

APPENDIX

D TRANSPORTATION AND TRAFFIC STUDY



APPENDIX

D-2 ACCESS MANAGEMENT REPORT



Secondary Plan Area (Area 47) Access Management Report

Access Management Report

Project # TP115086 Region of Peel
City of Brampton

Prepared for:

Region of Peel and City of Brampton

05/10/2021

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Prepared for:

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1.0 Introduction

This Access Management Report will form a part of the Environmental Assessment for the Special Policy Area 47 (SP47). It will include a detailed review of the access management along the six road corridors in the project scope including; Arterial A2, Coleraine Drive, Clarkway Drive, Countryside Drive, the new East-West Arterial, and Mayfield Road.

This Access Management Report will discuss the existing properties with accesses that will be impacted by this project, the existing standards, and future mitigation procedures as well as suggested intersection and accessway locations as per the TAC (Transportation Association of Canada) and Region of Peel Guidelines.

1.1 Study Area

The study area for the SP 47 includes the areas bounded by Clarkway Drive to the West, Highway 50 to the East, Mayfield Road to the North, and the new East-West Arterial to the South. The existing study area can be seen in Figure 1 below.

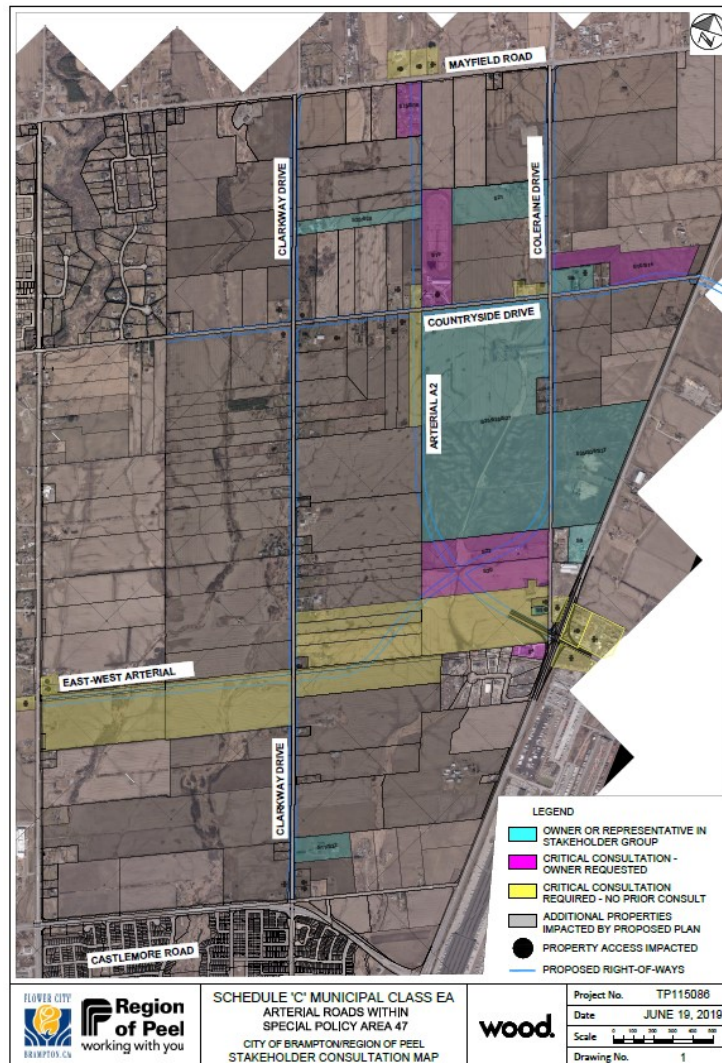


Figure 1: Stakeholder Consultation Map

1.2 Project Description

The project plans include two new arterial roads that will be built between Clarkway Drive and Coleraine Drive. Arterial A2 will be a new North-South arterial that connects to Mayfield Road to the North and the new East-West Arterial to the South. Meanwhile, the new East-West arterial will connect to Coleraine Drive to the East and create an East-West connection between Clarkway Drive to the West, Arterial A2, and Coleraine Drive.

2.0 Existing Conditions

The following section will review the existing standards and by-laws that govern the Region of Peel's major arterial roads and the municipal roads in the City of Brampton.

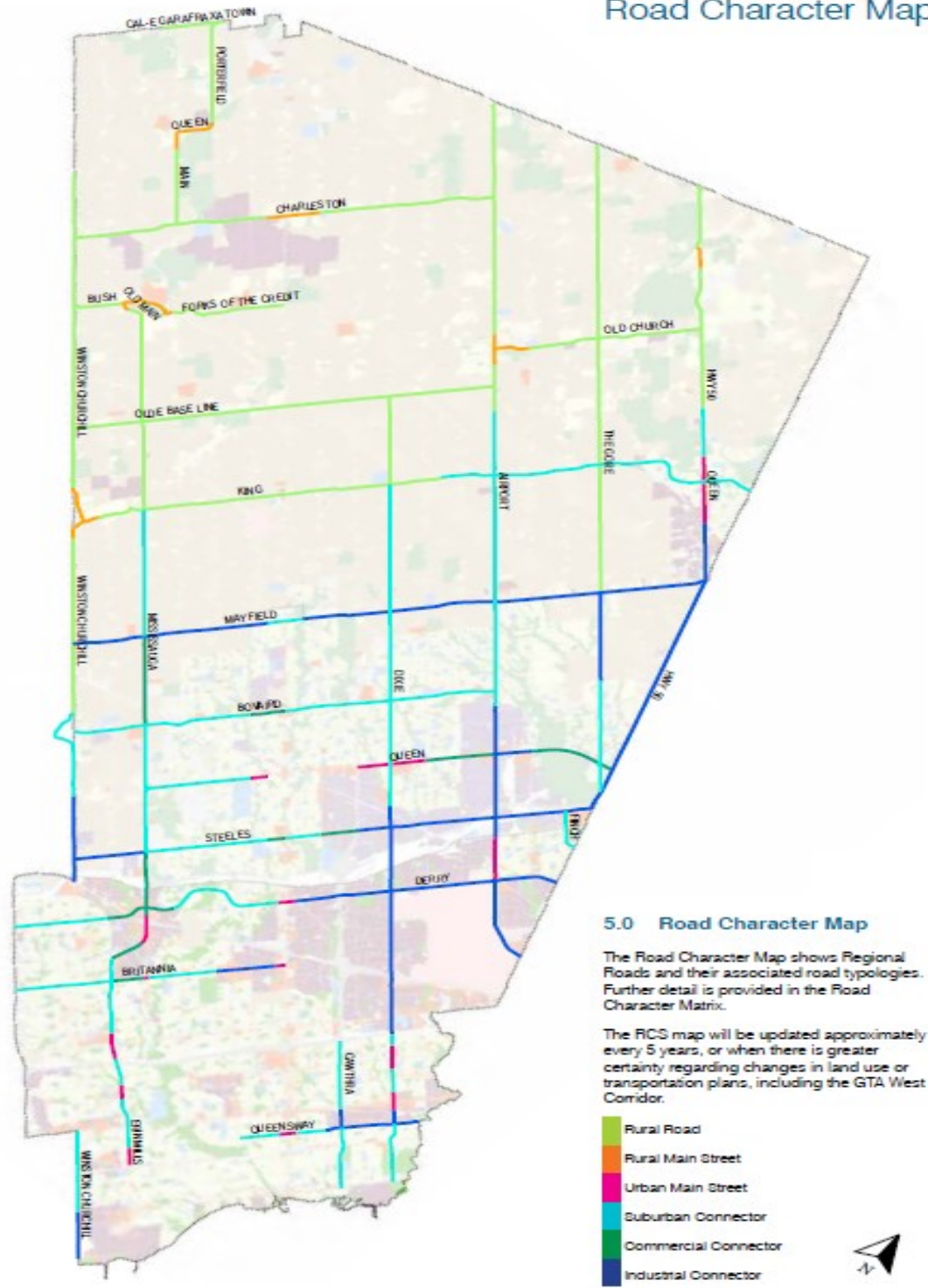
2.1 Region of Peel Road Classifications

The Region of Peel created a Road Characterization Study that was released May 2013. This document outlines the various classifications of different Right-of-Ways that exist in the Region as well as the new Access Control By-Law and how new roads and accesses should be designed.

The road typologies that are discussed in this document are Rural Roads, Industrial Connectors, Suburban Connector, Commercial Connector, Rural Main Street, and Urban Main Street. As part of the outcome of this study, a Road Character Map was created to provide an overview of the classification of the Regional Road network in the Region of Peel and can be seen below in

Figure 2.

Road Character Map



5.0 Road Character Map

The Road Character Map shows Regional Roads and their associated road typologies. Further detail is provided in the Road Character Matrix.

The RCS map will be updated approximately every 5 years, or when there is greater certainty regarding changes in land use or transportation plans, including the GTA West Corridor.

- Rural Road
- Rural Main Street
- Urban Main Street
- Suburban Connector
- Commercial Connector
- Industrial Connector

Note: Existing land use data for the base map was sourced from Area Municipal Official Plans. This map will be amended periodically in response to approved secondary plans, block plans, or council endorsed development applications.

Figure 2: Region of Peel Road Character Map (Region of Peel, 2013)

As per the Road Character Map, all existing Regional Roads within the study area are classified as Industrial Collectors. The Gore Road has a posted speed limit of 50km/h, while Highway 50 has a posted limit of 70km/h.

2.2 Brampton Municipal Road Classifications

Based on the 2020 Schedule B City Road Hierarchy released by the City of Brampton, Coleraine Drive is classified as a Minor Arterial, Countryside Drive is classified as an Urban Collector, Clarkway Drive is classified as a Collector, and Coleraine Drive is defined as a Major Arterial. Mayfield Road is classified as both an Urban Collector and Regional Major Arterial. The City of Brampton released a Road Hierarchy Map which can be seen in Figure 3 below.

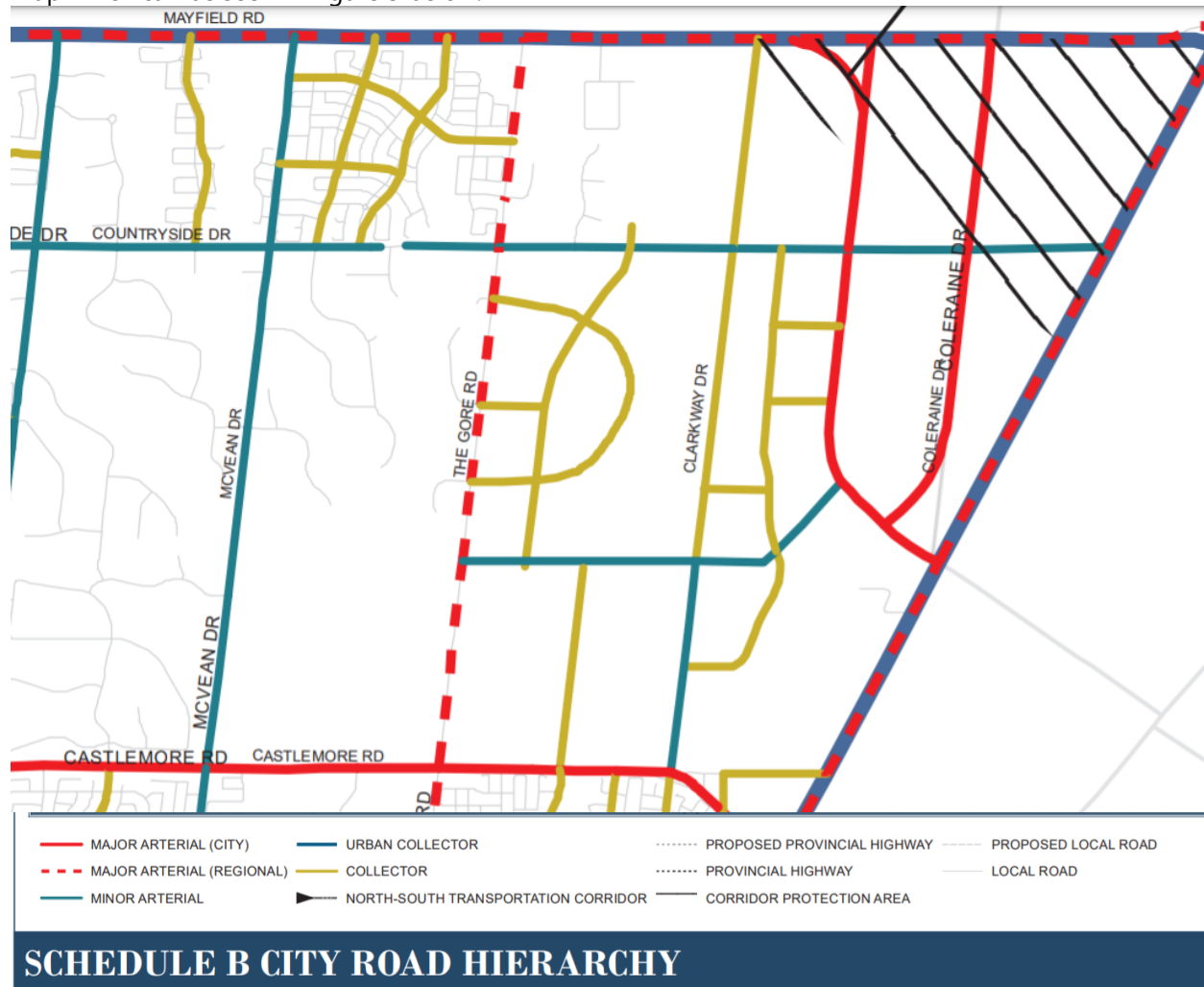


Figure 3: Brampton Municipal Road Classification

All the existing municipal roads are all two-lane minor arterials. The new East-West Arterial and Arterial A2 are also described in this figure and show that they will be minor arterials. Clarkway Drive, Countryside Drive, and Coleraine Drive have a posted speed limit of 70km/h. Mayfield Road has a posted limit of 80km/h.

The city also includes information regarding future land use of the SP47 area in their SP47 secondary plan drawing (2021).

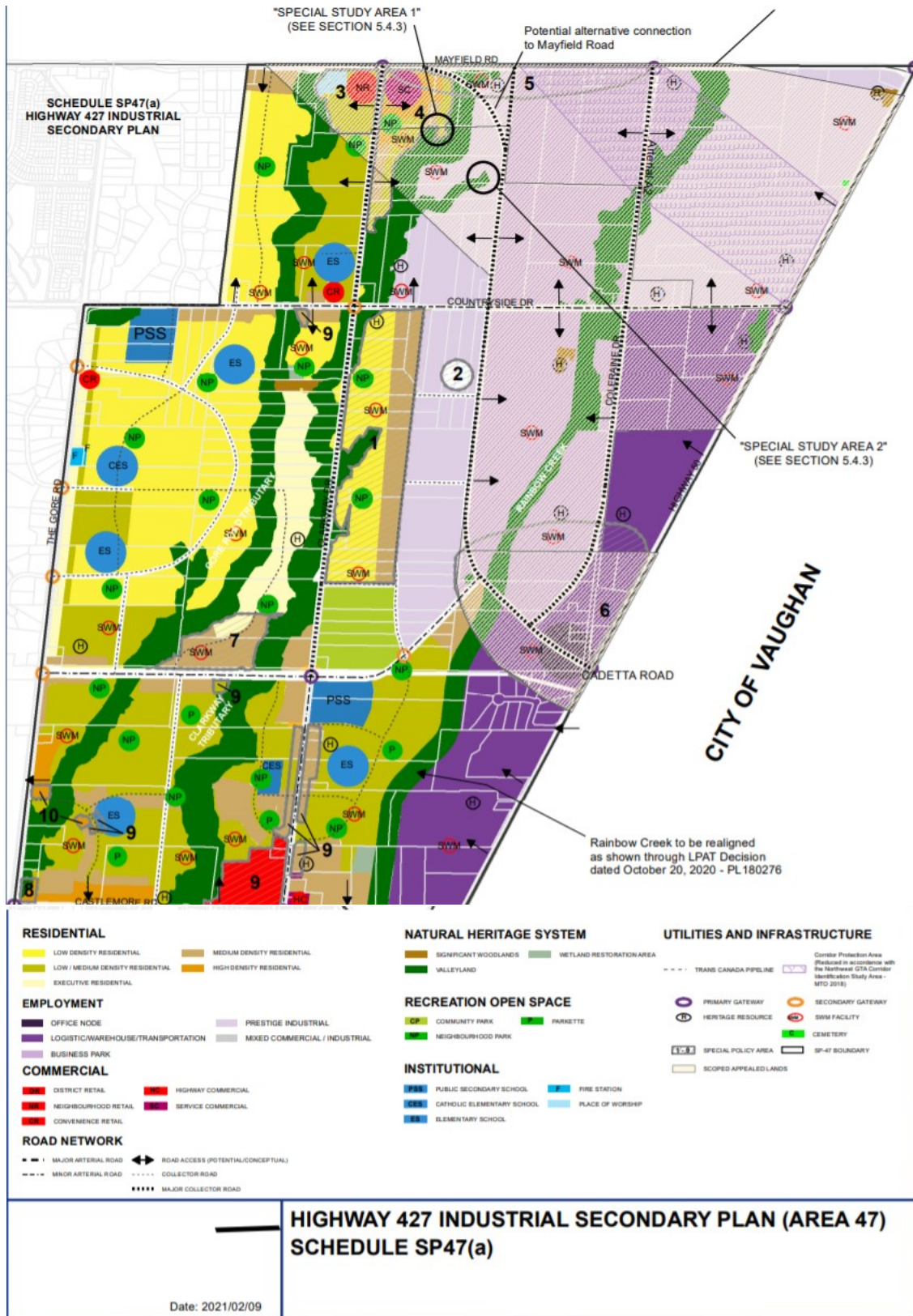


Figure 4: Brampton SP47 Secondary Plan

2.3 Controlled Access By-Law

The previous Region Controlled Access By-Law which was referred to as By-Law 59-77, has had its spacing requirements removed and is now referenced under By-Law 62-2013. Under this By-Law, spacing requirements are referenced under Regional Road Characterization Study - Section III: (2013).

As per this document, access management was grouped into four categories.

- Spacing of Accesses
- Access Design
- Provision of Auxiliary Lanes
- Forming a network of Local Connections

For the purposes of this report, the spacing of the accesses will be the main point of focus.

In the Regional Road Characterization Study, one of the outcomes was a table comparing spacings of different accesses to road classification. This matrix can be seen in Figure 5 below.

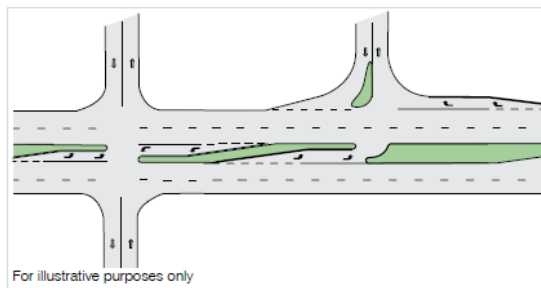


Figure 25: Median Opening Spacing – Full to Left-In/Right-In/Right-Out

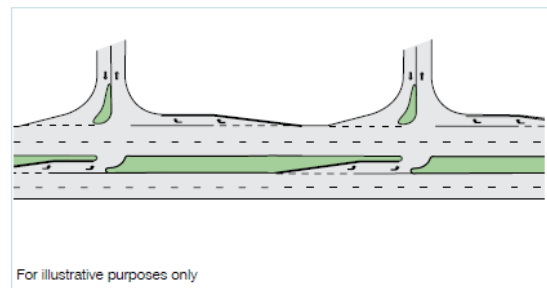


Figure 26: Median Opening Spacing – Left-In/Right-In/Right-Out to Left-In/Right-In/Right-Out

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)

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.

Figure 5: Region of Peel Median Opening Spacing (Region of Peel, 2013)

For Full to Full accessways, a minimum spacing of 450m is required while a smaller spacing of 225m is required for Left-In/Right-In/Right-out accesses on Industrial Collectors. Another table was also produced from the Region’s study that specified spacing between Right-In/Right-Out accesses which is seen below in Figure 6.

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.

Figure 6: Right-In/Right-Out Spacing (Region of Peel, 2013)

For Right-In/Right-Out accesses, a smaller spacing of 100m is required due to the smaller impact that these types of accesses have on the flow of traffic along a roadway.

Design criteria for accessways was included as part of the Road Characterization Study seen in Figure 7

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**
	R	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 7: Accessway Design Criteria (Region of Peel, 2013)

The existing municipal roads have standards for driveway widths which are summarized in Table 1 below.

Table 1: Brampton Driveway Width Standards

Property Width	Driveway Width
Less than 8.23 metres (27')	No wider than 4.9 metres (16')
8.23 metres (27') to 9.14 metres (30')	No wider than 5.2 metres (17')
15.24 metres (50') to 18.3 metres (60')	No wider than 6.71 metres (22')
Greater than 18.3 metres (60')	No wider than 7.32 metres (24')

2.3.1 Exceptions to Access By-Law

During the development application process, if any proposals violate these by-law guidelines, it is expected that developers will provide sufficient justification including relevant traffic and safety studies.

These studies should indicate where accesses are planned, spacing between accesses and justify why accesses are required. These accesses should also include a geometric safety study to ensure that the geometry of the surrounding roads and accesses will not impact the safety of the proposed access. It is the responsibility of the developer to receive approval from the Region and City for any exceptions required for their access plans.

2.4 Existing Access Properties

A review of the existing properties in the study area showed a combined total of 50 access ways on Coleraine Drive, Countryside Drive, Mayfield Road, and Clarkway Drive. All the existing accesses outside of the two on Mayfield Road connect to municipal roads and link with two-lane minor-arterials without median dividers.

The existing accesses do not use any auxiliary lanes and act as Left-in/Right-in/Right-out/Left-out accesses. The private accesses found on the municipal roads are often spaced at less than 100m from each other. The close spacing of these accesses as well as the relatively high posted speed limit can cause delays and queues as vehicles have difficulty making left-turn movements into and out of driveways on high speed roads.

No guidelines from the City of Brampton exist for designing and constructing building accesses. The Region of Peel's Road Characterization Study did not include typical spacings for roads without median dividers. As such, existing standards such as TAC Geometric Design Guide for Canadian Roads were used to analyze the existing accesses.

Countryside Drive, and Coleraine Drive are classified as an Urban Collector, and a Major Arterial respectively, by the City, however, they fall under the rural collector definition of TAC. As defined in Chapter 2 of the TAC design guide, a rural collector is defined as a road with interrupted flow with a

design speed of between 60-110 km/h and <5000 Annual Average Daily Traffic (AADT) (Transportation Association of Canada (TAC), 2017).

Countryside Drive, Clarkway Drive, and Coleraine Drive have a posted speed limit of 70km/h and, as shown in Table 2, had an AADT of 6490, 6044, and 6215 respectively in 2018. As of the time of this writing, these are the most up to date AADT values available. (City of Brampton, 2020). While the AADT is greater than the limit for a rural collector, these volumes have only been experienced in recent years, therefore accesses had been developed as if they were on a rural collector.

Table 2: City of Brampton AADT¹

Roadway	Year			
	2018	2016	2014	2012
Clarkway Drive	6044	3120	2110	709
Countryside Drive	6490	3820	4130	N/A
Coleraine Drive	6215	N/A	5280	4147

According to TAC Chapter 8 – Access (Transportation Association of Canada (TAC), 2017), the existing entrances are Access Level 6, described as right and left-turn access into and out of an activity centre with optional left-turn lanes. The accesses can typically be described as farmstead and residential accesses.

For rural collectors, a limit of one access per 400m is desirable. Private accesses should be located at least 400m from a major intersection and distance between rural accesses should be at least 150m.

2.5 Existing Accesses

As mentioned in the TAC design review, a rural collector represents a network of roads providing access to important market areas serving agricultural, commercial, industrial and recreational needs. Typically, these roads have an equal weight given to movement of traffic and accessing land along the collector.

As volumes on the roads increase due to new buildings and improvements in the area, accessing these existing buildings will become more difficult. To improve the flow of the existing municipal roads and accessways, it would be ideal to consolidate many of these accessways, primarily buildings that have more than one driveway to access it. Examples of shared accessway strategies can be found in Figure 8 below:

¹ Geohub (City of Brampton, 2020)

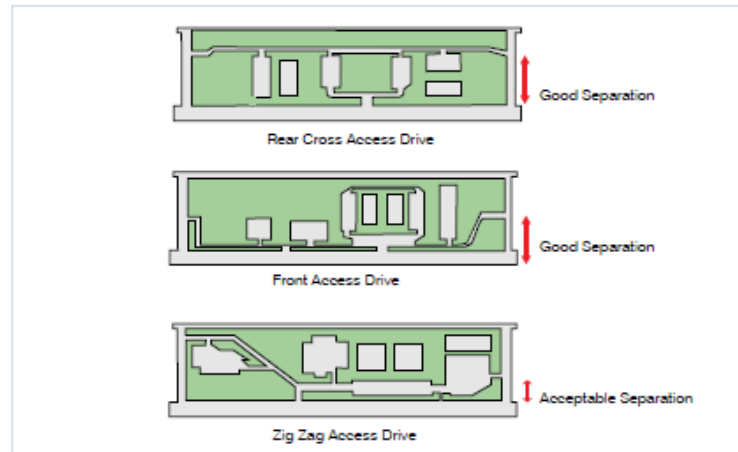


Figure 8: Shared Accessway Strategies (Region of Peel, 2013)

The TAC design guide also provides guidance for the minimum number of driveways depending on the property frontage on the collector. This is primarily used for city roads as the regional roads will be measured against the Road Characterization Study and Access by-law.

Table 8.9.2: Maximum Number of Driveways Based on Property Frontage¹³

Frontage (m)	Minimum Number of Driveways ^a
15	1 ^b
16 – 50	2
51 – 150	3 ^c
> 150	4 or more ^c

- Notes
- a. Subject to spacing guidelines presented in Subsection 8.5.2 and Figure 8.9.3 respectively
 - b. Single family residential properties normally restricted to one driveway, irrespective of frontage
 - c. For large developments the location and design elements of driveways are normally determined by a traffic impact study

Figure 9: TAC Driveway Guidelines (Transportation Association of Canada (TAC), 2017)

Since existing municipal roads are primarily rural and have agricultural properties, the frontage of these properties can be quite large. Therefore, it is reasonable to have some private accesses closer than the 150m guideline suggested by the TAC design guide. The average property frontage along Countryside Drive is 114m, along Clarkway Drive is 143m, and along Coleraine Drive is 167m.

All the existing properties follow the TAC guidelines for driveways per property frontage.

There are two properties along Clarkway Drive that have a very close set of driveways. Approximately 655m south of Countryside and Clarkway Drive, there are 4 driveways that are located within 70m.

While residential driveways have very low volume, due to the high posted speed of Clarkway Drive, and the improvements planned for this area. The proximity of these driveways could have significant impacts on the overall traffic flow of this area as it may cause confusion to drivers as to which driveway they are

trying to enter. It may be worth considering a way to separate these driveways further to more clearly distinguish the properties.

3.0 Proposed Network

As part of the planned improvements and developments, the construction of the new Arterial A2 and new East-West Arterial will be constructed between Clarkway Drive and Coleraine Drive.

3.1 Proposed Road Network

The proposed locations and design of Arterial A2 and the new East-West Arterial that will tie into Coleraine Drive can be seen below in Figure 10:

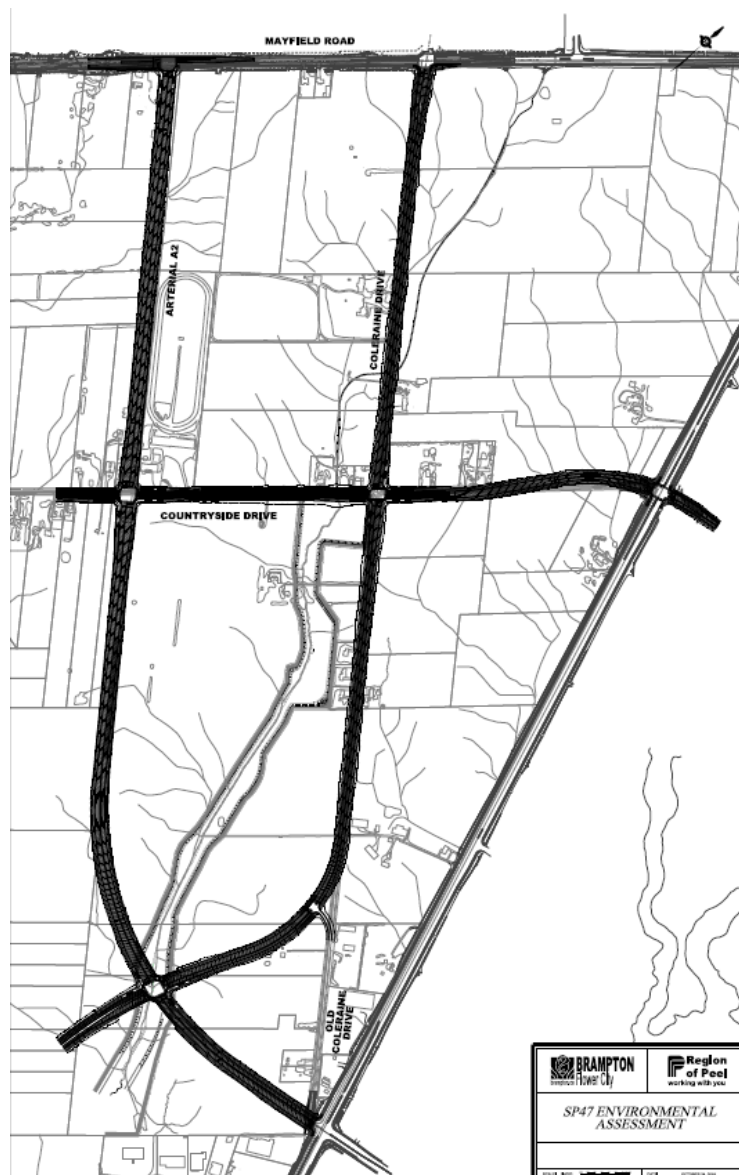


Figure 10: Arterial A2 and East-West Arterial

Arterial A2 is planned to tie into Countryside Drive approximately 700m East of Clarkway Drive. Coleraine Drive will be upgraded to a multi-lane arterial and curve into the new East-West Arterial. There are a total of 3 new intersections proposed in these plans.

This report will outline where the new private accesses along these roadways should be planned to be constructed to comply with the Region’s standards and TAC Design Guidelines. As shown in Figure 3, Arterial A2 is considered as a Major Arterial and the East-West Arterial is meant to be a Minor Arterial.

3.2 Access By-Law Compliance

In the TAC Design Guide, it specifies that Arterials are roads where traffic movement is the primary consideration while land access is a secondary function. Region of Peel’s Road Characterization Study also defines the Industrial Connector as movement focused and having high levels of truck traffic and is meant to be free-flowing. The proposed Industrial Collector Cross-Section as shown in the Road Characterization Study can be seen below in Figure 11.

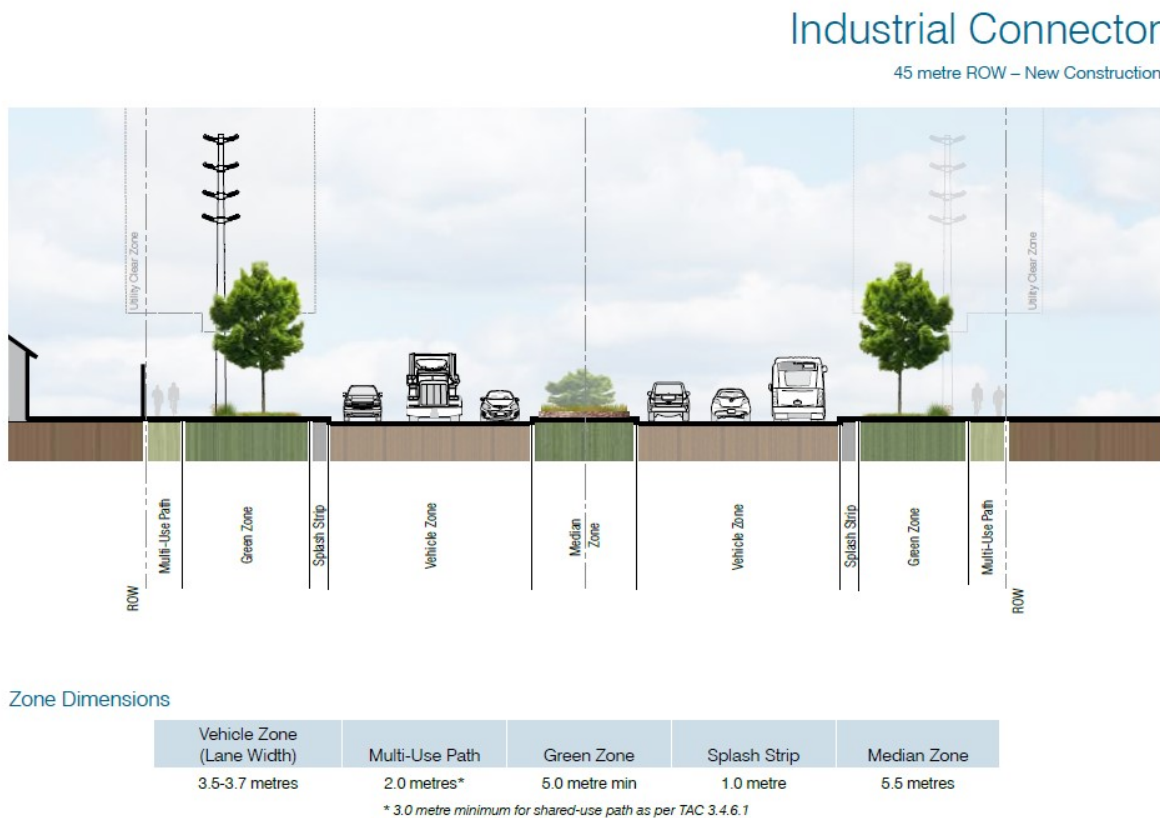


Figure 11: Proposed Industrial Collector Cross-Section (Region of Peel, 2013)

The proposed cross-section includes a centre-median to promote free-flow conditions. The recommended cross-sections that Wood has presented also include median barriers on all proposed roads and can be found in Appendix A.

Since all the proposed roads are planned to have centre-medians, the Region’s access guidelines will be used to propose access locations to be consistent with the Regional Roads in the area.

However, the median barrier planned for the proposed roads will not be wide enough to support left turning lanes. The median is planned to have a maximum width of 2.0m along the midblock of Arterial A2 and a 1.5m width at the East-West arterial midblock.

This is not wide enough to be replaced with a left-turning lane as per TAC guidelines. These left turn lanes should have similar widths to the adjacent through lanes, but not less than 3.5m for posted speeds over 60km/h.

Currently, the through lanes on Arterial A2 at midblock have a width of 3.65m and 3.75m. It could be possible to reduce the through-lane widths to make room for a left-turn lane within the median at proposed intersection locations if required.

Other mitigation measures could include adding auxiliary lanes to create Right-in/Right-out accesses in accordance with the Region of Peel's standards to create improvements to average speed and maintaining mobility on arterials. This would be particularly useful for situations where heavy vehicles and trucks would have to perform difficult right turns on high speed roads, to not block through traffic.

3.2.1 Existing Access By-Law Compliance on Proposed Arterials

Arterial A2 creates two new intersections with existing roads where accesses have already been built. The first is the intersection of A2 with Countryside Drive and the second is A2 and Mayfield Road.



Figure 12: Arterial A2 and Countryside Drive with Aerial

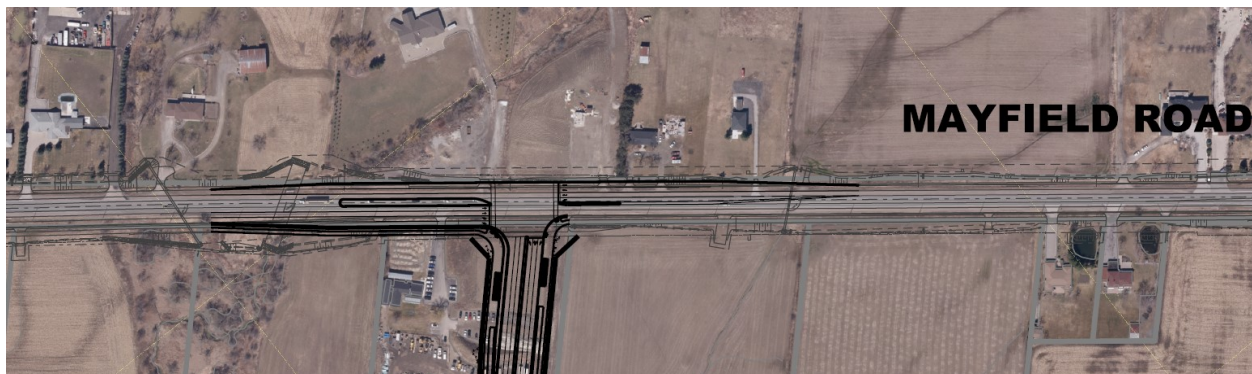


Figure 13: Arterial A2 and Mayfield Road with Aerial

Currently, there are three intersections within 225m west of the Countryside Dr./A2 intersection and two within 225m east of the Countryside Dr./A2 intersection. 225m is the required distance between intersections and accesses since Countryside does not have a median barrier. These existing accesses should be converted to Right-in/Right-out intersections to provide minimal disruption to the intersection and the accesses. Making a left turn out of some of existing driveways could require a vehicle to cross six lanes. This would not be desirable due to the delays this could cause for through traffic, or delay of exiting from these driveways.

To the north of the Mayfield Rd./A2 intersection, there are two driveways within 225m west of the intersection, and three driveways to the east of the intersection. Both driveways to the west of the intersection would likely be required to become Right-in/Right-out intersections due to the construction of the median at the intersection. The driveways to the east should also be converted to Right-in/Right-Out accesses to prevent conflict with the median and traffic close to the intersection.

For the new Coleraine Dr. alignment and East-West arterial, there are two existing intersections that are impacted, as well as impacts on five private access driveways. The two existing intersections that will be impacted are at Mayfield Rd. and Countryside Dr.



Figure 14: Coleraine Drive and Mayfield Road



Figure 15: Coleraine Drive and Countryside Drive

At Mayfield Rd., due to the minimal changes occurring at the intersection and no properties directly within the area of improvement, no changes are required for the existing properties near Mayfield Rd. and Coleraine Dr.

At the intersection of Coleraine Dr./Countryside Dr., there are two private driveways within 225m west of the intersection and one driveway to the east of the intersection. Although there is no median barrier along Countryside Dr., these driveways should be converted to Right-in/Right-out driveways to comply with the Region of Peel's study guidelines.

Finally, along Coleraine Dr., approximately 450m South of Countryside Dr., there are five driveways that should be converted to Right-in/Right-out intersections due to the construction of a median along Coleraine Dr. Another option would be to give the properties an access road due to the proximity of the driveways to a multi-lane high-speed road. As part of the Access By-Law and the Regional Road Characterization Study, one of the strategies that should be used going forward is the consolidation of driveways along the major Industrial Collectors to meet spacing requirements.

As shown in Figure 7, a shared access road could be considered for these driveways to have these driveways conform to the standards of the Region.

As per Figure 5, the spacing between Full to Full intersections is to be 450 meters while Full to Left-in or Left-in to Right-out intersections is to be 225 meters. This is slightly more than the TAC suggestion of a limit of one private access per 400 meters.

Using the limit of 450 meters between full-to-full intersections, a proposed map of intersections as well as smaller Full to Left-in and Left-in to Left-in intersection spacing can be seen in Appendix B.

3.2.2 Existing City of Brampton Roads

The existing Brampton city roads Countryside Dr., Coleraine Dr., Mayfield Rd., and Clarkway Dr. have existing accesses abutting onto them and will be developed further in the future. As per Section 2.4, the existing accesses have some room for improvement as the volumes on the city roads increase. It would be prudent to attempt to consolidate the driveways as much as possible.

In the future, in the absence of more localized guidelines, it is advised that the guidelines set by TAC, as stated in section 2.4, be followed. Therefore, future intersections and accesses should be spaced at least 400m apart. The other option would be to follow the Region's Road Characterization Study as shown in Section 2.3. As the existing accesses were reviewed on a case-by-case basis, it is suggested that existing driveways and accesses be left as they are.

3.2.3 Intersection Access on Curves

There are some locations which are outlined in Appendix B which show intersections or accessways able to be built on the curved sections of Arterial A2 as well as the new East-West connection in addition to a planned T-intersection on the East-West connection.

These intersections should be handled with caution as to not create unsafe crossing conditions for vehicles making left-turns. At the high speeds that these roads are being designed for, sightlines on curves becomes a significant concern for vehicles making left-turns at intersections. Some of the concerns of sightlines can be seen in Figure 16 below.

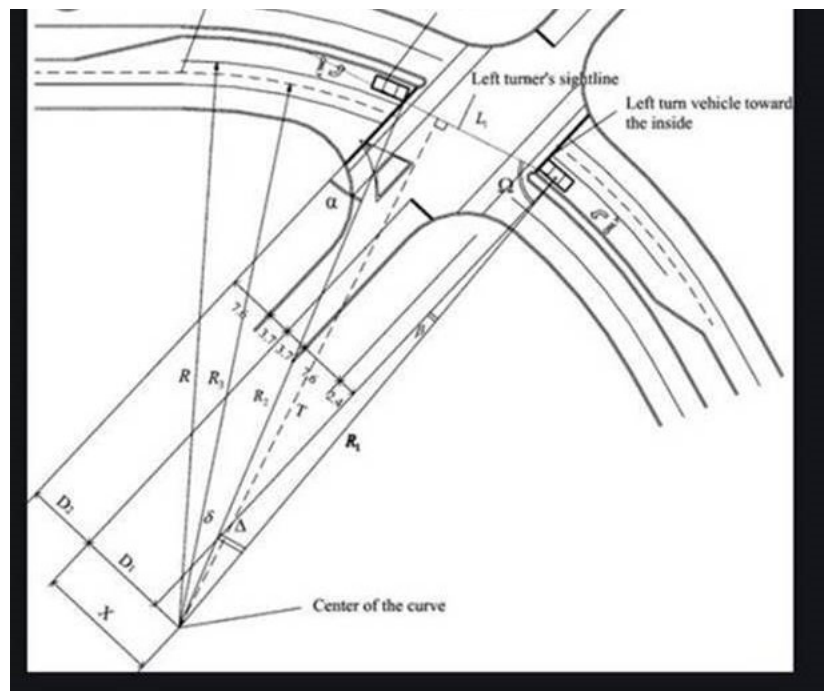


Figure 16: Sightlines on Curves

As shown, the topic of sightlines becomes more important as curves and speed become larger. The curvature creates problems with the decision sight distance for left turning vehicles. The extra daylighting area required for safe left turns may require the region or city to purchase land to create safer intersection operation.

3.2.4 Obstruction to Land Accesses

With the construction of Arterial A2 as well as the East-West Arterial from Coleraine Dr., some land will be split apart and will be cut off from major road accesses. Affected land areas can be seen in Appendix B.

It may be possible to service these areas with access roads or Right-in Right-out accesses. The Region should consider ways to mitigate these landlocked properties through either buying land, Right-in Right-out accesses, or permitting access roads.

For the purposes of this report, opportunities and limitations for each section of landlocked properties have been included. These recommendations should not be considered final as the City and the Region will have final recommendations regarding access permits. In accordance with the Region of Peel and the City of Brampton's "Highway 427 Industrial Secondary Plan Area 47" ("SP47 Secondary Plan") Sections 5.2.9.6 and 7.2.2, the City expects detailed development concept or tertiary plans as described here:

"The City may require the submission of a detailed development concept or Tertiary Plan, as part of a planning application, to demonstrate how lands within the Logistic/Warehouse/Transportation designation can be comprehensively developed to the satisfaction of the City and the Region of Peel."

And

"A Block Plan for the residential lands, or a Tertiary Plan with respect to employment lands, that are outside of the Corridor Protection Area shall demonstrate through the submission of a transportation study, among other means, to the satisfaction of the City and the Region that a comprehensive road network, access and servicing plan can be accommodated, or can be reserved, in the Block Plan or Tertiary Plan, as appropriate, that will effectively integrate development and accommodate improvements to the internal and external road networks."

Along with these provisions, the Region has the ability to require landowners to show how their development fits into road networks and gain access to local and Regional roads. The approval authority of the Region through tertiary plans and the Region's own access powers would allow the Region to require shared accesses in order to consolidate accesses in a safe manner. Therefore, it is expected that access can be planned under tertiary planning in the absence of a technical solution.

3.2.5 Northern Landlocked Parcels

The parcel of land that is located above Arterial A2 and the new section of Coleraine Dr., as shown in Appendix B, will have no clear way to access these roadways. This parcel is also split by Rainbow Creek into an east section and a west section further increasing the difficulty of servicing the entire parcel.

It would be difficult to access roads to the south or north from this parcel due to roads or properties causing blockages. There is no safe location to allow an access to these properties once these new roadways are constructed. The proximity to the major intersection of Arterial A2 with Coleraine Dr./E-W Arterial and due to the anticipated severely reduced sightlines.

During the interim, it is expected that the eastern section will continue to have access through Old Coleraine Dr. until such time that Coleraine Dr. is fully realigned. However, once Coleraine Dr. is realigned, any other access locations will need to be reviewed by the Region on a case-by-case basis and proper traffic and safety reviews would need to be included. For the western section, it is suggested that the property either be purchased by the City or Region and disposed of appropriately (ie. consolidate the parcel of land with the property directly to the north) once A2 is constructed and Coleraine Dr. realigned.

3.2.6 Western Landlocked Parcels

The three parcels of land that will be landlocked due to the construction of Arterial A2, as shown in Appendix B, will have similar access difficulties that the northern parcels have. There are no clear locations to connect these properties to any of the new roadways due to the proximity to the major intersection of Arterial A2 with Coleraine Dr./E-W Arterial and due to the anticipated severely reduced sightlines. The only reasonable point of connection would be Clarkway Dr. but that would require an access going through existing properties. As these three properties will not have direct access to roadways unless access to Clarkway Dr. is negotiated, it is suggested that these properties be purchased by the City or Region and disposed of appropriately. In the interim, the western properties are expected to have their usual access to Old Coleraine Dr.

3.2.7 Southern Landlocked Parcels

The parcels to the south of the intersection of Arterial A2 and Coleraine Dr., as shown in Appendix B, present their own difficulties due to the complicated geography and features of the area. One of the primary areas of concern is the existing Rainbow Creek. As can be seen in Figure 17 below, Rainbow Creek acts as a natural barrier to areas of existing properties.

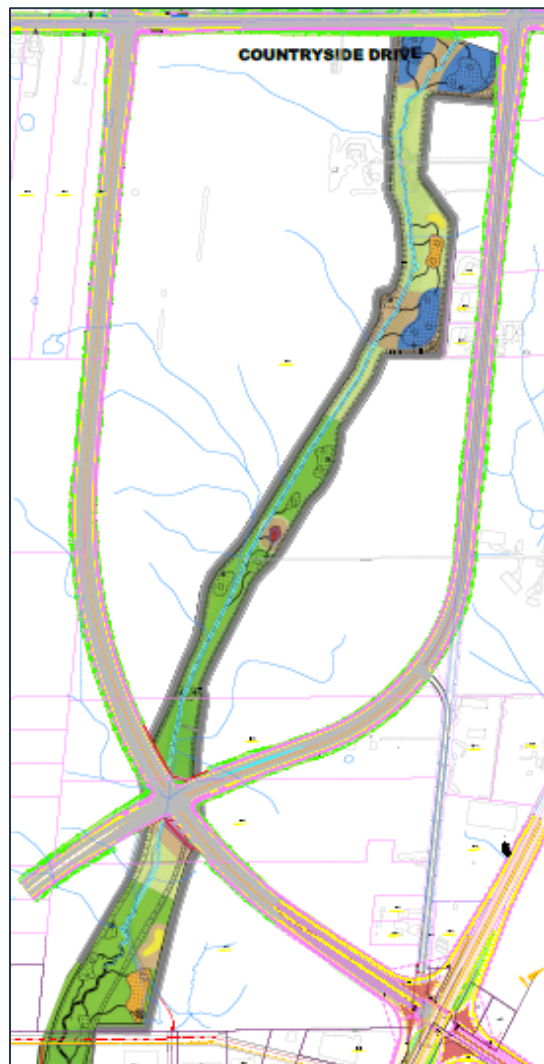


Figure 17: Rainbow Creek Limits

Rainbow Creek further splits access to the southern landlocked properties. For the parcel to the west of Rainbow Creek it is suggested that the same approach as was taken with the properties in section 3.2.6. It may be worthwhile to consolidate with the existing properties to the west that have existing road access on Clarkway Dr. However, connecting to the new East West Arterial, during the interim and final scenarios is strongly discouraged as it would create safety concerns. The proximity to the new intersection as well as the geometry of the turn on the west side may cause for unsafe conditions for a future access.

To the east of Rainbow Creek, connecting this to the north via Arterial A2 would not be feasible due to the close proximity to proposed intersections as well as the Single-Point Urban Interchange (SPUI) connection at Highway 50. No accesses should be granted between the intersection and SPUI on A2 due to the expected volume and capacity of this roadway. It is also blocked by Rainbow Creek to the west, and therefore the only potential way to connect these landlocked properties would be to go further south.

In the interim, connection to Old Coleraine Dr. will be available until such time that Arterial A2 is built or the new SPUI interchange is built, at which point new accesses will have to be built to Cadetta Rd. in the south. There are several access option to be considered including building a road connecting to Cadetta Rd. on one of the existing property boundaries connecting the new road to the cul-de-sac or the elbow of Cadetta Rd.

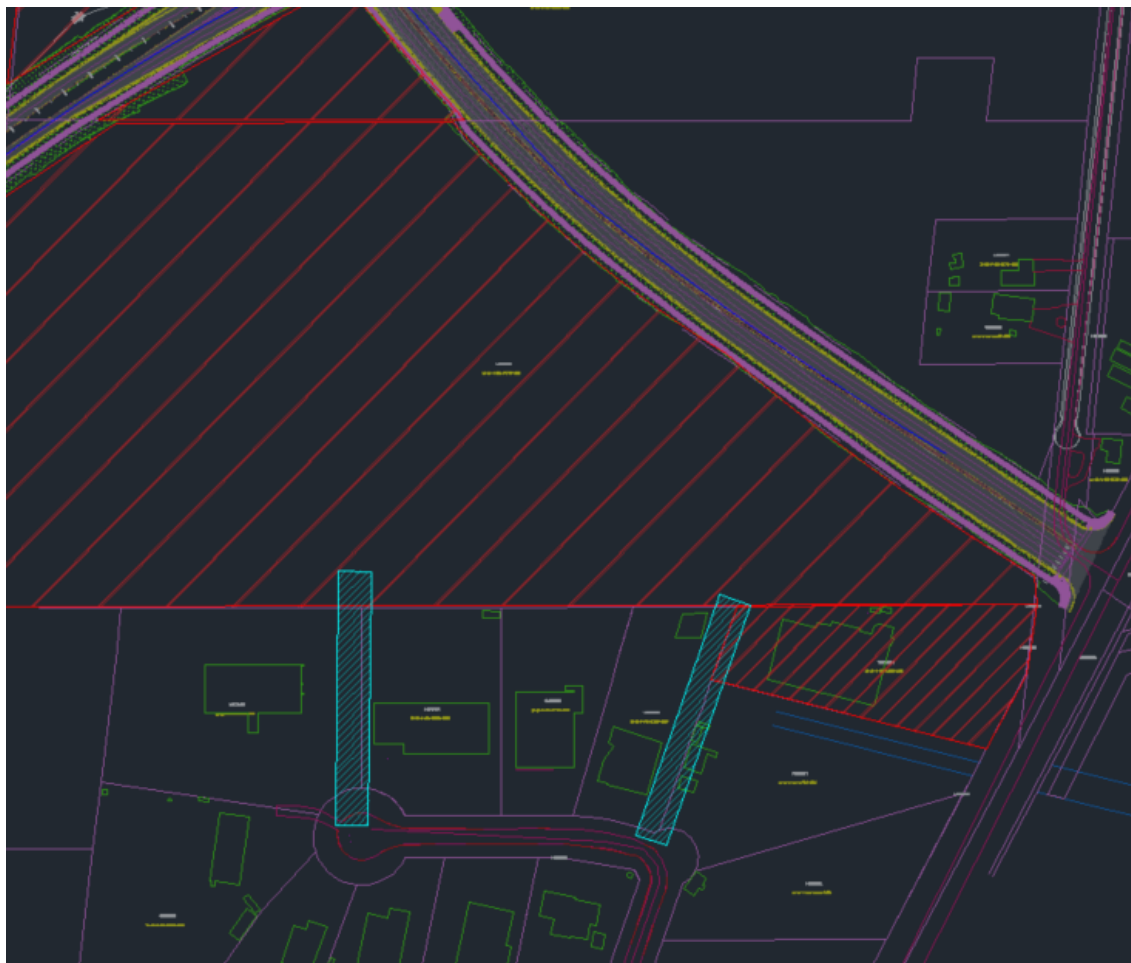


Figure 18: Cadetta Rd. Connection Options

Of these two suggestions, the connection to the cul-de-sac would only be applicable if the landlocked property on the east corner was consolidated with the property immediately to the south of it, otherwise, the connection to the corner of Cadetta Rd. would be able to facilitate the access to both landlocked properties.

The connection to the elbow of Cadetta Rd. may also be more feasible if a route is taken through the empty land to the east of the current suggestion. These plans will likely also require land acquisition to fit the roads through the existing properties. As no connections will be allowed to the north to Arterial A2, this is the most feasible option to connect the existing land locked properties. These plans are preliminary and require further input from the Region or City. These alternatives could also be considered to apply for regional or city development charges as a form of funding them.

4.0 Conclusion

As the level of detail around cross-section planning and road geometry planning advances, appropriate measures must be taken to ensure that access management is also being considered. With the high truck and commercial vehicle volumes that will exist along the new Arterial A2 and East-West Arterial roads, it is important to keep the key purpose of an arterial in mind. These roads are meant to move goods and people quickly, and without good access management, this would not be possible.

It is therefore suggested that the proper measures are taken in regards of the proposed locations of future intersections and accesses. Following the Region of Peel's new access bylaw and standards should be adhered to improve transitions between regional and municipal roads.

There are a few points of concern that will need to be addressed in the detailed design of the new proposed intersections at Arterial A2 and Countryside Drive as well as Coleraine Drive and Countryside Drive. It is suggested that the accessways that exist near those intersections should be converted to Right-in Right-out accesses to minimize the disruption to the traffic flow.

The existing driveways 450m south of Countryside Drive on Coleraine Drive will also need to be redesigned. Due to the proximity of the driveways, it may also be feasible to design an access road that connects to the four properties and provide an intersection or Left-in access to the access road.

Proposed intersections on the curved sections raise safety concerns due to obstruction of sightlines and reduced decision stopping distances. Therefore, these intersections should be designed with extra care for left turning vehicles to make them as safe as possible due to the high speeds and potential heavy vehicle traffic.

In conclusion, due to the proposed roads having median blocks, adjustments to the existing accesses need to be made to adhere to the Region of Peel's new access standards. Future full movement intersections should have a spacing of 450m wide. For new Left-in accesses to be built, it would be necessary for the through lane widths to be reduced to provide adequate width for a left-turning lane in the median space and construct them with 225m spacing.

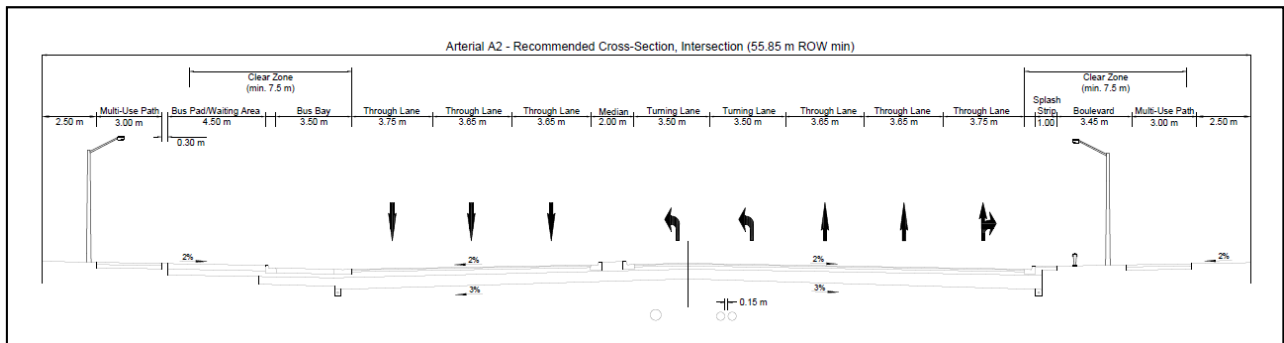
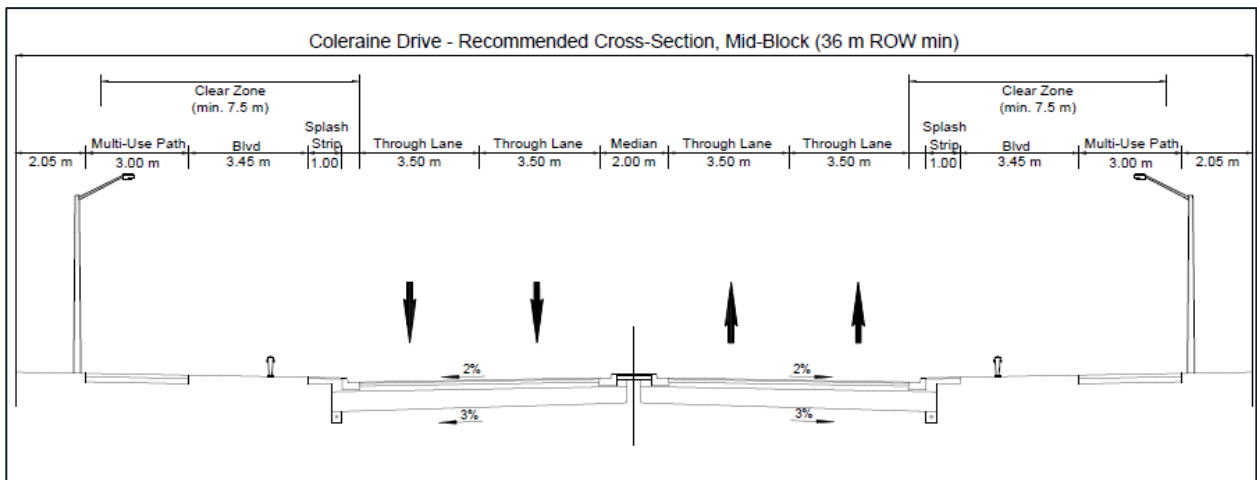
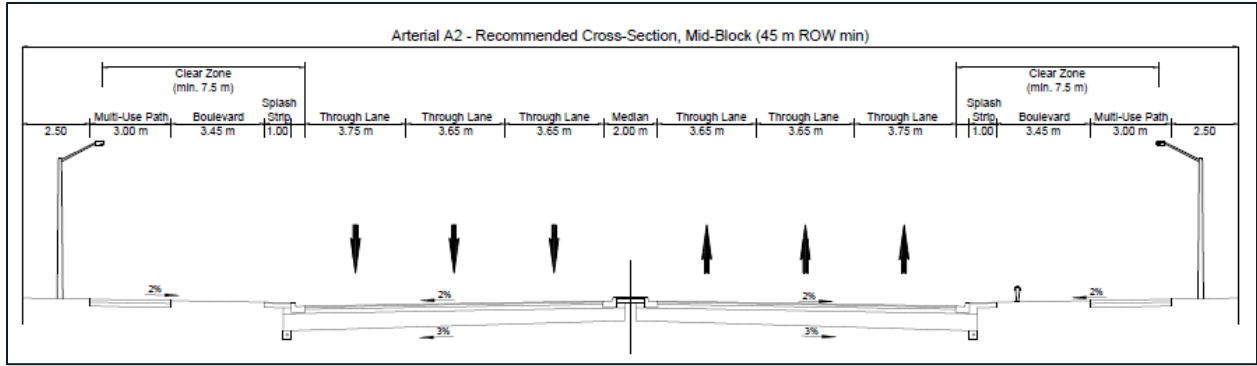
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Appendix A:
Proposed Cross-Sections



Appendix B:
Access Plans

