March 24, 2023

Riepma Consultants Inc.
220 Kempenfelt Drive
Barrie ON L4M 1C4

Attention: Mr. Clarence Riepma, P.Eng., MES, RPP, MCIP

Re: Proposed Tullamore Industrial Development
6086, 6186, 6026, 6230 Mayfield & 12151 Airport Road
Town of Caledon, Regional Municipality of Peel
Transportation Study

1.0 Introduction/Site Description

This transportation study presents a high-level assessment of the proposed industrial Draft Plan of Subdivision from a traffic standpoint with respect to the anticipated impacts of the proposed Draft Plan at the adjacent roadways. It should be noted that this is a transportation study reflecting the early planning stages of the development of the draft plan and is being prepared in advance of the site Traffic Impact Study (TIS) and Functional Internal Traffic Study (FITS).

The development property is 18.179 hectares (ha) in size and is located at the northeast corner of the intersection of Airport Road (Regional Road 7) and Mayfield Road (Regional Road 14), in the Town of Caledon, the Regional Municipality of Peel. The location is illustrated in **Figure 1**.

As shown in **Figure 2**, it is proposed to develop the land with 6 lots:

- Lot 1 Highway Commercial (Current Zoning: CH-480-H13)
- Lots 2, 3, 5 & 6 Prestige Industrial (Current Zoning: MP-482-H13)
- Lot 4 Serviced Industrial (Current Zoning: MS-483-H13)

The purpose of this study is to provide a review of the proposed draft plan regarding the road network and traffic flow. Based on the permitted land use table provided by the Town of Caledon Zoning, the following uses are currently permitted:

CH – Highway Commercial (Lot 1)

- *Animal Hospital*
- *Clinic*
- *Drive-Through Service Facility*
- *Dwelling, Accessory*
- *Dwelling Unit, Accessory*

- *Farmers' Market*
- *Financial Institution*
- *Fitness Centre*
- *Hotel*
- *Motel*
- *Motor Vehicle Gas Bar*
- *Motor Vehicle Rental Establishment*
- *Motor Vehicle Repair Facility*
- *Motor Vehicle Sales Establishment*
- *Motor Vehicle Service Centre*
- *Motor Vehicle Used Sales Establishment*
- *Open Storage Area, Accessory*
- *Parking Area, Commercial*
- *Place of Assembly*
- *Place of Entertainment*
- *Private Club*
- *Restaurant*
- *Retail Store*

MP – Prestige industrial (Lots 2, 3, 5 and 6)

- *Business office*
- *Cannabis-Related Indoor-Use*
- *Dry Cleaning or Laundry Plant*
- *Equipment Storage Building*
- *Factory Outlet*
- *Financial Institution*
- *Gasoline Pump Island, Accessory*
- *Industrial Hemp-Related Indoor-Use*
- *Industrial Use*
- *Light Equipment Rental Establishment*
- *Maintenance Garage, Accessory*
- *Merchandise Service Shop*
- *Place of Assembly*
- *Place of Worship*
- *Research Establishment*
- *Restaurant*
- *Retail Store, Accessory*
- *Training Facility*
- *Warehouse*
- *Warehouse, Public Self-Storage*
- *Warehouse, Wholesale*

MS – Serviced industrial (Lot 4)

- *Adult Video Store*
- *Bulk Storage Facility*
- *Cannabis-Related Indoor-Use*
- *Contractor's Facility*
- *Dry Cleaning or Laundry*
- *Equipment Storage Building*
- *Factory Outlet*
- *Gasoline Pump Island, Accessory*
- *Industrial Hemp-Related Indoor-Use*
- *Industrial Use*
- *Light Equipment Rental Establishment*
- *Maintenance Garage, Accessory*
- *Merchandise Service Shop*
- *Motor Vehicle Body Shop*
- *Motor Vehicle Compound*
- *Motor Vehicle Gas Bar*
- *Motor Vehicle Repair Facility*
- *Motor Vehicle Towing Facility*
- *Open Storage Area, Accessory*
- *Outside Display or Sales Area, Accessory*
- *Research Establishment*
- *Restaurant*
- *Retail Store, Accessory*
- *Transportation Depot*
- *Warehouse*
- *Warehouse, Public Self-Storage*
- *Warehouse, Wholesale*

The Zoning excerpts are included in **Appendix A.**

The exact uses for each lot are unknown at this point and will be dependent on the local demand including subsequent Site Plan Control applications. Once more land use information for each lot becomes available, as mentioned, a site plan application will be applied for and at that time a more detailed traffic impact study will be provided.

For this high-level transportation study, we will assume that lots 2 – 6 are under "Industrial Park" category, and lot 1 is under "Shopping Centre" with the Institute of Transportation Engineer's trip generation handbook, 11th Edition. This assumption is because the permitted uses are predominantly of industrial and commercial nature.

For this study, we will consider one full-moves access to Airport Road and two accesses to Mayfield Road one (1) full-moves and one (1) right in/right out. The access on Airport will be the existing Davis Lane. The full-moves access to Mayfield Road will be aligned

with Maisonneuve Blvd to the south, and the right in/right out access will be approximately 225 metres, as per the minimum spacing requirement outlined in the Region of Peel's Characterization Study (RCS) guidelines, east of the proposed right in/right out access to the Smart Centre site. Note, this Transportation Study and the Smart Centre Transportation Impact Study and Demand Management Plan are complementing each other to address the traffic impacts and site accesses to the various developments located within this quadrant.

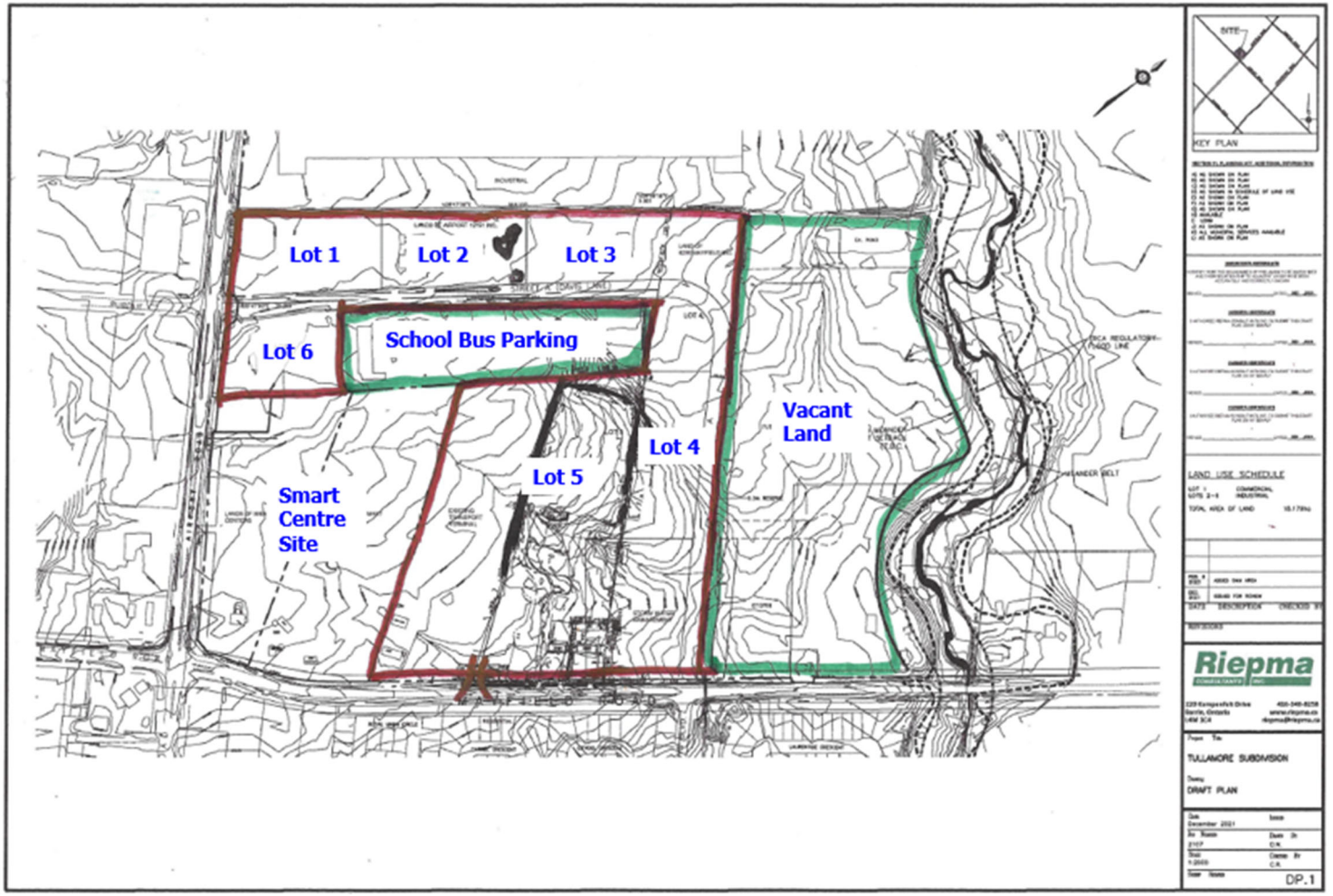
The proposed functional design of the site accesses will be provided during the site plan application stage.

The proposed access to Airport Road (Davis Lane/Perdue Court) is located approximately 450 metres north of the intersection of Airport Road and Mayfield Road. The proposed access to Mayfield Road opposite Maisonneuve Blvd is located approximately 650 metres east of the intersection of Airport Road and Mayfield Rod.

Figure 1 Site Location

Source: Google Maps

Figure 2 Draft Plan



An Updated Plan Will Be Provided Once Finalized

2.0 Existing Conditions

2.1 Existing Road Network

The subject property fronts onto Airport Road (Regional Road 7) and Mayfield Road (Regional Road 14) in the Town of Caledon, the Regional Municipality of Peel. The existing road network, lane configuration and existing traffic control for the study area are shown in **Figure 3**. The details are described below:

- **Airport Road (Regional Road 7)** is a north-south arterial roadway under the jurisdiction of the Regional Municipality of Peel. It has 4 general purpose lanes (2 lanes per direction) urban cross-section, and it maintains a posted speed limit of 60 km/h in the vicinity of the subject site. A multi-use path is provided on the east side.

- **Mayfield Road (Regional Road 14)** is an east-west arterial roadway under the jurisdiction of the Regional Municipality of Peel. It has 2 general purpose lanes rural cross-section and maintains a posted speed limit of 60 km/h in the vicinity of the site. The road has wide shoulders on both sides that can be utilized by pedestrian and cyclists.

- **Perdue Court** is an east-west industrial roadway under the jurisdiction of the Town of Caledon. The road has a rural cross-section with unposted speed limit of 50 km/h. There is a sidewalk on the north side from Airport Road to its western terminus. There are stopping restrictions on both sides of the road.

- **Maisonneuve Blvd** is a north-south collector roadway under the jurisdiction of the Town of Caledon. The road has an urban cross-section with curbs and gutters and has a posted speed limit of 50 km/h. Sidewalks are provided on both sides of the road. On-street parking is allowed on both sides of the road.

2.2 Planned Road Improvement

Based on the Regional Municipality of Peel's 2019 Long Range Transportation Plan and 2021 Capital Program, Mayfield Road is expected to be widened east of Airport Road from two to six lanes in 2023. This will complement the recently completed widening west of Airport Road.

Figure 3 Existing Lane Configurations

Source: Town of Caledon Interactive Map

3.0 Existing Transit Service

The subject site is located at the border of the City of Brampton and The Town of Caledon. It is currently served by the City of Brampton Transit Service.

- Within the Town of Caledon there isn't available transit to serve the site, however with the Community of Bolton, the Town has retained the services of Voyago to

provide local transit service. It is recommended the Town of Caledon expand the transit service to the site as land uses expand across the Mayfield Road corridor

- GO Transit provides bus service to the Regional Road 50/Mayfield Road Park and Ride located on the southwest corner of the intersection of Regional Road 50/Albion Vaughan Road-Mayfield Road. The following routes are operated by GO Transit:

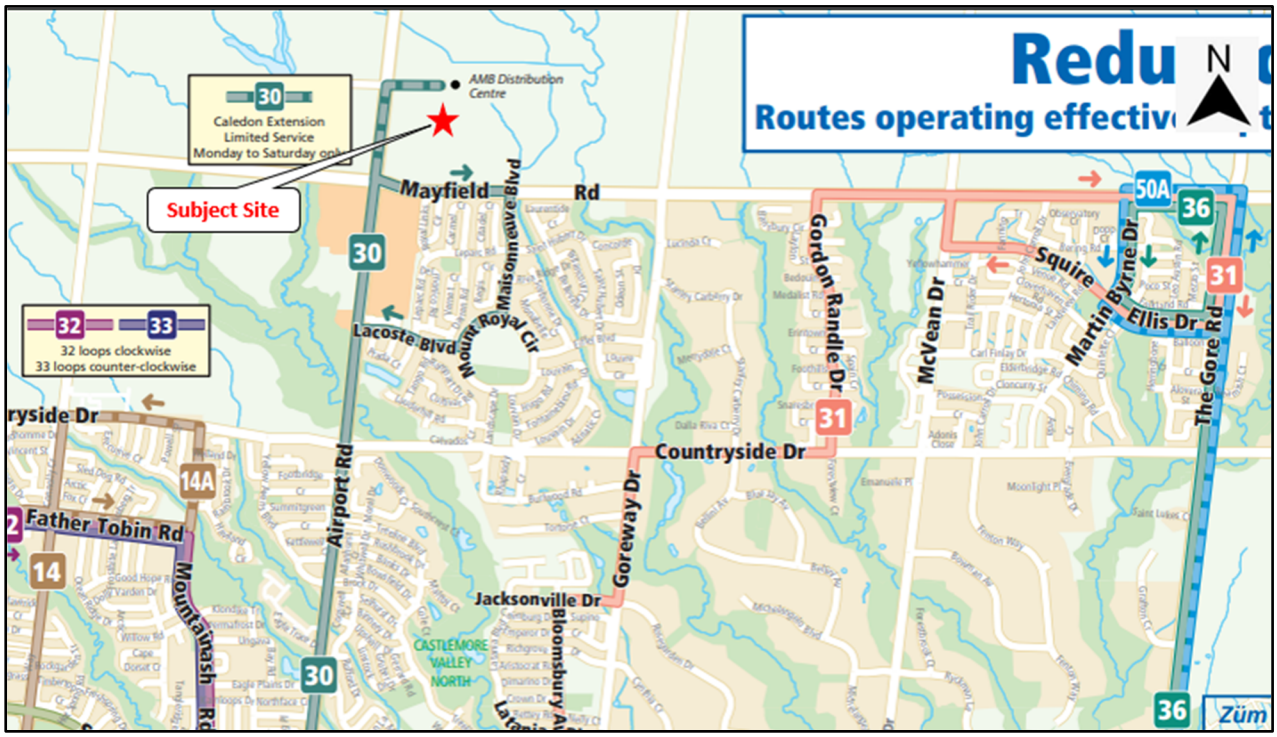
    - Bus Route 38 (Bolton) operates between HWY 50 at Colombia Way Downtown Bolton, and the Malton GO Station. Service is provided Monday to Friday only, from 4:12 PM to 6:42 PM (2hrs and 30min). Headways are approximately 50 minutes during peak hours. This route is approximately 8 km from the subject site.

- City of Brampton Bus Route 30 (Airport South) provides service mainly in the north-south directions along Airport Road. The route has 40 stops departing from 12203 Airport Road (approximately 1.0 km north of the subject site) and ending in Westwood Mall Terminal, Service starts operating at 12:11 AM and ends at 11:42 PM seven days a week.

- City of Brampton Bus Roue 31 (McVean North) provides service between The Gore Road and ending in Squire Elis Drive (Approximately 1.5 km east of the site). The service starts operating at 12:00 AM and ends at 10:53 PM seven days a week.

Existing transit facilities are illustrated in **Figure 4**.

Figure 4 Existing Transit Bus Service



Source: City of Brampton Transit Service Maps

4.0 Transportation Demand Management

Transportation Demand Management (TDM) refers to a variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system. TDM strategies have multiple benefits including the following:

- Reduced auto-related emissions to improve air quality.
- Decreased traffic congestion to reduce travel time.
- Increased travel options for businesses and commuters.
- Reduced personal transportation costs and energy consumptions.

The combined benefits listed above will assist in creating a more active and livable community through improvements to overall active transportation facilities for the residents, businesses, and the surrounding community.

Typical TDM measures include:

- Carpool/vanpool ride sharing, with emergency ride home;
- High-occupancy vehicle (HOV) lanes in existing rights-of-way for bus, taxis, and cars with three or more occupants;
- Bicycle and pedestrian programs;

- Promotion of public transit, including employer transit fare incentives;
- Parking supply and management strategies;
- Use of “smart card” technology and other advances in the pricing and marketing of transportation services;
- Establishment of Transportation Management Associations (TMAs) in employment areas and car-sharing organizations in residential areas;
- Programs to promote flexible working hours and telecommuting; and,
- Application of incident management systems and Intelligent Transportation System (ITS) innovations.

The combined benefits listed above will assist in creating a more active and livable community through improvements to overall active transportation facilities for the employers, employees, businesses, and the surrounding area.

5.0 Active Transportation

Sidewalk and separated bicycle infrastructure is not provided on Mayfield Road. Airport Road has a multi-use path along the east side fronting the subject site, where pedestrian and cyclists can safely utilize. Pedestrians and cyclists are expected to utilize the gravel shoulders or share the travelled roadways with vehicles on Mayfield Road. It is recommended that a sidewalk and/or multi-use path be provided on the north side of Mayfield Road along the subject site frontage.

A review of the Town of Caledon Trails and Cycling Routes Map didn’t identify any existing cycling or trail facilities on the study area roadways. The City of Brampton 2022 Cycling Map is illustrating a multi-use path along Airport Road that extends further north of Mayfield Road in the Town of Caledon. Additionally, there is a recreational trail in the vicinity of the site that is available for use. Existing cycling and trail facilities are illustrated in **Figure 5**.

The walk phases incorporated into the signal timing plan for the Airport Road and Mayfield Road intersection are push button actuated for pedestrians to cross the four legs of the intersection. Pedestrian signal heads are provided for each approach crossing.

Figure 5 Existing Cycling and Trail Facilities

Source: City of Brampton Cycling and Trail Maps

6.0 Site Generated Traffic and Turning Lane Review

Trip generation rates have been determined from the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 11th Edition*. Based on the proposed land use of 6 lots (Lot 1 commercial and Loa 2 – 6 industrial), the applicable ITE land use category for Lot 1 is "Shopping Centre" (LUC 820), and for Lots 2 – 6 is "Industrial Park" (LUC 130). This land use compiles multiple industrial uses in a single area as defined by the ITE land use definitions.

To take a conservative approach to the trip generation, we have ignored the impact of any transit modal split for the proposed traffic generation. Also, the ITE Manual provides methodology for determining the number of internal trips generated at a multi-use development. Internal trips are made within the site without use of external roads. To be conservative, we have ignored the impact an internal trip reduction.

Table 1 summarizes the total peak hours site trip generation for the proposed development.

Table 1 Proposed Site Trip Generation

Lot #	Gross Floor Area (ha)	Land Coverage	Net Area (ha)	Net Area (m^2)	Net Area (ft^2)	Land Use Code	Weekday AM Peak Hour			Weekday PM Peak Hour		
							In	Out	Total	In	Out	Total
1	1.486	25%	0.372	3,720	40,041.75	820	97	60	157	140	152	292
2 - 6	16.693		4.173	41,730	449,177.98	130	124	29	153	34	119	153
Total	**18.179**		**4.545**	**45,450**	**489,219.73**		**221**	**89**	**310**	**174**	**271**	**445**

Based on the foregoing, the development proposal is anticipated to generate 310 two-way trips (221 in and 89 out) during the weekday morning peak hour and 191 two-way trips (174 in and 271 out) during the afternoon peak hour.

The proposed site trip distribution will be based on the information from the 2016 Transportation Tomorrow Survey (TTS) for Town of Caledon Ward 4 and existing road network in the vicinity of the site. The relevant excerpts from the 2016 TTS report are provided in **Appendix B**.

7.0 Other Sites Generated Traffic

7.1 Smart Centre Site (6034 Mayfield Road)

This site is located on the northeast quadrant of Airport Road and Mayfield Road. There are three proposed accesses to the site (one (1) right in/right out to Mayfield Road, one (1) right in/right out and one (1) full-moves access to Airport Road). Based on the Transportation Impact Study and Demand Management Plan prepared by WSP on July 29, 2021, there will be 142 two-way trips (125 in and 17 out) during the weekday morning peak hour and 109 two-way trips (14 in and 95 out) during the afternoon peak hour. Excerpts from the WSP report are provided in **Appendix C**.

7.2 Trucking Company and School Bus Parking Area (12117 Airport Road)

This site is also located on the northeast quadrant of Airport Road and Mayfield Road. Currently this site has an established transport business and parking area that is occupied by school buses. It is zoned MP – Prestige industrial in the Town Zoning Map and has an area of approximately 39,800 m^2 (428,403.60 ft^2).

7.3 Residential Home (6340 Mayfield Road)

This site is located east of the proposed site and is occupied by a single dwelling residential unit. It is zoned MP – Prestige industrial in the Town Zoning Map and has an area of approximately 185,320 m^2 (1,994,767.9 ft^2).

Table 2 summarizes the overall peak hour traffic for the proposed site and Smart Centre Site trip generation.

Table 2 Proposed Site and Other Site Trip Generation

	Lot #	Land Use Code	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Site	1	820	97	60	157	140	152	292
	2 - 6	130	124	29	153	34	119	153
	Total		**221**	**89**	**310**	**174**	**271**	**445**
Other Sites	**Smart Centre**	110	109	15	124	14	95	109
	12117 Airport Road	130	36	6	42	8	28	36
	6340 Mayfield Road	130	137	33	170	37	133	170
	Total Trips		**503**	**143**	**646**	**233**	**527**	**760**

Based on land use provided, the development proposal and the other sites are anticipated to generate 646 two-way trips (503 in and 143 out) during the weekday morning peak hour and 760 two-way trips (233 in and 527 out) during the afternoon peak hour.

8.0 Right Turn and Left Turn Requirements (Auxiliary Lane Placement)

Ministry of Transportation (MTO) design criteria indicate that right turn lanes should be considered when the turning volume is anticipated to exceed 60 vehicles per hour at an unsignalized intersection. Based on the projected traffic volumes, right turn lane will be required at the future site accesses on Airport Road and Mayfield Road.

Additionally, the Region of Peel's Characterization Study (RCS) for access management elements indicates under **Chapter 5.0 – Section 5.4** – **Auxiliary Lane Placement** the need for right turn and left turn lanes for new developments. Based on the proposed site that includes both commercial and industrial uses and the number of projected vehicular trips from the proposed site and the neighbouring Smart Centre site, auxiliary right and left turns will be required. The relevant excerpts from the RCS report are provided in **Appendix D**.

The addition of auxiliary lanes will provide space for vehicle deceleration and storage for right and/or left turns from regional roads at their points of access as well as a refuge for turning vehicles. These lanes improve capacity and safety on the major roads by removing slowing or stopped vehicles from through lanes with higher speed traffic.

9.0 Sightline Analysis

Both Airport Road and Mayfield Road have a posted speed limit of 60 km/h. Based on the Ministry of Transportation of Ontario (MTO) geometric design standards, the minimum stopping distance for design speed of 80 km/h (posted speed limit of 60 km/h + 20 km/h)

is 135 metres. This requirement provides sufficient distance for an approaching vehicle to observe a stationary hazard in the road (such as a vehicle stopped at an intersection waiting to complete a turn) and bring their vehicle to a complete stop prior to the hazard.

A review of the available sight distance for the projected accesses onto Airport Road and Mayfield Road was completed as part of this traffic analysis. The sight distance north and south on Airport Road and east and west on Mayfield Road is well over 200 meters in all directions which is significantly greater than the minimum stopping sight distance requirements as identified in **Table E3.1** of the Ministry of Transportation Chapter E "At-Grade Intersections" Design Guidelines for a design speed of 80km/h (135 metres).
It is apparent that there are adequate sight distances along Airport Road and Mayfield Road for motorists to do their left/right turns safely.

Table E3-1
Minimum Stopping Sight Distance

Design Speed, km/h	20	30	40	50	60	70	80	90	100	110
Minimum Stopping Sight Distance, m	20	30	45	65	85	110	135	160	185	215

10.0 Conclusions and Recommendations

- The land uses proposed within each Draft Plan Block will be determined at the Site Plan Application stage; however, the proposed development is anticipated to include commercial (Lot 1) and industrial (Lot 2 – 6). A total of 6 separate development lots are anticipated with a total gross floor area (GFA) of 4.545 hectare (25% of the 18.179-hectare land coverage), which equates to 45,450 square metres (489,220 square feet).

- The proposed development will require one (1) full-moves accesses on Airport Road (Davis Lane/Perdue Court), and two (2) accesses to Mayfield Road one (1) full-moves opposite Maisonneuve Blvd and one (1) right in/right out.

- The sight distance available for future proposed site accesses on Airport Road and Mayfield Road meets the MTO minimum sight stopping distance

requirements for an 80km/h design speed (Posted speed limit of 60 km/h + 20 km/h).

- The proposed development and the other sites are anticipated to generate 646 two-way trips (503 in and 143 out) during the weekday morning peak hour and 760 two-way trips (233 in and 527 out) during the afternoon peak hour, respectively.

- Right turn lanes and left turn lanes at the accesses on Airport Road and Mayfield Road will be required based on the Region of Peel's Characterization Study (RCS) for access management guidelines.

- Several Transportation Demand Management opportunities and strategies are to be introduced to discourage single-occupant vehicle use within the study area.

- Sidewalk on the north side of Mayfield Road in the vicinity of the site will be required to support pedestrian connections,

Should you have any questions regarding this study, please do not hesitate to contact the undersigned.

Yours truly,

CGE TRANSPORTATION CONSULTING

Casey Ge, P.Eng.

President

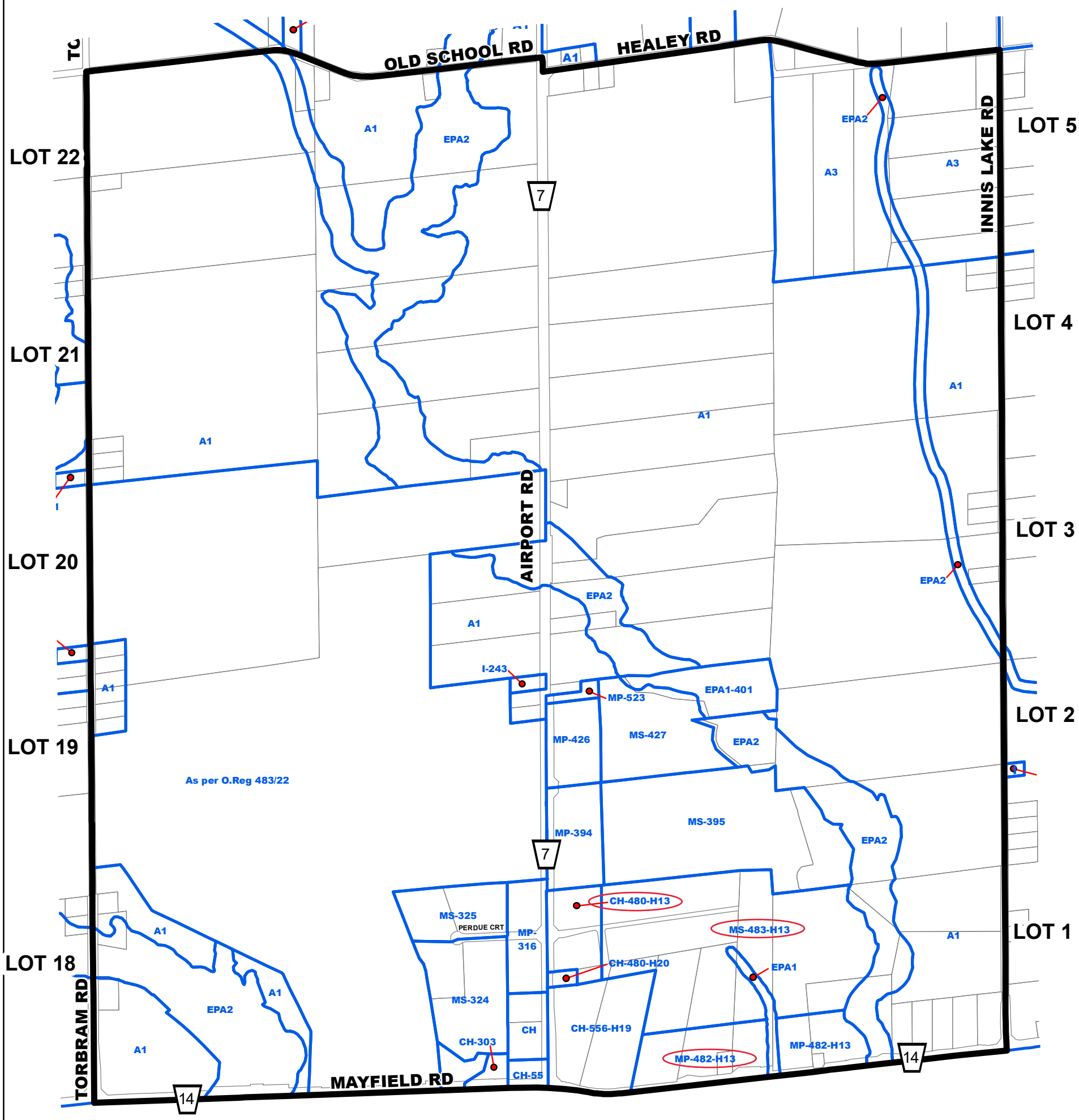
Appendix A	***Town of Caledon Zoning excerpts***
Appendix B	***2016 Transportation Tomorrow Survey Report***
Appendix C	***WSP – Transportation Impact Study and Demand Management Plan Excerpts***
Appendix D	***Region of Peel's Characterization Study Excerpts***

Appendix A

Town of Caledon Zoning Excerpts

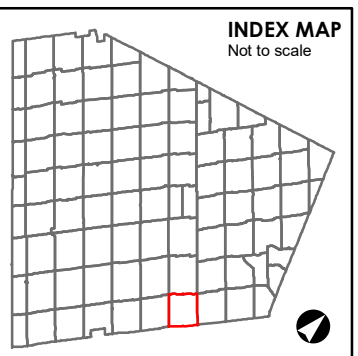
CON. 6 E.H.S. (CHING)

CON. 1 (ALB)



This copy is provided for convenience only. If necessary, the original may be referred to in the office of the Town Clerk.

INDEX MAP
Not to scale



A2 ZONE SYMBOL

A2-### ZONE SYMBOL
Note: Number of suffixes represent Exceptions which can be looked up in the Exceptions section of the By-law.

ZONE BOUNDARY

STRUCTURAL ENVELOPE MAP

NIAGARA ESCARPMENT DEVELOPMENT CONTROL AREA
Lands lying within the Development Control area pursuant to the Niagara Planning and Development Act are subject to permit requirements under Ontario Regulations 685/50, as amended.

OAK RIDGES MORAINE CONSERVATION PLAN AREA BOUNDARY

WELLHEAD PROTECTION AREA BOUNDARY
WP-2 WP-5 WP-10 WP-25
Zone Maps amended to indicate the 2, 5, 10, and 25 year Wellhead Protection Areas.

BY-LAW 2006-50
ZONE MAP 4
SCHEDULE "A"

0 137.5 275 550 m

TOWN OF CALEDON

Date: 3 April 2006
Revised: November 29, 2022

File: S:\POLICY SECTION\GIS\zoning_bylaw\2015_mxd

4

SECTION 7
COMMERCIAL ZONES

7.1 GENERAL PROHIBITION

No *person* shall, within any **Commercial *Zone***, use any land, or erect, *alter*, enlarge, use or maintain any *building* or *structure* for any *use* other than as permitted in **Table 7.1** of Subsection 7.2 and in accordance with the standards contained in **Table 7.2** of Subsection 7.3, the General Provisions contained in Section 4 and the Parking, Loading & Delivery Standards contained in Section 5.

7.2 PERMITTED USES

Uses permitted in a **Commercial *Zone*** are noted by the symbol '✓' in the column applicable to that *Zone* and corresponding with the row for a specific permitted *use* in **Table 7.1**. A number(s) following the symbol '✓' , *zone* heading or identified permitted *use*, indicates that one or more conditions apply to the *use* noted or, in some cases, to the entire *Zone*. Conditions are listed below the Permitted Use Table, **Table 7.1**.

The **Commercial *Zones*** established by this By-law are as follows:

CC **Core Commercial**
CCV **Village Core Commercial**
C **General Commercial**
CN **Neighbourhood Commercial**
CV **Village Commercial**
CH **Highway Commercial**
CHB **Bolton Highway Commercial**
CHV **Village Highway Commercial**
CT **Tourist Camp Commercial**

TABLE 7.1

	ZONE								
USE	**CC**	**CCV (12)**	**C**	**CN**	**CV**	**CH**	**CHV**	**CHB**	**CT**
Animal Hospital	✓		✓		✓	✓	✓	✓	
Art Gallery	✓	✓			✓				
Artist Studio & Gallery	✓	✓			✓				
Bakery		✓							
Boarding House	✓								
Building, Apartment		✓							
Business Office	✓	✓	✓	✓	✓			✓	
Clinic	✓	✓	✓	✓	✓	✓	✓		

Convenience Store	✓(4)	✓(4)	✓(4)	✓(4)	✓(4)				
Drive-Through Service Facility			✓ (13)			✓ (13)	✓ (13)	✓ (13)	
Dry Cleaning or Laundry Outlet	✓	✓	✓	✓	✓				
Dwelling, Accessory					✓ (9) (11)	✓ (10) (11)	✓ (10) (11)		✓
Dwelling, Common Element Townhouse		✓							
Dwelling, Freehold Townhouse		✓							
Dwelling, Townhouse		✓							
Dwelling Unit		✓							
Dwelling Unit, Accessory	✓ (7) (8)				✓ (7) (9)	✓ (7) (10)	✓(7)		✓(7)
Factory Outlet								✓	
Farmers' Market		✓			✓	✓	✓	✓	
Financial Institution	✓	✓	✓	✓	✓	✓	✓	✓	
Fitness Centre	✓	✓	✓	✓	✓	✓	✓	✓	
Funeral Home	✓		✓		✓				
Grocery Store		✓	✓ (5)						
Hotel	✓	✓	✓			✓	✓	✓	
Industrial Use								✓	
Laundromat	✓	✓	✓	✓	✓				
Merchandise Service Shop	✓	✓	✓		✓			✓	
Motel	✓		✓			✓	✓	✓	
Motor Vehicle Gas Bar					✓	✓	✓	✓	
Motor Vehicle Rental Establishment					✓	✓	✓	✓	
Motor Vehicle Repair Facility					✓	✓	✓	✓	
Motor Vehicle Sales Establishment					✓	✓	✓	✓	
Motor Vehicle Service Centre					✓	✓	✓	✓	
Motor Vehicle Used Sales Establishment					✓	✓	✓	✓	
Open Storage Area, Accessory						✓	✓	✓ (14)	

Outside Display or Sales Area, Accessory								✓	
Parking Area, Commercial	✓	✓	✓	✓	✓	✓	✓	✓	
Parking Area, Municipal	✓	✓							
Personal Service Shop	✓	✓	✓	✓	✓				
Place of Assembly	✓	✓	✓		✓	✓	✓	✓	
Place of Entertainment	✓	✓	✓		✓ **(1)**	✓	✓ **(1)**	✓	
Private Club	✓	✓	✓	✓	✓	✓	✓	✓	
Research Establishment								✓	
Restaurant	✓	✓	✓	✓	✓	✓	✓	✓	
Retail Store	✓	✓	✓	✓	✓ **(6)**	✓ **(6)**	✓ **(6)**		
Retail Store, Accessory								✓ **(2)**	
Sales, Service and Repair Shop	✓	✓	✓	✓	✓				
Tourist Camp									✓
Training Facility	✓	✓	✓		✓			✓	
Video Outlet/Rental Store	✓ **(3)**	✓	✓ **(3)**	✓ **(3)**	✓ **(3)**				
Warehouse								✓	
Warehouse, Public Self-Storage								✓	
Warehouse, Wholesale								✓	

Footnotes For Table 7.1

(1) Excluding a cinema or theatre.

(2) An *accessory retail store* shall not exceed 93 m^2 *net floor area*.

(3) A *video outlet/rental store* shall not exceed 185 m^2 *net floor area*.

(4) *Convenience store* not to exceed a maximum 160 m^2 *net floor area*.

(5) *Grocery store* not to exceed a maximum 1100 m^2 *net floor area*.

(6) A *retail store* shall not exceed 925 m^2 *net floor area* per *building.*

(7) Unit size not to exceed 15% of commercial *net floor area*.

(8) **CC *Zone*** permits a *boarding house* as well as 3 *accessory dwelling units* per commercial establishment.

(9) **CV *Zone*** permits both 1 a*ccessory dwelling* and 1 a*ccessory dwelling unit* per establishment.

(10) **CH *Zone*** and **CHV *Zone*** permit a maximum of 1 a*ccessory dwelling* or 1 a*ccessory dwelling unit* per establishment.

(11) *Accessory dwelling* size shall be governed by the applicable *lot* coverage and *yard* requirements.

(12) CCV Zone – The following provisions shall apply to any building abutting Kennedy Road or Dougall Avenue:

i. Only commercial uses shall be permitted on the first storey;
ii. Only dwelling units, business offices and hotel uses shall be permitted on storeys above the first storey;
iii. Entrances and lobbies used to service those uses listed in (ii) above shall be permitted on the first storey.

(13) Subject to compliance with Section 4.9, *drive-through service facilities* shall only be permitted in the Settlement Areas of Bolton and Mayfield West, and in Tullamore, Victoria, Sandhill, and Caledon Village only in existing commercial zones along Hurontario Street (Highway 10) and Charleston Sideroad (Regional Road 24).

(14) *Open Storage Area, Accessory* shall not be permitted with an *Industrial Use*

7.3 ZONE STANDARDS

No *person* shall, within any Commercial *Zone*, use any *lot* or erect, *alter*, use any *building* or *structure* except in accordance with the following *zone* provisions as set out in **Table 7.2**. A number(s) following the *zone* standard, *zone* heading or description of the standard, indicates an additional *Zone* requirement. These additional standards are listed at the end of **Table 7.2**.

TABLE 7.2

	ZONES								
STANDARD	**CC**	**CCV (12)**	**C**	**CN**	**CV**	**CH**	**CHV**	**CHB (7)**	**CT**
***Lot Area* (Minima):**	275 m^2	N/A	0.8ha	2,000 m^2	2,000 m^2				8,000 m^2
Motor Vehicle Service Centre						2,000 m^2	2,000 m^2	2,000 m^2	
Motel						2,750 m^2	2,750 m^2		

Hotel or M*otel*								2,750 m^2	
Other *uses* on *unserviced lot*						2,040 m^2	2,040 m^2	2,040 m^2	
Other *uses* on *partially serviced* lot						1,390 m^2	1,390 m^2	1,390 m^2	
Other *uses* on *fully serviced lot*						460 m^2	460 m^2	460 m^2	
***Lot Frontages* (Minima)**	Nil	9m	30m	30m	30m				45m
Motor Vehicle Service Centre, Hotel or Motel						40m	40m	40m	
Other *uses* on *fully serviced lot*						9m	9m	9m	
Other *uses* on any other *lot*						30m	30m	30m	
***Building Area* (Maximum)**	75%	N/A	25%	30%	25%	30%	30%	30%	25%
Building Setback (Minimum)									9m **(8)**
Front Yard		**(9)**							
Minimum	Nil	0.3m	15m	9m	9m	18m	18m	18m	
Maximum		2m							
Exterior Side Yard		**(11)**							
Minimum	Nil	0.3m	15m	9m	9m	18m	18m	18m	
Maximum		2m							
***Rear Yard* (Minima)**	6m	6m							
From a *rear lot line* abutting a Residential *zone* or a *lot* containing a Residential *use*			19.5 m			10.5m	10.5m	10.5m	
From a *rear lot line* abutting a Residential *zone*				9m	10.5m				
From any other *rear lot line*			15m	6m	7.5m	7.5m	7.5m	7.5m	
***Interior Side Yard* (Minima)**		**(11)**							
From an *interior side lot line*	1.5m	3m		9m	4.5m				

abutting a Residential *zone*									
From an *interior side lot line* abutting a Residential *zone* or a *lot* containing a Residential *use*			12m			10.5m	10.5m	10.5m	
From any other *interior side lot line*	Nil	Nil	7.5m	6m	3m	7.5m	7.5m	7.5m	
***Motor Vehicle Gas Bar Setback* (Minima)**									
From any *lot line*					4.5m **(6)**	6m **(6)**	6m **(6)**	6m **(6)**	
From any *sight triangle*					3m **(6)**	3m **(6)**	3m **(6)**	3m **(6)**	
Building Height									
Minimum									
Maximum	10.5m		10.5 m	10.5m	10.5m	10.5m	10.5m	10.5m	10.5m
Main Building (Minimum)		7.5m							
Main Building (Maximum)		15m							
***Landscaping Area* (Minimum)**	Nil	Nil	10%		20%	20%	20%	20%	30%
***Gross Floor Area* (Maxima)**									
Retail Store	465 m^2				925 m^2	925 m^2	925 m^2		
Retail Store, Accessory								93 m^2	
***Planting Strip Widths* (Minima):**		1.5m	4.5m	3m	3m	3m	3m	6m	6m
Along an *interior side lot line*	1.5m								
Along a *rear lot line*	3m								
***Planting Strip* Location**	**(1)**	**(10)**	**(2)**	**(1)**	**(1)**	**(3)**	**(3)**	**(3)**	**(4)**
***Play Facility Area* (Minimum)**									4%
***Play Facility* Location**									6m **(5)**

***Driveway Setbacks* (Minima)**		1.5m	4.5m						6m
From a *lot line* abutting a Residential *Zone*	1.5m			1.5m	4.5m	4.5m			
From a *lot line* abutting a Residential *zone* or a *lot* containing a Residential Use							4.5m	6m	
From any other *lot line*	Nil			Nil	1.5m	1.5m	1.5m	1.5m	
***Parking Space Setback* (Minima)**									
From any *street line*	1.5m	3m	1.5m	3m	1.5m	1.5m	1.5m	6m	
From any *lot line* abutting a Residential *zone*	4.5m	3m		4.5m	4.5m				
From any *lot line* abutting a Residential *zone* or a *lot* containing a Residential *use*			4.5m			4.5m	4.5m		
From any other *lot line*		1.5m						1.5m	
From any *lot line*									6m

Footnotes for Table 7.2

(1) **CC *Zone*, CN *Zone*, CV *Zone*** – A *planting strip* shall be required along any portion of a *rear lot line* and any portion of an *interior side lot line* which abuts a Residential *Zone*.

(2) **C *Zone*** - A *planting strip* shall be required along any of a *rear lot line* and any portion of an *interior side lot line* which abut a Residential *Zone* or which abuts a *lot* containing a Residential *use*.

(3) **CH *Zone*, CHV *Zone*, CHB *Zone*** – A *planting strip* shall be required along any *front lot line* and any *exterior lot line* and along any portion of a *rear lot line* and any portion of an *interior side lot line* which abut a Residential *Zone* or which abut a lot containing a Residential *use.*

(4) **CT *Zone*** – A *planting strip* shall be required along every *lot line* except that no *planting strip* shall be required for a length of 15m along a *front lot line* between a *tourist camp* management office and a *street*.

(5) **CT *Zone*** – No part of any *play facility* shall be located closer to any *lot line* than 6m

(6) *Motor Vehicle Gas Bar setback* – Where a *motor vehicle gas bar* includes a canopy or roof structure, the required *setback* shall be measured to the nearest part of the canopy or roof structure.

(7) **CHB *Zone*** – The following performance standards shall apply to a *Factory Outlet, Industrial Use*, *Merchandise Service Shop*, and a *Warehouse*:

(i) *Lot Area* (minimum):	925m^2
(ii) *Lot Frontage* (minimum):	30m
(iii) *Building Area* (maximum):	50%
(iv) *Yard, Front* (minimum):	
- from *lot line* abutting Residential *zone*	20m
- from any other *front lot line*	18m
(v) *Yard, Rear* (minimum):	
- from *lot line* abutting Residential *zone*	15m
- from *lot line* abutting provincial highway	18m
- from any other *rear lot line*	7.5m
(vi) *Yard, Interior Side* (minimum):	
- from *side lot line* abutting a Residential *zone* or *lot* containing Residential *use*	15m
- any other *side lot line*	7.5m
(vii) *Floor Area, Net*	
- *Factory Outlet*	20% of *net floor area* of permitted *industrial use* to which it is *accessory*

(8) **CT *Zone*** – *Building* Separations (minima):

Between tourist vehicles	6m
(i) Between tourist vehicle and Management office	9m
(ii) Between tourist vehicle and Recreation building	12m
(iii) Between *main building* and Detached *accessory building*	2m
(iv) Between detached *accessory buildings*	1m

(9) CCV *Zone* – Within the CCV Zo*ne*, with the exception of driveways and pedestrian walkways, lands abutting Kennedy Road or Dougall Avenue shall be developed with a continuous *building* face.

(10) CCV *Zone* – A *planting strip* shall be required along each *street line* adjacent to a *parking area*.

(11) CCV *Zone* – The minimum setback for any type of first *storey* residential *use* shall be 3m.

(12) CCV *Zone* – Within the CCV *Zone* the following special standards shall apply:

(i) For Holding Provisions see CCV-H15 in Subsection 13.3;

(ii) For the purpose of this *zone*, each of the two parcels of land located on the north and south sides of Dougall Ave. west of Kennedy Road shall each be deemed to be one *lot*, regardless of the number of *buildings* constructed thereon and regardless of any subdivision thereof by any means. Further the *lot line* abutting Dougall Ave. shall be considered to be the *front lot line*.

(iii) Notwithstanding any other provision of this By-law, no *building* or *structure* or part thereof and no chimney, pilaster or similar ornamental *structure* or part thereof and no *patio* or *porch* or part thereof and no machinery or equipment or part thereof and no fence, sidewalk or walkway or part thereof shall be located in any part of a *yard* that is subject to a registered easement;

(iv) Notwithstanding Section 5.4.2 and 5.4.4 only one *delivery space* shall be required on the *lot* described in Section 12(ii) above.

(v) The minimum off street parking requirement for any commercial *use* shall be 1 *parking space* per 34m2 of *gross floor area* or portion thereof.

(vi) The minimum off street parking requirement for any *apartment building* shall be 1.25 *parking spaces* per *dwelling unit* plus the requirement for any commercial *use* as noted in (v) above.

(vii) For the purpose of this *zone*, Section 4.36 with respect to *Sight Triangles* shall not apply.

(viii) In addition to the requirements of Section 4.4, air conditioners or heat pumps shall not be located in the *front yard* or *exterior side yard*.

(ix) For the purpose of this *zone, Building Height* shall be calculated using the vertical distance measured from the average elevation of the established grade at the front of such *building* to the median level between eaves and ridge on a gable, gambrel or hip roof.

(x) For the purpose of this *zone*, Established Grade, with reference to a *building*, shall be calculated using the average elevation of the finished surface of the ground where it meets the exterior of the front of such *building*.

SECTION 8
INDUSTRIAL ZONES

8.1 GENERAL PROHIBITION

No *person* shall, within any **Industrial *Zone***, use any land, or erect, *alter*, enlarge, use or maintain any *building* or *structure* for any *use* other than as permitted in **Table 8.1** of Subsection 8.2 and in accordance with the standards contained in **Table 8.2** of Subsection 8.3, the General Provisions contained in Section 4 and the Parking, Loading & Delivery Standards contained in Section 5.

8.2 PERMITTED USES

Uses permitted in an **Industrial *Zone*** are noted by the symbol '✓' in the column applicable to that *Zone* and corresponding with the row for a specific permitted *use* in **Table 8.1**. A number(s) following the symbol '✓' , *zone* heading or identified permitted *use*, indicates that one or more conditions apply to the *use* noted or, in some cases, to the entire *Zone*. Conditions are listed below the Permitted Use Table, **Table 8.1**.

The **Industrial *Zones*** established by this By-law are as follows:

MP **Prestige Industrial**
MS **Serviced Industrial**
MU **Unserviced Industrial**
MA **Airport Industrial**
MX **Extractive Industrial**
MD **Waste Management**

TABLE 8.1

	ZONE					
USE	**MP**	**MS**	**MU**	**MA**	**MX**	**MD**
Adult Video Store		✓				
Airport				✓		
Bulk Storage Facility		✓	✓			
Business Office	✓					
Cannabis-Related Use-Indoor	✓ **(3)**	✓ **(3)**				
Contractor's Facility		✓	✓			
Dry Cleaning or Laundry Plant	✓	✓				
Equipment Storage Building	✓	✓	✓			
Factory Outlet	✓	✓	✓			
Farm					✓	
Financial Institution	✓ **(2)**					
Gasoline Pump Island, Accessory	✓	✓	✓	✓		

Gravel Pit					✓	
Industrial Hemp-Related Use-Indoor	✓ (3)	✓ (3)				
Industrial Use	✓	✓	✓			
Light Equipment Rental Establishment	✓	✓				
Maintenance Garage, Accessory	✓	✓	✓			
Merchandise Service Shop	✓	✓	✓			
Motor Vehicle Body Shop		✓	✓			
Motor Vehicle Compound		✓	✓			
Motor Vehicle Gas Bar		✓				
Motor Vehicle Repair Facility		✓	✓			
Motor Vehicle Towing Facility		✓	✓			
Open Storage Area, Accessory		✓	✓	✓	✓	
Outside Display or Sales Area, Accessory		✓	✓			
Place of Assembly	✓					
Place of Worship	✓					
Quarry					✓	
Research Establishment	✓	✓				
Restaurant	✓ (2)	✓ (2)		✓ (2)		
Retail Store, Accessory	✓ (1)	✓ (1)				
Sanitary Landfill Site						✓
Sewage Treatment Facility						✓
Training Facility	✓					
Transportation Depot		✓	✓			
Warehouse	✓	✓	✓			
Warehouse, Public Self-Storage	✓	✓	✓			
Warehouse, Wholesale	✓	✓	✓			
Waste Processing Facility						✓
Waste Transfer Facility						✓

Footnotes for Table 8.1

(1) Must comply with Section 8.4.1

(2) Must comply with Section 8.4.2

(3) Must comply with Section 4.7 Cannabis or Industrial Hemp Uses.

8.3 ZONE STANDARDS

No *person* shall, within any **Industrial *Zone***, use any *lot* or erect, *alter*, use any *building* or *structure* except in accordance with the following *zone* provisions. A number(s) following the *zone* standard, *zone* heading or description of the standard, indicates an additional *Zone* requirement. These additional standards are listed at the end of *Table 8.2*.

TABLE 8.2

	ZONE					
STANDARD	**MP**	**MS**	**MU**	**MA**	**MX**	**MD**
***Lot Areas* (Minima):**	925 m^2	925 m^2	4,000 m^2	Nil	1ha	
Sanitary landfill site						4ha
Other Non-Residential *uses*						1ha
***Lot Frontage* (Minimum)**	30m	30m	50m	30m	10m	10m
***Building Area* (Minimum)**						
For a *Transportation Depot*		10% **(22) (23)**	10% **(22) (23)**			
***Building Area* (Maximum)**	50%	50% **(22)**	10% **(22)**	**(9)**	900 m^2	
Sanitary landfill site						180m^2
Sewage treatment facility						20%
Other Non-Residential *uses*						35%
***Yards* (Minima)**	**(14)**	**(14) (24)**	15m **(24)**		**(15)**	
From a *lot line* abutting a *zone* other than an Industrial *zone*				30m		
From any other *lot line*				21m		
***Front Yards* (Minima)**					30m	18m
From a *front lot line* abutting a Residential *zone*	20m					
From a *front lot line* abutting a Residential *zone* or a *lot* containing a Residential *use*		20m				
From a *front lot line* abutting a Provincial Highway	14m					
From any other *front lot line*	9m	9m				
***Exterior Side Yards* (Minima)**					30m	18m
From an *exterior side lot line* abutting a Residential *zone*	15m					
From an *exterior side lot line* abutting a Residential *zone* or a *lot* containing a Residential *use*		15m				
From an *exterior side lot line* abutting a Provincial Highway	14m					

From any other *exterior side lot line*	7.5m	7.5m				
Rear Yards (Minima)						
From a *rear lot line* abutting a Residential *zone* or a *lot* containing a Residential *use*		15m				
From a *rear lot line* abutting a Residential *zone*	15m				90m	
From a *rear lot line* abutting a Provincial Highway	14m					
From a *rear lot line* abutting a *zone* other than an MD or MX *Zone*						15m
From any other *rear lot line*	7.5m	7.5m			30m	3m
***Interior Side Yards* (Minima)**						
From an *interior side lot line* abutting a *zone* other than an MD or MX *Zone*						15m
From any other *lot line*						3m
From an *interior side lot line* abutting a Residential *zone*					90m	
From any other *interior side lot line*	**(1)**	**(5)**			30m	
From an *interior side lot line* abutting a Residential *zone* or a *lot* containing a Residential *use*	15m	15m				
***Gasoline Pump Island, Accessory* Setbacks (Minima)**				30m **(11) (16)**		
From any *street line*	**(21)**	6m **(16)**	6m **(16)**			
From any other *lot line*	4.5m **(16)**	4.5m **(16)**	4.5m **(16)**			
Excavation Setbacks (Minima)						
From any *lot line*					15m	
From any *street line*					30m	
***Accessory Open Storage Area* Setbacks (Minima)**		**(19) (24)**	**(20) (24)**			
From any *lot* line which abuts a Residential *zone*					90m	
From any other *lot line*					30m	
***Accessory Outside Sales* or *Display Area* Setback (Minimum)**						
From any *street line*		9m				
***Building Heights* (Maxima)**	18m	12.2m	12.2m		25m	12.2m
Residential *buildings*				10.5 m		
Non-Residential *Building*				12.2 m		
***Landscaping Area* (Minimum)**	10% **(13)**	10%	10%		5%	25%
***Net Floor Area* (Maxima)**						
Factory Outlet	20%	20%				

	(3)	**(6)**				
An indoor Sales Display Area associated with a W*holesale Warehouse*	33% **(4)**					
***Planting Strip Width* (Minimum):**	6 m	6 m	3 m	15 m	15 m	7.5 m
***Planting Strip* Location**	**(2) (17) (18)**	**(7) (17) (18)**	**(8)**	**(10)**	**(10)**	**(12)**
Landfill Area *Setbacks* (Minima)						
From any *street line*						30 m
From any *lot line* which abuts a *zone* other than an MD or MX *Zone*						90 m
***Driveway Setbacks* (Minima)**		**(24)**	**(24)**			
From a *lot line* abutting a Residential *zone*	4.5m					
Where a *driveway* forms part of a mutual *driveway* on an adjacent *lot*	Nil					
From any other *lot line*	1.5m	1.5m	1.5m	3m	3m	3m
From a *lot line* abutting a Residential *zone* or a *lot* containing a Residential use		4.5m	4.5m			
From a *lot line* abutting a *zone* other than an Industrial *zone*				9m		
From a *lot line* abutting a *zone* other than an MX or MD *zone*					9m	9.5m
***Parking Space Setbacks* (Minima)**		**(24)**	**(24)**			
From any front *lot line*	6m	6m				
From any other *lot line*	3m	3m				
From any *street line*			1.5m	3m	3m	3m
From any *lot line* abutting a Residential *zone* or a *lot* containing a Residential *use*			4.5m		9m	
From any *lot line* abutting a *zone* other than an Industrial *zone*				9m		
From any *lot line* abutting a *zone* other than an MD or MX *zone*						9m

Footnotes For Table 8.2

(1) **MP** *Zone* – Minimum *interior side yard* from any other *interior side lot line* shall be 3m on one side, 6m on other side

(2) **MP** *Zone* – A *planting strip* shall be required along each *front lot line* and each *exterior side lot line* and along any portion of a rear *lot line*, which abuts a Residential *zone* line or a *lot* containing a Residential *use*, and along any portion of an *interior side lot line* which abuts a Residential *zone* or a *lot* containing a Residential *use*.

(3) **MP** *Zone* – The maximum *net floor area* of a *factory outlet* shall be 20% of the *net floor area* of the *industrial facility* to which it is *accessory*.

(4) **MP** *Zone* – The maximum *net floor area* of a sales display area associated with a *wholesale warehouse use* shall be 33% of the total *net floor area*.

(5) **MS** *Zone* – The minimum *interior side yard* from any other *interior side lot line* shall be 3m on one side; 6m on other side.

(6) **MS** *Zone* – The maximum *net floor area* of a *factory outlet* shall be 20% of the *gross floor area* of the *industrial use* to which it is accessory.

(7) **MS** *Zone* – A *planting strip* shall be required along each *front lot line*.

(8) **MU** *Zone* – A *planting strip* shall be required along any portion of a *rear lot line* and any portion of an *interior side lot line* which abuts a Residential *zone* or which abuts a *lot* containing a Residential *use*.

(9) **MA** *Zone* – The maximum *building area* shall be the lesser of 5%; or 0.4 hectares.

(10) **MA** *Zone***, MX** *Zone* – A *planting strip* shall be required along each *front lot line*. A *planting strip* shall also be required along any portion of a *rear lot line* and any portion of an *interior side lot line* which abut a Residential *zone*.

(11) **MA** *Zone* – No *accessory gasoline pump island* shall be located closer to any *lot line* than 30m.

(12) **MD** *Zone* – A *planting strip* shall be required along any portion of a *rear lot line* and any portion of an *interior side lot line* which abut a *zone* other than an **MD** or **MX** *zone*.

(13) **MP** *Zone* - The required minimum *Landscaping Area* for a *corner lot* shall be 12.5%

(14) **MP** *Zone*, **MS** *Zone* - Notwithstanding any *building setback* provisions to the contrary, no *building setback* shall be required from any portion of a *lot line* which abuts a railroad right-of-way.

(15) **MX** *Zone* - Notwithstanding any *building setback* provisions to the contrary, no *building setback* shall be required from any portion of a *lot line* which abuts a railroad right-of-way or abuts another *lot* in an **MX** *Zone*.

(16) **MP** *Zone***, MS** *Zone,* **MU** *Zone,* **MA** *Zone - Accessory Gasoline Pump Island Setback* – Where an *Accessory Gasoline Pump Island* includes a canopy or roof *structure*, the required *setback* shall be measured to the nearest part of the canopy or roof *structure*.

(17) **MP** and **MS** *Zone* – In addition to the *Planting Strip* Widths and Locations noted in **Table 8.2**, the following provisions shall also apply:

(i) Minimum width abutting an arterial road or Provincial Highway 9.0m

(ii) Minimum width where truck *parking* or *loading spaces* are provided adjacent to an arterial road or Provincial Highway 12.0m

(iii) Minimum width required on all *interior side yards* except where there is a mutual *driveway* along an *interior side lot line*. 1.5m

(18) **MP** and **MS** *Zone* – Tullamore Industrial Commercial Secondary Plan Area– A *planting strip* along an arterial road shall be a minimum of 12m, and a *planting strip* for all internal roads within the Tullamore Industrial Commercial Secondary Plan Area shall be a minimum of 8 m.

(19) No open storage area shall be located:

(i) In a *front yard* or *exterior side yard*; or
(ii) Closer than 6 metres to any *lot line* unless a chain-link fence, at least 1.8 metres high, is constructed along that *lot line*.

(20) No open storage area shall be located:

(i) in a *front yard* or an *exterior side yard*; or
(ii) in a *rear yard* adjacent to a *rear lot line* of such *lot* which abuts a Residential *zone* or abuts a *lot* containing a Residential *use*; or
(iii) in a *side yard* adjacent to an *interior side lot line* of such *lot* which abuts a Residential *zone* or abuts a *lot* containing a Residential *use*; or
(iv) closer than 6 metres to any *lot line* if combustible materials are stored there.

(21) No accessory gasoline pump island shall be permitted in a *front yard* or in an *exterior side yard*.

(22) **MS** and **MU** *Zones* – Section 4.2.5 shall not apply to *transportation depots.*

(23) **MS** and **MU** *Zones* – For the purpose of calculating the minimum *building area*, it shall mean that portion of the *lot area* excluding any *landscaping area* permitted to be covered by one or more *building envelope.*

(24) **MS** and **MU** *Zones* – No parking, storing or staging for a *transportation depot* shall be located:

i) in a *front yard* or an *exterior side yard*; or

ii) in a *rear yard* adjacent to a *rear lot line* of such *lot* which abuts a residential *zone* or abuts a *lot* containing a Residential *use*; or

iii) in a *side yard* adjacent to an *interior side lot line* of such *lot* which abuts a Residential *zone* or abuts a *lot* containing a Residential *use.*

8.4 SPECIAL PROVISIONS AND STANDARDS FOR INDUSTRIAL ZONES

8.4.1 *Retail Store, Accessory* shall comply with the following provisions:

a) An *Accessory Retail Store* shall only be permitted as accessory to a permitted *industrial use* and for the retail sale and/or display of products manufactured or assembled on the *premises*;
b) An *Accessory Retail Store* shall only be located on the ground floor of the *building* in which the *industrial use* is located;
c) The area devoted to an *accessory retail store* shall not exceed 500 m^2 or 15% of the total *gross floor area* devoted to the *industrial use*, whichever is less; and
d) An *Accessory Retail Store* may be permitted in a free-standing *building* located on the same lot as a permitted *industrial use*, provided that the total *net floor area* of the *Accessory Retail Store* does not exceed 300 m^2.

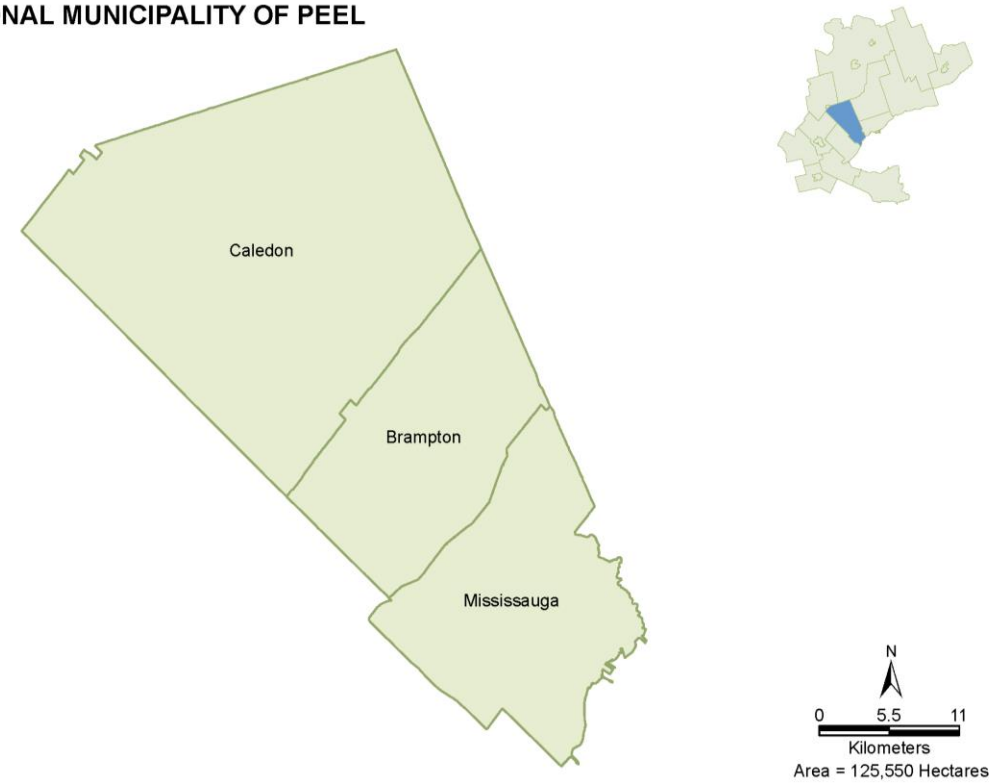
8.4.2 *Financial Institution* and/or *Restaurant* shall comply with the following provisions:

a) The area devoted to the *Financial Institution* or *Restaurant* shall not exceed 15% of the total *gross floor area* of all *buildings* on a *lot*, to a maximum of 500 m^2.

Appendix B

2016 Transportation Tomorrow Survey Report

REGIONAL MUNICIPALITY OF PEEL



REGIONAL MUNICIPALITY OF PEEL

HOUSEHOLD CHARACTERISTICS

Households	Dwelling Type			Household Size					Number of Available Vehicles					Household Averages				
	House	Townhouse	Apartment	1	2	3	4	5+	0	1	2	3	4+	Persons	Workers	Drivers	Vehicles	Trips/Day
430,100	59%	13%	28%	16%	24%	19%	22%	19%	7%	36%	42%	12%	4%	3.1	1.7	2.1	1.7	5.8

POPULATION CHARACTERISTICS

Population	Age							Daily Trips per Person (age 11+)	Daily Work Trips per Worker	Population	Employment Type			Student	Licensed	Transit Pass
	0-10	11-15	16-25	26-45	46-64	65+	Median				Full Time	Part Time	At Home			
										Male						
										663,700	46%	7%	3%	25%	69%	20%
1,352,100	13%	7%	14%	28%	26%	12%	37.9	2.1	0.75	Female						
										688,500	33%	10%	3%	24%	61%	23%

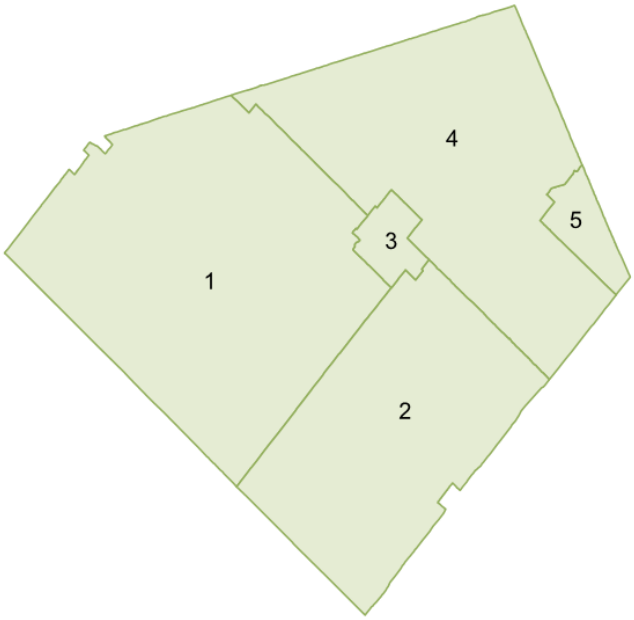
TRIPS MADE BY RESIDENTS OF REGIONAL MUNICIPALITY OF PEEL

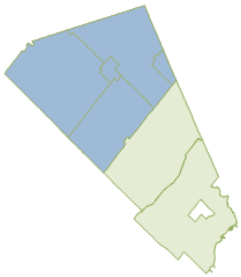
Time Period	Trips	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			HB-W	HB-S	HB-D	N-HB	Driver	Pass.	Transit	GO Train	Walk & Cycle	Other	Driver	Pass.	Transit	GO Train
6-9 AM	660,200	26.5%	47%	22%	23%	9%	63%	13%	8%	4%	8%	5%	8.9	3.4	10.4	27.7
24 Hrs	2,495,400		37%	13%	37%	13%	67%	14%	8%	2%	6%	3%	7.3	4.5	8.7	27.6

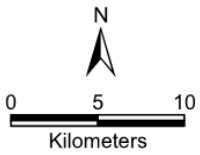
TRIPS MADE TO REGIONAL MUNICIPALITY OF PEEL BY RESIDENTS OF THE TTS AREA

Time Period	Trips	% 24 hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			Work	School	Home	Other	Driver	Pass.	Transit	GO Train	Walk & Cycle	Other	Driver	Pass.	Transit	GO Train
6-9 AM	644,200	26.1%	54%	20%	7%	19%	68%	13%	6%	0%	8%	5%	9.6	3.3	6.9	19.1
24 Hrs	2,464,600		24%	6%	44%	26%	69%	14%	7%	1%	6%	3%	7.6	4.4	7.5	27.3

TOWN OF CALEDON







TOWN OF CALEDON

HOUSEHOLD CHARACTERISTICS

Households	Dwelling Type			Household Size					Number of Available Vehicles					Household Averages				
	House	Townhouse	Apartment	1	2	3	4	5+	0	1	2	3	4+	Persons	Workers	Drivers	Vehicles	Trips/Day
21,200	89%	7%	4%	12%	29%	19%	25%	15%	1%	18%	49%	20%	12%	3.1	1.9	2.3	2.3	6.0

POPULATION CHARACTERISTICS

Population	Age							Daily Trips per Person (age 11+)	Daily Work Trips per Worker	Population	Employment Type			Student	Licensed	Transit Pass
	0-10	11-15	16-25	26-45	46-64	65+	Median				Full Time	Part Time	At Home			
										Male						
										32,600	49%	6%	3%	23%	74%	4%
										Female						
65,600	13%	8%	13%	24%	29%	12%	40.3	2.2	0.74	33,000	36%	10%	6%	23%	71%	6%

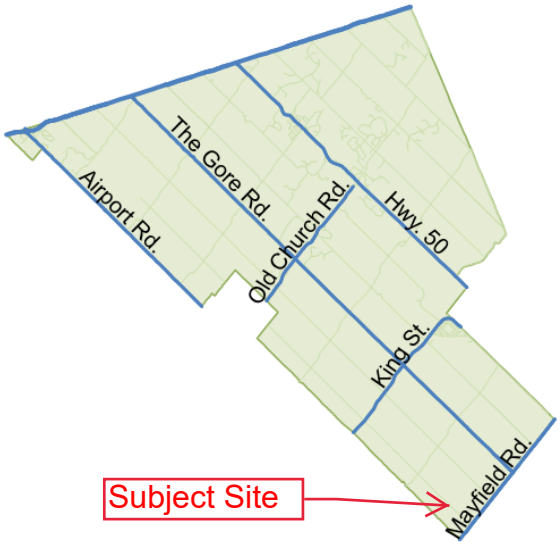
TRIPS MADE BY RESIDENTS OF TOWN OF CALEDON

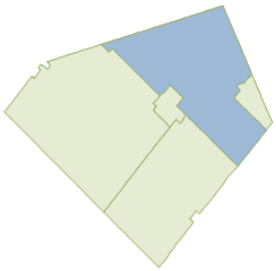
Time Period	Trips	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			HB-W	HB-S	HB-D	N-HB	Driver	Pass.	Transit	GO Train	Walk & Cycle	Other	Driver	Pass.	Transit	GO Train
6-9 AM	32,500	25.6%	55%	22%	16%	7%	73%	10%	1%	1%	3%	12%	18.9	9.5	31.2	38.0
24 Hrs	127,000		37%	13%	35%	15%	77%	12%	1%	0%	3%	6%	15.4	11.8	19.9	38.0

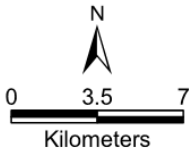
TRIPS MADE TO TOWN OF CALEDON BY RESIDENTS OF THE TTS AREA

Time Period	Trips	% 24 hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			Work	School	Home	Other	Driver	Pass.	Transit	GO Train	Walk & Cycle	Other	Driver	Pass.	Transit	GO Train
6-9 AM	25,700	24.2%	51%	30%	4%	15%	65%	13%	1%	*	4%	17%	12.8	7.4	7.1	*
24 Hrs	106,200		20%	8%	51%	21%	74%	13%	1%	0%	3%	8%	13.6	9.6	9.8	38.0

TOWN OF CALEDON
WARD 4







WARD 4

HOUSEHOLD CHARACTERISTICS

Households	Dwelling Type			Household Size					Number of Available Vehicles					Household Averages				
	House	Townhouse	Apartment	1	2	3	4	5+	0	1	2	3	4+	Persons	Workers	Drivers	Vehicles	Trips/Day
4,700	94%	5%	1%	10%	33%	17%	25%	15%	1%	16%	43%	25%	15%	3.2	2.0	2.4	2.5	6.4

POPULATION CHARACTERISTICS

Population	Age							Daily Trips per Person (age 11+)	Daily Work Trips per Worker	Population	Employment Type			Student	Licensed	Transit Pass
	0-10	11-15	16-25	26-45	46-64	65+	Median				Full Time	Part Time	At Home			
										Male						
										7,300	49%	8%	4%	24%	78%	3%
										Female						
14,900	10%	9%	14%	23%	30%	14%	41.7	2.2	0.72	7,600	36%	9%	7%	25%	72%	4%

TRIPS MADE BY RESIDENTS OF TOWN OF CALEDON - WARD 4

Time Period	Trips	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			HB-W	HB-S	HB-D	N-HB	Driver	Pass.	Transit	GO Train	Walk & Cycle	Other	Driver	Pass.	Transit	GO Train
6-9 AM	7,600	25.6%	53%	21%	17%	9%	72%	11%	*	0%	1%	14%	21.3	29.4	*	48.7
24 Hrs	29,900		36%	14%	35%	15%	79%	12%	1%	0%	1%	7%	16.7	15.0	19.9	48.7

TRIPS MADE TO TOWN OF CALEDON - WARD 4 - BY RESIDENTS OF THE TTS AREA

Time Period	Trips	% 24 hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			Work	School	Home	Other	Driver	Pass.	Transit	GO Train	Walk & Cycle	Other	Driver	Pass.	Transit	GO Train
6-9 AM	3,500	18.1%	45%	37%	5%	13%	60%	11%	*	*	9%	21%	18.6	9.5	*	*
24 Hrs	19,400		14%	7%	66%	13%	75%	12%	*	0%	3%	9%	16.6	12.6	*	48.7

Appendix C

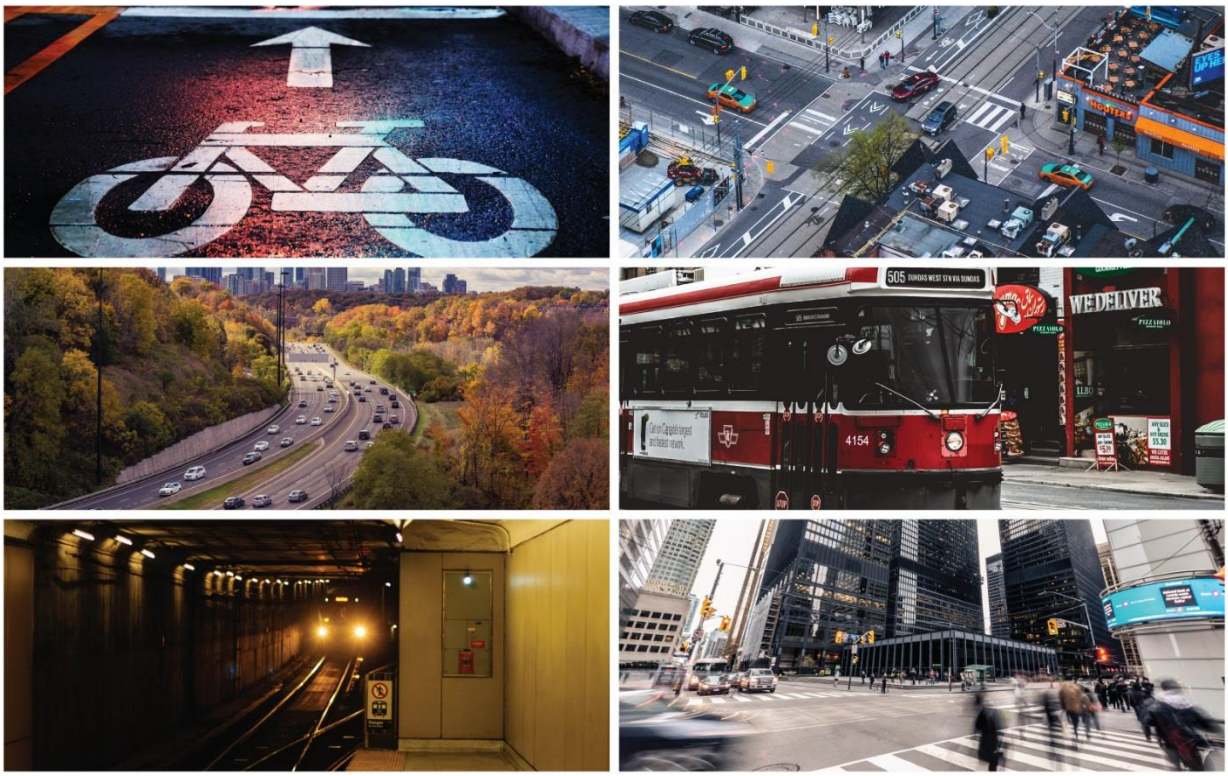
WSP – Transportation Impact Study and Demand Management Plan Excerpts

AIRFIELD DEVELOPMENTS INC. & AIRFIELD II DEVELOPMENTS INC.

6034 MAYFIELD ROAD

TRANSPORTATION IMPACT STUDY AND DEMAND MANAGEMENT PLAN

JULY 29, 2021



wsp

Figure 1.1

Site Location and Context

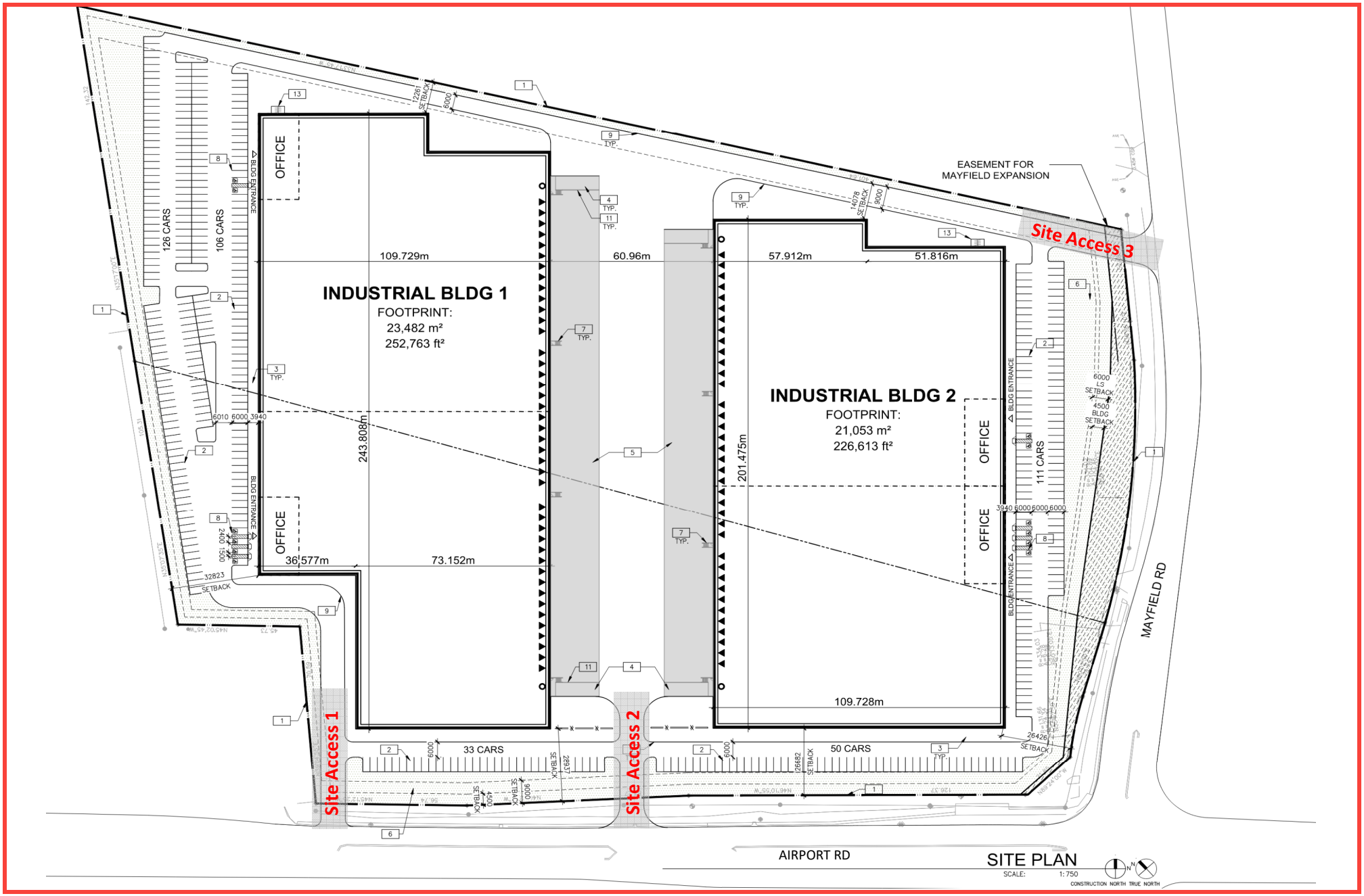


Figure 1.2

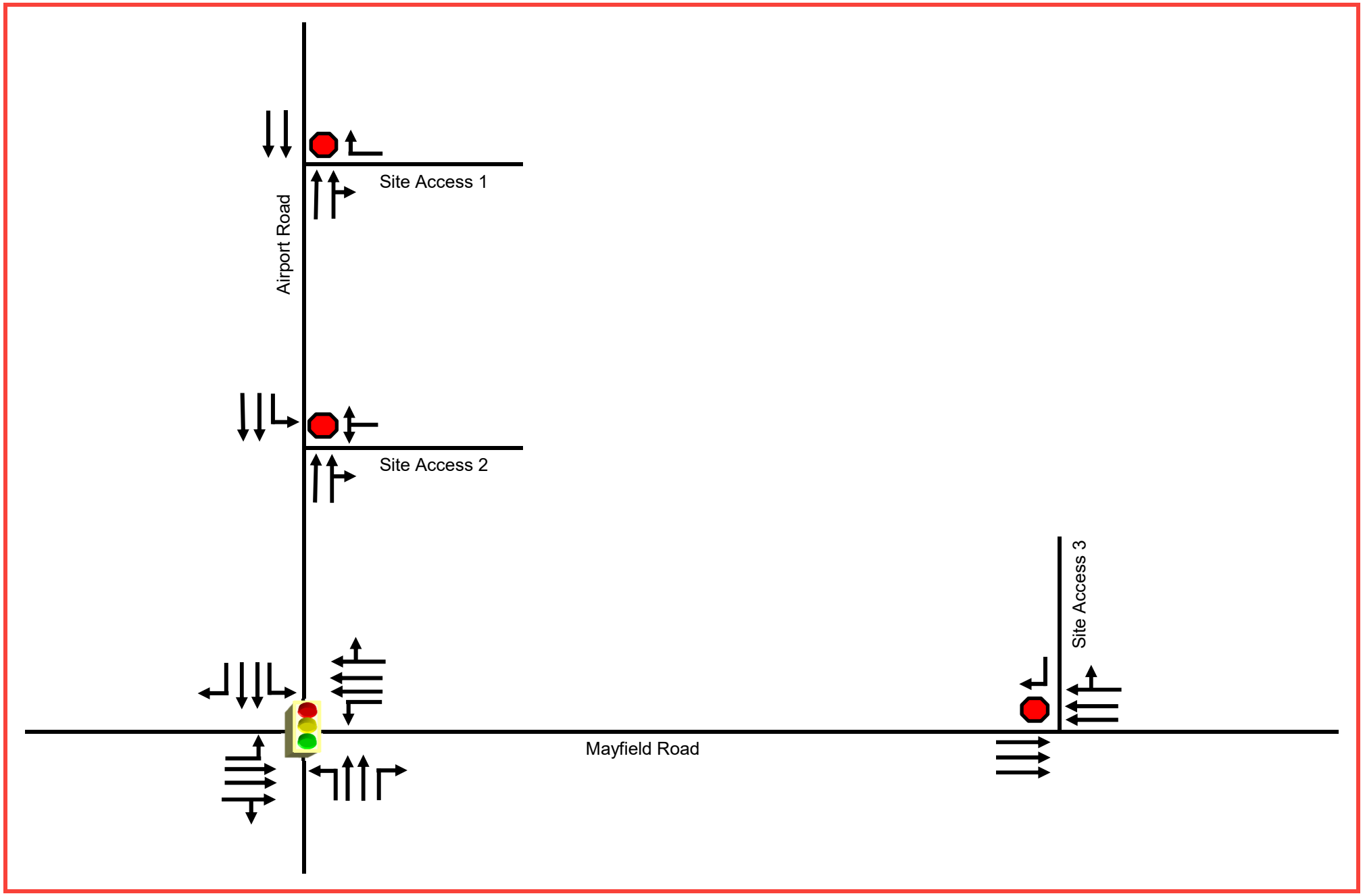
Proposed
Site Plan

4 SITE-GENERATED TRAFFIC

4.1 SITE ACCESSES

At full buildout, the proposed development will feature three vehicular driveways connecting to Airport Road and Mayfield Road as illustrated in the site plan (Figure 1.2). Site accesses 1 and 3 will operate as right-in/right-out access while site access 2 will operate with full-moves. For site access 2, WSP is proposing a southbound left-turn auxiliary lane with, in accordance with Transportation Association of Canada guidelines, a storage length of 77 metres and a taper of 60 metres. All three site accesses are proposed to be stop-controlled.

The lane configurations under future total conditions are illustrated in **Figure 4.1**.



Legend

Turning Movement

Signalized Intersection

Stop-Controlled Approach

Figure 4.1

Future Total Lane Configurations

4.2 TRIP GENERATION

The trips generated by the proposed development during the weekday a.m. and p.m. peak hours were estimated using the trip generation equations outlined in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*. As both warehouse and general industrial uses are currently being contemplated for the development, trip generation estimates using the ITE Land Use Codes 150 (Warehousing) and 110 (General Light Industrial) are compared in **Table 4.1**. Since, as shown in the table, general industrial uses are expected to generate a greater number of peak hour trips, the trip generation estimate for this use was conservatively adopted for this study.

It should be noted that these equations include both vehicle and truck trips to the development; truck trips were assumed to account for 13% of total peak hour trips based on truck trip generation information available from the ITE.

Based on Transportation Tomorrow Survey (TTS) 2016 data for employment trips to/from zones 3014, 3015, 3441, and 3442, it was determined that there was very minimal use of non-auto modes of travel. As such, no mode share adjustments were applied to the ITE-derived trips.

Table 4.1: Site Generated Trips

ITE Land Use (Code)		Weekday A.M. Peak Hour			Weekday P.M. Peak Hour		
		In	Out	Total	In	Out	Total
Warehousing (150)	Equation (X=1000 ft²)	T = 0.12 X + 25.32			T = 0.12 X + 27.82		
	Directional Splits	77%	23%	100%	27%	73%	100%
	Trips (479,375 ft²)	**64**	**19**	**83**	**23**	**62**	**85**
General Light Industrial (110)	Equation (X=1000 ft²)	Ln(T) = 0.74 Ln(X) + 0.39			Ln(T) = 0.69 Ln(X) + 0.43		
	Directional Splits	88%	12%	100%	13%	87%	100%
	Trips (479,375 ft²)	**125**	**17**	**142**	**14**	**95**	**109**
	Vehicle Trips (87%)	109	15	124	12	83	95
	Truck Trips (13%)	16	2	18	2	12	14

As presented above, the proposed development is forecasted to generate **142 and 109 total trips** during the a.m. and p.m. peak hours, respectively.

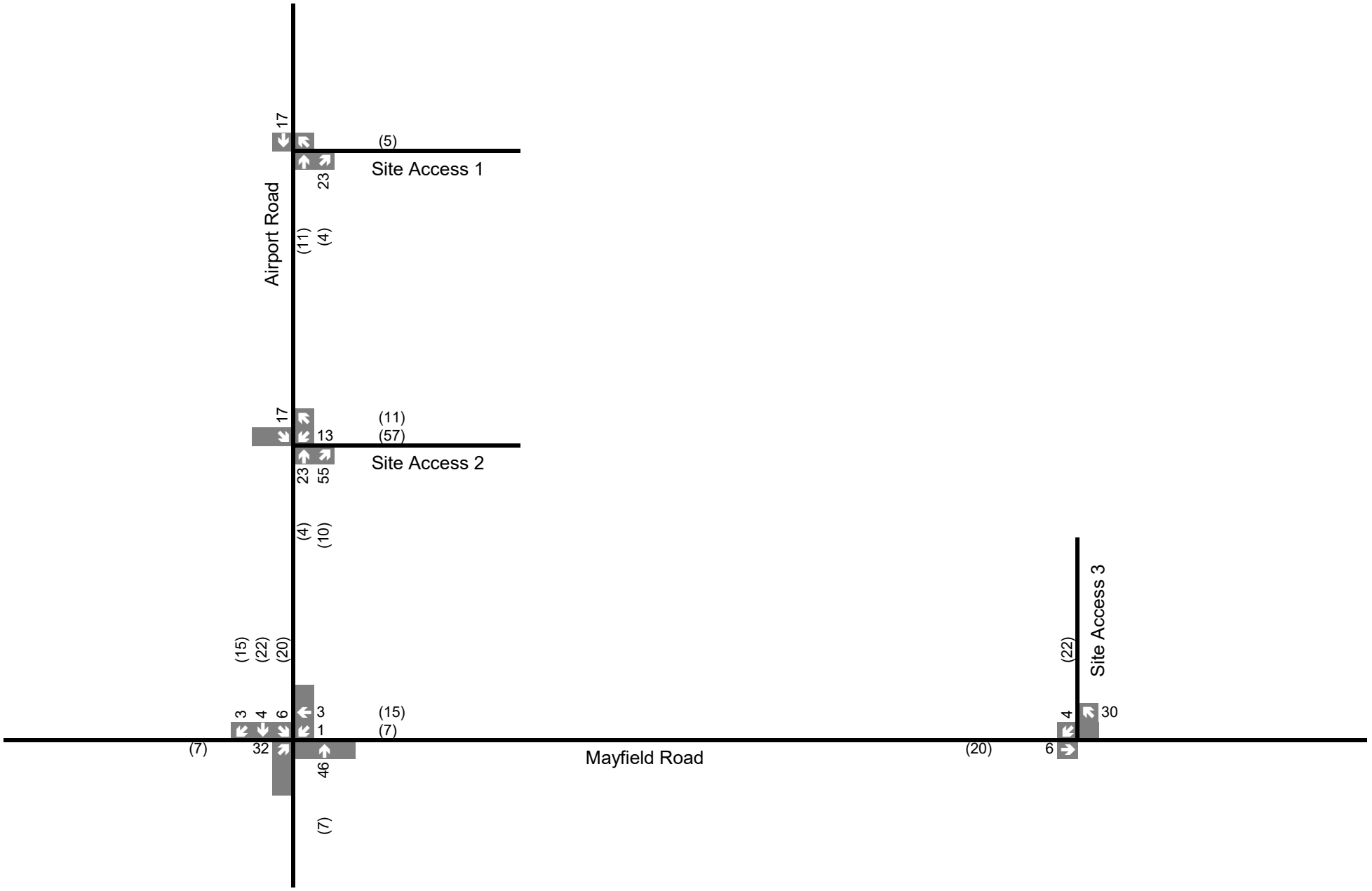
4.3 TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution and assignment of the site-generated trips was derived from the TTS data and assigned to the gateways based on local road network and land use considerations. The overall trip distribution is shown in **Table 4.2.**

Table 4.2: Trip Distribution

Gateway Direction	AM Inbound	AM Outbound	PM Inbound	PM Outbound
North	14%	0%	0%	17%
West	26%	34%	50%	31%
South	37%	34%	50%	31%
East	24%	32%	0%	20%

Figure 4.2 illustrates the resulting site traffic volumes for future horizon years.



Legend

xx A.M. Peak Hour Traffic Volumes

(xx) P.M. Peak Hour Traffic Volumes

Figure 4.2

Site Generated Traffic Volumes

Appendix D

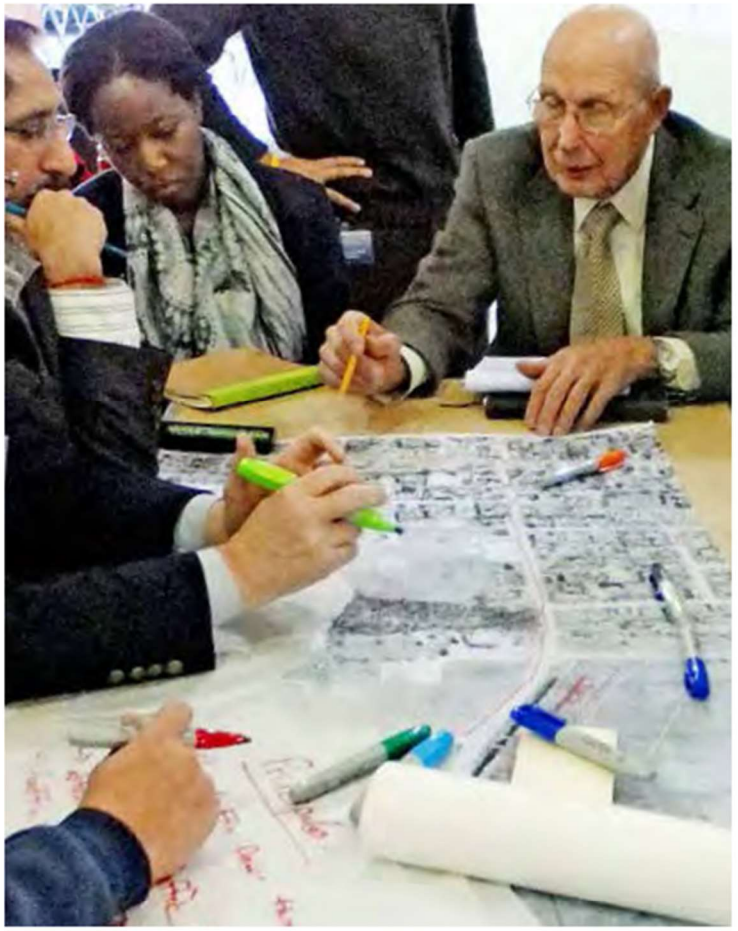
Region of Peel's Characterization Study Excerpts

5.0 Access Management Elements

5.1 Access Management Approach

In developing the spacing for access connections, the traffic operation objectives of continuous movement of all types of modes (traffic service), reduction of conflict points when possible between pedestrians, cyclists, and motorists (traffic safety), and efficient access to adjacent properties must be our primary purpose. However, successful urban places are not created through good traffic operations alone but are dependent upon the principles and objectives of land use planning. For this reason, both traffic operations objectives and current practices together with land use planning principles and the expectation of development were used to formulate an access management approach for the Region of Peel.

A large consideration of land use planning in the Region of Peel is the understanding that population growth will dramatically impact our communities through urbanization, intensification and development. Of course some of our rural places, particularly within the greenbelt will remain largely unchanged; however we can reasonably predict and should plan for the influx of development throughout Peel. To align more effectively with the Growth Secretariat's direction through Places to Grow and to support urbanization in specific locations, all spacing connection guidance should also consider the evolution of transitioning land uses over time. For this reason *Table 2: Median Opening Spacing*, was developed with this premise and the underlying assumption of development over time. The table reads left to right following the established transect model of land uses with the Rural type evolving to the Urban or Rural Main Street road types.



Access Control Workshop - Day 2

Access Management Elements

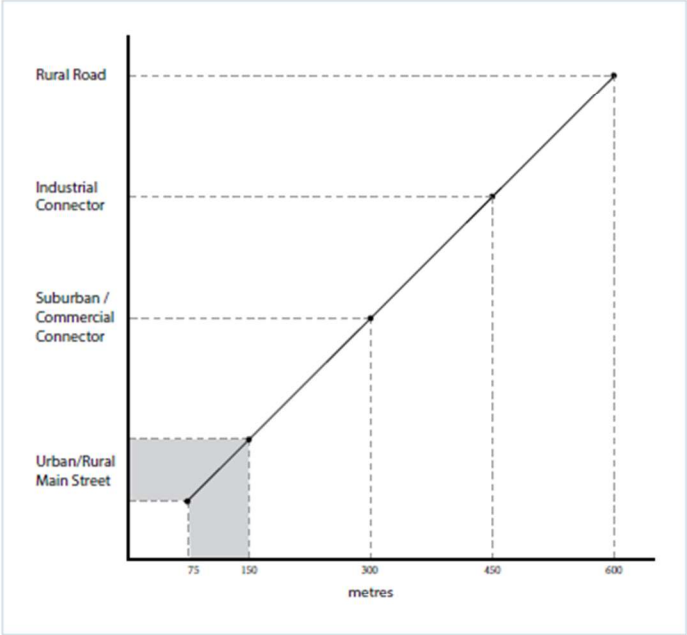


Figure 23: Access Spacings – Rural to Urban Transition
Source: Region of Peel

As highlighted in the Current Practices Review (Chapter 3), there is limited detailed guidance that considers development over time when regulating intersection spacing. In the absence of a complete and established set of detailed specifications, our approach was to consider the elements of successful urban places throughout the world and in Peel as identified earlier through the discussion on block dimensions (Chapter 1). Communities that offer walkable, compact, dense design begin with block dimensions in the range of 75m to 130m on the narrow end of the block face and between 150m and 200m along the wide end of the block face as established. The Urban Main Street criteria establish 150m for intersection spacing in an urban environment. The table continues by either halving this for partial access (Full to Left-In and Full to Right-In/Right-Out) or doubling it to 300m as in the case of the Suburban Connector. The graph below illustrates the decreasing spacing between intersections as land uses evolve over time and require reduced intersection spacing.

Inherent in this approach is the assumption that Commercial Connectors, such as Mississauga Road are the most likely of the road types to develop into Urban Main Streets and that Suburban Connectors with residential uses between commercial nodes will evolve more slowly over time.

5.1.1 Intersection Spacing

The need for new public streets intersecting the Region's arterials is predictable, given the growth of trip origins (homes) and destinations (commercial and employment space) along the arterial corridors, and the need to provide armatures of local streets for this growth. The creation of new

local streets is a municipal prerogative, while the location and design of their connection to arterials is a joint initiative of both the Region and Area Municipalities.

Where most new public streets require a full median opening for a full movement intersection with an arterial, the appropriate spacing between existing intersections is given as the *Full to Full* entry in *Table 1*. The *Full to Full* criteria vary significantly according to arterial characterization type. For three arterial types (Rural, Commercial Connector and Industrial Connector, their large spacing reflects an emphasis on minimizing vehicle delay within these corridors. This is consistent with both the historical and current practice of traffic control signal spacing of 300m–450m to allow for effective progression on the arterial road (see Access Management Practices Matrix). By contrast, for three other arterial characterization types (Rural Main Street, Urban Main Street and Suburban Connector) their small intersection spacing reflects the street and block pattern of urban activity centres and rural village centres. Lower spacings of 200m–215m are not only used in current municipal access management practice, but are also prescribed in traffic control spacings where traffic control signal coordination is not being considered. Further lower spacings of 150m for full movement accesses are generally accepted at unsignalized intersections/accesses only, and are only recommended where queues do not extend past 150m from the nearest signalized intersection.

For the Rural Road type, typically located in undeveloped areas (refer to Road Typologies Matrix), increased intersection spacing minimizes the number of public street intersections. For the connector road types, typically serving areas with industrial and commercial destinations, these spacings anticipate a limited increase in the number of public street connections. For the Main Street road types (both Rural and Urban) the spacings for public street intersections shift emphasis away from limiting the number of access connections and focus instead on forming a more dense pattern of local street connections where possible.

5.2 Access Management Rationale

The Region considers specific intersection spacing requirements based on land use character and transportation function for different contexts along Regional Roads. The rationale for the spacing shown in *Tables 2* and *3* by road type are as follows:

Rural Road – 600 metres

- Preservation of arterial function.
- Fewer stops desired in rural environmental.
- Larger/agricultural land parcels necessitating less frequent access.
- Minimal conflict points.
- Lowest pedestrian activity requiring fewer crossings.
- May evolve into other road types but may remain the unchanged (if in greenbelt, etc).
- Horizontal and vertical curves may limit intersection opportunities.
- Limited (inter-regional) transit requiring fewer stops.
- Preserves constant operating speed with fewer conflict points reduces acceleration and deceleration thus less noise, pollution and delay especially for large transport vehicles

Access Management Elements

Industrial Connector – 450 metres

- Preservation of arterial function.
- Fewer stops desired to reduce stopping and starting delays of large vehicles.
- Allows for effective signal optimization for trucks.
- Higher percentage of long vehicles requiring longer storage for larger vehicles and longer taper distances.
- Large lot sizes for warehouse and other industrial uses.
- Pedestrian activity higher (employees/transit riders) and thus crossing needs at intersections are more frequent than for Rural Roads.
- Existing conditions may present challenges for cyclists as vulnerable road users.
- Minimal conflict points.
- Primarily inter-regional travel with emphasis on connectivity to 400 series highways.
- Greater transit needs than on a Rural Road.
- Both inter and intra-regional travel.
- Balancing demand at intersections results in reduced emissions.
- Controls platooning making it easier to achieve good progression on higher saturated roads with mixed types of traffic.
- Preserves constant operating speed and helps to gain controlled progression, results in less deceleration and acceleration, less noise and pollution.

Suburban Connector – 300 metres

- Preservation of arterial function.
- More frequent stops than the Rural Road and Industrial Connector categories.
- Both inter and intra regional travel.
- Supports Goods Movement with cross section dimensions (specifically lane widths and turning radii).
- Fewer truck turning movements than the Industrial Connector.
- More pedestrians and cyclists than the Industrial Connector.
- More distribution points requiring more intersections and fewer turning movements from arterial to arterial (less protected phasing required).
- Transit supportive requiring more frequent stops than Rural and Industrial Connector road types.
- Consistent with both the historical and current practice of traffic control signal spacing to allow for effective progression on the arterial (See Access Management Practices Matrix).
- Controls platooning making it easier to achieve good progression on higher saturated roads with mixed types of traffic.
- Preserves constant operating speed and helps to gain controlled progression, results in less deceleration and acceleration, less noise and pollution.

Commercial Connector – 300 metres

- Preservation of arterial function.
- More frequent stops than the Rural Road and Industrial Connector categories.
- Both inter and intra-regional travel.
- Supports Goods Movement with cross section dimensions (specifically lane widths and turning radii).

Access Management Elements

- Fewer truck turning movements than the Industrial Connector.
- More pedestrians and cyclists than the Industrial Connector and possibly the Suburban Connector as a result of employment lands.
- More distribution points requiring more intersections and fewer turning movements from arterial to arterial (less protected phasing required).
- Transit supportive requiring more frequent stops than Rural and Industrial Connector road types.
- Consistent with both the historical and current practice of traffic control signal spacing to allow for effective progression on the arterial
- More frequent stops/turning movements than Rural, Industrial and Suburban due to commercial nodes of activity requiring reduced partial access points.
- More conflict points as a result of the greater land use intensities and decreased partial intersection spacing.
- Slower operating speed.
- Controls platooning making it easier to achieve good progression on higher saturated roads with mixed types of traffic.
- Preserves constant operating speed and helps to gain controlled progression, results in less deceleration and acceleration, less noise and pollution.

Rural Main Street – 150 metres

- Preservation of arterial function in a Main Street environment (urban center).
- Inter regional Transit.
- Increased demand for turning movements.
- Increased pedestrian and cycling activities.
- Lower volumes, less queuing.
- Lower speeds.
- Smaller lot size requiring increased access points.
- Shorter signal cycles.
- Can accommodate more stops as a result of the shorter signal cycles.
- Fewer turning movements resulting in reduced need for auxiliary lanes.

Urban Main Street – 150 metres

- Preservation of arterial function in a main street environment.
- Inter-regional Transit.
- Increased demand for turning movements resulting in more distributed turning points to alleviate pressure on main intersections.
- Decreased queuing.
- Connected street network.
- When a connected network exists, more access is realized by properties other than those fronting an arterial resulting in increased economic opportunity for land owners. Businesses no longer require access off the arterial to be successful.
- Shorter signal cycles.
- Can accommodate more stops as a result of the shorter signal cycles.
- Increased pedestrian and cycling activities.
- High transit activity requiring more frequent stops.

5.3 Access Connection Spacing

5.3.1 Median Opening Spacing

Controlling access along a divided roadway through openings in the median is among the most effective and readily available of access management actions available for Regional Roads. Median access does not have to be provided for individual properties but rather can be configured, at the direction of the Region, to focus turning movements at appropriate locations, to limit locations for conflicting (i.e. left-turn) movements and to establish points at which important access such as future public streets or major private driveways should be located. The Region's Active Transportation Plan can be referred to for pavement markings and other treatments recommended for the safe crossing of pedestrians and cyclists at access connections.

Three types of median openings are identified *(Table 2)*:

- Full-movement median opening at public street intersections and/or private driveways. (Full to Full)
- Partial-movement opening (Left-In/Right-In/Right-Out to Left-In/Right-In/Right-Out) allowing left turns to be made from the arterial road into a property, but preventing the counterpart left turn from the access onto the managed arterial road. (Full to Left-In/Right-In/Right)

The spacing of these types of median openings on each of the six Regional Road types identified in the RCS are given in *Table 2: Median Opening Spacing*.

For the Rural Road type, typically located in undeveloped areas, median opening spacings minimize the number of median openings (Note: Rural Roads do not typically have medians). For the Connector road types, typically serving areas with industrial and commercial destinations, median opening spacing criteria limit them to important destinations or combinations of such connections. For the Main Street road types (both rural and urban) mid-block median openings are undesirable, being either redundant or even incompatible with the closely-spaced public street intersections and small blocks that exist or are planned for such areas.

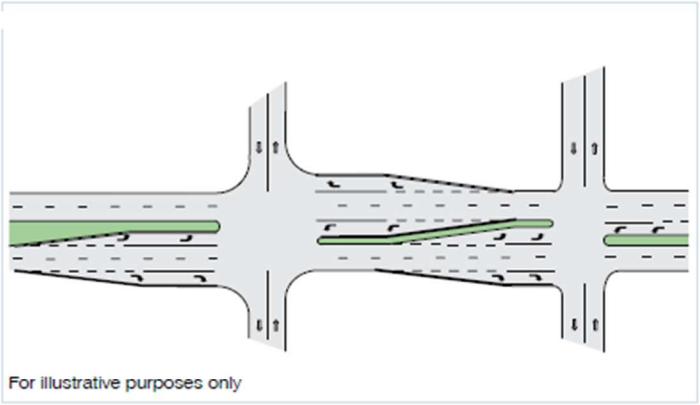


Figure 24: Median Opening Spacing – Full to Full
Source: Walter Kulash based on Access Control Diagrams provided by Region of Peel

Access Management Elements

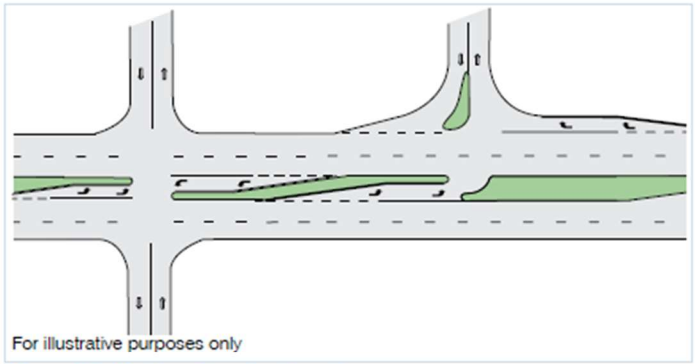


Figure 25: Median Opening Spacing – Full to Left-In/Right-In/Right-Out

Figure 26: Median Opening Spacing – Left-In/Right-In/Right-Out to Left-In/Right-In/Right-Out

Sources: Walter Kulash based on Access Control Diagrams provided by Region of Peel

Minimum Spacing Between (metres)	Rural Road	Industrial Connector	Suburban Connector	Commercial Connector	Rural Main Street	Urban Main Street
Full to Full	600	450	300	300	150	150
Full to Left-In/Right-In/Right-Out	ISR	225	150	150	75	75
Left-In/Right-In/Right-Out to Left-In/Right-In/Right-Out	ISR	225	150	150	75	75

Table 2: Median Opening Spacing

NOTE: Spacing measured between curb extension to curb extension. (See Figures 24-26)
All spacings and access points to be verified by a Transportation Impact Assessment and/or sightline analysis.

LEGEND: ISR: Individual Site Review

Source: All Tables were developed in consultation with the Region of Peel and are based on governing documents and professional judgment.

5.3.2 Right-In/Right-Out Spacing

The number of accesses and their possible locations are largely dictated by (1) the need to provide reasonable access to public roads for all properties and (2) the size and shape of these properties. Within these dictates, access spacing criteria can minimize the number of access and influence their location.

For the Rural Road type, typically located in undeveloped areas, access spacing criteria can limit accesses to existing (large) spacing. For the Connector road types, typically serving areas with industrial and commercial destinations, access spacing criteria can foster joint access by adjacent properties and lay the foundation for future public streets or service roads. For Main Street road types, (both rural and urban) accesses are undesirable, being at odds with the village, urban street fronts that exist, or are planned for such areas.

Along with access spacing criteria, the whole range of roadway network building actions can greatly reduce the number of accesses needed, and also influence their location.

Access spacing is categorized according to four distances from Right-In/Right-Out access to:

- Full median openings (Full to Right-In/Right-Out).
- Partial median openings (Full to Left-In/Right-In/Right-Out)
- Right-In/Right-Out to Right-In/Right-Out.
- Right-In Only to Right-Out Only.

The spacing of accesses on each of the six road types identified in the RCS are given in *Table 3: Right-In/Right-Out Spacing*. Restricted access spacing of 75m is a generally accepted municipal access management practice on more urban or Main Street roadways, while the 100m spacing is consistent with current municipal practice for divided arterials and commuter roads.

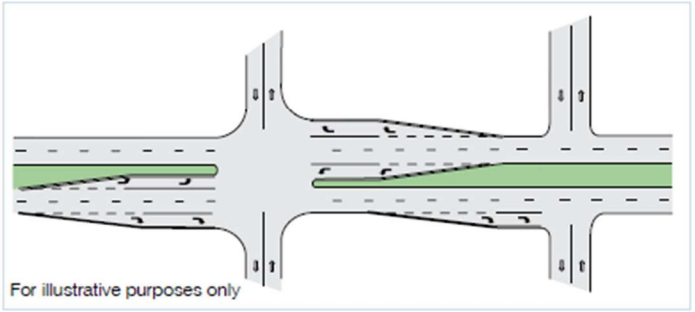


Figure 27: Full to Right-In/Right-Out with Median

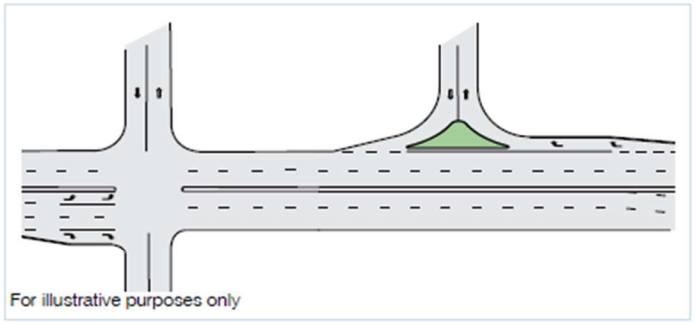
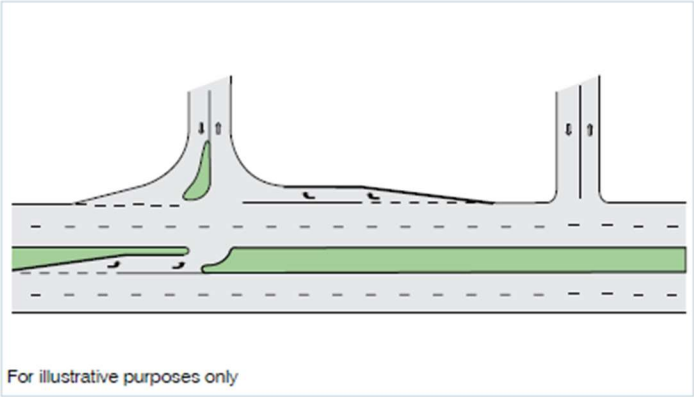


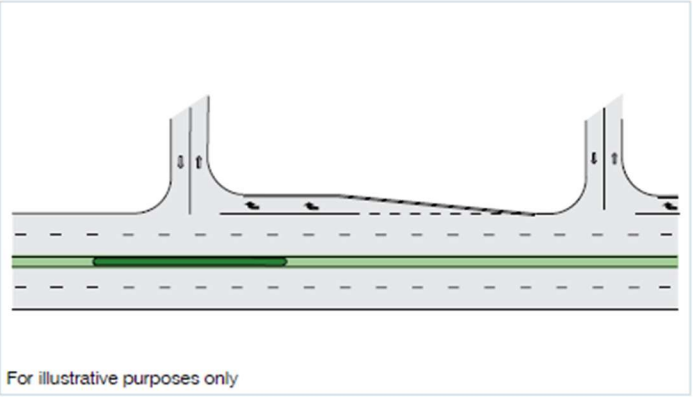
Figure 28: Full to Right-In/Right-Out with Divisional Island
Sources: Walter Kulash based on Access Control Diagrams provided by Region of Peel

Access Management Elements



For illustrative purposes only

Figure 29: Left-In/Right-In/Right-Out to Right-In/Right-Out



For illustrative purposes only

Figure 30: Right-In/Right-Out to Right-In/Right-Out

Sources: Walter Kulash based on Access Control Diagrams provided by Region of Peel

Minimum Spacing Between (metres)	Rural Road	Industrial Connector	Suburban Connector	Commercial Connector	Rural Main Street	Urban Main Street
Full to Right-In/Right-Out	75 or max lot frontage	100	75	100	75	75
Left-in/Right-In/Right-Out to Right-In/Right-Out	ISR	100	75	100	ISR	ISR
Right-In/Right-Out to Right-In/Right-Out	ISR	100	75	100	ISR	ISR

Table 3: Right-In/Right-Out Spacing

NOTES: Spacing measured between curb extension to curb extension. (See Figures 27-30) LEGEND: ISR: Individual Site Review

All spacings and access points to be verified by a Transportation Impact Assessment and/or sightline analysis.

Source: All Tables were developed in consultation with the Region of Peel and are based on governing documents and professional judgment.

5.4 Auxiliary Lane Placement

Guidance for providing auxiliary turn lanes (left turn and right turn) at access connection points are summarized in *Table 4: Auxiliary Lane Placement*. A screening process for an access that, per this document, qualifies as a right-in/right-out access only is provided in *Table 5*, and detailed requirements for restriction and auxiliary lanes based on traffic volume impacts.

5.5 Traffic Volumes for Accesses, Median Openings, and Auxiliary Lanes

In addition to the spacing criteria for median openings *(Table 2)* and accesses *(Table 3)* which apply to the arterial, the Region has proposed a traffic volume-based response addressing the need for access, auxiliary lanes and the encumbrance of land title with requirements for access limitation and provision of auxiliary lanes. This guidance, along with the Transportation Impact Assessments, provide opportunities for advancing a number of access management planning activities:

- Identifying the need for auxiliary lanes.
- Identifying the need for, and type of median opening or physical restriction (e.g. divisional island).
- Analyzing impact of U-turns on nearby intersections.
- Suggesting ways to shift some of the traffic to other streets.
- Suggesting a path toward a highly connected network
- Establishing if a traffic control device is warranted.

Access Connection	Turn Lane Type	Rural Road	Industrial Connector	Suburban Connector	Commercial Connector	Rural Main Street	Urban Main Street
Full Movement Intersection	R	Cond	Yes	Cond	Cond	Cond	Cond
	L	Cond	Yes	Yes	Yes	Cond	Cond
Left-in Median Opening and Right-In/Right-Out	R	Cond	Yes	Cond	Cond	Cond	Cond
	L	Cond	Yes	Yes	Yes	Cond	Cond
Driveway	*See Volume Thresholds for Access Control – Table 5*						

Table 4: Auxiliary Lane Placement

NOTE: These spacings may not be achievable due to limited frontage of land parcels or proximity to intersections.

LEGEND: Cond: Conditional, based on results of a Transportation Impact Assessment.
L: Left Turn Lane R: Right Turn Lane

Access Management Elements

New Development			
	Low Impact less than 60 veh/hr peak hour	Medium Impact 60-100 veh/hr peak hour	High Impact over 100 veh/hr peak hour
Physical Access Restriction	N/A	N/A	Yes
Auxillary Lane(s) Requirement	N/A	Yes, if supported by Regional staff and TIA	Yes
Access Restriction on Title	N/A*	Yes	Yes
Auxillary Lane(s) Requirements on Title	N/A	Yes	Yes
Re-Development/Intensification			
	Low Impact less than 60 veh/hr peak hour	Medium Impact 60-100 veh/hr peak hour	High Impact over 100 veh/hr peak hour
Physical Access Restriction	N/A	N/A	Yes
Auxillary Lane(s) Requirement	N/A	N/A	Yes
Access Restriction on Title	N/A*	Yes	Yes
Auxillary Lane(s) Requirements on Title	N/A	Yes	Yes

Table 5: Volume Thresholds for Access Control

* Not Applicable in Rural Road conditions.

Source: All Tables were developed in consultation with the Region of Peel and are based on governing documents and professional judgment.

5.6 Design Criteria for Access

Design criteria for access are summarized in the following table and the four supporting diagrams:

- Table 6: Design Criteria for Access.
- Figure 31: Typical Layout for Right-In/ Right-Out Access (with Median Island).
- Figure 32: Typical Layout for Right-In/ Right-Out Access (without Median Island).
- Figure 33: Typical Layout for Full Moves Median Opening.
- Figure 34: Typical Layout for Left-In, Right-In/Right-Out Access.

Design Criteria (metres)		Rural Road	Industrial Connector	Suburban Connector	Commercial Connector	Rural Main Street	Urban Main Street
Access Width (AW)		ISR	9.0 min	9.0 min	9.0 min	ISR	ISR
Access Throat Length (TL)		ISR	i	i	i	ISR	ISR
Corner Radius, Min (CR)		5.0***	9.0***	9.0***	9.0***	5.0***	5.0***
Median Barrier Length, Min (BL)		30.0*	30.0*	30.0*	30.0*	N/A	N/A
Left Turn Lane Transition (LT)		TAC	TAC	TAC	TAC	TAC	TAC
Left Turn Lane Storage, Min (LS)		30.0	30.0/vol	30.0/vol	30.0/vol	30.0	30.0
Right Turn Lane Transition (RT)		TAC	TAC	TAC	TAC	N/A	N/A
Right Turn Lane Storage, Min (RS)		30.0/vol	30.0/vol	30.0/vol	30.0/vol	N/A	N/A
Auxiliary Lane Width, Min (AW)	L	3.5 **	3.5**	3.5**	3.5**	3.5**	3.5**
	R	3.25***	3.25***	3.25***	3.25***	3.25***	3.25***
Pedestrians		Design of all accesses must consider pedestrians and the continuity of existing or planned Active Transportation facilities.					

Table 6: Design Criteria for Access

NOTES: * 30m on either side of access control as per current by-law.
** Match through-lane if less or determined based on design vehicle needs.
*** Pending Design Vehicle Needs.
i) Conditional based on needs as identified in Transportation Impact Assessment or at the discretion of the Region. Minimum 30m from curb, except for single residential lots.

LEGEND: TAC: Transition length based on design speed of roadway utilizing the TAC Manual and geometric design standards.
Vol: Determined based on projected turning volumes ISR: Individual Sight Review
N/A: Not Applicable L: Left Turn R: Right Turn

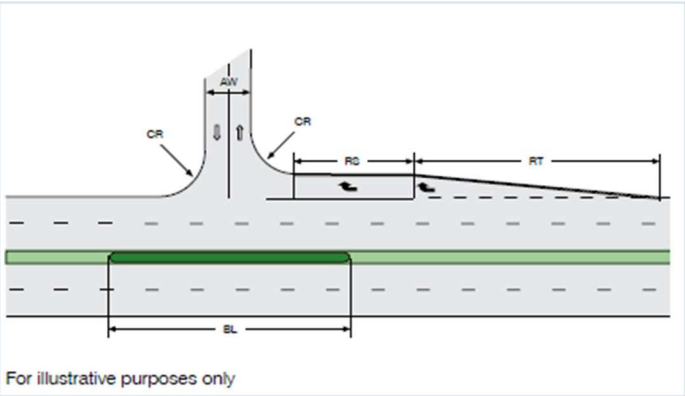


Figure 31: Typical Layout for Right-In/Right-Out Access with Median Island

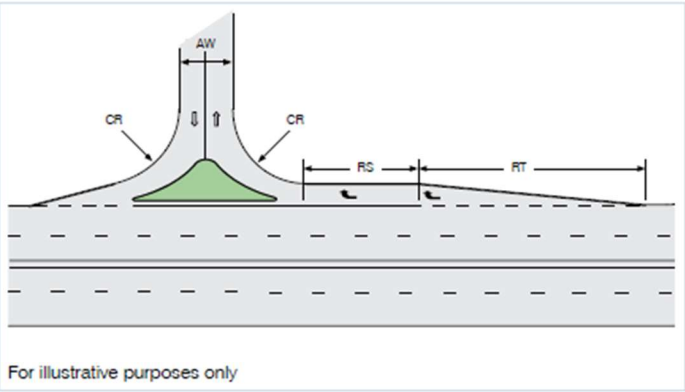


Figure 32: Typical Layout for Right-In/Right-Out Access without Median Island

NOTE: Please see Table 6 for definition of acronyms.
Sources: Walter Kulash based on Access Control Diagrams provided by Region of Peel.

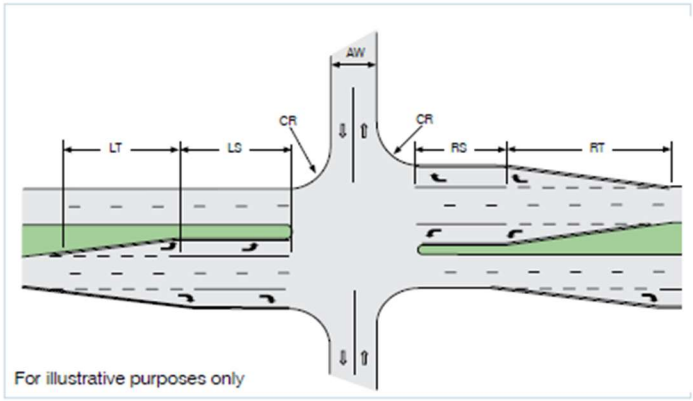


Figure 33: Typical Layout for Full Moves Median Opening

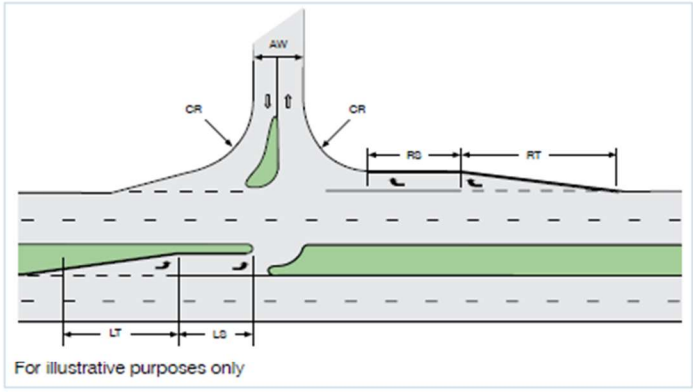


Figure 34: Typical Layout for Left-In plus Right-In/Right-Out Access

5.7 Additional Spacing Considerations

5.7.1 Traffic Control Device Spacing

The need for traffic control devices (stop control, signalization or roundabouts) is largely determined by thresholds of traffic volumes approaching the controlled intersection, evaluated for automobiles and pedestrians, as specified in the Transportation Impact Assessment. Consequently, it is not realistic to simply apply minimum-distance criteria to directly control the spacing of traffic control devices. Rather, their spacing is indirectly controlled through: (1) the spacing of median openings and (2) traffic volumes on the arterial and access at such median opening.

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As discussed in Chapter 3, traditional access management measures associated with spacing were developed around traffic control signal coordination. Depending on design speed, any spacing lower than 300m–415m was considered to disrupt corridor progression, thereby resulting in poorer service levels for traffic.

Most Regional Roads stand to benefit from spacing between traffic control devices that is as large as possible, thereby minimizing their negative impacts (delay resulting from vehicle acceleration/deceleration) on traffic flow. Where traffic control devices are needed at new accesses their negative impacts can be greatly offset by maximizing the connectivity of the new access, so that the it absorbs and disperses some of the traffic elsewhere otherwise rather than simply adding a new source of delay along the arterial. Where applicable, roundabouts will be considered as a complimentary measure to minimize conflict movements at accesses, as those entering or exiting a partial moves access can circulate through the roundabout at the nearby intersection as a means of performing the required left turn.

5.7.2 U-Turn Locations

Mid-Block U-Turns

Provision for U-turns at mid-block locations (i.e., other than at intersections) are a valuable access management measure in support of restriction of property access to right-in/right-out driveways. Mid-block U-turns, in both their spacing and design elements, are similar to partial median openings (left-in, right-in/right-out). Mid-block U-turn locations can reasonably be expected to evolve into future partial access or even full intersections.

U-Turns at Intersections

U-turns at signalized intersections, while frequently associated with access management practice, are not themselves an access management action. Rather, U-turns are a consequence of restrictions on left turns causing drivers to overshoot their intended destination access, then to make the U-turn and return to the destination, followed by a right turn at the right in/right out access.

In general, it is compatible with good access management practice to simply allow U-turns at the first signalized intersection downstream of the driver's intended destination access. Accommodating U-turns in this manner minimizes the increment of the travel added to the arterial by the turn restriction, and avoids the aggravation, to motorists, of having to negotiate more than one signalized intersection in order to make their U-turn.

U-turns nearly always require a protected left turn traffic control signal indication, as likely as not adding to the critical approach volume at a signalized intersection, and thereby consuming some of the traffic control signal's capacity. As signalized intersections approach their capacity, the increment of total delay caused by even small volumes of U-turns (say 50 – 60 hourly) becomes significant.

The most effective approach to excessive volumes of U-turns at traffic control signals is the accommodation of property access through a well-connected network of local streets properly spaced along the arterial. Further, these cross streets should be connected to cross-access easements permitting much of the needed property access to be supplied by local streets intersecting the arterial, rather than on a limited number of accesses directly connecting to the arterial. While the Region recognizes that relying on u-turns as an access management measure is not desirable, they will be considered in unique cases where appropriate and can be safely accommodated to minimize conflict movements.

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