PARSONS

IMPROVEMENTS TO WILLIAMS PARKWAY MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

Final Project Report

December 2024

TABLE OF CONTENTS

1.0 INTRODUCTION AND BACKGROUND 1

1.1 Study Area 1

1.2 Municipal Class Environmental Assessment Process 1

1.3 Project Report 1

2.0 EXISTING CONDITIONS WITHIN THE STUDY AREA 2

2.1 Transportation 2

2.1.1 Road Network 2

2.1.2 Existing and Future Traffic Conditions 2

2.1.3 Transit 3

2.1.4 Active Transportation 3

2.2 Drainage and Stormwater Management 3

2.3 Structures 4

2.4 Utilities 4

2.5 Socio-Economic Environment 4

2.5.1 Provincial, Regional and Local Planning Policies and Studies 4

2.5.2 Existing Land Use 14

2.6 Natural Environment 14

2.6.1 Designated Areas and Features 14

2.6.2 Vegetation and Vegetation Communities 15

2.6.3 Significant Woodlands 23

2.6.4 Significant Wetlands 23

2.6.5 Significant Wildlife Habitat (SWH) 23

2.6.6 Fisheries and Aquatic Habitat 23

2.6.7 Species at Risk (SAR) 24

2.6.8 Migratory Birds Convention Act 27

2.6.9 Fluvial Geomorphology 28

2.6.10 Hydrogeology 28

2.6.11 Source Water Protection 28

2.7 Cultural Environment 29

2.7.1 Built Heritage Resources and Cultural Heritage Landscapes 29

2.7.2 Archaeology 29

3.0 PROBLEM / OPPORTUNITY STATEMENT 30
4.0 EVALUATION OF ALTERNATIVE SOLUTIONS AND PREFERRED SOLUTION 31
4.1 Alternative Solutions 31
4.2 Evaluation Criteria 31
4.3 Evaluation of Alternative Solutions 33
4.4 Selection of Preferred Alternative Solution 39
5.0 ALTERNATIVE DESIGN CONCEPTS AND PREFERRED ALTERNATIVE 40
5.1 Alternative Design Concepts 40
5.2 Evaluation of Alternative Design Concepts 42
5.3 Selection of Preferred Alternative Design Concept 43
5.4 Intersection Crossing Types/Facility 43
6.0 CONSULTATION 49
6.1 Notice of Study Commencement 49
6.2 Consultation with Technical Agencies and Stakeholders 50
6.3 Indigenous Consultation 53
6.4 Notice of Completion 53
7.0 PREFERRED DESIGN 54
7.1 Typical Cross Sections 54
7.2 Horizontal / Vertical Road Alignment 55
7.3 Intersections 55
7.4 Structures 55
7.4.1 Williams Parkway Structure over Spring Creek 55
7.4.2 Torbram Road over Mimico Creek Culvert 56
7.5 Active Transportation 56
7.6 Drainage and Stormwater Management 56
7.7 Pavement Design 57
7.8 Utilities 57
7.9 Illumination 58
7.10 Preliminary Cost Estimate 58
8.0 IMPACTS AND MITIGATION MEASURES 59
8.1 Transportation 59
8.2 Property and Access 59
8.3 Natural Environment 59
8.3.1 Designated Areas 59

8.3.2 Vegetation and Vegetation Communities 59
8.3.3 Wildlife and Wildlife Habitat 61
8.3.4 Natural Environment Mitigation Measures 63
8.4 Operational Noise 65
8.5 Construction Noise and Air Quality 65
8.6 Climate Change 66
9.0 COMMITMENTS AND MONITORING 67
9.1 Commitments for Detail Design and Construction 67
9.2 Permits and Approvals 67
9.3 Monitoring Requirements 69

LIST OF FIGURES

Figure 1: Study Area 1
Figure 2: Peel Region Official Plan - Schedule D4 - Urban Growth Centre 6
Figure 3: PLRTP - Rapid Transit Network 7
Figure 4: Brampton Official Plan - Schedule 1 City Concept Map 8
Figure 5: Map of Existing Cycling Facilities (Exhibit 4.8 of the ATMP) 10
Figure 6: Proposed Network and Facility Type 11
Figure 7: Automated Speed Enforcement (ASE) along Greenbriar Road (Bottom Left), Jordan Boulevard (Top Left) and Jefferson Road (Top Right) 12
Figure 8: ELC Features in the Study Area 21
Figure 9: Watercourse Features in the Study Area 22
Figure 10: Source Water Protection Features in the Study Area 29
Figure 11: Alternative Design Concept #1 - Multi-Use Path Typical Cross Section 41
Figure 12: Alternative Design Concept #2 - Cycle Track and Sidewalk Typical Cross Section 41
Figure 13: Alternative Design Concept #3 – Two-Way Cycle Track Typical Cross Section 42
Figure 14: Alternative Design Concept #4 – On Street Bicycle Lane Typical Cross Section 42
Figure 15: Typical Cross Section 54
Figure 16: Cross-Section at Spring Creek Culvert 54

LIST OF TABLES

Table 1: Summary of Existing Roads in the Study Area 2
Table 2: ELC Vegetation Communities in the Study Area 15
Table 3: Summary of Potential Species at Risk within the Study Area 25
Table 4: Alternative Solutions 31
Table 5: Evaluation Criteria 32
Table 6: Evaluation of Alternative Solutions 33
Table 7: Alternative Design Concepts 40
Table 8: Alternative Intersection Crossing Types/Facilities 43
Table 9: Evaluation of Street Design Concepts 45
Table 10: Recommended Intersection Types 48
Table 11: Summary of Comments Received from Technical Agencies and Stakeholders 50

Table 12: Preliminary Tree removal Assessment Summary 60
Table 13: Preliminary Tree Compensation Requirements 61
Table 14: Permits and Approvals 67

APPENDICES

Appendix A – Transportation Impact Analysis
Appendix B – Structural Design Reports
Appendix C – Natural Environment Assessment Report
Appendix D – Fluvial Geomorphology Report
Appendix E – Hydrogeological Assessment
Appendix F – Municipal Heritage Bridges: Cultural, Heritage and Archaeological Resources Assessment Checklist
Appendix G – Record of Consultation
Appendix H – Design Drawings
Appendix I – Drainage and Stormwater Management Analysis
Appendix J – Pavement Design Report
Appendix K – Noise Impact Assessment Report

EXECUTIVE SUMMARY

The City of Brampton has initiated a Municipal Class Environmental Assessment (Class EA) for Willams Parkway from Dixie Road to Torbram Road (Figure ES-1). Intersection improvements will be made to Williams Parkway corridor by evaluating capacity and active transportation needs, structural condition, potential safety and operational issues towards achieving Vision Zero, population/ employment growth and travel demand management. This study is being conducted in accordance with the planning and design process for Schedule A+ projects as outlined in the Municipal Engineers Association "Municipal Class Environmental Assessment," (October 2000, as amended in 2007, 2011 and 2015).

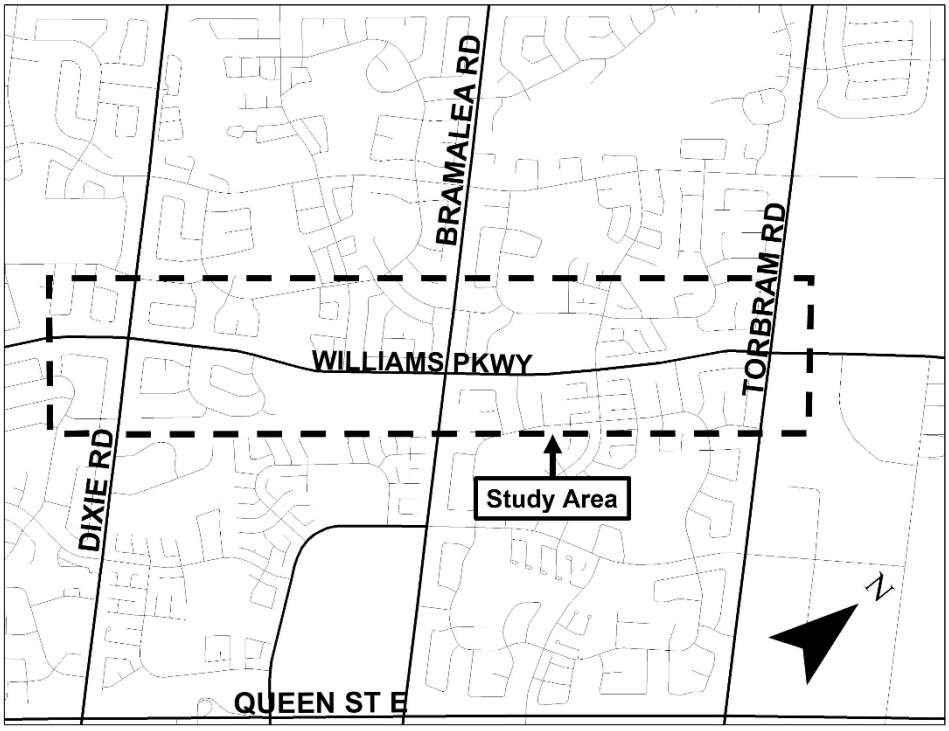


FIGURE ES-1: STUDY AREA

A number of background studies were undertaken for the study area to determine existing conditions and impacts and include the following:

- Transportation Assessment
- Structural Design Reports
- Natural Environment Assessment Report
- Fluvial Geomorphology Report
- Hydrogeological Assessment
- Municipal Heritage Bridges: Cultural, Heritage and Archaeological Resources Assessment Checklist
- Drainage and Stormwater Management Report
- Geotechnical / Pavement Design Report
- Noise Impact Assessment Report

PUBLIC CONSULTATION

Public consultation is an important part of the Municipal Class EA process. The following are the key points of contact during the EA study:

Key Point of Contact	Date	Means of Notification
Notice of Study Commencement	June 02, 2022	Newspaper, Mail, Email, City Website
Notice of Study Completion	December 20, 2024	Email, City Website

In addition to the key points of contacts above, the project team also consulted individually with key technical agencies and stakeholders throughout the EA, including TRCA and Peel Region.

PROBLEM AND OPPORTUNITY STATEMENT

Based on the review of existing provincial, regional and local plans and policies, the following Problem/Opportunity Statement was developed for the EA study:

> *Based on the Peel Region and the City of Brampton's Transportation Master Plans, there is a need to address increasing traffic demand in the City, including along Williams Parkway, from Dixie Road to Torbram Road. The MCEA Study should review how this traffic demand is to be accommodated while giving consideration to the safety of adjacent communities and schools. While reviewing the transportation infrastructure along Williams Parkway, this study provides an opportunity to incorporate Complete Streets design and active transportation facilities, support the City's transit plans and TDM goals, and achieve Vision Zero objectives.*

ALTERNATIVE SOLUTIONS

Alternative Solutions are high-level, planning options to address the Problem / Opportunity Statement and include a "Do Nothing" scenario. The following Alternative Solutions were evaluated against the environmental factors relevant to the study, such as the natural, social, cultural and economic environments.

1. Do Nothing
2. Limit Development
3. Incorporate Transportation Demand Management (TDM) Measures
4. Improve Existing Adjacent Transportation Corridors
5. Localized Intersection and Roadway Operational Improvements
6. Improve Active Transportation (AT) and Transit Facilities
7. Provide Additional Lane Capacity

Based on the evaluation, Alternatives 3, 5, and 6 are recommended as they best address the Problem/Opportunity Statement and were selected collectively as they offer warranted transportation improvements to the corridor.

ALTERNATIVE DESIGN CONEPTS

Alternative Design Concepts are options that carry forward the Alternative Solutions recommended in Phase 2 of the MCEA. The Alternative Design Concepts are then evaluated against the environmental factors relevant to the study, such as the natural, social, cultural and economic environments.
From Phase 2 of the MCEA, the recommended Alternative Solutions include:

- Incorporate Transportation Demand Management (TDM) Measures
- Localized Intersection and Roadway Operational Improvements
- Improve Active Transportation (AT) and Transit Facilities

Based on these Alternative Solutions, Table ES-1 includes several typical cross section alternatives that were prepared for the Williams Parkway corridor.

TABLE ES-1: ALTERNATIVE DESIGN CONCEPTS

No.	Typical Cross Sections	Description
1	Multi-Use Path on both sides of the road within the boulevard	Convert existing sidewalks into new multi-use paths on both sides of the road within the existing boulevard.
2	Separate sidewalk and cycle track on both sides of the road within the boulevard	Incorporate separated sidewalk and cycle track on both sides of the road within the existing boulevard.
3	Two-way cycle track on one side of the road in the boulevard	Maintain existing sidewalks on both sides of the road and implement a new bi-directional cycle track within the boulevard.
4	On-Street Bike lanes, one in each direction	Incorporate on street bike lanes on the curbside, one in each direction.

Based on the evaluation, Alternative Design Concept #1 – Multi-Use Path on both sides of the road within the boulevard is the preferred option as it best connects with Williams Parkway to the west, accommodates all active transportation modes and easily connects with other facilities.

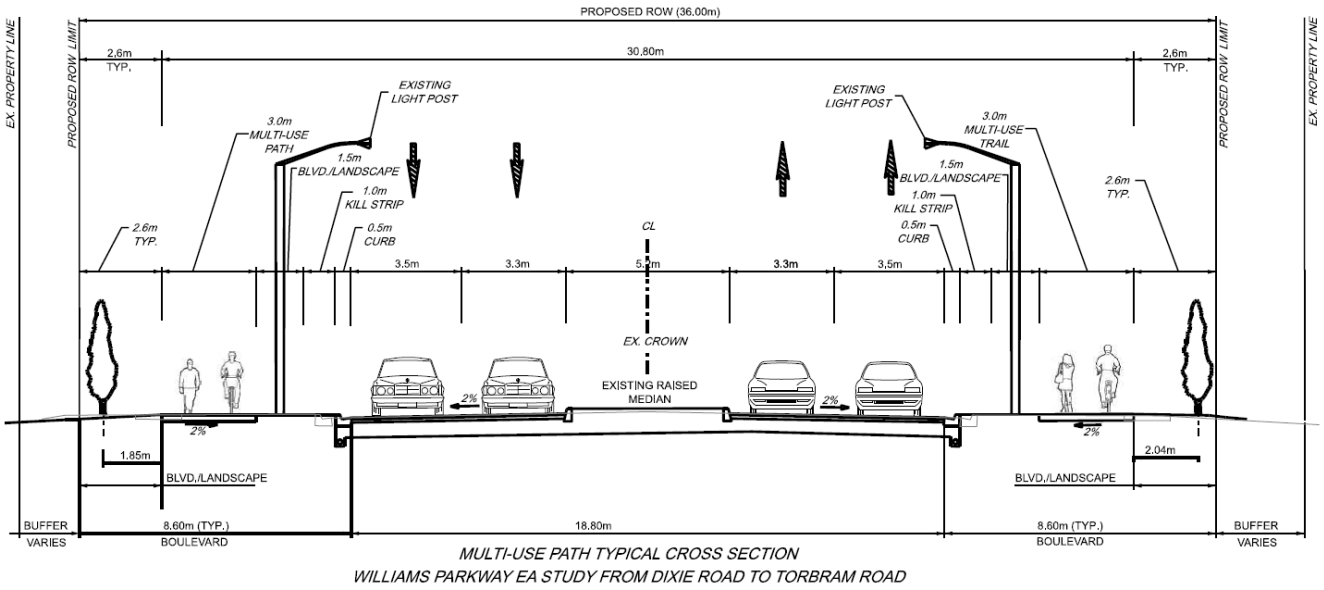


FIGURE ES-2: ALTERNATIVE DESIGN #1

Intersection crossing type and facilities were also evaluated and assessed for each intersection in the study area. The recommended improvements for each intersection are summarized in Table ES-2.

TABLE ES-2: INTERSECTIONS AND RECOMMENDED IMPROVEMENTS

Intersection	Recommended Improvement
Williams Parkway @ Mansfield Street west - Unsignalized	MUP Driveway Crossing
Williams Parkway @ Mansfield Street East – Proposed to be Signalized	Urban Intersection with Cross Rides
Williams Parkway @ Mackay Street – Signalized	Urban Intersection with Cross Rides
Williams Parkway @ Bramalea Road – Signalized	Protected Intersection with Cross Rides
Williams Parkway @ Glenridge Road – Signalized	Urban Intersection with Cross Rides
Williams Parkway @ Grenoble Boulevard/ Jordan Boulevard – Signalized	Protected Intersection with Cross Rides
Williams Parkway @ Graymar Road – Signalized	Recently Signalized with Cross Rides
Williams Parkway @ Torbram Road – Signalized	Protected Intersection with Cross Rides

PREFERRED DESIGN

Therefore, the preferred design includes the addition of 3.0m multi-use paths on both sides of the road. The typical cross section of the proposed design includes as shown in Figure ES-2:

- 3.3m travel lane
- 3.5m curb lane
- Raised median (width varies)
- 3.0m multi-use path (both sides of roadway)

The preferred design also includes intersection improvements, including upgrading existing intersections through pavement markings and also through intersection reconfiguration into a protected intersection.

Spring Creek Culvert: No culvert widening or extension. Structural rehabilitation is recommended as well as improvements to the barrier walls as part of the road cross section to provide proper protection for the MUP. This is a pinch-point location for the road design given the existing width of the culvert, thus a tightened cross section was developed for this location.

Mimico Creek Culvert: Due to flooding issues at the intersection, the culvert is to be replaced with twin box culverts to increase hydraulic capacity. The new proposed culvert will also address structural condition concerns.

IMPACTS AND MITIGATION

The impacts associated with implementing the recommended design along with the **key** mitigation measures to address the impacts are summarized at a high level below.

TABLE ES-3: KEY MITIGATION MEASURES

Category	Potential Impact	Proposed Mitigation Measure
Transportation		
Traffic	Construction of the recommended design could have potential impacts on the transportation environment.	A traffic management plan / construction staging plan will be developed during detailed design to minimize impacts to traffic and access, where possible.
Socio-Economic		
Permanent Property	There are no impacts to private property, though the proposed works are located in City of Brampton-owned lands that are not yet designated as road right-of-way. These lands will be designated by the City.	Temporary easements may be required for construction and grading work.
Temporary Property	Some property will be required as a temporary easement for construction and grading works.	Temporary easements may be required for construction and grading work.
Access	There may be temporary access impacts to some properties that have accesses directly off Williams Parkway.	Maintaining access to properties should be incorporated into the traffic management plan and any properties that will have their accesses temporarily impacted must be consulted in advance of works to minimize disturbance.

Category	Potential Impact	Proposed Mitigation Measure
Air Quality	During construction, air quality can be temporarily degraded due to dust and/or emissions from construction activities and equipment. Activities include vehicular traffic in open construction areas, dust from storage piles, unloading materials, particularly during strong winds, and the operation of construction equipment.	General construction best management practices should be conducted to minimize air quality impacts. These include minimizing idling, use of dust suppressants, regular cleaning, and management of stockpiles.
Noise	There will be temporary noise impacts as a result of construction work, however the magnitude of the impacts will vary greatly throughout the construction period.	General construction best management practices should be conducted to minimize noise impacts. These include limiting noisy works to regular work hours, properly maintaining equipment, and responding to complaints..
Natural Environment		
Vegetation and Ground Disturbance	Vegetation removals will be required to accommodate the MUP and noise walls. Preliminary tree removals have been determined.	Mitigation measures include avoiding encroachment through design and construction, delineating the boundaries of the work area using tree fencing, proper use of ESC measures, and restoration and compensation.
Terrestrial Wildlife and SAR	Some treed areas and riparian areas around watercourses provide potential SAR/SoCC habitat and may be impacted by construction.	Mitigation measures include timing vegetation removals outside of the active season for birds and bats, directing artificial light away from natural areas, proper use of ESC measures, conducting pre-construction surveys for wildlife in the work zone, and following protocols for wildlife encounters.
Fish and Fish Habitat	In-water works and direct impacts to permanent fish habitat at Mimico Creek due to culvert extension.	Mitigation measures include following the in-water timing window, ESC measures, fish protocols for dewatering and working in the dry, and spill response plans.
Fluvial Geomorphology	Potential impacts to Mimico Creek alignment due to culvert extension.	Natural channel design to be incorporated into design if required.

DETAILED DESIGN COMMITMENTS

Below is a summary of additional works that are required to be completed during the detailed design phase of the project, prior to construction:

Transportation/Technical Requirements

- Further review of open and closed footings for the culverts will need to be undertaken.
- Exact pavement structures will need to be confirmed as they vary throughout the corridor.
- Utilities shall be consulted to confirm utility conflicts and coordinate relocation, where required.
- A traffic management plan / construction staging plan will be developed to minimize impacts to traffic and access, where possible.
- Relocate and properly connect catchbasins impacted by the outer curb relocation to the existing storm sewer system.
- A Low Impact Development Feasibility Study for other quality control measures that meet CLI ECA requirements is to be undertaken during detailed design, where the primary goal is to control the 90th percentile runoff volume and achieve 80% TSS control, following a hierarchy of retention, LID filtration, and conventional stormwater management.
- Erosion prevention and sediment control measures must be implemented during construction. An ESC Report and associated plans and drawings are to be prepared and submitted to TRCA. The measures must adhere to the Erosion and Sediment Control Guidelines for Urban Construction (December 2019).

<u>Socio-Economic Requirements</u>

- Details of the noise barriers (i.e. exact location, where to end and finish, materials, etc.) will be further refined.

<u>Natural Environment Requirements</u>

- An updated tree inventory and Arborist Report should be undertaken in detailed design / prior to construction to more accurately identify the tree impacts based on refined design information (e.g. exact limits of grading, noise wall start and end limits) as well as construction requirements.
- Potential impacts to Mimico Creek and natural channel design may be required by a fluvial geomorphologist if some realignment is required.
- Additional site visits to determine if Green Heron and Pileated Woodpecker nests are present should be conducted during detailed design.

1.0 Introduction and Background

1.1 Study Area

The City of Brampton has initiated a Municipal Class Environmental Assessment (MCEA) Study for improvements to Williams Parkway from Dixie Road to Torbram Road (see Figure 1). Technical studies will be completed to determine what improvements are needed for the Williams Parkway corridor, including evaluating capacity and active transportation needs, structural condition, potential safety and operational issues towards achieving Vision Zero, population/employment growth and travel demand management.

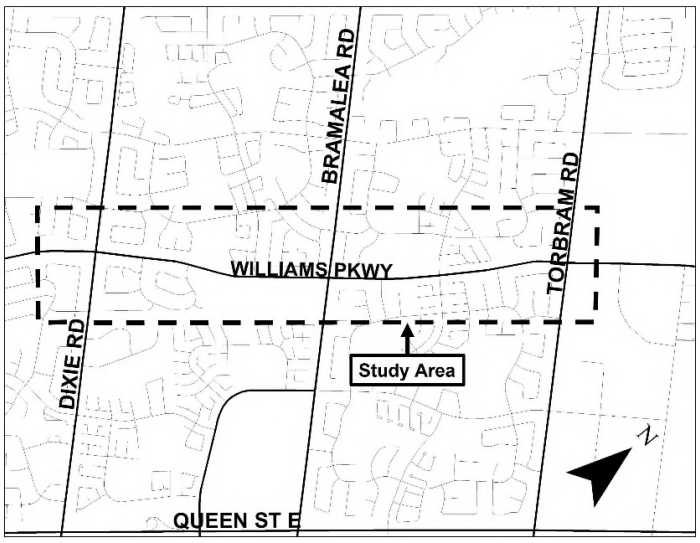


FIGURE 1: STUDY AREA

1.2 Municipal Class Environmental Assessment Process

The MCEA Study was initiated in accordance with the planning and design process as outlined in the Municipal Class Environmental Assessment (2023), which is approved under the Ontario *Environmental Assessment Act*. Based on the proposed scope of work, this MCEA study was initially started as a Schedule 'A+' project. The MCEA process was updated in 2023 and Schedule 'A' and 'A+' projects are now categorized as Exempt. Nonetheless, this MCEA Study includes completion of technical studies to determine existing conditions, development and evaluation of alternatives, an assessment of the impacts of the proposed improvements, and development of a preferred design.

1.3 Project Report

This Project Report has been prepared to document the MCEA process followed for the Williams Parkway MCEA Study. The Project Report summarizes the inventory of existing conditions, the alternatives considered, the recommended design, the impacts and mitigation measures, and the consultation undertaken.

2.0 Existing Conditions within the Study Area

2.1 Transportation

2.1.1 ROAD NETWORK

The study area is comprised of Williams Parkway, an east-west minor arterial road with two lanes per direction, and several crossing roads. All roads are under the jurisdiction of the City of Brampton; except for Dixie Road, which are under the jurisdiction of Peel Region. **Table 1** below provides a summary of all the roads within the study area.

TABLE 1: SUMMARY OF EXISTING ROADS IN THE STUDY AREA

Road Name	Regional/City	Road Type	Number of Lanes
Williams Parkway	City	Minor Arterial	4
Dixie Road	Region	Major Arterial	4
Mansfield Street	City	Local	2
MacKay Street	City	Collector	2
Bramalea Road	City	Minor Arterial	4
Glenridge Road	City	Local	2
Grenoble/Jordan Blvd	City	Local	2
Graymar Road	City	Local	2
Torbram Road	City	Minor Arterial	4

2.1.2 EXISTING AND FUTURE TRAFFIC CONDITIONS

A Traffic Impact Analysis was undertaken to understand transportation needs in the study area. In general, under existing conditions, the study area intersections and road segments operate at an acceptable level of service, except for some concerns during PM peak periods. A multi-modal analysis identified that improvements could be made for active transportation and transit throughout the corridor.

The traffic analysis also looked at future 2031 traffic conditions by considering traffic growth, modal split targets set by the City, and potential improvements that could be implemented such as traffic signal improvements and geometric changes. Overall, intersection and road segments operated at a good or acceptable level of service. In some cases, some individual traffic movements operated at lower levels of service, however the volumes are still within capacity. Therefore, no capacity improvements (i.e., additional lanes) are required on Williams Parkway. Some recommendations were made to extend turning lane storage lengths to reduce queuing issues. The full Transportation Impact Analysis can be reviewed in **Appendix A**.

2.1.3 TRANSIT

The closest regional transit facility is the GO Transit Kitchener Rail Line, which connects Kitchener in the west to Union station in the east. The closest stop to the study area is at Bramalea GO Station, to the south of the study area.

In terms of local Brampton Transit buses, Williams Parkway itself is serviced by the 29/29A bus route that runs east-west along Williams Parkway, from James Potter Road in the west to Edvac Drive in the east. Several Brampton Transit bus routes cross the study area in a north-south direction, including Route 18/18B on Dixie Road, Route 15 on Bramalea Road, Route 14 on Torbram Road, and local Route 19 on Mackay Street S/Bramalea Road and Route 12 on Jordan Boulevard/Grenoble Boulevard.

The ZUM corridors which run along Bovaird Drive East and Queen Street East help support the growth of the City and aid in the implementation of transit services as well as the LRT/BRT service line which runs east along Queen Street East. Williams Parkway is a primary transit corridor which is used as a support corridor to aid in the flow of traffic along main regional roads allowing for connections to other main corridors in the area.

2.1.4 ACTIVE TRANSPORTATION

The active transportation network is comprised of pedestrian sidewalk facilities on both sides of Williams Parkway throughout the study area. On the east end, from east of Graymar Road to Torbram Road, the sidewalk is widened and appears to be two paths together.

In addition to the sidewalks on Williams Parkway, there are many local neighbourhood and trail connections. There is access to the Chinguacousy Trail which provides multi-modal access to pedestrians and cyclists into the larger open space system north and south associated with the Chinguacousy Trail. The Chinguacousy Trail is also identified as being part of the City's 'Major Pathway Network' per Schedule C1 of the City's Official Plan. Existing off-road trails located on the Chinguacousy Trail provide connections to Blue Oak Park and Dixie Sandalwood Park/ Brampton Soccer Centre in the north. The existing off-road trails also provides a connection to Bramalea City Centre as well as Donald M. Gordon Chinguacousy Park to the south.

There are also connections to the Don Doan Trail closer to Torbram Road that provides multi-modal access to a separate parks and school network.

2.2 Drainage and Stormwater Management

The existing study area is located mostly in the Spring Creek and Mimico Creek watershed. Contributing catchment areas were assessed based on topographic contour data for study area. It was determined that the sub-catchment areas discharge to outlet locations known as hydrologic reference points (HRPs). There are five HRPs in the study area, four of which are in the Mimico watershed and one in the Spring Creek watershed.

The current stormwater management (SWM) system does not provide any water quality treatment before draining in the watercourses or external storm sewer system. Six storm sewer outlets have been identified in the study area.

2.3 Structures

There are two structures in the study area and they are described below. See the Structural Design Reports in **Appendix B** for more details.

The structure at Williams Parkway over Spring Creek is located approximately 200m west of MacKay Street. It was constructed in 1983 and is a concrete rigid frame cast-in-place bridge with span length of 6.17m, a bridge deck that is 600mm deep and 25m wide, which accommodates two lanes in each direction on Williams Parkway. The wearing surface is asphalt with waterproofing. Barrier walls at south and north sidewalks have a total length of 27.7m with 900mm depth. In general, the structure is in good condition.

The Torbram Road over Mimico Creek Culvert is located in the intersection of Williams Parkway and Torbram Road, at the eastern limit of the study area. The existing structure is a corrugated steel pipe (CSP) culvert. The structure has a diagonal west-east orientation located under the intersection of Torbram Road and Williams Parkway (northwest quadrant to southeast quadrant). The culvert currently carries 4 lanes of vehicular through traffic for Torbram Road and 4 lanes of vehicular though traffic for Williams Parkway, plus associated turn lanes and sidewalk crossings. The culvert was constructed in 1980, as per the Biennial Culvert Inspection Report.

2.4 Utilities

The preliminary design was circulated to the Brampton PUCC for mark up of existing utility infrastructure. Based on responses from the PUCC, it was determined that the following utilities are present in the study area:

- Acronym (Hydro One Telecom) – existing underground infrastructure between MacKay Street and Jordan Boulevard
- Zayo – existing plant around Torbram Road
- Enbridge Gas – several high-pressure gas mains throughout study area
- Bell Canada – conduit primarily on the south side of the road
- Rogers – aerial plant, fiber optic cable
- Alectra – underground plants on both sides of the road

2.5 Socio-Economic Environment

2.5.1 PROVINCIAL, REGIONAL AND LOCAL PLANNING POLICIES AND STUDIES

2.5.1.1 Provincial Planning Policies

2.5.1.1.1 Provincial Policy Statement, 2020

The 2020 Provincial Policy Statement (PPS) sets the policy foundation for regulating the development and use of land and provides direction on land use planning within the province to promote strong communities, a strong economy and a clean and healthy environment. All decisions related to land use planning matters are required to be consistent with the PPS. Other provincial plans build upon the PPS' policy foundation.

Policies that are relevant to the study are provided in Policy 1.6.7 Transportation Systems. Specifically:

- Policy 1.6.7.1 states: “Transportation systems should be provided which are safe, energy-efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.”
- Policy 1.6.7.3 states: “As part of a multimodal transportation system, connectivity within and among transportation systems and modes should be maintained and, where possible, improved including connections which cross jurisdictional boundaries.”
- Policy 1.6.7.4 states: “A land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support current and future use of transit and active transportation.”

2.5.1.1.2 A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019, amended 2020

The Growth Plan for the Greater Golden Horseshoe (the “Growth Plan”) outlines the province’s objectives to plan growth and development in the Greater Golden Horseshoe which includes the City of Brampton. A key objective of the plan is to support economic prosperity, protect the environment and help communities achieve a high quality of life. A key vision for the Greater Golden Horseshoe is that an “integrated transportation network will allow people choices for easy modes of travel both within and between urban centres throughout the region”.

The study area is part of the Delineated Built-Up Area, which are areas designated in the Growth Plan for residential development and intensification with priority for planning and investment in infrastructure and public service facilities that support intensification.

Under Section 3.2.2 which speaks to policies for transportation systems to support growth, key goals include: connectivity, a balance of choices, particularly promoting transit and active transportation, sustainability, multi-modal access, accommodating agricultural vehicles (if appropriate), and safety.

2.5.1.1.3 Greenbelt Plan, 2017

The Greenbelt Plan, together with the Oak Ridges Moraine Conservation Plan and the Niagara Escarpment Plan, identifies where urbanization should not occur to protect agricultural and ecological areas and functions. The study area does not fall within the Greenbelt Plan areas.

2.5.1.2 Regional Planning Policies

2.5.1.2.1 Region of Peel Official Plan, 2018

The Peel Regional Official Plan (ROP) provides a long-term policy and planning framework for Peel Region to direct growth, manage resources, and protect the environment. The study area is located in the Region’s Urban Boundary, within the Built-Up Area as shown in the map of “Schedule D4” (see Figure 2). The ROP states that lands which fall within the Built-Up Area are comprised of the majority of Brampton’s existing development areas and will accommodate a significant portion of Brampton’s new growth. There is an industrial/ business corridor where the Toronto Pearson International Airport Operating Area is located adjacent to the east of Torbram Road, and it extends to Humber West Parkway.

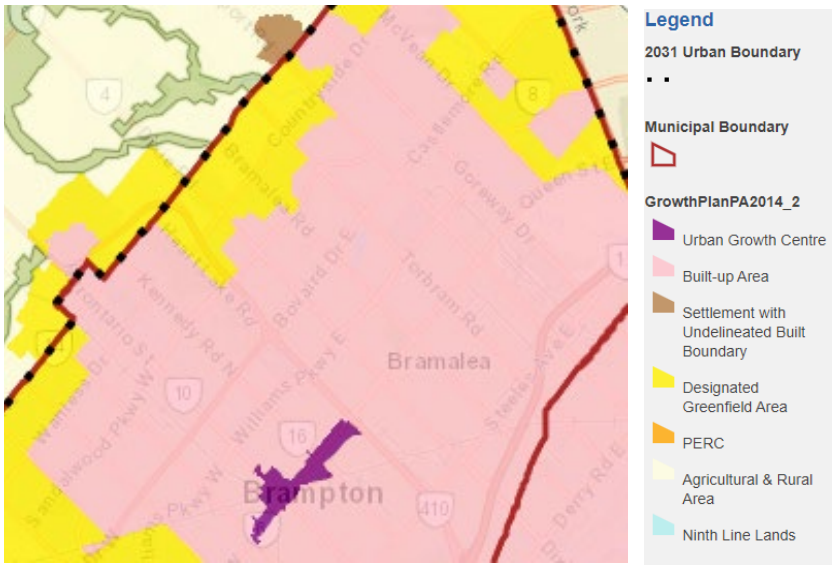


FIGURE 2: PEEL REGION OFFICIAL PLAN - SCHEDULE D4 - URBAN GROWTH CENTRE

The Airport Operating Area is an irregular area generally bounded by a line between North Park Drive to the north, Torbram Road/Bramalea Road to the west, Humberwest Parkway/Goreway Drive to the east, and Highway 407 ETR to the south. An amendment that incorporates the general policy framework set out in the Region of Peel Official Plan states that the Airport Operating Area affects land use planning matters in the City of Brampton. In terms of future planning for this area, the ROP states that there are certain noise sensitive land uses that need to be taken into consideration such as daycare centres, schools, residential units and nursing or retirement homes when in close proximity to the Airport Operating Area.
In the Peel Region OP, Bovaird Drive and Bramalea Road are identified as primary intensification corridors which will accommodate intense mixed-use development at high densities and are supported by the City's transit service.

2.5.1.2.2 Region of Peel Long Range Transportation Plan, 2019

The Region of Peel's Long Range Transportation Plan (PLRTP) is a transportation planning and infrastructure document that will guide decision making to accommodate growth in Peel Region to 2041. Within the study area, Dixie Road is the only regional road. Beyond the study area, there are two other major regional roads, Bovaird Drive East and Queen Street East, to the north and south of the Williams Parkway corridor, respectively.

To support regional transit trips on the GO Rail Line, Peel Region is advocating for two-way all-day 15-minute GO service along the Kitchener Line, which services stations from Union Station to Mount Pleasant GO Station. The closest GO Station to the study area is Bramalea GO, which is located south of the study area at Bramalea Road and Steeles Avenue East.

The PLRTP identifies ZUM corridors along Bovaird Drive East and Queen Street East as well as an LRT/BRT service line on Queen Street East and Priority Bus service on Bovaird Drive East and Bramalea Road. Figure 3 below shows "Figure 3-7 - Rapid Transit Network" from the PLRTP. Both the existing and proposed transit service will enhance access to the study area.

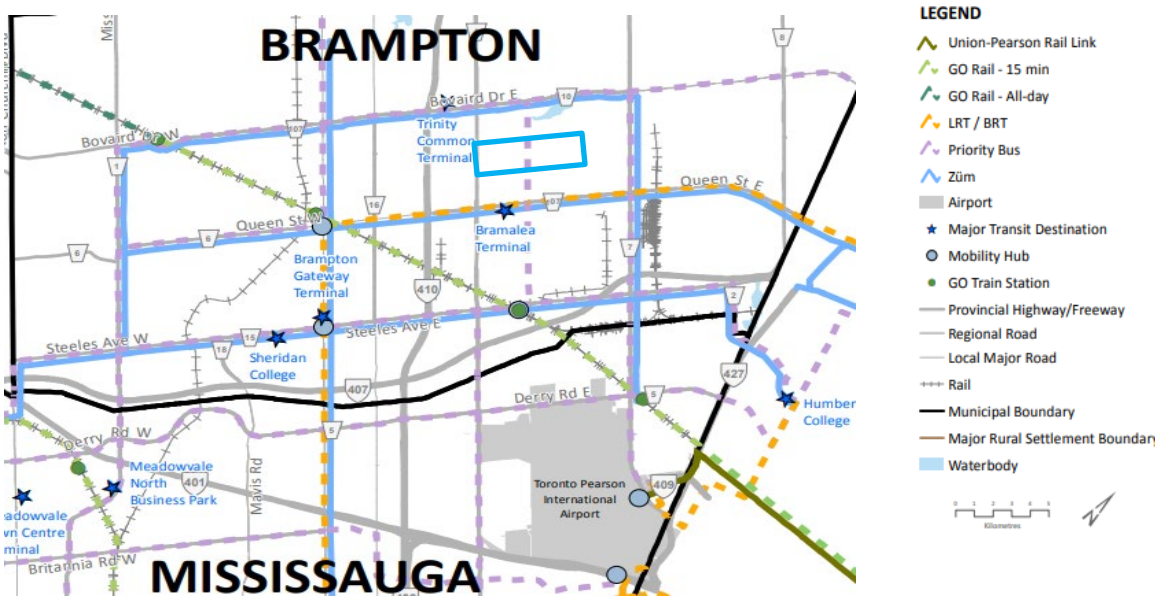


FIGURE 3: PLRTP - RAPID TRANSIT NETWORK

2.5.1.2.3 Peel Vision Zero Road Safety Strategic Plan (2018-2022)

The framework around Vision Zero is to prevent fatalities and injuries from motor vehicle collisions to create safer roads by reducing and ultimately, eliminating motor vehicle collisions. Considerations that relate to the study area are:

- Street light improvements
- Automated speed enforcement (school zones and community safety zones only)
- High friction pavement
- Pavement marking improvements
- Traffic signal network progression
- Bike box (allows cyclists to position themselves ahead of vehicle traffic at intersection)

2.5.1.3 Brampton Planning Policies

2.5.1.3.1 City of Brampton Official Plan, 2006, consolidated 2020

The City of Brampton's Official Plan (OP) provides guidance for land use, development and infrastructure decision-making based on the long-term vision and goals of the City. Specifically, the OP seeks to accommodate and direct growth while managing and enhancing the environmental, cultural, social and economic amenities. The City has identified six pillars, which are the main components of the OP, including Modern Transportation Systems; Managing Growth; Protecting our Environment, Enhancing Our Neighborhoods; A Dynamic and Prosperous Economy; Community Lifestyle and, Excellence in Local Government.

Figure 4, which shows "Schedule 1 City Concept Map" from the City's Official Plan, depicts the study area as comprised of Communities, Open Space, and Employment designations. The Communities designation is defined as the "basic living units of the City" in the OP and are generally comprised of residential uses, though communities are to be planned as Complete Communities that meet not only

residential needs but also provide convenient access to jobs, services, and community infrastructure, such as recreation, schools, and open space.

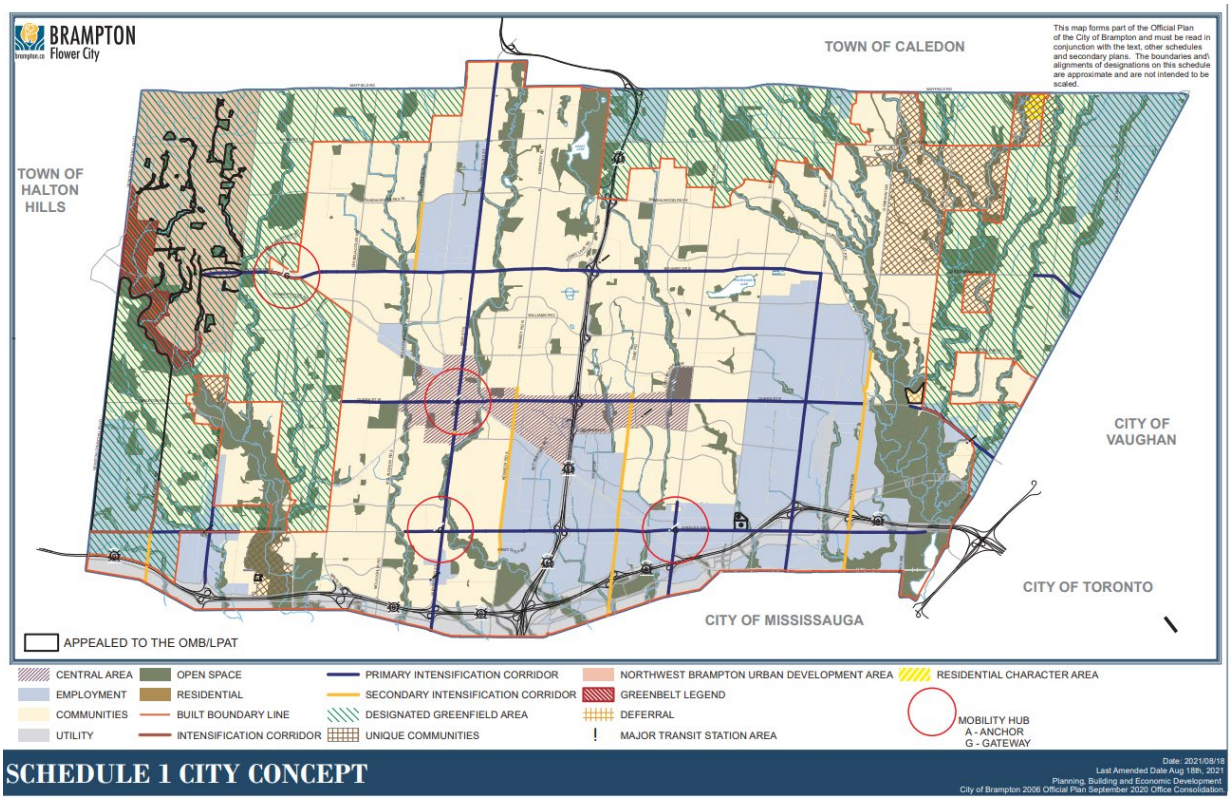


FIGURE 4: BRAMPTON OFFICIAL PLAN - SCHEDULE 1 CITY CONCEPT MAP

An Open Space area associated with the study area is Heart Lake Conservation Park, which is bounded by Sandalwood Parkway to the south, Kennedy Road North to the west, Mayfield Road to the north and Heart Lake Road to the east. This park is a natural environmental feature that has recreational and cultural significance. There is a connecting waterway that passes from Heart Lake Conservation Park via the Chinguacousy Trail (see Section 4.6.7 – Valleylands and Watercourse Corridors of the OP) which falls within the study area bounded by Dixie Road in the west and Bramalea Road in the east. Section 4.5.6 of the OP states the Pathways system is a vital component of the City's open space infrastructure and transportation system as they knit parks, valleys and community destinations together and provide convenient pedestrian and cycling routes across Brampton.

The study area is located within the Bramalea Secondary Plan – Area 3. The secondary plan provides specific land use designations and permissions for the secondary plan area, which is comprised mostly of low to high density residential, commercial and retail services, open space, natural heritage system, institutional, and utilities.

The City of Brampton OP is currently being updated. A second Statutory Public Meeting is planned for Fall 2022 to provide a forum for the public to submit comments on the second draft of the OP. A subsequent meeting will be held in early 2023 to report back on the results and recommendations of the meeting.

2.5.1.3.2 City of Brampton Transportation Master Plan (2015)

The City of Brampton Transportation Master Plan (TMP) was most recently updated in 2015 and looks at existing and forecasted traffic volumes and patterns across the entire City and considers future development and other transportation improvements. Based on these results, the TMP provides a recommended City network for 2041.

As depicted in Section 11.1 Short Term Horizon in the TMP, the study area was proposed for road widening from 4 to 6 lanes. To the west of the study area, from Kennedy Road to North Park Drive, the TMP proposed to widen the road from 4 to 6 lanes. To the east of the study area, from Torbram Road to Humber West Parkway, the TMP proposed to widen the road from 4 to 6 lanes. As stated in the TMP, Williams Parkway should be widened between Highway 410 and Torbram Road due to capacity constraints on this road.

Williams Parkway is defined as a transit support corridor as stated in the TMP in "Figures 23, 24 and 25 – Recommended Rapid Transit implementation by 2021". This roadway is considered a support corridor to bring service to corridors with higher order transit.

The 2015 TMP is currently being reviewed and updated to account for new development, growth, and changing goals and visions in the City. Changes are expected to be in accordance with the recommendations made in Brampton 2040 Vision 'Living the Mosaic'. While the TMP is being updated, the City prepared a 'TMP and Capital Plan Interim Strategy' in 2021 that reviewed the long list of six-lane road widening projects recommended by the 2015 TMP. The review identified that the priorities of the City has shifted towards a Complete Communities approach where recommendations are not solely based on mobility but also consider safety, sustainability, and people-oriented designs. Following the Interim Strategy, Brampton City Council directed City staff in July 2021 to pause any EAs and design projects for long-term six-lane road widening projects and to prioritize transit and active transportation projects instead.

2.5.1.3.3 City of Brampton Active Transportation Master Plan (2019)

The City of Brampton Active Transportation Master Plan (ATMP) was developed in 2019 and builds upon the 'Vision 2040: "Living the Mosaic" (2018)' document that set out a long-term vision for the City. The ATMP provides active transportation-focused plans, policies, and programs intended to implement elements of the Vision 2040 plan.

The ATMP identifies existing active transportation facilities in the study area (see Figure 5):

- Chinguacousy Trail as an existing 'Recreational Trail (Paved)'
- A small 'Boulevard Bike Path' is identified on Williams Parkway "starting at Graymar Road to Torbram Road
- North-south local 'Recreational Trail (Paved)' connecting the Jefferson, Jordan, Jayfield, and Greenbriar Parks
- Several north-south local park paths associated with local parks
- Urban Shoulders on MacKay Street and Grenoble Boulevard that end at Williams Parkway

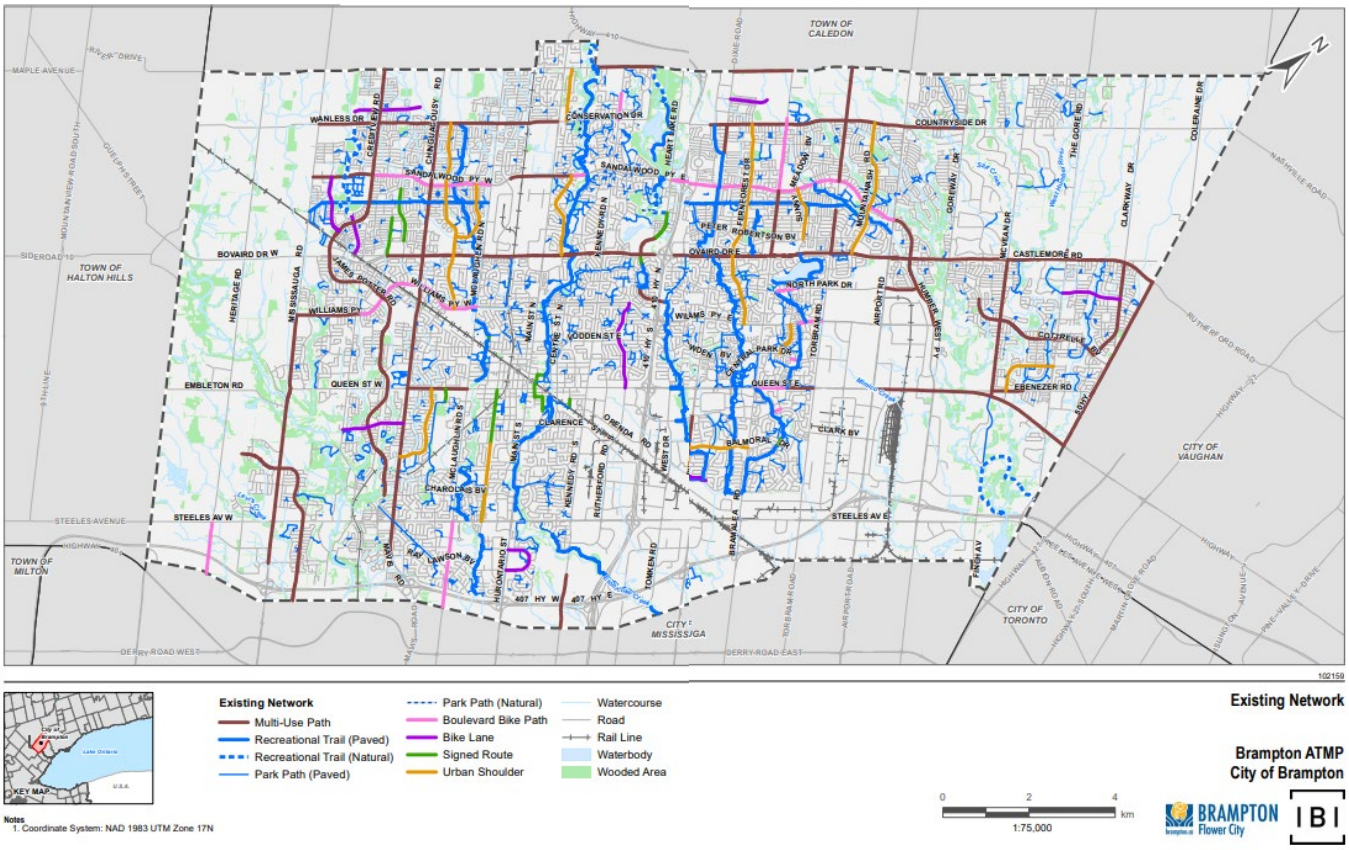


FIGURE 5: MAP OF EXISTING CYCLING FACILITIES (EXHIBIT 4.8 OF THE ATMP)

The ATMP also highlights proposed cycling networks that will be implemented. The "Proposed Network and Facility Type" map (see Figure 6, Exhibit 4.16 of the ATMP) depicts the recommended facilities in the City. The ATMP recommends a multi-use path/boulevard path on the section of Williams Parkway in the study area, with connections to the existing AT network, future bike lanes on local roads and multi-use paths on Bramalea Road and Torbram Road.

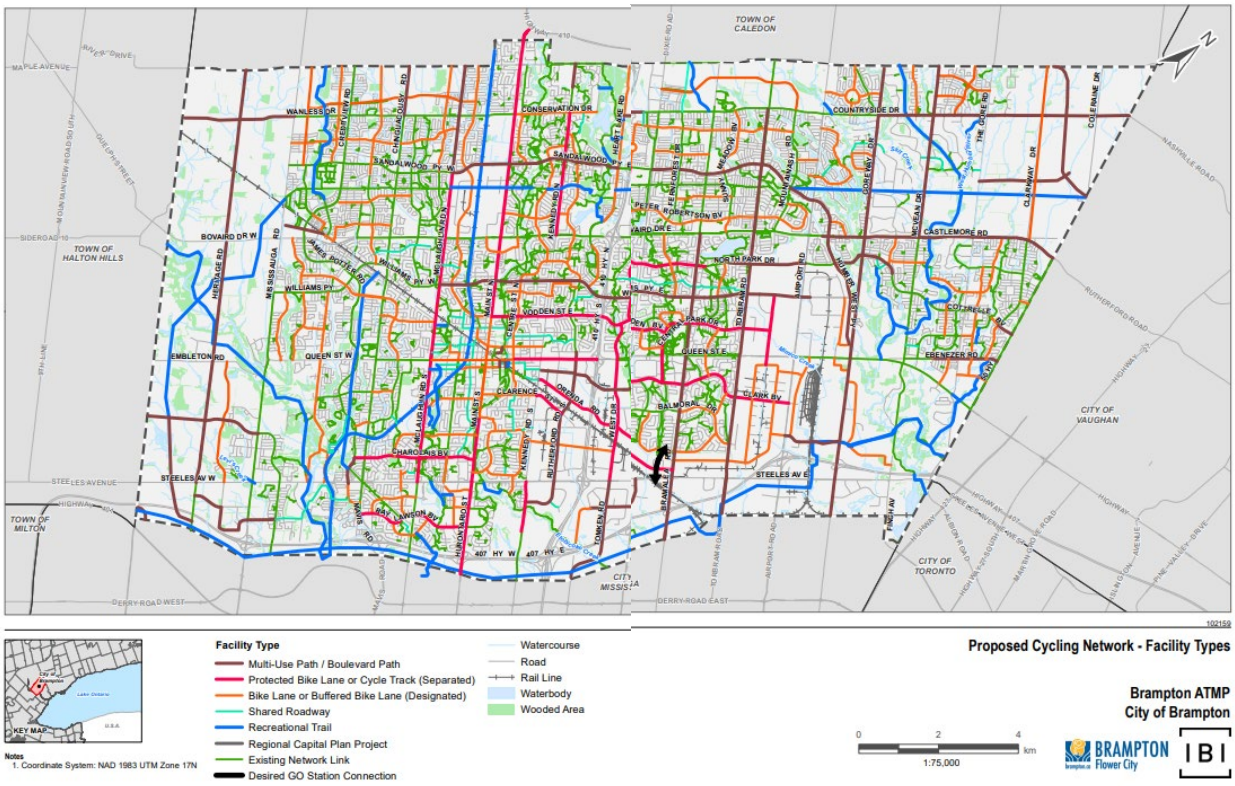


FIGURE 6: PROPOSED NETWORK AND FACILITY TYPE

2.5.1.3.4 Brampton 2040 Vision: Living The Mosaic (2018)

The City has compiled the ideas and perspectives offered by its residents through extensive consultation with the community to develop its vision for the next 25 years. Goals that relate to the study include:

- Revitalizing existing districts and neighbourhoods (Action #3-3 – Revitalize Bramalea)
- Connectivity and transportation network improvements
- Streets for people, including trees and building facades that make the pedestrian realm more attractive
- Sustainability and focus on nature

2.5.1.3.5 City of Brampton – Neighbourhood Traffic Management Guide

The City of Brampton Neighbourhood Traffic Management Guide identifies management strategies in dealing with traffic related issues in neighbourhoods and in addressing the safety needs of the City's local residents. The Guide aims to address a range of public concerns relating to speeding, infiltration and other traffic issues in residential neighborhoods.

Several Community Safety Zones are identified within the study area (see Figure 7). Community Safety Zones are identified as areas where public safety is of special concern, and typically include areas around parks, schools and residential neighbourhoods where there is significant number of vulnerable road users.

There are community safety zones identified:

- On Jordan Boulevard, north of Williams Parkway, associated with the Chinguacousy Secondary School and the surrounding residential neighbourhoods
- On Glenforest Road/Greenbriar Road, associated with St. Jean Brebeuf Elementary School, Grenoble Public School, Greenbriar Middle School, and the surrounding residential neighbourhoods
- Jefferson Road, north of Williams Parkway and west of Jordan Boulevard, associated with Jefferson Public School

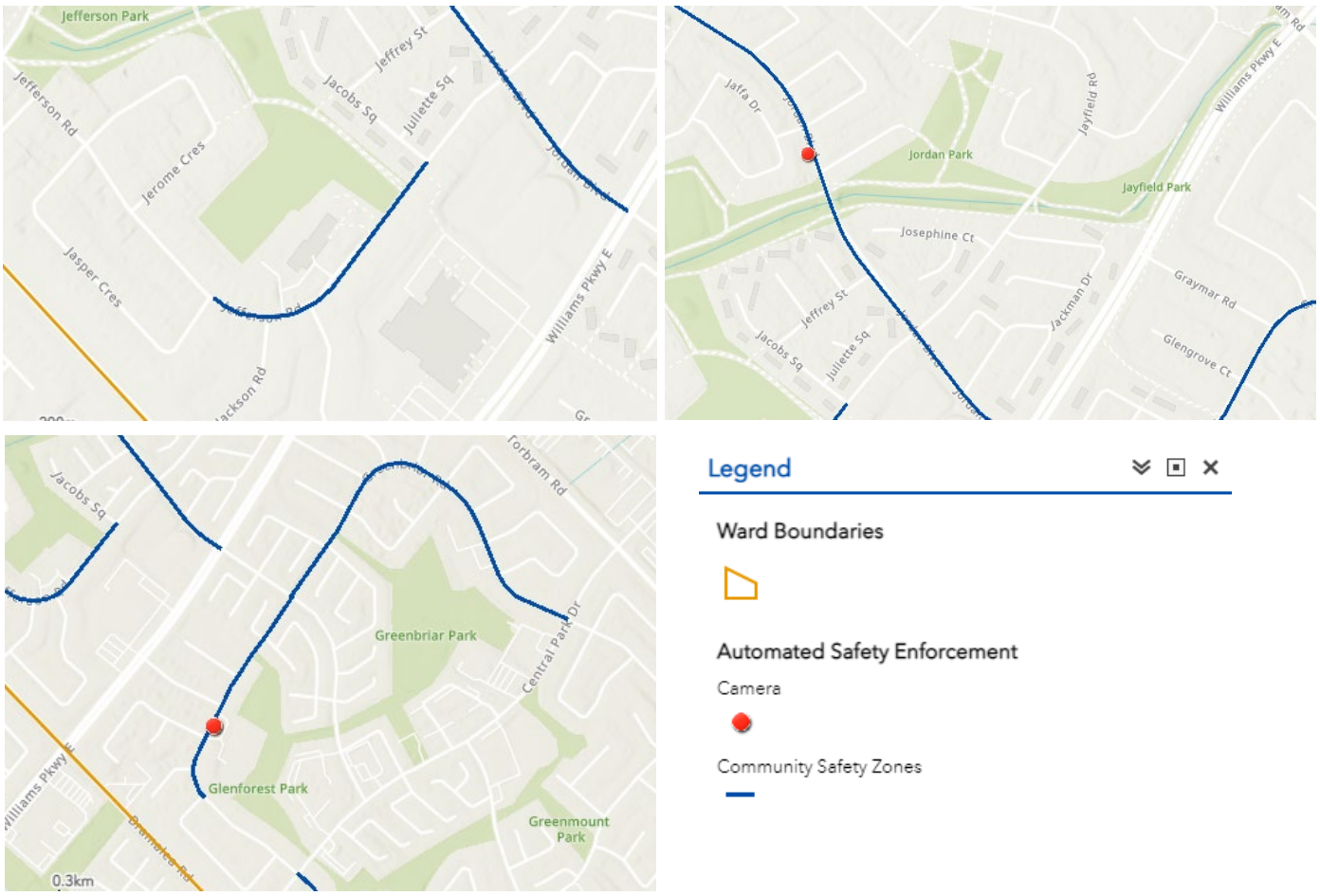


FIGURE 7: AUTOMATED SPEED ENFORCEMENT (ASE) ALONG GREENBRIAR ROAD (BOTTOM LEFT), JORDAN BOULEVARD (TOP LEFT) AND JEFFERSON ROAD (TOP RIGHT)

2.5.1.4 Additional Studies

The City of Brampton has undertaken additional studies that shape both the study area and surrounding community. These studies will influence this EA study in determining the use and appropriateness of a proposed extension through the study area.

2.5.1.4.1 Dixie Road Improvements from Queen Street to 2 km North of Mayfield Road Municipal class environmental assessment Study

The Region of Peel completed a Schedule "C" MCEA in November 2011 for improvements on Dixie Road from Queen Street East to 2 km north of Mayfield Road. Improvement was identified to be

required due to the population growth in the Region of Peel and the due the recommendations of the Peel Long Range Transportation Plan and City of Brampton Transportation Master Plan.

As recommended by the MCEA, the Preferred Design for Dixie Road is to widen to six (6) through lanes plus turning lanes from north of Queen Street to Countryside Drive and four (4) through lanes plus turning lanes north of Countryside Drive to the northerly project limit. The project is currently in the detail design phase as the proposed improvements and construction is anticipated to be completed by 2031.

2.5.1.4.2 Williams Parkway from Mclaughlin Road to North Park Drive/Howden Boulevard Municipal Class Environmental Assessment Study

The City of Brampton completed a Schedule "C" MCEA in June 2011 for Williams Parkway from McLaughlin Road to North Park Drive/Howden Boulevard to determine potential improvements to meet existing and future transportation requirements. The project is currently in the detailed design phase and subject to Council approval, the project can proceed with construction in 2023. The study was conducted as the Transportation and Transit Master Plan (TTMP), 2004 identified that Williams Parkway will experience road capacity deficiencies as a result of growth in the northwest part of Brampton.

The recommendations of the MCEA included widening to six (6) lanes maintaining an urban cross section and raised median from McLaughlin Road to North Park Drive, implementing a 3.0m multi-use path in the south boulevard and a sidewalk in the north boulveard, construction of 2.4m high noise walls, where required, and other drainage and stormwater management improvements.

In October 2019, Council passed a motion to review the project, in particular, the road widening recommendation and the detailed design phase from the six-lane road widening which was then decided to be paused at 60% completion. In November 2020, a final decision was made by Council and approved an amended Option 3, which was to narrow Williams Parkway existing four lanes as it creates more space for the multi-use path, encourages Active Transportation with safety, calms traffic speeds and directly aligns with Brampton's 2040

2.5.1.4.3 Williams Parkway from Torbram Road To Humberwest Parkway Municipal Class Environmental Assessment

The City of Brampton completed a Schedule "C" MCEA in October 2012 for Williams Parkway from Torbram Road to Humberwest Parkway, which recommended widening to six (6) lanes from Torbram Road to Automatic Road/Spar Drive and maintaining a four lane section from Automatic Road/Spar Drive to Humberwest Parkway. The study also recommended transit and intersection improvements, a multi-use path on the south side of Williams Parkway, and noise walls.

In January 2020, the City of Brampton conducted a Traffic Analysis Study for Williams Parkway, from Torbram Road to Airport Road, to reassess existing and future traffic operations to confirm whether widening to six (6) lanes was still warranted. The findings of the study determined that widening did not significantly offer additional benefits for any specific modes. The recommendations of the study included maintaining the four lane section from Airport Road to Torbram Road and implementing minor localized operational improvements at various intersections, including the Williams Parkway and Torbram Road intersection.

2.5.1.4.4 Torbram Road from Queen Street East to Bovaird Drive Municipal Class Environmental Assessment

In 2017, the City of Brampton initiated a Schedule "C" MCEA study to widen Torbram Road from four to six lanes between Queen Street E to Bovaird Drive. The study was in the preliminary design phase and was anticipating hosting its second Public Information Centre. The study is currently on hold while the City reviews the 2015 TMP recommendations for six-lane widenings.

2.5.2 EXISTING LAND USE

The study area is located within lands designated "Communities" in 'Schedule 1 City Concept' of the Brampton Official Plan and referenced in Figure 4. The study area is comprised of parcels zoned as 'Open Space', 'Residential' and 'Employment'. Adjacent land uses are comprised of parcels zoned for residential and open space uses.

Most of the Open Space in the study area is associated with the Chinguacousy Trail. The Dixie Sandalwood Park/Brampton Soccer Centre, Ellen Mitchell Recreation Centre (indoor swimming pool and fitness) and walking and cycling paths are also zoned as 'Open Space'.

Residential land uses are mainly single detached houses located in surburban neighbourhoods on local roads both north and south of Williams Parkway. There are many institutional uses in the study area, such as Chinguacousy Secondary School, Judith Nyman Secondary School, Williams Parkway Senior Public School, and Terry Miller Recreation Centre.

Medium and higher density developments are situated to the south on Queen Street East and west past Dixie Road, beyond the scope of the study area.

2.6 Natural Environment

A Natural Environment Assessment Report was prepared to document existing environmental conditions. A summary is provided in this section, however, for the full report and details, refer to Appendix C.

2.6.1 DESIGNATED AREAS AND FEATURES

The following designated areas and features fall within the study area:

- **TRCA Regulated Area:** The TRCA Regulated Area extends within the study area, overlapping with areas associated with Tributary of Spring Creek and Mimico Creek.
- **TRCA Target Natural Heritage System (NHS):** The wooded and riparian habitats within the study area are part of the Etobicoke Mimico Watershed Natural Heritage System which is part of the TRCA Target Natural Heritage System.
- **Valleylands and Watercourse Corridors:** Schedule "D" Natural Heritage Features and Areas of the City's (City of Brampton 2020) Official Plan shows the portion of the study area surrounding Tributary of Spring Creek and Mimico Creek are located within a Valleylands and Watercourse Corridor.
- **Municipal Parks:** Jayfield Park and the parklands associated with the Chinguacousy recreational trail occur within the study area.

2.6.2 VEGETATION AND VEGETATION COMMUNITIES

2.6.2.1 Tree Inventory and Assessment

A tree inventory and health assessment of all trees within the Tree Inventory Area (all trees within a 6m buffer from the project area) was completed on July 14 and 20, 2022. A total of 834 individual trees and an additional 46 groupings were documented within the Tree Inventory Area. A summary of the species and number of individual trees can be found in the Natural Environment Assessment Report.

For the individual trees surveyed, the most plentiful species was Norway maple, where it consisted of over 25% of total individual trees for the inventory. The second most abundant species was the Austrian pine, with 120 individual trees. The trees inventoried observed to have Good overall health and generally of large sizes. There were 396 trees measured to have a DBH between 20-40 cm. This is followed by 262 trees within the range of 11-19 cm. Out of the 834 individual trees, 813 (97%) were characterized with an Overall Health of Fair or Good. The remaining 21 (3%) individuals were found to be of Poor Overall Health.

For the Tree Groupings, a total of 4156 trees were documented into 46 groups, with varying compositions. Consistently throughout, these groupings had various number of stems, from 3 trees to 400 trees, each with less than 10 cm DBH and good Overall Health. The dominant species included Amur Maple and European Buckthorn, both of which are invasive species. Of the few native species, Gray Dogwood and Eastern White Cedar were the most plentiful.

2.6.2.1 Ecological Land Classification

The majority of the study area is built-up with residential and commercial developments and parklands. The only naturalized areas present are associated with Mimico Creek and Spring Creek which are surrounded by woodland and meadow communities. A summary of vegetation communities within the study area are summarized in Table 2 below and shown in Figure 8.

TABLE 2: ELC VEGETATION COMMUNITIES IN THE STUDY AREA

ELC Code	Community Type	Description / Comments
Constructed Communities		
CGL	Constructed Greenlands	This community includes parklands and landscaped areas.
CVC	Commercial and Institutional	This community includes commercial and institutional properties and buildings.
CVR	Residential	This community includes residential developments.
Meadow Communities		
MEG	Graminoid Meadow	This community is dominated by unmowed grasses, with occasional forbs.
MEM	Mixed Meadow	This community is composed of grasses and forbs such as Canada Thistle (*Cirsium arvense*), Teasel species (*Dipsacus sp*) and Common Burdock (*Arctium minus*).
Treed Hedgerow Communities		
TAGM5	Fencerow	These communities are a cultural deciduous fencerow, planted young trees and shrubs understory with mostly Common Buckthorn.

ELC Code	Community Type	Description / Comments
Thicket Communities		
THDM2	Dry-Fresh Deciduous Shrub Thicket	This community is a Burning Bush (*Euonymus alata*) dominant thicket and was confirmed by Parsons during field investigation.
THDM2-6	Buckthorn Deciduous Shrub Thicket	This community dominated with Willow species (*Salix sp*) and Manitoba Maple (*Acer negundo*).
Woodland Communities		
WODM5	Fresh-Moist Deciduous Woodland	These communities are successional woodlands that is composed of Silver Maple (*Acer saccharinum*), Black Walnut (*Juglans nigra*), Manitoba Maple, Ash species (*Fraxinus sp*), Poplar species (*Populus sp*), Speckled Alder (*Alnus incana*), Amur Maple (*Acer ginnala*), Dogwood species (*Cornus sp*) and Willow species.
WIMM4	Fresh-Moist Mixed Woodland	This community is a successional woodland with a mix of trees and shrubs species such as, Silver Maple, White Spruce (*Picea glauca*), Poplar species, Ash species, Pussy Willow (*Salix discolor*) and Dogwood species in the understory.
Open Aquatic Communities		
OAO	Open Aquatic	This community is unvegetated and includes the watercourse channels of Spring Creek.

FIGURE 2 (1 of 5) - VEGETATION COMMUNITIES

Key Map

LEGEND

- Road
- Watercourse (Peel Region)
- Project Extent
- Study Area (120 m)
- Ongoing Restoration Works (City of Brampton)

Ecological Land Classification (ELC)

- Constructed
- Fencerow
- Meadow
- Open Aquatic
- Successional Woodland
- Thicket

1:2,000 Meters 0 50 100

DATA SOURCES: Parsons (2022); Toronto Region Conservation Authority (TRCA); Peel Region; City of Brampton; Land Information Ontario (LIO); ESRI

Natural Environment Assessment Report
Improvements to Williams Parkway from Dixie Road to Torbram Road
Municipal Class Environmental Assessment Study

PROJECT NO:	DATE:	DRAFT BY:
478286	10/1/2022	M.E.

N

PARSONS Ontario

FIGURE 2 (2 of 5) - VEGETATION COMMUNITIES

Key Map

LEGEND

- Road
- Watercourse (Peel Region)
- Project Extent
- Study Area (120 m)
- Ongoing Restoration Works (City of Brampton)

Ecological Land Classification (ELC)

- Constructed
- Fencerow
- Meadow
- Open Aquatic
- Successional Woodland
- Thicket

1:2,000 Meters 0 50 100

DATA SOURCES: Parsons (2022); Toronto Region Conservation Authority (TRCA); Peel Region; City of Brampton; Land Information Ontario (LIO); ESRI

Natural Environment Assessment Report
Improvements to Williams Parkway from Dixie Road to Torbram Road
Municipal Class Environmental Assessment Study

N

PROJECT NO:	DATE:	DRAFT BY:
478286	10/1/2022	M.E.

PARSONS Ontario

FIGURE 2 (3 of 5) - VEGETATION COMMUNITIES

Key Map

LEGEND

- Road
- Watercourse (Peel Region)
- Project Extent
- Study Area (120 m)
- Ongoing Restoration Works (City of Brampton)

Ecological Land Classification (ELC)

- Constructed
- Fencerow
- Meadow
- Open Aquatic
- Successional Woodland
- Thicket

1:2,000 Meters 0 50 100

DATA SOURCES: Parsons (2022); Toronto Region Conservation Authority (TRCA); Peel Region; City of Brampton; Land Information Ontario (LIO); ESRI

Natural Environment Assessment Report
Improvements to Williams Parkway from Dixie Road to Torbram Road
Municipal Class Environmental Assessment Study

N

PROJECT NO:	DATE:	DRAFT BY:
478286	10/1/2022	M.E.

PARSONS Ontario

FIGURE 2 (4 of 5) - VEGETATION COMMUNITIES

Key Map

LEGEND

- Road
- Watercourse (Peel Region)
- Project Extent
- Study Area (120 m)
- Ongoing Restoration Works (City of Brampton)

Ecological Land Classification (ELC)

- Constructed
- Fencerow
- Meadow
- Open Aquatic
- Successional Woodland
- Thicket

1:2,500 Meters 0 50 100

DATA SOURCES: Parsons (2022); Toronto Region Conservation Authority (TRCA); Peel Region; City of Brampton; Land Information Ontario (LIO); ESRI

Natural Environment Assessment Report
Improvements to Williams Parkway from Dixie Road to Torbram Road Municipal Class Environmental Assessment Study

PROJECT NO:	DATE:	DRAFT BY:
478286	10/1/2022	M.E.

N

PARSONS Ontario

FIGURE 8: ELC FEATURES IN THE STUDY AREA

FIGURE 9: WATERCOURSE FEATURES IN THE STUDY AREA

2.6.3 SIGNIFICANT WOODLANDS

None of the woodlands identified within Schedule "D" of the City's Official Plan are located within the study area. There are other woodlands present within the study area not shown on Schedule "D". Two non-sensitive woodlands are located within the study area to the north and the south of the Tributary of Spring Creek crossing.

2.6.4 SIGNIFICANT WETLANDS

The desktop and field study did not identify any provincially significant wetlands or other wetlands (i.e., evaluated or unevaluated) within the study area.

2.6.5 SIGNIFICANT WILDLIFE HABITAT (SWH)

All wildlife and vegetation communities documented during the desktop study and field investigations were assessed as part of the SWH screening. An assessment of candidate and confirmed SWH was completed following the *SWH Criteria Schedules for Ecoregions 6E and 7E* (MNRF 2015a & MNRF 2015b), including SoCC screening.

The SoCC screening determined that there is potential habitat for Wood Thrush. As such, Special Concern and Rare Species SWH is considered. Further assessment of the study area is required to confirm the presence of the species during the appropriate timing window. Wood Thrush was determined to have potential habitat in the study area. OBBA records detailed its presence and presence of Fresh-Moist Deciduous Woodland (WOD), and Fresh-Moist Mixed Woodland (WOM) vegetation community types support this SWH Candidacy for this species. This species satisfy the Candidate SWH requirements for Special Concern and Rare Species category.

2.6.6 FISHERIES AND AQUATIC HABITAT

The study area is located in the Spring Creek subwatershed of the Etobicoke Creek watershed and the Mimico Creek subwatershed of the Mimico Creek watershed. The primary drainage features identified within the study area that support fish and provide fish habitat are Tributary of Spring Creek, which bisects the study area just west of the Chinguacousy Trail, and Mimico Creek, which flows near the eastern limit of the study area. See Figure 9 for a summary of the fish-bearing watercourses within the study area.

2.6.6.1 Tributary of Spring Creek

The Tributary of Spring Creek is located within the Etobicoke Creek watershed. The tributary is a permanent, warmwater, direct fish habitat watercourse conveyed under Williams Parkway in the northwest to southeast direction through a bridge. The surrounding land use at Williams Parkway is highly treed parklands. Tributary of Spring Creek begins as two tributaries approximately 7.5 km and 4 km northwest of the study area that flow separately through agricultural lands, woodlands, wetlands, parklands, and residential areas before flowing into a reservoir approximately 2 km upstream of the study area. From the reservoir, Tributary of Spring Creek flows out as one channel in the southeast direction through Manitou Park, and then Maitland Park North before entering the study area.

2.6.6.2 Mimico Creek

This watercourse is conveyed under Williams Parkway and Torbram Road intersection by a CSP culvert and is considered permanent, warmwater, direct fish habitat. The watercourse flowed parallel and

north of Williams Parkway from Jayfield Park to Torbram Road and then passed underneath the intersection. The surrounding land use at Williams Parkway was noted as primarily residential and parklands.

Mimico Creek begins west of the study area and flows in an east direction for approximately 1 km, passing through Jefferson Park, then Jordan Park and lastly Jayfield Park before turning northeast and entering the study area, running parallel to Williams Parkway. During field investigations completed on August 3, 2022 by Parsons, the channel's upstream reach from the Williams Parkway crossing to approximately 33 m upstream was observed as a high velocity, narrow concrete channel with concrete extending into the riparian area and riparian vegetation emerging from the concrete in some areas. Further upstream, the watercourse continued as a high velocity concrete channel but the concrete no longer extended into the riparian area which caused pools of water to form adjacent to the concrete channel due to excess flow. Within the study area approximately 192 m upstream of the Williams Parkway crossing, the concrete lining within Mimico Creek was being removed and the creek was being re-naturalized as part of TRCA's efforts to improve water quality, and fish and wildlife habitat. This construction was completed in 2022.

2.6.7 SPECIES AT RISK (SAR)

A SAR screening was completed to determine habitat potential for SAR to occur within the study area and/or adjacent lands based on findings from the background review and field investigations. The results of the screening are summarized in Table 3.

Based on the results of the screening, three (3) SAR and one (1) SoCC have the potential to occur within the study area and/or the adjacent lands:

- Little Brown Myotis (*Myotis lucifugus*)
- Northern Myotis (*Myotis septentrionalis*)
- Tricolored Bat (*Perimyotis subflavus*)
- Wood Thrush (*Hylocichla mustelina*)

An additional 3 species of migratory bats with, expectation to be uplisted to Endangered under ESA and SARA, have the potential to occur in the study area and/or adjacent lands:

- Hoary Bat (*Lasiurus cinereus*)
- Eastern Red Bat (*Lasiurus borealis*)
- Silver-haired Bat (*Lasionycteris noctivagans*)

No aquatic SAR were identified during the background review to potentially occur in the area. According to the GTAA Living City Project Etobicoke Creek – The Aquatic System (TRCA 2006) report, there is a historic presence of Redside Dace in the Spring Creek subwatershed of the Etobicoke Creek watershed, which contains Tributary of Spring Creek within the study area. Redside Dace is a freshwater fish species listed as 'Endangered' and protected provincially under the ESA and listed as 'Endangered' federally and protected on Schedule 1 of the SARA. Based on review of the most recent COSEWIC status report for Redside Dace (COSEWIC 2018), the species has not been documented within the Etobicoke Creek watershed since 1940 and is considered potentially extirpated from the watershed.

TABLE 3: SUMMARY OF POTENTIAL SPECIES AT RISK WITHIN THE STUDY AREA

Species	SARA	ESA	Legal Protection	Assessment
Mammals				
Eastern Small-footed Myotis (*Myotis leibii*)	No Status	END	ESA	Unlikely – This species prefers roosting in rock habitats and barns. No suitable habitat is present in the study area.
Little Brown Myotis (*Myotis lucifugus*)	END	END	ESA. SARA	**Potential** - There are no previous records of SAR bats within the study area and no individuals were observed during the 2022 site visit, however background records for bats are limited and observations are generally not expected during daytime site visits. There are forest fragments and urban trees that could provide possible roosting habitat, with forests and riparian areas providing foraging habitat. Trees within the Project limits are within an existing fragmented urban landscape and do not provide unique roosting opportunities when compared with the surrounding area. With appropriate timing windows, these species and its habitat are not anticipated to be impacted by proposed works.
Northern Myotis (*Myotis septentrionalis*)	END	END	ESA, SARA	
Tricolored Bat (*Perimyotis subflavus*)	END	END	ESA	
Hoary Bat (*Lasiurus cinereus*)	END *pending uplist (TBD)*	END *pending uplist (TBD)*	N/A	**Potential** - There are no previous records of migratory bats within the study area and no individuals were observed during the 2022 site visit, however background records for bats are limited and observations are generally not expected during daytime site visits. There are forest fragments and urban trees that could provide possible roosting habitat, with forests and riparian areas providing foraging habitat. Trees within the Project limits are within an existing fragmented urban landscape and do not provide unique roosting opportunities when compared with the surrounding area. With appropriate timing windows, these species and its habitat are not anticipated to be impacted by proposed works.
Eastern Red Bat (*Lasiurus borealis*)	END *pending uplist (TBD)*	END *pending uplist (TBD)*	N/A	
Silver-haired Bat (*Lasionycteris noctivagans*)	END *pending uplist (TBD)*	END *pending uplist (TBD)*	N/A	
Amphibians				
Western Chorus Frog *(Pseudacris triseriata)*	THR	No Status	SARA	Unlikely - ORAA has records within 1 km squares. There is no suitable habitat available within the study area.
Birds				

Species	SARA	ESA	Legal Protection	Assessment
Barn Swallow (*Hirundo rustica*)	THR	THR	ESA, SARA, MBCA	Unlikely - OBBA has records of this species from within the 10km2 map squares (17PJ04). E-bird did not have any recent records of this species in the study area. This species nor its nests were observed within the study area or adjacent lands during 2022 field investigations. There is limited nesting habitat as road culverts and lacks sufficient foraging habitat in the study area. Therefore, it is considered that there is no suitable habitat within the study area for this species.
Bank Swallow *(Riparia riparia)*	THR	THR	ESA, SARA, MBCA	Unlikely – OBBA has records of this species from within the 10km2 map squares (17PJ04). E-bird did not have any recent records of this species in the study area or adjacent lands. Suitable banks or bluffs are not present within the study area or adjacent lands.
Bobolink *(Dolichonyx oryzivorus)*	THR	THR	ESA, SARA, MBCA	Unlikely - OBBA has records of this species from within the 10km2 map squares (17PJ04). E-bird did not have any recent records of this species in the study area. Habitat for this species is not considered present. There is no suitable vegetation communities present within the study area or adjacent lands for this species.
Chimney Swift (*Cheatura pelagica*)	THR	THR	ESA, SARA, MBCA	Unlikely - OBBA has records of this species from within the 10km2 map squares (17PJ04). However, there are no identified critical habitat present in the Brampton area according to the Proposed Recovery Strategy (2022). This species is not expected to be impacted by the proposed works.
Common Nighthawk (*Chordeiles minor*)	THR	SC	SARA, MBCA	Unlikely - OBBA has records of this species from within the 10km2 map squares (17PJ04). There are no suitable nesting or foraging habitat within the study area and adjacent lands for this species.
Eastern Meadowlark (*Sturnella magna*)	THR	THR	ESA, SARA, MBCA	Unlikely - OBBA has records of this species from within the 10km2 map squares (17PJ04). E-bird did not have any recent records of this species in the study area. Habitat for this species is not considered present. There is no suitable vegetation

Species	SARA	ESA	Legal Protection	Assessment
				communities present within the study area or adjacent lands for this species.
Wood Thrush (*Hylocichla mustelina*)	THR	SC	SARA, MBCA	**Potential** - OBBA has records of this species from within the 10km2 map squares (17PJ04). The woodlands in the study area and adjacent lands may provide suitable habitat, however this species and its habitat is not anticipated to be impacted by the proposed works.
Plants				
Black Ash *(Fraxinus nigra)*	No Status	END	ESA, SARA	Unlikely - NHIC presented a record of occurrence in the 1km2 square (17PJ0142). The woodlands associated with Mimico Creek and the tributary of Spring Creek may provide suitable habitat, however no Black Ash were documented within the study area during the 2022 field investigations. This species and its habitat are not anticipated to be impacted by the proposed works.
Butternut (*Juglans cinerea*)	END	END	iNaturalist	Unlikely - While no background records were identified for this species, the woodlands in the riparian areas of Mimico Creek and the tributary of Spring Creek may provide suitable habitat. No Butternuts were documented within the study area during the 2022 field investigations. This species and its habitat are not anticipated to be impacted by the proposed works.
Insects				
Monarch (*Danaus Plexippus*)	END	SC	SARA	Unlikely - There are no previous records of Monarchs within the study area, and this species and its habitat are not anticipated to be impacted by proposed works.

2.6.8 MIGRATORY BIRDS CONVENTION ACT

New regulations of MBCA were adopted in 2022 where protections for migratory birds and nests were updated. MBCA Schedule 1 species were identified, for which nest protections extend beyond the standard provisions to protect active nests, with nest protection applying to nests throughout the year, and requiring that a nest be established to be abandoned for a minimum designated waiting period. Potential Schedule 1 species were screened for suitable habitat and background records within the study area, which showed there is potential suitable nesting habitat for Green Heron and Pileated Woodpecker within the 120 m study area, however nesting potential is limited within the proposed Project limits.

Suitable nesting habitat for Green Heron may be found in the riparian buffers of Mimico Creek and the Tributary to Spring Creek. Suitable nesting habitat for Pileated Woodpecker can be found in the woodlands that occur along Spring Creek and Mimico Creek where suitable mature trees are present. Targeted surveys for Green Heron nests and Pileated Woodpecker nest cavities focusing on treed habitats along Mimico Creek and Tributary to Spring Creek should be conducted during detailed design to determine if active nests are present.

2.6.9 FLUVIAL GEOMORPHOLOGY

Within the study area, there are two watercourse crossings that were assessed through a fluvial geomorphological and meander belt width study. This includes Spring Creek, running north-south across Williams Parkway between Dixie Road and Bramalea Road, and the east branch of Mimico Creek, and runs along and across Williams Parkway between Jordan Boulevard and Torbram Road. Both Spring Creek and Mimico Creek are highly urbanized creeks having been realigned in the 1970, though a section of Mimico Creek north of Williams Parkway, was recently rehabilitated by the TRCA.

A meander belt width assessment of the two creeks suggests that Mimico Creek should have a meander belt width of approximately 15 m, although this creek is heavily constrained. Spring Creek was assessed to have a 25.5 m belt width at the Williams Pkwy crossing. A crossing structure span for Spring Creek at Williams Pkwy should be based on the final meander belt width of 25.5 m.

If either creek is to be disturbed by the proposed road improvements, the creeks should be realigned or protected using natural channel design principles supported by a professional Fluvial Geomorphologist. For full details, refer to the Fluvial Geomorphology Report in **Appendix D.**

2.6.10 HYDROGEOLOGY

A Hydrogeological Assessment was undertaken as part of this study to document hydrogeologic conditions in the study area and to assess potential impacts and/or requirements related to groundwater. Two monitoring wells were installed as part of this study near the two watercourses and monitoring and sampling was undertaken was carried out at the wells. This project is not likely to affect groundwater flow patterns in the study area post-construction as no deep foundations are involved. Construction dewatering and permitting may be required, however this will be determined in later stages of design when more details are available. See the Hydrogeological Assessment for in **Appendix E** for the full findings.

2.6.11 SOURCE WATER PROTECTION

The study area is located in the Toronto and Region Source Protection Area. A Highly Vulnerable Aquifer (vulnerability score of 6) is identified in the study area as shown in **Figure 10**. The application of road salt for winter maintenance is a prescribed drinking water threat associated with the operations of the project. However, per the CTC Source Protection Plan which applies to the Toronto and Region Source Protection Area, road salt application is not a significant threat given the type and vulnerability of the source water protection feature. Mitigation measures to address the impacts of road salt are undertaken by separate City initiatives outside this study to reduce salt usage and its impacts on the environment.

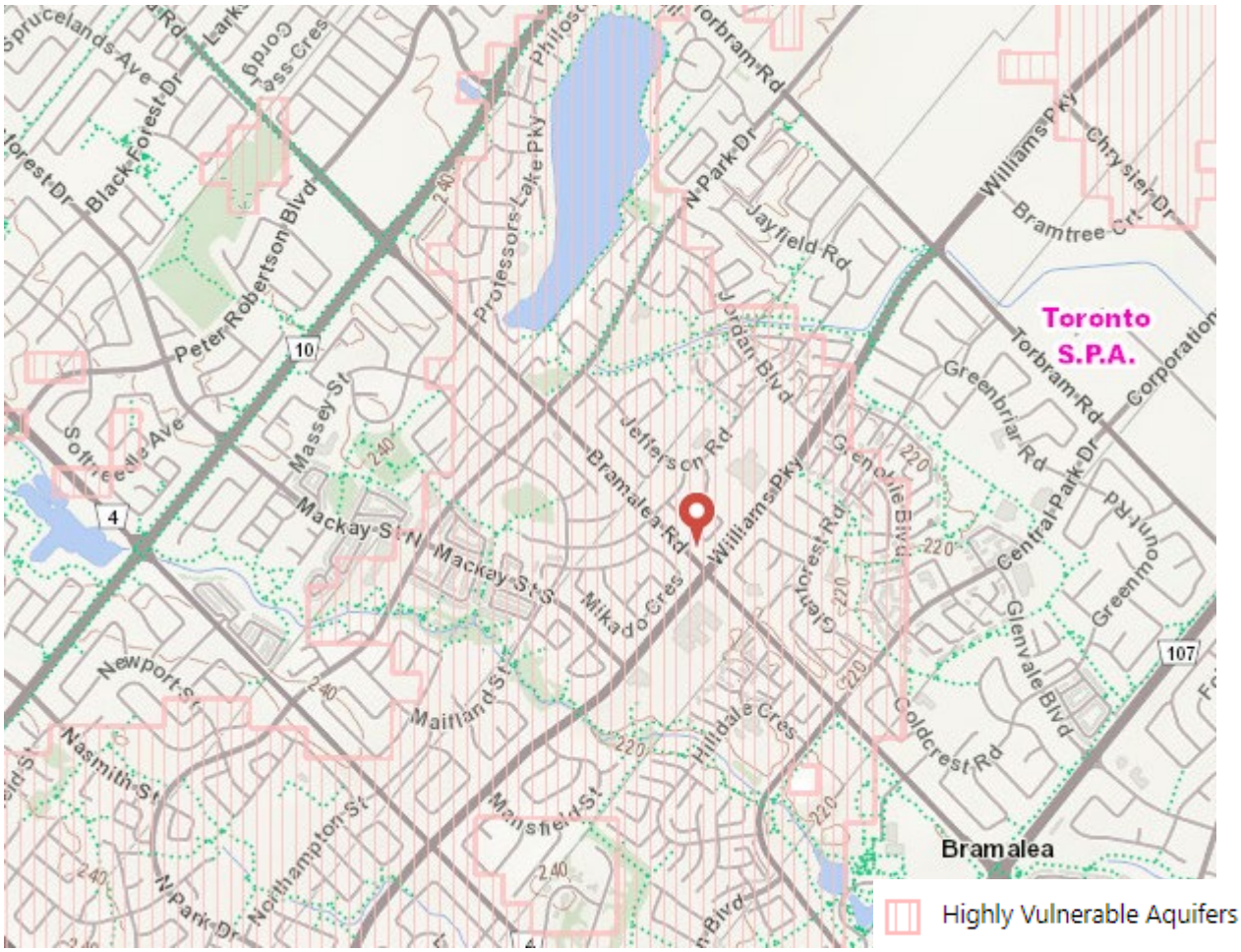


FIGURE 10: SOURCE WATER PROTECTION FEATURES IN THE STUDY AREA

2.7 Cultural Environment

Cultural heritage resources include archaeological resources, built heritage resources and cultural heritage landscapes.

2.7.1 BUILT HERITAGE RESOURCES AND CULTURAL HERITAGE LANDSCAPES

Based on a background review and understanding of the area, no cultural heritage assessments were completed for this study. However, a Municipal Heritage Bridges: Cultural, Heritage and Archaeological Resources Assessment Checklist was completed to determine if the bridge requires heritage evaluation or assessment, and it was determined that no further cultural heritage studies are required. The checklist is included in **Appendix F.**

2.7.2 ARCHAEOLOGY

All works will be completed within the road right-of-way which has been disturbed to be previous disturbance from construction of Williams Parkway. As such, no additional archaeological studies were completed, and it is anticipated that there will be no impacts to archaeological resources.

3.0 Problem / Opportunity Statement

The Region of Peel's Long Range Transportation Plan (PLRTP) forecasts that there will be a significant increase in the population, which will have an increase to the demand of traffic, and this growth will need to be accommodated in the Region to 2041. The City of Brampton Transportation Master Plan (TMP) 2015 Update has also identified Williams Parkway from Dixie Road to Torbram Road as requiring widening from 4 to 6 lanes to accommodate future traffic demand and the City is currently in the process of updating the TMP. While additional road capacity is one way to address traffic demand, the City acknowledges that there are other methods to manage travel that are to be explored. Encouraging other travel modes, other than passenger vehicles, is another way to reduce traffic demand. Therefore, based on these studies and the surrounding context, the problems to be addressed through this MCEA are:

- How to accommodate future traffic demand
- Minimizing risk to public safety in community zones (i.e., schools, soccer club, community centres etc.)

Through exploring alternatives to address traffic demand and road safety, opportunities exist to improve Williams Parkway from Dixie Road in the west to Torbram Road in the east, that include:

- Incorporate Complete Streets design
- Improve active transportation facilities and connectivity that supports the City's open spaces and transportation system by connecting parks, valleys and community destinations through improved pedestrian and cycling routes
- Support and encourage transit use and operations
- Support the Region and City's Transportation Demand Management (TDM) goals
- Achieve "Vision Zero" objective (i.e., street light improvements, pavement marking improvements, traffic signal network progression, bike box)

Based on the problems and opportunities identified above, we have developed the following Problem/Opportunity Statement to guide the Williams Parkway Improvements MCEA Study:

> *Based on the Peel Region and the City of Brampton's Transportation Master Plans, there is a need to address increasing traffic demand in the City, including along Williams Parkway, from Dixie Road to Torbram Road. The MCEA Study should review how this traffic demand is to be accommodated while giving consideration to the safety of adjacent communities and schools. While reviewing the transportation infrastructure along Williams Parkway, this study provides an opportunity to incorporate Complete Streets design and active transportation facilities, support the City's transit plans and TDM goals, and achieve Vision Zero objectives.*

4.0 Evaluation of Alternative Solutions and Preferred Solution

4.1 Alternative Solutions

Alternative Solutions are ways to address the Problem / Opportunity Statement and include a "Do Nothing" scenario. The Class EA process requires that all reasonable and feasible solutions be identified, described and evaluated against the environmental factors relevant to the study, such as the natural, social, cultural and economic environments. A number of potential solutions were developed for the Problem / Opportunity Statement (see Section 3.0) and are described in **Table 4**.

TABLE 4: ALTERNATIVE SOLUTIONS

Alternative Solutions		Description
1	Do Nothing	The existing condition is not changed (this alternative will form a baseline for comparison of alternative solutions).
2	Limit Development	Limit planned development and growth in the City of Brampton
3	Incorporate Transportation Demand Management (TDM) Measures	Address traffic demand using TDM measures to shift transportation demand patterns away from peak/vehicular travel.
4	Improve Existing Adjacent Transportation Corridors	Undertake improvements to existing roads adjacent or crossing the study area, not Williams Parkway itself.
5	Localized Intersection and Roadway Operational Improvements	Undertake intersection/roadway operational improvements at localized sections of the corridor to improve intersection and roadway operations.
6	Improve Active Transportation (AT) and Transit Facilities	Improve existing or incorporate additional facilities to support active transportation (AT) and transit use on Williams Parkway.
7	Provide Additional Lane Capacity	Add vehicular lands to accommodate more traffic capacity by widening the road.

4.2 Evaluation Criteria

Evaluation criteria are developed to represent the broad definition of the environment as applicable to the study. Generally, the environment is broken down into various factors as outline in **Table 5**.

TABLE 5: EVALUATION CRITERIA

Environmental Factors	Evaluation Criteria	Description
Technical / Transportation	Traffic Demand and Operations	Does the Alternative Solution address anticipated traffic demand needs and traffic operations in the corridor now and in the future? How does the Alternative Solution impact travel time?
	Connectivity	Does the Alternative Solution support improved connectivity to the surrounding community?
	Safety	Does the Alternative Solution improve safety or provide a safe transportation environment for all users?
	Active Transportation	Does the Alternative Solution accommodate active transportation users along the corridor?
	Transit	Does the Alternative Solution support the transit vision for this corridor?
Natural Environment	Terrestrial	What impacts will the Alternative Solution have on the terrestrial environment?
	Aquatic	What impacts will the Alternative Solution have on the aquatic environment?
Cultural Environment	Archaeology	What impacts will the Alternative Solution have on archaeological resources?
	Cultural Heritage	What impacts will the Alternative Solution have on cultural heritage resources and landscapes?
Socio-Economic Environment	Alignment with Local Planning Policies	Does the Alternative Solution align with and support the vision of local planning documents (e.g. Official Plan, Transportation Master Plan)?
	Compatibility with Surrounding Land Uses	Does the Alternative Solution support the planned growth, development and/or revitalization in this area?
	Property	Will private property need to be acquired? Will significant amounts of property be needed?
	Noise	How will the Alternative Solution impact the noise levels along the corridor?
Costs	Capital Costs	What are the anticipated construction costs of the Alternative Solution?
	Maintenance Costs	What are the anticipated maintenance costs of the Alternative Solution?

4.3 Evaluation of Alternative Solutions

The Alternative Solutions identified in Section 4.1 were evaluated against the criteria developed in Section 4.2. The evaluation is completed in detail in **Table 6**.

TABLE 6: EVALUATION OF ALTERNATIVE SOLUTIONS

Alternative Solutions	1		2		3		4		5		6		7	
	Do Nothing		Limit Development		Incorporate Transportation Demand Management (TDM) Measures		Improve Existing Adjacent Transportation Corridors		Localized Intersection and Roadway Operational Improvements		Improve Active Transportation (AT) Facilities		Provide Additional Lane Capacity	
TRANSPORTATION & ENGINEERING														
Traffic Demand and Operations	◑	Existing transportation network is sufficient to accommodate anticipated growth to 2041 though offers no improvements to manage demand.	◑	Could somewhat reduce growth in traffic demand.	●	Supports reduction in traffic demand by encouraging other sustainable modes, carpooling, travel during off times, etc.	◑	Would not reduce traffic demand on Williams Parkway. Depending on the improvements, may attract more traffic to the study area.	●	Would improve overall operations and travel along the corridor, reducing congestion caused by traffic demand.	◑	Could somewhat reduce growth in traffic demand by making AT uses more desirable.	○	Additional lanes are not warranted based on anticipated future traffic demand and operations; existing four lanes are sufficient.
Connectivity	○	No improvements to connectivity in the study area, including to Chinguacousy Trail and surrounding schools.	○	No improvements to connectivity in the study area, including to Chinguacousy Trail and surrounding schools.	◑	TDM Measures could include enhanced connectivity in the study area, including to local trails and surrounding schools.	◑	Some improvements to connectivity in the study area through improvements to facilities on other roads.	◑	Improvements to AT connectivity, particularly at intersections with the implementation of cross rides.	●	Enhanced connectivity to adjacent corridors, local trails, community/ recreational uses and surrounding schools.	○	No change in connectivity in the study area, including to Chinguacousy Trail and surrounding schools.
Safety	○	No improvements to safety in the study area.	○	No improvements to safety in the study area.	◑	Potential to improve safety in the study area.	○	No direct improvements to safety on Williams Parkway.	●	Improves operational safety at localized areas through road improvements (longer lane, proper turning radii, sightlines).	●	Improves safety for active transportation users by providing dedicated and improved AT facilities.	○	May offer some operational improvements, however may decrease safety due to an increase in vehicle and vehicle speeds.

Alternative Solutions	1		2		3		4		5		6		7	
	Do Nothing		Limit Development		Incorporate Transportation Demand Management (TDM) Measures		Improve Existing Adjacent Transportation Corridors		Localized Intersection and Roadway Operational Improvements		Improve Active Transportation (AT) Facilities		Provide Additional Lane Capacity	
Active Transportation	○	No improvements to active transportation in the study area.	○	No improvements to active transportation in the study area.	◑	TDM Measures could include improvements and policies to support active transportation facilities.	◑	No direct improvements for active transportation in the study area, however, may influence the growth of AT use in the study area.	◑	Improves AT connections at intersection crossings through cross rides.	●	Significant improvements to existing active transportation facilities to encourage AT use and comfort in the study area.	○	No improvements to active transportation in the study area and may discourage AT uses.
Transit	○	No improvements to transit uses in the study area.	○	No improvements to transit uses in the study area.	◑	TDM Measures could include improvements and policies to support transit use in the study area.	◑	No direct improvements to transit on Williams Parkway but could support transit use and connectivity to Williams Parkway.	◑	Some operational improvements could be associated with transit improvements (e.g. new turn lane also used as a bus bay).	◑	AT facilities would support transit use by providing facilities from the bus stops to surrounding uses.	◑	Additional lanes could improve transit times and operations.
SUMMARY	○	Does not support transportation improvements to the study area.	○	Does not support transportation improvements to the study area.	◑	Improves the transportation functions of the study area while reducing traffic demand.	◑	Improves transportation corridors but no direct improvements to Williams Parkway.	●	Improves operations and safety through the corridor, including for AT.	●	Improves the transportation functions of the study area while also reducing traffic demand.	○	Minimal improvements with potential harmful impacts of road widening to safety and AT use.
NATURAL ENVIRONMENT														
Terrestrial	●	No impacts to the terrestrial environment.	●	No impacts to the terrestrial environment.	●	No terrestrial impacts as part of this study. TDM measures will be undertaken separately by the City.	◑	Potential terrestrial impacts to areas on other adjacent corridors.	●	Minimal terrestrial impacts resulting in very localized impacts.	◑	Some potential terrestrial impacts but would likely be localized to the improved facility locations.	○	Potential for significant terrestrial impacts due to the large footprint of additional lanes.

Alternative Solutions	1		2		3		4		5		6		7	
	Do Nothing		Limit Development		Incorporate Transportation Demand Management (TDM) Measures		Improve Existing Adjacent Transportation Corridors		Localized Intersection and Roadway Operational Improvements		Improve Active Transportation (AT) Facilities		Provide Additional Lane Capacity	
Aquatic	●	No impacts to the aquatic environment.	●	No impacts to the aquatic environment.	●	No aquatic impacts as part of this study. TDM measures will be undertaken separately by the City.	◑	Potential aquatic impacts to areas on other adjacent corridors.	●	None or very limited aquatic impacts.	◑	Minor potential aquatic impacts as any crossing would likely not need widening or widening would be minor.	○	Potential for significant aquatic impacts as structures would need to widened and watercourses potentially realigned.
SUMMARY	●	No natural environmental impacts.	●	No natural environmental impacts.	●	No natural environmental impacts.	◑	Some potential for natural environmental impacts.	●	Very minimal natural environmental impacts.	◑	Some potential for natural environmental impacts.	○	Potential for significant natural environmental impacts.
CULTURAL ENVIRONMENT														
Archaeology	●	No impacts to archaeological resources.	●	No impacts to archaeological resources.	●	No archaeological impacts as part of this study. TDM measures will be undertaken separately by the City.	◑	Potential archaeological impacts to areas on other adjacent corridors.	●	As works will be contained to the ROW, no archaeological impacts.	●	As works will be contained to the ROW, no archaeological impacts.	◑	Potential for archaeological impacts as work may be required outside the ROW.
Cultural Heritage	●	No heritage resources in the study area.	●	No heritage resources in the study area.	●	No heritage resources in the study area.	◑	Potential heritage impacts to areas on other adjacent corridors.	●	No heritage resources in the study area.	●	No heritage resources in the study area.	●	No heritage resources in the study area.
SUMMARY	●	No cultural impacts.	●	No cultural impacts.	●	No cultural impacts.	◑	Potential for cultural impacts.	●	No cultural impacts.	●	No cultural impacts.	◑	Potential for archaeological impacts.
SOCIO - ECONOMIC ENVIRONMENT														

Alternative Solutions	1		2		3		4		5		6		7	
	Do Nothing		Limit Development		Incorporate Transportation Demand Management (TDM) Measures		Improve Existing Adjacent Transportation Corridors		Localized Intersection and Roadway Operational Improvements		Improve Active Transportation (AT) Facilities		Provide Additional Lane Capacity	
Alignment with Local Planning Policies	○	Offers no improvements that are recommended from City plans and policies (i.e. City's transportation plans, TDM goals, Vision Zero objectives etc.)	◑	The study area is located in the Built Up Area where development should occur, however this is a well developed neighbourhood with less likelihood for new development.	●	Supports the City's plans and policies to incorporate TDM measures to address traffic demand and modal splits.	◑	Some of the other adjacent roads are designated for improvements through the City's TMP.	●	In line with City plans and policies for safe and functioning roads.	●	In line with City plans and policies to support AT use and facilities.	X	Does not align with City's mandate to pause all six-lane widening projects until the updated TMP is completed.
Compatibility with Surrounding Land Uses	◑	Minimal changes or impacts to surrounding land uses.	◑	The study area is a primarily stable neighbourhood so there is no significant development planned.	●	TDM Measures are applicable to the surrounding land uses.	◑	Improvements on adjacent roads are warranted and would be assessed as part of a separate study specific to those areas.	●	Improves traffic operations and safety making travel in the study area easier, facilitating access to adjacent land uses.	●	Supports accessibility to adjacent uses including the many schools, neighbourhood trails and sidewalks, such as the Chinguacousy Trail and Don Doan Trail.	○	Least compatible with adjacent uses as it would make the corridor less safe due to more cars and higher speeds.
Property	●	No property is required.	●	No property is required.	●	No property is required.	◑	Potential property is required on adjacent corridors.	●	No property is required.	●	No property is required.	◑	Potential property is required to widen lanes.
Noise	●	No change in the noise levels along the corridor.	●	No change in the noise levels along the corridor.	◑	Over the long term, could reduce noise from vehicles.	◑	Could result in lower or higher noise levels depending on the improvements.	◑	Minimal change in noise levels from existing.	◑	Minimal change in noise levels from existing.	○	Long term permanent increase in noise due to additional travel lane.

Alternative Solutions	1		2		3		4		5		6		7	
	Do Nothing		Limit Development		Incorporate Transportation Demand Management (TDM) Measures		Improve Existing Adjacent Transportation Corridors		Localized Intersection and Roadway Operational Improvements		Improve Active Transportation (AT) Facilities		Provide Additional Lane Capacity	
SUMMARY	◑	While there are no major impacts, does not address improvements recommended through City plans.	◑	Limiting development is not in line with City policies however, it is not anticipated significant development would occur in this stable neighbourhood.	◑	Aligns with City's plans and compatible with adjacent areas with minimal impacts.	◑	Improvements on other roads may be warranted but will be undertaken as separate studies.	●	Aligns with City's plans and compatible with adjacent areas with minimal impacts.	●	Aligns with City's plans and compatible with adjacent areas with minimal impacts.	X	Does not align with Council direction to pause six-lane widening projects recommended from the existing TMP.
COST														
Capital Costs	●	No capital costs.	●	No capital costs.	●	Little to no capital costs associated with this project. TDM Measures undertaken separately by City.	◑	Moderate to significant capital costs to improve adjacent roads.	◑	Minimal to moderate capital costs to improve localized sections in the study area.	◑	Moderate capital costs to improve active transportation facilities.	○	Significant capital costs to widen Williams Parkway with additional travel lanes.
Maintenance Costs	●	Minimal change to existing maintenance costs.	●	Minimal change to existing maintenance costs.	●	Minimal change to existing maintenance costs.	◑	Improvements to existing roads would introduce some additional maintenance costs.	●	Minimal change to existing maintenance costs.	◑	Some increase in maintenance costs will be required.	○	Moderate increase in maintenance costs for additional travel lanes.
SUMMARY	●	No to minimal cost impacts.	●	No to minimal cost impacts.	●	No to minimal cost impacts.	◑	Some costs anticipated for this alternative.	●	Minimal costs anticipated for this alternative.	◑	Some costs anticipated for this alternative.	○	Significant costs for this alternative.
Conclusions	This alternative is **not recommended** as doing nothing does not support or address the problems or opportunities identified in the Problem / Opportunity Statement. Particularly, it does not support improvements to the study area.		This alternative is **not recommended** as limiting development does not support or address the problems or opportunities identified in the Problem / Opportunity Statement. Particularly, it does not support improvements to the study area.		This alternative **is recommended** as incorporating Transportation Demand Management (TDM) Measures supports the City's vision to reduce traffic demand and increase modal splits for other sustainable modes of		This alternative is **not recommended** as the improvements to existing adjacent transportation corridors does not directly address improvements to the Williams Parkway corridor.		This alternative **is recommended** as some localized improvements would aid in operations of the corridor thereby supporting traffic flow as well as safety and supporting AT use.		This alternative **is recommended** as it supports the City's AT plan for the study area and also supports the adjacent uses in the corridor, such as safety and connectivity of the adjacent communities and schools.		This alternative is **not recommended** as an additional vehicular lane is not warranted based on future traffic demand and would not support adjacent land uses as it would likely decrease safety of the corridor.

Alternative Solutions	1	2	3	4	5	6	7
	Do Nothing	Limit Development	Incorporate Transportation Demand Management (TDM) Measures	Improve Existing Adjacent Transportation Corridors	Localized Intersection and Roadway Operational Improvements	Improve Active Transportation (AT) Facilities	Provide Additional Lane Capacity
			transportation with minimal direct impacts.				

4.4 Selection of Preferred Alternative Solution

Based on the evaluation, Alternatives 3, 5, and 6 are recommended as they best address the Problem/Opportunity Statement and were selected collectively as they offer warranted transportation improvements to the corridor.

5.0 Alternative Design Concepts and Preferred Alternative

5.1 Alternative Design Concepts

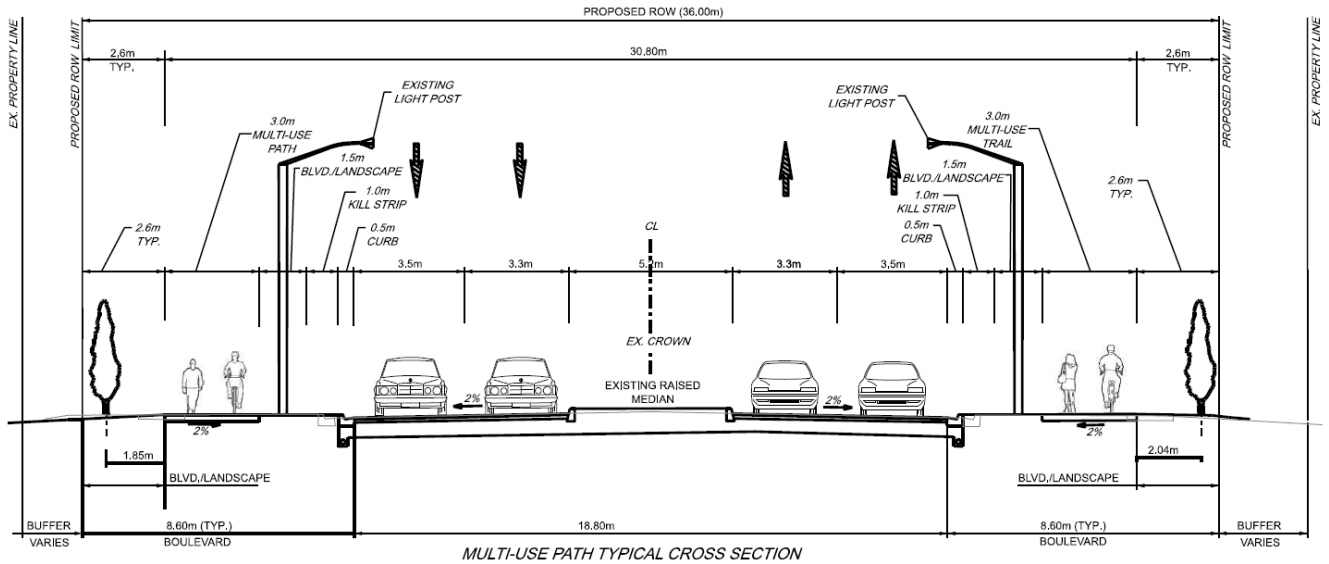
Alternative Design Concepts are options that carry forward the Alternative Solutions recommended in Phase 2 of the MCEA. The Alternative Design Concepts are then evaluated against the environmental factors relevant to the study, such as the natural, social, cultural and economic environments.
From Phase 2 of the MCEA, the recommended Alternative Solutions include:

- Incorporate Transportation Demand Management (TDM) Measures
- Localized Intersection and Roadway Operational Improvements
- Improve Active Transportation (AT) and Transit Facilities

Based on these Alternative Solutions, Table 7 includes several typical cross section alternatives were prepared for the Williams Parkway corridor. Figure 11, Figure 12, Figure 13, and Figure 14 show the typical cross sections for the four Alternative Design Concepts.

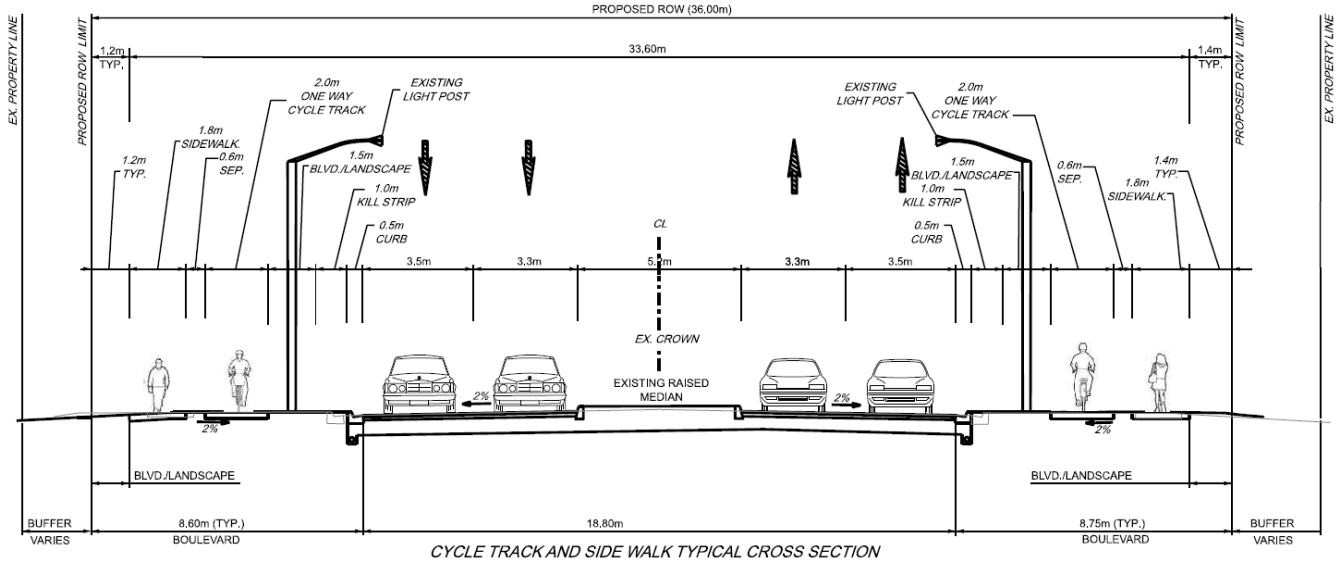
TABLE 7: ALTERNATIVE DESIGN CONCEPTS

No.	Typical Cross Sections	Description
1	Multi-Use Path on both sides of the road within the boulevard	Convert existing sidewalks into new multi-use paths on both sides of the road within the existing boulevard.
2	Separate sidewalk and cycle track on both sides of the road within the boulevard	Incorporate separated sidewalk and cycle track on both sides of the road within the existing boulevard.
3	Two-way cycle track on one side of the road in the boulevard	Maintain existing sidewalks on both sides of the road and implement a new bi-directional cycle track within the boulevard.
4	On-Street Bike lanes, one in each direction	Incorporate on street bike lanes on the curbside, one in each direction.



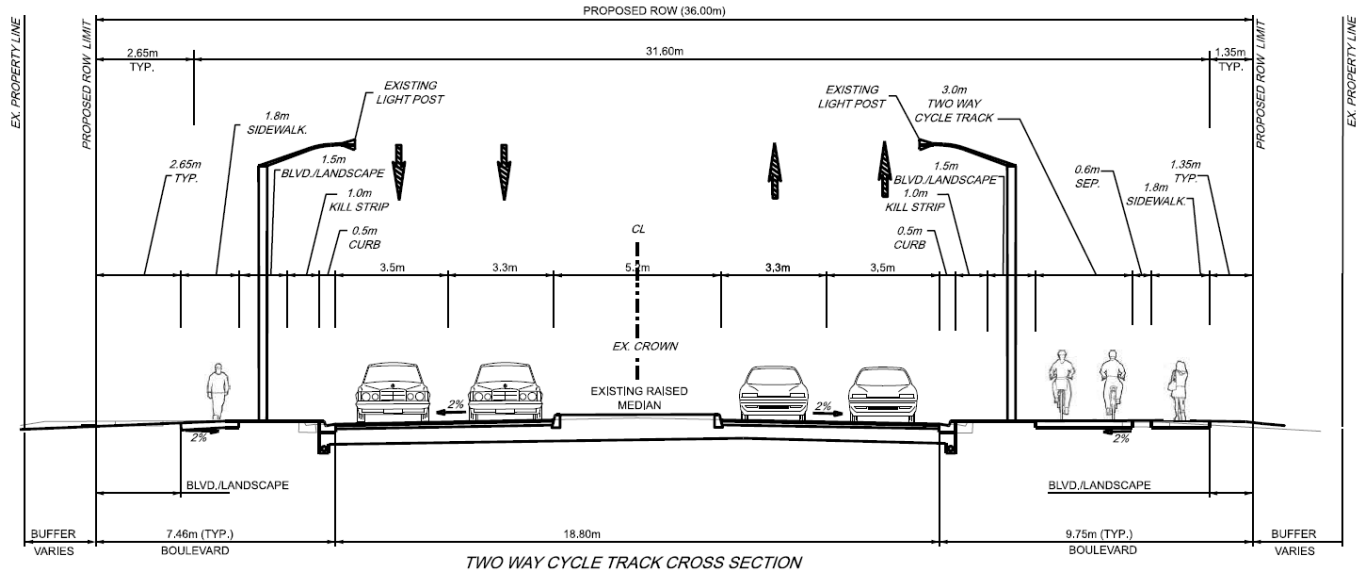
MULTI-USE PATH TYPICAL CROSS SECTION
WILLIAMS PARKWAY EA STUDY FROM DIXIE ROAD TO TORBRAM ROAD

FIGURE 11: ALTERNATIVE DESIGN CONCEPT #1 - MULTI-USE PATH TYPICAL CROSS SECTION



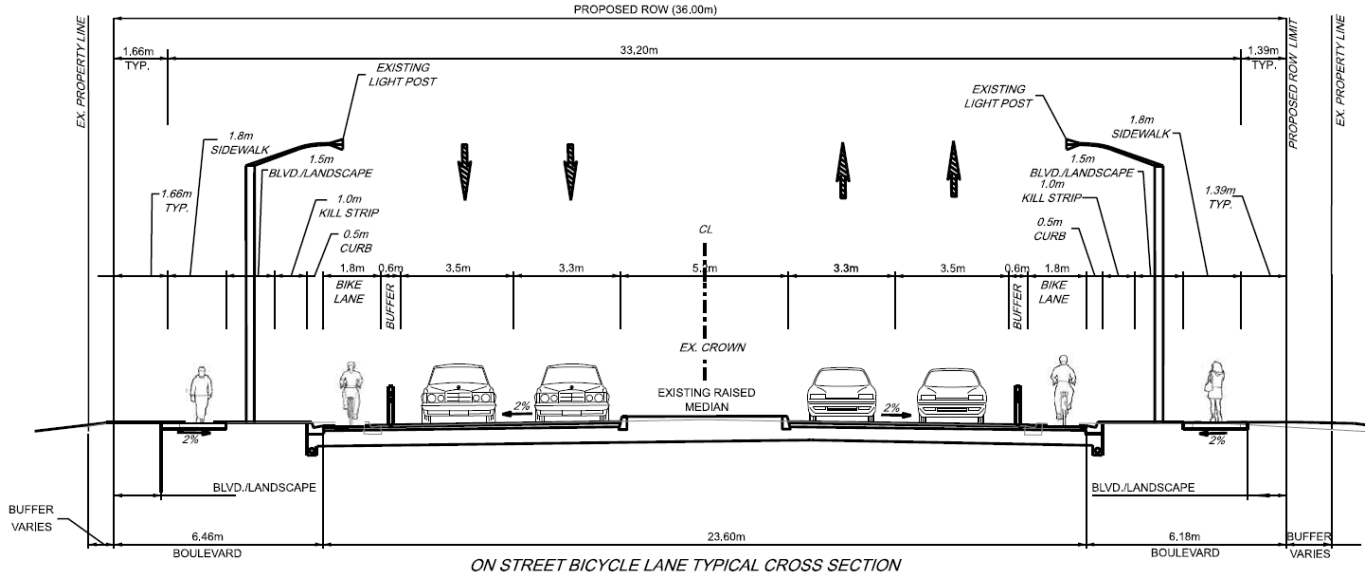
CYCLE TRACK AND SIDE WALK TYPICAL CROSS SECTION
WILLIAMS PARKWAY EA STUDY FROM DIXIE ROAD TO TORBRAM ROAD

FIGURE 12: ALTERNATIVE DESIGN CONCEPT #2 - CYCLE TRACK AND SIDEWALK TYPICAL CROSS SECTION



TWO WAY CYCLE TRACK CROSS SECTION
WILLIAMS PARKWAY EA STUDY FROM DIXIE ROAD TO TORBRAM ROAD

FIGURE 13: ALTERNATIVE DESIGN CONCEPT #3 – TWO-WAY CYCLE TRACK TYPICAL CROSS SECTION



ON STREET BICYCLE LANE TYPICAL CROSS SECTION
WILLIAMS PARKWAY EA STUDY FROM DIXIE ROAD TO TORBRAM ROAD

FIGURE 14: ALTERNATIVE DESIGN CONCEPT #4 – ON STREET BICYCLE LANE TYPICAL CROSS SECTION

5.2 Evaluation of Alternative Design Concepts

The Alternative Design Concepts identified in Section 5.1 were evaluated against similar evaluation criteria. New evaluation criteria were included that would better help evaluate the design concepts against each other include how well they connected into Williams Parkway to the east and west of the study area corridor, how the concept would support improved local neighbourhood connectivity, if the concept could minimize impacts at the Chinguacousy Trail/Spring Creek Culvert, and construction impacts to implement the design concept. The evaluation matrix is included in **Table 9.**

5.3 Selection of Preferred Alternative Design Concept

Based on the evaluation, Alternative Design Concept #1 – Multi-Use Path on both sides of the road within the boulevard is the preferred option as it best connects with Williams Parkway to the west, accommodates all active transportation modes and easily connects with other facilities. This alternative has the smallest ROW thus will have the least impacts, especially to the Spring Creek Culvert, and will allow for the most boulevard buffer from the travel lanes to the multi-use path.

5.4 Intersection Crossing Types/Facility

This MCEA is an opportune time to determine and design the appropriate intersection crossing facilities, such as protected intersections, which prioritize the safety and comfort of vulnerable road users. This is in line with the City's initiative to prioritize sustainable transportation modes and Complete Streets that emphasize walking and cycling.

The appropriate intersection crossing type and facilities will be evaluated and assessed for each intersection in the study area. The intersections include:

- Major Intersections
    - Bramalea Road
    - Jordan Boulevard/Grenoble Boulevard
    - Torbram Road
- Minor Intersections
    - Mansfield Street (west)
    - Mansfield Street (east) (proposed to be signalized by City Transportation department)
    - MacKay Street South
    - Glenridge Road
    - Graymar Road

A review of the City's assessment criteria and design standards, as well as other relevant municipalities such as York Region and the City of Ottawa, was conducted to develop a list of potential options for intersection crossing. The table below lists the options of crossing types and facilities to be explored and assessed further through this study and a short description of each.

TABLE 8: ALTERNATIVE INTERSECTION CROSSING TYPES/FACILITIES

No.	Intersection Crossing Type/Facility	Description
1	Do Nothing (Existing standard pedestrian crossing)	The intersection remains as is with existing striped crossings to be used by both pedestrians. Cyclists are required to dismount and walk their bikes across the intersection.
2	Urban Intersection with Multi-Use Path (Combined or Separated Cross Rides)	Crossings that better incorporate a multi-use path (MUP) through the use of a combined cross-ride that separates cyclists from pedestrians. Includes bicycle signals.

No.	Intersection Crossing Type/Facility	Description
3	Protected Intersection with Physical Islands (Separated Cross Rides)	The intersection provides physical separation for pedestrians, cyclists and vehicular traffic via physical barriers, like islands, and curbs. These are appropriate for intersections where high volumes of both vehicular and active transportation traffic is expected. The additional separation measures will improve safety by reducing conflicts at busy intersections between all modes of transportation. Includes bicycle signals.
4	Multi-use Path Driveway/Side Street Crossing (Mixed Cross Ride)	For shorter, unsignalized crossings, special pavement markings delineate and notify drivers of the multi-use path crossing. The HTA does not allow mixed cross-rides at signalized intersections; however, they are appropriate for driveway crossings and stop controlled intersections. Mixed cross rides can be implemented with or without green pavement marking to highlight conflict areas. It should be noted that green pavement markings often require additional long-term maintenance.
5	Bike Signal Phasing	Incorporating bicycle signals to provide bike priority facilities for safer crossings through partial or full separation in time by signal phasing.

Evaluation criteria have been developed to assess the most appropriate intersection crossing type and facilities at each intersection in the study area. These criteria are based on technical considerations developed by the City and expanded with our understanding of the corridor context.

An evaluation was completed and the recommended intersection types are included in Table 10.

TABLE 9: EVALUATION OF STREET DESIGN CONCEPTS

Evaluation Criteria	Evaluation of Street Design Options							
	1		2		3		4	
	Multi-Use Path on both sides of the road in the boulevard		Separate sidewalk and cycle track on both sides of the road in the boulevard		Two-way cycle track in the boulevard		On-street bike lanes, one in each direction	
TRANSPORTATION & ENGINEERING								
Connections to Williams Parkway east and west of the study area	●	Best connects with Williams Parkway to the west which has the same cross section layout, easily transitions to the east which has sidewalks on both sides of the road.	◑	Transitions would not be too difficult but having three different cross sections across this section of Williams Parkway may be more confusing to users and require more transitions.	◑	A bi-directional cycle track does not connect well to the east or west as cyclists will need to cross the street depending on the direction. Least compatible with the rest of Williams Parkway.	○	Most difficult to transition as you would need to build cycling accessible ramps to transition the boulevard facilities to on-street facilities (and vice versa).
Connectivity with surrounding neighbourhoods	●	Easiest transition from existing sidewalks, trails and schools to the MUP and the MUP is a bi-directional facility on both sides of the road.	◑	Transitions to the surrounding neighbourhoods are not difficult but because the cycle tracks are uni-directional, bikes would need to cross the street via cross rides to go to the other side.	○	Provides least connectivity and not ideal scenario where the one direction of cyclists will need to cross the street in order to access the other side, which will only have a sidewalk facility. Therefore cyclists and pedestrians will need to share the sidewalk, resulting in less safe conditions for both users.	◑	Transitions to the surrounding neighbourhoods are not difficult but would require ramps to transition from the street. Because the bike lanes are uni-directional, bikes would need to cross the street via cross rides to go to the other side.
Safety	◑	There is no separation between pedestrians and other faster forms of AT (cyclists, scooter, etc.), requiring more mindfulness from users. Located in the boulevard provides better protection from vehicles.	●	Separation of pedestrians and other AT users, and within the boulevard, provides better safety overall.	●	Separation of pedestrians and other AT users, and within the boulevard, provides better safety overall.	X	Per OTM Book 18, on-street bike lanes are not recommended for roads with vehicles travelling in speeds of greater than 70 kph.
Transit	●	MUP provides easy access to bus stops/shelters with no conflicts.	◑	Pedestrians will have to cross the cycle track to access the bus stop, creating a point of conflict.	○	Pedestrians will have to cross the cycle track to access the bus stop, creating a point of conflict. On the side with the cycle track, there may not be sufficient space to accommodate the bus shelter and pad.	○	The bus will need to cross into/through the bikelane to access bus bays and stops, which is a dangerous conflict point for cyclists.
Chinguacousy Trail/Spring Creek Culvert	●	Smallest overall ROW width will be easiest to accommodate / reduce impacts at the Spring Creek Culvert.	◑	ROW could be squeezed into the Spring Creek culvert but the design will be severely compromised because there will be no buffer between any of the facilities/lanes.	○	Likely cannot fit at the Spring Creek Culvert, and if it could, it would require a major shift in the alignment of the travel lanes.	○	Pedestrians would be travelling directly adjacent to the curb resulting in reduced safety. It would also require the curbs to be widened outward, requiring a full depth pavement structure.

Evaluation Criteria	Evaluation of Street Design Options							
	1		2		3		4	
	Multi-Use Path on both sides of the road in the boulevard		Separate sidewalk and cycle track on both sides of the road in the boulevard		Two-way cycle track in the boulevard		On-street bike lanes, one in each direction	
SUMMARY	●	Overall is the most preferred from a transportation perspective as a MUP accommodates all active transportation users, connects easily with other areas of Williams Parkway, and has the smallest ROW for fewest impacts to the Spring Creek culvert.	◑	Similar to the MUP option but a larger ROW and more conflict points. Does not match as well into other areas of Williams Parkway but provides separated facilities for pedestrians and cyclists.	○	Provides separated facilities for different AT uses but requires different transitions and connections as cyclists will all be on one side of the road.	X	Not recommended as it would not meet safety requirements per transportation policies and would result in difficult transitions and conflict points.
NATURAL ENVIRONMENT								
Terrestrial	●	Smallest overall ROW width will reduce impacts on surrounding trees and vegetation. More flexibility in designing the MUP to avoid impacts.	◑	Wider ROW has more potential to impact surrounding trees and vegetation and less flexible in design to avoid impacts due to separate facilities	◑	Wider ROW has more potential to impact surrounding trees and vegetation and less flexible in design to avoid impacts due to separate facilities	◑	Wider ROW has more potential to impact surrounding trees and vegetation and less flexible in design to avoid impacts due to separate facilities
Aquatic	●	Smallest overall ROW width likely to have least impacts on watercourses.	◑	Wider ROW has more potential to impact watercourses, particularly Spring Creek.	◑	Wider ROW has more potential to impact watercourses, particularly Spring Creek.	◑	Wider ROW has more potential to impact watercourses, particularly Spring Creek.
SUMMARY	●	This alternative results in the least potential for natural environmental impacts as it has the most narrow ROW width.	◑	Wider ROW has greater potential for impacts to adjacent vegetation and watercourses in the study area.	◑	Wider ROW has greater potential for impacts to adjacent vegetation and watercourses in the study area.	◑	Wider ROW has greater potential for impacts to adjacent vegetation and watercourses in the study area.
CULTURAL ENVIRONMENT								
Archaeology	●	Can be contained within the existing ROW, therefore no additional archaeological assessment required.	●	Can be contained within the existing ROW, therefore no additional archaeological assessment required.	●	Can be contained within the existing ROW, therefore no additional archaeological assessment required.	●	Can be contained within the existing ROW, therefore no additional archaeological assessment required.
SUMMARY	●	No archaeological impacts anticipated as all works are contained to the existing ROW.	●	No archaeological impacts anticipated as all works are contained to the existing ROW.	●	No archaeological impacts anticipated as all works are contained to the existing ROW.	●	No archaeological impacts anticipated as all works are contained to the existing ROW.
SOCIO–ECONOMIC ENVIRONMENT								
Property	●	Cross section can fit within the proposed 32m ROW.	●	Cross section can fit within the proposed 32m ROW.	●	Cross section can fit within the proposed 32m ROW.	●	Cross section can fit within the proposed 32m ROW.

Evaluation Criteria	Evaluation of Street Design Options							
	1		2		3		4	
	Multi-Use Path on both sides of the road in the boulevard		Separate sidewalk and cycle track on both sides of the road in the boulevard		Two-way cycle track in the boulevard		On-street bike lanes, one in each direction	
Construction Impacts	●	Minimal construction impacts as construction will just involve reconstructing the existing sidewalk.	●	Minimal construction impacts as a cycle track just needs to be added.	◑	Relatively more construction impacts on one side of the road corridor.	◑	More construction impacts to both sides of the road and impacting the travel lanes.
SUMMARY	●	No property impacts and minimal construction impacts.	●	No property impacts and minimal construction impacts.	◑	No property impacts with some construction impacts.	◑	No property impacts with some construction impacts.
COST								
Capital Costs	●	Minimal costly as the existing sidewalk can be converted to a MUP. Partially already constructed from Torbram Road to Graymar Road.	◑	Moderate costs to add a cycle track.	◑	Moderate costs to add a cycle track.	○	Significant costs to reconstruct the road to accommodate on-street bike lanes as lanes need to be widened out and full depth pavement structure required.
Maintenance Costs	●	Minimal change in maintenance costs. Asphalt is easier to repair and maintain in the long term.	◑	Concrete sidewalks are more costly to maintain in the long term	◑	Concrete sidewalks are more costly to maintain in the long term	●	Easy to maintain as winter maintenance would be completed along with the street and little to no maintenance on the pavement structure, allowing longer life span of the facility.
SUMMARY	●	Least capital and maintenance costs.	◑	Moderate capital and maintenance costs	◑	Moderate capital and maintenance costs	◑	Significant capital costs but low maintenance costs
Conclusions	●	The multi-use path on both sides of the road in the boulevard is the preferred option as it best connects with Williams Parkway to the west, accommodates all active transportation modes and easily connects with other facilities. This alternative has the smallest ROW thus will have least impacts, especially to the Spring Creek Culvert, and will allow for the most boulevard buffer from the travel lanes to the multi-use path.	◑	This alternative ranks second as it is similar to the multi-use path but has a larger footprint and results in more crossing connections/transitions that need to be considered. This alternative offers separation of AT uses offering more safety to users.	○	This alternative is not preferred as cyclists going in both directions are using one side of Williams Parkway, requiring crossing the street in order to access the opposite side.	○	This alternative is not preferred as the AT facility is in the street and provides the least safe facility for cyclists.

TABLE 10: RECOMMENDED INTERSECTION TYPES

Intersection	Suitable Facility	Rationale
Williams Parkway @ Mansfield Street west - Unsignalized	MUP Driveway Crossing	A "MUP Driveway Crossing" is recommended given this is a low order road and unsignalized. This option would best accommodate a MUP, provide increased safety at minimal cost, and with minimal impacts to the intersection.
Williams Parkway @ Mansfield Street East – Proposed to be Signalized	Urban Intersection with MUP	An "Urban Intersection with Cross Rides" is recommended given this is a low order road, the lower anticipated pedestrian/cyclist volumes, and the limited intersection space does not warrant a Protected Intersection.
Williams Parkway @ Mackay Street – Signalized	Urban Intersection with MUP	An "Urban Intersection with Cross Rides" is recommended due to pedestrian/cyclist volumes, limited physical space, and the construction/maintenance costs compared to a Protected Intersection.
Williams Parkway @ Bramalea Road – Signalized	Protected Intersection	A "Protected Intersection with Cross Rides" is recommended as this is a major intersection of two minor arterial roads and its proximity to the adjacent schools. While more costly, the benefits and safety offered by a protected intersection would be valuable to the many nearby schools.
Williams Parkway @ Glenridge Road – Signalized	Urban Intersection with MUP	An "Urban Intersection with Cross Rides" is recommended due to pedestrian/cyclist volumes, limited physical space, and the construction/maintenance costs compared to a Protected Intersection.
Williams Parkway @ Grenoble Boulevard/ Jordan Boulevard – Signalized	Protected Intersection	A “Protected Intersection with Cross Rides” is recommended as Grenoble Blvd is identified as a future signed cycling route in the City and it is expected there may be higher pedestrian/cyclist volumes. This intersection is also supported as a Protected Intersection by the City.
Williams Parkway @ Graymar Road – Signalized	Recently Signalized with Cross Rides	
Williams Parkway @ Torbram Road – Signalized	Protected Intersection	A "Protected Intersection with Cross Rides" is recommended as this is a major intersection of two minor arterial roads and at a location where more industrial vehicles may be expected, warranting additional safety. This intersection is also supported as a Protected Intersection by the City.

6.0 Consultation

6.1 Notice of Study Commencement

A Notice of Study Commencement was prepared at the beginning of the MCEA Study to notify stakeholders of project initiation, describe the project, its location, the planning process being followed, and to provide the contact information for key project staff. The notice was issued on June 2 and 9, 2022 in the *Brampton Guardian*. The Notice was also mailed to adjacent property owners and the contact list on the same week. All consultation materials for this project can be found in **Appendix G**.

Provincial Agencies	
Ministry of the Environment, Conservation and Parks (MECP)	Ministry of Natural Resources and Forestry (MNRF)
Ministry of Citizenship and Multiculturalism (MCM)	
Municipalities/Regions	
Region of Peel	City of Brampton
Local Agencies and Stakeholders	
Toronto and Region Conservation Authority (TRCA)	
Schools	
Peel District School Board	Dufferin-Peel Catholic District School Board
Student Transportation of Peel Region	North Park Secondary School
Russell D. Barber P.S.	Hilldale Public School
Williams Parkway Sr. Public School	Judith Nyman Secondary School
Khalsa Community School	Jefferson Public School
Chinguacousy Secondary School	
Emergency Services	
Ontario Provincial Police	Brampton Fire and Emergency Services
Peel Regional Paramedic Services	Peel Regional Police
Utilities	
Alectra Utilities	Bell Canada
Enbridge Gas	Acronym
Rogers	Telus
Zayo	Region of Peel
Interest Groups	
Brampton Cycling Club	Bike Brampton
Brampton Cycling Advisory Committee	Full Throttle Cycling Club
Brampton Environmental Alliance	Brampton Environmental Advisory Committee
Brampton Residents Association	Brampton Community Environment Alliance

6.2 Consultation with Technical Agencies and Stakeholders

Consultation with technical agencies and local stakeholders (such as residents, businesses, developers, interest groups) is key to identifying area-specific interests and constraints so that they can be considered in the study. Correspondence with these technical agencies and stakeholders includes written emails, letters, comment forms, etc., meetings, and workshops. Project correspondence throughout the study is summarized in Table 11. A Record of Consultation, which includes all project correspondence, including meeting minutes, are provided in **Appendix G**.

In addition to the summary of comments, the study team coordinated with Peel Region on various regional projects, including the improvements on Dixie Road, to which the preliminary design of Williams Parkway ties into.

The team also met with TRCA at the beginning of the study to conduct a walk through of the study area and identify any areas of concern that should be reviewed as part of this MCEA. TRCA was provided the study reports, including the drainage report, for review and comment.

TABLE 11: SUMMARY OF COMMENTS RECEIVED FROM TECHNICAL AGENCIES AND STAKEHOLDERS

Agency/Stakeholder	Date	Comment	Project Team Response
Provincial			
Ministry of Citizenship and Multiculturalism (MCM)	June 15, 2022	Letter from MHSTCI highlighting MHSTCI's interests regarding archaeological resources, built heritage resources, and cultural heritage landscapes.	Project Team clarified no archaeological assessments will be undertaken and that a Cultural Heritage Report is not required as there are no cultural heritage resources present in the study. The bridge heritage checklist was completed for the study.
Ministry of Natural Resources and Forestry (MNRF)	June 21, 2022	Letter from MNRF highlighting relevant factors and requirements.	Noted by Project Team.
Ministry of Environment, Conservation, and Parks (MECP)	July 06, 2022	MECP provided a list of Indigenous Communities that may have an interest in this project.	Project Team clarified if they will be expecting a formal letter from MECP on the EA Study itself.
	July 14, 2022	MECP will not be providing a formal response letter as it is a Schedule A+ project. An Areas of Interest Document and Guide to Indigenous Consultation was attached to the email.	Noted by Project Team.
Local			
Region of Peel	June 2022	Several Peel Region staff requested to be kept	Noted by Project Team and Region staff added to the contact list.

Agency/Stakeholder	Date	Comment	Project Team Response
		apprised of the study / added to the contact list.	
	July / August 2022	Peel Region staff provided information on water and wastewater infrastructure as well as the Dixie Road widening project.	Project team continued to collaborate with the Region on regional projects. The design for the Dixie Road project has been incorporated into the design drawings for this study.
Toronto and Region Conservation Authority (TRCA)	June 16, 2022	Letter from TRCA in response to NOSC detailing TRCA's commenting roles, areas of interest, assessment of alternatives, and submission requirements.	Project Team clarified that the current stage of the study is the Class EA and preliminary design, not detail design as was stated in the letter.
	September 15, 2022	TRCA arranging site visit to discuss the details for this project. TRCA to send reg area/floodplain mapping, HEC RAS, and hydrological models through a data sharing agreement. TRCA noted there is also significant stream restoration from concrete channel to natural channel at Mimico Creek as part of the Jefferson, Joran, and Jayfield Park Restoration Project.	Project Team coordinated a site visit with TRCA to go through study and any key features or sensitivities in the corridor. TRCA background information was requested (mapping, models).
	November 4, 2022	Site walk through with TRCA. Mainly visited two key locations within TRCA Regulated Area associated with the two watercourses. Clarified the proposed approach of design at both culverts and that as this is only preliminary design, there will not be formal permit application at this time.	
	December 18, 2024	Feedback from TRCA on the Drainage Report and the MCEA was received. TRCA requested the models used to support the hydrologic and hydraulic assessments, confirmed that the review of quality treatment is deferred to the City as	The models were provided to TRCA and commitments for ESC measures were included for detailed design.

Agency/Stakeholder	Date	Comment	Project Team Response
		opposed to TRCA, and that an ESC Report and ESC measures should be provided in detailed design.	
Peel District School Board	July 08, 2022	Peel District School Board requested to be kept updated with the EA Study as it may impact some of their schools (Williams Parkway Sr., Judith Nyman Secondary School, and Chinguacousy Secondary School).	Project Team updated the contact list.
Utilities			
Alectra	June 07, 2022	Alectra requesting to be part of TAC for informational purposes as they have design jobs in the area and would like to understand the project.	Project Team added them to TAC and contact list. Project Team also requested plans from Alectra.
Telus	August 05, 2022	Telus indicated they have no underground or aerial infrastructure in the proposed work area.	Noted by Project Team.
Acronym	August 05, 2022	Acronym indicated they have existing underground infrastructure in the project area (between Mackay St S and Jordan Blvd).	Noted by Project Team.
Enbridge	August 05, 2022	Enbridge provided utility mark ups. Detail Design must be resubmitted for their review.	Noted by Project Team.
Rogers	August 15, 2022	Rogers provided utility mark ups.	Noted by Project Team
Zayo	August 22, 2022	Zayo has existing plant in the study area. The City must maintain standard clearances.	Noted by Project Team.
Stakeholders			
Local Resident	July 12, 2022	Request to be added to the mailing list. Asked about the expected completion date of the study and when	Resident added to the contact list and provided approximate completion timeline for the study.

Agency/Stakeholder	Date	Comment	Project Team Response
		the process of property expropriation would begin.	
Local Resident	July 21, 2022	Expressed concerns with previous decisions regarding Williams Parkway being carried over to this section, including impacts to natural vegetation, noise walls, and traffic and safety concerns.	A transportation study will advise on traffic and safety requirements and that a noise study will provide recommendations on noise wall requirements. Resident was added to study contact list as well.
Local Resident	May 25, 2023	Request for a noise wall for property backing onto Williams Parkway.	The noise report provided recommendations for noise walls throughout the corridor.
Local Resident	June 19, 2024	Request for update on the noise wall.	Update on the study was provided.
Local Resident	May 26, 2023	Request for noise wall on property.	The noise report provided recommendations for noise walls throughout the corridor.
Local Resident	July 19, 2023	Request that noise wall be extended to additional properties on Leacrest St.	The noise report provided recommendations for noise walls throughout the corridor.

6.3 Indigenous Consultation

Four First Nations / Indigenous Community groups were consulted for this project. One response was received from the Mississaugas of the Credit First Nation where they noted they had no comments or concerns at this time but requested to remain informed of any changes to the project.

Indigenous Communities	
Six Nations of the Grand River	Haudenosaunee Confederacy Chiefs Council
Huron Wendat	Mississaugas of the Credit First Nation

6.4 Notice of Completion

A Notice of Completion was posted on the project website and distributed to the project contact list on December 20, 2024. The Notice provided information on the recommendations of the study, that the Project Report was available for public review, and to invite comments on the project.

7.0 Preferred Design

7.1 Typical Cross Sections

The typical cross section (see Figure 15) of the proposed design includes:

- 3.3m travel lane
- 3.5m curb lane
- Raised median (width varies)
- 3.0m multi-use path (both sides of roadway)

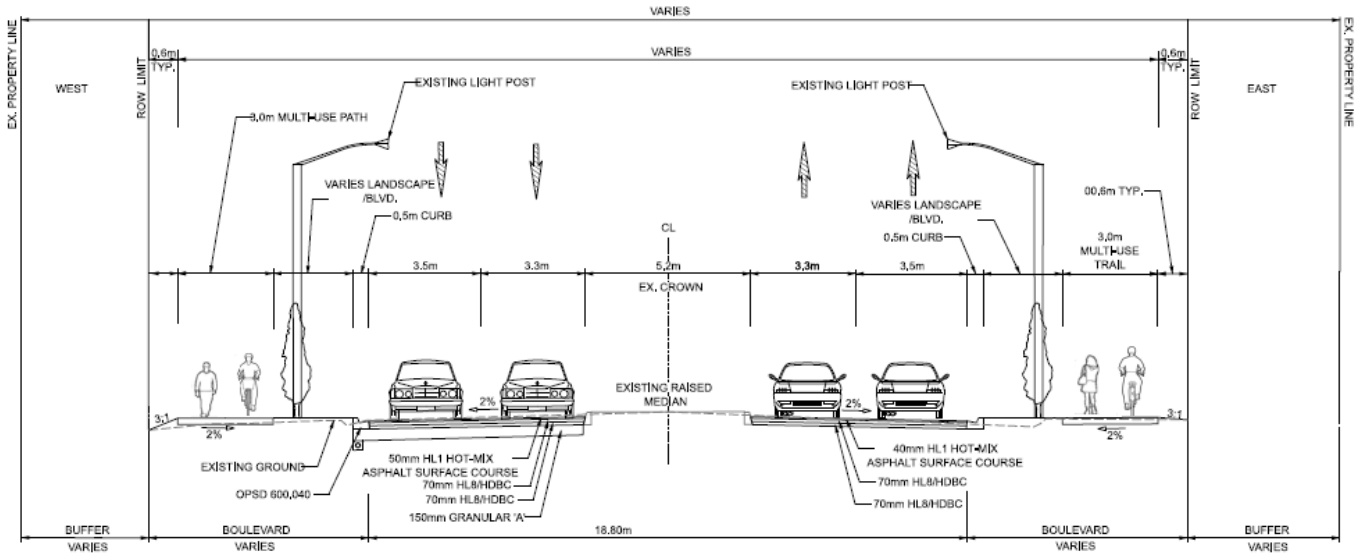


FIGURE 15: TYPICAL CROSS SECTION

A specific cross-section as shown in Figure 16 was developed for the Spring Creek Culvert as it is a pinch point in the corridor. To minimize impacts to the existing structure, the MUP was reduced to 2.7-2.8m on both sides of the road.

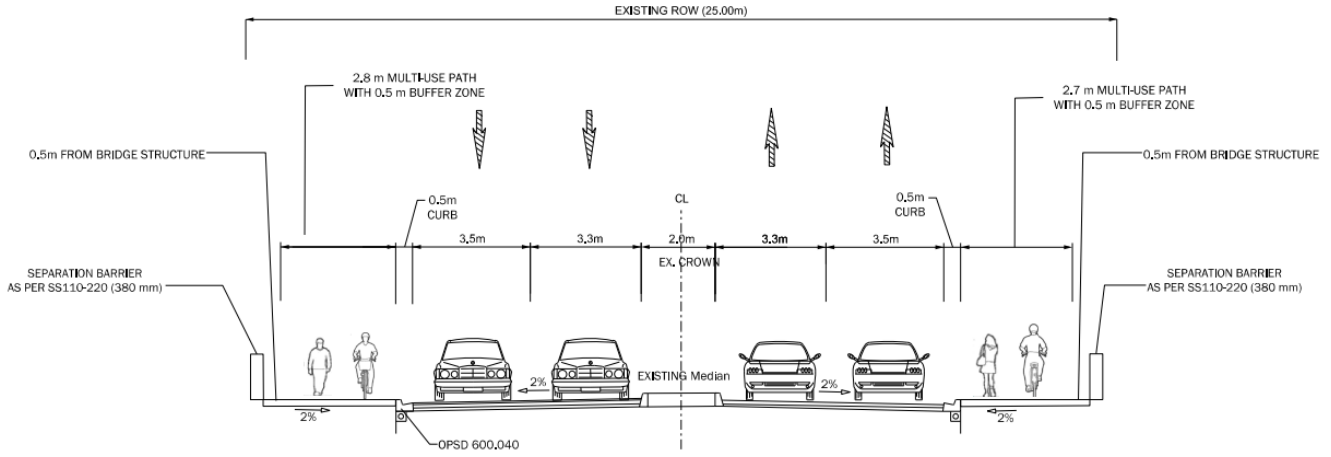


FIGURE 16: CROSS-SECTION AT SPRING CREEK CULVERT

7.2 Horizontal / Vertical Road Alignment

There are no horizontal or vertical road alignment changes in the corridor. The intent is to minimize the construction impacts of the recommended improvements. As there is some reduction in the lane widths, the curbs will be adjusted and the overall road width will decrease, but the overall horizontal alignment and vertical profile will not be changed. Furthermore, the existing crossfall throughout the corridor will be maintained in the proposed design.

7.3 Intersections

Intersections throughout the study area were reviewed for safety improvements (see Section 5.4), including crossing facilities and turning radii. The recommended improvements at each intersection with Williams Parkway are:

Intersection	Recommended Improvement
Williams Parkway @ Mansfield Street west - Unsignalized	MUP Driveway Crossing
Williams Parkway @ Mansfield Street East – Proposed to be Signalized	Urban Intersection with Cross Rides
Williams Parkway @ Mackay Street – Signalized	Urban Intersection with Cross Rides
Williams Parkway @ Bramalea Road – Signalized	Protected Intersection with Cross Rides
Williams Parkway @ Glenridge Road – Signalized	Urban Intersection with Cross Rides
Williams Parkway @ Grenoble Boulevard/ Jordan Boulevard – Signalized	Protected Intersection with Cross Rides
Williams Parkway @ Graymar Road – Signalized	Recently Signalized with Cross Rides
Williams Parkway @ Torbram Road – Signalized	Protected Intersection with Cross Rides

7.4 Structures

Recommended improvements at the two structures are detailed below. General Arrangement drawings can be found in **Appendix H.**

7.4.1 WILLIAMS PARKWAY STRUCTURE OVER SPRING CREEK

At the Williams Parkway structure over Spring Creek, all components of the proposed road cross-section can fit within the existing bridge deck and the bridge does not need to be extended or widened. However, improvements to the barrier walls are required to satisfy safety requirements for the MUP.

Considering serviceability and functionality, the existing barrier on deck is suggested to be replaced by combination traffic/bicycle barrier and railing, which can refer to Brampton Standard STD 417 and a modified Ministry of Transportation Ontario (MTO) Standard SSD 110-84. The proposed barrier wall has thickness of 250mm and height of 908 mm from the top of asphalt. The proposed railing is 462mm high from the top of barrier wall, and the total height of barrier will be 1370 mm (as required by OTM Book 18 whenever a cycling facility is adjacent to a fall hazard). The sidewalk will be modified to accommodate MUP.

Minor rehabilitation such as patch repairs and crack injection and the bridge inside barrel is also proposed. Detailed condition survey is recommended to evaluate the amount of cracks, patches and delamination on the bridge structure, especially on soffit and underside of deck.

7.4.2 TORBRAM ROAD OVER MIMICO CREEK CULVERT

As per visual inspection, it is concluded that the culvert CSP barrel shows the sign of severe deterioration caused by corrosion and cannot be readily rehabilitated without excavation of the roadway or reduction to the hydraulic capacity. It is also noted that the culvert has surpassed approximately 40 years of the service life which is typical for these types of structures. Accordingly, rehabilitation or strengthening of the culvert is not recommended. Therefore, it is proposed the culvert be fully replaced in its entirety.

Different culvert replacement options were studied as part of the Torbram Road MCEA to address the structural needs and also to meet drainage and hydraulic needs, as this area faced issues associated with flooding. Based on the results of the hydraulic analysis, the proposed option is replacing the existing CSP culvert with two individual single cell precast culverts placed side by side, or a cast-in-place double cell culvert. The twin cell culverts are comprised of dry and wet cells have the invert elevations 208.30 at the upstream and 207.87 at the downstream end. The sizes (span x rise) of culverts are 3600 mm x 2400 mm and 3000 mm x 2400 mm. Further review of open and closed footings will need to be undertaken during the detailed design.

7.5 Active Transportation

Active transportation is accommodated through the Williams Parkway corridor by the implementation of a 3.0m wide MUP on both sides of the roadway within the boulevard. The MUP connects seamlessly to the west end of the study area, tying into the Region's Dixie Road project, where a MUP is proposed on both sides of the boulevard as well. Where possible, the MUP has been setback away from the travel lanes to provide additional comfort to active transportation users.

7.6 Drainage and Stormwater Management

The proposed design was reviewed to identify how it impacts road drainage and SWM. Generally, the inclusion of a MUP on both sides of the road slightly increases impervious area, however, there will also be some narrowing of existing lanes that will decrease impervious area. The catchbasin location will need to be located according to the outer curb adjustment resulting from the lane width reduction. Further design is required during detailed design to properly relocate the catch basins.

Quantity control was reviewed at the HRPs. It was determined that the flow increases as result of the proposed project results in insignificant changes to flow (flow increase is between 0 to 3 L/s), indicating there is negligible changes to impervious surfaces resulted in minimum changes to peak flow rate. As such, no modifications to the existing storm sewer system is required to accommodate the road improvements.

As mentioned earlier, the existing Williams Parkway corridor does not have any form of quality control. Quality control needs to be considered and implemented to meet Consolidated Linear Infrastructure Environmental Compliance Approval (CLI ECA) requirements. Due to the limited right of way, Low Impact Development (LID) measures were not considered in preliminary design but need to be reviewed as part of detailed design. Stormwater quality control could also be provided through oil grit separators, however these units are considered as pre-treatment or a last resort through the CLI ECA process. A Low Impact Development Feasibility Study for other quality control measures that meet CLI ECA requirements is to be undertaken during detailed design, where the primary goal is to control the

90th percentile runoff volume and achieve 80% TSS control, following a hierarchy of retention, LID filtration, and conventional stormwater management.

Proposed design provides the on-site retention of runoff from a 5mm storm event through infiltration or evapotranspiration. The water balance analysis, based on water-holding capacity and a conservative infiltration rate for topsoil, show that the pervious drainage area exceed the required 5 mm retention storage.

Hydraulic analysis was also completed for the two culverts in the study area. At the Mimico Creek crossing at Williams Parkway and Torbram Road, road topping and flooding was experienced at the intersection as well as at the Gatewood Drive intersection beyond the 50-year storm event. As such, twin box culverts were proposed to accommodate greater flows to alleviate flooding issues at the intersection.

At the Spring Creek crossing, flooding overtops the existing road level for the Regional storm. As the proposed road design can fit on the existing culvert without any widening or extension, no further changes are proposed at this culvert to address road overtopping.

For a full description of the drainage and stormwater management analysis, see **Appendix I**.

7.7 Pavement Design

36 geotechnical boreholes were drilled throughout the corridor to determine sub-surface conditions. Based on the geotechnical findings and the future traffic conditions, several pavement design options were developed that considered design life and grade raise. Through consulting with the City, the recommended pavement rehabilitation is a full depth asphalt concrete removal and overlay with zero grade raise to avoid the need to change the existing roadway profile. The exact pavement structures vary throughout the corridor, however this will be confirmed in the detailed design stage.

The recommended pavement rehab structure for Williams Parkway is outlined under Option 2 of section 8.1.1 and 8.1.2 of the Pavement Design Report in **Appendix J.**

The following is the recommended pavement structure for the MUP (as per City of Brampton Standard Drawing No. L511):

- 75mm - Hot Mix Asphalt (HL3A)
- 200mm – Granular Base Course (Granular A/19mm CRL)

For a full description of the geotechnical findings and the recommendations, see the Pavement Design Report in **Appendix J.**

7.8 Utilities

Potential utility conflicts are noted in the preliminary design drawings. During detailed design, a complete SUE investigation (QL-A) shall be performed to confirm any underground utility conflicts and coordinate relocation, where required.

7.9 Illumination

The streetlighting design is incorporated into the preliminary design drawings and aims to minimize impacts to existing street lighting poles, relocating as few as necessary while still providing sufficient illumination per IESNA RP-8 standards. Preliminary streetlighting design is based on 9.9m base mounted concrete pole with luminaire mounted on a standard davit arm; as per City of Brampton standards 512 and 510. Pedestrian-level lighting is also provided for the MUP on the same poles as the road lighting

7.10 Preliminary Cost Estimate

The preliminary cost estimate for this project is $22.3M.

8.0 Impacts and Mitigation Measures

8.1 Transportation

It is anticipated that construction of the preferred design will have impacts to the transportation system, including impacts to traffic flow and existing active transportation network connectivity, a traffic management plan / construction staging plan will be developed during detailed design to minimize impacts to traffic and access, where possible.

Emergency service providers were contacted during this EA study, but should be contacted again prior to construction to make sure they are aware of the potential traffic disruptions resulting from construction.

8.2 Property and Access

There are no impacts to private property, though the proposed works are located in City of Brampton-owned lands that are not yet designated as road right-of-way. These lands will be designated by the City. Temporary easements may be required for construction and grading work.

There may be temporary access impacts to some properties that have accesses directly off Williams Parkway. Maintaining access to properties should be incorporated into the traffic management plan and any properties that will have their accesses temporarily impacted must be consulted in advance of works to minimize disturbance.

8.3 Natural Environment

8.3.1 DESIGNATED AREAS

Within the study area, there are two areas identified as a part of Schedule “D” Natural Heritage Features and Areas of the City’s (City of Brampton 2020) Official Plan. One area surrounds the Tributary of Spring Creek is designated as Existing Natural Cover, and the second area surrounding Mimico Creek is designated as Potential Natural Cover, both of which are located within a Valleyland and Watercourse Corridor. These designated areas are located approximately 5-10 m from the anticipated construction limits potential direct and indirect impacts to these general natural heritage and valley lands may include temporary and/or marginal habitat loss, disturbance, and/or alteration. The extent and magnitude of direct and indirect impacts within designated areas is expected to be negligible as most construction works are expected to be completed within the existing ROW. Due to the minimal proposed removal of vegetation within the Natural Heritage Features, habitat functions within designated areas are retained and the potential impacts can be minimized with general mitigation measures identified in Section 8.3.4.

8.3.2 VEGETATION AND VEGETATION COMMUNITIES

A Preliminary Tree Removal Assessment was completed to determine potential impacts to trees in the study area. These preliminary tree impact numbers are based on the 30% preliminary design and only represent a high-level understanding of anticipated tree impacts. An updated tree inventory and Arborist Report should be undertaken in detailed design / prior to construction to more accurately

identify the tree impacts based on refined design information (e.g. exact limits of grading, noise wall start and end limits) as well as construction requirements.

A total of 237 trees are expected to be removed on City of Brampton lands, with 133 expected to be injured, 341 are expected to be protected, and 43 trees to be retained. Due to proximity to work and expected installation of noise walls adjacent to private property, 24 trees are expected to be injured with 23 trees being recommended for removal on private property. A summary of tree impacts is provided in Table 12, but refer to the Natural Environmental Assessment Report in **Appendix C**.

TABLE 12: PRELIMINARY TREE REMOVAL ASSESSMENT SUMMARY

DBH Category	City of Brampton				Private			
	Retain	Protect	Injure	Remove	Retain	Protect	Injure	Remove
Less than 7 cm	6	18	3	26	0	2	0	0
7 – 19 cm	16	159	38	116	5	3	2	4
20 – 29 cm	5	98	46	63	10	2	4	6
30 – 39 cm	11	56	33	22	6	3	5	5
40 – 49 cm	5	8	13	9	2	0	6	7
50 – 59 cm	0	2	0	1	0	0	4	1
60 – 69 cm	0	0	0	0	0	0	1	0
70 – 79 cm	0	0	0	0	0	0	2	0
Total	**43**	**341**	**133**	**237**	**23**	**10**	**24**	**23**

Expected impacts to trees on City lands are subject to the Tableland and Tree Assessment Guideline's framework for adhering to compensation ratios and report requirements. Trees on private lands under 30 cm DBH are not protected under the Tree Preservation Bylaw. A total of 18 private trees over 30 cm DBH are assessed as Injure and 13 private trees over 30 cm DBH are assessed as Remove.

Trees on private lands were assessed as Injure or Remove due to their close proximity to the existing pathway, the designed MUP, or designed noise walls. Trees were also assessed as Remove where there are no existing barriers between the trees and pedestrian path, and where excavation and damage to roots would render these trees unstable, increase risk of failing, and becoming hazardous for pedestrians.

Compensation ratios for the loss of healthy tableland trees is dependent on the DBH of the removed tree as per the City's Tableland and Tree Assessment Guidelines. A summary of compensation trees is provided in Table 13. The City's cash-in-lieu program is also available for projects where compensation planting cannot occur on site, excluding natural heritage feature compensation. The program is applicable to all projects where healthy tableland trees would be removed, including capital projects by the City of Brampton and/or the Region of Peel. Compensation rate is listed as $650 per tree.

TABLE 13: PRELIMINARY TREE COMPENSATION REQUIREMENTS

DBH of removed tree	# of City Trees for Removal	# of Private Trees for Removal	Ratio of Replacement to Removed	# of City Replacement Trees Expected	# of Private Replacement Trees Expected	Total # of Replacement Trees Expected
7 – 19 cm	26	0	1:1	116	4	120
20 – 29 cm	116	4	2:1	126	12	138
30 – 39 cm	63	6	3:1	66	15	81
40 – 49 cm	22	5	4:1	36	28	64
50 – 59 cm	9	7	5:1	5	5	10
60 – 69 cm	1	1	6:1	0	0	0
70 – 79 cm	0	0	7:1	0	0	0
Total	**237**	**23**	-	**349**	**64**	**413**

8.3.3 WILDLIFE AND WILDLIFE HABITAT

Based on the identified areas of impact, minimal tree removal, and low-quality existing woody vegetation, the extent and magnitude of habitat loss is expected to be minimal. Temporary disruption and avoidance of habitat by wildlife may occur due to construction-related activities such as construction noise, lighting and increased human presence.

8.3.3.1 Significant Wildlife Habitat

There is Candidate Special Concern and Rare Species SWH present in the study area for Wood Thrush and Monarch. The woodland communities adjacent to the Tributary of Spring Creek and Mimico Creek provide suitable habitat for Wood Thrush, while the meadow habitats along the Tributary of Spring Creek and east of the Williams Parkway/Torbram intersection are suitable for Milkweed (*Asclepias syriaca*), a food source for Monarch caterpillars. Preliminary design showed impacts along both creeks and woodland areas are limited to trees immediately adjacent to the road and culverts. Using appropriate avoidance and mitigation measures, no negative impacts are anticipated.

8.3.3.2 Terrestrial Species at Risk

Potential impacts to terrestrial SAR and SoCC may include temporary loss, disturbance, and alteration of habitat; disruption and avoidance of habitat; and injury and incidental take. Impacts associated with the anticipated construction activity are expected to be temporary and minimal in nature given the limited naturalized habitat.

Based on the results of the screening and field investigations, 3 SAR have the potential to occur within the study area and/or the adjacent lands with all being identified as low probability. Additional species considered include Wood Thrush and 3 species of migratory bats with pending SAR status.

- SAR Bats: Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tricolored Bat (*Perimyotis subflavus*) are listed as Endangered under the ESA and the SARA.

These species may roost in trees and/or buildings and are known to forage within wooded areas and near water. Trees identified for removal as a result of the Project are primarily street trees and are not expected to provide unique roosting opportunities within the surrounding landscape. Woodlands adjacent to the Tributary to Spring Creek and Mimico Creek may provide roosting and foraging opportunities however tree removal adjacent to these areas is expected to be minimal. Based on recent MECP guidance, provided that all tree removals can avoid the bat active season (April 1 to September 30), no negative impacts to SAR bats or their habitat is expected.

- Migratory Bats: Hoary Bat (*Lasiurus cinereus*), Eastern Red Bat (*Lasiurus borealis*), and Silver-haired Bat (*Lasionycteris noctivagans*) are anticipated to be listed as Endangered under the ESA as of January 2025. These species roost in trees, including in foliage clusters, and are known to forage within wooded areas and near water. As no MECP guidance has been provided for these species at this time, the assessment and avoidance for SAR bats as above should be used for these species until official guidance has been released.
- Wood Thrush (*Hylocichla mustelina*) is listed as Special Concern under the ESA and Threatened under the SARA, though it receives protection on provincial lands under the MBCA. Wood thrush nest in mature deciduous and mixed forests with well-developed undergrowth and may occur in association with WOD and WOM habitats present within the study area. As tree removals identified as a result of the Project are primarily street trees and do not occur within suitable nesting habitat, no negative impacts are anticipated

8.3.3.3 Fish and Fish Habitat

Spring Creek: No direct or indirect impacts are anticipated to occur within Tributary of Spring Creek as proposed bridge works only include extending the tops of the bridge walls and no in-water work is proposed. It is anticipated that these works can be fully mitigated through the implementation of appropriate ESC measures and measures to protect fish and fish habitat.

Mimico Creek: Proposed works for the culvert which conveys Mimico Creek under Torbram Road may include replacement with a longer culvert for the installation of a culvert extension. These works will result in direct impacts to the watercourse through the increase in culvert footprint area and the permanent alteration of fish habitat from open stream habitat to closed habitat. Due to potential direct impacts to Mimico Creek, natural channel design may be required by a fluvial geomorphologist if some realignment is required and should be confirmed during detailed design.

Temporary disturbance of fish habitat (substrates, vegetation etc.) is anticipated to occur within the vicinity of proposed works for Mimico Creek. During in-water construction there is potential for fish to exhibit avoidance behaviour of the construction zone and actively disturbed areas which may result in the temporary displacement of fish during the construction phase. Fish passage within watercourse may also be restricted and disrupted for a short period of time as a result of construction activities as a result of the placement of cofferdams for site isolation to ensure construction in isolation of flowing water. Site isolation may also require temporary dewatering and bypass pumping if water is present within the watercourses at the time of in-water works. Due to construction activities along the banks (i.e. clearing, grubbing, excavation etc.) as well as in-water works there is potential for the disruption of sediments. With this disruption, there is an increased potential for sedimentation of habitats within the Project area as well as downstream habitats. Indirect impacts to the watercourse and downstream habitats may occur from faulty equipment and machinery yet it is anticipated these impacts can be fully mitigated through measures to protect fish and fish habitat.

8.3.3.4 MBCA Schedule 1 Nests

There is potential habitat for two species of MBCA Schedule 1 birds within the study area: Green Heron and Pileated Woodpecker. Potential nesting habitat for both species are limited to select naturalized areas. Green Heron nesting habitat may be present along the banks of Mimico Creek and the Tributary of Spring Creek. Pileated Woodpecker nesting habitat may be present in the woodlands along the Tributary of Spring Creek. There is limited work along the culverts of both watercourses, however, additional site visits to determine if Green Heron and Pileated Woodpecker nests are present should be conducted during detailed design.

8.3.4 NATURAL ENVIRONMENT MITIGATION MEASURES

8.3.4.1 Vegetation Removal and Ground Disturbance

- Temporary Tree Protection Fencing shall be installed as described by the City of Brampton's Construction Standards L110 (City of Brampton 2024) for trees determined to be Protected by the Tree Inventory and Assessment and confirmed during detail design.
- Construction activities shall be limited to the work area, and if necessary, sensitive features should be demarcated if they are located immediately adjacent to the work zone.
- Where necessary, implement surface protection measures to minimize soil compaction.
- The Clean Equipment Protocol for Industry (Halloran et al., 2013) shall be implemented throughout the duration of construction.
- Implement dust control measures (watering, tarping of stockpiles containing fine material) for the suppression of fugitive dust;
- Implement standard BMPs for erosion and sediment control. The ESC plan shall consider the following:
    - Maintain vegetative buffers to the extent feasible;
    - Timing of vegetation removal shall consider rainfall and other weather conditions that could increase the likelihood of erosion and sedimentation.
    - Minimize the extent and duration of exposed soil and re-vegetate as soon as possible to help re-stabilize soils. Vegetation plantings shall include a seed mix that is appropriate to the area and similar to or better than preconstruction conditions;
    - Selection of ESC controls shall be appropriate for the site and extent of disturbance, and potential impacts to wildlife, such as entanglement (e.g., measures that contain plastic mesh or netting) or restriction to movement and access to habitat (as required) shall be considered; and
    - ESC measures shall be installed prior to vegetation removal and remain in place until vegetation has become established and soils re-stabilized
- Implement an emergency and response management plan to address the potential for spills. This includes the following:
    - Ensure all on-site hazardous materials are properly stored and located at least 30 m away from watercourses and other sensitive natural features, including all handling and refueling activities
    - All on-site materials shall be self-contained, maintained according to manufacturer's instructions and disposed of appropriately;
    - Develop and implement an emergency response management and monitoring plan that includes measures for preventing and addressing potential spills and monitoring activities;
    - Spill kits should be kept on-site and accessible at all times; and

    - All waste resulting from construction shall be removed from the site and disposed of at an appropriate facility. This includes packaging (bags, wraps, boxes, ties, etc.), waste materials (cement, grout, asphalt, or other substances), and ESC structures (silt fencing, flow checks, etc.) once permanent vegetation has established and ESC measures are no longer required.
- Following construction, restore disturbed areas to pre-construction conditions with native species (seed) suitable for the site as per OPSS MUNI 804.

8.3.4.2 Terrestrial Wildlife and SAR

- Where feasible, vegetation removal shall occur between October 1 – March 31 which is outside of the sensitive periods for most wildlife unless specified for specific species, locations or as dictated through permits and approvals (see mitigation for wildlife, below).
- If vegetation removal is required during the breeding bird season (April 1 – August 31), then nest sweeps shall be conducted prior to vegetation removal.
- If nest sweeps are required, they shall be carried out by an Avian Biologist and vegetation removals shall be completed within 48 hours of the conducted sweep.
- If removal of trees is required, removal shall occur outside of the active bat season (April 1 to September 30) to prevent impacts to SAR bats. If this timing window cannot be respected, consultation with MECP should be carried out to determine next steps.
- If wildlife is encountered during construction, whenever possible, work shall be temporarily suspended until the species is out of harm's way.
- Should any SAR, including those not discussed in the report, be observed during construction, activities that could have a negative impact on the species or habitat shall be temporarily suspended or modified and MECP shall be contacted immediately to discuss mitigation options.
- Where feasible, minimize the extent and duration of construction noise and lighting during sensitive seasons and to daylight hours.
- Restrict construction activities to work areas.
- Avoid idling and ensure construction vehicles and machinery are kept in good repair.

8.3.4.3 Fish and Fish Habitat

- Construction activities with potential for direct and/or indirect impacts to fish habitat including works associated with culvert replacements or extensions should be conducted in dry conditions in order to minimize impacts to aquatic resources and fish habitat. These works should be completed within the appropriate in-water timing window for construction activities of July 1st – March 31st as provided by MNR to avoid the critical spawning, rearing and migration periods for fish.
- Works along banks and in-water works should be isolated from the watercourse and scheduled when flows are low or absent and avoid seasonally wet periods (i.e. spring) and high-volume storm events.
- Equipment should arrive on site in clean and working condition and be checked and maintained throughout construction.
- A spill response plan shall be developed prior to commencement of construction activities which outlines an appropriate response system and contingency measures in the event a spill occurs.

- Standard environmental controls and measures to protect fish and fish habitat including the use of cofferdams, installation of appropriate ESC measures and salvage of fish from work areas should be implemented prior to construction activities.

8.3.4.4 Environmental Monitoring and Training

- Daily visual inspection of the site prior to construction is required to determine if any wildlife has entered the site.
- Construction equipment and machinery left for prolonged periods of time shall be inspected for bird nests.
- Provide site-specific SAR information to on-site staff to include a description of relevant SAR, photos of SAR that may be present on site, appropriate avoidance measures and emergency contact numbers in case of incident with SAR.

8.4 Operational Noise

A Noise Impact Assessment was completed to assess the noise impact from road traffic on Williams Parkway that the existing residences receive. Sensitive receptors were determined throughout the corridor, which were comprised of the residential homes backing onto Williams Parkway. As there are no existing noise walls, the existing and future daytime sound levels at most receptors are generally above 60 dBA. Since the daytime sound levels exceed 60 dBA without noise mitigation at many locations, noise barriers are needed in accordance with the policies of the MTO, Peel Region, and City of Brampton.

Noise barriers are recommended across most of Williams Parkway where residences are in close proximity to the road (see design drawings for conceptual noise barrier locations). Noise barriers must be shown to provide at least 5 dBA of attenuation to be implemented. In accordance with the MTO policy, the objective is to mitigate the daytime sound levels as close to the provincial objective of 55 dBA as possible. To mitigate the daytime sound levels to below 60 dBA and to provide at least 5 dBA of sound attenuation, as is required by the policies, minimum 2.0 high sound barrier walls are recommended. Details of the noise barriers (i.e. exact location, where to end and finish, materials, etc.) will be further refined in detailed design. For full details of the recommendations, see the Noise Impact Assessment Report in Appendix K.

8.5 Construction Noise and Air Quality

During construction, air quality can be temporarily degraded due to dust and/or emissions from construction activities and equipment. There will also be temporary noise impacts from construction activities. The following measures are recommended to mitigate the temporary construction noise and air quality impacts:

- Limit noise construction activities to daytime hours, where possible.
- Where work is required outside of regular daytime work hours, the contractor should try to minimize noise generated.
- Where works take place outside of the hours permitted by the City of Brampton noise by-law, an exemption should be obtained from the City of Brampton and proper notification to residents should be provided.

- If complaints regarding construction noise arise, the contractor must investigate and verify that the noise control measures agreed to are in effect. In the presence of persistent noise complaints, alternative noise control measures may be required.
- Equipment should be properly maintained and in good operating condition and comply with MECP NPC-115 guidelines.
- No unnecessary idling of vehicles and limit the speed of vehicular traffic through the construction site.
- Dust suppressant measures are to be used to reduce dust emissions, when appropriate. Non-chloride dust suppressants for the entrainment of fugitive dust is preferred.
- Regular cleaning of the construction site, access roads, and construction vehicles to remove construction-caused debris and dust.
- All haul equipment should be covered when hauling fine-grained materials.
- Stockpiles of fine-grained materials should be covered and stabilized, particularly during dry or windy periods.

8.6 Climate Change

EA projects are required to assess how the project mitigates impacts on climate change and also how the project seeks to adapt to ongoing climate change impacts.

In terms of mitigation of further impacts on climate change, the proposed MUP will promote active transportation modes of travel along the corridor. The approach to traffic capacity and demand, and the decision to not pursue widening in favour of more sustainable modes of travel also supports a move way from vehicular travel and greenhouse gas emissions.

With respect to adapting to climate change, increasing flooding and larger storm events are an ongoing challenge for municipalities. This is a concern, notably at the culvert under the Torbram Road intersection. Recommendations for the culvert accommodate for future storm events. With the reduction of lane widths, there is minimal increase to the impervious area as a result of this project, allowing water to return to the ground as opposed to being managed in the City's storm system.

9.0 Commitments and Monitoring

9.1 Commitments for Detail Design and Construction

Section 8.0 identifies the impacts and mitigation measures associated with the proposed design. Below is a summary of additional works that are required to be completed during the detailed design phase of the project, prior to construction:

Transportation/Technical Requirements

- Further review of open and closed footings for the culverts will need to be undertaken.
- Exact pavement structures will need to be confirmed as they vary throughout the corridor.
- Utilities shall be consulted to confirm utility conflicts and coordinate relocation, where required.
- A traffic management plan / construction staging plan will be developed to minimize impacts to traffic and access, where possible.
- Relocate and properly connect catchbasins impacted by the outer curb relocation to the existing storm sewer system.
- A Low Impact Development Feasibility Study for other quality control measures that meet CLI ECA requirements is to be undertaken during detailed design, where the primary goal is to control the 90th percentile runoff volume and achieve 80% TSS control, following a hierarchy of retention, LID filtration, and conventional stormwater management.
- Erosion prevention and sediment control measures must be implemented during construction. An ESC Report and associated plans and drawings are to be prepared and submitted to TRCA. The measures must adhere to the Erosion and Sediment Control Guidelines for Urban Construction (December 2019).

Socio-Economic Requirements

- Details of the noise barriers (i.e. exact location, where to end and finish, materials, etc.) will be further refined.

Natural Environment Requirements

- An updated tree inventory and Arborist Report should be undertaken in detailed design / prior to construction to more accurately identify the tree impacts based on refined design information (e.g. exact limits of grading, noise wall start and end limits) as well as construction requirements.
- Potential impacts to Mimico Creek and natural channel design may be required by a fluvial geomorphologist if some realignment is required.
- Additional site visits to determine if Green Heron and Pileated Woodpecker nests are present should be conducted during detailed design.

9.2 Permits and Approvals

The permits and approvals in Table 14 have been identified as required or potentially required.

TABLE 14: PERMITS AND APPROVALS

Regulatory Agency	Legislation	Permit / Approval	Description
Fisheries and Oceans Canada (DFO)	Fisheries Act	Letter of Advice/Fisheries Act Authorization (to be determined by DFO after submission of request for review)	Required for works in fish-bearing watercourses. In this project, this would be applicable to culvert improvements at Mimico Creek.
Environment and Climate Change Canada	Migratory Birds Convention Act	Avoidance and mitigation to avoid contravention of Act Potential submission to Abandoned Nest Registry	Protection of migratory birds and associated nests when active and in use. Protection for Schedule 1 migratory birds and nests year-round and a designated waiting period applies.
Ministry of the Environment, Conservation and Parks (MECP)	Endangered Species Act	SAR Permit	Not anticipated, however timing windows should avoid bat timing windows or encroachment of woodlands, otherwise further consultation with MECP is required.
	Ontario Water Resources Act	Permit To Take Water (PTTW) / Environmental Activity and Sector Registry (EASR)	PTTW required if >400,000 L/d of surface or groundwater taken, an EASR will be registered as a prescribed activity if the amount of water exceeds 50,000 L/d and is <400,000 L/d.
	Environmental Protection Act	Environmental Compliance Approval	Required prior to construction to ensure proposed works comply with MECP guidelines for sanitary, storm and water systems. Given the limited storm system activities, a standalone ECA may not be required and related activities may fall under CLI-ECA process instead.

Regulatory Agency	Legislation	Permit / Approval	Description
Toronto and Region Conservation Authority (TRCA)	Conservation Authorities Act, O. Reg. 166/06	Development and Interference with Wetlands and Alterations to Shorelines and Watercourses	A permit is required for works within TRCA Regulated Area. The Regulated Area crosses the study area, primarily associated with Spring Creek and Mimico Creek.
City of Brampton	Section 53 of the Ontario Water Resources Act	Consolidated Linear Infrastructure – Environmental Compliance Approval (CLI-ECA)	Not a standalone permit, rather proposed storm systems and changes to storm systems must meet CLI-ECA requirements.
	Tree Preservation By-law 317-2012	Tree Permit	By-law that regulates the injury and removal of trees greater than 30cm dbh on public and private land in the City of Brampton.
	Noise By-law 93-84	Noise By-law Exemption	Required for construction works outside regular working hours.
	Sewage By-law 90-75	Sewage Use Permit	By-law that regulates the discharge into the storm sewer system of the City of Brampton.

9.3 Monitoring Requirements

During construction, standard best management practices and construction monitoring should be undertaken to ensure that construction is occurring according to the design and that mitigation measures are implemented correctly and are functioning as intended. Through the permitting process, additional measures may be required.

Appendix A

Transportation Impact Analysis

PARSONS

Appendix B

Structural Design Reports

PARSONS

Appendix C

Natural Environment Assessment Report

PARSONS

Appendix D

Fluvial Geomorphology Report

PARSONS

Appendix E

Hydrogeological Assessment

PARSONS

Appendix F

Municipal Heritage Bridges: Cultural, Heritage and Archaeological Resources Assessment Checklist

PARSONS

Appendix G

Record of Consultation

Appendix H

Design Drawings

PARSONS

Appendix I

Drainage and Stormwater Management Analysis

PARSONS

Appendix J

Pavement Design Report

PARSONS

Appendix K

Noise Impact Assessment Report

PARSONS