

A large graphic on the left side of the page, composed of a light blue rectangle on top and a red rectangle on the bottom, both of equal width and height.

Appendix A

Transportation Analysis Report

A solid dark gray horizontal bar located at the bottom right of the page.

Transportation Analysis Report

ReNew Golden Mile: Reconfigured & New Major Streets EA

City of Toronto

Final

July 10, 2025





Disclaimer.

In preparing this report, HDR relied, in whole or in part, on data and information provided by the Client and third parties that was current at the time of such usage, which information has not been independently verified by HDR and which HDR has assumed to be accurate, complete, reliable, and current. Therefore, while HDR has utilized its best efforts in preparing this report, HDR does not warrant or guarantee the conclusions set forth in this report which are dependent or based upon data, information or statements supplied by third parties or the client, or that the data and information have not changed since being provided in the report.

This report is intended for the planning purpose for the Client, and for the Client's sole and exclusive use and is not for the benefit of any third party and may not be distributed to, disclosed in any form to, used by, or relied upon by, any third party without a prior written consent of HDR, which consent may be withheld in its sole discretion. Use of this study report or any information contained herein, if by any party other than Client, shall be at the sole risk of such party and shall constitute a release and agreement by such party to defend and indemnify HDR and its affiliates, officers, employees and subcontractors from and against any liability for direct, indirect, incidental, consequential or special loss or damage or other liability of any nature arising from its use of the Report or reliance upon any of its content. To the maximum extent permitted by law, such release from and indemnification against liability shall apply in contract, tort (including negligence), strict liability, or any other theory of liability.

Table of Contents

1	Introduction	1
1.1	Study Area	2
1.2	Methodology and Approach	4
1.3	Report Structure	4
2	Existing (2013) Transportation Network	5
2.1	Road Network	5
2.2	Transit Network	7
2.2.1	Inter-Regional Transit (GO Transit)	7
2.2.2	Local Transit (TTC)	7
2.3	Existing (2013) Active Transportation Network	9
2.3.1	Pedestrian Network	9
2.3.2	Cycling Network	9
3	Multi-modal Level of Service Analysis for Existing (2013) Conditions	10
3.1	Overview	10
3.2	Pedestrian Level of Service (PLOS)	11
3.2.1	Pedestrian Level of Service Criteria	11
3.2.2	Existing Pedestrian Conditions	14
3.3	Transit Level of Service (TLOS)	17
3.3.1	Transit Level of Service Criteria	17
3.3.2	Existing Transit Conditions	19
4	Existing (2013) Traffic Condition Analysis	21
4.1	Traffic Data Collection	21
4.2	Traffic Model Development and Calibration	27
4.3	Existing (2013) Intersection Lane Configurations	27
4.4	Existing (2013) Traffic Volumes	29
4.5	Existing (2013) Intersection Operational Analysis	32
4.5.1	Existing (2013) Weekday Peak Hour Conditions	33
4.5.2	Existing (2013) Weekend Peak Hour Conditions	42
5	Future (2041) Full Build-Out Traffic Condition Analysis	49
5.1	Transportation Network Improvements	49
5.1.1	Golden Mile TMP (GMTMP) Recommendations	49
5.1.2	Regional Network Improvements	51
5.2	Future Demand Forecast	53
5.3	Preliminary Intersection Lane Configurations and Traffic Control Measures	55
5.4	Future Pedestrian, Cycling and Transit LOS	58
5.5	Preliminary Full Build-Out Intersection Operational Analysis	58
5.5.1	Preliminary Traffic Volumes	58
5.5.2	Future Weekday Peak Hour Conditions	61
5.5.3	Future Weekend Peak Hour Conditions	69
5.6	Trip Rate Adjustment and Traffic Analysis Update	76
5.6.1	Potential Solutions	77

5.6.2	Trip Reduction Research.....	78
5.6.3	Traffic Analysis Update	80
5.7	Alternative Assessment for Study Area Corridors.....	88
5.8	Future Traffic Analysis for the Preferred Road Network.....	94
5.8.1	Intersection Operational Analysis	95
5.8.2	Turning Movement Volume Estimates	110
5.8.3	Traffic Signal Assessment.....	110
5.8.4	Right Turn Lane Assessment	111
5.8.5	Storage Length Assessment	117
5.9	Recommended Lane Configurations	119
6	Study Findings and Preliminary Recommendations	121
6.1	Existing (2013) Traffic Conditions	121
6.1.1	Existing (2013) Vehicular Level of Service.....	121
6.1.2	Existing (2013) Pedestrian and Transit Level of Service	122
6.2	Golden Mile Secondary Plan - Transportation Master Plan (GMTMP) Recommendations.....	123
6.2.1	Key Street Network Improvements	123
6.2.2	GMTMP – Proposed Right-of-Way Widths.....	123
6.2.3	GMTMP – Proposed Active Transportation Network Solutions.....	123
6.2.4	GMTMP – Proposed Transit Solutions.....	124
6.3	Future (2041) Traffic Conditions.....	128
6.3.1	Future (2041) Full Build-Out Pedestrian and Transit Level of Service	128
6.3.2	Future (2041) Full Build-Out Vehicular Level of Service.....	128

List of Tables

Table 2-1: Transit Service Summary in 2013	7
Table 3-1: Pedestrian Active Transportation Design Check Considerations	12
Table 3-2: Pedestrian LOS Grades	13
Table 3-3: Underperforming Intersections (PLOS)	15
Table 3-4: Underperforming Segments (PLOS).....	16
Table 3-5: Transit LOS Grades	18
Table 3-6: Underperforming Intersections (TLOS).....	19
Table 3-7: Underperforming Segments (TLOS).....	20
Table 4-1: Traffic Data Collection Summary – Turning Movement Counts	21
Table 4-2: Location and Number of ATR Count Dates Provided	26
Table 4-3: Intersection Level of Service Criteria	32
Table 4-4: Intersection Operational Analysis Results – AM Peak Hour	34
Table 4-5: Intersection Operational Analysis Results – PM Peak Hour	38
Table 4-6: Intersection Operational Analysis Results – Weekend Peak Hour	44
Table 5-1: Intersection Operational Analysis Results – Future (2041) Base Case AM Peak Hour	62
Table 5-2: Intersection Operational Analysis Results – Future (2041) Base Case Weekend	71

Table 5-3: 50% of Employees Working Remotely with 20% of Their Time Spent Remotely	79
Table 5-4: 75% of Employees Working Remotely with 50% of Their Time Spent Remotely	79
Table 5-5: Intersection Operational Analysis Results – Updated Future (2041) Base Case PM Peak Hour	81
Table 5-6: Intersection Overall Delay/LOS Comparison for O'Connor Drive Reconfiguration	89
Table 5-7: Intersection Overall Delay/LOS Comparison for Thermos Road and Sinnott Road Realignment.....	91
Table 5-8: Intersection Operational Analysis Results – Future (2041) EA-Preferred AM Peak Hour	96
Table 5-9: Intersection Operational Analysis Results – Future (2041) EA-Preferred PM Peak Hour	103
Table 5-10: Traffic Signal Assessment.....	114
Table 5-11: Right Turn Lane Assessment	115
Table 5-12: Storage Length Assessment	117

List of Figures

Figure 1-1: Study Area Boundaries for Aimsun Meso-scopic, Micro-scopic Hybrid Models and EA	3
Figure 2-1: Existing Road Network.....	5
Figure 2-2: Existing (2013) Transit Service within the Study Area	8
Figure 2-3: Existing and Proposed Cycling Network.....	9
Figure 3-1: Urban/Suburban Bike Facility Selection Tool	11
Figure 3-2: Existing (2013) Pedestrian Level of Service Results	14
Figure 3-3: Existing (2013) Transit Level of Service Results	19
Figure 4-1: Existing (2013) Intersection Lane Configurations	28
Figure 4-2: Existing (2013) Traffic Volumes – AM Peak Hour.....	30
Figure 4-3: Existing (2013) Traffic Volumes – PM Peak Hour.....	31
Figure 4-4: Intersection LOS Summary – Existing (2013) AM Peak Hour.....	33
Figure 4-5: Intersection LOS Summary – Existing (2013) PM Peak Hour.....	33
Figure 4-6: Intersection LOS Summary – Weekend Peak Hour.....	43
Figure 5-1: GMTMP Recommendations – Key Road Network Improvements	50
Figure 5-2: Future 2041 Base Case Model Screenshot.....	52
Figure 5-3: Future Traffic Demand Forecast	54
Figure 5-4: Review of 2041 Peak-Hour Auto Demands.....	55
Figure 5-5: Future (2041) Preliminary Lane Configurations and Traffic Controls	57
Figure 5-6: Future (2041) Preliminary Traffic Volumes for AM Peak.....	59
Figure 5-7: Future (2041) Preliminary Traffic Volumes for Weekend Peak Hour	60
Figure 5-8: Intersection LOS Summary – Future (2041) Base Case AM Peak Hour.....	61

Figure 5-9: Intersection LOS Summary – Future (2041) Base Case Weekend Peak Hour	70
Figure 5-10: Intersection LOS Summary – Updated Future (2041) Base Case PM Peak Hour	81
Figure 5-11: Alignment Alternatives for O'Connor Drive Reconfiguration	89
Figure 5-12: Alignment Alternatives for Thermos Road and Sinnott Road Realignment	90
Figure 5-13: Alignment Alternatives for O'Connor Drive Extension to Birchmount Road	91
Figure 5-14: Alignment Alternatives for Craigton Drive Reconfiguration	92
Figure 5-15: Alignment Alternatives for Golden Mile Boulevard.....	93
Figure 5-16: EA-Preferred Roadway Network and SP Study Area Intersections	94
Figure 5-17: Intersection LOS Summary – Future (2041) EA-Preferred AM Peak Hour	95
Figure 5-18: Intersection LOS Summary – Future (2041) EA-Preferred PM Peak Hour	96
Figure 5-19: Future (2041) Traffic Volume Projections – AM Peak Hour	112
Figure 5-20: Future (2041) Traffic Volume Projections – PM Peak Hour	113
Figure 5-21: Future (2041) Recommended Intersection Controls and Lane Configurations	120
Figure 6-1: GMTMP Proposed Right-of-Way Width.....	125
Figure 6-2: GMTMP Proposed AT Network Improvements.....	126
Figure 6-3: GMTMP Proposed Transit Improvements	127

Technical Appendices

Appendix A – Traffic Operational Analysis Methodology Memo
Appendix B – Technical Memorandum for Aimsun Model Development and Calibration
Appendix C – Population and Employment Estimates for Future (2041) Full Build-Out Conditions
Appendix D – Aimsun Model Screenshots for EA-Preferred Roadway Network

1 Introduction

HDR has been retained by the City of Toronto (City) to undertake the Golden Mile Area Street Network (Schedule 'C') Municipal Class Environmental Assessment (MCEA) Study. The EA study reviews the potential for new major street corridors and the reconfiguration and extension of the existing street network as identified in the Golden Mile Transportation Master Plan (GMTMP) and Golden Mile Secondary Plan (GMSP).

The Eglinton Connects Planning Study completed in 2014 identified the Golden Mile area as one of six focus areas with potential to accommodate future residential, mixed-use and employment growth following the introduction of the Eglinton Crosstown Light Rail Transit (LRT). The study recommended that the City develop a Secondary Plan for the Golden Mile area. The purpose of the GMSP was to establish a comprehensive planning framework for future development in the GMSP area by outlining the long-term vision for a complete, livable, connected, responsive, and prosperous mixed-use community. The GMSP Study was initiated by the City of Toronto Planning staff in May 2016 and completed in October 2020. To support the preparation and implementation of the GMSP, the Golden Mile TMP (2020) was also completed.

The TMP identified long-term transportation objectives and developed a multi-modal transportation master plan for the area, including the evaluation and identification of transportation network solutions for new and existing transportation infrastructure, completing the requirements for Phases 1 and 2 of the MCEA process. The transportation network improvements identified in the GMTMP that are subject to this EA study are:

- O'Connor Drive potential re-alignment, reconfiguration and extension to Birchmount Road;
- Golden Mile Boulevard, potential new east-west public street from Victoria Park Avenue to Birchmount Road;
- Craigton Drive potential re-alignment, widening and reconfiguration;
- Thermos Road/Sinnott Road at Eglinton Avenue East intersection reconfiguration; and
- Jonesville Crescent/Craigton Drive / Ashtonbee Road from Eglinton Avenue East to Birchmount Road functional coordination, including a potential new traffic signal at Eglinton Avenue East.

The GMTMP Study recommended the City initiate Phases 3 and 4 of the MCEA process to determine the alignment and functional design of transportation network improvements within the Golden Mile area. To build on the remaining Golden Mile area recommendations from the GMSP and TMP, the City of Toronto retained HDR to conduct a Municipal Class Environmental Assessment study for the Golden Mile area. This study is referred to as the Golden Mile Area Street Network EA Study and will

reconfirm the recommendations from the GMSP and TMP and complete Phases 3 and 4 of the Municipal Class EA process for Schedule 'C' projects as outlined in the MCEA guidelines (October 2000, as amended in 2007, 2011 and 2015).

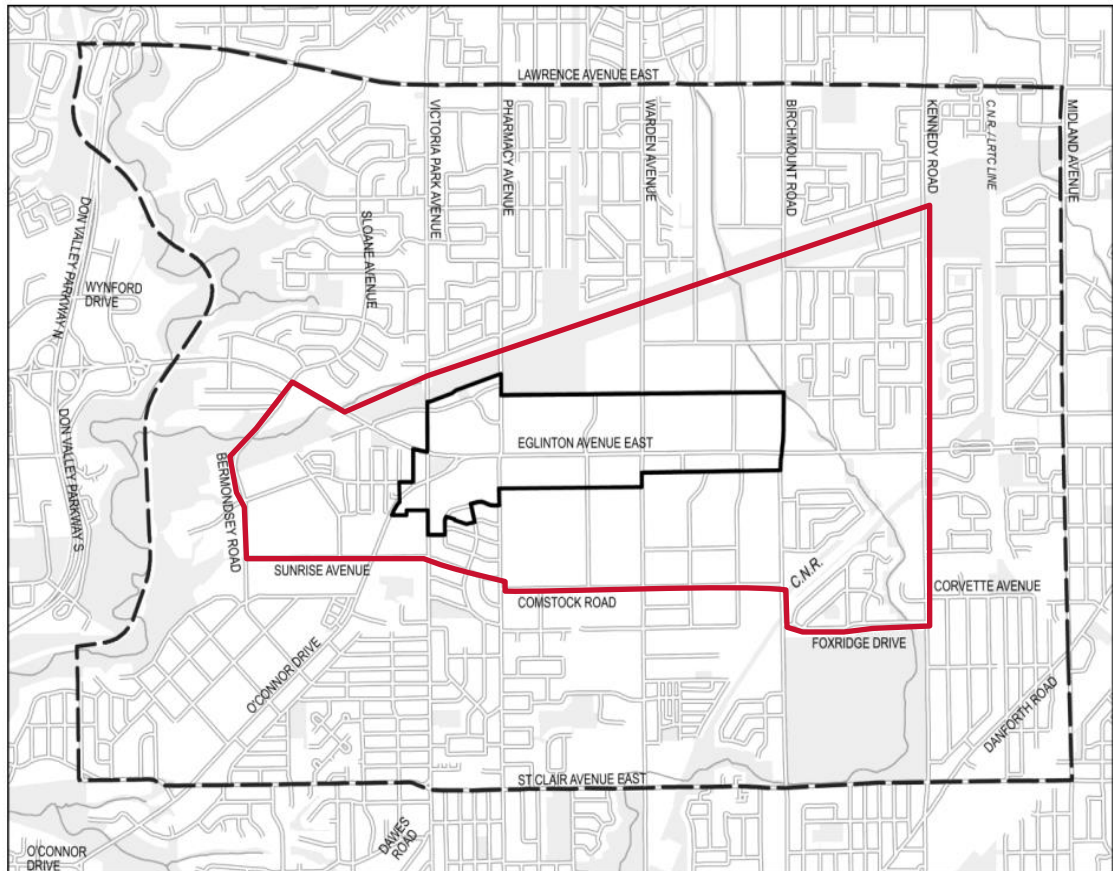
As part of the EA Study, HDR conducted a detailed assessment of the existing transportation conditions. The results of the analysis will be useful in identifying alternative network improvements, evaluate associated benefits and confirm the preferred transportation solutions. The EA study will present viable design options to the public and stakeholders for comments.

1.1 Study Area

As per the RFP requirements, the traffic operational analysis was conducted using a hybrid (including micro-scopic and meso-scopic) Aimsun based model. The study area boundaries for the micro-scopic and meso-scopic analyses, and the EA study area are presented in **Figure 1-1**.

The micro-scopic study area is bounded by Ashtonbee Road to the north, Southmead Road/Civic Road to the south, Birchmount Road to the east, and O'Connor Drive/Victoria Park Avenue to the west. The micro-scopic study area boundary is also the Golden Mile Secondary Plan study area. The meso-scopic study area is bounded by Lawrence Avenue East to the north, St. Clair Avenue East to the south, Midland Avenue to the east and the Don River to the west.

The EA study area is bounded by the Hydro Corridor/Eglinton Avenue East to the north, Sunrise Avenue/Comstock Road/Foxridge Drive to the south, Kennedy Road to the east, and Bermondsey Road to the west.



Legend:

-  Micro-scopic Model Study Area (Golden Mile Secondary Plan Boundary)
-  Meso-scopic Model Study Area
-  Golden Mile Environmental Assessment Study Area Boundary

Figure 1-1: Study Area Boundaries for Aimsun Meso-scopic, Micro-scopic Hybrid Models and EA

1.2 Methodology and Approach

Considering the study objectives, the traffic operational analysis was conducted using an Aimsun based hybrid model. Aimsun is capable of macro, meso, and micro demand loading and simulation as part of its 3-tiered modelling capabilities, as well as hybrid modelling considering meso-scopic and micro-scopic analysis. A hybrid model for this study was developed, calibrated and validated using various traffic data, observed travel patterns and City's GTAV4 travel demand model.

The primary purpose of the Aimsun model is to review potential route changes between the City's major corridors and assess the transportation improvement alternatives required to meet future development and growth within the study area. A technical memorandum summarizing the proposed approaches and methodologies for traffic operational analysis was submitted to the City on February 15, 2022 (revised on March 10, 2022), and is included in **Appendix A**. The Traffic Operational Analysis Methodology Memo:

- describes the proposed approach for developing the model;
- presents the study areas for the meso-scopic and micro-scopic analysis; and
- outlines the calibration/validation methodology.

1.3 Report Structure

This Transportation Analysis Report outlines the existing transportation network and the existing traffic conditions within the GMSP area, and summarizes the traffic analysis results for the Future (2041) full build-out scenario. The traffic operational analysis results with the proposed improvements are documented in the report and include the following sections:

- **Section 2** outlines the existing transportation network within the study area, including existing road network, transit network and pedestrian and cycling network;
- **Section 3** details the existing traffic conditions, which includes traffic data collection and traffic model development, the existing intersection lane configurations and traffic volumes, a summary of the intersection operational analysis results;
- **Section 3** presents the Multi-modal Level of Service Analysis for pedestrians and cyclists;
- **Section 5** presents the traffic analysis results for the Future (2041) full build-out scenario; and
- **Section 6** summarizes the findings of the existing traffic operational analysis and outlines existing network constraints and opportunities.

2 Existing (2013) Transportation Network

As per the RFP requirements, the existing conditions of this study represent the pre-Eglinton Crosstown LRT (ECLRT) construction conditions for the year 2013. It is noted that the current (2022) Eglinton Avenue East is operating with four general purpose lanes plus a dedicated LRT transit corridor. However, the ECLRT is not yet open to the general public as it is still undergoing testing until the end of 2024.

2.1 Road Network

The existing road network for the study area is presented in **Figure 2-1**. A description of the key roadways and corridors within the study area is provided as follows.

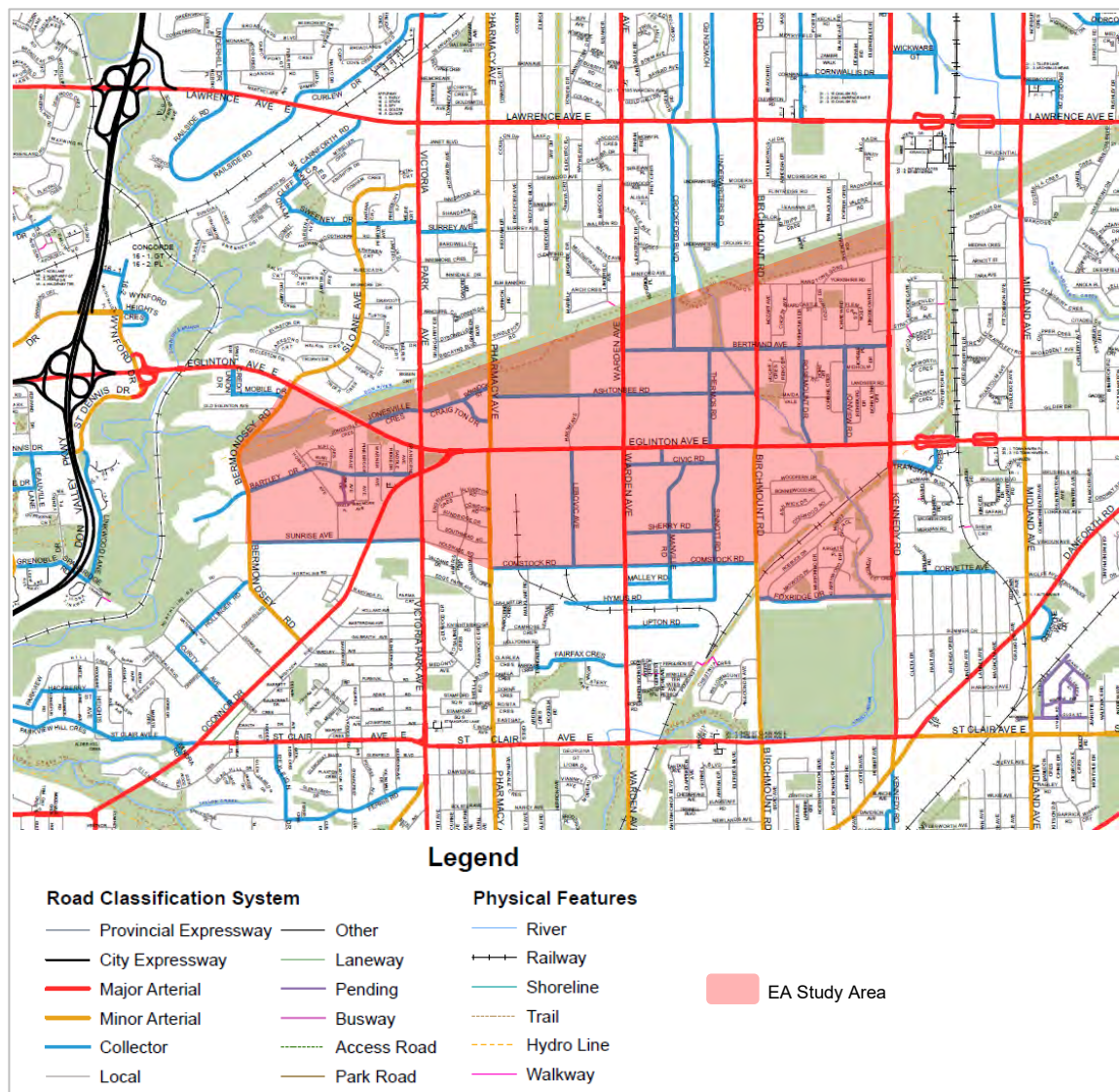


Figure 2-1: Existing Road Network

Source: City of Toronto Road Classification Maps

Eglinton Avenue East is a major arterial corridor, and was operating with a six-lane cross-section throughout the study area (in 2013). The curbside high occupancy vehicle (HOV) lanes were operating along Eglinton Avenue East on both sides during weekday morning and afternoon peak periods. The posted speed limit for this corridor is 60 km/h throughout the study area.

O'Connor Drive is a major arterial corridor with a four-lane cross-section throughout the study area. It intersects with Victoria Park Avenue and Eglinton Avenue East and forms a triangle Victoria Park-Eglinton Parkette. East of Victoria Park Avenue, O'Connor Drive becomes Eglinton Square. Due to the geometric constraints, the northbound left and through movements are prohibited at Eglinton Square/Eglinton Avenue East intersection. The posted speed limit on O'Connor Drive/Eglinton Square is 60 km/h.

Victoria Park Avenue is a major arterial corridor with a four-lane cross-section throughout the study area. It runs in the north-south direction parallel with other City arterial corridors in the study area including **Pharmacy Avenue, Warden Avenue, Birchmount Road, Kennedy Road, and Midland Avenue**. At the Victoria Park Avenue/Eglinton Avenue East intersection, left turns in the north and southbound directions are prohibited. Within the study area, these corridors operate with a four-lane cross-section, and with a posted speed limit of 60 km/h.

Lawrence Avenue East and **St Clair Avenue East** are major east-west arterial corridors that bound the meso-scopic study area to the north and south, respectively. Lawrence Avenue East has a six-lane cross-section and St. Clair Avenue East has a four-lane cross-section. Both roadways could be used as an alternative for Eglinton Avenue East for regional travelers. The posted speed limit is 60 km/h on Lawrence Avenue East and St. Clair Avenue East.

Other collector roadways within the study area were considered in the traffic modelling, including Craigton Drive, Ashtonbee Road, Bartley Drive, Sunrise Avenue, Comstock Road, Foxridge Drive, Thermos Road, Bertrand Avenue, Lebovic Avenue, etc. All of these roadways have a two-lane cross-section with a posted speed limit of 40/50 km/h (except for Comstock Road which has a four-lane cross-section west of Warden Avenue, and Hakimi Avenue/Lebovic Avenue which has a four-lane cross-section north/south of Eglinton Avenue East). The existing lane configurations and intersection controls are presented in **Section 4.2**.

2.2 Transit Network

2.2.1 Inter-Regional Transit (GO Transit)

GO Transit is the inter-regional transit servicing the Greater Toronto Area. The Kennedy GO train station is located east of the Kennedy Road and Eglinton Avenue intersection, servicing GO Transit's Stouffville line.

As per the latest GO train schedule (effective September 3, 2022), hourly peak-direction service is provided during the peak periods (i.e., southbound during the morning peak period, northbound during the afternoon peak period), and hourly bi-directional service is provided during weekday off-peak periods. During the weekends, bi-directional service is provided every 1-2 hours after 8 a.m.

2.2.2 Local Transit (TTC)

The Toronto Transit Commission (TTC) operates bus services along all major and minor arterials streets. The transit services provided by TTC in 2013 are summarized in **Table 2-1**. Bus routes along all major and minor arterial streets provide frequent service, at headways of 10 minutes or better, during the weekday peak periods.

An excerpt from the TTC system map for the existing conditions study year of 2013 is shown in **Figure 2-2**.

Table 2-1: Transit Service Summary in 2013

Route		Headway (min)*		
Number	Name	AM Peak	PM Peak	Saturday Afternoon
24	Victoria Park	3.5	4.5	8.25
67	Pharmacy	8.5	10	15
68	Warden	4.25	6	10
17	Birchmount	6.5	7.5	15
43	Kennedy	6	6	6.25
34	Eglinton East	4	4	6
113	Danforth Road	13	15	18
70	O'Connor	7.5	7.5	11
91	Woodbine	9	12	20

**Includes only the branches that serve the EA study area*



Figure 2-2: Existing (2013) Transit Service within the Study Area

2.3 Existing (2013) Active Transportation Network

2.3.1 Pedestrian Network

Within the Golden Mile Secondary Plan study area, pedestrian infrastructure is generally provided to connect the various residential and commercial zones. Gaps in the pedestrian network within the GMSP study area include:

- No sidewalk on the north side of Craigton Drive;
- No sidewalk on the north side of Rannock Street;
- No sidewalk on the south side of Ashtonbee Road between Warden Avenue and Birchmount Road;
- No sidewalk on the south side of Eglinton Square; and
- No pedestrian crossing at the east approach of Eglinton Avenue East and Eglinton Square.

The remaining roadways within the GMSP study area have sidewalks on both sides, and the remaining signalized intersections within the study area include 'marked' pedestrian crossings at all approaches.

2.3.2 Cycling Network

Existing cycling infrastructure within the study area is limited; the Gatineau Hydro Corridor trail (extended west to Eglinton Avenue in 2018) and other off-street trails make up most of the existing cycling infrastructure. See **Figure 2-3** for the existing and proposed cycling infrastructure in the study area.



Figure 2-3: Existing and Proposed Cycling Network

3 Multi-modal Level of Service Analysis for Existing (2013) Conditions

3.1 Overview

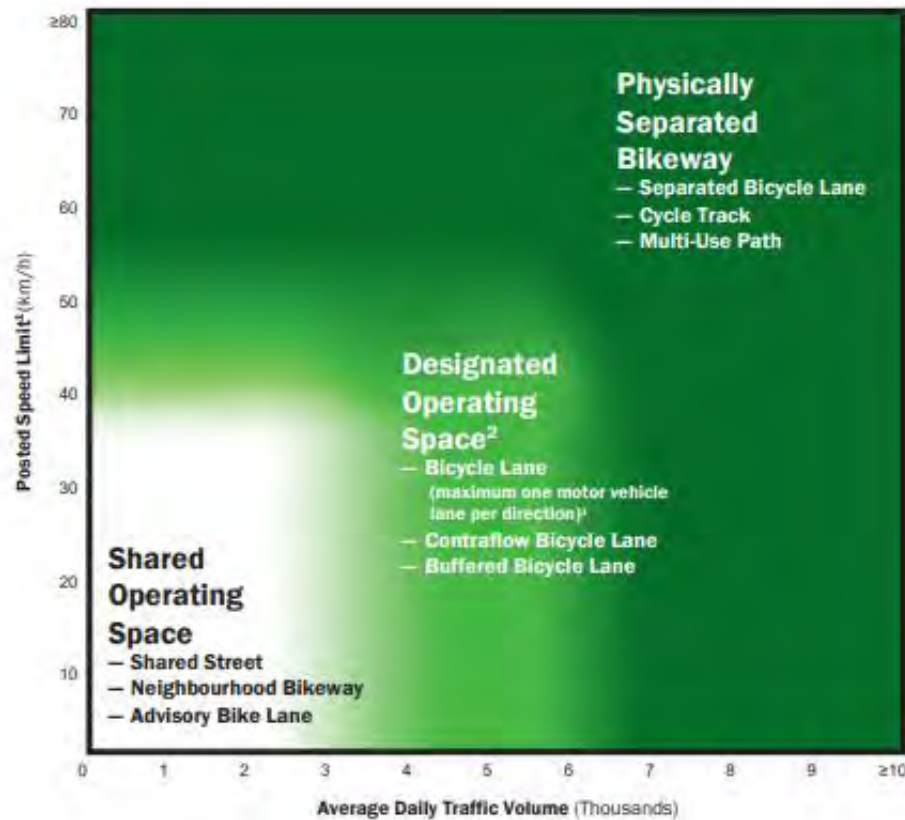
The existing Golden Mile Secondary Plan (GMSP) study area is primarily a commercial hub, with many points of interest generating a substantial amount of automobile trips. The convergence of all these high-volume and busy regional roadways presents a challenging atmosphere for cycling and pedestrian modes of transportation.

As per the City's recommendation, the transportation condition assessment for all modes (a multi-modal level of service analyses for pedestrians, bicycles, transit) was conducted following the recently published Ontario Traffic Council's (OTC's) Guideline (January 2022). The vehicular level of service was conducted using Aimsun model/software. This section presents the multi-modal level of service (MMLOS) analysis for the roads and intersections located within the GMSP study area.

The MMLOS is a tool that evaluates the performance of each mode to provide an integrated depiction of the multi-modal levels of service. This table-based approach considers the roadway characteristics and facility type and quality for both intersections and mid-blocks (segments).

For the study area, the Bicycle Level of Service (BLOS) cannot be determined, as the approach taken by the OTC Guide requires the presence of cycling infrastructure that corresponds with the minimum appropriate facility type, as determined by the tool presented in **Source:** *Ontario Traffic Council Multi-Modal Level of Service Guidelines - Figure 6.1 (2021)*

Figure 3-1. As shown in the figure, for roadways with an operating speed of 40 km/h or higher in an urban or suburban context, the minimum appropriate facility type is a designated operating space, and there are no dedicated cycling facilities within the study area. Therefore, this analysis focuses on Transit and Pedestrian Level of Service along arterial and collector roads within the study area. The purpose of this MMLOS is to improve transportation conditions for all modes.



Source: Ontario Traffic Council Multi-Modal Level of Service Guidelines - Figure 6.1 (2021)

Figure 3-1: Urban/Suburban Bike Facility Selection Tool

3.2 Pedestrian Level of Service (PLOS)

3.2.1 Pedestrian Level of Service Criteria

The pedestrian level of service (PLOS) analysis for the study area was conducted following the OTC's Guide. The PLOS methodology first sets a target LOS based on the area type and whether it is a signalized intersection, an unsignalized intersection, or a mid-block segment. For this analysis, unsignalized intersections within the study area were excluded. The area types within the study area are generally either Neighbourhood Connector or Neighbourhood Main Street. A brief description of these two area types is outlined below:

- **Neighbourhood Connector:** Major corridor that connects neighbourhoods, with a focus on transporting high volumes of vehicles. Infrastructure design prioritizes vehicles and trucks.
- **Neighbourhood Main Street:** Major corridor that is predominantly surrounded by commercial land uses. Infrastructure design is generally auto-oriented, but other modes are also served.

The OTC Guide also provides the opportunity to adjust the target LOS based on planning and strategic policy goals within the study area. No additional adjustments were made to the target LOS that is automatically generated based on the area type.

Once the target LOS is determined, the existing LOS for each mode can be evaluated. An active transportation design check is first conducted in order to provide a minimum level of safety for vulnerable road users. For pedestrians, access to properties along the roadway, the presence of crosswalks at intersections, and whether the Accessibility for Ontarians with Disabilities Act (AODA) has been followed must first be assessed. If any condition is not met, the roadway is not considered to provide service for pedestrians, and a PLOS value cannot be determined.

After the active transportation design check is complete, the PLOS is assessed based on the characteristics of the pedestrian infrastructure that is available. A level of service score from 'A' to 'F' was assigned based on the following criteria for segments and signalized intersections:

- **Segment PLOS** considers the effective width of the pedestrian facility, the width of the buffer which separates the facility from vehicles, and the maximum distance between controlled crossings along the segment.
- **Signalized intersection PLOS** considers the presence of enhanced pedestrian measures such as leading pedestrian intervals (LPIs), dedicated phases, refuge islands, pedestrian storage space, and raised intersections. The analysis also considers the average effective turning radius for permitted right-turn movements, the signal cycle length, and the number of uncontrolled conflicts, including permitted left-turn movements, permitted right-turn-on-green movements, permitted right-turn-on-red movements, and channelized right turns.

The active transportation design checks for pedestrians are summarized in **Table 3-1**, and the grading scheme for PLOS is summarized in **Table 3-2**.

Table 3-1: Pedestrian Active Transportation Design Check Considerations

Access (Segments)	Do the pedestrian facilities provide direct access to all properties along the segment?
Continuity (Intersections)	Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?
Accessibility (Intersections)	Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?

Table 3-2: Pedestrian LOS Grades

Road Type	Measure	Weight	Level of Service					
			A	B	C	D	E	F
Segments	Pedestrian Facility Width (m)	33%	> 3.0	2.6 - 3.0	2.1 - 2.5	1.8 - 2.0	1.5 - 1.7	< 1.5
	Pedestrian Buffer Width (m)	33%	> 2.5	2.1 - 2.5	1.6 - 2.0	1.3 - 1.5	1.0 - 1.2	< 1.0
	Max Distance between Controlled Crossings (m)	33%	200	201 - 230	231 - 260	261 - 290	291 - 320	> 320
Signalized Intersections	Enhanced Pedestrian Measures	25%	> 1.0	0.76 - 1.0	0.51 - 0.75	0.26 - 0.50	0.01 - 0.25	0
	Average Effective Turning Radius (m)	25%	< 9.0	9.0 - 10.9	11.0 - 12.9	13.0 - 14.9	15.0 - 17.9	≥ 18
	Signal Cycle Length (s)	25%	< 60	61 - 75	76 - 90	91 - 105	106 - 120	> 120
	Number of Uncontrolled Conflicts (conflicts/approach)	25%	1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 2.5	2.6 - 3.0	> 3.0

3.2.2 Existing Pedestrian Conditions

The existing (2013) pedestrian level of service analysis results for the Golden Mile study area are presented in **Figure 3-2**.



Figure 3-2: Existing (2013) Pedestrian Level of Service Results

The study area intersections which did not meet the target LOS (as suggested by OTC guideline) for pedestrians are listed in **Table 3-3**.

Table 3-3: Underperforming Intersections (PLOS)

Intersection	Target LOS	Actual LOS
Birchmount Road & Ashtonbee Road	C	D
Eglinton Avenue East & Birchmount Road	C	E
Eglinton Avenue East & Lebovic Avenue / Hakimi Avenue	C	E
Eglinton Avenue East & Pharmacy Avenue	C	E
Eglinton Avenue East & Prudham Gate	C	E
Eglinton Avenue East & Sinnott Road	C	D
Eglinton Avenue East & Thermos Road	C	E
Eglinton Avenue East & Victoria Park Avenue	C	D
Eglinton Avenue East & Warden Avenue	C	E
Pharmacy Avenue & Ashtonbee Road	C	D
Victoria Park Avenue & Jonesville Crescent / Craigton Drive	C	E
Victoria Park Avenue & O'Connor Drive / Eglinton Square	C	F
Warden Avenue & Ashtonbee Road	C	E

Overall, a majority of the intersections within the study area did not meet the target / recommended LOS for pedestrians following the OTC guidelines. This is primarily due to a lack of enhanced pedestrian measures, large turning radii, long cycle lengths, and a high number of uncontrolled conflicts per approach.

Various mitigation measures such as implementing LPIs, prohibiting turning movements, and reducing cycle lengths could improve the PLOS at intersections within the study area. An LOS value could not be assigned to the intersection of Eglinton Avenue East and Eglinton Square, as a pedestrian crossing is missing on the east side of the intersection, which resulted in the intersection not meeting the active transportation design check.

The study area segments which did not meet the target LOS for pedestrians (as per OTC guidelines) are summarized in **Table 3-4** Table .

Table 3-4: Underperforming Segments (PLOS)

Roadway Corridor	From	To	Side	Target LOS	Actual LOS
Birchmount Road	Ashtonbee Road	Eglinton Avenue East	East	C	D
		100 metres South of Eglinton Avenue East	West	C	D
	Eglinton Avenue East	100 metres South of Eglinton Avenue East	East	C	D
Eglinton Avenue East	Eglinton Square	Pharmacy Avenue	North	C	E
			South	C	E
	Pharmacy Avenue	Birchmount Road	South	C	E
		Sinnott Road	North	C	E
	Sinnott Road	Birchmount Road	North	C	D
	Victoria Park Avenue	Eglinton Square	North	C	D
Lebovic Avenue	Eglinton Avenue East	185 metres South of Eglinton Avenue East	East	C	D
			West	C	D
O'Connor Drive	300 metres West of Victoria Park Avenue	Victoria Park Avenue	East	C	D
			West	C	E
Pharmacy Avenue	Craigton Drive	Eglinton Avenue East	East	C	E
			West	C	D
	Eglinton Avenue East	Alvinston Road	West	C	D
	115 metres North of Ashtonbee Road	Craigton Drive	East	C	D
			West	C	D
Victoria Park Avenue	Craigton Drive	Eglinton Square	East	C	D
			West	C	D
	Eglinton Square	Southmead Road	East	C	D
			West	C	D
Warden Avenue	Ashtonbee Road	Eglinton Avenue East	East	C	E
			West	C	D
	80 metres South of Civic Road	Eglinton Avenue East	East	C	E
			West	C	E

Overall, a majority of the segments within the study area did not meet the target LOS for pedestrians. This is primarily due to narrow pedestrian facilities, narrow buffers between the pedestrian facilities and vehicles, and long distances between controlled crossings. Various mitigation measures such as mid-block pedestrian crossings, wider sidewalks, and wider boulevards would improve the PLOS along segments within the study area.

As there are no pedestrian facilities available in the following segments, the resulting PLOS value could not be assigned, which resulted in the segments not meeting the active transportation design check (as per OTC guidelines):

- The north side of Craigton Drive between Victoria Park Avenue and Pharmacy Avenue;
- The north side of Rannock Street between Craigton Drive and Pharmacy Avenue;
- The south side of Eglinton Square between Eglinton Avenue East and Victoria Park Avenue;
- The south side of Ashtonbee Road between Warden Avenue and Birchmount Road;
- Both sides of Prudham Gate between Eglinton Avenue East and Civic Road;
- Both sides of Civic Road between Warden Avenue and Sinnott Road, and
- Both sides of Sinnott Road between Eglinton Avenue East and Civic Road.

3.3 Transit Level of Service (TLOS)

3.3.1 Transit Level of Service Criteria

The Transit Level of Service (TLOS) analysis was performed using the methodology provided in the OTC's Guideline. The area types are described in **Section 3.2.1** and were used to determine an appropriate target LOS for transit, with no additional adjustments made for planning and strategic policy goals.

The TLOS was evaluated for the study area signalized intersections and segments based on the available transit infrastructure. A level of service score from 'A' to 'F' was assigned based on the following criteria for segments and signalized intersections:

- **Segment TLOS** considers the type of transit facility, the availability of passenger amenities such as seating and shelters, and the pedestrian level of service.
- **Signalized intersection TLOS** considers the presence of transit priority measures such as transit signal priority (TSP), dedicated transit lanes, queue jumps, the average traffic delay for movements used by transit, and the pedestrian level of service.

The grading scheme for TLOS is summarized in **Table 3-5**.

Table 3-5: Transit LOS Grades

Road Type	Measure	Weight	Level of Service					
			A	B	C	D	E	F
Segments	Transit Facility Type	33%	Dedicated lanes	Intersection priority measures	N/A	Mixed traffic with > 1 lane per direction	N/A	Mixed traffic with 1 lane per direction
	Transit Passenger Amenities	33%	An abundance of passenger amenities	Moderate presence of passenger amenities	N/A	Low presence of passenger amenities	N/A	No presence of passenger amenities
	Pedestrian Level of Service	33%	A	B	C	D	E	F
Signalized Intersection	Transit Priority Measures	33%	Transit priority measures at all approaches for transit	N/A	Transit priority measures at a minimum of one but not all approaches for transit	N/A	N/A	No transit priority measures at any approaches for transit
	Transit Movement Delay (s)	33%	0 - 10	11 - 20	21 - 35	36 - 55	56 - 80	> 80
	Pedestrian Level of Service	33%	A	B	C	D	E	F

3.3.2 Existing Transit Conditions

The existing (2013) transit level of service analysis results for the Golden Mile study area are presented in **Figure 3-3**.



Figure 3-3: Existing (2013) Transit Level of Service Results

Intersections that did not meet the target LOS for transit are summarized in **Table 3-6**.

Table 3-6: Underperforming Intersections (TLOS)

Intersections	Target LOS	Actual LOS
Eglinton Avenue East & Eglinton Square	D	E
Victoria Park Avenue & Jonesville Crescent / Craigton Drive	D	E
Victoria Park Avenue & O'Connor Drive / Eglinton Square	D	E
Warden Avenue & Ashtonbee Road	D	E

Overall, a majority of the intersections within the study area meet the target LOS for transit. For the intersections that did not meet the target LOS, this was primarily due to low PLOS scores (as discussed in **Section 3.22**), high delays for transit movements, and a lack of transit priority measures. At Eglinton Avenue East and Eglinton Square, a lack of a pedestrian crossing on the east side of the intersection resulted in the intersection failing the active transportation design check. As a result, no PLOS could

be determined for this intersection (as discussed in **Section 3.22**), which affected the TLOS. Various mitigation measures such as transit signal priority (TSP), dedicated transit lanes, queue jumps, and enhanced pedestrian infrastructure would improve the TLOS at intersections within the study area.

Segments that did not meet the target LOS for transit are summarized in **Table 3-7**.

Table 3-7: Underperforming Segments (TLOS)

Roadway	From	To	Side	Target LOS	Actual LOS
Birchmount Road	Ashtonbee Road	Eglinton Avenue East	East	D	E
	Eglinton Avenue East	100 metres South of Eglinton Avenue East	East	D	E
Craigton Drive	Rannock Street	Pharmacy Avenue	South	B	E
	Victoria Park Avenue	Rannock Street		B	E
		Pharmacy Avenue	North	B	F
Pharmacy Avenue	Craigton Drive	Eglinton Avenue East	East	D	E
	115 metres North of Ashtonbee Road	Craigton Drive	West	D	E
Rannock Street	Craigton Drive	Pharmacy Avenue	South	B	E
Victoria Park Avenue	Craigton Drive	Eglinton Square	West	D	E

Overall, the majority of the road segments within the study area meet the target LOS for transit. For the segments that did not meet the target LOS, this was primarily due to low PLOS scores, a lack of amenities for passengers, and a lack of dedicated right-of-way or intersection priority measures. Various mitigation measures such as transit signal priority (TSP), dedicated transit lanes, bus shelters, seating, and enhanced pedestrian infrastructure could improve the TLOS along segments within the study area.

4 Existing (2013) Traffic Condition Analysis

4.1 Traffic Data Collection

The Turning Movement Counts (TMCs) for the study area intersections were received from the City on June 27, 2022, and additional TMCs were extracted from the City's Open Data source. A summary of the data collection count dates for study area intersections is presented in **Table 4-1**.

Table 4-1: Traffic Data Collection Summary – Turning Movement Counts

TCS #	Intersection Name	Weekday Date	Weekend Date
202	Craigton Dr & Jonesville Cr at Victoria Park Ave	Wednesday, January 26, 2011	Not available
377	Danforth Rd at Midland Ave	Wednesday, June 8, 2016	Saturday, June 11, 2016
392	Danforth Rd at St. Clair Ave	Tuesday, April 28, 2015	Saturday, June 11, 2016
404	Lawrence Ave E at Railside Rd & Underhill Dr	Wednesday, March 4, 2020	Not available
406	Curlew Dr at Lawrence Ave E & Railside Rd	Wednesday, March 4, 2020	Not available
407	Lawrence Ave at Victoria Park Ave	Tuesday, September 6, 2011	Not available
408	Lawrence Ave at Pharmacy Ave	Tuesday, February 6, 2018	Not available
409	Lawrence Ave at Warden Ave	Wednesday, May 6, 2015	Saturday, November 29, 2014
410	Birchmount Rd at Lawrence Ave	Wednesday, July 29, 2015	Saturday, December 10, 2016
411	Lawrence at Winston Churchill Ci & 144m E Of Canlish Rd	Monday, October 20, 2008	Not available
412	Kennedy Rd at Lawrence Ave	Monday, September 30, 2013	Not available
413	Lawrence Ave at Midland Ave	Monday, March 21, 2011	Saturday, January 7, 2017
447	O Connor Dr at St Clair Ave	Wednesday, June 5, 2013	Saturday, April 19, 2014
448	Bermondsey Rd at O'Connor Dr & Yardley Ave	Monday, April 25, 2016	Not available
449	Eglinton Sq at O Connor Dr & Victoria Park Ave	Thursday, March 8, 2012	Saturday, April 26, 2014
450	Eglinton Ave at Eglinton Sq	Monday, May 3, 2010	Not available
451	Eglinton Ave at Victoria Park Ave	Monday, March 11, 2013	Not available



TCS #	Intersection Name	Weekday Date	Weekend Date
452	Eglinton Ave at Pharmacy Ave	Monday, February 27, 2012	Not available
455	Eglinton Ave at Bermondsey Rd & Sloane Ave	Tuesday, February 1, 2011	Sunday, June 6, 2004
456	Eglinton Ave at Warden Ave	Monday, January 31, 2011	Not available
457	Eglinton Ave at Sinnott Rd	Thursday, April 26, 2012	Not available
458	Birchmount Rd at Eglinton Ave	Monday, September 13, 2010	Not available
459	Eglinton Ave at Ionview Rd	Tuesday, April 3, 2012	Not available
460	Eglinton Ave at Kennedy Rd	Monday, June 10, 2013	Not available
461	Eglinton Ave at Midland Ave	Wednesday, March 28, 2012	Not available
470	Glen Eden Cres at Selwyn Ave & St Clair Ave	Wednesday, August 10, 2011	Not available
471	St Clair Ave at Victoria Park Ave	Thursday, October 17, 2013	Saturday, December 10, 2016
472	Pharmacy Ave at St Clair Ave	Monday, May 14, 2012	Saturday, December 10, 2016
473	St Clair Ave at Warden Ave	Monday, June 3, 2013	Saturday, November 15, 2014
474	Birchmount Rd at St Clair Ave	Thursday, December 8, 2016	Saturday, December 10, 2016
475	Kennedy Rd at St Clair Ave	Monday, June 6, 2016	Saturday, December 10, 2016
476	Midland Ave at St Clair Ave	Thursday, April 12, 2012	Saturday, December 10, 2016
503	Crockford Blvd & Lawrence Ave E	Monday, June 14, 2010	Not available
513	Bassett Ave at Victoria Park Ave & Yardley Ave	Tuesday, October 15, 2013	Not available
514	Elvaston Dr at Victoria Park Ave	Wednesday, September 25, 2013	Not available
515	Surrey Ave at Victoria Park Ave	Wednesday, August 28, 2013	Not available
519	Victoria Park at 60m N Of Parma Crt	Tuesday, December 20, 2011	Not available
520	O Connor Dr at Sunrise Ave	Tuesday, January 4, 2011	Not available

TCS #	Intersection Name	Weekday Date	Weekend Date
641	Herron Ave at St Clair Ave	Wednesday, December 14, 2016	Not available
688	Pharmacy Ave at Surrey Ave	Tuesday, February 27, 2018	Not available
690	Comstock Rd at Warden Ave	Monday, November 24, 2014	Not available
884	Bermondsey Rd at Sunrise Ave	Tuesday, February 19, 2013	Not available
885	Birchmount Rd at Comstock Rd	Wednesday, December 14, 2016	Not available
886	Bertrand Ave at Birchmount Rd	Wednesday, December 14, 2016	Not available
932	Carnforth Rd at Lawrence Ave	Tuesday, June 26, 2018	Not available
941	Comstock Rd at Pharmacy Ave	Monday, October 17, 2011	Not available
1031	Bertrand Ave at Warden Ave	Thursday, May 22, 2014	Not available
1051	Kennedy Rd at Merrian Rd	Tuesday, July 21, 2015	Not available
1057	Bertrand Ave at Kennedy Rd	Thursday, July 23, 2015	Not available
1080	Midland Ave at Stansbury Cr	Wednesday, December 14, 2016	Not available
1098	Marcos Blvd at Midland Ave & Romulus Dr	Wednesday, December 14, 2016	Not available
1103	Danforth Rd at 42m N Of Hart Ave	Wednesday, June 1, 2016	Not available
1122	Corvette Ave at Kennedy Rd	Thursday, February 4, 2010	Not available
1124	Bartley Dr at Bermondsey Rd	Monday, May 17, 2010	Not available
1279	Midland Ave at Verdun Ave	Wednesday, June 1, 2016	Not available
1283	Linden Ave at St Clair Ave	Wednesday, December 14, 2016	Not available
1284	Howden Rd at Lawrence Ave & Underwriters Rd	Wednesday, July 21, 2010	Not available
1285	Fairfax Cr at Warden Ave	Tuesday, June 24, 2014	Not available
1286	Warden Ave at Wayne Ave	Wednesday, November 26, 2014	Not available
1295	Ashtonbee Rd at Pharmacy Ave	Tuesday, March 12, 2013	Not available
1377	Ashtonbee Rd at Warden Ave	Wednesday, May 6, 2015	Saturday, November 22, 2014



TCS #	Intersection Name	Weekday Date	Weekend Date
1386	Eglinton Ave at Credit Union Dr & Swift Dr	Thursday, March 1, 2012	Not available
1411	Inniswood Dr at Pharmacy Ave	Thursday, February 24, 2011	Not available
1581	Holswade Rd at Sunrise Ave & Victoria Park Ave	Tuesday, March 19, 2013	Not available
1585	Arncliffe Cr at Victoria Park Ave	Thursday, May 9, 2013	Sunday, December 12, 2004
1617	Pharmacy Ave at 175m South Of Eglinton Ave E	Monday, March 5, 2012	Not available
1638	# 800 Warden Ave at Warden Ave 1553m S Of Civic Rd	Monday, November 28, 2011	Not available
1657	Sherwood Ave at Warden Ave	Thursday, February 3, 2011	Not available
1661	# 720 Kennedy Rd at Kennedy Rd (Plaza)	Tuesday, December 8, 2009	Not available
1680	Curity Ave at O Connor Dr	Monday, October 26, 2009	Not available
1681	Plaxton Dr at St Clair Ave	Wednesday, December 14, 2016	Not available
1701	Midland Ave at Prudential Dr	Wednesday, December 14, 2016	Not available
1718	St Clair Ave at Westbourne Ave	Thursday, December 13, 2012	Not available
1719	Broadbent Ave at Midland Ave & Wainfleet Rd	Tuesday, February 22, 2011	Not available
1720	Dohme Ave at O Connor Dr	Tuesday, January 17, 2012	Not available
1742	Eglinton Ave at Rosemount Dr	Monday, March 7, 2011	Not available
1762	Kennedy Rd at Ranstone Gardens	Wednesday, December 19, 2018	Not available
1791	Eglinton Ave at Lebovic Ave	Thursday, April 1, 2010	Not available
1872	Eglinton Ave at Prudham Gt	Monday, March 11, 2013	Not available
1941	Comstock Rd at Lebovic Ave	Wednesday, May 22, 2013	Not available
1996	Ashtonbee Rd at Birchmount Rd	Thursday, January 31, 2013	Not available
2068	Gilder Dr at Lord Roberts Dr & Midland Ave	Wednesday, February 23, 2011	Not available
2069	Ashtonbee Road at Hakimi Ave	Tuesday, January 4, 2011	Not available

TCS #	Intersection Name	Weekday Date	Weekend Date
2070	Lebovic Ave at 300m S Of Eglinton Ave & Lebovic Plaza	Thursday, January 14, 2010	Not available
2093	Birchmount Rd at Ranstone Gardens	Wednesday, December 14, 2016	Not available
2100	Birchmount Rd at Modern Rd	Tuesday, November 29, 2011	Not available
2125	Knightsbridge Rd at Pharmacy Ave	Thursday, February 8, 2018	Not available
2147	Warden Ave at 260m N Of Bertrand & Multi Use Trail	Monday, March 26, 2012	Not available
2166	Birchmount Rd at Chelwood Rd	Wednesday, December 14, 2016	Not available
2168	Birchmount Rd at Bonniewood Rd	Wednesday, December 14, 2016	Not available
2178	Elinor Ave at Lawrence Ave	Tuesday, October 12, 2010	Not available
2224	Anaconda Ave at Birchmount Rd	Wednesday, December 14, 2016	Not available
2227	Innisdale Dr at Pharmcay Ave	Tuesday, February 27, 2018	Not available
2229	Biscayne Blvd at Pharmacy Ave & Singleton Rd	Tuesday, February 27, 2018	Not available
2260	Birchmount Rd at Flora Dr	Thursday, January 20, 2011	Not available
2268	Pharmacy Ave at 115m North Of Rannock St	Tuesday, February 27, 2018	Not available
2322	Danforth Rd at Magnolia Ave	Thursday, November 21, 2013	Not available
2325	Birchmount Rd at Foxridge Dr	Tuesday, November 12, 2013	Not available
2407	Santamonica Blvd at St Clair Ave	Thursday, August 3, 2017	Not available
2408	Kennedy Rd at Radnor Ave	Tuesday, July 31, 2018	Not available
2456	Bermondsey Rd at Northline Rd	Monday, January 7, 2013	Not available
2504	Lawrence Ave at Townley Ave	Tuesday, April 4, 2017	Sunday, December 3, 2017

Automatic Traffic Recorder (ATR) Counts for mid-blocks were also received from the City on March 16, 2022. The count dates generally ranged from September to December 2013. A summary of the ATR counts is provided in **Table 4-2**.

Table 4-2: Location and Number of ATR Count Dates Provided

Corridor	Location and Leg	Number of ATR Counted Dates per direction				
		EB	NB	SB	WB	Total
Eglinton Avenue E	Total # of ATR counts for corridor	33			42	75
	East of Birchmount				3	3
	East of Credit Union	3			3	6
	East of Eglinton Square				3	3
	East of Ionview	3			3	6
	East of Kennedy				3	3
	East of Midland				3	3
	East of Pharmacy	3			3	6
	East of Rosemount				3	3
	East of Sloane				6	6
	East of Warden	3			3	6
	West of Birchmount	3			3	6
	West of Eglinton Square	3			3	6
	West of Midland	3				3
	West of Pharmacy	3				3
	West of Rosemount	3				3
	West of Victoria Park Avenue	3				3
	West of Warden	3			3	6
Pharmacy Ave	Total # of ATR counts for corridor		6	6		12
	North of Ashtonbee			3		3
	South of Ashtonbee		3			3
	South of Eglinton			3		3
	South of Eglinton Square Mall		3			3
Victoria Park Ave	Total # of ATR counts for corridor		34	34		68
	North of Jonesville			3		3
	North of St Clair			14		14
	South of Craigton		3	14		17
	South of Eglinton		14	3		17
	South of Eglinton Square		3			3
	South of Lawrence		14			14
Warden Ave	Total # of ATR counts for corridor		6	6		12
	North of Ashtonbee		3	3		6
	South of Ashtonbee			3		3
	South of Eglinton		3			3

4.2 Traffic Model Development and Calibration

An Aimsun-based hybrid model (micro-scopic and meso-scopic model) was developed for the Golden Mile study area. The study area boundaries for micro and meso-scopic models are presented in **Figure 1-1**.

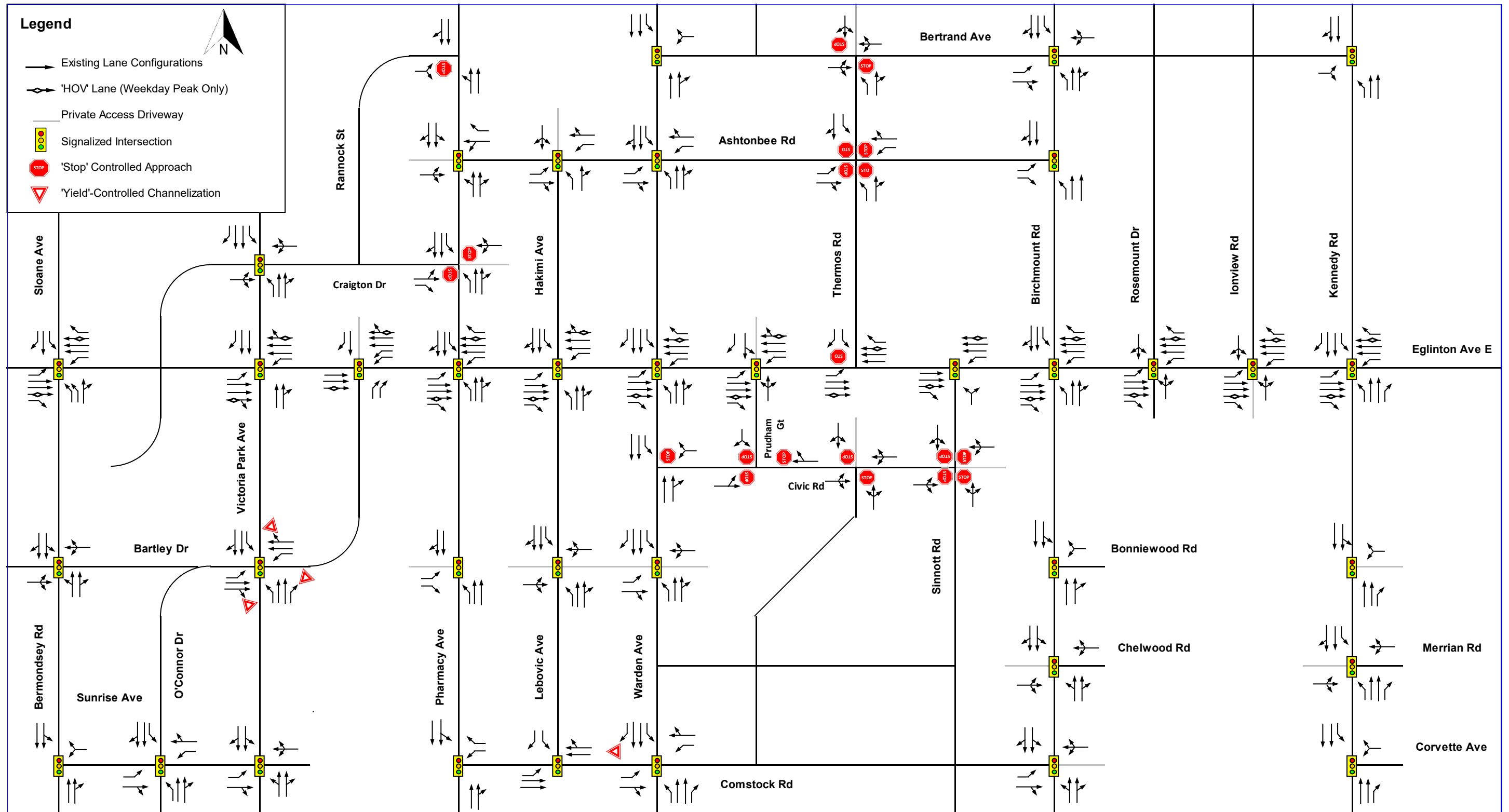
Aimsun is a fully integrated traffic modelling program that incorporates macro-scopic functionalities with a meso-scopic and micro-scopic traffic simulation. It facilitates a detailed assessment of traffic operations for different road network configuration and intersections, combined with dynamic traffic route choice assignment options related to the local road network inclusive of the study area. The Aimsun model for this study builds on information and origin-destination matrices extracted from the City's 2011 Regional Travel Demand Model (GTAModelv4.0, received on January 14, 2022). The model development incorporated a wide range of input data, including:

- Transportation Network - posted speed limits, number of lanes, intersection lane configurations, priority rules/conflict area, transit lanes, etc.;
- Driving Behavior - desire speed distribution, car following and lane changing parameters;
- Traffic Controls - 'Stop' / 'Yield' signs, traffic signals, placement of 'Stop' bar, detector placement, signal timing plans, turning permissions/restrictions, etc.;
- Travel Demand Inputs (i.e. based on City's subarea model and transit system) - traffic volumes, origin-destination pattern, mode share, transit routes and schedules, proportion of commercial vehicles - small/medium and heavy vehicles, variation in demand during peak periods; and
- Calibration Data - traffic counts, travel time data.

The Aimsun model was calibrated and validated to existing 2013 traffic demands, travel time, and traffic operating speeds to closely represent the traffic conditions pre-construction of ECLRT. The trip correction matrices, derived from the existing traffic modelling (i.e., the differences between the initial trip matrices derived from the City's travel demand model and the trip matrices following matrix adjustment) will be used for the future traffic demand correction. Details for the development and calibration of the Aimsun hybrid model are provided in **Appendix B**.

4.3 Existing (2013) Intersection Lane Configurations

The existing intersection lane configurations and intersection control types are presented in **Figure 4-1**.



4.4 Existing (2013) Traffic Volumes

The existing condition analysis covers a three-hour period during both weekday morning and afternoon peaks, with the intersection operational analysis focusing specifically on the peak hour conditions:

- Morning Peak Period: 7:00 am – 10:00 am
- Morning Peak Hour: 8:00 am – 9:00 am
- Afternoon Peak Period: 3:30 pm – 6:30 pm
- Afternoon Peak Hour: 4:30 pm – 5:30 pm

Figure 4-2 and **Figure 4-3** present the peak-hour existing traffic volumes for the existing (2013) weekday AM and PM peak hour, respectively.

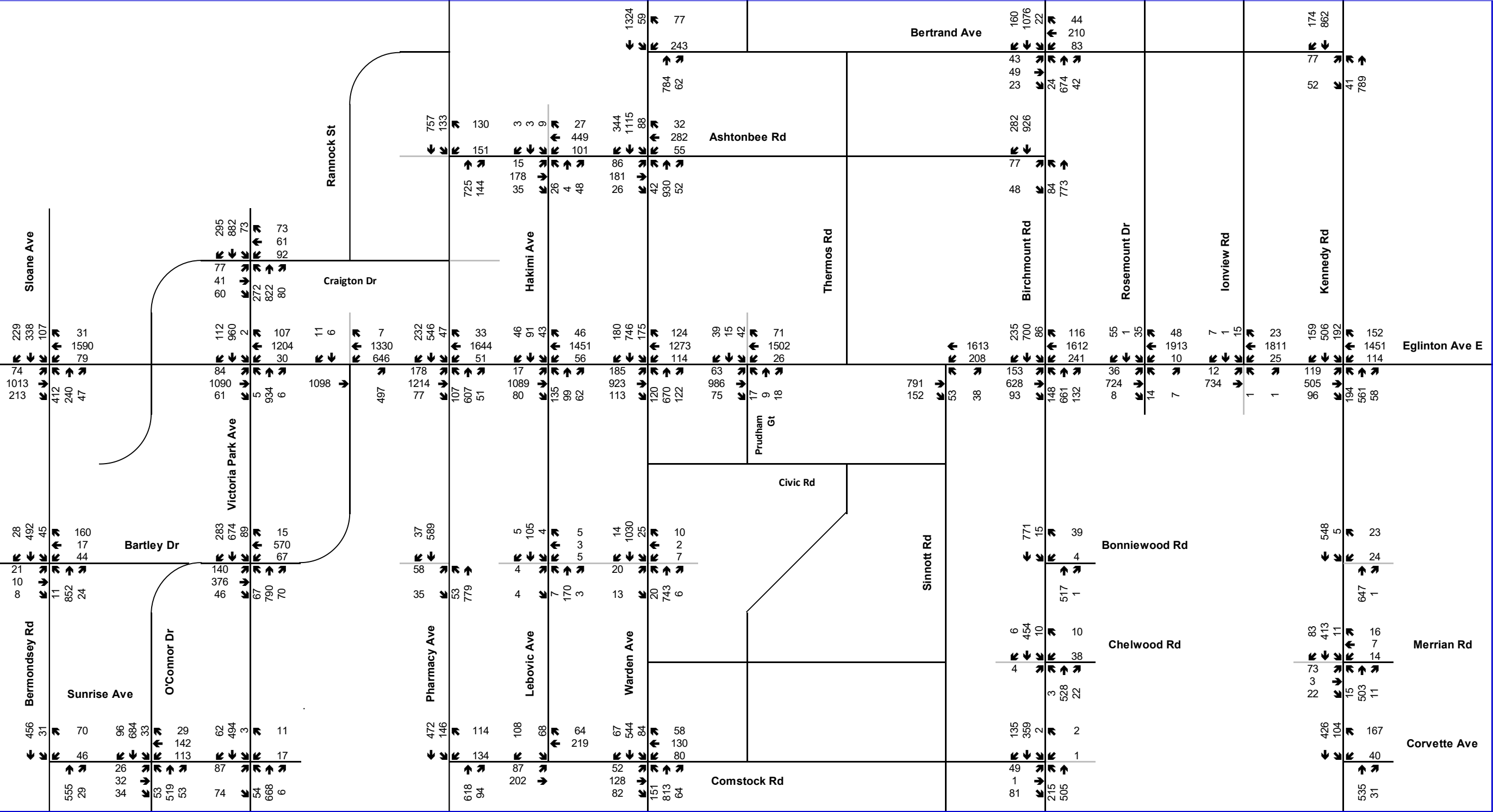


Figure 4-2: Existing (2013) Traffic Volumes – AM Peak Hour

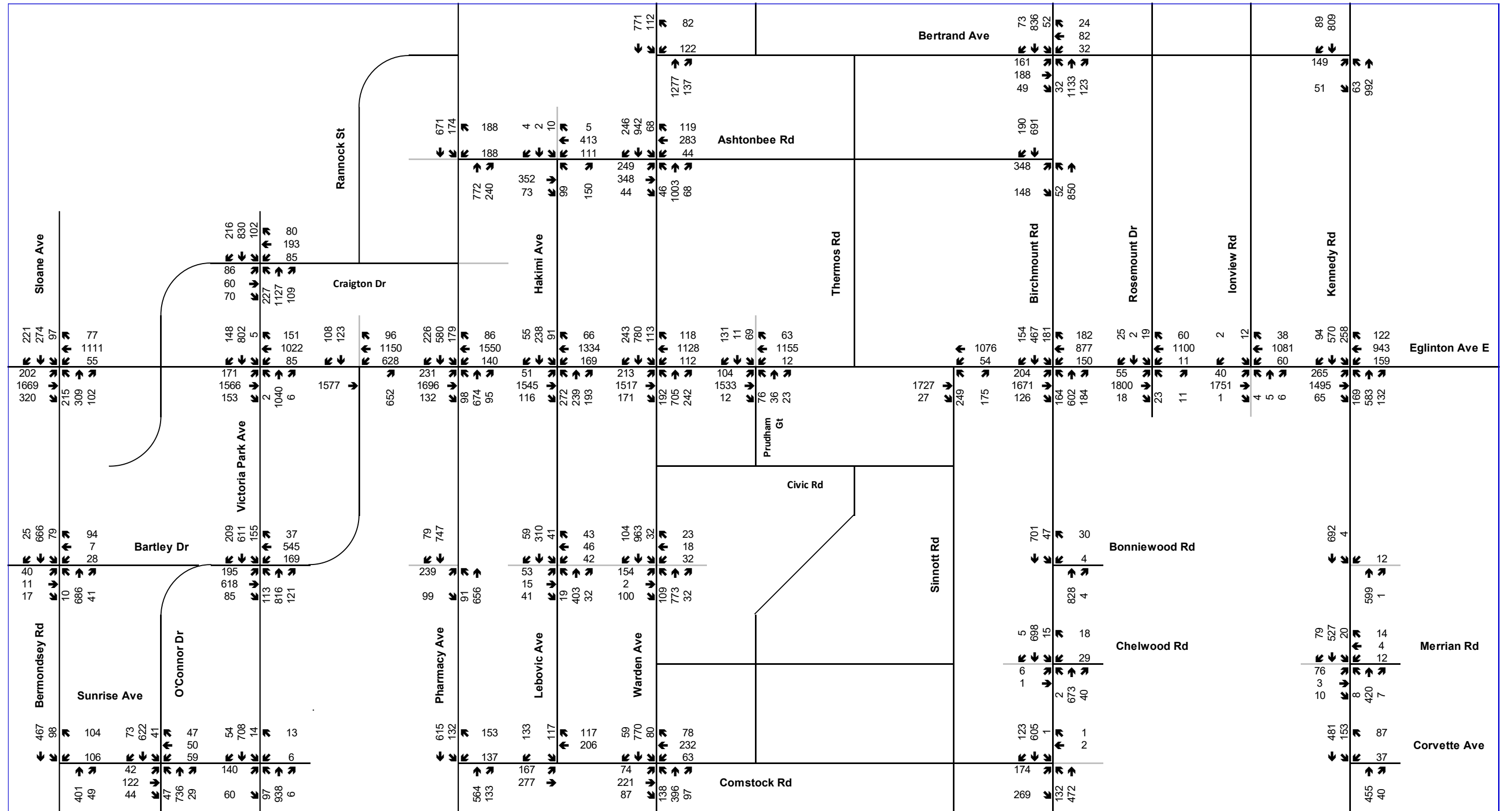


Figure 4-3: Existing (2013) Traffic Volumes – PM Peak Hour

4.5 Existing (2013) Intersection Operational Analysis

An evaluation of the existing operations for the intersections within the study area was performed using the calibrated Aimsun micro-simulation model. The intersection operational analysis was assessed based on average vehicular delays, level of service (LOS) and queuing conditions. **Table 4-3** summarizes the LOS criteria for signalized and stop-controlled intersections.

Table 4-3: Intersection Level of Service Criteria

Level of Service	Average Delay Per Vehicle (seconds)		Traffic Operation
	Signalized Intersections	Stop-controlled Intersections	
A	≤ 10	≤ 10	Acceptable Operation
B	> 10 and ≤ 20	> 10 and ≤ 15	
C	> 20 and ≤ 35	> 15 and ≤ 25	
D	> 35 and ≤ 55	> 25 and ≤ 35	
E	> 55 and ≤ 80	> 35 and ≤ 50	Marginally Acceptable – Occasional Queuing
F	> 80	> 50	Unacceptable – Persistent Queueing

The level of service (LOS) is a qualitative measure that describes operational conditions within a traffic stream. The Highway Capacity Manual (HCM) defines six levels of service, LOS 'A' through LOS 'F'.

LOS 'A' represents the lower average delay, while LOS 'F' represents the higher average delay. The highest possible rating is LOS 'A', under which the average total delay for a movement, approach or intersection is less than 10 seconds per vehicle. When the average delay exceeds 50 seconds at unsignalized intersections, or 80 seconds at signalized intersections, the movement is classified as LOS 'F'. LOS 'E' is the point at which remedial measures are considered, depending on the nature and extent of the delays. Average vehicle delays between LOS 'A' and LOS 'D' are generally considered as an acceptable level of service for signalized intersections in urban areas.

4.5.1 Existing (2013) Weekday Peak Hour Conditions

Overall intersection LOS are summarized in **Figure 4-4** and **Figure 4-5**, for the weekday morning and afternoon peak hour respectively. More detailed intersection operational analysis results are presented in **Table 4-4** and **Table 4-5**.

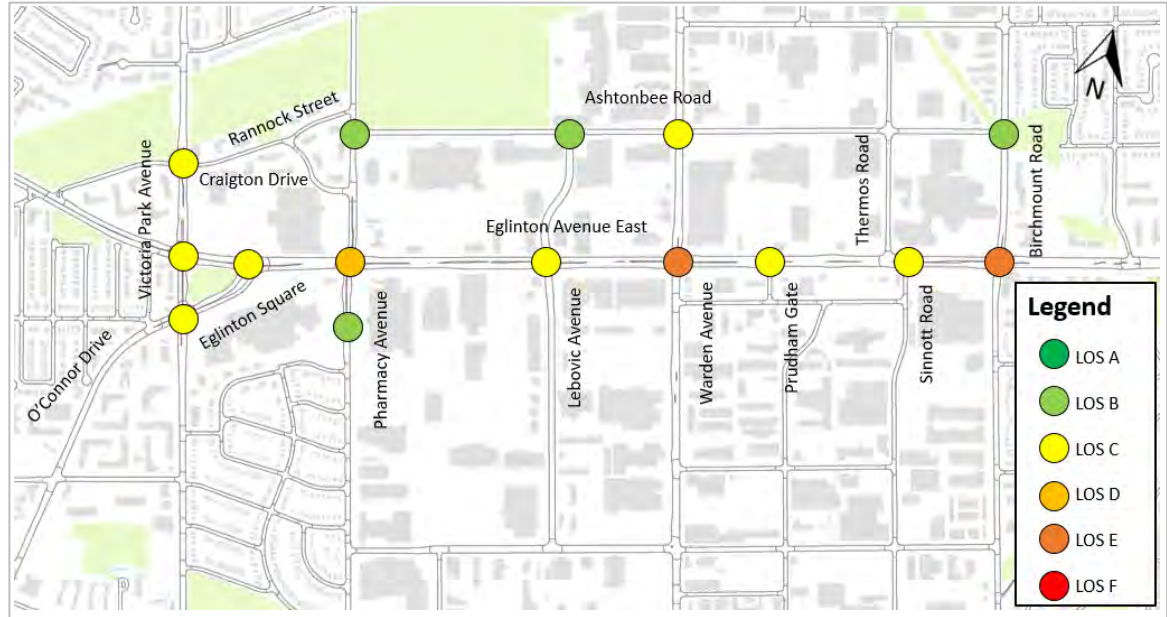


Figure 4-4: Intersection LOS Summary – Existing (2013) AM Peak Hour

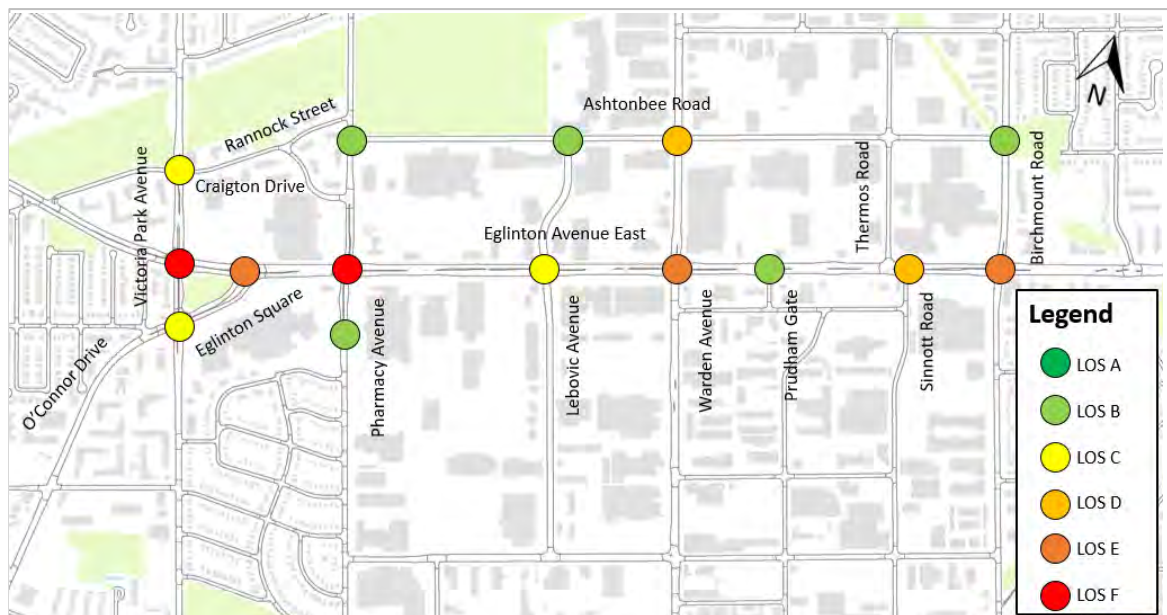


Figure 4-5: Intersection LOS Summary – Existing (2013) PM Peak Hour

The results of the analysis present the overall intersection delays and LOS, estimated vehicular maximum queue lengths for intersection approaches, as well as the delays and LOS for individual movements. The highlighted cells in the table shows the turning movements which are not operating with an acceptable level of service.

Table 4-4: Intersection Operational Analysis Results – AM Peak Hour

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Eglinton Ave at Victoria Park Ave (Px 451)	27	C	EBL	37	D	35
			EBT	28	C	
			EBR	21	C	
			WBL	42	D	50
			WBT	31	C	
			WBR	37	D	
			NBT	18	B	35
			NBR	41	D	
			SBT	27	C	50
			SBR	31	C	
Eglinton Ave at Eglinton Sq (Px 450)	21	C	EBT	14	B	20
			WBL	48	D	20
			WBT	15	B	
			WBR	8	A	
			NBR	28	C	20
			SBT	62	E	10
			SBR	7	A	
Eglinton Ave at Pharmacy Ave (Px 452)	52	D	EBL	80	F	50
			EBT	31	C	
			EBR	22	C	
			WBL	104	F	300
			WBT	88	F	
			WBR	74	E	
			NBL	40	D	35
			NBT	27	C	
			NBR	23	C	
			SBL	39	D	35
			SBT	29	C	
			SBR	33	C	
Eglinton Ave at Lebovic Ave (Px 1791)	23	C	EBL	42	D	35
			EBT	30	C	
			EBR	22	C	
			WBL	33	C	20
			WBT	17	B	
			WBR	22	C	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBL	25	C	10
			NBT	24	C	
			NBR	14	B	
			SBL	33	C	10
			SBT	32	C	
			SBR	17	B	
Eglinton Ave at Warden Ave (Px 456)	56	E	EBL	78	E	70
			EBT	49	D	
			EBR	40	D	
			WBL	64	E	180
			WBT	65	E	
			WBR	67	E	
			NBL	71	E	100
			NBT	54	D	
			NBR	59	E	
			SBL	60	E	70
			SBT	45	D	
			SBR	42	D	
Eglinton Ave at Prudham Gt (Px 1872)	27	C	EBL	39	D	20
			EBT	13	B	
			EBR	9	A	
			WBL	35	D	85
			WBT	35	C	
			WBR	29	C	
			NBL	42	D	10
			NBT	32	C	
			NBR	9	A	
			SBL	30	C	10
			SBT	60	E	
			SBR	5	A	
Eglinton Ave at Sinnott Rd (Px 457)	29	C	EBT	29	C	20
			EBR	19	B	
			WBL	37	D	50
			WBT	29	C	
			NBL	43	D	10
			NBR	20	C	
Birchmount Rd at Eglinton Ave (Px 458)	55	E	EBL	79	E	35
			EBT	45	D	
			EBR	30	C	
			WBL	62	E	200



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			WBT	54	D	50
			WBR	48	D	
			NBL	128	F	
			NBT	43	D	
			NBR	48	D	135
			SBL	87	F	
			SBT	61	E	
			SBR	71	E	
Craigton Dr & Jonesville Cr at Victoria Park Ave (Px 202)	22	C	EBL	38	D	10
			EBT	36	D	
			EBR	23	C	
			WBL	40	D	10
			WBT	45	D	
			WBR	32	C	
			NBL	26	C	10
			NBT	8	A	
			NBR	11	B	
			SBL	40	D	70
			SBT	27	C	
			SBR	24	C	
Eglinton Sq at O Connor Dr & Victoria Park Ave (Px 449)	22	C	EBL	29	C	10
			EBT	26	C	
			EBR	13	B	
			WBL	83	F	35
			WBT	50	D	
			WBR	21	C	
			NBL	28	C	50
			NBT	8	A	
			NBR	4	A	
			SBL	27	C	20
			SBT	19	B	
			SBR	11	B	
Ashtonbee Rd at Pharmacy Ave (Px 1295)	13	B	EBL	41	D	10
			EBT	34	C	
			EBR	11	B	
			WBL	41	D	10
			WBT	46	D	
			WBR	14	B	
			NBL	7	A	10
			NBT	9	A	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBR	8	A	20
			SBL	19	B	
			SBT	11	B	
			SBR	8	A	
Pharmacy Ave at 175m South Of Eglinton Ave (Px 1617)	12	B	EBL	22	C	10
			EBR	4	A	
			NBL	15	B	20
			NBT	12	B	
			SBT	12	B	20
			SBR	16	B	
Ashtonbee Rd at Warden Ave (Px 1377)	25	C	EBL	31	C	20
			EBT	20	C	
			EBR	14	B	
			WBL	34	C	35
			WBT	32	C	
			WBR	24	C	
			NBL	73	E	50
			NBT	26	C	
			NBR	25	C	
			SBL	30	C	35
			SBT	20	B	
			SBR	33	C	
Ashtonbee Rd at Birchmount Rd (Px 1996)	13	B	EBL	45	D	10
			EBR	9	A	
			NBL	26	C	20
			NBT	13	B	
			SBT	10	B	20
			SBR	14	B	
Ashtonbee Road at Hakimi Ave (Px 2069)	11	B	EBL	11	B	10
			EBT	8	A	
			EBR	5	A	
			WBL	10	B	10
			WBT	7	A	
			WBR	7	A	
			NBL	53	D	10
			NBT	41	D	
			NBR	14	B	
			SBL	47	D	10
			SBT	44	D	
			SBR	32	C	

Note: LOS E/F indicates critical movements/intersections.

Table 4-5: Intersection Operational Analysis Results – PM Peak Hour

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Eglinton Ave at Victoria Park Ave (Px 451)	188	F	EBL	518	F	360
			EBT	567	F	
			EBR	546	F	
			WBL	68	E	70
			WBT	41	D	
			WBR	33	C	
			NBT	40	D	70
			NBR	53	D	
			SBT	26	C	50
			SBR	35	C	
Eglinton Ave at Eglinton Sq (Px 450)	72	E	EBT	124	F	140
			WBL	122	F	70
			WBT	23	C	
			WBR	16	B	
			NBR	48	D	35
			SBT	40	D	10
			SBR	8	A	
Eglinton Ave at Pharmacy Ave (Px 452)	92	F	EBL	353	F	220
			EBT	130	F	
			EBR	120	F	
			WBL	135	F	300
			WBT	92	F	
			WBR	73	E	
			NBL	58	E	50
			NBT	31	C	
			NBR	29	C	
			SBL	78	E	50
			SBT	37	D	
			SBR	35	D	
Eglinton Ave at Lebovic Ave (Px 1791)	34	C	EBL	58	E	70
			EBT	47	D	
			EBR	35	C	
			WBL	43	D	35
			WBT	23	C	
			WBR	27	C	
			NBL	36	D	20
			NBT	28	C	
			NBR	23	C	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			SBL	42	D	20
			SBT	34	C	
			SBR	25	C	
Eglinton Ave at Warden Ave (Px 456)	60	E	EBL	104	F	185
			EBT	84	F	
			EBR	83	F	
			WBL	52	D	50
			WBT	39	D	
			WBR	34	C	
			NBL	64	E	70
			NBT	43	D	
			NBR	49	D	
			SBL	59	E	100
			SBT	52	D	
			SBR	48	D	
Eglinton Ave at Prudham Gt (Px 1872)	18	B	EBL	24	C	10
			EBT	8	A	
			EBR	9	A	
			WBL	41	D	35
			WBT	28	C	
			WBR	17	B	
			NBL	40	D	10
			NBT	37	D	
			NBR	22	C	
			SBL	35	D	10
			SBT	30	C	
			SBR	6	A	
Eglinton Ave at Sinnott Rd (Px 457)	39	D	EBT	43	D	100
			EBR	38	D	
			WBL	58	E	35
			WBT	29	C	
			NBL	52	D	10
			NBR	46	D	
Birchmount Rd at Eglinton Ave (Px 458)	59	E	EBL	82	F	165
			EBT	65	E	
			EBR	61	E	
			WBL	65	E	70
			WBT	53	D	
			WBR	31	C	
			NBL	100	F	85



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBT	64	E	50
			NBR	80	F	
			SBL	61	E	
			SBT	32	C	
			SBR	36	D	
Craigton Dr & Jonesville Cr at Victoria Park Ave (Px 202)	24	C	EBL	76	E	10
			EBT	61	E	
			EBR	46	D	
			WBL	50	D	10
			WBT	45	D	
			WBR	38	D	
			NBL	37	D	50
			NBT	18	B	
			NBR	17	B	
			SBL	68	E	50
			SBT	15	B	
			SBR	14	B	
Eglinton Sq at O Connor Dr & Victoria Park Ave (Px 449)	25	C	EBL	37	D	20
			EBT	30	C	
			EBR	16	B	
			WBL	83	F	50
			WBT	68	E	
			WBR	27	C	
			NBL	43	D	50
			NBT	10	A	
			NBR	6	A	
			SBL	29	C	10
			SBT	9	A	
			SBR	7	A	
Ashtonbee Rd at Pharmacy Ave (Px 1295)	17	B	EBL	52	D	10
			EBT	44	D	
			EBR	21	C	
			WBL	60	E	35
			WBT	55	D	
			WBR	33	C	
			NBL	15	B	20
			NBT	10	B	
			NBR	9	A	
			SBL	18	B	20
			SBT	8	A	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Pharmacy Ave at 175m South Of Eglinton Ave (Px 1617)	15	B	SBR	6	A	10
			EBL	22	C	
			EBR	5	A	
			NBL	20	C	20
			NBT	13	B	
			SBT	16	B	20
Ashtonbee Rd at Warden Ave (Px 1377)	39	D	SBR	13	B	70
			EBL	61	E	
			EBT	43	D	
			EBR	38	D	70
			WBL	44	D	
			WBT	37	D	
			WBR	29	C	70
			NBL	72	E	
			NBT	35	C	
			NBR	41	D	70
			SBL	56	E	
			SBT	33	C	
Ashtonbee Rd at Birchmount Rd (Px 1996)	15	B	SBR	42	D	10
			EBL	40	D	
			EBR	10	B	
			NBL	28	C	20
			NBT	15	B	
			SBT	9	A	20
Ashtonbee Road at Hakimi Ave (Px 2069)	20	B	SBR	12	B	20
			EBL	15	B	
			EBT	10	A	
			EBR	9	A	10
			WBL	23	C	
			WBT	8	A	
			WBR	10	A	20
			NBL	42	D	
			NBT	47	D	
			NBR	37	D	10
			SBL	107	F	
			SBT	114	F	
			SBR	81	F	

Note: LOS F indicates critical movements/intersections.

During morning peak hour, all the intersections are operating with overall LOS D or better, except for the Eglinton Avenue East intersections at Warden Avenue and at Birchmount Road (overall LOS E). Many turning movements at these two intersections were operating at LOS E: westbound movements and all the left turning movements at Warden Avenue, and southbound movements and all the left turning movements at Birchmount Road. All the intersection approaches are operating with max queue lengths within the available storage length (without extending to the upstream intersection).

During the afternoon peak hour, Eglinton Avenue East is operating with higher delays at study area intersections than the morning peak hour condition. Heavy congestion and queuing were observed during the model simulation on Eglinton Avenue East in the eastbound direction approaching Pharmacy Avenue, causing the intersection overall LOS at E/F at Victoria Park Avenue, at Eglinton Square, and at Pharmacy Avenue. As discussed in the Aimsun Model Development and Calibration Memo (provided in **Appendix B**), the single-occupancy vehicles (SOVs) simulated in the model are not allowed to use the high-occupancy vehicles (HOV) lanes along Eglinton Avenue East, which may cause low lane utilization and reduce the number of vehicles that can be processed at these intersections. In addition, due to the limitations of the Aimsun model, the Split Cycle Offset Optimization Technique (SCOOT) technique implemented on Eglinton Avenue East intersections were not fully reflected in the simulation, which could potentially underestimate the vehicle process capacity and traffic progression along Eglinton Avenue East.

Similar to morning peak hour conditions, Eglinton Avenue East intersections at Warden Avenue and at Birchmount Road were operating with overall LOS E during afternoon peak hour. Eastbound movements and left turning movements at these two intersections are operating at LOS E/F. All the other intersection approaches (except for Eglinton Avenue's eastbound at Pharmacy Avenue and at Victoria Park Avenue) were operating with max queue lengths within the available storage length (without extending to the upstream intersection).

4.5.2 Existing (2013) Weekend Peak Hour Conditions

The hybrid (Meso+Micro) Aimsun model was developed and calibrated for the weekday morning and afternoon peak conditions. The City's travel demand model, and other travel demand models developed for GTA, do not provide travel demand for the weekend condition. Therefore, to conduct the traffic operational analysis for the weekend conditions using Aimsun, the following steps were utilized (as discussed and approved by the City on April 7, 2022):

- The background trips entering and exiting from the study area were estimated based on the available weekend and weekday turning movement counts (17 intersection counts were made available by the City);
- The following steps were completed to estimate the trips generated by the Traffic Analysis Zones (TAZs) within the modelling boundary during weekend conditions:

- o Reviewed existing (2013) land use data within the meso-scopic model area and identified land use types as per ITE Trip Generation Manual for each of the Traffic Analysis Zones (TAZs), which are part of the meso-scopic and micro-scopic model boundaries;
- o For each of the land use types, extracted the average trip rates based on ITE Trip Generation Manual for weekday afternoon and weekend (Saturday) peak hour conditions, estimated factors to proportionally convert the weekday traffic demand to the weekend peak hour conditions;
- o For each of the TAZs, estimated the approximate weights for related land use types based on the land use data, estimated the trip rate conversion factors for each TAZ considering existing and future land-use types and associated factors of trip rates; and
- o Converted the calibrated weekday afternoon peak hour demands to weekend peak hour demands, using the trip rate conversion factors for each of the TAZs.

The overall intersection LOS are summarized in **Figure 4-6** for the weekend peak hour. Detailed intersection operational analysis results for the weekend peak hour condition are presented in **Table 4-6**. The highlighted cells in the Table shows the turning movements which are not operating with an acceptable level of service.

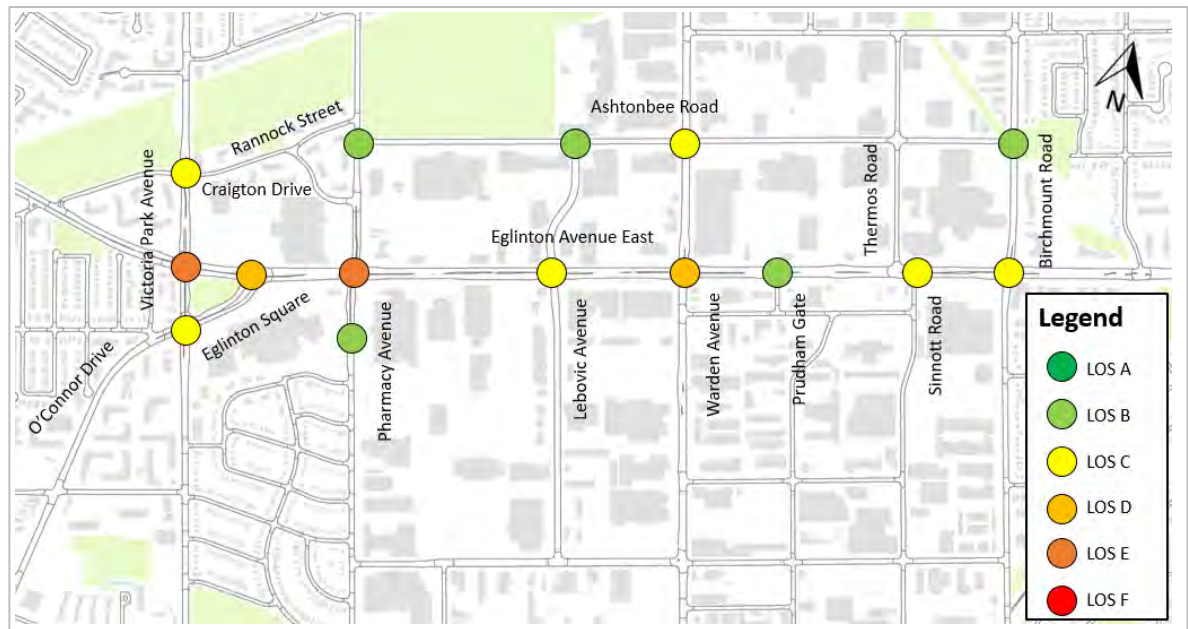


Figure 4-6: Intersection LOS Summary – Weekend Peak Hour

Table 4-6: Intersection Operational Analysis Results – Weekend Peak Hour

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Eglinton Ave at Victoria Park Ave (Px 451)	63	E	EBL	116	F	215
			EBT	119	F	
			EBR	113	F	
			WBL	60	E	20
			WBT	21	C	
			WBR	24	C	
			NBT	31	C	50
			NBR	33	C	
			SBT	31	C	50
			SBR	22	C	
Eglinton Ave at Eglinton Sq (Px 450)	45	D	EBT	62	E	120
			WBL	53	D	10
			WBT	8	A	
			WBR	9	A	
			NBR	90	F	85
			SBT	42	D	10
			SBR	10	B	
Eglinton Ave at Pharmacy Ave (Px 452)	74	E	EBL	340	F	330
			EBT	104	F	
			EBR	93	F	
			WBL	127	F	100
			WBT	44	D	
			WBR	33	C	
			NBL	62	E	50
			NBT	32	C	
			NBR	30	C	
			SBL	72	E	50
			SBT	33	C	
			SBR	30	C	
Eglinton Ave at Lebovic Ave (Px 1791)	33	C	EBL	51	D	50
			EBT	52	D	
			EBR	47	D	
			WBL	47	D	20
			WBT	16	B	
			WBR	24	C	
			NBL	28	C	10
			NBT	21	C	
			NBR	20	B	
			SBL	32	C	10

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			SBT	29	C	
			SBR	23	C	
Eglinton Ave at Warden Ave (Px 456)	44	D	EBL	99	F	165
			EBT	78	E	
			EBR	76	E	
			WBL	40	D	20
			WBT	16	B	
			WBR	18	B	
			NBL	37	D	35
			NBT	30	C	
			NBR	31	C	
			SBL	36	D	50
			SBT	30	C	
			SBR	21	C	
Eglinton Ave at Prudham Gt (Px 1872)	18	B	EBL	45	D	50
			EBT	22	C	
			EBR	14	B	
			WBL	28	C	10
			WBT	10	A	
			WBR	11	B	
			NBL	32	C	10
			NBT	29	C	
			NBR	18	B	
			SBL	30	C	10
			SBT	39	D	
			SBR	5	A	
Eglinton Ave at Sinnott Rd (Px 457)	22	C	EBT	21	C	50
			EBR	21	C	
			WBL	48	D	35
			WBT	24	C	
			NBL	37	D	10
			NBR	20	B	
Birchmount Rd at Eglinton Ave (Px 458)	32	C	EBL	42	D	70
			EBT	34	C	
			EBR	29	C	
			WBL	30	C	35
			WBT	25	C	
			WBR	20	B	
			NBL	50	D	20
			NBT	35	D	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBR	37	D	20
			SBL	53	D	
			SBT	33	C	
			SBR	30	C	
Craigton Dr & Jonesville Cr at Victoria Park Ave (Px 202)	27	C	EBL	28	C	10
			EBT	25	C	
			EBR	14	B	
			WBL	27	C	10
			WBT	24	C	
			WBR	14	B	
			NBL	57	E	70
			NBT	27	C	
			NBR	27	C	
			SBL	64	E	70
			SBT	24	C	
			SBR	16	B	
Eglinton Sq at O Connor Dr & Victoria Park Ave (Px 449)	21	C	EBL	29	C	20
			EBT	22	C	
			EBR	12	B	
			WBL	40	D	10
			WBT	28	C	
			WBR	7	A	
			NBL	29	C	35
			NBT	9	A	
			NBR	3	A	
			SBL	34	C	35
			SBT	23	C	
			SBR	19	B	
Ashtonbee Rd at Pharmacy Ave (Px 1295)	11	B	EBL	38	D	10
			EBT	40	D	
			EBR	9	A	
			WBL	38	D	10
			WBT	38	D	
			WBR	12	B	
			NBL	17	B	20
			NBT	10	A	
			NBR	10	A	
			SBL	17	B	10
			SBT	5	A	
			SBR	3	A	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Pharmacy Ave at 175m South of Eglinton Ave (Px 1617)	12	B	EBL	21	C	10
			EBR	5	A	
			NBL	17	B	10
			NBT	7	A	
			SBT	16	B	20
			SBR	14	B	
Ashtonbee Rd at Warden Ave (Px 1377)	26	C	EBL	27	C	20
			EBT	20	C	
			EBR	17	B	
			WBL	31	C	20
			WBT	27	C	
			WBR	17	B	
			NBL	40	D	35
			NBT	23	C	
			NBR	24	C	
			SBL	47	D	50
			SBT	29	C	
			SBR	31	C	
Ashtonbee Rd at Birchmount Rd (Px 1996)	16	B	EBL	40	D	10
			EBR	10	B	
			NBL	21	C	10
			NBT	12	B	
			SBT	11	B	10
			SBR	12	B	
Ashtonbee Road at Hakimi Ave (Px 2069)	12	B	EBL	8	A	20
			EBT	9	A	
			EBR	8	A	
			WBL	15	B	10
			WBT	12	B	
			WBR	9	A	
			NBL	38	D	10
			NBT	39	D	
			NBR	15	B	
			SBL	43	D	10
			SBT	32	C	
			SBR	15	B	

Note: LOS F indicates critical movements/intersections.



During the weekend peak hour, all the intersections are operating with overall LOS D or better, except for the Eglinton Avenue East intersections at Victoria Park Avenue and at Pharmacy Avenue (overall LOS E).

Many movements at these two intersections are operating at LOS E which are: eastbound movements at Victoria Park Avenue, and eastbound movements and all the left turning movements at Pharmacy Avenue. All the intersection approaches are operating with max queue lengths within the available storage length (without extending to the upstream intersection).

5 Future (2041) Full Build-Out Traffic Condition Analysis

The traffic analysis for the future (2041) full build-out condition was conducted to assess the full build-out scenario of approved but not yet constructed developments, planned intensification in the Golden Mile Secondary Plan and with partial implementation of some transportation improvements (e.g. ECLRT and partial implementation of some alternative solutions from the Golden Mile TMP such as traffic mitigation measures/design solutions, new conceptual local roads and connections, etc.).

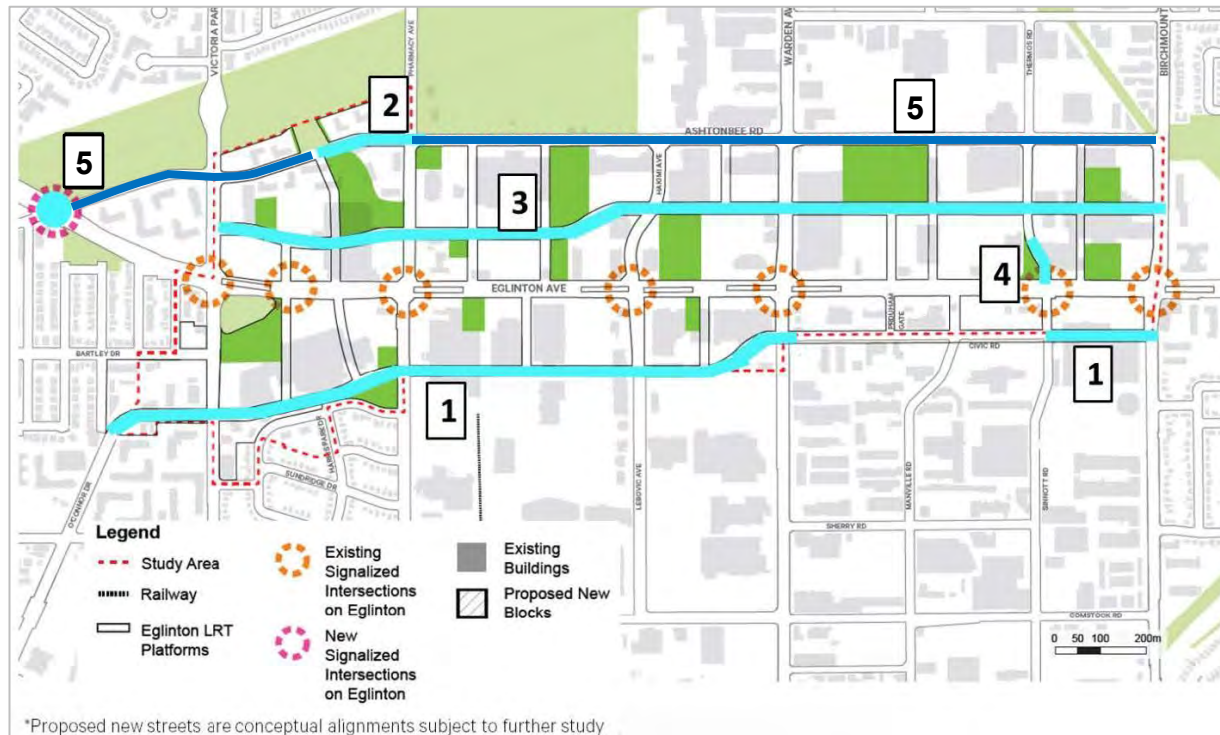
5.1 Transportation Network Improvements

5.1.1 Golden Mile TMP (GMTMP) Recommendations

A Transportation Master Plan (TMP) Study was completed in November 2019 for the GM Secondary Plan area. The GMTMP study identified the following key street network improvements, as presented in **Figure 5-1**. However, the first three improvements as listed were only considered for the Future (2041) Full Build-out condition analysis and model development. The Thermos Road/Sinnott Road (#4) and Jonesville Crescent/Eglinton Avenue (#5) were not included which is described as follows:

1. O'Connor Drive potential re-alignment, reconfiguration, and extension to Birchmount Road (Civic Road Extension);
2. Craigton Drive potential re-alignment, widening and reconfiguration;
3. Golden Mile Boulevard, potential new east-west public street from Victoria Park Avenue to Birchmount Road;
4. Thermos Road/Sinnott Road at Eglinton Avenue East intersection reconfiguration (jog elimination) was recommended by the TMP; however, this was not included in the preliminary model as the City Councillor moved a motion to not permit the realignment of Thermos and Sinnott Road October 2020; and
5. Jonesville Crescent/Craigton Drive/Ashtonbee Road from Eglinton Avenue East to Birchmount Road functional coordination, including a potential new traffic signal at Eglinton Avenue East is currently not included in the future model, as this intersection is constructed with a 'right-in-right-out' configuration under the ECLRT project.

Additional recommended streets such as local north-south streets serve a local function and are expected to be implemented through site plan approval. These local streets will provide critical connections to future developments and therefore were also included in the Base Case condition analysis and model development.



Source: Golden Mile TMP Final Report - Figure 10-1 (Nov 2019)

Figure 5-1: GMTMP Recommendations – Key Road Network Improvements

5.1.2 Regional Network Improvements

Other regional network improvements were also reviewed and considered in the Base Case condition establishment, as described as follows.

Eglinton East Light Rail Transit (ECLRT) – Since the existing conditions of this study represent the pre-ECLRT construction conditions for the year 2013, the future Base Case model included Eglinton Avenue East operating with four general purpose lanes plus a dedicated LRT transit corridor. Intersection configurations along Eglinton Avenue East were reviewed as per the design plan and verified through a site visit conducted in September 2022. Transit signal priority (TSP) for light rail transit along Eglinton Avenue East was incorporated in the future Base Case model development.

Scarborough Subway Extension¹ – The Scarborough subway extension was included in the 2031 and 2041 EMME subarea model received from the City. The future traffic demands associated with Kennedy Station were reflected in the traversal trip matrices extracted from the subarea models. The Scarborough subway extension is not expected to cause lane configuration impacts on the future vehicular transportation network.

Phase 2 Rapid TO Corridors² – Lawrence Avenue East (Don Mills Road to Starspray Loop), Victoria Park Avenue (Steeles Avenue East to Victoria Park TTC Station), and Eglinton Avenue East (Kennedy TTC Station to Finch Avenue East) were identified as the “Top 20 roadways” proposed to move forward in the next 10 years for further study, design, and implementation of transit priority solutions. At the current stage, roadway-specific studies and rolling implementations are not yet completed and therefore no lane configuration impacts were considered in the Base Case condition in this study.

O'Connor Drive Improvements³ – The City has completed a number of studies (2012 to 2017) which have recommended improvements to O'Connor Drive between Glenwood Crescent and Bermondsey Road, including road reconstruction, sewer upgrading, streetscaping, road safety improvements, etc. For future Base Case conditions, the channelization at O'Connor and St. Clair intersection was removed; other improvements are not expected to cause lane configuration impacts.

In addition, a list of Active Transportation projects within the GMSP area was provided by the City. These projects are mainly reconstruction/rehabilitation projects and are not expected to cause lane configuration impacts on the future vehicular transportation network.

A screenshot of the future 2041 Base Case Aimsun model is presented in **Figure 5-2**, for the micro-simulation model study area (i.e., GMSP area).

¹ [Scarborough Subway Extension \(Line 2 East Extension\)](#)

² [RapidTO: Bus & Streetcar Priority – Phase 2](#)

³ [O'Connor Drive Improvements PIC](#)

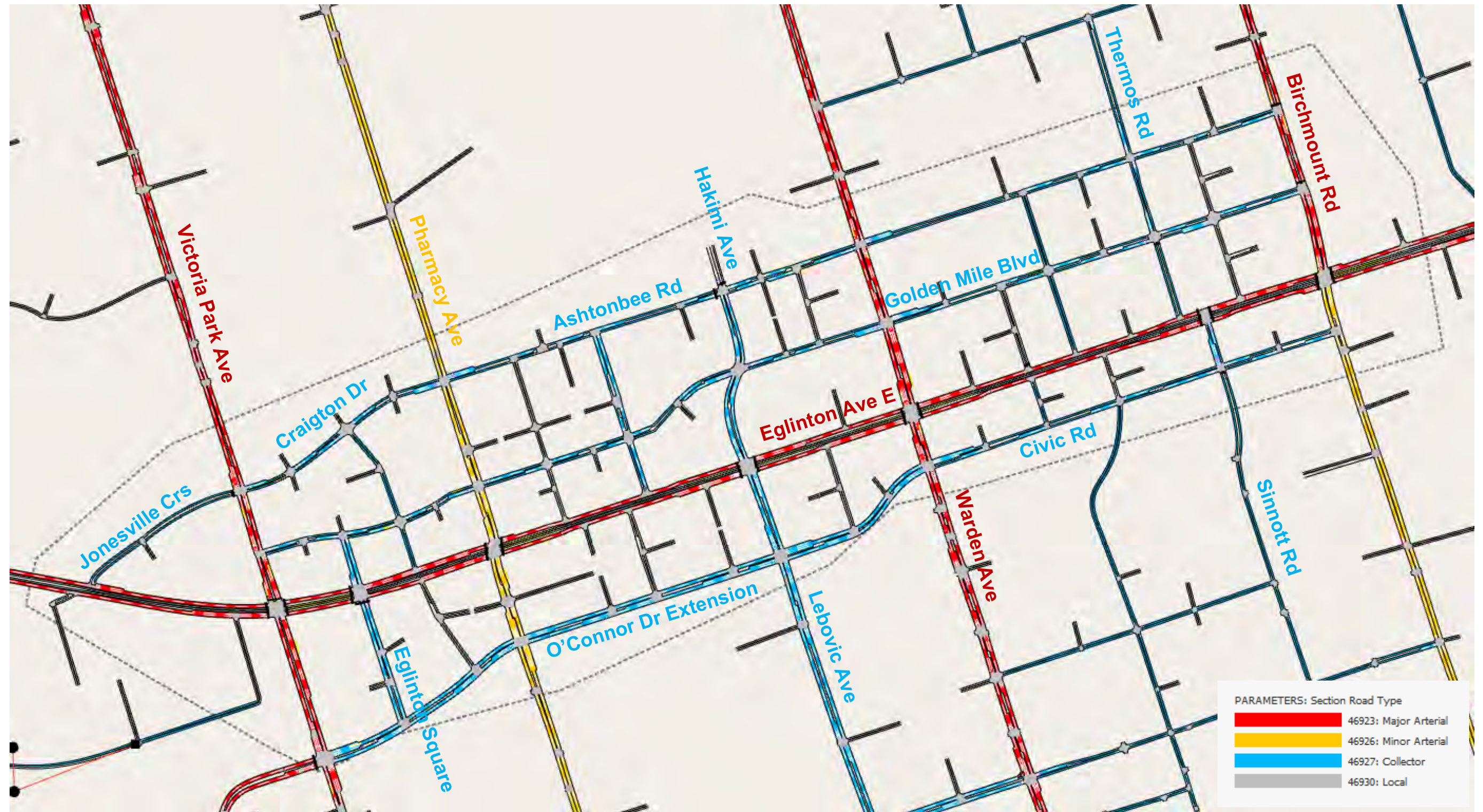


Figure 5-2: Future 2041 Base Case Model Screenshot

5.2 Future Demand Forecast

The future 2041 weekday peak hour traffic demands were developed based on morning and afternoon Origin-Destination (OD) traversal matrices extracted from the 2041 EMME subarea model received from the City, and further adjusted considering trip generations for future land use within the GMSP area. The following steps were carried out to estimate the future 2041 weekday/weekend peak-hour auto demands, as presented in **Figure 5-3**.

- The initial 2041 weekday peak-hour auto traffic demands were extracted from the City's subarea EMME model, and then disaggregated along with the zone disaggregation process (same approach as existing demand disaggregation).
- The disaggregated 2041 weekday peak-hour auto demands were adjusted using the existing correction matrices derived from the demand calibration process: the differences between calibrated existing auto demands and initial existing auto demands (i.e., the correction matrices) were applied to the disaggregated 2041 peak-hour auto demands to generate the calibrated 2041 weekday peak-hour auto demands.
- City has provided the latest 2041 population and employment estimates and associated block breakdown for the GMSP area (**Appendix C**), which were not reflected in the City's 2041 subarea model. Therefore, trip generations for zones within the GMSP area were updated using the City's land use projections. During this process, the land use types and breakdown, ITE trip rates, and mode shares were extracted from GMTMP Study and used to estimate the weekday and weekend peak hour trip productions and attractions for each zone.
- Based on the updated trip generations for GMSP area zones, the calibrated 2041 weekday peak-hour auto demands were further adjusted using the 'bi-constrain' demand projection method. This is a multi-iteration calculation process adjusting traffic demands to achieve the production/attraction targets while holding the current OD patterns.
- The City's travel demand model, and other travel demand models developed for GTA, do not provide travel demand for the weekend condition. Therefore, the 2041 weekend peak-hour traffic demands were estimated based on the calibrated 2041 afternoon peak-hour traffic demands, following the same approach as discussed in the Existing Traffic Conditions section.
- As the City's land use data provides block breakdown, the adjusted 2041 weekday/weekend peak-hour auto demands were further split to reflect more detailed traffic access/egress to/from the respective planning blocks. The new blocks identified by the City were considered as new Traffic Analysis Zones (TAZs) in the future Base Case model.

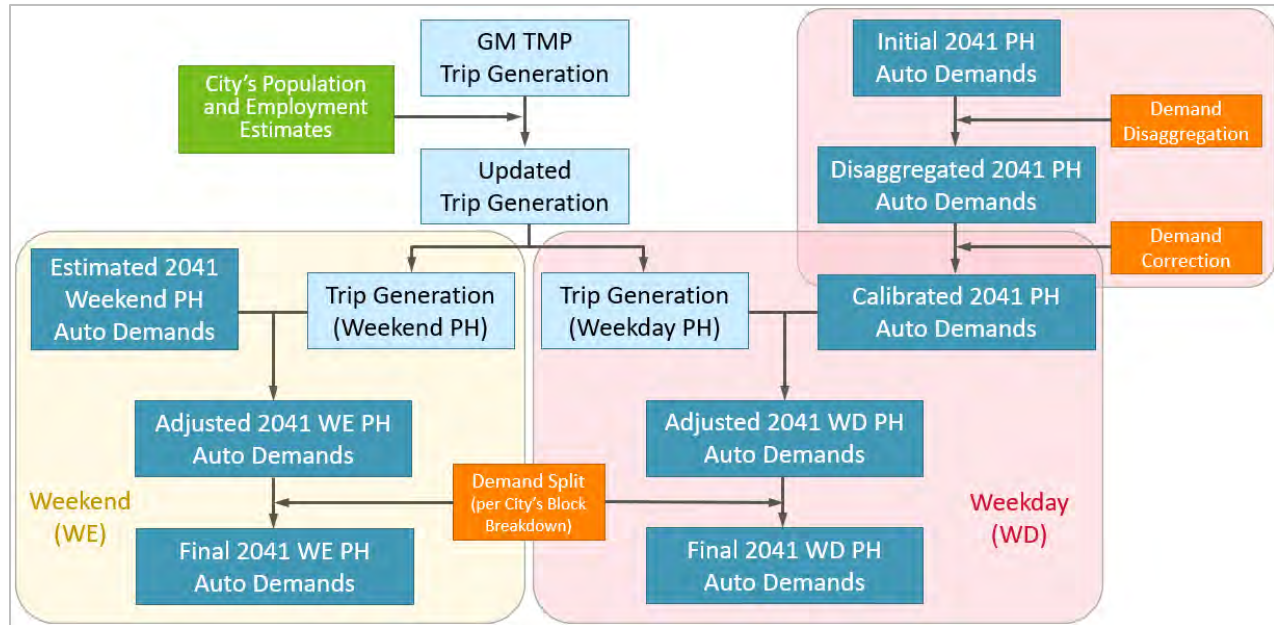


Figure 5-3: Future Traffic Demand Forecast

The 2041 weekday peak-hour demands for trucks were estimated based on the calibrated existing weekday peak-hour truck demands: the calibrated existing weekday peak-hour traffic demands were increased by 10% and 14% respectively, for morning and afternoon peak hour, to estimate the 2041 weekday peak-hour truck demands. The growth rates applied were derived based on an overall auto traffic growth from 2011 to 2041 as per the EMM subarea modelling outputs. The 2041 weekend peak-hour truck demands were estimated based on the 2041 weekday afternoon peak-hour truck demands, following the same approach as discussed in the Existing Traffic Conditions section (**Section 4.2**).

The 3-hour traffic demand profiles (with 15-min interval) for 2041 were assumed to be the same as the existing conditions.

A review and comparison of 2041 peak-hour auto demands is presented in **Figure 5-4**, for the initial, calibrated, and adjusted demands. The total auto demands for macrosimulation area is increased by 4-5% from the initial demands extracted from EMM subarea model to the calibrated demands using existing correction matrix; however, when updating the auto demands using new trip generations derived from City's population and employment projections, the total peak-hour auto demands are expected to increase by 37% for the morning peak hour condition and by 22% for the afternoon peak hour condition.

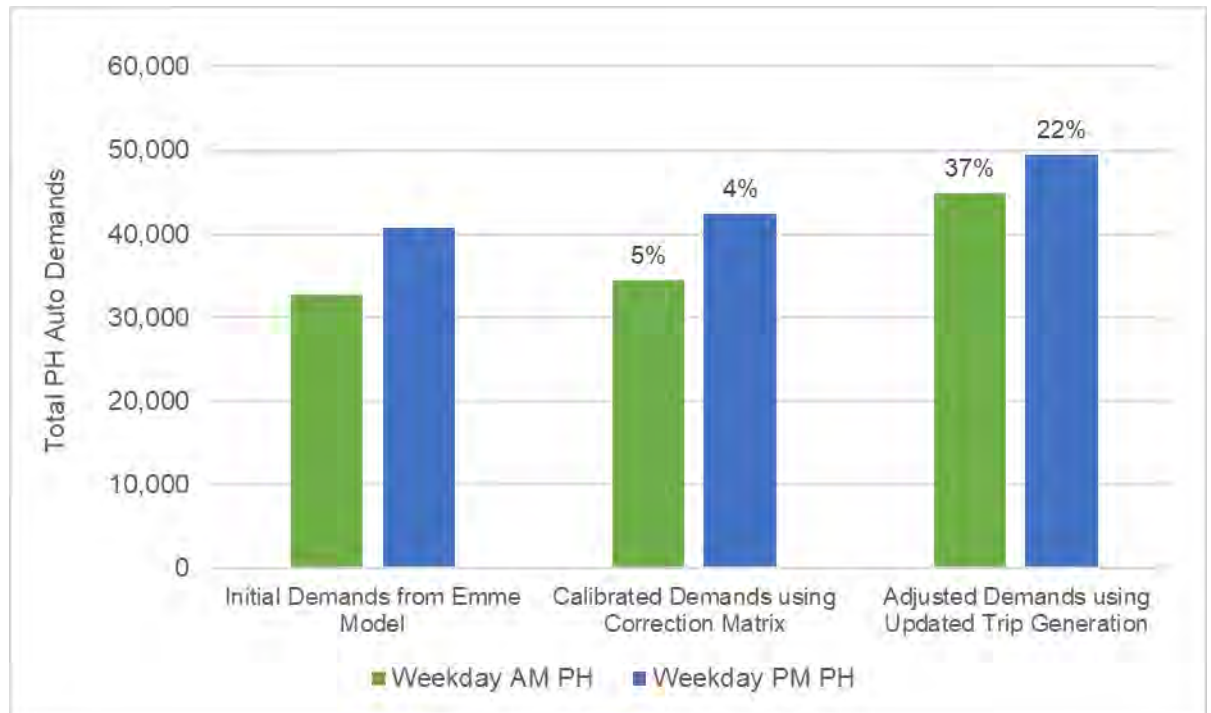


Figure 5-4: Review of 2041 Peak-Hour Auto Demands

5.3 Preliminary Intersection Lane Configurations and Traffic Control Measures

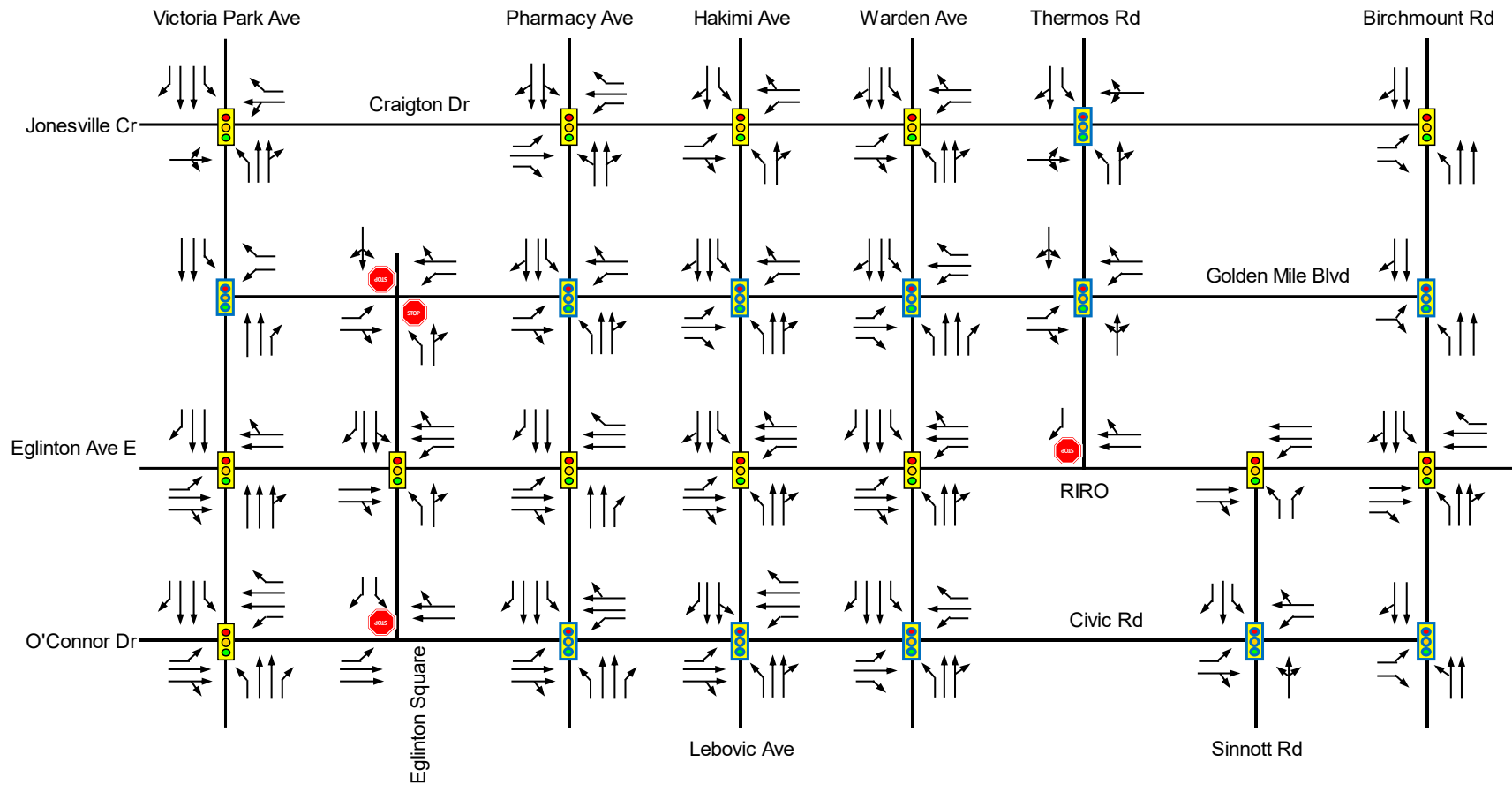
The future (2041) preliminary intersection lane configurations and associated traffic control measures within the GM Secondary Plan area were established based on the preferred lane configurations identified in the GMTMP Study (presented in Figure 10-4 of the GMTMP Report, November 12, 2019). In addition, dedicated turning lanes were proposed for some movements which were initially recommended from the TMP to operate with shared left/through or shared through/right lanes, as listed below:

- At O'Connor Dr Extension and Lebovic Ave, add one dedicated northbound left lane;
- At O'Connor Dr Extension and Warden Ave, add one dedicated southbound left lane;
- At O'Connor Dr Extension and Sinnott Rd, add one dedicated southbound left lane and one southbound right lane;
- At Golden Mile Boulevard and Pharmacy Avenue, add one dedicated eastbound left lane and one dedicated westbound left lane;
- At Golden Mile Boulevard and Hakimi Avenue, add one dedicated eastbound right lane;



- At Golden Mile Boulevard and Warden Avenue, add one dedicated eastbound right lane, one dedicated westbound right lane and one dedicated northbound right lane;
- At Golden Mile Boulevard and Birchmount Road, add one dedicated northbound left lane; and
- At Craigton Drive and Victoria Park Avenue, add one dedicated westbound right lane.

The future (2041) preliminary intersection lane configurations and traffic controls used for the Base Case condition analysis are presented in **Figure 5-5**.



Legend

- Lane Configurations
- Existing Signalized Intersection
- New Signalized Intersection
- 'Stop' Controlled Approach



Figure 5-5: Future (2041) Preliminary Lane Configurations and Traffic Controls

5.4 Future Pedestrian, Cycling and Transit LOS

The future (2041) pedestrian, cycling, and transit level of services will be analyzed for the preferred/recommended transportation network improvements identified in the next phase of the study, specifically for the study area corridors considered in this EA Study (i.e., O'Connor Drive, Golden Mile Boulevard, and Craigton Drive / Ashtonbee Road / Jonesville Crescent).

With the currently planned ECLRT other proposed transit and AT network improvements as discussed, and the finer-grained street network, the level of services for sustainable modes (AT and Transit) are expected to improve significantly compared to the existing conditions. The proposed ECLRT will result in prohibited left-turn movements at some intersections along Eglinton Avenue East, which will allow for the implementation of leading pedestrian intervals (LPIs) as part of the City's Vision Zero initiative. LPIs provide pedestrians with the opportunity to begin crossing the intersection while all vehicles in all directions remain stopped at a red light. This improves pedestrian safety as it minimizes the amount of time that pedestrians spend in conflict with vehicles. As such, implementation of LPIs within the study area is expected to improve pedestrian LOS, which also impacts transit LOS as described in **Section 3.3**.

The proposed cycling facilities within the study area will result in the study area corridors passing the active transportation design check, as discussed in **Section 3.1**. This will allow the Bicycle LOS to be determined for the future network. Moreover, the proposed implementation of transit priority measures and improved pedestrian safety will result in improved Transit and Pedestrian LOS in the future.

5.5 Preliminary Full Build-Out Intersection Operational Analysis

5.5.1 Preliminary Traffic Volumes

The future (2041) traffic analysis was conducted using the calibrated Aimsun-based hybrid model, to evaluate transportation improvement alternatives and assess traffic operations at intersections. The future preliminary peak hour traffic volumes for the full build-out conditions are presented through **Figure 5-6** and **Figure 5-7** for the Weekday morning and Weekend peak hour conditions, respectively. It is noted that due to network gridlock during the afternoon peak hour, preliminary traffic volumes and analysis results are not available for the afternoon peak hour condition. These preliminary traffic volumes were estimated based on the throughput/processed traffic volumes (auto and trucks) during multiple micro-simulation runs using the Aimsun model. The actual traffic demands could be higher than the throughput volumes.

	Victoria Park Ave				Pharmacy Ave			Hakimi Ave			Warden Ave			Thermos Rd			Birchmount Rd		
Jonesville Cr	205	1109	180	↑	138	788	289	6	19	18	254	750	35	279	134	177	205	580	
	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
	49	16	70	↑	131	224	44	38	411	281	370	325	15	176	366	10	339	200	93
	157	903	72	↑	78	872	106	42	24	114	66	849	50	20	128	82	596		
Eglinton Ave E	749	500		↑	171	693	43	40	299	65	45	733	34	91	44	55	12	765	
	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
	316	250	25	↑	192	150	84	31	172	451	113	215	228	77	299	4	65	247	359
	884	91	318	↑	61	16	71	114	121	192	25	725	148	47	93	40	624		
O'Connor Dr	119	940		↑	20	1080		24	541	312	56	652	318	120		24	21	938	262
	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
	62	1072	166	↑	124	1178	136	81	806	22	403	626	98	RIRO			547	134	722
	804	82		↑	895	259		165	303	165	225	483	65	541	11	204	74	154	
	318	689	62	↑	304	557	347	299	402	179	448	387	236	Civic Rd			460	551	
	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
	170	842	59	↑	238	680	72	49	449	35	215	175	60	276	124	109	175	267	830
	20	676	281	↑	77	781	212	558	422	292	156	294	33	219	3	141	26		
Eglinton Square					Lebovic Ave						Sinnott Rd								

Figure 5-6: Future (2041) Preliminary Traffic Volumes for AM Peak



Victoria Park Ave				Pharmacy Ave				Hakimi Ave				Warden Ave				Thermos Rd				Birchmount Rd			
166 896 170				136 705 187				5 14 13				211 688 44				302 134 76				370 668			
↑ ↓ ↑				↑ ↓ ↑				↑ ↓ ↑				↑ ↓ ↑				↑ ↓ ↑				↑ ↓			
105 82 73				127 171 34				8 448 77				142 364 24				83 322 77				463			
Jonesville Cr				62 241 36				7 614 205				289 561 25				133 390 14				55			
47 30 94				32 660 179				73 9 142				36 544 59				25 100 35				47 763			
138 1002 125				183 544 41				23 218 55				48 578 94				162 25 37				137 595			
757 300				163				42 138 102				115 343 108				39 304 36				Golden Mile Blvd			
↑ ↓				↑ ↓				↑ ↓				↑ ↓				↑ ↓				↑ ↓			
7 7 7				242 315 66				57 262 508				55 209 225				51 311				223			
860 168 120				81 622 213				153 103 161				88 467 180				81 72 143				320			
120 86 29 111				18 678				41 521 269				89 591 257				126				9 684 230			
31 105 88				↑ ↓				↑ ↓				↑ ↓				↑ ↓				↑ ↓			
122 841				20 694 180				74 897				66 610 108				29 699				228 841			
Eglinton Ave E				152 943 97				86 879 67				93 721 41				214 606 129				RiRO			
↑ ↓				↑ ↓				↑ ↓				↑ ↓				↑ ↓				755 4			
749 79				878 132				752 113				198 258 33				139 472 57				357 97			
878 132				245 203 16				41 198 258 33				472 353 118				96 8 36				843 62			
180 674 69				59 485 177				222 398 43				147 151 40				123 199 9				122 578 195			
↑ ↓				↑ ↓				↑ ↓				↑ ↓				↑ ↓				↑ ↓			
97 79				142 430				141 380 69				276 337 54				98 228 36				229 518			
309 74				117 378 84				38 226 67				96 239 127				96 8 36				191			
152 480 33				104 561 56				92 304 147				147 151 40				123 199 9				154 702			
↑ ↓				↑ ↓				↑ ↓				↑ ↓				↑ ↓				↑ ↓			
219 529				Eglinton Square				Lebovic Ave				Civic Rd				Sinnott Rd							
14 584 237																							

Figure 5-7: Future (2041) Preliminary Traffic Volumes for Weekend Peak Hour

5.5.2 Future Weekday Peak Hour Conditions

Based on the traffic volumes presented in **Section 5.5.1** and the network improvements discussed in **Section 5.1.1**, an evaluation of the future (2041) Base Case scenario was undertaken in Aimsun. Preliminary signal timing plans were developed in Synchro using the future network assumptions and the macro trip assignment turning movement counts. The intersection operational analysis was assessed based on average vehicular delays, level of service (LOS), and queuing conditions. The LOS criteria for signalized and stop-controlled intersections were previously presented in **Table 4-3**.

The overall intersection LOS for the morning peak hour is summarized in **Figure 5-8**.

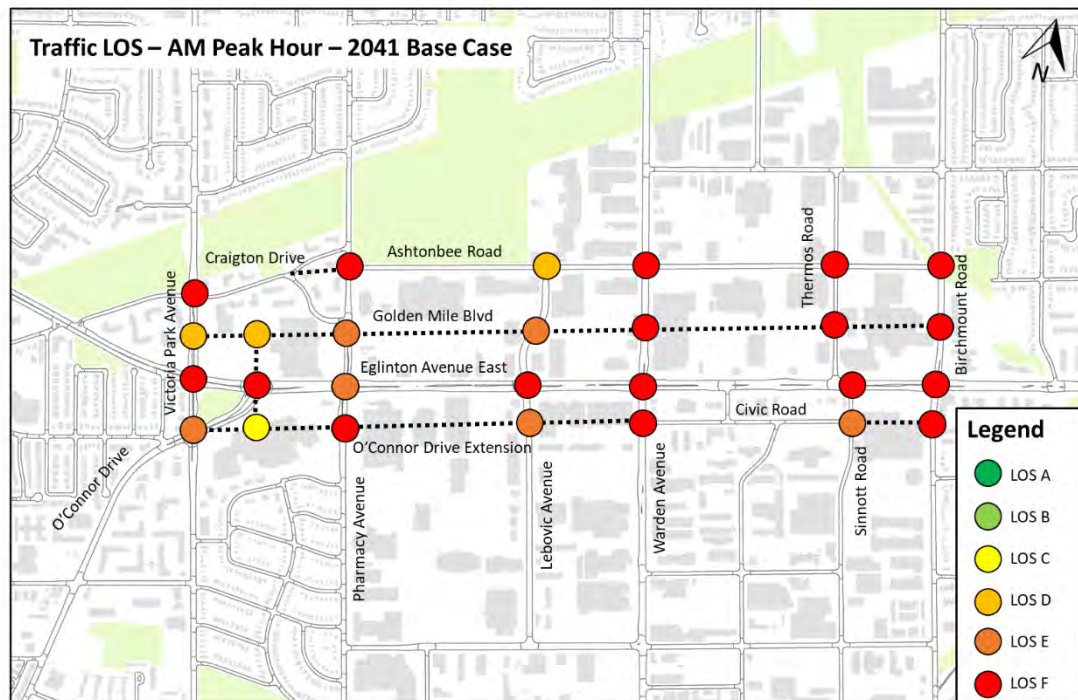


Figure 5-8: Intersection LOS Summary – Future (2041) Base Case AM Peak Hour

Detailed intersection operational analysis results are presented in **Table 5-1**. The results of the analysis present the overall intersection delays and LOS, estimated vehicular maximum queue lengths for intersection approaches, as well as the delays and LOS for individual movements. The highlighted cells in the Table shows the turning movements which are not operating with an acceptable level of service.

**Table 5-1: Intersection Operational Analysis Results – Future (2041) Base Case
AM Peak Hour**

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Eglinton Ave at Victoria Park Ave (Px 451)	123	F	EBL	430	F	350
			EBT	290	F	
			EBR	282	F	
			WBT	36	D	140
			WBR	37	D	
			NBT	87	F	160
			NBR	92	F	
			SBT	49	D	90
			SBR	57	E	
Eglinton Ave at Eglinton Sq (Px 450)	88	F	EBT	76	E	140
			EBR	78	E	
			WBL	134	F	230
			WBT	66	E	
			WBR	67	E	
			NBL	166	F	165
			NBT	107	F	
			NBR	117	F	
			SBL	105	F	90
			SBT	90	F	
			SBR	36	D	
Eglinton Ave at Pharmacy Ave (Px 452)	64	E	EBL	243	F	230
			EBT	63	E	
			EBR	61	E	
			WBT	57	E	215
			WBR	56	E	
			NBT	65	E	
			NBR	45	D	140
			SBT	58	E	
			SBR	39	D	90
Eglinton Ave at Lebovic Ave (Px 1791)	136	F	EBL	150	F	270
			EBT	142	F	
			EBR	146	F	
			WBL	153	F	280
			WBT	110	F	
			WBR	117	F	
			NBL	192	F	130
			NBT	80	E	
			NBR	74	E	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			SBL	239	F	160
			SBT	120	F	
			SBR	85	F	
Eglinton Ave at Warden Ave (Px 456)	155	F	EBL	155	F	250
			EBT	109	F	
			EBR	99	F	
			WBL	338	F	280
			WBT	202	F	
			WBR	178	F	
			NBL	104	F	80
			NBT	93	F	
			NBR	88	F	
			SBL	175	F	150
			SBT	141	F	
			SBR	129	F	
Eglinton Ave at Sinnott Rd (Px 457)	116	F	EBT	63	E	140
			EBR	59	E	
			WBL	157	F	210
			WBT	148	F	
			NBL	67	E	50
			NBR	25	C	
Birchmount Rd at Eglinton Ave (Px 458)	123	F	EBT	41	D	110
			EBR	35	D	
			WBT	230	F	290
			WBR	217	F	
			NBL	79	E	80
			NBT	33	C	
			NBR	31	C	
			SBL	106	F	150
			SBT	123	F	
			SBR	157	F	
Craigton Dr & Jonesville Cr at Victoria Park Ave (Px 202)	106	F	EBL	81	F	35
			EBT	76	E	
			EBR	55	E	
			WBL	99	F	135
			WBT	87	F	
			WBR	54	D	
			NBL	72	E	110
			NBT	44	D	
			NBR	51	D	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			SBL	206	F	370
			SBT	165	F	
			SBR	143	F	
Ashtonbee Rd at Pharmacy Ave (Px 1295)	139	F	EBL	112	F	140
			EBT	86	F	
			EBR	96	F	
			WBL	231	F	205
			WBT	129	F	
			WBR	87	F	
			NBL	33	C	80
			NBT	32	C	
			NBR	43	D	
			SBL	267	F	290
			SBT	248	F	
			SBR	243	F	
Ashtonbee Road at Hakimi Ave (Px 2069)	49	D	EBL	55	D	160
			EBT	52	D	
			EBR	52	D	
			WBL	66	E	165
			WBT	40	D	
			WBR	40	D	
			NBL	52	D	75
			NBT	72	E	
			NBR	45	D	
			SBL	57	E	20
			SBT	59	E	
			SBR	19	B	
Ashtonbee Rd at Warden Ave (Px 1377)	160	F	EBL	138	F	220
			EBT	102	F	
			EBR	120	F	
			WBL	362	F	260
			WBT	229	F	
			WBR	185	F	
			NBL	103	F	75
			NBT	28	C	
			NBR	35	C	
			SBL	261	F	250
			SBT	274	F	
			SBR	282	F	
	91	F	EBL	53	D	155

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Ashtonbee Rd at Thermos Rd			EBT	47	D	160
			EBR	45	D	
			WBL	68	E	
			WBT	66	E	
			WBR	56	E	
			NBL	138	F	105
			NBT	78	E	
			NBR	65	E	
			SBL	164	F	250
			SBT	153	F	
			SBR	150	F	
Ashtonbee Rd at Birchmount Rd (Px 1996)	170	F	EBL	84	F	190
			EBR	69	E	
			NBL	49	D	175
			NBT	34	C	
			SBT	353	F	240
			SBR	343	F	
Golden Mile Blvd at Victoria Park Ave	47	D	WBL	82	F	130
			WBR	53	D	
			NBT	29	C	85
			NBR	49	D	
			SBL	65	E	110
			SBT	40	D	
Golden Mile Blvd at Eglinton Square	45	D	EBL	25	C	130
			EBT	42	D	
			EBR	45	D	
			WBL	100	F	110
			WBT	22	C	
			WBR	18	B	
			NBL	55	E	35
			NBT	32	C	
			NBR	26	C	
			SBL	45	D	30
			SBT	62	E	
			SBR	47	D	
Golden Mile Blvd at Pharmacy Ave	79	E	EBL	81	F	140
			EBT	96	F	
			EBR	94	F	
			WBL	160	F	240
			WBT	137	F	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			WBR	128	F	70
			NBL	49	D	
			NBT	23	C	
			NBR	39	D	
			SBL	102	F	170
			SBT	99	F	
			SBR	93	F	
Golden Mile Blvd at Hakimi Ave	63	E	EBL	45	D	85
			EBT	53	D	
			EBR	44	D	
			WBL	104	F	155
			WBT	73	E	
			WBR	66	E	
			NBL	64	E	50
			NBT	41	D	
			NBR	36	D	
			SBL	87	F	85
			SBT	97	F	
			SBR	44	D	
Golden Mile Blvd at Warden Ave	112	F	EBL	154	F	230
			EBT	123	F	
			EBR	137	F	
			WBL	403	F	270
			WBT	165	F	
			WBR	124	F	
			NBL	50	D	90
			NBT	27	C	
			NBR	21	C	
			SBL	120	F	140
			SBT	150	F	
			SBR	153	F	
Golden Mile Blvd at Thermos Rd	81	F	EBL	90	F	150
			EBT	110	F	
			EBR	83	F	
			WBL	61	E	165
			WBT	68	E	
			WBR	69	E	
			NBL	65	E	90
			NBT	62	E	
			NBR	64	E	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			SBL	123	F	85
			SBT	57	E	
			SBR	54	D	
Golden Mile Blvd at Birchmount Rd	98	F	EBL	192	F	250
			EBR	244	F	
			NBL	37	D	75
			NBT	14	B	
			SBT	138	F	140
			SBR	153	F	
O Connor Dr & Victoria Park Ave (Px 449)	65	E	EBL	147	F	360
			EBT	76	E	
			EBR	73	E	
			WBL	67	E	60
			WBT	48	D	
			WBR	40	D	
			NBL	77	E	160
			NBT	56	E	
			NBR	28	C	
			SBL	146	F	195
			SBT	72	E	
			SBR	63	E	
O'Connor Dr Extension at Eglinton Square	33	C	EBL	33	C	115
			EBT	27	C	
			WBT	23	C	10
			WBR	24	C	
			SBL	71	E	195
			SBR	69	E	
O'Connor Dr Extension at Pharmacy Ave	90	F	EBL	140	F	230
			EBT	109	F	
			EBR	95	F	
			WBL	95	F	200
			WBT	104	F	
			WBR	200	F	
			NBL	96	F	300
			NBT	100	F	
			NBR	96	F	
			SBL	53	D	140
			SBT	38	D	
			SBR	35	C	
	75	E	EBL	198	F	205



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
O'Connor Dr Extension at Lebovic Ave			EBT	198	F	40
			EBR	147	F	
			WBL	100	F	
			WBT	63	E	
			WBR	38	D	330
			NBL	41	D	
			NBT	40	D	
			NBR	37	D	
			SBL	143	F	135
			SBT	53	D	
			SBR	30	C	
O'Connor Dr Extension at Warden Ave	160	F	EBL	422	F	280
			EBT	200	F	
			EBR	158	F	
			WBL	147	F	200
			WBT	195	F	
			WBR	190	F	
			NBL	244	F	160
			NBT	322	F	
			NBR	303	F	
			SBL	48	D	80
			SBT	32	C	
			SBR	17	B	
Civic Rd at Sinnott Rd	66	E	EBL	62	E	55
			EBT	37	D	
			EBR	30	C	
			WBL	53	D	155
			WBT	48	D	
			WBR	52	D	
			NBL	161	F	220
			NBT	77	E	
			NBR	148	F	
			SBL	48	D	65
			SBT	44	D	
Civic Rd at Birchmount Rd	96	F	SBR	31	C	
			EBL	80	E	115
			EBR	47	D	
			NBL	176	F	200
			NBT	167	F	
			SBT	21	C	80

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			SBR	20	C	

Note: LOS F indicates critical movements/intersections.

During the morning peak period, many of the study area intersections are expected to operate with LOS E or F, and many of the maximum queues are expected to exceed the available storage lengths or extend to the upstream intersection. Short distances between intersections, particularly between Civic Road/O'Connor Drive Extension and Eglinton Avenue East, result in queues blocking the northbound and southbound receiving lanes at Warden Avenue and Sinnott Road.

The east-west movements along Ashtonbee Road and Golden Mile Boulevard are expected to experience higher levels of delay due to projected traffic demand along these corridors, which only have one lane per direction. As a result of the implementation of the ECLRT in the Future (2041) Base Case scenario, the eastbound and westbound left-turn movements along Eglinton Avenue East are fully protected, resulting in all of these movements having a LOS of F in the AM peak period. Although, increasing the cycle lengths within the study area may improve traffic operations, that could negatively impact the pedestrian and transit LOS.

With the projected traffic demand for the future (2041) afternoon peak hour, a network gridlock was observed, and this situation prevented a very large number of vehicles to enter in the study area network during each simulation run. As a result, vehicles were not able to enter the network during the simulation and the results are not indicative of conditions with the proposed demand. Therefore, the traffic modelling results for the afternoon peak hour would not provide realistic results, and results for the weekday afternoon peak hour are not included in this report.

It is noted that the City's proposed land use projection for the Secondary Plan area, which was used in this study, is approximately 66% higher than the Golden Mile Secondary Plan TMP projection. Moreover, traffic demands for the afternoon peak period are approximately 10% higher than demand during the morning peak period, and it is anticipated that the preliminary network configuration will not be able to accommodate current traffic demands in the afternoon peak period.

5.5.3 Future Weekend Peak Hour Conditions

Similar to the weekday peak hour, preliminary signal timing plans were developed in Synchro for the weekend peak hour and incorporated into the Aimsun model to evaluate the future (2041) Base Case scenario. The intersection operational analysis was assessed based on average vehicular delays, level of service (LOS), and queuing conditions. The LOS criteria for signalized and stop-controlled intersections were previously presented in **Table 4-3**.

The overall intersection LOS for the Weekend period is summarized in **Figure 5-9**.

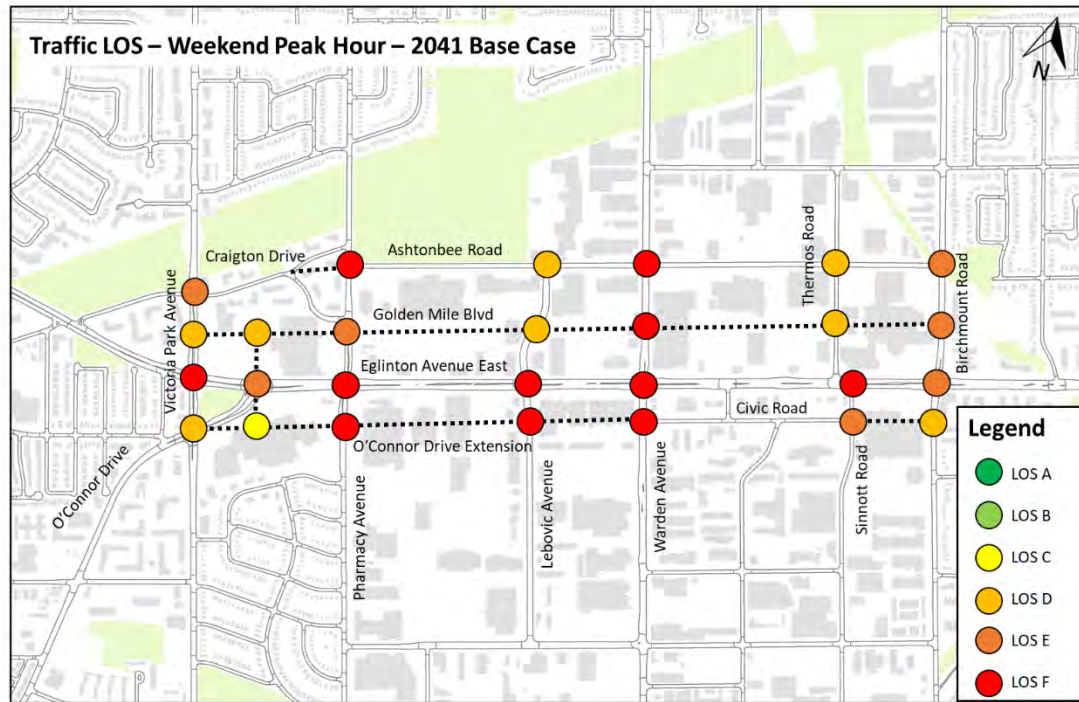


Figure 5-9: Intersection LOS Summary – Future (2041) Base Case Weekend Peak Hour

Detailed intersection operational analysis results are presented in **Table 5-2**. The results of the analysis present the overall intersection delays and LOS, estimated vehicular maximum queue lengths for intersection approaches, as well as the delays and LOS for individual movements. The highlighted cells in the Table shows the turning movements which are not operating with an acceptable level of service.

Table 5-2: Intersection Operational Analysis Results – Future (2041) Base Case Weekend

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Eglinton Ave at Victoria Park Ave (Px 451)	107	F	EBL	287	F	350
			EBT	236	F	
			EBR	236	F	
			WBT	25	C	120
			WBR	50	D	
			NBT	81	F	140
			NBR	47	D	
			SBT	40	D	90
			SBR	29	C	
Eglinton Ave at Eglinton Sq (Px 450)	66	E	EBT	58	E	140
			EBR	52	D	
			WBL	134	F	185
			WBT	32	C	
			WBR	41	D	
			NBL	113	F	155
			NBT	82	F	
			NBR	74	E	
			SBL	117	F	75
			SBT	97	F	
			SBR	24	C	
Eglinton Ave at Pharmacy Ave (Px 452)	90	F	EBL	755	F	230
			EBT	97	F	
			EBR	90	F	
			WBT	56	E	225
			WBR	46	D	
			NBT	77	E	140
			NBR	53	D	
			SBT	66	E	90
			SBR	51	D	
Eglinton Ave at Lebovic Ave (Px 1791)	166	F	EBL	189	F	270
			EBT	130	F	
			EBR	123	F	
			WBL	471	F	290
			WBT	232	F	
			WBR	194	F	
			NBL	284	F	150
			NBT	98	F	
			NBR	73	E	
			SBL	160	F	115
			SBT	78	E	
			SBR	62	E	
Eglinton Ave at Warden Ave (Px 456)	181	F	EBL	305	F	280
			EBT	179	F	
			EBR	156	F	
			WBL	381	F	280
			WBT	233	F	
			WBR	199	F	
			NBL	155	F	80
			NBT	85	F	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBR	76	E	150
			SBL	166	F	
			SBT	129	F	
			SBR	101	F	
Eglinton Ave at Sinnott Rd (Px 457)	111	F	EBT	74	E	195
			EBR	151	F	
			WBL	301	F	205
			WBT	158	F	
			NBL	52	D	55
			NBR	29	C	
Birchmount Rd at Eglinton Ave (Px 458)	63	E	EBT	28	C	120
			EBR	31	C	
			WBT	69	E	255
			WBR	66	E	
			NBL	54	D	80
			NBT	41	D	
			NBR	37	D	150
			SBL	126	F	
			SBT	105	F	
			SBR	104	F	
Craigton Dr & Jonesville Cr at Victoria Park Ave (Px 202)	72	E	EBL	98	F	80
			EBT	112	F	
			EBR	110	F	
			WBL	166	F	150
			WBT	177	F	
			WBR	118	F	
			NBL	32	C	45
			NBT	20	C	
			NBR	22	C	
			SBL	142	F	370
			SBT	98	F	
			SBR	85	F	
Ashtonbee Rd at Pharmacy Ave (Px 1295)	86	F	EBL	93	F	115
			EBT	91	F	
			EBR	95	F	
			WBL	207	F	210
			WBT	124	F	
			WBR	70	E	
			NBL	34	C	70
			NBT	25	C	
			NBR	25	C	
			SBL	140	F	290
			SBT	122	F	
			SBR	123	F	
Ashtonbee Road at Hakimi Ave (Px 2069)	45	D	EBL	53	D	190
			EBT	49	D	
			EBR	48	D	
			WBL	67	E	200
			WBT	40	D	
			WBR	35	D	
			NBL	50	D	40

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBT	48	D	15
			NBR	26	C	
			SBL	40	D	
			SBT	46	D	
			SBR	23	C	
Ashtonbee Rd at Warden Ave (Px 1377)	132	F	EBL	97	F	220
			EBT	71	E	
			EBR	70	E	
			WBL	113	F	240
			WBT	89	F	
			WBR	72	E	
			NBL	106	F	110
			NBT	62	E	
			NBR	53	D	
			SBL	241	F	250
			SBT	254	F	
			SBR	250	F	
Ashtonbee Rd at Thermos Rd	55	D	EBL	45	D	105
			EBT	32	C	
			EBR	31	C	
			WBL	56	E	165
			WBT	39	D	
			WBR	38	D	
			NBL	107	F	60
			NBT	43	D	
			NBR	43	D	
			SBL	90	F	215
			SBT	95	F	
			SBR	85	F	
Ashtonbee Rd at Birchmount Rd (Px 1996)	60	E	EBL	59	E	130
			EBR	44	D	
			NBL	119	F	205
			NBT	22	C	
			SBT	86	F	240
			SBR	86	F	
Golden Mile Blvd at Victoria Park Ave	36	D	WBL	55	D	75
			WBR	22	C	
			NBT	21	C	70
			NBR	45	D	
			SBL	84	F	105
			SBT	36	D	
Golden Mile Blvd at Eglinton Square	40	D	EBL	34	C	75
			EBT	42	D	
			EBR	51	D	
			WBL	80	F	100
			WBT	21	C	
			WBR	19	B	
			NBL	54	D	45
			NBT	32	C	
			NBR	33	C	
			SBL	33	C	30

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Golden Mile Blvd at Pharmacy Ave	67	E	SBT	43	D	
			SBR	34	C	
			EBL	54	D	135
			EBT	53	D	
			EBR	53	D	
			WBL	261	F	185
			WBT	136	F	
			WBR	116	F	
			NBL	58	E	80
			NBT	29	C	
			NBR	28	C	
			SBL	80	E	170
			SBT	81	F	
			SBR	72	E	
Golden Mile Blvd at Hakimi Ave	42	D	EBL	70	E	100
			EBT	53	D	
			EBR	33	C	
			WBL	70	E	155
			WBT	56	E	
			WBR	52	D	
			NBL	37	D	40
			NBT	31	C	
			NBR	31	C	
			SBL	35	C	30
			SBT	28	C	
			SBR	25	C	
Golden Mile Blvd at Warden Ave	109	F	EBL	127	F	240
			EBT	167	F	
			EBR	119	F	
			WBL	107	F	195
			WBT	64	E	
			WBR	44	D	
			NBL	65	E	110
			NBT	60	E	
			NBR	233	F	
			SBL	302	F	140
			SBT	100	F	
			SBR	86	F	
Golden Mile Blvd at Thermos Rd	43	D	EBL	61	E	90
			EBT	46	D	
			EBR	68	E	
			WBL	67	E	150
			WBT	57	E	
			WBR	50	D	
			NBL	35	C	95
			NBT	32	C	
			NBR	30	C	
			SBL	34	C	50
			SBT	30	C	
			SBR	23	C	
	58	E	EBL	74	E	170

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Golden Mile Blvd at Birchmount Rd			EBR	75	E	100
			NBL	51	D	
			NBT	28	C	
			SBT	74	E	140
			SBR	69	E	
O Connor Dr & Victoria Park Ave (Px 449)	51	D	EBL	98	F	400
			EBT	64	E	
			EBR	62	E	
			WBL	67	E	50
			WBT	53	D	
			WBR	40	D	
			NBL	82	F	160
			NBT	46	D	
			NBR	28	C	
			SBL	90	F	170
			SBT	39	D	
			SBR	33	C	
O'Connor Dr Extension at Eglinton Square	27	C	EBL	25	C	130
			EBT	22	C	
			WBT	23	C	40
			WBR	23	C	
			SBL	44	D	95
			SBR	38	D	
O'Connor Dr Extension at Pharmacy Ave	88	F	EBL	146	F	230
			EBT	94	F	
			EBR	104	F	
			WBL	57	E	105
			WBT	55	E	
			WBR	77	E	
			NBL	116	F	300
			NBT	122	F	
			NBR	131	F	
			SBL	76	E	140
			SBT	71	E	
			SBR	46	D	
O'Connor Dr Extension at Lebovic Ave	106	F	EBL	249	F	210
			EBT	217	F	
			EBR	174	F	
			WBL	38	D	75
			WBT	37	D	
			WBR	60	E	
			NBL	144	F	315
			NBT	190	F	
			NBR	163	F	
			SBL	239	F	145
			SBT	46	D	
			SBR	29	C	
O'Connor Dr Extension at Warden Ave	131	F	EBL	441	F	280
			EBT	250	F	
			EBR	214	F	
			WBL	63	E	145

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			WBT	67	E	160
			WBR	85	F	
			NBL	223	F	
			NBT	288	F	
			NBR	240	F	80
			SBL	74	E	
			SBT	40	D	
			SBR	23	C	
Civic Rd at Sinnott Rd	59	E	EBL	74	E	95
			EBT	32	C	
			EBR	27	C	
			WBL	54	D	135
			WBT	62	E	
			WBR	60	E	
			NBL	127	F	205
			NBT	68	E	
			NBR	120	F	
			SBL	54	D	20
			SBT	45	D	
			SBR	20	C	
Civic Rd at Birchmount Rd	42	D	EBL	67	E	75
			EBR	35	D	
			NBL	63	E	200
			NBT	53	D	
			SBT	22	C	80
			SBR	20	B	

Note: LOS F indicates critical movements/intersections.

Similar to the weekend morning peak period, the Weekend period results indicate that many intersections are expected to operate with an unacceptable level of service (LOS E or F) under Future (2041) Full Build-out conditions, and many of the maximum queues will exceed the available storage lengths or extend to the upstream intersection. Once again, queues will block the northbound and southbound receiving lanes at Warden Avenue at Eglinton Avenue East and O'Connor Drive Extension. East-west movements along Ashtonbee Road and Golden Mile Boulevard experience high levels of delay, and all of the eastbound and westbound left-turn movements along Eglinton Avenue East are expected to operate with a LOS of F in the Weekend period.

5.6 Trip Rate Adjustment and Traffic Analysis Update

The preliminary traffic analysis results based on the population and employment data (provided on May 12, 2022) for the 2041 Full Build-out scenario were presented in **Section 5.5**. The analysis results indicated that heavy delays and congestion are expected for the future 2041 peak hour conditions; especially during the afternoon peak hour, significant queuing issues were observed during the model simulation, causing traffic gridlock and preventing the model from generating valid analysis results.

5.6.1 Potential Solutions

To address the network capacity issue, several items were discussed and agreed upon in a meeting with the City on December 15, 2022. The following key notes were summarized:

- The City acknowledged that there would be a capacity issue (i.e., traffic gridlock prevents the model from generating valid analysis results) for the 2041 Base Case scenario for the afternoon peak period with full build-out population and employment targets received in May 2022.
- The resulting travel demand is much higher than the transportation network capacity, and thus it is resulting in gridlock conditions, and also many vehicles are not able to enter the network due to congestion. Therefore, the modelling results with this condition will not be a meaningful exercise. An approximate 25% decrease in auto driver trips, relative to current model assumptions would be required to accommodate future 2041 full build-out travel demands for the afternoon peak condition.
- City and HDR agreed that this 25% reduction needs to be justified, and three potential solutions need to be explored further:
 1. Reduce employment projection: Reduced 2041 employment data (from 31,515 to 19,800) was received from the City on December 21, 2022;
 2. Adjust the trip generation rates: HDR team noted that the trip generation analysis was conducted using the pre-COVID trip generation rates, and it is not reflecting the current travel patterns with a hybrid or increase in work-from-home trends. An additional 10 - 15% trip reduction could be considered to reflect the current travel patterns which reflect higher work-from-home conditions and online shopping, etc.; and
 3. Reduce auto mode share: To reflect anticipated future shifts further away from private vehicle travel (relative to the Golden Mile TMP) towards more sustainable modes. This reflects the “induced demand” phenomenon where restricted automobile capacity combined with active transportation infrastructure, transit service improvements, and land use intensification will increase active transportation and transit trips (and reduce the share of auto trips). Depending on the outcome of solutions 1 and 2, a mode shift may not be required. However, there may be a need to test transit capacity issues for both east-west and north-south transit demand.
- The 2041 base case model would need to be updated based on the assumed travel behaviour changes outlined above.
- An option to assume less than 100% full build out in 2041 was discussed; however, it was not agreed upon as the City prefer this EA address the ultimate/full-build needs of the five corridors included in the study.

5.6.2 Trip Reduction Research

To support the recommended lower trip generation rate by 10-15%, HDR conducted additional research to better understand how post-pandemic travel patterns may be changing. A few studies with survey results supporting the potential trip reduction were shared with the City on January 5, 2023, as follows:

- **Statistics Canada Study: Working from home: Productivity and preferences⁴:** *“Overall, 80% of new teleworkers indicated that they would like to work at least half of their hours from home once the pandemic is over.”*
- **Beyond COVID-19: What Will The Future of Work Look Like?⁵:** *“54% of employees want to work remotely either part- or full-time in the future.”*
- **What is your work-from-home forecast for after Covid-19?⁶:** *“We forecast that 25-30% of the U.S. workforce will be working-from-home one or more days a week after the pandemic.”*
- **What is the Future of Remote Work?⁷:** *“A recent survey confirmed that the rise of remote work is likely to continue, with 77% of people expecting to work at least three days a week remotely.”*

HDR completed a high-level analysis to estimate the potential trip reductions based on the review of the above-mentioned research papers as discussed here.

- **Table 5-3** displays the weekly and daily round trips generated, along with the estimated daily trip reduction for an office of assumed 100 employees where 50% of employees work remotely 1 day a week, and the remaining half work full time in the office. When compared to pre-pandemic conditions where all 100 employees (or 100% of the workforce) worked from the office, there is a 10% reduction in daily trips taken (down to 450 trips instead of 500).
- This reduction in daily trips is further magnified as presented in **Table 5-4**, for an office with 100 employees where 75% of employees now work 2.5 days a week remotely, and the remaining 25% work full time in the office. As presented, the estimated daily trip reduction is about 38% (down to 313 trips instead of 500). These two examples further show that the proposed assumption of a 10-15% trip reduction is supported.

⁴ <https://www150.statcan.gc.ca/n1/daily-quotidien/210401/dq210401b-eng.htm>

⁵ <https://enboarder.com/blog/beyond-covid-19-what-will-the-future-of-work-look-like/>

⁶ <https://globalworkplaceanalytics.com/work-at-home-after-covid-19-our-forecast>

⁷ <https://www.wrike.com/remote-work-guide/trends-and-future-of-remote-work/>

Table 5-3: 50% of Employees Working Remotely with 20% of Their Time Spent Remotely

Scenario	No. of Employees		No. of Days Work at Office		Weekly Round Trip	Daily Round Trip	Estimated Daily Trip Reduction
	Remote Work	Work at Office	For Employees with 'Remote Work'	For Employees with 'Work at Office'			
Typical weekday commute (before the pandemic)	0	100	0	5	500	100	10%
Future Forecast (after the pandemic)	50	50	4	5	450	90	

Table 5-4: 75% of Employees Working Remotely with 50% of Their Time Spent Remotely

Scenario	No. of Employees		No. of Days Work at Office		Weekly Round Trip	Daily Round Trip	Estimated Daily Trip Reduction
	Remote Work	Work at Office	For Employees with 'Remote Work'	For Employees with 'Work at Office'			
Typical weekday commute (before the pandemic)	0	100	0	5	500	100	38%
Future Forecast (after the pandemic)	75	25	2.5	5	313	63	

It is important to note that the trip reduction assumptions used in this study were intended to avoid gridlock in the micro-simulation model and to enable effective evaluation of alternatives. We recognize that the current trend of remote work is expected to gradually shift back to full-time office-based work for most jobs by 2041. Therefore, in future studies conducted during the development review process, the analysis assumptions, such as trip generation rates, mode splits, and potential trip reductions, will need to be revisited and confirmed based on updated conditions and considerations and latest TTS data.

5.6.3 Traffic Analysis Update

The City agreed to the proposed 10% trip reduction in conjunction with the revised population and employment forecasts (per the discussion on February 3, 2023), provided the study acknowledges the following:

- The peak hour demand will be spread into shoulder hours (i.e., before and after peak hour) and also during other hours;
- Travel Demand Management (TDM) measures which include an increase in 'Working from Home/remotely' by employees (significantly increased after COVID 19);
- Increase in online shopping (also increase significantly after COVID 19); and
- Additional modal shift to transit, walking, cycling, and carpool.

The 2041 Full Build-out intersection operational analysis (Base Case scenario) for the afternoon peak hour condition was updated, considering the following factors:

- Using reduced employment data received from the City on Dec 21, 2022 (from 31,515 to 19,800); and
- The transportation network was not able to accommodate the future travel demand in 'Business as Usual' conditions. Therefore, the transportation demand expected to be generated from the proposed development were further reduced by a 10% trip reduction compared to the pre-COVID Conditions.

The updated analysis results for the 2041 afternoon peak hour indicated:

- Due to reduced employment data, the auto trip generation (i.e., production / attraction combined) is expected to decrease by 22% for the SP area (from 20,500 to 15,700). However, this reduction only resulted in 5% total trip reduction at an overall subarea level (from 97,900 to 93,200);
- With updated traffic demands and an additional 10% trip reduction (as described above), the model was able to process traffic volumes without any network gridlock conditions; and
- High delays and congestion were observed at some intersections. The LOS summary is presented in **Figure 5-10** below and detailed LOS summary is included in **Table 5-5** for the study area intersections.

This updated 2041 Base Case model (afternoon peak hour only) was used for the alternative assessment of study area corridors, as discussed in the next section.

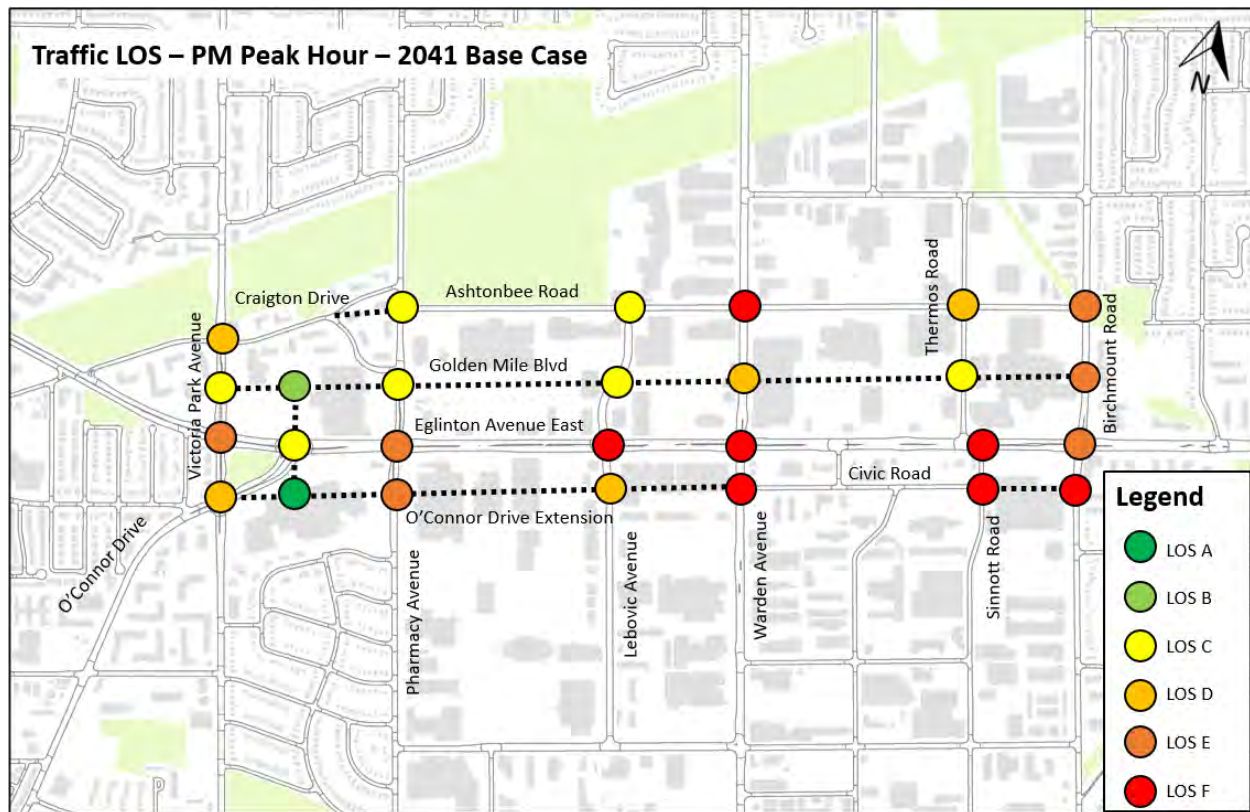


Figure 5-10: Intersection LOS Summary – Updated Future (2041) Base Case PM Peak Hour

Table 5-5: Intersection Operational Analysis Results – Updated Future (2041) Base Case PM Peak Hour

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Eglinton Ave at Victoria Park Ave (Px 451)	65	E	EBL	199	F	205
			EBT	110	F	
			EBR	106	F	
			WBT	15	B	75
			WBR	23	C	
			NBT	62	E	95
			NBR	16	B	
			SBT	34	C	45
			SBR	48	D	
Eglinton Ave at Eglinton Sq (Px 450)	24	C	EBT	17	B	90
			EBR	20	C	
			WBL	43	D	55
			WBT	12	B	
			WBR	13	B	80
			NBL	47	D	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBT	53	D	20
			NBR	65	E	
			SBL	61	E	
			SBT	55	E	
			SBR	11	B	
Eglinton Ave at Pharmacy Ave (Px 452)	58	E	EBL	219	F	185
			EBT	58	E	
			EBR	58	E	
			WBT	42	D	100
			WBR	30	C	
			NBT	82	F	80
			NBR	63	E	
			SBT	42	D	65
			SBR	30	C	
Eglinton Ave at Lebovic Ave (Px 1791)	105	F	EBL	191	F	270
			EBT	122	F	
			EBR	115	F	
			WBL	238	F	165
			WBT	64	E	
			WBR	58	E	
			NBL	153	F	95
			NBT	85	F	
			NBR	87	F	
			SBL	144	F	50
			SBT	39	D	
			SBR	38	D	
Eglinton Ave at Warden Ave (Px 456)	144	F	EBL	178	F	275
			EBT	148	F	
			EBR	150	F	
			WBL	482	F	320
			WBT	177	F	
			WBR	151	F	
			NBL	87	F	55
			NBT	52	D	
			NBR	50	D	
			SBL	148	F	75
			SBT	135	F	
			SBR	137	F	
Eglinton Ave at Sinnott Rd (Px 457)	133	F	EBU	162	F	270
			EBT	110	F	
			EBR	108	F	
			WBL	333	F	165

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			WBT	187	F	55
			NBL	56	E	
			NBR	31	C	
Birchmount Rd at Eglinton Ave (Px 458)	73	E	EBT	16	B	95
			EBR	17	B	
			WBT	120	F	210
			WBR	109	F	
			NBL	116	F	70
			NBT	46	D	
			NBR	39	D	
			SBL	144	F	120
			SBT	121	F	
			SBR	139	F	
Craigton Dr & Jonesville Cr at Victoria Park Ave (Px 202)	36	D	EBL	63	E	45
			EBT	57	E	
			EBR	34	C	
			WBL	53	D	35
			WBT	43	D	
			WBR	15	B	
			NBL	24	C	35
			NBT	12	B	
			NBR	18	B	
			SBL	88	F	185
			SBT	49	D	
			SBR	42	D	
Ashtonbee Rd at Pharmacy Ave (Px 1295)	35	C	EBL	51	D	35
			EBT	48	D	
			EBR	52	D	
			WBL	80	E	55
			WBT	72	E	
			WBR	29	C	
			NBL	13	B	55
			NBT	12	B	
			NBR	11	B	
			SBL	60	E	160
			SBT	41	D	
			SBR	39	D	
Ashtonbee Road at Hakimi Ave (Px 2069)	23	C	EBL	28	C	85
			EBT	18	B	
			EBR	17	B	
			WBL	43	D	75
			WBT	20	B	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			WBR	17	B	25
			NBL	34	C	
			NBT	38	D	
			NBR	20	B	
			SBL	32	C	15
			SBT	30	C	
			SBR	13	B	
Ashtonbee Rd at Warden Ave (Px 1377)	85	F	EBL	54	D	100
			EBT	31	C	
			EBR	38	D	
			WBL	60	E	105
			WBT	53	D	
			WBR	36	D	
			NBL	69	E	55
			NBT	35	D	
			NBR	38	D	
			SBL	167	F	160
			SBT	165	F	
			SBR	178	F	
Ashtonbee Rd at Thermos Rd	37	D	EBL	28	C	100
			EBT	23	C	
			EBR	15	B	
			WBL	25	C	55
			WBT	18	B	
			WBR	16	B	
			NBL	58	E	50
			NBT	31	C	
			NBR	30	C	
			SBL	76	E	90
			SBT	87	F	
			SBR	52	D	
Ashtonbee Rd at Birchmount Rd (Px 1996)	79	E	EBL	52	D	165
			EBR	31	C	
			NBL	58	E	115
			NBT	12	B	
			SBT	157	F	305
			SBR	153	F	
Golden Mile Blvd at Victoria Park Ave	23	C	WBL	40	D	35
			WBR	6	A	
			NBT	15	B	40
			NBR	29	C	
			SBL	53	D	70

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Golden Mile Blvd at Eglinton Square	11	B	SBT	24	C	25
			EBL	2	A	
			EBT	9	A	
			EBR	11	B	85
			WBL	8	A	
			WBT	1	A	
			WBR	1	A	25
			NBL	16	B	
			NBT	25	C	
			NBR	21	C	20
			SBL	12	B	
			SBT	13	B	
Golden Mile Blvd at Pharmacy Ave	32	C	SBR	11	B	65
			EBL	33	C	
			EBT	37	D	
			EBR	36	D	55
			WBL	68	E	
			WBT	34	C	
			WBR	32	C	50
			NBL	54	D	
			NBT	25	C	
			NBR	25	C	55
Golden Mile Blvd at Hakimi Ave	21	C	SBL	42	D	
			SBT	29	C	
			SBR	24	C	25
			EBL	21	C	
			EBT	21	C	
			EBR	7	A	110
			WBL	43	D	
			WBT	32	C	
			WBR	26	C	45
			NBL	24	C	
			NBT	19	B	
Golden Mile Blvd at Warden Ave	45	D	NBR	17	B	15
			SBL	22	C	
			SBT	20	B	
			SBR	11	B	70
			EBL	44	D	
			EBT	36	D	110
			EBR	45	D	
			WBL	127	F	
			WBT	44	D	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			WBR	25	C	35
			NBL	37	D	
			NBT	25	C	
			NBR	13	B	
			SBL	58	E	70
			SBT	73	E	
			SBR	72	E	
Golden Mile Blvd at Thermos Rd	21	C	EBL	32	C	35
			EBT	27	C	
			EBR	53	D	
			WBL	31	C	35
			WBT	22	C	
			WBR	15	B	
			NBL	20	C	75
			NBT	19	B	
			NBR	15	B	
			SBL	24	C	20
			SBT	14	B	
			SBR	8	A	
Golden Mile Blvd at Birchmount Rd	58	E	EBL	46	D	85
			EBR	64	E	
			NBL	34	C	70
			NBT	17	B	
			SBT	109	F	170
			SBR	98	F	
O'Connor Dr & Victoria Park Ave (Px 449)	38	D	EBL	110	F	130
			EBT	60	E	
			EBR	56	E	
			WBL	40	D	30
			WBT	19	B	
			WBR	5	A	
			NBL	72	E	135
			NBT	59	E	
			NBR	26	C	
			SBL	45	D	30
			SBT	14	B	
			SBR	8	A	
O'Connor Dr Extension at Eglinton Square	5	A	EBL	12	B	15
			EBT	1	A	
			WBT	1	A	0
			WBR	3	A	
			SBL	22	C	30

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			SBR	21	C	
O'Connor Dr Extension at Pharmacy Ave	66	E	EBL	123	F	70
			EBT	32	C	
			EBR	24	C	
			WBL	35	D	70
			WBT	39	D	
			WBR	63	E	
			NBL	121	F	290
			NBT	144	F	
			NBR	116	F	
			SBL	37	D	55
			SBT	39	D	
			SBR	20	C	
O'Connor Dr Extension at Lebovic Ave	46	D	EBL	71	E	70
			EBT	40	D	
			EBR	30	C	
			WBL	26	C	20
			WBT	13	B	
			WBR	15	B	
			NBL	84	F	205
			NBT	87	F	
			NBR	73	E	
			SBL	154	F	40
			SBT	28	C	
			SBR	11	B	
O'Connor Dr Extension at Warden Ave	124	F	EBL	292	F	205
			EBT	139	F	
			EBR	100	F	
			WBL	67	E	160
			WBT	80	E	
			WBR	106	F	
			NBL	223	F	155
			NBT	273	F	
			NBR	254	F	
			SBL	67	E	35
			SBT	35	C	
			SBR	16	B	
Civic Rd at Sinnott Rd	101	F	EBL	148	F	110
			EBT	33	C	
			EBR	26	C	
			WBL	71	E	95
			WBT	112	F	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			WBR	112	F	240
			NBL	311	F	
			NBT	181	F	
			NBR	324	F	
			SBL	30	C	10
			SBT	21	C	
			SBR	9	A	
Civic Rd at Birchmount Rd	127	F	EBL	110	F	100
			EBR	74	E	280
			NBL	243	F	
			NBT	235	F	
			SBT	19	B	75
			SBR	13	B	

Note: LOS F indicates critical movements/intersections.

5.7 Alternative Assessment for Study Area Corridors

The alignment alternatives for the study area corridors were evaluated using the updated 2041 Base Case traffic model (afternoon peak hour only) from a traffic operations perspective. A comprehensive evaluation of each alternative is documented in the Environmental Study Report (ESR).

O'Connor Drive Reconfiguration

The alignment alternatives for the reconfiguration of O'Connor Drive (between Victoria Park Avenue and Pharmacy Avenue) are presented in **Figure 5-11**. A comparison of intersection overall delay and LOS for the three alternatives is provided in **Table 5-6**. The analysis indicates that Alternatives 1 and 2 are expected to operate with similar intersection delays, both of which are significantly lower than those of Alternative 3, which features two closely spaced intersections on Victoria Park Avenue. Therefore, from a traffic operations perspective, Alternatives 1 and 2 are preferable over Alternative 3.

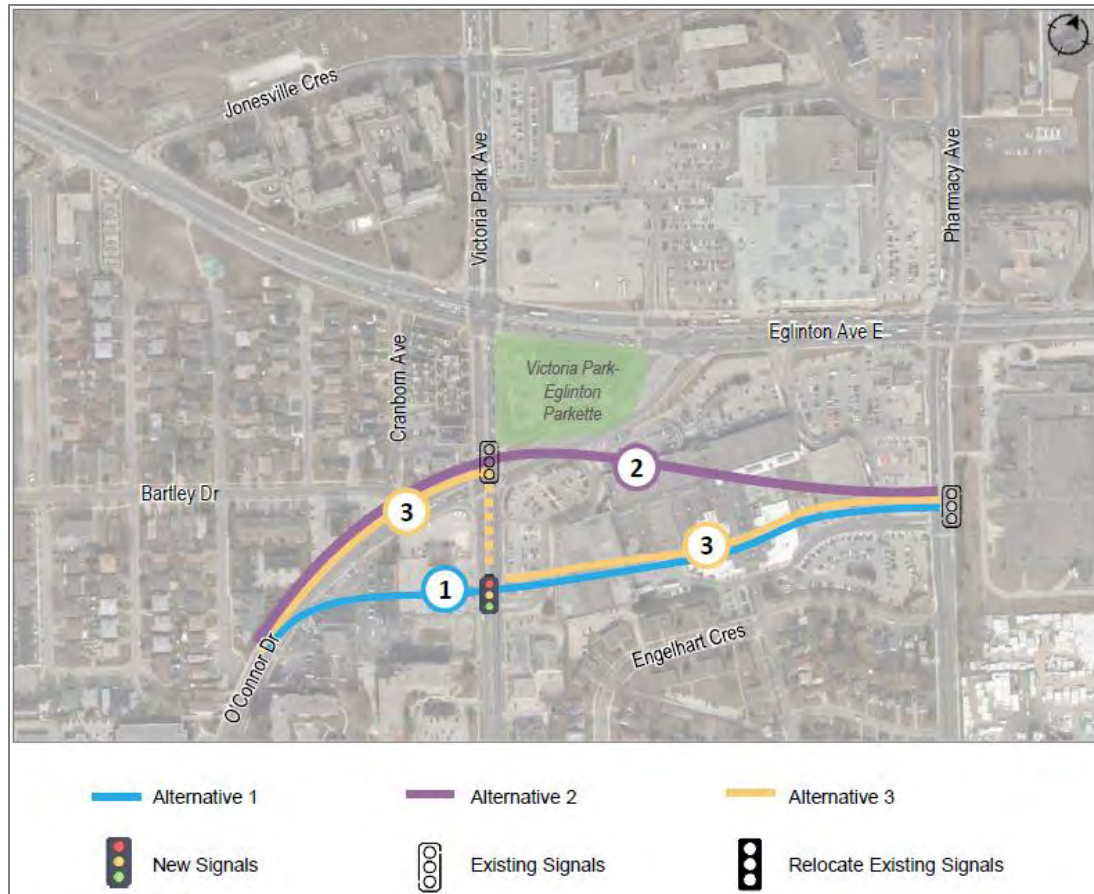


Figure 5-11: Alignment Alternatives for O'Connor Drive Reconfiguration

Table 5-6: Intersection Overall Delay/LOS Comparison for O'Connor Drive Reconfiguration

Intersections	Alt 1 (Base Case)		Alt 2		Alt3	
	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
O'Connor Dr and Victoria Park Ave	38	D	38	D	105	F
O'Connor Dr Extension and Victoria Park Ave (South)	-	-	-	-	65	E
O'Connor Dr and Eglington Square	5	A	8	A	7	A
O'Connor Dr and Pharmacy Ave	66	E	65	E	74	E

Thermos Road and Sinnott Road Realignment

Four alignment alternatives for the Thermos Road and Sinnott Road realignment are presented in **Figure 5-12**. All four alternatives eliminate the jog configuration of Thermos Road and Sinnott Road at Eglinton Avenue East, which is currently reflected in the future Base Case model. These four alternatives are expected to result in similar traffic conditions. Consequently, only one alternative (Alternative 4) was modelled and compared to the Base Case scenario, as shown in **Table 5-7**. The intersection reconfiguration (i.e., jog elimination in Alternative 4) is anticipated to reduce overall intersection delays. However, this reconfiguration was not included in the shortlist of the preferred network configuration following a City motion in October 2020, which prohibits the realignment of Thermos and Sinnott Roads.



Figure 5-12: Alignment Alternatives for Thermos Road and Sinnott Road Realignment

Table 5-7: Intersection Overall Delay/LOS Comparison for Thermos Road and Sinnott Road Realignment

Intersections	Base Case		Alt 4	
	Delay (s)	LOS	Delay (s)	LOS
Eglinton Ave and Sinnott Rd	133	F	98	F

For the remaining three corridors - O'Connor Drive Extension to Birchmount Road, Craigton Drive Reconfiguration, and Golden Mile Boulevard - one alignment alternative for each corridor has been incorporated into the future Base Case scenario. It is anticipated that these alternatives would yield similar performance outcomes from a traffic operations perspective. As a result, these alignment alternatives were not evaluated using traffic simulation models.

Per the comprehensive alternative evaluation process, alignment alternatives and the recommended alternative for O'Connor Drive Extension, Craigton Drive Reconfiguration, and Golden Mile Boulevard are presented in **Figure 5-13** to **Figure 5-15**, respectively.



Figure 5-13: Alignment Alternatives for O'Connor Drive Extension to Birchmount Road



Figure 5-14: Alignment Alternatives for Craigton Drive Reconfiguration

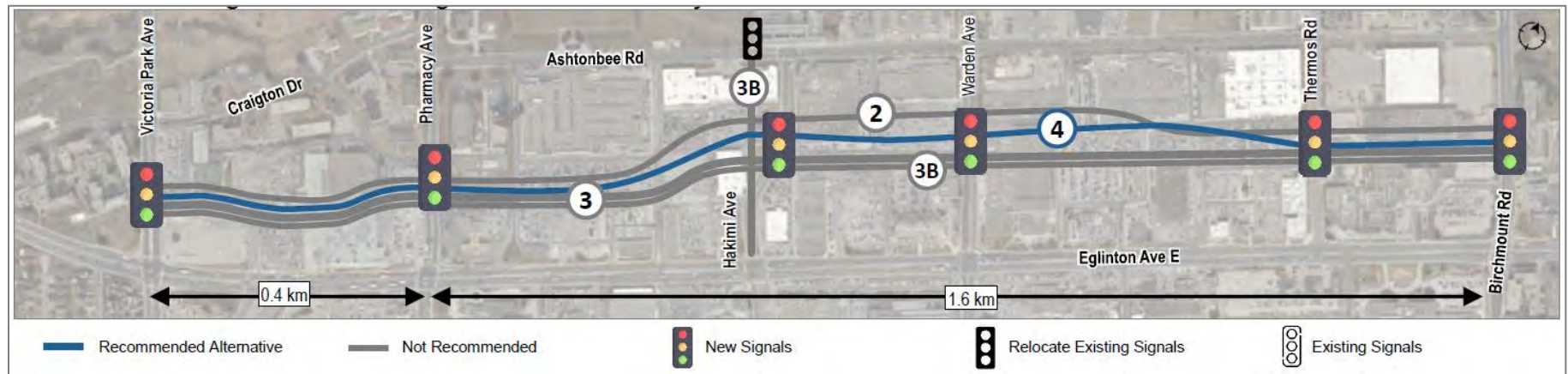


Figure 5-15: Alignment Alternatives for Golden Mile Boulevard

5.8 Future Traffic Analysis for the Preferred Road Network

Based on the EA-preferred roadway network configuration, traffic analysis was conducted to:

- Assess intersection operational performance (delays, LOS, and queues);
- Estimate future turning movement volumes for intersections within the Secondary Plan (SP) study area;
- Assess traffic signal requirements for the new/modified intersections;
- Identify right turn lane requirements for the new/modified intersections; and
- Identify storage length requirements for dedicated left and right turn lanes.

Figure 5-16 presents the EA-preferred roadway network configuration and SP study area intersections.



Figure 5-16: EA-Preferred Roadway Network and SP Study Area Intersections

5.8.1 Intersection Operational Analysis

The intersection operational analysis was assessed based on average vehicular delays, level of service (LOS), and queuing conditions. The LOS criteria for signalized and stop-controlled intersections were previously presented in **Table 4-3**.

The overall intersection LOS for the weekday morning and afternoon peak hours are presented in **Figure 5-17** and **Figure 5-18**, respectively. Detailed movement LOS results are summarized in **Table 5-8** and **Table 5-9**; Aimsun model screenshots showing the roadway segment delays are presented in **Appendix D**.

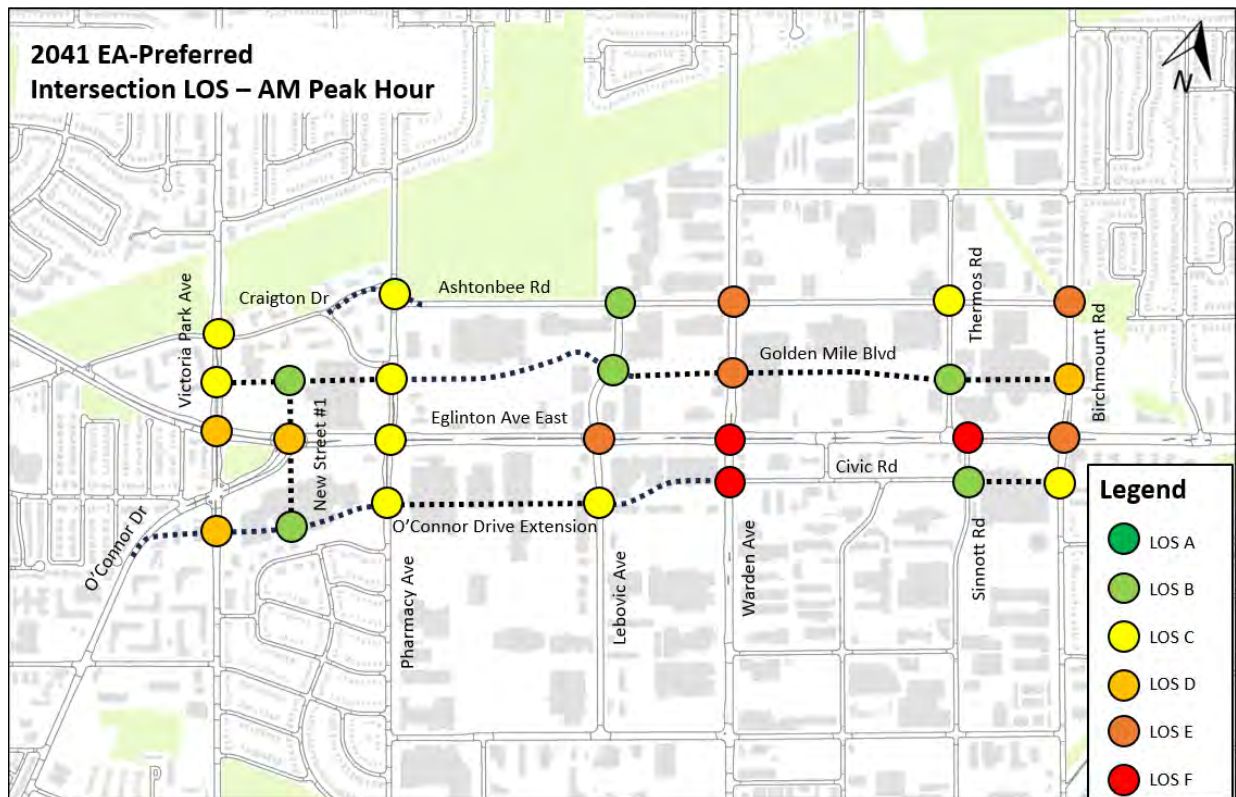


Figure 5-17: Intersection LOS Summary – Future (2041) EA-Preferred AM Peak Hour

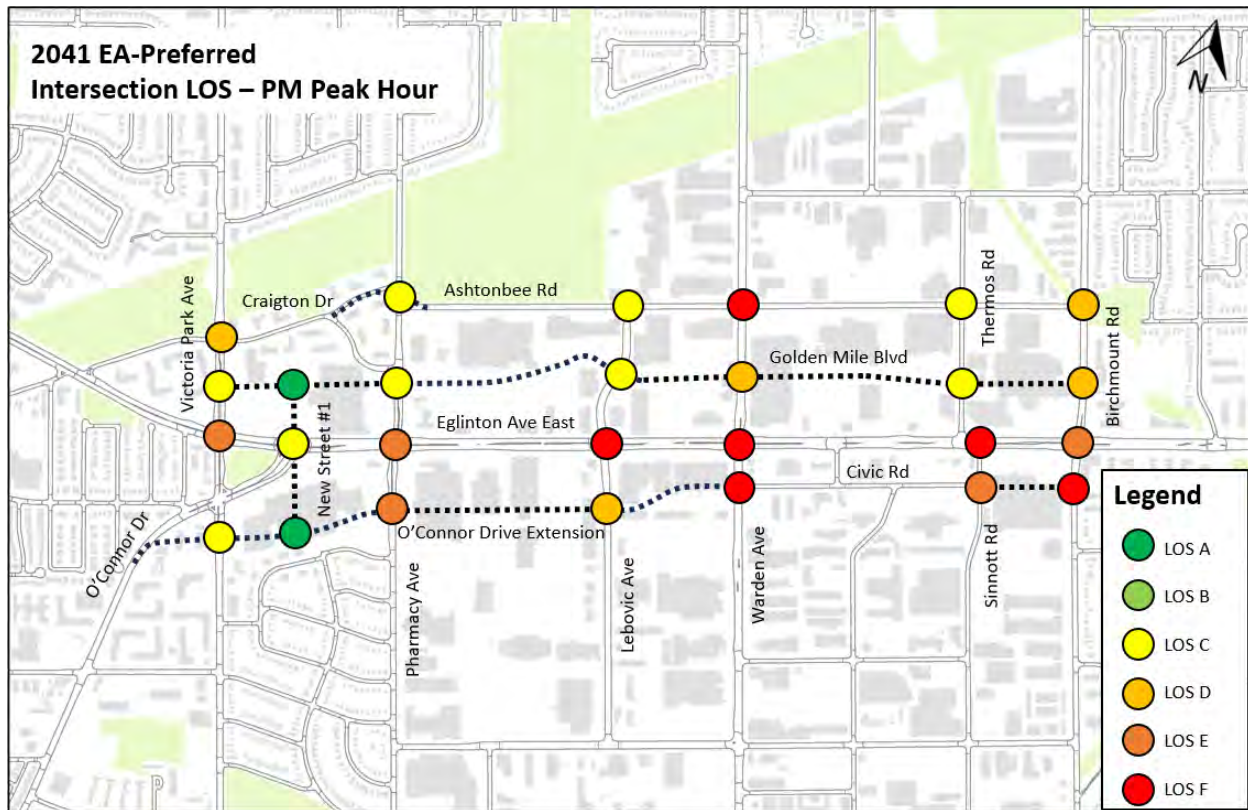


Figure 5-18: Intersection LOS Summary – Future (2041) EA-Preferred PM Peak Hour

Table 5-8: Intersection Operational Analysis Results – Future (2041) EA-Preferred AM Peak Hour

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Eglinton Ave at Victoria Park Ave (Px 451)	43	D	EBL	329	F	125
			EBT	46	D	
			EBR	42	D	
			WBT	25	C	115
			WBR	26	C	
			NBT	45	D	80
			NBR	33	C	
			SBT	43	D	50
			SBR	49	D	
Eglinton Ave at New Street No.1	37	D	EBT	39	D	130
			EBR	44	D	
			WBL	66	E	100
			WBT	28	C	
			WBR	25	C	
			NBL	45	D	50
			NBT	42	D	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBR	44	D	25
			SBL	43	D	
			SBT	43	D	
			SBR	20	B	
Eglinton Ave at Pharmacy Ave (Px 452)	35	C	EBL	93	F	135
			EBT	26	C	
			EBR	26	C	
			WBT	32	C	100
			WBR	20	C	
			NBT	52	D	70
			NBR	16	B	
			SBT	36	D	70
			SBR	35	D	
Eglinton Ave at Lebovic Ave (Px 1791)	63	E	EBL	82	F	155
			EBT	58	E	
			EBR	57	E	
			WBL	68	E	80
			WBT	50	D	
			WBR	54	D	
			NBL	127	F	45
			NBT	48	D	
			NBR	26	C	
			SBL	92	F	80
			SBT	46	D	
			SBR	35	D	
Eglinton Ave at Warden Ave (Px 456)	125	F	EBL	80	E	95
			EBT	56	E	
			EBR	52	D	
			WBL	337	F	315
			WBT	187	F	
			WBR	172	F	
			NBL	91	F	50
			NBT	82	F	
			NBR	79	E	
			SBL	143	F	80
			SBT	102	F	
			SBR	88	F	
Eglinton Ave at Sinnott Rd (Px 457)	89	F	EBU	84	F	70
			EBT	40	D	
			EBR	34	C	
			WBL	127	F	170
			WBT	118	F	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBL	47	D	40
			NBR	11	B	
Birchmount Rd at Eglinton Ave (Px 458)	65	E	EBT	27	C	70
			EBR	23	C	
			WBT	96	F	270
			WBR	92	F	
			NBL	50	D	55
			NBT	25	C	
			NBR	22	C	
			SBL	92	F	110
			SBT	85	F	
			SBR	96	F	
Craigton Dr & Jonesville Cr at Victoria Park Ave (Px 202)	32	C	EBL	50	D	35
			EBT	33	C	
			EBR	23	C	
			WBL	63	E	45
			WBT	45	D	
			WBR	15	B	
			NBL	47	D	80
			NBT	35	D	
			NBR	31	C	
			SBL	40	D	135
			SBT	28	C	
			SBR	23	C	
Ashtonbee Rd at Pharmacy Ave (Px 1295)	26	C	EBL	49	D	30
			EBT	37	D	
			EBR	43	D	
			WBL	98	F	45
			WBT	68	E	
			WBR	26	C	
			NBL	8	A	30
			NBT	8	A	
			NBR	12	B	
			SBL	41	D	155
			SBT	26	C	
			SBR	23	C	
Ashtonbee Road at Hakimi Ave (Px 2069)	15	B	EBL	20	B	45
			EBT	11	B	
			EBR	9	A	
			WBL	22	C	55
			WBT	12	B	
			WBR	10	B	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBL	42	D	15
			NBT	38	D	
			NBR	16	B	
			SBL	39	D	10
			SBT	38	D	
			SBR	8	A	
Ashtonbee Rd at Warden Ave (Px 1377)	72	E	EBL	71	E	90
			EBT	44	D	
			EBR	58	E	
			WBL	150	F	105
			WBT	85	F	
			WBR	50	D	
			NBL	85	F	40
			NBT	13	B	
			NBR	24	C	
			SBL	108	F	170
			SBT	106	F	
			SBR	116	F	
Ashtonbee Rd at Thermos Rd	20	C	EBL	26	C	70
			EBT	17	B	
			EBR	15	B	
			WBL	23	C	45
			WBT	19	B	
			WBR	15	B	
			NBL	37	D	25
			NBT	29	C	
			NBR	22	C	
			SBL	28	C	40
			SBT	24	C	
			SBR	18	B	
Ashtonbee Rd at Birchmount Rd (Px 1996)	79	E	EBL	48	D	110
			EBR	20	C	
			NBL	45	D	70
			NBT	22	C	
			SBT	132	F	320
			SBR	130	F	
Golden Mile Blvd at Victoria Park Ave	32	C	WBL	113	F	115
			WBR	71	E	
			NBT	7	A	20
			NBR	12	B	
			SBL	23	C	75
			SBT	28	C	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Golden Mile Blvd at New Street No.1	20	B	EBL	0	A	15
			EBT	1	A	
			EBR	2	A	
			WBL	18	B	105
			WBT	26	C	
			WBR	15	B	
			NBL	48	D	20
			NBT	14	B	
			NBR	12	B	
			SBL	23	C	30
			SBT	24	C	
			SBR	25	C	
Golden Mile Blvd at Pharmacy Ave	30	C	EBL	39	D	50
			EBT	50	D	
			EBR	40	D	
			WBL	57	E	95
			WBT	54	D	
			WBR	42	D	
			NBL	33	C	25
			NBT	8	A	
			NBR	20	B	
			SBL	36	D	50
			SBT	31	C	
			SBR	27	C	
Golden Mile Blvd at Hakimi Ave	17	B	EBL	17	B	15
			EBT	18	B	
			EBR	7	A	
			WBL	23	C	80
			WBT	21	C	
			WBR	17	B	
			NBL	37	D	20
			NBT	23	C	
			NBR	13	B	
			SBL	25	C	20
			SBT	19	B	
			SBR	8	A	
Golden Mile Blvd at Warden Ave	55	E	EBL	91	F	40
			EBT	49	D	
			EBR	32	C	
			WBL	174	F	175
			WBT	78	E	
			WBR	48	D	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBL	37	D	30
			NBT	13	B	
			NBR	7	A	
			SBL	53	D	80
			SBT	75	E	
			SBR	63	E	
Golden Mile Blvd at Thermos Rd	19	B	EBL	24	C	30
			EBT	17	B	
			EBR	1	A	
			WBL	23	C	55
			WBT	20	B	
			WBR	15	B	
			NBL	26	C	55
			NBT	26	C	
			NBR	17	B	
			SBL	26	C	20
			SBT	22	C	
			SBR	15	B	
Golden Mile Blvd at Birchmount Rd	44	D	EBL	65	E	85
			EBR	83	F	
			NBL	21	C	20
			NBT	3	A	
			SBT	70	E	175
			SBR	84	F	
O Connor Dr & Victoria Park Ave (Px 449)	38	D	EBL	43	D	85
			EBT	20	C	
			EBR	13	B	
			WBL	45	D	40
			WBT	37	D	
			WBR	22	C	
			NBL	85	F	70
			NBT	43	D	
			NBR	14	B	
			SBL	106	F	100
			SBT	45	D	
			SBR	35	D	
O'Connor Dr Extension at New Street No.1	14	B	EBL	8	A	15
			EBT	1	A	
			WBT	6	A	95
			WBR	5	A	
			SBL	33	C	70
			SBR	64	E	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
O'Connor Dr Extension at Pharmacy Ave	27	C	EBL	40	D	45
			EBT	33	C	
			EBR	12	B	
			WBL	39	D	40
			WBT	43	D	
			WBR	43	D	
			NBL	29	C	50
			NBT	24	C	
			NBR	22	C	
			SBL	18	B	65
			SBT	22	C	
			SBR	18	B	
O'Connor Dr Extension at Lebovic Ave	27	C	EBL	46	D	25
			EBT	66	E	
			EBR	7	A	
			WBL	37	D	10
			WBT	29	C	
			WBR	6	A	
			NBL	19	B	75
			NBT	14	B	
			NBR	18	B	
			SBL	59	E	55
			SBT	35	C	
			SBR	14	B	
O'Connor Dr Extension at Warden Ave	104	F	EBL	283	F	185
			EBT	125	F	
			EBR	53	D	
			WBL	46	D	30
			WBT	50	D	
			WBR	70	E	
			NBL	220	F	155
			NBT	271	F	
			NBR	259	F	
			SBL	42	D	35
			SBT	27	C	
			SBR	10	A	
Civic Rd at Sinnott Rd	19	B	EBL	31	C	20
			EBT	15	B	
			EBR	8	A	
			WBL	18	B	70
			WBT	15	B	
			WBR	16	B	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBL	29	C	75
			NBT	15	B	
			NBR	16	B	
			SBL	30	C	30
			SBT	31	C	
			SBR	20	B	
Civic Rd at Birchmount Rd	26	C	EBL	39	D	30
			EBR	12	B	
			NBL	49	D	145
			NBT	38	D	
			SBT	14	B	75
			SBR	12	B	

Note: LOS F indicates critical movements/intersections.

Table 5-9: Intersection Operational Analysis Results – Future (2041) EA-Preferred PM Peak Hour

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Eglinton Ave at Victoria Park Ave (Px 451)	71	E	EBL	229	F	205
			EBT	130	F	
			EBR	123	F	
			WBT	16	B	70
			WBR	26	C	
			NBT	63	E	110
			NBR	34	C	
			SBT	43	D	70
			SBR	63	E	
Eglinton Ave at New Street No.1	28	C	EBT	20	B	100
			EBR	19	B	
			WBL	88	F	70
			WBT	13	B	
			WBR	15	B	80
			NBL	52	D	
			NBT	56	E	
			NBR	61	E	15
			SBL	47	D	
			SBT	36	D	
			SBR	11	B	
	61	E	EBL	403	F	200
			EBT	59	E	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Eglinton Ave at Pharmacy Ave (Px 452)			EBR	61	E	125
			WBT	45	D	
			WBR	36	D	
			NBT	75	E	80
			NBR	55	D	
			SBT	42	D	65
			SBR	35	C	
Eglinton Ave at Lebovic Ave (Px 1791)	102	F	EBL	191	F	285
			EBT	138	F	
			EBR	130	F	
			WBL	168	F	175
			WBT	62	E	
			WBR	56	E	
			NBL	141	F	95
			NBT	83	F	
			NBR	78	E	
			SBL	166	F	55
			SBT	39	D	
			SBR	34	C	
Eglinton Ave at Warden Ave (Px 456)	123	F	EBL	159	F	290
			EBT	145	F	
			EBR	153	F	
			WBL	335	F	240
			WBT	108	F	
			WBR	94	F	
			NBL	82	F	55
			NBT	50	D	
			NBR	48	D	
			SBL	152	F	75
			SBT	141	F	
			SBR	151	F	
Eglinton Ave at Sinnott Rd (Px 457)	101	F	EBU	146	F	225
			EBT	103	F	
			EBR	105	F	
			WBL	215	F	155
			WBT	108	F	
			NBL	49	D	40
			NBR	30	C	
Birchmount Rd at Eglinton Ave (Px 458)	61	E	EBT	27	C	115
			EBR	31	C	
			WBT	72	E	185
			WBR	72	E	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBL	70	E	70
			NBT	43	D	
			NBR	54	D	
			SBL	136	F	95
			SBT	108	F	
			SBR	115	F	
Craigton Dr & Jonesville Cr at Victoria Park Ave (Px 202)	54	D	EBL	55	E	40
			EBT	56	E	
			EBR	35	C	
			WBL	57	E	35
			WBT	50	D	
			WBR	17	B	
			NBL	25	C	35
			NBT	12	B	
			NBR	17	B	
			SBL	125	F	240
			SBT	95	F	
			SBR	82	F	
Ashtonbee Rd at Pharmacy Ave (Px 1295)	30	C	EBL	54	D	45
			EBT	53	D	
			EBR	61	E	
			WBL	72	E	40
			WBT	64	E	
			WBR	29	C	
			NBL	14	B	55
			NBT	12	B	
			NBR	11	B	
			SBL	38	D	135
			SBT	27	C	
			SBR	26	C	
Ashtonbee Road at Hakimi Ave (Px 2069)	27	C	EBL	41	D	125
			EBT	33	C	
			EBR	30	C	
			WBL	37	D	70
			WBT	18	B	
			WBR	16	B	
			NBL	36	D	30
			NBT	38	D	
			NBR	22	C	
			SBL	37	D	15
			SBT	27	C	
			SBR	15	B	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Ashtonbee Rd at Warden Ave (Px 1377)	90	F	EBL	90	F	130
			EBT	42	D	
			EBR	46	D	
			WBL	76	E	95
			WBT	52	D	
			WBR	35	C	
			NBL	60	E	55
			NBT	38	D	
			NBR	37	D	
			SBL	187	F	180
			SBT	169	F	
			SBR	179	F	
Ashtonbee Rd at Thermos Rd	32	C	EBL	27	C	70
			EBT	18	B	
			EBR	19	B	
			WBL	26	C	40
			WBT	16	B	
			WBR	13	B	
			NBL	59	E	25
			NBT	30	C	
			NBR	23	C	
			SBL	63	E	90
			SBT	62	E	
			SBR	50	D	
Ashtonbee Rd at Birchmount Rd (Px 1996)	54	D	EBL	40	D	110
			EBR	25	C	120
			NBL	53	D	
			NBT	14	B	205
			SBT	97	F	
Golden Mile Blvd at Victoria Park Ave	33	C	SBR	96	F	
			WBL	47	D	75
			WBR	12	B	
			NBT	16	B	35
			NBR	28	C	
			SBL	64	E	80
			SBT	48	D	
Golden Mile Blvd at New Street No.1	8	A	EBL	0	A	10
			EBT	1	A	
			EBR	2	A	
			WBL	4	A	85
			WBT	1	A	
			WBR	1	A	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBL	22	C	30
			NBT	24	C	
			NBR	24	C	
			SBL	12	B	20
			SBT	12	B	
			SBR	11	B	
Golden Mile Blvd at Pharmacy Ave	34	C	EBL	43	D	100
			EBT	41	D	
			EBR	37	D	
			WBL	72	E	100
			WBT	38	D	
			WBR	44	D	
			NBL	63	E	50
			NBT	25	C	
			NBR	25	C	
			SBL	37	D	70
			SBT	29	C	
			SBR	26	C	
Golden Mile Blvd at Hakimi Ave	21	C	EBL	19	B	25
			EBT	17	B	
			EBR	7	A	
			WBL	47	D	140
			WBT	31	C	
			WBR	26	C	
			NBL	25	C	45
			NBT	19	B	
			NBR	16	B	
			SBL	23	C	15
			SBT	19	B	
			SBR	15	B	
Golden Mile Blvd at Warden Ave	42	D	EBL	48	D	80
			EBT	35	C	
			EBR	44	D	
			WBL	119	F	85
			WBT	33	C	
			WBR	16	B	
			NBL	36	D	35
			NBT	25	C	
			NBR	15	B	
			SBL	53	D	90
			SBT	73	E	
			SBR	72	E	



Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Golden Mile Blvd at Thermos Rd	22	C	EBL	29	C	35
			EBT	25	C	
			EBR	1	A	
			WBL	30	C	30
			WBT	25	C	
			WBR	21	C	
			NBL	20	B	80
			NBT	20	C	
			NBR	17	B	
			SBL	26	C	15
			SBT	16	B	
			SBR	10	B	
Golden Mile Blvd at Birchmount Rd	45	D	EBL	44	D	65
			EBR	41	D	
			NBL	34	C	70
			NBT	17	B	
			SBT	78	E	130
			SBR	70	E	
O Connor Dr & Victoria Park Ave (Px 449)	30	C	EBL	50	D	130
			EBT	32	C	
			EBR	24	C	
			WBL	42	D	30
			WBT	37	D	
			WBR	21	C	
			NBL	75	E	90
			NBT	43	D	
			NBR	17	B	
			SBL	45	D	30
			SBT	13	B	
			SBR	8	A	
O'Connor Dr Extension at New Street No.1	8	A	EBL	9	A	30
			EBT	3	A	
			WBT	3	A	25
			WBR	3	A	
			SBL	30	C	35
			SBR	29	C	
O'Connor Dr Extension at Pharmacy Ave	67	E	EBL	87	F	90
			EBT	48	D	
			EBR	29	C	
			WBL	55	E	130
			WBT	55	D	
			WBR	66	E	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
			NBL	104	F	225
			NBT	121	F	
			NBR	93	F	
			SBL	34	C	55
			SBT	39	D	
			SBR	19	B	
O'Connor Dr Extension at Lebovic Ave	43	D	EBL	69	E	95
			EBT	33	C	
			EBR	21	C	
			WBL	29	C	55
			WBT	22	C	
			WBR	24	C	
			NBL	76	E	155
			NBT	73	E	
			NBR	61	E	
			SBL	91	F	55
			SBT	28	C	
			SBR	11	B	
O'Connor Dr Extension at Warden Ave	100	F	EBL	152	F	175
			EBT	50	D	
			EBR	31	C	
			WBL	71	E	165
			WBT	81	F	
			WBR	104	F	
			NBL	208	F	170
			NBT	246	F	
			NBR	221	F	
			SBL	80	F	35
			SBT	38	D	
			SBR	15	B	
Civic Rd at Sinnott Rd	75	E	EBL	102	F	110
			EBT	27	C	
			EBR	23	C	
			WBL	51	D	90
			WBT	78	E	
			WBR	82	F	
			NBL	287	F	245
			NBT	141	F	
			NBR	234	F	
			SBL	31	C	10
			SBT	23	C	
			SBR	9	A	

Intersection Name	Overall		Movement			
	Delay (s)	LOS	Movement	Delay (s)	LOS	Maximum queue (m)
Civic Rd at Birchmount Rd	122	F	EBL	136	F	110
			EBR	104	F	
			NBL	221	F	260
			NBT	213	F	
			SBT	20	B	90
			SBR	13	B	

Note: LOS F indicates critical movements/intersections.

5.8.2 Turning Movement Volume Estimates

The future (2041) turning movement volumes for intersections within the SP study area were derived from the dynamic traffic assignment results (averaged over five simulation runs) for both morning and afternoon peak hour conditions. Significant congestion was observed along Warden Avenue as it approached Eglinton Avenue during the simulation. As a result, the estimated turning movement volumes at the Warden Avenue intersections (i.e., the processed number of vehicles) may underestimate the actual traffic demands.

The estimated future traffic volumes for weekday morning and afternoon peak hours are presented in **Figure 5-19** and **Figure 5-20**, respectively.

5.8.3 Traffic Signal Assessment

A traffic signal assessment was conducted for the new and modified intersections using the traffic volumes mentioned earlier. A Synchro analysis was performed under the assumption that these intersections would operate with unsignalized control. The overall intersection delays and Levels of Service (LOS) are summarized in **Table 5-10**.

From a traffic operations perspective, the following three intersections are expected to operate with adequate LOS under unsignalized control and, therefore, may not require traffic signals:

- Golden Mile Boulevard and New Public Street #1 (northbound stop-sign controlled, east-west direction operating free-flow);
- Golden Mile Boulevard and Thermos Road (all-way stop); and
- O'Connor Drive and New Public Street #1 (southbound stop-sign controlled, east-west direction operating free-flow).

All other assessed intersections are expected to experience significant delays without traffic signals. Therefore, traffic signals are recommended for these intersections based on projected traffic demand. However, the following five intersections may not be feasible for traffic signal implementation due to factors such as intersection spacing and safety considerations (highlighted as "if feasible"). Further review and confirmation of traffic signals at these locations will be carried out in the preliminary design.

- Golden Mile Boulevard and Victoria Park Avenue;
- Golden Mile Boulevard and Birchmount Road;
- O'Connor Drive Extension and Warden Avenue;
- Civic Road and Sinnott Road; and
- Civic Road and Birchmount Road.

5.8.4 Right Turn Lane Assessment

The requirement for a dedicated right turn lane was assessed using the traffic volumes mentioned earlier, assuming intersection controls (traffic signals or unsignalized) based on the recommended types from a traffic operations perspective. A Synchro analysis was performed to assess the right turn lane requirement, considering two options:

- With a shared through/right lane or shared left/right lane; and
- With a dedicated right turn lane.

A dedicated right-turn lane was deemed necessary, if either:

- The volume to capacity (v/c) ratio for a shared right lane exceeds 1.0; or
- The right turning volume is relatively high (e.g., over 200 vehicle per hour).

The assessment results are presented in **Table 5-11**. The analysis results indicate that a dedicated right turn lane would be required at following intersection approaches to provide adequate traffic operations:

- Craigton Drive and Pharmacy Avenue: Westbound approach;
- Golden Mile Boulevard and Victoria Park Avenue: Westbound and northbound approaches;
- Golden Mile Boulevard and Hakimi Avenue: Eastbound approach;
- Golden Mile Boulevard and Birchmount Road: Eastbound approach;
- O'Connor Drive and Victoria Park Avenue: Southbound approach;
- O'Connor Drive and Pharmacy Avenue: Westbound approach;
- O'Connor Drive Extension and Lebovic Avenue: Eastbound and westbound approaches; and
- O'Connor Drive Extension and Warden Avenue: Westbound and southbound approaches.



Victoria Park Ave				Pharmacy Ave				Hakimi Ave				Warden Ave				Thermos Rd				Birchmount Rd			
Jonesville Cr	234	918	105	247	123	843	278	191	3	19	18	37	420	974	38	159	242	121	111	194	253	802	
	56	5	48	108	132	143	33	142	33	333	187	425	377	260	12	274	134	336	9	237	296		
	153	867	53	104	33	36	946	76	51	26	37	168	40	772	48	35	9	24	111	55	106	79	648
	831	238			209	703	47	19	55	283	33	50	117	886	36	92	99	23	61	82	25	858	
Eglinton Ave E	186	19	249	12	212	216	331	221	12	66	83	219	102	112	34	320	53	316	25	321	42		
	275	90	112	78	208	143	36	331	45	838	85	163	102	112	34	94	53	316	25	321	256	276	685
	886	93	112	50	11	25	41	1026	35	496	403	10	61	749	313	5	195		11	698	18	1006	254
	1357	282	59	13	849	233	1051	592	322	592	322	326	603	326									1104
O'Connor Dr	74	1071	145	83	90	1195	302	73	28	119	793	211	123	824	90	280	RIRO				71	607	10
	823	144	29	1195	302	73	28	119	793	211	123	824	90	280	280	621	128	544	58	599	103	59	706
	145	823	144	29	302	73	28	119	793	211	123	824	90	280	280	621	128	544	58	599	103	59	706
	420	759	36	9	253	27	155	357	681	144	105	249	277	405	151	85	338	573	259	174	273	148	57
Proposed Street #1	74	1071	145	83	90	1195	302	73	28	119	793	211	123	824	90	280	Civic Rd				71	607	10
	823	144	29	1195	302	73	28	119	793	211	123	824	90	280	280	621	128	544	58	599	103	59	706
	145	823	144	29	302	73	28	119	793	211	123	824	90	280	280	621	128	544	58	599	103	59	706
	420	759	36	9	253	27	155	357	681	144	105	249	277	405	151	85	338	573	259	174	273	148	57
Lebovic Ave	74	1071	145	83	90	1195	302	73	28	119	793	211	123	824	90	280	Sinnott Rd				71	607	10
	823	144	29	1195	302	73	28	119	793	211	123	824	90	280	280	621	128	544	58	599	103	59	706
	145	823	144	29	302	73	28	119	793	211	123	824	90	280	280	621	128	544	58	599	103	59	706
	420	759	36	9	253	27	155	357	681	144	105	249	277	405	151	85	338	573	259	174	273	148	57
Sinnott Rd	74	1071	145	83	90	1195	302	73	28	119	793	211	123	824	90	280					71	607	10
	823	144	29	1195	302	73	28	119	793	211	123	824	90	280	280	621	128	544	58	599	103	59	706
	145	823	144	29	302	73	28	119	793	211	123	824	90	280	280	621	128	544	58	599	103	59	706
	420	759	36	9	253	27	155	357	681	144	105	249	277	405	151	85	338	573	259	174	273	148	57

Figure 5-19: Future (2041) Traffic Volume Projections – AM Peak Hour

Figure 5-20: Future (2041) Traffic Volume Projections – PM Peak Hour

Table 5-10: Traffic Signal Assessment

Intersection (assuming operate with unsignalized control)	Overall Intersection Delay (s)		Overall Intersection LOS		Recommend Traffic Signals	Critical Movements and Delay (s)
	AM	PM	AM	PM		
Craigton Dr and Pharmacy Ave	-	-	-	-	Yes	
Ashtonbee Rd and Thermos Rd	41	92	D	F	Yes	
Golden Mile Blvd and Victoria Park Ave	82	728	F	F	if feasible	
Golden Mile Blvd and New Public Street #1	21	5	C	A	No	SBLTR (51)
Golden Mile Blvd and Pharmacy Ave	-	-	-	-	Yes	
Golden Mile Blvd and Hakimi Ave	83	-	F	-	Yes	
Golden Mile Blvd and Warden Ave	-	-	-	-	Yes	
Golden Mile Blvd and Thermos Rd	18	19	C	C	No	no critical movement
Golden Mile Blvd and Birchmount Rd	7	15	A	B	if feasible	EBL (157)
Eglinton Ave and New Public Street #1	-	-	-	-	Yes	
O'Connor Dr and Victoria Park Ave	-	-	-	-	Yes	
O'Connor Dr and New Public Street #1	5	6	A	A	No	SBL (86)
O'Connor Dr and Pharmacy Ave	-	-	-	-	Yes	
O'Connor Dr Extension and Lebovic Ave	-	-	-	-	Yes	
O'Connor Dr Extension and Warden Ave	-	-	-	-	if feasible	
Civic Rd and Sinnott Rd	53	15	F	B	if feasible	WBTR (118)
Civic Rd and Birchmount Rd	25	17	D	C	if feasible	EBL (450)

Note: "-" indicates delay is too high to be reported by Synchro

Table 5-11: Right Turn Lane Assessment

Intersection	Approach	V/C Ratios ¹ for			Recommend Dedicated Right Turn Lane	Right Turning Volumes (for Critical Peak Hour)
		Shared Through/Right	Through and Dedicated Right			
Craigton Dr and Victoria Park Ave	WB	0.83	0.36	0.70	No	247
Craigton Dr and Pharmacy Ave	EB	0.69	0.77	0.08	No	33
	WB	1.21	0.65	0.49	Yes	171
Golden Mile Blvd and Victoria Park Ave	WB	1.16	0.77	0.65	Yes	292
	NB	1.10	0.87	0.38	Yes	278
Golden Mile Blvd and New Public Street #1 (unsignalized)	EB	0.43	0.36	0.11	No	112
	WB	0.37	0.39	0.01	No	12
Golden Mile Blvd and Pharmacy Ave	EB	0.76	0.67	0.12	No	42
	WB	0.91	0.84	0.16	No	60
Golden Mile Blvd and Hakimi Ave	EB	1.03	0.69	0.56	Yes	354
	WB	0.83	0.72	0.16	No	66
Golden Mile Blvd and Warden Ave	EB	0.75	0.49	0.25	No	164
	WB	0.90	0.77	0.28	No	129
Golden Mile Blvd and Thermos Rd (unsignalized)	EB	0.67	0.71	0.00	No	0
	WB	0.76	0.64	0.14	No	82
Golden Mile Blvd and Birchmount Rd	EB	0.90	0.66	0.66	Yes (high turning volume)	262
O'Connor Dr and Victoria Park Ave	EB	0.89	0.70	0.19	No	116
	WB	1.13	1.09	0.02	No (low turning volume)	24
	NB	0.89	0.70	0.38	No	232
	SB	1.13	0.71	0.76	Yes	420

Intersection	Approach	V/C Ratios ¹ for			Recommend Dedicated Right Turn Lane	Right Turning Volumes (for Critical Peak Hour)
		Shared Through/Right	Through and Dedicated Right			
O'Connor Dr and New Public Street #1 (unsignalized)	WB	1.05	0.76	0.35	No (other local access could provide right-turn route)	189
O'Connor Dr and Pharmacy Ave	EB	0.57	0.49	0.08	No	62
	WB	0.99	0.69	0.25	Yes (high turning volume)	233
	NB	0.80	0.73	0.13	No	147
	SB	0.94	0.58	0.57	No	357
O'Connor Dr Extension and Lebovic Ave	EB	0.83	0.49	0.32	Yes (high turning volume)	230
	WB	0.67	0.31	0.36	Yes (high turning volume)	242
O'Connor Dr Extension and Warden Ave	EB	0.75	0.44	0.29	No	198
	WB	0.96	0.34	0.69	Yes (high turning volume)	371
	NB	0.42	0.35	0.13	No	84
	SB	0.77	0.48	0.52	Yes (high turning volume)	337
Civic Rd and Sinnott Rd	EB	0.73	0.69	0.05	No	18
	WB	0.57	0.41	0.16	No	124
Civic Rd and Birchmount Rd	EB	0.83	0.75	0.31	No	121

Note: 1. V/C ratios represent the critical peak hour condition with a higher value

5.8.5 Storage Length Assessment

The storage length requirements were assessed based on the aforementioned traffic volumes, intersection controls (traffic signals or unsignalized), and dedicated right turn lanes assessment results.

Synchro analysis was performed to estimate the 95th percentile queue length. The higher value of the queue lengths during both peak hours were considered for storage length design for each movement, as presented in **Table 5-12**.

Table 5-12: Storage Length Assessment

Intersection	Movement	95th Percentile Queue (m)		Storage Length Requirement based on Queue Length ¹
		AM	PM	
Craigton Dr and Victoria Park Ave	WBL	36	35	40
	WBR	42	8	45
Craigton Dr and Pharmacy Ave	EBL	60	29	60
	WBL	23	12	25
	WBR	26	40	40
Golden Mile Blvd and Victoria Park Ave	WBL	93	77	95
	WBR	31	38	40
	NBR	1	34	35
	SBL	25	94	95
Golden Mile Blvd and New Public Street #1 (unsignalized)	EBL ²	1	1	15
	WBL ²	1	1	15
Golden Mile Blvd and Pharmacy Ave	EBL	53	32	55
	WBL	95	62	95
Golden Mile Blvd and Hakimi Ave	EBL	5	12	15
	EBR	54	17	55
	WBL	39	41	45
Golden Mile Blvd and Warden Ave	EBL	51	30	55
	WBL	30	17	30
Golden Mile Blvd and Thermos Rd (unsignalized)	EBL ²	1	1	15
	WBL ²	1	1	15
Golden Mile Blvd and Birchmount Rd	EBL	20	49	50
	EBR	25	20	25



Intersection	Movement	95th Percentile Queue (m)		Storage Length Requirement based on Queue Length ¹
		AM	PM	
	NBL	67	28	70
O'Connor Dr and Victoria Park Ave	EBL	106	151	155
	WBL	21	14	25
	WBR	0	0	15
	NBL	10	9	15
	NBR	61	41	65
	SBL	3	2	15
	SBR	0	0	15
O'Connor Dr and New Public Street #1 (unsignalized)	EBL	6	3	15
	WBR	0	2	15
O'Connor Dr and Pharmacy Ave	EBL	52	31	55
	WBL	33	49	50
	WBR	15	39	40
	NBL	21	26	30
	SBL	31	38	40
	SBR	82	4	85
O'Connor Dr Extension and Lebovic Ave	EBL	13	35	35
	EBR	1	25	25
	WBL	9	26	30
	WBR	13	25	25
O'Connor Dr Extension and Warden Ave	EBL	54	39	55
	WBL	17	58	60
	WBR	18	53	55
	NBL	20	11	20
	SBL	56	37	60
	SBR	55	29	55
Civic Rd and Sinnott Rd	EBL	9	54	55
	WBL	9	9	15

Note: 1. Use 15m if the reported 95th percentile queue length is less than 15m

2. Dedicated left turn lanes were not carried-forward in the draft design plan

5.9 Recommended Lane Configurations

Based on the review of Right-of-Way (ROW) constraints and other design considerations, the final recommended intersection traffic controls and lane configurations for the study area network are presented in **Figure 5-21**. Detailed preliminary design and roadway cross-section configurations for the study area corridors are documented in the Environmental Study Report (ESR).

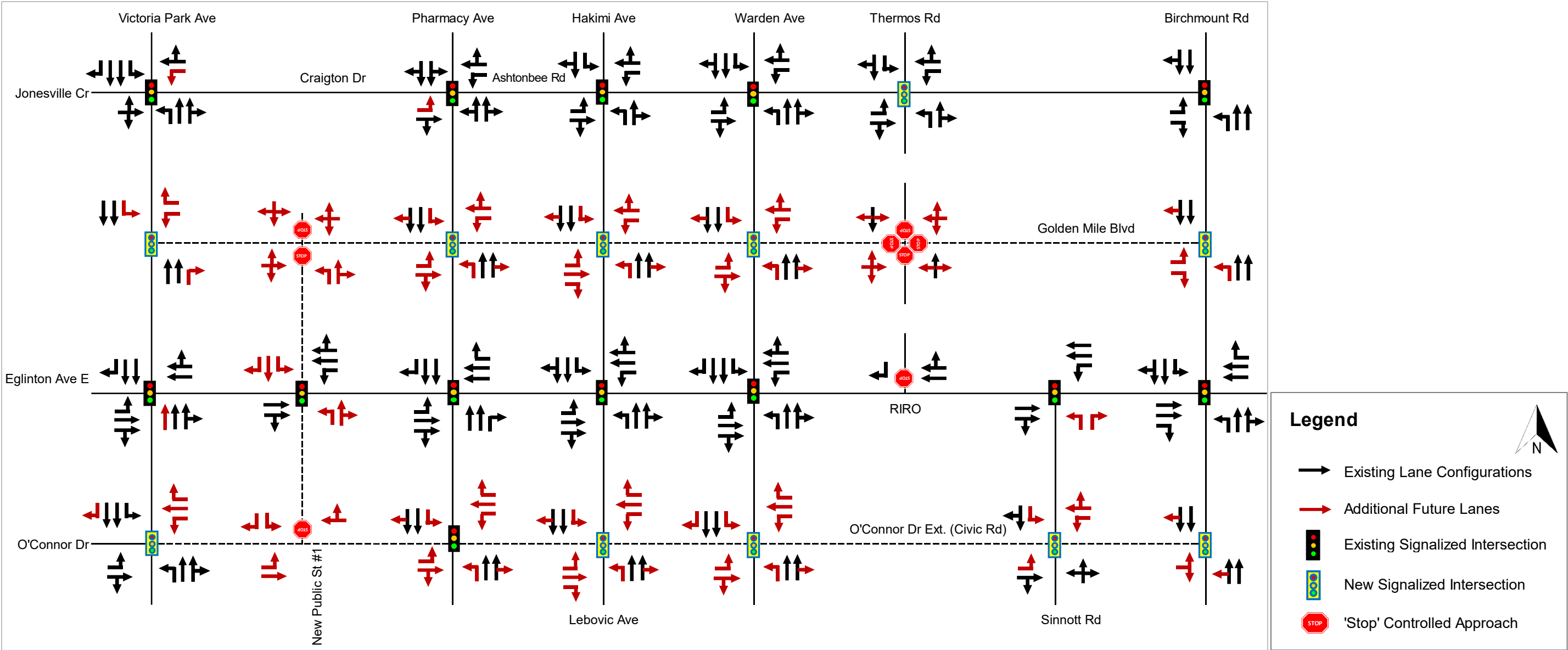


Figure 5-21: Future (2041) Recommended Intersection Controls and Lane Configurations

6 Study Findings and Preliminary Recommendations

6.1 Existing (2013) Traffic Conditions

6.1.1 Existing (2013) Vehicular Level of Service

The existing intersection operational analysis was conducted for the pre-Eglinton Crosstown LRT (ECLRT) construction conditions, representing transportation conditions in 2013. The traffic operational analysis was conducted using an extensive detailed Aimsun-based hybrid model (i.e. micro-scopic plus meso-scopic models), which was developed and calibrated considering road network, origin-destination pattern, travel time, transit operations and driving behaviour. The model simulates 2013 auto and truck traffic demands for both the morning and afternoon weekday peak periods and weekend afternoon peak period conditions.

The results of the analysis indicate that Eglinton Avenue East generally operates with an acceptable level of services during peak hour conditions. However, high delays and congestion at some of the major intersections along Eglinton Avenue East, (i.e., at Victoria Park Avenue, Pharmacy Avenue, and at Warden Avenue) reduce the network capacity and affect traffic progression. There are limited alternative routes available to travel in the east-west direction. The discontinuity (missing links and intersection jogs) and low capacity (two-lane cross-section, multiple property accesses) for parallel east-west increase traffic demands on Eglinton Avenue East.

With the planned ECLRT, the study area segment of Eglinton Avenue East will be operating with four general-purpose lanes with a dedicated LRT transit facility. The ECLRT route is still under testing until the end of 2024. With the planned ECLRT, the auto demand, as well as vehicular capacity on the Eglinton Avenue East corridor, will reduce, which could possibly improve the vehicular level of service. With the proposed secondary plan, a finer-grained street network with additional east-west corridors could significantly increase the network capacity and relieve the traffic congestion along Eglinton Avenue East. The finer road network will also encourage more active transportation within the study area.

6.1.2 Existing (2013) Pedestrian and Transit Level of Service

The multi-modal level of service (MMLOS) analysis was conducted for pedestrian and transit modes, following the Ontario Traffic Council's (OTC's) Guide (January 2022), for the roads and intersections located within the Golden Mile Secondary Plan study area. Overall, a majority of the intersections and roadway segments within the study area did not meet the target LOS for pedestrians. At intersections, low LOS (D/E) is primarily caused by a lack of enhanced pedestrian measures, large turning radii, long cycle lengths, and a high number of uncontrolled conflicts per approach. Along road segments, low LOS (D/E) is primarily due to narrow pedestrian facilities, narrow buffers between the pedestrian facilities and vehicles, and long distances between controlled crossings.

Various mitigation measures including implementing LPIs, reducing cycle lengths, widening sidewalks/boulevards, prohibiting turning movements, and implementing mid-block pedestrian crossings would improve the pedestrian level of service (PLOS) within the study area. The Eglinton Crosstown LRT (as of 2022) implemented left-turn restrictions at various intersections along Eglinton Avenue East, which will improve PLOS at those intersections by reducing uncontrolled conflicts. A finer-grained street network is needed to enhance connectivity within the GMSP area to improve mobility for all modes.

Most of the intersections and roadway segments within the study area meet the target LOS for transit. The low PLOS and vehicular delays at some intersections and roadway segments could potentially affect the transit LOS; lack of transit priority measures and dedicated right-of-way could also cause reduced LOS D/E for transit. Potential mitigation measures including TSP, dedicated transit lanes, queue jumps, bus shelters, seating, and enhanced pedestrian infrastructure are expected to improve the TLOS within the study area. Under future conditions, the Eglinton Crosstown LRT will improve the transit level of services on the Eglinton Avenue East corridor, as it will have a dedicated right-of-way and shelters.

6.2 Golden Mile Secondary Plan - Transportation Master Plan (GMTMP) Recommendations

6.2.1 Key Street Network Improvements

For the Golden Mile Secondary Plan, a Transportation Master Plan (TMP) Study was completed in November 2019. The TMP study identified the following key street network improvements for the GMSP area, presented in **Figure 5-1**.

- O'Connor Drive potential re-alignment, reconfiguration and extension to Birchmount Road with a two-lane cross-section;
- Golden Mile Boulevard, a potential new east-west public street from Victoria Park Avenue to Birchmount Road with a two-lane cross-section;
- Craigton Drive potential re-alignment, widening and reconfiguration with a two-lane cross-section;
- Thermos Road / Sinnott Road at Eglinton Avenue East intersection reconfiguration; and
- Jonesville Crescent / Craigton Drive / Ashtonbee Road from Eglinton Avenue East to Birchmount Road functional coordination, including a potential new traffic signal at Eglinton Avenue East.

6.2.2 GMTMP – Proposed Right-of-Way Widths

The GMTMP recommended right-of-way (ROW) widths for the recommended network for existing and future streets are illustrated in **Figure 6-1**.

Golden Mile Boulevard and O'Connor Drive corridors are both recommended for 27m ROW width to accommodate required street elements building upon the cycling network recommendations and Transit Priority Plan. Craigton Drive re-alignment, Ashtonbee Road, and Thermos Road / Sinnott Road reconfiguration are recommended for a 23m ROW width. Jonesville Crescent is recommended for a 20m ROW width. The proposed cross-sections for these ROWs are available in the TMP report and will be reviewed and confirmed during the EA study.

6.2.3 GMTMP – Proposed Active Transportation Network Solutions

The GMTMP identifies that the existing built form encourages driving by requiring pedestrians to walk long distances to reach their destinations, often across surface parking lots. The GMTMP recommended a finer-grained street network to enhance connectivity within the GMSP area to improve mobility for all modes.

The study also recommended dedicated and separated cycling facilities throughout the GMSP study area. Separate sidewalks were also intended to be included alongside cycling facilities except where shared-use facilities are implemented. In addition, traffic signals at busy intersections are recommended to provide protected crossing locations.

Figure 6-2 presents the GMTMP study recommended AT network improvements. For the five corridors within the EA study area:

- Bike facility (cycle track or bike lanes) was recommended on O'Connor Drive and its extension, and further extended along Civic Road to Birchmount Road;
- Cycle track was recommended on Craigton Drive;
- Bike lane or raised cycle track was recommended on Golden Mile Boulevard;
- Bike facility (cycle track or bike lanes) was recommended on Thermos Road / Sinnott Road; and
- Cycle track was recommended on Ashtonbee Road.

6.2.4 GMTMP – Proposed Transit Solutions

The GMTMP study recommends transit priority improvements on Victoria Park Avenue and Warden Avenue to serve north-south transit demand through the GMSP study area. The exact nature of these improvements is subject to further study, though these could incorporate elements as directed in the Official Plan. The location of these corridors relative to the Preferred Network is illustrated in **Figure 6-3**. The GMTMP Study identifies that Victoria Park Avenue and Warden Avenue will require 36 m ROW, to facilitate future transit priority and cycling improvements, which would be subject to future transit corridor or Environmental Assessment study. Eglinton Avenue will require an additional ROW (43 m width) to accommodate an enhanced public realm.

It is of note that GMTMP study identified that through coordination with adjacent Secondary Plan studies along the Eglinton Avenue corridor, there could be a potential transit capacity issue along the Eglinton Crosstown LRT line, particularly west of the GMSP study area towards Yonge-Eglinton. This includes GMSP, Don Mills Crossing and Laird-in-Focus. The study recommends identifying these future potential issues to Metrolinx.

The GMTMP Study has not identified any specific transit improvements/ transit routes for the O'Connor Drive, Golden Mile Boulevard, Craigton Drive, Jonesville Crescent/Craigton Drive corridors. However, the TMP Study has identified that the TTC Route 67AB (Pharmacy) and 70AB (O'Connor) will be impacted by the Preferred TMP network recommendation. The study also recommends planning and implementation of the preferred street network through development must coordinate with the TTC to ensure that adequate space is provided to accommodate transit needs.



Figure 6-1: GMTMP Proposed Right-of-Way Width

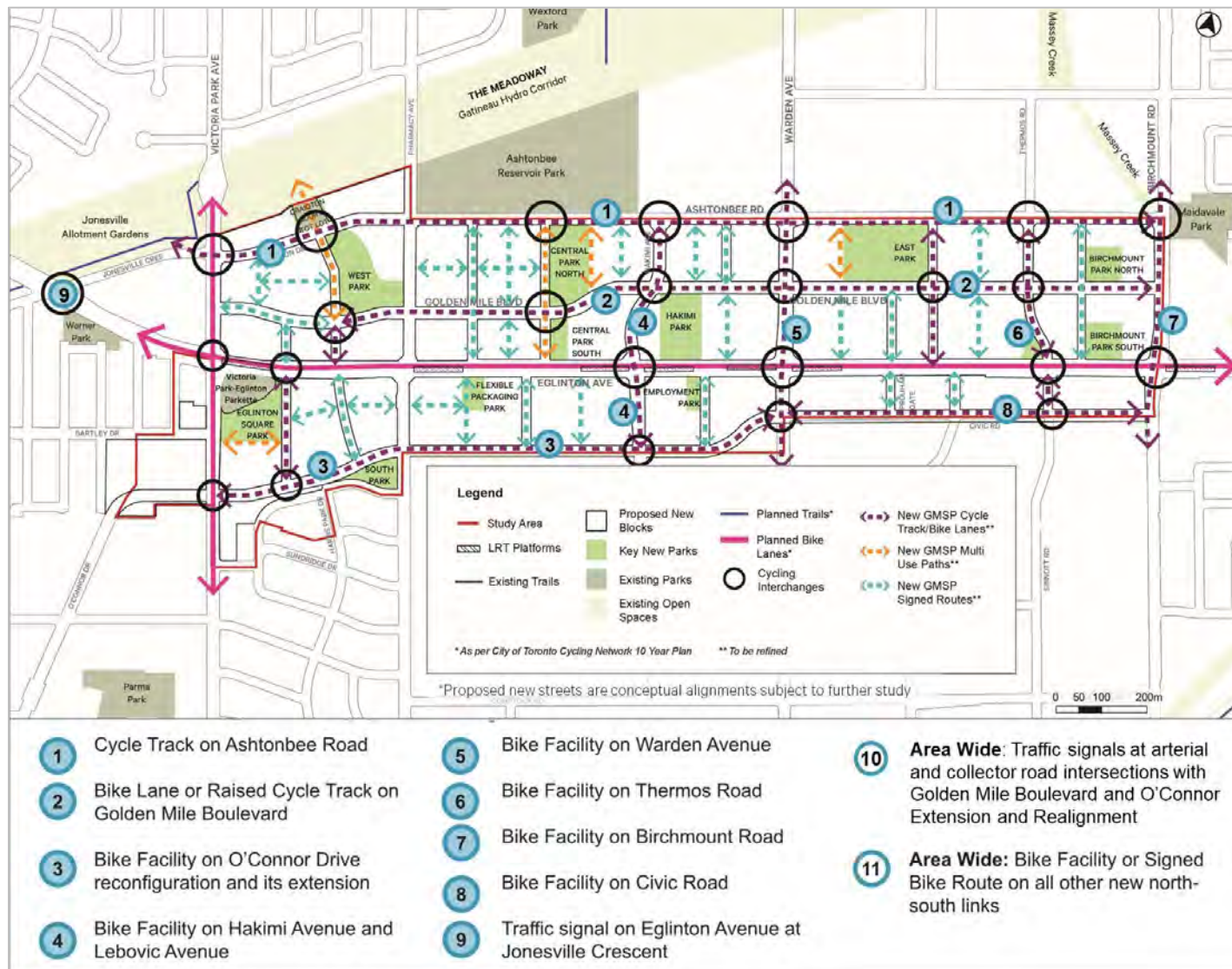


Figure 6-2: GMTMP Proposed AT Network Improvements

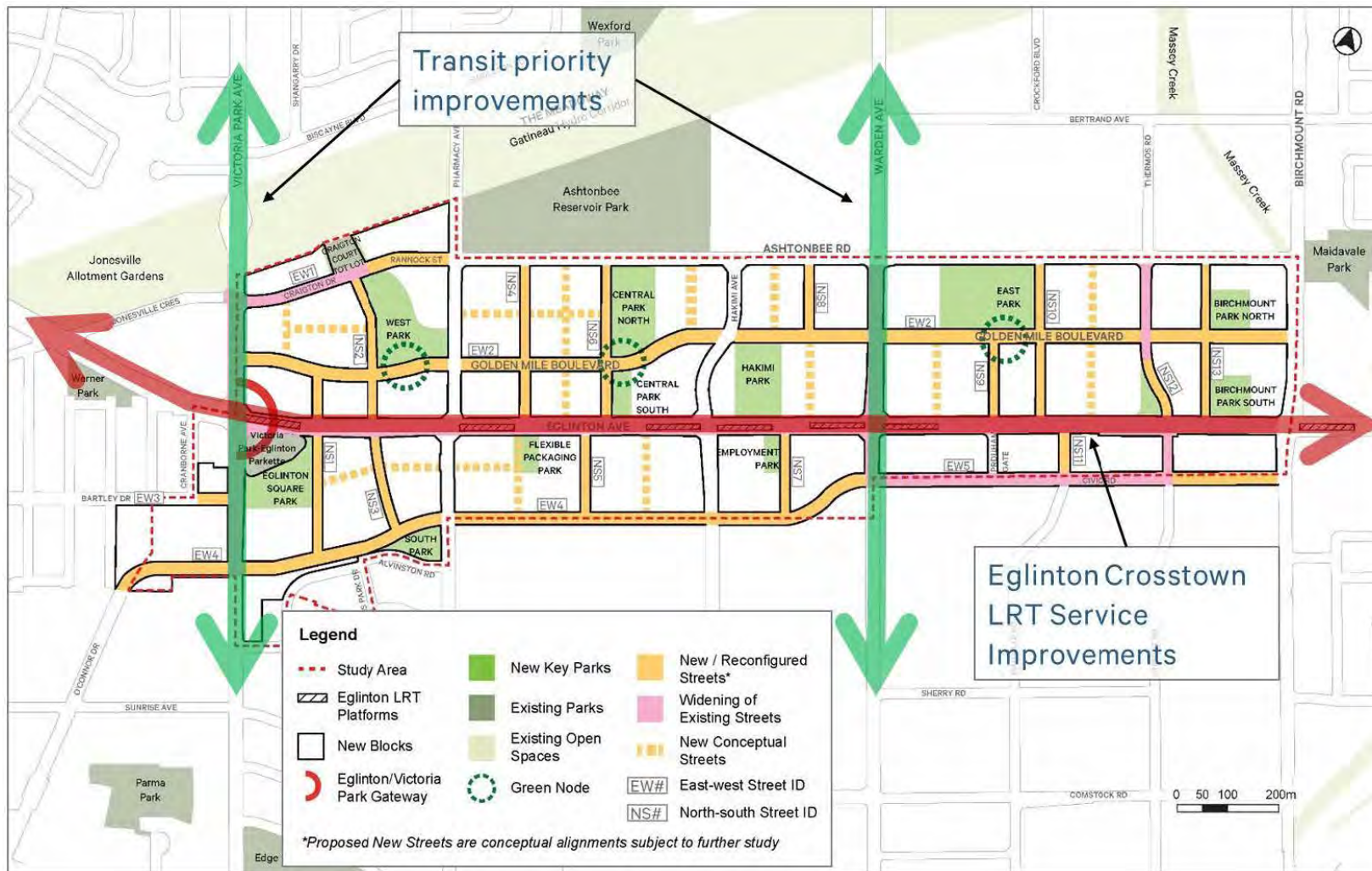


Figure 6-3: GMTMP Proposed Transit Improvements

6.3 Future (2041) Traffic Conditions

6.3.1 Future (2041) Full Build-Out Pedestrian and Transit Level of Service

The future (2041) pedestrian, cycling and transit level of services will be analyzed for the preferred/recommended transportation network improvements identified in the next phase of the study, specifically for the study area corridors considered in this EA Study. It is anticipated that future improvements will result in an improved Transit and Pedestrian LOS and will allow a Bicycle LOS to be determined for the future network. The future ECLRT line will also allow for the implementation of LPIs, which will improve pedestrian safety.

6.3.2 Future (2041) Full Build-Out Vehicular Level of Service

Preliminary traffic operational performance for the Future (2041) Full Build-out conditions was assessed using the calibrated Aimsun hybrid model, incorporating recommendations from the Golden Mile TMP. The overall intersection Level of Service (LOS) for the AM peak and weekend periods is presented in **Sections 5.5.2** and **5.5.3**, respectively. Preliminary traffic analysis results indicate that both the weekday morning peak and weekend periods experience significant delays, with LOS E or F at most intersections. For the afternoon peak period, network gridlock caused by high traffic demand prevented the generation of realistic results.

To address network capacity issues, the City agreed to a proposed 10% trip reduction, along with revised population and employment forecasts (as per the February 3, 2023 discussion in **Section 5.6**). Using the trip reduction and revised land use data, the 2041 Full Build-out intersection operational analysis (Base Case scenario) for the afternoon peak hour condition was updated. This updated analysis was used for assessing alignment alternatives for study area corridors from a traffic operations perspective, as detailed in **Section 5.7**. A more comprehensive evaluation is documented in the Environmental Study Report (ESR).

Based on the EA-preferred roadway network configuration, the traffic analysis addressed the following key elements:

- Intersection operational performance, including delays, LOS, and queues;
- Future turning movement volumes for intersections within the Secondary Plan (SP) study area;
- Traffic signal requirements for new/modified intersections;
- Right-turn lane requirements for new/modified intersections; and
- Storage length requirements for dedicated left and right-turn lanes.

The future (2041) turning movement volumes for intersections within the SP study area were derived from the dynamic traffic assignment results, averaged over five simulation runs, for both morning and afternoon peak hour conditions.

A traffic signal assessment was conducted for new and modified intersections based on the aforementioned traffic volumes. Synchro analysis was performed under the assumption that intersections would initially operate with unsignalized controls. From a traffic operations perspective, all assessed intersections are recommended for traffic signals, except for the following three intersections, which are expected to achieve adequate LOS under unsignalized control:

- Golden Mile Boulevard and New Public Street #1 (northbound stop-sign controlled, east-west direction operating free-flow);
- Golden Mile Boulevard and Thermos Road (all-way stop); and
- O'Connor Drive and New Public Street #1 (southbound stop-sign controlled, east-west direction operating free-flow).

The requirement for a dedicated right turn lane was assessed using the traffic volumes mentioned earlier, assuming intersection controls (traffic signals or unsignalized) based on the recommended types from a traffic operations perspective. The analysis results indicate that a dedicated right turn lane would be required at following intersection approaches to provide adequate traffic operations:

- Craigton Drive and Pharmacy Avenue: Westbound approach;
- Golden Mile Boulevard and Victoria Park Avenue: Westbound and northbound approaches;
- Golden Mile Boulevard and Hakimi Avenue: Eastbound approach;
- Golden Mile Boulevard and Birchmount Road: Eastbound approach;
- O'Connor Drive and Victoria Park Avenue: Southbound approach;
- O'Connor Drive and Pharmacy Avenue: Westbound approach;
- O'Connor Drive Extension and Lebovic Avenue: Eastbound and westbound approaches; and
- O'Connor Drive Extension and Warden Avenue: Westbound and southbound approaches.

Storage length requirements for dedicated left and right-turn lanes were assessed based on traffic volumes, intersection controls, and the results of the right-turn lane assessment. Synchro analysis was performed to estimate the 95th percentile queue lengths, as described in **Table 5-12**. The higher value of the queue lengths during both peak hours were considered for storage length design for each movement.

Based on a review of Right-of-Way (ROW) constraints and other design considerations, the final recommended intersection controls and lane configurations for the study area network are illustrated in **Figure 5-21**. Detailed preliminary design and roadway cross-section configurations for the study area corridors are documented in the ESR.

While the current analysis provides a comprehensive assessment of existing and future traffic conditions, it is acknowledged that some operational issues have been identified in the model outputs, including localized delays and capacity constraints at key intersections. These issues highlight the need for further detailed analysis and targeted mitigation strategies during subsequent phases of design and through future development processes. As the study area evolves, additional data collection, refined modelling, and design updates will be essential to ensure that transportation infrastructure supports safe and efficient traffic operations.