



BA Group

12197, 12211, 12213 AND 12231 HURONTARIO STREET ARGO SUMMER VALLEY LIMITED

Traffic Impact and Parking Study
Plan of Subdivision

Prepared For: Argo Summer Valley Limited

June 1, 2022



**MOVEMENT
IN URBAN
ENVIRONMENTS**

BAGROUP.COM

© BA Consulting Group Ltd.
45 St. Clair Avenue West, Suite 300
Toronto, ON M4V 1K9
www.bagroup.com

TABLE OF CONTENTS

1.0	INTRODUCTION	2
1.1	Site Location And Context.....	2
1.2	Project Summary	3
1.3	Site Access and Circulation	3
1.4	Key Transportation Findings	6
1.5	This Study	10
1.6	Site Background	10
2.0	PLANNING AND POLICY CONTEXT	12
2.1	Provincial Policies & Directives	12
2.2	Region of Peel Policies	12
2.3	City of Brampton Policies	13
3.0	STUDY AREA TRANSPORTATION INFRASTRUCTURE	15
3.1	Area Street Network.....	15
3.2	Area Transit Network	19
3.3	Area Active Transportation Network	22
4.0	VEHICLE PARKING CONSIDERATIONS	25
4.1	Zoning By-law Requirements	25
4.2	Town of Caledon Development Standards Manual	26
4.3	Proposed Parking Supply.....	26
5.0	TRAFFIC VOLUMES	28
5.1	Analysis Scenarios and Horizons	28
5.2	Existing Traffic Volumes	28
5.3	Background Traffic Volumes	31
5.4	Site Traffic Volumes.....	34
5.5	Future Total Traffic Volumes	35
6.0	VEHICLE TRAFFIC OPERATIONS ANALYSIS	39
6.1	Analysis Methodology	39
6.2	Network-Wide Parameters	39
6.3	Signalized Intersection Analysis Results	41
6.4	Unsignalized Intersection Analysis Results	42
6.5	Queue Analysis Results	43
6.6	Summary	43



LIST OF TABLES

Table 1	Development Proposal Summary.....	3
Table 2	Existing Area Street Network	15
Table 3	Existing Area Transit Network Service	19
Table 4	Town of Caledon Zoning By-law 2006-50 Parking Requirements	25
Table 5	City of Brampton Zoning By-law 270-2004 Parking Requirements.....	26
Table 6	Proposed Parking Supply for Caledon Lots.....	27
Table 7	Proposed Parking Supply for Brampton Lots.....	27
Table 8	Existing Traffic Counts.....	28
Table 9	Background Developments.....	31
Table 10	Residential Trip Generation Rates	34
Table 11	Site Traffic Distribution.....	34
Table 12	Multi-Modal New Site Trip Generation.....	35
Table 13	Hurontario Street / Collingwood Avenue-Highwood Road Capacity Analysis Results.....	41
Table 14	Highwood Road / Hillpath Crescent-Site Access	42
Table 15	Hurontario Street / Collingwood Avenue-Highwood Road Queue Results.....	43

LIST OF FIGURES

Figure 1	Site Location	4
Figure 2	Site Context.....	5
Figure 3:	Area Road Network	17
Figure 4:	Existing Area Road Lane Configuration and Traffic Control.....	18
Figure 5:	Area Transit Context.....	21
Figure 6:	Area Bicycle Network.....	23
Figure 7:	Area Pedestrian Facilities	24
Figure 8:	Proposed Hurontario Street Reconfiguration.....	29
Figure 9:	Existing Traffic Volumes	30
Figure 10:	Future Background Traffic Volumes (2027).....	32
Figure 11:	Future Background Traffic Volumes (2032).....	33
Figure 12:	Site Traffic Volumes	36
Figure 13:	Future Total Traffic Volumes (2027).....	37
Figure 14:	Future Total Traffic Volumes (2032).....	38



TABLE OF APPENDICES

Appendix A	Reduced Scale Architectural Plans
Appendix B	Parking Allocation Plan
Appendix C	Turning Movement Counts
Appendix D	Transportation Tomorrow Survey (TTS) Data
Appendix E	Existing Signal Timing Plans
Appendix F	Synchro Worksheets



OVERVIEW

1.0 INTRODUCTION

BA Consulting Group Ltd (BA Group) has been retained by Argo Summer Valley Limited to provide transportation consulting services in relation to the proposed development of the Argo Summer Valley property (12197, 12211, 12213 and 12231 Hurontario Street) just south of Highway 410. The Site is generally within the northeast quadrant of the intersection of Hurontario Street and Collingwood Avenue / Highwood Road, and includes lands within the City of Brampton (the “City”) and the Town of Caledon (the “Town”).

This report has been prepared in support of Plan of Subdivision applications being submitted to the City of Brampton and the Town of Caledon.

1.1 SITE LOCATION AND CONTEXT

1.1.1 Address and Policy Area

The development site (the “Site”) is comprised of two abutting properties, municipally known as 12197 Hurontario Street in the City of Brampton and 12231, 12211 & 12213 Hurontario Street in the Town of Caledon. The site is located in the northeast quadrant of the Hurontario Street and Collingwood Avenue/ Highwood Road intersection. It is bounded by the Highway 410 and Highway 10 interchange to the north, existing detached residential uses to the east and south, and vacant lands to the west of Hurontario Street.

The Site is located within the City of Brampton’s Snelgrove-Heart Lake Secondary Plan Area and within Caledon’s Mayfield West Secondary Plan Area. The site location and context are illustrated in **Figure 1** and **Figure 2**.

1.1.2 Existing Land Use

The Site has a frontage of approximately 203 metres on Hurontario Street, and an area of approximately 3.6 hectares (8.978 acres). The lands are currently zoned as “Agricultural” under the City’s By-law 270-2004, as amended, and “High Commercial” and “Agricultural” in the Town’s Zoning By-law 2006-50.




12197 Hurontario Street, which is in the City of Brampton and located in the Snelgrove-Heart Lake Secondary Plan is designated as “Low Density Residential” according to the City’s Official Plan Schedule A – General Land-Use Designations. This Designation permits predominantly residential land-uses including a range of different dwelling types. The lands 12231, 12211 & 12213 Hurontario Street, located in Caledon, is designated as Residential Policy Area B in the Town of Caledon’s Official Plan. The Town has also enacted an interim control by-law (2021-092) in the immediate area (including the Site) to control development adjacent to the future Mayfield West Transit Hub at the intersection of the Spine Road and Collector Road F within the Mayfield West Secondary Plan area. The Site is approximately 200 metres east of the proposed Transit Hub, and would be within the Major Transit Station Area.

1.2 PROJECT SUMMARY

A residential subdivision is proposed for the Site, consisting of approximately 36 detached units and 45 townhouses. Vehicular access is provided off Highwood Road via 'Street A'. The Project statistics are summarized in **Table 1**.

Reduced architectural plans are provided for reference in **Appendix A**.

TABLE 1 DEVELOPMENT PROPOSAL SUMMARY

Use		Development Proposal	
	81 Residential Units	Detached Residential	36 units
		Townhouse Residential	45 units
	Parking Spaces	Driveways and Parking Garages	250
		On-street	24 spaces
Access			
	Access	Driveway off Highwood Road, via 'Street A'	

Notes:

1. Based upon site statistics provided by Glen Schnarr & Associates Inc., dated April 11, 2022.

1.3 SITE ACCESS AND CIRCULATION

1.3.1 Vehicular Site Access

Vehicular access to the proposed subdivision is provided via a proposed public road that has an access point on Highwood Road. The proposed road forms a four-legged intersection at the point of access with Highwood Road and aligns with the centreline of Hillpath Crescent. No access is proposed on Hurontario Street, and the existing access points on Hurontario Street that were used for the original lots will be removed.

The proposed public road provides vehicle access to the individual lots, as well as on-street parking spaces, and facilitates vehicular manoeuvres for garbage and fire trucks.

1.3.2 Road Design Standards

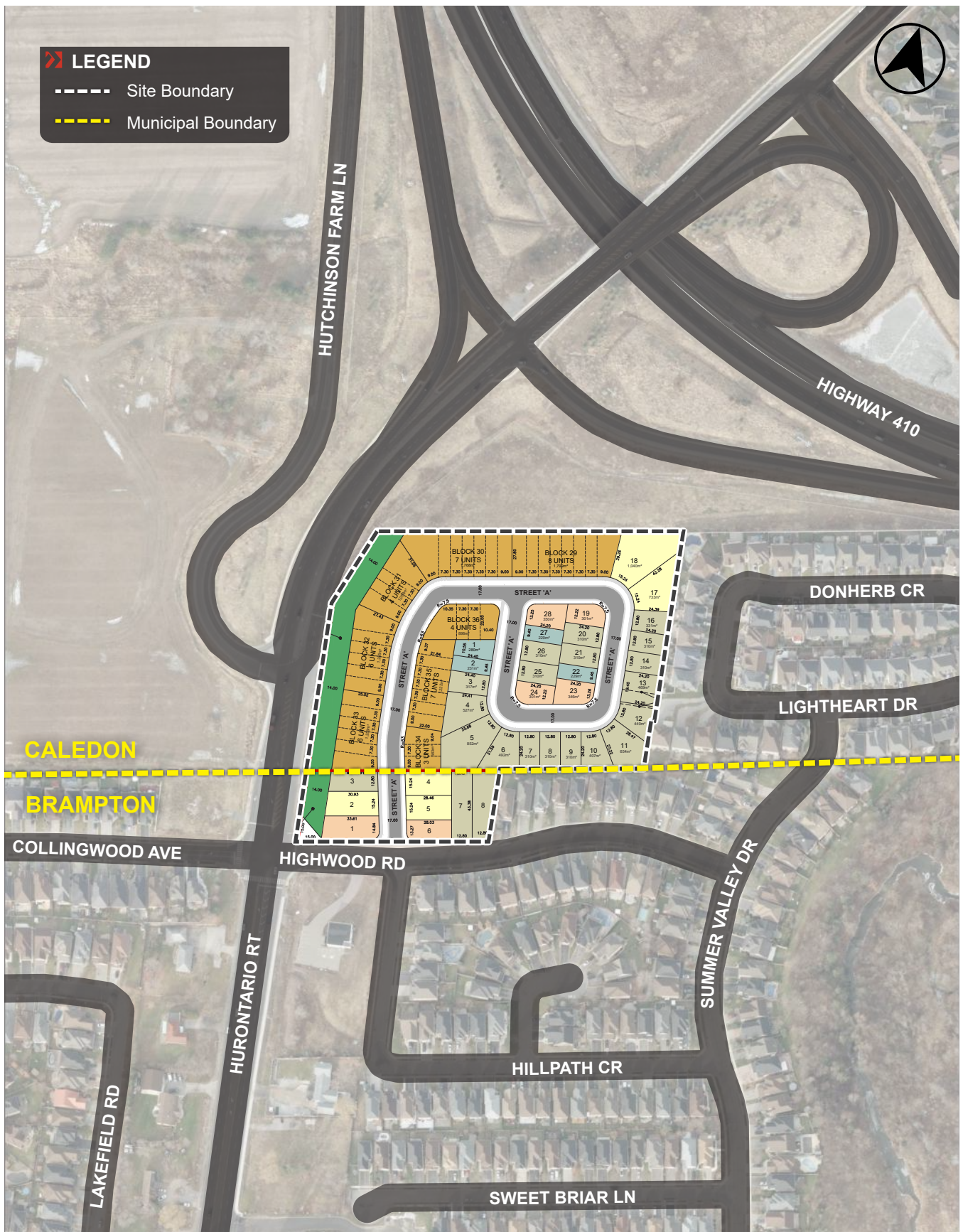
The site is geographically located straddling the Brampton/Caledon border, but the subject plan does not physically connect to any Town of Caledon roads. The site connects only to Highwood Road (a City of Brampton road), and to all intents and purposes will be an extension of the development to the south.

The internal site roads will be designed in accordance with City of Brampton standards and will generally conform to the existing standard requirements for a Minor Local street in standard drawing 200, with a 17m ROW and an 8m pavement width. The adoption of the proposed road design standard on the Town of Caledon and City of Brampton portions of the site will be in line with adjacent road design standards and is considered appropriate for the site.



P:\75197\06\Graphics\Adobe\AI

FIGURE 1 SITE LOCATION



P:\75197\06\Graphics\Adobe\AI

FIGURE 2 SITE CONTEXT

1.4 KEY TRANSPORTATION FINDINGS

The following provides a summary of the key findings of our transportation assessment of the Project.

Introduction

1. Argo Summer Valley Limited are filing applications for a Draft Plan of Subdivision to permit the redevelopment of the Site. The proposed plan includes 36 detached units and 45 townhouses.
2. The Site is located in the northeast quadrant of the Hurontario Street and Collingwood Avenue/Highwood Road intersection. It is generally bounded by the Highway 410 and Highway 10 interchange to the north, existing detached residential uses to the east and south, and vacant lands to the west of Hurontario Street. The Site is located within the City of Brampton's Snelgrove-Heart Lake Secondary Plan Area and within Caledon's Mayfield West Secondary Plan Area.

Existing Conditions

3. The development Site is comprised of two abutting properties, municipally known as 12197 Hurontario Street in the City of Brampton and 12231, 12211 & 12213 Hurontario Street in the Town of Caledon. The Site (currently vacant) has no existing roads, sidewalks, transit or cycling facilities.
4. 12197 Hurontario Street, which is in the City of Brampton and located in the Snelgrove-Heart Lake Secondary Plan is designated as "Low Density Residential" according to the City's Official Plan Schedule A – General Land-Use Designations.
5. The lands 12231, 12211 & 12213 Hurontario Street, located in Caledon, is designated as Residential Policy Area B in the Town of Caledon's Official Plan.
6. The Town has also enacted an interim control by-law (2021-092) in the immediate area to control development adjacent to the future Mayfield West Transit Hub at the intersection of the Spine Road and Collector Road F within the Mayfield West Secondary Plan area. The Site is located approximately 200 metres east of the proposed Transit Hub, and would be within the Major Transit Station Area.

Former Development Applications

7. The Site, while currently vacant, has contained development in the last decade including a proposed Neighbourhood Retail Centre between the City of Brampton and the Town of Caledon, which had contemplated a total of 9,290 sq. metres (100,000 sq. ft.) GFA. The applicant at that time proposed to re-designate the lands from "Low Density Residential" to "Neighbourhood Commercial" within the Snelgrove Secondary Plan and rezone the Site from "Agricultural" to "Commercial Two".
8. The northern portion of the site was previously occupied by a trailer sales and auction centre, with direct access to Hurontario Street approximately 100 metres north of Highwood Road, and the southern portion of the site contained two residential dwellings, also with access to Hurontario Street.
9. The current proposal for these lands (consistent with the City's vision for the Snelgrove Secondary Plan) is a departure from the Retail Centre and will generate considerably less traffic than a neighbourhood retail centre at this location.

Planned Area Road Network Improvements

10. The following road improvements are already planned by the Province, Peel Region and the City of Brampton adjacent to or within the Site Environs:
 - Spine Road – Mayfield West Phase 2 EA was initiated by the Town of Caledon to assess the construction of the new east-west Spine Road from Hurontario Street to Chinguacousy Road. The study area has been extended since to include the Highway 410 interchange with Hurontario Street / Valleywood Boulevard. The planned east-west Spine Road is intended to provide access to and connectivity between primary activity areas within the Mayfield West Phase 2 Stage 1 (MW2-S1) Lands and Mayfield West Phase 2 Stage 2 (MW2-S2) areas.
 - The GTA West Corridor (GTA West) is a proposed 4 to 6 lane, 59-kilometre 400-series highway and bus transitway proposed in the western Greater Toronto Area that will run east-west immediately north of Mount Pleasant Secondary Plan Area 51-2. The City is considering a 'Grand Boulevard' alternative to the GTA West, further described below. The EA for the corridor is expected to be complete by the end of 2022.

Planned Area Transit

11. Significant transit improvements are planned for the vicinity of the Site to facilitate better access to the regional transit network. As identified in the TMP Rapid Transit Implementation by 2031 and 2041, Züm service along the Main Street / Hurontario Street will be further extended to make connections with two New Rapid Transit corridors (rail or bus service in exclusive lanes) along Main Street (Queen Street to Mayfield Road), and Queen Street (Main Street to Vaughan Metropolitan Centre).
12. A Future Transportation Corridor (within the GTA West or Boulevard), north of the site, also proposes an east-west transitway.
13. The Mayfield West Phase 2 plans include a transit hub on the proposed Spine Road approximately 200 metres (5 minute walk) west of the Site, that will provide an interface between City of Brampton BRT routes, local buses and GO Transit routes travelling on Highway 410.
14. The combination of all the proposed changes to the network indicates that transit availability and accessibility will improve significantly in the future.

Planned Area Active Transportation

15. The Mayfield West Phase 2 EA identifies a new east-west Spine Road from Hurontario Street to Chinguacousy Road, planned to serve as a main pedestrian and cycling corridor, with the provision of on and off street cycling and pedestrian routes.
16. The City's TMP has identified Hurontario Street and Mayfield Road as corridors for future facilities. Within the immediate vicinity of the site, Hurontario Street has been identified as a future in right-of-way (on-road or in-boulevard) facility. Mayfield Road has been identified as a future off-road trail.

Vehicle Parking Considerations

17. Application of the Town of Caledon Zoning By-law 2006-50 (for the portion of the Site located in the Town of Caledon) results in an overall requirement of 158 parking spaces, including 146 resident spaces and 12 visitor spaces.
18. Application of the City of Brampton Zoning By-law 270-2004 (to the portion of the Site located within the City of Brampton) results in an overall requirement of 16 parking spaces, including 16 resident spaces and zero (0) visitor spaces.
19. The architectural stats for the proposed development indicate a total of 274 parking spaces. The proposed supply is to be allocated as follows:
 - Driveways and Parking Garages - 250 parking spaces
 - On-street - 24 parking spaces
20. For the portion of the site located within the Town of Caledon, the single detached dwellings with double driveway/garages will provide 4 spaces for each of the 24 units, which results in a total supply of 96 parking spaces for those units. For the detached dwellings with double garages/driveways, all of the parking required by the zoning by-law and recommended in the Development Standards Manual can be accommodated on each lot. The remaining 45 townhouses and 4 detached with single driveways have 2 spaces / unit in each driveway and garage.
 - For visitor parking, as per visitor parking requirement for townhouses in Zoning By-law 2006-50, the townhouses and single driveway single detached dwellings would generate a need for 12 spaces. The proposed on-street parking capacity is approximately 24 spaces, which will provide sufficient parking for visitors.
21. For the portion of the site located within the City of Brampton, the single detached dwellings with double driveway/garages will provide 4 spaces for each of the 8 units, which results in a total supply of 32 parking spaces for those units. For the detached dwellings with double garages/driveways, all of the parking required by the zoning by-law 270-2004 can be accommodated on each lot.
22. The proposed parking supply is considered appropriate and satisfies the Town of Caledon's Development Standards Manual requirement, Town of Caledon Zoning By-law 2006-50 and City of Brampton Zoning By-law 270-2004 requirements.

Traffic Volume Forecasting

23. The proposed development is expected to generate in the order of **45 two-way vehicle trips** during the morning peak hour and **65 two-way vehicle trips** during the afternoon peak hour.
24. The proposed development would generate in the order of **49 and 72 two-way person trips** during the weekday morning and afternoon peak hours, respectively

Traffic Operation Analysis

25. Based on the analysis conducted by BA Group, the forecast vehicle Site traffic generated by the Project will have minimal to small impacts on the overall operation of the network signalized and unsignalized intersections.
26. All of the study area signalized and unsignalized intersections can acceptably accommodate Site-related traffic activity and will continue to operate within capacity and at acceptable levels of service under future conditions without the need for improvements

Overall

27. The proposed Site plan arrangements, including vehicle access and parking provisions, are appropriate and will support the proposed development.
28. The Site-generated trips can be acceptably accommodated by the area infrastructure during the weekday morning and afternoon peak hours.

1.5 THIS STUDY

Argo Summer Valley Limited are filing applications for a Draft Plan of Subdivision to permit the redevelopment of the Site. The proposed plan includes a 36 detached units and 45 townhouses.

This report provides an assessment of the transportation related aspects of the Site, including:

- a summary of the existing land uses and proposed development program;
- a review of the area transportation context, including planned area transportation network improvements;
- an overview of key transportation related design elements and their compatibility with the existing and planned community, completed studies, and ongoing studies; and
- a review of intersection operations in the study area under existing and future conditions including an assessment of the impacts of the Project.

The City of Brampton, Town of Caledon, Peel Region, and the Province have a number of planned improvements for the area surrounding the Site - notably improvements to transit connectivity, new active transportation links, and the adjacent road network identified in the:

- City and Regional Official Plans (OP, ROP)
- City and Regional Transportation Master Plans (TMP, LRTP);
- Mayfield West Phase 2 Transportation Assessment

Plans for road improvements approved and already underway by the City and Region will provide for significantly improved connectivity and mobility options for future Site residents and visitors. Planned area road, transit, and active transportation improvements are outlined in **Section 3.0** of this report.

The transportation elements of the Site have been thoughtfully designed to respect the vision of the TMP, existing and draft Secondary Plans, and existing approved EAs.

1.6 SITE BACKGROUND

1.6.1 Former Development Applications

The Site, while currently vacant, has contained development in the last decade. The northern portion of the site was previously occupied by a trailer sales and auction centre, with direct access to Hurontario Street approximately 100 metres north of Highwood Road, and the southern portion of the site contained two residential dwellings, also with access to Hurontario Street.

The site has had previous development proposals, including a proposed Neighbourhood Retail Centre between the City of Brampton and the Town of Caledon, which had contemplated a total of 9,290 sq. metres (100,000 sq. ft.) GFA. The applicant at that time proposed to re-designate the lands from “Low Density Residential” to “Neighbourhood Commercial” within the Snelgrove Secondary Plan and rezone the Site from “Agricultural” to “Commercial Two”.

The current proposal for these lands (consistent with the City’s vision for the Snelgrove Secondary Plan) is a departure from the Retail Centre and will generate considerably less traffic than a neighbourhood retail centre at this location.

TECHNICAL ASSESSMENT

2.0 PLANNING AND POLICY CONTEXT

2.1 PROVINCIAL POLICIES & DIRECTIVES

The Places to Grow: Growth Plan for the Greater Golden Horseshoe (“Growth Plan”) outlines the importance of reducing reliance upon the automobile and promoting transit and active transportation. Planning along priority transit corridors, such as the GTA West corridor, shall be prioritized and planned for minimum density targets. The Growth Plan also highlights the importance of planning for the integration of active transportation within the existing and planned street network (e.g. complete streets) and within development projects.

The GTA West Corridor (GTA West) is a proposed 4 to 6 lane, 59-kilometre 400-series highway and bus transitway in the western Greater Toronto Area. Implementation of this corridor is anticipated to significantly reduce travel times for drivers in York, Peel and Halton Regions. The proposed corridor would extend from Highway 400, between King Road and Kirby Road, to the 401/407 ETR interchange near Mississauga, Milton and Halton Hills. The proposed highway would have 11 interchanges at municipal roads, while the transitway would be a separate corridor running alongside the highway dedicated exclusively for public transit.

The Province’s EA is currently in Phase 2 (Alternative Designs) of the process, with the second Public Information Centre (PIC #2) having been undertaken in October 2019, in which the preferred route and interchange locations of the GTA West were announced. This route, with modifications, was confirmed publicly by the provincial government on August 7, 2020. The EA for the corridor is expected to be complete by the end of 2022. Transportation related elements of the EA are anticipated to be completed as part of the provincial EA.

2.2 REGION OF PEEL POLICIES

2.2.1 Region of Peel Official Plan (1996, latest consolidation: 2021)

The **Region of Peel Official Plan** (ROP) sets the planning policy framework to guide the future growth and development of the Region.

- The ROP provides general policies and direction for long range strategic land use policy for the Region of Peel, including general shifts in goals and priorities relating to transportation;
- General support is indicated for facilitating a shift to promote public transit and other sustainable modes of transportation; as well as,
- Support for the integration of transportation planning, transportation investment and land use planning.

2.2.2 Let’s Move Peel Long Range Transportation Plan (2019)

The Long Range Transportation Plan (LRTP) is a five-year plan that guides transportation planning and infrastructure needs in the Region of Peel and sets out the blueprint to accommodate anticipated growth to 2041. The Plan serves as the basis for recommended Transportation Infrastructure Programming, the basis for the Transportation Capital Budget and 10-year Program, and is a key input into the Region’s Development Charges Background Study and By-law Update in 2020.

2.3 CITY OF BRAMPTON POLICIES

2.3.1 City of Brampton Official Plan (2006, latest consolidation: 2020)

The **City of Brampton Official Plan** (OP) sets the planning policy framework to guide the future growth and development of the City. It recognizes that the City's settlement area is nearly built out and most of the future development in the City will occur through intensification.

- The OP provides general policies and direction for future land use, including general shifts in goals and priorities relating to transportation.
- General support is indicated for facilitating a shift to sustainable transportation, supported by infrastructure and other initiatives; and
- Additional statements anticipate and indicate support for developments that propose reduced parking supplies.

2.3.2 City of Brampton Transportation Master Plan (2015)

The City of Brampton Transportation Master Plan (TMP) provides the framework for transit, cycling and other active transportation network expansions. The TMP is a key study that has been conducted by the City of Brampton to identify and plan for transportation network improvements to address existing issues and accommodate future growth in the area surrounding the proposed development Site.

The TMP also proposes future connections, to be established in phases, including those that may currently be under review. Site specific recommendations include future cycling routes, support corridors for transit adjacent to the Site, and active transportation connections. These multi-modal recommendations are considered under short, medium and long-term implementation timeframes.

As identified in the TMP Rapid Transit Implementation by 2031 and 2041, Züm service along the Main Street / Hurontario Street will be further extended to make connections with two New Rapid Transit corridors (rail or bus service in exclusive lanes) along Main Street (Queen Street to Mayfield Road), and Queen Street (Main Street to Vaughan Metropolitan Centre).

The City of Brampton initiated a review and update of the current TMP in December 2020, beginning with the identification of 3 objectives to inform the approach for the review. These include:

- the direction from the 2040 Vision for transportation planning and management which emphasizes travel choices and balancing infrastructure with alternative modes of travel;
- reconsideration of auto-centric network planning; and,
- public engagement to consider the impacts of transportation planning on community, travel choices, natural and built environments.

The official TMP Review process was planned to begin in early 2021 with an 18-month work plan.

2.3.3 City of Brampton Active Transportation Master Plan (2019)

The City of Brampton Active Transportation Master Plan (ATMP) is intended to define existing opportunities, consider and evaluate solutions, and identify a recommended active transportation system that provides comfortable and attractive pedestrian and bicycle facilities, in addition to supporting policies and programs.

The key focus of the ATMP includes:

- improving walking and cycling safety;
- providing options to all residents including improving accessibility of the transportation network;
- maximizing the value and usage of existing infrastructure;
- expanding the network;
- improving access to transit; and,
- utilizing active transportation as a viable first mile / last mile option.

3.0 STUDY AREA TRANSPORTATION INFRASTRUCTURE

3.1 AREA STREET NETWORK

3.1.1 Existing Area Road Network

A description of the road network within the Site environs is provided in **Table 2** below and illustrated in **Figure 3**. The area road configuration and traffic control is illustrated in **Figure 4**.

TABLE 2 EXISTING AREA STREET NETWORK

	Name of Street	Description
MAJOR ARTERIAL	Hurontario Street	<p>A major arterial road under the jurisdiction of the City of Brampton that runs generally north-south along the western edge of the Site. In the vicinity of the site, Hurontario Street operates with a 5-lane cross-section (including a centre left turn lane), plus an auxiliary northbound left turn lane at the signalized intersection of Hurontario Street / Collingwood Avenue south of the site.</p> <p>The posted speed limit is 70 km/h to the south of the Site and 50 km/h just north of Hurontario Street and Highwood Road intersection.</p>
	Mayfield Road (Regional Road 14)	<p>A major arterial road under the jurisdiction of the Region of Peel that runs in an east-west direction south of the Site. It extends from Highway 50 in the east and Winston Churchill Boulevard to the west. In the vicinity of the Site, it currently has a 4-lane cross-section (two in each direction), with auxiliary left turns.</p> <p>West of the Site, Mayfield Road has a two-lane rural cross-section and a speed limit of 70 km/h, and widens to four lanes with auxiliary left turns, at its intersection with Hurontario Street in the vicinity of the Site with a posted speed limit of 60 km/h in both directions.</p>
LOCAL ROADS	Highwood Road / Collingwood Avenue	<p>A local road under the jurisdiction of Brampton that generally runs east-west along the southern edge of the Site. The road extends from east of Hurontario Street to Summer Valley Drive (as Highwood Road), and west of Hurontario Street to Robertson Davies Drive (as Collingwood Avenue).</p> <p>The posted speed limit is 50 km/h.</p>
	Hillpath Crescent	<p>A two-way road serving a small section of townhomes along the south side of Highwood Road at its east end. It connects to Highwood Road via a stop control.</p>
	Summer Valley Drive	<p>A two-way road running north-south between Lighthouse Drive and Mayfield Road. Summer Valley Drive has a 2-lane cross section and a posted speed limit of 50 km/h.</p>

3.1.2 Planned Area Road Network

Spine Road – Mayfield West Phase 2

In 2016, a Class Environmental Assessment (EA) was initiated by the Town of Caledon to assess the construction of the new east-west Spine Road from Hurontario Street to Chinguacousy Road. The study area has been extended since to include the Highway 410 interchange with Hurontario Street / Valleywood Boulevard, given that modifications to the interchange would be necessary to maintain and accommodate the operation of the proposed Spine Road. The planned east-west Spine Road is intended to provide access to and connectivity between primary activity areas within the Mayfield West Phase 2 Stage 1 (MW2-S1) Lands and Mayfield West Phase 2 Stage 2 (MW2-S2) areas, with the capacity to support development. The Spine Road is being planned to accommodate transit service and to connect with the proposed transit hub planned in MW2-S1. It will serve as a main pedestrian and cycling corridor, with the provision of on and off street cycling and pedestrian routes.

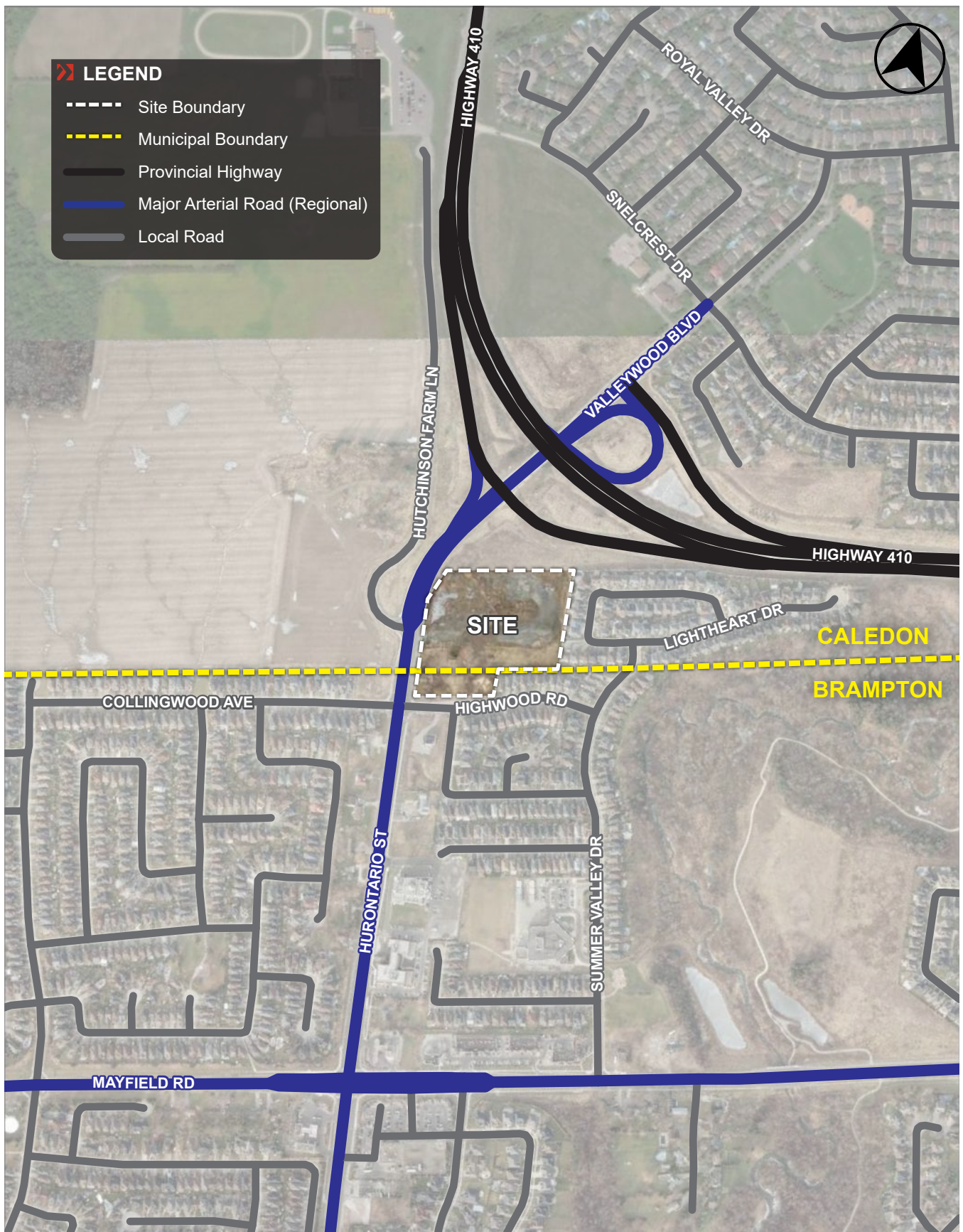
GTA West Corridor Planning

The 'GTA West Transportation Corridor Route Planning and Environmental Assessment Study, Stage 2' Environmental Assessment (commenced in 2014 by the Province) is underway and is currently following both a Federal and Provincial Impact process to focus on identifying a route and preliminary design for a 400 series highway.

The GTA West is a proposed 4 to 6 lane, 59-kilometre 400-series highway and bus transitway in the western Greater Toronto Area. Implementation of this corridor is anticipated to reduce travel times for drivers in York, Peel and Halton Regions. The proposed corridor would extend from Highway 400, between King Road and Kirby Road, to the 401/407 ETR interchange near Mississauga, Milton and Halton Hills. The highway would have 11 interchanges at municipal roads, while the transitway would be a separate corridor running alongside the highway, dedicated exclusively for public transit.

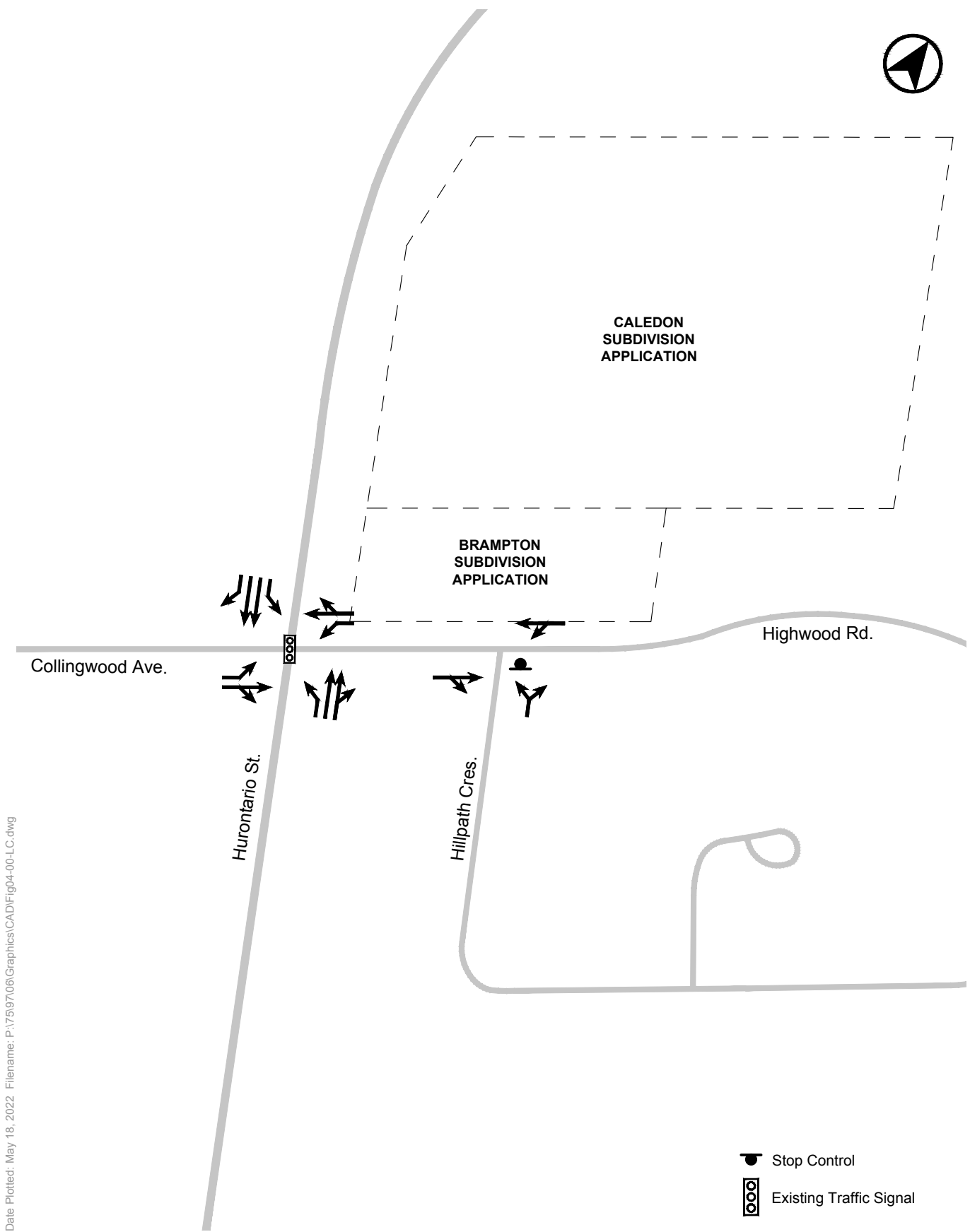
The Province's EA is currently in Phase 2 (Alternative Designs) of the process, with the second Public Information Centre (PIC #2) having been undertaken in October 2019, in which the preferred route and interchange locations of the GTA West were announced. This route, with modifications, was confirmed publicly by the provincial government on August 7, 2020. The EA for the corridor is expected to be complete by the end of 2022. Transportation related elements of the EA are anticipated to be completed as part of the provincial EA.

The area existing and future road network context is illustrated in **Figure 3**.



P:\75197\06\Graphics\Adobe\AI

FIGURE 3 AREA ROAD NETWORK



Date Plotted: May 18, 2022 Filename: P:\7597\06\Graphics\CAD\Fig04-00-LC.dwg

FIGURE 4 EXISTING AREA ROAD LANE CONFIGURATION AND TRAFFIC CONTROL

3.2 AREA TRANSIT NETWORK

3.2.1 Existing Transit Network

An overview of the key area transit routes in proximity to the Site is summarized in **Table 3**. The area transit network is further illustrated **Figure 5**.

TABLE 3 EXISTING AREA TRANSIT NETWORK SERVICE

	Route	Headway	Closest Stop	Description
Brampton Transit Local Bus Service (Züm)	24 – Van Kirk	20 minutes weekday peak ¹	Collingwood Avenue / Hurontario Street (Stop ID: 2204) ~150m from Site, 2-min walk	This bus route runs predominantly along the Van Kirk Drive and surrounding neighbourhoods, eventually connecting back to the Downtown Brampton Terminal and Main Street Züm stations, where transit users are able to access buses 1, 1A 2, 24, 25, 52, 501, 501A, 502, and 561. Some of these routes connect to the Bramalea GO station.
	202 – Mayfield PM	Every weekday at 7:24 am	(Stop ID: 2662) ~900 m from the Site, 11 min walk	Designated “school special” route: This bus route departs from Heart Lake Terminal, servicing various neighbourhoods along Hurontario Street and Mayfield Road, and ends at Mayfield Secondary School.
	204 – Mayfield PM	Every weekday at 3:13 pm	Mayfield Rd – end of Summer Valley Dr (Stop ID: 3355) ~650m from the Site, 8 min walk	Designated “school special” route: This bus route departs from Mayfield Secondary School and ends at the Heart Lake Terminal.
	7/7A – Kennedy	15 – 21 minutes during weekdays	Mayfield Road, opposite Summer Valley Drive (Stop ID: 2662) ~900 m from the Site, 11 min walk	This route runs primarily along Hurontario Street (north of Sandalwood Parkway), Mayfield Road, and Kennedy Road North, stopping at the Heart Lake terminal. The route runs from Mayfield Road down to Courtney Park Drive East and Derry Road, which would allow riders to access many Mississauga MiWay routes, including buses 15, 42, 53, 57, 19 and 103.
	81 – Mayfield West	~ 30 minutes during weekday peak periods	Hurontario Street s/ of Mayfield Road (Stop ID: 3355) ~800m from Site, 10-min walk	The bus routes runs along Mayfield West between Hurontario Street and Kennedy Road North and the neighbourhood of Southfield Village. Route 81 connects back to the Sandalwood Loop, which provides access to buses 28 - Wanless and 502 – Züm Main.
GO Transit	37 – Brampton Terminal	~60-65 minutes during weekday peak, 75 minutes during off-peak	(Stop ID: 2205) ~550m from the Site, 7 min walk	The 37 Brampton Term GO Bus travels along Hurontario Street between Orangeville Mall and Brampton GO. Route 37 only operates during weekdays.

Note:

- Headways are reflected based on assessment conducted in 2019. Due to the global COVID-19 (i.e. coronavirus) pandemic, Brampton Transit is currently (at the time of writing) operating with reduced service. It is expected and assumed that the reductions in service will revert back to ‘typical conditions’ by the time this project is completed and therefore, the table is intended to represent ‘typical conditions’.

3.2.2 Planned Area Transit

City Rapid Transit Implementation to 2031 and 2041

The City of Brampton TMP includes a strategy to optimize the role of transit, including a recommended rapid transit implementation by the 2041 horizon year. Key improvements within the Site's vicinity are outlined below:

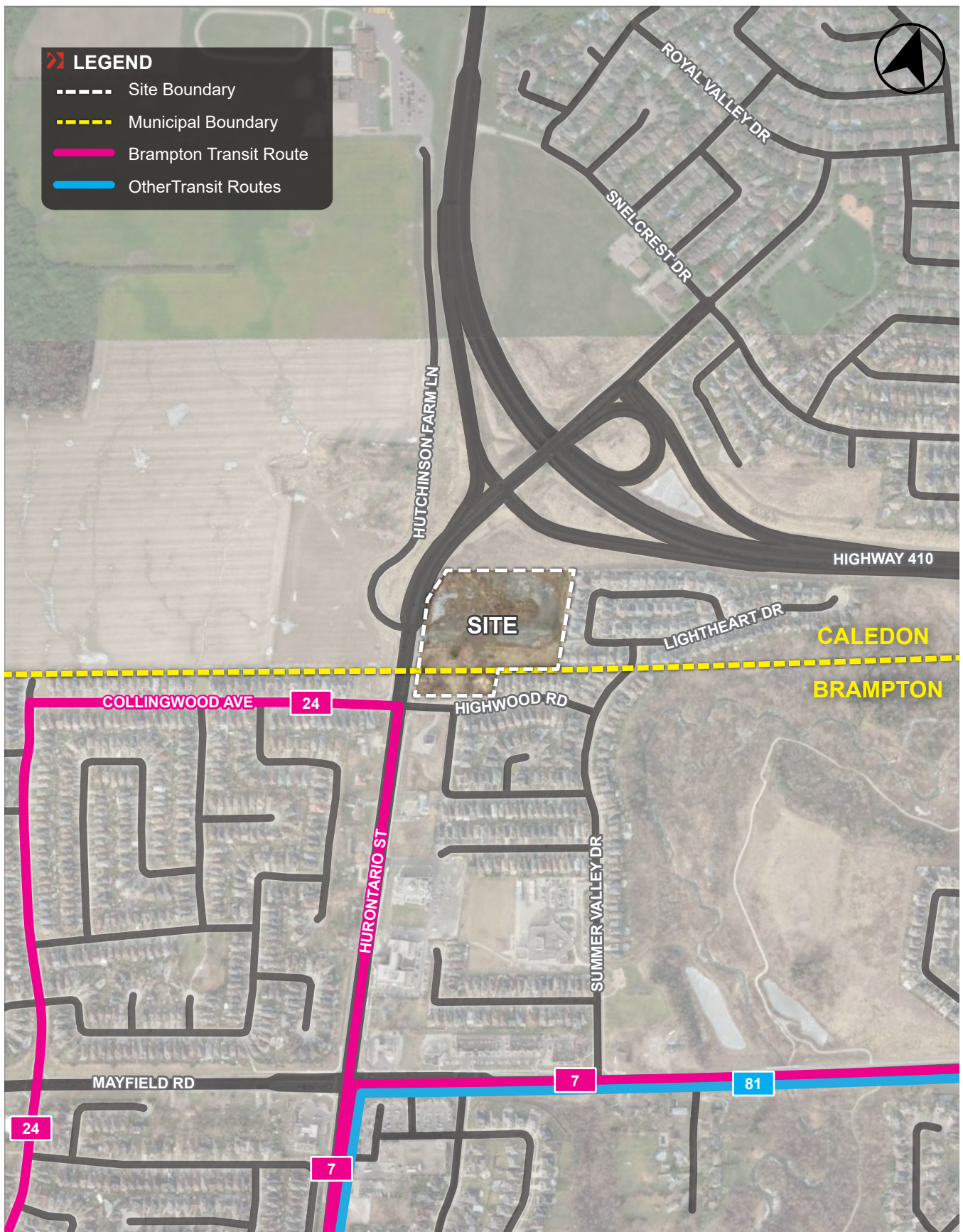
- 2031 Recommended Rapid Transit Implementation
 - Identification of Mayfield Road as a "Support Corridor"
 - New Rapid Transit corridors (rail or bus service in exclusive lanes) are proposed along Main Street operating between Queen Street and Mayfield Road (west of the Site); and Queen Street between Main Street and Vaughan Metropolitan Centre (south of the Site).
- 2041 Recommended Rapid Transit Implementation
 - Expansion of the Züm network to include Sandalwood Parkway as a Zum corridor connecting to the Airport Road ZÜM and a Bramalea ZÜM
 - Continued identification of area Support Corridors (see note above).

The Mayfield West Phase 2 plans include a transit hub on the proposed Spine Road approximately 200 metres west of the Site, that will provide an interface between City of Brampton BRT routes, local buses and GO Transit routes travelling on Highway 410. This proposed transit hub will be within a 5 minute walk of the Site and will provide future residents of the site with easy access to a range of transit services.

Hurontario LRT

Hurontario Light Rail Transit (LRT) is an under-construction higher order transit line that will add 18 kilometres of rapid connectivity along the Hurontario Street corridor, extending from Brampton Gateway Terminal at Steeles Avenue (12 km southeast of the proposed development) to Port Credit GO station (in Mississauga) in the south. The Hurontario LRT is scheduled to be completed in Fall 2024, will feature 19 stops, and provide direct connections to the Milton and Lakeshore West GO Transit Lines, Mississauga Transitway, Brampton Transit, Züm and MiWay.

A Hurontario LRT extension, connecting further north into Brampton, is currently in planning stages. The City of Brampton is leading the "LRT Extension Study." The project is focused on the Main Street South corridor, extending from Brampton Gateway Terminal in the south to Brampton GO Station (and the downtown Brampton area) in the north. The proposed route extension is currently undergoing an Environmental Assessment that is anticipated to be completed before the end of 2021, and construction is anticipated to begin within 6-10 years.



P:\7597\06\Graphics\Adobe\AI

FIGURE 5 AREA TRANSIT NETWORK

3.3 AREA ACTIVE TRANSPORTATION NETWORK

3.3.1 Existing Pedestrian and Cycling Network

The Site is currently vacant and there are no cycling or pedestrian facilities within the Site. As part of the proposed development, active transportation infrastructure (pedestrian facilities) will be established.

Sidewalks currently exist and provide pedestrian routes along the east side of Hurontario Street south of the Site, on the west side of Hurontario Street north of Collingwood Avenue / Highwood Road and along Highwood Road south of the Site. The widening of Mayfield Road, as described in the Mayfield EA, will include a 3m multi-use trail on both sides of Mayfield Road.

The site is located in close proximity to existing cycling routes that provide linkages to other areas of Brampton. Notably, multi-use pathways extend east from Kennedy Road and connect to the Esker Lake Trail and the Etobicoke Creek Trail is located approximately 700 metres to the southeast of the Site. As stated above, the future 3m multi-use trails along Mayfield will provide new off street cycling routes

The Site is located near a few existing designated trail and/or cycling routes including:

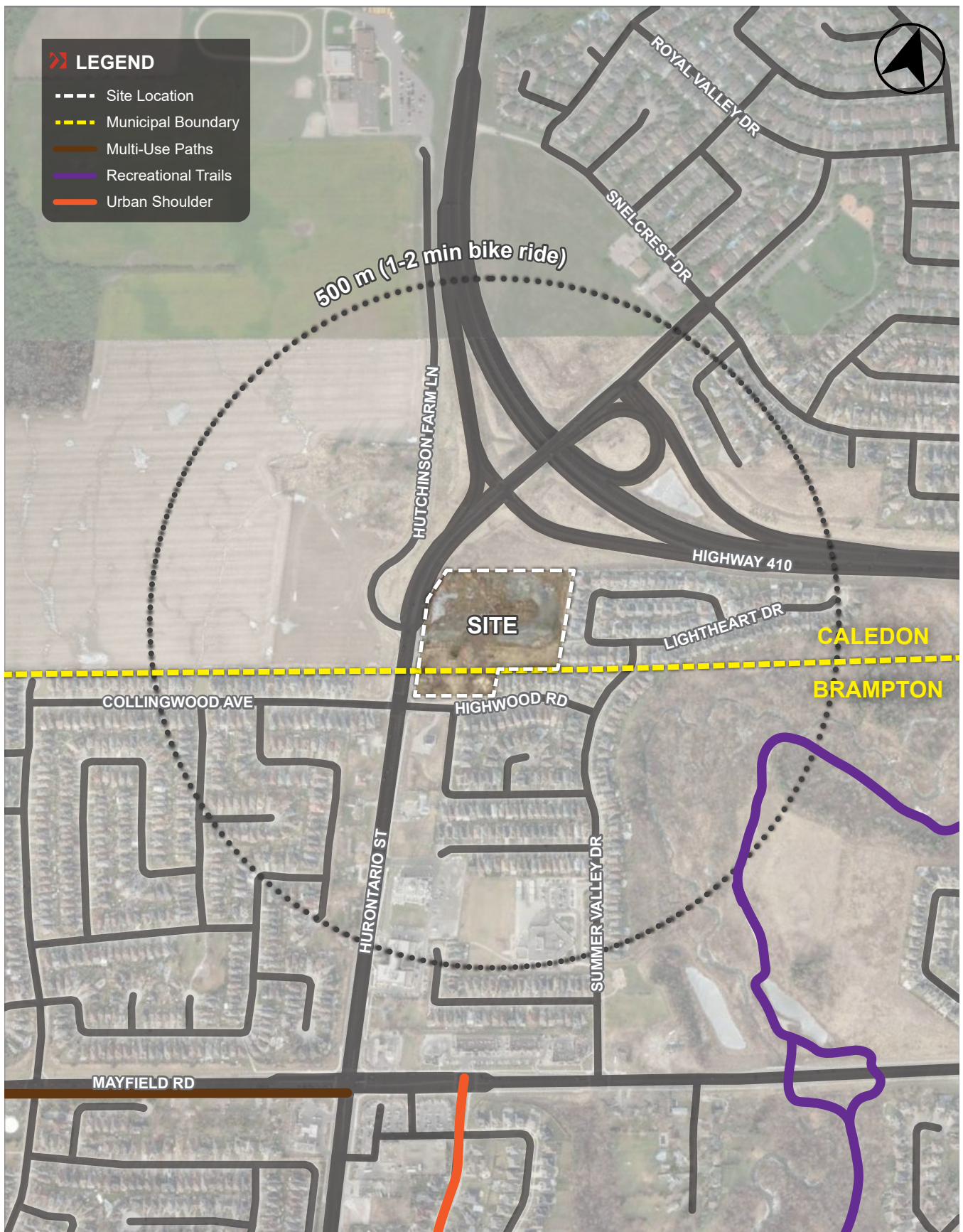
- **Multi-Use path** on Mayfield Road, east of the Site and Kennedy Road
- **Recreational trail** – Etobicoke Creek Trail, southeast of the Site
- **Urban Shoulder Signed route** – Colonel Bertram Road, south of the Site

3.3.2 Planned Pedestrian and Cycling Network

The City of Brampton TMP includes a plan for active transportation facilities. Hurontario Street and Mayfield Road have been identified as corridors for future facilities. Within the immediate vicinity of the site, Hurontario Street has been identified as a future in right-of-way (on-road or in-boulevard) facility. Mayfield Road has been identified as a future off-road trail. The draft plan's proposed sidewalk and path network will provide access to the proposed residential subdivision and promote neighbourhood connectivity for pedestrians and cyclists.

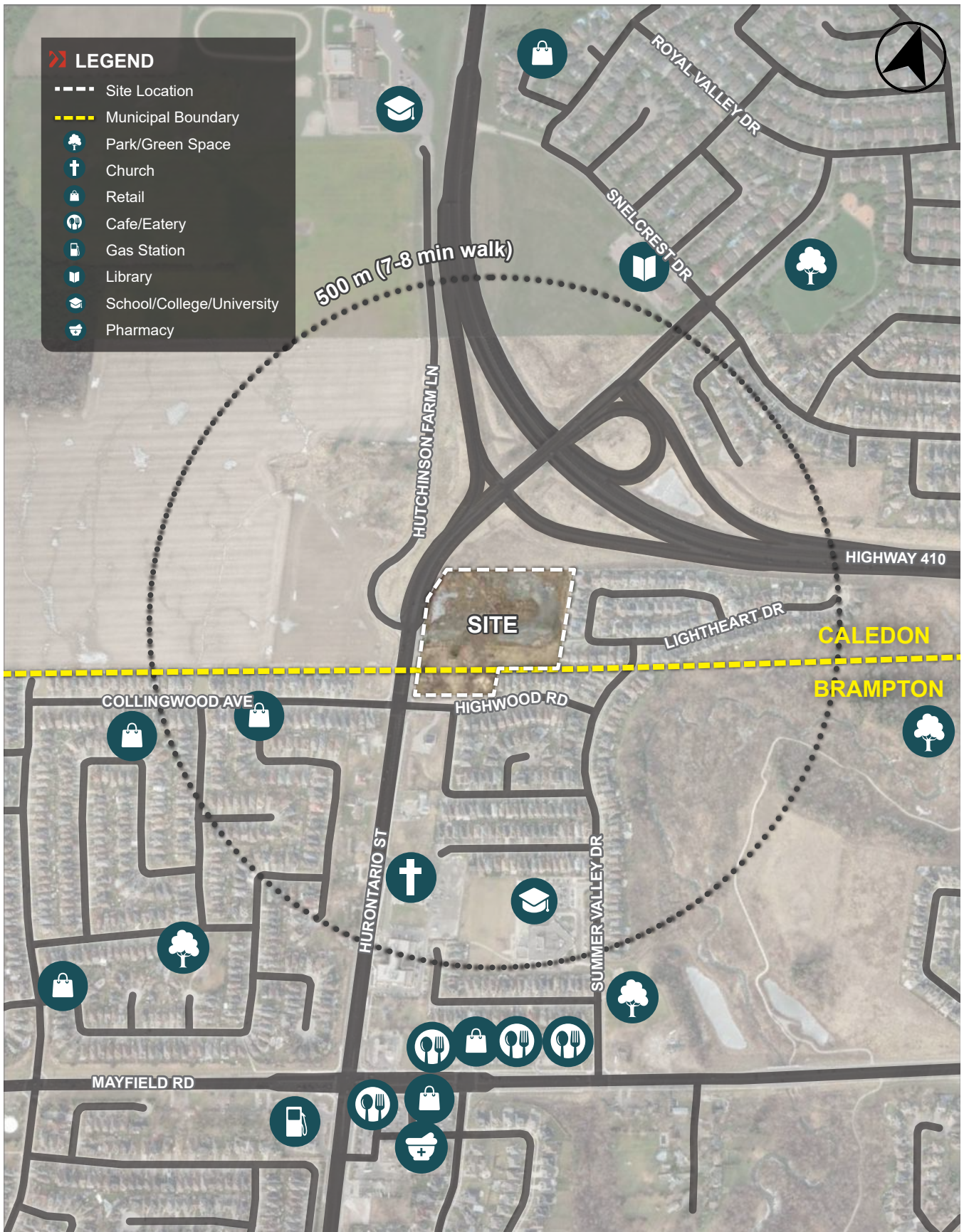
The proposed sidewalk and path network will provide access to the proposed residential subdivision and promote neighbourhood connectivity for pedestrians and cyclists.

The area bicycle network (existing and planned) and pedestrian facilities are illustrated in **Figure 6** and **Figure 7**.



P:\75197\06\Graphics\Adobe\AI

FIGURE 6 AREA EXISTING AND PLANNED BICYCLE NETWORK



P:\75197\06\Graphics\Adobe\AI

FIGURE 7 AREA PEDESTRIAN FACILITIES

4.0 VEHICLE PARKING CONSIDERATIONS

4.1 ZONING BY-LAW REQUIREMENTS

4.1.1 Town of Caledon Zoning By-law 2006-50

For the portion of the site located within the Town of Caledon, the site is subject to the Town of Caledon Zoning By-law 2006-50.

Application of the minimum parking requirements of the Town of Caledon Zoning By-law 2006-50 for single detached units and townhouses results in an overall requirement of 158 parking spaces, including 146 resident spaces and 12 visitor spaces. The minimum parking requirements based on the Town of Caledon Zoning By-law are summarized in **Table 4**.

TABLE 4 TOWN OF CALEDON ZONING BY-LAW 2006-50 PARKING REQUIREMENTS

Type	Use	Units	Minimum Parking Requirement	Number of Parking Spaces Required ¹
Resident	Single Detached	28 units	2 spaces / unit	56 spaces
	Townhouses	45 units	2 spaces / unit	90 spaces
	Subtotal	73 units	--	146 spaces
Visitor	Single Detached	28 units	0 spaces / unit	0 spaces
	Townhouses	45 units	0.25 spaces / unit	12 spaces
	Subtotal	73 units	--	12 spaces
Total		73 units	--	158 spaces

Notes:

1. Based upon site statistics provided by Glen Schnarr & Associates Inc., dated April 11, 2022.
2. The number of vehicle parking spaces is rounded up to the nearest whole number.

4.1.2 City of Brampton Zoning By-law 270-2004

For the portion of the site located within the City of Brampton, the site is subject to the City of Brampton Zoning By-law 270-2004.

Application of the minimum parking requirements of the City of Brampton Zoning By-law 270-2004 for single detached units results in an overall requirement of 16 parking spaces, including 16 resident spaces and zero (0) visitor spaces. The minimum parking requirements based on the City of Brampton Zoning By-law are summarized in **Table 5**.

TABLE 5 CITY OF BRAMPTON ZONING BY-LAW 270-2004 PARKING REQUIREMENTS

Type	Use	Units / GFA	Minimum Parking Requirement	Number of Parking Spaces Required ¹
Resident	Single Detached	8 units	2 spaces / unit	16 spaces
Visitor	Single Detached	8 units	0 spaces / unit	0 spaces
Total		8 units	--	16spaces

Notes:

1. Based upon site statistics provided by Glen Schnarr & Associates Inc., dated April 11, 2022.
2. The number of vehicle parking spaces is rounded up to the nearest whole number.

4.2 TOWN OF CALEDON DEVELOPMENT STANDARDS MANUAL

For the portion of the development located in the Town of Caledon, the Town of Caledon Development Standards Manual requires 3.5 spaces / unit for the 73 units, including garages, driveways, and on-street parking.

4.3 PROPOSED PARKING SUPPLY

The single detached dwellings with double driveway/garages will provide 4 spaces for each of the 24 units, which results in a total supply of 96 parking spaces for those units, which exceeds the Development Standards Manual requirement of 3.5 spaces / unit, as well as the zoning by-law requirement of 2 spaces / unit. For the detached dwellings with double garages/driveways, all of the parking required by the zoning by-law and recommended in the Development Standards Manual can be accommodated on each lot.

The remaining 45 townhouses and 4 detached with single driveways have 2 spaces / unit in each driveway and garage – which satisfies the zoning by-law requirement of 2 spaces / unit.

For visitor parking, considering a rate of 0.25 spaces per unit, as per the visitor parking requirement for townhouses in Zoning By-law 2006-50, the townhouses and single driveway single detached dwellings would generate a need for 13 spaces. The proposed on-street parking capacity is approximately 24 spaces, which will provide sufficient parking for visitors.

Table 6 summarizes the parking supply of the proposed development for Caledon lots.

TABLE 6 PROPOSED PARKING SUPPLY FOR CALEDON LOTS

Use	Units	Parking Supply Ratio	Number of Proposed Parking Spaces
<i>Blended rate (Residential and Non-Residential)</i>			
Single Detached (Double Driveway)	24 units	4 spaces / unit	96 spaces
Subtotal	24 units	--	96 spaces
<i>Residential – Town of Caledon Zoning By-law</i>			
Single Detached (Single Driveway)	4 units	2 spaces / unit	8 spaces
Townhouses	45 units	2 spaces / unit	90 spaces
Subtotal	49 units	--	98 spaces
<i>Visitor Parking Capacity</i>			
Single Detached (Single Driveway) & Townhouses	49 units	0.48 spaces / unit	24 spaces
Subtotal	49 units	--	24 spaces
Total Site	73 units	--	218 spaces

Notes:

1. Based upon site statistics provided by Glen Schnarr & Associates Inc., dated April 11, 2022.
2. The number of vehicle parking spaces is rounded up to the nearest whole number

For the portion of the site located within the City of Brampton, the single detached dwellings with double driveway/garages will provide 4 spaces for each of the 8 units, which results in a total supply of 32 parking spaces for those units, which exceeds the Zoning By-law requirement of 2 spaces / unit. For the detached dwellings with double garages/driveways, all of the parking required by the zoning by-law 270-2004 can be accommodated on each lot.

Table 7 summarizes the parking supply of the proposed development for Brampton lots.

TABLE 7 PROPOSED PARKING SUPPLY FOR BRAMPTON LOTS

Use	Units	Parking Supply Ratio	Number of Proposed Parking Spaces
<i>Blended rate (Residential and Non-residential)</i>			
Single Detached (Double Driveway)	8 units	4 spaces / unit	32 spaces
Total Site	8 units	--	32 spaces

5.0 TRAFFIC VOLUMES

5.1 ANALYSIS SCENARIOS AND HORIZONS

Traffic analyses have been completed for the following weekday morning and afternoon peak hour scenarios:

- **Existing Traffic** – volumes on the road network under existing conditions.
- **Future Background Traffic** – volumes in the future prior to build-out of the Site which consider other area developments.
- **Future Total Traffic** – volumes in the future after build-out of the Site, inclusive of other area developments.

The following two planning horizons have been considered in this study for the analysis of future conditions:

- **Future 2027 (5-year horizon)** – presumes reduced allowable developments prior to the completion of the Mayfield West Phase 2 TMP.
- **Future 2032 (10-year horizon)** – presumes full build-out of the Mayfield West Phase 2 TMP area. The future traffic volumes after the completion of the Mayfield West Phase 2 are illustrated in **Figures 2.6 and 2.7** (2031 Total Traffic Volumes) of the January 2018 *Mayfield West Phase 2 Stage 2 Transportation Assessment*.

5.2 EXISTING TRAFFIC VOLUMES

Base existing traffic volumes were established for the weekday morning and afternoon peak hours (the busiest hour of traffic between 7:30-9:30 am and 4:00-6:00 pm respectively) for intersections within the study area, based on traffic count information collected by Spectrum Traffic Inc. on behalf of BA Group.

The traffic count information adopted as the basis for the traffic operations analysis undertaken to assess the operational impacts of the proposed development is summarized in **Table 8**.

TABLE 8 EXISTING TRAFFIC COUNTS

Intersections	Date of Counts	Source
Hurontario Street / Collingwood Avenue-Highwood Road	Thu, Jan 20, 2022	Spectrum Traffic Data Inc.
Hillpath Crescent / Highwood Road		

The existing turning movement counts were reviewed in detail to ensure general consistency in the traffic volumes on roadways between intersections. Where necessary, minor adjustments were made to balance traffic volumes between intersections to create a representative traffic volume base for the purposes of the traffic operations analyses undertaken as part of this study.

Weekday morning and afternoon peak hour traffic volumes in the study area adopted for this analysis are illustrated in **Figure 9**. Turning movement counts are attached in **Appendix C**.

P:\75197\06\Graphics\Adobe\AI

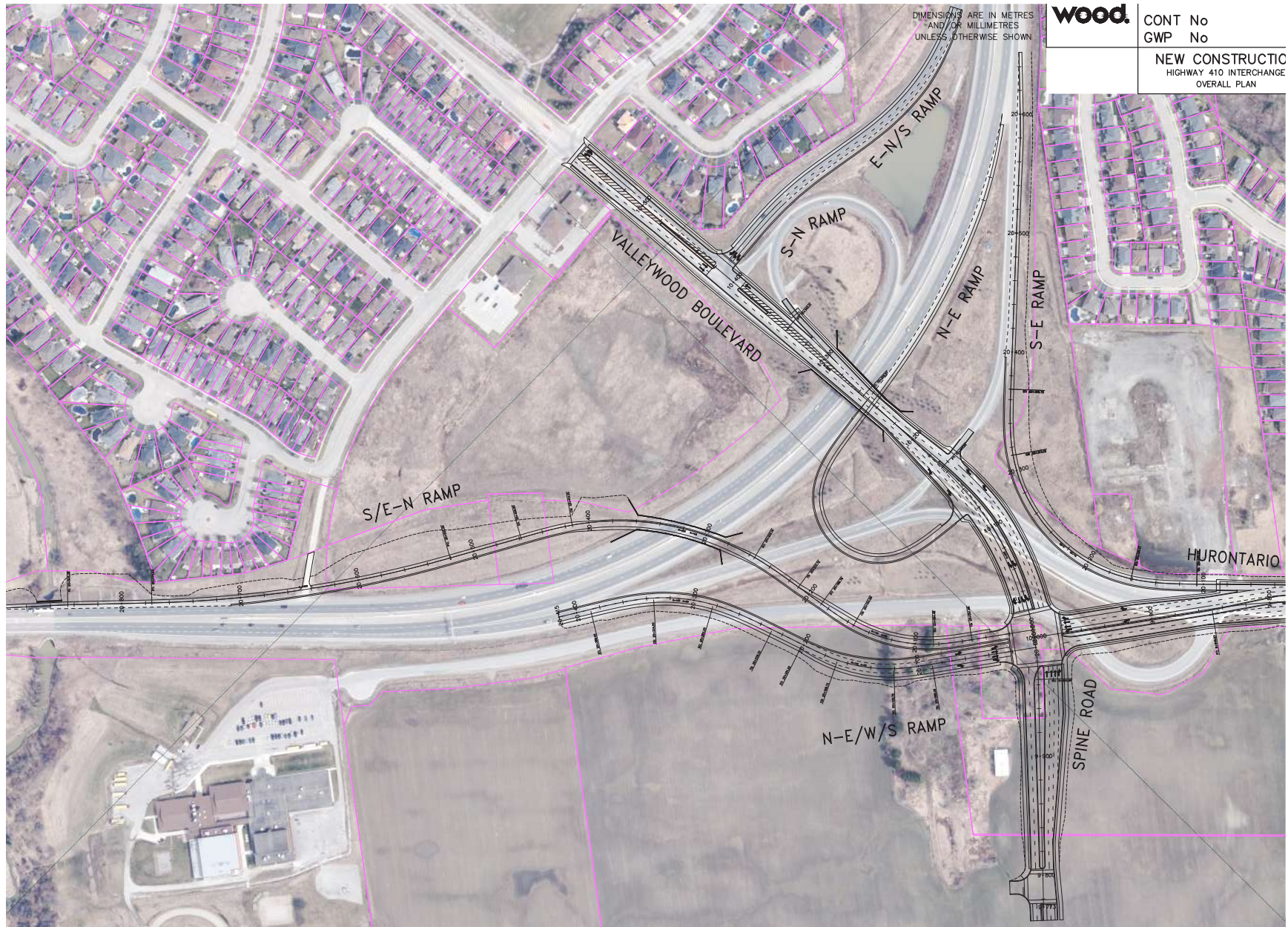
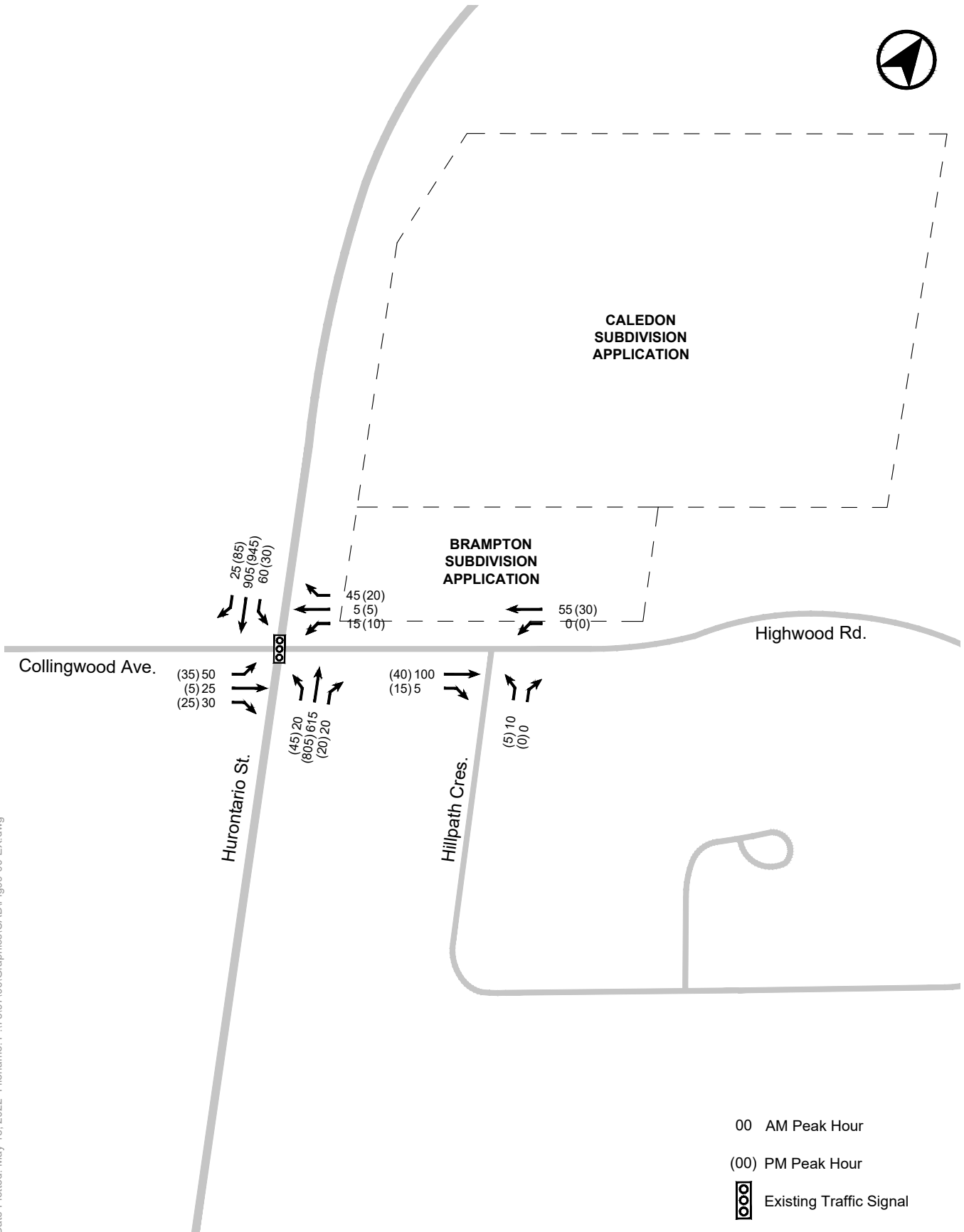


FIGURE 8 PROPOSED HURONTARIO STREET RECONFIGURATION



Date Plotted: May 18, 2022 Filename: P:\7597\06\Graphics\CAD\Fig09-00-EX.dwg

FIGURE 9 EXISTING TRAFFIC VOLUMES

5.3 BACKGROUND TRAFFIC VOLUMES

5.3.1 Corridor Growth

An average growth rate of 2.0% per annum was applied along the corridors of Hurontario Street, consistent with the corridor growth assumptions adopted in the *Mayfield West Phase 2 Stage 2 Transportation Assessment* report.

5.3.2 Background Developments (2027 Horizon)

Allowances were made to account for new traffic generated by other development proposals in the area that are either under construction, approved, being reviewed or for which an application is expected to be submitted to the City in the near future. A total of 2 development proposals have been considered for the 2027 horizon, which represents approximately 401 residential units. Background developments included in this analysis are summarized in **Table 9**.

Trip generation rates and traffic assignments adopted for each background development are based upon the information contained in the traffic impact studies (TIS) prepared for each project. Where no traffic volumes and distributions were available for a specific background development, trip generation rates and traffic distribution assumptions have been adopted consistent with this development application.

TABLE 9 BACKGROUND DEVELOPMENTS

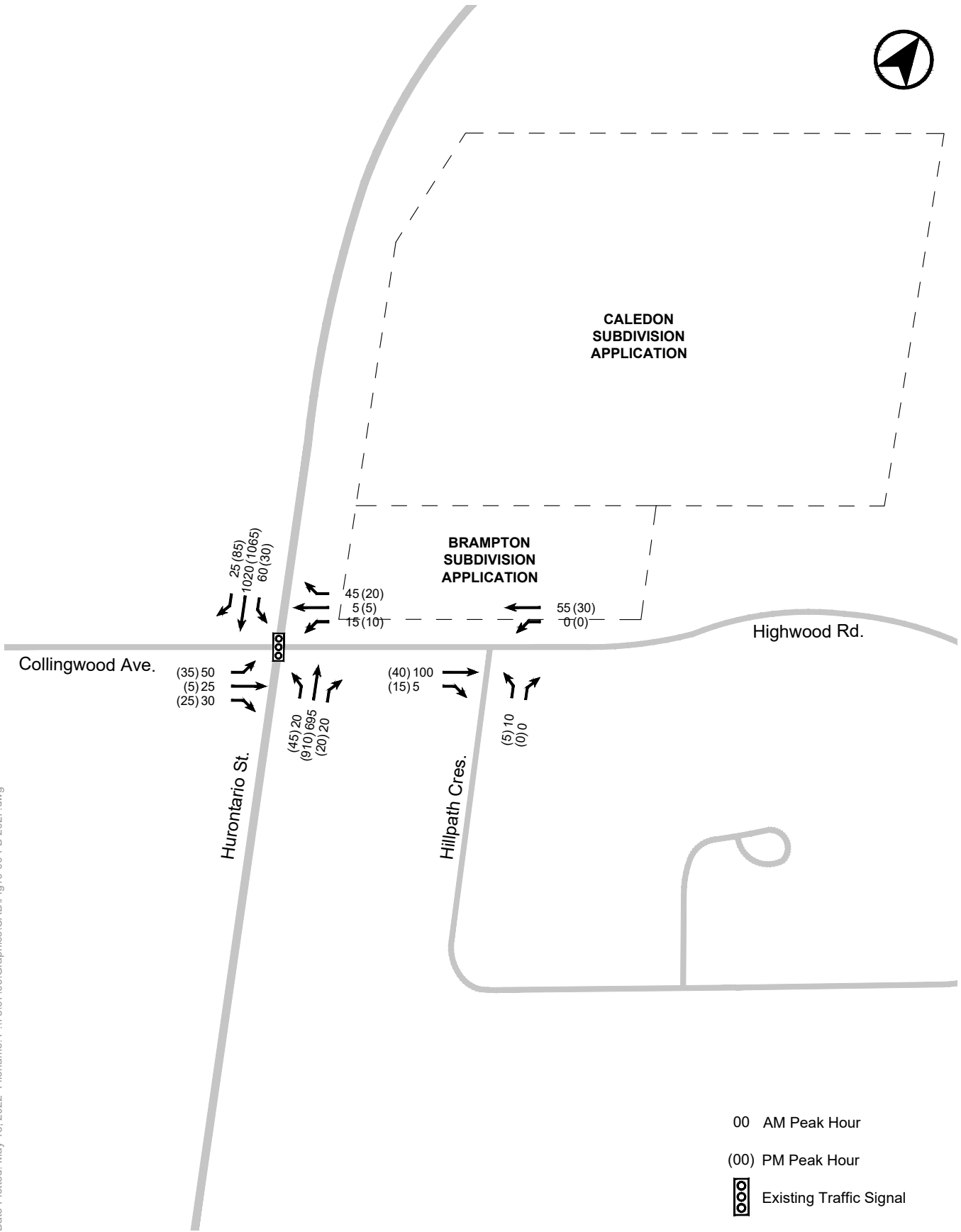
Developments	Development Statistics	Sources	Date	Status
2247, 2257, 2271 Mayfield Road	200 residential units	nexTrans	Nov 2020	Under Review
12089 Hurontario Street	201 residential units	C.F. Crozier & Associates	Mar 2021	Under Review
Total	401 residential units			

5.3.3 Future Background Traffic (2027 Horizon)

Future background traffic volumes for the 2027 horizon, representing the sum of existing traffic volumes, corridor growth volumes and background development traffic volumes, are illustrated in **Figure 10**.

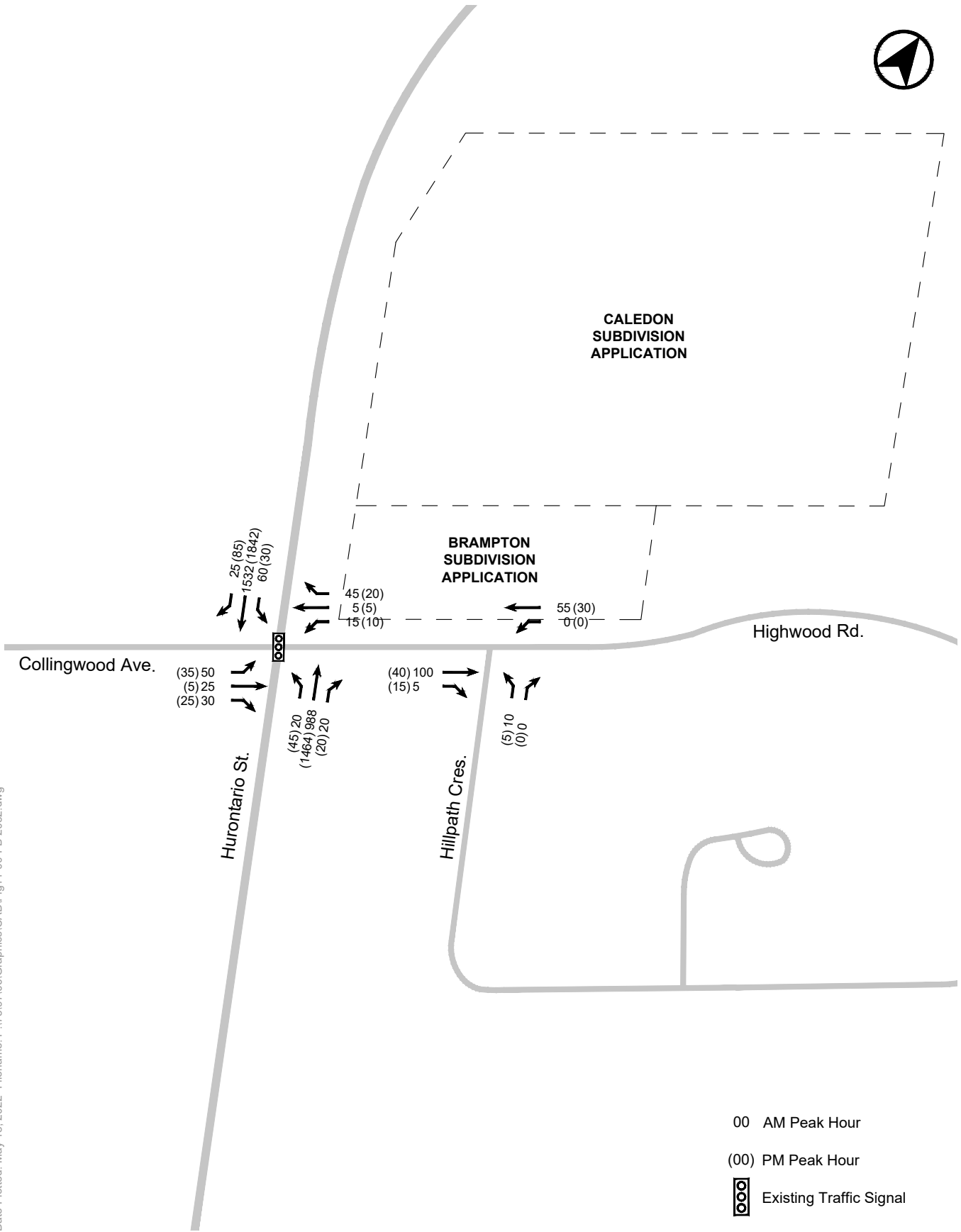
5.3.4 Future Background Traffic (2032 Horizon)

Future background traffic volumes for the 2032 horizon were developed based on 2031 Total Traffic (**Figures 2.6 and 2.7**) volumes from the January 2018 *Mayfield West Phase 2 Stage 2 Transportation Assessment* report by Paradigm Transportation Solutions Ltd. The traffic volumes along Hurontario Street were assumed to be consistent with projected 2031 volumes south of Hurontario Street / Spine Road-Valleywood Boulevard. The turning volumes and minor street volumes were assumed to be consistent with the 2027 horizon. Future background traffic volumes for the 2032 horizon are illustrated in **Figure 11**.



Date Plotted: May 18, 2022 Filename: P:\7597\06\Graphics\CAD\Fig10-00-FB 2027.dwg

FIGURE 10 FUTURE BACKGROUND TRAFFIC VOLUMES (2027)



Date Plotted: May 18, 2022 Filename: P:\7597\06\Graphics\CAD\Fig11-00-FB 2032.dwg

FIGURE 11 FUTURE BACKGROUND TRAFFIC VOLUMES (2032)

5.4 SITE TRAFFIC VOLUMES

5.4.1 Residential Site Traffic Generation

Details of the proposed trip generation rates for the site in weekday morning and afternoon peak hours are summarized in **Table 10**. The Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition was applied for low-rise residential units on the site.

TABLE 10 RESIDENTIAL TRIP GENERATION RATES

Land Use	Size	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Single-Family Detached Housing (LU 210)	Trip Rate (Trips / Unit)	0.28	0.56	0.83	0.69	0.42	1.11
	36 units	10	20	30	25	15	40
Single-Family Attached Housing (LU 215)	Trip Rate (Trips / Unit)	0.11	0.22	0.33	0.33	0.22	0.56
	45 units	5	15	20	15	10	25
Total Residential Site Traffic (81 units)		15	30	45	40	25	65

Notes:

1. Vehicle trips have been rounded to the nearest 5.

The proposed development is expected to generate in the order of **45 two-way vehicle trips** during the morning peak hour and **65 two-way vehicle trips** during the afternoon peak hour.

5.4.2 Site Traffic Distribution and Assignment

Site traffic has been assigned onto the area road network based on a review of travel information provided by the 2016 Transportation for Tomorrow Survey (TTS) and existing road network traffic patterns and connectivity. The Site traffic distribution is summarized in **Table 11**. Detailed output TTS data and distribution assumptions are included in **Appendix D**.

TABLE 11 SITE TRAFFIC DISTRIBUTION

Directions	Outbound ¹	Inbound ²
To / From the North on Hurontario Street	10%	5%
To / From the South on Hurontario Street ³	50%	45%
To / From the East on Highway 410	35%	45%
To / From the East on Mayfield Road	5%	5%
To / From the West on Mayfield Road	0%	0%
Total	100%	100%

Notes:

1. Based upon morning peak period residential outbound trips.
2. Based upon afternoon peak period residential inbound trips.
3. Based upon trips to/from residential units.
4. Based on trips to/from households in TTS zones 3007, 3381, 3459.

New Site traffic generated by the proposed development was assigned onto the area road network based on the directional distribution summarized in **Table 11**. New Site traffic volumes for the weekday morning and afternoon peak hours are illustrated in **Figure 12**.

5.4.3 Multi-Modal Trip Generation

In addition to the vehicular trip generation for the proposed development, BA Group has developed forecasts of activity levels for other travel modes using modal split information for the area provided by the 2016 TTS data and Site-related traffic forecasts, as summarized in **Table 12**.

TABLE 12 MULTI-MODAL NEW SITE TRIP GENERATION

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Area Mode Split						
Driver	68%	66%		68%	66%	
Passenger	20%	27%		20%	27%	
Transit	11%	7%		11%	7%	
Walk	1%	0%		1%	0%	
Cycle	0%	0%		0%	0%	
Total	100%	100%		100%	100%	
Multi-Modal Trip Generation						
Driver	12	21	33	31	18	49
Passenger	3	9	12	9	7	16
Transit	2	2	4	5	2	7
Walk	0	0	0	0	0	0
Cycle	0	0	0	0	0	0
Total	17	32	49	45	27	72

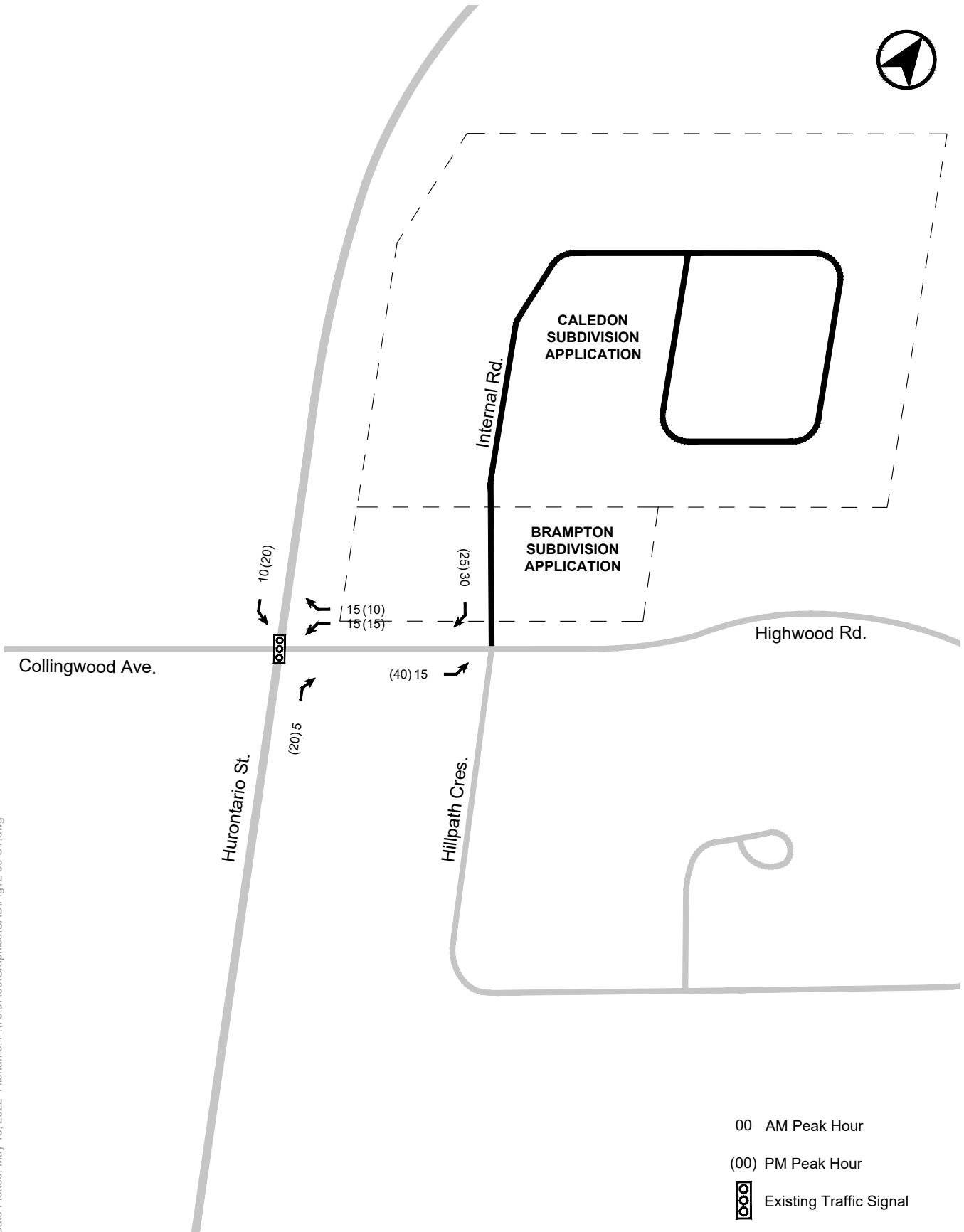
Notes:

1. Inbound mode-splits based on afternoon peak period residential inbound trips,
2. Outbound mode splits based on morning peak period residential outbound trips.
3. Based on trips to/from households in TTS zones 3007, 3381, 3459.

Based on the foregoing, the proposed development would generate in the order of **49 and 72 two-way person trips** during the weekday morning and afternoon peak hours, respectively.

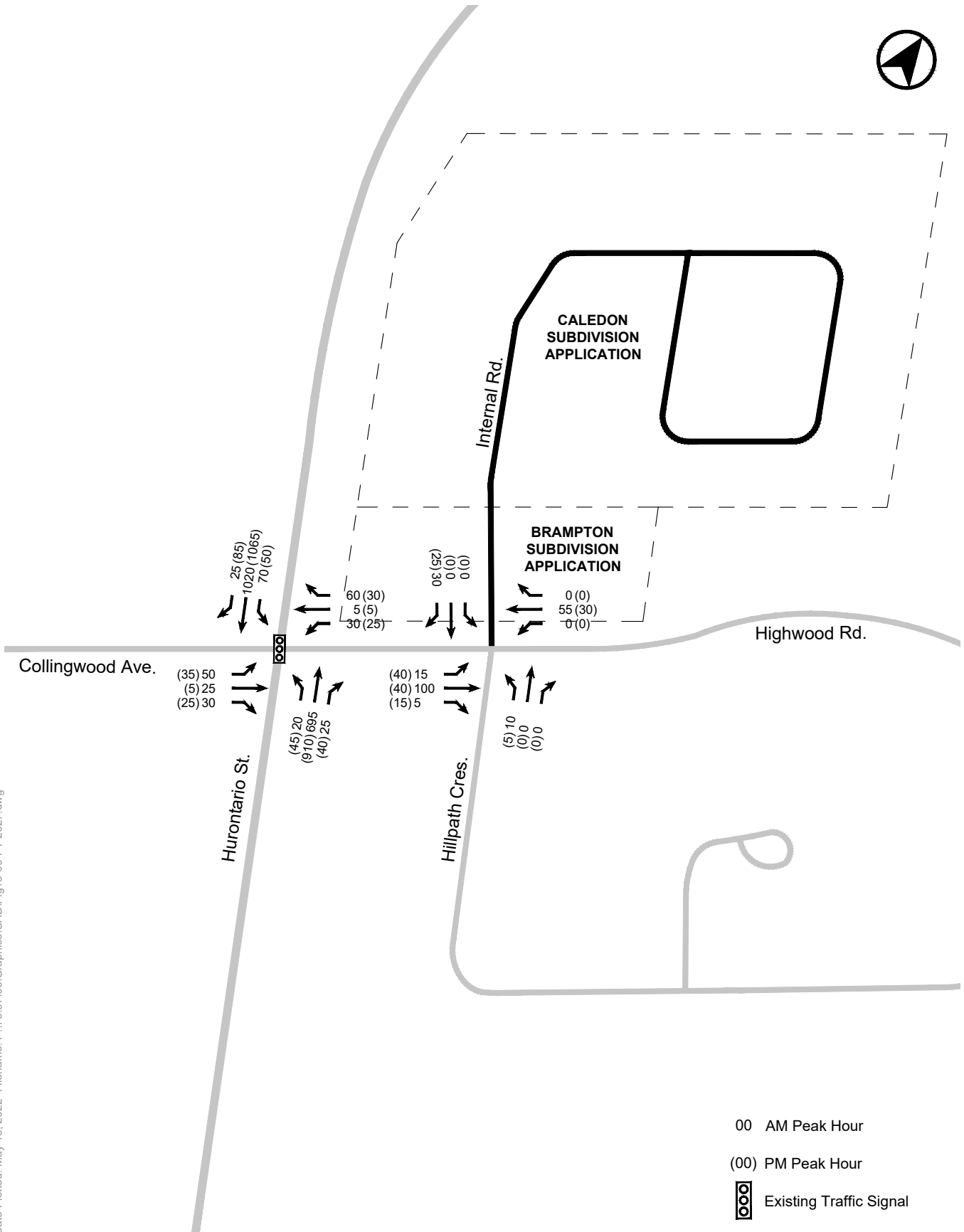
5.5 FUTURE TOTAL TRAFFIC VOLUMES

Future total traffic volumes, reflecting the addition of new Site traffic volumes and future background traffic volumes are illustrated in **Figure 13** for the 2027 horizon and **Figure 14** for the 2032 horizon.



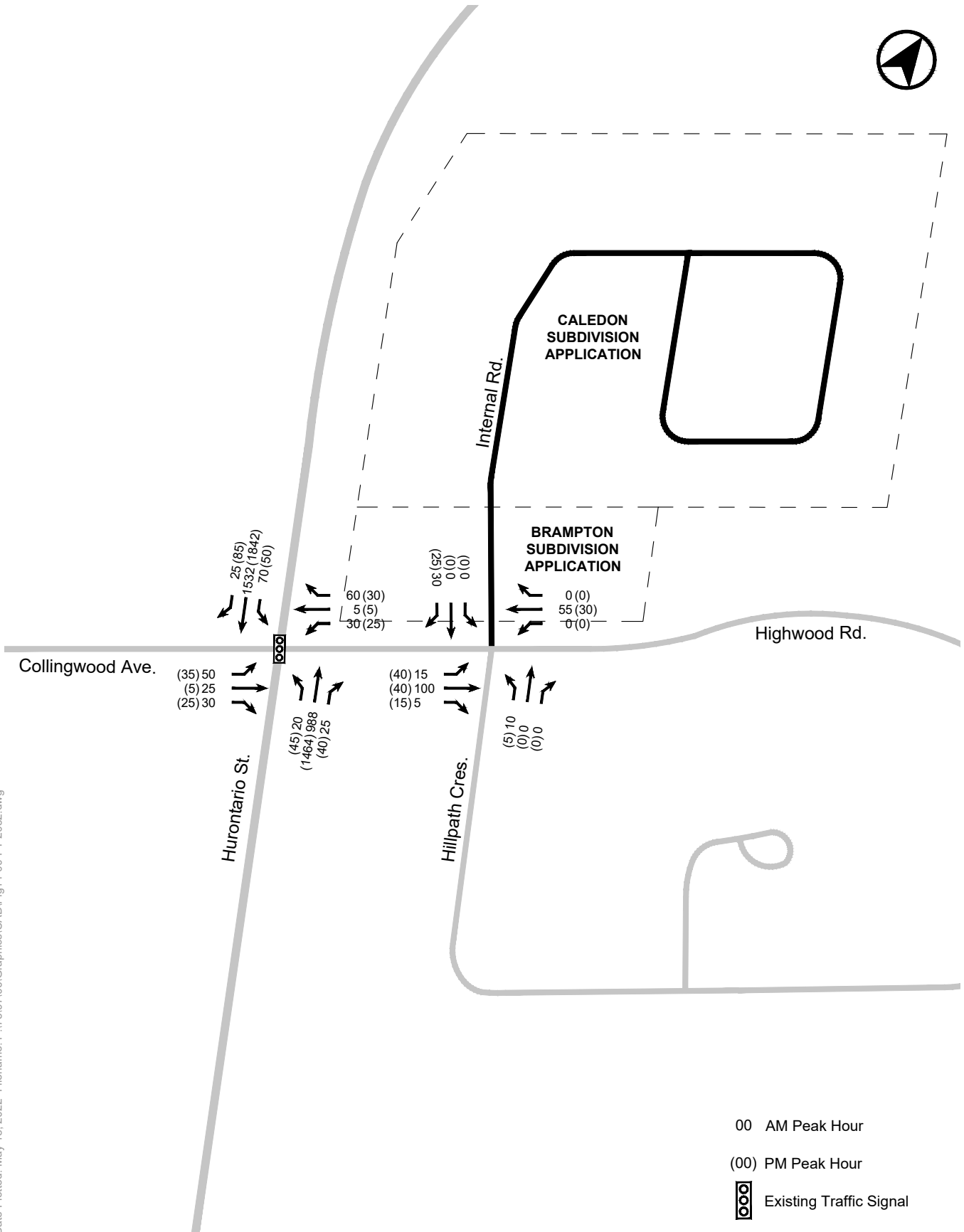
Date Plotted: May 18, 2022 Filename: P:\7597\06\Graphics\CAD\Fig12-00-ST.dwg

FIGURE 12 SITE TRAFFIC VOLUMES



Date Plotted: May 18, 2022 Filename: P:\7597\06\Graphics\CAD\Fig13-00-FT-2027.dwg

FIGURE 13 FUTURE TOTAL TRAFFIC VOLUMES (2027)



Date Plotted: May 18, 2022 Filename: P:\7597\06\Graphics\CAD\Fig14-00-FT_2032.dwg

FIGURE 14 FUTURE TOTAL TRAFFIC VOLUMES (2032)

6.0 VEHICLE TRAFFIC OPERATIONS ANALYSIS

6.1 ANALYSIS METHODOLOGY

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

Signalized Intersections:

Analyses undertaken at intersections operating under traffic signal control have been undertaken using the methodologies and procedures outlined in the Highway Capacity Manual (HCM) 2000, and in accordance with the Region of Peel's guidelines for analyses undertaken using Synchro 11.0 software. The product of the signalized intersection evaluation is an intersection performance index (volume to capacity ratio or V/C), where a V/C index of 1.00 indicates 'at or near capacity' conditions.

Unsignalized Intersections:

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

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

HCM level of service (LOS) criteria for unsignalized intersections is as follow:

- LOS A: Control Delay \leq 10s
- LOS B: $10s <$ Control Delay \leq 15s
- LOS C: $15s <$ Control Delay \leq 25s
- LOS D: $25s <$ Control Delay \leq 35s
- LOS E: $35s <$ Control Delay \leq 50s
- LOS F: Control Delay $>$ 50s

6.2 NETWORK-WIDE PARAMETERS

Key analysis parameters were assumed based on requirements contained in the Region of Peel's *Regional Guidelines for Using Synchro* (December 2010), summarized as follows:

Network Assumptions

The existing area road network lane configuration and traffic control are illustrated in **Figure 4**. The existing area road network lane configuration and traffic control were maintained throughout all scenarios analyzed.

As discussed in **Section 3.1.2**, The McLaughlin Road Class EA identifies the geometric improvements for the Hurontario Street / Valleywood Boulevard Interchange and the construction of a new east-west corridor ("Spine

Road”) that extends from Chinguacousy Road to Hurontario Street and connects to the interchange, **Figure 8**. These improvements are expected to take place as part of the Mayfield West Phase 2 Secondary Plan. The new intersection of Hurontario Street and the Spine Road would be constructed approximately 250 metres north of Highway Road. It is noted that access to and from the proposed development is not dependent on the implementation of these modifications.

Existing Signal Timing

Existing signal timings, phasing plans, and cycle lengths were obtained from the City of Brampton and the Region of Peel. Existing signal timings adopted as the basis for the traffic operations analyses are provided in **Appendix E**.

Future Signal Timing

Existing signal timings were maintained during the analysis of future conditions.

Base Saturation Flow Rates

The Region of Peel’s *Regional Guidelines for Using Synchro* (December 2010) specifies a base saturation flow rate of 1,900 vehicles per hour of green time per lane (vphgpl) for signalized and unsignalized intersections. These default rates were adopted in the analysis of the proposed development.

Heavy Vehicle Assumptions

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

Lost Time Adjustments

The Region of Peel’s *Regional Guidelines for Using Synchro* (December 2010) specifies a base lost time adjustment factor of 0.0 seconds (i.e. a total loss time per phase equal to the amber plus all-red time). This default value was adopted in the analysis.

Peak Hour Factors

The Region of Peel’s *Regional Guidelines for Using Synchro* (December 2010) specifies a based peak hour factor (PHF) of 1.00 for all movement on all approaches at all intersections.

Lane Utilization Factors

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

6.3 SIGNALIZED INTERSECTION ANALYSIS RESULTS

Traffic operations analysis results and discussion for the signalized intersection of Hurontario Street / Collingwood Avenue-Highwood Road under existing, future background and future total conditions are summarized in **Table 13**. Detailed capacity analysis reports are provided in **Appendix F**.

TABLE 13 HURONTARIO STREET / COLLINGWOOD AVENUE-HIGHWOOD ROAD CAPACITY ANALYSIS RESULTS

Lane Group	Existing		Future Background (2027)		Future Total (2027)		Future Background (2032)		Future Total (2032)	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EBL	0.38 (0.32)	C (C)	0.38 (0.32)	C (C)	0.38 (0.32)	C (C)	0.38 (0.32)	C (C)	0.38 (0.32)	C (C)
EBTR	0.16 (0.06)	C (C)	0.16 (0.06)	C (C)	0.16 (0.06)	C (C)	0.16 (0.13)	C (C)	0.16 (0.13)	C (C)
WBL	0.11 (0.09)	C (C)	0.11 (0.09)	C (C)	0.22 (0.22)	C (C)	0.11 (0.09)	C (C)	0.22 (0.22)	C (C)
WBTR	0.06 (0.06)	C (C)	0.06 (0.06)	C (C)	0.07 (0.07)	C (C)	0.06 (0.06)	C (C)	0.07 (0.07)	C (C)
NBL	0.05 (0.11)	A (A)	0.06 (0.13)	A (A)	0.06 (0.13)	A (A)	0.12 (0.37)	A (B)	0.12 (0.38)	A (B)
NBT	0.26 (0.31)	A (A)	0.30 (0.35)	A (A)	0.30 (0.36)	A (A)	0.42 (0.56)	A (A)	0.42 (0.57)	A (A)
SBL	0.11 (0.06)	A (A)	0.12 (0.07)	A (A)	0.14 (0.12)	A (A)	0.17 (0.15)	A (A)	0.19 (0.25)	A (A)
SBT	0.37 (0.36)	A (A)	0.42 (0.40)	A (A)	0.42 (0.40)	A (A)	0.63 (0.70)	A (A)	0.64 (0.70)	A (A)
SBR	0.02 (0.05)	A (A)	0.02 (0.05)	A (A)	0.02 (0.05)	A (A)	0.02 (0.06)	A (A)	0.02 (0.06)	A (A)
Overall	0.38 (0.35)	A (A)	0.42 (0.40)	A (A)	0.42 (0.40)	A (A)	0.60 (0.66)	A (A)	0.60 (0.66)	A (A)

Note

1. 00 (00): Weekday morning peak hour (Weekday afternoon peak hour).

Under existing traffic conditions, the intersection operates within capacity during the weekday morning and afternoon peak hour periods with overall volume-to-capacity (V/C) ratios of 0.38 and 0.35, respectively.

Under the 2027 future background conditions, with the addition of 2027 background traffic, the intersection will continue to operate under acceptable conditions with overall V/C ratios of 0.42 and 0.40 during the morning and afternoon peak hours, respectively. The maximum V/C ratio for any individual movement is 0.42 on the southbound through movement in the weekday morning peak hour.

Under 2027 future total conditions, with the addition of site-related traffic, the intersection will continue to operate under acceptable conditions with overall V/C ratios of 0.42 and 0.40 during the morning and afternoon peak

hours, respectively. The maximum V/C ratio for any individual movement is 0.42 on the southbound through movement in the weekday morning peak hour.

Under the 2032 future background conditions, with the addition of 2032 background traffic, the intersection will continue to operate under acceptable conditions with overall V/C ratios of 0.60 and 0.66 during the morning and afternoon peak hours, respectively. The maximum V/C ratio for any individual movement is 0.70 on the southbound through movement in the weekday afternoon peak hour.

Under 2032 future total conditions, with the addition of both site-related and Mayfield West Phase 2 traffic, the intersection will continue to operate under acceptable conditions with overall V/C ratios of 0.60 and 0.66 during the morning and afternoon peak hours, respectively. The maximum V/C ratio for any individual movement is 0.70 on the southbound through movement in the weekday afternoon peak hour.

The addition of Site traffic has minimal impacts on the overall intersection operations. All individual movements and the intersection overall are expected to operate within the capacity and at acceptable levels of service.

6.4 UNSIGNALIZED INTERSECTION ANALYSIS RESULTS

Vehicular access to the site will be provided onto Highwood Road, directly across from Hillpath Crescent. The access to the site is anticipated to operate acceptably (**LOS B** or better) under the future total scenario. The results of the unsignalized intersection traffic operations analyses undertaken for the Highwood Road / Hillpath Crescent-Site Access are summarized in **Table 14**. Detailed Synchro analysis worksheets are provided in **Appendix F**.

TABLE 14 HIGHWOOD ROAD / HILLPATH CRESCENT-SITE ACCESS

Lane Group	Existing		Future Background (2027)		Future Total (2027)		Future Background (2032)		Future Total (2032)	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
EBTLR	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	1.0 (3.2)	A (A)	0.0 (0.0)	A (A)	1.0 (3.2)	A (A)
WBTLR	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)
NBTLR	9.5 (9.1)	A (A)	9.5 (9.1)	A (A)	10.1 (10.0)	B (B)	9.5 (9.1)	A (A)	10.1 (10.0)	B (B)
SBTLR	0.0 (0.0)	A (A)	0.0 (0.0)	A (A)	8.6 (8.5)	A (A)	0.0 (0.0)	A (A)	8.6 (8.5)	A (A)

Notes:

- 00 (00): Weekday morning peak hour (Weekday afternoon peak hour).
- Control delay calculated in seconds

The addition of Site traffic has minimal impacts on the overall intersection operations. All individual movements and the intersection overall are expected to operate within the capacity and at acceptable levels of service.

6.5 QUEUE ANALYSIS RESULTS

The 50th and 95th percentile queues at the signalized intersection Hurontario Street / Collingwood Avenue-Highwood Avenue are summarized in **Table 15**.

TABLE 15 HURONTARIO STREET / COLLINGWOOD AVENUE-HIGHWOOD ROAD QUEUE RESULTS

Lane Group	Existing		Future Background (2027)		Future Total (2027)		Future Background (2032)		Future Total (2032)	
	50 th %ile	95 th %ile	50 th %ile	95 th %ile	50 th %ile	95 th %ile	50 th %ile	95 th %ile	50 th %ile	95 th %ile
EBL	5.3 (4.3)	13.8 (10.5)	5.3 (4.3)	13.8 (10.5)	5.3 (3.9)	13.9 (10.5)	5.3 (4.3)	13.7 (10.5)	5.3 (4.0)	13.7 (10.5)
EBTR	2.6 (0.6)	10.9 (6.6)	2.6 (0.6)	10.9 (6.6)	2.6 (0.6)	10.9 (6.6)	2.6 (1.8)	10.9 (7.8)	2.6 (1.7)	10.9 (7.8)
WBL	1.5 (1.2)	6.1 (4.6)	1.5 (1.2)	6.1 (4.6)	3.1 (2.8)	9.5 (8.3)	1.5 (1.2)	5.9 (4.6)	3.1 (2.8)	9.5 (8.3)
WBTR	0.5 (0.6)	8.3 (6.1)	0.5 (0.6)	8.3 (6.1)	0.5 (0.6)	9.4 (7.1)	0.5 (0.6)	8.2 (6.1)	0.5 (0.6)	9.4 (7.1)
NBL	0.6 (1.4)	2.8 (4.8)	0.6 (1.4)	2.8 (4.9)	0.6 (1.4)	2.8 (4.9)	0.7 (1.7)	3.4 (15.5)	0.7 (1.7)	3.5 (15.5)
NBT	11.8 (15.6)	21.0 (25.8)	13.8 (18.3)	24.0 (30.1)	13.9 (18.6)	24.3 (30.8)	21.8 (37.1)	37.8 (60.0)	22.1 (37.7)	38.3 (61.6)
SBL	1.9 (0.9)	6.1 (3.4)	1.9 (0.9)	6.2 (3.4)	2.3 (1.5)	7.1 (5.3)	2.0 (1.0)	7.0 (4.2)	2.4 (1.7)	8.2 (7.6)
SBT	18.9 (18.9)	32.3 (31.1)	22.5 (22.4)	37.7 (36.3)	22.5 (22.3)	38.0 (36.3)	43.1 (56.3)	74.1 (92.9)	43.1 (56.0)	74.4 (92.9)
SBR	0.0 (0.0)	1.5 (3.3)	0.0 (0.0)	1.5 (3.3)	0.0 (0.0)	1.5 (3.3)	0.0 (0.6)	1.2 (4.1)	0.0 (0.6)	1.2 (4.1)

Note

- 00 (00): Weekday morning peak hour (Weekday afternoon peak hour).
- Queue lengths calculated in metres.

All 50th and 95th percentile queue lengths are well-contained within their respective storage lengths during both peak hours under all conditions. The addition of Site traffic has minimal impacts on the overall intersection operations.

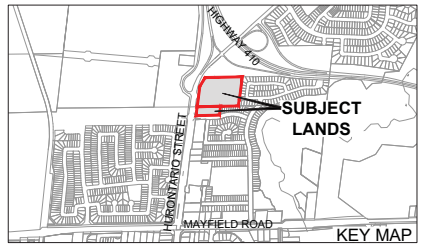
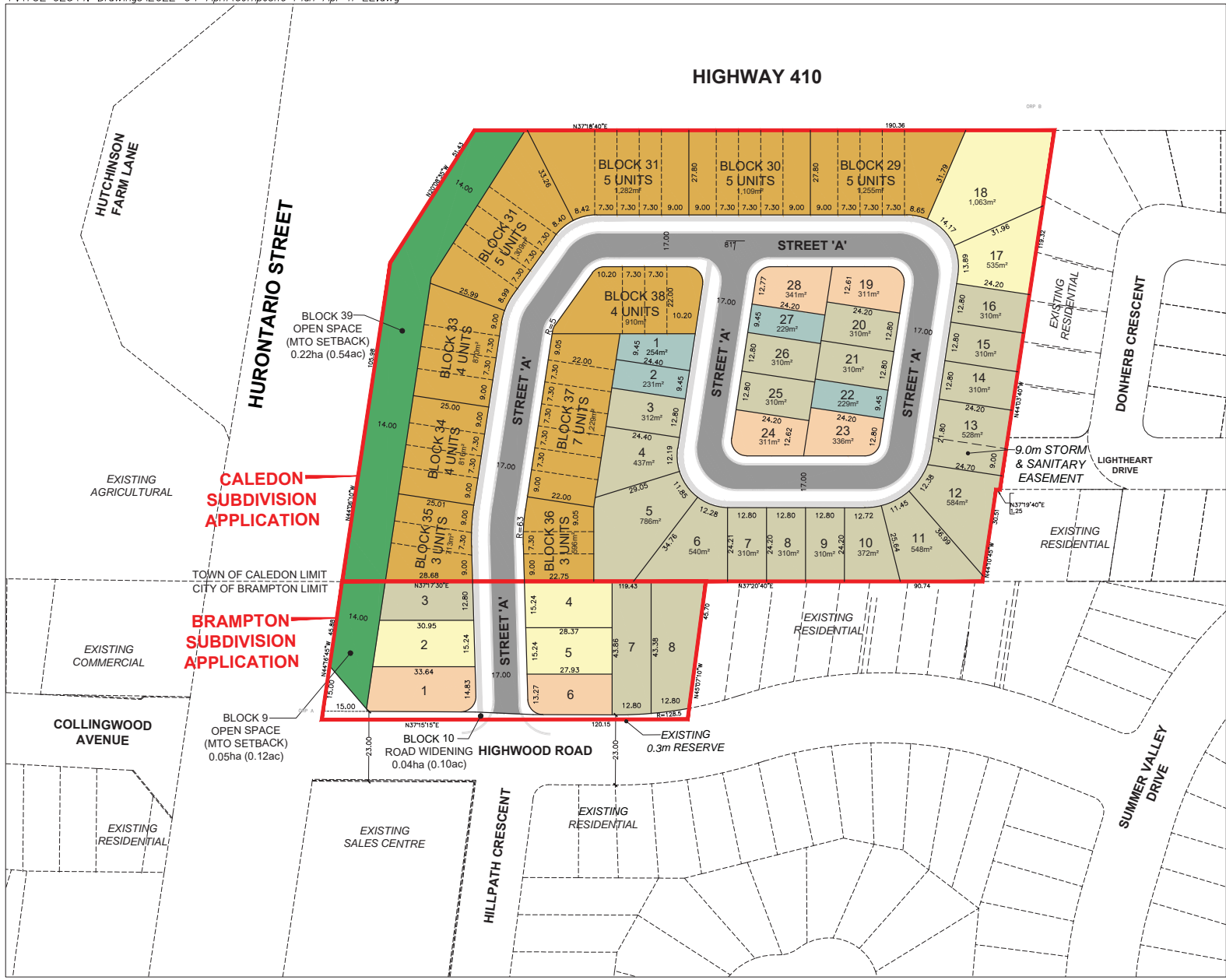
6.6 SUMMARY

Based on the analysis conducted by BA Group, the forecast vehicle Site traffic generated by the proposed development will have minimal impacts on the overall operation of the network signalized and unsignalized intersections. All of the study area signalized and unsignalized intersections can acceptably accommodate Site-related traffic activity and will continue to operate within the capacity and at acceptable levels of service under future conditions without the need for improvements.

APPENDICES

Appendix A

Reduced Scale Architectural Plans



COMPOSITE PLAN
ARGO SUMMER VALLEY LIMITED
FILE # _____

PART OF LOT 18, CONCESSION 1, E.H.S.
 (GEOGRAPHIC TOWNSHIP OF CHINGUACOUSY)
 CITY OF BRAMPTON
 REGIONAL MUNICIPALITY OF PEEL
 AND
 PART OF LOT 19, CONCESSION 1, E.H.S.
 (GEOGRAPHIC TOWNSHIP OF CHINGUACOUSY, COUNTY OF PEEL)
 TOWN OF CALEDON
 REGIONAL MUNICIPALITY OF PEEL

LAND USE SCHEDULE - CITY OF BRAMPTON

LAND USE	LOTS / BLOCKS	AREA (ha)	AREA (ac)	UNITS	DENSITY (UPHA)
DETACHED - 12.20m (40')		0.09	0.22	2	22.22
DETACHED - 12.80m (42')	1-8	0.16	0.40	3	18.75
DETACHED - 15.24m (50')		0.13	0.32	3	23.08
OPEN SPACE (MTO SETBACK)	9	0.05	0.12		
ROAD WIDENING	10	0.04	0.10		
17.0m LOCAL R.O.W. (LENGTH: 43m)		0.07	0.17		
TOTAL	10	0.54	1.33	8	21.05

LAND USE SCHEDULE - TOWN OF CALEDON

LAND USE	LOTS / BLOCKS	AREA (ha)	AREA (ac)	UNITS	DENSITY (UPHA)
DETACHED - 9.45m (31')		0.09	0.22	4	44.44
DETACHED - 12.20m (40')		0.13	0.32	4	39.77
DETACHED - 12.80m (42')	1-28	0.72	1.78	18	25.00
DETACHED - 15.24m (50')		0.16	0.40	2	12.50
TOWNHOUSE - 7.30m (24')	29-38	1.01	2.50	45	44.55
OPEN SPACE (MTO SETBACK)	39	0.22	0.54		
17.0m LOCAL R.O.W. (LENGTH: 426m)		0.75	1.85		
TOTAL	39	3.08	7.61	73	34.60

LAND USE SCHEDULE - COMBINED

LAND USE	AREA (ha)	AREA (ac)	UNITS	DENSITY (UPHA)
DETACHED - 9.45m (31')	0.09	0.22	4	44.44
DETACHED - 12.20m (40')	0.22	0.54	6	27.27
DETACHED - 12.80m (42')	0.88	2.17	21	23.86
DETACHED - 15.24m (50')	0.29	0.72	5	17.24
TOWNHOUSE - 7.30m (24')	1.01	2.50	45	44.55
OPEN SPACE (MTO SETBACK)	0.27	0.67		
ROAD WIDENING	0.04	0.10		
17.0m LOCAL R.O.W. (LENGTH: 468m)	0.82	2.03		
TOTAL	3.62	8.95	81	32.53

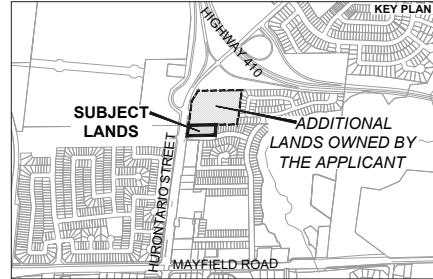
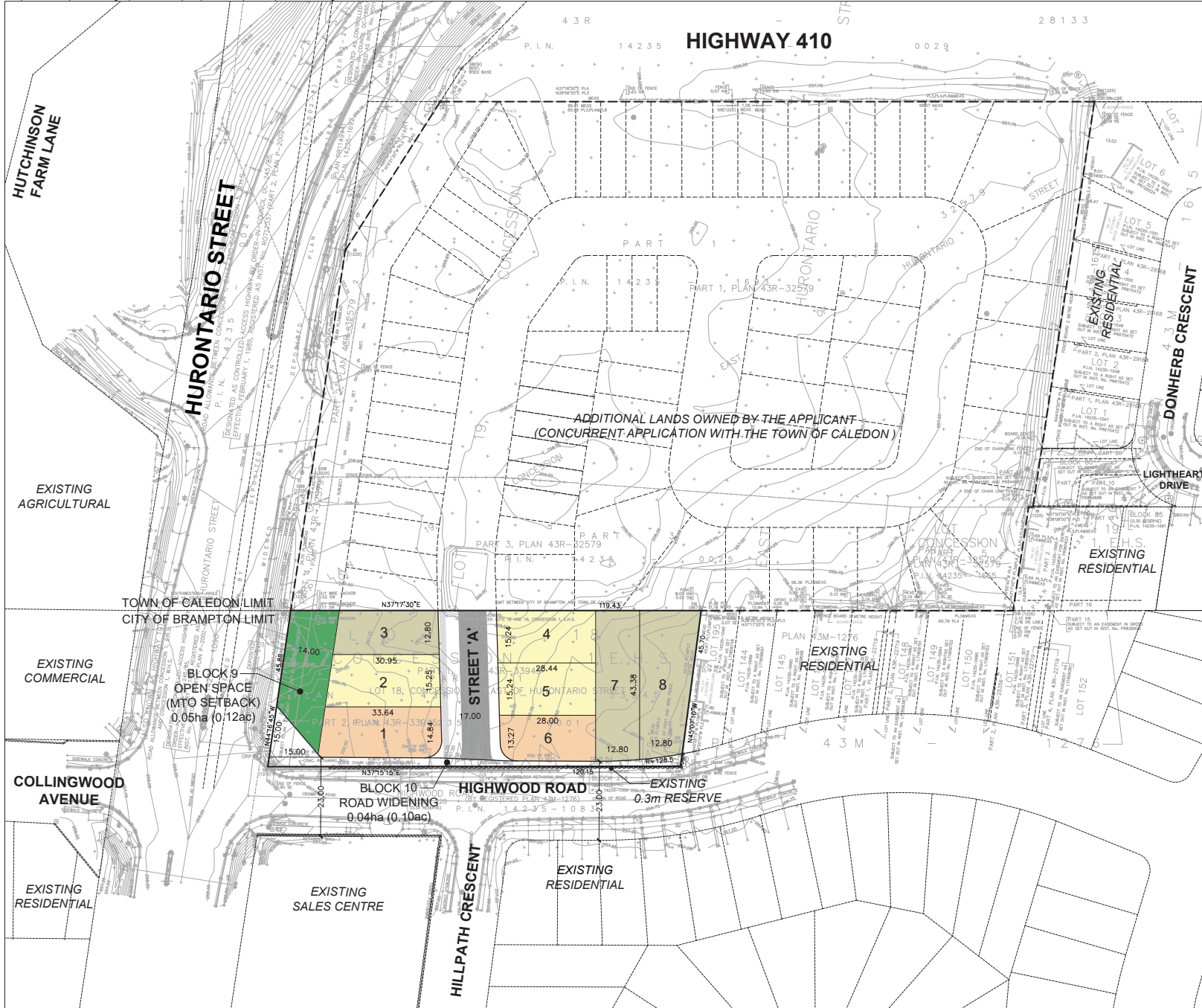
CALEDON
SUBDIVISION
APPLICATION

BRAMPTON
SUBDIVISION
APPLICATION



SCALE 1:1,250
 APRIL 11, 2022





DRAFT PLAN OF SUBDIVISION
ARGO SUMMER VALLEY LIMITED
FILE #

PART OF LOT 18, CONCESSION 1, E.H.S.
 (GEOGRAPHIC TOWNSHIP OF CHINGUACOUSY)
 CITY OF BRAMPTON
 REGIONAL MUNICIPALITY OF PEEL

OWNERS CERTIFICATE
 I HEREBY AUTHORIZE GLEN SCHNARR & ASSOCIATES INC. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE CITY OF BRAMPTON FOR APPROVAL.

SIGNED:
 MR. GINO BUCK, A.S.O.
 ARGO SUMMER VALLEY LIMITED

DATE: FEB. 15, 2022

SURVEYORS CERTIFICATE
 I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

SIGNED:
 A. U. KUMARAMAYAKE, O.L.S.
 R.P.E. SURVEYING LTD.

DATE: FEB. 18, 2022

ADDITIONAL INFORMATION
 (UNDER SECTION 51(17) OF THE PLANNING ACT) INFORMATION REQUIRED BY CLAUSES A,B,C,D,E,F,G,J & L ARE SHOWN ON THE DRAFT AND KEY PLANS.

- H) MUNICIPAL AND PIPED WATER TO BE PROVIDED
- I) SANDY LOAM AND CLAY LOAM
- K) SANITARY AND STORM SEWERS TO BE PROVIDED

LAND USE SCHEDULE

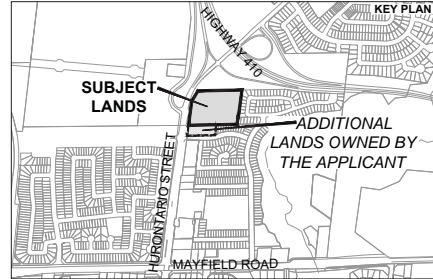
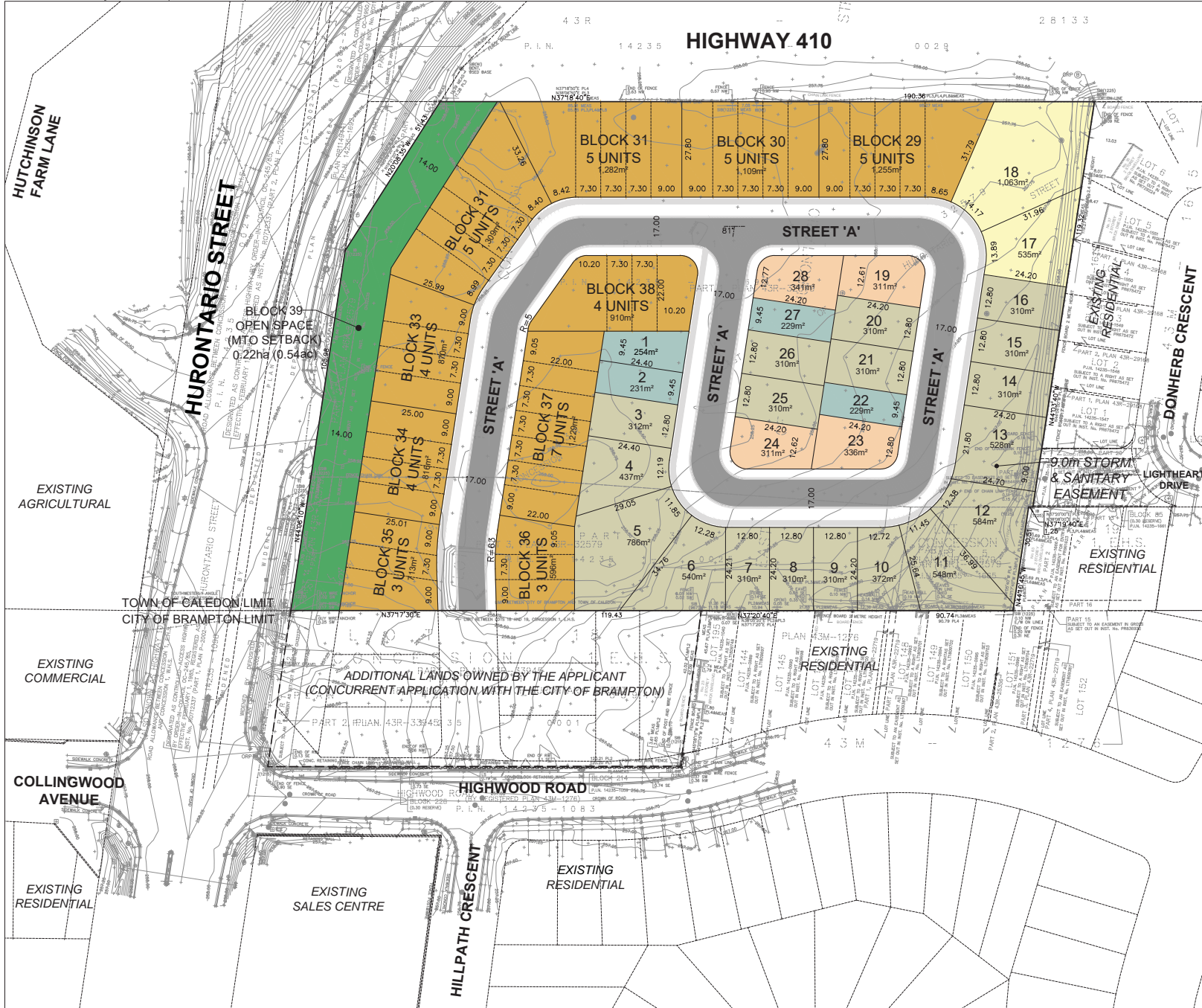
LAND USE	LOTS / BLOCKS	AREA (ha)	AREA (ac)	UNITS	DENSITY (UPHA)
DETACHED - 12.23m (40')	1-8	0.99	0.22	2	22.22
DETACHED - 12.80m (42')		0.16	0.40	3	18.75
DETACHED - 15.24m (50')		0.13	0.32	3	23.08
OPEN SPACE (MTO SETBACK)	9	0.05	0.12		
ROAD WIDENING	10	0.04	0.10		
17.0m LOCAL R.O.W. (LENGTH 43m)		0.07	0.17		
TOTAL	10	0.64	1.53	8	21.05

NOTES
 - ALL DAYLIGHT RADI ARE 5.0m, UNLESS OTHERWISE DENOTED
 - PAVEMENT & SIDEWALK ILLUSTRATION IS DIAGRAMMATIC



SCALE 1:500
 (24 x 36)
 APRIL 11, 2022





DRAFT PLAN OF SUBDIVISION
ARGO SUMMER VALLEY LIMITED
 FILE #

PART OF LOT 19, CONCESSION 1, E.H.S.
 (GEOGRAPHIC TOWNSHIP OF CHINGUACOUSY)
 TOWN OF CALEDON
 REGIONAL MUNICIPALITY OF PEEL

OWNERS CERTIFICATE
 I HEREBY AUTHORIZE GLEN SCHNARR & ASSOCIATES INC. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE TOWN OF CALEDON FOR APPROVAL.

SIGNED:
 MR. G.D. BUCK, A.S.C.
 ARGO SUMMER VALLEY LIMITED

DATE: FEB. 15, 2022

SURVEYORS CERTIFICATE
 I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

SIGNED:
 A.U. KUMARAMAYAKE, O.L.S.
 R.P.E. SURVEYING LTD.

DATE: FEB. 18, 2022

ADDITIONAL INFORMATION
 (UNDER SECTION 51(17) OF THE PLANNING ACT) INFORMATION REQUIRED BY CLAUSES A,B,C,D,E,F,G,J & L ARE SHOWN ON THE DRAFT AND KEY PLANS.

- H) MUNICIPAL AND PIPED WATER TO BE PROVIDED
- I) SANDY LOAM AND CLAY LOAM
- K) SANITARY AND STORM SEWERS TO BE PROVIDED

LAND USE SCHEDULE

LAND USE	LOTS / BLOCKS	AREA (ha)	AREA (ac)	UNITS	DENSITY (UPHA)
DETACHED - 9.45m (31)		0.09	0.22	4	44.44
DETACHED - 12.20m (40)	1-28	0.13	0.32	4	30.77
DETACHED - 12.80m (42)		0.72	1.78	18	25.00
DETACHED - 15.24m (50)		0.16	0.40	2	12.50
TOWNHOUSE - 7.30m (24)	29-38	1.01	2.50	45	44.55
OPEN SPACE (MTO SETBACK)	39	0.22	0.54		
17.0m LOCAL R.O.W. (LENGTH: 428m)		0.75	1.85		
TOTAL	39	3.08	7.61	73	34.60

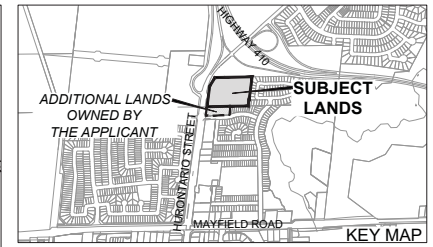
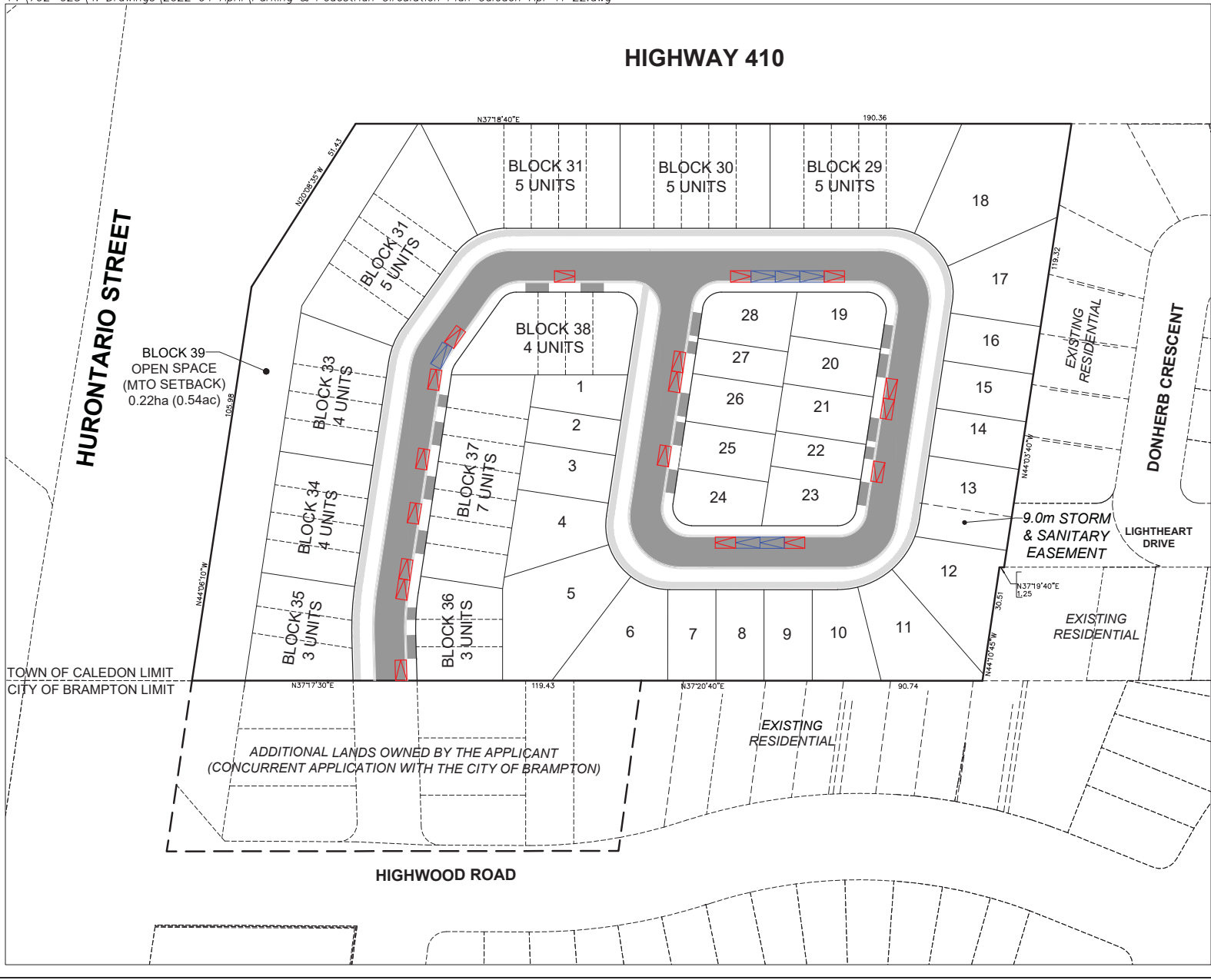
NOTES
 - ALL DAYLIGHT RADI ARE 5.0m, UNLESS OTHERWISE DENOTED
 - PAVEMENT & SIDEWALK ILLUSTRATION IS DIAGRAMMATIC



SCALE 1:500
 (24 x 36)
 APRIL 11, 2022



Appendix B Parking Allocation Plan



PARKING & PEDESTRIAN CIRCULATION PLAN
ARGO SUMMER VALLEY LIMITED
FILE # _____

PART OF LOT 19, CONCESSION 1, E.H.S.
 (GEOGRAPHIC TOWNSHIP OF CHINGUACOUSY, COUNTY OF PEEL)
 TOWN OF CALEDON
 REGIONAL MUNICIPALITY OF PEEL

DEVELOPMENT STATISTICS

TOTAL NUMBER OF UNITS:	73
TOTAL ON-STREET PARKING PROVIDED:	24

- LEGEND**
- POTENTIAL SIDEWALK LOCATIONS
 - CONCEPTUAL PAVEMENT / DRIVEWAYS
 - SINGLE ON-STREET PARKING (3.0m x 5.4m)
 - TANDEM ON-STREET PARKING (3.0m x 6.5m)

NOTE

- 9.0m MINIMUM SETBACK FROM INTERSECTIONS FOR ALL ON-STREET PARKING SPACES.



SCALE 1:1,000
 APRIL 11, 2022



Appendix C

Turning Movement Counts



Turning Movement Count (2 . HIGHWOOD RD & HILLPATH CRES)

Start Time	E Approach HIGHWOOD RD					S Approach HILLPATH CRESCENT					W Approach HIGHWOOD RD					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
07:30:00	11	0	0	0	11	0	3	0	1	3	1	6	0	0	7	21	
07:45:00	14	0	0	0	14	0	3	0	0	3	0	7	0	0	7	24	
08:00:00	10	0	0	0	10	0	2	0	0	2	2	9	0	0	11	23	
08:15:00	14	0	0	0	14	0	1	0	0	1	2	4	0	0	6	21	89
08:30:00	9	1	0	0	10	0	0	0	0	0	1	13	0	0	14	24	92
08:45:00	7	0	0	0	7	0	4	0	0	4	0	26	1	0	27	38	106
09:00:00	26	0	0	0	26	0	5	0	0	5	2	51	0	0	53	84	167
09:15:00	15	0	0	0	15	0	0	0	0	0	1	10	0	0	11	26	172
BREAK																	
16:00:00	6	0	0	0	6	0	0	0	1	0	4	7	0	0	11	17	
16:15:00	10	0	0	0	10	0	3	0	0	3	3	3	0	0	6	19	
16:30:00	7	0	0	0	7	0	1	0	0	1	5	17	0	0	22	30	
16:45:00	6	0	0	0	6	0	2	0	0	2	2	11	0	0	13	21	87
17:00:00	7	0	0	0	7	1	1	0	0	2	1	15	0	0	16	25	95
17:15:00	5	0	0	0	5	0	3	0	0	3	5	16	0	0	21	29	105
17:30:00	4	0	0	0	4	0	2	0	0	2	2	12	1	0	15	21	96
17:45:00	6	0	0	0	6	0	0	0	0	0	9	11	0	0	20	26	101
Grand Total	157	1	0	0	158	1	30	0	2	31	40	218	2	0	260	449	-
Approach%	99.4%	0.6%	0%	-	-	3.2%	96.8%	0%	-	-	15.4%	83.8%	0.8%	-	-	-	-
Totals %	35%	0.2%	0%	-	35.2%	0.2%	6.7%	0%	-	6.9%	8.9%	48.6%	0.4%	-	57.9%	-	-
Heavy	8	0	0	-	-	0	1	0	-	-	0	11	0	-	-	-	-
Heavy %	5.1%	0%	0%	-	-	0%	3.3%	0%	-	-	0%	5%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



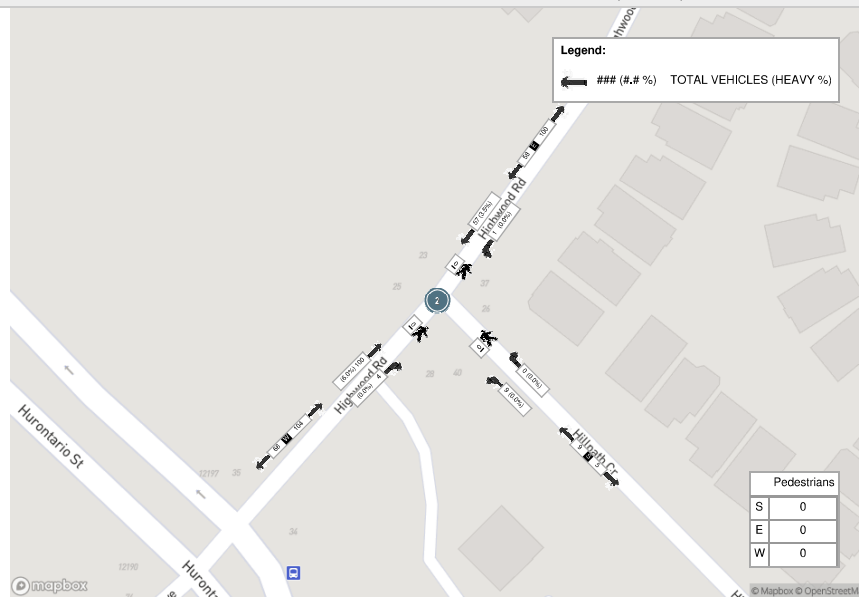
Peak Hour: 08:30 AM - 09:30 AM Weather: Scattered Clouds (-17.22 °C)

Start Time	E Approach HIGHWOOD RD					S Approach HILLPATH CRESCENT					W Approach HIGHWOOD RD					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:30:00	9	1	0	0	10	0	0	0	0	0	1	13	0	0	14	24
08:45:00	7	0	0	0	7	0	4	0	0	4	0	26	1	0	27	38
09:00:00	26	0	0	0	26	0	5	0	0	5	2	51	0	0	53	84
09:15:00	15	0	0	0	15	0	0	0	0	0	1	10	0	0	11	26
Grand Total	57	1	0	0	58	0	9	0	0	9	4	100	1	0	105	172
Approach%	98.3%	1.7%	0%	-	-	0%	100%	0%	-	-	3.8%	95.2%	1%	-	-	-
Totals %	33.1%	0.6%	0%	-	33.7%	0%	5.2%	0%	-	5.2%	2.3%	58.1%	0.6%	-	61%	-
PHF	0.55	0.25	0	-	0.56	0	0.45	0	-	0.45	0.5	0.49	0.25	-	0.5	-
Heavy	2	0	0	-	2	0	0	0	-	0	0	6	0	-	6	-
Heavy %	3.5%	0%	0%	-	3.4%	0%	0%	0%	-	0%	0%	6%	0%	-	5.7%	-
Lights	55	1	0	-	56	0	9	0	-	9	4	94	1	-	99	-
Lights %	96.5%	100%	0%	-	96.6%	0%	100%	0%	-	100%	100%	94%	100%	-	94.3%	-
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	2	0	-	2	-
Single-Unit Trucks %	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	2%	0%	-	1.9%	-
Buses	2	0	0	-	2	0	0	0	-	0	0	4	0	-	4	-
Buses %	3.5%	0%	0%	-	3.4%	0%	0%	0%	-	0%	0%	4%	0%	-	3.8%	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-

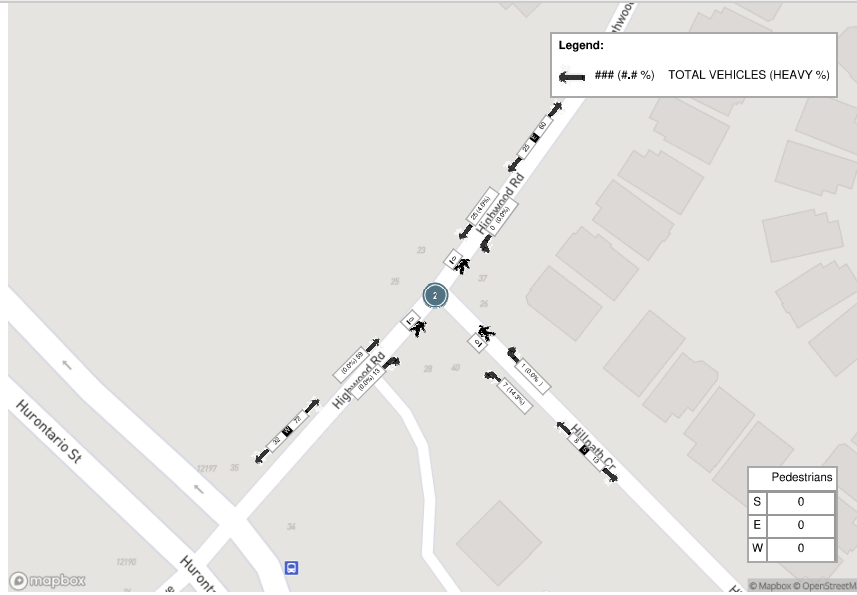
Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (-12 °C)

Start Time	E Approach HIGHWOOD RD					S Approach HILLPATH CRESCENT					W Approach HIGHWOOD RD					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:30:00	7	0	0	0	7	0	1	0	0	1	5	17	0	0	22	30
16:45:00	6	0	0	0	6	0	2	0	0	2	2	11	0	0	13	21
17:00:00	7	0	0	0	7	1	1	0	0	2	1	15	0	0	16	25
17:15:00	5	0	0	0	5	0	3	0	0	3	5	16	0	0	21	29
Grand Total	25	0	0	0	25	1	7	0	0	8	13	59	0	0	72	105
Approach%	100%	0%	0%		-	12.5%	87.5%	0%		-	18.1%	81.9%	0%		-	-
Totals %	23.8%	0%	0%		23.8%	1%	6.7%	0%		7.6%	12.4%	56.2%	0%		68.6%	-
PHF	0.89	0	0		0.89	0.25	0.58	0		0.67	0.65	0.87	0		0.82	-
Heavy	1	0	0		1	0	1	0		1	0	0	0		0	-
Heavy %	4%	0%	0%		4%	0%	14.3%	0%		12.5%	0%	0%	0%		0%	-
Lights	24	0	0		24	1	6	0		7	13	59	0		72	-
Lights %	96%	0%	0%		96%	100%	85.7%	0%		87.5%	100%	100%	0%		100%	-
Single-Unit Trucks	1	0	0		1	0	1	0		1	0	0	0		0	-
Single-Unit Trucks %	4%	0%	0%		4%	0%	14.3%	0%		12.5%	0%	0%	0%		0%	-
Buses	0	0	0		0	0	0	0		0	0	0	0		0	-
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	0		-	-	-	0		-	-
Pedestrians%	-	-	-	0%	-	-	-	0%		-	-	-	0%		-	-

Peak Hour: 08:30 AM - 09:30 AM Weather: Scattered Clouds (-17.22 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (-12 °C)



Turning Movement Count (1. HURONTARIO ST & HIGHWOOD RD)

Start Time	N Approach HURONTARIO ST						E Approach HIGHWOOD RD						S Approach HURONTARIO ST						W Approach COLLINSWOOD AVE						Int. Total (15 min)	Int. Total (1 hr)
	Right N/W	Thru N/S	Left N/E	UTurn N/N	Peds N	Approach Total	Right E/N	Thru E/W	Left E/S	UTurn E/E	Peds E	Approach Total	Right S/E	Thru S/N	Left S/W	UTurn S/S	Peds S	Approach Total	Right W/S	Thru W/E	Left W/N	UTurn W/W	Peds W	Approach Total		
07:30:00	6	212	2	0	0	220	8	1	5	0	0	14	0	150	2	0	0	152	12	6	25	0	0	43	429	
07:45:00	7	229	5	0	0	241	9	0	8	0	0	17	2	122	3	0	1	127	12	1	19	0	0	32	417	
08:00:00	11	225	5	0	0	241	8	0	3	0	0	11	3	106	2	0	0	111	9	2	14	0	0	25	388	
08:15:00	4	194	4	0	0	202	10	0	4	0	0	14	0	140	5	0	0	145	5	2	11	0	1	18	379	
08:30:00	13	231	11	5	0	260	8	1	2	0	0	11	3	171	4	0	0	178	11	0	19	0	0	30	479	
08:45:00	6	243	17	5	1	271	7	0	5	0	0	12	5	175	2	0	1	182	6	5	14	0	1	25	490	
09:00:00	2	160	25	0	1	187	22	4	5	0	1	31	9	128	7	0	0	144	8	19	4	0	0	31	393	
09:15:00	3	154	8	0	0	165	9	1	4	0	0	14	3	137	4	0	0	144	5	0	6	0	0	11	334	
BREAK																										
16:00:00	24	257	5	0	0	286	4	2	0	0	0	6	5	209	16	0	0	230	6	1	10	0	0	17	539	
16:15:00	19	221	3	0	0	243	9	1	3	0	0	13	3	213	12	0	1	228	7	0	9	0	1	16	500	
16:30:00	23	227	11	1	0	262	5	0	0	0	0	5	8	201	7	1	0	217	6	3	11	0	0	20	504	
16:45:00	19	239	10	0	0	268	3	2	6	0	0	11	3	176	11	0	0	190	7	0	7	0	0	14	483	
17:00:00	24	231	11	0	1	266	6	1	1	0	1	8	7	210	5	0	0	222	6	0	5	0	0	11	507	
17:15:00	29	233	9	0	0	271	2	1	6	0	1	9	10	189	11	0	1	210	6	0	11	0	1	17	507	
17:30:00	23	261	7	0	0	291	5	0	2	0	1	7	6	175	20	0	0	201	10	2	10	0	0	22	521	
17:45:00	23	206	11	0	0	240	4	1	1	0	0	6	8	160	12	0	0	180	7	1	7	0	0	15	441	
Grand Total	236	3523	144	11	3	3914	119	15	65	0	4	189	75	2662	123	1	4	2861	123	42	182	0	4	347	7311	
Approach%	6%	90%	3.7%	0.3%	-	-	6%	7.9%	21.1%	0%	-	-	2.6%	93%	4.3%	0%	-	35.4%	12.1%	52.4%	0%	-	-	-		
Totals %	3.2%	48.2%	2%	0.2%	-	53.5%	1.6%	0.2%	0.8%	0%	-	2.6%	1%	36.4%	1.7%	0%	-	39.1%	1.7%	0.6%	2.5%	0%	-	4.7%		
Heavy %	3	164	3	0	-	-	4	2	3	0	-	-	4	150	3	0	-	7	4	7	0	-	-	-		
Heavy %	1.3%	4.7%	2.1%	0%	-	-	3.4%	13.3%	5.5%	0%	-	-	5.3%	5.6%	2.4%	0%	-	5.7%	9.5%	3.8%	0%	-	-	-		
Bicycles %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Bicycles %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		



Peak Hour: 08:15 AM - 09:15 AM Weather: Scattered Clouds (-17.22 °C)

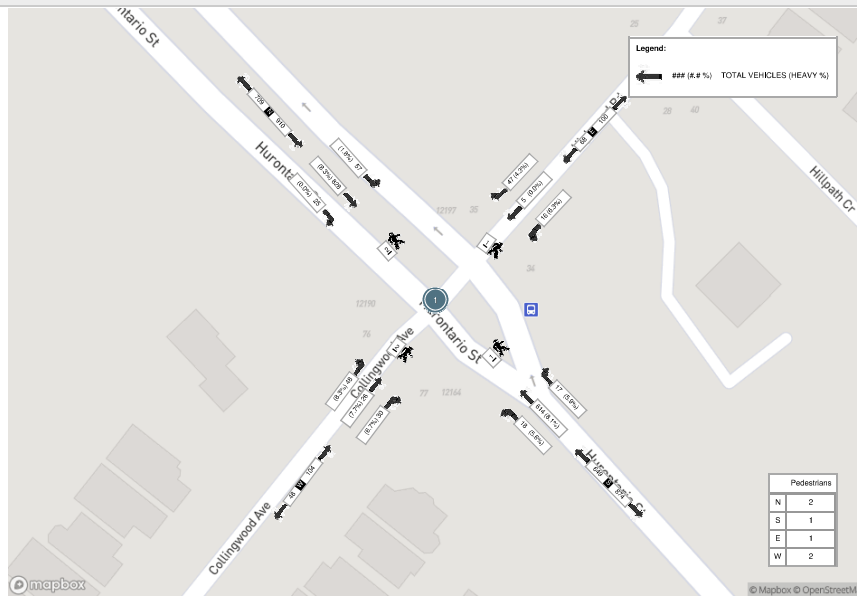
Start Time	N Approach HURONTARIO ST						E Approach HIGHWOOD RD						S Approach HURONTARIO ST						W Approach COLLINGWOOD AVE						Hi. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:15:00	4	194	4	0	0	202	10	0	4	0	0	14	0	140	5	0	0	145	5	2	11	0	1	18	379
08:30:00	13	231	11	5	0	260	8	1	2	0	0	11	3	171	4	0	0	178	11	0	19	0	0	30	479
08:45:00	6	243	17	5	1	271	7	0	5	0	0	12	5	175	2	0	1	182	6	5	14	0	1	25	490
09:00:00	2	160	25	0	1	187	22	4	5	0	1	31	9	128	7	0	0	144	8	19	4	0	0	31	393
Grand Total	25	628	57	10	2	920	47	5	16	0	1	68	17	614	18	0	1	649	30	26	48	0	2	104	1741
Approach%	2.7%	90%	6.2%	1.1%	-	-	69.1%	7.4%	23.5%	0%	-	2.6%	94.6%	2.8%	0%	-	28.8%	25%	46.2%	0%	-	-	-	-	-
Totals %	1.4%	47.6%	3.3%	0.6%	0.2%	52.8%	2.7%	0.3%	0.9%	0%	3.9%	1%	35.3%	1%	0%	37.3%	1.7%	1.5%	2.8%	0%	6%	-	-	-	-
PHF	0.48	0.85	0.57	0.5	0.35	0.85	0.53	0.31	0.8	0	0.55	0.47	0.88	0.64	0	0.89	0.68	0.34	0.63	0	0.84	-	-	-	-
Heavy	0	69	1	0	0	70	2	0	1	0	3	1	50	1	0	52	2	2	4	0	8	-	-	-	-
Heavy %	0%	8.2%	1.8%	0%	0%	7.6%	4.3%	0%	6.3%	0%	4.4%	5.9%	8.1%	5.6%	0%	8%	6.7%	7.7%	8.3%	0%	7.7%	-	-	-	-
Lights	25	759	56	10	2	850	45	5	15	0	65	16	564	17	0	320	28	24	44	0	36	-	-	-	-
Lights %	100%	91.7%	98.2%	100%	100%	92.4%	95.7%	100%	93.8%	0%	95.6%	94.1%	91.9%	94.4%	0%	92%	93.3%	92.3%	91.7%	0%	92.3%	-	-	-	-
Single-Unit Trucks	0	54	0	0	0	54	0	0	0	0	0	0	31	0	0	31	0	0	0	0	0	-	-	-	-
Single-Unit Trucks %	0%	6.5%	0%	0%	0%	5.9%	0%	0%	0%	0%	0%	0%	5%	0%	0%	4.8%	0%	0%	0%	0%	0%	-	-	-	-
Buses	0	8	1	0	0	9	2	0	1	0	3	1	10	1	0	12	2	2	4	0	8	-	-	-	-
Buses %	0%	1%	1.8%	0%	0%	1%	4.3%	0%	6.3%	0%	4.4%	5.9%	1.6%	5.6%	0%	1.8%	6.7%	7.7%	8.3%	0%	7.7%	-	-	-	-
Articulated Trucks	0	7	0	0	0	7	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	-	-	-	-
Articulated Trucks %	0%	0.8%	0%	0%	0%	0.8%	0%	0%	0%	0%	0%	0%	1.5%	0%	0%	1.4%	0%	0%	0%	0%	0%	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Pedestrians %	-	-	-	-	33.3%	-	-	-	-	-	16.7%	-	-	-	-	-	-	-	-	-	33.3%	-	-	-	-



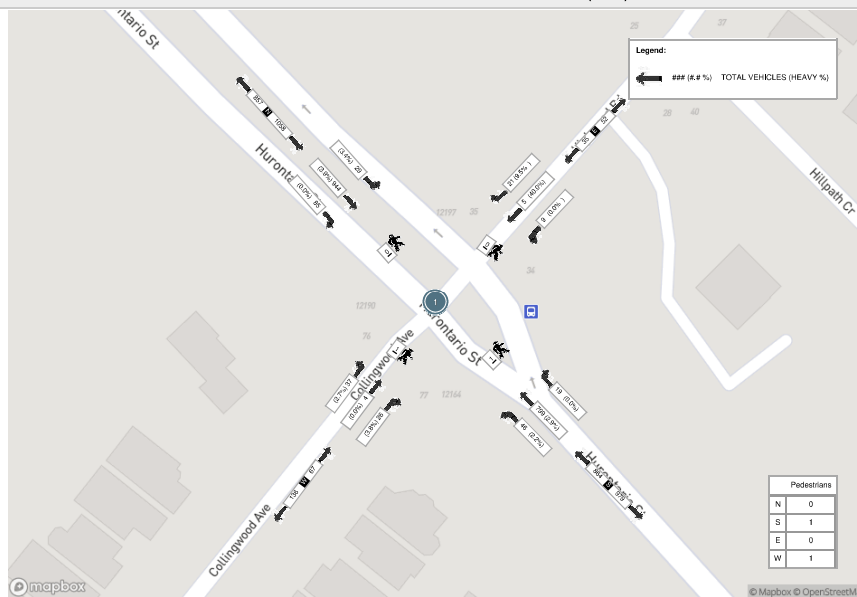
Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (-12 °C)

Start Time	N Approach HURONTARIO ST						E Approach HIGHWOOD RD						S Approach HURONTARIO ST						W Approach COLLINGWOOD AVE						Hi. 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	24	257	5	0	0	286	4	2	0	0	0	6	5	209	16	0	0	230	6	1	10	0	0	17	539
16:15:00	19	221	3	0	0	243	9	1	3	0	0	13	3	213	12	0	1	228	7	0	9	0	1	18	500
16:30:00	23	227	11	1	0	262	5	0	0	0	0	5	8	201	7	1	0	217	6	3	11	0	0	20	504
16:45:00	19	229	10	0	0	268	3	2	6	0	0	11	3	176	11	0	0	190	7	0	7	0	0	14	483
Grand Total	85	944	29	1	0	1059	21	5	9	0	0	35	19	799	46	1	1	865	26	4	37	0	1	67	2026
Approach%	8%	89.1%	2.7%	0.1%	-	-	69%	14.3%	25.7%	0%	-	2.2%	92.4%	5.3%	0.1%	-	38.8%	6%	55.2%	0%	-	-	-	-	
Totals %	4.2%	46.6%	1.4%	0%	0%	52.3%	1%	0.2%	0.4%	0%	1.7%	0.9%	39.4%	2.3%	0%	42.7%	1.3%	0.2%	1.8%	0%	3.3%	-	-	-	-
PHF	0.89	0.92	0.66	0.25	0.33	0.93	0.58	0.63	0.38	0	0.67	0.59	0.94	0.72	0.25	0.94	0.93	0.33	0.84	0	0.84	-	-	-	-
Heavy	0	37	1	0	0	38	2	2	0	0	0	4	0	23	1	0	24	1	0	1	0	2	-	-	-
Heavy %	0%	3.9%	3.4%	0%	0%	3.6%	9.5%	40%	0%	0%	11.4%	0%	2.9%	2.2%	0%	2.8%	3.8%	0%	2.7%	0%	3%	-	-	-	-
Lights	85	937	29	1	0	1021	19	3	9	0	0	31	19	776	45	1	1	841	25	4	36	0	0	65	-
Lights %	100%	96.1%	96.8%	100%	100%	96.4%	90.5%	60%	100%	0%	88.6%	100%	97.1%	97.8%	100%	97.2%	96.2%	100%	97.2%	0%	97%	-	-	-	-
Single-Unit Trucks	0	12	0	0	0	12	1	0	0	0	1	0	11	0	0	11	0	0	0	0	0	-	-	-	-
Single-Unit Trucks %	0%	1.3%	0%	0%	0%	1.1%	4.8%	0%	0%	0%	2.9%	0%	1.4%	0%	0%	1.3%	0%	0%	0%	0%	0%	-	-	-	-
Buses	0	11	1	0	0	12	1	2	0	0	3	0	8	1	0	7	1	0	1	0	2	-	-	-	-
Buses %	0%	1.2%	3.4%	0%	0%	1.1%	4.8%	40%	0%	0%	8.6%	0%	0.8%	2.2%	0%	0.8%	3.8%	0%	2.7%	0%	3%	-	-	-	-
Articulated Trucks	0	14	0	0	0	14	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	-	-	-	-
Articulated Trucks %	0%	1.5%	0%	0%	0%	1.3%	0%	0%	0%	0%	0%	0%	0.8%	0%	0%	0.7%	0%	0%	0%	0%	0%	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Pedestrians %	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	50%	-	-	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Scattered Clouds (-17.22 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (-12 °C)



Appendix D

Transportation Tomorrow Survey (TTS) Data

12197, 12211, 12213 and 12231 Hurontario Street

7597-06

Residential Vehicular Site Traffic Distribution (AM Peak Hour)

Outbound

BA Group - EFS

2022-05-18

Fri Feb 04 2022 13:29:05 GMT-0500 (Eastern Standard Time) - Run Time: 3367ms

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 3007,3381,3459
and

Start time of trip - start_time In 600-859
and

Trip purpose of origin - purp_orig In H
and

Primary travel mode of trip - mode_prime In D,M,P,T,U

Trip 2016

Table:

	3007	3381	3459	Total
PD 1 of Toronto	20	0	33	53
PD 2 of Toronto	0	0	23	23
PD 3 of Toronto	0	0	40	40
PD 7 of Toronto	0	0	41	41
PD 8 of Toronto	0	0	85	85
PD 9 of Toronto	14	0	25	39
PD 10 of Toronto	17	0	16	33
PD 11 of Toronto	0	11	0	11
PD 16 of Toronto	0	0	15	15
Newmarket	0	0	8	8
Richmond Hill	0	0	13	13
Markham	0	6	0	6
King	10	0	0	10
Vaughan	10	18	48	76
Caledon	63	22	44	129
3012	0	22	0	22
3014	35	0	0	35
3106	0	0	24	24
3151	12	0	21	33
3197	16	0	0	16
Brampton	274	222	883	1379
3325	0	0	62	62
3327	21	0	0	21
3328	0	0	48	48
3331	0	0	28	28
3336	0	0	12	12
3339	25	0	0	25
3340	0	0	95	95
3342	9	0	13	22
3343	0	0	23	23
3348	0	14	88	102
3349	0	0	47	47
3350	22	0	0	22
3351	23	19	0	42
3357	7	18	0	25
3360	26	0	0	26
3365	0	0	12	12
3368	0	0	49	49
3369	0	0	13	13
3370	16	0	0	16
3372	0	0	7	7
3375	0	0	47	47
3376	0	0	17	17
3381	26	9	34	69
3383	0	13	23	36
3417	29	21	0	50
3419	0	34	33	67
3423	6	0	37	43
3430	0	14	0	14
3434	0	0	27	27
3436	0	0	33	33
3443	0	0	23	23
3455	0	0	7	7
3459	0	0	34	34
3462	5	0	0	5
3467	0	38	22	60
3469	0	0	13	13
3480	0	17	15	32
3483	0	24	0	24
3486	49	0	0	49
3495	0	0	9	9
3513	10	0	0	10
3514	0	0	11	11
Mississauga	168	79	740	987
Halton Hills	31	0	7	38
Milton	11	0	8	19
Oakville	10	0	33	43
Dundas	0	13	0	13
Hamilton	17	11	0	28
Kitchener	0	37	0	37
Cambridge	17	0	0	17
City of Guelph	17	0	54	71
Orangeville	22	0	0	22
Mono	0	12	0	12

Fri Feb 04 2022 13:34:03 GMT-0500 (Eastern Standard Time) - Run Time: 2683ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:

2006 GTA zone of origin - gta06_orig In 3007,3381,3459
and

Start time of trip - start_time In 600-859
and

Trip purpose of origin - purp_orig In H
and

Primary travel mode of trip - mode_prime In D,M,P,T,U
and

Planning district of destination - pd_dest In 34

Trip 2016

Table:

	3007	3381	3459
3012	0	22	0
3014	35	0	0
3106	0	0	24
3151	12	0	21
3197	16	0	0

Fri Feb 04 2022 13:41:47 GMT-0500 (Eastern Standard Time) - Run Time: 2683ms

Cross Tabulation Query Form - Trip - 2016 v1.1

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

Filters:

2006 GTA zone of origin - gta06_orig In 3007,3381,3459
and

Start time of trip - start_time In 600-859
and

Trip purpose of origin - purp_orig In H
and

Primary travel mode of trip - mode_prime In D,M,P,T,U
and

Planning district of destination - pd_dest In 35

Trip 2016

Table:

	3007	3381	3459
3325	0	0	62
3327	21	0	0
3328	0	0	48
3331	0	0	28
3336	0	0	12
3339	25	0	0
3340	0	0	95
3342	9	0	13
3343	0	0	23
3348	0	14	88
3349	0	0	47
3350	22	0	0
3351	23	19	0
3357	7	18	0
3360	26	0	0
3365	0	0	12
3368	0	0	49
3369	0	0	13
3370	16	0	0
3372	0	0	7
3375	0	0	47
3376	0	0	17
3381	26	9	34
3383	0	13	23
3417	29	21	0
3419	0	34	33
3423	6	0	37
3430	0	14	0
3434	0	0	27
3436	0	0	33
3443	0	0	23
3455	0	0	7
3459	0	0	34
3462	5	0	0
3467	0	38	22
3469	0	0	13
3480	0	17	15
3483	0	24	0
3486	49	0	0
3495	0	0	9
3513	10	0	0
3514	0	0	11

12197, 12211, 12213 and 12231 Hurontario Street

7597-06

Residential Vehicular Site Traffic Distribution (PM Peak Hour)

Inbound

BA Group - EFS

2022-05-18

Fri Feb 04 2022 14:38:58 GMT-0500 (Eastern Standard Time) - Run Time: 3075ms

Fri Feb 04 2022 15:02:31 GMT-0500 (Eastern Standard Time) - Run Time: 3458ms

Fri Feb 04 2022 15:03:23 GMT-0500 (Eastern S

Cross Tabulation Query Form - Trip - 2016 v1.1

Cross Tabulation Query Form - Trip - 2016 v1.1

Cross Tabulation Query Form - Trip - 2016 v1.1

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

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

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_

Filters:
2006 GTA zone of destination - gta06_dest In 3007,3381,3459
and
Start time of trip - start_time In 1500-1759
and
Trip purpose of destination - purp_dest In H
and
Primary travel mode of trip - mode_prime In D,M,P,T,U

Filters:
2006 GTA zone of destination - gta06_dest In 3007,3381,3459
and
Start time of trip - start_time In 1500-1759
and
Trip purpose of destination - purp_dest In H
and
Primary travel mode of trip - mode_prime In D,M,P,T,U
and
Planning district of origin - pd_orig In 34

Filters:
2006 GTA zone of destination - gta06_dest In 3007,3381,3459
and
Start time of trip - start_time In 1500-1759
and
Trip purpose of destination - purp_dest In H
and
Primary travel mode of trip - mode_prime In D,M,P,T,U
and
Planning district of origin - pd_orig In 35

Trip 2016
Table:

	3007	3381	3459	Total
PD 1 of Toronto	67	0	66	133
PD 3 of Toronto	0	17	40	57
PD 7 of Toronto	0	0	36	36
PD 8 of Toronto	0	0	39	39
PD 9 of Toronto	6	0	30	36
PD 10 of Toronto	17	0	39	56
PD 11 of Toronto	0	11	0	11
PD 16 of Toronto	0	0	15	15
Aurora	11	0	0	11
Richmond Hill	0	0	13	13
Markham	0	6	0	6
King	10	0	0	10
Vaughan	10	6	23	39
Caledon	12	22	44	78
3012	0	22	0	22
3106	0	0	24	24
3151	12	0	21	33
Brampton	355	123	1172	1650
3325	0	0	135	135
3328	0	0	48	48
3331	29	0	28	57
3336	0	0	12	12
3337	12	0	0	12
3339	25	0	21	46
3340	0	0	173	173
3342	20	0	13	33
3348	0	14	88	102
3349	0	0	43	43
3350	22	0	0	22
3357	30	0	0	30
3363	0	0	18	18
3368	0	0	28	28
3369	0	0	13	13
3370	22	18	26	66
3372	0	0	7	7
3375	0	0	68	68
3376	0	0	17	17
3381	49	6	87	142
3383	0	0	23	23
3384	0	0	17	17
3419	0	34	33	67
3423	6	0	37	43
3429	0	0	18	18
3430	0	14	0	14
3436	0	0	18	18
3443	0	0	23	23
3455	0	0	7	7
3458	29	0	17	46
3459	0	0	19	19
3461	23	0	29	52
3462	39	30	0	69
3467	0	0	68	68
3480	0	0	15	15
3486	26	6	0	32
3495	14	0	16	30
3513	10	0	0	10
3514	0	0	11	11
Mississauga	131	67	495	693
Halton Hills	11	0	7	18
Milton	0	0	12	12
Oakville	23	0	13	36
Hamilton	0	11	0	11
Kitchener	0	37	0	37
City of Guelph	17	0	54	71

Trip 2016
Table:

	3007	3381	3459	
	3012	0	22	0
	3106	0	0	24
	3151	12	0	21

Trip 2016
Table:

	3007	3381	3459	
	3325	0	0	135
	3328	0	0	48
	3331	29	0	28
	3336	0	0	12
	3337	12	0	0
	3339	25	0	21
	3340	0	0	173
	3342	20	0	13
	3348	0	14	88
	3349	0	0	43
	3350	22	0	0
	3357	30	0	0
	3363	0	0	18
	3368	0	0	28
	3369	0	0	13
	3370	22	18	26
	3372	0	0	7
	3375	0	0	68
	3376	0	0	17
	3381	49	6	87
	3383	0	0	23
	3384	0	0	17
	3419	0	34	33
	3423	6	0	37
	3429	0	0	18
	3430	0	14	0
	3436	0	0	18
	3443	0	0	23
	3455	0	0	7
	3458	29	0	17
	3459	0	0	19
	3461	23	0	29
	3462	39	30	0
	3467	0	0	68
	3480	0	0	15
	3486	26	6	0
	3495	14	0	16
	3513	10	0	0
	3514	0	0	11

12197, 12211, 12213 and 12231 Hurontario Street

7597-06

Residential Vehicular Site Traffic Distribution (AM Peak Hour)

Outbound

BA Group - EFS

2022-05-18

Zone	Trips	%	Traffic Volume Allocation					TOTAL
			NORTH Hurontario	SOUTH Hurontario	EAST Hwy 410	EAST Mayfield	WEST Mayfield	
PD 1 of Toronto	53	2%			100%			100%
PD 2 of Toronto	23	1%			100%			100%
PD 3 of Toronto	40	1%			100%			100%
PD 7 of Toronto	41	1%			100%			100%
PD 8 of Toronto	85	3%			100%			100%
PD 9 of Toronto	39	1%			100%			100%
PD 10 of Toronto	33	1%			100%			100%
PD 11 of Toronto	11	0%			100%			100%
PD 16 of Toronto	15	0%			100%			100%
Newmarket	8	0%			100%			100%
Richmond Hill	13	0%			100%			100%
Markham	6	0%			100%			100%
King	10	0%				100%		100%
Vaughan	76	2%			50%	50%		100%
3012	22	1%	40%			60%		100%
3014	35	1%	50%			50%		100%
3106	24	1%	90%				10%	100%
3151	33	1%	50%			50%		100%
3197	16	0%	50%			50%		100%
3325	62	2%		100%				100%
3327	21	1%	50%	50%				100%
3328	48	1%	50%	50%				100%
3331	28	1%	50%	50%				100%
3336	12	0%	20%	80%				100%
3339	25	1%		50%	50%			100%
3340	95	3%		100%				100%
3342	22	1%		100%				100%
3343	23	1%		100%				100%
3348	102	3%		100%				100%
3349	47	1%		100%				100%
3350	22	1%		100%				100%
3351	42	1%		100%				100%
3357	25	1%	50%	50%				100%
3360	26	1%		100%				100%
3365	12	0%		100%				100%
3368	49	2%		100%				100%
3369	13	0%		100%				100%
3370	16	0%		100%				100%
3372	7	0%		100%				100%
3375	47	1%		100%				100%
3376	17	1%		100%				100%
3381	69	2%	100%					100%
3383	36	1%		100%				100%
3417	50	2%		80%	20%			100%
3419	67	2%	50%	50%				100%
3423	43	1%		50%	50%			100%
3430	14	0%		100%				100%
3434	27	1%		100%				100%
3436	33	1%		100%				100%
3443	23	1%			100%			100%
3455	7	0%		100%				100%
3459	34	1%	100%					100%
3462	5	0%		100%				100%
3467	60	2%		100%				100%
3469	13	0%	50%			50%		100%
3480	32	1%		100%				100%
3483	24	1%		100%				100%
3486	49	2%		100%				100%
3495	9	0%		100%				100%
3513	10	0%		50%	50%			100%
3514	11	0%		50%	50%			100%
Mississauga	987	30%		50%	50%			100%
Haltoun Hills	38	1%	40%	20%			40%	100%
Milton	19	1%		70%	30%			100%
Oakville	43	1%		50%	50%			100%
Dundas	13	0%		45%	45%		10%	100%
Hamilton	28	1%		10%	90%			100%
Kitchener	37	1%	50%		50%			100%
Cambridge	17	1%		80%	10%			100%
City of Guelph	71	2%	50%		10%		50%	100%
Orangeville	22	1%	100%					100%
Mono	12	0%	100%					100%
TOTAL TRIPS	3247	100%						

Assumed Split

Route Split Totals						TOTAL
NORTH Hurontario	SOUTH Hurontario	EAST Hwy 410	EAST Mayfield	WEST Mayfield		
0.00%	0.00%	1.63%	0.00%	0.00%		1.6%
0.00%	0.00%	0.71%	0.00%	0.00%		0.7%
0.00%	0.00%	1.23%	0.00%	0.00%		1.2%
0.00%	0.00%	1.26%	0.00%	0.00%		1.3%
0.00%	0.00%	2.62%	0.00%	0.00%		2.6%
0.00%	0.00%	1.20%	0.00%	0.00%		1.2%
0.00%	0.00%	1.02%	0.00%	0.00%		1.0%
0.00%	0.00%	0.34%	0.00%	0.00%		0.3%
0.00%	0.00%	0.46%	0.00%	0.00%		0.5%
0.00%	0.00%	0.25%	0.00%	0.00%		0.2%
0.00%	0.00%	0.40%	0.00%	0.00%		0.4%
0.00%	0.00%	0.18%	0.00%	0.00%		0.2%
0.00%	0.00%	0.00%	0.31%	0.00%		0.3%
0.00%	0.00%	1.17%	1.17%	0.00%		2.3%
0.27%	0.00%	0.00%	0.41%	0.00%		0.7%
0.54%	0.00%	0.00%	0.54%	0.00%		1.1%
0.67%	0.00%	0.00%	0.00%	0.07%		0.7%
0.51%	0.00%	0.00%	0.51%	0.00%		1.0%
0.25%	0.00%	0.00%	0.25%	0.00%		0.5%
0.00%	1.91%	0.00%	0.00%	0.00%		1.9%
0.32%	0.32%	0.00%	0.00%	0.00%		0.6%
0.74%	0.74%	0.00%	0.00%	0.00%		1.5%
0.43%	0.43%	0.00%	0.00%	0.00%		0.9%
0.07%	0.30%	0.00%	0.00%	0.00%		0.4%
0.00%	0.38%	0.38%	0.00%	0.00%		0.8%
0.00%	2.93%	0.00%	0.00%	0.00%		2.9%
0.00%	0.68%	0.00%	0.00%	0.00%		0.7%
0.00%	0.71%	0.00%	0.00%	0.00%		0.7%
0.00%	3.14%	0.00%	0.00%	0.00%		3.1%
0.00%	1.45%	0.00%	0.00%	0.00%		1.4%
0.00%	0.68%	0.00%	0.00%	0.00%		0.7%
0.00%	1.29%	0.00%	0.00%	0.00%		1.3%
0.38%	0.38%	0.00%	0.00%	0.00%		0.8%
0.00%	0.80%	0.00%	0.00%	0.00%		0.8%
0.00%	0.37%	0.00%	0.00%	0.00%		0.4%
0.00%	1.51%	0.00%	0.00%	0.00%		1.5%
0.00%	0.40%	0.00%	0.00%	0.00%		0.4%
0.00%	0.49%	0.00%	0.00%	0.00%		0.5%
0.00%	0.22%	0.00%	0.00%	0.00%		0.2%
0.00%	1.45%	0.00%	0.00%	0.00%		1.4%
0.00%	0.52%	0.00%	0.00%	0.00%		0.5%
2.13%	0.00%	0.00%	0.00%	0.00%		2.1%
0.00%	1.11%	0.00%	0.00%	0.00%		1.1%
0.00%	1.23%	0.31%	0.00%	0.00%		1.5%
1.03%	1.03%	0.00%	0.00%	0.00%		2.1%
0.00%	0.66%	0.66%	0.00%	0.00%		1.3%
0.00%	0.43%	0.00%	0.00%	0.00%		0.4%
0.00%	0.83%	0.00%	0.00%	0.00%		0.8%
0.00%	1.02%	0.00%	0.00%	0.00%		1.0%
0.00%	0.00%	0.71%	0.00%	0.00%		0.7%
0.00%	0.22%	0.00%	0.00%	0.00%		0.2%
1.05%	0.00%	0.00%	0.00%	0.00%		1.0%
0.00%	0.15%	0.00%	0.00%	0.00%		0.2%
0.00%	1.85%	0.00%	0.00%	0.00%		1.8%
0.20%	0.00%	0.00%	0.20%	0.00%		0.4%
0.00%	0.99%	0.00%	0.00%	0.00%		1.0%
0.00%	0.74%	0.00%	0.00%	0.00%		0.7%
0.00%	1.51%	0.00%	0.00%	0.00%		1.5%
0.00%	0.28%	0.00%	0.00%	0.00%		0.3%
0.00%	0.15%	0.15%	0.00%	0.00%		0.3%
0.00%	0.17%	0.17%	0.00%	0.00%		0.3%
0.00%	15.20%	15.20%	0.00%	0.00%		30.4%
0.47%	0.23%	0.00%	0.00%	0.47%		1.2%
0.00%	0.41%	0.18%	0.00%	0.00%		0.6%
0.00%	0.66%	0.66%	0.00%	0.00%		1.3%
0.00%	0.18%	0.18%	0.00%	0.04%		0.4%
0.00%	0.09%	0.78%	0.00%	0.00%		0.9%
0.57%	0.00%	0.57%	0.00%	0.00%		1.1%
0.00%	0.42%	0.05%	0.00%	0.05%		0.5%
1.09%	0.00%	0.00%	0.00%	1.09%		2.2%
0.68%	0.00%	0.00%	0.00%	0.00%		0.7%
0.37%	0.00%	0.00%	0.00%	0.00%		0.4%
11.5%	50.7%	32.5%	3.4%	1.7%		66.4%

10%	50%	35%	5%	0%	100%
-----	-----	-----	----	----	------

12197, 12211, 12213 and 12231 Hurontario Street
7597-06

Residential Vehicular Site Traffic Distribution (PM Peak Hour)

Inbound

BA Group - EFS

2022-05-18

Zone	Trips	%	Traffic Volume Allocation					TOTAL
			NORTH Hurontario	SOUTH Hurontario	EAST Hwy 410	EAST Mayfield	WEST Mayfield	
PD 1 of Toronto	133	4%			100%			100%
PD 3 of Toronto	57	2%			100%			100%
PD 7 of Toronto	36	1%			100%			100%
PD 8 of Toronto	39	1%			100%			100%
PD 9 of Toronto	36	1%			100%			100%
PD 10 of Toronto	56	2%			100%			100%
PD 11 of Toronto	11	0%			100%			100%
PD 16 of Toronto	15	0%			100%			100%
Aurora	11	0%			50%	50%		100%
Richmond Hill	13	0%			50%	50%		100%
Markham	6	0%			100%			100%
King	10	0%			50%	50%		100%
Vaughan	39	1%			50%	50%		100%
3012	22	1%			50%	50%		100%
3106	24	1%	100%					100%
3151	33	1%	50%			50%		100%
3325	135	4%		100%				100%
3328	48	2%		50%	50%			100%
3331	57	2%		50%	50%			100%
3336	12	0%		50%	50%			100%
3337	12	0%		20%	40%	40%		100%
3339	46	1%		40%	60%			100%
3340	173	6%		50%	50%			100%
3342	33	1%		50%	50%			100%
3348	102	3%		100%				100%
3349	43	1%		100%				100%
3350	22	1%		100%				100%
3357	30	1%		60%	40%			100%
3363	18	1%		80%	20%			100%
3368	28	1%		100%				100%
3369	13	0%		100%				100%
3370	66	2%		100%				100%
3372	7	0%		50%	50%			100%
3375	68	2%		100%				100%
3376	17	1%		100%				100%
3381	142	5%	50%	50%				100%
3383	23	1%		100%				100%
3384	17	1%	50%	50%				100%
3419	67	2%		40%	20%	40%		100%
3423	43	1%		50%	50%			100%
3429	18	1%		100%				100%
3430	14	0%		100%				100%
3436	18	1%		100%				100%
3443	23	1%			100%			100%
3455	7	0%	20%	80%				100%
3458	46	1%		100%				100%
3459	19	1%	50%	50%				100%
3461	52	2%		100%				100%
3462	69	2%		100%				100%
3467	68	2%		100%				100%
3480	15	0%		100%				100%
3486	32	1%		100%				100%
3495	30	1%		70%	30%			100%
3513	10	0%		100%				100%
3514	11	0%		100%				100%
Mississauga	693	23%		10%	90%			100%
Halton Hills	18	1%		50%	50%			100%
Milton	12	0%		40%	60%			100%
Oakville	36	1%			100%			100%
Hamilton	11	0%		20%	70%	10%		100%
Kitchener	37	1%		50%	50%			100%
City of Guelph	71	2%	100%					100%
TOTAL TRIPS	3073	100%						

Assumed Split

Route Split Totals					
NORTH Hurontario	SOUTH Hurontario	EAST Hwy 410	EAST Mayfield	WEST Mayfield	TOTAL
0.00%	0.00%	4.33%	0.00%	0.00%	4.3%
0.00%	0.00%	1.85%	0.00%	0.00%	1.9%
0.00%	0.00%	1.17%	0.00%	0.00%	1.2%
0.00%	0.00%	1.27%	0.00%	0.00%	1.3%
0.00%	0.00%	1.17%	0.00%	0.00%	1.2%
0.00%	0.00%	1.82%	0.00%	0.00%	1.8%
0.00%	0.00%	0.36%	0.00%	0.00%	0.4%
0.00%	0.00%	0.49%	0.00%	0.00%	0.5%
0.00%	0.00%	0.18%	0.18%	0.00%	0.4%
0.00%	0.00%	0.21%	0.21%	0.00%	0.4%
0.00%	0.00%	0.20%	0.00%	0.00%	0.2%
0.00%	0.00%	0.16%	0.16%	0.00%	0.3%
0.00%	0.00%	0.63%	0.63%	0.00%	1.3%
0.00%	0.00%	0.36%	0.36%	0.00%	0.7%
0.78%	0.00%	0.00%	0.00%	0.00%	0.8%
0.54%	0.00%	0.00%	0.54%	0.00%	1.1%
0.00%	4.39%	0.00%	0.00%	0.00%	4.4%
0.00%	0.78%	0.78%	0.00%	0.00%	1.6%
0.00%	0.93%	0.93%	0.00%	0.00%	1.9%
0.00%	0.20%	0.20%	0.00%	0.00%	0.4%
0.00%	0.08%	0.16%	0.16%	0.00%	0.4%
0.00%	0.60%	0.90%	0.00%	0.00%	1.5%
0.00%	2.81%	2.81%	0.00%	0.00%	5.6%
0.00%	0.54%	0.54%	0.00%	0.00%	1.1%
0.00%	3.32%	0.00%	0.00%	0.00%	3.3%
0.00%	1.40%	0.00%	0.00%	0.00%	1.4%
0.00%	0.72%	0.00%	0.00%	0.00%	0.7%
0.00%	0.59%	0.39%	0.00%	0.00%	1.0%
0.00%	0.47%	0.12%	0.00%	0.00%	0.6%
0.00%	0.91%	0.00%	0.00%	0.00%	0.9%
0.00%	0.42%	0.00%	0.00%	0.00%	0.4%
0.00%	2.15%	0.00%	0.00%	0.00%	2.1%
0.00%	0.11%	0.11%	0.00%	0.00%	0.2%
0.00%	2.21%	0.00%	0.00%	0.00%	2.2%
0.00%	0.55%	0.00%	0.00%	0.00%	0.6%
2.31%	2.31%	0.00%	0.00%	0.00%	4.6%
0.00%	0.75%	0.00%	0.00%	0.00%	0.7%
0.28%	0.28%	0.00%	0.00%	0.00%	0.6%
0.00%	0.87%	0.44%	0.87%	0.00%	2.2%
0.00%	0.70%	0.70%	0.00%	0.00%	1.4%
0.00%	0.59%	0.00%	0.00%	0.00%	0.6%
0.00%	0.46%	0.00%	0.00%	0.00%	0.5%
0.00%	0.59%	0.00%	0.00%	0.00%	0.6%
0.00%	0.00%	0.75%	0.00%	0.00%	0.7%
0.05%	0.18%	0.00%	0.00%	0.00%	0.2%
0.00%	1.50%	0.00%	0.00%	0.00%	1.5%
0.31%	0.31%	0.00%	0.00%	0.00%	0.6%
0.00%	1.69%	0.00%	0.00%	0.00%	1.7%
0.00%	2.25%	0.00%	0.00%	0.00%	2.2%
0.00%	2.21%	0.00%	0.00%	0.00%	2.2%
0.00%	0.49%	0.00%	0.00%	0.00%	0.5%
0.00%	1.04%	0.00%	0.00%	0.00%	1.0%
0.00%	0.68%	0.29%	0.00%	0.00%	1.0%
0.00%	0.00%	0.33%	0.00%	0.00%	0.3%
0.00%	0.00%	0.36%	0.00%	0.00%	0.4%
0.00%	2.26%	20.30%	0.00%	0.00%	22.6%
0.00%	0.29%	0.29%	0.00%	0.00%	0.6%
0.00%	0.16%	0.23%	0.00%	0.00%	0.4%
0.00%	0.00%	1.17%	0.00%	0.00%	1.2%
0.00%	0.07%	0.25%	0.00%	0.04%	0.4%
0.00%	0.60%	0.60%	0.00%	0.00%	1.2%
2.31%	0.00%	0.00%	0.00%	0.00%	2.3%
6.6%	43.4%	46.8%	3.1%	0.0%	73.8%

5%	45%	45%	5%	0%	100%
-----------	------------	------------	-----------	-----------	-------------

12197, 12211, 12213 and 12231 Hurontario Street

7597-06

Mode Split

BA Group - EFS

2022-05-18

2016 TTS DATA

Residential (AM Peak Period)

Fri Feb 04 2022 12:58:21 GMT-0500 (Eastern Standard Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode_prime

Filters:

Start time of trip - start_time In 600-859

and

Trip purpose of origin - purp_orig In H

and

2006 GTA zone of origin - gta06_orig In 3007, 3381, 3459

or

Start time of trip - start_time In 600-859

and

Trip purpose of destination - purp_dest In H

and

2006 GTA zone of destination - gta06_dest In 3007, 3381, 3459

Table: Trip 2016

Row:	Count:	Expanded:	%
Transit excluding GO rail	11	176	4%
Cycle	1	18	0%
Auto driver	168	3004	66%
GO rail only	8	104	2%
Joint GO rail and local transi	2	28	1%
Auto passenger	24	377	8%
School bus	34	877	19%
Total:	248	4583	100%

Auto	66%
Auto Passenger	27%
Transit	7%
Pedestrian	0%
Cyclist	0%
Total	100%

Residential (PM Peak Period)

Fri Feb 04 2022 13:10:44 GMT-0500 (Eastern Standard Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode_prime

Filters:

Start time of trip - start_time In 1500-1759

and

Trip purpose of origin - purp_orig In H

and

2006 GTA zone of origin - gta06_orig In 3007, 3381, 3459

or

Start time of trip - start_time In 1500-1759

and

Trip purpose of destination - purp_dest In H

and

2006 GTA zone of destination - gta06_dest In 3007, 3381, 3459

Table: Trip 2016

Row:	Count:	Expanded:	%
Transit excluding GO rail	12	478	9%
Auto driver	183	3479	68%
GO rail only	7	97	2%
Auto passenger	26	516	10%
School bus	24	521	10%
Walk	1	26	1%
Total:	253	5117	100%

Auto	68%
Auto Passenger	20%
Transit	11%
Pedestrian	1%
Cyclist	0%
Total	100%

Appendix E Existing Signal Timing Plans

BA Consulting Group Ltd.
 300 – 45 St. Clair Ave. W.
 Toronto, ON
 M4V 1K9

Attention: Alain Wong

Subject: Request for Signal Timings

As per you request, the traffic signal timing for the requested intersection is as follows:

Hurontario Street at Collingwood Avenue / Highwood Road								
PHASE DIRECTION								
<i>Day Plan</i>	<i>Time</i>	<i>Plan</i>	2 <i>Hurontario Street - Northbound</i>	4 <i>Collingwood Avenue - Westbound</i>	6 <i>Hurontario Street - Southbound</i>	8 <i>Highwood Road - Eastbound</i>	<i>Cycle Length</i>	<i>Offset</i>
Sunday	0000-2400	Free	48	24	48	24	72	0
Weekdays	0000-2400	Free	48	24	48	24	72	0
Saturday	0000-2400	Free	48	24	48	24	72	0

Note 1: Four seconds Amber and two seconds all red for all phases

Note 2: Eight seconds pedestrian walk and 12 seconds pedestrian clearance for phase 2 and phase 6, if demanded

Note 3: Eight seconds pedestrian walk and 30 seconds pedestrian clearance for phase 4 and phase 8, if demanded

Note 4: Phase 4 and 8 are served if demanded

Note 5: This intersection is semi-actuated

Yours truly,



Carolyn Ricker – Traffic Signal Technologist
 Traffic Services – Public Works & Engineering
 Tel: (905) 874-2556 Fax: (905) 874-2599
carolyn.ricker@brampton.ca

Appendix F
Synchro Worksheets

Timings

2: Hurontario St & Collington Ave/Highwood Rd

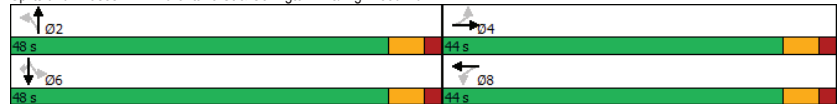
Existing AM
Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	
Traffic Volume (vph)	50	25	15	5	20	615	60	905	25	
Future Volume (vph)	50	25	15	5	20	615	60	905	25	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases	4		8		2		6		6	
Permitted Phases	4		8		2		6		6	
Detector Phase	4	4	8	8	2	2	6	6	6	
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	44.0	44.0	44.0	44.0	26.0	26.0	26.0	26.0	26.0	
Total Split (s)	44.0	44.0	44.0	44.0	48.0	48.0	48.0	48.0	48.0	
Total Split (%)	47.8%	47.8%	47.8%	47.8%	52.2%	52.2%	52.2%	52.2%	52.2%	
Maximum Green (s)	38.0	38.0	38.0	38.0	42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	30.0	30.0	30.0	30.0	12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	

Intersection Summary

Cycle Length: 92
Actuated Cycle Length: 65
Natural Cycle: 70
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Hurontario St & Collington Ave/Highwood Rd



Queues

2: Hurontario St & Collington Ave/Highwood Rd

Existing AM
Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	50	55	15	50	20	635	60	905	25
v/c Ratio	0.32	0.24	0.10	0.21	0.05	0.25	0.11	0.36	0.02
Control Delay	30.7	16.7	24.9	11.7	4.2	4.0	4.5	4.6	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	16.7	24.9	11.7	4.2	4.0	4.5	4.6	1.2
Queue Length 50th (m)	5.3	2.6	1.5	0.5	0.6	11.8	1.9	18.9	0.0
Queue Length 95th (m)	13.8	10.9	6.1	8.3	2.8	21.0	6.1	32.3	1.5
Internal Link Dist (m)	343.0		60.2		420.4		84.7		
Turn Bay Length (m)					19.8		48.8		38.1
Base Capacity (vph)	739	984	749	959	414	2516	571	2526	1202
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.06	0.02	0.05	0.05	0.25	0.11	0.36	0.02

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 2: Hurontario St & Collington Ave/Highwood Rd

Existing AM
 Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	↔
Traffic Volume (vph)	50	25	30	15	5	45	20	615	20	60	905	25
Future Volume (vph)	50	25	30	15	5	45	20	615	20	60	905	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.92		1.00	0.86		1.00	1.00		1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1653	1657		1684	1604		1700	3367		1767	3380	1597
Fit Permitted	0.72	1.00		0.72	1.00		0.31	1.00		0.41	1.00	1.00
Satd. Flow (perm)	1260	1657		1278	1604		554	3367		764	3380	1597
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	25	30	15	5	45	20	615	20	60	905	25
RTOR Reduction (vph)	0	27	0	0	40	0	0	1	0	0	0	7
Lane Group Flow (vph)	50	28	0	15	10	0	20	634	0	60	905	18
Heavy Vehicles (%)	8%	7%	6%	6%	0%	4%	5%	8%	5%	1%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	6.9	6.9		6.9	6.9		47.4	47.4		47.4	47.4	47.4
Effective Green, g (s)	6.9	6.9		6.9	6.9		47.4	47.4		47.4	47.4	47.4
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.71	0.71		0.71	0.71	0.71
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	131	172		133	166		396	2407		546	2416	1141
v/s Ratio Prot		0.02			0.01			0.19			0.27	
v/s Ratio Perm	c0.04			0.01			0.04			0.08		0.01
v/c Ratio	0.38	0.16		0.11	0.06		0.05	0.26		0.11	0.37	0.02
Uniform Delay, d1	27.7	27.1		26.9	26.8		2.8	3.3		2.9	3.7	2.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	0.4		0.4	0.1		0.2	0.3		0.4	0.4	0.0
Delay (s)	29.6	27.5		27.3	26.9		3.0	3.6		3.3	4.1	2.7
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		28.5			27.0			3.6			4.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		6.1			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.38										
Actuated Cycle Length (s)		66.3			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		53.6%			ICU Level of Service			A				
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis
 3: Hillpath Crescent/Site Access & Highwood Rd

Existing AM
 Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	100	5	0	55	0	10	0	0	0	0	0
Future Volume (Veh/h)	0	100	5	0	55	0	10	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	100	5	0	55	0	10	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		84										
pX, platoon unblocked												
vC, conflicting volume		55			105			158	158	102	158	160
vC1, stage 1 conf vol												55
vC2, stage 2 conf vol												
vCu, unblocked vol		55			105			158	158	102	158	160
tC, single (s)		4.1			4.1			7.1	6.5	6.2	7.1	6.5
tC, 2 stage (s)												
tF (s)		2.2			2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %		100			100			99	100	100	100	100
cM capacity (veh/h)		1563			1499			813	738	958	813	736
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	105	55	10	0								
Volume Left	0	0	10	0								
Volume Right	5	0	0	0								
cSH	1563	1499	813	1700								
Volume to Capacity	0.00	0.00	0.01	0.03								
Queue Length 95th (m)	0.0	0.0	0.3	0.0								
Control Delay (s)	0.0	0.0	9.5	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	9.5	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			15.6%					ICU Level of Service			A	
Analysis Period (min)			15									

Timings

2: Hurontario St & Collington Ave/Highwood Rd

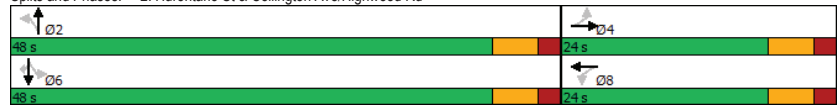
Existing PM
Argo Summer Valley (7597-06)

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (vph)	35	5	10	5	45	805	30	945	85	
Future Volume (vph)	35	5	10	5	45	805	30	945	85	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases	4		8		2		6		6	
Permitted Phases	4	8		2		6		6	6	
Detector Phase	4	4	8	8	2	2	6	6	6	
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	
Total Split (s)	24.0	24.0	24.0	24.0	48.0	48.0	48.0	48.0	48.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%	66.7%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max	
Act Effct Green (s)	7.3	7.3	7.2	7.2	52.4	52.4	52.4	52.4	52.4	
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.81	0.81	0.81	0.81	0.81	
v/c Ratio	0.21	0.15	0.06	0.14	0.10	0.28	0.06	0.33	0.06	
Control Delay	28.3	14.0	25.0	15.1	4.1	3.3	3.8	3.5	1.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	28.3	14.0	25.0	15.1	4.1	3.3	3.8	3.5	1.2	
LOS	C	B	C	B	A	A	A	A	A	
Approach Delay	21.7		17.9		3.3		3.3			
Approach LOS	C		B		A		A			

Intersection Summary

Cycle Length: 72
 Actuated Cycle Length: 64.4
 Natural Cycle: 50
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.33
 Intersection Signal Delay: 4.2
 Intersection LOS: A
 Intersection Capacity Utilization 53.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Hurontario St & Collington Ave/Highwood Rd



Queues

2: Hurontario St & Collington Ave/Highwood Rd

Existing PM
Argo Summer Valley (7597-06)

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	35	30	10	25	45	825	30	945	85
v/c Ratio	0.21	0.15	0.06	0.14	0.10	0.28	0.06	0.33	0.06
Control Delay	28.3	14.0	25.0	15.1	4.1	3.3	3.8	3.5	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	14.0	25.0	15.1	4.1	3.3	3.8	3.5	1.2
Queue Length 50th (m)	4.3	0.6	1.2	0.6	1.4	15.6	0.9	18.9	0.0
Queue Length 95th (m)	10.5	6.6	4.6	6.1	4.8	25.8	3.4	31.1	3.3
Internal Link Dist (m)	343.0		60.2		420.4		84.7		
Turn Bay Length (m)					19.8		48.8		38.1
Base Capacity (vph)	412	477	429	425	449	2901	506	2882	1315
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06	0.02	0.06	0.10	0.28	0.06	0.33	0.06

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 2: Hurontario St & Collington Ave/Highwood Rd

Existing PM
 Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	↔	
Traffic Volume (vph)	35	5	25	10	5	20	45	805	20	30	945	85	
Future Volume (vph)	35	5	25	10	5	20	45	805	20	30	945	85	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00	
Frt	1.00	0.88		1.00	0.88		1.00	1.00		1.00	1.00	0.85	
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1715	1640		1785	1468		1750	3567		1733	3544	1597	
Fit Permitted	0.82	1.00		0.82	1.00		0.30	1.00		0.34	1.00	1.00	
Satd. Flow (perm)	1474	1640		1534	1468		553	3567		622	3544	1597	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	35	5	25	10	5	20	45	805	20	30	945	85	
RTOR Reduction (vph)	0	23	0	0	19	0	0	2	0	0	0	22	
Lane Group Flow (vph)	35	7	0	10	6	0	45	823	0	30	945	63	
Heavy Vehicles (%)	2%	0%	3%	0%	40%	9%	2%	2%	0%	3%	3%	0%	
Bus Blockages (#/hr)	5	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm	
Protected Phases		4			8			2			6		
Permitted Phases	4			8			2			6		6	
Actuated Green, G (s)	4.9	4.9		4.9	4.9		49.9	49.9		49.9	49.9	49.9	
Effective Green, g (s)	4.9	4.9		4.9	4.9		49.9	49.9		49.9	49.9	49.9	
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.75	0.75		0.75	0.75	0.75	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	108	120		112	107		413	2664		464	2647	1192	
v/s Ratio Prot		0.00			0.00			0.23			c0.27		
v/s Ratio Perm	c0.02			0.01			0.08			0.05		0.04	
v/c Ratio	0.32	0.06		0.09	0.06		0.11	0.31		0.06	0.36	0.05	
Uniform Delay, d1	29.4	28.8		28.9	28.8		2.3	2.8		2.2	2.9	2.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.2		0.3	0.2		0.5	0.3		0.3	0.4	0.1	
Delay (s)	31.1	29.0		29.2	29.0		2.9	3.1		2.5	3.3	2.3	
Level of Service	C	C		C	C		A	A		A	A	A	
Approach Delay (s)		30.1			29.1			3.1			3.2		
Approach LOS		C			C			A			A		
Intersection Summary													
HCM 2000 Control Delay		4.4		HCM 2000 Level of Service					A				
HCM 2000 Volume to Capacity ratio		0.35											
Actuated Cycle Length (s)		66.8		Sum of lost time (s)					12.0				
Intersection Capacity Utilization		53.9%		ICU Level of Service					A				
Analysis Period (min)		15											
c Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis
 3: Hillpath Crescent/Site Access & Highwood Rd

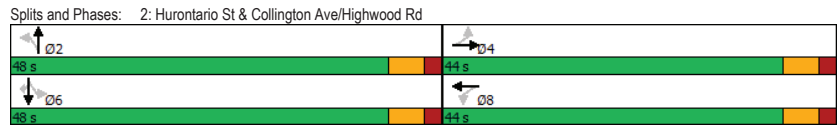
Existing PM
 Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	40	15	0	30	0	5	0	0	0	0	0
Future Volume (Veh/h)	0	40	15	0	30	0	5	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	40	15	0	30	0	5	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None		None									
Median storage (veh)												
Upstream signal (m)	84											
pX, platoon unblocked												
vC, conflicting volume	30			55			78	78	48	78	85	30
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			55			78	78	48	78	85	30
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1596			1563			883	817	1027	916	809	1050
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	55	30	5	0								
Volume Left	0	0	5	0								
Volume Right	15	0	0	0								
cSH	1596	1563	883	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (m)	0.0	0.0	0.1	0.0								
Control Delay (s)	0.0	0.0	9.1	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	9.1	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay				0.5								
Intersection Capacity Utilization	13.3%		ICU Level of Service		A							
Analysis Period (min)	15											

Timings Future Background AM (2027)
 2: Hurontario St & Collington Ave/Highwood Rd Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	↖	↗	↖	↗	↖	↗	↖	↗	↖	
Traffic Volume (vph)	50	25	15	5	20	695	60	1020	25	
Future Volume (vph)	50	25	15	5	20	695	60	1020	25	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases	4		8		8		2		6	
Permitted Phases	4		8		2		6		6	
Detector Phase	4		8		8		2		6	
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	44.0	44.0	44.0	44.0	26.0	26.0	26.0	26.0	26.0	
Total Split (s)	44.0	44.0	44.0	44.0	48.0	48.0	48.0	48.0	48.0	
Total Split (%)	47.8%	47.8%	47.8%	47.8%	52.2%	52.2%	52.2%	52.2%	52.2%	
Maximum Green (s)	38.0	38.0	38.0	38.0	42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	30.0	30.0	30.0	30.0	12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	

Intersection Summary	
Cycle Length:	92
Actuated Cycle Length:	65
Natural Cycle:	70
Control Type:	Semi Act-Uncoord



Queues Future Background AM (2027)
 2: Hurontario St & Collington Ave/Highwood Rd Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	50	55	15	50	20	715	60	1020	25
v/c Ratio	0.32	0.24	0.10	0.21	0.06	0.28	0.11	0.40	0.02
Control Delay	30.7	16.7	24.9	11.7	4.3	4.1	4.6	4.9	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	16.7	24.9	11.7	4.3	4.1	4.6	4.9	1.2
Queue Length 50th (m)	5.3	2.6	1.5	0.5	0.6	13.8	1.9	22.5	0.0
Queue Length 95th (m)	13.8	10.9	6.1	8.3	2.8	24.0	6.2	37.7	1.5
Internal Link Dist (m)	343.0		60.2		420.4		84.7		
Turn Bay Length (m)					19.8		48.8		38.1
Base Capacity (vph)	739	984	749	959	359	2518	528	2526	1202
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.06	0.02	0.05	0.06	0.28	0.11	0.40	0.02

Intersection Summary	
Cycle Length:	92
Actuated Cycle Length:	65
Natural Cycle:	70
Control Type:	Semi Act-Uncoord

HCM Signalized Intersection Capacity Analysis
2: Hurontario St & Collington Ave/Highwood Rd

Future Background AM (2027)
Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	↔
Traffic Volume (vph)	50	25	30	15	5	45	20	695	20	60	1020	25
Future Volume (vph)	50	25	30	15	5	45	20	695	20	60	1020	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.92		1.00	0.86		1.00	1.00		1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1653	1657		1684	1604		1700	3368		1767	3380	1597
Fit Permitted	0.72	1.00		0.72	1.00		0.27	1.00		0.38	1.00	1.00
Satd. Flow (perm)	1260	1657		1278	1604		481	3368		707	3380	1597
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	25	30	15	5	45	20	695	20	60	1020	25
RTOR Reduction (vph)	0	27	0	0	40	0	0	1	0	0	0	7
Lane Group Flow (vph)	50	28	0	15	10	0	20	714	0	60	1020	18
Heavy Vehicles (%)	8%	7%	6%	6%	0%	4%	5%	8%	5%	1%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases		4			8			2			6	
Actuated Green, G (s)	6.9	6.9		6.9	6.9		47.4	47.4		47.4	47.4	47.4
Effective Green, g (s)	6.9	6.9		6.9	6.9		47.4	47.4		47.4	47.4	47.4
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.71	0.71		0.71	0.71	0.71
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	131	172		133	166		343	2407		505	2416	1141
v/s Ratio Prot		0.02			0.01			0.21			c0.30	
v/s Ratio Perm	c0.04			0.01			0.04			0.08		0.01
v/c Ratio	0.38	0.16		0.11	0.06		0.06	0.30		0.12	0.42	0.02
Uniform Delay, d1	27.7	27.1		26.9	26.8		2.8	3.4		2.9	3.9	2.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	0.4		0.4	0.1		0.3	0.3		0.5	0.5	0.0
Delay (s)	29.6	27.5		27.3	26.9		3.1	3.7		3.4	4.4	2.7
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		28.5			27.0			3.7			4.3	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		6.1			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.42										
Actuated Cycle Length (s)		66.3			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		56.8%			ICU Level of Service			B				
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis
3: Hillpath Crescent/Site Access & Highwood Rd

Future Background AM (2027)
Argo Summer Valley (7597-06)

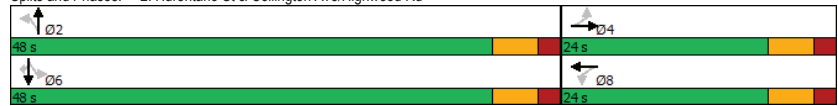
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	100	5	0	55	0	10	0	0	0	0	0
Future Volume (Veh/h)	0	100	5	0	55	0	10	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	100	5	0	55	0	10	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		84										
pX, platoon unblocked												
vC, conflicting volume		55			105			158	158	102	158	160
vC1, stage 1 conf vol												55
vC2, stage 2 conf vol												
vCu, unblocked vol		55			105			158	158	102	158	160
tC, single (s)		4.1			4.1			7.1	6.5	6.2	7.1	6.5
tC, 2 stage (s)												
tF (s)		2.2			2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %		100			100			99	100	100	100	100
cM capacity (veh/h)		1563			1499			813	738	958	813	736
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	105	55	10	0								
Volume Left	0	0	10	0								
Volume Right	5	0	0	0								
cSH	1563	1499	813	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (m)	0.0	0.0	0.3	0.0								
Control Delay (s)	0.0	0.0	9.5	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	9.5	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			15.6%					ICU Level of Service			A	
Analysis Period (min)			15									

Timings Future Background PM (2027)
 2: Hurontario St & Collington Ave/Highwood Rd Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	↖	↗	↖	↗	↖	↗	↖	↗	↖	
Traffic Volume (vph)	35	5	10	5	45	910	30	1065	85	
Future Volume (vph)	35	5	10	5	45	910	30	1065	85	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases	4		8		2		6		6	
Permitted Phases	4	8		2		6		6		
Detector Phase	4	4	8	8	2	2	6	6	6	
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	44.0	44.0	44.0	44.0	26.0	26.0	26.0	26.0	26.0	
Total Split (s)	24.0	24.0	24.0	24.0	48.0	48.0	48.0	48.0	48.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%	66.7%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max	
Act Effct Green (s)	7.2	7.2	7.1	7.1	52.2	52.2	52.2	52.2	52.2	
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.81	0.81	0.81	0.81	0.81	
v/c Ratio	0.21	0.14	0.06	0.14	0.12	0.32	0.07	0.37	0.06	
Control Delay	28.2	14.0	24.9	15.1	4.4	3.5	3.9	3.8	1.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	28.2	14.0	24.9	15.1	4.4	3.5	3.9	3.8	1.2	
LOS	C	B	C	B	A	A	A	A	A	
Approach Delay	21.6		17.9		3.5		3.6			
Approach LOS	C		B		A		A			

Intersection Summary	
Cycle Length:	72
Actuated Cycle Length:	64.2
Natural Cycle:	70
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.37
Intersection Signal Delay:	4.3
Intersection LOS:	A
Intersection Capacity Utilization:	56.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Hurontario St & Collington Ave/Highwood Rd



Queues Future Background PM (2027)
 2: Hurontario St & Collington Ave/Highwood Rd Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	35	30	10	25	45	930	30	1065	85
v/c Ratio	0.21	0.14	0.06	0.14	0.12	0.32	0.07	0.37	0.06
Control Delay	28.2	14.0	24.9	15.1	4.4	3.5	3.9	3.8	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	14.0	24.9	15.1	4.4	3.5	3.9	3.8	1.2
Queue Length 50th (m)	4.3	0.6	1.2	0.6	1.4	18.3	0.9	22.4	0.0
Queue Length 95th (m)	10.5	6.6	4.6	6.1	4.9	30.1	3.4	36.3	3.3
Internal Link Dist (m)	343.0		60.2		420.4		84.7		
Turn Bay Length (m)					19.8		48.8		38.1
Base Capacity (vph)	413	478	430	426	389	2901	451	2880	1313
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06	0.02	0.06	0.12	0.32	0.07	0.37	0.06

Intersection Summary

--	--	--	--	--	--	--	--	--	--

HCM Signalized Intersection Capacity Analysis
2: Hurontario St & Collington Ave/Highwood Rd

Future Background PM (2027)
Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	35	5	25	10	5	20	45	910	20	30	1065	85
Future Volume (vph)	35	5	25	10	5	20	45	910	20	30	1065	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.88		1.00	0.88		1.00	1.00		1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1640		1785	1468		1750	3569		1733	3544	1597
Fit Permitted	0.82	1.00		0.82	1.00		0.26	1.00		0.31	1.00	1.00
Satd. Flow (perm)	1474	1640		1534	1468		478	3569		557	3544	1597
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	5	25	10	5	20	45	910	20	30	1065	85
RTOR Reduction (vph)	0	23	0	0	19	0	0	1	0	0	0	22
Lane Group Flow (vph)	35	7	0	10	6	0	45	929	0	30	1065	63
Heavy Vehicles (%)	2%	0%	3%	0%	40%	9%	2%	2%	0%	3%	3%	0%
Bus Blockages (#/hr)	5	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	4.9	4.9		4.9	4.9		49.7	49.7		49.7	49.7	49.7
Effective Green, g (s)	4.9	4.9		4.9	4.9		49.7	49.7		49.7	49.7	49.7
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.75	0.75		0.75	0.75	0.75
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	108	120		112	108		356	2663		415	2644	1191
v/s Ratio Prot		0.00			0.00			0.26			c0.30	
v/s Ratio Perm	c0.02			0.01			0.09			0.05		0.04
v/c Ratio	0.32	0.06		0.09	0.06		0.13	0.35		0.07	0.40	0.05
Uniform Delay, d1	29.3	28.7		28.8	28.7		2.4	2.9		2.3	3.1	2.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.2		0.3	0.2		0.7	0.4		0.3	0.5	0.1
Delay (s)	31.0	28.9		29.1	28.9		3.1	3.3		2.6	3.5	2.3
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		30.0			29.0			3.3			3.4	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay	4.5			HCM 2000 Level of Service				A				
HCM 2000 Volume to Capacity ratio	0.40											
Actuated Cycle Length (s)	66.6			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	56.0%			ICU Level of Service				B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
3: Hillpath Crescent/Site Access & Highwood Rd

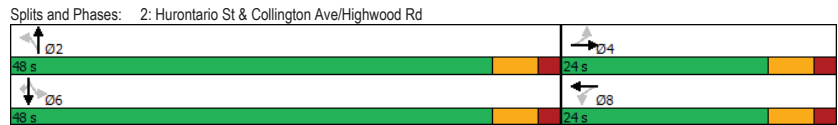
Future Background PM (2027)
Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔			↔			↔			↔		
Traffic Volume (veh/h)	0	40	15	0	30	0	5	0	0	0	0	0	
Future Volume (Veh/h)	0	40	15	0	30	0	5	0	0	0	0	0	
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Hourly flow rate (vph)	0	40	15	0	30	0	5	0	0	0	0	0	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None			None									
Median storage (veh)													
Upstream signal (m)	84												
pX, platoon unblocked													
vC, conflicting volume	30			55			78	78	48	78	85	30	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	30			55			78	78	48	78	85	30	
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	100			100			99	100	100	100	100	100	
cM capacity (veh/h)	1596			1563			883	817	1027	916	809	1050	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1									
Volume Total	55	30	5	0									
Volume Left	0	0	5	0									
Volume Right	15	0	0	0									
cSH	1596	1563	883	1700									
Volume to Capacity	0.00	0.00	0.01	0.00									
Queue Length 95th (m)	0.0	0.0	0.1	0.0									
Control Delay (s)	0.0	0.0	9.1	0.0									
Lane LOS	A				A								
Approach Delay (s)	0.0	0.0	9.1	0.0									
Approach LOS	A				A								
Intersection Summary													
Average Delay	0.5												
Intersection Capacity Utilization	13.3%			ICU Level of Service				A					
Analysis Period (min)	15												

Timings Future Background AM (2032)
 2: Hurontario St & Collington Ave/Highwood Rd Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	↖	↗	↖	↗	↖	↗	↖	↗	↖	
Traffic Volume (vph)	50	25	15	5	20	988	60	1532	25	
Future Volume (vph)	50	25	15	5	20	988	60	1532	25	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases	4		8		2		6		6	
Permitted Phases	4	8		2		6		6		
Detector Phase	4	4	8	8	2	2	6	6	6	
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	
Total Split (s)	24.0	24.0	24.0	24.0	48.0	48.0	48.0	48.0	48.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%	66.7%	
Maximum Green (s)	18.0	18.0	18.0	18.0	42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	

Intersection Summary	
Cycle Length:	72
Actuated Cycle Length:	65.8
Natural Cycle:	60
Control Type:	Semi Act-Uncoord



Queues Future Background AM (2032)
 2: Hurontario St & Collington Ave/Highwood Rd Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Group Flow (vph)	50	55	15	50	20	1008	60	1532	25	
v/c Ratio	0.32	0.24	0.10	0.21	0.11	0.40	0.16	0.61	0.02	
Control Delay	30.7	16.7	24.8	11.6	5.9	4.8	5.4	6.8	0.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	
Total Delay	30.7	16.7	24.8	11.6	5.9	4.8	5.4	7.4	0.8	
Queue Length 50th (m)	5.3	2.6	1.5	0.5	0.7	21.8	2.0	43.1	0.0	
Queue Length 95th (m)	13.7	10.9	5.9	8.2	3.4	37.8	7.0	74.1	1.2	
Internal Link Dist (m)	343.0		60.2		420.4		84.7			
Turn Bay Length (m)					19.8		48.8		38.1	
Base Capacity (vph)	346	477	351	474	181	2524	380	2529	1206	
Starvation Cap Reductn	0	0	0	0	0	0	0	511	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.12	0.04	0.11	0.11	0.40	0.16	0.76	0.02	

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Hurontario St & Collington Ave/Highwood Rd

Future Background AM (2032)
Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	↔
Traffic Volume (vph)	50	25	30	15	5	45	20	988	20	60	1532	25
Future Volume (vph)	50	25	30	15	5	45	20	988	20	60	1532	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.92		1.00	0.86		1.00	1.00		1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1653	1657		1684	1604		1700	3372		1767	3380	1597
Fit Permitted	0.72	1.00		0.72	1.00		0.13	1.00		0.27	1.00	1.00
Satd. Flow (perm)	1260	1657		1278	1604		241	3372		508	3380	1597
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	25	30	15	5	45	20	988	20	60	1532	25
RTOR Reduction (vph)	0	27	0	0	40	0	0	1	0	0	0	7
Lane Group Flow (vph)	50	28	0	15	10	0	20	1007	0	60	1532	18
Heavy Vehicles (%)	8%	7%	6%	6%	0%	4%	5%	8%	5%	1%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	7.0	7.0		7.0	7.0		48.0	48.0		48.0	48.0	48.0
Effective Green, g (s)	7.0	7.0		7.0	7.0		48.0	48.0		48.0	48.0	48.0
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.72	0.72		0.72	0.72	0.72
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	131	173		133	167		172	2415		363	2421	1144
v/s Ratio Prot		0.02			0.01			0.30			c0.45	
v/s Ratio Perm	c0.04			0.01			0.08			0.12		0.01
v/c Ratio	0.38	0.16		0.11	0.06		0.12	0.42		0.17	0.63	0.02
Uniform Delay, d1	28.0	27.3		27.2	27.0		2.9	3.8		3.1	4.9	2.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	0.4		0.4	0.1		1.4	0.5		1.0	1.3	0.0
Delay (s)	29.8	27.8		27.6	27.2		4.3	4.4		4.0	6.2	2.7
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		28.8			27.3			4.4			6.1	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		6.8					HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio		0.60										
Actuated Cycle Length (s)		67.0					Sum of lost time (s)			12.0		
Intersection Capacity Utilization		69.3%					ICU Level of Service			C		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
3: Hillpath Crescent/Site Access & Highwood Rd

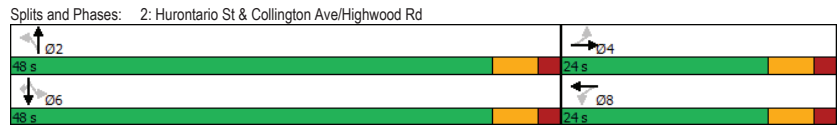
Future Background AM (2032)
Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	100	5	0	55	0	10	0	0	0	0	0
Future Volume (Veh/h)	0	100	5	0	55	0	10	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	100	5	0	55	0	10	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		84										
pX, platoon unblocked												
vC, conflicting volume		55			105			158	158	102	158	160
vC1, stage 1 conf vol												55
vC2, stage 2 conf vol												
vCu, unblocked vol		55			105			158	158	102	158	160
tC, single (s)		4.1			4.1			7.1	6.5	6.2	7.1	6.5
tC, 2 stage (s)												
tF (s)		2.2			2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %		100			100			99	100	100	100	100
cM capacity (veh/h)		1563			1499			813	738	958	813	736
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	105	55	10	0								
Volume Left	0	0	10	0								
Volume Right	5	0	0	0								
cSH	1563	1499	813	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (m)	0.0	0.0	0.3	0.0								
Control Delay (s)	0.0	0.0	9.5	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	9.5	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay		0.6										
Intersection Capacity Utilization		15.6%			ICU Level of Service			A				
Analysis Period (min)		15										

Timings Future Background PM (2032)
Argo Summer Valley (7597-06)
2: Hurontario St & Collington Ave/Highwood Rd

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	↔	↔	↔	↔	↔	↔↔	↔	↔↔	↔	
Traffic Volume (vph)	35	5	10	5	45	1464	30	1842	85	
Future Volume (vph)	35	5	10	5	45	1464	30	1842	85	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases	4		8		2		6		6	
Permitted Phases	4		8		2		6		6	
Detector Phase	4	4	8	8	2	2	6	6	6	
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	
Total Split (s)	24.0	24.0	24.0	24.0	48.0	48.0	48.0	48.0	48.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%	66.7%	
Maximum Green (s)	18.0	18.0	18.0	18.0	42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	

Intersection Summary
 Cycle Length: 72
 Actuated Cycle Length: 64.2
 Natural Cycle: 65
 Control Type: Semi Act-Uncoord



Queues Future Background PM (2032)
Argo Summer Valley (7597-06)
2: Hurontario St & Collington Ave/Highwood Rd

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	35	30	10	25	45	1484	30	1842	85
v/c Ratio	0.21	0.15	0.06	0.14	0.34	0.51	0.13	0.64	0.06
Control Delay	28.2	18.6	24.9	15.1	14.8	4.8	5.4	6.3	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	28.2	18.6	24.9	15.1	14.8	4.8	5.4	6.9	1.7
Queue Length 50th (m)	4.3	1.8	1.2	0.6	1.7	37.1	1.0	56.3	0.6
Queue Length 95th (m)	10.5	7.8	4.6	6.1	#15.5	60.0	4.2	92.9	4.1
Internal Link Dist (m)	343.0		60.2		420.4		84.7		
Turn Bay Length (m)					19.8	48.8		38.1	
Base Capacity (vph)	413	471	430	426	131	2903	225	2880	1309
Starvation Cap Reductn	0	0	0	0	0	0	0	591	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06	0.02	0.06	0.34	0.51	0.13	0.80	0.06

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

HCM Signalized Intersection Capacity Analysis
2: Hurontario St & Collington Ave/Highwood Rd

Future Background PM (2032)
Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	↔
Traffic Volume (vph)	35	5	25	10	5	20	45	1464	20	30	1842	85
Future Volume (vph)	35	5	25	10	5	20	45	1464	20	30	1842	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.88		1.00	0.88		1.00	1.00		1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1640		1785	1468		1750	3572		1733	3544	1597
Fit Permitted	0.82	1.00		0.82	1.00		0.09	1.00		0.15	1.00	1.00
Satd. Flow (perm)	1474	1640		1534	1468		163	3572		276	3544	1597
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	5	25	10	5	20	45	1464	20	30	1842	85
RTOR Reduction (vph)	0	14	0	0	19	0	1	0	0	0	0	16
Lane Group Flow (vph)	35	16	0	10	6	0	45	1483	0	30	1842	69
Heavy Vehicles (%)	2%	0%	3%	0%	40%	9%	2%	2%	0%	3%	3%	0%
Bus Blockages (#/hr)	5	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	4.9	4.9		4.9	4.9		49.7	49.7		49.7	49.7	49.7
Effective Green, g (s)	4.9	4.9		4.9	4.9		49.7	49.7		49.7	49.7	49.7
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.75	0.75		0.75	0.75	0.75
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	108	120		112	108		121	2665		205	2644	1191
v/s Ratio Prot		0.01			0.00			0.42			c0.52	
v/s Ratio Perm	c0.02			0.01			0.28			0.11		0.04
v/c Ratio	0.32	0.13		0.09	0.06		0.37	0.56		0.15	0.70	0.06
Uniform Delay, d1	29.3	28.9		28.8	28.7		3.0	3.7		2.4	4.5	2.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.5		0.3	0.2		8.5	0.8		1.5	1.5	0.1
Delay (s)	31.0	29.4		29.1	28.9		11.5	4.5		3.9	6.0	2.3
Level of Service	C	C		C	C		B	A		A	A	A
Approach Delay (s)		30.3			29.0			4.7			5.8	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay	6.0		HCM 2000 Level of Service				A					
HCM 2000 Volume to Capacity ratio	0.66											
Actuated Cycle Length (s)	66.6		Sum of lost time (s)				12.0					
Intersection Capacity Utilization	69.5%		ICU Level of Service				C					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
3: Hillpath Crescent/Site Access & Highwood Rd

Future Background PM (2032)
Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	40	15	0	30	0	5	0	0	0	0	0
Future Volume (Veh/h)	0	40	15	0	30	0	5	0	0	0	0	0
Sign Control	Free		Free		Stop		Stop		Stop			
Grade	0%		0%		0%		0%		0%			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	40	15	0	30	0	5	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None		None									
Median storage (veh)												
Upstream signal (m)	84											
pX, platoon unblocked												
vC, conflicting volume	30			55			78	78	48	78	85	30
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			55			78	78	48	78	85	30
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1596			1563			883	817	1027	916	809	1050
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	55	30	5	0								
Volume Left	0	0	5	0								
Volume Right	15	0	0	0								
cSH	1596	1563	883	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (m)	0.0	0.0	0.1	0.0								
Control Delay (s)	0.0	0.0	9.1	0.0								
Lane LOS	A		A									
Approach Delay (s)	0.0	0.0	9.1	0.0								
Approach LOS	A		A									
Intersection Summary												
Average Delay	0.5											
Intersection Capacity Utilization	13.3%		ICU Level of Service				A					
Analysis Period (min)	15											

Timings

2: Hurontario St & Collington Ave/Highwood Rd

Future Total AM (2027)

Argo Summer Valley (7597-06)

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	50	25	30	5	20	695	70	1020	25
Future Volume (vph)	50	25	30	5	20	695	70	1020	25
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	4		8		2		6		6
Permitted Phases	4	8		2		6		6	6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	44.0	44.0	44.0	44.0	26.0	26.0	26.0	26.0	26.0
Total Split (s)	44.0	44.0	44.0	44.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	52.2%	52.2%	52.2%	52.2%	52.2%
Maximum Green (s)	38.0	38.0	38.0	38.0	42.0	42.0	42.0	42.0	42.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag									
Lead-Lag Optimize?									
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	30.0	30.0	30.0	30.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0

Intersection Summary

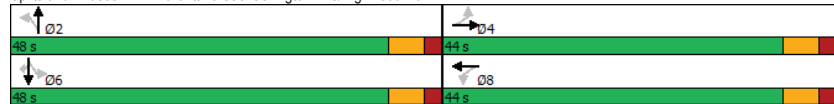
Cycle Length: 92

Actuated Cycle Length: 64.1

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Splits and Phases: 2: Hurontario St & Collington Ave/Highwood Rd



Queues

2: Hurontario St & Collington Ave/Highwood Rd

Future Total AM (2027)

Argo Summer Valley (7597-06)

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	50	55	30	65	20	720	70	1020	25
v/c Ratio	0.32	0.24	0.19	0.26	0.06	0.29	0.13	0.41	0.02
Control Delay	30.4	16.7	26.9	11.2	4.4	4.2	4.8	4.9	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	16.7	26.9	11.2	4.4	4.2	4.8	4.9	1.3
Queue Length 50th (m)	5.3	2.6	3.1	0.5	0.6	13.9	2.3	22.5	0.0
Queue Length 95th (m)	13.9	10.9	9.5	9.4	2.8	24.3	7.1	38.0	1.5
Internal Link Dist (m)	343.0		60.2		420.4		84.7		
Turn Bay Length (m)					19.8		48.8		38.1
Base Capacity (vph)	738	995	758	972	357	2503	522	2512	1196
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.06	0.04	0.07	0.06	0.29	0.13	0.41	0.02

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Hurontario St & Collington Ave/Highwood Rd

Future Total AM (2027)
Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	↔
Traffic Volume (vph)	50	25	30	30	5	60	20	695	25	70	1020	25
Future Volume (vph)	50	25	30	30	5	60	20	695	25	70	1020	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.92		1.00	0.86		1.00	0.99		1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1653	1657		1684	1596		1700	3365		1767	3380	1597
Fit Permitted	0.71	1.00		0.72	1.00		0.27	1.00		0.38	1.00	1.00
Satd. Flow (perm)	1243	1657		1278	1596		481	3365		703	3380	1597
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	25	30	30	5	60	20	695	25	70	1020	25
RTOR Reduction (vph)	0	27	0	0	54	0	0	1	0	0	0	7
Lane Group Flow (vph)	50	28	0	30	11	0	20	719	0	70	1020	18
Heavy Vehicles (%)	8%	7%	6%	6%	0%	4%	5%	8%	5%	1%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases		4			8			2			6	
Actuated Green, G (s)	6.9	6.9		6.9	6.9		46.4	46.4		46.4	46.4	46.4
Effective Green, g (s)	6.9	6.9		6.9	6.9		46.4	46.4		46.4	46.4	46.4
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.71	0.71		0.71	0.71	0.71
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	131	175		135	168		341	2391		499	2401	1134
v/s Ratio Prot		0.02			0.01			0.21			c0.30	
v/s Ratio Perm	c0.04			0.02			0.04			0.10		0.01
v/c Ratio	0.38	0.16		0.22	0.07		0.06	0.30		0.14	0.42	0.02
Uniform Delay, d1	27.2	26.6		26.7	26.3		2.9	3.5		3.0	3.9	2.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	0.4		0.8	0.2		0.3	0.3		0.6	0.6	0.0
Delay (s)	29.1	27.0		27.6	26.5		3.2	3.8		3.6	4.5	2.8
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		28.0			26.8			3.8			4.4	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		6.4			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.42										
Actuated Cycle Length (s)		65.3			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		56.8%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
3: Hillpath Crescent/Site Access & Highwood Rd

Future Total AM (2027)
Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	15	100	5	0	55	0	10	0	0	0	0	30
Future Volume (Veh/h)	15	100	5	0	55	0	10	0	0	0	0	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	100	5	0	55	0	10	0	0	0	0	30
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		84										
pX, platoon unblocked												
vC, conflicting volume		55			105			218	188	102	188	190
vC1, stage 1 conf vol												55
vC2, stage 2 conf vol												
vCu, unblocked vol		55			105			218	188	102	188	190
tC, single (s)		4.1			4.1			7.1	6.5	6.2	7.1	6.5
tC, 2 stage (s)												6.2
tF (s)		2.2			2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %		99			100			99	100	100	100	97
cM capacity (veh/h)		1563			1499			716	704	958	772	702
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	120	55	10	30								
Volume Left	15	0	10	0								
Volume Right	5	0	0	30								
cSH	1563	1499	716	1018								
Volume to Capacity	0.01	0.00	0.01	0.03								
Queue Length 95th (m)	0.2	0.0	0.3	0.7								
Control Delay (s)	1.0	0.0	10.1	8.6								
Lane LOS	A		B	A								
Approach Delay (s)	1.0	0.0	10.1	8.6								
Approach LOS			B	A								
Intersection Summary												
Average Delay				2.2								
Intersection Capacity Utilization			26.9%	ICU Level of Service						A		
Analysis Period (min)			15									

Timings

2: Hurontario St & Collington Ave/Highwood Rd

Future Total PM (2027)

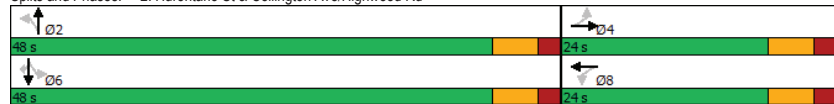
Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↘	↓	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗	↖	↗	↖
Traffic Volume (vph)	35	5	25	5	45	910	50	1065	85
Future Volume (vph)	35	5	25	5	45	910	50	1065	85
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	4		8		2		6		6
Permitted Phases	4	8		2		6		6	6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	44.0	44.0	44.0	44.0	26.0	26.0	26.0	26.0	26.0
Total Split (s)	24.0	24.0	24.0	24.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max
Act Effct Green (s)	7.2	7.2	7.2	7.2	51.1	51.1	51.1	51.1	51.1
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.81	0.81	0.81	0.81	0.81
v/c Ratio	0.21	0.14	0.14	0.18	0.12	0.33	0.11	0.37	0.06
Control Delay	27.7	13.9	26.3	13.7	4.4	3.5	4.2	3.8	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	13.9	26.3	13.7	4.4	3.5	4.2	3.8	1.2
LOS	C	B	C	B	A	A	A	A	A
Approach Delay	21.3		18.9		3.6		3.6		
Approach LOS	C		B		A		A		

Intersection Summary

Cycle Length: 72
 Actuated Cycle Length: 63.2
 Natural Cycle: 70
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.37
 Intersection Signal Delay: 4.5
 Intersection LOS: A
 Intersection Capacity Utilization 57.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 2: Hurontario St & Collington Ave/Highwood Rd



Queues

2: Hurontario St & Collington Ave/Highwood Rd

Future Total PM (2027)

Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↘	↓	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	35	30	25	35	45	950	50	1065	85
v/c Ratio	0.21	0.14	0.14	0.18	0.12	0.33	0.11	0.37	0.06
Control Delay	27.7	13.9	26.3	13.7	4.4	3.5	4.2	3.8	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	13.9	26.3	13.7	4.4	3.5	4.2	3.8	1.2
Queue Length 50th (m)	3.9	0.6	2.8	0.6	1.4	18.6	1.5	22.3	0.0
Queue Length 95th (m)	10.5	6.6	8.3	7.1	4.9	30.8	5.3	36.3	3.3
Internal Link Dist (m)	343.0		60.2		420.4		84.7		
Turn Bay Length (m)					19.8		48.8		38.1
Base Capacity (vph)	419	484	436	441	387	2881	440	2866	1308
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06	0.06	0.08	0.12	0.33	0.11	0.37	0.06

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 2: Hurontario St & Collington Ave/Highwood Rd

Future Total PM (2027)
 Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	35	5	25	25	5	30	45	910	40	50	1065	85
Future Volume (vph)	35	5	25	25	5	30	45	910	40	50	1065	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.88		1.00	0.87		1.00	0.99		1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1640		1785	1476		1750	3559		1733	3544	1597
Fit Permitted	0.82	1.00		0.82	1.00		0.26	1.00		0.30	1.00	1.00
Satd. Flow (perm)	1474	1640		1534	1476		478	3559		544	3544	1597
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	5	25	25	5	30	45	910	40	50	1065	85
RTOR Reduction (vph)	0	23	0	0	28	0	0	3	0	0	0	22
Lane Group Flow (vph)	35	7	0	25	7	0	45	947	0	50	1065	63
Heavy Vehicles (%)	2%	0%	3%	0%	40%	9%	2%	2%	0%	3%	3%	0%
Bus Blockages (#/hr)	5	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	4.9	4.9		4.9	4.9		48.7	48.7		48.7	48.7	48.7
Effective Green, g (s)	4.9	4.9		4.9	4.9		48.7	48.7		48.7	48.7	48.7
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.74	0.74		0.74	0.74	0.74
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	110	122		114	110		354	2642		403	2630	1185
v/s Ratio Prot		0.00			0.00			0.27			c0.30	
v/s Ratio Perm	c0.02			0.02			0.09			0.09		0.04
v/c Ratio	0.32	0.06		0.22	0.07		0.13	0.36		0.12	0.40	0.05
Uniform Delay, d1	28.8	28.2		28.6	28.2		2.4	3.0		2.4	3.1	2.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.2		1.0	0.3		0.7	0.4		0.6	0.5	0.1
Delay (s)	30.4	28.4		29.5	28.5		3.1	3.3		3.0	3.6	2.4
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		29.5			28.9			3.3			3.5	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		4.8					HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio		0.40										
Actuated Cycle Length (s)		65.6				Sum of lost time (s)			12.0			
Intersection Capacity Utilization		57.2%				ICU Level of Service			B			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 3: Hillpath Crescent/Site Access & Highwood Rd

Future Total PM (2027)
 Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	40	40	15	0	30	0	5	0	0	0	0	25
Future Volume (Veh/h)	40	40	15	0	30	0	5	0	0	0	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	40	40	15	0	30	0	5	0	0	0	0	25
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		84										
pX, platoon unblocked												
vC, conflicting volume	30			55			182	158	48	158	165	30
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			55			182	158	48	158	165	30
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	100	100	100	100	98
cM capacity (veh/h)	1596			1563			721	720	1027	798	713	1050
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	95	30	5	25								
Volume Left	40	0	5	0								
Volume Right	15	0	0	25								
cSH	1596	1563	721	1050								
Volume to Capacity	0.03	0.00	0.01	0.02								
Queue Length 95th (m)	0.6	0.0	0.2	0.6								
Control Delay (s)	3.2	0.0	10.0	8.5								
Lane LOS	A		B	A								
Approach Delay (s)	3.2	0.0	10.0	8.5								
Approach LOS			B	A								
Intersection Summary												
Average Delay				3.7								
Intersection Capacity Utilization		22.7%			ICU Level of Service			A				
Analysis Period (min)				15								

Timings

2: Hurontario St & Collington Ave/Highwood Rd

Future Total AM (2032)

Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	50	25	30	5	20	988	70	1532	25
Future Volume (vph)	50	25	30	5	20	988	70	1532	25
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0
Total Split (s)	24.0	24.0	24.0	24.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%	66.7%
Maximum Green (s)	18.0	18.0	18.0	18.0	42.0	42.0	42.0	42.0	42.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag									
Lead-Lag Optimize?									
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0

Intersection Summary

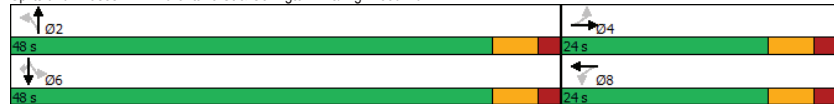
Cycle Length: 72

Actuated Cycle Length: 64.8

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Splits and Phases: 2: Hurontario St & Collington Ave/Highwood Rd



Queues

2: Hurontario St & Collington Ave/Highwood Rd

Future Total AM (2032)

Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	50	55	30	65	20	1013	70	1532	25
v/c Ratio	0.32	0.24	0.19	0.26	0.11	0.40	0.19	0.61	0.02
Control Delay	30.5	16.6	26.9	11.1	6.0	4.9	5.8	6.9	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Total Delay	30.5	16.6	26.9	11.1	6.0	4.9	5.8	7.5	0.8
Queue Length 50th (m)	5.3	2.6	3.1	0.5	0.7	22.1	2.4	43.1	0.0
Queue Length 95th (m)	13.7	10.9	9.5	9.4	3.5	38.3	8.2	74.4	1.2
Internal Link Dist (m)		343.0		60.2		420.4		84.7	
Turn Bay Length (m)					19.8		48.8		38.1
Base Capacity (vph)	346	482	355	487	178	2511	375	2518	1201
Starvation Cap Reductn	0	0	0	0	0	0	0	511	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.11	0.08	0.13	0.11	0.40	0.19	0.76	0.02

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 2: Hurontario St & Collington Ave/Highwood Rd

Future Total AM (2032)
 Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	↔
Traffic Volume (vph)	50	25	30	30	5	60	20	988	25	70	1532	25
Future Volume (vph)	50	25	30	30	5	60	20	988	25	70	1532	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.92		1.00	0.86		1.00	1.00		1.00	1.00	0.85
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1653	1657		1684	1596		1700	3370		1767	3380	1597
Fit Permitted	0.71	1.00		0.72	1.00		0.13	1.00		0.27	1.00	1.00
Satd. Flow (perm)	1243	1657		1278	1596		240	3370		504	3380	1597
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	25	30	30	5	60	20	988	25	70	1532	25
RTOR Reduction (vph)	0	27	0	0	54	0	0	2	0	0	0	7
Lane Group Flow (vph)	50	28	0	30	11	0	20	1011	0	70	1532	18
Heavy Vehicles (%)	8%	7%	6%	6%	0%	4%	5%	8%	5%	1%	8%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	7.0	7.0		7.0	7.0		47.1	47.1		47.1	47.1	47.1
Effective Green, g (s)	7.0	7.0		7.0	7.0		47.1	47.1		47.1	47.1	47.1
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.71	0.71		0.71	0.71	0.71
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	131	175		135	169		171	2401		359	2408	1137
v/s Ratio Prot		0.02			0.01			0.30			c0.45	
v/s Ratio Perm	c0.04			0.02			0.08			0.14		0.01
v/c Ratio	0.38	0.16		0.22	0.07		0.12	0.42		0.19	0.64	0.02
Uniform Delay, d1	27.5	26.9		27.1	26.6		3.0	3.9		3.2	5.0	2.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	0.4		0.8	0.2		1.4	0.5		1.2	1.3	0.0
Delay (s)	29.4	27.3		27.9	26.8		4.4	4.4		4.4	6.3	2.8
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		28.3			27.1			4.4			6.2	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		7.0										A
HCM 2000 Volume to Capacity ratio		0.60										
Actuated Cycle Length (s)		66.1			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		71.0%			ICU Level of Service			C				
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis
 3: Hillpath Crescent/Site Access & Highwood Rd

Future Total AM (2032)
 Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	15	100	5	0	55	0	10	0	0	0	0	30
Future Volume (Veh/h)	15	100	5	0	55	0	10	0	0	0	0	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	100	5	0	55	0	10	0	0	0	0	30
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		84										
pX, platoon unblocked												
vC, conflicting volume	55			105			218	188	102	188	190	55
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	55			105			218	188	102	188	190	55
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	100	100	100	100	97
cM capacity (veh/h)	1563			1499			716	704	958	772	702	1018
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	120	55	10	30								
Volume Left	15	0	10	0								
Volume Right	5	0	0	30								
cSH	1563	1499	716	1018								
Volume to Capacity	0.01	0.00	0.01	0.03								
Queue Length 95th (m)	0.2	0.0	0.3	0.7								
Control Delay (s)	1.0	0.0	10.1	8.6								
Lane LOS	A		B	A								
Approach Delay (s)	1.0	0.0	10.1	8.6								
Approach LOS			B	A								
Intersection Summary												
Average Delay		2.2										
Intersection Capacity Utilization		26.9%			ICU Level of Service			A				
Analysis Period (min)		15										

Timings

2: Hurontario St & Collington Ave/Highwood Rd

Future Total PM (2032)

Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	
Traffic Volume (vph)	35	5	25	5	45	1464	50	1842	85	
Future Volume (vph)	35	5	25	5	45	1464	50	1842	85	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases	4		8		2		6		6	
Permitted Phases	4	8		2		6		6	6	
Detector Phase	4	4	8	8	2	2	6	6	6	
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	
Total Split (s)	24.0	24.0	24.0	24.0	48.0	48.0	48.0	48.0	48.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%	66.7%	
Maximum Green (s)	18.0	18.0	18.0	18.0	42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	12.0	12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	

Intersection Summary

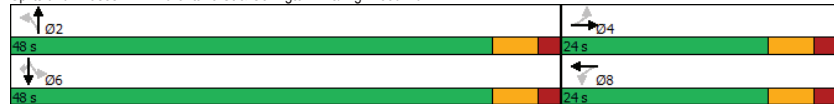
Cycle Length: 72

Actuated Cycle Length: 63.4

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Splits and Phases: 2: Hurontario St & Collington Ave/Highwood Rd



Queues

2: Hurontario St & Collington Ave/Highwood Rd

Future Total PM (2032)

Argo Summer Valley (7597-06)

	↖	→	↗	←	↖	↑	↗	↓	↖
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	35	30	25	35	45	1504	50	1842	85
v/c Ratio	0.21	0.15	0.14	0.18	0.34	0.52	0.23	0.64	0.07
Control Delay	27.8	18.4	26.4	13.7	14.9	4.9	7.3	6.4	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Total Delay	27.8	18.4	26.4	13.7	14.9	4.9	7.3	6.9	1.7
Queue Length 50th (m)	4.0	1.7	2.8	0.6	1.7	37.7	1.7	56.0	0.6
Queue Length 95th (m)	10.5	7.8	8.3	7.1	#15.5	61.6	7.6	92.9	4.1
Internal Link Dist (m)	343.0		60.2		420.4		84.7		
Turn Bay Length (m)					19.8		48.8		38.1
Base Capacity (vph)	418	476	435	440	131	2887	217	2868	1304
Starvation Cap Reductn	0	0	0	0	0	0	0	550	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06	0.06	0.08	0.34	0.52	0.23	0.79	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 2: Hurontario St & Collington Ave/Highwood Rd

Future Total PM (2032)
 Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	35	5	25	25	5	30	45	1464	40	50	1842	85
Future Volume (vph)	35	5	25	25	5	30	45	1464	40	50	1842	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Frt	1.00	0.88	1.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00
Fit Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1715	1640	1785	1476	1750	3566	1733	3544	1597			
Fit Permitted	0.82	1.00	0.82	1.00	0.09	1.00	0.15	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1474	1640	1534	1476	162	3566	268	3544	1597			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	5	25	25	5	30	45	1464	40	50	1842	85
RTOR Reduction (vph)	0	14	0	0	28	0	2	0	0	0	0	16
Lane Group Flow (vph)	35	16	0	25	7	0	45	1502	0	50	1842	69
Heavy Vehicles (%)	2%	0%	3%	0%	40%	9%	2%	2%	0%	3%	3%	0%
Bus Blockages (#/hr)	5	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	Perm
Protected Phases	4	4	8	8	2	2	6	6	6	6	6	6
Permitted Phases	4	4	8	8	2	2	6	6	6	6	6	6
Actuated Green, G (s)	4.9	4.9	4.9	4.9	48.9	48.9	48.9	48.9	48.9	48.9	48.9	48.9
Effective Green, g (s)	4.9	4.9	4.9	4.9	48.9	48.9	48.9	48.9	48.9	48.9	48.9	48.9
Actuated g/C Ratio	0.07	0.07	0.07	0.07	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	109	122	114	109	120	2650	199	2633	1186			
v/s Ratio Prot	0.01	0.01	0.00	0.00	0.42	0.42	c0.52					
v/s Ratio Perm	c0.02	0.02	0.02	0.02	0.28	0.28	0.19	0.19	0.04	0.04	0.04	0.04
v/c Ratio	0.32	0.13	0.22	0.07	0.38	0.57	0.25	0.70	0.06	0.06	0.06	0.06
Uniform Delay, d1	28.9	28.5	28.7	28.3	3.0	3.8	2.7	4.5	2.3	2.3	2.3	2.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.5	1.0	0.3	8.7	0.9	3.0	1.6	0.1	0.1	0.1	0.1
Delay (s)	30.6	29.0	29.6	28.6	11.7	4.6	5.7	6.1	2.4	2.4	2.4	2.4
Level of Service	C	C	C	C	B	A	A	A	A	A	A	A
Approach Delay (s)	29.8	29.0	29.0	29.0	4.8	4.8	5.9	5.9	2.4	2.4	2.4	2.4
Approach LOS	C	C	C	C	A	A	A	A	A	A	A	A
Intersection Summary												
HCM 2000 Control Delay	6.3		HCM 2000 Level of Service				A					
HCM 2000 Volume to Capacity ratio	0.66											
Actuated Cycle Length (s)	65.8		Sum of lost time (s)				12.0					
Intersection Capacity Utilization	69.5%		ICU Level of Service				C					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 3: Hillpath Crescent/Site Access & Highwood Rd

Future Total PM (2032)
 Argo Summer Valley (7597-06)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	40	40	15	0	30	0	5	0	0	0	0	25
Future Volume (Veh/h)	40	40	15	0	30	0	5	0	0	0	0	25
Sign Control	Free		Free		Stop		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	40	40	15	0	30	0	5	0	0	0	0	25
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None		None									
Median storage (veh)												
Upstream signal (m)	84											
pX, platoon unblocked												
vC, conflicting volume	30			55			182	158	48	158	165	30
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			55			182	158	48	158	165	30
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			99	100	100	100	100	98
cM capacity (veh/h)	1596			1563			721	720	1027	798	713	1050
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	95	30	5	25								
Volume Left	40	0	5	0								
Volume Right	15	0	0	25								
cSH	1596	1563	721	1050								
Volume to Capacity	0.03	0.00	0.01	0.02								
Queue Length 95th (m)	0.6	0.0	0.2	0.6								
Control Delay (s)	3.2	0.0	10.0	8.5								
Lane LOS	A		B	A								
Approach Delay (s)	3.2	0.0	10.0	8.5								
Approach LOS			B	A								
Intersection Summary												
Average Delay	3.7											
Intersection Capacity Utilization	22.7%		ICU Level of Service				A					
Analysis Period (min)	15											