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## **Indigenous Land Acknowledgement**

We would like to begin by acknowledging the land on which we gather, and which the Region of Peel operates, is part of the Treaty Lands and Territory of the Mississaugas of the Credit. For thousands of years, Indigenous peoples inhabited and cared for this land, and continue to do so today. In particular we acknowledge the territory of the Anishinabek, Huron-Wendat, Haudenosaunee and Ojibway/Chippewa peoples; the land that is home to the Metis; and most recently, the territory of the Mississaugas of the Credit First Nation who are direct descendants of the Mississaugas of the Credit.

We are grateful to have the opportunity to work on this land, and by doing so, give our respect to its first inhabitants.

## Public Information Centre (PIC) Objectives

The key dates and objectives for the study are:

### Key Dates

**February 17, 2022**

PIC No. 2 materials posted to project website

**February 17 to March 10, 2022**

Submit questions or comments related to PIC No. 2 materials

**March 24, 2022**

Responses to questions and comments posted



Update public and stakeholders on the study's progress



Review and summarize the study's recommendations



Present details of the study's output



Receive feedback on the evaluation process and servicing alternatives

*This is the last of two PICs for this study.*

## Public Information Centre (PIC)

Please note this is the final PIC for this study. PIC No. 1 was originally scheduled in-person for March 25, 2020, but was postponed due to COVID-19. As such, PIC No. 1 was held online with materials posted on May 21, 2020. [All PIC No. 1 materials were posted on the project website as a virtual PIC.](#)

Visit Project  
Website

## How Can You Help?

Provide your input! After reviewing the PIC materials, navigate to the 'Provide Feedback' section or [click here](#) to submit your comments. The comment form will be available from **February 17 to March 10, 2022**.

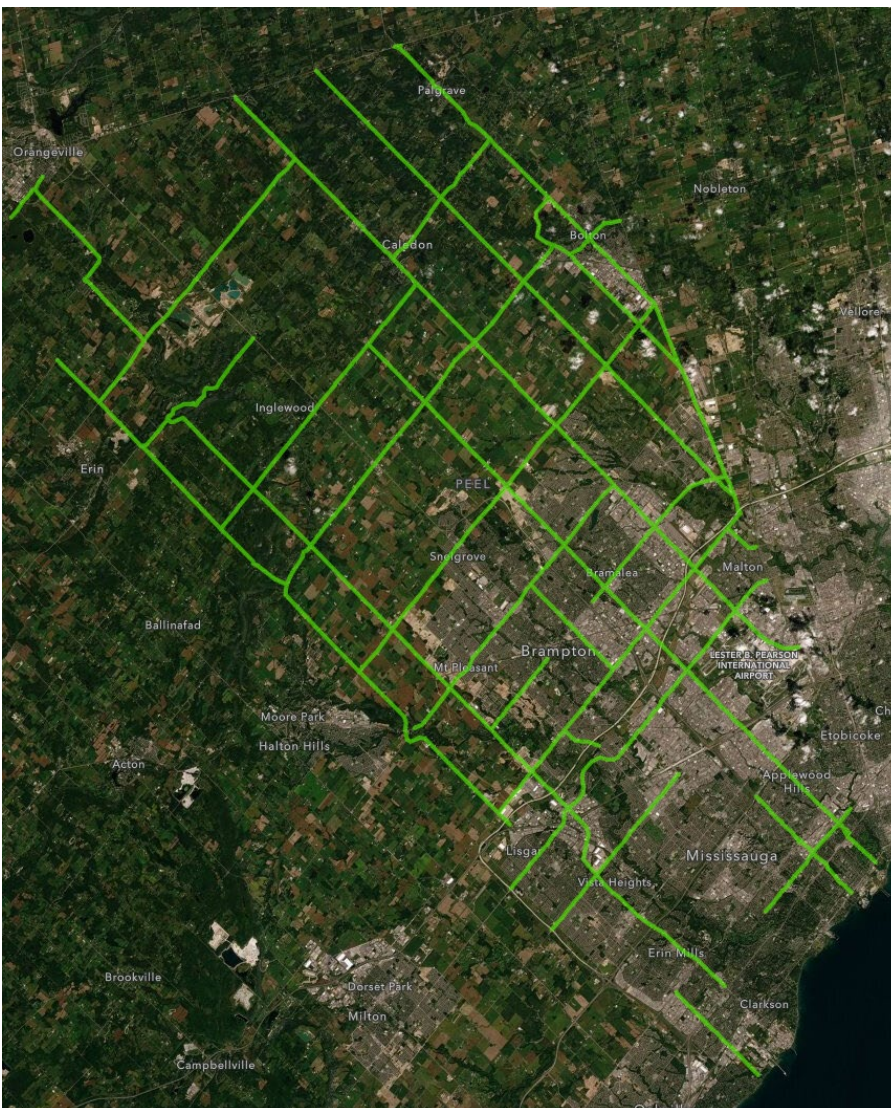
## Project Summary

The Region of Peel has initiated an infrastructure planning initiative to develop a Stormwater Servicing Master Plan for Regional Road infrastructure.

### The following are the key study objectives:

1. To develop a comprehensive stormwater servicing strategy that considers the impacts of growth and climate change;
2. To develop tools to help assess and evaluate the system for existing, future, and climate change impacts;
3. To identify the expectations of stakeholders and community by establishing measurable levels of service;
4. To develop an optimal implementation plan that identifies the cost and timing for work to be undertaken to achieve the preferred strategy, and;
5. To inform future capital programs with respect to funding source including renewal and growth related projects.

**This project will focus on the stormwater infrastructure located within the Regional road right-of-way.**



## A Unique Master Servicing Plan – Growth within the Region of Peel

The Stormwater Servicing Master Plan for Regional Roads is based only on Regionally owned and managed stormwater infrastructure.

- The Region's *Long Range Transportation Plan* (LRTP) identifies strategies to service future growth to 2041 and is in the process of being updated to identify strategies to 2051
- The Stormwater Servicing Master Plan will be updated in tandem with the LRTP (every 5 years), as stormwater planning and projects are tied to transportation planning and projects
- The Regional storm sewers are designed and built to manage stormwater coming from the right-of-way (roads) only
- The Region's preference prevents connections from private property to Regional storm sewers unless no other outlet is available (Town/City or Conservation Authority managed outlet)

The Master Plan has addressed:

- How to mitigate future stormwater flows due to increased paved surfaces, in alignment with the *Long Range Transportation Plan* (LRTP) projects
- The impacts of climate change on stormwater management
- Aligning existing programs, such as storm sewer renewal and maintenance, with known storm sewer capacity concerns
- Creating tools, such as a hydraulic computer simulation model, to predict existing capacity and determine upgrades required for growth in the Region

### Key Considerations:

The study will support existing and future growth-related decision making:

- Stormwater infrastructure in the Region of Peel is a two-tiered system
- The Region owns and maintains 26 Regional Roads and all stormwater infrastructure within them
- The Town of Caledon, City of Brampton and City of Mississauga are responsible for local stormwater systems
- The impacts of climate change will be considered throughout the study
- Align study output with the Region's *Long Range Transportation Plan* (LRTP) projects to determine projects which are driven by growth within the Regional right-of-way

For additional information, watch the [video here](#) to learn more about the following:

- What is Stormwater? How can it affect you?
- What is the lower-tier municipality vs. Region's role in stormwater management?
- What are some solutions that deal with stormwater infrastructure that is aging and/or at-capacity?

## Climate Change

A key consideration in the preparation for the Stormwater Servicing Master Plan was determining the impacts of climate change on the storm sewer system.

### How did the study consider climate change?

The Region of Peel's *Public Works Stormwater Design Criteria and Procedural Manual* was updated in 2019 and used to support the Master Plan in determining the impacts of climate change. The updates to the Procedure Manual:

- Included the updating of the Region's design storm event to account for climate change
- Were reviewed and used as an input into the Master Plan analysis

Below is a link to the Region of Peel's *Public Works Stormwater Design Criteria and Procedural Manual* (2019).

[Peel Stormwater Manual](#)

Through the Stormwater Servicing Master Plan for Regional Roads:

- A new hydraulic computer simulation model was created to mimic the Region's existing storm sewer system
- Climate change-adjusted storm events were used in the analysis to ensure that the recommended strategies increase **resiliency to climate change**
- Climate change considerations are aligned with the policy direction included in the *Peel 2051 Regional Official Plan*, the *Municipal Comprehensive Review*, and *O.Reg. 588/17*

## Class Environmental Assessment (EA) Process

### What Have We Done So Far?

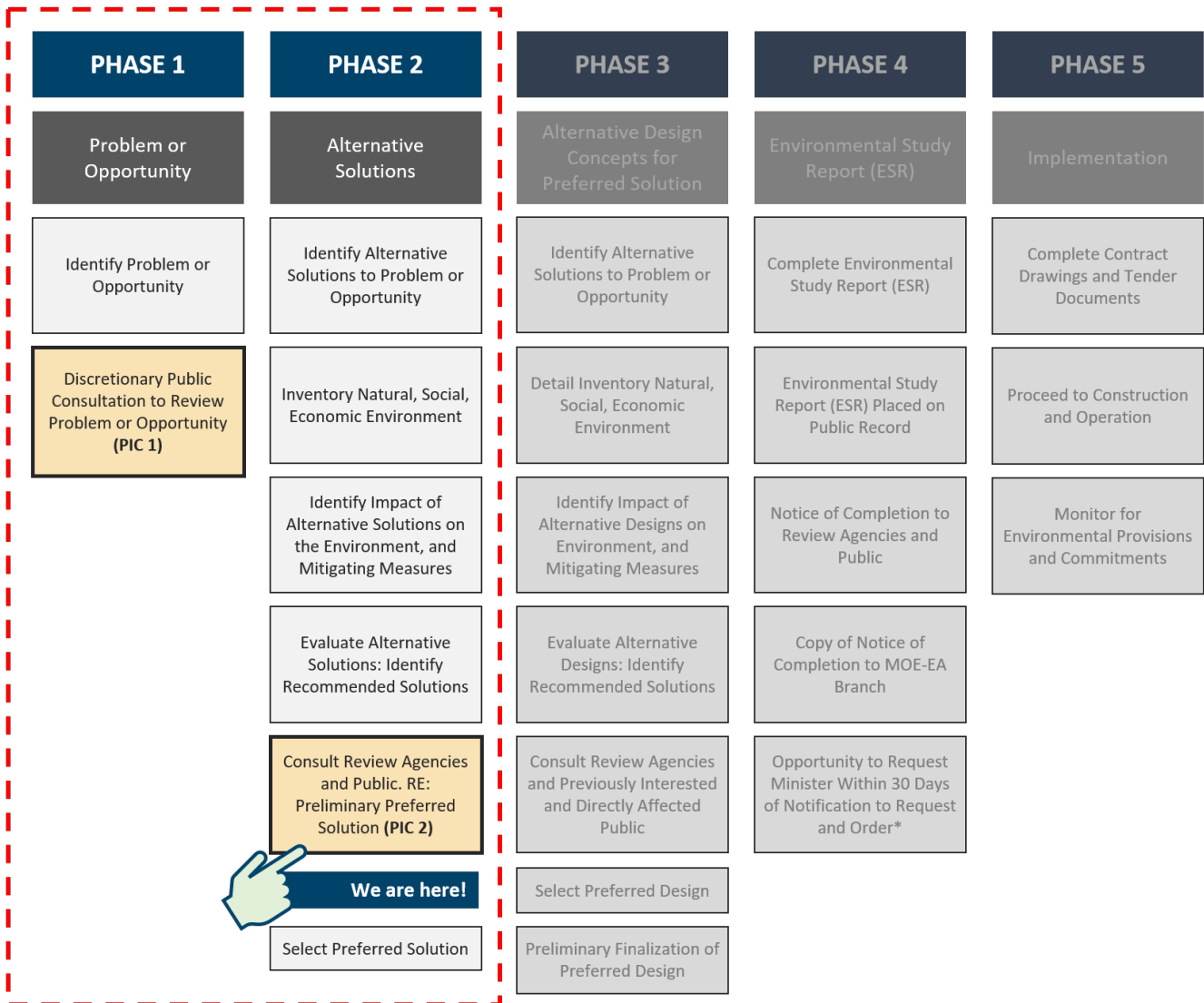
The **Stormwater Servicing Master Plan for Regional Road** infrastructure follows the Municipal Engineers Association (MEA) Class Environmental Assessment (EA) process and will satisfy Phases 1 and 2 of the Class EA process. The study's problem and opportunity statement is as follows:

**Study Problem and Opportunity Statement:** Provide efficient stormwater servicing to existing and future Regional road infrastructure by taking into account existing aging infrastructure, growth, natural environment, climate change and compliance within regulatory framework.

PIC No. 1 presented the study's problem and opportunity statement and list of preliminary servicing concepts to manage the Region's stormwater infrastructure. PIC No. 1 presentation materials are available at the link below:

[View PIC No.1  
Materials](#)

We are currently in Phase 2 of the study, with the primary focus on developing a list of preliminary preferred servicing solutions. Following Phase 2, the Master Plan will be complete.



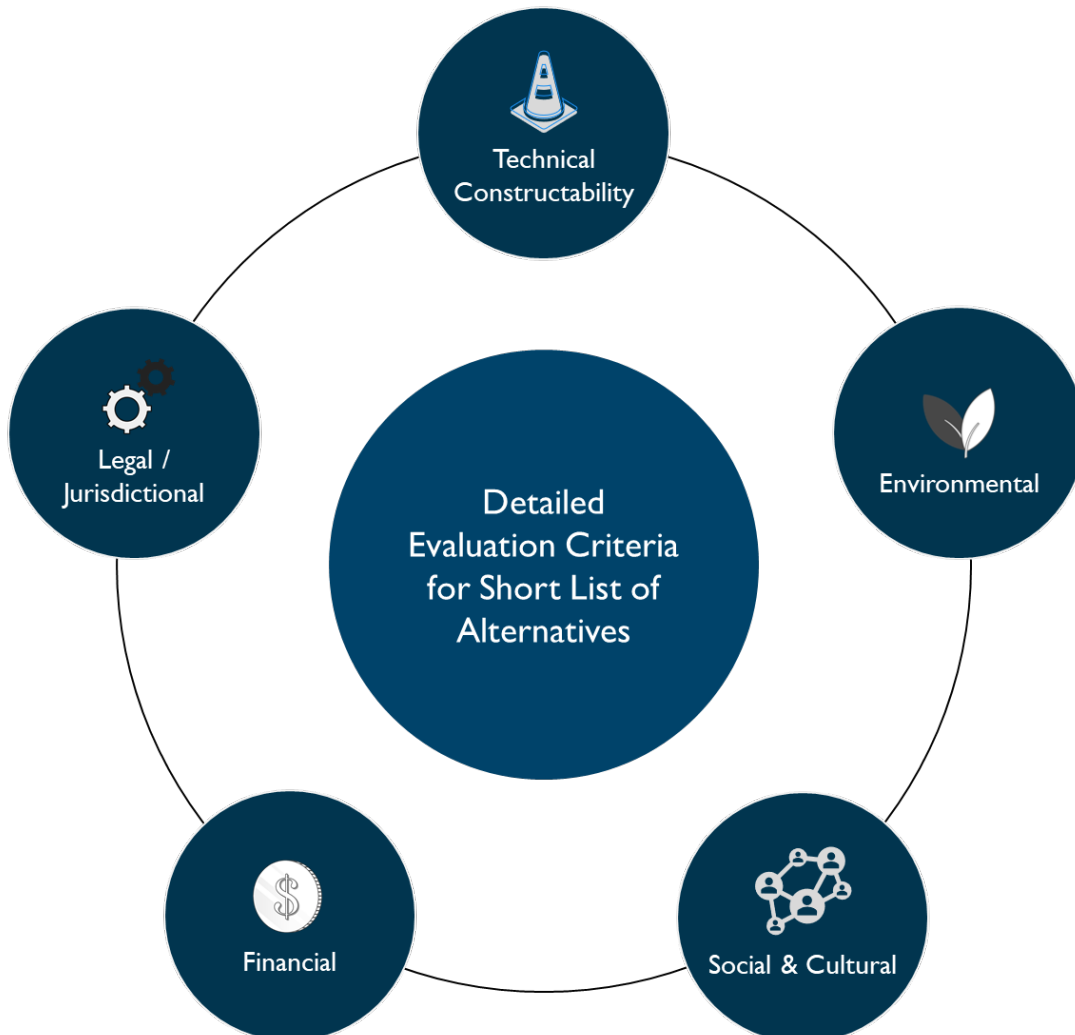
MEA Mandated Requirements: <https://municipalclassea.ca/manual/page10.html>

# Evaluation Methodology

## What's Being Evaluated?

This study looked at two different components of the Region's stormwater infrastructure:

1. Determining how much stormwater can fit in the existing storm sewer system and where upsizing is required
2. Determining the best location for Low Impact Development (LID) stormwater management strategies





## What is a Low Impact Development (LID)?

Infrastructure that mimics natural processes that result in the infiltration, evapotranspiration, or use of stormwater in order to protect water quality and aquatic habitat.

Low Impact Developments can:

- Clean stormwater from within the right-of-way before it enters the natural environment (streams, lakes, or ponds)
- Help regulate stormwater flows to prevent flooding
- Infiltrate stormwater into the ground, maintaining the natural water balance

Examples of Low Impact Developments include:

- Infiltration trenches/chambers
- Bio-swales
- Bioretention facilities
- Enhanced grass swales
- Cooling Trench

## Capacity Analysis Methodology and Stormwater Model

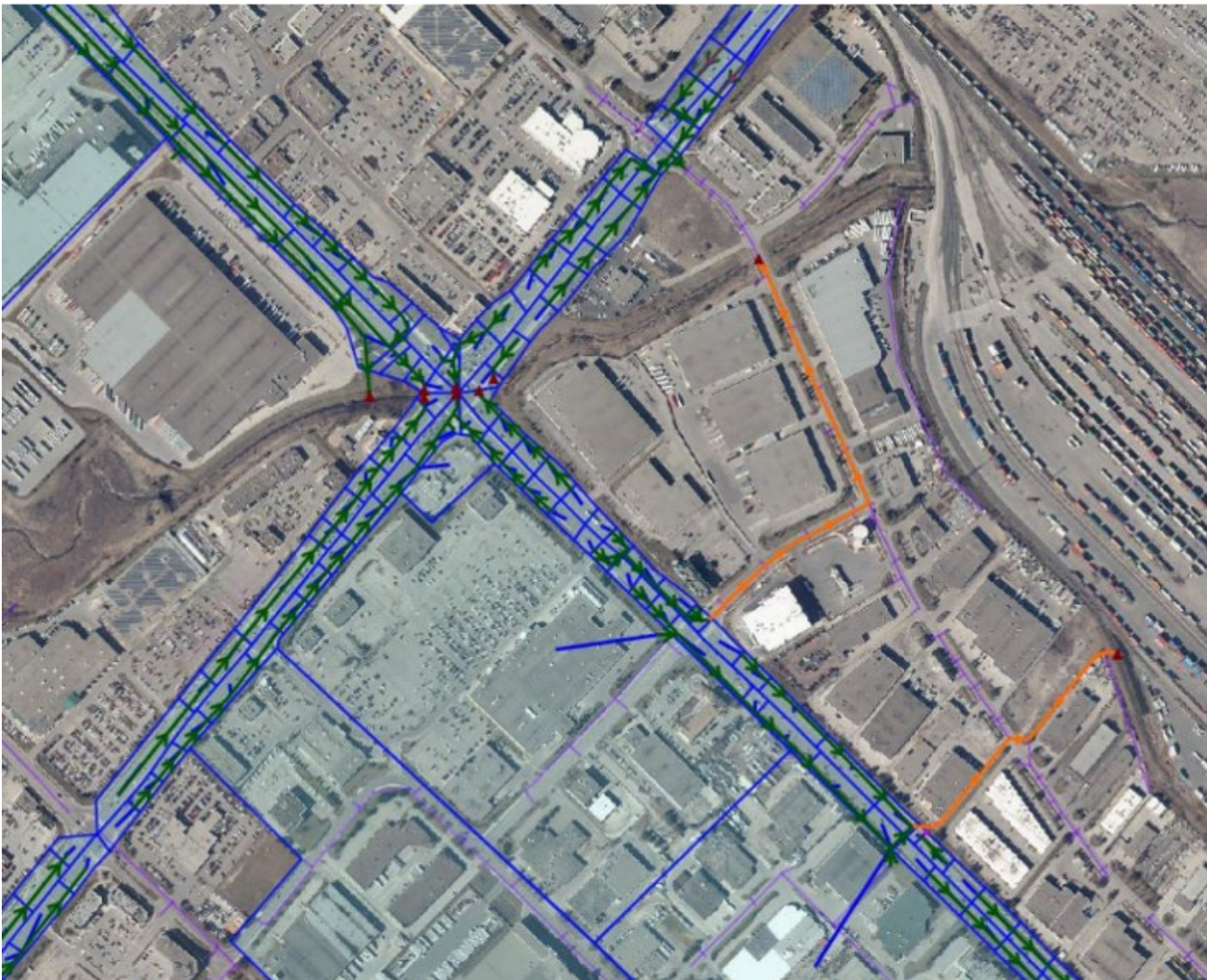
A hydraulic computer simulation model was created to assess capacity in the storm sewers.

The analysis:

- Included all the Region owned storm sewers
- Accounted for the local road storm sewers where connecting to the Regional storm sewers
- Identified storm sewers not meeting the Region's design criteria (1-in-10 year rainfall)
- Considered the impacts of the climate change event scenario
- Identified storm sewers with extra capacity that could be used to service growth

Alternatives that were evaluated to address storm sewers with capacity issues included:

- Do nothing
- Pipe replacement and upsize
- Stormwater diversion
- Implementation of Low Impact Development (LID)



## Low Impact Development (LID) Project Selection Methodology

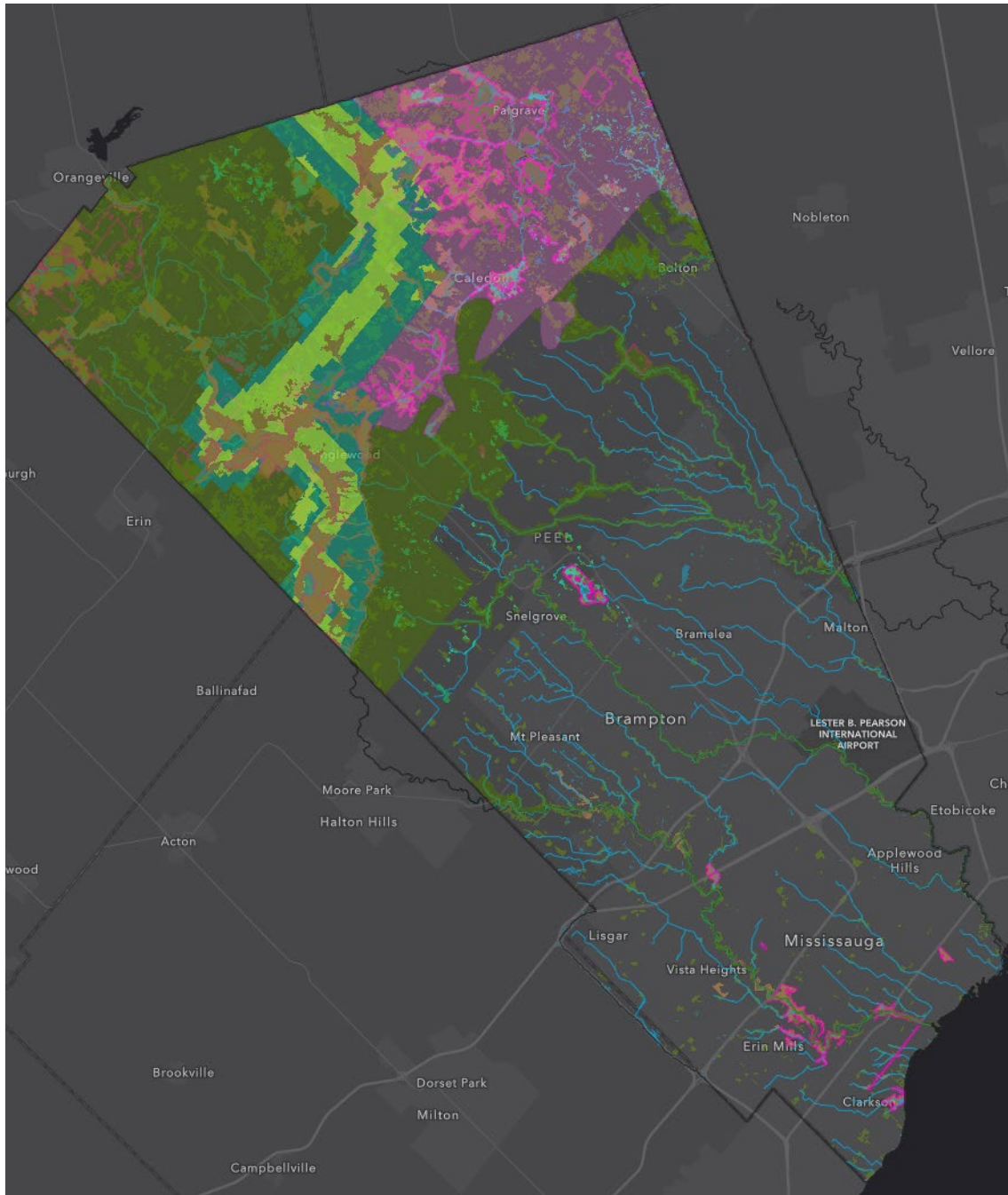
A system-wide analysis was completed to identify the best locations for LID stormwater servicing strategies. For the preferred locations, the following alternatives were reviewed following the *Municipal Class Environmental Assessment (MCEA)* multiple-bottom-line evaluation process:

1. Do nothing
2. Implement stormwater management (SWM) pond
3. Infiltration trench/cistern
4. Bioretention facility
5. Bioswales
6. Perforated pipe/exfiltration system
7. Permeable paving
8. Superpipe storage
9. Enhanced grass swales
10. Proprietary SWM devices

Legend		SWM Ponds	Bio-Retention Facilities	Enhanced Grass Swales	Bioswales	Perforated Pipe	Permeable Pavement	Proprietary SWM Devices	Superpipe Storage	Infiltration Trenches
High	●									
Moderate	◐									
Low	○									
Type of Project	Facility Site Development	●	●	●	●	●	●	●	●	●
	Road Works (Urban)	○	●	●	●	◐	◐	●	●	●
	Road Works (Rural)	◐	●	●	●	○	◐	◐	○	◐
Municipal Staff and Financial Considerations	Community Engagement	●	●	○	●	○	◐	○	◐	◐
	Inter-department Coordination	●	●	○	●	○	○	○	◐	◐
	Design Team	●	●	○	●	○	◐	◐	◐	◐
	Capital Cost	●	●	○	◐	○	●	●	◐	◐
	Operation & Maintenance Cost	●	●	○	◐	○	◐	●	◐	◐
Design Considerations	Geotechnical Testing Complexity	◐	◐	◐	●	◐	●	○	◐	◐
	Infiltration Testing Complexity	◐	◐	◐	●	◐	●	○	◐	◐
	Planning Complexity	●	●	○	◐	◐	◐	◐	◐	◐
	Design Complexity	◐	◐	○	◐	◐	●	◐	◐	◐
Benefits	Flood Risk Reduction	●	◐	○	◐	◐	◐	○	●	○
	Pollutant Removal	●	●	◐	●	◐	◐	●	○	●
	Groundwater Recharge	○	◐	◐	◐	◐	●	○	○	●
	Stream Channel Erosion Control	●	●	◐	◐	●	●	○	○	◐
	Amenity and Aesthetic Value	●	●	◐	◐	○	○	○	◐	◐
	Traffic Calming	○	○	○	○	○	○	○	◐	◐
	Urban Tree Canopy	●	●	○	○	○	○	○	◐	◐
	High Profile with Community and Media	●	●	○	●	○	○	◐	◐	◐

## What Investigations Have Been Completed?

To ensure a comprehensive assessment, the following investigations have been completed



## **Archeological**

To identify and protect known and potential archaeological resources within the study areas.

**Draft Archaeological Assessment**

## **Cultural Heritage Screening Report (CHSR)**

To identify and protect buildings and landscapes with potential significant cultural value within or nearby the study areas.

**Draft CHSR**

## **Natural Environment**

To provide a preliminary assessment of sensitive natural features (e.g. wetlands, species at risk, etc.) present in the study areas with the aim to protect and mitigate environmental impacts.

**Draft Natural Environmental Report**

## **Geotechnical and Hydrogeological**

To identify and protect groundwater sources and other sensitive subsurface features within the study area.

**Draft Geotechnical and Hydrogeological Review**

## **Hydraulic and Fluvial Geomorphic Hazard Assessment**

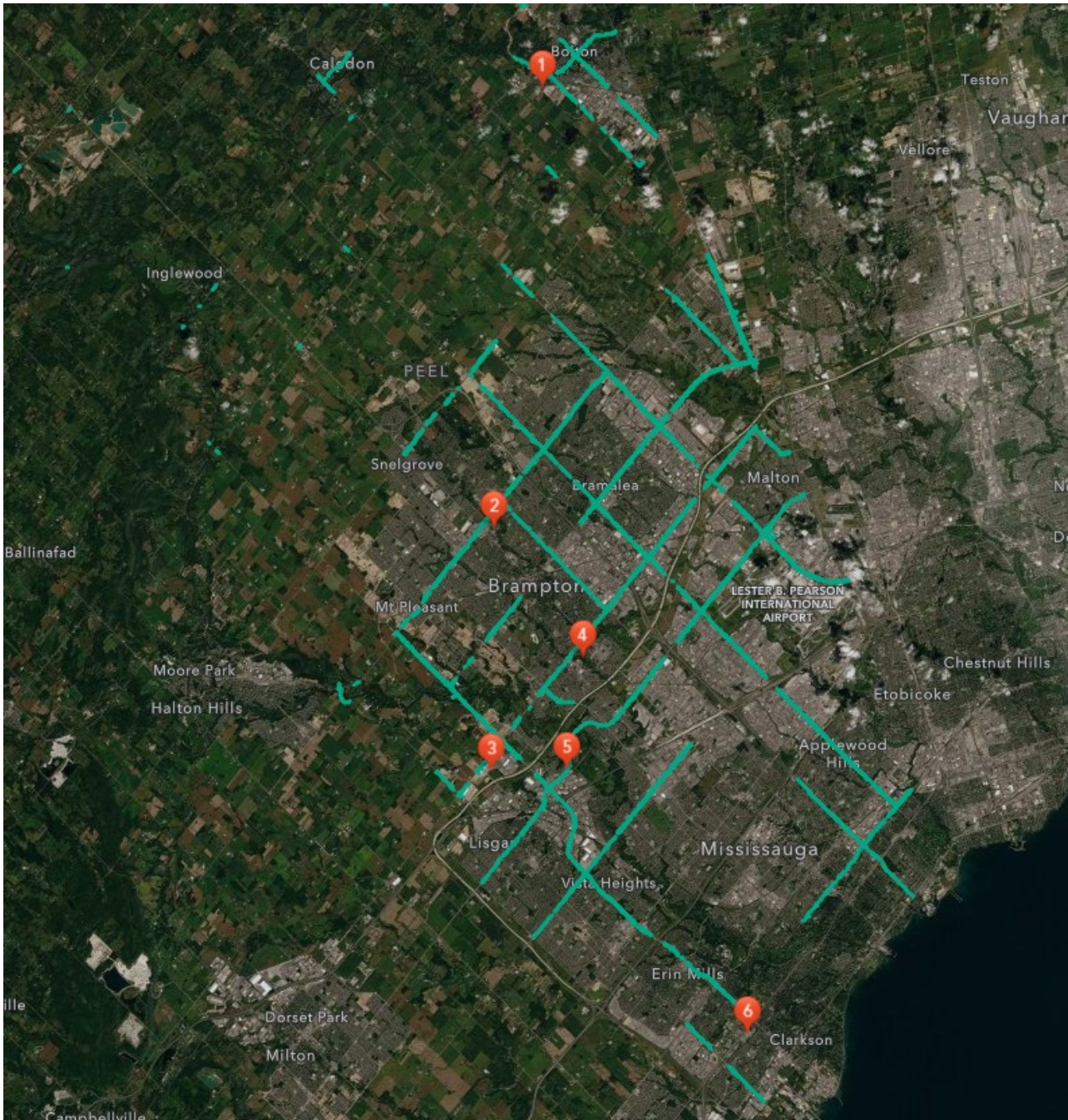
To identify and protect receiving waters from adverse impacts (channel encroachment or mitigation) nearby the study areas.

**Draft Hydraulic Assessment**

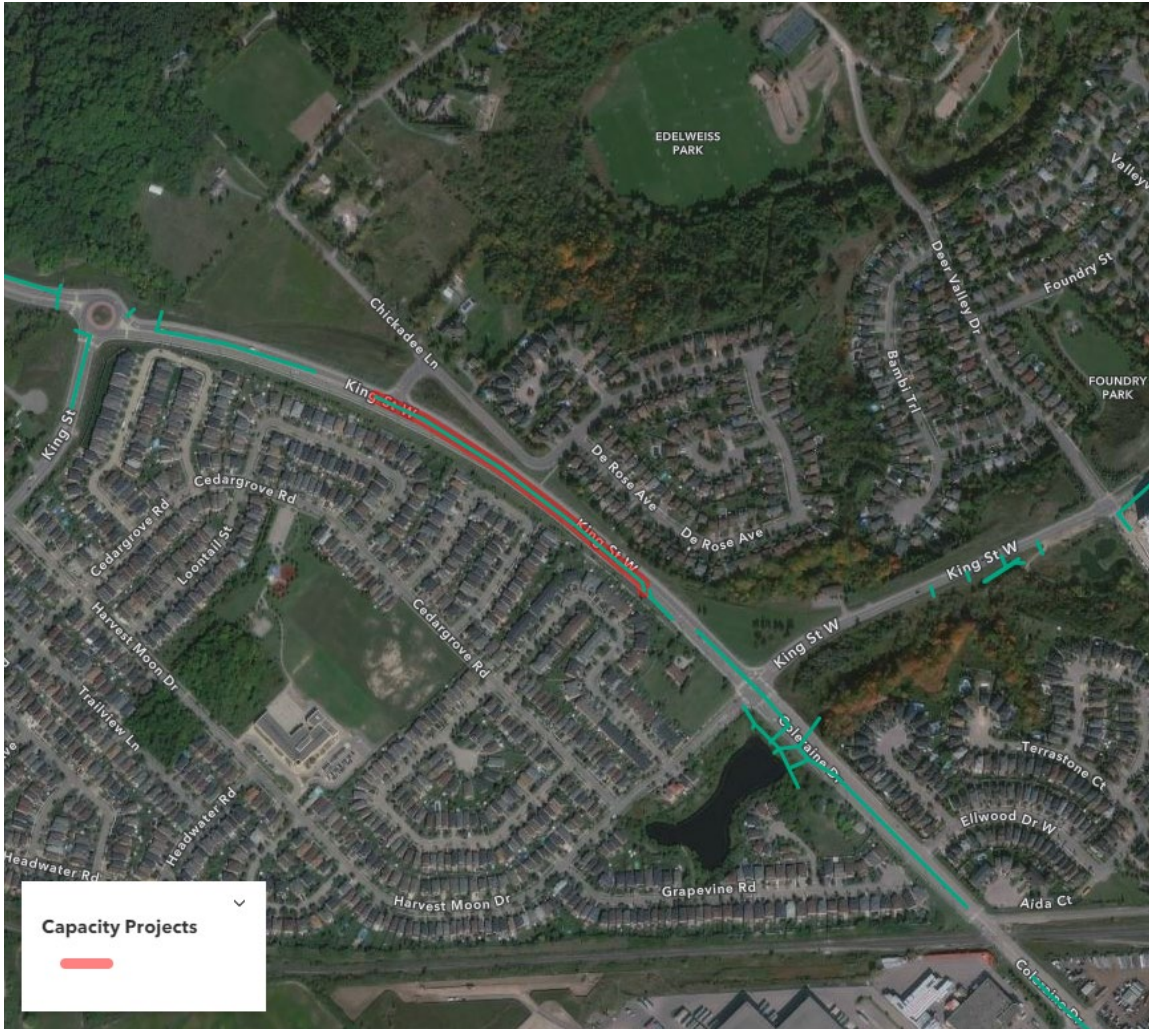
# Preliminary Recommendations

## Stormwater Pipe Upsizing

The following locations were selected as the best opportunities to enhance the Region's stormwater infrastructure when a future roadworks project is triggered by growth or renewal. The evaluation identified that these locations were best suited to simple upsizing. As these locations all have existing pipes within the road right-of-way, they can be completed as Schedule A or A+ projects and therefore do not require further evaluation of alternatives.

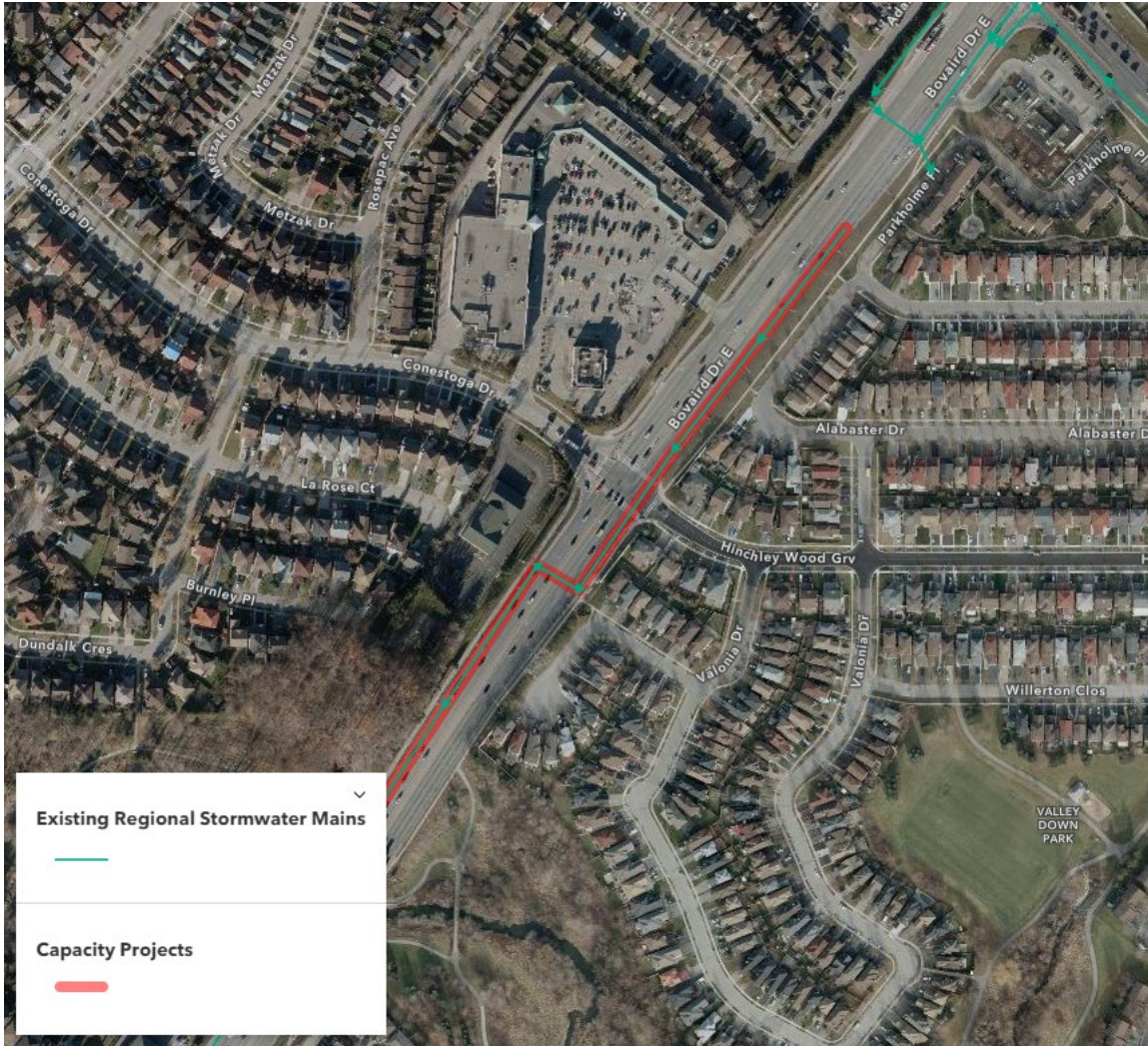


# 1. Emil Kolb Parkway and De Rose Avenue



Upsize of existing storm sewer along Emil Kolb Parkway nearby De Rose Avenue.

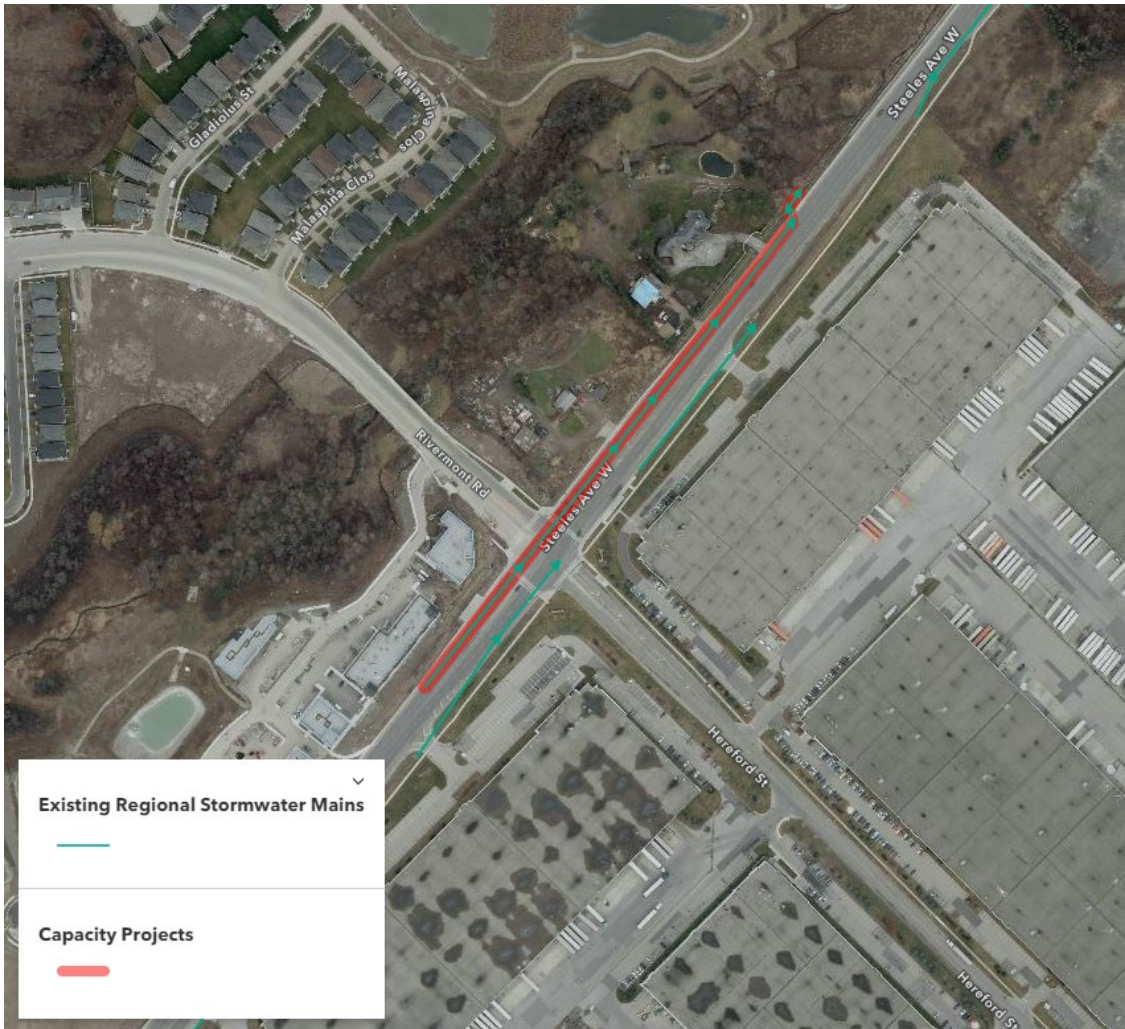
## 2. Bovaird Drive and Conestoga Drive



Upsize of existing storm sewer along Bovaird Drive at Conestoga Drive.

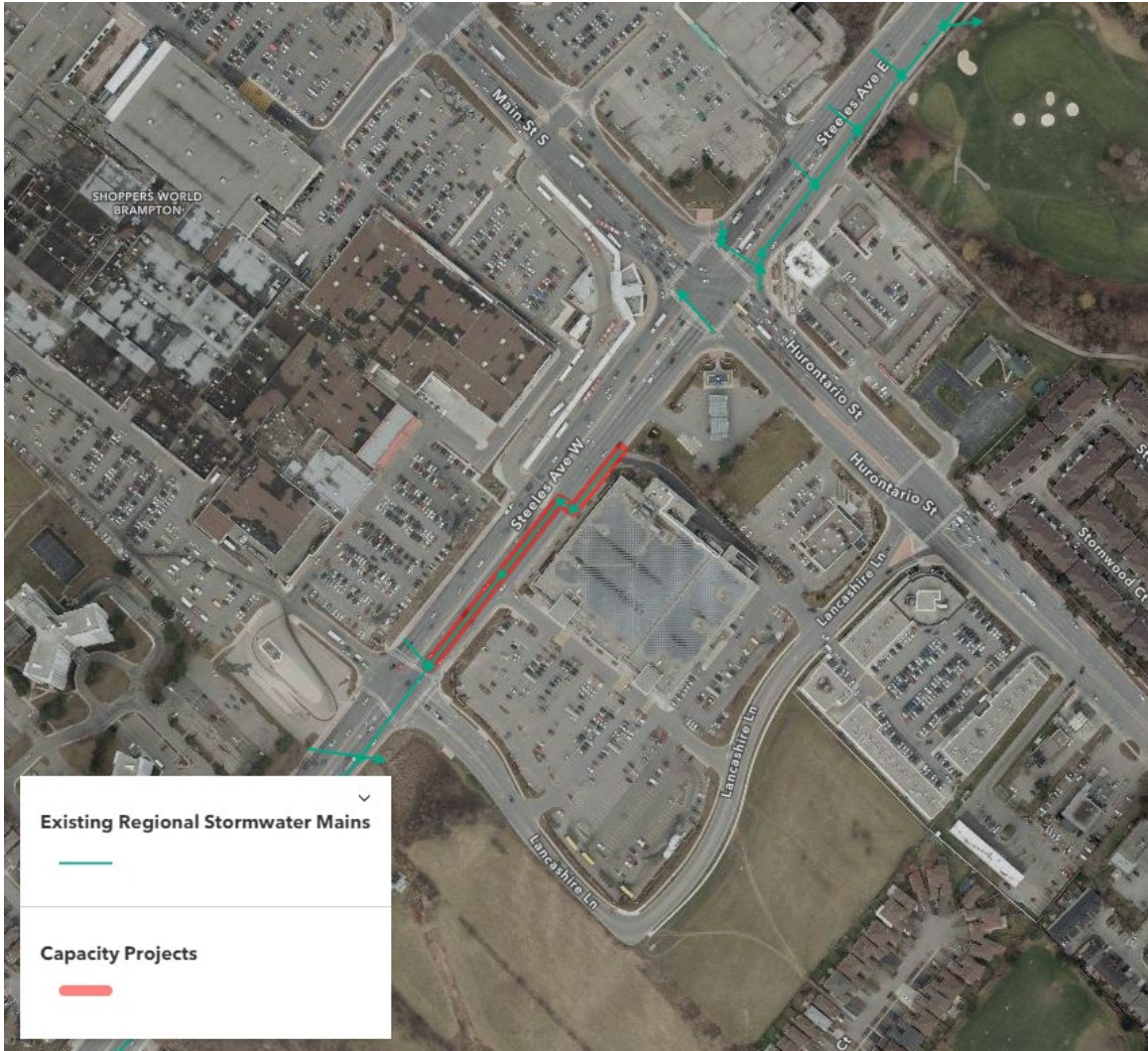


### 3. Steeles Avenue West and Rivermont Road



Upsize of existing storm sewer along Steeles Avenue West at Rivermont Road.

#### 4. Steeles Avenue West and Lancashire Lane



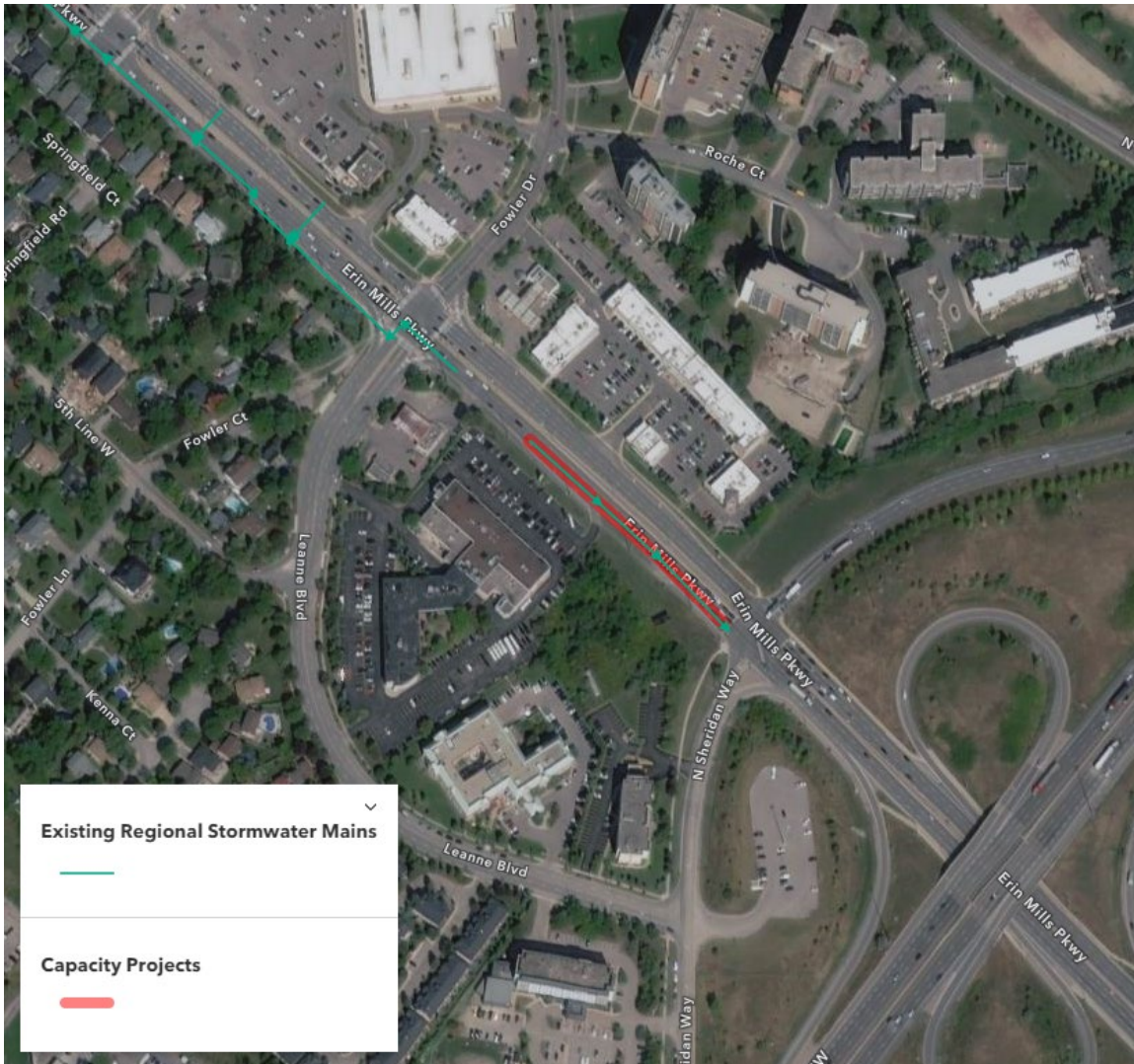
Upsize of existing storm sewer along Steeles Avenue West at Lancashire Lane.

## 5. Derry Road and Dishley Court



Upsize of existing storm sewer along Derry Road at Dishley Court.

## 6. Erin Mills Parkway and Queen Elizabeth Way (QEW) Ramp West



Upsize of existing storm sewer along Erin Mills Parkway at the QEW Ramp West.

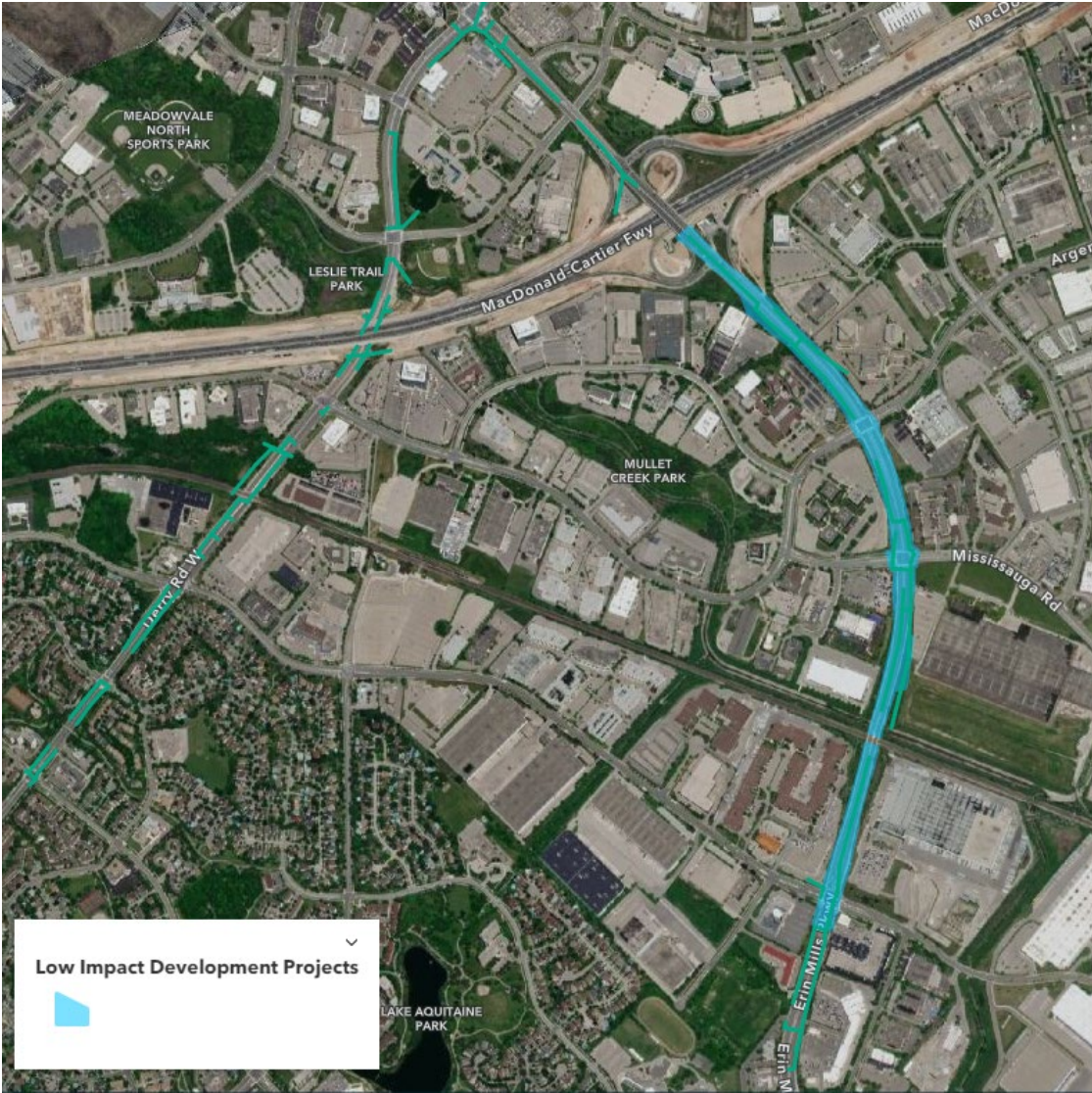
## Low Impact Development (LID) Implementation

A system wide evaluation process determined 17 locations where LID stormwater management strategies would be practical. Of these 17 locations, 9 were short-listed as the most favourable sites to implement LID strategies. The short-listed sites were determined by ranking highest in the following criteria:

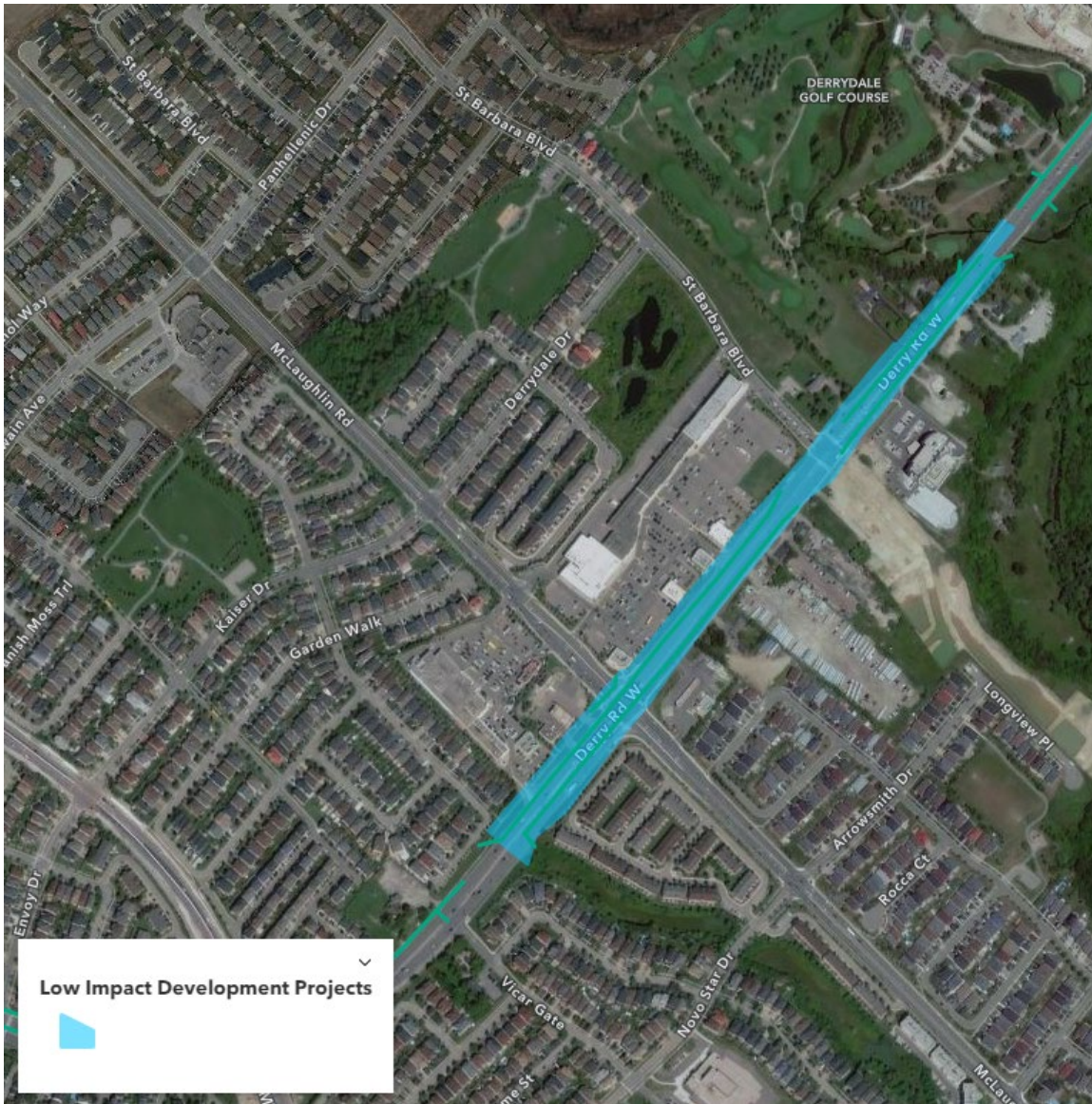
- Infiltration potential
- Pipe capacity and condition
- Surrounding road projects (i.e. road resurfacing, capital projects, sustainable transportation projects)
- Whether or not there are existing quality treatments
- Planned water and/or wastewater system projects
- Proposed studies
- Environmental sensitivities
- Erin Mills south of Highway 401
- Location #1:
  - Road resurfacing, corridor improvements, and a multi-use trail planned in 2024/2025
  - No existing quality treatment at outfall
  - Good infiltration potential



# 1. Erin Mills Parkway south of Highway 401



## 2. Derry Road and McLaughlin Road

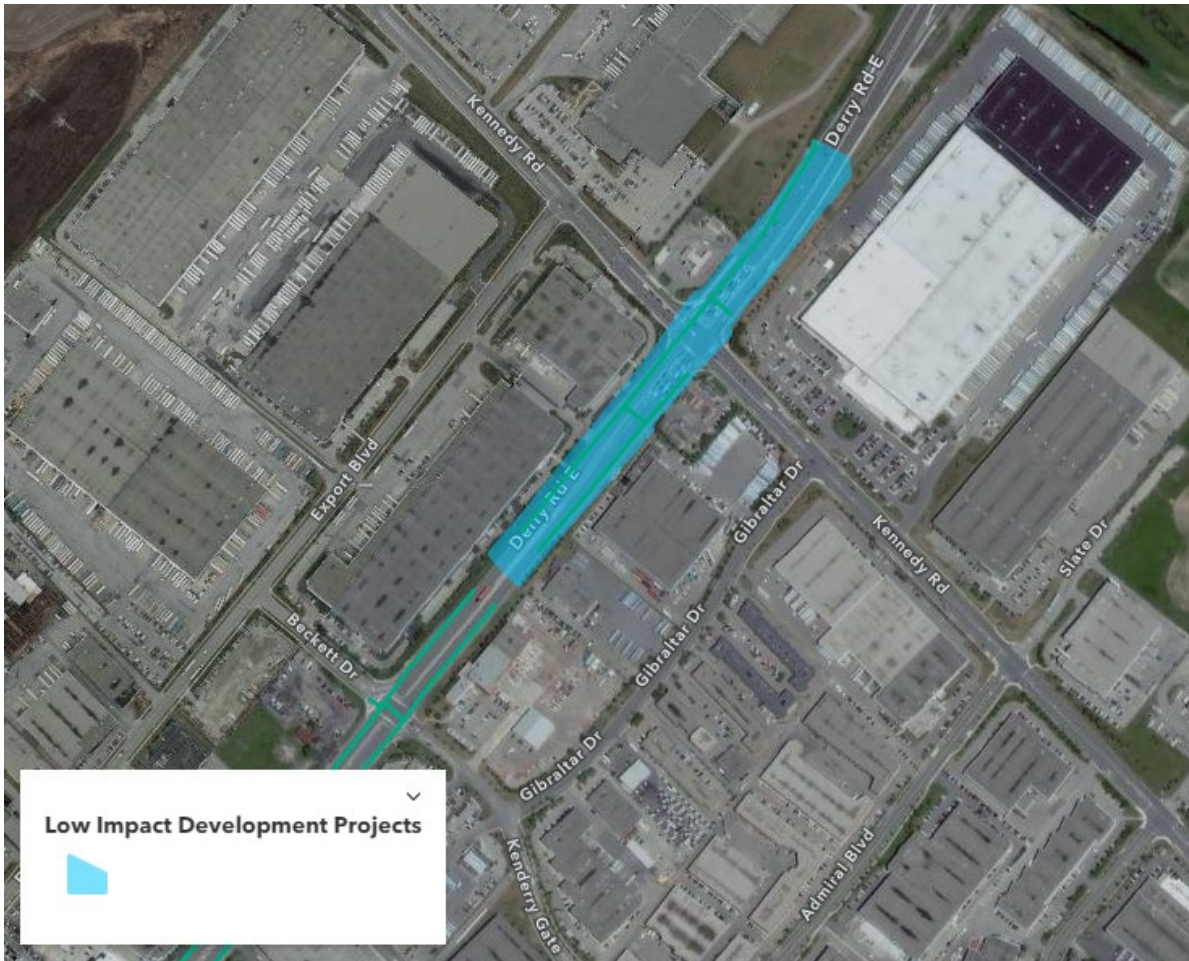


### 3. Derry Road east of Highway 410





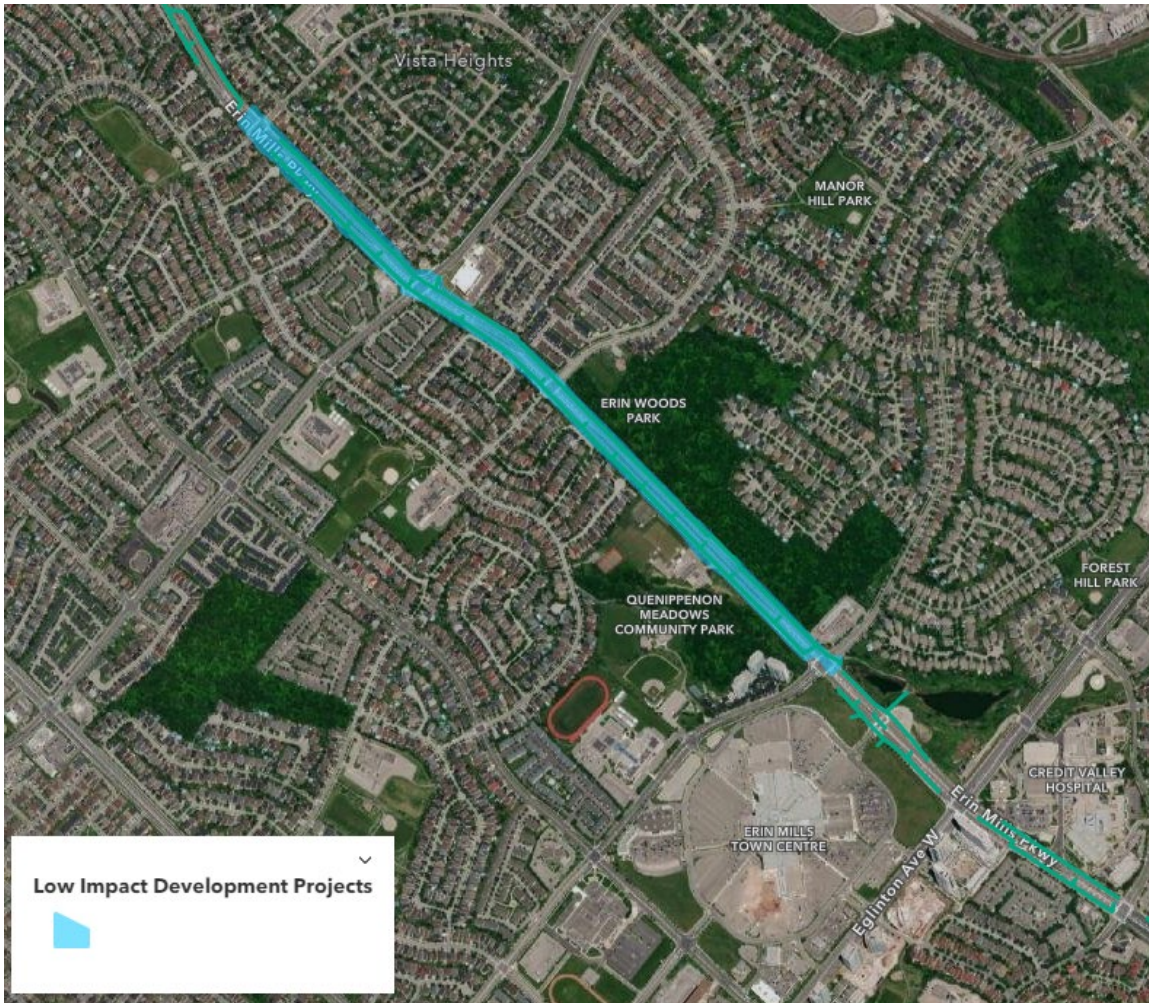
#### 4. Derry Road west of Highway 410



## 5. Mayfield Road east of Dixie Road



## 6. Erin Mills north of Highway 403



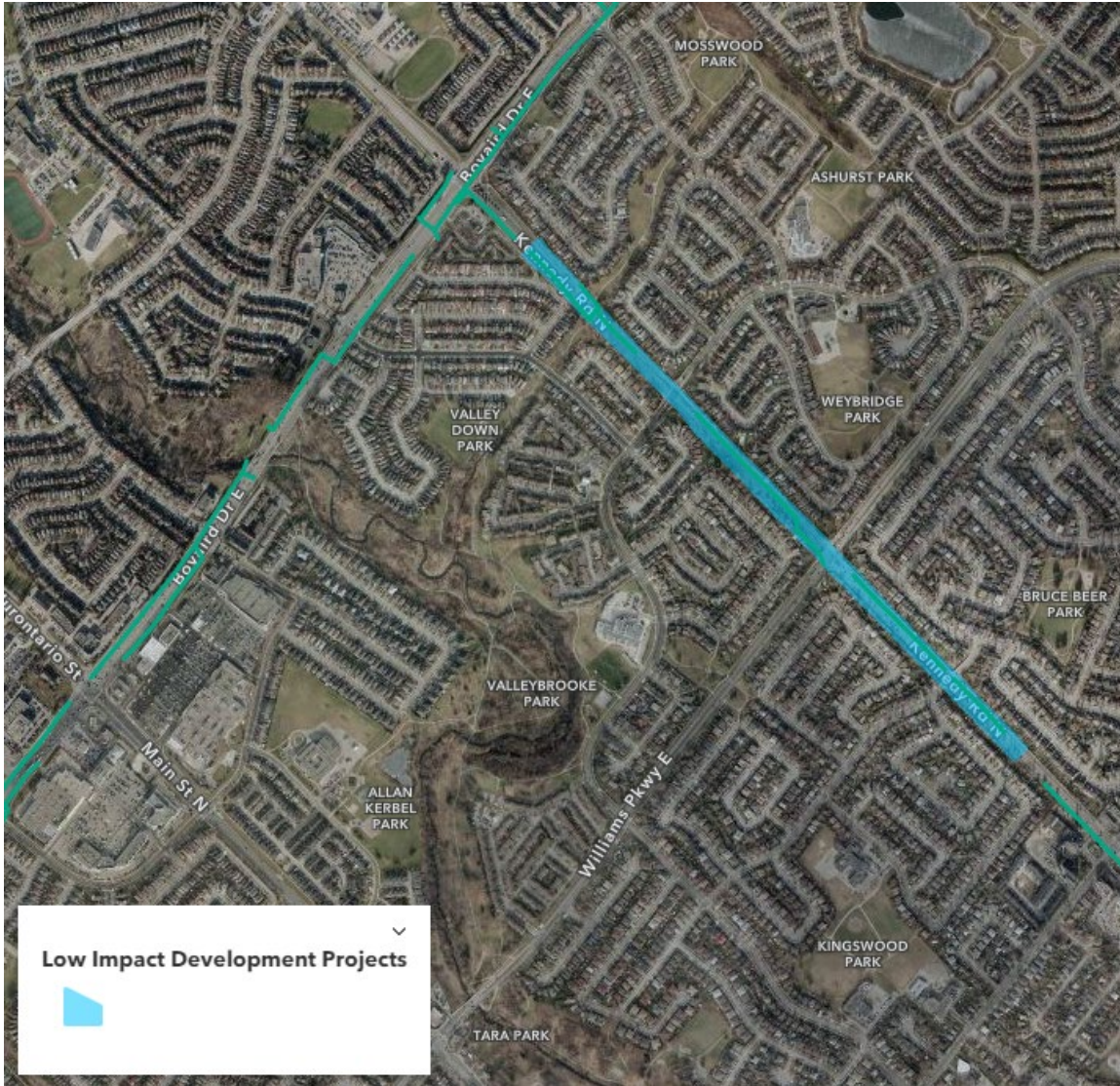
## 7. Dixie Road south of Highway 401



## 8. Erin Mills south of Highway 403

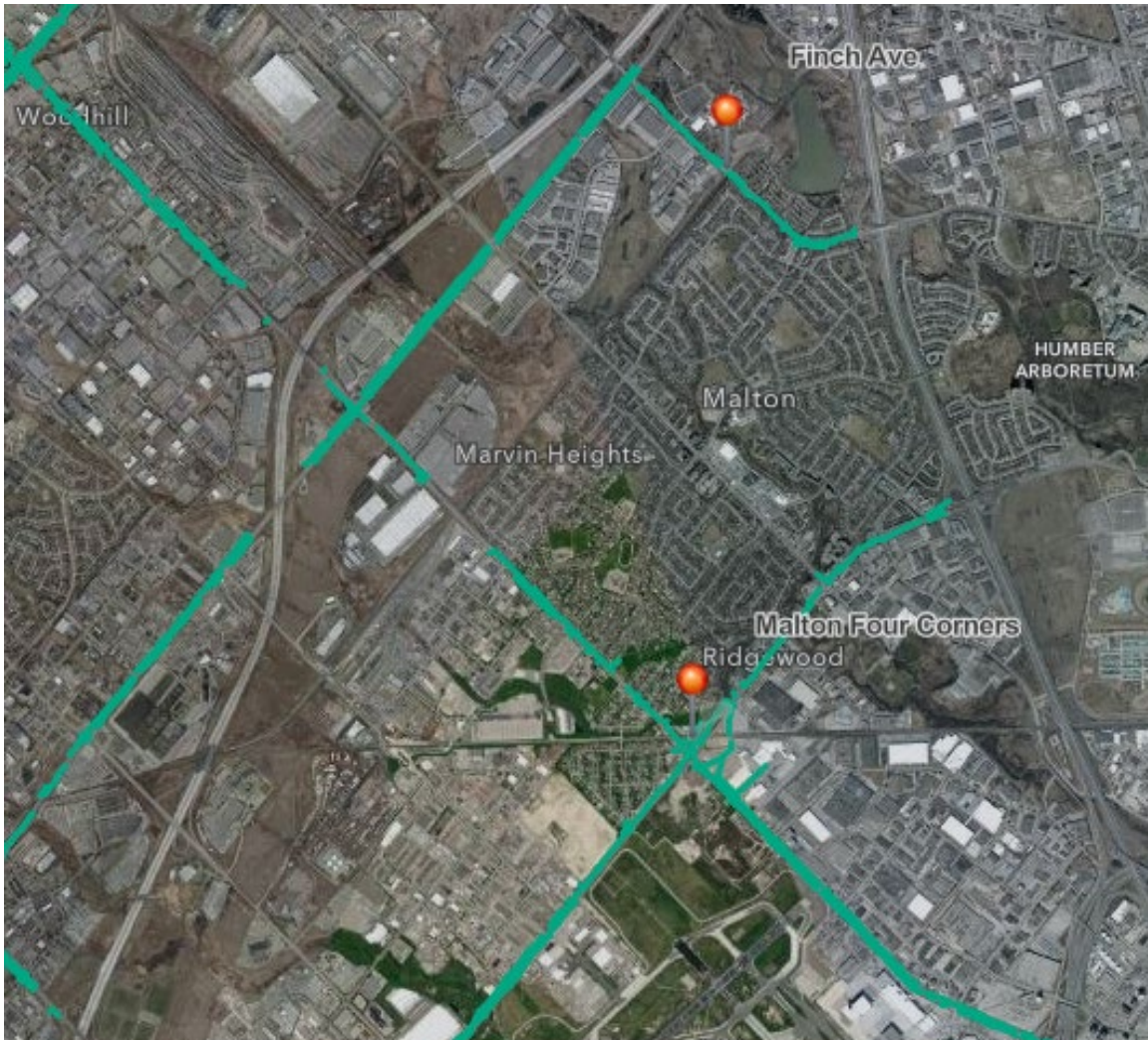


## 9. Kennedy Road south of Bovaird Drive



## Stormwater Pumping Station Review

The Region currently has two stormwater pumping stations which pump stormwater to storm sewers within the Region of Peel road network. These pumping stations were evaluated to determine if the pumping stations could be removed and a different method of directing stormwater to the storm sewers was possible.



## Malton Four Corners Pumping Station

The Malton Four Corners pumping station is in good working order as it was recently upgraded/rehabilitated in the past year. No modifications are proposed at this location and removal of the pumping station is not recommended.

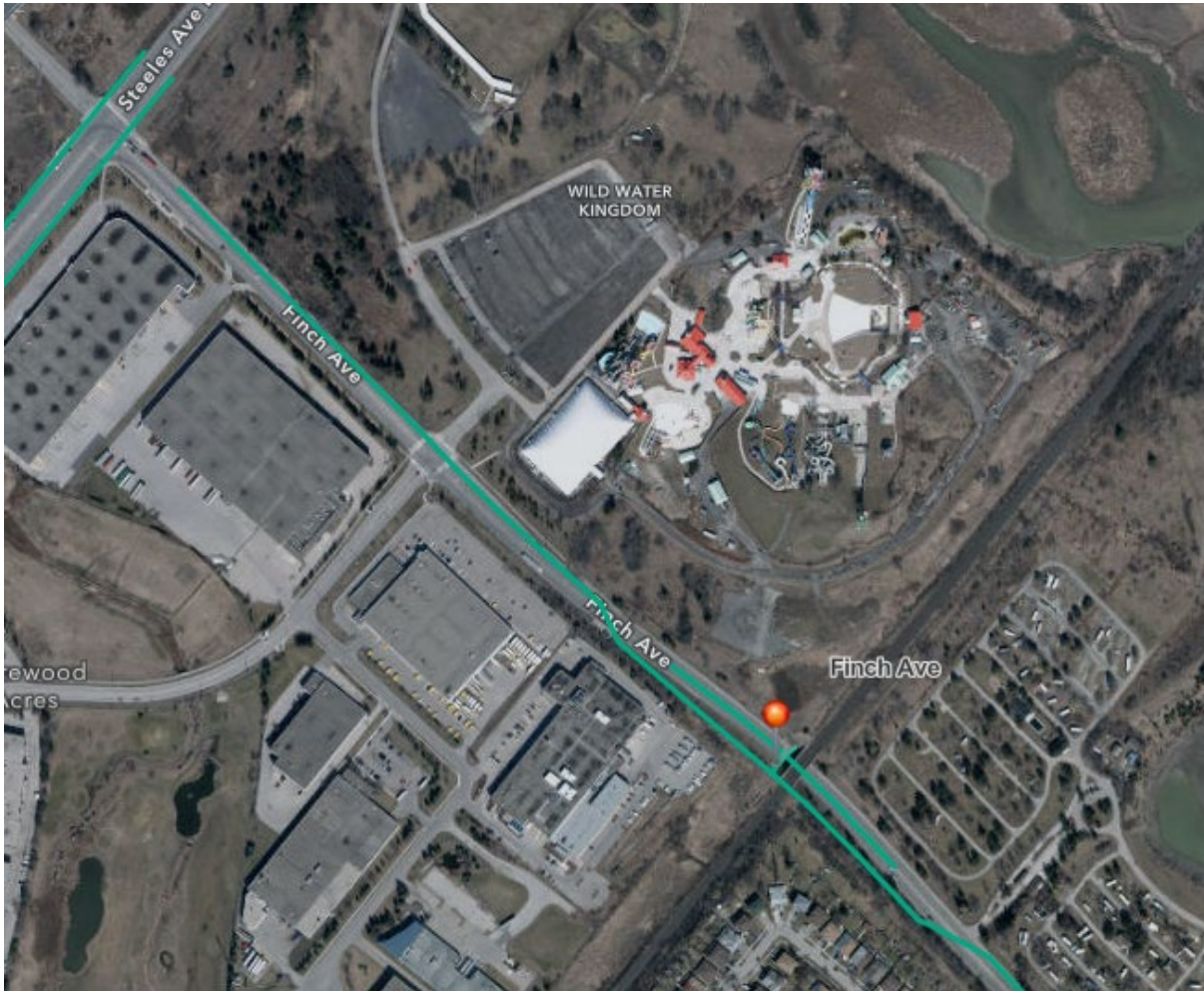




## Finch Avenue Pumping Station

This Finch pumping station was recommended for rehabilitation following a condition assessment (GM BluePlan, 2015) and pre-design report (Associated Engineering, 2020). This study reviewed alternatives to determine if the pumping station could be removed and a different method of directing stormwater to the storm sewers was possible, in place of the planned rehabilitation. Following review of the storm sewer network and outfall locations and elevations, the pumping station is required, as all outlet elevations were unable to support a gravity system.

No modifications are proposed at this location and removal of the pumping station is not recommended.



## Project Coordination Opportunities

Through the engineering analysis, we have determined that upsizing is not required immediately. Upsizing is proposed at the time of renewal (repair or rehabilitation), or in-line with proposed LRTP growth-related roadworks. The following table highlights the potential capital project opportunities:

Capacity Project No.	Description	Planned Capital Project Opportunity
1	Emil Kolb Parkway and De Rose Ave.	Sustainable Transportation Strategy Or Asset Renewal
2	Bovaird Drive and Conestoga Drive	Asset Renewal
3	Steeles Avenue and Rivermont Road	Long Range Transportation Plan Or Asset Renewal
4	Steeles Avenue and Lancashire Lane	Asset Renewal
5	Derry Road and Dishley Court	Sustainable Transportation Strategy Or Asset Renewal
6	Erin Mills Parkway and QEW Ramp W	Sustainable Transportation Strategy Or Asset Renewal

Low Impact Development (LID) based projects are recommended for implementation due to growth within the Regional roads per the Long Range Transportation Plan (LRTP) or Sustainable Transportation Strategy (STS). The proposed LID projects will support growth within the Regional transportation network. The timelines will follow the individual Environmental Assessment (EA) timelines per the LRTP.

<b>LID Project No.</b>	<b>Description</b>	<b>Planned Capital Project Opportunity</b>
<b>1</b>	Erin Mills Parkway south of Highway 401	Sustainable Transportation Strategy
<b>2</b>	Derry Road and McLaughlin Road	Sustainable Transportation Strategy
<b>3</b>	Derry Road east of Highway 410	Sustainable Transportation Strategy
<b>4</b>	Derry Road west of Highway 410	Sustainable Transportation Strategy
<b>5</b>	Mayfield Road east of Dixie Road	Long Range Transportation Plan Sustainable Transportation Strategy
<b>6</b>	Erin Mills Parkway north of Highway 403	Sustainable Transportation Strategy
<b>7</b>	Dixie Road south of Highway 401	Sustainable Transportation Strategy
<b>8</b>	Erin Mills Parkway south of Highway 403	Sustainable Transportation Strategy
<b>9</b>	Kennedy Road south of Bovaird Drive (potential to become a City of Brampton owned road)	Sustainable Transportation Strategy

## Provide Feedback

Following this virtual Public Information Centre (PIC), the project team will review and consider the input received on the recommendations and complete the Stormwater Master Servicing Plan document.

We encourage you to get provide feedback by filling out this [comment sheet](#) by **March 10, 2022** to provide any feedback on the study and/or if you would like to receive project information updates. Responses to all comments received will be posted on March 24, 2022.

[Comment Sheet](#)

**Please contact the Project Manager, Ms. Syeda Banuri, M.Eng., P.Eng, at any point during the study if you have questions or comments.**

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[Visit Project Website](#)

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Please note that information related to this study will be collected in accordance with the *Freedom of Information and Protection of Privacy Act*. All comments related will become part of the public record and may be included in the study documentation prepared for public review.

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