reference to architectural drawings A1.1 – r2 and A2.3 – r6, however it's unclear if the spaces are shown. Please confirm.

Response: Refer to the revised Site Plan drawings A2.1, A2.2 and A2.3 in **Appendix B** of the TIS for the location and quantity of short and long-term bicycle parking spaces.

(2) There is some intensification development proposals along Guelph Street corridor. A 0% growth rate to Guelph Street is not appropriate, the study shall assume a 2% growth rate along Guelph Street.

Response: The assumed 0% growth rate adopted within the May 2023 report was established based upon a review of historical traffic counts and an understanding that background developments identified and assessed within the report would directly contribute and substitute growth along Guelph Street. While this remains a reasonable approach, our analysis has been revised to reflect a conservative 2% corridor growth rate in addition to area background developments. Consideration of this added growth does not change the conclusions and recommendations related to recommended road improvements (none) in the May 2023 TIS.

(3) The development of 12, 22, 24 Dayfoot Drive, has updated trip generation, please include these in the updated analysis.

Response: Background development traffic volumes have been updated to reflect site traffic volumes presented in the TIS prepared by Nextrans Consulting Engineers in April of 2023.

(4) As no review was done to determine the current modal split within the area. The vehicular trip generation should be based off "Not Close to Rail Transit", to reflect a conservative analysis.

Response: As part of the May 2023 report, the ITE's Trip Generation Manual (11th Edition) was used to obtain trip generation rates categorized under Land Use Code 221 – Multifamily Housing (Mid-Rise) with a Land Use Subcategory of "Close to Rail Transit". According to ITE, a site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile (805 m) or less. This criterion is satisfied by the Georgetown GO station located within a 500-metre walking distance from the Site and as such, the close to rail trip generation rates were adopted.

These rates are believed to be an appropriate representation of the future vehicular mode split for the Site in response to the following:

- The proximity of higher order transit is within the distance threshold as defined by ITE;
- Vehicular parking is proposed to be reduced to that of the Apartment Dwelling requirements from the in-force Zoning By-law;
- While not in the Zoning By-law, short and long-term bicycle parking is proposed throughout the Site; and,
- Additional Transportation Demand Management (TDM) strategies are proposed in **Section 3.4** of the report to promote and facilitate the use of walking, cycling, public transit, telecommuting and carpooling as an alternative to single passenger vehicle travel.

Notwithstanding the above justification, trip generation rates have been revised in line with the Land Use Subcategory of "Not Close to Rail Transit" as per the Town of Halton Hills request. This is considered a conservative approach which may not reflect evolving modal split conditions in line with the TDM measures proposed and the Town of Halton Hills direction towards a more sustainable transportation system. Consideration of this higher trip generation rate does not change the conclusions and recommendations related to recommended road improvements (none) in the May 2023 TIS.

2.0 RESPONSE TO BROOKMCLLROY COMMENTS

2.1 16-18 MILL ST., GEORGETOWN – OPA AND ZBA APPLICATION URBAN DESIGN PEER REVIEW – FEBRUARY 26, 2021

A – Low-Rise Residential (Southwest) Interface

(c) Reduction of Non-Permeable Surface Area

- **Surface parking dominates the southwestern portion of the site and accounts for a large percentage of the overall site area. Every effort should be made to reduce the area of non-permeable parking surface by:**
  - **Reducing the number of parking spaces located at-grade;**
  - **Using permeable paving in surface parking spaces;**
  - **Examining potential alternative truck maneuvers to eliminate the necessity of a paved painted zone opposite to the loading area; and,**
  - **Converting any excess parking or maneuvering area into a series of landscape bump-outs with a combination of trees and low-level plantings.**

Response: The TIS has been updated to reflect the most recent proposed development including 61 parking spaces and the removal of surface parking. Loading space requirements specified in Zoning By-law 2010-0050 were advised by the Town of Halton Hills to not apply to pure residential developments, however, the proposed development provides 1 loading space with dimensions in alignment with Zoning By-law 2010-0050 and 38 bicycle parking spaces (2 short-term and 36 long-term). AutoTrack vehicle manoeuvring diagrams for the loading space are included in report **Appendix C**.

3.0 RESPONSE TO HALTON REGION COMMENTS

3.1 REGIONAL COMMENTS – LOCAL OFFICIAL PLAN & ZONING BY-LAW AMENDMENTS – MARCH 1, 2021

A – Waste Management

The subject property can be serviced by Regional waste collection. Regional staff require a Waste Management Plan be provided for review that includes representative scaled drawings. The Waste Plan is to include the criteria outlined in Section 1.4.1 of the Region's Development Design Guidelines for Source Separation of Solid Waste (https://www.halton.ca/Repository/Development-Design-Guidelinesfor-Source-Separatio). Regional staff will also require the following items to be included in the Plan:

- **Turning radius of 13 m centre line is required for waste collection vehicles;**
- **Overhead clearance of 7.5 m if waste collection truck required to drive under;**
- **Collection point level (+/- 2%);**
- **Weight capacity 35 tonnes (P.Eng certified) if waste collection truck required to drive over structure (i.e. parking garage);**
- **Two-way traffic – 6 m road width/One-way traffic – 4.5 m road width;**
- **Continuous forward collection of Waste collection vehicles without reversing (Cul-de-sac or T-turnaround may be acceptable);**
- **18 m minimum head-on approach;**
- **18 m maximum back-up distance;**
- **Collection area – minimum area required for waste receptacles;**
- **Door width for waste rooms and any door where a waste receptable must go through – minimum 2.2 m;**
- **Internal storage requirements included as per Section 1.9 – note which section applies; and**
- **Sufficient storage for all waste receptacles (and compactors if required).**

Response: A Turtle Island garbage truck was tested as a private garbage collection vehicle. Architectural plans which demonstrate a shared loading and garbage collection space are provided in report **Appendix B** and AutoTrack vehicle manoeuvring diagrams are provided in report **Appendix C**.

3.2 REGIONAL COMMENTS – LOCAL OFFICIAL PLAN & ZONING BY-LAW AMENDMENTS – THIRD SUBMISSION – SEPTEMBER 11, 2023

Waste Management

Through the Region's second submission comments, detailed comments were provided from a waste management perspective, under the assumption that municipal waste collection would be desired for the proposed development, since the property is eligible for Regional waste collection.

Based on the information provided with the third submission, Regional waste collection would not be able to service the proposed loading area due to the height clearance being 6.7 metres. Regional staff require a 7.5 metre height clearance. As mentioned in previous Regional comments, a detailed Waste Plan is required for this site, if municipal collection is desired. Please provide confirmation in the next submission if private collection is being considered. If municipal waste collection is preferred, Regional staff have repeated the former Regional comments below outlining the requirements for a detailed Waste Plan, to be submitted for Regional staff review.

Regional staff require a Waste Management Plan be provided for review that includes representative scaled drawings. The Waste Plan is to include the criteria outlined in Section 1.4.1 of the Region's Development Design Guidelines for Source Separation of Solid Waste https://www.halton.ca/Repository/Development-Design-Guidelines-for-Source-Separation. Regional staff will also require the following items to be included in the Plan:

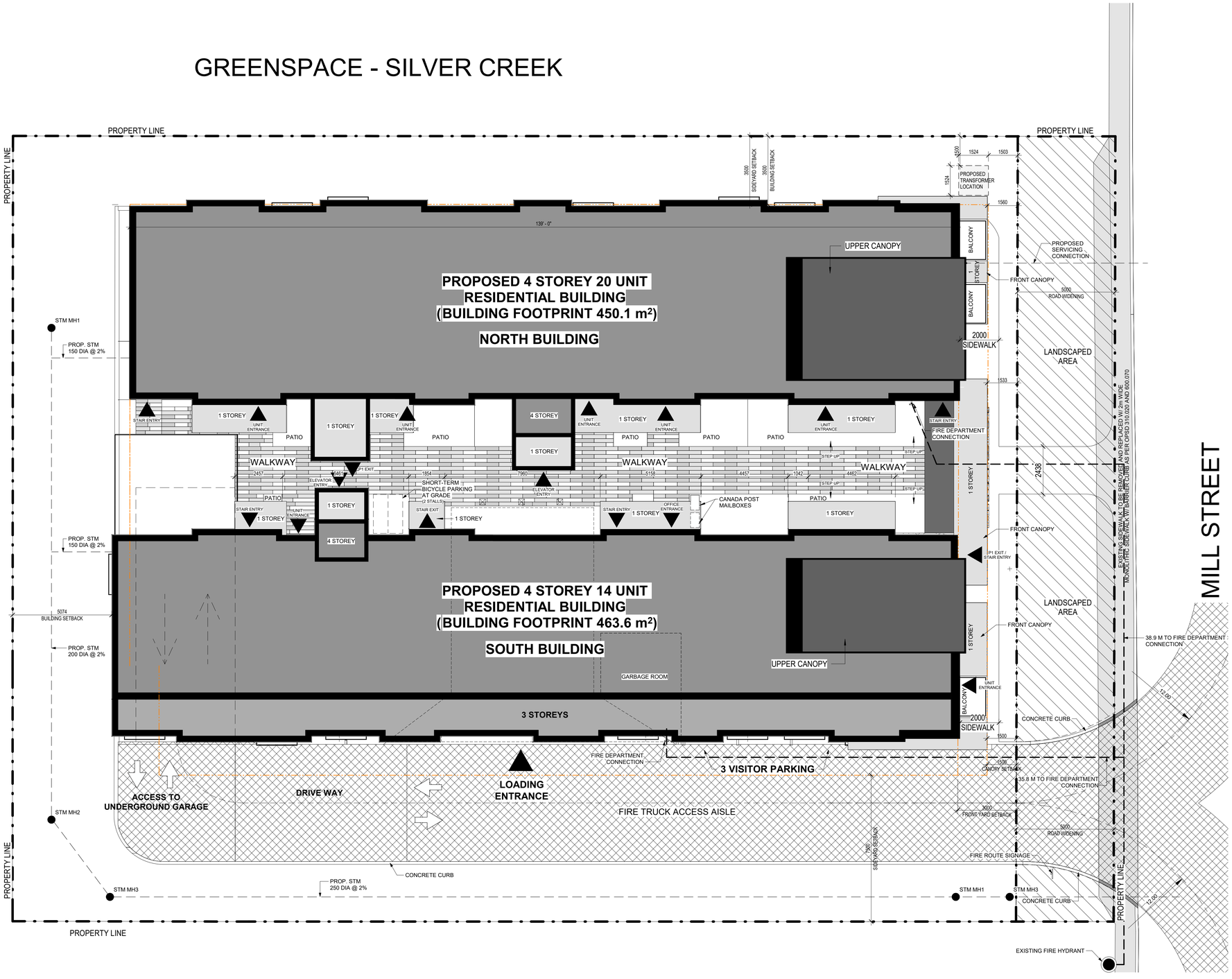
- **turning radius of 13 m centre line is required for waste collection vehicles;**
- **overhead clearance of 7.5 m if waste collection truck required to drive under;**
- **collection point level (+/- 2%);**
- **weight capacity 35 tonnes (P.Eng certified) if waste collection truck required to drive over structure (i.e. parking garage);**
- **two-way traffic – 6 m road width/ One-way traffic – 4.5 m road width;**
- **continuous forward collection of Waste collection vehicles without reversing (Cul-de-sac or T-turnaround may be acceptable);**
- **18 m minimum head-on approach; 8 • 18 m maximum back-up distance;**
- **collection area – minimum area required for waste receptacles;**
- **door width for waste rooms and any door where a waste receptacle must go through – minimum 2.2 m;**
- **internal storage requirements included as per Section 1.9 – note which section applies; and**
- **sufficient storage for all waste receptacles (and compactors if required)**

This is an important matter to be addressed at the OPA and Zoning stage of the planning process, as accommodating municipal waste collection vehicles can significantly impact the site layout and/or design of a development.

Response: The proposed shared loading and garbage collection space has been designed to accommodate private waste collection. Architectural plans of the shared space are provided in report **Appendix B** and AutoTrack vehicle manoeuvring diagrams of a Turtle Island garbage truck are provided in report **Appendix C**.

APPENDIX B:
Architectural Plans

GREENSPACE - SILVER CREEK



1 **SITE PLAN**
1 : 100

SITE DATA

16 + 18 Mill Street, Georgetown, Ontario

DATA		EXISTING ZONE	PROPOSED ZONE	PROPOSED
EXISTING ZONING		ZONING - LDR1-2		
PROPOSED ZONING		**ZONING - MDR2-SPECIAL (MULTIPLE DWELLING)**		
LOT AREA (m²) - PRE-ROAD WIDENING		2271.69 (m²)		
LOT AREA (m²) - POST-ROAD WIDENING		**2070.51 (m²)**		
MINIMUM LOT FRONTAGE (m)		11.0 (m)	11.0 (m)	40.23 (m)
SETBACKS	FRONT YARD (m)	4.5 (m)	4.5 (m)	7.9(m) pre-road widening 2.9(m) post-road widening
	INTERIOR SIDE YARD (m)	4.5 (m)	4.5 (m)	3.5 m (north) & 7.5 m (south)
	EXTERIOR SIDE YARD (m)	4.5 (m)	3.5 (m)	3.5 (m)
	REAR YARD (m)	4.5 (m)	4.5 (m)	5.0 (m)

BUILDING DATA

DATA	REQUIRED	PROVIDED
TOTAL DENSITY (# of units)	145 (units per ha.)	34 units (Pre-Road Widening, 150 units per ha) (Post-Road Widening, 164 units per ha)
BUILDING AREA (m²) - NORTH BUILDING	XX (m²)	450.1 (m²)
BUILDING AREA (m²) - SOUTH BUILDING		463.6 (m²)
TOTAL		**913.7 (m²)**
GROSS FLOOR AREA (m²) - PARKING 2		1,440.2 (m²)
GROSS FLOOR AREA (m²) - PARKING 1		1,440.2 (m²)
GROSS FLOOR AREA (m²) - LEVEL 1		705.3 (m²)
GROSS FLOOR AREA (m²) - LEVEL 2		804.5 (m²)
GROSS FLOOR AREA (m²) - LEVEL 3		894.9 (m²)
GROSS FLOOR AREA (m²) - LEVEL 4		806.6 (m²)
GROSS FLOOR AREA (m²) - NORTH	XX (m²)	1,756.8 (m²)
GROSS FLOOR AREA (m²) - SOUTH	XX (m²)	1,454.5 (m²)
TOTAL		**3,211.3 (m²)**
FLOOR SPACE INDEX (FSI) INCLUDING BELOW GRADE - NORTH BUILDING	XX (m²)	GFA + P1 & P2 COMM. AND SERVICE/ LOT AREA = 1.5
FLOOR SPACE INDEX (FSI) INCLUDING BELOW GRADE - SOUTH BUILDING	XX (m²)	GFA + P1 & P2 COMM. AND SERVICE/ LOT AREA = 1.4
FLOOR SPACE INDEX (FSI) ABOVE GRADE ONLY - NORTH BUILDING	XX (m²)	GFA / LOT AREA =0.85
FLOOR SPACE INDEX (FSI) ABOVE GRADE ONLY - SOUTH BUILDING	XX (m²)	GFA / LOT AREA = 0.70
NUMBER OF STOREYS	6 MAX.	4
BUILDING HEIGHT (m)	11 (m) MAX.	15.1 (m)

UNIT DATA

DATA	REQUIRED	PROVIDED
NORTH BUILDING	XX	2 BED = 12 (2 B.F. INCL.) 3 BED = 8 (1 B.F. INCL.) TOTAL = 20
SOUTH BUILDING	XX	2 BED = 9 (2 B.F. INCL.) 3 BED = 5 (1 B.F. INCL.) TOTAL = 14
COMBINED TOTAL	XX	2 BED = 21 (4 B.F. INCL.) 3 BED = 13 (2 B.F. INCL.) TOTAL = 34

LANDSCAPING DATA

DATA	REQUIRED	PROVIDED
LANDSCAPE AREA (percentage)	XX (%)	29 (%)
LANDSCAPE AREA (m²)	XX (m²)	748 (m²)

VEHICLE PARKING DATA

DATA	REQUIRED	PROVIDED
RESIDENTIAL PARKING (NORTH BUILDING)	In Multiple Dwelling - 2 per dwelling unit= 50 2 * 20 residential units = 40	52
RESIDENTIAL PARKING (SOUTH BUILDING)	In Multiple Dwelling - 2 per dwelling unit= 50 2 * 14 residential units = 28	
TOTAL	**68**	**52**
BARRIER FREE PARKING (INCLUDED IN RES. COUNT)	1	5
VISITOR PARKING	34 UNITS*0.3 = 11	9 (1 BF INCL.)
	TOTAL	**61**

BICYCLE PARKING DATA

DATA	REQUIRED	PROVIDED
RESIDENTIAL BICYCLE PARKING	N/A	2 SHORT TERM 36 LONG TERM
	TOTAL	**38**

NOTES:

As recommended within the Environmental Noise Assessment prepared by SLR Consulting (Canada) Ltd., dated December 14, 2020; An Acoustical Consultant (a qualified professional) shall be retained to review and confirm the final building design to ensure compliance with the recommendations made within the report.

Project North

True North

GENERAL NOTES

1. **Do not scale drawings.** Written dimensions shall have precedence over scaled dimensions.
2. All work shall comply with the 2012 Ontario Building Code and amendments.
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No.	Date	Revision
6	2024-10-28	ISSUED FOR OPA/ZBA
5	2024-08-08	ISSUED FOR COORDINATION
4	2024-03-19	ISSUED FOR OPA/ZBA
3	2024-02-16	REVIEW SET
2	2022-04-11	ISSUED FOR OPA/ZBA
1	2022-04-06	ISSUED FOR REZONING

Client:

Project Name / Address:

16 & 18 MILL STREET, GEORGETOWN DEVELOPMENT

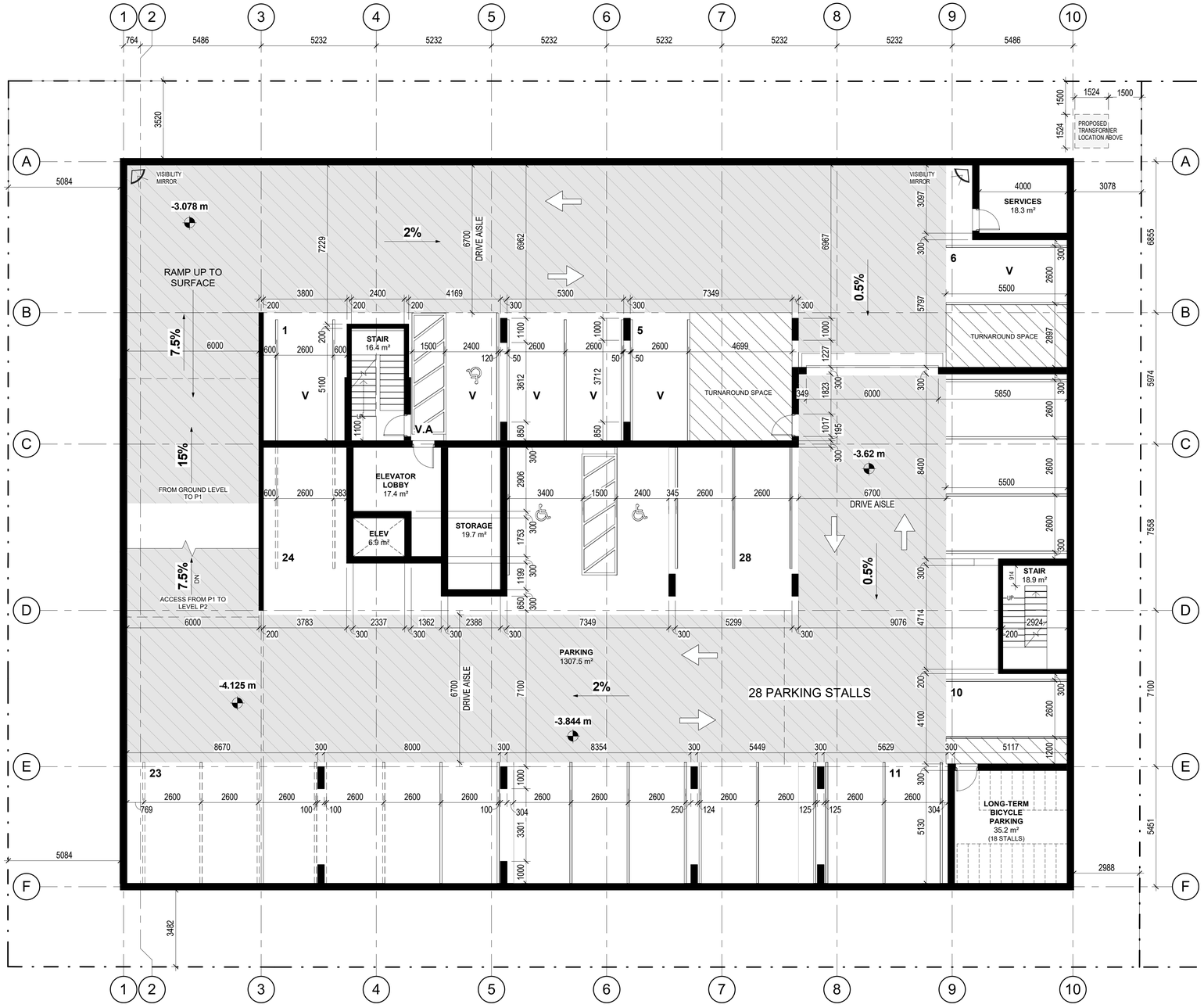
SRM architects+ urban×designers

Project No: 20052
Drawing Date: 09-28-2020
Drawn by: JHF | Checked by: MYV
Office Location: KITCHENER
Plot Date / Time: 2024-10-28 10:33:37 AM

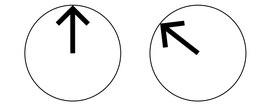
Drawing Name:

SITE PLAN

Drawing Scale: As indicated
Status: OPA/ZBA
Revision No.: r6
Drawing No.: **A1.1**



1 **P1 PARKING LEVEL**
1 : 100



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7	2024-02-16	REVIEW SET
6	2022-04-11	ISSUED FOR OPA/ZBA
5	2022-04-06	ISSUED FOR REZONING
4	2020-12-16	ISSUED FOR REZONING
3	2020-12-04	CONSULTANT COORDINATION
2	2020-11-19	CONSULTANT COORDINATION
1	2020-09-28	CONSULTANT COORDINATION

Client:

Project Name / Address:

16 & 18 MILL STREET, GEORGETOWN DEVELOPMENT

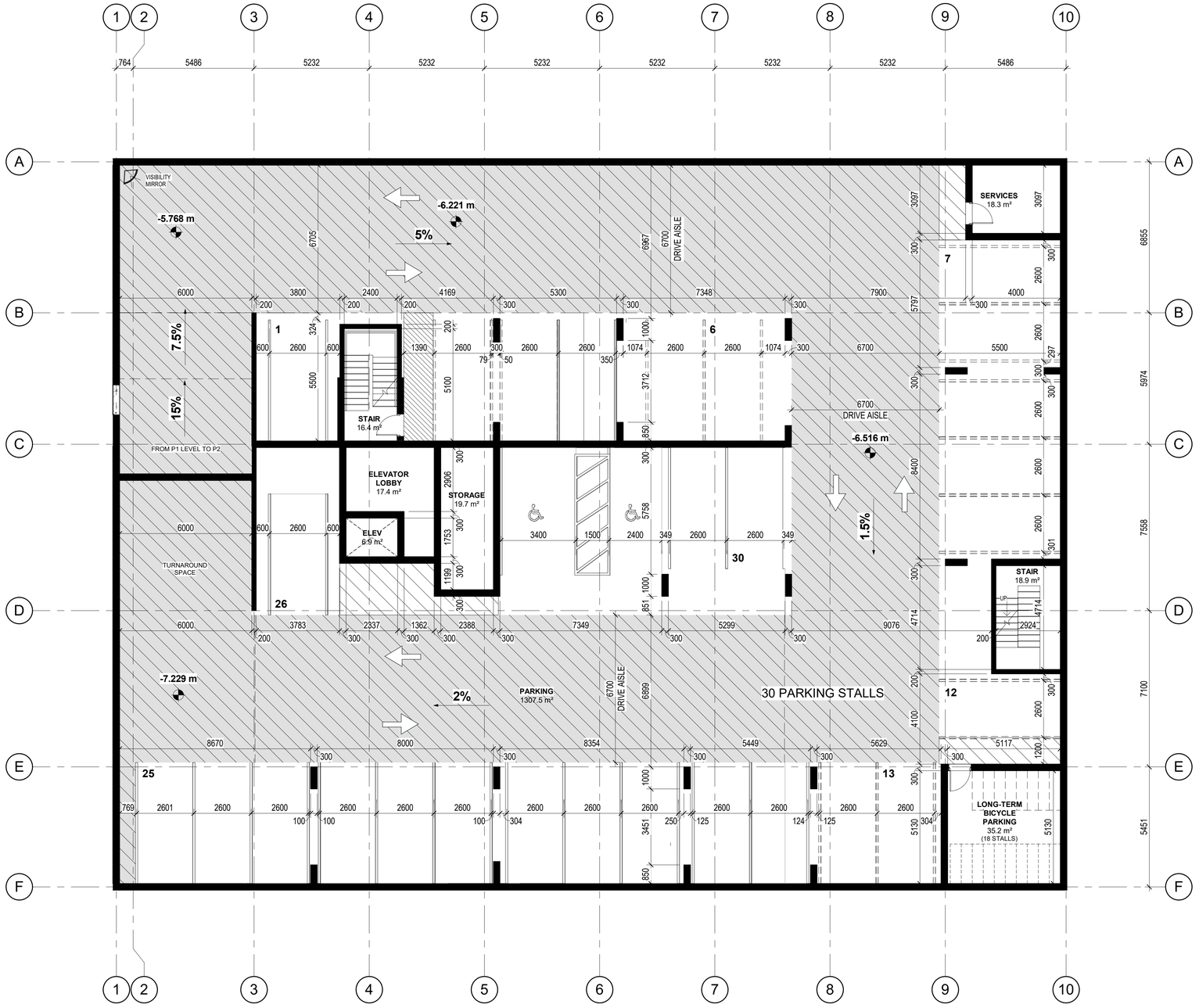
SRM↗ architects+ urban⋆designers

Project No: 20052
Drawing Date: 09-28-2020
Drawn by: JHF | Checked by: MYV
Office Location: KITCHENER
Plot Date / Time: 2024-10-28 10:33:37 AM

Drawing Name:

P1 LEVEL PARKING

Drawing Scale: 1 : 100
Status: OPA/ZBA
Revision No.: **r10**
Drawing No.: **A2.1**



1 **P2 PARKING LEVEL**
1 : 100

Project North **True North**

GENERAL NOTES

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5	2022-04-06	ISSUED FOR REZONING
4	2020-12-16	ISSUED FOR REZONING
3	2020-12-04	CONSULTANT COORDINATION
2	2020-11-19	CONSULTANT COORDINATION
1	2020-09-28	CONSULTANT COORDINATION

Client:

Project Name / Address:

16 & 18 MILL STREET, GEORGETOWN DEVELOPMENT

SRM↗ architects+ urban⋆designers

Project No: 20052
Drawing Date: 09-28-2020
Drawn by: JHF
Checked by: MYV
Office Location: KITCHENER
Plot Date / Time: 2024-10-28 10:33:38 AM

Drawing Name:

P2 LEVEL PARKING

Drawing Scale: 1 : 100
Status: OPA/ZBA
Revision No.: **r10**
Drawing No.: **A2.2**

1 **FLOOR PLAN - LEVEL 1**
1 : 100

UNIT DATA - LEVEL 1	
WALKUP UNITS (GROUND FLOOR)	
TYPE	**COUNT**
2 BED	4 (2 B.F. INCL.)
3 BED	3 (1 B.F. INCL.)
TOTAL	**7**

Project North

True North

GENERAL NOTES

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5	2022-04-06	ISSUED FOR REZONING
4	2020-12-16	ISSUED FOR REZONING
3	2020-12-04	CONSULTANT COORDINATION
2	2020-11-19	CONSULTANT COORDINATION
1	2020-09-28	CONSULTANT COORDINATION

Client:

Project Name / Address:

16 & 18 MILL STREET, GEORGETOWN DEVELOPMENT

SRM architects+ urban*designers

Project No: 20052
Drawing Date: 09-28-2020
Drawn by: M.S
Checked by: MYV
Office Location: KITCHENER
Plot Date / Time: 2024-10-28 10:33:40 AM

Drawing Name:

LEVEL 1 FLOOR PLAN

Drawing Scale: As indicated
Status: OPA/ZBA
Revision No.: **r9**
Drawing No.: **A2.3**

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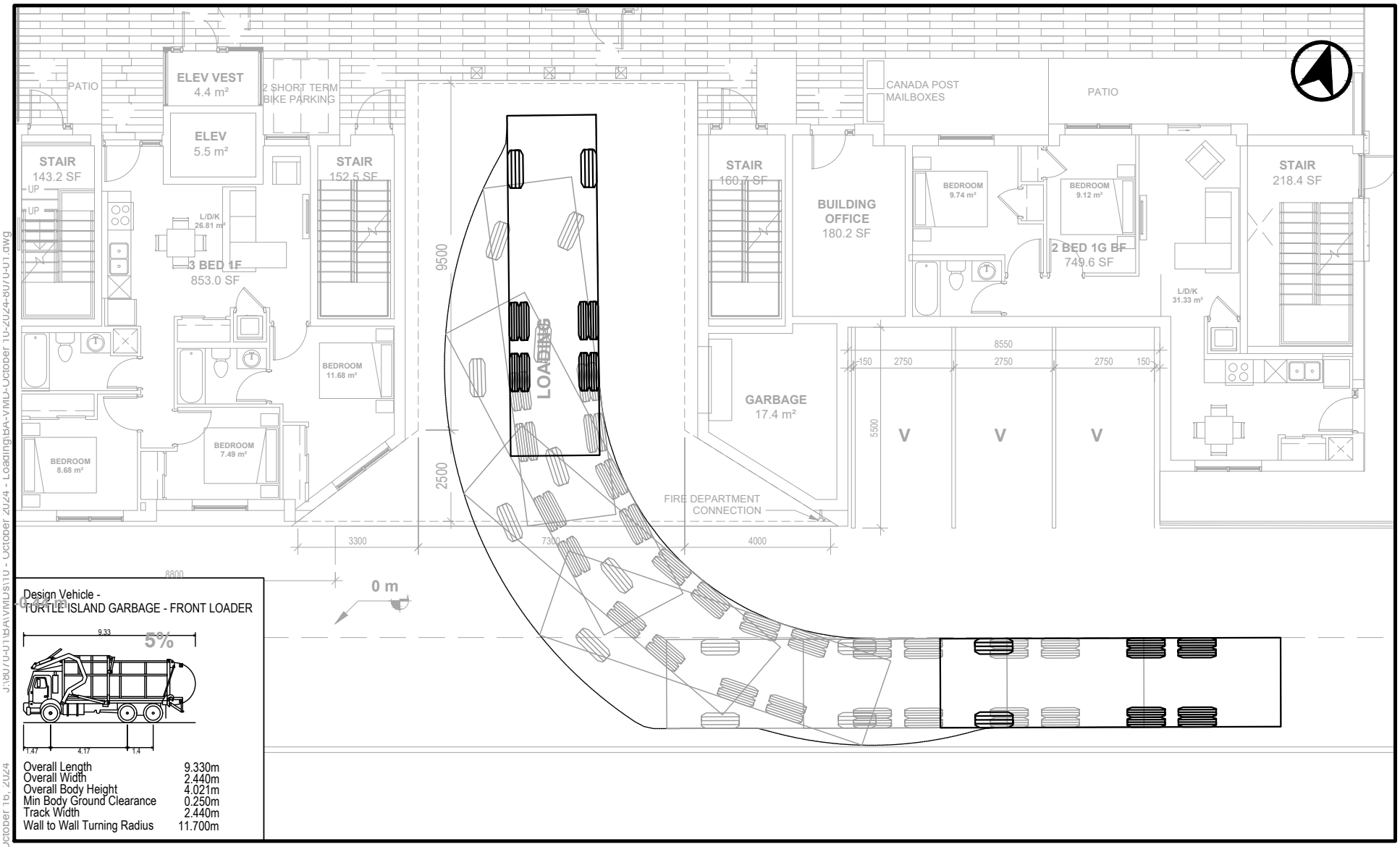
APPENDIX C:
Vehicle Manoeuvring Diagrams



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0 1 2 3 4 5m

Scale

Date Plotted: October 10, 2024

J:\8070-01\BA\VMD\810 - October 2024 - Loading\BA-VMD-October 10-2024-8070-01.dwg

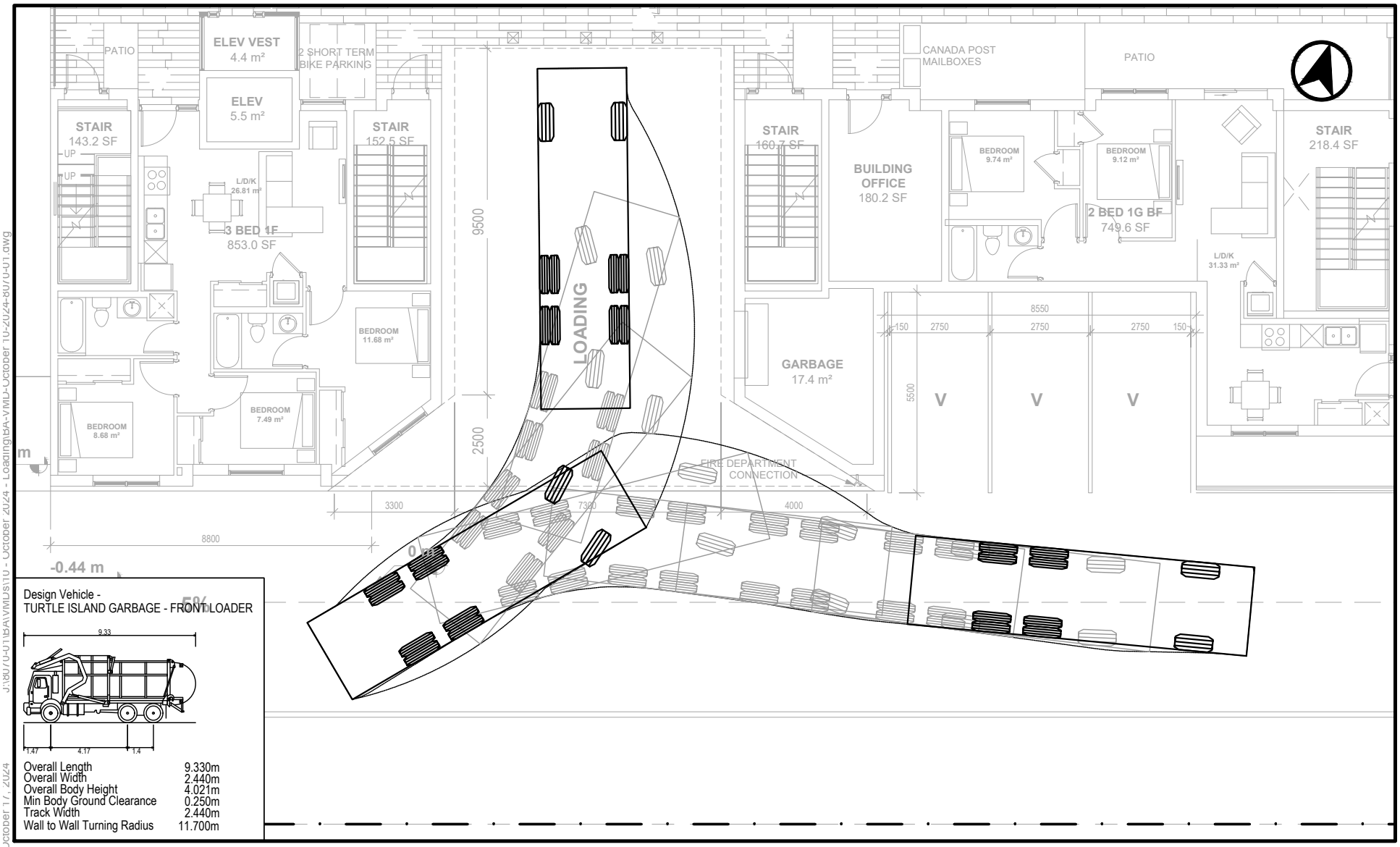
BA Group

16-18 Mill Street Residential Development

Vehicle Manoeuvring Diagram - Private Collection - Inbound

Turtle Island Garbage Truck - Front Loader

Project:	16-18 Mill Street
Project No.	8070-01
Date:	October 10, 2024
Revised:	01
Drawing No.	VMD-01



Design Vehicle -
TURTLE ISLAND GARBAGE - FRONT LOADER

Overall Length	9.330m
Overall Width	2.440m
Overall Body Height	4.021m
Min Body Ground Clearance	0.250m
Track Width	2.440m
Wall to Wall Turning Radius	11.700m

1:150

0 1 2 3 4 5m

Scale

Date Plotted: October 17, 2024

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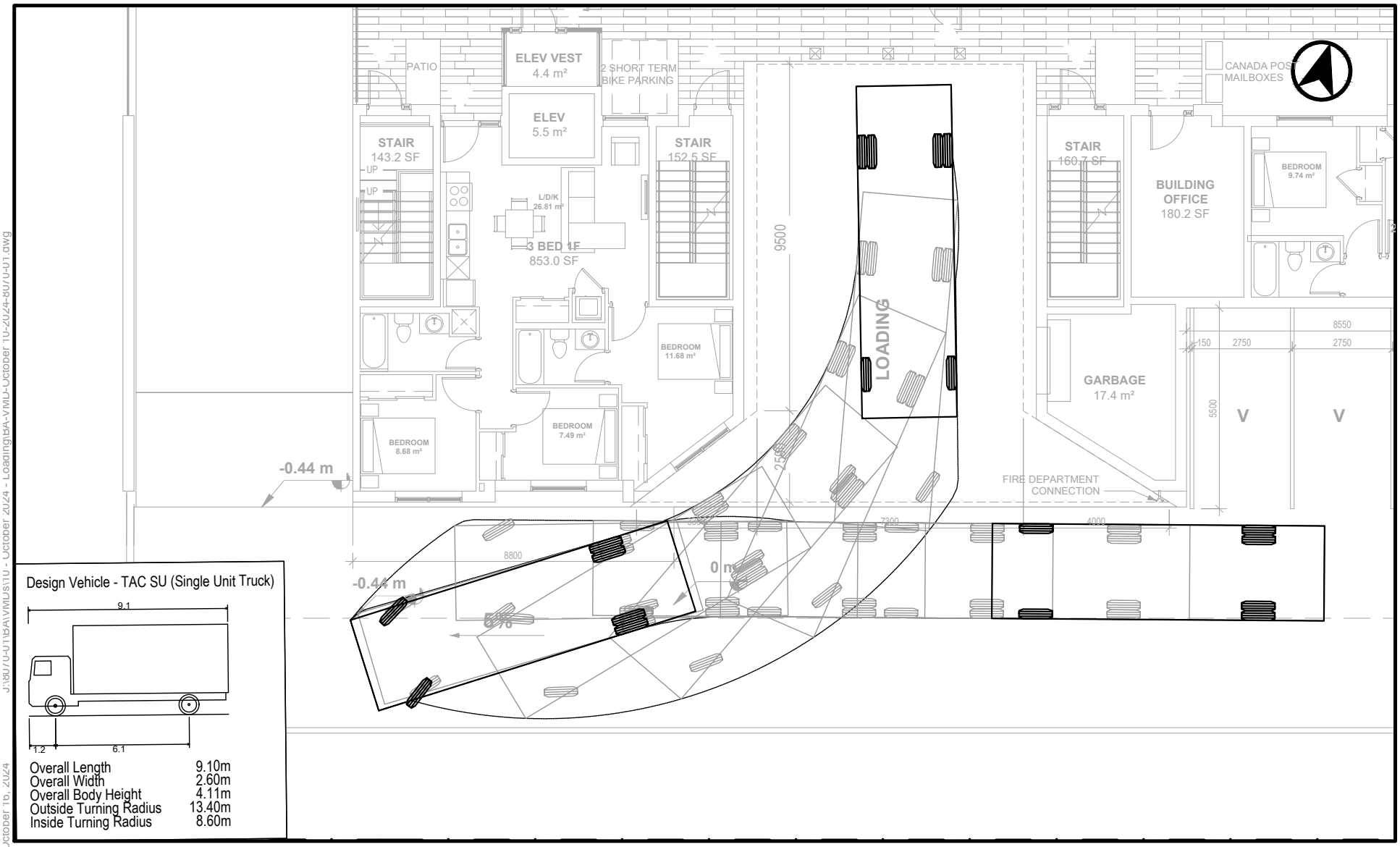
BA Group

16-18 Mill Street Residential Development

Vehicle Manoeuvring Diagram - Private Collection - Outbound
Turtle Island Garbage Truck - Front Loader

Project:	16-18 Mill Street
Project No.	8070-01
Date:	October 10, 2024
Revised:	01
Drawing No.	VMD-02



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0 1 2 3 4 5m

Scale

Date Plotted: October 10, 2024

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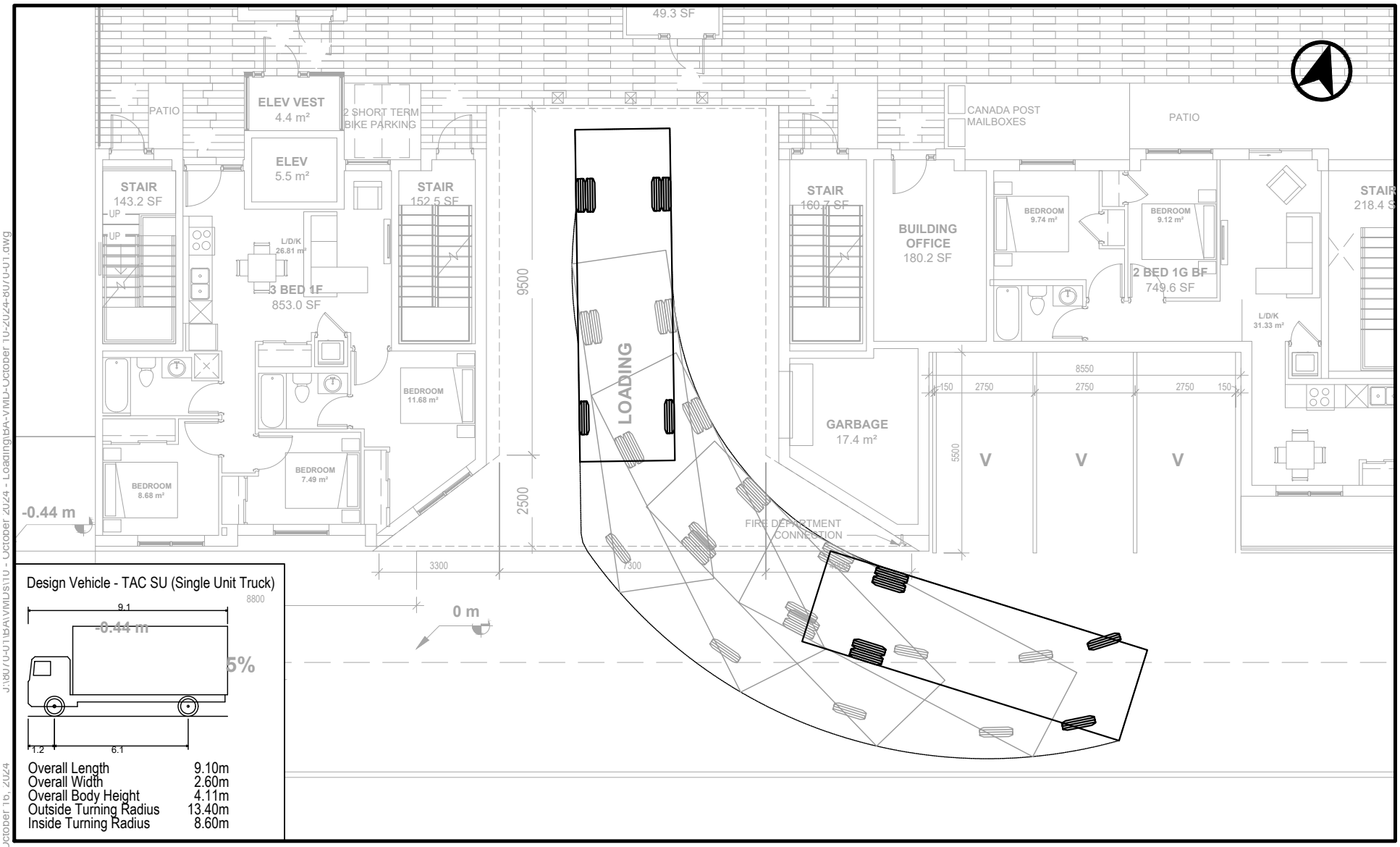
BA Group

16-18 Mill Street Residential Development

Vehicle Manoeuvring Diagram - Inbound

TAC Single Unit (SU) Truck

Project:	16-18 Mill Street
Project No.	8070-01
Date:	October 10, 2024
Revised:	01
Drawing No.	VMD-03



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0 1 2 3 4 5m

Scale

Date Plotted: October 10, 2024

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BA Group

16-18 Mill Street Residential Development

Vehicle Manoeuvring Diagram - Outbound

TAC Single Unit (SU) Truck

Project:	16-18 Mill Street
Project No.	8070-01
Date:	October 10, 2024
Revised:	01
Drawing No.	VMD-04

APPENDIX D:
Turning Movement Counts

Guelph St @ Mill St

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

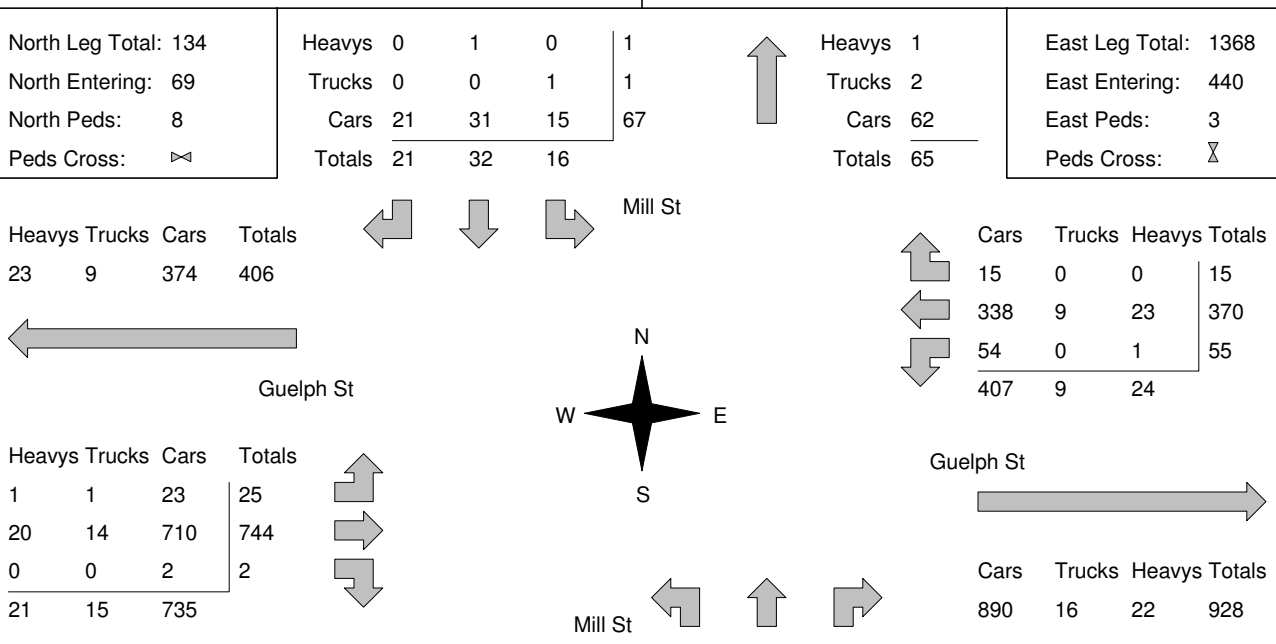
Municipality: Halton Hills
Site #: 0000000002
Intersection: Guelph St & Mill St
TFR File #: 2
Count date: 5-Nov-2018

Weather conditions:
Rain/Cloudy

Person(s) who counted:
Les

**** Signalized Intersection ****

Major Road: Guelph St runs W/E



Comments

Guelph St @ Mill St

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:15:00
To: 12:15:00

Municipality: Halton Hills
Site #: 0000000002
Intersection: Guelph St & Mill St
TFR File #: 2
Count date: 5-Nov-2018

Weather conditions:
Rain/Cloudy

Person(s) who counted:
Les

**** Signalized Intersection ****

Major Road: Guelph St runs W/E

North Leg Total:	80			
North Entering:	47			
North Peds:	2			
Peds Cross:	⋈			

Heavys	0	0	0	0
Trucks	1	0	0	1
Cars	12	19	15	46
Totals	13	19	15	

Heavys	0	
Trucks	1	
Cars	32	
Totals	33	

East Leg Total:	1134		
East Entering:	515		
East Peds:	5		
Peds Cross:	⧖		

Mill St

Heavys	Trucks	Cars	Totals
6	17	424	447

Cars	Trucks	Heavys	Totals
5	0	0	5
408	16	6	430
78	0	2	80
491	16	8	

Guelph St

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	6	6
10	11	452	473
0	0	5	5
10	11	463	

Guelph St

Cars	Trucks	Heavys	Totals
595	13	11	619

Mill St

Peds Cross:	⧖		
West Peds:	4		
West Entering:	484		
West Leg Total:	931		

Cars	102			
Trucks	0			
Heavys	2			
Totals	104			

Cars	4	21	128	153
Trucks	0	1	2	3
Heavys	0	0	1	1
Totals	4	22	131	

Peds Cross:	⋈		
South Peds:	9		
South Entering:	157		
South Leg Total:	261		

Comments

Guelph St @ Mill St

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

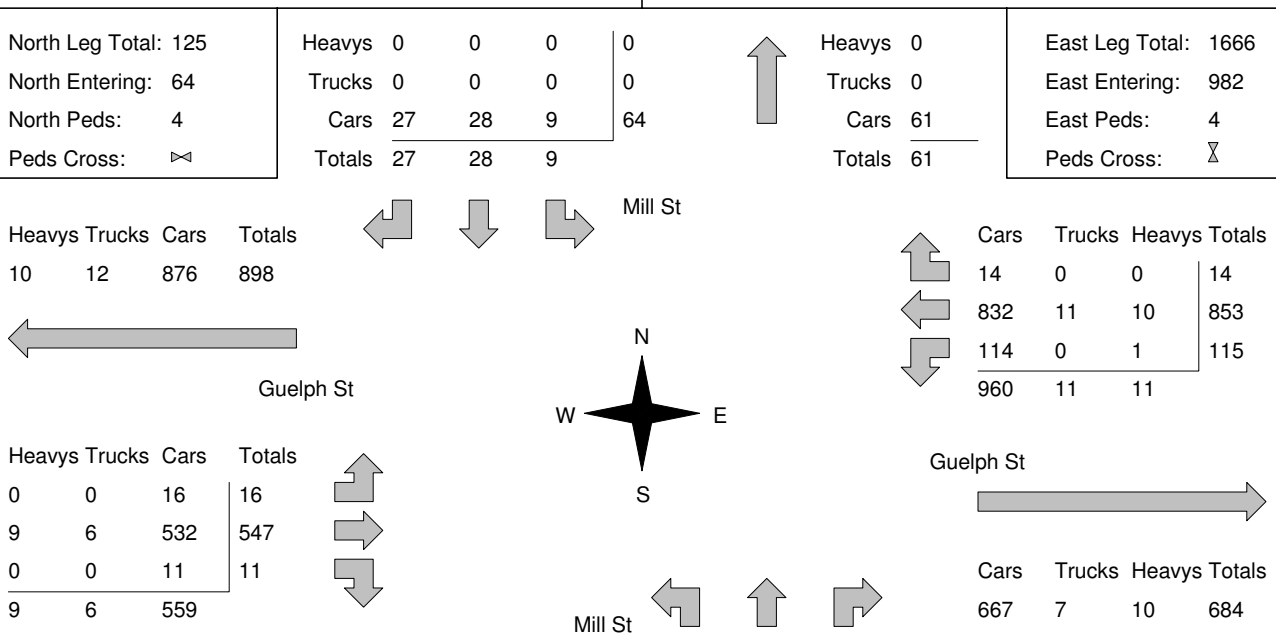
Municipality: Halton Hills
Site #: 0000000002
Intersection: Guelph St & Mill St
TFR File #: 2
Count date: 5-Nov-2018

Weather conditions:
Rain/Cloudy

Person(s) who counted:
Les

**** Signalized Intersection ****

Major Road: Guelph St runs W/E



Comments

Guelph St @ Mill St

Total Count Diagram

Municipality: Halton Hills
Site #: 0000000002
Intersection: Guelph St & Mill St
TFR File #: 2
Count date: 5-Nov-2018

Weather conditions:
Rain/Cloudy

Person(s) who counted:
Les

**** Signalized Intersection ****

Major Road: Guelph St runs W/E

North Leg Total:	809			
North Entering:	445			
North Peds:	28			
Peds Cross:	⋈			

Heavys	1	3	1	5
Trucks	3	5	6	14
Cars	134	215	77	426
Totals	138	223	84	

Heavys	3	
Trucks	6	
Cars	355	
Totals	364	

East Leg Total:	10097	
East Entering:	4777	
East Peds:	29	
Peds Cross:	⧖	

Mill St

Heavys	Trucks	Cars	Totals
100	100	4044	4244

Cars	Trucks	Heavys	Totals
90	1	0	91
3829	94	99	4022
649	5	10	664
4568	100	109	

Guelph St

N
W E
S

Heavys	Trucks	Cars	Totals
2	2	108	112
128	99	3972	4199
0	1	55	56
130	102	4135	

Guelph St

Cars	Trucks	Heavys	Totals
5060	120	140	5320

Mill St

Peds Cross:	⧖		
West Peds:	54		
West Entering:	4367		
West Leg Total:	8611		

Cars	919
Trucks	11
Heavys	13
Totals	943

Cars	81	157	1011	1249
Trucks	3	3	15	21
Heavys	0	1	11	12
Totals	84	161	1037	

Peds Cross:	⋈		
South Peds:	117		
South Entering:	1282		
South Leg Total:	2225		

Comments

Spectrum

Turning Movement Count
Location Name: GUELPH ST & MILL ST
Date: Tue, Nov 03, 2020 Deployment Lead: Theo Daglis

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

Turning Movement Count (1 . GUELPH ST & MILL ST)

Start Time	N Approach MILL ST						E Approach GUELPH ST						S Approach MILL ST						W Approach GUELPH ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	2	2	1	0	1	5	2	43	6	0	0	51	9	0	0	0	0	9	1	103	0	0	0	104	169	
07:15:00	2	0	2	0	0	4	0	56	7	0	0	63	6	2	2	0	0	10	2	130	3	0	2	135	212	
07:30:00	1	6	2	0	0	9	1	69	6	0	2	76	14	1	0	0	0	15	0	150	2	0	0	152	252	
07:45:00	1	9	1	0	0	11	7	63	5	0	1	75	21	4	1	0	0	26	0	173	5	0	1	178	290	923
08:00:00	1	2	10	0	0	13	5	101	12	0	1	118	12	0	0	0	0	12	1	178	2	0	0	181	324	1078
08:15:00	1	8	7	0	1	16	5	100	15	0	4	120	28	3	2	0	4	33	0	146	2	0	1	148	317	1183
08:30:00	2	4	6	0	2	12	1	75	15	0	2	91	40	3	2	0	12	45	0	163	0	0	6	163	311	1242
08:45:00	6	5	7	0	1	18	6	97	19	0	0	122	40	1	0	0	7	41	1	118	3	0	0	122	303	1255
BREAK																										
16:00:00	6	3	4	0	0	13	5	196	21	0	1	222	26	4	2	0	0	32	1	123	3	0	1	127	394	
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16:45:00	4	8	3	0	2	15	5	177	24	0	3	206	26	9	2	0	0	37	4	136	0	0	0	140	398	1577
17:00:00	4	3	3	0	1	10	5	202	25	0	0	232	30	6	0	0	1	36	1	111	6	0	5	118	396	1579
17:15:00	4	4	5	0	1	13	6	176	24	0	1	206	34	6	3	0	1	43	3	113	1	0	3	117	379	1563
17:30:00	5	3	4	0	0	12	3	178	22	0	0	203	28	1	1	0	2	30	4	115	1	0	3	120	365	1538
17:45:00	3	5	5	0	0	13	1	167	21	0	0	189	34	5	3	0	1	42	2	107	5	0	5	114	358	1498
Grand Total	51	77	63	0	10	191	60	2041	270	0	19	2371	386	56	22	0	31	464	26	2164	37	0	31	2227	**5253**	-
Approach%	26.7%	40.3%	33%	0%		-	2.5%	86.1%	11.4%	0%		-	83.2%	12.1%	4.7%	0%		-	1.2%	97.2%	1.7%	0%		-	-	-
Totals %	1%	1.5%	1.2%	0%		3.6%	1.1%	38.9%	5.1%	0%		45.1%	7.3%	1.1%	0.4%	0%		8.8%	0.5%	41.2%	0.7%	0%		42.4%	-	-
Heavy	0	1	2	0		-	1	95	7	0		-	10	1	0	0		-	2	97	1	0		-	-	-
Heavy %	0%	1.3%	3.2%	0%		-	1.7%	4.7%	2.6%	0%		-	2.6%	1.8%	0%	0%		-	7.7%	4.5%	2.7%	0%		-	-	-
Bicycles	0	0	0	0		-	0	0	0	0		-	1	0	0	0		-	0	0	0	0		-	-	-
Bicycle %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0.3%	0%	0%	0%		-	0%	0%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: GUELPH ST & MILL ST
Date: Tue, Nov 03, 2020 Deployment Lead: Theo Daglis

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

Peak Hour: 08:00 AM - 09:00 AM Weather: Shower Rain (4.47 °C)

Start Time	N Approach MILL ST						E Approach GUELPH ST						S Approach MILL ST						W Approach GUELPH ST						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	1	2	10	0	0	13	5	101	12	0	1	118	12	0	0	0	0	12	1	178	2	0	0	181	324
08:15:00	1	8	7	0	1	16	5	100	15	0	4	120	28	3	2	0	4	33	0	146	2	0	1	148	317
08:30:00	2	4	6	0	2	12	1	75	15	0	2	91	40	3	2	0	12	45	0	163	0	0	6	163	311
08:45:00	6	5	7	0	1	18	6	97	19	0	0	122	40	1	0	0	7	41	1	118	3	0	0	122	303
Grand Total	10	19	30	0	4	59	17	373	61	0	7	451	120	7	4	0	23	131	2	605	7	0	7	614	**1255**
Approach%	16.9%	32.2%	50.8%	0%		-	3.8%	82.7%	13.5%	0%		-	91.6%	5.3%	3.1%	0%		-	0.3%	98.5%	1.1%	0%		-	**-**
Totals %	0.8%	1.5%	2.4%	0%		4.7%	1.4%	29.7%	4.9%	0%		35.9%	9.6%	0.6%	0.3%	0%		10.4%	0.2%	48.2%	0.6%	0%		48.9%	**-**
PHF	0.42	0.59	0.75	0		0.82	0.71	0.92	0.8	0		0.92	0.75	0.58	0.5	0		0.73	0.5	0.85	0.58	0		0.85	**-**
Heavy	0	0	1	0		1	1	36	2	0		39	4	1	0	0		5	0	35	1	0		36	**-**
Heavy %	0%	0%	3.3%	0%		1.7%	5.9%	9.7%	3.3%	0%		8.6%	3.3%	14.3%	0%	0%		3.8%	0%	5.8%	14.3%	0%		5.9%	**-**
Lights	10	19	29	0		58	16	337	59	0		412	116	6	4	0		126	2	570	6	0		578	**-**
Lights %	100%	100%	96.7%	0%		98.3%	94.1%	90.3%	96.7%	0%		91.4%	96.7%	85.7%	100%	0%		96.2%	100%	94.2%	85.7%	0%		94.1%	**-**
Single-Unit Trucks	0	0	0	0		0	0	16	1	0		17	2	0	0	0		2	0	18	1	0		19	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	4.3%	1.6%	0%		3.8%	1.7%	0%	0%	0%		1.5%	0%	3%	14.3%	0%		3.1%	**-**
Buses	0	0	1	0		1	0	10	1	0		11	2	0	0	0		2	0	13	0	0		13	**-**
Buses %	0%	0%	3.3%	0%		1.7%	0%	2.7%	1.6%	0%		2.4%	1.7%	0%	0%	0%		1.5%	0%	2.1%	0%	0%		2.1%	**-**
Articulated Trucks	0	0	0	0		0	1	10	0	0		11	0	1	0	0		1	0	4	0	0		4	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	5.9%	2.7%	0%	0%		2.4%	0%	14.3%	0%	0%		0.8%	0%	0.7%	0%	0%		0.7%	**-**
Pedestrians	-	-	-	-	4	-	-	-	-	-	6	-	-	-	-	-	20	-	-	-	-	-	7	-	**-**
Pedestrians%	-	-	-	-	9.8%		-	-	-	-	14.6%		-	-	-	-	48.8%		-	-	-	-	17.1%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	2.4%		-	-	-	-	7.3%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

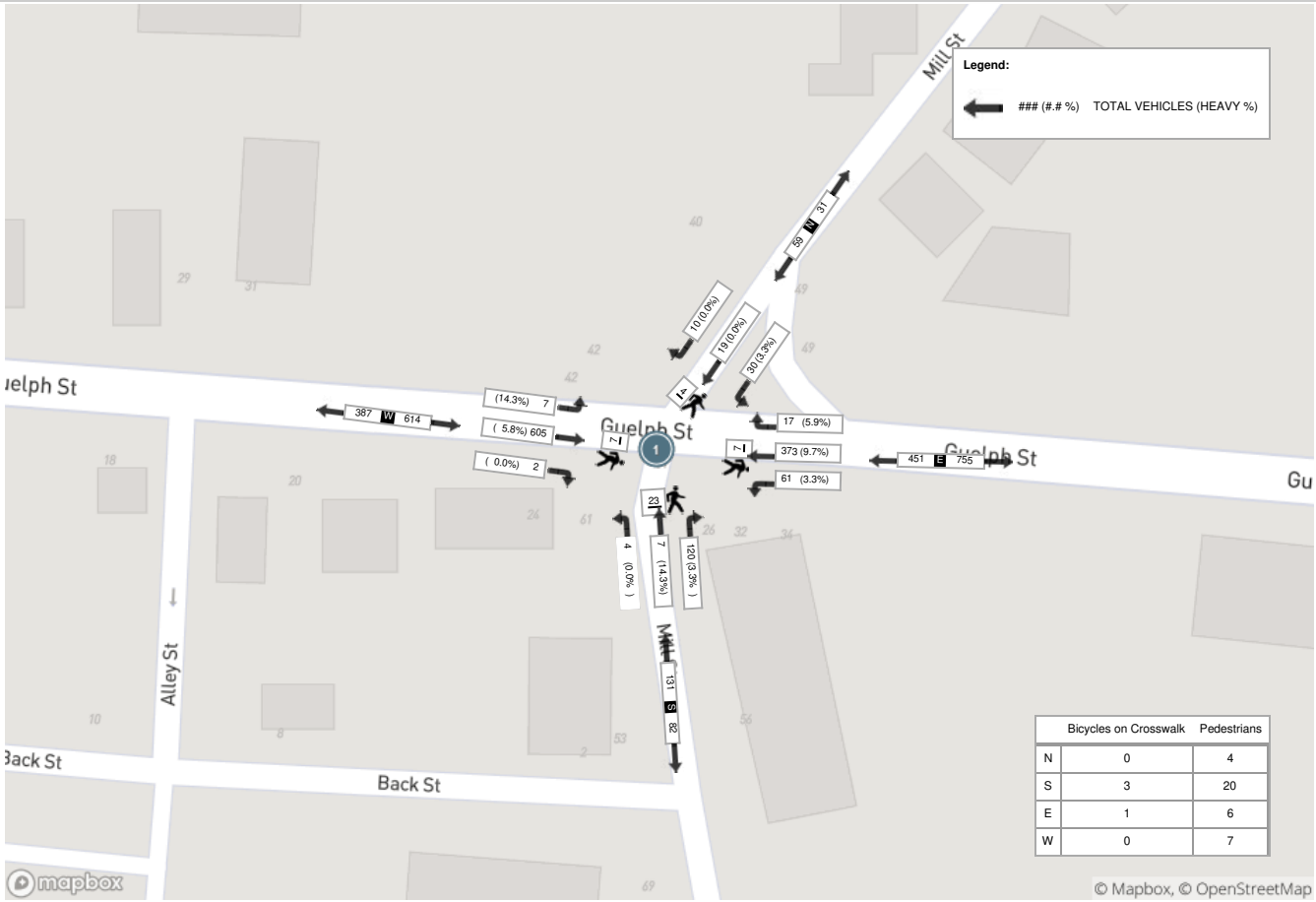
Turning Movement Count
Location Name: GUELPH ST & MILL ST
Date: Tue, Nov 03, 2020 Deployment Lead: Theo Daglis

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

Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (5.94 °C)

Start Time	N Approach MILL ST						E Approach GUELPH ST						S Approach MILL ST						W Approach GUELPH ST						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:15:00	3	9	2	0	0	14	4	162	21	0	3	187	19	7	2	0	0	28	4	159	3	0	2	166	395
16:30:00	6	6	1	0	1	13	4	179	27	0	1	210	19	4	2	0	3	25	2	139	1	0	2	142	390
16:45:00	4	8	3	0	2	15	5	177	24	0	3	206	26	9	2	0	0	37	4	136	0	0	0	140	398
17:00:00	4	3	3	0	1	10	5	202	25	0	0	232	30	6	0	0	1	36	1	111	6	0	5	118	396
Grand Total	17	26	9	0	4	52	18	720	97	0	7	835	94	26	6	0	4	126	11	545	10	0	9	566	**1579**
Approach%	32.7%	50%	17.3%	0%		-	2.2%	86.2%	11.6%	0%		-	74.6%	20.6%	4.8%	0%		-	1.9%	96.3%	1.8%	0%		-	**-**
Totals %	1.1%	1.6%	0.6%	0%		3.3%	1.1%	45.6%	6.1%	0%		52.9%	6%	1.6%	0.4%	0%		8%	0.7%	34.5%	0.6%	0%		35.8%	**-**
PHF	0.71	0.72	0.75	0		0.87	0.9	0.89	0.9	0		0.9	0.78	0.72	0.75	0		0.85	0.69	0.86	0.42	0		0.85	**-**
Heavy	0	0	0	0		0	0	11	1	0		12	2	0	0	0		2	1	28	0	0		29	**-**
Heavy %	0%	0%	0%	0%		0%	0%	1.5%	1%	0%		1.4%	2.1%	0%	0%	0%		1.6%	9.1%	5.1%	0%	0%		5.1%	**-**
Lights	17	26	9	0		52	18	709	96	0		823	92	26	6	0		124	10	517	10	0		537	**-**
Lights %	100%	100%	100%	0%		100%	100%	98.5%	99%	0%		98.6%	97.9%	100%	100%	0%		98.4%	90.9%	94.9%	100%	0%		94.9%	**-**
Single-Unit Trucks	0	0	0	0		0	0	5	0	0		5	1	0	0	0		1	1	21	0	0		22	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.6%	1.1%	0%	0%	0%		0.8%	9.1%	3.9%	0%	0%		3.9%	**-**
Buses	0	0	0	0		0	0	2	1	0		3	1	0	0	0		1	0	6	0	0		6	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.3%	1%	0%		0.4%	1.1%	0%	0%	0%		0.8%	0%	1.1%	0%	0%		1.1%	**-**
Articulated Trucks	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	0	1	0	0		1	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	**-**
Pedestrians	-	-	-	-	4	-	-	-	-	-	6	-	-	-	-	-	4	-	-	-	-	-	9	-	**-**
Pedestrians%	-	-	-	-	16.7%		-	-	-	-	25%		-	-	-	-	16.7%		-	-	-	-	37.5%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	4.2%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 08:00 AM - 09:00 AM **Weather: Shower Rain (4.47 °C)**



Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (5.94 °C)

	Bicycles on Crosswalk	Pedestrians
N	0	4
S	0	4
E	1	6
W	0	9

Spectrum

Turning Movement Count
Location Name: MILL ST & GUELPH ST
Date: Tue, May 17, 2022 Deployment Lead: Tasos Issaaakidis

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

Turning Movement Count (1 . MILL ST & GUELPH ST)

Start Time	N Approach MILL ST						E Approach GUELPH ST						S Approach MILL ST						W Approach GUELPH 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		
07:00:00	0	0	0	0	0	0	0	78	9	0	0	87	11	0	0	0	0	11	0	135	0	0	0	135	233	
07:15:00	0	0	0	0	1	0	0	82	10	0	0	92	20	0	2	0	1	22	0	140	0	0	1	140	254	
07:30:00	0	0	0	0	1	0	0	66	6	0	1	72	15	0	1	0	1	16	2	165	0	0	0	167	255	
07:45:00	0	0	0	0	2	0	1	107	12	0	0	120	22	0	0	0	2	22	0	189	0	0	0	189	331	1073
08:00:00	0	0	0	0	1	0	0	91	17	0	3	108	24	0	1	0	2	25	0	200	0	0	0	200	333	1173
08:15:00	0	0	0	0	0	0	1	123	30	0	0	154	42	0	1	0	3	43	3	203	0	0	0	206	403	1322
08:30:00	2	0	0	0	4	2	0	103	14	0	1	117	50	0	1	0	14	51	1	167	0	0	3	168	338	1405
08:45:00	0	0	0	0	3	0	0	99	21	0	1	120	51	0	2	0	17	53	4	153	0	0	1	157	330	1404
BREAK																										
16:00:00	0	0	0	0	2	0	0	188	26	0	2	214	34	0	5	0	3	39	5	131	0	0	1	136	389	
16:15:00	0	0	0	0	2	0	0	178	31	0	2	209	35	0	4	0	3	39	4	150	0	0	1	154	402	
16:30:00	0	0	0	0	5	0	0	223	28	0	2	251	29	0	10	0	4	39	3	135	0	0	4	138	428	
16:45:00	0	0	0	0	4	0	0	170	33	0	3	203	32	0	2	0	0	34	3	154	0	0	4	157	394	1613
17:00:00	0	0	0	0	2	0	0	218	24	0	3	242	34	0	0	0	0	34	3	140	0	0	2	143	419	1643
17:15:00	0	0	0	0	0	0	0	197	30	0	2	227	37	0	4	0	0	41	2	125	0	0	0	127	395	1636
17:30:00	0	0	0	0	4	0	0	197	36	0	6	233	31	0	2	0	4	33	1	138	0	0	3	139	405	1613
17:45:00	0	0	0	0	0	0	0	144	33	0	4	177	34	0	4	0	3	38	1	126	0	0	0	127	342	1561
Grand Total	2	0	0	0	31	2	2	2264	360	0	30	2626	501	0	39	0	57	540	32	2451	0	0	20	2483	**5651**	-
Approach%	100%	0%	0%	0%		-	0.1%	86.2%	13.7%	0%		-	92.8%	0%	7.2%	0%		-	1.3%	98.7%	0%	0%		-	**-**	-
Totals %	0%	0%	0%	0%		0%	0%	40.1%	6.4%	0%		46.5%	8.9%	0%	0.7%	0%		9.6%	0.6%	43.4%	0%	0%		43.9%	**-**	-
Heavy	1	0	0	0		-	1	129	4	0		-	4	0	2	0		-	1	121	0	0		-	**-**	-
Heavy %	50%	0%	0%	0%		-	50%	5.7%	1.1%	0%		-	0.8%	0%	5.1%	0%		-	3.1%	4.9%	0%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Clear Sky (6.71 °C)

Start Time	N Approach MILL ST						E Approach GUELPH ST						S Approach MILL ST						W Approach GUELPH 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	
07:45:00	0	0	0	0	2	0	1	107	12	0	0	120	22	0	0	0	2	22	0	189	0	0	0	189	331
08:00:00	0	0	0	0	1	0	0	91	17	0	3	108	24	0	1	0	2	25	0	200	0	0	0	200	333
08:15:00	0	0	0	0	0	0	1	123	30	0	0	154	42	0	1	0	3	43	3	203	0	0	0	206	403
08:30:00	2	0	0	0	4	2	0	103	14	0	1	117	50	0	1	0	14	51	1	167	0	0	3	168	338
Grand Total	2	0	0	0	7	2	2	424	73	0	4	499	138	0	3	0	21	141	4	759	0	0	3	763	**1405**
Approach%	100%	0%	0%	0%		-	0.4%	85%	14.6%	0%		-	97.9%	0%	2.1%	0%		-	0.5%	99.5%	0%	0%		-	**-**
Totals %	0.1%	0%	0%	0%		0.1%	0.1%	30.2%	5.2%	0%		35.5%	9.8%	0%	0.2%	0%		10%	0.3%	54%	0%	0%		54.3%	**-**
PHF	0.25	0	0	0		0.25	0.5	0.86	0.61	0		0.81	0.69	0	0.75	0		0.69	0.33	0.93	0	0		0.93	**-**
Heavy	1	0	0	0		1	1	53	2	0		56	3	0	0	0		3	1	34	0	0		35	**-**
Heavy %	50%	0%	0%	0%		50%	50%	12.5%	2.7%	0%		11.2%	2.2%	0%	0%	0%		2.1%	25%	4.5%	0%	0%		4.6%	**-**
Lights	1	0	0	0		1	1	371	71	0		443	135	0	3	0		138	3	725	0	0		728	**-**
Lights %	50%	0%	0%	0%		50%	50%	87.5%	97.3%	0%		88.8%	97.8%	0%	100%	0%		97.9%	75%	95.5%	0%	0%		95.4%	**-**
Single-Unit Trucks	0	0	0	0		0	0	20	1	0		21	1	0	0	0		1	0	15	0	0		15	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	4.7%	1.4%	0%		4.2%	0.7%	0%	0%	0%		0.7%	0%	2%	0%	0%		2%	**-**
Buses	0	0	0	0		0	0	15	1	0		16	2	0	0	0		2	1	13	0	0		14	**-**
Buses %	0%	0%	0%	0%		0%	0%	3.5%	1.4%	0%		3.2%	1.4%	0%	0%	0%		1.4%	25%	1.7%	0%	0%		1.8%	**-**
Articulated Trucks	1	0	0	0		1	1	18	0	0		19	0	0	0	0		0	0	6	0	0		6	**-**
Articulated Trucks %	50%	0%	0%	0%		50%	50%	4.2%	0%	0%		3.8%	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	**-**
Pedestrians	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	20	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	17.1%		-	-	-	-	8.6%		-	-	-	-	57.1%		-	-	-	-	8.6%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	2.9%		-	-	-	-	2.9%		-	-	-	-	2.9%		-	-	-	-	0%		**-**

Spectrum

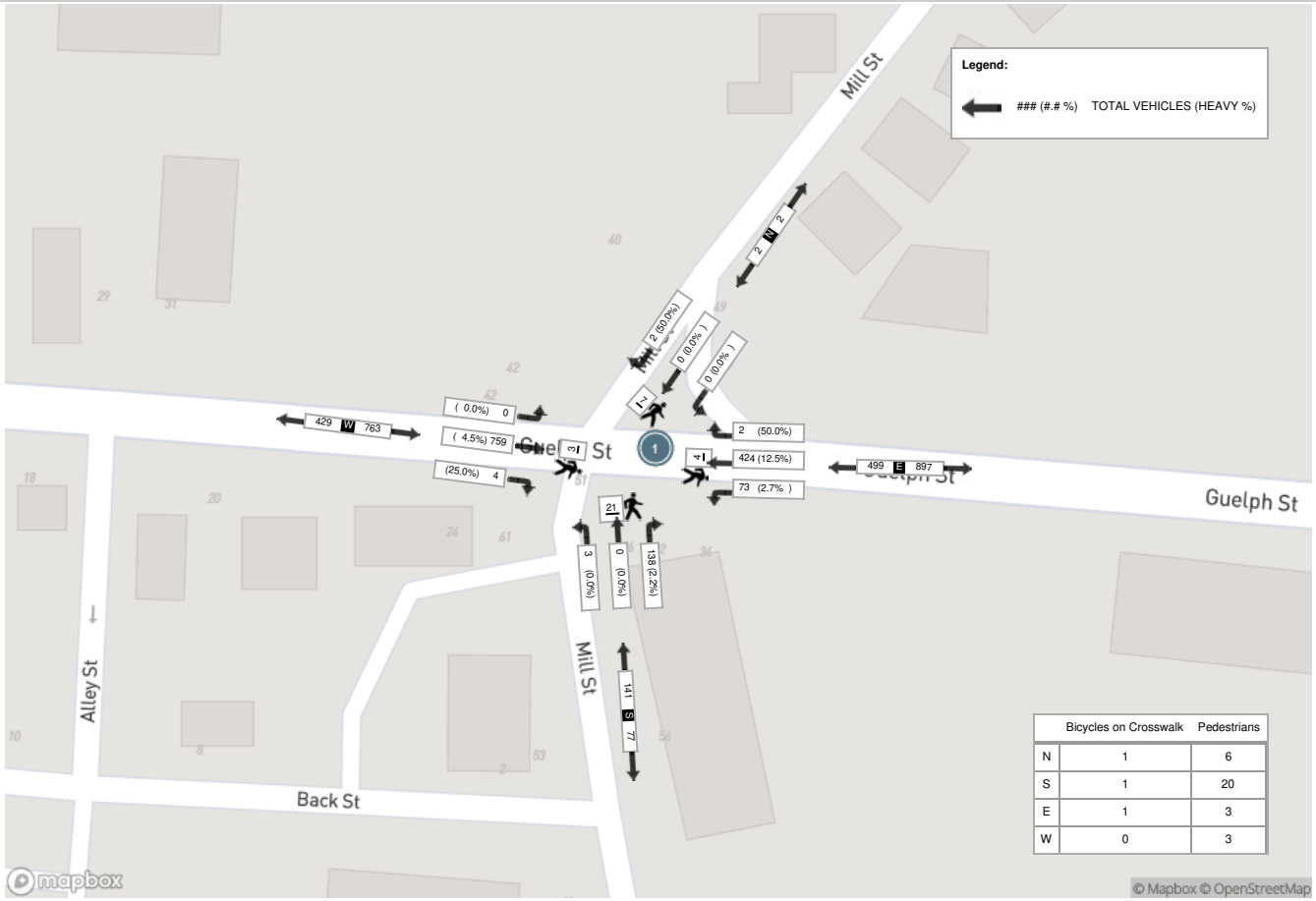
Turning Movement Count
Location Name: MILL ST & GUELPH ST
Date: Tue, May 17, 2022 Deployment Lead: Tasos Issaaakidis

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

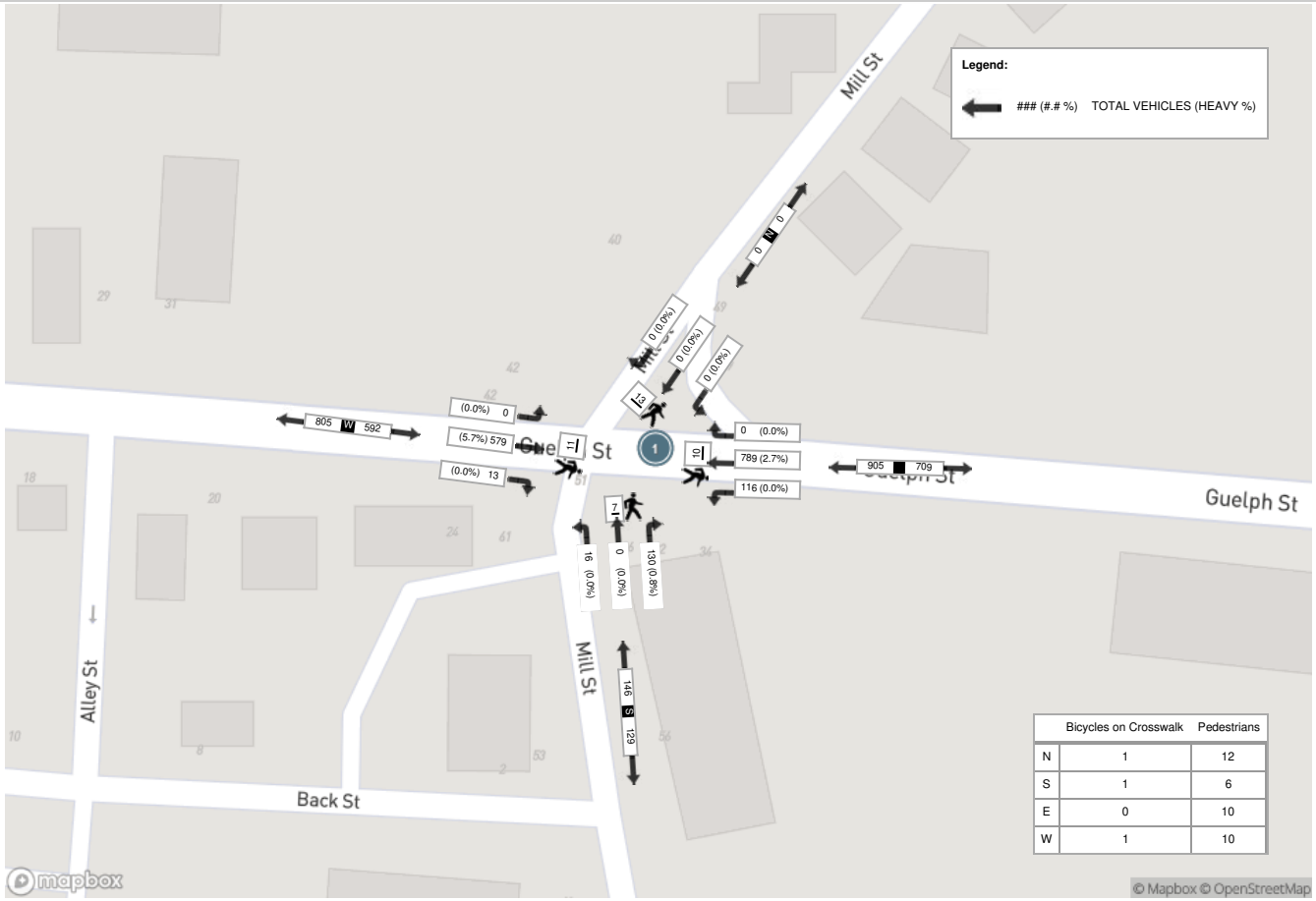
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (14.07 °C)

Start Time	N Approach MILL ST						E Approach GUELPH ST						S Approach MILL ST						W Approach GUELPH 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	0	0	0	0	2	0	0	178	31	0	2	209	35	0	4	0	3	39	4	150	0	0	1	154	402
16:30:00	0	0	0	0	5	0	0	223	28	0	2	251	29	0	10	0	4	39	3	135	0	0	4	138	428
16:45:00	0	0	0	0	4	0	0	170	33	0	3	203	32	0	2	0	0	34	3	154	0	0	4	157	394
17:00:00	0	0	0	0	2	0	0	218	24	0	3	242	34	0	0	0	0	34	3	140	0	0	2	143	419
Grand Total	0	0	0	0	13	0	0	789	116	0	10	905	130	0	16	0	7	146	13	579	0	0	11	592	**1643**
Approach%	0%	0%	0%	0%		-	0%	87.2%	12.8%	0%		-	89%	0%	11%	0%		-	2.2%	97.8%	0%	0%		-	**-**
Totals %	0%	0%	0%	0%		0%	0%	48%	7.1%	0%		55.1%	7.9%	0%	1%	0%		8.9%	0.8%	35.2%	0%	0%		36%	**-**
PHF	0	0	0	0		0	0	0.88	0.88	0		0.9	0.93	0	0.4	0		0.94	0.81	0.94	0	0		0.94	**-**
Heavy	0	0	0	0		0	0	21	0	0		21	1	0	0	0		1	0	33	0	0		33	**-**
Heavy %	0%	0%	0%	0%		0%	0%	2.7%	0%	0%		2.3%	0.8%	0%	0%	0%		0.7%	0%	5.7%	0%	0%		5.6%	**-**
Lights	0	0	0	0		0	0	768	116	0		884	129	0	16	0		145	13	546	0	0		559	**-**
Lights %	0%	0%	0%	0%		0%	0%	97.3%	100%	0%		97.7%	99.2%	0%	100%	0%		99.3%	100%	94.3%	0%	0%		94.4%	**-**
Single-Unit Trucks	0	0	0	0		0	0	12	0	0		12	0	0	0	0		0	0	20	0	0		20	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	3.5%	0%	0%		3.4%	**-**
Buses	0	0	0	0		0	0	2	0	0		2	1	0	0	0		1	0	10	0	0		10	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.2%	0.8%	0%	0%	0%		0.7%	0%	1.7%	0%	0%		1.7%	**-**
Articulated Trucks	0	0	0	0		0	0	7	0	0		7	0	0	0	0		0	0	3	0	0		3	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	**-**
Pedestrians	-	-	-	-	12	-	-	-	-	-	10	-	-	-	-	-	6	-	-	-	-	-	10	-	**-**
Pedestrians%	-	-	-	-	29.3%		-	-	-	-	24.4%		-	-	-	-	14.6%		-	-	-	-	24.4%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	2.4%		-	-	-	-	0%		-	-	-	-	2.4%		-	-	-	-	2.4%		**-**

Peak Hour: 07:45 AM - 08:45 AM **Weather: Clear Sky (6.71 °C)**



Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (14.07 °C)



	Bicycles on Crosswalk	Pedestrians
N	1	12
S	1	6
E	0	10
W	1	10

Spectrum

Turning Movement Count
Location Name: MILL ST & DAYFOOT DR
Date: Tue, Nov 03, 2020 Deployment Lead: Theo Daglis

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

Turning Movement Count (2 . MILL ST & DAYFOOT DR)

Start Time	N Approach MILL ST						E Approach EAST DRIVEWAY						S Approach MILL ST						W Approach DAYFOOT DR						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	0	4	0	0	0	4	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4	0	1	4	10	
07:15:00	0	2	0	0	0	2	0	0	0	0	0	0	0	5	1	0	1	6	3	0	0	0	1	3	11	
07:30:00	0	8	0	0	0	8	0	0	0	0	1	0	0	5	0	0	0	5	0	0	2	0	3	2	15	
07:45:00	1	10	0	0	1	11	0	0	0	0	1	0	0	14	1	0	0	15	0	0	2	0	1	2	28	64
08:00:00	0	8	0	0	0	8	0	0	1	0	2	1	0	5	2	0	0	7	4	0	0	0	1	4	20	74
08:15:00	1	13	1	0	0	15	0	0	0	0	1	0	0	8	2	0	0	10	1	0	2	0	2	3	28	91
08:30:00	0	9	0	0	0	9	1	0	0	0	1	1	0	2	2	0	1	4	2	0	0	0	4	2	16	92
08:45:00	2	17	0	0	0	19	0	0	0	0	0	0	0	9	1	0	0	10	2	0	4	0	0	6	35	99
BREAK																										
16:00:00	7	11	0	0	0	18	0	0	0	0	1	0	1	9	2	1	0	13	2	0	2	0	3	4	35	
16:15:00	2	13	1	0	0	16	0	0	0	0	0	0	0	13	0	0	0	13	2	0	0	0	0	2	31	
16:30:00	5	9	0	0	0	14	0	0	0	0	0	0	0	5	2	0	1	7	3	0	4	0	1	7	28	
16:45:00	5	14	0	0	0	19	0	0	0	0	0	0	0	7	4	0	0	11	2	0	1	0	3	3	33	127
17:00:00	3	4	1	0	0	8	1	0	1	0	2	2	0	15	2	0	1	17	1	0	1	0	7	2	29	121
17:15:00	2	11	0	0	0	13	0	0	0	0	1	0	1	12	0	0	3	13	0	0	0	0	2	0	26	116
17:30:00	5	7	0	0	1	12	0	0	0	0	1	0	0	4	0	0	0	4	1	0	1	0	4	2	18	106
17:45:00	2	10	0	0	0	12	0	0	0	0	0	0	0	11	0	0	0	11	1	0	0	0	3	1	24	97
Grand Total	35	150	3	0	2	188	2	0	2	0	11	4	2	126	19	1	7	148	24	0	23	0	36	47	**387**	-
Approach%	18.6%	79.8%	1.6%	0%		-	50%	0%	50%	0%		-	1.4%	85.1%	12.8%	0.7%		-	51.1%	0%	48.9%	0%		-	-	-
Totals %	9%	38.8%	0.8%	0%		48.6%	0.5%	0%	0.5%	0%		1%	0.5%	32.6%	4.9%	0.3%		38.2%	6.2%	0%	5.9%	0%		12.1%	-	-
Heavy	1	3	0	0		-	0	0	0	0		-	0	2	1	0		-	1	0	1	0		-	-	-
Heavy %	2.9%	2%	0%	0%		-	0%	0%	0%	0%		-	0%	1.6%	5.3%	0%		-	4.2%	0%	4.3%	0%		-	-	-
Bicycles	0	1	0	0		-	0	0	0	0		-	0	0	0	0		-	2	0	0	0		-	-	-
Bicycle %	0%	0.7%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	8.3%	0%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: MILL ST & DAYFOOT DR
Date: Tue, Nov 03, 2020 Deployment Lead: Theo Daglis

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

Peak Hour: 08:00 AM - 09:00 AM Weather: Shower Rain (4.47 °C)

Start Time	N Approach MILL ST						E Approach EAST DRIVEWAY						S Approach MILL ST						W Approach DAYFOOT DR						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	0	8	0	0	0	8	0	0	1	0	2	1	0	5	2	0	0	7	4	0	0	0	1	4	20
08:15:00	1	13	1	0	0	15	0	0	0	0	1	0	0	8	2	0	0	10	1	0	2	0	2	3	28
08:30:00	0	9	0	0	0	9	1	0	0	0	1	1	0	2	2	0	1	4	2	0	0	0	4	2	16
08:45:00	2	17	0	0	0	19	0	0	0	0	0	0	0	9	1	0	0	10	2	0	4	0	0	6	35
Grand Total	3	47	1	0	0	51	1	0	1	0	4	2	0	24	7	0	1	31	9	0	6	0	7	15	**99**
Approach%	5.9%	92.2%	2%	0%		-	50%	0%	50%	0%		-	0%	77.4%	22.6%	0%		-	60%	0%	40%	0%		-	**-**
Totals %	3%	47.5%	1%	0%		51.5%	1%	0%	1%	0%		2%	0%	24.2%	7.1%	0%		31.3%	9.1%	0%	6.1%	0%		15.2%	**-**
PHF	0.38	0.69	0.25	0		0.67	0.25	0	0.25	0		0.5	0	0.67	0.88	0		0.78	0.56	0	0.38	0		0.63	**-**
Heavy	0	2	0	0		2	0	0	0	0		0	0	2	1	0		3	0	0	0	0		0	**-**
Heavy %	0%	4.3%	0%	0%		3.9%	0%	0%	0%	0%		0%	0%	8.3%	14.3%	0%		9.7%	0%	0%	0%	0%		0%	**-**
Lights	3	45	1	0		49	1	0	1	0		2	0	22	6	0		28	9	0	6	0		15	**-**
Lights %	100%	95.7%	100%	0%		96.1%	100%	0%	100%	0%		100%	0%	91.7%	85.7%	0%		90.3%	100%	0%	100%	0%		100%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	4.2%	0%	0%		3.2%	0%	0%	0%	0%		0%	**-**
Buses	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Buses %	0%	2.1%	0%	0%		2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	1	1	0		2	0	0	0	0		0	**-**
Articulated Trucks %	0%	2.1%	0%	0%		2%	0%	0%	0%	0%		0%	0%	4.2%	14.3%	0%		6.5%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	7	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	33.3%		-	-	-	-	8.3%		-	-	-	-	58.3%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

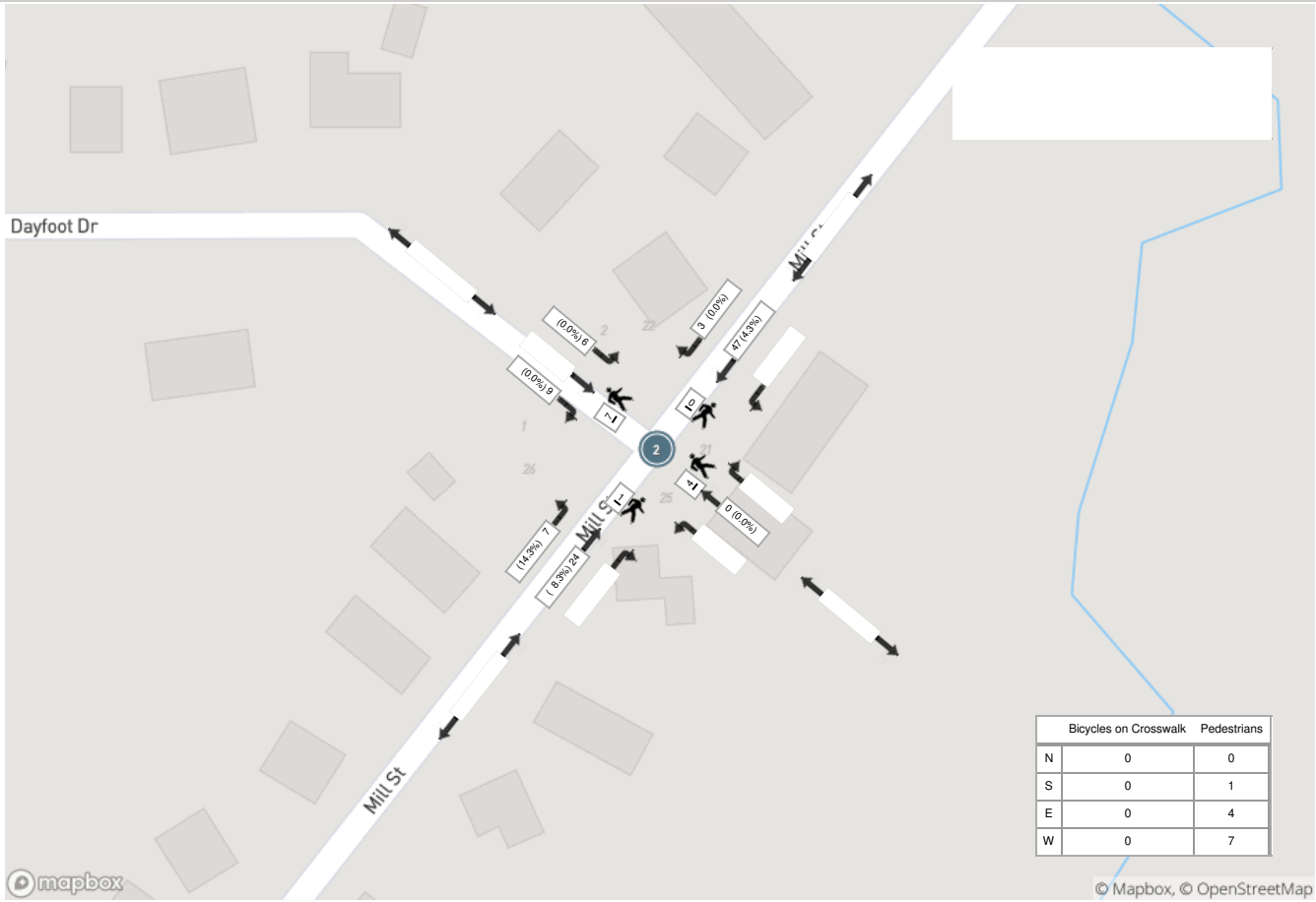
Turning Movement Count
Location Name: MILL ST & DAYFOOT DR
Date: Tue, Nov 03, 2020 Deployment Lead: Theo Daglis

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

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (5.94 °C)

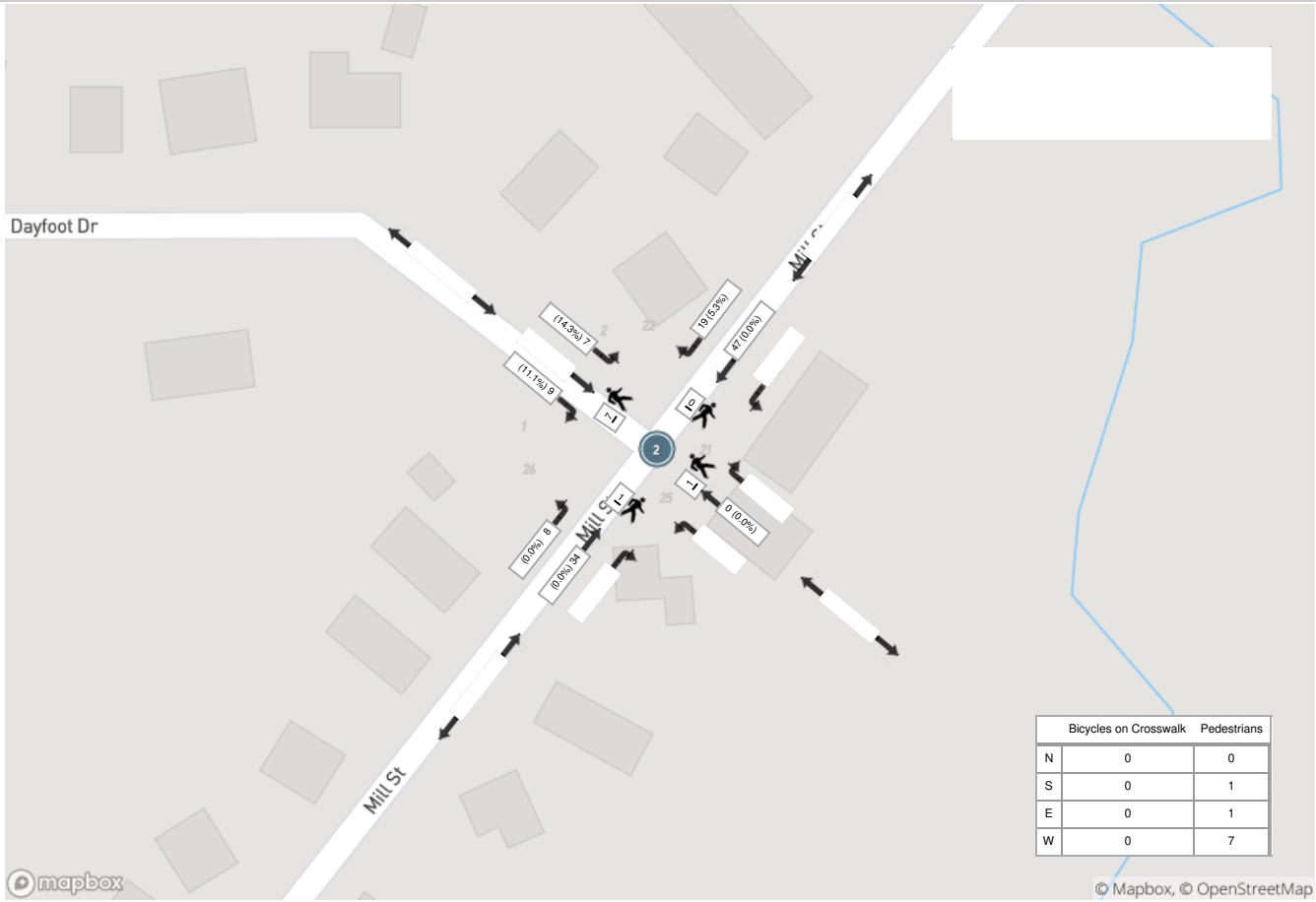
Start Time	N Approach MILL ST						E Approach EAST DRIVEWAY						S Approach MILL ST						W Approach DAYFOOT DR						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:00:00	7	11	0	0	0	18	0	0	0	0	1	0	1	9	2	1	0	13	2	0	2	0	3	4	35
16:15:00	2	13	1	0	0	16	0	0	0	0	0	0	0	13	0	0	0	13	2	0	0	0	0	2	31
16:30:00	5	9	0	0	0	14	0	0	0	0	0	0	0	5	2	0	1	7	3	0	4	0	1	7	28
16:45:00	5	14	0	0	0	19	0	0	0	0	0	0	0	7	4	0	0	11	2	0	1	0	3	3	33
Grand Total	19	47	1	0	0	67	0	0	0	0	1	0	1	34	8	1	1	44	9	0	7	0	7	16	**127**
Approach%	28.4%	70.1%	1.5%	0%		-	0%	0%	0%	0%		-	2.3%	77.3%	18.2%	2.3%		-	56.3%	0%	43.8%	0%		-	**-**
Totals %	15%	37%	0.8%	0%		52.8%	0%	0%	0%	0%		0%	0.8%	26.8%	6.3%	0.8%		34.6%	7.1%	0%	5.5%	0%		12.6%	**-**
PHF	0.68	0.84	0.25	0		0.88	0	0	0	0		0	0.25	0.65	0.5	0.25		0.85	0.75	0	0.44	0		0.57	**-**
Heavy	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	1	0	1	0		2	**-**
Heavy %	5.3%	0%	0%	0%		1.5%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	11.1%	0%	14.3%	0%		12.5%	**-**
Lights	18	47	1	0		66	0	0	0	0		0	1	34	8	1		44	8	0	6	0		14	**-**
Lights %	94.7%	100%	100%	0%		98.5%	0%	0%	0%	0%		0%	100%	100%	100%	100%		100%	88.9%	0%	85.7%	0%		87.5%	**-**
Single-Unit Trucks	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	**-**
Single-Unit Trucks %	5.3%	0%	0%	0%		1.5%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	14.3%	0%		6.3%	**-**
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	**-**
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	11.1%	0%	0%	0%		6.3%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	7	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	11.1%		-	-	-	-	11.1%		-	-	-	-	77.8%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 08:00 AM - 09:00 AM **Weather: Shower Rain (4.47 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	1
E	0	4
W	0	7

Peak Hour: 04:00 PM - 05:00 PM **Weather: Overcast Clouds (5.94 °C)**



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

Spectrum

Turning Movement Count
Location Name: MILL ST & DAYFOOT DR
Date: Tue, May 17, 2022 Deployment Lead: Tasos Issaaakidis

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

Turning Movement Count (2 . MILL ST & DAYFOOT DR)

Start Time	N Approach MILL ST						E Approach EAST DRIVEWAY						S Approach MILL ST						W Approach DAYFOOT DR						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	1	3	0	2	0	0	5	9	
07:15:00	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	
07:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	3	3	
07:45:00	4	0	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	2	1	0	4	0	0	5	11	26
08:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	3	3	20
08:15:00	3	0	0	0	0	3	0	0	0	0	2	0	0	0	1	0	0	1	1	0	0	0	0	1	5	22
08:30:00	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	1	1	2	0	6	0	3	8	9	28
08:45:00	3	0	0	0	0	3	0	0	0	0	6	0	0	0	1	0	4	1	1	0	0	1	0	2	6	23
BREAK																										
16:00:00	6	0	0	0	1	6	0	0	0	0	2	0	0	0	0	0	0	0	0	0	7	0	0	7	13	
16:15:00	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	2	3	9	
16:30:00	15	0	0	0	3	15	0	0	0	0	5	0	0	0	0	0	2	0	0	0	3	0	0	3	18	
16:45:00	5	0	0	0	0	5	0	0	0	0	1	0	0	0	0	0	4	0	0	0	7	0	0	7	12	52
17:00:00	4	0	0	0	1	4	0	0	0	0	6	0	0	0	0	0	1	0	0	0	6	1	0	7	11	50
17:15:00	4	0	0	0	1	4	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	0	2	6	47
17:30:00	4	0	0	0	0	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0	0	3	7	36
17:45:00	3	0	0	1	0	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	0	4	8	32
Grand Total	63	0	0	1	6	64	0	0	0	0	33	0	0	0	6	0	16	6	10	0	51	2	5	63	**133**	-
Approach%	98.4%	0%	0%	1.6%		-	0%	0%	0%	0%		-	0%	0%	100%	0%		-	15.9%	0%	81%	3.2%		-	**-**	-
Totals %	47.4%	0%	0%	0.8%		48.1%	0%	0%	0%	0%		0%	0%	0%	4.5%	0%		4.5%	7.5%	0%	38.3%	1.5%		47.4%	**-**	-
Heavy	0	0	0	0		-	0	0	0	0		-	0	0	6	0		-	10	0	0	0		-	**-**	-
Heavy %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	100%	0%		-	100%	0%	0%	0%		-	**-**	-
Bicycles	3	0	0	0		-	0	0	0	0		-	0	0	0	0		-	0	0	0	0		-	**-**	-
Bicycle %	4.8%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: MILL ST & DAYFOOT DR
Date: Tue, May 17, 2022 Deployment Lead: Tasos Issaaakidis

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

Peak Hour: 07:45 AM - 08:45 AM Weather: Clear Sky (6.71 °C)

Start Time	N Approach MILL ST						E Approach EAST DRIVEWAY						S Approach MILL ST						W Approach DAYFOOT DR						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	4	0	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	2	1	0	4	0	0	5	11
08:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	3	3
08:15:00	3	0	0	0	0	3	0	0	0	0	2	0	0	0	1	0	0	1	1	0	0	0	0	1	5
08:30:00	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	1	1	2	0	6	0	3	8	9
Grand Total	7	0	0	0	0	7	0	0	0	0	6	0	0	0	4	0	1	4	5	0	12	0	3	17	**28**
Approach%	100%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	100%	0%		-	29.4%	0%	70.6%	0%		-	**-**
Totals %	25%	0%	0%	0%		25%	0%	0%	0%	0%		0%	0%	0%	14.3%	0%		14.3%	17.9%	0%	42.9%	0%		60.7%	**-**
PHF	0.44	0	0	0		0.44	0	0	0	0		0	0	0	0.5	0		0.5	0.63	0	0.5	0		0.53	**-**
Heavy	0	0	0	0		0	0	0	0	0		0	0	0	4	0		4	5	0	0	0		5	**-**
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	100%	0%		100%	100%	0%	0%	0%		29.4%	**-**
Lights	7	0	0	0		7	0	0	0	0		0	0	0	0	0		0	0	0	12	0		12	**-**
Lights %	100%	0%	0%	0%		100%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	100%	0%		70.6%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	4	0		4	5	0	0	0		5	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	100%	0%		100%	100%	0%	0%	0%		29.4%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	60%		-	-	-	-	10%		-	-	-	-	30%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: MILL ST & DAYFOOT DR
Date: Tue, May 17, 2022 Deployment Lead: Tasos Issaaakidis

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

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (14.07 °C)

Start Time	N Approach MILL ST						E Approach EAST DRIVEWAY						S Approach MILL ST						W Approach DAYFOOT DR						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	
16:00:00	6	0	0	0	1	6	0	0	0	0	2	0	0	0	0	0	0	0	0	0	7	0	0	7	13
16:15:00	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	2	3	9
16:30:00	15	0	0	0	3	15	0	0	0	0	5	0	0	0	0	0	2	0	0	0	3	0	0	3	18
16:45:00	5	0	0	0	0	5	0	0	0	0	1	0	0	0	0	0	4	0	0	0	7	0	0	7	12
Grand Total	32	0	0	0	4	32	0	0	0	0	8	0	0	0	0	0	8	0	0	0	20	0	2	20	**52**
Approach%	100%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	100%	0%		-	**-**
Totals %	61.5%	0%	0%	0%		61.5%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	38.5%	0%		38.5%	**-**
PHF	0.53	0	0	0		0.53	0	0	0	0		0	0	0	0	0		0	0	0	0.71	0		0.71	**-**
Heavy	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Lights	32	0	0	0		32	0	0	0	0		0	0	0	0	0		0	0	0	20	0		20	**-**
Lights %	100%	0%	0%	0%		100%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	100%	0%		100%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	4	-	-	-	-	-	8	-	-	-	-	-	8	-	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	-	18.2%		-	-	-	-	36.4%		-	-	-	-	36.4%		-	-	-	-	9.1%		**-**
Bicycles on Road	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 07:45 AM - 08:45 AM **Weather: Clear Sky (6.71 °C)**

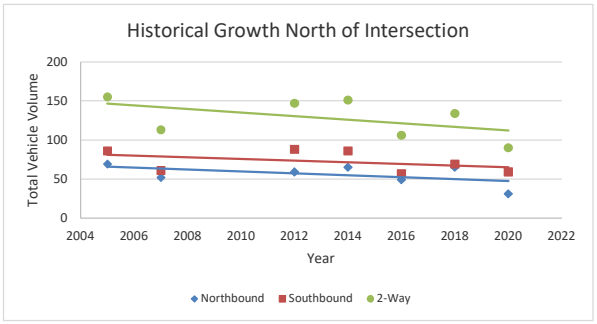
Peak Hour: 04:00 PM - 05:00 PM **Weather: Overcast Clouds (14.07 °C)**

APPENDIX E:
Corridor Growth Analysis

Project:	16-18 Mill St
Project ID:	8070-01
Intersection	Guelph St & Mill St
Peak Hour	AM Peak

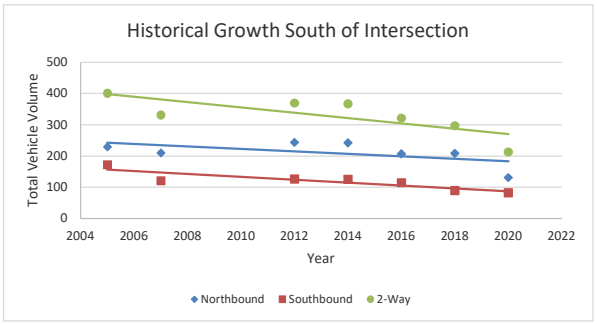
North of Intersection				
Date	**Year**	**Northbound**	**Southbound**	**2 Way**
03-Nov-20	2020	31	59	90
05-Nov-18	2018	65	69	134
09-Nov-16	2016	49	57	106
16-Dec-14	2014	65	86	151
17-Dec-12	2012	59	88	147
13-Dec-07	2007	52	61	113
21-Dec-05	2005	69	86	155

Trend Point at start	47.4	64.9	112.3
Trend Point at end	65.6	81.1	146.7
Slope	-1.2	-1.1	-2.3
Annual Growth	**-2.1%**	**-1.5%**	**-1.8%**



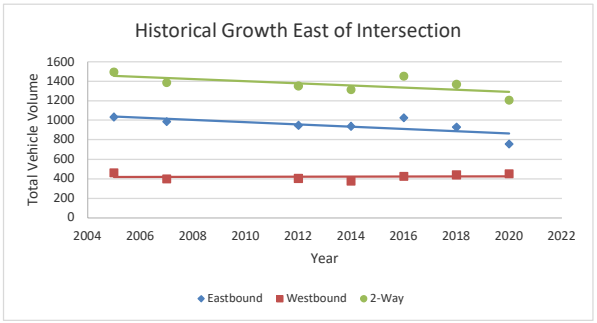
South of Intersection				
Date	**Year**	**Northbound**	**Southbound**	**2 Way**
03-Nov-20	2020	131	82	213
05-Nov-18	2018	208	89	297
09-Nov-16	2016	207	114	321
16-Dec-14	2014	242	125	367
17-Dec-12	2012	243	126	369
13-Dec-07	2007	210	121	331
21-Dec-05	2005	229	172	401

Trend Point at start	183.1	86.5	269.6
Trend Point at end	241.9	156.3	398.3
Slope	-3.9	-4.7	-8.6
Annual Growth	**-1.8%**	**-3.9%**	**-2.6%**



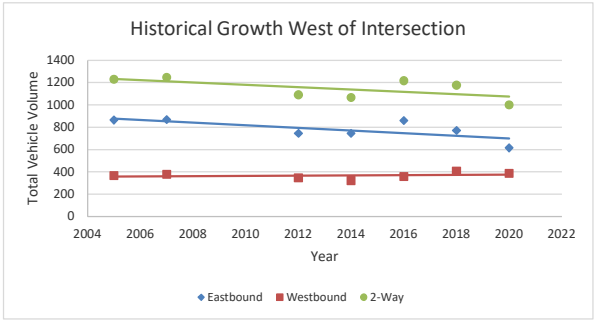
East of Intersection				
Date	**Year**	**Eastbound**	**Westbound**	**2 Way**
03-Nov-20	2020	755	451	1206
05-Nov-18	2018	928	440	1368
09-Nov-16	2016	1026	425	1451
16-Dec-14	2014	937	376	1313
17-Dec-12	2012	947	404	1351
13-Dec-07	2007	986	398	1384
21-Dec-05	2005	1033	460	1493

Trend Point at start	865.5	426.2	1291.7
Trend Point at end	1038.5	417.0	1455.4
Slope	-11.5	0.6	-10.9
Annual Growth	**-1.2%**	**0.1%**	**-0.8%**



West of Intersection				
Date	**Year**	**Eastbound**	**Westbound**	**2 Way**
03-Nov-20	2020	614	387	1001
05-Nov-18	2018	771	406	1177
09-Nov-16	2016	859	359	1218
16-Dec-14	2014	745	322	1067
17-Dec-12	2012	744	347	1091
13-Dec-07	2007	869	379	1248
21-Dec-05	2005	865	366	1231

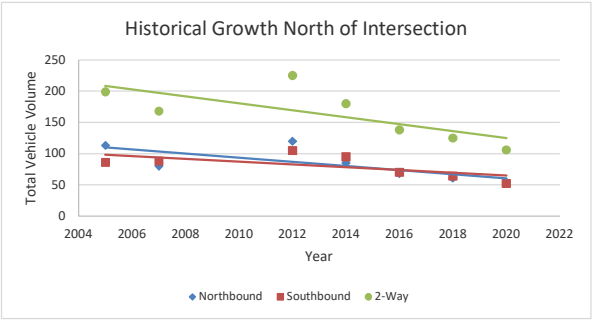
Trend Point at start	700.0	374.8	1074.8
Trend Point at end	877.2	356.8	1234.0
Slope	-11.8	1.2	-10.6
Annual Growth	**-1.5%**	**0.3%**	**-0.9%**



Project:	16-18 Mill St
Project ID:	8070-01
Intersection	Guelph St & Mill St
Peak Hour	PM Peak

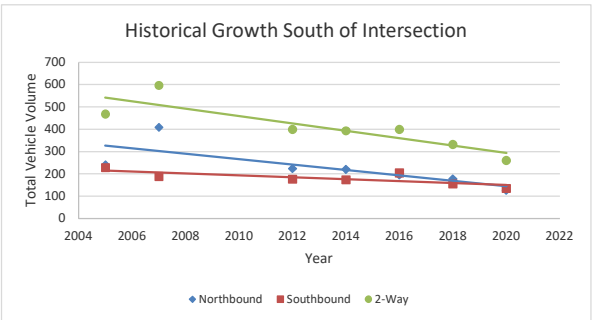
North of Intersection				
Date	**Year**	**Northbound**	**Southbound**	**2 Way**
03-Nov-20	2020	54	52	106
05-Nov-18	2018	61	64	125
09-Nov-16	2016	68	70	138
16-Dec-14	2014	85	95	180
17-Dec-12	2012	120	105	225
13-Dec-07	2007	80	88	168
21-Dec-05	2005	113	86	199

Trend Point at start		60.2	64.7	124.9
Trend Point at end		110.1	98.1	208.2
Slope		-3.3	-2.2	-5.6
Annual Growth		**-3.9%**	**-2.7%**	**-3.4%**



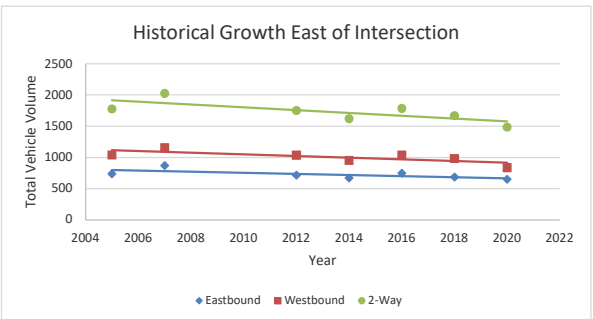
South of Intersection				
Date	**Year**	**Northbound**	**Southbound**	**2 Way**
03-Nov-20	2020	126	134	260
05-Nov-18	2018	177	154	331
09-Nov-16	2016	195	204	399
16-Dec-14	2014	220	173	393
17-Dec-12	2012	223	176	399
13-Dec-07	2007	408	188	596
21-Dec-05	2005	241	227	468

Trend Point at start		143.5	149.5	293.0
Trend Point at end		326.4	215.0	541.4
Slope		-12.2	-4.4	-16.6
Annual Growth		**-5.3%**	**-2.4%**	**-4.0%**



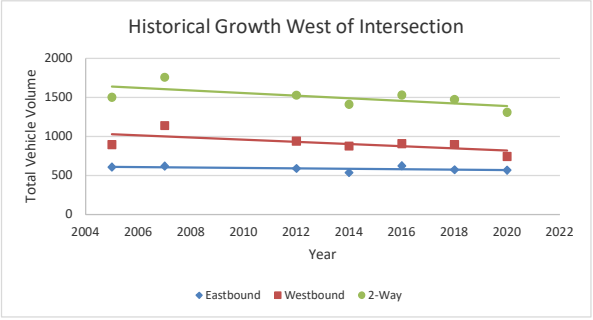
East of Intersection				
Date	**Year**	**Eastbound**	**Westbound**	**2 Way**
03-Nov-20	2020	648	835	1483
05-Nov-18	2018	684	982	1666
09-Nov-16	2016	746	1036	1782
16-Dec-14	2014	669	952	1621
17-Dec-12	2012	716	1035	1751
13-Dec-07	2007	868	1157	2025
21-Dec-05	2005	737	1038	1775

Trend Point at start		661.6	913.3	1575.0
Trend Point at end		798.0	1113.8	1911.9
Slope		-9.1	-13.4	-22.5
Annual Growth		**-1.2%**	**-1.3%**	**-1.3%**



West of Intersection				
Date	**Year**	**Eastbound**	**Westbound**	**2 Way**
03-Nov-20	2020	566	743	1309
05-Nov-18	2018	574	898	1472
09-Nov-16	2016	623	906	1529
16-Dec-14	2014	536	876	1412
17-Dec-12	2012	588	939	1527
13-Dec-07	2007	620	1137	1757
21-Dec-05	2005	607	895	1502

Trend Point at start		568.6	818.9	1387.5
Trend Point at end		610.4	1025.7	1636.1
Slope		-2.8	-13.8	-16.6
Annual Growth		**-0.5%**	**-1.5%**	**-1.1%**



APPENDIX F:
TTS Queries

SUMMARY

	AM		PM	
	Inbound	Outbound	Inbound	Outbound
East - Guelph Street East	61.62%	59.43%	61.62%	59.43%
West - Guelph Street West	11.98%	11.71%	11.98%	11.71%
North - McNabb Street East	15.04%	11.53%	15.04%	11.53%
North - McNabb Street West	3.69%	4.12%	3.69%	4.12%
South - Mill Street South	7.68%	13.20%	7.68%	13.20%
Total	**100%**	**100%**	**100%**	**100%**

ROUNDED

	AM		PM	
	Inbound	Outbound	Inbound	Outbound
East - Guelph Street East	60%	60%	60%	60%
West - Guelph Street West	10%	10%	10%	10%
North - McNabb Street East	15%	10%	15%	10%
North - McNabb Street West	5%	5%	5%	5%
South - Mill Street South	10%	15%	10%	15%
Total	**100%**	**100%**	**100%**	**100%**

P:\80\70\01\Analysis\3 - Trip Distribution\Summary.pdf

AM OUTBOUND DISTRIBUTION

Tue Oct 20 2020 16:24:35 GMT-0400 (Eastern Daylight Time) - Run Time: 2277ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
2006 GTA zone of origin - gta06_orig In 4163,4164
and
Start time of trip - start_time In 630-930
and
Trip purpose of origin - purp_orig In H

Trip 2016
Table:

Destination	Origin		Total	Route Selection					Trip Distribution					
				East	West	North		South	East	West	North		South	
	4163	4164		Guelph St E	Guelph St W	McNabb St E	McNabb St W	Mill St S	Guelph St E	Guelph St W	McNabb St E	McNabb St W	Mill St S	
PD 1 of Toronto	62	85	147	100%					3.3%	0.0%	0.0%	0.0%	0.0%	100%
PD 3 of Toronto	0	25	25	90%		5%	5%		0.5%	0.0%	0.0%	0.0%	0.0%	100%
PD 8 of Toronto	94	0	94	100%					2.1%	0.0%	0.0%	0.0%	0.0%	100%
PD 9 of Toronto	0	36	36	90%		5%	5%		0.7%	0.0%	0.0%	0.0%	0.0%	100%
PD 10 of Toronto	81	0	81	90%		5%	5%		1.6%	0.0%	0.1%	0.1%	0.0%	100%
Oshawa	52	0	52	90%		5%	5%		1.0%	0.0%	0.1%	0.1%	0.0%	100%
East Gwillimbury	14	0	14	90%		5%	5%		0.3%	0.0%	0.0%	0.0%	0.0%	100%
Caledon	32	145	177		30%	50%	20%		0.0%	1.2%	2.0%	0.8%	0.0%	100%
Brampton	252	195	447	80%		10%	10%		8.0%	0.0%	1.0%	1.0%	0.0%	100%
Mississauga	348	194	542	100%					12.1%	0.0%	0.0%	0.0%	0.0%	100%
Halton Hills	1041	1083												
4155	21	0	21	80%				20%	0.4%	0.0%	0.0%	0.0%	0.1%	100%
4157	0	8	8	60%		40%			0.1%	0.0%	0.1%	0.0%	0.0%	100%
4158	14	0	14	60%		25%		15%	0.2%	0.0%	0.1%	0.0%	0.0%	100%
4160	21	14	35	60%		15%		25%	0.5%	0.0%	0.1%	0.0%	0.2%	100%
4161	43	88	131	60%		40%			1.7%	0.0%	1.2%	0.0%	0.0%	100%
4162	254	379	633	60%		30%		10%	8.5%	0.0%	4.2%	0.0%	1.4%	100%
4163	347	211	558	15%	30%			55%	1.9%	3.7%	0.0%	0.0%	6.8%	100%
4164	9	221	230		65%		35%		0.0%	3.3%	0.0%	1.8%	0.0%	100%
4166	78	0	78	10%	30%			60%	0.2%	0.5%	0.0%	0.0%	1.0%	100%
4168	97	6	103	50%	10%			40%	1.1%	0.2%	0.0%	0.0%	0.9%	100%
4170	43	0	43	30%	60%			10%	0.3%	0.6%	0.0%	0.0%	0.1%	100%
4173	0	0	0		80%		20%		0.0%	0.0%	0.0%	0.0%	0.0%	100%
4175	0	0	0		100%				0.0%	0.0%	0.0%	0.0%	0.0%	100%
4177	0	0	0	20%	80%				0.0%	0.0%	0.0%	0.0%	0.0%	100%
4193	102	0	102	50%		50%			1.1%	0.0%	1.1%	0.0%	0.0%	100%
4194	14	117	131	50%		50%			1.5%	0.0%	1.5%	0.0%	0.0%	100%
4195	0	0	0	20%	80%				0.0%	0.0%	0.0%	0.0%	0.0%	100%
4197	0	38	38	20%	80%				0.2%	0.7%	0.0%	0.0%	0.0%	100%
Milton	44	126	170	80%				20%	3.0%	0.0%	0.0%	0.0%	0.8%	100%
Oakville	74	73	147	80%				20%	2.6%	0.0%	0.0%	0.0%	0.7%	100%
Burlington	135	112	247	80%				20%	4.4%	0.0%	0.0%	0.0%	1.1%	100%
Hamilton	14	0	14	80%				20%	0.2%	0.0%	0.0%	0.0%	0.1%	100%
Kitchener	30	8	38	50%	50%				0.4%	0.4%	0.0%	0.0%	0.0%	100%
City of Guelph	30	0	30	50%	50%				0.3%	0.3%	0.0%	0.0%	0.0%	100%
Erin	24	0	24		100%				0.0%	0.5%	0.0%	0.0%	0.0%	100%
Essa	0	71	71	80%		5%	15%		1.3%	0.0%	0.1%	0.2%	0.0%	100%
Mono	0	12	12		70%		30%		0.0%	0.2%	0.0%	0.1%	0.0%	100%
Niagara-on-the-Lake	0	0	0		70%		30%		0.0%	0.0%	0.0%	0.0%	0.0%	100%
Guelph/Eramosa	0	0	0	25%	75%				0.0%	0.0%	0.0%	0.0%	0.0%	100%
Centre Wellington	0	0	0	100%					0.0%	0.0%	0.0%	0.0%	0.0%	100%
External	0	0	0	50%	40%		10%		0.0%	0.0%	0.0%	0.0%	0.0%	100%
External Trips Total	**1973**	**1732**	**3705**						**59.4%**	**11.7%**	**11.5%**	**4.1%**	**13.2%**	100%
Trips Total	**2329**	**2164**	**4493**						**60%**	**10%**	**10%**	**5%**	**15%**	**100%**
									60%	**10%**	**10%**	**5%**	**15%**	**100%**

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PM INBOUND DISTRIBUTION

Tue Oct 20 2020 16:20:50 GMT-0400 (Eastern Daylight Time) - Run Time: 2381ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:
2006 GTA zone of destination - gta06_dest In 4163,4164
and
Start time of trip - start_time In 1600-1900
and
Trip purpose of destination - purp_dest In H

Trip 2016
Table:

Origin	Destination		Total	Route Selection					Trip Distribution					
				East	West	North		South	East	West	North		South	
	4163	4164		Guelph St E	Guelph St W	McNabb St E	McNabb St W	Mill St S	Guelph St E	Guelph St W	McNabb St E	McNabb St W	Mill St S	
PD 1 of Toronto	119	156	275	100%					7.2%	0.0%	0.0%	0.0%	0.0%	100%
PD 3 of Toronto	0	0	0	90%		5%	5%		0.0%	0.0%	0.0%	0.0%	0.0%	100%
PD 8 of Toronto	0	0	0	100%					0.0%	0.0%	0.0%	0.0%	0.0%	100%
PD 9 of Toronto	0	36	36	90%		5%	5%		0.8%	0.0%	0.0%	0.0%	0.0%	100%
PD 10 of Toronto	15	0	15	90%		5%	5%		0.4%	0.0%	0.0%	0.0%	0.0%	100%
Oshawa	0	0	0	90%		5%	5%		0.0%	0.0%	0.0%	0.0%	0.0%	100%
East Gwillimbury	14	0	14	90%		5%	5%		0.3%	0.0%	0.0%	0.0%	0.0%	100%
Caledon	21	56	77		30%	50%	20%		0.0%	0.6%	1.0%	0.4%	0.0%	100%
Brampton	238	224	462	80%		10%	10%		9.6%	0.0%	1.2%	1.2%	0.0%	100%
Mississauga	380	112	492	100%					12.8%	0.0%	0.0%	0.0%	0.0%	100%
Halton Hills	750	1064												
4155	0	0	0	80%				20%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
4157	0	8	8	60%		40%			0.1%	0.0%	0.1%	0.0%	0.0%	100%
4158	44	0	44	60%		25%		15%	0.7%	0.0%	0.3%	0.0%	0.2%	100%
4160	21	0	21	60%		15%		25%	0.3%	0.0%	0.1%	0.0%	0.1%	100%
4161	0	0	0	60%		40%			0.0%	0.0%	0.0%	0.0%	0.0%	100%
4162	154	416	570	60%		30%		10%	8.9%	0.0%	4.4%	0.0%	1.5%	100%
4163	127	107	234	15%	30%			55%	0.9%	1.8%	0.0%	0.0%	3.3%	100%
4164	0	142	142		65%		35%		0.0%	2.4%	0.0%	1.3%	0.0%	100%
4166	14	0	14	10%	30%			60%	0.0%	0.1%	0.0%	0.0%	0.2%	100%
4168	0	0	0	50%	10%			40%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
4170	43	0	43	30%	60%			10%	0.3%	0.7%	0.0%	0.0%	0.1%	100%
4173	26	0	26		80%		20%		0.0%	0.5%	0.0%	0.1%	0.0%	100%
4175	18	0	18		100%				0.0%	0.5%	0.0%	0.0%	0.0%	100%
4177	0	39	39	20%	80%				0.2%	0.8%	0.0%	0.0%	0.0%	100%
4193	188	12	200	50%		50%			2.6%	0.0%	2.6%	0.0%	0.0%	100%
4194	94	302	396	50%		50%			5.2%	0.0%	5.2%	0.0%	0.0%	100%
4195	21	0	21	20%	80%				0.1%	0.4%	0.0%	0.0%	0.0%	100%
4197	0	38	38	20%	80%				0.2%	0.8%	0.0%	0.0%	0.0%	100%
Milton	114	50	164	80%				20%	3.4%	0.0%	0.0%	0.0%	0.9%	100%
Oakville	0	73	73	80%				20%	1.5%	0.0%	0.0%	0.0%	0.4%	100%
Burlington	61	112	173	80%				20%	3.6%	0.0%	0.0%	0.0%	0.9%	100%
Hamilton	14	0	14	80%				20%	0.3%	0.0%	0.0%	0.0%	0.1%	100%
Kitchener	0	0	0	50%	50%				0.0%	0.0%	0.0%	0.0%	0.0%	100%
City of Guelph	8	8	16	50%	50%				0.2%	0.2%	0.0%	0.0%	0.0%	100%
Erin	34	46	80		100%				0.0%	2.1%	0.0%	0.0%	0.0%	100%
Essa	0	71	71	80%		5%	15%		1.5%	0.0%	0.1%	0.3%	0.0%	100%
Mono	0	0	0		70%		30%		0.0%	0.0%	0.0%	0.0%	0.0%	100%
Niagara-on-the-Lake	0	33	33		70%		30%		0.0%	0.6%	0.0%	0.3%	0.0%	100%
Guelph/Eramosa	14	0	14	25%	75%				0.1%	0.3%	0.0%	0.0%	0.0%	100%
Centre Wellington	5	0	5	100%					0.1%	0.0%	0.0%	0.0%	0.0%	100%
External	0	15	15	50%	40%		10%		0.2%	0.2%	0.0%	0.0%	0.0%	100%
External Trips Total	**1660**	**1807**	**3467**						**61.6%**	**12.0%**	**15.0%**	**3.7%**	**7.7%**	100%
Trips Total	**1787**	**2056**	**3843**						**60%**	**10%**	**15%**	**5%**	**10%**	**100%**
									60%	**10%**	**15%**	**5%**	**10%**	**100%**

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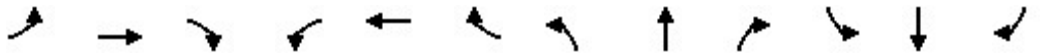
APPENDIX G:
Synchro Outputs

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	27	815	60	418	228	71
v/c Ratio	0.05	0.69	0.24	0.19	0.48	0.20
Control Delay	5.2	11.4	9.5	4.9	10.8	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.2	11.4	9.5	4.9	10.8	16.9
Queue Length 50th (m)	0.8	39.4	2.3	6.5	4.7	4.0
Queue Length 95th (m)	4.9	134.3	12.2	21.4	25.7	16.4
Internal Link Dist (m)		244.8		229.4	50.3	70.5
Turn Bay Length (m)	40.0		50.0			
Base Capacity (vph)	773	1655	368	3018	866	793
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	0.03	0.49	0.16	0.14	0.26	0.09

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	745	5	55	370	15	15	25	170	15	30	20
Future Volume (vph)	25	745	5	55	370	15	15	25	170	15	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	4.0	4.0		6.5	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			1.00	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.89			0.96	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.99	
Satd. Flow (prot)	1604	1825		1717	3329			1632			1751	
Flt Permitted	0.51	1.00		0.23	1.00			0.98			0.91	
Satd. Flow (perm)	857	1825		410	3329			1599			1603	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	810	5	60	402	16	16	27	185	16	33	22
RTOR Reduction (vph)	0	0	0	0	3	0	0	133	0	0	17	0
Lane Group Flow (vph)	27	815	0	60	415	0	0	95	0	0	54	0
Confl. Peds. (#/hr)	8		18	18		8			3	3		
Heavy Vehicles (%)	8%	4%	0%	1%	8%	0%	0%	4%	1%	6%	3%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.5	35.5		35.5	35.5			10.8			10.8	
Effective Green, g (s)	38.5	38.5		36.0	38.5			12.8			12.8	
Actuated g/C Ratio	0.65	0.65		0.61	0.65			0.22			0.22	
Clearance Time (s)	7.0	7.0		7.0	7.0			6.0			6.0	
Vehicle Extension (s)	4.5	4.5		4.5	4.5			2.0			2.0	
Lane Grp Cap (vph)	556	1184		248	2161			345			346	
v/s Ratio Prot		c0.45			0.12							
v/s Ratio Perm	0.03			0.15				c0.06			0.03	
v/c Ratio	0.05	0.69		0.24	0.19			0.27			0.16	
Uniform Delay, d1	3.8	6.6		5.4	4.2			19.4			18.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	2.0		0.9	0.1			0.2			0.1	
Delay (s)	3.8	8.6		6.2	4.2			19.5			18.9	
Level of Service	A	A		A	A			B			B	
Approach Delay (s)		8.4			4.5			19.5			18.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	59.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	10	5	60	55	5
Future Volume (Veh/h)	5	10	5	60	55	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	11	5	65	60	5
Pedestrians	7					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				214		
pX, platoon unblocked						
vC, conflicting volume	144	70	72			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	144	70	72			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	99	99	100			
cM capacity (veh/h)	845	993	1447			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	70	65
Volume Left	5	5	0
Volume Right	11	0	5
cSH	942	1447	1700
Volume to Capacity	0.02	0.00	0.04
Queue Length 95th (m)	0.4	0.1	0.0
Control Delay (s)	8.9	0.6	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	0.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	16	603	125	945	196	71
v/c Ratio	0.06	0.62	0.28	0.38	0.52	0.21
Control Delay	10.9	16.4	6.0	5.4	19.3	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	16.4	6.0	5.4	19.3	20.6
Queue Length 50th (m)	0.9	49.6	4.0	19.4	10.7	5.1
Queue Length 95th (m)	5.1	120.1	14.8	51.8	36.2	18.8
Internal Link Dist (m)		244.8		229.4	50.3	70.5
Turn Bay Length (m)	40.0		50.0			
Base Capacity (vph)	512	1714	540	3419	701	689
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	0.03	0.35	0.23	0.28	0.28	0.10

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	545	10	115	855	15	20	30	130	10	30	25
Future Volume (vph)	15	545	10	115	855	15	20	30	130	10	30	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	4.0	4.0		4.5	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.90			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1741	1857		1744	3530			1660			1773	
Flt Permitted	0.30	1.00		0.24	1.00			0.96			0.94	
Satd. Flow (perm)	555	1857		445	3530			1602			1681	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	592	11	125	929	16	22	33	141	11	33	27
RTOR Reduction (vph)	0	0	0	0	1	0	0	81	0	0	19	0
Lane Group Flow (vph)	16	603	0	125	944	0	0	115	0	0	52	0
Confl. Peds. (#/hr)	4		5	5		4	11		4	4		11
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	34.5	34.5		47.0	47.0			11.4			11.4	
Effective Green, g (s)	37.5	37.5		47.5	50.0			13.4			13.4	
Actuated g/C Ratio	0.53	0.53		0.67	0.70			0.19			0.19	
Clearance Time (s)	7.0	7.0		5.0	7.0			6.0			6.0	
Vehicle Extension (s)	4.5	4.5		3.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	291	975		441	2471			300			315	
v/s Ratio Prot		c0.32		0.03	c0.27							
v/s Ratio Perm	0.03			0.16				c0.07			0.03	
v/c Ratio	0.05	0.62		0.28	0.38			0.38			0.16	
Uniform Delay, d1	8.3	11.9		6.9	4.4			25.4			24.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	1.5		0.4	0.2			0.3			0.1	
Delay (s)	8.4	13.4		7.2	4.5			25.7			24.4	
Level of Service	A	B		A	A			C			C	
Approach Delay (s)		13.3			4.9			25.7			24.4	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	12.5
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

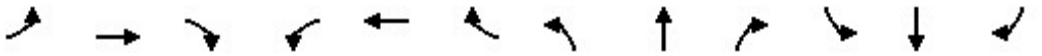
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	10	10	50	55	20
Future Volume (Veh/h)	10	10	10	50	55	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.91
Hourly flow rate (vph)	11	11	11	54	60	22
Pedestrians	7					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				214		
pX, platoon unblocked						
vC, conflicting volume	154	78	89			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	154	78	89			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	99	99	99			
cM capacity (veh/h)	800	953	1510			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	22	65	82
Volume Left	11	11	0
Volume Right	11	0	22
cSH	869	1510	1700
Volume to Capacity	0.03	0.01	0.05
Queue Length 95th (m)	0.6	0.2	0.0
Control Delay (s)	9.2	1.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	1.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	33	902	60	495	239	196
v/c Ratio	0.07	0.78	0.34	0.24	0.46	0.70
Control Delay	6.5	16.4	15.2	6.2	12.9	39.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	16.4	15.2	6.2	12.9	39.0
Queue Length 50th (m)	1.6	84.0	4.0	13.6	9.5	24.0
Queue Length 95th (m)	5.7	163.5	14.7	24.5	31.9	53.8
Internal Link Dist (m)		244.8		229.4	42.0	62.2
Turn Bay Length (m)	40.0		50.0			
Base Capacity (vph)	631	1464	227	2655	678	401
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.62	0.26	0.19	0.35	0.49

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	825	5	55	410	45	15	35	170	90	55	35
Future Volume (vph)	30	825	5	55	410	45	15	35	170	90	55	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	4.0	4.0		6.5	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.90			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1603	1825		1728	3306			1640			1735	
Flt Permitted	0.47	1.00		0.16	1.00			0.97			0.61	
Satd. Flow (perm)	787	1825		293	3306			1600			1087	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	897	5	60	446	49	16	38	185	98	60	38
RTOR Reduction (vph)	0	0	0	0	9	0	0	117	0	0	10	0
Lane Group Flow (vph)	33	902	0	60	486	0	0	122	0	0	186	0
Confl. Peds. (#/hr)	8		18	18		8			3	3		
Heavy Vehicles (%)	8%	4%	0%	1%	8%	0%	0%	4%	1%	6%	3%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	42.9	42.9		42.9	42.9			16.1			16.1	
Effective Green, g (s)	45.9	45.9		43.4	45.9			18.1			18.1	
Actuated g/C Ratio	0.64	0.64		0.60	0.64			0.25			0.25	
Clearance Time (s)	7.0	7.0		7.0	7.0			6.0			6.0	
Vehicle Extension (s)	4.5	4.5		4.5	4.5			2.0			2.0	
Lane Grp Cap (vph)	501	1163		176	2107			402			273	
v/s Ratio Prot		c0.49			0.15							
v/s Ratio Perm	0.04			0.20				0.08			c0.17	
v/c Ratio	0.07	0.78		0.34	0.23			0.30			0.68	
Uniform Delay, d1	4.9	9.4		7.1	5.5			21.8			24.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	3.7		2.0	0.1			0.2			5.5	
Delay (s)	5.0	13.1		9.1	5.6			22.0			29.9	
Level of Service	A	B		A	A			C			C	
Approach Delay (s)		12.8			6.0			22.0			29.9	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

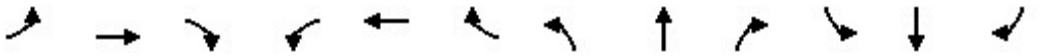
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	75	40	65	60	10
Future Volume (Veh/h)	10	75	40	65	60	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	82	43	71	65	11
Pedestrians	7					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	234	78	83			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	234	78	83			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	98	92	97			
cM capacity (veh/h)	731	983	1433			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	93	114	76
Volume Left	11	43	0
Volume Right	82	0	11
cSH	945	1433	1700
Volume to Capacity	0.10	0.03	0.04
Queue Length 95th (m)	2.6	0.7	0.0
Control Delay (s)	9.2	3.0	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	3.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	24.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	38	663	125	1136	228	158
v/c Ratio	0.16	0.68	0.31	0.48	0.57	0.63
Control Delay	13.3	19.0	7.2	7.1	27.0	40.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	19.0	7.2	7.1	27.0	40.1
Queue Length 50th (m)	2.8	69.2	5.5	34.9	20.6	19.1
Queue Length 95th (m)	10.4	142.5	15.8	72.6	56.2	51.4
Internal Link Dist (m)		244.8		229.4	42.0	62.2
Turn Bay Length (m)	40.0		50.0			
Base Capacity (vph)	391	1589	438	3243	705	467
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	0.10	0.42	0.29	0.35	0.32	0.34

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	600	10	115	945	100	20	60	130	65	45	35
Future Volume (vph)	35	600	10	115	945	100	20	60	130	65	45	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1742	1858		1745	3485			1693			1785	
Flt Permitted	0.25	1.00		0.21	1.00			0.97			0.62	
Satd. Flow (perm)	459	1858		380	3485			1642			1131	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	652	11	125	1027	109	22	65	141	71	49	38
RTOR Reduction (vph)	0	0	0	0	7	0	0	52	0	0	10	0
Lane Group Flow (vph)	38	663	0	125	1129	0	0	176	0	0	148	0
Confl. Peds. (#/hr)	4		5	5		4	11		4	4		11
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	39.0	39.0		51.3	51.3			14.9			14.9	
Effective Green, g (s)	42.0	42.0		51.8	54.3			16.9			16.9	
Actuated g/C Ratio	0.53	0.53		0.65	0.69			0.21			0.21	
Clearance Time (s)	7.0	7.0		4.5	7.0			6.0			6.0	
Vehicle Extension (s)	4.5	4.5		3.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	243	985		391	2389			350			241	
v/s Ratio Prot		c0.36		0.03	c0.32							
v/s Ratio Perm	0.08			0.18				0.11			c0.13	
v/c Ratio	0.16	0.67		0.32	0.47			0.50			0.61	
Uniform Delay, d1	9.5	13.6		8.7	5.8			27.4			28.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	2.2		0.5	0.3			0.4			3.2	
Delay (s)	10.0	15.7		9.1	6.0			27.9			31.4	
Level of Service	B	B		A	A			C			C	
Approach Delay (s)		15.4			6.4			27.9			31.4	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	55	80	55	60	25
Future Volume (Veh/h)	15	55	80	55	60	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	60	87	60	65	27
Pedestrians	7					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	320	86	99			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	320	86	99			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	97	94	94			
cM capacity (veh/h)	609	943	1498			

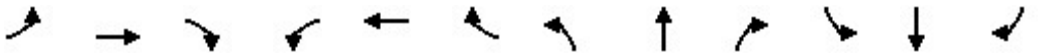
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	76	147	92
Volume Left	16	87	0
Volume Right	60	0	27
cSH	846	1498	1700
Volume to Capacity	0.09	0.06	0.05
Queue Length 95th (m)	2.4	1.5	0.0
Control Delay (s)	9.7	4.7	0.0
Lane LOS	A	A	
Approach Delay (s)	9.7	4.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	33	902	60	500	239	206
v/c Ratio	0.07	0.78	0.35	0.24	0.46	0.73
Control Delay	6.6	16.7	15.6	6.2	12.8	41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	16.7	15.6	6.2	12.8	41.2
Queue Length 50th (m)	1.7	88.9	4.2	14.4	9.8	26.4
Queue Length 95th (m)	5.7	163.5	14.9	24.6	31.9	#61.3
Internal Link Dist (m)		244.8		229.4	42.0	68.3
Turn Bay Length (m)	40.0		50.0			
Base Capacity (vph)	617	1445	221	2618	671	394
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.62	0.27	0.19	0.36	0.52

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	825	5	55	410	50	15	35	170	95	60	35
Future Volume (vph)	30	825	5	55	410	50	15	35	170	95	60	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	4.0	4.0		6.5	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.90			0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1603	1825		1728	3302			1640			1736	
Flt Permitted	0.46	1.00		0.16	1.00			0.97			0.61	
Satd. Flow (perm)	781	1825		289	3302			1599			1083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	897	5	60	446	54	16	38	185	103	65	38
RTOR Reduction (vph)	0	0	0	0	10	0	0	116	0	0	10	0
Lane Group Flow (vph)	33	902	0	60	490	0	0	123	0	0	196	0
Confl. Peds. (#/hr)	8		18	18		8			3	3		
Heavy Vehicles (%)	8%	4%	0%	1%	8%	0%	0%	4%	1%	6%	3%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	43.3	43.3		43.3	43.3			16.6			16.6	
Effective Green, g (s)	46.3	46.3		43.8	46.3			18.6			18.6	
Actuated g/C Ratio	0.64	0.64		0.60	0.64			0.26			0.26	
Clearance Time (s)	7.0	7.0		7.0	7.0			6.0			6.0	
Vehicle Extension (s)	4.5	4.5		4.5	4.5			2.0			2.0	
Lane Grp Cap (vph)	496	1159		173	2097			407			276	
v/s Ratio Prot		c0.49			0.15							
v/s Ratio Perm	0.04			0.21				0.08			c0.18	
v/c Ratio	0.07	0.78		0.35	0.23			0.30			0.71	
Uniform Delay, d1	5.1	9.6		7.3	5.7			21.9			24.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	3.8		2.1	0.1			0.2			7.0	
Delay (s)	5.2	13.4		9.4	5.8			22.1			31.7	
Level of Service	A	B		A	A			C			C	
Approach Delay (s)		13.1			6.2			22.1			31.7	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	75	40	70	70	10
Future Volume (Veh/h)	10	75	40	70	70	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	82	43	76	76	11
Pedestrians	7					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				205		
pX, platoon unblocked						
vC, conflicting volume	250	88	94			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	250	88	94			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	98	92	97			
cM capacity (veh/h)	716	970	1420			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	93	119	87
Volume Left	11	43	0
Volume Right	82	0	11
cSH	930	1420	1700
Volume to Capacity	0.10	0.03	0.05
Queue Length 95th (m)	2.7	0.7	0.0
Control Delay (s)	9.3	2.9	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	2.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		

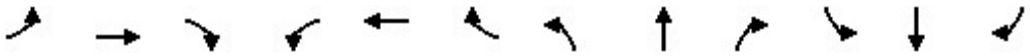
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	5	75	70	0
Future Volume (Veh/h)	0	10	5	75	70	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	11	5	82	76	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				248		
pX, platoon unblocked						
vC, conflicting volume	168	76	76			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	168	76	76			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	820	985	1523			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	11	87	76
Volume Left	0	5	0
Volume Right	11	0	0
cSH	985	1523	1700
Volume to Capacity	0.01	0.00	0.04
Queue Length 95th (m)	0.3	0.1	0.0
Control Delay (s)	8.7	0.4	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	0.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	38	663	125	1141	228	163
v/c Ratio	0.16	0.68	0.32	0.48	0.56	0.64
Control Delay	13.7	19.5	7.6	7.5	26.6	41.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	19.5	7.6	7.5	26.6	41.0
Queue Length 50th (m)	2.9	71.2	5.7	36.7	20.8	20.3
Queue Length 95th (m)	10.8	146.7	16.5	76.6	56.6	54.1
Internal Link Dist (m)		244.8		229.4	42.0	68.3
Turn Bay Length (m)	40.0		50.0			
Base Capacity (vph)	385	1570	432	3211	696	456
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	0.10	0.42	0.29	0.36	0.33	0.36

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	600	10	115	945	105	20	60	130	70	45	35
Future Volume (vph)	35	600	10	115	945	105	20	60	130	70	45	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.6	3.6	3.3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1742	1858		1745	3483			1692			1785	
Flt Permitted	0.25	1.00		0.21	1.00			0.96			0.61	
Satd. Flow (perm)	456	1858		377	3483			1641			1121	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	652	11	125	1027	114	22	65	141	76	49	38
RTOR Reduction (vph)	0	0	0	0	7	0	0	52	0	0	9	0
Lane Group Flow (vph)	38	663	0	125	1134	0	0	176	0	0	154	0
Confl. Peds. (#/hr)	4		5	5		4	11		4	4		11
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	39.6	39.6		51.9	51.9			15.7			15.7	
Effective Green, g (s)	42.6	42.6		52.4	54.9			17.7			17.7	
Actuated g/C Ratio	0.53	0.53		0.65	0.68			0.22			0.22	
Clearance Time (s)	7.0	7.0		4.5	7.0			6.0			6.0	
Vehicle Extension (s)	4.5	4.5		3.0	4.5			2.0			2.0	
Lane Grp Cap (vph)	241	982		385	2372			360			246	
v/s Ratio Prot		c0.36		0.03	c0.33							
v/s Ratio Perm	0.08			0.18				0.11			c0.14	
v/c Ratio	0.16	0.67		0.32	0.48			0.49			0.62	
Uniform Delay, d1	9.8	13.9		9.0	6.1			27.5			28.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.5	2.2		0.5	0.3			0.4			3.5	
Delay (s)	10.3	16.1		9.5	6.3			27.9			32.0	
Level of Service	B	B		A	A			C			C	
Approach Delay (s)		15.8			6.6			27.9			32.0	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	55	80	60	65	25
Future Volume (Veh/h)	15	55	80	60	65	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	60	87	65	71	27
Pedestrians	7					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				205		
pX, platoon unblocked						
vC, conflicting volume	330	92	105			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	330	92	105			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	97	94	94			
cM capacity (veh/h)	599	936	1490			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	76	152	98
Volume Left	16	87	0
Volume Right	60	0	27
cSH	837	1490	1700
Volume to Capacity	0.09	0.06	0.06
Queue Length 95th (m)	2.4	1.5	0.0
Control Delay (s)	9.7	4.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.7	4.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	5	5	70	85	0
Future Volume (Veh/h)	0	5	5	70	85	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	5	5	76	92	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				248		
pX, platoon unblocked						
vC, conflicting volume	178	92	92			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	178	92	92			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	809	965	1503			

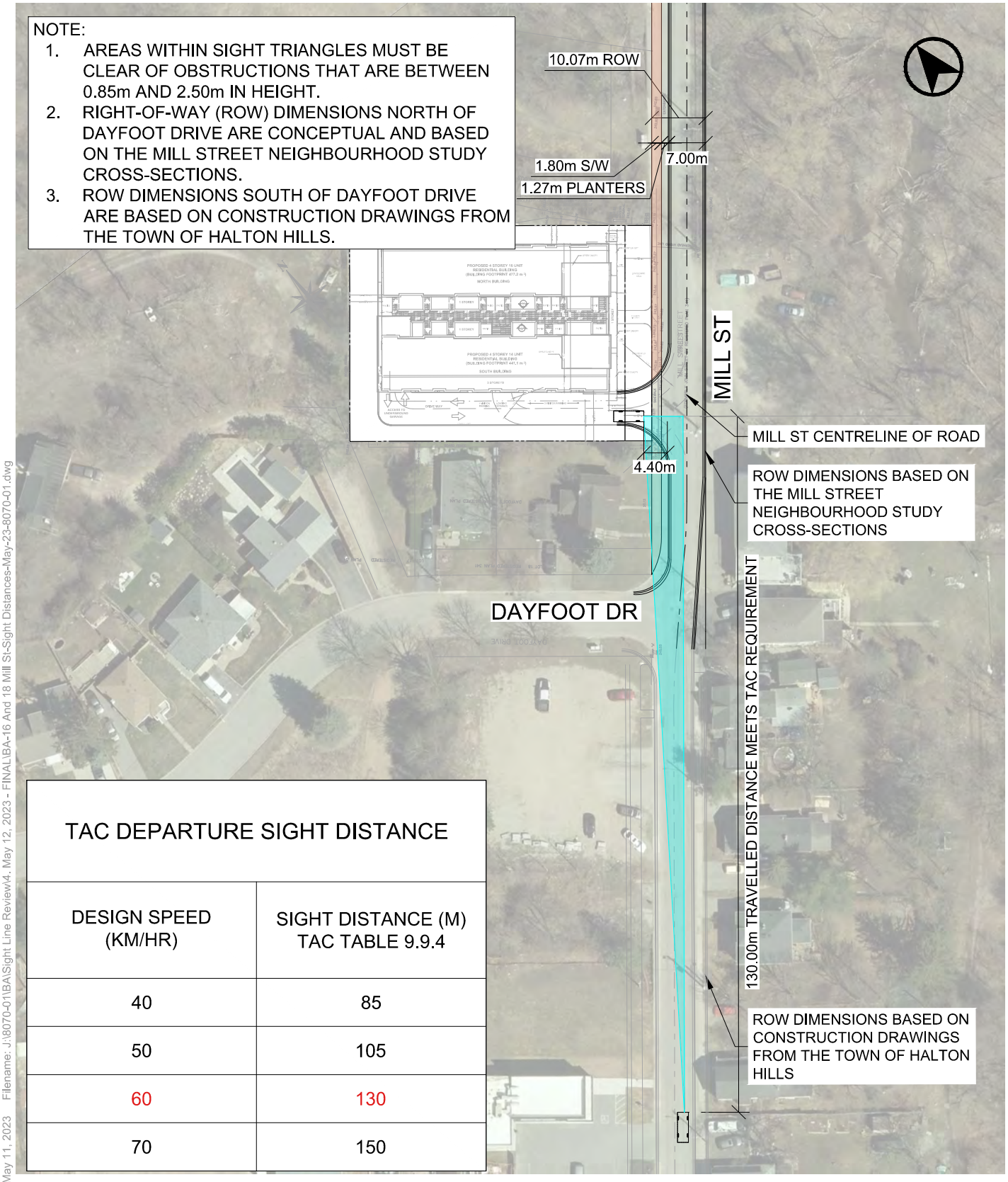
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	5	81	92
Volume Left	0	5	0
Volume Right	5	0	0
cSH	965	1503	1700
Volume to Capacity	0.01	0.00	0.05
Queue Length 95th (m)	0.1	0.1	0.0
Control Delay (s)	8.7	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX H:
Site Distance Review

NOTE:

1. AREAS WITHIN SIGHT TRIANGLES MUST BE CLEAR OF OBSTRUCTIONS THAT ARE BETWEEN 0.85m AND 2.50m IN HEIGHT.
2. RIGHT-OF-WAY (ROW) DIMENSIONS NORTH OF DAYFOOT DRIVE ARE CONCEPTUAL AND BASED ON THE MILL STREET NEIGHBOURHOOD STUDY CROSS-SECTIONS.
3. ROW DIMENSIONS SOUTH OF DAYFOOT DRIVE ARE BASED ON CONSTRUCTION DRAWINGS FROM THE TOWN OF HALTON HILLS.



TAC DEPARTURE SIGHT DISTANCE	
DESIGN SPEED (KM/HR)	SIGHT DISTANCE (M) TAC TABLE 9.9.4
40	85
50	105
60	130
70	150

1:1,000

0 10 20 30 40 50m

Scale

Date Plotted: May 11, 2023 Filename: J:\8070-01\BA\Sight Line Review\4. May 12, 2023 - FINAL\BA-16 And 18 Mill St-Sight Distances-May-23-8070-01.dwg

BA Group

16-18 MILL ST

SIGHT DISTANCE REVIEW

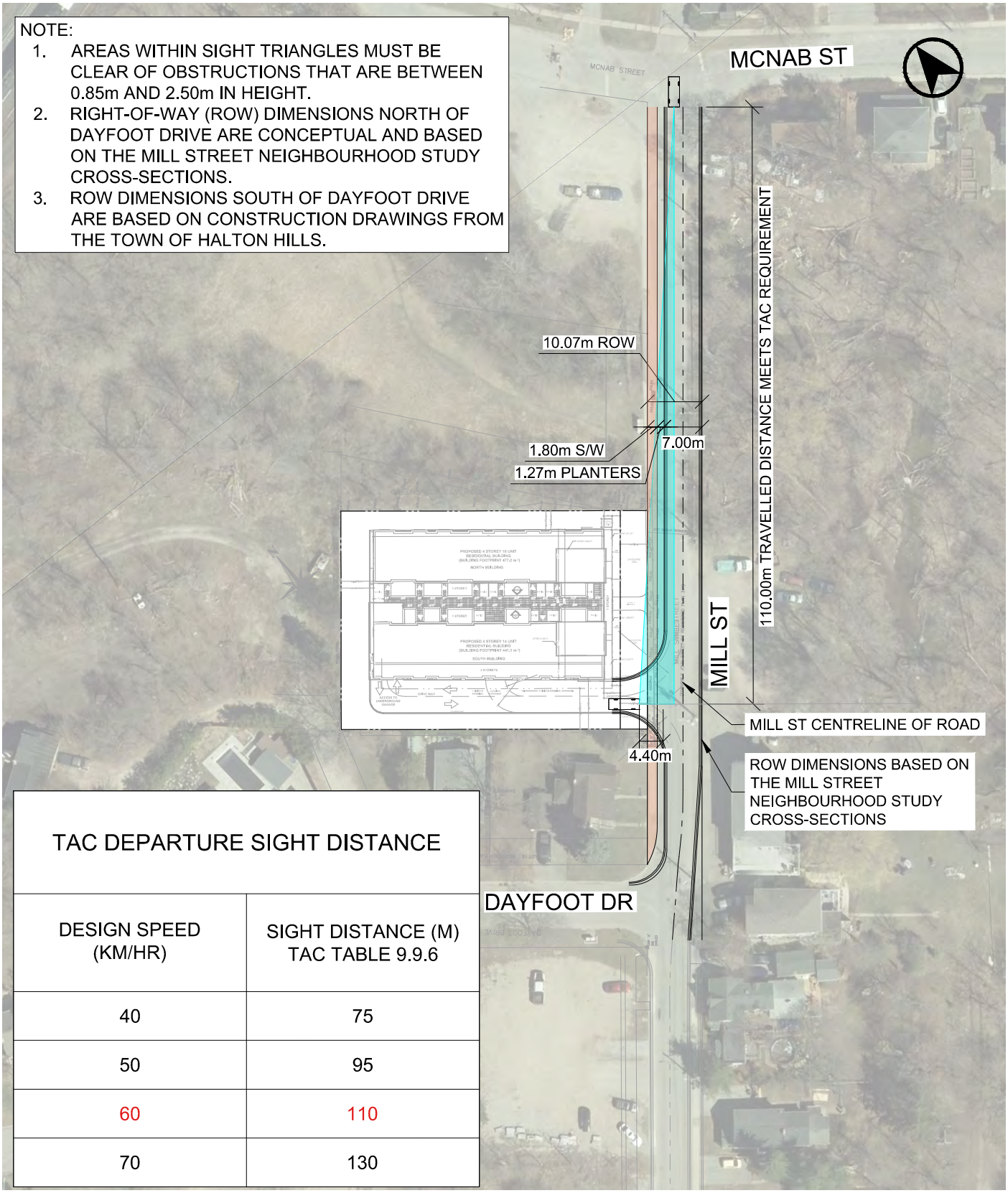
SITE DRIVEWAY / MILL ST - LEFT TURN

DESIGN SPEED OF 60 KM/HR

Project:	16-18 Mill St
Project No.	8070-01
Date:	May 12, 2023
Revised:	--
Drawing No.	SD-01

NOTE:

1. AREAS WITHIN SIGHT TRIANGLES MUST BE CLEAR OF OBSTRUCTIONS THAT ARE BETWEEN 0.85m AND 2.50m IN HEIGHT.
2. RIGHT-OF-WAY (ROW) DIMENSIONS NORTH OF DAYFOOT DRIVE ARE CONCEPTUAL AND BASED ON THE MILL STREET NEIGHBOURHOOD STUDY CROSS-SECTIONS.
3. ROW DIMENSIONS SOUTH OF DAYFOOT DRIVE ARE BASED ON CONSTRUCTION DRAWINGS FROM THE TOWN OF HALTON HILLS.



TAC DEPARTURE SIGHT DISTANCE	
DESIGN SPEED (KM/HR)	SIGHT DISTANCE (M) TAC TABLE 9.9.6
40	75
50	95
60	110
70	130

1:1,000

0 10 20 30 40 50m

Scale

Date Plotted: May 11, 2023 Filename: J:\8070-01\BA\Sight Line Review\4. May 12, 2023 - FINAL\BA-16 And 18 Mill St-Sight Distances-May-23-8070-01.dwg

BA Group

16-18 MILL ST

SIGHT DISTANCE REVIEW

SITE DRIVEWAY / MILL ST - RIGHT TURN DESIGN SPEED OF 60 KM/HR

Project:	16-18 Mill St
Project No.	8070-01
Date:	May 12, 2023
Revised:	--
Drawing No.	SD-02