Mayfield West Phase 2 Stage 2 Transportation Assessment

Town of Caledon

Paradigm Transportation Solutions Limited

January 2018

Project Summary

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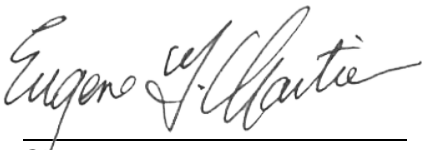
List of Revisions

Version	Date	Description
1	31 January 2018	First Submission

Signatures



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1 Introduction

1.1 Background

Since 2008, Paradigm Transportation Solutions Limited (Paradigm) has been assisting the Town of Caledon (Town) with transportation planning for the Mayfield West Phase 2 lands. The work culminated in the completion of the Mayfield West Phase 2 Secondary Plan Transportation Master Plan (TMP) (December 2015), which Town Council approved in March 2016. Two addenda to the TMP have been prepared since the original report was filed (see Section 1.2 for details).

Pursuant to a December 2016 resolution of Town Council, the Town has embarked on a series of studies to support further expansion of the Mayfield West Phase 2 settlement area, known as the Stage 2 lands. This area comprises approximately 110 hectares of developable land and is being planned to accommodate up to 8,800 people. The expansion is intended to implement the 2031 and 2041 Growth Plan for the Greater Golden Horseshoe population and employment forecasts, which is part of the 2017 Growth Plan conformity amendment process (Official Plan Review Peel 2041).

In August 2017, the Town submitted a Planning Justification Report and updated technical studies to Peel Region in support of the Stage 2 settlement boundary expansion request. Regional staff advised that the transportation study needed to be updated to reflect the 2017 Growth Plan updates and new density requirements for the Mayfield West Phase 2 area. Specifically:

> *Based on the Provincial Plan updates and the new density requirements for this area, an updated Transportation Plan is required to outline how the transportation network will function successfully. As previously indicated, specific reference should be made to the approximate developable land area of 110 hectares and up to 8800 people within the Mayfield West Phase II Stage II area.*
>
> *The original study should be updated, and staff request that those updated sections be highlighted for ease in the review and comment on the document.*

1.2 Update Approach and Scope

The requested update to the December 2015 Mayfield West Phase 2 TMP involves changes to the base assumptions and data used in the original study, thereby necessitating revisions to the technical analyses and conclusions set out primarily in Chapter 6 of the original report. These revisions extend beyond the material prepared in June 2017 for the second addendum of the TMP.

The Town has decided to update the original TMP instead of preparing a separate report addressing only the Stage 2 lands. The TMP is based on the land use Framework Plan for the entire Mayfield West Phase 2 area, including Stage 2, and therefore provides a comprehensive transportation strategy for the broader development area typical for a study of this nature.

The approach for completing the **Mayfield West Phase 2 Stage 2 Transportation Assessment** involved the following three steps, consistent with this philosophy:

1. Update the traffic forecasts based on the revised land use plan for the Mayfield West Phase 2 area, as depicted on the "Mayfield West Phase 2: Proposed Stage 2 Framework Plan" prepared by Glen Schnarr & Associates Inc. (GSAI) and dated December 19, 2017. **Figure 1.1** shows the revised plan, which features the following key changes from the version that served as the basis for the original TMP:

   - Increase in average density for the Stage 2 lands from approximately 62.9 to 80 persons and jobs per hectare;
   - Changes to the land use plan for the Mixed Use Policy Area; and
   - Removal of the Collector Road A crossing of the Orangeville Brampton Railway (OBRY) rail corridor.

   The final two changes were previously addressed in the first addendum to the TMP (November 2016, updated July 2017).

   Other assumptions used in preparing the traffic forecasts were also updated, including:

   - Base year traffic volumes;
   - Trip generation rates;
   - Trip distribution patterns; and
   - Roadway capital improvement plans.

   New/updated information from other studies advanced or completed in the intervening period were incorporated, as well, including the:

   - Greater Toronto Area (GTA) West Transportation Corridor Route Planning and Environmental Assessment Study (the GTA West Study); and
   - Class Environmental Assessment for Widening of McLaughlin Road and Construction of East-West Spine Road (Mayfield West Phase 2), Highway 410 Ramp Reconfiguration (the McLaughlin Road Class EA).

2. Analyze intersection operations using the updated traffic forecasts to identify potential issues. The analyses were completed with a more current version of Synchro that used in the previous study; and

3. Review and update the road networks based on the revised analyses, identifying required improvements to support growth within the Mayfield West Phase 2 area.

The other transportation comments raised by Peel Region staff in their September 13, 2017 response to the Planning Justification Report were addressed through these steps, including:

- Referencing the policy framework within the Region of Peel Official Plan and how the TMP will account for the GTA West Corridor; and
- Assessing future operating conditions, identifying potential traffic impacts to the adjacent transportation network, and confirming future infrastructure needs required to accommodate planned development, particularly for the Mayfield Road and Hurontario Street intersection.

This study has relied extensively on the assumptions postulated and previous work completed in preparing the Mayfield West Phase 2 TMP. The same methodology used in completing the analyses for the master plan was applied for this study, with the data updated to reflect the most current information available and to ensure consistency with other ongoing initiatives (e.g., McLaughlin Road Class EA). In addition, the text from the original TMP has been used in this report, but revised to reflect the updated information per Regional staff's request. **Appendix A** provides a redline mark-up version of Chapter 6 for ease of reference.

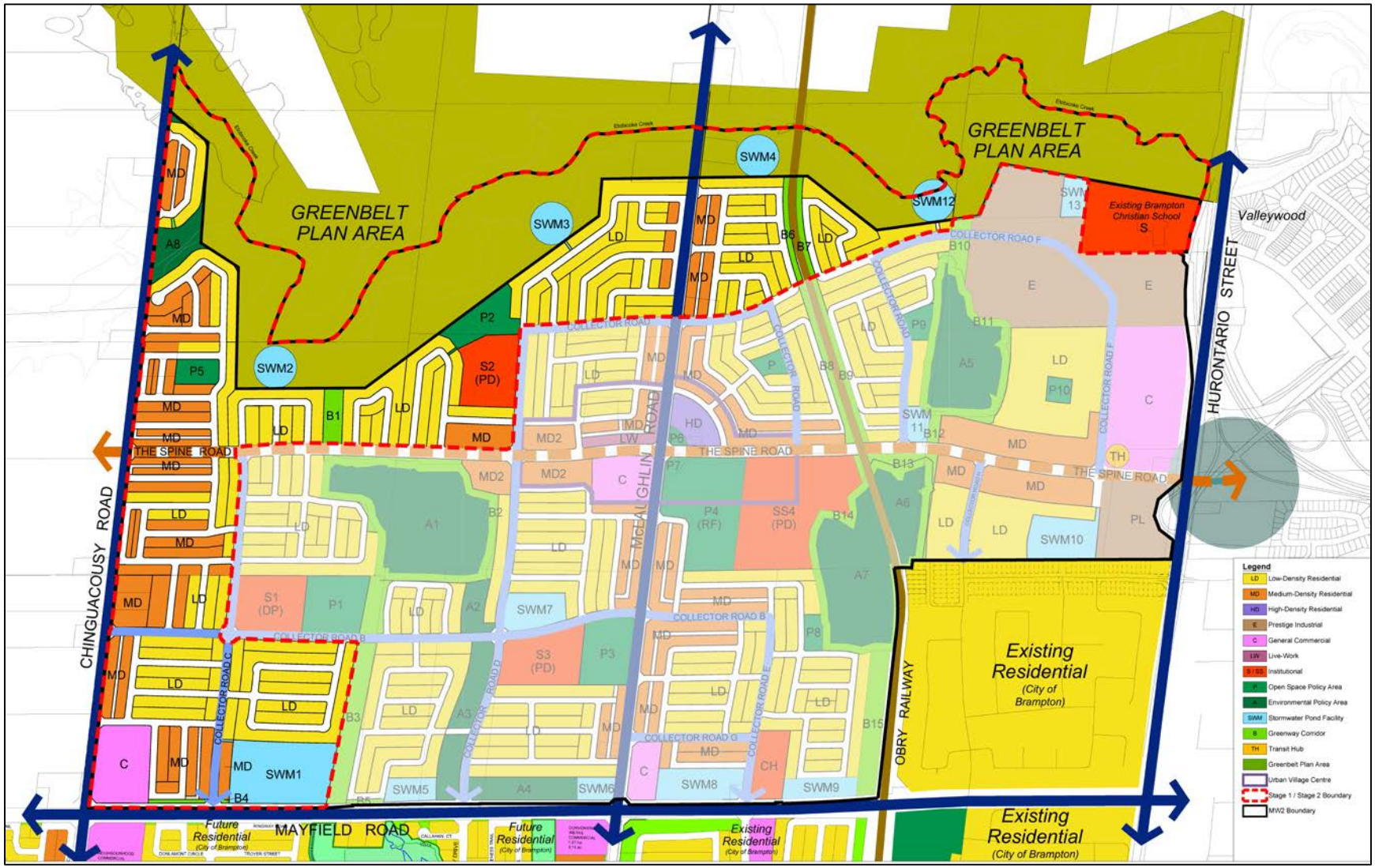
1.3 Study Area

Consistent with the previous transportation analyses completed for the Mayfield West Phase 2 Secondary Plan Area, the Study Area references a future expansion of the Mayfield West Rural Service Centre settlement boundary, which covers the area south of the Etobicoke Creek greenbelt, located west of Highway 10. The study limits are generally defined as Highway 10 to the east, Mayfield Road to the south, Chinguacousy Road to the west and Old School Road to the north.

1.4 Report Organization

The remainder of the report is organized into two chapters:

- Chapter 2 presents the revised technical analysis, following the structure of Chapters 6 and 7 in the Mayfield West Phase 2 TMP. This material would replace the entirety of Chapter 6 and part of Chapter 7 in the original report.
- Chapter 3 summarizes the conclusions and recommendations of this update.



Mayfield West Phase 2: Proposed Stage 2 Framework Plan

Figure 1.1

2 Future Travel Demand and Transportation Strategy

The primary objective of travel demand forecasting is to determine the expected travel demands associated with the planned land uses (as per the endorsed Framework Plan) and to identify infrastructure requirements and policy initiatives required to satisfy anticipated traffic demands.

The forecasting approach used throughout the Transportation Master Plan study recognizes the importance of the role that all modes of travel play in accommodating future residential and employment growth. In order to assess the adequacy of existing and planned infrastructure adjacent to the Mayfield West Phase 2 Study Area, forecasts of future travel demands have been developed which represent full build-out of the Mayfield West Phase 2 lands (both Stages 1 and 2) including future development areas east of Chinguacousy Road and north to the Greenbelt Plan Area.

Consistent with the original TMP, a nominal horizon year of 2031 has been used for the analysis of the future travel demands as build-out of the Stage 1 lands is anticipated to occur by this horizon. It also reflects the fact that the 2031 horizon year is consistent with modeling and transportation planning activities undertaken by both Peel Region and the City of Brampton.

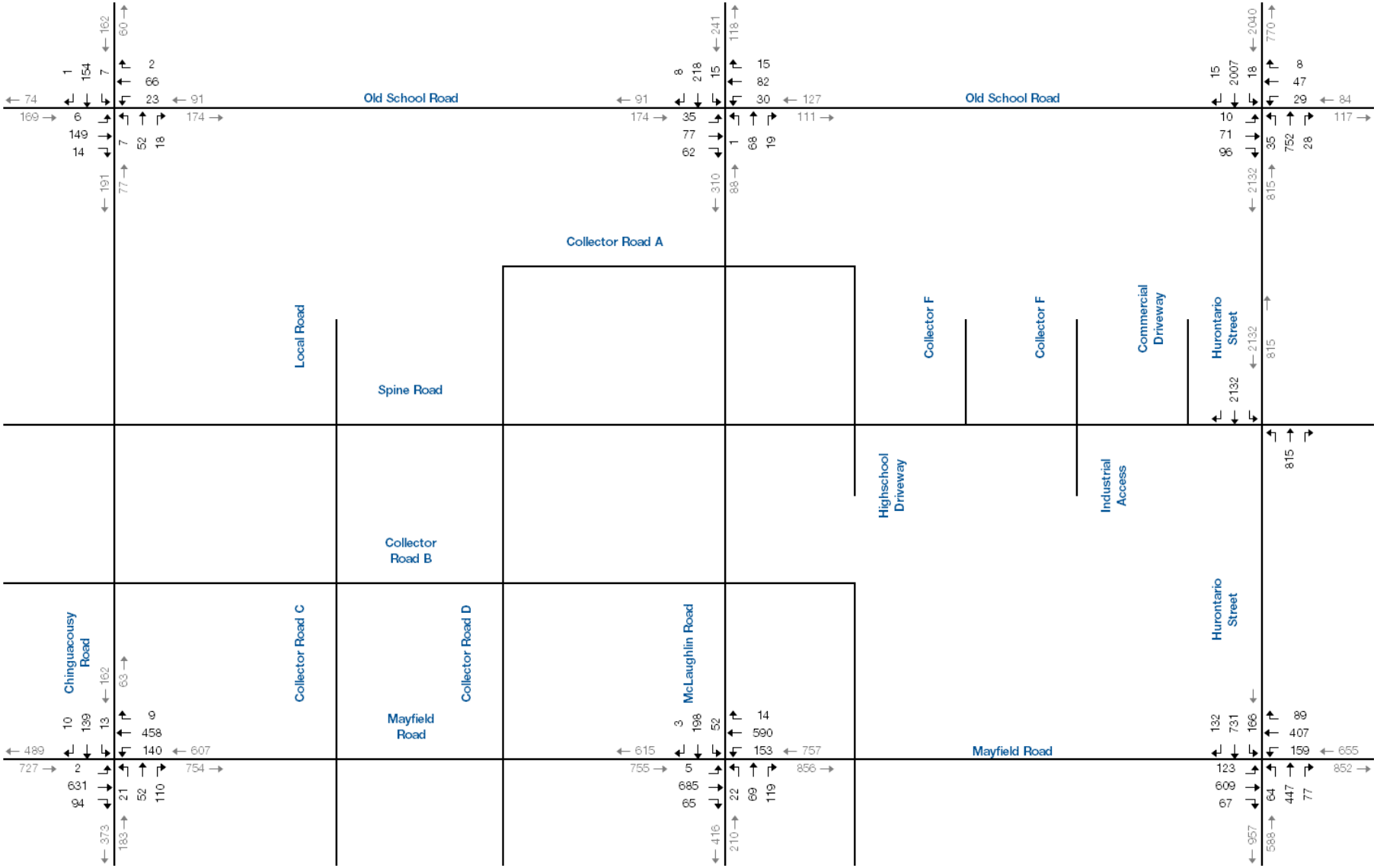
A horizon year of 2041 has also been used for the analysis of future travel demands, consistent with the requirement to implement both the 2031 and 2041 Growth Plan population and employment forecasts, which is part of the 2017 Growth Plan conformity amendment process (Peel 2041: Regional Official Plan Review). For 2041, two scenarios were evaluated to assess future travel demands with and without the GTA West Transportation Corridor.

2.1 Existing and Future Background Traffic Estimates

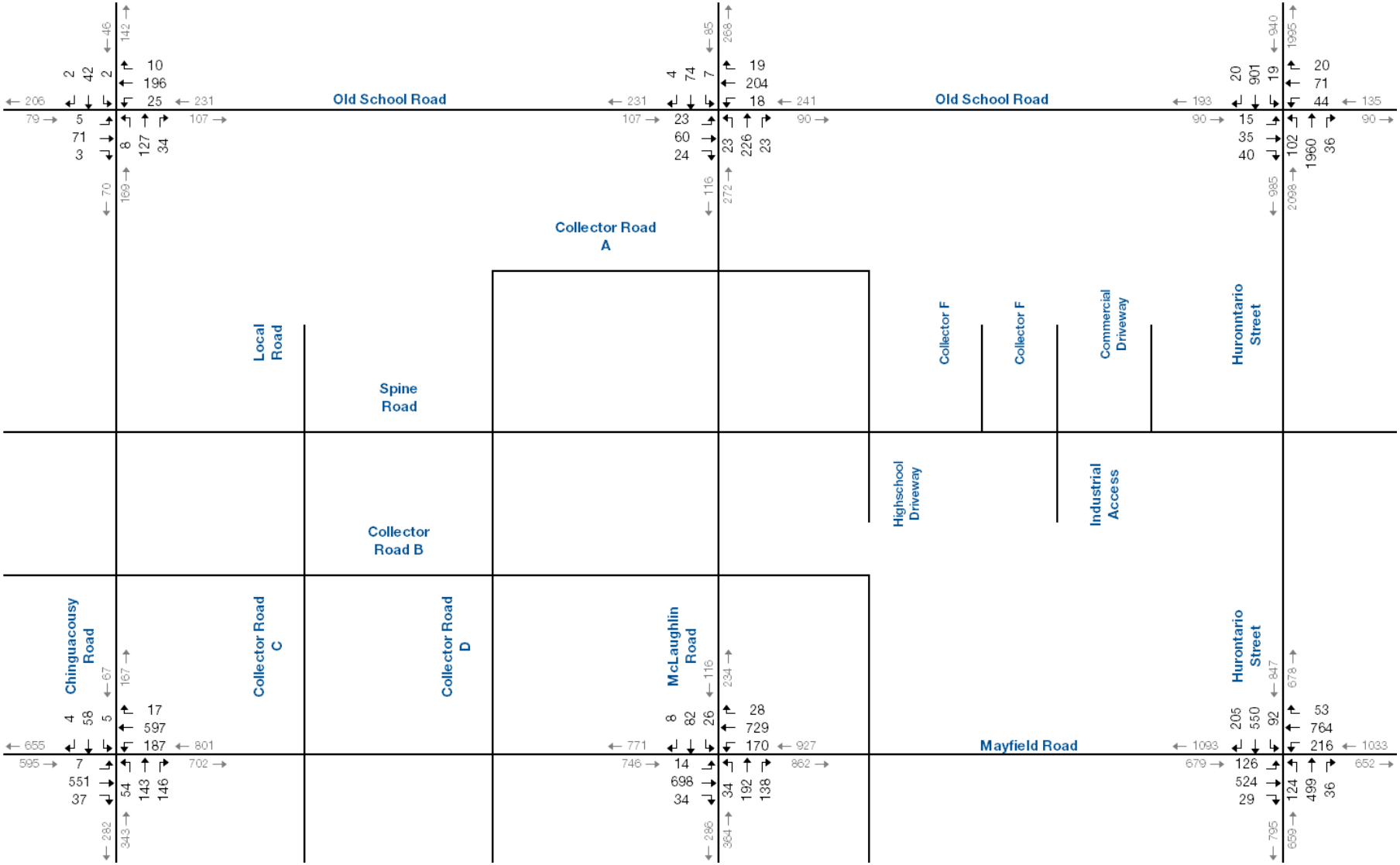
2.1.1 Existing Traffic Estimates

Existing traffic volumes on the Study Area road network were derived from recent turning movement counts collected by the Town of Caledon, Peel Region and the Ministry of Transportation (MTO). **Figures 2.1** and **2.2** show existing AM and PM peak hour volumes, respectively.

Through traffic volumes in the peak direction at the Hurontario Street and Old School Road intersection (southbound in the morning and northbound in the afternoon) are significant and approach capacity.



Existing Traffic – AM Peak Hour



Existing Traffic – PM Peak Hour

2.1.2 Future Background Traffic Estimates

Future background traffic volumes on all Study Area roads except Hurontario Street were calculated by applying a 2% per annum growth rate to existing traffic volumes, consistent with the traffic analyses prepared for the McLaughlin Road Class EA[1]. For Hurontario Street north of the Highway 410 and Valleywood Boulevard interchange to Old School Road, a traffic growth rate of 1% was used, as derived from Peel Region EMME model output plots. The general 2% per annum rate was applied on Hurontario Street south of the interchange.

2.2 Development Concept

For the purposes of undertaking traffic assessments as part of the TMP, land use allocation (per the proposed Stage 2 Framework Plan) was summarized into five key land use types, as summarized in **Table 2.1**.

TABLE 2.1 LAND USE ALLOCATION

Land Use	Density
Residential	
• Low Density	3,184 units
• Medium Density	2,416 units
• High Density	168 units
Commercial	64,850 m^2 GFA
Employment	
• Business Park	1,814 employees
Schools	
• Elementary Schools	2,725 students
• Secondary School	1,500 students
• Daycare	68 children
Other	
• Recreation Centre	30 employees
• Church	14,973 m^2 GFA

[1] Class Environmental Assessment for Widening of McLaughlin Road and Construction of East-West Spine Road (Mayfield West Phase 2), Highway 410 Ramp Reconfiguration; (prepared by Amec Foster Wheeler Environment and Infrastructure), 2017.

2.3 Planned and Programmed Roadway Network Improvements

The estimation and assessment of future travel demands considered the impact of future roadway improvements anticipated to occur within a close proximity to the Study Area which may have varying levels of impact to future traffic operations. In particular, the planned widening of Mayfield Road, future improvements to Chinguacousy Road and McLaughlin Road, as well as the need for considerable interchange improvements has been identified. These and other planned transportation improvements are summarized as follows:

2.3.1 Region of Peel

Improvements recommended as part of the Mayfield Road Class EA[2] (Chinguacousy Road to Heart Lake Road) include:

- Mayfield Road from Chinguacousy Road to Hurontario Street, widening from four to six lanes inclusive of centre median (where appropriate) with urbanized cross-section and boulevard multi-use trails on both the north and south sides of the roadway;
- Reduce southbound left-turn lanes at Hurontario Street from dual left-turn lanes to a single left-turn lane; and
- Provide for additional turning lanes at key intersections including Chinguacousy Road, McLaughlin Road, Hurontario Street and new collector roads associated with development south of Mayfield Road.

The 2018 Peel Region Capital Budget and Forecast earmarks funding for construction of the Mayfield Road widening project in the year 2022.

2.3.2 City of Brampton

The 2018-2020 City of Brampton Capital Budget identifies the following improvements:

- McLaughlin Road from Wanless Drive to Mayfield Road, widening from two to four lanes (by 2019); and
- Chinguacousy Road from Wanless Drive to Mayfield Road, widening from two to four lanes (by 2019).

[2] Class Environmental Assessment for Mayfield Road from Chinguacousy Road to Heart Lake Road (Project #10-4350); (prepared by GENIVAR), August 2013.

2.3.3 GTA West Transportation Corridor Route Planning and Environmental Assessment Study

The Provincial Growth Plan identifies a conceptual future transportation corridor that generally extends east from Guelph to the area east of Caledon and includes policy directions requiring that transportation corridors be identified and protected. As such, the Ontario Ministry of Transportation (MTO) has commenced the formal EA process to examine long-term transportation problems and opportunities to the year 2031 including the consideration of alternative solutions to provide better linkages between Urban Growth Centres in the GTA West Corridor Preliminary Study Area.

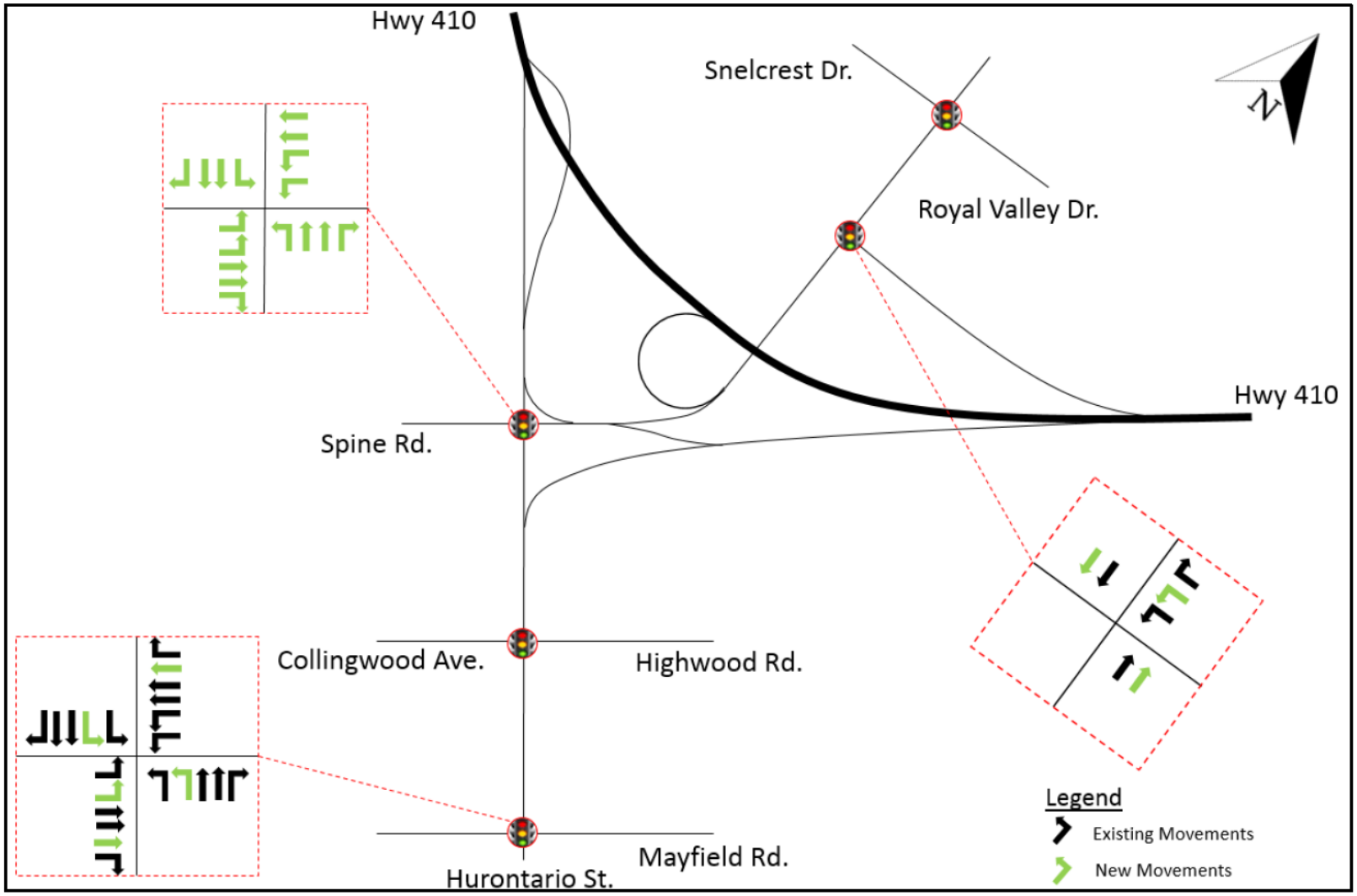
At the time of writing of this report, work on the GTA West Study was suspended. Prior to halting work in December 2015, the study had concluded that there was a need for a future transportation corridor, as detailed in the Transportation Development Strategy Report[3]. Route alternatives for the new corridor within the Route Planning Study Area were being investigated, with a Focused Analysis Area (FAA), a zone surrounding the shortlist of alternatives, defined. In terms of potential connections with Highway 410, the feasibility of providing a connection to Highway 410, east of the Mayfield West Phase 2 Study Area, and subsequent identification of interchange requirements were being examined.

The Province has not detailed its plans for the project, other than suggesting an announcement was imminent. Given that MTO has made no firm commitment to implement the corridor by 2031, this study has assumed that the facility will not be in place within this time frame. For the 2041 horizon year, scenarios with and without the GTA West Transportation Corridor have been analyzed, with forecasts from the Peel Region EMME model used to evaluate changes in travel patterns on the Study Area road network. This approach is consistent with and supports the Region of Peel Official Plan objective to plan for and protect this proposed future corridor (Section 5.9.12 Future GTA West Transportation Corridor and other policies).

2.3.4 Hurontario Street/Valleywood Boulevard Interchange

The ongoing McLaughlin Road Class EA is identifying the geometric improvements required to connect the proposed Mayfield West Phase 2 Spine Road to the Hurontario Street/Valleywood Boulevard interchange. **Figure 2.3** illustrates the proposed interchange geometry as identified in the McLaughlin Road Class EA report.

[3] GTA West Corridor Environmental Assessment Study – Transportation Development Strategy Report; (Ontario Ministry of Transportation), November 2012.



Source: Class Environmental Assessment for Widening of McLaughlin Road and Construction of East-West Spine Road (Mayfield West Phase 2), Highway 410 Ramp Reconfiguration, Amec Foster Wheeler Environment and Infrastructure, 2017

Recommended Lane Configuration for Highway 410 and Hurontario Street/Valleywood Boulevard Interchange

2.4 Trip Generation

The expected travel demands associated with the full build-out of Mayfield West Phase 2 are a direct function of type and density of land use proposed within the area. Generally speaking, residential land uses generate travel demands based on the number of dwelling units within a specific area, the type of dwelling provided and/or the expected population of new residents. Non-residential land uses tend to generate travel demands based on the type of use (i.e. commercial, industrial, institutional, etc.), the number of employees anticipated within the Study Area and the types of services offered.

The Institute of Transportation Engineers (ITE) publishes a document titled Trip Generation (10th Edition)[4], which provides a method for calculating trip production and attraction as a function of an independent variable for specific land uses. The data contained in the ITE Trip Generation provides statistically valid, empirically based estimates of trip generation characteristics for various types and sizes of development based on travel demand patterns observed in communities throughout North America. Local sources can also be used to estimate trip generation characteristics of different land uses such as local trip generation studies and Transportation Tomorrow Survey (TTS) data which provide trip origin/destination data as well as travel mode.

Estimation of travel demand for the Mayfield West Phase 2 Study Area has been based on observed and/or estimated trip generation rates published by ITE for each of the anticipated land uses. In estimating the trip generation for the development, the following ITE land use types have been assumed:

- Land Use Code 210 – Single Family Detached (Low Density Residential)
- Land Use Code 220 – Multifamily Housing (Low-Rise) (Medium Density Residential)
- Land Use Code 221 – Multifamily Housing (Mid-Rise) (High Density Residential)
- Land Use Code 520 – Elementary School
- Land Use Code 530 – High School
- Land Use Code 565 – Daycare
- Land Use Code 770 – Business Park
- Land Use Code 820 – Shopping Centre

[4] Trip Generation 10th Edition; (Institute of Transportation Engineers), September 2017.

2.4.1 Modal Split

Assumptions regarding the share of future trips which will use auto, transit and other non-motorized modes of travel were based on a review of the Transportation Tomorrow Survey (TTS)[5] data and recognized the desire to for a balanced transportation strategy which provides accessibility to local transit service, as well as promotes active modes of transportation. For the purposes of estimating future travel demands, the following mode share targets were assumed:

- Residential – 5% Modal Split Reduction
- Institutional (Elementary School, Secondary School and Daycare) – 5% Modal Split Reduction
- Business Park – 10% Modal Split Reduction
- Specialty Retail – 5% Modal Split Reduction
- Shopping Centre – 5% Modal Split Reduction

2.4.2 Overlap, Pass-By and Multi-Purpose Trip Reduction

Research has shown that neighbourhoods containing a mix of land uses, which have been planned with the focus of creating safe and convenient pedestrian and cycling environments, and are located near transit-supportive developments, generally allow residents and employees to drive significantly less when compared to traditional suburban neighbourhoods.

Standard trip generation estimation procedures are generally based on data collected from single-use, automobile-dependant suburban sites. However, the consideration of trip overlap, pass-by trips and/or multi-purpose trips are all important factors when estimating the extent in which trips made within a mixed-use area are internalized, or satisfied, with both the origin and destination being located within the neighbourhood. The resulting estimates are important in accurately determining the quantity of external trips generated by the development, thereby resulting in impact to the roadway system external to the site.

There is some allowance for trip overlap and multi-purpose trip making when examining commercial land uses, but in general, the ITE trip generation methods do not adequately account for the effects of transit-oriented development, mixed-use neighbourhoods, site design, walkability, transit or regional accessibility – all of which are the key elements of smart growth strategies that result in a sustainable community.

Application of available ITE trip generation rates are appropriate when determining total traffic estimates. However, there are instances when the total number of trips generated by a site is different from the amount of new traffic added to the adjacent road network. For example, retail and

[5] Transportation Tomorrow Survey; (University of Toronto), source: www.jpint.utoronto.ca/drs

commercial-oriented developments are typically located adjacent to busy streets in order to attract the motorists already on the street. These sites attract a portion of their trips from traffic passing the site on the way from an origin (i.e. home) to a primary destination (i.e. work) and may not add new traffic to the adjacent street system.

Pass-by trips are defined as trips made as an intermediate stop on the way from an origin (i.e. home) to a primary destination (i.e. work) without requiring a route diversion. Pass-by trips are attracted from traffic passing the site on an adjacent roadway that offers direct access to the development and are already included in the existing traffic stream and therefore does not result in a new trip. In order to account for trip overlap, pass-by and multi-purpose trip making phenomenon a general reduction of 35% has been applied to the proposed retail commercial uses, and a work-live reduction of 25% has been applied to the residences located adjacent to the Village Centre which consist of ground-floor retail and second storey residential uses.

In summary, new commercial trips generated by the proposed developments are estimated to be approximately 65-75% of the typical trip rates for stand-alone suburban commercial developments.

2.4.3 Trip Generation Estimates

Based on the land use allocation summarized in **Table 2.1**, and a review of modal split characteristics as well as overlap, pass-by and multi-trip interactions, an estimation of net "new" auto trips generated as a result of full build-out of the proposed Mayfield West Phase 2 community has been completed. **Table 2.2** summarizes the resulting trip generation estimates. Detailed trip generation tables which identify land use categories, independent variable selection, quantity, and trip reduction factors are contained in **Appendix B1** for further reference. It should be noted that the estimates of trips generated are estimated on the basis of relatively small traffic analyses zones within the Mayfield West Phase 2 area. Many of these trips are internal to the area and do not create additional trips external to the lands. **Appendix B2** provides a map of the traffic zones used for the trip generation and assignment analyses.

TABLE 2.2: ESTIMATED PEAK HOUR TRIP GENERATION

Number of Peak Hour Trips					
AM Peak Hour			PM Peak Hour		
Inbound	Outbound	**Trips**	Inbound	Outbound	**Trips**
2,687	3,648	**6,351**	4,216	3,650	**7,868**

It has been determined that the full build-out of Mayfield West Phase 2 is estimated to generate approximately 6,351 two-way vehicle trips during the AM peak hour and approximately 7,868 two-way vehicle trips during the PM peak hour. For analyses purposes, it has been assumed that the full build-

out of the area could occur by year 2031, notwithstanding that development is still likely to happen within the 2031 to 2041 period. This assumption provides for a conservative approach to analyzing the impacts of site-generated traffic.

2.5 Trip Distribution and Assignment

Distribution of site-generated auto trips has been based on a review of 2011 TTS trip distribution data which summarized origin/destination patterns for internal and external trips made to and from areas within the GTA and Hamilton. A review of the trip distribution data indicates that a moderate amount of trips are anticipated to be internal to the Town of Caledon, and a considerable amount of external peak hour trips are primarily oriented to and from the City of Brampton.

Tables 2.3 to **2.5** summarize the resulting trip distribution assumptions. Different distributions were assumed for different land uses. It should be noted that the school, residential and employment distributions were based entirely on the results obtained from the TTS data found in **Appendix B3.** By contrast, the commercial distribution was based on an assessment of the market area that would be serviced by the proposed development.

TABLE 2.3: PEAK HOUR TRIP DISTRIBUTION – RESIDENTIAL AND SCHOOL

Origin / Desination	AM Peak		PM Peak	
	Inbound	Outbound	Inbound	Outbound
York & Toronto	11%	23%	27%	6%
Simcoe & Barrie	4%	1%	3%	0%
Dufferin & Orangeville	7%	3%	4%	2%
Waterloo, Wellington & Guelph	1%	0%	0%	0%
Brantford, Hamilton, Halton & Niagara	2%	3%	3%	1%
Caldeon	54%	43%	36%	83%
Brampton	18%	15%	16%	6%
Mississauga	3%	11%	11%	2%
Total	*100%*	*100%*	*100%*	*100%*

TABLE 2.4: PEAK HOUR TRIP DISTRIBUTION – EMPLOYMENT

Origin / Desination	AM Peak		PM Peak	
	Inbound	Outbound	Inbound	Outbound
York & Toronto	15%	6%	14%	16%
Simcoe & Barrie	9%	4%	10%	9%
Dufferin & Orangeville	9%	3%	10%	11%
Waterloo, Wellington & Guelph	1%	1%	1%	1%
Brantford, Hamilton, Halton & Niagara	3%	2%	4%	4%
Caldeon	42%	59%	35%	36%
Brampton	16%	20%	15%	17%
Mississauga	5%	5%	11%	6%
Total	*100%*	*100%*	*100%*	*100%*

TABLE 2.5: PEAK HOUR TRIP DISTRIBUTION – COMMERCIAL

Origin / Desination	Inbound	Outbound
York & Toronto	8%	8%
Simcoe & Barrie	4%	4%
Dufferin & Orangeville	4%	4%
Waterloo, Wellington & Guelph	2%	2%
Brantford, Hamilton, Halton & Niagara	15%	15%
Caldeon	22%	22%
Brampton	35%	35%
Mississauga	10%	10%
Total	*100%*	*100%*

Figures 2.4 and **2.5** illustrate the final assignment of site-generated trips. These trips were assigned to the area roadway network based on the overall directness of travel, accessibility to adjacent freeway facilities and knowledge of local study area travel patterns. Consideration was also given to planned and programmed roadway improvements adjacent to the Study Area summarized in **Section 2.3**.

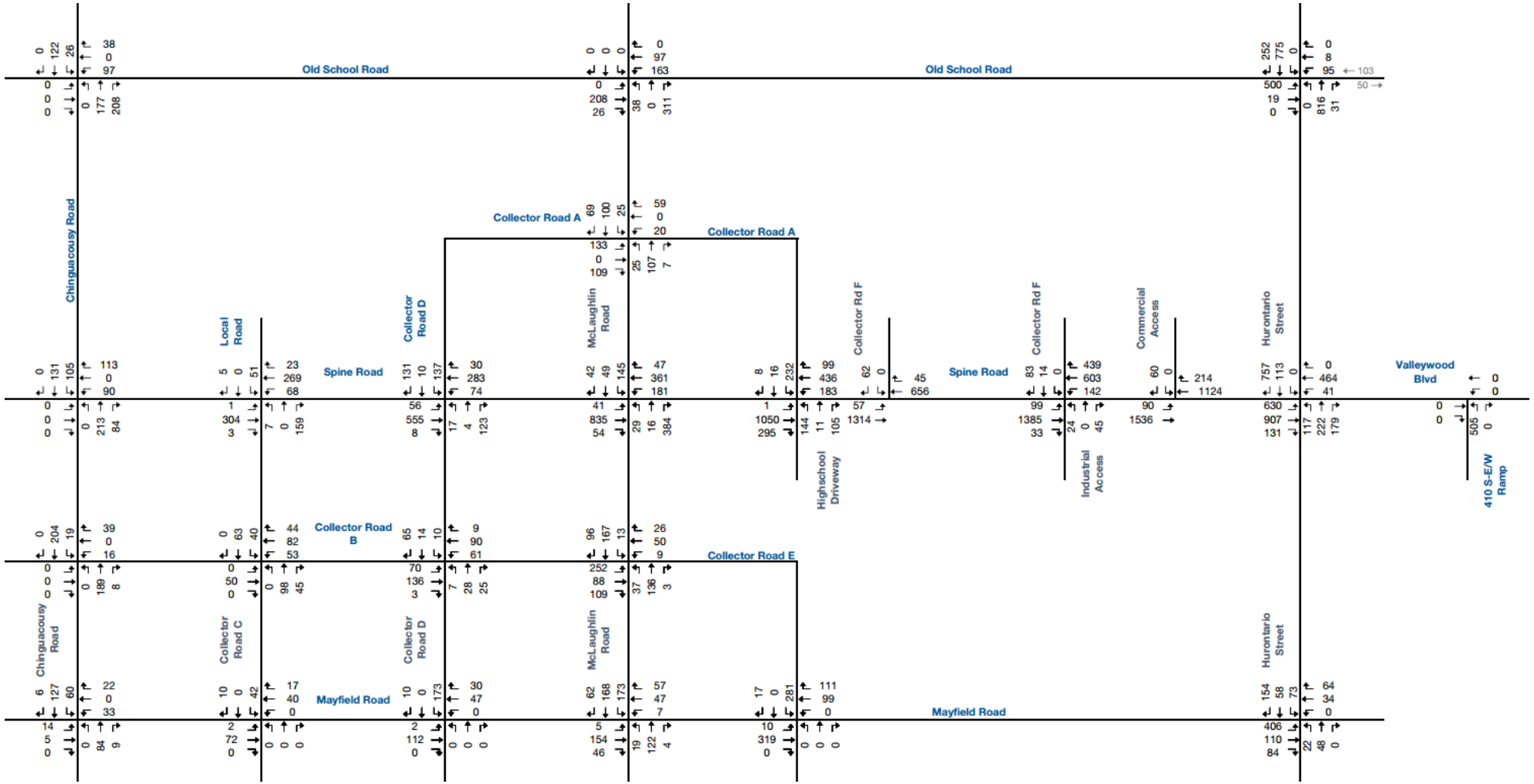
2.6 Future Total Traffic Estimates

Future total traffic is the combination of future background traffic) and site-generated traffic. For Mayfield Road, the east-west mainline link volumes were extracted from the Mayfield Road Class EA Study Traffic Report[6]. Similarly, the north-south volumes for Hurontario Street including the Highway 410 and Valleywood Boulevard interchange were extracted from the McLaughlin Road Class EA report.

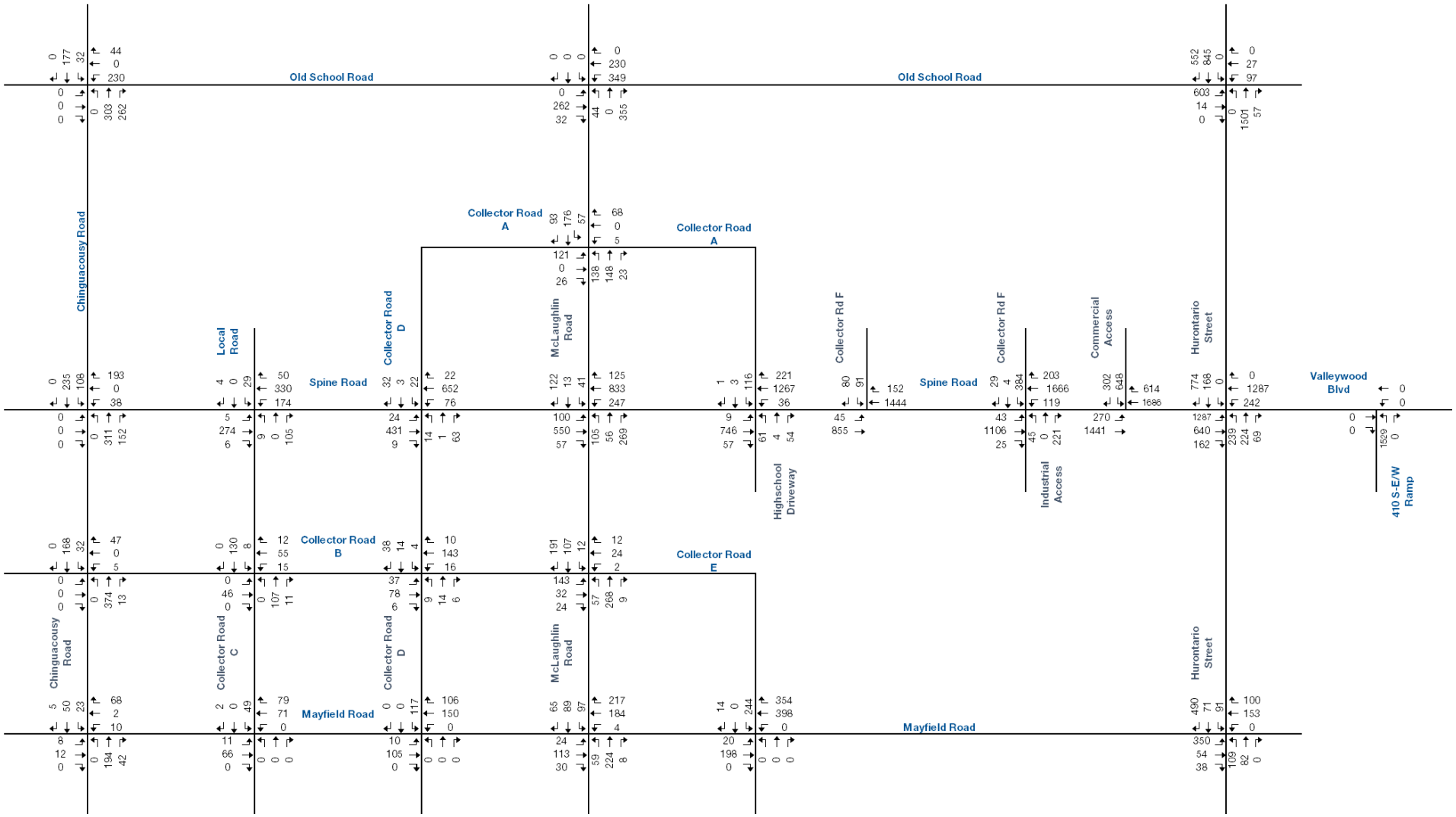
For the 2041 scenario with the GTA West Transportation Corridor in place, the Peel Region EMME model forecasts were used to evaluate the change in travel pattern on the study area road network. **Appendix C** provides the Peel Region EMME model forecasts for 2031 and for 2041 with and without GTA West Transportation Corridor scenarios.

Figures 2.6 to **2.11** illustrate the resulting peak hour future total traffic forecasts for the 2031 and 2041 (with and without GTA West) horizon years.

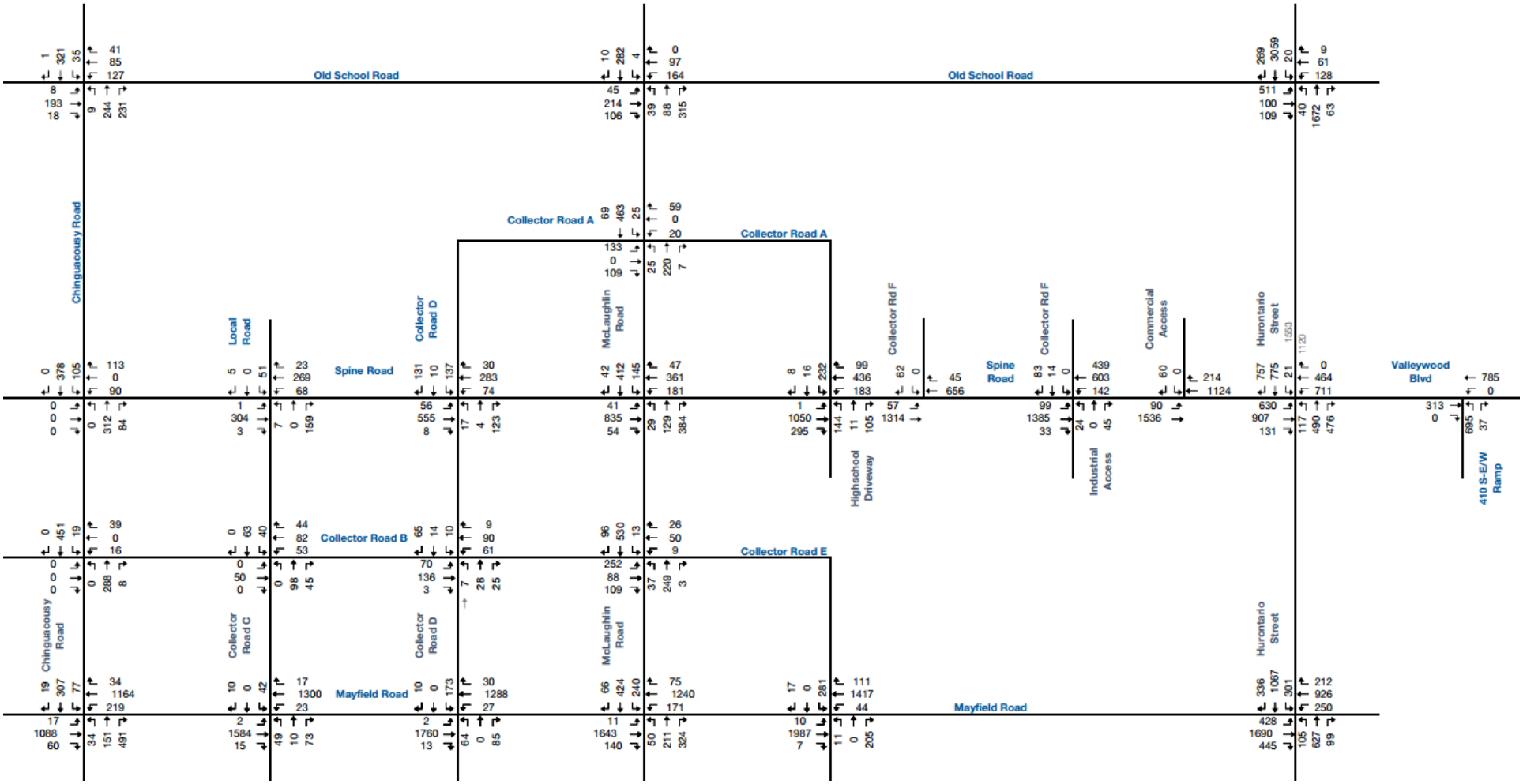
[6] Class Environmental Assessment for Mayfield Road from Chinguacousy Road to Heart Lake Road (Project #10-4350) – Traffic Report, Exhibits 17 and 19; (prepared by GENIVAR), August 2013.



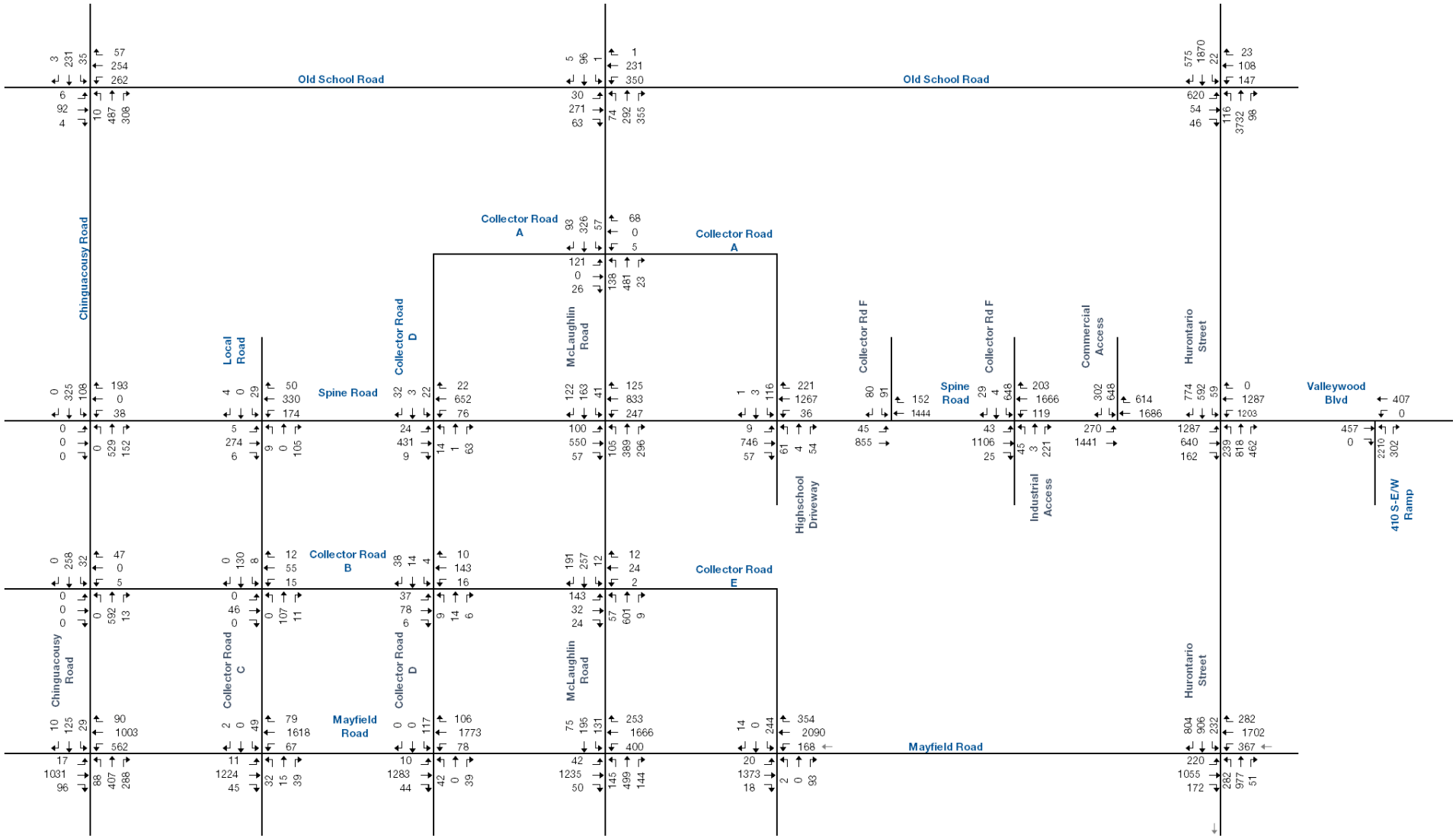
Site Trip Assignment – AM Peak Hour



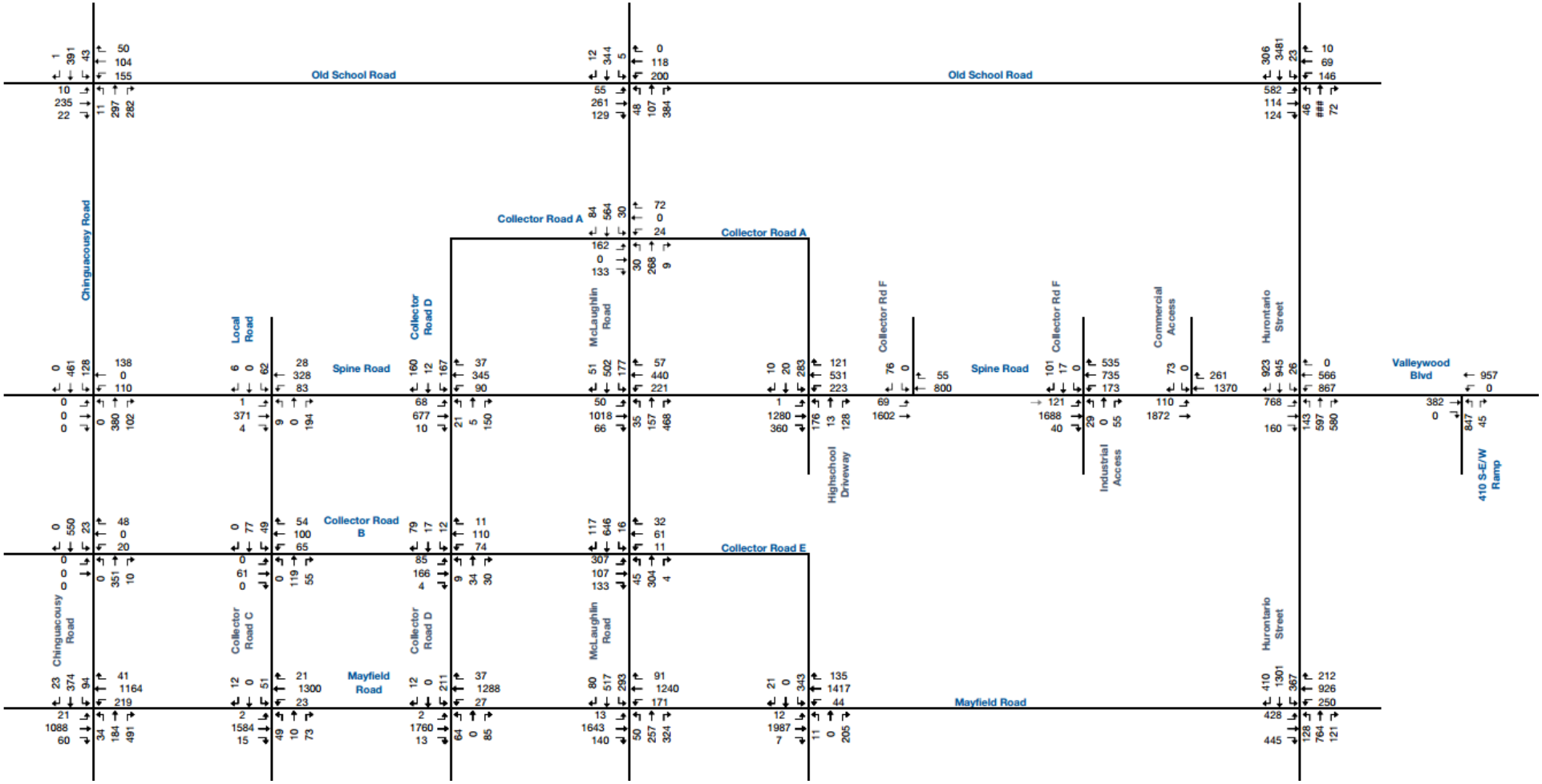
Site Trip Assignment – PM Peak Hour



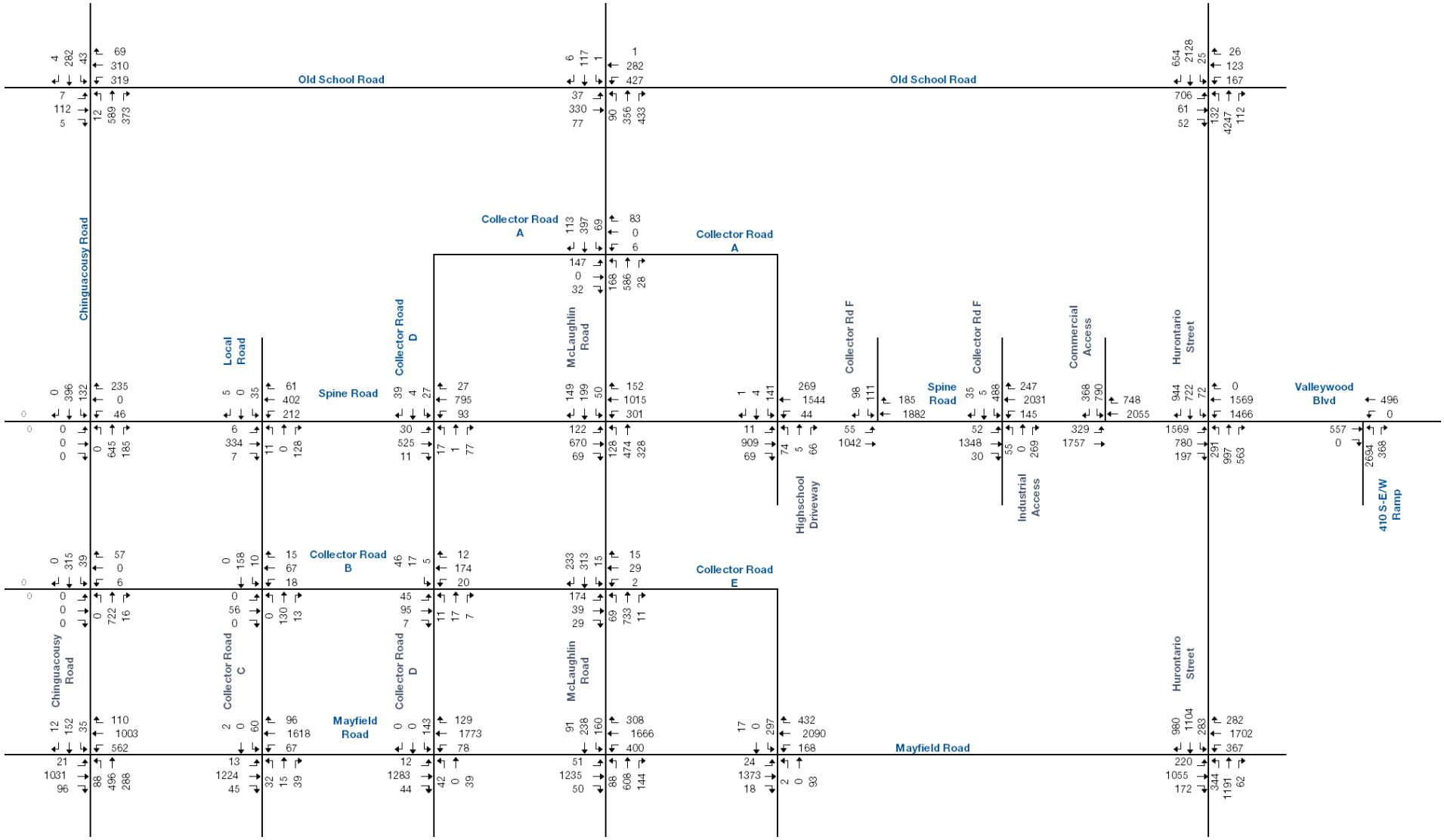
2031 Total Traffic – AM Peak Hour



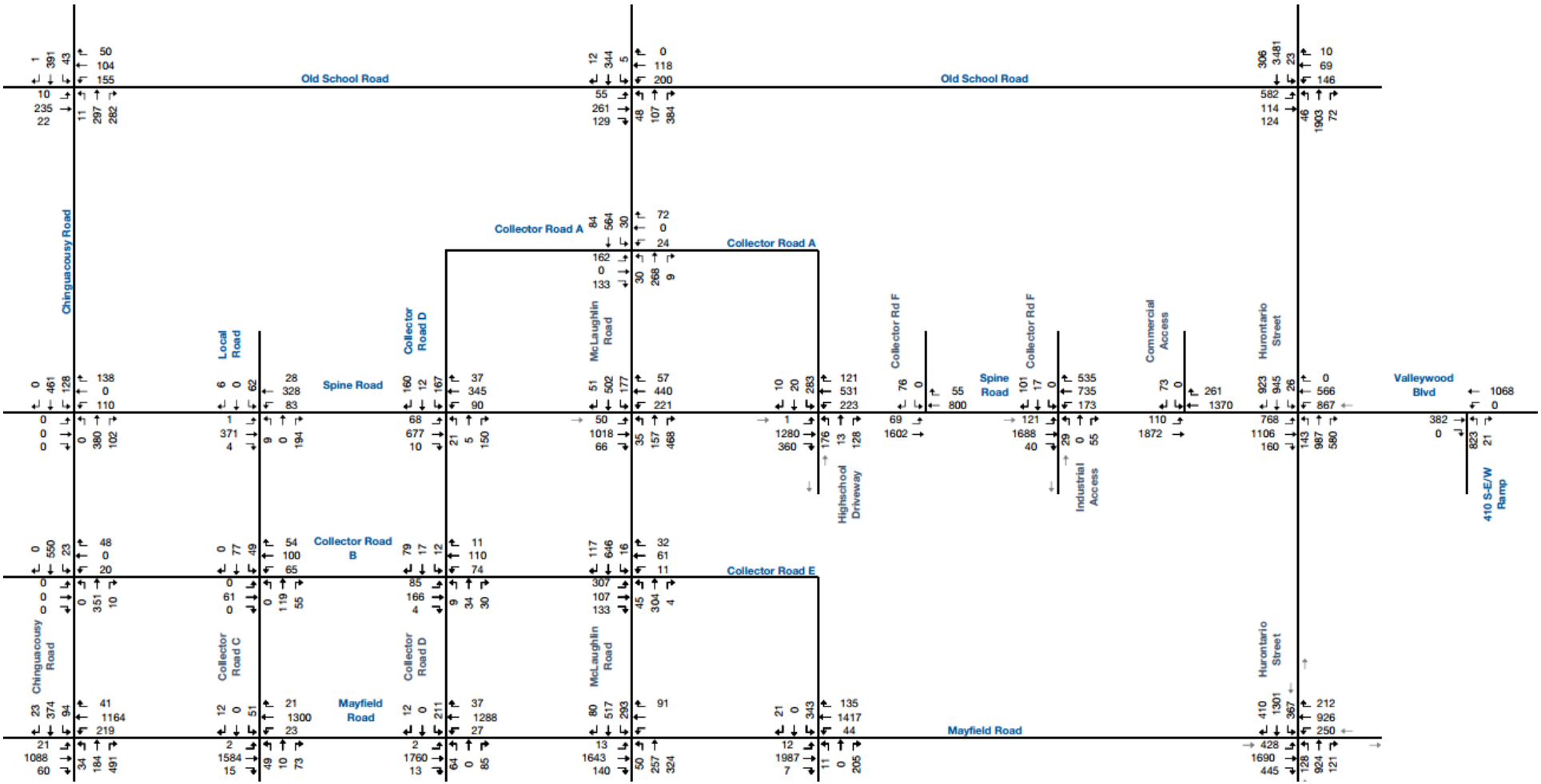
2031 Total Traffic – PM Peak Hour



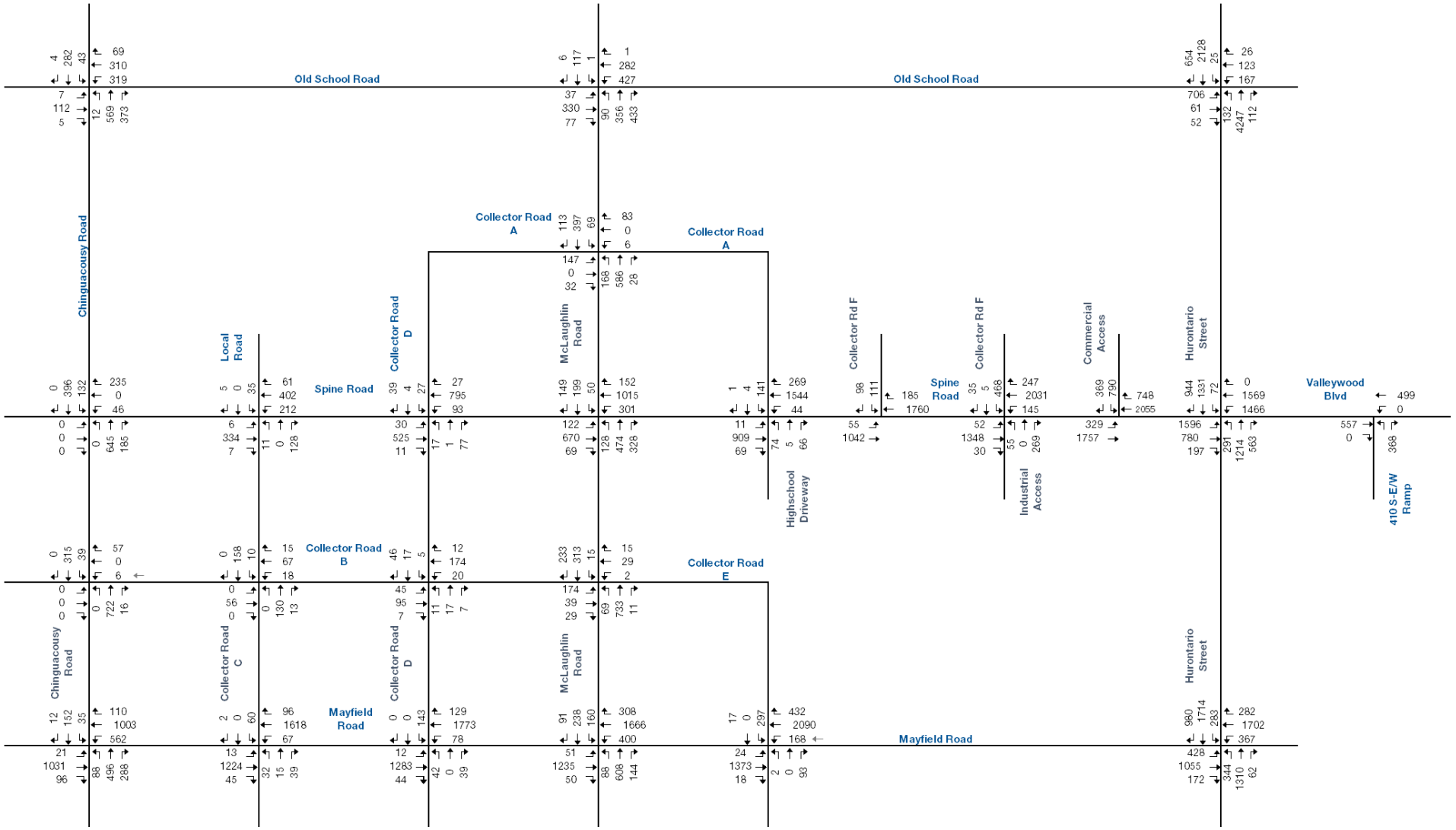
2041 Total Traffic (without GTAW) – AM Peak Hour



2041 Total Traffic (without GTAW) – PM Peak Hour



2041 Total Traffic (with GTAW) – AM Peak Hour



2041 Total Traffic (with GTAW) – PM Peak Hour

2.7 Traffic Analysis

Intersection capacity analyses were completed for key intersections within the Study Area in order to assess future operating conditions, identify potential traffic impacts to the adjacent transportation system, and to confirm future infrastructure needs required to accommodate planned development. Analysis was undertaken based on Highway Capacity Manual (HCM) methodologies and Synchro 9.0 software.

2.7.1 Analysis Methodology

The operation of Study Area intersections has been analyzed to determine intersection level of service (LOS) and intersection capacity utilization (ICU) in an effort to quantify future roadway requirements as well as the extent of impact site traffic will have on the adjacent transportation network.

Signalized Intersections

Capacity analysis for signalized intersections is based on the procedures described in the Highway Capacity Manual (HCM). For signalized intersections, the analysis focuses on performance measures such as intersection level of service (LOS), volume-to-capacity ratios (v/c) and control delay (measured in seconds).

LOS is a qualitative measure of operational performance which is based on control delay. **Table 2.6** summarizes the LOS criteria for signalized intersections. LOS A is represented by a control delay of less than 10 seconds per vehicles (referred to as free-flow operating conditions) while LOS F is represented by a control delay greater than 80 seconds per vehicles (referred to as restricted flow operating conditions).

TABLE 2.6: LOS CRITERIA FOR SIGNALIZED INTERSECTIONS

Level-of-Service	Average Control Delay (seconds per vehicle)	General Description
A	0 - 10	Free Flow
B	>10 - 20	Stable Flow (slight delays)
C	>20 - 35	Stable Flow (acceptable delays)
D	>35 - 55	Approaching Unstable Flow (tolerable delays)
E	>55 - 80	Unstable Flow (intolerable delays)
F	>80	Forced Flow (unacceptable delays)

In determining the LOS performance for signalized intersections, the average control delay per vehicle is estimated for each lane group and is aggregated for each approach, and for the intersection as a whole. Acceptable intersection operations are generally defined as v/c ratios of 0.85 or less for shared movements and 1.00 for exclusive movements, as indicated in the

Region of Peel guidelines for Traffic Impact Studies. Individual movements experiencing a v/c ratio greater than 1.00 are deemed to be "critical" in terms of operation, indicating that the movement may be considered for geometric improvement.

Unsignalized Intersections

When analyzing unsignalized intersections, LOS is determined by the computed or measured control delay and is defined for each minor ("critical") movement. In the determination of the performance of unsignalized intersections, the average control delay per vehicle is estimated for each lane group and is aggregated for each approach. Control delay includes the initial deceleration delay, queue move-up time, stopped delay and the final acceleration delay. The LOS criteria for unsignalized intersections are somewhat different from the criteria used for signalized intersections, primarily because different transportation facilities create different driver perceptions. The expectation is that a signalized intersection is designed to carry higher volumes of traffic and experience greater delay than that of an unsignalized intersection.

Table 2.7 summarizes the LOS criteria for unsignalized intersections. Acceptable operations are normally defined a LOS E or better for individual movements, conditional on the estimated maximum queue length for individual movements being less than the available storage. LOS F occurs where there are not enough gaps of suitable size to allow the minor street demand to safely cross, turn into, or through, traffic on the major street. This is evident from long control delays experienced by minor street traffic and by queuing on the minor street approaches. LOS E represents effective capacity of a movement.

TABLE 2.7: LOS CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level-of-Service	Average Control Delay (seconds per vehicle)
A	0 - 10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	>50

It is important to use caution when using the HCM methodology to assess unsignalized intersections. Even under low-volume traffic conditions, the HCM delay equation will often predict greater than 50 seconds of delay (LOS F) for many unsignalized intersections that permit minor street left-turn movements. LOS F is commonly predicted regardless of the volume of minor street left-turning traffic. HCM notes that "even with a LOS F estimate, most low volume minor-street approaches would not meet any of the Manual on

Uniform Traffic Control Devices (MUTCD) volume or delay warrants for signalization. As a result, analysts that use the HCM level of service thresholds to determine the design adequacy of two-way stop controlled intersections should do so with caution."

Intersection Capacity Utilization

The Intersection Capacity Utilization (ICU) method is more precise and less subject to manipulation when compared to LOS performance, and is intended to be used in planning applications, such as future roadway design. The objective function of ICU is based on volume-to-capacity ratios, rather than delay; therefore representing an estimated measurement of true capacity at an intersection. The ICU performance measures are designed to be used in conjunction with delay-based methods, such as LOS, in order to represent overall intersection performance.

2.7.2 2031 Geometric Requirements

The determination of future intersection geometric requirements was based on an iterative approach which examined the forecasted peak hour traffic volumes and various modes of intersection traffic control in order to develop recommended lane requirements which balance the need for high levels of service and safe operations, with the desire to design a transportation network that encourages all modes of travel.

The recommended intersection geometric requirements are to be used in conjunction with the findings of the Mayfield Road Class EA (see **Table 2.8**) and McLaughlin Road Class EA (see **Figure 2.3**). **Table 2.9** graphically summarizes the future intersection lane requirements as a result of forecasted 2031 peak hour traffic volumes and has formed the basis for subsequent traffic analyses.

TABLE 2.8: MAYFIELD ROAD CLASS EA RECOMMENDED ROADWAY IMPROVEMENTS

Roadway	Limits	2031 Improvement
Mayfield Road	Chinguacousy Road to Hurontario Street	Widen to 6-lanes
Chinguacousy Road	Wanless Drive to Mayfield Road	Widen to 4-lanes
Collector Road C	Wanless Drive to Mayfield West Phase 2 limits	New 2-lane Roadway Traffic Signal at Mayfield Road
Collector Road D	Wanless Drive to Mayfield Road	New 2-lane Roadway Traffic Signal at Mayfield Road
McLaughlin Road	Wanless Drive to Mayfield Road	Widen to 4-lanes
Collector Road E		Traffic Signal at Mayfield Road

TABLE 2.9: INTERSECTION LANE REQUIREMENTS

Intersection	Traffic Control	Eastbound			Westbound			Northbound			Southbound		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1: Chinguacousy Rd & Old School Rd	TWSC - EW												
2: McLaughlin Rd & Old School Rd	TCS												
3: Hurontario St & Old School Rd	TCS												
4: Mayfield Rd & Chinguacousy Rd	TCS												
5: Mayfield Rd & McLaughlin Rd	TCS												
6: Mayfield Rd & Hurontario St	TCS												
7: 410 S-E/W Ramp & Valleywood Blvd	TCS												
9: McLaughlin Rd & Collector Rd A	TCS												
10: The Spine Rd & Chinguacousy Rd	TWSC - EW												
11: Collector Rd C/Local Road & The Spine Rd	TWSC - NS												
12: The Spine Rd & Collector Rd D	TCS												
13: The Spine Rd & McLaughlin Rd	TCS												
14: HS Driveway/Collector Rd A & The Spine Rd	TCS												
15: The Spine Rd & Collector Rd F	TCS												
16: Industrial Access/Collector Rd F & The Spine Rd	TCS												
17: The Spine Rd & Commercial Access	TCS												
18: The Spine Rd & Hurontario St	TCS												
19: Chinguacousy Rd & Collector Rd B	TWSC - EW												
20: Collector Rd C & Collector Rd B	TWSC - NS												
21: Collector Rd D & Collector Rd B	TWSC - EW												
22: McLaughlin Rd & Collector Rd B/Collector Rd E	TCS												
24: Collector Rd C & Mayfield Rd	TCS												
25: Collector Rd D & Mayfield Rd	TCS												
25: Collector Rd E & Mayfield Rd	TCS												

Legend:

TCS – Traffic Control Signal
TWSC – Two-Way Stop Control
AWS – All-way Stop Control

2.7.3 2031 Total Traffic Operations

Table 2.10 summarizes operational conditions and performance measures for each of the Study Area intersections under future 2031 peak hour traffic conditions. For analysis purposes, cross-section requirements and lane configurations for intersections with Mayfield Road, Hurontario Street, and the ramps for the Valleywood Boulevard interchange were consistent with the recommendations made as part of the subject Class EA studies. **Appendix D** contains the detailed Synchro output.

For the 2031 AM peak hour:

- All stop-controlled intersections are expected to operate acceptably, with overall levels of service ranging from LOS A to LOS D;
- All signalized intersections except Hurontario Street and Old School Road are expected to operate acceptably, with overall levels of service ranging from LOS B to LOS E and a maximum ICU of 95%; and
- The Hurontario Street and Old School Road intersection is expected to experience operational issues, with an overall LOS F, an ICU of 135% and delay of approximately 177 seconds projected. This significant delay can be attributed to projected traffic volumes for the northbound through, southbound through, and eastbound left-turn movements. With delays of this magnitude, it is reasonable to assume that traffic patterns will adjust, especially given available capacity at the McLaughlin Road and Old School Road intersection. Reassigning some of the eastbound left turning vehicles to McLaughlin Road and introducing a dedicated left-turn lane and shared through/left-turn lane in the eastbound direction would improve intersection operation.

For the 2031 PM peak hour:

- All stop-controlled intersections are expected to operate acceptably, with an overall LOS A, except for Chinguacousy Road and Old School Road (LOS F). The installation of traffic control signals (if warranted) or a roundabout could help to mitigate the high westbound left-turn volumes.
- Most signalized intersections are expected to operate acceptably, with overall levels of service ranging from LOS A to LOS C and a maximum ICU of 98% projected. Exceptions include:
  - Hurontario Street and Old School Road, which is expected to experience operational issues with an overall LOS F, an ICU of 158% and delay of approximately 263 seconds projected. Like the AM peak hour, reassigning some of the eastbound left turning vehicles to McLaughlin Road and introducing a shared through/left-turn lane in the eastbound direction would significantly improve intersection operation.

TABLE 2.10: INTERSECTION PERFORMANCE – 2031 FUTURE TRAFFIC CONDITIONS

Intersection	Traffic Control	AM Peak Hour			PM Peak Hour		
		Overall Delay	Overall LOS	ICU %	Overall Delay	Overall LOS	ICU %
1: Chinguacousy Rd & Old School Rd	AWSC	25.8	D	72.0%	143	F	89.7%
2: McLaughlin Rd & Old School Rd	TCS	10.3	B	67.5%	24.6	C	84.6%
3: Hurontario St & Old School Rd	TCS	176.5	F	135.2%	258.1	F	157.7%
4: Mayfield Rd & Chinguacousy Rd	TCS	25.4	C	76.7%	28.5	C	84.2%
5: Mayfield Rd & McLaughlin Rd	TCS	27.5	C	79.5%	25.9	C	79.4%
6: Mayfield Rd & Hurontario St	TCS	62.1	E	85.9%	49.7	D	100.7%
7: 410 S-E/W Ramp & Valleywood Blvd	TCS	11.6	B	48.2%	21.2	C	82.3%
9: McLaughlin Rd & Collector Rd A	TCS	10.4	B	49.3%	10	A	53.8%
10: The Spine Rd & Chinguacousy Rd	TWSC - EW	3.9	A	37.2%	3.6	A	47.2%
11: Collector Rd C/Local Road & The Spine Rd	TWSC - NS	4.1	A	46.5%	3.8	A	42.6%
12: The Spine Rd & Collector Rd D	TCS	12.3	B	62.5%	4.3	A	56.9%
13: The Spine Rd & McLaughlin Rd	TCS	29.1	C	91.3%	23.4	C	93.0%
14: HS Driveway/Collector Rd A & The Spine Rd	TCS	26.9	C	94.9%	21.2	C	86.4%
15: The Spine Rd & Collector Rd F	TCS	11.4	B	50.4%	3.1	A	51.6%
16: Industrial Access/Collector Rd F & The Spine Rd	TCS	16.7	B	74.7%	24.1	C	97.8%
17: The Spine Rd & Commercial Access	TCS	8.5	A	56.2%	49.7	D	107.5%
18: The Spine Rd & Hurontario St	TCS	21.2	C	82.0%	61.7	E	104.5%
19: Chinguacousy Rd & Collector Rd B	TWSC - EW	1.0	A	33.7%	1	A	41.9%
20: Collector Rd C & Collector Rd B	TWSC - NS	7.1	A	40.0%	7.5	A	31.2%
21: Collector Rd D & Collector Rd B	TWSC - NS	8.5	A	27.8%	8.4	A	28.7%
22: McLaughlin Rd & Collector Rd B/Collector Rd E	TCS	16.0	B	51.7%	8.4	A	44.8%
24: Collector Rd C & Mayfield Rd	TCS	4.5	A	47.0%	2.5	A	55.7%
25: Collector Rd D & Mayfield Rd	TCS	10.8	B	57.2%	8.5	A	63.1%
25: Collector Rd E & Mayfield Rd	TCS	16.2	B	76.8%	14	B	81.8%

Legend:

TCS – Traffic Control Signal
TWSC – Two-Way Stop Control
AWS – All-way Stop Control

- Chinguacousy Road and Old School Road, which is expected to experience some operational issues with an overall LOS F and delay of 143 seconds projected. The intersection is expected to have some residual capacity, with an ICU of 90%.
- The intersections of Mayfield Road and Hurontario Street, Spine Road and Commercial Access and Spine Road and Hurontario Street, which are expected to approach capacity with an ICU between 100% and 108%, but have overall levels of service ranging from LOS D to LOS E.

Overall, the traffic analysis illustrated that most Study Area intersections are expected to operate satisfactorily for the 2031 total traffic scenario with Mayfield West Phase 2 development. The Hurontario Street and Old School Road intersection is the only location projected to experience operational issues during both peak hours. With minor geometric improvements (eastbound left-turn lane and shared through/left-turn lane) and redistribution of some traffic to McLaughlin Road, the intersection is expected to operate at more acceptable levels of service.

2.7.4 2041 Total Traffic Operations

Tables 2.11 and **2.12** summarize operational conditions and performance measures for each of the Study Area intersections under future 2041 peak hour traffic conditions, with and without the GTA West Transportation Corridor. **Appendix D** contains the detailed Synchro output.

The tables illustrate that the GTA West Transportation Corridor is not expected to materially impact operation of the Study Area intersections, except for Hurontario Street at Spine Road and at Old School Road. The most significant change occurs at the Hurontario Street and Spine Road intersection, where overall delay is expected to increase from about 108 seconds without GTA West to 153 seconds with the highway during the PM peak hour. This can be attributed to an increase in the number of trips originating from GTA West that will travel southbound on Hurontario Street through the Study Area.

For both the 2041 AM and PM peak hours, all stop-controlled intersections are expected to operate acceptably, with an overall LOS A, except for Chinguacousy Road and Old School Road (LOS F). Again, the installation of traffic control signals (if warranted) or a roundabout could help to mitigate the high westbound left-turn volumes at this location.

For the 2041 AM peak hour, most signalized intersections are expected to operate at an acceptable overall level of service with available capacity. The ICU is estimated to exceed 100% at four intersections, but only Hurontario Street and Old School Road is projected to experience operational issues (LOS F).

TABLE 2.11: INTERSECTION PERFORMANCE – 2041 FUTURE TRAFFIC CONDITIONS WITHOUT GTA WEST

Intersection	Traffic Control	AM Peak Hour			PM Peak Hour		
		Overall Delay	Overall LOS	ICU %	Overall Delay	Overall LOS	ICU %
1: Chinguacousy Rd & Old School Rd	AWSC	88.1	F	85.8%	267.5	F	106.3%
2: McLaughlin Rd & Old School Rd	TCS	12.2	B	78.6%	65.4	E	107.6%
3: Hurontario St & Old School Rd	TCS	241.4	F	152.4%	357.2	F	178.1%
4: Mayfield Rd & Chinguacousy Rd	TCS	35.7	D	91.3%	46	D	99.0%
5: Mayfield Rd & McLaughlin Rd	TCS	35.6	D	94.0%	33.7	C	93.2%
6: Mayfield Rd & Hurontario St	TCS	61.9	E	101.5%	91.4	F	120.6%
7: 410 S-E/W Ramp & Valleywood Blvd	TCS	12.8	B	57.3%	41.8	D	98.9%
9: McLaughlin Rd & Collector Rd A	TCS	11.9	B	58.2%	14.5	B	61.9%
10: The Spine Rd & Chinguacousy Rd	TWSC - EW	5.4	A	43.2%	4.8	A	55.2%
11: Collector Rd C/Local Road & The Spine Rd	TWSC - NS	6.1	A	53.1%	5	A	54.3%
12: The Spine Rd & Collector Rd D	TCS	9.3	A	73.4%	9.1	A	65.0%
13: The Spine Rd & McLaughlin Rd	TCS	47.0	D	108.4%	40.1	D	109.7%
14: HS Driveway/Collector Rd A & The Spine Rd	TCS	63.4	E	117.3%	29.7	C	102.4%
15: The Spine Rd & Collector Rd F	TCS	7.7	A	60.0%	4	A	61.5%
16: Industrial Access/Collector Rd F & The Spine Rd	TCS	22.4	C	87.4%	55.9	E	115.6%
17: The Spine Rd & Commercial Access	TCS	8.9	A	67.0%	89.7	F	128.8%
18: The Spine Rd & Hurontario St	TCS	34.2	C	97.0%	108.4	F	124.5%
19: Chinguacousy Rd & Collector Rd B	TWSC - EW	1.1	A	39.7%	1.2	A	49.5%
20: Collector Rd C & Collector Rd B	TWSC - NS	7.9	A	45.2%	7.9	A	35.3%
21: Collector Rd D & Collector Rd B	TWSC - NS	9.3	A	31.0%	8.9	A	31.8%
22: McLaughlin Rd & Collector Rd B/Collector Rd E	TCS	23.8	C	58.6%	8.5	A	50.3%
24: Collector Rd C & Mayfield Rd	TCS	4.3	A	54.4%	4.0	A	63.6%
25: Collector Rd D & Mayfield Rd	TCS	17.3	B	66.8%	10.9	B	72.5%
25: Collector Rd E & Mayfield Rd	TCS	25.7	C	91.5%	23.7	C	95.3%

Legend:

TCS – Traffic Control Signal
TWSC – Two-Way Stop Control
AWS – All-way Stop Control

TABLE 2.12: INTERSECTION PERFORMANCE – 2041 FUTURE TRAFFIC CONDITIONS WITH GTA WEST

Intersection	Traffic Control	AM Peak Hour			PM Peak Hour		
		Overall Delay	Overall LOS	ICU %	Overall Delay	Overall LOS	ICU %
1: Chinguacousy Rd & Old School Rd	AWSC	88.1	F	85.8%	267.5	F	106.3%
2: McLaughlin Rd & Old School Rd	TCS	12.2	B	78.6%	65.4	E	107.6%
3: Hurontario St & Old School Rd	TCS	241.4	F	152.4%	357.2	F	178.1%
4: Mayfield Rd & Chinguacousy Rd	TCS	33.2	C	91.3%	46	D	99.0%
5: Mayfield Rd & McLaughlin Rd	TCS	38.1	D	94.0%	33.7	C	93.2%
6: Mayfield Rd & Hurontario St	TCS	61.9	E	101.5%	99.4	F	120.6%
7: 410 S-E/W Ramp & Valleywood Blvd	TCS	13.2	B	59.7%	41.9	D	98.9%
9: McLaughlin Rd & Collector Rd A	TCS	11.9	B	58.2%	14.5	B	61.9%
10: The Spine Rd & Chinguacousy Rd	TWSC - EW	5.4	A	43.2%	4.8	A	55.2%
11: Collector Rd C/Local Road & The Spine Rd	TWSC - NS	6.1	A	53.1%	5	A	54.3%
12: The Spine Rd & Collector Rd D	TCS	10.1	B	73.4%	4.4	A	65.0%
13: The Spine Rd & McLaughlin Rd	TCS	48.0	D	108.4%	40.1	D	109.7%
14: HS Driveway/Collector Rd A & The Spine Rd	TCS	67.1	E	117.3%	30	C	102.4%
15: The Spine Rd & Collector Rd F	TCS	7.1	A	60.0%	4.2	A	61.5%
16: Industrial Access/Collector Rd F & The Spine Rd	TCS	21.5	C	87.4%	58.1	E	115.6%
17: The Spine Rd & Commercial Access	TCS	7.2	A	67.0%	91.7	F	128.8%
18: The Spine Rd & Hurontario St	TCS	36.8	D	97.0%	152.8	F	141.3%
19: Chinguacousy Rd & Collector Rd B	TWSC - EW	1.1	A	39.7%	1.2	A	49.5%
20: Collector Rd C & Collector Rd B	TWSC - NS	7.9	A	45.2%	7.9	A	35.3%
21: Collector Rd D & Collector Rd B	TWSC - NS	9.3	A	31.0%	8.9	A	31.8%
22: McLaughlin Rd & Collector Rd B/Collector Rd E	TCS	22.7	C	58.6%	8.7	A	50.3%
24: Collector Rd C & Mayfield Rd	TCS	4.8	A	54.4%	4.0	A	63.6%
25: Collector Rd D & Mayfield Rd	TCS	16.6	B	66.8%	10.9	B	72.5%
25: Collector Rd E & Mayfield Rd	TCS	24.0	C	91.5%	23.7	C	95.3%

Legend:

TCS – Traffic Control Signal
TWSC – Two-Way Stop Control
AWS – All-way Stop Control

For the 2041 PM peak hour, the following four signalized intersections are expected to operate over capacity (ICU greater than 100%) and provide a poor level of service (LOS F):

- Hurontario Street and Old School Road;
- Mayfield Road and Hurontario Street;
- Spine Road and Commercial Access; and
- Spine Road and Hurontario Street.

The other signalized intersections are expected to operate at an acceptable overall level of service with available capacity.

Overall, the traffic analysis illustrated that most Study Area intersections are expected to operate satisfactorily for the 2041 total traffic scenario with Mayfield West Phase 2 development, with or without the GTA West Transportation Corridor in place. But more will be approaching capacity or experiencing operational issues.

The Hurontario Street is the most critical corridor within the Study Area and is expected to be over capacity by 2041. The intersections on Hurontario Street at Spine Road and Old School Road are projected to experience the longest delays. To address these long-term operations issues, widening of Hurontario Street from two to three lanes in each direction in this area should be further examined. It is also conceivable that travel behaviour will change over time and these operational concerns may not be as significant. Traffic conditions should continue to be monitored for change over time.

2.8 Recommended Transportation Strategy

This section summarizes the updated recommended transportation strategy, incorporating revisions highlighted in previous sections of this report and previously made through the first addendum to the TMP (i.e. removal of the Collector Road A crossing of the Orangeville Brampton Railway (OBRY) rail corridor). The strategy is based on and developed to accommodate the projected population and employment growth of the entire Mayfield West Phase 2 area, as contemplated by the proposed Stage 2 Framework Plan provided in **Figure 1.1**. The overall strategy reflects and has kept with the broad transportation system principles set out in the Official Plan.

The strategy achieves the urban design vision for Mayfield West Phase 2, which promotes a diverse transportation system that supports urban development while providing an emphasis on non-auto modes of travel including public transit, cycling and walking. The resulting plan allows for use by all modes of transportation and strives to achieve an acceptable balance between the need to provide acceptable levels of mobility and land access, and the development of a vibrant and sustainable Village Centre that provides a strong emphasis on active transportation. The networks described below have been designed to support the proposed levels of development and incorporate the results of previous technical work

undertaken, as well as reflect comments received from the public and review agencies through the Mayfield West Phase 2 planning process. The recommended road network plan forms the basis upon which the transit, cycling and pedestrian plans have been developed. In combination, these networks form the recommended transportation strategy, which supports the proposed levels of development.

2.8.1 Road Network Plan

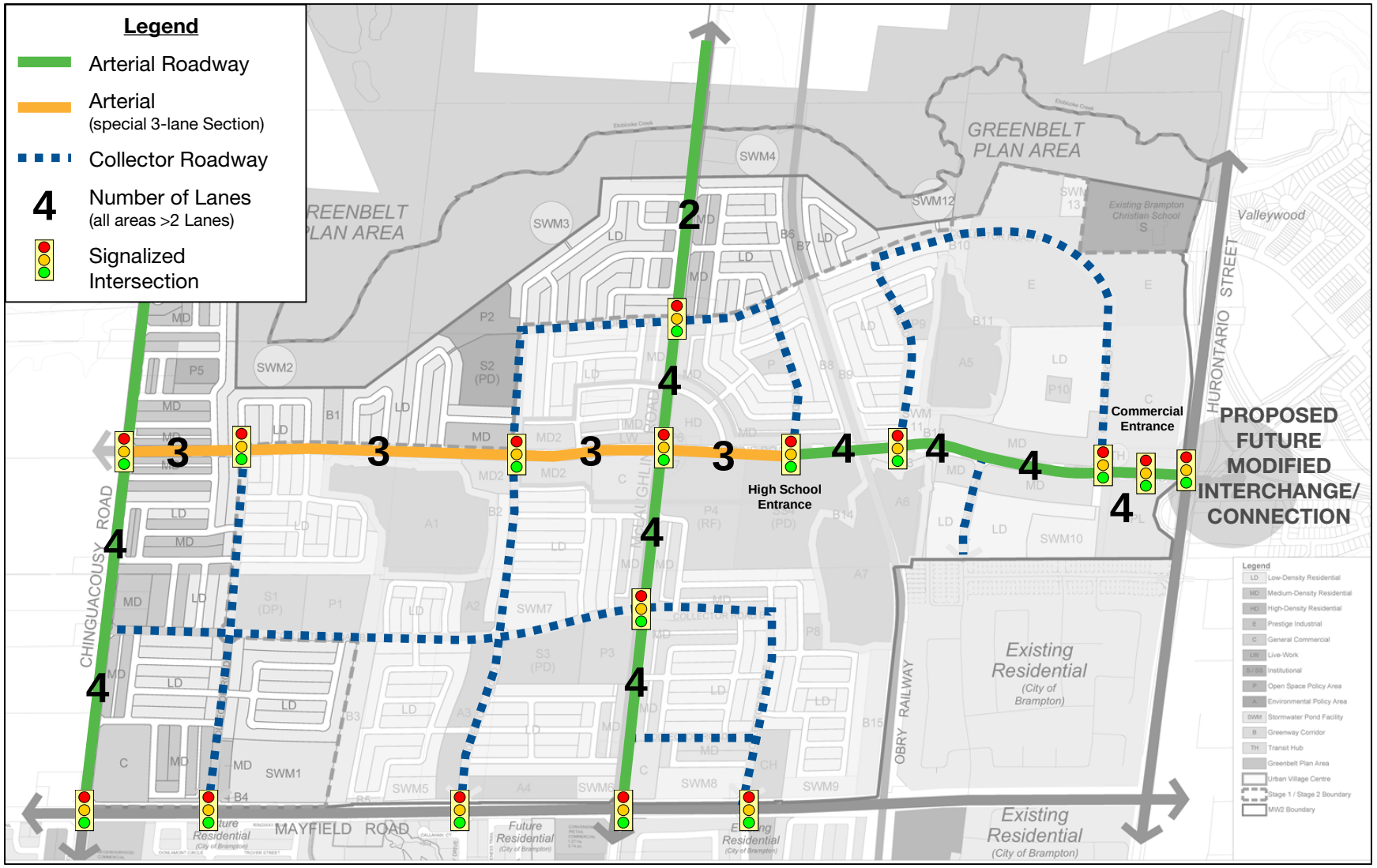
Figure 2.12 illustrates the updated recommended road network plan for Mayfield West Phase 2. The plan provides an integrated road structure that is supportive of public transit and links the Mayfield West Phase 2 area to the adjacent regional road structure through the development of a modified grid roadway network.

The proposed arterial roads denoted on the plan provide mobility within the area, as well as connections to the surrounding Municipal arterial roads, Regional roads and Provincial highways. The arterial network consists of:

- An east–west Spine Road extending from Chinguacousy Road to Hurontario Street and the Highway 410 interchange at Valleywood Boulevard. This internal linkage provides direct access to and connectivity between the primary activity areas within the Mayfield West Phase 2 area, and needed capacity to support the development. The Spine Road also accommodates transit service and connects with the proposed Transit Hub, as well as serving as a main pedestrian and cycling corridor, linking the Village Centre, public facilities and recreational destinations by way of an interconnected system of on and off-street cycling and pedestrian routes; and
- The extension of Chinguacousy Road and McLaughlin Road north from Mayfield Road, generally along their current alignments. McLaughlin Road will serve as the primary gateway into the Mayfield West Phase 2 lands from the north. This roadway will bisect the development, providing access to the residential lands as well as key access through the Village Centre. It will also serve as a key transit route, effectively connecting Mayfield West Phase 2 with Mayfield Road, and a pedestrian and cycling corridor.

The Town is currently undertaking an Class Environmental Assessment for the Spine Road and McLaughlin Road, and design of the Highway 410 interchange modifications, through the McLaughlin Road Class EA.

Supporting the road network are designated collector roads providing connectivity between the neighbourhoods within Mayfield West Phase 2 as well as connections to the arterial roads. The collector roads will also accommodate walking, cycling and public transit services within the community. The plan identifies locations within the road network where traffic calming measures should be considered to help minimize potential impacts of traffic on the community environment.



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Updated Road Network Plan

The proposed road network plan includes one crossing of the Orangeville Brampton Railway (OBRY) at the Spine Road, with gate protection recommended.

2.8.2 Public Transit Plan

Figure 2.13 shows the updated local bus service plan. Public transit services are an important component of the TMP. The plan recommends local bus services integrated with the transit services in adjacent urban areas and connecting to GO Transit rail stations and other main activity centres within the City of Brampton.

The transit hub located within the mixed use commercial area will provide connectivity between the local bus services as well as with GO Transit routes in this part of Peel Region and with a planned bus rapid transit service on the Hurontario Street corridor. The transit hub located within or adjacent to the mixed use commercial area and the designated employment areas will also encourage the use of public transit for travel to and from these activity centres. Detailed design guidelines have been included within the TMP for the effective accommodation of bus operations on the collector streets and arterial roads within Mayfield West Part 2.

2.8.3 Pedestrian and Cycling Plan

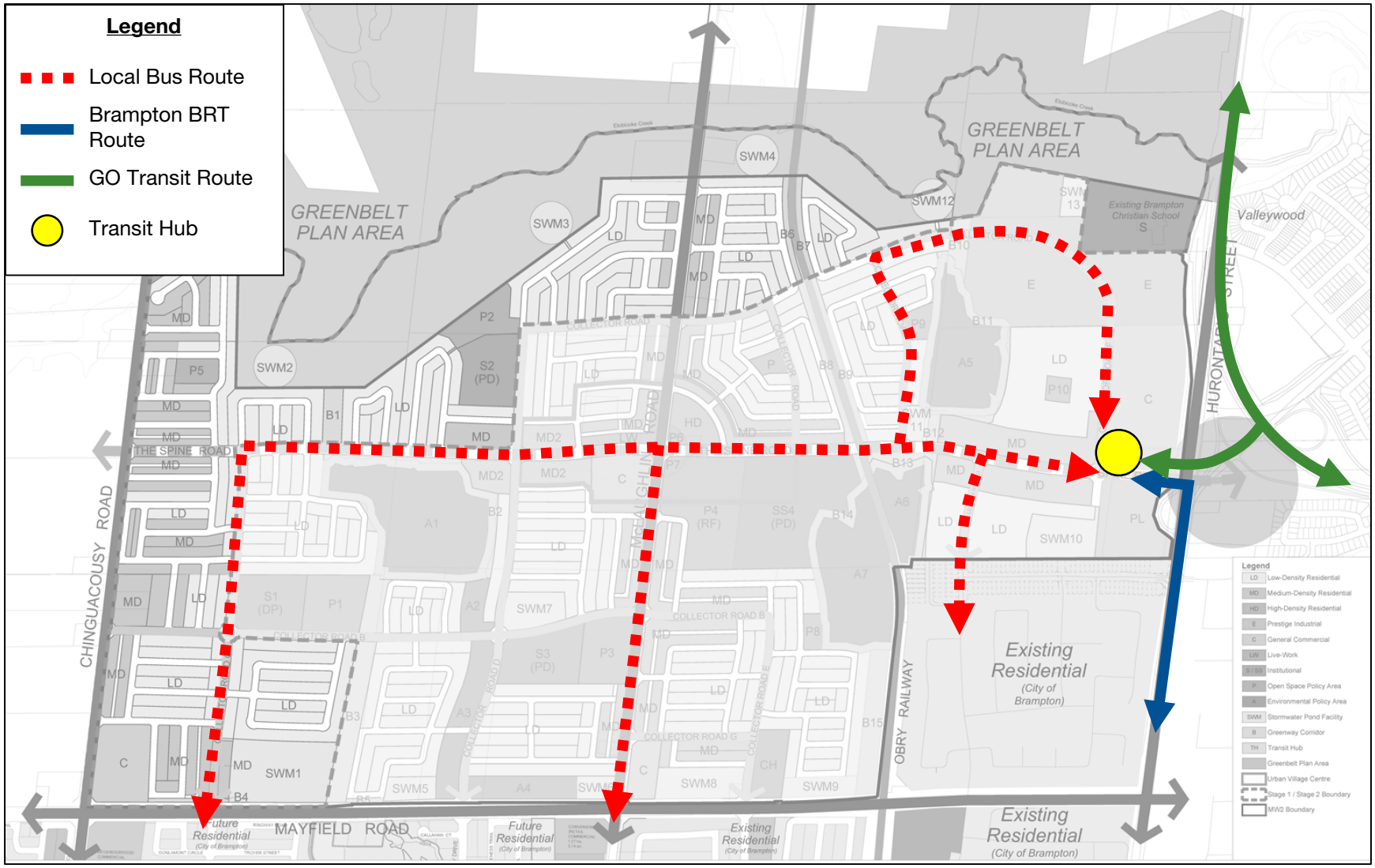
Figure 2.14 illustrates the recommended pedestrian and cycling plan from the Mayfield West Phase 2 TMP. The plan goals are to encourage healthy lifestyles and to reduce vehicular travel within the Mayfield West Phase 2 area.

The pedestrian and cycling facilities have been planned to connect to and be fully integrated with the trails and cycling routes in the surrounding areas of Caledon, Brampton and Peel Region. The pedestrian facilities are aimed at meeting the needs of leisure walkers, hikers and runners and will consist of:

- On-street sidewalk facilities on arterial roads, collector streets and most local streets;
- Greenway and open space trails adjacent to the natural areas;
- Multi-use trails along available corridors and trail linkages to ensure connectivity within neighbourhood areas.

The cycling facilities are planned to meet the needs of commuter, utilitarian and recreational cyclists who typically represent a wide range of cycling ability and confidence. The cycling plan includes wide bike lanes on the arterial roads, bike lanes and/or widened pavement along collector roads and off-road cycling trails. The plan also outlines supporting measures to accommodate cyclists and to achieve a reasonable safe interface between cycling activity and vehicle traffic.

The plan still needs to be updated to reflect the revised roadway network and other changes proposed through the revised Framework Plan.



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Updated Transit Plan

Recommended Cycling and Trails Plan

2.8.4 Supporting Transportation Policies

To further support the Town's vision for the Mayfield West Phase 2 community, the TMP includes a series of supporting transportation policies. A comprehensive parking strategy is outlined, which is designed to provide optimal parking levels to meet the expected parking demand at new developments within the community while avoiding excessive parking supply. Guidelines have been developed based on recent industry experience and studies to set out the amount of parking that should be provided on site for different types of land use. The guidelines include a suggested approach for managing on street parking in residential areas and guidelines for the provision of bicycle parking in new development. The TMP also outlines an approach and guidelines to travel demand management strategies to encourage the use of sustainable modes of transportation and minimize single occupant vehicle trips.

3 Conclusions and Recommendations

3.1 Conclusions

The purpose of this study was to update the Mayfield West Phase 2 Transportation Master Plan to incorporate changes to the overarching development Framework Plan and more current base data. Consistent with the original TMP, a nominal horizon year of 2031 was used for the analysis of future travel demands. A 2041 horizon year was also assessed, with two scenarios reflecting travel demand with and without the proposed GTA West Transportation Corridor analyzed.

Full build-out of the Mayfield West Phase 2 area at higher development densities for the Stage 2 lands is estimated to generate approximately 6,350 and 7,870 two-way vehicle trips during the AM and PM peak hours, respectively. Compared to the December 2015 TMP, the trip generation estimate is slightly lower for AM peak hour (previously 6,420 trips) but higher for the PM peak hour (previously 7,250 trips). This variance can be attributed to the change in land use and use of more current (different) trip generation data.

The operational analysis completed using the updated traffic forecasts concluded that:

- For the 2031 total traffic scenario, most Study Area intersections are anticipated to operate satisfactorily, except for Spine Road and Commercial Access and Spine Road and Hurontario Street, which are projected to reach (and slightly exceed) capacity. Hurontario Street and Old School Road is also a (more significant) concern, as the intersection is expected to experience operational issues in the future. The report identified a few measures that should be considered to address this anticipated concern.
- The GTA West Transportation Corridor is not expected to materially impact operation of the Study Area intersections with the 2041 total traffic scenario, except for Hurontario Street at Spine Road and at Old School Road.
- Projected traffic volumes in the Hurontario Street corridor are expected to reach and exceed available capacity by the year 2041. Capacity expansion, such as widening the road to six lanes, will likely need to be considered to alleviate this anticipated concern. The configuration and feasibility of any improvements to this corridor will need to be determined in concert with the GTA West Transportation Corridor Route Planning and Environmental Assessment Study.

3.2 Recommendations

Based on the findings of this study, it is recommended that:

- The Recommended Road Network Plan (Figure 7.1) contained in the Mayfield West Phase 2 TMP be updated to include eastbound left-turn and shared through/left-turn lanes at the intersection of Hurontario Street and Old School Road by 2031;
- The network plans shown in **Figures 2.12, 2.13** and **2.14** be implemented as development of the Mayfield West Phase 2 area progresses;
- Traffic control signals be considered at the intersection of Chinguacousy Road and Old School Road. The actual need and approximate timing of installation will be confirmed through future signal warrant assessment in accordance with Town of Caledon and Peel Region policies; and
- The widening of Hurontario Street from two to three lanes in each direction from Old School Road to the Highway 410 and Valleywood Boulevard Interchange be explored, subject to the GTA West Transportation Corridor Route Planning and Environmental Assessment Study.