

Final Report

Traffic & Parking Brief – 30 Sophia Street West, Barrie



Prepared for 2426011 Ontario Inc.
by IBI Group
November 9, 2022

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1 Introduction

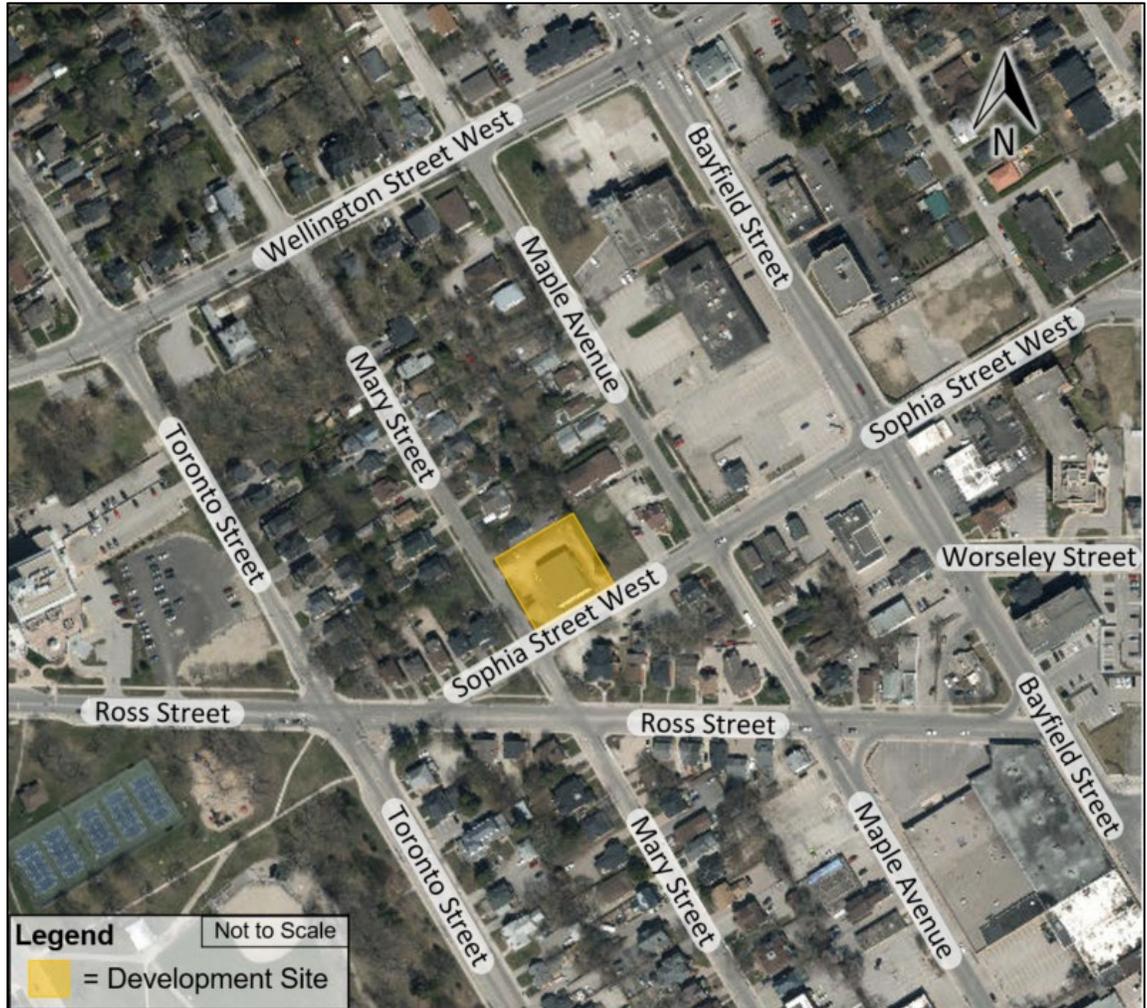
30 Sophia Street West (the ‘development site’) is located on the northeast corner of the intersection of Sophia Street West and Mary Street in the City of Barrie, and is currently occupied by a vacant two-storey auto parts building. 2426011 Ontario Inc. (the ‘proponent’) is proposing to construct a four-storey, 39-unit mixed-use building. A total of 19 surface parking spaces and 27 underground parking spaces are proposed for this site. Vehicle access to the site is proposed via two full movement accesses – one onto Sophia Street West and the other onto Mary Street.

The purpose of this report is to analyze the impact that the proposed development may have on the surrounding transportation network. This report is consistent with the scope of investigation discussed with City of Barrie staff in September 2022. This correspondence is presented in **Appendix A**.

2 Project Understanding

The development site is located within the City of Barrie, just northwest of the downtown core area. The property is located on the northeast corner of the intersection of Sophia Street West and Mary Street, less than 200 meters from the major roadways of Wellington Street West to the north, Bayfield Street to the east, and Ross Street to the south and west. The area surrounding the development site consists primarily of lower-density residential uses as well as some commercial uses. The location of the development site is illustrated in **Exhibit 2-1**.

Exhibit 2-1: Development Location

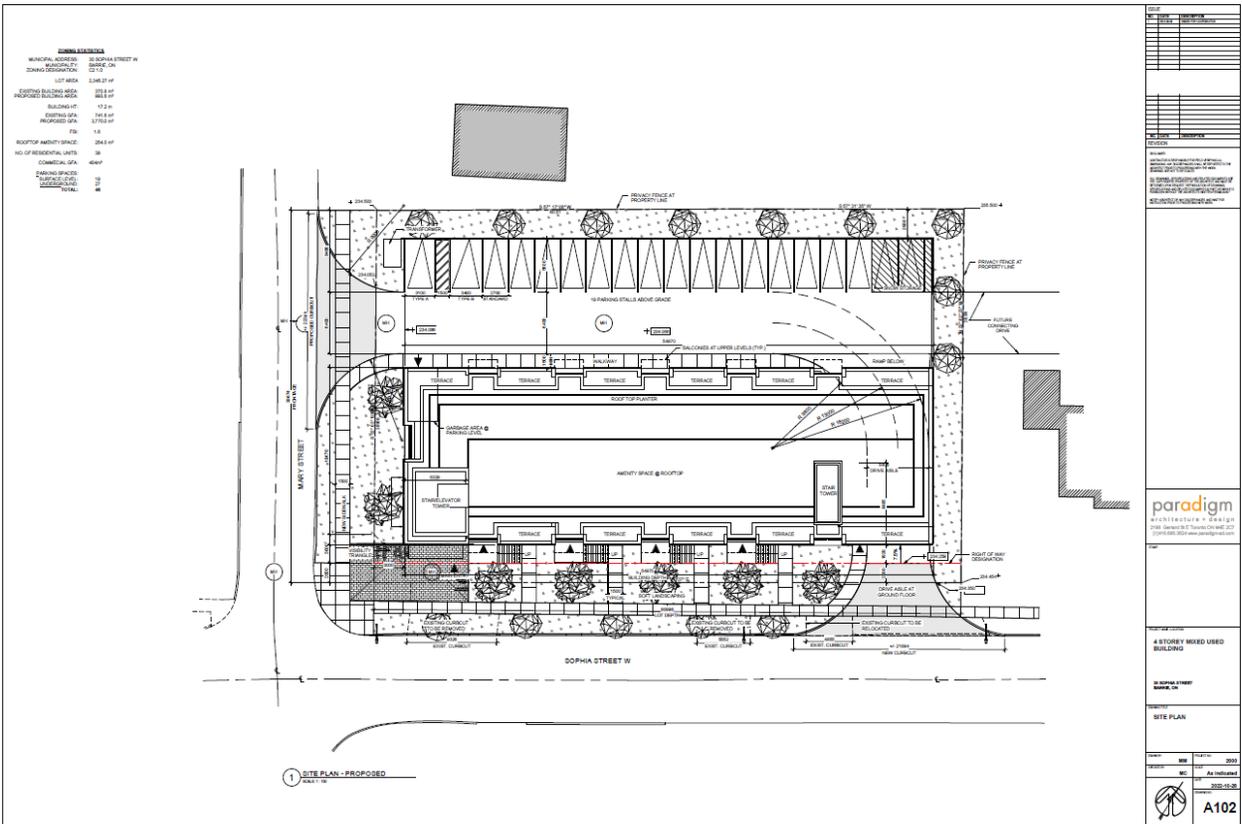


Base Map Source: Barrie ArcGIS Maps. Retrieved October 14, 2022 from:
<https://barrie.maps.arcgis.com/apps/MapSeries/>

Presently, the property contains a two-story building which was previously used as an auto parts store and is understood to be vacant. The proponent is proposing to replace the existing building with a four-storey mixed use building containing 39 residential units and 426 m² of commercial gross floor area (GFA). 19 surface and 27 underground vehicle parking spaces, including two accessible spaces, are proposed to accommodate parking demand. Vehicle access to the site is proposed via Sophia Street West and Mary Street (at the southeast and northwest corners of the site).

The site plan for the proposed development is illustrated in **Exhibit 2-2**.

Exhibit 2-2: Proposed Development Site Plan



3 Existing Transportation Network

This section describes the existing transportation network, including study area roadways and transit services in the vicinity of the development.

3.1 Existing Road Network

The laneway configuration of roadways surrounding the development are illustrated in **Exhibit 3-1**, while additional details of these roadways are provided in **Exhibit 3-2**.

Exhibit 3-1: Development Area Roadway Lane Configuration

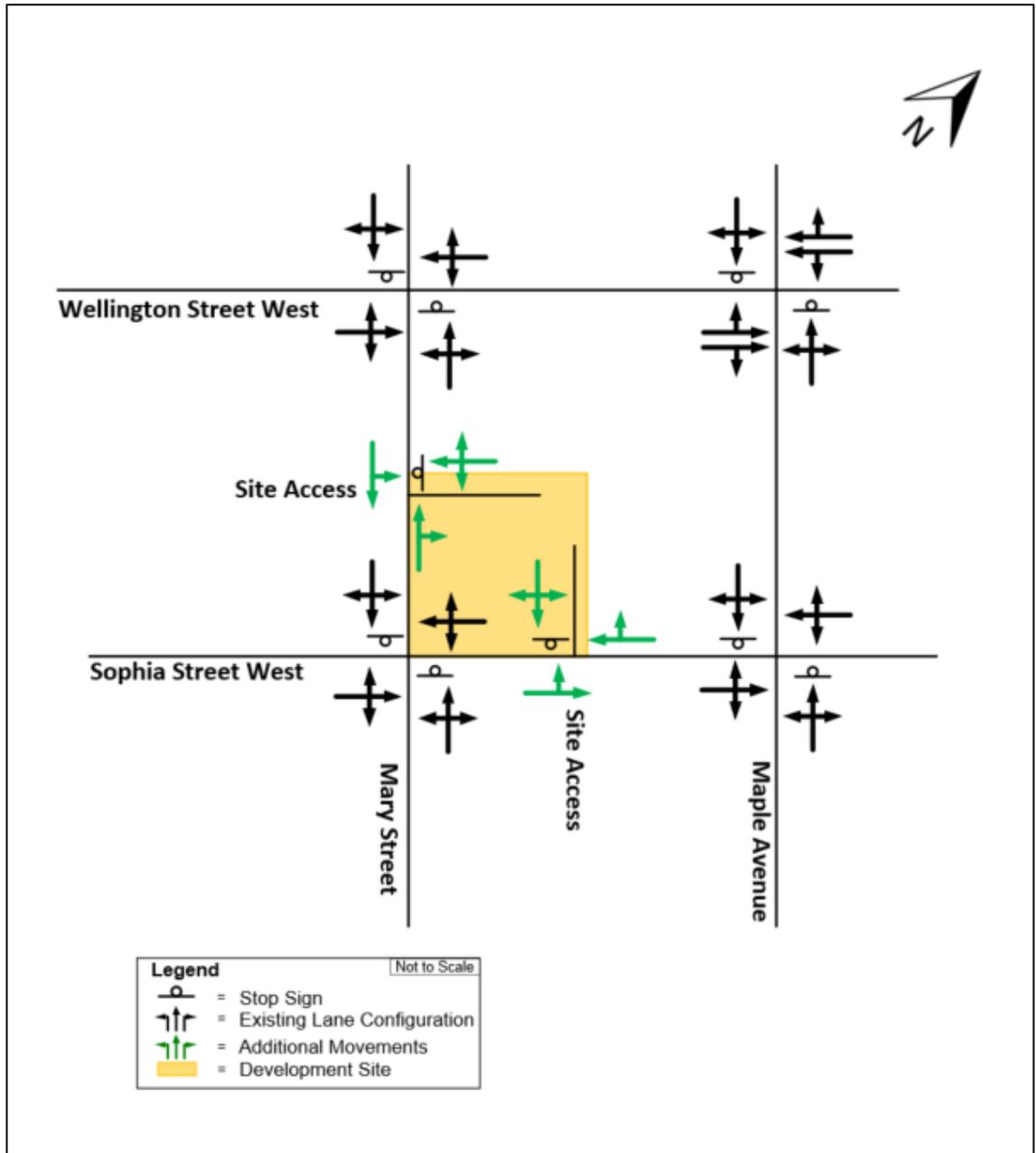


Exhibit 3-2: Adjacent Roadways Additional Information

Street Name	Classification	Orientation	Road Width (Lanes)	Speed Limit	On-Street Parking
Sophia Street West	Collector Road	East / West	2	50 km/h	Prohibited
Mary Street	Local Road	North / South	2	50 km/h	Permitted
Maple Avenue	Local Road	North / South	2	50 km/h	Parking is permitted on the east side
Wellington Street West	Arterial Road	East / West	2-4	40-50 km/h	Prohibited

3.2 Existing Sustainable Transportation Network

The development site is in close proximity to several Barrie Transit bus routes, which primarily provide north/south service along Maple Avenue, Bayfield Street and Ross Street. The nearest transit stop is located at the intersection of Sophia Street West and Maple Avenue, just east of the development site. It must be noted that the proposed development is located approximately 550 metres walking distance (6 minutes) from the Barrie Transit terminal. In addition to providing access to the majority of transit routes within the City, connections to the Allandale Waterfront GO Transit rail station and off-peak GO Transit regional buses are available at this facility.

The transit services in the development area are illustrated in **Exhibit 3-3**. Service patterns and destinations of the routes in close proximity are illustrated in **Exhibit 3-4**.

Exhibit 3-3: Existing Transit Network

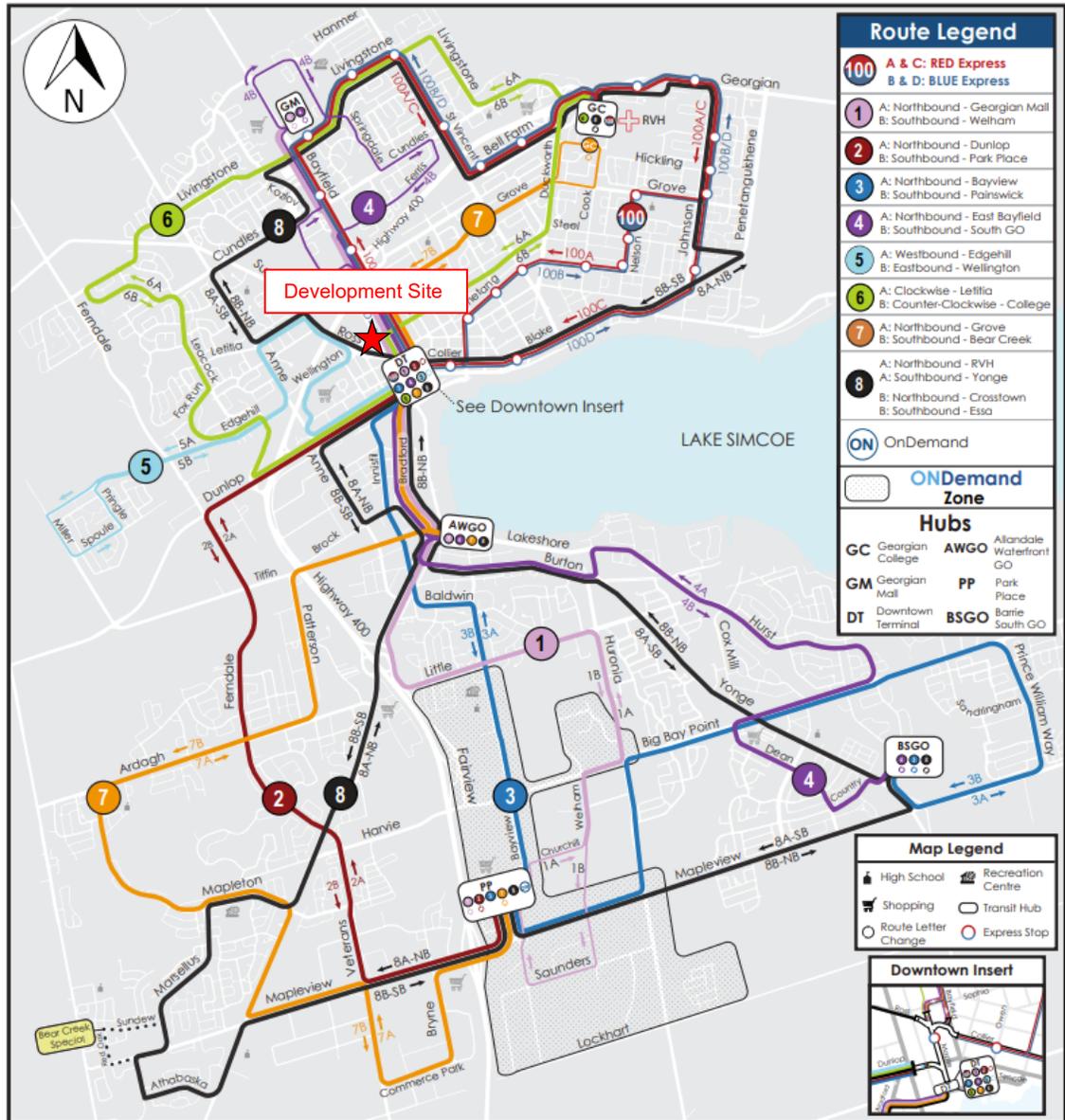


Image Source: City of Barrie. Retrieved October 17, 2022 from <https://www.barrie.ca/media/6686>

Exhibit 3-4: Existing Transit Service Patterns

Route	Onward Transit Connections	Approximate Walking Distance to Nearest Bus Stop ¹	Average Peak Hour Bus Service Frequency
1 – Georgian Mall / Welham	Park Place, Bayview Drive, Allandale GO, Downtown Terminal, Georgian Mall, Allandale Recreation Centre	220 metres (4 minutes)	30 minutes
4 – East Bayfield / South GO	Barrie South GO, Hurst at Cox Mill, Allandale GO, Downtown Terminal, Georgian Mall	220 meters (4 minutes)	35 minutes
6 – Letitia / College	Downtown Terminal, Cedar Pointe at Edgehill, Meyer Avenue, Georgian College, Margaret Drive	85 metres (2 minutes)	30 minutes
7 – Grove / Bear Creek	Park Place, Peggy Hill Community Centre, Allandale GO, Downtown Terminal, Georgian College	220 metres (4 minutes)	30 minutes
8 – RVH - Yonge / Crosstown - Essa	Park Place, Peggy Hill Community Centre, Allandale GO, Downtown Terminal, Georgian College, Livingstone at Bayfield, Barrie South GO	220 metres (4 minutes)	30 minutes
100 – Red/Blue Express	Downtown Terminal, Georgian Mall, Georgian College, Johnson at Grove	220 meters (4 minutes)	20-25 minutes

With respect to active transportation, concrete sidewalks are provided on the north side of Sophia Street West, and the west side of Mary Street. With respect to cycling, *The City of Barrie Transportation Master Plan (TMP)* (June 219) identifies a buffered bike lane to be installed on Ross Street, a conventional bike lane to be installed on Wellington Street, and an in-boulevard pathway to be installed on Toronto Street. These facilities are expected to provide convenient connections to other areas of downtown Barrie, including the Allandale Waterfront GO Transit rail station via the waterfront trail network.

4 Background Developments

From the City of Barrie’s development applications webpage, four background developments with the potential to introduce notable traffic volumes into the study area were identified:

- 112-136 Bayfield Street, 14 Sophia Street West, and 113-115 Maple Avenue (12-storey mixed-use building containing 300 residential units and ground floor commercial usage);
- 6-12 Sophia Street East and 113-117 Bayfield Street (8-storey rental apartment building containing 108 units, of which 70 are proposed to be affordable housing);

¹ Approximate walking speed of 1 m/s.

- 17 Sophia Street East, 3 - 11 McDonald Street, and 58 - 60 Clapperton Street (21-storey mixed-use building containing 253 residential units and 257 m² of ground floor commercial space);
- 31 Ross Street (paramedic station that is 1,216 ft² in size).

The four background developments mentioned above are illustrated in **Exhibit 4-1**.

Exhibit 4-1: Background Developments



Base Map Source: Barrie ArcGIS Maps. Retrieved October 14, 2022 from:
<https://barrie.maps.arcgis.com/apps/MapSeries/>

A summary of the anticipated vehicular trips generated by the background developments is detailed in **Exhibit 4-2**. These volumes were estimated using trip generation rates from the publication **Trip Generation Manual, 11th Edition** (Institute of Transportation Engineers, October 2021).

Exhibit 4-2: Background Development Vehicle Trip Generation Summary

Background Development Address	Land Use Codes (LUC) Used	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Inbound	Outbound	Total	Inbound	Outbound	Total
112-136 Bayfield Street, 14 Sophia Street West, and 113-115 Maple Avenue	222 & 822	48	55	103	65	65	130
6-12 Sophia Street East and 113-117 Bayfield Street	221 & 223	4	17	21	10	5	15
17 Sophia Street East, 3 - 11 McDonald Street, and 58 - 60 Clapperton Street	222 & 822	30	41	71	34	33	67
31 Ross Street	575	- ²			0	1	1
Total Automobile Trips	-	82	113	195	109	104	213

As shown in **Exhibit 4-2**, the background developments are anticipated to generate approximately 195 vehicular trips during the Weekday AM Peak Hour (82 vehicular trips inbound and 113 vehicular trips outbound), and approximately 212 vehicular trips during the Weekday PM Peak Hour (109 vehicular trips inbound and 103 vehicular trips outbound).

5 Trip Generation & Traffic Impacts

In order to determine the estimated number of automobile trips associated with the proposed development, trip generation rates from the publication *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, October 2021) were consulted. Based on the nature of the development (a 4-storey mixed-use building with commercial usage), its location context within the City of Barrie, and available data quality, Land Use Code 231: Mid-Rise Residential with Ground-Floor Commercial, Dense Multi-Use Urban was used. The estimated automobile trips and the net inbound and outbound vehicle trips for the proposed 39-unit development is presented in **Exhibit 5-1**.

² No AM peak data is available for this land use in ITE. However, based on the available PM peak data, AM peak trip generation is expected to be negligible.

Exhibit 5-1: Trip Generation Summary – Existing Development

30 Sophia Street West, Barrie – Proposed Development – 39 Dwelling Units					
LUC 231: Mid-Rise Residential with Ground-Floor Commercial, Dense Multi-Use Urban					
Term	Unit	Weekday AM Peak Hour		Weekday PM Peak Hour	
Trip Generation Rate	Vehicle trips / dwelling unit	0.20		0.28	
Total Trips	Vehicle trips / hour	8		11	
New Inbound Trips	Vehicles / hour	39%	3	44%	5
New Outbound Trips	Vehicles / hour	61%	5	56%	6

As shown in **Exhibit 5-1**, the proposed development is expected to generate up to 8 trips during the AM peak hour (3 inbound trips and 5 outbound trips), and up to 11 trips during the PM peak hour (5 inbound trips and 6 outbound trips).

Given that the net new automobile trips from the proposed development are likely less than the daily fluctuation in local traffic volumes, it is anticipated that the proposed development will have very little impact on the surrounding transportation network.

6 Parking Analysis

The purpose of the parking study is to determine if the proposed parking supply of 45 on-site parking spaces is an appropriate supply to accommodate anticipated demand from the proposed development. This section analyzes the zoning by-law requirements, and parking observations at comparable developments in the vicinity of the development site.

6.1 Zoning By-law Requirements

The proposed development at 30 Sophia Street West is designated in the Zoning By-Law as being located within a “Transition Centre Commercial, C2-1” area. However, it is our understanding that Staff have indicated that it be treated as being within the Urban Growth Centre (UGC). Based on the review of the City of Barrie Zoning By-law (ZBL) No. 2009-141, Section 4.6, the relevant vehicle parking requirements are illustrated in **Exhibit 6-1**.

Exhibit 6-1: ZBL Parking Requirements

Land Use	Proposed Units / Proposed m ²	Parking Rate Requirement (per unit / per m ²)	Required Spaces
Resident Parking Requirements			
Residential Dwelling Unit	39	1 space per residential dwelling unit	39
Retail Parking Requirements			
Retail Gross Floor Area	404	1 space per 24 m ² of commercial space	17
Total			
Required Parking (ZBL 2009-141)			56
Proposed Parking Supply for All Users			46
Surplus/Deficiency			-10

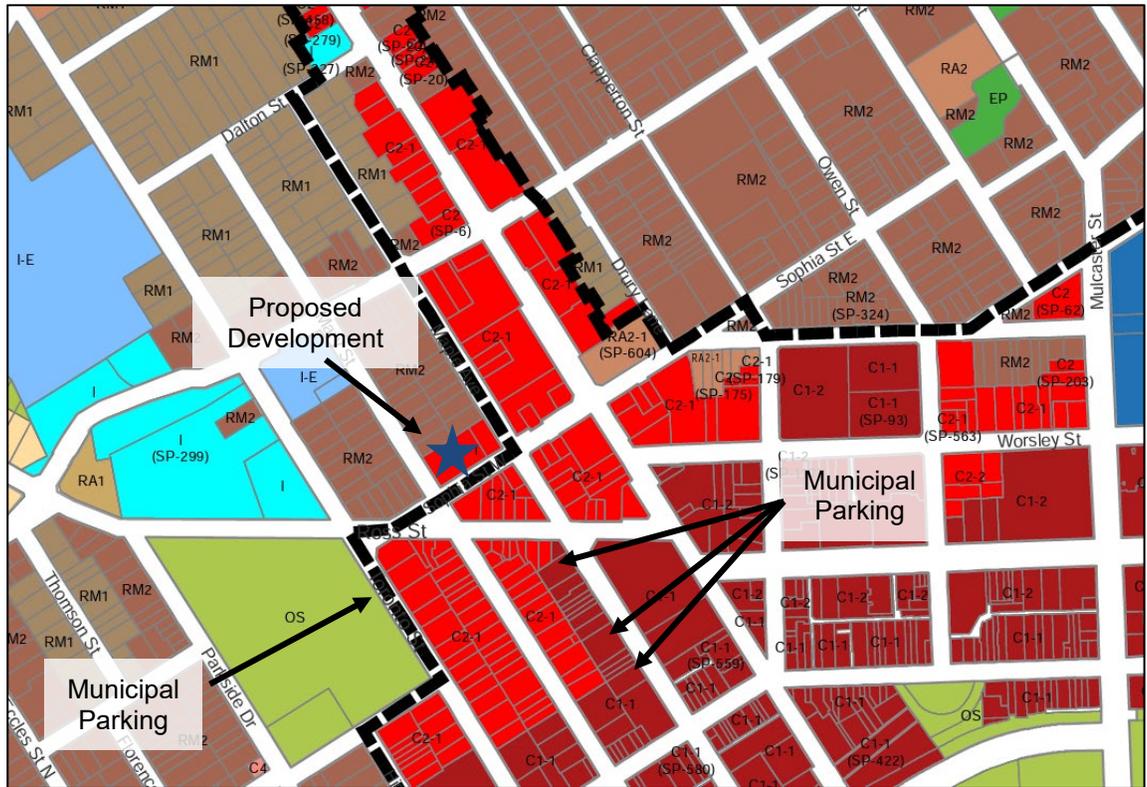
Red text indicates a ZBL deficiency.

As shown in **Exhibit 6-1**, the proposed development is required to supply 57 vehicular parking spaces based on the ZBL. As the proposed development proposes to supply 46 vehicular parking spaces, a ZBL deficiency of 10 vehicle parking spaces is expected. However, it should be noted that the proposed development is expected to comply with the residential requirements.

6.2 Parking Demand Review

With respect to commercial parking, the ZBL exempts commercial and place of worship uses in Central Area Commercial (C1) zones from minimum parking requirements. While the proposed development is located in a C2 zone, it is our understanding that Staff have indicated that it be treated as being within the UCG. As well, the site is within 150 metres of a C1 zone. As such, commercial parking demand, the expectation of on-site commercial parking in the eyes of patrons, and the availability of municipal parking is expected to be functionally similar to a C1 zone. This is illustrated in **Exhibit 6-4**.

Exhibit 6-2: Zoning By-Law Map



Base Map Source: Barrie ArcGIS Maps. Retrieved October 14, 2022 from:
<https://www.barrie.ca/government/policies-laws/laws-listing/zoning-law>

Based on a more appropriate retail parking requirement, an operational demand of 39 parking spaces is anticipated as shown in **Exhibit 6-5**. With a proposed parking supply of 46 parking spaces, a surplus of 7 parking spaces would be anticipated.

Exhibit 6-3: Anticipated Parking Space Requirement Based on the Parking Occupancy Studies and

Land Use	Proposed Units / Proposed m ²	Parking Rate Requirement (per unit / per m ²)	Required Spaces
Resident Parking Requirements			
Residential Dwelling Unit	39	1 space per residential dwelling unit	39
Retail Parking Requirements			
Retail Gross Floor Area	404	0 spaces per 24m ² of commercial space	0
Total			
Required Parking			39
Proposed Parking Supply for All Users			46
Surplus/Deficiency			+7

Green text indicates an operational surplus.

7 Vehicle Swept Path Analysis

A vehicle swept path analysis was conducted using AutoTurn to demonstrate that vehicles can enter and exit the site in a forward motion, and that access to loading and waste collection areas are functional. This analysis is presented in **Appendix B**.

8 Conclusions

This traffic and parking brief was prepared to analyze the impact that the proposed development may have on the surrounding transportation network. Based on the analysis presented, the proposed development is expected to generate up to 8 trips during the AM peak hour (3 inbound trips and 5 outbound trips), and up to 11 trips during the PM peak hour (5 inbound trips and 6 outbound trips). Given that the net new automobile trips from the proposed development are likely less than the daily fluctuation in local traffic volumes, it is anticipated that the development will have very little impact on the surrounding transportation network.

With respect to parking, the ZBL exempts commercial and place of worship uses in Central Area Commercial (C1) zones from minimum parking requirements. While the proposed development is located in a C2 zone, the site is within 150 metres of a C1 zone and is functionally within the UGC. As such, commercial parking demand, the expectation of on-site commercial parking in the eyes of

patrons, and the availability of municipal parking is expected to be functionally similar to a C1 zone. As the residential parking requirements are expected to comply with the ZBL, an operational demand of 39 parking spaces is anticipated. As 46 spaces are proposed, an operational surplus of 7 spaces is expected. This indicates that the proposed parking supply is expected to be sufficient to accommodate anticipated demand.

Appendix A

Scope of Investigation

Andrae Griffith

From: Donson Chan <Donson.Chan@barrie.ca>
Sent: Tuesday, September 6, 2022 10:06 AM
To: Andrae Griffith; Riley Anderson
Cc: Jason Endrawis
Subject: RE: 30 Sophia Street West Final Consolidated Pre-Consultation Comments (D28-040-2022)

*** Exercise caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***

Hi Andrae,

Staff have reviewed the proposed traffic brief scope below and have no concerns. Please proceed in preparing a Traffic Brief in accordance with the City of Barrie Terms of Reference. The Traffic Brief shall include any nearby proposed site plan, including residential developments regarding the impacts to the existing roadway network. Please confirm any nearby proposed site plans to be included in the Traffic Brief.

Thank you,

Donson Chan, P.Eng.

Transportation Engineer – Infrastructure and Growth Management, Development Services

The City of Barrie

Mobile 249-733-5355

Please consider the environment before printing this email.

From: Andrae Griffith <andrae.griffith@ibigroup.com>
Sent: Friday, September 2, 2022 1:50 PM
To: Riley Anderson <Riley.Anderson@barrie.ca>
Cc: Donson Chan <Donson.Chan@barrie.ca>; Jason Endrawis <jason.endrawis@ibigroup.com>
Subject: RE: 30 Sophia Street West Final Consolidated Pre-Consultation Comments (D28-040-2022)

Hi Riley,

As you may be aware, IBI Group has been retained by 2426011 Ontario Inc. to conduct transportation analysis in support of the proposed development at 30 Sophia Street west in the City of Barrie. As per the pre-consultation comments, city staff have requested a traffic impact study.

As you may also be aware, the City of Barrie Traffic Impact Study Guidelines establishes a number of thresholds for which a TIS would be required – the first of which is if the development will add 50 trips or more during the peak hour to the surround road network. Based on a review of the Institute of Transportation Engineers Trip Generation Manual 11th Edition, a 39-unit residential development with less than 25,000 square feet of ground floor commercial space (Land Use Code 231) is expected to generate 8 trips during the AM peak hour and 11 trips during the PM peak hour. This is far below the thresholds in the guidelines, and would very likely not produce any reportable impacts were a full TIS to be produced.

In cases like this, the Guidelines indicates that a traffic brief is the appropriate level of transportation analysis. Therefore, IBI Group proposes to submit a traffic brief which would consist of the following tasks:

1. IBI Group will conduct a qualitative assessment of the transportation network in the vicinity of the development. We will comment on existing transportation facilities within a 1.0 kilometre radius of the development site, including existing key roadways, major intersections, traffic control measures, transit services, and active transportation facilities.
2. IBI Group will document the size and nature of the proposed development, including the estimated number of automobile trips likely to be generated during the weekday AM and PM peak hours of activity for the proposed land uses. The trip generation will be based on information from the Institute of Transportation Engineers (“ITE”) publication, Trip Generation, 11th Edition.
3. Based on the assessment of the transportation network and the anticipated new vehicle trips generated by the proposed development concepts, IBI Group will discuss the likely impacts to study area roadways due to development-related vehicle trips. The proposed configuration of the site accesses, and any transportation improvements or site plan modifications required to better accommodate the anticipated traffic volumes will be discussed, as appropriate. Please note that this analysis will be qualitative, as we do not propose to conduct traffic volume observations or intersection capacity analysis due to the low number of anticipated new site trips.

We trust that this level of analysis is satisfactory, given that the proposed development is expected to generate an almost imperceptible number of new peak hour trips – and may even be net zero in comparison to existing uses on the site.

Please let us know if you have any questions.

Sincerely,

Andrae Griffith
(he/him/his)

Vacation Alert: September 6, 2022 to September 12, 2022 (inclusive)

IBI GROUP

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Toronto ON M4V 2Y7 Canada
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From: Cameron Sellers <csellers@ipsconsultinginc.com>

Sent: Thursday, August 18, 2022 5:57 PM

To: Andrae Griffith <andrae.griffith@ibigroup.com>

Subject: FW: 30 Sophia Street West Final Consolidated Pre-Consultation Comments (D28-040-2022)

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FYI Andrae



Cameron Sellers, B.B.A.

PARTNER

647 Welham Road, Unit 9A, Barrie, ON L4N 0B7
Tel: 705 - 812 - 3281 extension 24 | Fax: 705 - 812 - 3438
E-Mail: csellers@ipsconsultinginc.com URL: www.ipsconsultinginc.com

From: Riley Anderson <Riley.Anderson@barrie.ca>

Sent: August 18, 2022 11:54 AM

To: Cameron Sellers <csellers@ipsconsultinginc.com>

Subject: 30 Sophia Street West Final Consolidated Pre-Consultation Comments (D28-040-2022)

Good afternoon Cameron,

Please find attached the final consolidated comment package for the Pre-Consultation respecting 30 Sophia Street West. The comment package has also been uploaded to the APLI Portal. Should you have any questions, please feel free to reach out to each individual department or to myself and I can facilitate a conversation.

Kind regards,

Riley Anderson
Planner
Development Services, City of Barrie

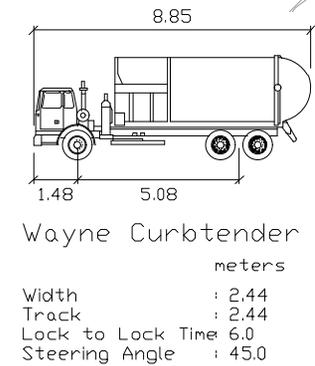
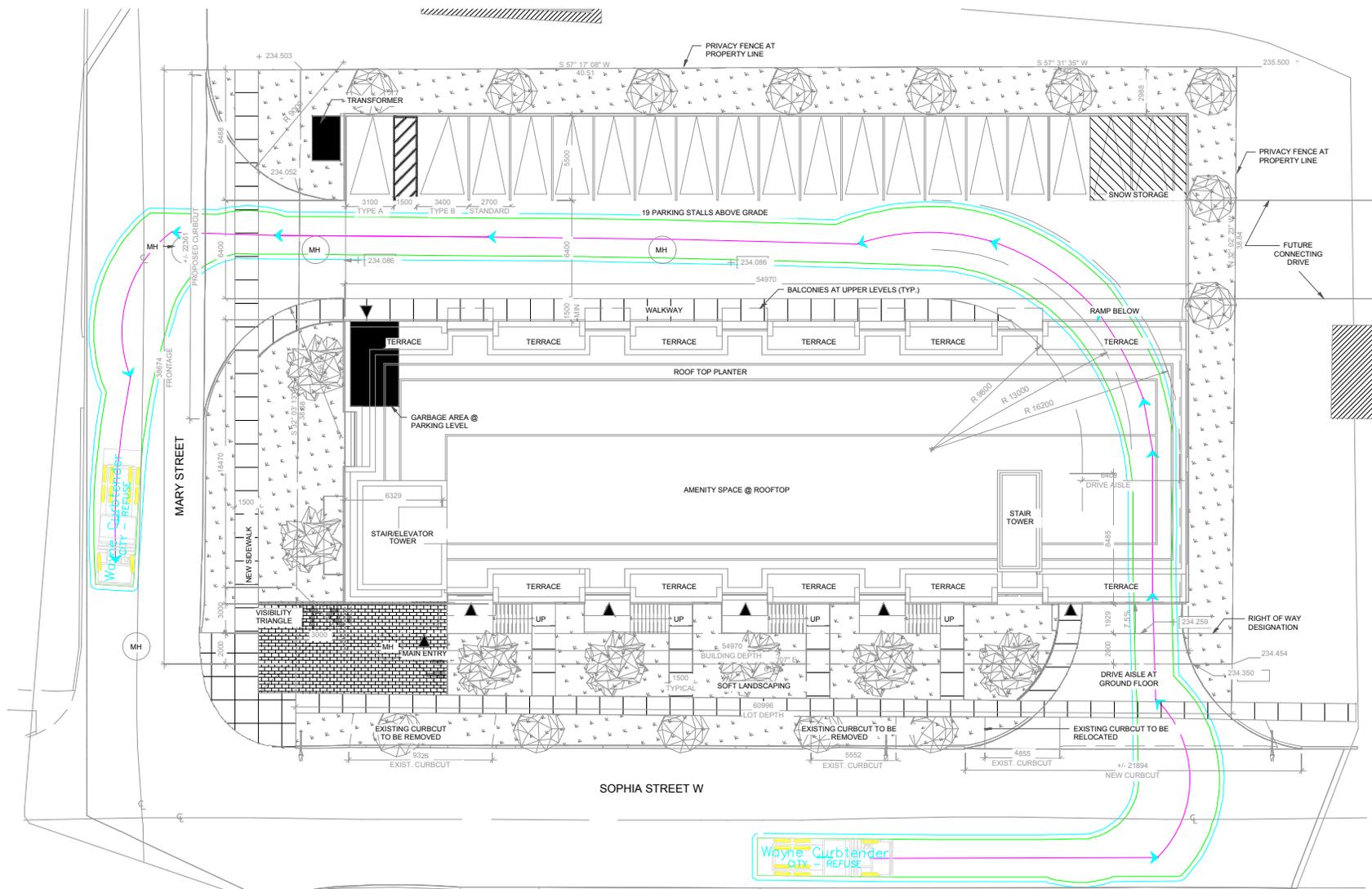


City of Barrie: City Hall, 70 Collier Street, P.O. Box 400, Barrie, ON, L4M 4T5
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www.barrie.ca

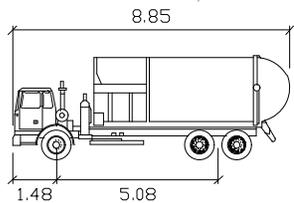
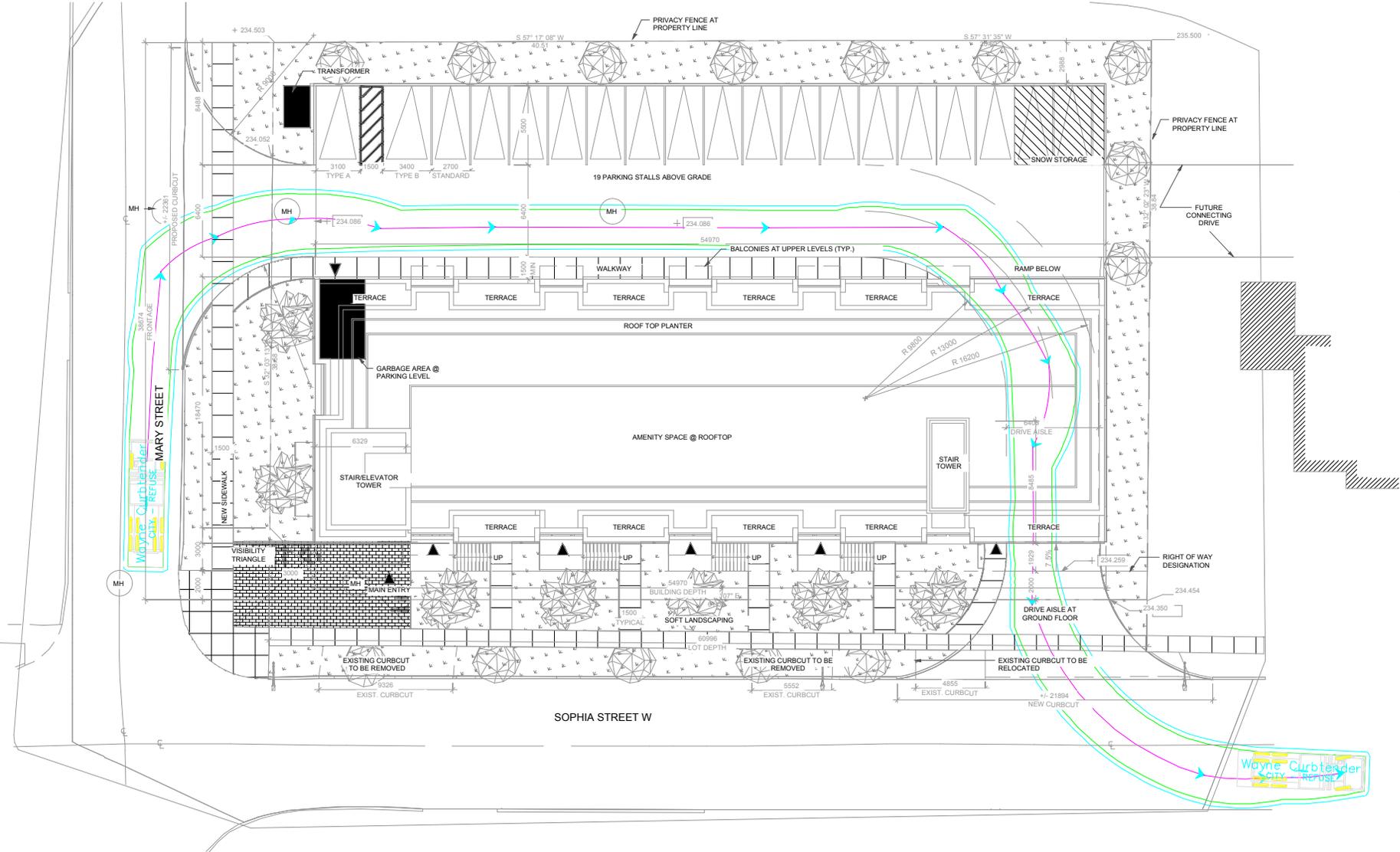
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Appendix B

Vehicle Swept Path Analysis



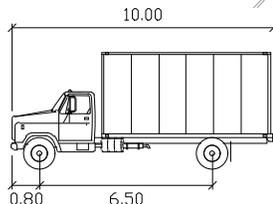
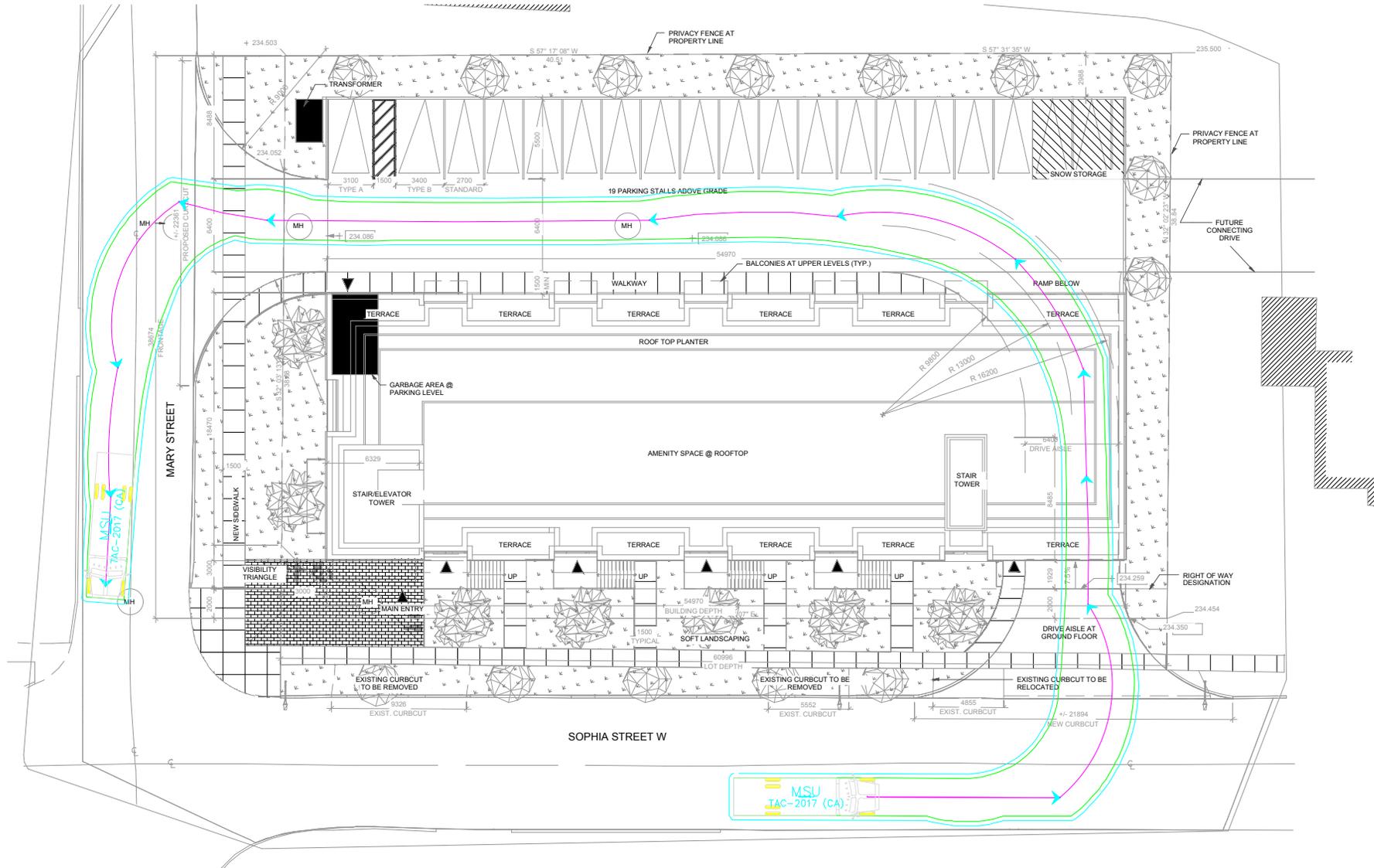
CLIENT 2426011 Ontario Inc. c/o Innovative Planning Solutions 647 Welham Road, Unit 9A, Barrie, ON L4N 0B7	PROJECT NAME 30 Sophia Street West, Barrie 30 Sophia Street West, Barrie, Ontario			
	SCALE: 1:400	DATE: 2022-11-09		
PROJECT ENG: P.R.		DRAWN BY: H.O.		REVISION 0.2
CHECKED BY: A.G.		APPROVED BY: A.G.		
PROJECT NO: 140522				



Wayne Curbtender
 meters
 Width : 2.44
 Track : 2.44
 Lock to Lock Time : 6.0
 Steering Angle : 45.0

CLIENT 2426011 Ontario Inc. c/o Innovative Planning Solutions 647 Welham Road, Unit 9A, Barrie, ON L4N 0B7	PROJECT NAME 30 Sophia Street West, Barrie 30 Sophia Street West, Barrie, Ontario	
	SCALE: 1:400	DATE: 2022-11-09
	PROJECT ENG: P.R.	DRAWN BY: H.O.
	CHECKED BY: A.G.	APPROVED BY: A.G.
	PROJECT NO: 140522	

		FIGURE NAME Vehicle Maneuvering Diagram	FIGURE NO. AT-2	REVISION 0.2
		SCALE CHECK 1 in		



MSU
 meters
 Width : 2.60
 Track : 2.60
 Lock to Lock Time 6.0
 Steering Angle : 40.2

CLIENT 2426011 Ontario Inc. c/o Innovative Planning Solutions 647 Welham Road, Unit 9A, Barrie, ON L4N 0B7	PROJECT NAME 30 Sophia Street West, Barrie 30 Sophia Street West, Barrie, Ontario			
	SCALE: 1:400	DATE: 2022-11-09		
PROJECT NO: 140522	PROJECT ENG: P.R.	DRAWN BY: H.O.	REVISION 0.2	SCALE CHECK 1 in
	CHECKED BY: A.G.	APPROVED BY: A.G.		