APPENDIX

G

Consultation and Engagement

APPENDIX

G-1 PIC # 1

CITY OF MISSISSAUGA – NOTICE OF STUDY COMMENCEMENT AND PUBLIC INFORMATION CENTRE #1

Municipal Class Environmental Assessment
Port Credit Storm Drainage Master Plan

WHAT?

- The City of Mississauga is undertaking a Schedule B Municipal Class Environmental Assessment (EA) in the Port Credit Neighbourhood to evaluate the drainage system capacity and collect information on potential drainage system issues, including the impacts of infill and intensification development as well as climate change. This will allow the City to mitigate any identified deficiencies.

WHY?

- In recent years, the Port Credit Neighbourhood has been subject to infill and intensification.
- Recent assessments or evaluations of the drainage system capacity have not yet been completed. This Study is intended to determine the current and future storm drainage infrastructure requirements for the area in order to prepare a roadmap for future action.

HOW?

- Detailed modelling of existing drainage systems will be conducted to identify a comprehensive program for the City's drainage infrastructure.
- This will also be used to assess preferred alternatives for managing storm drainage within the Port Credit study area and establish process and prioritization for implementation.

GET INVOLVED!

- A Public Information Centre (PIC) is being held to present initial Study findings and to answer any questions. Consultation is an important part of the Class EA process. Public experience with flooding or drainage issues in the area is encouraged to be shared for incorporation into the planning and design of this study.
- A key component of this study is to consult with regulatory agencies, the public, interested stakeholders and Indigenous Peoples & Nations whose Traditional Territory the Study is located in.
- The PIC will be posted online to be available to stream virtually:

July 26, 2022 – August 16, 2022

- Comments are requested to be received by:

August 16, 2022

- If you have any questions or comments regarding the Study, wish to provide input on the proposed solutions, or wish to be added or removed from the Study mailing list, please contact:

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga
(905) 615-3200, ext. 4793
muneef.ahmad@mississauga.ca

Matt Senior, MASc. P.Eng.
Consultant Project Manager
Wood Environment & Infrastructure Solutions
(905) 335-2353, ext. 3080
matt.senior@woodplc.com

COVID-19 Community Engagement Update: While we continue to respond to this pandemic, we are working hard to deliver essential services and projects to keep our City moving and safe. While we can't connect in person at this time, we still want to connect! Opportunities to connect with the Study Team and share your input are noted above.

This notice was first issued on July 25, 2022.

Welcome to the Virtual Public Information Centre #1 for the:

Port Credit Storm Drainage Master Plan

Municipal Class Environment Assessment (Schedule B)

July 26, 2022 – August 16, 2022

Purpose of Study

What will the Study include?

- Identify the potential drainage system issues, including impacts of infill and intensification development, as well as climate change
- Create a plan to mitigate any identified deficiencies

Port Credit Neighbourhood

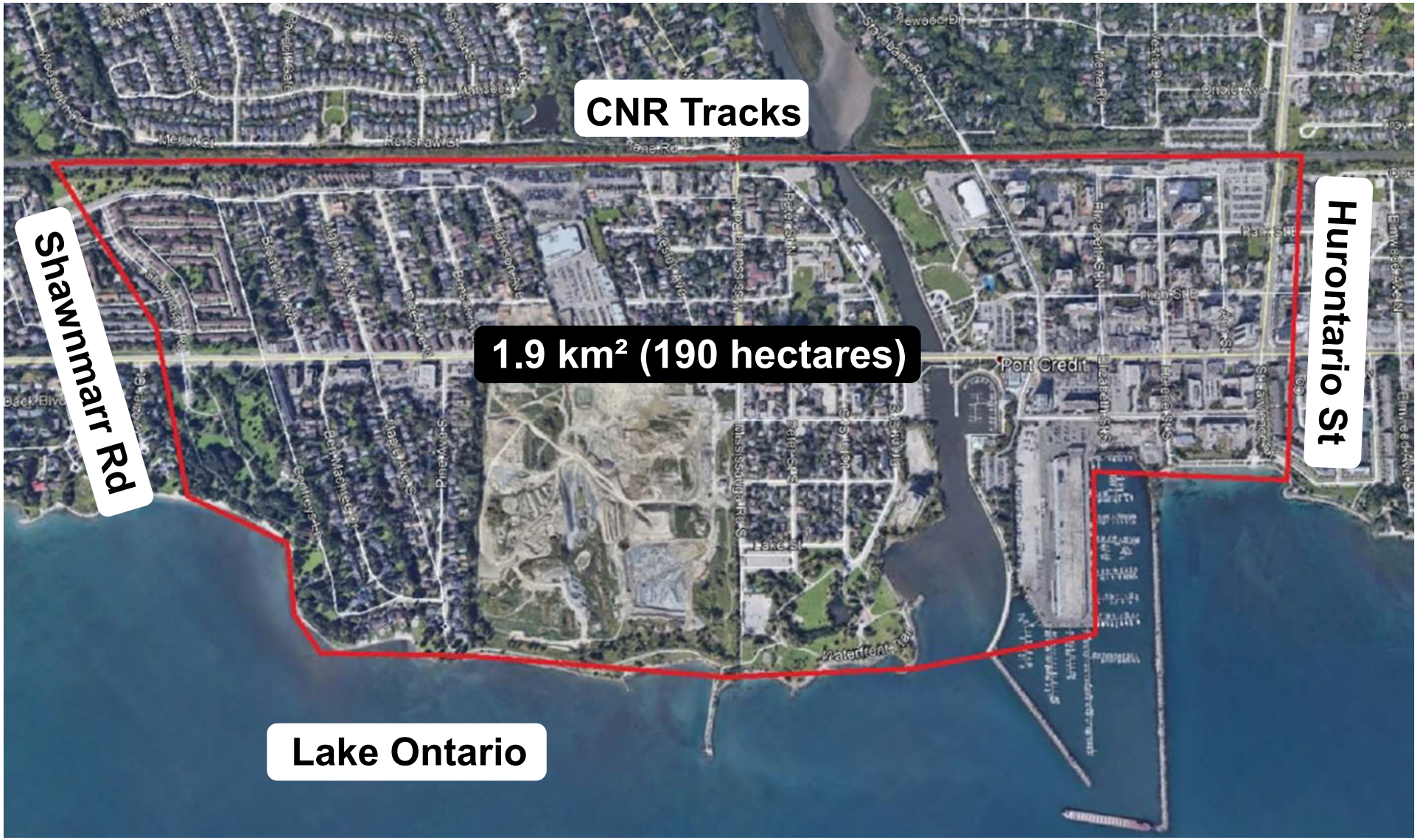
- **Population**: 12,520
- **Developed Older Area**
- **Waterfront Community**

Port Credit Neighbourhood

Why is the Study being completed?

- Experienced significant intensification
- Recent drainage system evaluations have not been completed
- Roadmap for future action

Study Area


CNR Tracks
Shawnmarr Rd
Hurontario St
1.9 km² (190 hectares)
Lake Ontario
Port Credit

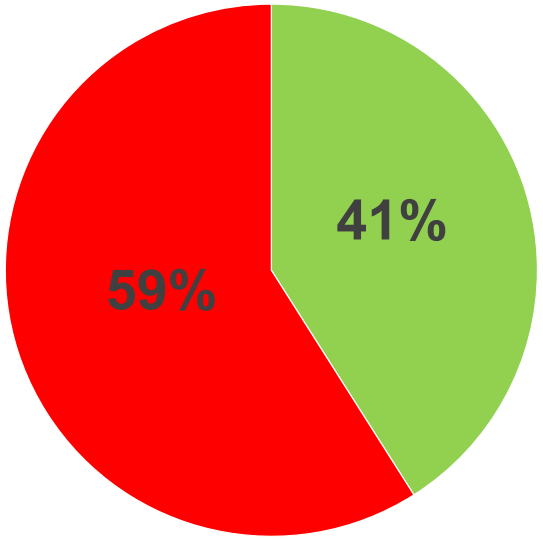
Task 1: Study Area Characterization

- **Municipal Policy Review**
- **Environmental Inventory**
  - Natural Areas
  - Species
- **Review of Storm Sewer Infrastructure**
- **Flow Route Analysis and Flood Risk**

Task 2: Drainage System Performance Assessment

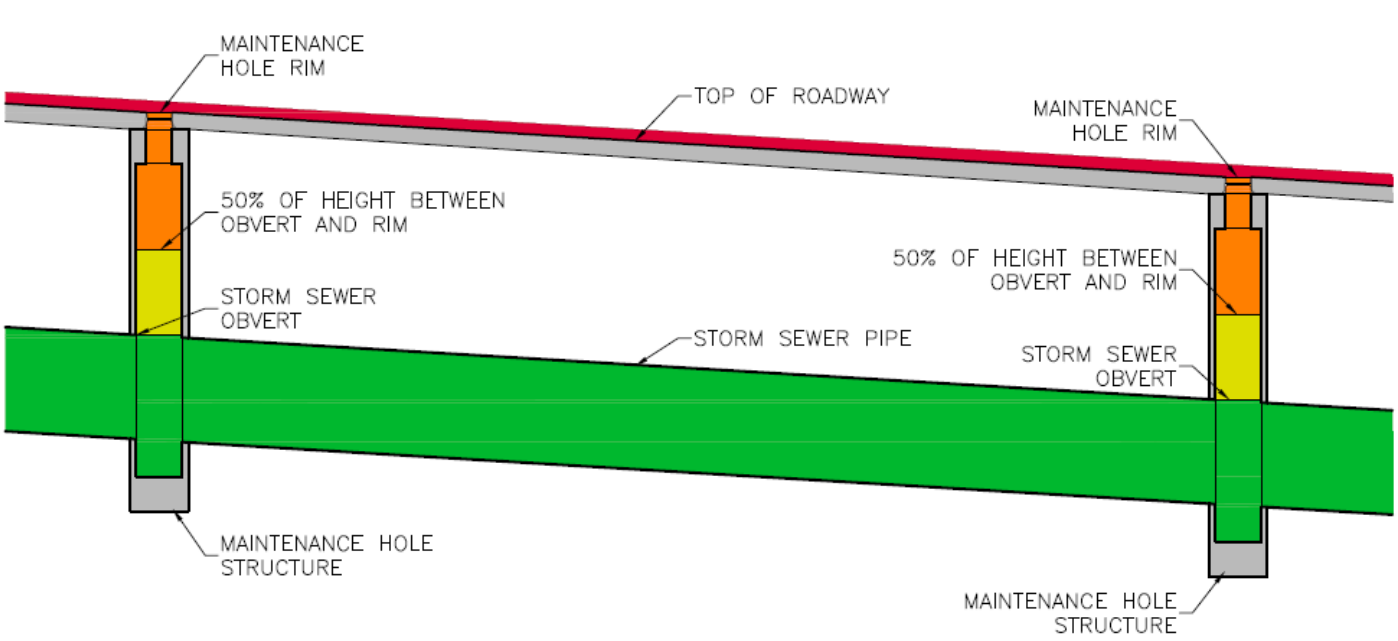
- **Hydrologic Modelling**
  - Analyzed multiple storm events
  - Soil Infiltration Capacity
- **Hydraulic Modelling**
  - Assessed capacity of storm sewers, roadways and linkages

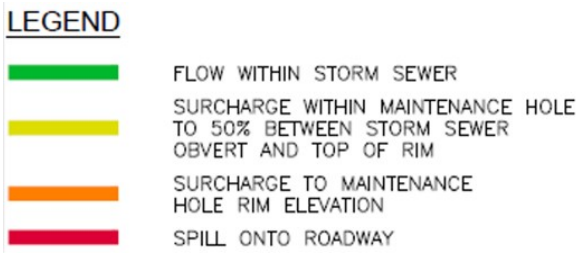
Pipe Flow Capacity



Unsurcharged
Surcharged or Flooded

Task 2: Drainage System Performance Assessment





- **Major System Analysis (Overland Flows)**
- **Intensification Assessment**
- **Climate Change Impact Assessment**

96% of Roadway Sections meet City standards for 1:100 year storm

Overview of Study

Study: This Municipal Class EA Study is being undertaken to create a Storm Drainage Master Plan for the Port Credit study area.

Schedule: The design and implementation of the Storm Drainage Master Plan is a Schedule B undertaking.

✓ Task 1: Study Area Characterization (Sep 2020)

↓

✓ Task 2: Analysis & Assessment of Stormwater Management System (Dec 2021)

↓

We are here Task 3: Evaluation of Alternatives

↓

Task 4: Preferred Stormwater Management Strategy

↓

Task 5: Stormwater Management Master Plan Report

Thank you!

Follow-up questions and comments can be emailed to:

Muneef Ahmad, P.Eng

Manager, Stormwater Projects & Approvals

City of Mississauga

Muneef.Ahmad@Mississauga.ca

Matt Senior, M.A.Sc., P.Eng

Consultant Project Manager

Wood, Environment & Infrastructure Solutions

Matt.Senior@WoodPLC.com

Port Credit Storm Drainage Master Plan

PIC #1 Video Script

Slide Number	Text
1	Welcome to the first Public Information Centre for the Port Credit Storm Drainage Master Plan. The Study will follow the Schedule B Municipal Class Environment Assessment process. Due to the COVID-19 pandemic, this Public Information Centre is being held virtually.
2	Extreme storm events have led to flooding and erosion damage within the City of Mississauga and surrounding areas. The purpose of this study is to identify the potential drainage system issues, including impacts of infill and intensification development, and climate change, within the Port Credit neighbourhood of the City. A plan will be created to mitigate any identified deficiencies within Port Credit while also incorporating goals from the City-wide Stormwater Master Plan, Mississauga Official Plan, and the Port Credit Local Area Plan.
3	As of 2020, Port Credit has a population of 12 520. It is a highly urbanized and developed older area of the City, and includes waterfront areas along Lake Ontario and the Credit River, including the Port Credit Harbour.
4	It has experienced intensification in recent years, and is likely to see more. Recent assessments or evaluations of the drainage system capacity have not yet been completed. This Study is intended to determine the current and future storm drainage infrastructure requirements for the area in order to prepare a roadmap for future action
5	The total study area is approximately 1.9 kilometres squared, or 190 hectares, bordered by the Canadian National Railway tracks to the north, Lake Ontario to the south, Shawnmarr Road to the west, and Hurontario Street to the east.
6	Two tasks within the Municipal Class Environmental Assessment Study process have already been completed. Task 1 was a Study Area Characterization which contains a background review of municipal policy, an inventory of natural areas and species based on available data from the City and Credit Valley Conservation, and a review of storm sewer data to understand flow analysis and flood risk. This included analyzing storm sewers, which carry rainwater and melting snow from roofs and roads, channeling it into bodies of water to prevent surface flooding within developed areas.
7	Task 2 was a Drainage System Performance Assessment which built upon the Study Area Characterization and applied modelling software to assess flows and drainage system capacities in various scenarios. Hydrologic modelling estimated runoff flows during 1 in 10 year and 1 in 100 year storm events as well as surface cover and soil infiltration capacity. Hydraulic modelling assessed capacity of storm sewers, roadways, and linkages such as catchbasins and inlets. Modelling showed that 59% of the networks would be at full capacity during a 10-year storm event and have susceptibility to surcharge or flood.
8	Task 2 also completed other modelling of the drainage system. The Major System (or Overland Flow) Results show that 96% of roadway sections within Port Credit would meet City standards for the 100-year storm event. Both of the assessments for Intensification and Climate Change showed worsened storm sewer, overland flow, and drainage system performance in scenarios without any type of controls in place.

9	In total, there are five tasks for this Municipal Class Environmental Assessment Study process to design and implement the Storm Drainage Master Plan for Port Credit. Task One and Task Two have already been completed. The City is currently completing Task Three: the Evaluation of Alternatives to create a solution for drainage issues within Port Credit. A Public Information Centre will be conducted later in 2022 or early 2023 to present the results for the preferred strategies. Following public feedback, the next task will be to create a Preferred Stormwater Management Strategy and accompanying Report.
10	Throughout this whole process, the City will continue to engage with the public to obtain feedback regarding the Port Credit Drainage Master Plan. If you have any follow-up questions or comments on this video, please email Muneef.Ahmad@mississauga.ca or Matt.Senior@Woodplc.com by August 16th, 2022. We thank you for viewing this presentation and being engaged with the City of Mississauga and improvements within Port Credit!

COMMENT FORM

Port Credit Storm Drainage Master Plan
Municipal Class Environmental Assessment (Schedule B)
Public Information Centre #1

July 26, 2022 - August 16, 2022

The City of Mississauga welcomes your comments on the Port Credit Storm Drainage Plan Municipal Class Environmental Assessment by e-mail or phone call to either of the following individuals by August 16, 2022:

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga
Tel: (905) 615-3200, ext.4793
E-mail: muneef.ahmad@mississauga.ca

Matt Senior, M.A.Sc., P.Eng.
Consultant Project Manager
Wood, Environment & Infrastructure Solutions
Tel: (905) 335-2353, ext. 3080
Email: matt.senior@woodplc.com

Do you have any further questions or comments on the information presented (e.g. the Study Area Characterization and/or Drainage System Performance Assessment)?

Are there any other considerations the City should include in the evaluation of drainage system performance and flooding?

Have you experienced flooding on your property within the Port Credit area? If yes, please specify when and where.

General Comments:

Thank-you for your participation. If you wish to be added to our Project Mailing List to be kept informed about the Study, please provide your contact information below.

Name: _____ **Address:** _____

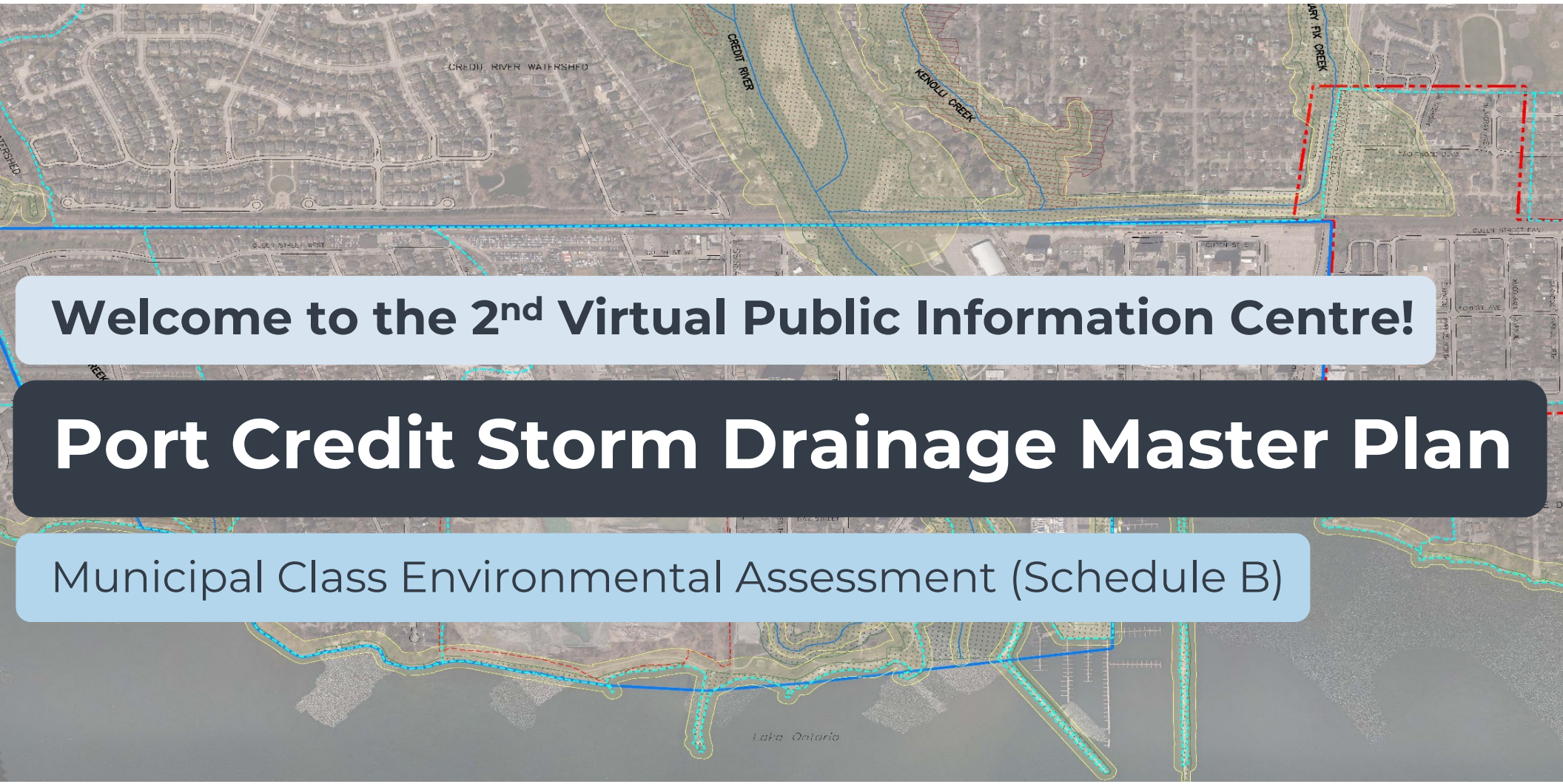
City: _____ **Postal Code:** _____

Phone: _____ **E-mail:** _____

Personal information, as defined by the Municipal Freedom of Information and Protection of Privacy Act (MFIPPA) is collected under the authority of the Municipal Act, 2001, and in accordance with the provisions of MFIPPA. Personal information on this Public Open House Comment Sheet will be used for the purpose of informing the Port Credit Storm Drainage Plan Municipal Class Environmental Assessment.

APPENDIX

G-2 PIC # 2



Welcome to the 2nd Virtual Public Information Centre!

Port Credit Storm Drainage Master Plan

Municipal Class Environmental Assessment (Schedule B)

March 20 to April 10, 2024

MISSISSAUGA

WSP

Port Credit Neighbourhood

- Population: 12,520
- Developed older area and waterfront community
- Site of the proposed Hurontario LRT

Port Credit Waterfront

Purpose of Study

Why is the Study being completed?

- Experienced significant intensification
- Little information on known flooding areas
- Roadmap for future action, including mitigation

What does the Study include?

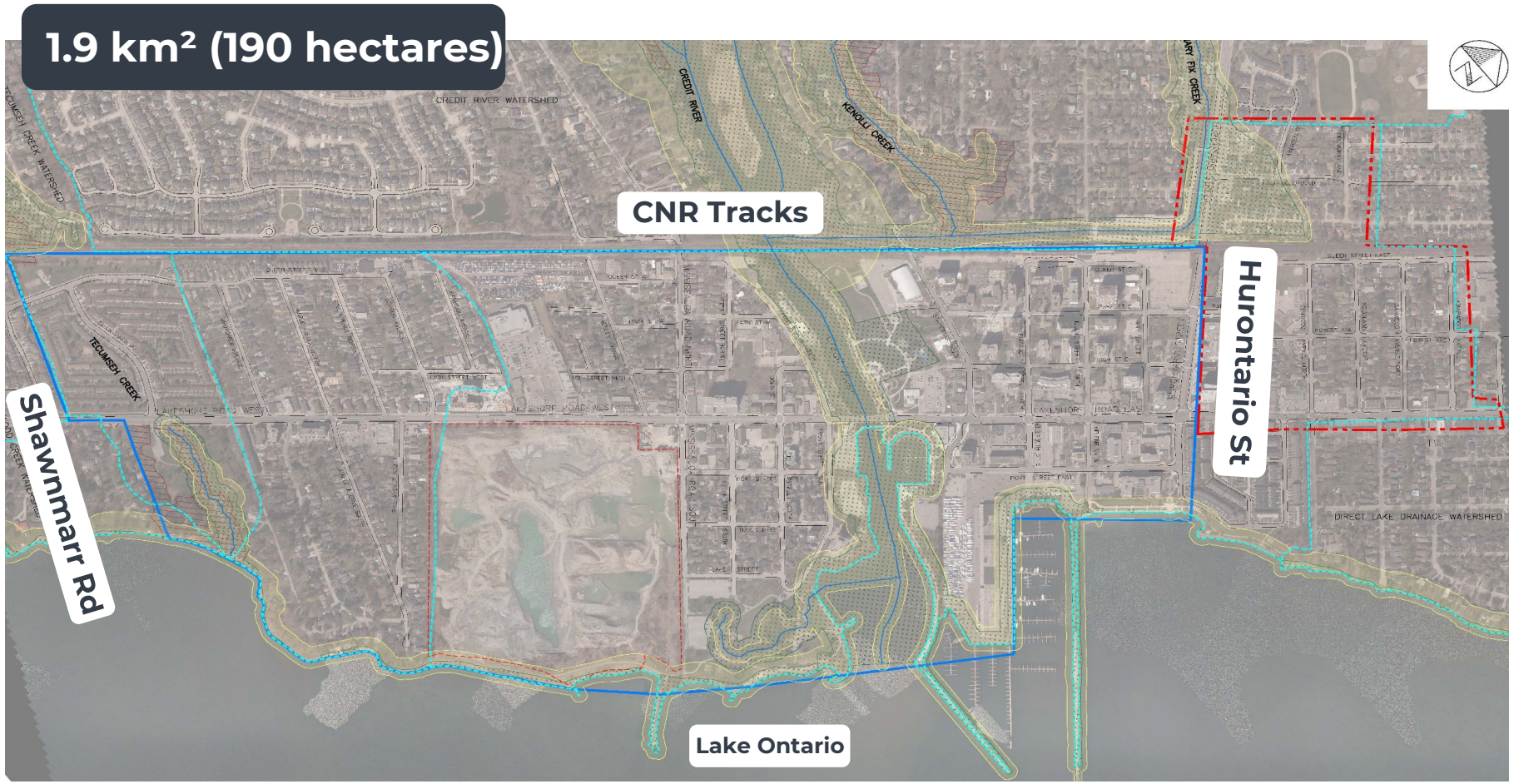
- Identification of the potential drainage system issues, including impacts of infill and intensification development, as well as climate change
- Creation of a plan to mitigate any identified deficiencies

Port Credit

Future Hurontario LRT

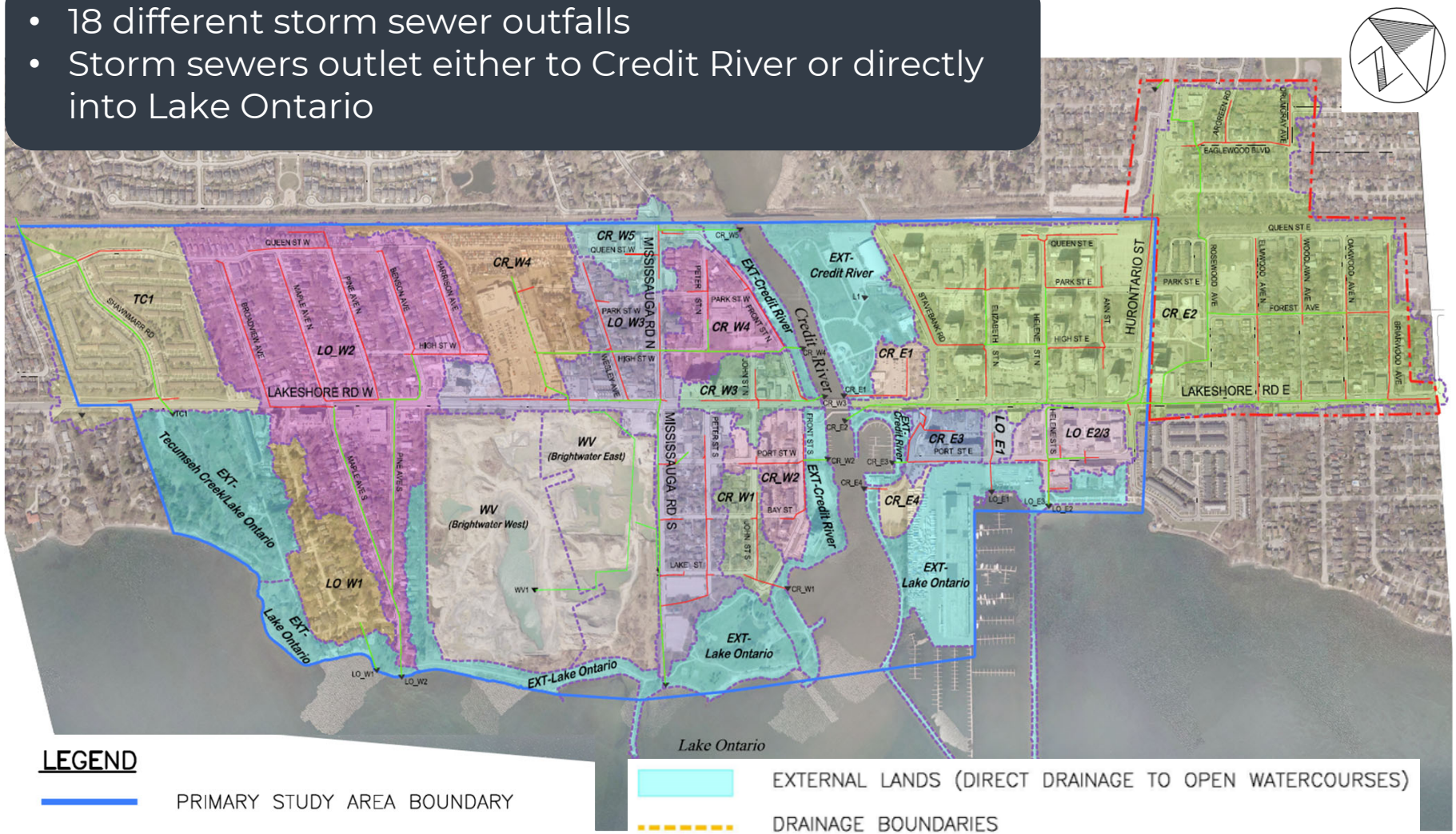
Study Area

The map below shows the extent of the Study Area. The parcel outlined in red in the east was an addition to the Study Area due to its drainage connections in the Port Credit Area. This portion was evaluated at a higher level than other parts of the Study Area.



Drainage Networks

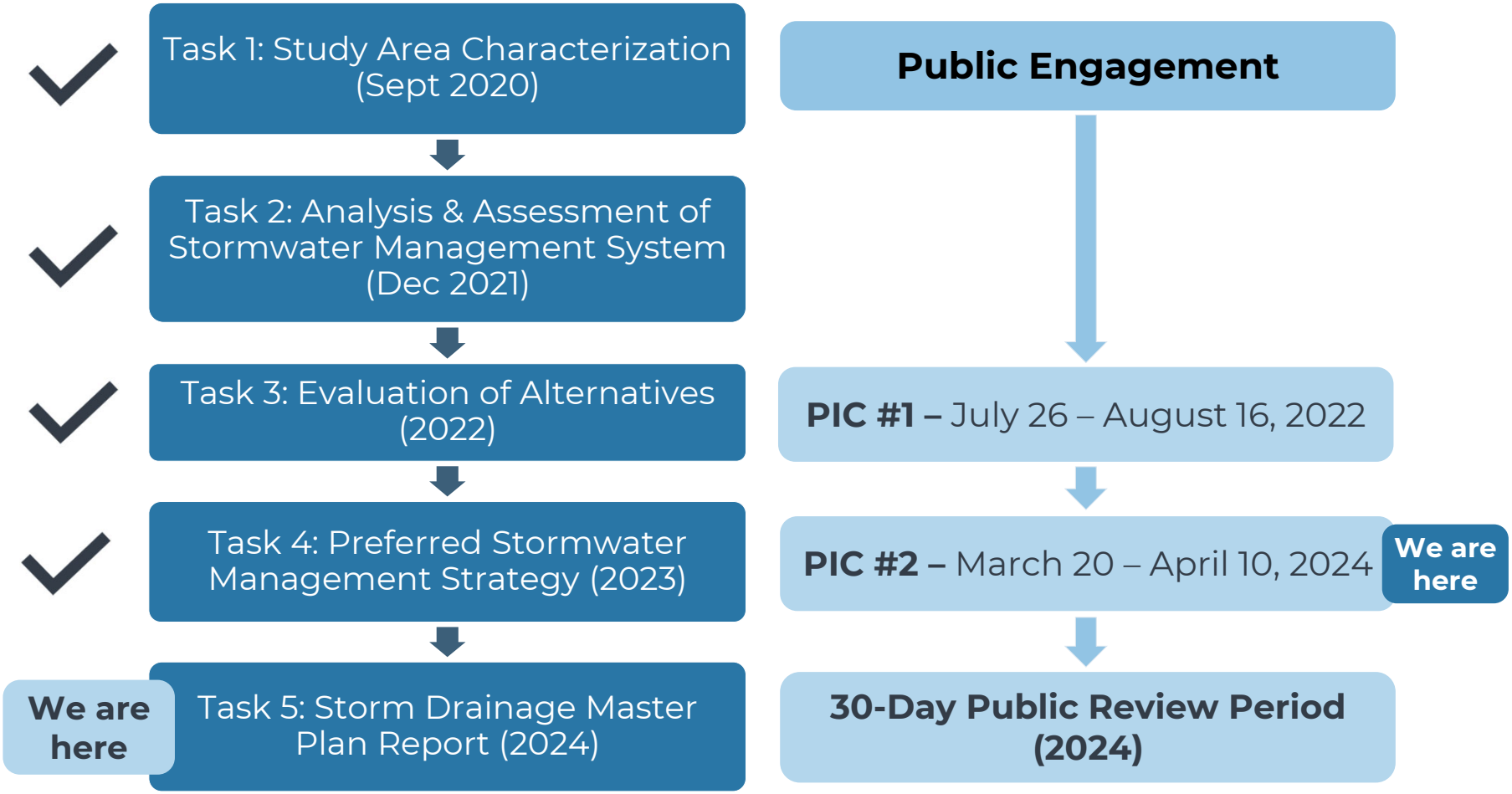
- 18 different storm sewer outfalls
- Storm sewers outlet either to Credit River or directly into Lake Ontario



Overview of Study

Study: This Municipal Class EA Study is being undertaken to create a Storm Drainage Master Plan for the Port Credit study area.

Schedule: The design and implementation of the Storm Drainage Master Plan is a Schedule B undertaking1



Task 1: Study Area Characterization

- **Municipal Policy Review**
- **Environmental Inventory**
  - Natural Areas
  - Species
- **Review and inventory of Storm Sewer Infrastructure**

Task 2: Drainage System Performance Assessment

- **Hydrologic Modelling**
  - Analyzed multiple storm events
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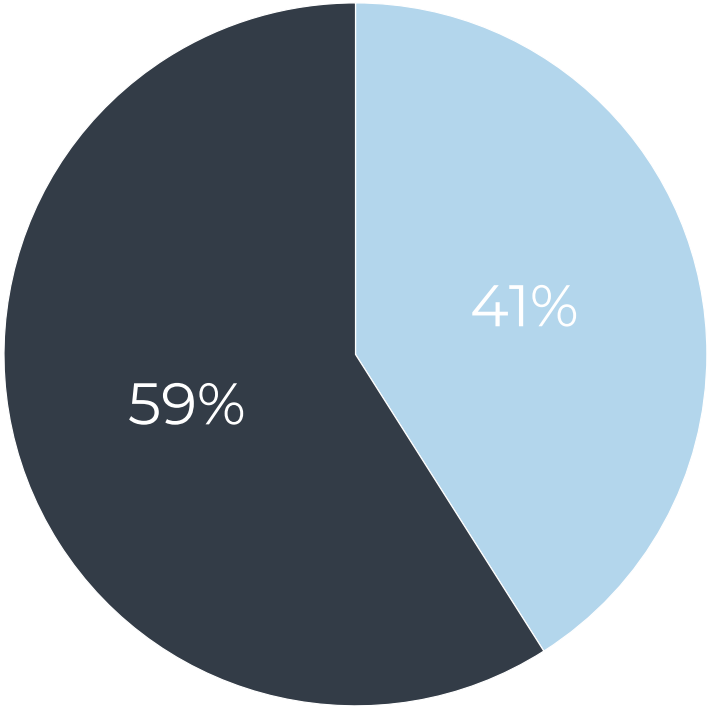
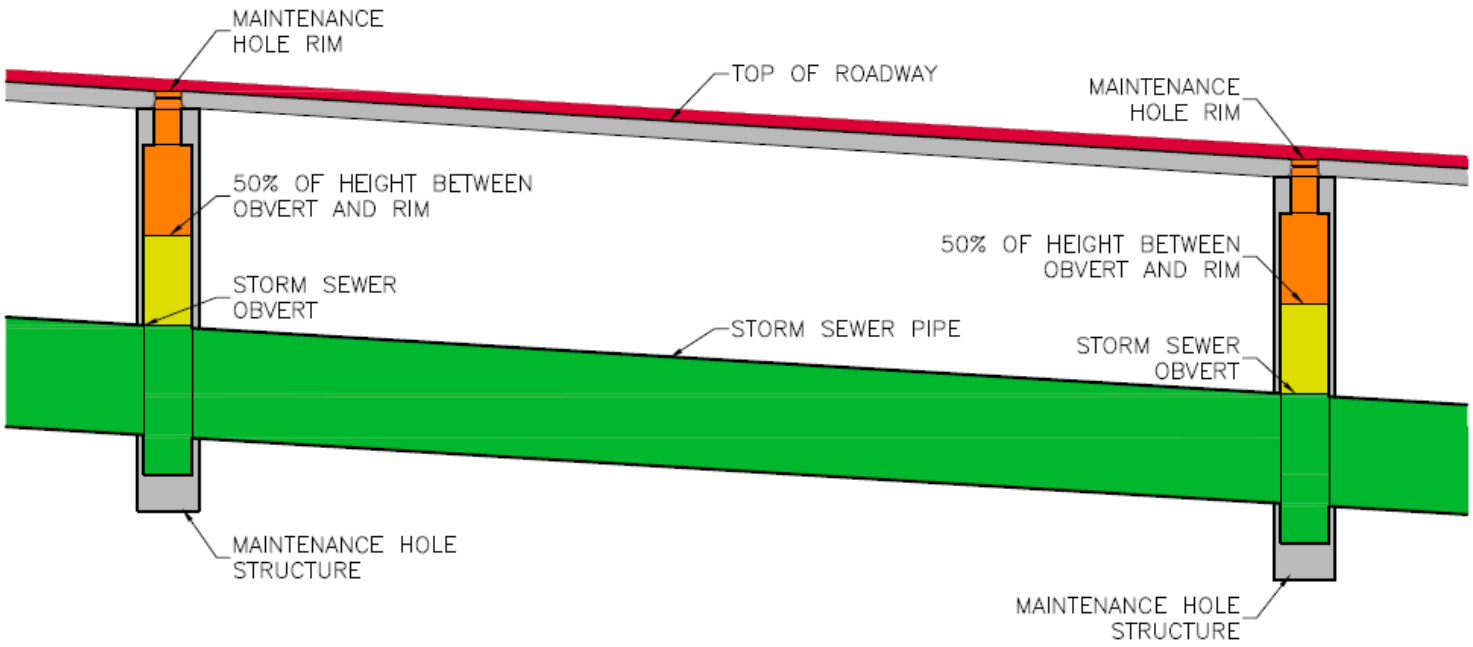
  - Assessed capacity of storm sewers, roadways and linkages

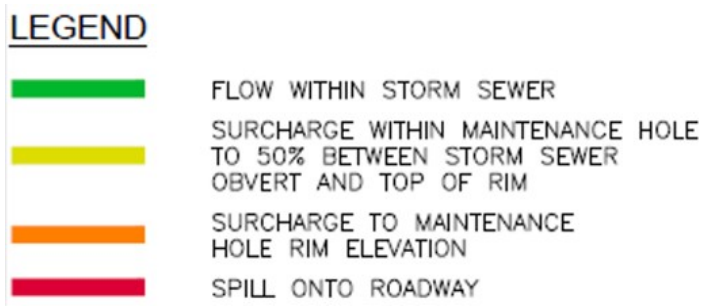
Pipe Flow Capacity



Majority of pipe flow capacity in Port Credit is surcharged or flooded for a 10-year storm event

Task 2: Drainage System Performance Assessment





- **Major System Analysis (Overland Flows)**
- **Intensification Assessment**
- **Climate Change Impact Assessment**

96% of Roadway Sections meet City standards for 1:100 year storm

Task 3: Long List of Alternatives

A long list of options for alternatives was developed for the project. Several options were evaluated on their effectiveness of improving drainage in the Port Credit Area.

A) Storm Sewer and Catch Basin Capacity Modifications

i) Increased storm sewer sizing and diversion
ii) Roof leader / foundation drain disconnections
iii) Catch basin capacity modifications (increases and decreases)

B) Grading Improvements (Major System)

i) Private property
ii) Public right-of-way (ROW)

C) Infiltration, Storage, and Quantity Control

i) Low Impact Development (LID) Best Management Practices (BMPs) to promote on-site infiltration
ii) Linear Storage
iii) On-site stormwater management for private property
iv) Stormwater management within public areas (e.g. surface ponding in parks or underground storage)

D) Combinations

Surface ponding in public areas

Water retention planter systems

Task 3: Screened Alternatives

Several alternatives from the long list were screened out from further consideration for the reasons listed below. The letter of the alternative corresponds with categorization from the previous slide (Task 3: Long List of Alternatives).

A) ii) Roof Leader / Foundation Drain Disconnection

- Atypical in most areas
- Enforcement challenging; generally no appropriate outlets

B) i) and ii) Grading Improvements (Major System) on private property and public road right-of-way (ROW)

- Private property grading challenging given ownership and compensation, cost-benefit considerations
- Public road ROW grades already typically constrained

C) i) ii) iii) and iv) Infiltration, Storage and Quantity Control

- Generally limited value given proximity to outlets
- Space restrictions make this challenging
- Limited space in road right-of-way (ROW) for superpipes
- Limited public space, and where present typically close to shorelines / outlets
- Limitations of site plan control process for new development as a result of Bill 23: More Homes Built Faster Act, 2022

Task 3: Alternative Evaluation Criteria

The storm sewer upgrade options were evaluated based on the following criteria (continued on next slide):

Evaluation Category	Evaluation Criteria	Description
Functionality	Effectiveness	Overall effectiveness to improve drainage system performance
	Implementation	Complexity or ease of construction
	Maintenance	Complexity or ease of longer-term operations and maintenance
	Utilities	Potential effects on public and private infrastructure
Social Environment	Public Safety	Potential for improved public safety
	Recreational Uses	Potential impacts to the public's ability to use the area for recreational purposes (e.g. trails and parks)
	Private Property Impacts	Potential impacts to adjacent private properties (such as businesses and residents) or land needs for the project
	Construction Effects	Potential impacts during construction (noise, air quality, dust, etc.)
Economic Environment	Construction Cost	Capital cost for construction
	Maintenance Cost	Long-term operations and maintenance costs

Task 3: Alternative Evaluation Criteria

The storm sewer upgrade options were evaluated based on the following criteria (continued from the previous slide):

Evaluation Category	Evaluation Criteria	Description
Cultural Environment	Archaeological Resources	Potential impacts on identified archaeological resources
	Heritage Resources	Potential effects on built heritage resources and cultural heritage
Natural Environment	Terrestrial Ecosystem	Potential effects on terrestrial ecosystem
	Aquatic Ecosystem	Potential effects on aquatic ecosystem
Climate Change	Climate Change Mitigation	Expected production of greenhouse gas emissions and ability to act as a carbon sink (e.g. trees)
	Climate Change Adaptation	Resilience or vulnerability to changing climatic conditions

Bioretention area that provides additional water quality treatment

Task 3: Technical Assessment of Storm Sewer Works

Base Modelling Approach

- Dual drainage system of storm sewer, overland flow and roadway right-of-way was developed in PCSWMM.
- Model was integrated with hydrology, such as runoff potential from the drainage area.
- PCSWMM used to assess drainage system performance for 10-year storm events.
- Overland flow was assessed for 100-year storm events.
- Incorporation of intensification scenario of a 50% increase in low density residential areas to “as of right”.
- Assessment of potential climate change impacts.

Summary of Findings

- Between 29% and 41% of storm sewers are below capacity (unsurcharged).
- Larger sewersheds indicate greater issues.
- Poorest roadways have identified depression storage issues (e.g. ponding).
- Intensification of development and climate change will result in an increase in storm sewer surcharging, overland flow depths.

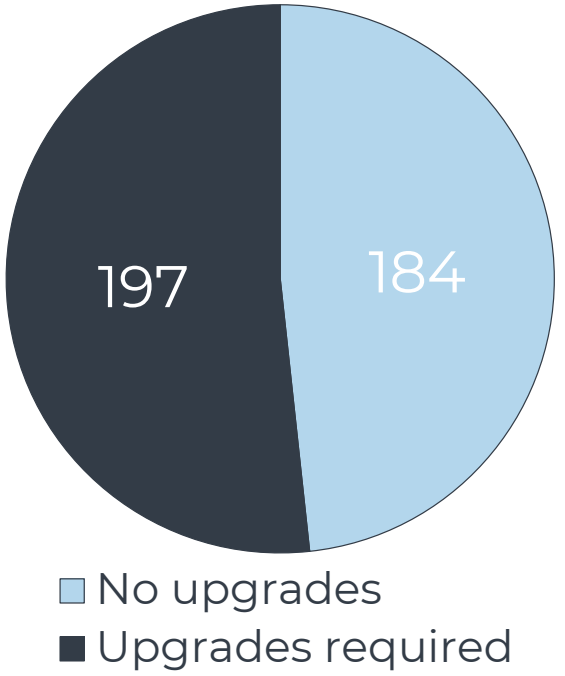
Task 3: Preferred Alternative – Storm Sewer Upgrades

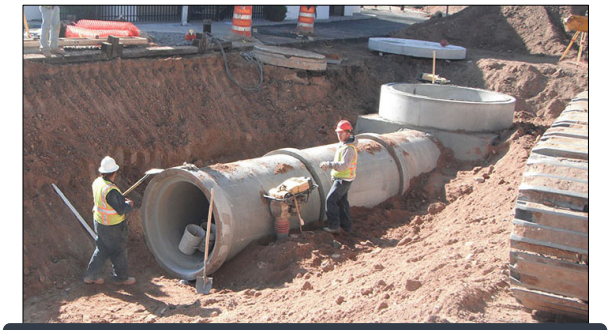
The generally preferred approach involves storm sewer upgrades (Option A. i)), in conjunction with catch basin capacity upgrades (Option A. iii)) as required.

- For base conditions to be met, 52% of storm sewers require an upgrade
- Results indicate storm sewer upgrades also benefit overland flow (major system) performance for the 100-year storm event
- Given results of Closed-circuit television (CCTV) review, there are no items of immediate action thus Project Works will need to be accommodated in City's long-term capital works budget
- Construction cost estimates to be reviewed further with City staff (potential input from Region also may be considered)

This project is long term, and the estimated timeline is approximately five to ten years until start of construction.

Storm Sewer Sections





Storm Sewer Installation

Task 4: Application of Criteria and Prioritization

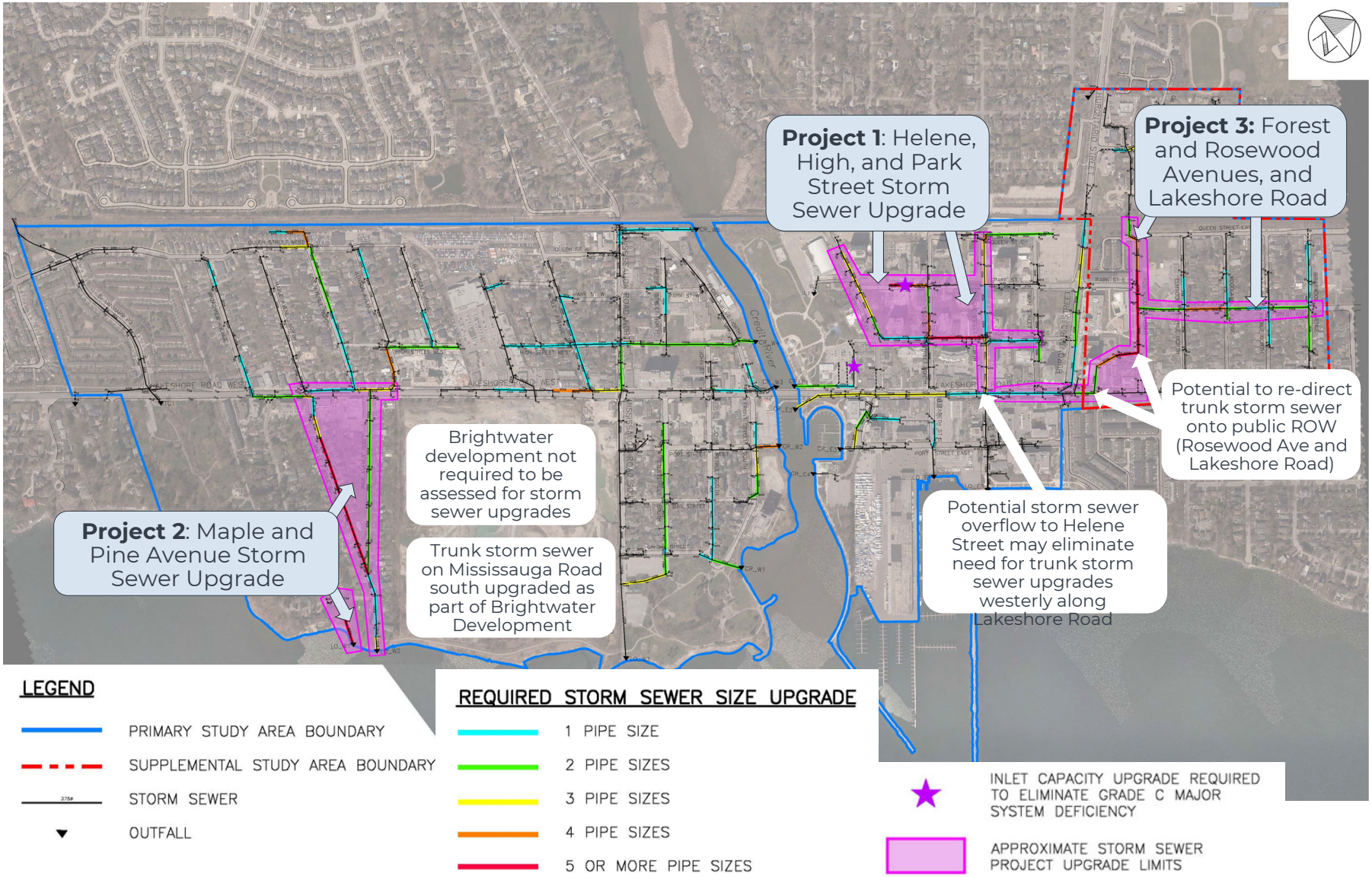
As part of the Preferred Option, of the storm sewer sizing upgrades that were evaluated, segments of storm sewers were grouped into several areas. Three projects have been identified in the Port Credit area and have been evaluated through the criteria to determine their impact on improving drainage.

Project	Streets within Project Footprint
#1	• Helene Street (Queen Street to Lakeshore Road) • High Street (Stavebank Road to Ann Street) • Elizabeth Street (Park Street to High Street; could also include High Street to Lakeshore • Road and Park Street to Queen Street for continuity) • Stavebank Road (CNR to High Street) • Consider also including Park Street (Stavebank to Ann Street) for continuity
#2	• Ben Machree Drive to Lake Ontario • Maple Avenue South (Lakeshore Road to Lake Ontario) • Pine Avenue South (Lakeshore Road to Maple Avenue South) • Consider including Lakeshore Road (Broadview Avenue to Benson Avenue)
#3	• Rosewood Avenue (CNR to Lakeshore Road) • Lakeshore Road (Rosewood Avenue to Helene Street) • Forest Avenue (Briarwood Avenue to Rosewood Avenue)

Alternative	Alternative Weighted Score
Do Nothing	**4.3 / 10**
As Proposed by Study	**6.1 / 10**

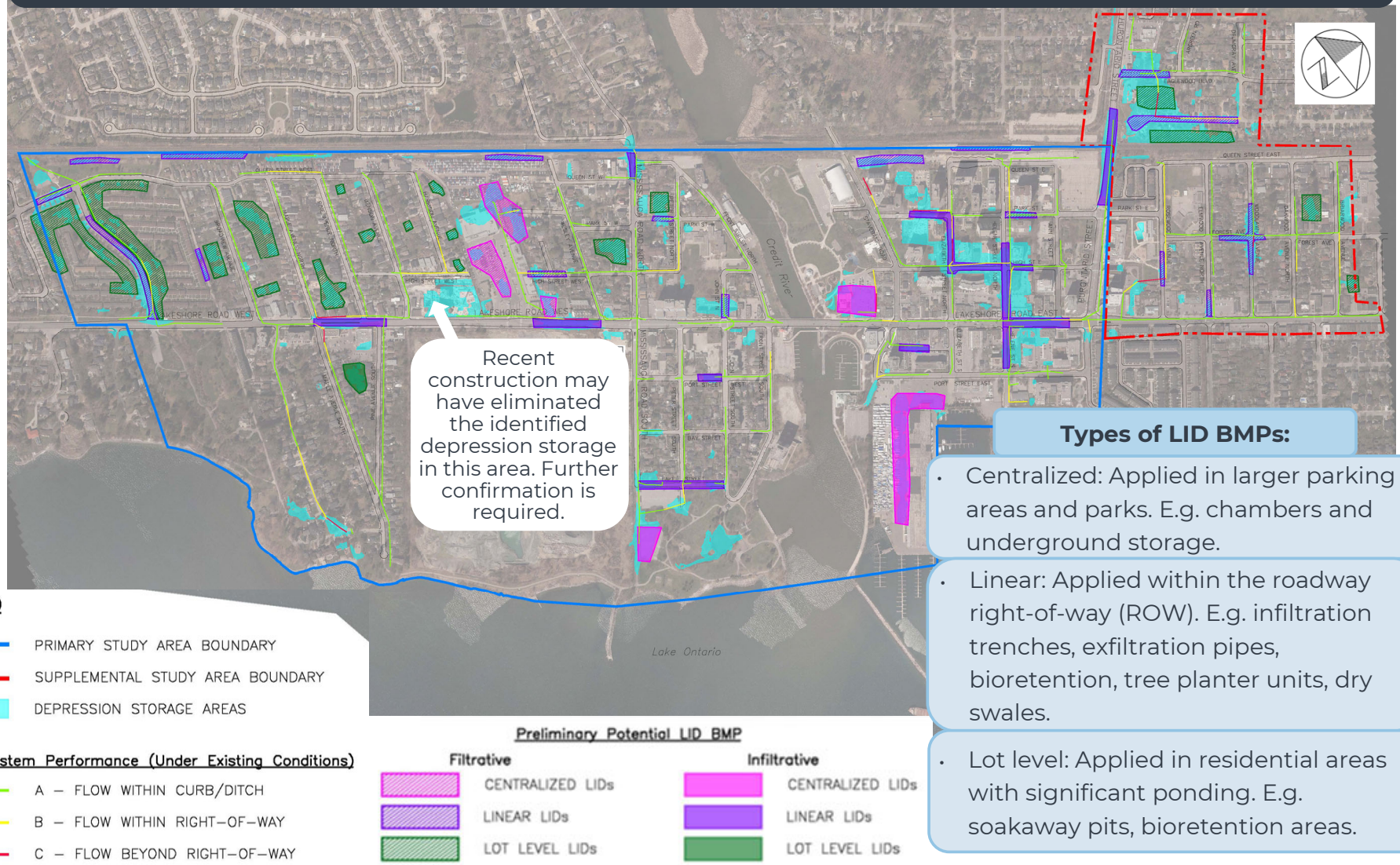
Task 4: Proposed Infrastructure

The three projects identified are shown in the map below:



Task 4: Proposed Low Impact Development (LID BMPs)

Projects 1, 2, and 3 may include LID BMPs to enhance the storm sewer upgrades. These would potentially incorporate a variety of options, including centralized, linear, and lot level LID BMPs.



Types of LID BMPs:

- Centralized: Applied in larger parking areas and parks. E.g. chambers and underground storage.
- Linear: Applied within the roadway right-of-way (ROW). E.g. infiltration trenches, exfiltration pipes, bioretention, tree planter units, dry swales.
- Lot level: Applied in residential areas with significant ponding. E.g. soakaway pits, bioretention areas.

Implementation Considerations

As all three projects have similar evaluation scores, the prioritization of projects is based on the degree of urbanization in the area, re-development pressures and overall findings from the technical evaluation.

Reasons for Construction Prioritization:

Project #1:

- Highly urbanized area with intensification
- Through implementation of this project, Level of Service (LOS) would remain consistent and reduce surface ponding issues

Project #2:

- Single family detached residential area with intensification also occurring
- As with Project #1, LOS would remain consistent
- Upgrade measures prioritized as single detached housing is not subject to on-site stormwater management such as Site Plan Control

Project #3:

- Lowest priority due to less intensification occurring within the area
- Depression storage and flow deficiencies are less prevalent than in the other Project areas

Preliminary construction cost estimates are as follows:

Project	Length (km)	Construction Costs*
#1	1.4	$5 million
#2	1.2	$6 million
#3	1.1	$6.3 million
Total	3.7	$17.3 million

Construction is estimated to begin in approximately five (5) to ten (10) years. Affected homeowners and residents will be notified in advance of any construction.

More formalized cost-benefit approaches and budgets will be confirmed through further studies.

*Does not include engineering fees, design fees, or contingency.

Thank you!

Next Steps of the Class EA process:

- Task 5: Port Credit Storm Drainage Master Plan (2024) Report Completion
- 30-Day Public Review Period (2024)

Credit River near Port Credit

Questions and comments can be emailed to:

Muneef Ahmad, P.Eng

Manager, Stormwater Projects & Approvals

City of Mississauga

Muneef.Ahmad@Mississauga.ca

Matt Senior, M.A.Sc., P.Eng

Consultant Project Manager

WSP

Matt.Senior@WSP.com

Please submit your feedback by April 10, 2024

Port Credit Storm Drainage Master Plan

PIC #2 Video Script

Slide Number	Text
1	Welcome to the second Public Information Centre for the Port Credit Storm Drainage Master Plan, being held virtually from March 20 to April 10, 2024. This Public Information Centre will provide an update of the Study carried out for the Drainage Master Plan, which has been following the Schedule B Municipal Class Environment Assessment process.
2	As of 2020, the Port Credit area has a population of 12 520. It is a highly urbanized and developed older area of the City and includes the waterfront areas along Lake Ontario and the Credit River, including the Port Credit Harbour. The area is also proposed to include the Hurontario Light Rail Transit Line, also known as the Hazel McCallion Line.
3	The Port Credit Area has experienced intensification in recent years and could see more. In addition, extreme storm events have led to flooding and erosion damage within the City of Mississauga, including within Port Credit. This Study is intended to determine the current and future storm drainage infrastructure requirements for the area in order to prepare a roadmap for future action. The study includes identification of the potential drainage system issues, including impacts of infill and intensification development, and climate change, within the Port Credit neighbourhood of the city. A Drainage Master Plan will be created to mitigate any identified deficiencies within Port Credit while also incorporating goals from the City-wide Stormwater Master Plan, Mississauga Official Plan, and the Port Credit Local Area Plan.
4	The total study area is approximately 1.9 kilometres squared, or 190 hectares, bordered by the Canadian National Railway tracks to the north, Lake Ontario to the south, Shawnmarr Road to the west, and Hurontario Street to the east, as shown on the map outlined in blue. The parcel outlined in red east of the Study Area was added due to its drainage connections to the Port Credit Area, however, this portion was evaluated at a higher level than other parts of the Study Area.
5	As part of the Study, the drainage networks within the Port Credit Area include eighteen different storm sewer outfalls, identified by the different colours on the map. The storm sewers outlet either into the Credit River or directly into Lake Ontario. The direction of the outfall is noted by arrows on the map.
6	Four out of five tasks within the Municipal Class Environmental Assessment Study process have already been completed. This presentation will review these tasks and their outcomes. The first Public Information Centre was held in the summer of 2022. This Public Information Centre is an opportunity to provide feedback on the tasks completed to date. There will also be an opportunity to review the final task of this Study, the Storm Drainage Master Plan Report, during the 30-Day Public Review later in 2024.
7	Task 1 was a Study Area Characterization which contains a background review of municipal policy, an inventory of natural areas and species based on available data from the City and Credit Valley Conservation, and an inventory of storm sewer data. The storm sewers carry rainwater and melting snow from roofs and roads, channeling it into bodies of water in an effort to prevent surface flooding within developed areas.

8	Task 2 was a Drainage System Performance Assessment which built upon the Study Area Characterization and applied modelling software to assess flows and drainage system capacities in various scenarios. Hydrologic modelling estimated runoff flows during 1 in 10 year and 1 in 100 year storm events as well as surface cover and soil infiltration capacity. Hydraulic modelling assessed capacity of storm sewers, roadways, and linkages such as catchbasins and inlets. Modelling showed that 59% of the networks would be at full capacity during a 10-year storm event and have susceptibility to surcharge or flood.
9	Task 2 also completed other modelling of the drainage system. The Major System (or Overland Flow) Results show that 96% of roadway sections within Port Credit would meet City standards for the 100-year storm event. Both of the assessments for Intensification and Climate Change showed worsened storm sewer, overland flow, and drainage system performance in scenarios without any type of controls in place.
10	Task 3 was to develop a long list of potential mitigation alternatives based on the characterization and background of the area in Task 1, as well as the modelling results in Task 2. The long list of ten alternatives is divided into four main categories: storm sewer and catch basin capacity modifications; grading improvements for the major system; infiltration, storage, and quantity control; and combinations of the previously mentioned options. Several options were then evaluated based on their effectiveness on improving the drainage in the Port Credit Area.
11	From the long list of alternatives, several options were screened out from further consideration due to the following reasons. The numbering of this slide matches the options presented on the previous slide of the long list of options. Given the high urbanization of the Port Credit area, roof leader and foundation drain disconnection is likely not feasible as there are no appropriate pervious areas to discharge the flows into. For residential areas with detached homes, roof leaders and foundation drains would already be expected to be disconnected as per typical City requirements. Enforcement of roof leader and foundation drain disconnections can also be challenging, and as such, this option is considered likely infeasible. Grading on private property is considered challenging given the need for agreement from private landowners and limited possible changes given the highly urbanized nature of Port Credit. Grading modifications within the public road right-of-way may be feasible to a limited degree in localized areas but is generally constrained by the need to meet adjacent grades at property boundaries and adjacent streets and right-of-way. The highly urbanized Port Credit makes this option not feasible for wide-scale application. In general, quantity control is considered to be of limited value for the study area given the proximity to outlets of the Credit River and Lake Ontario. Available space for quantity control measures is similarly a challenge as superpipes require space within the road right-of-way section and can lead to utility conflicts. As well, off-line storage areas require sufficient available public space and within the Port Credit areas, larger public spaces are typically located along the shoreline of either the Credit River or Lake Ontario, at which point quantity control measures would not be required as noted previously. Due to Bill 23: More Homes Built Faster Act, implemented in 2022, there are limitations of the site plan control process for new development, and therefore, Low Impact Development (LID) Best Management Practices (BMPs) to promote on-site infiltration may be more difficult to implement.

12	After the screening out of several options, the remaining options were evaluated using a fulsome perspective, as per the Class Environmental Assessment process. Each evaluation category was further divided into evaluation criteria and the description of each evaluation criteria is summarized in the table on this slide. The general description of the evaluation categories is as follows: The Functionality category notes how effective the alternative may be in addressing identified drainage system issues, and the ease or complexity associated with the construction and long-term operation of the alternative. The Social Environment category refers to the impacts or issues relating to the interaction of the community or neighbourhood with the implementation of the proposed alternative. For instance, this evaluates effectiveness of the proposed alternative at reducing risk and increasing public safety or impacts to public recreational spaces as well as private property, including short-term construction impacts to the area. The Economic Environment category evaluates the immediate (capital) costs and future long-term (operations and maintenance) costs and overall cost-benefit of the alternative.
13	The Cultural Environment category refers to the impacts/issues related to potential archaeological and cultural heritage resources. It should be noted that as the current study did not include specific assessments for these areas, the screening has been more generalized based on limited available data or typical areas of concern from previous experience. The Natural Environment category examines the potential environmental impacts or benefits that alternatives may have on the local area, including both terrestrial and aquatic features. The Climate Change category is an evaluation of how the alternative may contribute to overall climate change impacts such as greenhouse gas emissions and also how resilient or adaptive the works are to future changing climatic conditions. To evaluate these categories, criteria weighting was utilized to reflect the relative importance of each evaluation factor.
14	As part of Task 3, a technical assessment of the storm sewer works was completed. It involved a base modelling approach developed in PCSWMM. The PCSWMM software was selected based on previous application in the City of Mississauga for similar assessments, the robustness of the tool, support through the U.S. Environmental Protection Agency, as well as enhancements, including powerful GIS tools. The dual drainage system of storm sewer, overland flow, and road right-of-way was developed in PCSWMM and model was integrated with hydrology, such as runoff potential from the drainage area. PCSWMM used to assess drainage system performance for 10-year storm events while overland flow was assessed for 100-year storm events. Further, the model incorporated an intensification scenario of a 50% increase in low density residential areas and an assessment of potential climate change impacts. The findings of the model indicated that between 29% and 41% of storm sewers are below capacity and larger sewersheds have greater issues than smaller watersheds. Further, several roadways have been identified to have depression storage issues such as

	ponding. Increased intensification of development in the Port Credit area, as well as climate change will result in an increase in storm sewer surcharging as well as overland flow depths.
15	Based on the evaluations and technical assessment, the generally preferred approach involves storm sewer upgrades, in conjunction with catch basin capacity upgrades as required. For the base conditions to be met, 52% of storm sewer sections require an upgrade. The evaluation results also indicate that the storm sewer upgrades also benefit overland flow (major system) performance for the 100-year storm event. The City used Closed-circuit television (CCTV) review of the storm sewers to identify that there are no items of immediate action, thus Project Works will need to be accommodated in the City's long-term capital works budget. The construction cost estimates (which will be noted further) are to be reviewed with City staff, with potential input from Peel Region. This project is long term, and the estimated timeline is approximately five to ten years until start of construction within the Port Credit area.
16	As part of Task 4 and the Preferred Option to improve storm sewer upgrades, segments of the evaluated storm sewers were grouped into three projects to be completed in the Port Credit Area. The streets within the Project Footprints are noted in the table on this slide. The projects have been evaluated through the previously mentioned criteria to determine their impact on improving drainage. If nothing were to occur within the project area, the alternative weighted score would be 4.3 out of 10. If upgrades of the storm sewer systems were to be completed, this would increase the score to 6.1 out of 10 for each project area.
17	The map on this slide shows the area of the recommended storm sewer upgrades. From west to east, Project 2 includes Maple and Pine Avenue; Project 1 includes Helene, High, and Park street, and Project 3 includes Forest and Rosewood Avenue as well as Lakeshore Road. For Project 3, there is also a potential to re-direct the trunk sewer onto the public right-of-way of Rosewood Avenue and Lakeshore Road. As well, after Project 1 is complete, this may eliminate the need for trunk storm sewer upgrades along the west side of Lakeshore Road. The Brightwater Development is not required to be assessed for the storm sewer upgrades and further, the trunk storm sewer on Mississauga Road will be upgraded as part of this development.
18	In addition to the storm sewer upgrades and even with constraints due to Bill 23: More Homes Built Faster Act, implemented in 2022, Low Impact Development (LID) Best Management Practices (BMPs) are recommended to be implemented to serve as enhancements for the proposed projects. There are three types of LID BMPs: centralized, linear, and lot level, shown on the map in this slide with different colours. Centralized LID BMPs are applied in larger parking areas and parks, such as incorporating chambers and underground storage. Linear LID BMPs are applied within the roadway right-of-way and include infiltration trenches, exfiltration pipes, bioretention, tree planter units, and dry swales. The lot level LID BMPs would be applied to residential areas with significant ponding, usually in the forms of soakaway pits and bioretention areas.
19	As all three projects have similar evaluation scores, the prioritization of projects is based on the degree of urbanization in the area, as well as the re-development pressures and overall findings from the technical evaluation. Project #1 is in a highly urbanized area with intensification occurring, Project #2 is in a residential area with single family detached housing with intensification also occurring, and

	Project #3 is the lowest priority as there is less intensification occurring in the area. Projects #1 and #2 will have the same Level of Services throughout construction, but surface ponding issues would be reduced. Project #3 has less prevalent depression storage and flow deficiencies than within the other Project areas. As noted, the construction is estimated to begin in approximately five to ten years and affected homeowners and residents will be notified in advance of any construction. The estimated construction costs (excluding engineering fees, design fees, or contingency) are shown in the table above, however, more formalized cost-benefit approaches and budgets will be confirmed through further studies.
20	We thank you for viewing this presentation and being engaged with the City of Mississauga and improvements within Port Credit! In summary, there are five tasks for this Municipal Class Environmental Assessment Study process to design and implement the Storm Drainage Master Plan for Port Credit. Task One to Four have already been completed and the City is currently completing the final Report. This report will be available later in 2024 and you will be able to review it during the 30-Day Public Review Period. If you have any follow-up questions or comments on this video, please email Muneef.Ahmad@mississauga.ca or Matt.Senior@Woodplc.com by April 10, 2024.

APPENDIX

G-3 TAC Meeting # 1

Port Credit
Storm Drainage Master Plan

Technical Advisory Committee (TAC) - Meeting #1

April 26, 2022

Meeting Agenda

1. Study Purpose and Overview

2. Work To-Date and Findings
   a) Technical Memo #1: Study Area Characterization
   b) Technical Memo #2: Model Build and Performance Assessment

3. Next Steps
   a) PIC #1
   b) Project Schedule, Deliverables, and TAC Meetings

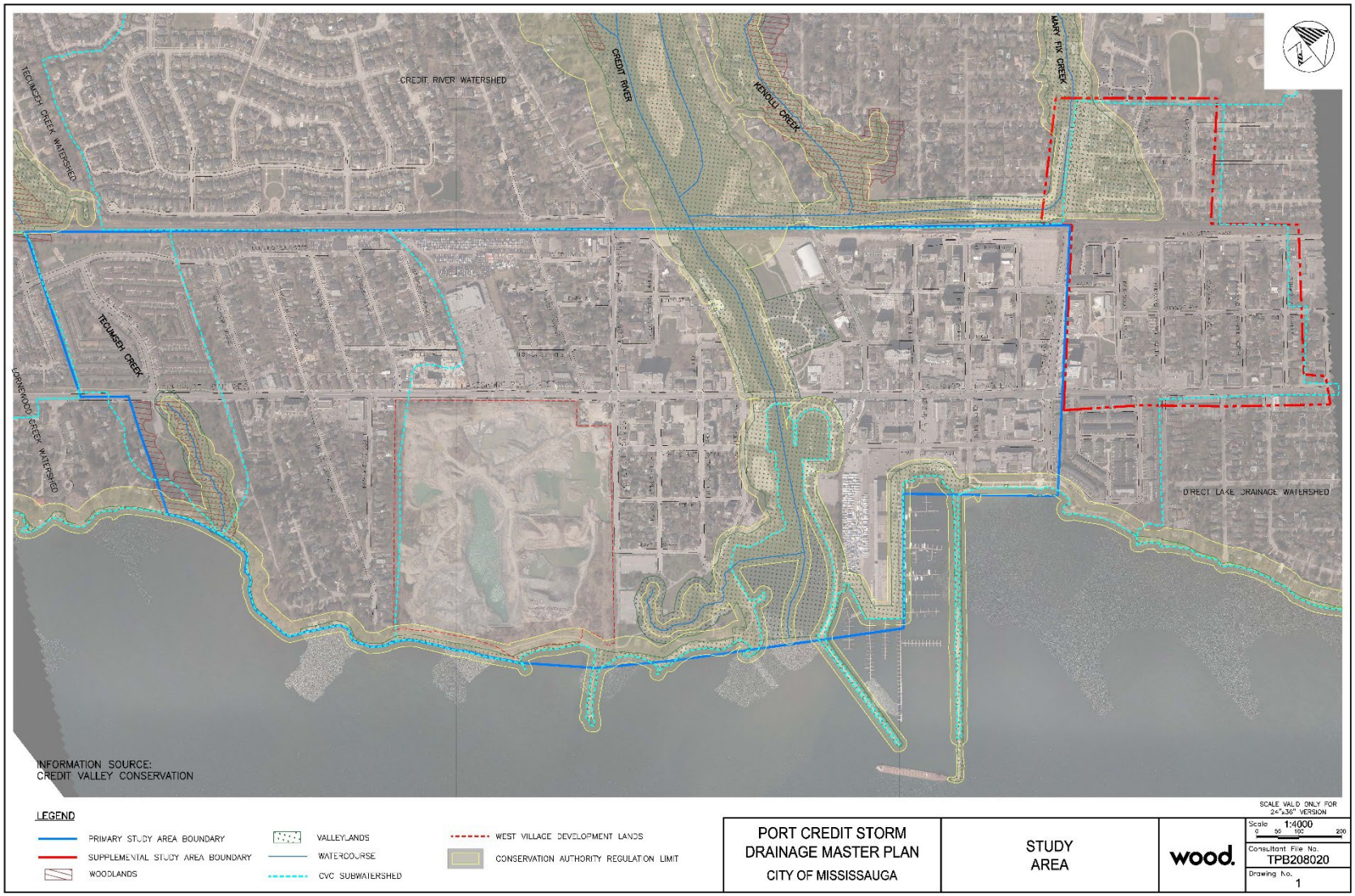
1. Study Purpose and Overview

Port Credit Storm Drainage Master Plan

1. Study Purpose and Overview

- The Port Credit neighbourhood is an older area of the City
- The area has been subject to infill/intensification pressures in recent years; Hurontario LRT will like affect this as well
- No previous assessments or evaluations of drainage system capacity
- No information on known flooding areas or areas of pro-active maintenance
- Need for a study to confirm potential drainage system issues and plan to mitigate while consider related factors such as planned infill/intensification and climate change
- Ensure a robust study by following the Class EA Process and considering related factors and inputs

1. Study Purpose and Overview



1. Study Purpose and Overview

- **Task 1: Study Area Characterization**
  - Background and data gap review
- **Task 2: Analysis & Assessment of SWM System**
  - Hydrologic\hydraulic model development
  - Drainage system performance and stress-testing
- ***Task 3: Evaluation of Alternatives***
- ***Task 4: Preferred SWM Strategy***
- ***Task 5: SWM Master Plan Report***

1. Study Purpose and Overview

- Technical Advisory Committee (TAC) intended to provide technical oversight and input to the study
- Four (4) meetings originally planned at key check-points (After TM1, TM2, and then two check-ins as part of Task 3 for evaluation of alternatives)
- Current meeting combines first two planned sessions (TM1 and 2); intent is to provide an overview of findings and next steps and gather input from the TAC
- Potential to combine other two sessions into a single session following alternative evaluation

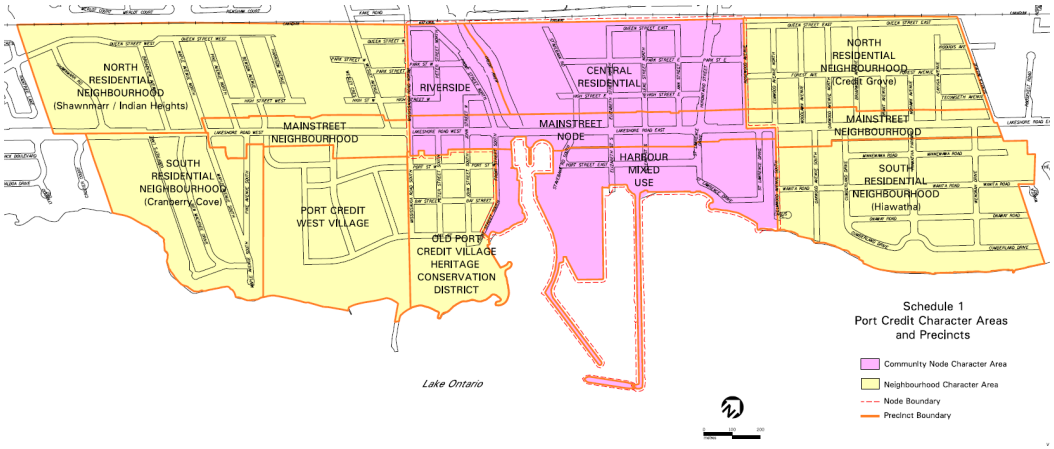
2. Work-to-date and Findings

Port Credit Storm Drainage Master Plan

2. Work-to-date and Findings

a) Tech Memo #1 (Study Area Characterization)

- Existing area is already urbanized and developed (190 ha, 12,520 people)
- Growth areas in Port Credit Community Node, Hurontario Street, and Port Credit GO Station
- Large infill development (West Village\Brightwater) is not being directly assessed as part of this study other than where drainage will discharge to City services



2. Work-to-date and Findings

a) Tech Memo #1 (Study Area Characterization)

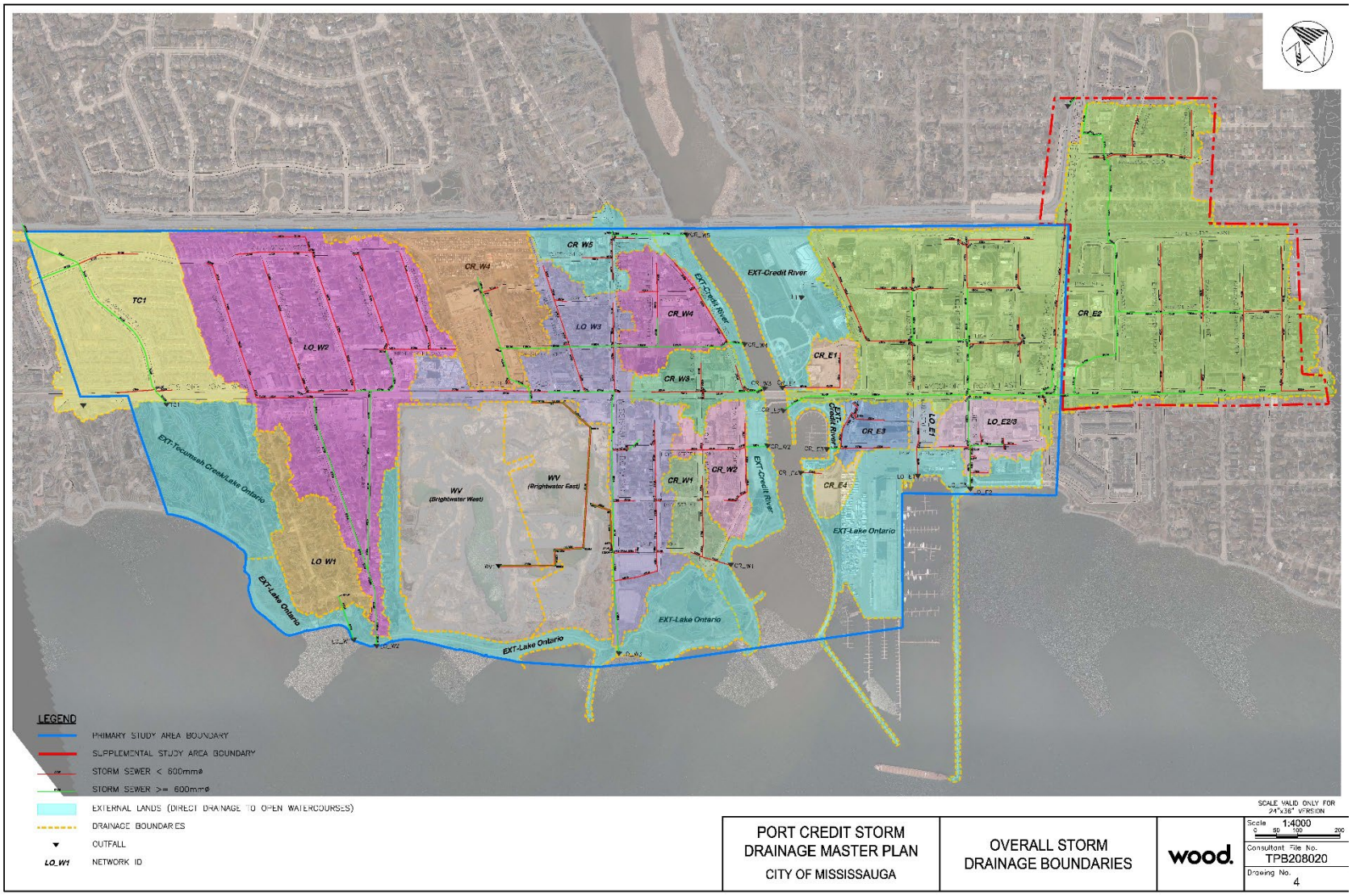
- Environmental considerations are key to the Class EA process
- A limited desktop environmental inventory was completed based primarily on available data from City and CVC
- Port Credit is a highly urbanized landscape, however natural systems require consideration, including:
  - *Park and shoreline areas*
  - *Credit River area*
  - *Tecumseh Creek area*

2. Work-to-date and Findings

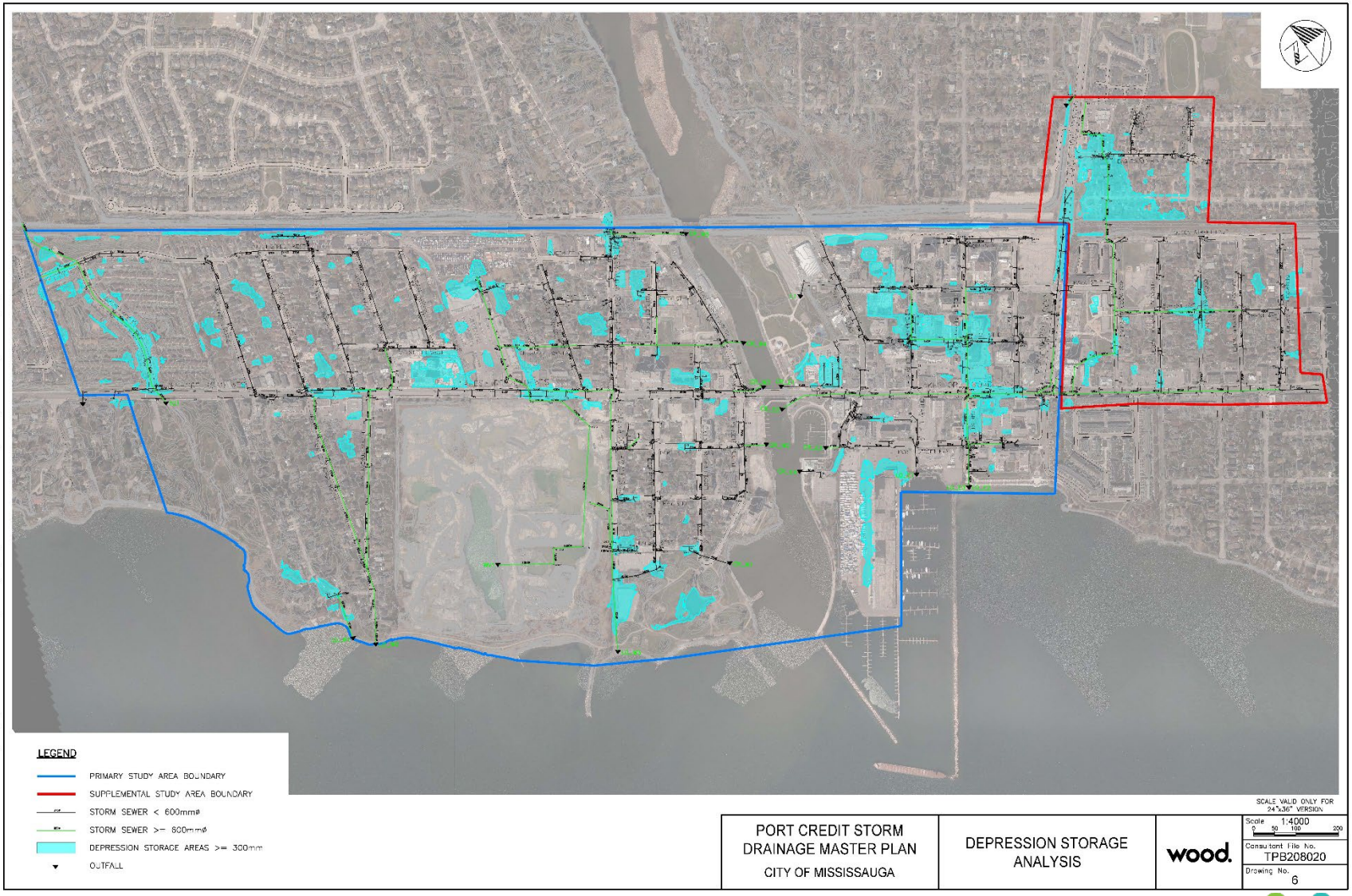
a) Tech Memo #1 (Study Area Characterization)

- Storm Sewer Data was reviewed in detail given study focus
  - *17 km of storm sewers*
  - *40% of sewers are trunks (>600 mm)*
  - *18 storm outfalls, generally to either Credit River or Lake*
- Supplemental topographic survey to fill data gaps and confirm vertical datum between sources
- CCTV inspection findings summarized
  - *Obstructions, debris, deposits, tailwater*
  - *Unmapped taps*
  - *Damage*
- Major system ponding analysis also undertaken

2. Work-to-date and Findings



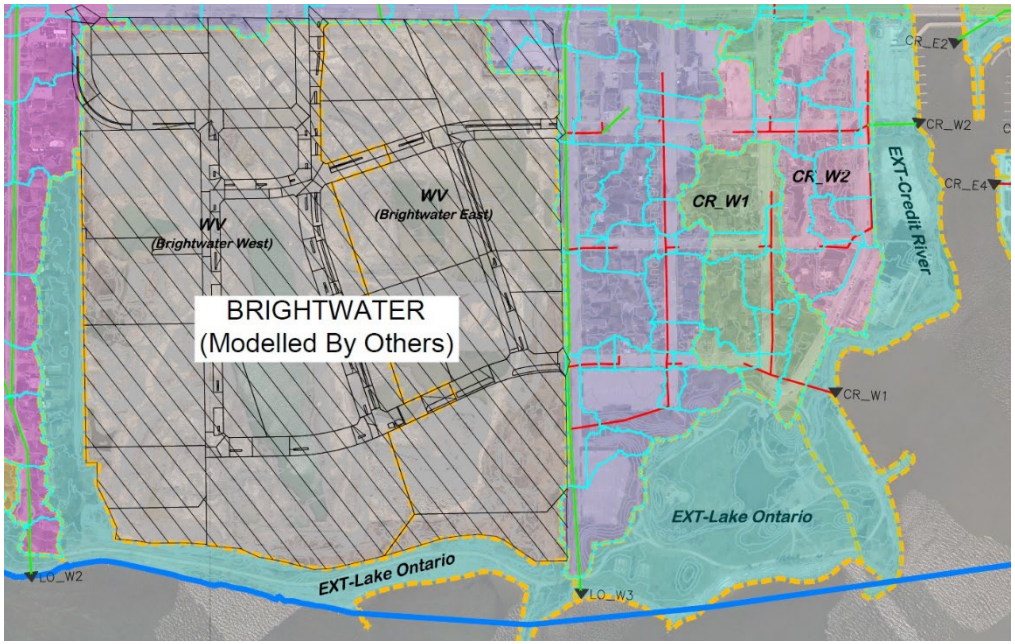
2. Work-to-date and Findings



2. Work-to-date and Findings

b) Tech Memo #2 (Model Build and Performance Assessment)

- PCSWMM applied for modelling to estimate flows for different conditions and drainage system capacities
- **Hydrologic modelling**
  - *Develop refined subcatchments (448, 0.34 ha average)*
  - *Parameterized based on land use mapping (imperviousness) and geotechnical data (infiltration)*
  - *Brightwater\West Village incorporated based on site specific PCSWMM model prepared by proponent*



2. Work-to-date and Findings

b) Tech Memo #2 (Model Build and Performance Assessment)

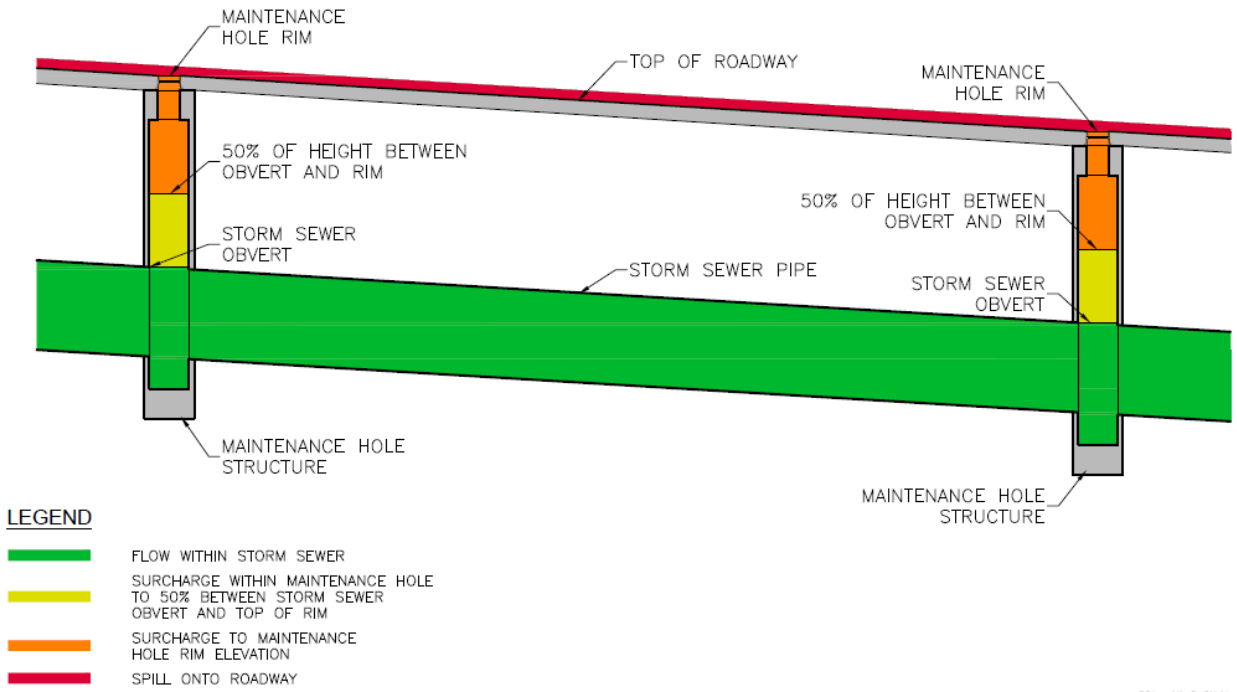
- **Hydraulic Modelling**
  - *Storm Sewers (GIS and C-plans)*
  - *Major System (roadways as parallel 1D system)*
  - *Orifices used to model inlets linking systems*

- Model validated against database of other models
- City interest in a scoped Rational Method check, to be completed

2. Work-to-date and Findings

b) Tech Memo #2 (Model Build and Performance Assessment)

- Minor (storm sewer) system evaluated for 10-year storm
- Assess based on hydraulic gradeline (HGL) as well as theoretical pipe capacity (% of full)



2. Work-to-date and Findings

b) Tech Memo #2 (Model Build and Performance Assessment)

- Results indicate 29% unsurcharged, 44% surcharged, and 27% flooded based on HGL performance
- Results similarly indicate 41% unsurchaged and 59% surcharged or flooded based on pipe capacity
- Several networks indicate greater concerns, including larger sewersheds
  - *CR_E2 (Lakeshore Road east of Credit River)*
  - *LO_W2 (Maple\Pine Avenue)*
  - *LO_W3 (Mississauga Road)*

2. Work-to-date and Findings

b) Tech Memo #2 (Model Build and Performance Assessment)

- Major system (overland flow) assessed for 100-year storm
- Performance based on type of roadway and ponding level
  - ***A:*** *Depth < 0.15 m (urban) or < 0.30 m (rural)*
  - ***B****: Depth of 0.15 - 0.25 m (urban) , or 0.30 - 0.37 m (rural)*
  - ***C:*** *Depth > 0.25 m (urban) or > 0.37 m (rural)*
- Results indicate that
  - On average 80% of roadways meet Category A, 16% are in Category B and 4% Category C
  - Areas of poorest performance generally coincide with those identified through depression storage analysis

2. Work-to-date and Findings

b) Tech Memo #2 (Model Build and Performance Assessment)

- A sensitivity assessment of **intensification** of existing low density residential areas was completed
- Assessment based on "as of right" conditions, whereby maximum building footprint is 40% of the lot area
- Also consider a 90% relationship of footprint to amenity areas (driveways, walkways, patios, etcetera)
- Assume a 50% uptake in intensification
- Increases overall imperviousness from 45% to 55%

2. Work-to-date and Findings

b) Tech Memo #2 (Model Build and Performance Assessment)

- Updated model has been simulated and compared to existing conditions scenario
- Greatest sensitivity areas of greatest expected intensification
- **Storm Sewer Performance (10-year)**
  - *Majority of changes are a shift from "B" to "C" (i.e. HGL at 0 to 50% of depth to 50 to 100% of depth)*
  - *Minimal changes in pipe capacity statistics*
- **Overland Flow Performance (100-year)**
  - *21% increase in type "B" (above curb but within ROW) and 9% increase in type "C" (beyond ROW)*

2. Work-to-date and Findings

b) Tech Memo #2 (Model Build and Performance Assessment)

- A sensitivity assessment of **climate change** impacts was completed
- Based on a discussion with Region of Peel and Climate Risk Institute, preferred approach was determined to be climate-change adjusted IDF curves (UWO IDFCC)
- Both the SSP 2-4.5 and 5-8.5 emission scenarios assessed
- Much greater rainfalls predicted for future 100-year event than for 10-year event

2. Work-to-date and Findings

b) Tech Memo #2 (Model Build and Performance Assessment)

- **Storm Sewer Performance (10-year)**
  - *SSP 2-4.5*
    - *Increase in areas in Type "C" (+18%) and Type "D" (+5%)*
    - *Flow check indicates increase of 8% in over-capacity*
  - *SSP 5-8.5*
    - *Similar increase in Type "C" (+11%) and Type "D" (+21%)*
    - *Flow check indicates increase of 12% in over-capacity*
- **Overland Flow Performance (100-year)**
  - *SSP 2-4.5: Additional 973 m in Type "C" (+6%)*
  - *SSP 5-8.5: Additional 1,149 m in Type "C" (+7%)*

3. Next Steps

Port Credit Storm Drainage Master Plan

3. Next Steps

a) PIC #1

- Incorporate any feedback from TAC
- Prepare materials for PIC #1
- Planning for some form of pre-recorded (not live) format
- Timing in late May or early June, need to ensure sufficient notification time is allocated

3. Next Steps

b) Project Schedule, Deliverables, and TAC Meetings

- Proceed with Task 3 (Evaluation of Alternatives)
  - Long list of SWM practices
  - Develop evaluation criteria
  - Evaluate alternatives and confirm preferred strategy

- TAC Meeting #2 thereafter to review and discuss (September or October)

- PIC #2 thereafter (November or December)

- Finalize Reporting and File Notice of Completion


wood.

Minutes

Date:	May 5, 2022
File #:	TPB208020
Meeting Date & Time:	April 26, 2022 at 9:00
Meeting at:	Virtual Teams Meeting
Subject:	Port Credit Storm Drainage Master Plan Technical Advisory Committee (TAC) Meeting #1

Attendees:

Muneef Ahmad, City of Mississauga	Jeanne Thomsen, Peel Region
Scott Perry, City of Mississauga	Italia Ponce Vanelli, Peel Region
Scott Sorensen, City of Mississauga	Farshad Salehzadeh, Peel Region
Lincoln Kan, City of Mississauga	Emma Haug-Kindellan, Wood
Jakub Kilis, Credit Valley Conservation	Ron Scheckenberger, Wood
Matteo De Stefano, Credit Valley Conservation	Matt Senior, Wood

Regrets:

Rizwan Haq, Credit Valley Conservation	Samantha Stokke, Wood
Miriam Polga, Peel Region	

MATTERS DISCUSSED **ACTION BY:**

1. Introduction and Overview

- All attendees introduced themselves, their current role and the organization they represent.
- Muneef Ahmad provided a general overview of the Port Credit area and the City's interest in completing the subject Storm Drainage Master Plan. He confirmed that the Bridgewater Development is under construction.
- Matt Senior made a presentation providing an overview of the study. He noted that the TAC is intended to provide technical oversight and input to the study. It is currently expected that in addition to the current meeting, there will be an additional TAC meeting to review the subsequent evaluation of alternatives.

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2. Work To-Date and Findings

- Matt Senior noted that Tasks 1 (Study Area Characterization) and 2 (Analysis & Assessment of SWM System) and the associated Technical Memoranda have been completed.
- Scott Sorensen questioned the methodology applied for the depression storage analysis. Matt Senior noted that this was completed solely using GIS tools and the available DEM.
- Matt Senior noted that the City has expressed an interest in completing a scoped Rational Method verification for some of the storm sewer capacity results; Wood will complete this assessment and advise. **Wood**
- Scott Perry noted that it may be of value to combine the impact assessments for intensification and climate change, as dual stressors; Wood/City to consider. **Wood/City**
- Farshad Salehzadeh questioned what design storms were used in the assessment; Wood advised that 24-hour Chicago storms were applied. A brief sensitivity analysis was completed which confirmed that this event governed over the SCS distributions (ref. Section 3.4.1 of Technical Memorandum #2).
- Farshad Salehzadeh noted that the City's standards include that storm sewers should "accommodate" the 10-year storm, which he suggested is ambiguous. Muneef Ahmad noted that this should be interpreted as meaning unsurcharged flow conditions (water level below obvert).
- It was noted that the intensification assessment should potentially consider full build-out of all areas (rather than 50% uptake) given the high house values in the area. City to advise. **City**
- Farshad Salehzadeh noted that network LO_W2 has some overlap with identified areas of high sanitary inflow/infiltration.
- Scott Perry noted that in general the results for overland flow (80% less than curb height for 100-year event) were encouraging. **Info.**
- Scott Perry advised that tailwater impacts are a primary concern. Wood to consider an additional scoped analysis that considers high operating tailwater levels and the associated impacts to drainage system performance. Scott noted that there are currently no backflow valves in place on storm sewer outfalls. **Wood**
- Jeanne Thomsen noted that there are some residential backflow valves in this area; Peel region to provide. **Peel**

- Scott Sorensen noted that a submission is being reviewed for a re-development of the Marina Park area on the west side of the Credit River south of Lakeshore Road. There is a submerged storm sewer outfall currently in this location. The design consultant is recommending the existing 600 mm diameter storm sewer be upgraded to a 750 mm diameter pipe. It was suggested that the information be provided to Wood for review and inclusion in the current study. **City/Wood**
- City staff noted that networks CR_E1 (Stavebank Road) and CR_E2 (Lakeshore Road) have indicated issues with tailwater levels and storm sewer sedimentation. **Info.**
- It was noted that in many cases the available CCTV was abandoned due to high tailwater levels, which does not provide any information on possible storm sewer issues. The potential to re-do CCTV during lower water levels may be considered.
- Ron Scheckenberger highlighted that any information on foundation drainage connections to the storm sewer system would be helpful as they would potentially receive impacts from tailwater conditions. Data from the CCTV can be used in part to identify taps. **City**
- Scott Perry noted that anecdotally, there have not been many drainage complaints for the Port Credit area. Lincoln Kan suggested that additional input should be solicited from operations and works staff.
- Matteo De Stefano questioned whether or not a 5 mm infiltration target has been assessed; this should be considered. **Wood**
- Matteo De Stefano noted that CVC can provide updated shoreline and riverine hazard limits as required. **CVC**
- Matteo De Stefano made note of the Tecumseh Creek enclosure at the western limits of the study area. It was indicated that quantity controls include 100-year post to 2-year pre peak flow control for this area.

3. Next Steps

- Lincoln Kan stated that the PIC format will need to be confirmed. There is a City directive in place that may require a live (in-person) format. Muneef Ahmad to review with the local ward councillor. **City**
- It was suggested that the public be asked for information on foundation drainage connectivity as part of the PIC. **Wood/City**
- Scott Sorensen questioned what would be considered in the long-list of alternatives. Matt Senior indicated that Wood typically tries to generate a thorough long list but in a highly urbanized area storm sewer improvements will likely be high on the list. Ron Scheckenberger also noted that Inlet Control Devices (ICDs) should be considered.

Meeting Minutes prepared by:

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited

Per: Matt Senior, M.A.Sc., P.Eng.
Associate – Senior Water Resources Engineer

MS\RS

APPENDIX

G-4 TAC Meeting # 2

Port Credit Storm Drainage Master Plan

City of Mississauga

TAC Meeting #2 (Alternative Evaluation)

March 6, 2023

Meeting Agenda

1. Study Purpose
2. Previous Findings
3. Alternative Evaluation
4. Next Steps

1. Study Purpose

Overview

- The Port Credit neighbourhood is an older area of the City
- The area has been subject to infill/intensification pressures in recent years; Hurontario LRT will likely affect this as well
- No previous assessments or evaluations of drainage system capacity
- No information on known flooding areas or areas of pro-active maintenance
- Need for a study to confirm potential drainage system issues and plan to mitigate while considering related factors such as planned infill/intensification and climate change
- Ensure a robust study by following the Class EA process and considering related factors and inputs

Study Area Limits

Port Credit Area
City of Mississauga

Role of the TAC

- Technical Advisory Committee (TAC) intended to provide technical oversight and input to the study
- Four (4) meetings originally planned at key check-points (After TM1, TM2, and then two check-ins as part of Task 3 for evaluation of alternatives)
- Previous TAC Meeting #1 (April 26, 2022) combined first two planned sessions (TM1 and TM2); provided an overview of base findings and gathered feedback from the TAC
- Current TAC Meeting #2 generally combined other two planned sessions; focus is on alternative evaluation and preliminary preferred solution

Study Work Plan

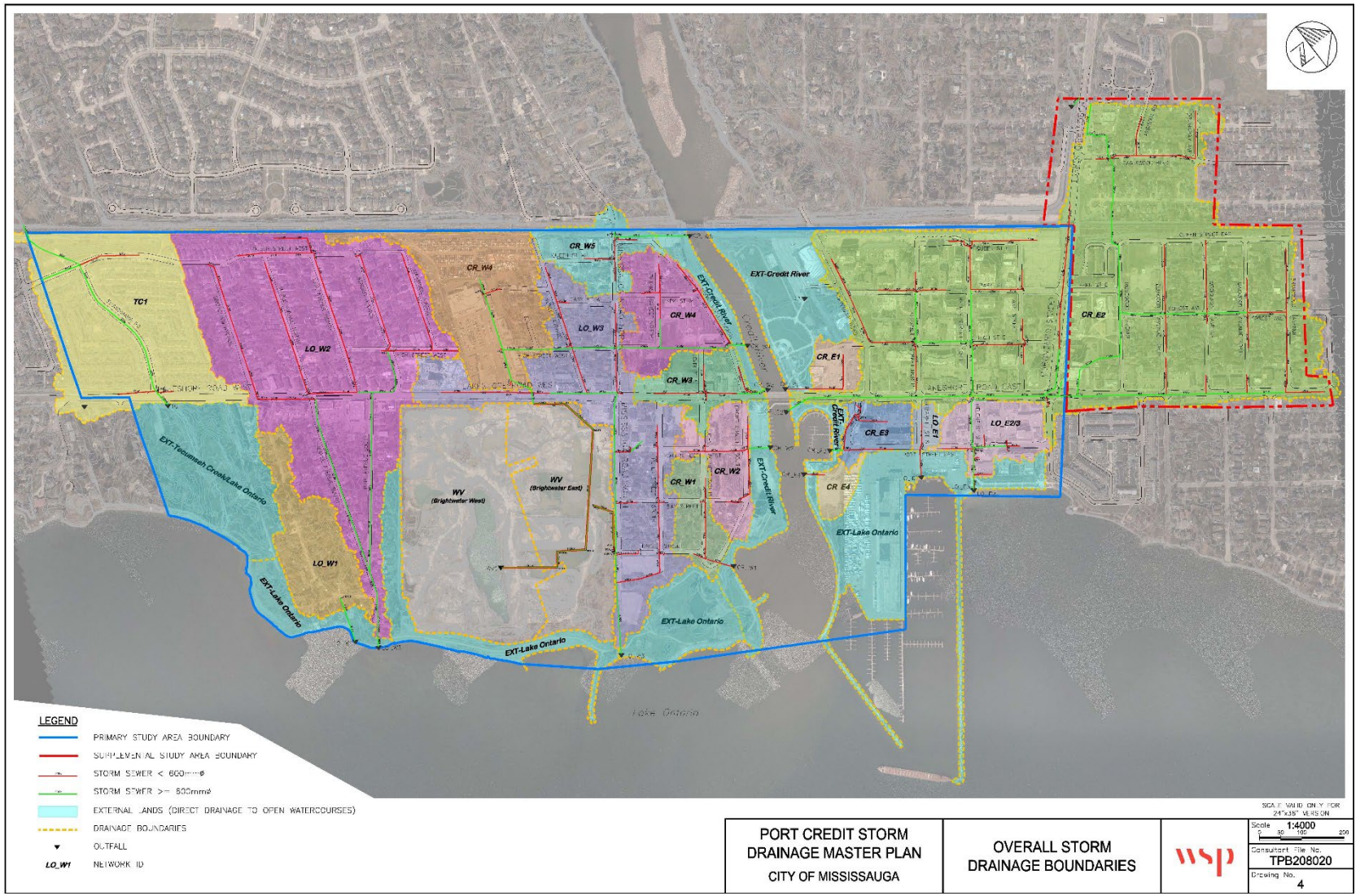
- Task 1: Study Area Characterization
  - Background and data gap review
- Task 2: Analysis & Assessment of SWM System
  - Hydrologic\hydraulic model development
  - Drainage system performance and stress-testing
- Task 3: Evaluation of Alternatives
  - Long-List of Alternatives
  - Develop Criteria and Evaluation
- *Task 4: Preferred SWM Strategy*
- *Task 5: SWM Master Plan Report*

2. Previous Findings

Base Modelling Approach

- Dual drainage (storm sewer and overland flow\roadways) developed in PCSWMM
  - 17 km of storm sewers
  - 40% of storm sewers are trunks (> 600 mm diameter)
  - Linked 1D-1D dual drainage model; orifices represent catchbasins to link the two systems
- Integrated with hydrology (runoff potential from drainage area)
  - 448 total subcatchments (0.34 ha) – high resolution
  - Brightwater\West Village based on site-specific model by proponent
- Used to assess drainage system performance using design storms
  - Storm sewer assessed for 10-year storm event
  - Overland for 100-year storm event
- Additional assessments
  - Assess intensification scenario (50% uptake in low density residential areas to “as of right”)
  - Assess potential climate change impacts (UWO-IDFCC tool, two emission scenarios)

Drainage Networks



- 18 different storm sewer outfalls
- Either outlet to Credit River or directly to Lake Ontario

Summary of Findings

- Base Conditions
  - Between 29% and 41% of storm sewers are unsurcharged (below capacity)
  - Larger sewersheds indicating greater issues
    - CR_E2 (Lakeshore Road east of Credit River)
    - LO_W2 (Maple\Pine Avenue)
    - LO_W3 (Misssissauga Road)
  - 80% of roadways are “Category A” (urban depth < 0.15 m, rural depth < 0.30 m) – generally good
    - Poorest performance areas generally those with identified depression storage issues (ponding)
- Intensification
  - Results indicate an increase in storm sewer surcharging, overland flow depths
- Climate Change
  - Results depend on scenario chosen (SSP 2-4.5 or SSP 5-8.5)
  - Additional increase in storm sewer surcharging and overland flow depths

PIC #1

- Was prepared following TAC Meeting #1 (April 26, 2022)
- An online video was prepared and posted (July 26 – August 16, 2022)
- Given the technical content the video was generally condensed and simplified for public interest (5 minutes +\-)
- Minimal feedback received; only 1 phone call from the public
- Potentially greater interest after PIC #2 which will present alternatives and the preferred solution

Port Credit Storm Drainage Master Plan – TAC Meeting #2

3. Alternative Evaluation

Long-List of Alternatives

- Storm Sewer and Inlet Capacity Modifications
  - Increased storm sewer sizing
  - Storm sewer diversion
  - Roof leader/foundation drain disconnections
  - Inlet capacity modifications (increases or decreases)
- Major System Grading Improvements
  - Private property
  - Public road right-of-way
- Infiltration, Storage and Quantity Control
  - LID BMPs to promote at-source infiltration
  - Linear storage (super pipes)
  - On-site SWM for private property
  - Off-line SWM within public areas (surface or sub-surface)
- Combinations

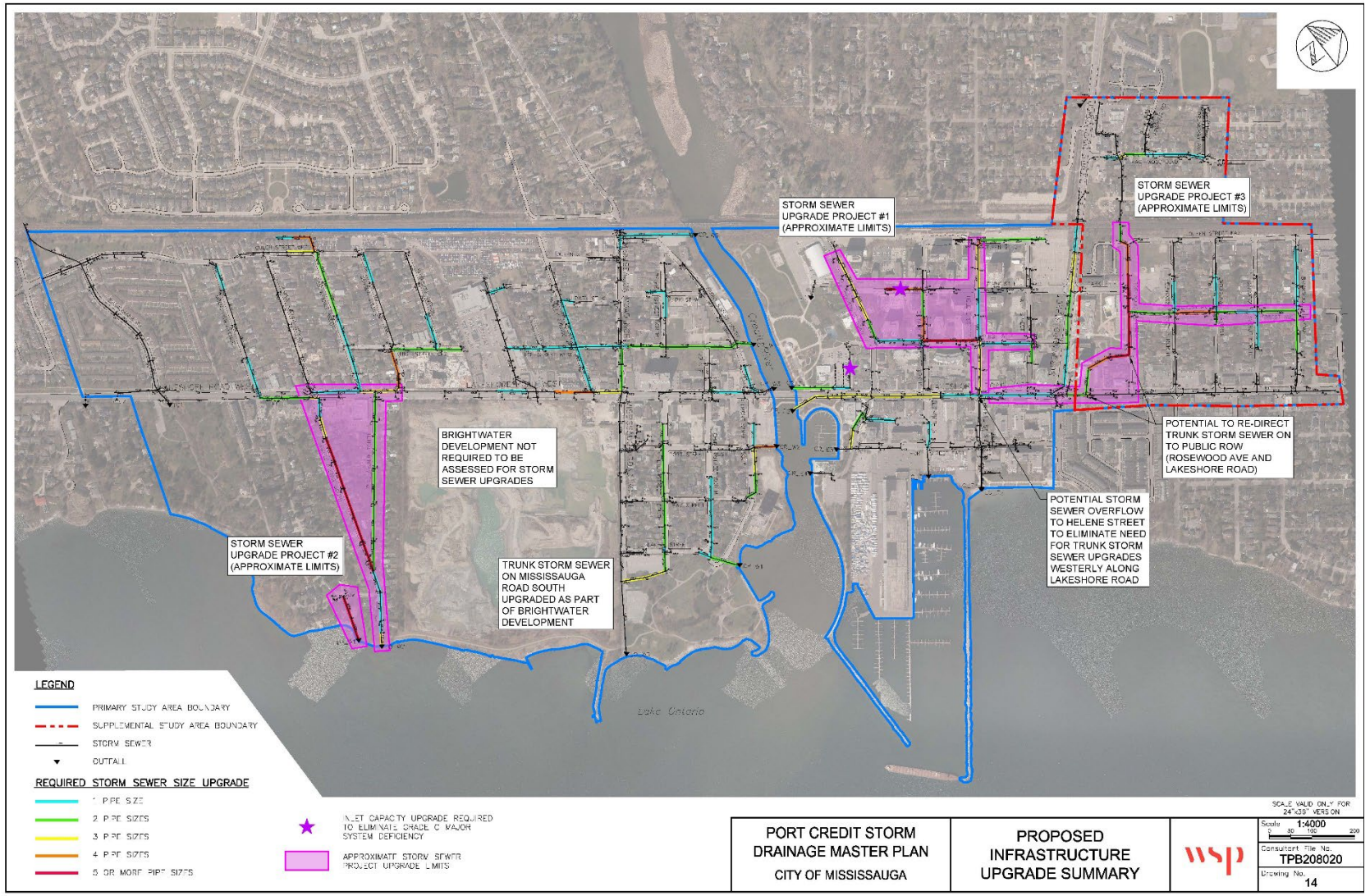
Screened Alternatives

- Roof Leader\Foundation Drain Disconnection
  - Atypical in most areas
  - Enforcement challenging; generally no appropriate outlets
- Major System Grading Improvements
  - Private property grading challenging given ownership and compensation, cost-benefit
  - Public road right-of-way grades already typically constrained
- Quantity Control
  - Generally limited value given proximity to outlets
  - Space restrictions make this challenging
  - Limited space in road ROW for superpipes
  - Limited public space, and where present typically close to shorelines\outlets
  - Limitations of SPC process for new development now (Bill 23 changes)

Preferred Alternative – Storm Sewer Upgrades

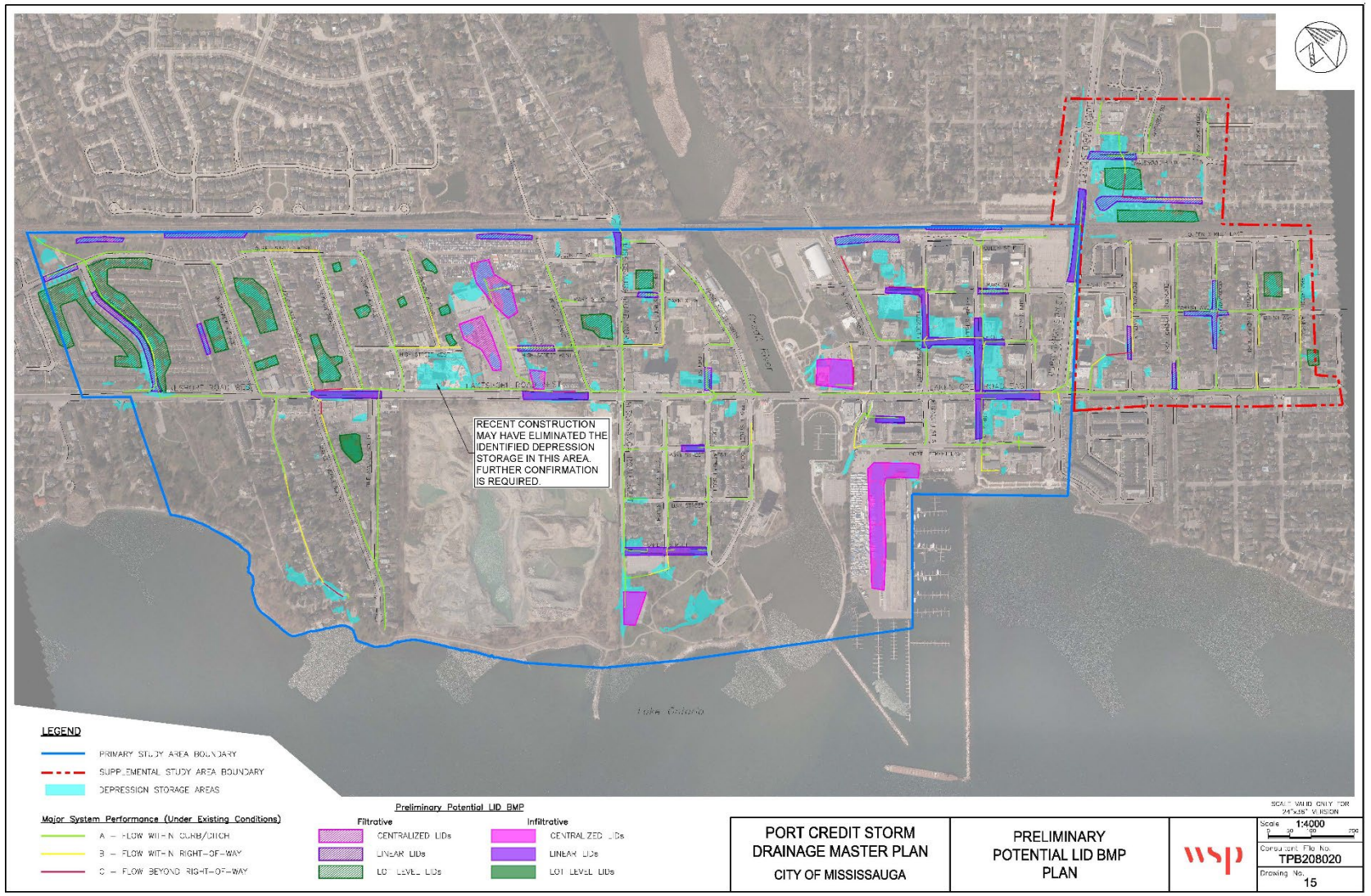
- Based on the preceding, storm sewer upgrades are generally considered to be the preferred approach
- A technical modelling evaluation has been completed for the entire area to determine overall upgrade requirements
- For base conditions, 197 of 381 sections of storm sewer (52%) require an upgrade
  - 77 (39%) for 1 standard pipe size
  - 56 (28%) for 2 standard pipe sizes
  - 31 (16%) for 3 standard pipe sizes
  - 33 (17%) for 4 or more standard pipe sizes
- Adjust outlet elevations where feasible to address tailwater but may be limited
- Results indicate storm sewer upgrades also benefit overland flow (major system) performance for the 100-year storm event
- Identified storm sewer upgrades have been lumped into common reconstruction “project” areas; three (3) total identified. Preliminary costing of $6M to $7M per

Proposed Infrastructure Upgrades



- Focus is on storm sewer upgrades
- Three (3) primary project areas:
- **#1 (Helene, High, and Park Streets)**
- **#2 (Maple and Pine Avenues)**
- **#3 (Forest and Rosewood Avenues, Lakeshore Road)**

Potential LID BMP Installations



- Supplement storm sewer upgrades with LID BMP installations
- Focus on potential residual depression storage areas
- Consider linear, lot level and centralized types based on location

Alternative Evaluation Criteria

Evaluation Category	Criteria Weight	Evaluation Criteria	Description
Functionality	15%	Effectiveness	Overall effectiveness to improve drainage system performance
	5%	Implementation	Complexity or ease of construction
	5%	Maintenance	Complexity or ease of longer-term operations and maintenance
	5%	Utilities	Potential effects on public and private infrastructure (utilities)
Social Environment	5%	Public Safety	Potential for improved public safety
	5%	Recreational Uses	Potential impacts to public's use of area for recreational purposes (trails and parks)
	5%	Private Property Impacts	Potential impact to adjacent private properties (business and residential) or land needs for the works
	5%	Construction Effects	Potential impacts during construction (noise, air quality, dust, etcetera)
Economic Environment	5%	Construction Cost	Capital cost for construction
	5%	Maintenance Cost	Long-term operations and maintenance costs
Cultural Environment	5%	Archaeological Resources	Potential impacts on identified archaeological resources
	5%	Heritage Resources	Potential effects on built heritage resources and cultural heritage
Natural Environment	5%	Terrestrial Ecosystem	Potential effects on terrestrial ecosystem
	5%	Aquatic Ecosystem	Potential effects on aquatic ecosystem
Climate Change	10%	Climate Change Mitigation	Expected production of greenhouse gas emissions and impacts on carbon sinks (i.e. trees)
	10%	Climate Change Adaptation	Resilience or vulnerability to changing climatic conditions

Application of Criteria and Prioritization

Project	Alternative	Alternative Weighted Score
#1 (Helene and High Street)	Do Nothing	**4.3**
	As Proposed	**6.1**
#2 (Maple and Pine Avenue)	Do Nothing	**4.3**
	As Proposed	**6.1**
#3 (Forest and Rosewood Avenue)	Do Nothing	**4.3**
	As Proposed	**6.1**

- Similar scores for all sites
- Prioritization (as per numbering) based on degree of urbanization, re-development pressures and overall findings from technical evaluation

Additional Considerations

- Given results of CCTV review no items of immediate action thus works will need to be accommodated in City's long-term capital works budget
- Other deficiencies from CCTV should still be addressed as part of City O&M
- No direct overlap with planned Peel Region projects based on initial review
- Sewer sizing to be finalized on the basis of future conditions (intensification + climate change impacts) to ensure conservative approach
- Construction cost estimates to be reviewed further with City staff (potential input from Region also may be considered)
- More formal cost-benefit approach to be considered as well

4. Next Steps

PIC #2

- Proposing to undertake a similar online video format; 3-week posting window
- Want to generate more engagement from the public; considering road signs
- Be clearer about what feedback we are seeking
  - Known history of flooding and drainage problems
  - Feedback on preferred alternatives (recognizing that they will not occur for several years)
- Material to be prepared following TAC Meeting #2
  - Incorporate any additional feedback from the TAC
  - Need to consider material preparation and notice timelines
  - Likely to be posted in mid to late April

Key Project Timelines

- Following PIC #2 will compile and implement feedback received (if any)
- Updated and finalize preferred solution
- Prepare draft of Master Plan Reporting – draft to City in late May
- Update and finalize report thereafter and post Notice of Completion in late June

Thank you

wsp.com

MEETING NOTES

JOB TITLE	Port Credit Storm Drainage Master Plan		
PROJECT NUMBER	TPB208020	**DATE**	06 March 2023
TIME	3:30 PM	**VENUE**	Teleconference
SUBJECT	Technical Advisory Committee (TAC) Meeting #2 (Alternative Evaluation)		
CLIENT	City of Mississauga		

ATTENDEES			
Name	**Company**	**Phone**	**Email**
Muneef Ahmad	City of Mississauga		muneef.ahmad@mississauga.ca
Lincoln Kan	City of Mississauga		lincoln.kan@mississauga.ca
Scott Perry	City of Mississauga		scott.perry@mississauga.ca
Scott Sorensen	City of Mississauga		acott.sorensen@mississauga.ca
Frank Pugliese	Peel Region		frank.pugliese@peelregion.ca
Jakub Kilis	CVC		jakup.kilis@cvc.ca
Matteo De Stefano	CVC		matteo.destefano@cvc.ca
Emma Haug-Kindellan	WSP		emma.haugkindellan@wsp.com
David Marshall	WSP		david.marshall2@wsp.com
Samantha Stokke	WSP		samantha.stokke@wsp.com
Matt Senior	WSP		matt.senior@wsp.com

ADDITIONAL DISTRIBUTION			
Name	**Company**	**Phone**	**Email**
Jonathan Briatico	Peel Region		jonathan.briatico@peelregion.ca
Rizwan Haq	CVC		rizwan.haq@cvc.ca

MATTERS ARISING	**ACTION**
1.0 PURPOSE AND ALTERNATIVE EVALUATION	
a) Matt Senior provided an overview of the study and the material related to the drainage system assessment provided at the previous TAC Meeting (April 26, 2022). He noted that since that time PIC #1 was held (online video format) between July 26 and August 16, 2022. Minimal public feedback was received. b) Matt Senior provided an overview of the preferred solution, which is based on storm sewer upgrades in three (3) separate areas ("projects"): 1. Helene, High and Park Streets 2. Maple and Pine Avenues 3. Forest and Rosewood Avenues, Lakeshore Road c) Frank Pugliese questioned whether or not utility conflicts or clearances had been considered. Matt Senior noted that this has not been considered given the high-level of study (Master Plan) but would need to be considered as part of subsequent preliminary and detailed design.	

d) Frank Pugliese noted that synergy with potential Peel Region infrastructure needs should be considered (water and wastewater upgrades) to avoid duplication and repeated reconstruction, all present agreed. He requested a copy of the upgrade mapping; WSP to provide in GIS compatible format so that Peel can overlay with their planned capital works and advise. [NOTE: information was forwarded to Peel Region following the meeting.] Peel Region to review and advise of any synergies. e) Matt Senior provided an overview of potential LID BMP installations. Scott Perry questioned whether these works were fundamental to the proposed solution or more "bonus improvements". Matt advised that they were the latter; the storm sewer upgrades have been assess without considering any benefit from these features. It was noted that the potential to include these would need to be considered as part of future design work but would provide a benefit to at source infiltration as well as water quality benefits.	**Peel**
2.0 NEXT STEPS	
a) WSP requested that TAC members provide any input on the presented content within the next two (2) weeks to ensure that it can be incorporated into materials for PIC #2. b) PIC #2 is currently planned for an online video format in mid to late April. It was noted that road signs may be considered to inform the public and better solicit feedback, however there may be limited interest in the works given minimal reports of drainage issues and the current expectation that reconstruction work will not occur for several years. c) Draft reporting is expected to be complete following PIC #2 in late May; report will likely be finalized and Notice of Completion issued in late June.	**All**

These minutes are considered to be accurate recording of all items discussed. Written notice of discrepancies, errors or omission must be given within seven (7) days, otherwise the minutes will be accepted as written.

NEXT MEETING

No additional meetings are currently planned.

APPENDIX

G-5 Progress Meetings

Minutes

Date:	December 2, 2020
File #:	TPB208020
Meeting Date & Time:	December 1, 2020 1:00 PM
Meeting at:	Teleconference
Subject:	Port Credit Master Drainage Plan, City of Mississauga Project Progress Meeting

Attendees:

Muneef Ahmad, City of Mississauga
Samantha Stokke, Wood (part)
Emma Haug-Kindellan, Wood
Ron Scheckenberger, Wood
Matt Senior, Wood

MATTERS DISCUSSED **ACTION BY:**

1. Consultation

- Muneef Ahmad noted that the Port Credit community is highly engaged in several ongoing City initiatives hence is reaching a level of fatigue due to the number of ongoing initiatives. Consultation for the current study will need to consider the most appropriate method accordingly.
- The number of PICs were discussed, it was generally agreed that PIC #1 (initial stages of background review and data gathering, Problem Statement) is not as critical and it may therefore be preferable to communicate this through a Bulletin and have only PIC #2 (summary of findings and recommendations, preferred alternative). All present agreed this was a preferred approach.
- Different options for release of the Notice of Study Commencement (NSC) and Notice of PIC were reviewed. Muneef Ahmad suggested it may be preferable to issue an informal notice to residents along with a questionnaire requesting information on known drainage issues, as well as the bulletin cited above. The formal NSC could then be issued later in combination with the Notice of PIC. Samantha Stokke noted that it may be preferable to still issue the formal NSC in the early

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MATTERS DISCUSSED	ACTION BY:
stages. City to review and advise on preferred approach; Wood to prepare supporting documentation as required.	**City Wood**
• Notification and consultation in the current COVID-19 pandemic were discussed; Samantha Stokke noted that notification need not be traditional print media but can also be through digital media and platforms (blogs, websites, social media, etcetera), provided that it is consistent with City guidelines and policy. The City has a consultation specialist who can be involved. City to review and advise.	**City**
• City to confirm if there is a specific Port Credit residents association or business improvement area group who should be involved, or if there is a specific group consultation forum or publication.	**City**
• Indigenous Consultation will be reviewed further as part of the separate Build Beautiful project.	
2. Potential Additional Scope Discussion	
• Muneef Ahmad noted the City's interest in considering synergy with the Region of Peel's sanitary sewer system, specifically capital planning and construction activities, but also the Region's Inflow/Infiltration reduction programs. Any information regarding known problem areas for the Region (basement flooding, I/I hotspots, etcetera) would be useful to consider through the SWM MP.	
• Approaches to engaging with the Region were discussed, it was generally agreed that a scoped 1 on 1 meeting (Wood, City and Region) would be beneficial to review this information specifically. City to review Peel contacts and advise, Wood to co-ordinate a meeting thereafter.	**City/Wood**
• The makeup of the Technical Advisory Committee (TAC) was reviewed. It was generally agreed that more technical contacts from the City, Region, and Credit Valley Conservation (CVC) would be appropriate. Wood to review Build Beautiful list and provide recommended TAC composition to City for review; thereafter Wood to contact potential TAC members and determine a meeting date – target mid-late January 2021.	**City/Wood**
• Matt Senior noted that as part of the initial contacts, efforts should be made to collect information from TAC members regarding the area (i.e. problem areas).	
3. Review of Tech Memo #1 and Next Steps	
• Next Steps from TM #1 were reviewed. Wood requested an updated aerial image from the City, geotechnical information, and any information on outlets within J.C. Saddington Park.	**City**

MATTERS DISCUSSED	ACTION BY:
• Wood to follow up with CVC regarding available environmental data for the study area.	**Wood**
• With respect to Tecumseh Creek, Muneef Ahmad suggested a preference to simplify the analyses and focus on the local drainage only. It was noted that this can be discussed with the TAC (CVC in particular).	
• The West Village (now Brightwater) development was discussed. Emma Haug-Kindellan noted that information regarding City infrastructure in this area is uncertain. Muneef Ahmad generally suggested that the analyses could be terminated at the property boundary in the absence of further information, however City to review available information to determine if any updated data are available with respect to the development.	**City**
• Matt Senior questioned whether Wood should advance the second phase of work (related primarily to hydrologic/hydraulic modelling) now or await TAC Meeting #1. Muneef Ahmad suggested it would be preferable to await the outcomes of the TAC.	

Meeting Minutes prepared by:

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited

Per: Matthew Senior, M.A.Sc., P.Eng.
Associate - Water Resources Engineer

Distribution: All Present

Minutes

Date:	February 10, 2021
File #:	TPB208020
Meeting Date & Time:	February 10, 2021 11:00 am
Meeting at:	WebEx Teleconference
Subject:	Port Credit Drainage Study – Coordinating City and Region Efforts

Attendees:

Muneef Ahmad, City of Mississauga
Monika Racioppo, Region of Peel
Ali Aamir, Region of Peel
Jeanne Thomsen, Region of Peel
Farshad Salehzade, Region of Peel
Ron Scheckenberger, Wood
Emma Haug-Kindellan, Wood
Matt Senior, Wood

Regrets:

Samantha Stokke, Wood

MATTERS DISCUSSED **ACTION BY:**

1. Port Credit Project Introduction

- The scope of the Port Credit Storm Drainage Master Plan (EA) was introduced to the Region, providing context of the study area limits and briefly outlining the proposed assessment relating to minor/major stormwater system capacity and performance analysis, which will ultimately result in recommendations for system improvements.
- Muneef Ahmad explained the intent for this meeting to initiate a partnership for information sharing to ensure alignment and coordination between the City's Port Credit Drainage Study and the Region's on-going and/or planned efforts within the study area.

2. Region of Peel – I/I Reduction Program

- Farshad Salehzade provided a description of the Region's I/I program, through which the Region of Peel has been separated/delineated into 40 different "blocks". These "blocks" have been prioritized according to the severity of potential issues associated with I/I in these neighborhood areas; the block prioritization is not limited to only high

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MATTERS DISCUSSED **ACTION BY:**

vs low I/I occurrences, but also considers the potential issues associated with I/I in these areas, including flood risks, limiting development growth, risks to the environment and infrastructure, etc.

- Through the Region's I/I Reduction Programs, each identified "block" is evaluated, inspected and assessed through a variety of different initiatives/actions, including but not limited to, identifying and completing all downspout disconnections, ensuring inspections for the entire infrastructure system is complete/up to date (all MHs, pipes, pump stations, etc.), identification and remediation of cross-connections, and assessing the need for additional capacity (pipe sizes, pumping, etc.).
- Farshad Salehzade stated that the Port Credit Study Area is identified as "Block 17" and has been ranked as either 6th or 7th in priority across the Region (exact ranking to be confirmed).To-date, Block 17 has not been examined in detail through the I/I program, however is expected to be assessed at this level in a few years.
- Based upon the Region's current efforts in the Port Credit area, Farshad Salehzade noted that high levels of I/I have been reported within some parts the Study Area, particularly within the Maple Avenue neighborhood, located directly West of the Brightwater Development, south of Lakeshore Road. These occurrences of I/I are known to be largely groundwater based, which have been confirmed through the Region's flow monitoring gauges, smoke testing, etc. being conducted within the Port Credit area.
- The Region noted that establishing the capacity and level-of-service (LOS) for the minor/major storm system will help it in its efforts to improve the sanitary system performance, to ensure that both systems are operating as designed. Wood and the City identified that the capacity / LOS is a direct outcome of the current Storm Drainage study, which will be shared and integrated with the Region's work.
- Muneef Ahmad noted that the Region's findings, including identified problem areas, will be an important consideration moving forward with the potential outcomes and recommendations of the Drainage Study (i.e. areas with high groundwater table influencing I/I may not be suitable for infiltrative designs). The intent is to integrate the respective assessments/programs and ensure the most effective designs, implementation and construction to improve the community.

MATTERS DISCUSSED	ACTION BY:

3. Region of Peel – External Agencies Group (PWI)

- Monika Racioppo outlined the intent of the External Agencies (ExA) Group at the Region, which was developed in an effort to streamline requests and reviews from external agencies for information pertinent to W/WW assets and programs.
- Monika Racioppo requested Wood to provide information regarding the study area (mapping, project background, etc.) to the ExA (PWI) via email contact (pwi@peelregion.ca), so that the Region can review in detail and provide an indication as to the available information (capital planning, monitoring, maintenance, etc.).
- Wood will send this information within a week of the meeting date. Once the information has been received by the Region through the subject channels (PWI email), the Region (Ali Aamir) will review and provide an indication as to what information is available. **Wood/Region**

4. Technical Advisory Committee (TAC) for Port Credit Project

- Matt Senior asked the Region representatives who at the Region would be interested in taking part in the TAC for the Port Credit Project, and if a specific contact could be provided for further coordination.
- The Region expressed interest in being a part of the TAC, and Jeanne Thomsen suggested that the PWI (ExA) group be listed as the primary contact (pwi@peelregion.ca).
- Wood to follow-up regarding the TAC members and determine a meeting date with City staff. **Wood**

Meeting Minutes prepared by:

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited

Per: Matthew Senior, M.A.Sc. P.Eng.
Associate, Senior Water Resources Engineer

Distribution: All Present + Regrets

Minutes

Date:	June 15, 2021
File #:	TPB208020
Meeting Date & Time:	June 15, 2021 2:00 PM
Meeting at:	Teleconference
Subject:	Port Credit Master Drainage Plan, City of Mississauga Technical Review Meeting

Attendees:

Muneef Ahmad, City of Mississauga

Emma Haug-Kindellan, Wood

Matt Senior, Wood

MATTERS DISCUSSED **ACTION BY:**

1. Infill and Intensification

- Muneef Ahmad noted that the Brightwater development is likely the primary anticipated infill within the study area. [NOTE: Wood intends to include this area as per the proposed modelling by others in both the existing and intensification land use scenarios].
- It was generally agreed that any other infill/intensification will likely be focused on existing low density residential, as other areas are already largely built out or have high impervious coverage. Muneef Ahmad suggested that there may be some "knock down, re-builds" or assembly of several parcels in these areas however the amount and coverage is not known.
- Currently, low density residential (LDR) is assumed at 45% imperviousness. Matt Senior suggested that this can be revised for the infill/intensification scenario assuming future re-builds maximize the coverage (building at 35% of lot) plus amenity areas (Wood to make a suitable assumption based on its work in other areas and any other data for the area). It was agreed that full uptake is unlikely, and that as an initial assumption 50% uptake (rebuilds) be considered.

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MATTERS DISCUSSED	ACTION BY:
• Wood to review and determine the resulting imperviousness for LDR land use and update subcatchments, then review the associated drainage system impacts.	**Wood**

2. Climate Change and Next Steps

• Muneef Ahmad noted that a study area specific dataset was developed by the Region of Peel and TRCA, and this should be considered as the preferred source of information. Wood to review with Christine Tu at the Region of Peel to discuss the dataset and its potential application to the study.	**Wood**
• If the preceding determines that the subject dataset cannot be applied, Wood to consider the alternative approaches noted in the work plan (IDF adjustment tools like IDFCC, OCCDP, MTO, etc).	
• Wood to move forward with other analyses for Tech Memo No. 2 in the interim. Depending on timing for discussions with the Region, Wood may submit an interim TM2 to City for review with the climate change analyses to be completed thereafter.	**Wood**
• Once TM2 has been completed and submitted to the City for review, a meeting with the TAC is expected to be scheduled to discuss the findings and next steps.	

Meeting Minutes prepared by:

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited

Per: Matthew Senior, M.A.Sc., P.Eng.
Associate - Water Resources Engineer

Distribution: All Present + Ron Scheckenberger, Wood

Minutes

Date:	July 9th, 2021
File #:	TPB208020
Meeting Date & Time:	July 9th, 2021 at 10 am
Meeting at:	Virtual Teams Meeting
Subject:	Port Credit Storm Drainage Master Plan Climate Change Assessment

Attendees:

Muneef Ahmad, City of Mississauga	Glenn Milner, Climate Risk Institute
Jeremy Schembri, Region of Peel	Matt Senior, Wood
Christopher Despins, Region of Peel	Emma Haug-Kindellan, Wood

Regrets:

Christine Tu, Region of Peel	Ron Scheckenberger, Wood

MATTERS DISCUSSED **ACTION BY:**

1. Introduction and Project Background

- All attendees introduced themselves, their current role and the organization they represent.
- Matt Senior provided background regarding the current Storm Drainage Master Plan (SDMP) being conducted by Wood for the Port Credit community. The study area limits were shown on a plan, which outlined the primary study area being the downtown Port Credit core, approximately bound by Shawnmarr Road to the west, Hurontario Street to the east, and the CNR to the north.
- Matt Senior outlined that the current study includes dual drainage modelling (hydrologic/hydraulic) to evaluate the level of service / performance of the existing storm sewer system (minor/major) under existing conditions (land use/climate), as well as with the impact of future infill and/or intensification within the residential areas; included in the scope is also an assessment under climate change rainfall conditions. The results of this performance analysis will allow for the development and evaluation of potential mitigation options to reduce flood risk throughout the community.

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- Matt Senior stated that the intended purpose of this meeting was to engage with the City, Region and partners to gain insight into climate change analysis completed within the Region and discuss any potential climate change datasets that might be applicable for use in the current study.

2. Past Region of Peel Climate Change Studies

- Glenn Milner provided background on the Region of Peel Climate Trend report, which was then followed by a Climate Vulnerability Assessment specific to the Port Credit area. He indicated that these studies completed a historical analysis and future projections of climate trends specific to the Region of Peel from the period of 1981 to 2100, which then informed a case study for vulnerabilities across the Port Credit community with respect to future climate trends. [NOTE: The reports are available online].
- Glenn Milner stated that the Vulnerability Assessment completed for the Port Credit community outlined vulnerability in a variety of different aspects, including flooding risk, as well as several other community impact lenses. This study also included an identification of at-risk areas within the Port Credit area, based upon GIS analysis and climate projections; although, these areas were not validated against more detailed modelling.
- Matt Senior asked whether any detailed data sets were produced or whether Glenn Milner felt any of the data produced or analyzed as part of these previous studies could be applied in the current modelling effort (i.e., IDF curves). Glenn Milner advised that the data within the climate trend reports does not contain information on climate change influences at a sub-daily time scale (i.e. for discrete modelling), and rather focuses on daily, seasonal and extreme trends.

3. On-going Climate Change Studies (ROP & Others)

- Christopher Despins provided details regarding on-going and/or recent climate change studies that the Region of Peel has been completing with a consultant (GM BluePlan) in partnership with other neighboring municipalities. These include climate trends for the Region of Peel, as well as a review and update to the Region's IDF parameters for the inclusion of climate change impacts. Christopher Despins to follow-up with the Region's stormwater group to gain further insight into the methods for IDF curve updates, and for the possible sharing of background material (Note: After the meeting, Christopher Despins provided the requested background material). **Region**

- Glenn Milner discussed an assessment of IDF curves for climate change completed within the Durham Region which analyzed a variety of return periods and shifting storm peaks. This assessment also summarized a number of "dos & don'ts" with respect to the use and application of IDF tools (i.e. IDF_CC tool). Glenn Milner to follow-up and see if this memorandum can be shared with Wood with respect to best practices for use of the tools. **CRI**

4. Recommendations for the Port Credit Study

- Matt Senior opened the floor to the group for recommendations as to what data sets/tools would be preferred and/or available for use in the current study.
- Glenn Milner suggested that the two (2) most widely used tools for climate change influenced IDF curves across the Province are the University of Western's IDF_CC tool, and the University of Waterloo's MTO IDF Curves. Glenn Milner suggested that the IDF_CC tool would be preferred, given that the tool is based on climate change modelling approaches and is consistent with the methodology applied in the previous Regional scale studies.
- Matt Senior asked whether there were any recommendations on the emissions scenarios which are preferred for the climate change scenarios and indicated that typically Wood applies a range to determine the spectrum of impacts. Glenn Milner suggested that RCP 4.5 and RCP 8.5 are the most common, for which RCP 8.5 is the most conservative representing worst case scenarios; he suggested that risk tolerances and associated impacts be incorporated as part of the decision of which scenarios are to be modelled and used for design/mitigation recommendations. Wood to review options as part of subsequent study tasks and review decisions with the City. **Wood/City**
- As an FYI to attendees, Glenn Milner also noted the pending updates to the climate change emission scenarios and the associated policies for meeting the scenario requirements. The updates are to consist of revised naming, minor refinements to the projections and updated/current policies.
- Jeremy Schembri asked whether there has been any consideration for reaching out to TRCA to see if they have produced any climate change influenced rainfall data for modelling and offered the Region's support in accessing that info. Muneef Ahmad suggested that the guidance gained through the current call is sufficient for the current study scope.
- Jeremy Schembri expressed the Region's interest in reviewing the outcomes of the Port Credit SDMP once the modelling and reporting are complete. Wood/City to advise accordingly. **Wood/City**

Meeting Minutes prepared by:

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited

Per: Emma Haug-Kindellan, M.Eng., EIT
Water Resources EIT

EHK/MS

MEETING NOTES

JOB TITLE	Port Credit Storm Drainage Master Plan		
PROJECT NUMBER	TPB208020	**DATE**	12 October 2022
TIME	3:15 PM	**VENUE**	Teleconference
SUBJECT	Project Update Meeting – Review of Preliminary Alternative Assessment		
CLIENT	City of Mississauga		

ATTENDEES			
Name	**Company**	**Phone**	**Email**
Muneef Ahmad	City of Mississauga		muneef.ahmad@mississauga.ca
Emma Haug-Kindellan	WSP		emma.haugkindellan@wsp.com
Matt Senior	WSP		matt.senior@wsp.com

ADDITIONAL DISTRIBUTION			
Name	**Company**	**Phone**	**Email**
Samantha Stokke	WSP		samantha.stokke@wsp.com
Nadya Mrochkovskaia	WSP		nadya.mrochkovskaia@wsp.com

MATTERS ARISING	**ACTION**
1.0 ALTERNATIVE ASSESSMENT REVIEW	
a) Matt Senior and Emma Haug-Kindellan provided a general overview of likely alternatives, noting that WSP has applied an alternative selection flow chart on other projects. In general, it is expected that storm sewer upgrades will be the primary alternative, however other alternatives such as roadside LID BMPs (consistent with Build Beautiful) will also be considered.	
b) LID types were discussed, it was generally suggested that this would be guided by the road type and that limited ROW space may be an issue for surface-based LIDs.	
c) There was some discussion regarding high lake levels and impacts to storm sewer performance. Matt Senior noted that re-profiling can be reviewed but that raising the infrastructure may not be feasible. He noted that flapgates\backflow valves may be of limited value in this case.	
d) The "worst case" scenario of climate change + infill and intensification has yet to be simulated, WSP will need to consider this. This scenario may be used to test the effectiveness of primary measures and determine whether additional upgrades to accommodate this scenario are technically feasible or not.	
e) Prioritization of alternatives was discussed. Areas with known infrastructure issues would likely be a high priority for combination with capacity upgrades. Arterial roads would similarly be higher priority over more local roads. Infill and intensification pressure areas would also be prioritization factors.	
f) Capital Planning information regarding what roads are scheduled for reconstruction would be helpful to ensure synergy. City to review and forward.	**City**
g) It was noted that data from the City's Asset Management Plan (AMP) may be useful, including updated GIS data above and beyond the CCTV inspection data that WSP previously reviewed and summarized. City to forward updated GIS data (if available).	**City**

h) Inflow and infiltration hot spot mapping from the Region of Peel would also be helpful. WSP to review material previously forwarded;City to confirm if there is updated available data from the Region. i) With respect to the major system, although depression areas were noted in the GIS analysis the modelling indicates limited areas with identified deficiencies. Matt Senior noted that the benefits of an upgraded storm sewer (minor) system on major system performance should first be assessed. Road-side surface LID BMPs, if feasible given ROW space, may also be helpful for major system storage. j) With respect to re-development pressures, Muneef Ahmad noted that the area between Stavebank and Hurontario (north of Lakeshore) is the primary focus. k) The requirements of the Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) for the current study should be confirmed; Muneef Ahmad to review and advise. l) With respect to on-site SWM measures, it was confirmed that these would not apply to single family homes which are not subject to the site plan approval process. Muneef Ahmad noted that in other cases the City does typically require over-control to the limit of the available storm sewer capacity. Matt Senior questioned if this study should provide any further details on capacity however Muneef noted this was not required. He suggested the City's preferred approach would be to ensure a consistent Level of Service (LOS) throughout for all storm sewer systems. m) Matt Senior provided an example of a ranked scoring matrix for the Class EA process which could be applied for the Port Credit study. Muneef Ahmad was generally supportive but suggested that the weight for climate change factors should likely be increased to 20%, he noted that public safety is likely also part of climate change so that factor could potentially be altered to 10%. Other factors could potentially be reduced (such as cultural heritage, etcetera).	**WSP\City** **City**
2.0 SCHEDULE AND NEXT STEPS	
a) WSP to prepare an updated schedule. It was agreed that technical work should be targeted for completion by the end of November. Internal City review and circulation could then occur, with the TAC meeting potentially to occur in January 2023, and the PIC in February 2023. b) Muneef Ahmad confirmed that the PIC would be the same format as last time, a video summary would be posted on the project website. This should be targeted for completion by the end of January, to support delivery\posting in mid-February. c) Matt Senior questioned if there was a designed length of the video, given that PIC #1 used a shorter length. Muneef Ahmad suggested that the PIC #2 video could be longer and have more detail given that it may be of greater interest to the public. More graphics should be implemented in this version as opposed to PIC #1 which was more text\table heavy. Providing clarity on street level projects will likely be of interest to the public.	**WSP**

These minutes are considered to be accurate recording of all items discussed. Written notice of discrepancies, errors or omission must be given within seven (7) days, otherwise the minutes will be accepted as written.

NEXT MEETING

An invitation will be issued if an additional meeting is required.

MEETING NOTES

JOB TITLE	Port Credit Storm Drainage Master Plan		
PROJECT NUMBER	TPB208020	**DATE**	12 January 2022
TIME	11:00 AM	**VENUE**	Teleconference
SUBJECT	Project Update Meeting – Review of Preliminary Preferred Solution		
CLIENT	City of Mississauga		

ATTENDEES			
Name	**Company**	**Phone**	**Email**
Muneef Ahmad	City of Mississauga		muneef.ahmad@mississauga.ca
Emma Haug-Kindellan	WSP		emma.haugkindellan@wsp.com
David Marshall	WSP		david.marshall2@wsp.com
Samantha Stokke	WSP		samantha.stokke@wsp.com
Matt Senior	WSP		matt.senior@wsp.com

ADDITIONAL DISTRIBUTION			
Name	**Company**	**Phone**	**Email**
Nadya Mrochkovskaia	WSP		nadya.mrochkovskaia@wsp.com

MATTERS ARISING	**ACTION**
1.0 DISCUSSION OF PRELIMINARY PREFERRED SOLUTION	
a) Matt Senior provided a brief overview of the additional work completed for Tech Memo #3 (submitted December 9/10, 2022). He noted that although a fulsome alternative assessment was completed, in general the simplest solution was determined the most appropriate, with a focus on storm sewer upgrades. The storm sewer upgrades also appear to be beneficial in addressing overland flow\major system deficiencies. Low Impact Development (LID) measures have also been proposed. b) Muneef Ahmad noted that the report did not flag any issues of immediate concern or priority with respect to maintenance or condition which would likely trigger quicker City action on storm sewer upgrades. As such, the proposed works will need to be accommodated within the City's long-term capital works plan and budget. c) Muneef Ahmad noted that the proposed priority storm sewer upgrade works do not appear to have any direct overlap with known Peel Region projects, but this should be confirmed. d) Matt Senior noted that WSP would appreciate input from City staff on the construction cost estimates included in Appendix F based on recent construction tenders in the City. Muneef will review and confirm with City staff. It was noted that for public presentation costs should likely be presented as a range rather than fixed numbers as these may change. e) It was agreed that a second TAC meeting should be scheduled to review and confirm findings. Muneef Ahmad suggested that this be targeted for mid-February. WSP to co-ordinate. f) Matt Senior noted that WSP's planners should re-confirm the evaluation applied. Muneef Ahmad noted that this should occur prior to TAC meeting #2.	**City** **WSP** **WSP**

g) It was noted that there was no specific archaeology or cultural heritage work included in scope in support of the current study. City to review whether there are any Stage 1 assessment reports or other information available for the general study area and forward if so. There may be limited Cultural Heritage data available on the City's open data portal. h) Muneef Ahmad confirmed that storm sewer sizing should be completed for "future conditions", i.e. incorporating climate change adjusted rainfall and future intensification data. It was noted that the intensification impacts would largely only impact the area around Maple Avenue and Pine Avenue (Upgrade Area #2). i) The changes from Provincial Bill 23 were discussed. Muneef Ahmad noted that prior to Bill 23 single family homes were actually subject to site plan control, however now this only applies to greater than 10 units. Appropriate wording may be required in the report to qualify unknown changes, such as "as of the time of writing….". j) Muneef Ahmad noted an increased interest in cost benefit analysis; he will forward the Natural Research Council of Canada document. Matt Senior noted that WSP has not been generally applying this on other projects, usually the standard Class EA evaluation process (including "do nothing") has been used. In this case the general assumption is that achieving a consistent Level of Service may trump cost implications. Samantha Stokke noted that the cost criteria in the EA evaluation does however consider this indirectly. k) Muneef Ahmad noted he would like to include the NRC cost-benefit approach in the current study and would consider a scoped Change Order if necessary to include this. Matt Senior noted that the project is relatively healthy budget-wise so this may not be an issue but will review further. It was noted that the approach may be useful and applicable to other projects as well in the future. l) Matt Senior confirmed that lot level measures (LIDs) have not been directly costed given the uncertainty. He noted that further City feedback should be gathered (i.e. via TAC Meeting #2) to confirm what is likely\realistic and then costs should be include to ensure they are budgeted. m) Further to the changes under Bill 23, Muneef Ahmad noted that private side LIDs are unlikely to be required or promoted\supported by City staff. Matt Senior noted CVC's work on LID aggregation, however this has generally been considered for industrial\commercial lands. n) Matt Senior noted that the study scope did not include stormwater quality controls, however he suggested that there be general wording included with respect to this, in particular the importance of including retrofit quality control as part of road reconstruction. Muneef Ahmad agreed.	**City** **WSP** **WSP**
2.0 PUBLIC INFORMATION CENTRE #2	
a) PIC #2 will need to occur following TAC meeting #2. Muneef Ahmad suggested a general time window of March 8th to 29th (3-week window). He confirmed that an online format can be used again. b) Samantha Stokke noted concern with the lack of public engagement on PIC #1. Muneef Ahmad noted that one (1) phone call was received, and that connection was made with the Port Credit residents association, but nothing was received back. Samantha Stokke suggested that road signs could be considered this time to generate more interest. c) Samantha Stokke requested the City provide website statistics for what traffic was generated for the previous PIC. d) Muneef Ahmad questioned what type of feedback\engagement was being sought from the public. Matt Senior noted that generally any known history of flooding\drainage problems is helpful, and related concerns related to streetscaping or condition. Samantha Stokke noted that there may also be interest in future construction impacts. Muneef Ahmad noted that it is likely that the identified projects may not occur for several years, and that more direct public engagement would better occur at that time. e) Samantha Stokke will review key contact to notify for PIC #2, including the residents association. Work to advance on preparing the draft PIC #2 materials for City review, however this will also be pending outcomes of TAC meeting #2. f) It was suggested that work on completing the project reporting should occur in parallel with PIC #2 planning, such that the study can be wrapped up thereafter (April\May\June for notice of completion).	**City** **WSP**

MEETING NOTES

These minutes are considered to be accurate recording of all items discussed. Written notice of discrepancies, errors or omission must be given within seven (7) days, otherwise the minutes will be accepted as written.

NEXT MEETING

Next meeting is expected to be Technical Advisory Committee (TAC) Meeting #2, to occur in mid-February.

APPENDIX

G-6 Indigenous Consultations

APPENDIX

G-6.1 Haudenosaunee Development Institute

COMMENT FORM

Port Credit Storm Drainage Master Plan
Municipal Class Environmental Assessment (Schedule B)
Public Information Centre #2

March 20, 2024 - April 10, 2024

The City of Mississauga welcomes your comments on the Port Credit Storm Drainage Plan Municipal Class Environmental Assessment by e-mail or phone call to either of the following individuals by April 10, 2024:

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga
Tel: (905) 615-3200, ext.4793
E-mail: muneef.ahmad@mississauga.ca

Matt Senior, M.A.Sc., P.Eng.
Consultant Project Manager
WSP Canada
Tel: (905) 335-2353, ext. 3080
Email: matt.senior@wsp.com

Do you have any further questions or comments on the information presented (e.g. the Evaluation of Alternatives and/or Preferred Stormwater Management Strategy)?

Have you experienced flooding on your property within the Port Credit area? If yes, please specify when and where.

General Comments:

Thank-you for your participation. If you wish to be added to our Project Mailing List to be kept informed about the final report, please provide your contact information below.

Name: _____ **Address:** _____

City: _____ **Postal Code:** _____

Phone: _____ **E-mail:** _____

Personal information, as defined by the Municipal Freedom of Information and Protection of Privacy Act (MFIPPA) is collected under the authority of the Municipal Act, 2001, and in accordance with the provisions of MFIPPA. Personal information on this Public Open House Comment Sheet will be used for the purpose of informing the Port Credit Storm Drainage Plan Municipal Class Environmental Assessment.

From: Muneef Ahmad
To: info@hdi.land
Subject: Closure: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan
Attachments: image001.png
image002.png
image003.png
HDI-application_SWMP.pdf

Good morning:

A note of thanks for our exchange on the Mississauga City-wide Stormwater Master Plan and Port Credit Storm Drainage Master Plan. We do apologize that we'd neglected to provide the attached Agreement. A hard copy of the attached Agreement is being sent to HDI along with a cheque for the applicable review fee of $3,000.

After the message below, we made a follow-up call on August 25, 2022. The Mississauga City-wide Stormwater Master Plan including the consultation process is now wrapping up. The projects stemming from the Stormwater Master Plan will include consultation opportunities, and the City will reach out to you to determine your interest in providing feedback on pertinent initiatives, as well as regarding any relevant information that arises on these two projects.

Regards,

MISSISSAUGA
Muneef Ahmad P.Eng
Manager-Stormwater Projects & Approvals, Environmental Services Section
T 905-615-3200 ext.4793
muneef.ahmad@mississauga.ca

City of Mississauga | Transportation & Works Department,
Infrastructure Planning & Engineering Services

storm water

Follow us on Instagram **@saugastormwater**

From: Muneef Ahmad
Sent: Wednesday, July 27, 2022 10:47 AM
To: 'info@hdi.land' <info@hdi.land>
Cc: Stokke, Samantha (samantha.stokke@woodplc.com) <samantha.stokke@woodplc.com>
Subject: RE: Notification: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan

Good morning, Tracey:

Thank you for the brief chat. As discussed, please see the attached and below for your consideration

and kindly forgive the date error on the attached letter as it was issued last year, not 2020 as the PDF letter suggests.

I'll reach out in about a month for any discussion if we've not had an opportunity for an exchange by then.

Regards,

Muneef Ahmad P.Eng
Manager-Stormwater Projects & Approvals, Environmental Services Section
T 905-615-3200 ext.4793
muneef.ahmad@mississauga.ca

City of Mississauga | Transportation & Works Department,
Infrastructure Planning & Engineering Services

From: Muneef Ahmad
Sent: Friday, May 7, 2021 12:15 PM
To: 'hdi2@bellnet.ca' <hdi2@bellnet.ca>
Cc: Scheckenberger, Ron (ron.scheckenberger@woodplc.com) <ron.scheckenberger@woodplc.com>; Kelly, Mary K <mary.k.kelly@woodplc.com>; Stokke, Samantha (samantha.stokke@woodplc.com) <samantha.stokke@woodplc.com>
Subject: Notification: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan

Dear Tracey:

The City values its relationship with the Haudenosaunee Confederacy Chiefs Council (HCCC) and recognize that HCCC, as represented by Haudenosaunee Development Institute (HDI), may have an interest in learning more about and participating in the above-captioned projects.

The attachment includes a notification letter and summary of both projects for your reference. We would welcome the opportunity to meet and discuss.

We will contact you by telephone soon to determine your interest in a meeting. If you have any questions, feel free to contact the undersigned.

Regards,

Muneef Ahmad P.Eng
Manager-Stormwater Projects & Approvals, Environmental Services Section
T 905-615-3200 ext.4793
muneef.ahmad@mississauga.ca

City of Mississauga | Transportation & Works Department,
Infrastructure Planning & Engineering Services

Ron Scheckenberger,
P.Eng., M. Eng.,
Principal – Water Resources
Direct: +905 335 2353 Ext. 3109
ron.scheckenberger@woodplc.com
www.woodplc.com

Tracey General
Office Manager
Haudenosaunee Confederacy Chiefs Council
c/o Haudenosaunee Development Institute
hdi2@bellnet.ca

May 7, 2020

Re: City of Mississauga Stormwater Master Plan, Build Beautiful

Dear Ms. General,

The City of Mississauga (City) is creating a Stormwater Master Plan, titled *Build Beautiful*. This aspirational plan will lay out a path for the City to better manage rainwater and snowmelt in a way that protects our businesses and residents while preserving our natural environment. The City is also completing a Storm Drainage Master Plan for the Port Credit community, which is one of the recommendations from *Build Beautiful*. This plan will build on the City's understanding of flood risks in this community to propose solutions to better manage rainwater. The City has engaged Wood Environment & Infrastructure (Wood) to support the development of both these plans.

The City values its relationship with the Haudenosaunee Confederacy Chiefs Council (HCCC) and recognize that HCCC, as represented by Haudenosaunee Development Institute (HDI), may have an interest in learning more about and participating in the project. We have attached a summary of both projects for your reference and would welcome the opportunity to meet and discuss. We will contact you by telephone soon to determine your interest in a meeting. If you have any questions, please feel free to contact the undersigned.

Sincerely,

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga

Ron Scheckenberger, M.Eng., P. Eng.
Consultant Project Manager
Wood Environment & Infrastructure Solutions

Cc: Mary Kelly, Wood (mary.k.kelly@woodplc.com)
Samantha Stokke, Wood (samantha.stokke@woodplc.com)

Encl: Project Summary Stormwater Master Plan – *Build Beautiful*
Project Summary Port Credit Storm Drainage Master Plan

City of Mississauga Stormwater Master Plan, “Build Beautiful”

Project Description

The City of Mississauga (City) is creating a new Stormwater Master Plan, titled “Build Beautiful”, that aims to protect our businesses and residents while preserving our natural environment. Through “Build Beautiful”, the City will outline actions and recommendations for managing rainwater and snowmelt and address issues such as flooding and water quality. Using the existing stormwater management program as its foundation, “Build Beautiful” will meet municipal priorities and legislative requirements and provide recommendations for better and/or further actions to effectively manage stormwater in Mississauga.

Stormwater Management Planning is Important

People often do not think about stormwater until they are directly affected by a severe storm event or experience property damage from flooding and/or erosion. But stormwater runoff can impact the community in several ways.

- Flooding from storm events can damage public and personal property, impact business operations and even get in the way of day-to-day activities.
- Runoff can pick up and transport harmful pollutants such as oil, grease, trash and fertilizers to waterways.
- Rapid drainage from developed land can cause significant erosion to waterways which further impacts water quality and habitat.

Managing the City’s stormwater is very important to protecting our drinking water source, Lake Ontario, since rainwater and snowmelt ends up in the lake. It also plays an important role protecting public safety and health, and works to reduce flood risks, control erosion and maintain water quality in local natural waterways. The City manages stormwater by planning, designing, constructing, operating and maintaining stormwater assets within municipal roadways, public easements and other City lands. Developing a Master Plan helps further refine and optimize the existing actions the City is taking to manage stormwater. The Stormwater Master Plan will be an aspirational plan, and will

focus on compliance with the legislative framework by establishing details and prioritizing the City's Actions and Programs.

Schedule and Next Steps

There are three phases to the development of "Build Beautiful".

Phase 1: During the first phase we reviewed background information, legislation, existing programs and industry best practices. As part of this phase we have also conducted an online survey that will help us develop a vision for the future that aligns with community-identified interests and priorities.

Phase 2: We are currently in this phase and are defining the future actions and recommendations based on the knowledge gained during Phase 1. A key component of this phase will be sharing the learnings, proposed actions and recommendations, and seeking input from residents, key stakeholders and Indigenous Peoples and Nations.

Phase 3: During this final phase we will develop an implementation plan for approval by City Council in Fall 2021.

Additional Information

For more information about the City's "Build Beautiful" Stormwater Master Plan, please visit: https://yoursay.mississauga.ca/stormwater-master-plan

Contact Information

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga
300 City Centre Drive,
Mississauga, ON L5B 3C1
Telephone: 905-615-3200 ext. 4793
muneef.ahmad@cityofmississauga.ca

Ron Scheckenberger, M.Eng., P. Eng.
Consultant Project Manager
Wood Environment & Infrastructure Solutions
3450 Harvester Road, Suite 100
Burlington, ON L7N 3W5
Telephone: 905-335-2353
ron.scheckenberger@woodplc.com

Port Credit Storm Drainage Master Plan
Municipal Class Environmental Assessment

A Municipal Class Environmental Assessment is a decision-making and planning process which identifies the potential environmental effects of a project within a local area, so these risks can be managed prior to a project's implementation.

Project Description

The City of Mississauga (City) is currently in the process of preparing a City-wide Stormwater Master Plan, which will outline actions for managing stormwater to protect our businesses and residents while preserving our natural environment. One of the recommendations of the City-wide Stormwater Master Plan is to undertake a Storm Drainage Master Plan specifically for the Port Credit area. The Port Credit Storm Drainage Master Plan will aim to address current and future requirements of the City's storm drainage infrastructure, and will include:

- Data collection and background information review
- Road and sewer network modelling and assessment
- Evaluation of alternatives, such as increased sewer pipe sizes and grading of the ground
- Recommended preferred stormwater strategy

Approximate study area (south of the Canadian National Railway tracks to Lake Ontario, between Shawnmarr Road (to the West) and Hurontario Street (to the East))

Municipal Class Environmental Assessment

Master Plan projects are required to follow the process described in the Municipal Class Environmental Assessment (Class EA) document. The purpose of this Class EA is to:

- Identify priority-based Stormwater Management Program
- Determine local (area-specific) Stormwater Management Policy recommendations

The Class EA planning process helps identify the potential effects of proposed projects. Each proposed alternative is assessed against baseline conditions to determine the potential effects, and where necessary, identify mitigation measures to minimize or avoid those impacts. From these alternatives, the most feasible alternative is identified.

A key component of this study is to consult with the regulatory agencies, the public, interested stakeholders and Indigenous Nations whose Traditional Territory the project is located in.

Potential Project Related Effects

Potential project effects will be identified through an evaluation of the alternatives. Mitigation measures to address these potential effects will be developed for the preferred solution and recommendations.

Schedule and Next Steps

Consultation is an important part of the Class EA process. Public input and comment are invited, for incorporation into the planning and design of this Study. Two Public Information Centre (PIC) will be held to present the Study findings, the alternative solutions being considered, and to answer any questions you may have. Details regarding the PIC will be advertised publicly as the Study progresses.

- Public Information Sessions: tentatively planned for Fall 2021
- Master Plan Report: tentatively planned for Spring 2022

Contact Information

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga
300 City Centre Drive,
Mississauga, ON L5B 3C1
Telephone: 905-615-3200 ext. 4793
muneef.ahmad@cityofmississauga.ca

Ron Scheckenberger, M.Eng., P. Eng.
Consultant Project Manager
Wood Environment & Infrastructure Solutions
3450 Harvester Road, Suite 100
Burlington, ON L7N 3W5
Telephone: 905-335-2353
ron.scheckenberger@woodplc.com

APPENDIX

G-6.2 Huron-Wendat

From: Muneef Ahmad
To: mario.groslouis@cnhw.qc.ca; melanievincent21@yahoo.ca
Subject: Closure: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan
Attachments: image001.png
image002.png
image003.png

Good morning:

A note of thanks for our exchange on the Mississauga City-wide Stormwater Master Plan and Port Credit Storm Drainage Master Plan.

After the message below, we made a follow-up call on August 25, 2022. The Mississauga City-wide Stormwater Master Plan including the consultation process is now wrapping up. The projects stemming from the Stormwater Master Plan will include consultation opportunities, and the City will reach out to you to determine your interest in providing feedback on pertinent initiatives, as well as regarding any relevant information that arises on these two projects.

Regards,

MISSISSAUGA
Muneef Ahmad P.Eng
Manager-Stormwater Projects & Approvals, Environmental Services Section
T 905-615-3200 ext.4793
muneef.ahmad@mississauga.ca

City of Mississauga | Transportation & Works Department,
Infrastructure Planning & Engineering Services

Follow us on Instagram **@saugastormwater**

From: Muneef Ahmad
Sent: Monday, July 25, 2022 2:28 PM
To: 'mario.groslouis@cnhw.qc.ca' <mario.groslouis@cnhw.qc.ca>; 'melanievincent21@yahoo.ca' <melanievincent21@yahoo.ca>
Cc: Stokke, Samantha (samantha.stokke@woodplc.com) <samantha.stokke@woodplc.com>
Subject: RE: Notification: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan

Good afternoon, Mr. Gros-Louis and Ms. Vincent:

We wanted to follow-up on the message below and attached letter to see if there were any questions. Due to the pandemic and the many other important matters going on in the community,

we did not want to bother you with this, but also do not want to miss any feedback you may have. Please forgive the date error on the attached letter as it was issued last year, not 2020 as the PDF letter suggests.

I had just tried reaching you by phone, but it was suggested that an e-mail follow-up might be easier for you. I'll reach out in about a month for any discussion if we've not had an opportunity for an exchange by then.

Regards,

MISSISSAUGA
Muneef Ahmad P.Eng
Manager-Stormwater Projects & Approvals, Environmental Services Section
T 905-615-3200 ext.4793
muneef.ahmad@mississauga.ca

City of Mississauga | Transportation & Works Department,
Infrastructure Planning & Engineering Services

From: Muneef Ahmad
Sent: Friday, May 7, 2021 5:22 PM
To: 'mario.groslouis@cnhw.qc.ca' <mario.groslouis@cnhw.qc.ca>; 'melanievincent21@yahoo.ca' <melanievincent21@yahoo.ca>
Cc: Scheckenberger, Ron (ron.scheckenberger@woodplc.com) <ron.scheckenberger@woodplc.com>; 'Kelly, Mary K' <mary.k.kelly@woodplc.com>; Stokke, Samantha (samantha.stokke@woodplc.com) <samantha.stokke@woodplc.com>
Subject: Notification: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan

Dear Mr. Gros-Louis and Ms. Vincent:

The City values its relationship with the Huron-Wendat First Nation and recognize that the Nation may have an interest in learning more about and participating in the above-captioned projects.

The attachment includes a notification letter and summary of both projects for your reference. We would welcome the opportunity to meet and discuss.

We will contact you by telephone soon to determine your interest in a meeting. If you have any questions, feel free to contact the undersigned.

Regards,

MISSISSAUGA
Muneef Ahmad P.Eng
P.Eng., M. Eng.,
Manager-Stormwater Projects & Approvals, Environmental Services Section
T 905-615-3200 ext.4793
muneef.ahmad@mississauga.ca
City of Mississauga | Transportation & Works Department,
Infrastructure Planning & Engineering Services

wood.
Ron Scheckenberger,
Principal – Water Resources
Direct: +905 335 2353 Ext. 3109
ron.scheckenberger@woodplc.com
www.woodplc.com

Mario Gros-Louis
Huron-Wendat First Nation
mario.groslouis@cnhw.qc.ca

Mélanie Vincent
Huron-Wendat First Nation
melanievincent21@yahoo.ca

May 7, 2021

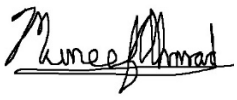
Re: City of Mississauga Stormwater Master Plan, Build Beautiful

Dear Mr.Gros-Louis and Ms. Vincent,

The City of Mississauga (City) is creating a Stormwater Master Plan, titled *Build Beautiful*. This aspirational plan will lay out a path for the City to better manage rainwater and snowmelt in a way that protects our businesses and residents while preserving our natural environment. The City is also completing a Storm Drainage Master Plan for the Port Credit community, which is one of the recommendations from *Build Beautiful*. This plan will build on the City's understanding of flood risks in this community to propose solutions to better manage rainwater. The City has engaged Wood Environment & Infrastructure (Wood) to support the development of both these plans.

The City values its relationship with the Huron-Wendat First Nation and recognize that the Nation may have an interest in learning more about and participating in the project. We have attached a summary of both projects for your reference and would welcome the opportunity to meet and discuss. We will contact you by telephone soon to determine your interest in a meeting. If you have any questions, please feel free to contact the undersigned.

Sincerely,



Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga

Ron Scheckenberger, M.Eng., P. Eng.
Consultant Project Manager
Wood Environment & Infrastructure Solutions

Cc: Mary Kelly, Wood (mary.k.kelly@woodplc.com)
Samantha Stokke, Wood (samantha.stokke@woodplc.com)

Encl: Project Summary Stormwater Master Plan – *Build Beautiful*
Project Summary Port Credit Storm Drainage Master Plan

City of Mississauga Stormwater Master Plan, “Build Beautiful”

Project Description

The City of Mississauga (City) is creating a new Stormwater Master Plan, titled “Build Beautiful”, that aims to protect our businesses and residents while preserving our natural environment. Through “Build Beautiful”, the City will outline actions and recommendations for managing rainwater and snowmelt and address issues such as flooding and water quality. Using the existing stormwater management program as its foundation, “Build Beautiful” will meet municipal priorities and legislative requirements and provide recommendations for better and/or further actions to effectively manage stormwater in Mississauga.

Stormwater Management Planning is Important

People often do not think about stormwater until they are directly affected by a severe storm event or experience property damage from flooding and/or erosion. But stormwater runoff can impact the community in several ways.

- Flooding from storm events can damage public and personal property, impact business operations and even get in the way of day-to-day activities.
- Runoff can pick up and transport harmful pollutants such as oil, grease, trash and fertilizers to waterways.
- Rapid drainage from developed land can cause significant erosion to waterways which further impacts water quality and habitat.

Managing the City’s stormwater is very important to protecting our drinking water source, Lake Ontario, since rainwater and snowmelt ends up in the lake. It also plays an important role protecting public safety and health, and works to reduce flood risks, control erosion and maintain water quality in local natural waterways. The City manages stormwater by planning, designing, constructing, operating and maintaining stormwater assets within municipal roadways, public easements and other City lands. Developing a Master Plan helps further refine and optimize the existing actions the City is taking to manage stormwater. The Stormwater Master Plan will be an aspirational plan, and will

focus on compliance with the legislative framework by establishing details and prioritizing the City's Actions and Programs.

Schedule and Next Steps

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Phase 1: During the first phase we reviewed background information, legislation, existing programs and industry best practices. As part of this phase we have also conducted an online survey that will help us develop a vision for the future that aligns with community-identified interests and priorities.

Phase 2: We are currently in this phase and are defining the future actions and recommendations based on the knowledge gained during Phase 1. A key component of this phase will be sharing the learnings, proposed actions and recommendations, and seeking input from residents, key stakeholders and Indigenous Peoples and Nations.

Phase 3: During this final phase we will develop an implementation plan for approval by City Council in Fall 2021.

Additional Information

For more information about the City's "Build Beautiful" Stormwater Master Plan, please visit: https://yoursay.mississauga.ca/stormwater-master-plan

Contact Information

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga
300 City Centre Drive,
Mississauga, ON L5B 3C1
Telephone: 905-615-3200 ext. 4793
muneef.ahmad@cityofmississauga.ca

Ron Scheckenberger, M.Eng., P. Eng.
Consultant Project Manager
Wood Environment & Infrastructure Solutions
3450 Harvester Road, Suite 100
Burlington, ON L7N 3W5
Telephone: 905-335-2353
ron.scheckenberger@woodplc.com

Port Credit Storm Drainage Master Plan
Municipal Class Environmental Assessment

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- Data collection and background information review
- Road and sewer network modelling and assessment
- Evaluation of alternatives, such as increased sewer pipe sizes and grading of the ground
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Approximate study area (south of the Canadian National Railway tracks to Lake Ontario, between Shawnmarr Road (to the West) and Hurontario Street (to the East))

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- Public Information Sessions: tentatively planned for Fall 2021
- Master Plan Report: tentatively planned for Spring 2022

Contact Information

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga
300 City Centre Drive,
Mississauga, ON L5B 3C1
Telephone: 905-615-3200 ext. 4793
muneef.ahmad@cityofmississauga.ca

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Wood Environment & Infrastructure Solutions
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Burlington, ON L7N 3W5
Telephone: 905-335-2353
ron.scheckenberger@woodplc.com

APPENDIX

G-6.3 Mississaugas of the Credit First Nation

From:	Abby LaForme
To:	Muneef Ahmad
Cc:	Mark LaForme; Stokke, Samantha
Subject:	RE: Notification: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan
Date:	Tuesday, July 26, 2022 1:44:36 PM
Attachments:	image002.jpg image003.png image004.png

Good Afternoon Muneef,

Thank you for reaching out to MCFN DOCA for Consultation.
At this time MCFN DOCA has no comments or concerns regarding the Stormwater Master Plan & Port Credit Storm Drainage Master Plan.
Please keep MCFN DOCA informed if any new information arises about the said project.

Thank you

Abby LaForme,
Acting Consultation Coordinator

Mississaugas of the Credit First Nation (MCFN)
Department of Consultation & Accommodation (DOCA)
4065 Highway 6, Hagersville, ON N0A 1H0
Ph: (905) 768 – 4260
Email: Abby.LaForme@mncfn.ca

From: Muneef Ahmad <Muneef.Ahmad@mississauga.ca>
Sent: Monday, July 25, 2022 2:20 PM
To: Abby LaForme <Abby.LaForme@mncfn.ca>
Cc: Mark LaForme <Mark.LaForme@mncfn.ca>; Stokke, Samantha (samantha.stokke@woodplc.com) <samantha.stokke@woodplc.com>
Subject: RE: Notification: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan

Good afternoon, Abby:

Further to a brief this with Mark this afternoon, please see below and attached. Forgive me for the date typo on the attached letter as it was issued last year, not 2020 as the PDF letter suggests.

I'll reach out in about a month for any discussion if we've not had an opportunity for an exchange by then.

Regards,

Muneef Ahmad P.Eng
Manager-Stormwater Projects & Approvals, Environmental Services Section
T 905-615-3200 ext.4793
muneef.ahmad@mississauga.ca

City of Mississauga | Transportation & Works Department,
Infrastructure Planning & Engineering Services

From: Muneef Ahmad
Sent: Friday, May 7, 2021 5:28 PM
To: Fawn.Sault@newcreditfirstnation.com
Cc: Scheckenberger, Ron (ron.scheckenberger@woodplc.com) <ron.scheckenberger@woodplc.com>; Kelly, Mary K <mary.k.kelly@woodplc.com>; Stokke, Samantha (samantha.stokke@woodplc.com) <samantha.stokke@woodplc.com>
Subject: Notification: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan

Dear Ms. Sault:

The City values its relationship with Mississaugas of the Credit First Nation and recognize that the Nation may have an interest in learning more about and participating in the above-captioned projects.

The attachment includes a notification letter and summary of both projects for your reference. We would welcome the opportunity to meet and discuss.

We will contact you by telephone soon to determine your interest in a meeting. If you have any questions, feel free to contact the undersigned.

Regards,

Muneef Ahmad P.Eng
Manager-Stormwater Projects & Approvals, Environmental Services Section
T 905-615-3200 ext.4793 Direct:
muneef.ahmad@mississauga.ca
City of Mississauga | Transportation & Works Department,
Infrastructure Planning & Engineering Services

Ron Scheckenberger, P.Eng., M. Eng.,
Principal – Water Resources
+905 335 2353 Ext. 3109

www.woodplc.com

Fawn Sault
Consultation Manager
Mississaugas of the Credit First Nation
Fawn.Sault@newcreditfirstnation.com

May 7, 2020

Re: City of Mississauga Stormwater Master Plan, Build Beautiful

Dear Ms. Sault,

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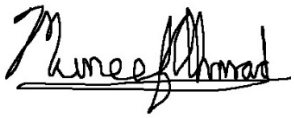

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga

Ron Scheckenberger, M.Eng., P. Eng.
Consultant Project Manager
Wood Environment & Infrastructure Solutions

Cc: Mary Kelly, Wood (mary.k.kelly@woodplc.com)
Samantha Stokke, Wood (samantha.stokke@woodplc.com)

Encl: Project Summary Stormwater Master Plan – *Build Beautiful*
Project Summary Port Credit Storm Drainage Master Plan

City of Mississauga Stormwater Master Plan, “Build Beautiful”

Project Description

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Additional Information

For more information about the City's "Build Beautiful" Stormwater Master Plan, please visit: https://yoursay.mississauga.ca/stormwater-master-plan

Contact Information

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga
300 City Centre Drive,
Mississauga, ON L5B 3C1
Telephone: 905-615-3200 ext. 4793
muneef.ahmad@cityofmississauga.ca

Ron Scheckenberger, M.Eng., P. Eng.
Consultant Project Manager
Wood Environment & Infrastructure Solutions
3450 Harvester Road, Suite 100
Burlington, ON L7N 3W5
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ron.scheckenberger@woodplc.com

Port Credit Storm Drainage Master Plan
Municipal Class Environmental Assessment

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Project Description

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Municipal Class Environmental Assessment

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Potential Project Related Effects

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Schedule and Next Steps

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- Public Information Sessions: tentatively planned for Fall 2021
- Master Plan Report: tentatively planned for Spring 2022

Contact Information

Muneef Ahmad, P.Eng.
Manager, Stormwater Projects & Approvals
City of Mississauga
300 City Centre Drive,
Mississauga, ON L5B 3C1
Telephone: 905-615-3200 ext. 4793
muneef.ahmad@cityofmississauga.ca

Ron Scheckenberger, M.Eng., P. Eng.
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Wood Environment & Infrastructure Solutions
3450 Harvester Road, Suite 100
Burlington, ON L7N 3W5
Telephone: 905-335-2353
ron.scheckenberger@woodplc.com

APPENDIX

G-6.4 Six Nations of the Grand River

From: Muneef Ahmad
To: tayler.hill@sixnations.ca
Cc: Stokke, Samantha
Subject: RE: Notification: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan
Date: Monday, July 25, 2022 1:21:38 PM
Attachments: image001.png
image004.png
20210510-SWMP-SNGR.pdf

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

Good afternoon, Tayler:

Thank you for the brief chat this afternoon. As discussed, please see the attached and below for your consideration.

I'll reach out in about a month for any discussion if we've not had an opportunity for an exchange by then.

Regards,

Muneef Ahmad P.Eng
Manager-Stormwater Projects & Approvals, Environmental Services Section
T 905-615-3200 ext.4793
muneef.ahmad@mississauga.ca

City of Mississauga | Transportation & Works Department,
Infrastructure Planning & Engineering Services

From: Muneef Ahmad
Sent: Monday, May 10, 2021 9:36 AM
To: 'rvanstone@sixnations.ca' <rvanstone@sixnations.ca>
Cc: 'lonnybomberry@sixnations.ca' <lonnybomberry@sixnations.ca>; 'tayler.hill@sixnations.ca' <tayler.hill@sixnations.ca>; Scheckenberger, Ron (ron.scheckenberger@woodplc.com) <ron.scheckenberger@woodplc.com>; 'Kelly, Mary K' <mary.k.kelly@woodplc.com>; Stokke, Samantha (samantha.stokke@woodplc.com) <samantha.stokke@woodplc.com>
Subject: Notification: Mississauga City-wide Stormwater Master Plan & Port Credit Storm Drainage Master Plan

Dear Ms. Vanstone:

The City values its relationship with the Six Nations of the Grand River and recognize that the Nation may have an interest in learning more about and participating in the above-captioned projects.

The attachment includes a notification letter and summary of both projects for your reference. We would welcome the opportunity to meet and discuss.

We will contact you by telephone soon to determine your interest in a meeting. If you have any

questions, feel free to contact the undersigned.

Regards,

Muneef Ahmad P.Eng
P.Eng., M. Eng.,
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City of Mississauga | Transportation & Works Department,
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Ron Scheckenberger,
Principal – Water Resources
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www.woodplc.com

Robbin Vanstone
Consultation Supervisor
Six Nations of the Grand River
rlinn@sixnations.ca

May 7, 2020

Re: City of Mississauga Stormwater Master Plan, Build Beautiful

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City of Mississauga

Ron Scheckenberger, M.Eng., P. Eng.
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Wood Environment & Infrastructure Solutions

Cc: Mary Kelly, Wood (mary.k.kelly@woodplc.com)
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