Basement Flooding Study Area 53 Lake Shore Boulevard West/Mimico Creek – Bundle B Municipal Class Environmental Assessment

Project File Report - DRAFT

City of Toronto

60616952

February 2023

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AECOM: 2015-04-13

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Revision History

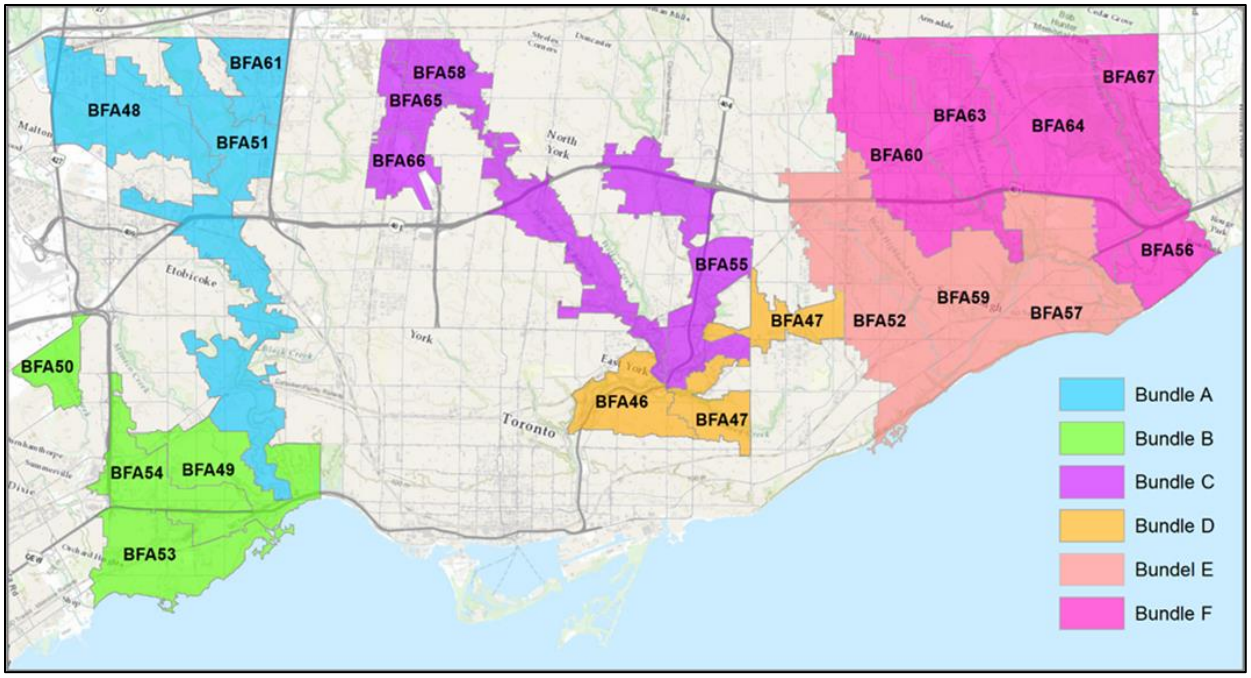
Revision Number	Date	Revised By	Revision Description
-	November 21, 2022	-	Draft submitted to City
1	February 2, 2023	SZ, YO	Draft submitted to City addressing review comments

Executive Summary

Introduction

Over the past two decades the City of Toronto (the City) has experienced numerous storm events that have increased the frequency of basement flooding incidents, the erosion of watercourses and the damaging of critical transportation infrastructure within the City. AECOM Canada Ltd. (AECOM) was retained by the City to complete the Bundle B Capacity Assessment Studies for Areas 49, 50, 53 and 54 in support of the City's Basement Flooding Protection Program (BFPP), as shown in **Figure ES-1**.

Figure ES-1: Basement Flooding Capacity Assessment Studies



The primary focus of the BFPP Capacity Assessment studies, including Area 53, is to recommend solutions to increase capacity in the City's collection and overland drainage systems. In keeping with the underlying principles of the BFPP, this includes the development of alternative solutions to reduce the risk of future basement flooding and with a focus on accelerated implementation of solutions that meet Municipal Class Environmental Assessment (MCEA) Schedule A/A+ assignments (i.e., projects), as well as any potential Schedule B and C assignments in accordance with the MCEA process.

The Capacity Assessment studies, including Area 53, satisfy the planning requirements for Municipal Class Environmental Assessment Schedule A and A+ projects and provides the basis for potential Schedule B and C projects. The Area 53 Capacity

Assessment study recommended a Schedule B project referred to as Alternative STM-53-49 under Assignment number 53-33 which includes conveyance and Mimico Creek outfall capacity upgrades in the Lake Shore Boulevard West and Mimico Creek area.

AECOM has been retained by the City to complete a separate Schedule B Municipal Class Environmental Assessment study in support of this potential solution.

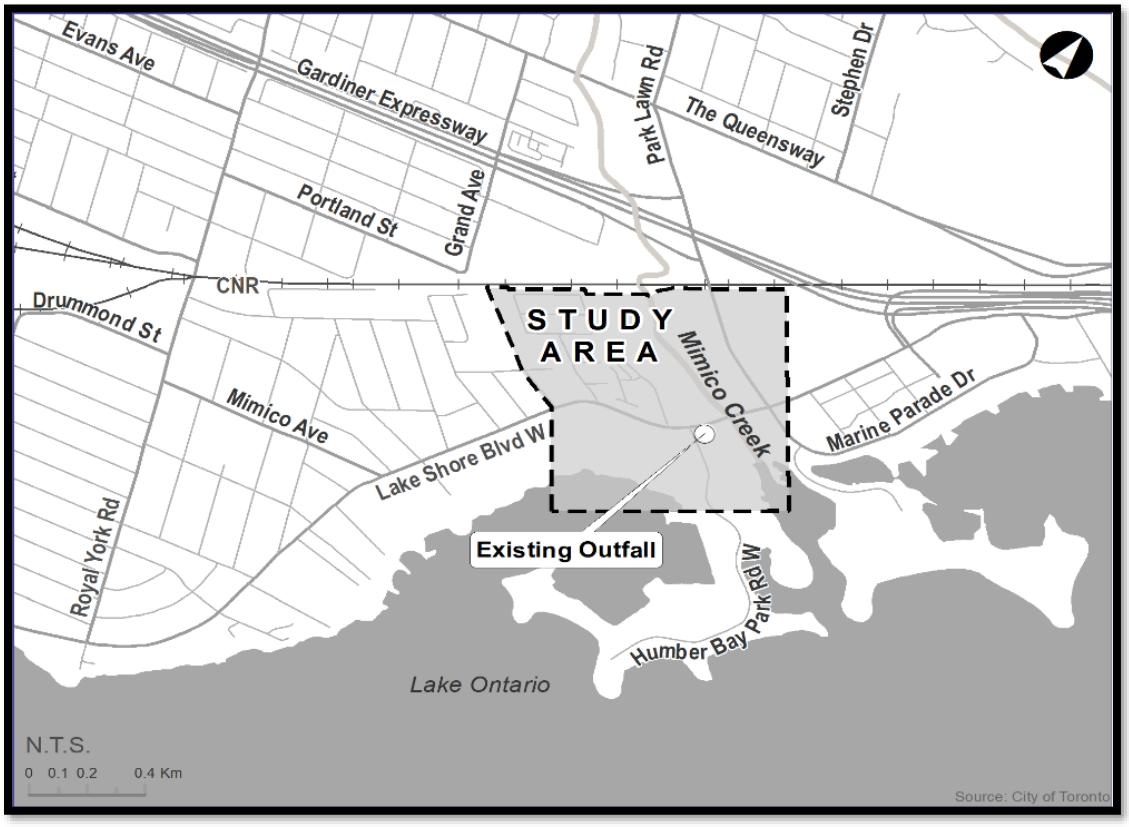
Municipal Class Environmental Assessment Study Area

The Municipal Class Environmental Assessment Study Area is located within Etobicoke – Lakeshore Ward 3 bounded by:

- Lakeshore West Rail Corridor (CN Rail line) to the north
- Park Lawn Road to the east
- Humber Bay Park to the south
- Louisa Street to the west

Refer to **Figure ES-2** for an overview of the Study Area.

Figure ES-2: Study Area



Municipal Class Environment Assessment Process

This study was conducted in accordance with the planning and design process for Schedule B projects, as outlined in the Municipal Engineers Association's Municipal Class Environmental Assessment manual (October 2000, as amended in 2007, 2011 and 2015), which is approved under the Ontario *Environmental Assessment Act* (R.S.O. 1990, c. E.18).

As a Schedule B project, upsizing of the existing Mimico Creek outfall including necessary works to connect the system outside of the Lake Shore Boulevard West road allowance is subject to Phase 1 (Problem or Opportunity) and Phase 2 (Alternative Solutions) of the Municipal Class Environmental Assessment planning process.

Phase 1: Problem or Opportunity Statement

Phase 1 of the five-phase Municipal Class Environmental Assessment planning process requires the proponent of an undertaking (i.e., the City) to first document factors leading to the conclusion that the improvement is needed, and to develop a clear statement of the identified problems or opportunities to be addressed. The Problem or Opportunity Statement is the main starting point in the undertaking of a Municipal Class Environmental Assessment Study and assists in setting the scope of the Project. The following problem or opportunity statement has been developed for this study:

Problem:

- The Sewer Capacity Assessment Study has recently been completed for Study Area 53, which has identified a number of potential factors contributing to flooding, including:
  - Surcharge of the sanitary sewer caused by Rainfall Derived Infiltration and Inflow (RDII)
  - Surcharge of the storm sewer system, which may result in increasing the flow to the sanitary sewer system through potential interaction between the two systems
  - High groundwater table, above the sewer or basement elevation
  - Accumulation of surface runoff in low-lying areas
  - Backup from outfall or accumulation of sediment in the outflow conduit
  - High overland flow depth on the right-of-way
  - Undersized storm sewer or undersized catchbasins resulting in high overland flow
  - Blocked/broken storm and sanitary sewers and maintenance holes; and
  - Blocked catchbasins.

- The Sewer Capacity Assessment Study for Area 53 recommends a number of solutions to address basement and surface flooding, including a Schedule B project associated with Alternative STM 53-49 that forms part of Assignment number 53-33 and includes a combination of:
  - 307 m of 1500 mm storm sewer south of the TTC (Toronto Transit Commission) tracks on Lakeshore Boulevard West
  - Four high capacity inlets on Lakeshore Boulevard West
  - Upsizing of the local storm sewer on Legion Road to a 450 mm and 750 mm pipe, with inlet controls devices on the upstream portion of this section
  - Upsizing of the existing Mimico Creek outfall from 600 mm to 1500 mm at Humber Bay Park

Opportunity:

- Complete the Municipal Class Environmental Assessment Schedule B planning process in consultation with key stakeholders, review agencies, Indigenous Communities and the public that will confirm the preliminary preferred solution from the Area 53 Sewer Capacity Assessment Study through an evaluation of reasonable solutions that meet the required level of service

Assignment number 53-33 within Area 53 also includes reconstructing sanitary sewers at a lower elevation on Greystone Court and at Beyond The Sea Condominiums property located north of Lake Shore Boulevard West. These sanitary works have not been reviewed or evaluated within the scope of this Schedule B Municipal Class Environmental Assessment study as they will be within the existing road allowance and are therefore considered Schedule A+ (pre-approved).

Phase 2: Alternative Solutions

Phase 2 of the Municipal Class Environmental Assessment process involves the identification and evaluation of reasonable alternative solutions to the problem (Phase 1), as well as consultation with applicable review agencies, stakeholders, Indigenous Communities, and the public to solicit comment and input to inform the selection of the preferred solution.

The following alternative solutions have been identified and evaluated to address surface and basement flooding within the Study Area:

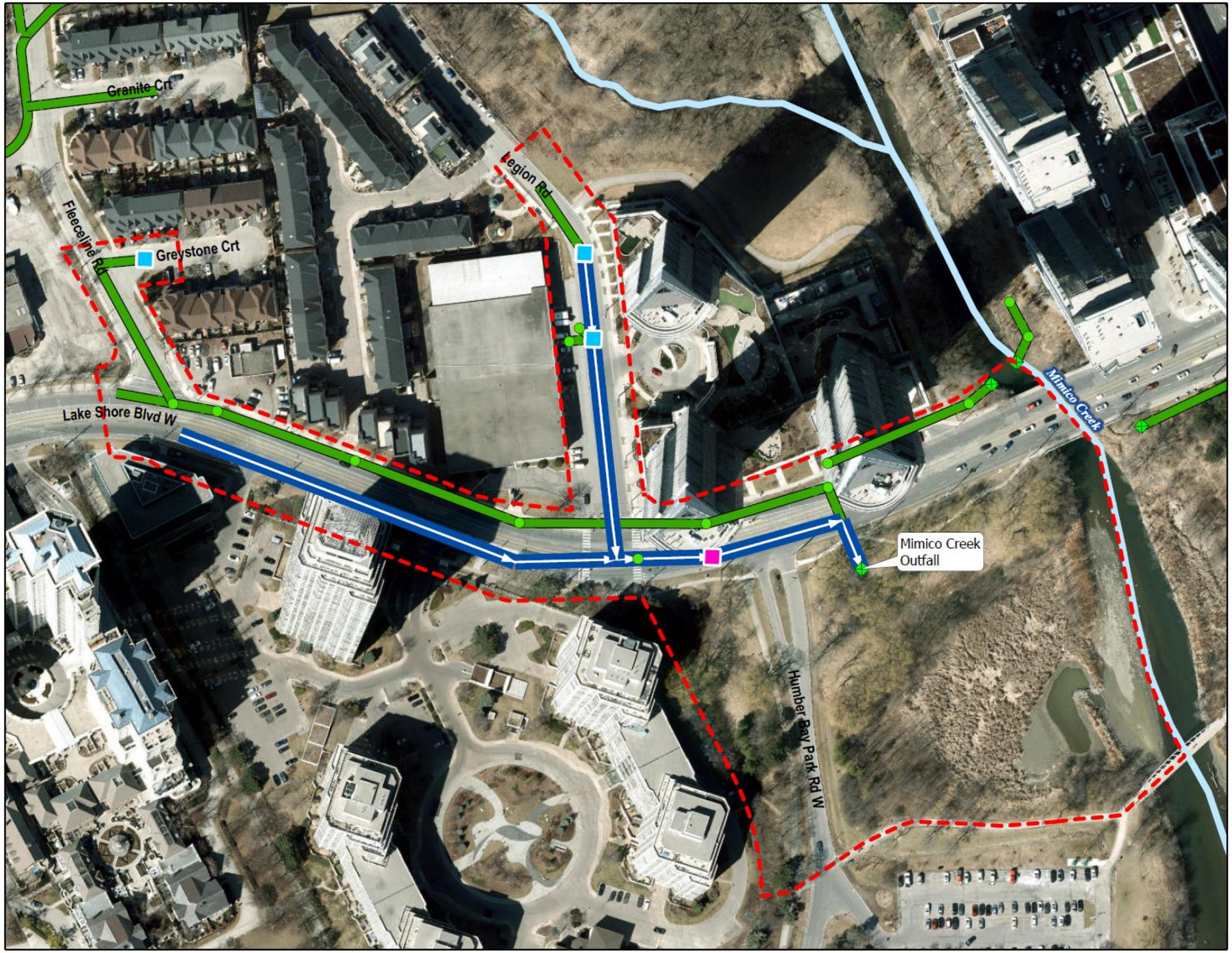
- Alternative 1: Do Nothing
- Alternative 2:

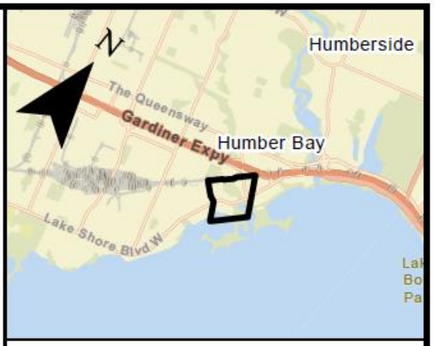
  - new 1500 mm storm sewer (307 m length) on Lake Shore Boulevard West, south of the TTC streetcar tracks
  - four high-capacity inlets on Lakeshore Boulevard West
  - upsizing of the local storm sewer on Legion Road to a 450 mm and 750 mm pipe, with inlet controls devices upstream
  - upsizing existing Mimico Creek outfall from 600 mm to 1500 mm at Humber Bay Park
- Alternative 3:
  - new 1500 mm storm sewer (307 m length) on Lake Shore Boulevard West, north of the TTC streetcar tracks and along existing sewer alignment
  - upsizing storm sewer crossing over the TTC streetcar tracks
  - four high-capacity inlets on Lake Shore Boulevard West
  - upsizing local storm sewer on Legion Road to 450 mm and 750 mm, with inlet controls devices on the upstream
  - upsizing existing Mimico Creek outfall from 600 mm to 1500 mm at Humber Bay Park

Based on a comparative evaluation, Alternative 2 as shown in **Figure ES-3**, was identified and confirmed as the preliminary preferred solution based on the following key rationale:

- Alternative 2 has better constructability with the installation of the new larger storm sewer on the south side of the TTC streetcar tracks
- Alternative 2 results in less disruption to the community during construction with less construction activity fronting directly the condominiums/businesses and reduced impacts to TTC streetcar operations
- Alternative 2 has lower carbon emissions related to shorter construction duration and less traffic impacts
- Alternative 2 is anticipated to have lower capital cost

Figure ES-3: Preferred Solution





- Existing Manhole
- Existing Outfall
- New High Capacity Inlet (HCI)
- New Inlet Control Device (ICD)
- Storm Solutions
- Existing Storm Pipe
- Alternative Focus Area
- Watercourses

City of Toronto
Area 53 Bundle B MCEA Project

Preferred Solution - Alternative 2

0 50 100
Meters

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Figure ES-3

Communications and Consultation Overview

As part of the Municipal Class Environmental Assessment Schedule B planning and design process, several steps have been undertaken to inform government agencies, Indigenous communities, the local community and the general public to solicit comments.

The Municipal Engineers Association Municipal Class Environmental Assessment manual outlines specific mandatory public and review agency consultation contact points and methods. In order to properly communicate the Project details and to solicit feedback throughout the planning and design process, the following activities were undertaken:

- Development of a contact list at the onset of the Project to notify agencies, stakeholders, Indigenous Communities, and members of the public that requested to be kept informed
- Distribution of the Notice of Commencement and Public Consultation and Notice of Completion
- Posting of relevant project details on the City's website www.toronto.ca/bf53
- Hosting a virtual Public Consultation Event giving interested participants, including community members an opportunity to review the Project, including alternative solutions and provide feedback for consideration
- Outreach and information sharing with Indigenous Communities that may potentially be interested in the Project

Potential Impacts and Proposed Mitigation Measures

Impacts related to the storm sewer components and upsizing of the Mimico Creek outfall in Humber Bay Park will be largely limited to the duration and location of construction. Efforts to minimize impacts, such as land use disturbances and noise and vibration will be made by implementing standard construction and best management practices. Where adverse environmental effects cannot be avoided (e.g. tree removals), appropriate measures have been developed to eliminate, or reduce to some degree, the negative effects associated with construction of the preferred solution.

The proposed mitigation measures as described in **Section 8** of this report will be reviewed and further developed during the preliminary and detailed design phases by means of further studies and permit applications, where applicable.

Conclusions and Recommendations

This Municipal Class Environmental Assessment covers the processes required to ensure that the proposed works association with Alternative 2 meets the requirements of the *Ontario Environmental Assessment Act (R.S.O. 1990, c. E.18).* The preferred undertaking as described in **Section 7** of this report resolves the problem and opportunity statement. The Municipal Class Environmental Assessment planning process has not identified any significant environmental concerns that cannot be addressed by incorporating best management practices and established mitigation measures during construction as identified in **Section 8**.

The following next steps are recommended:

- The Project File be made available for a 30-day public review period
- Following the filing and clearance of this Area 53 Bundle B Municipal Class Environmental Assessment study, the City proceeds to preliminary and detailed design of the preferred solution (Alternative 2) and commence implementation, as capital budget permits with consideration of the City's prioritization process of basement flooding projects
- The additional studies, commitments and mitigation measures identified in this report should be reviewed and expanded upon during the preliminary and detailed design phase and implemented as part of construction
- The City continues to encourage property owners to take responsibility for the operation and maintenance of drainage systems on private property including:
  - Lot grading
  - Driveway drainage and private property catchbasins
  - Foundation drains in the basement and garage
  - Sump pumps and backflow valves
  - Clogged drains due to private tree roots or items poured down the drain such as grease

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Appendix B. Natural Environment Existing Conditions Report

Appendix C. Arborist Report and Tree Preservation Plan Report

Appendix D. Mimico Creek Fluvial Geomorphological Assessment - Current Conditions Memorandum

Appendix E. Stage 1 Archaeological Assessment Review Memorandum

Appendix F. Desktop Cultural Heritage Screening Report

Appendix G. Consultation Record

1. Introduction

1.1 Background

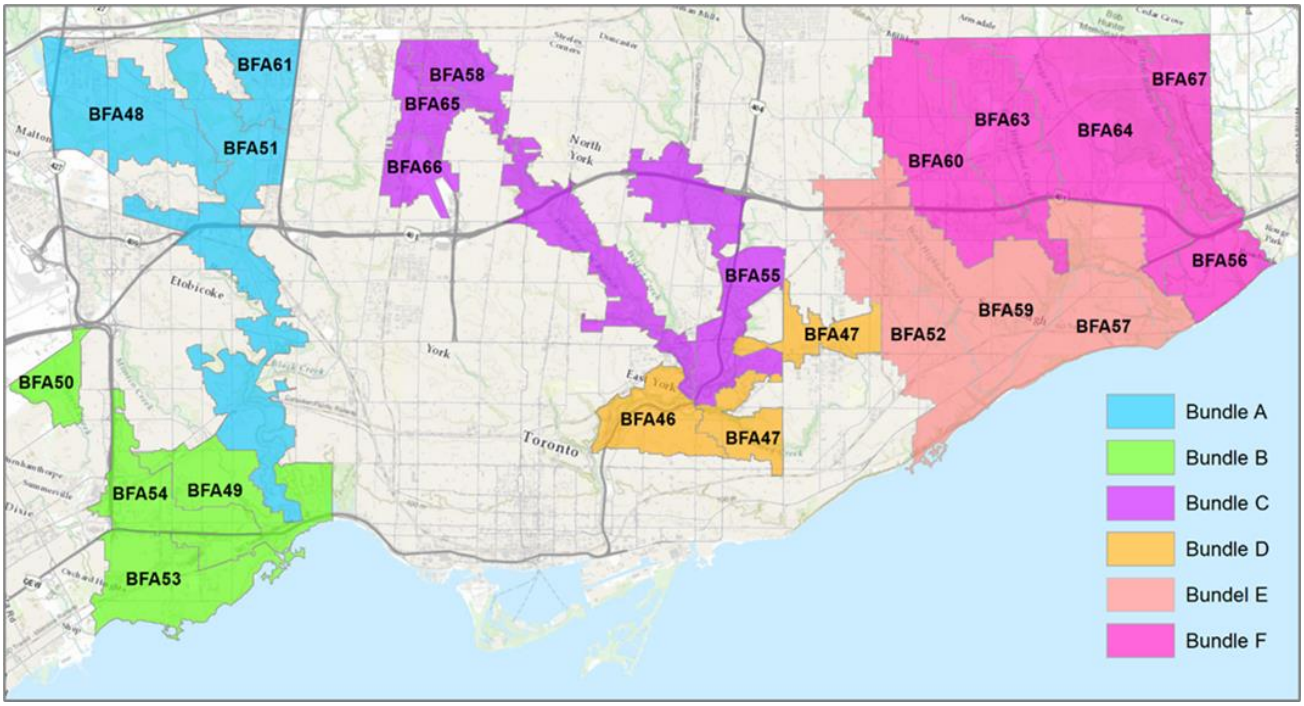
Over the past two decades the City of Toronto (the City) has experienced numerous storm events that have increased the frequency of basement flooding incidents, the erosion of watercourses and the damaging of critical transportation infrastructure within the City. In 2003, the City developed a city-wide Wet Weather Flow Master Plan (WWFMP) to address the impacts of wet weather flows. The WWFMP requires a hierarchical approach to stormwater management, considering source controls first, then conveyance controls and ultimately end of pipe control measures.

In 2006, the City adopted a workplan to address basement flooding and reduce the risk of it occurring. The Basement Flooding Protection Program (BFPP) initially focused on an integrated approach to the causes of basement flooding problems and focused on:

- Reducing surface flooding
- Reducing Inflow and Infiltration into the storm and sanitary collection systems
- Reducing sewer surcharging during storm events
- Expanded sewer condition and operational survey
- Identification of residential downspout connections
- Identifying capital improvements on the major and minor systems to reduce and elimination potential capacity issues in the collection system

In 2013, the BFPP was expanded to cover the entire City and was increased to 67 study areas. In 2019, the City released the BFPP Capacity Assessment Studies for the remaining 21 study catchment areas. AECOM Canada Ltd. (AECOM) was retained by the City to complete the Bundle B Capacity Assessment Studies for Areas 49, 50, 53 and 54 in support of the City's Basement Flooding Protection Program (BFPP), as shown in **Figure 1-1**.

Figure 1-1: Basement Flooding Capacity Assessment Studies



The primary focus of the BFPP Capacity Assessment Studies, including Area 53, is to recommend solutions to increase capacity in the City's collection and overland drainage systems. In keeping with the underlying principles of the BFPP, this includes the development of alternative solutions to reduce the risk of future basement flooding and with a focus on accelerated implementation of solutions that meet Municipal Class Environmental Assessment (MCEA) Schedule A/A+ assignments (i.e., projects), as well as any potential Schedule B and C assignments in accordance with the MCEA process. Refer to **Appendix A** for a copy of the technical memorandums prepared that provide the preliminary analysis and flood cluster identification (Technical Memo 1), hydrologic and hydraulic modelling and assessment (Technical Memo 2) and preferred solutions development (Technical Memo 3) for the Area 53 Capacity Assessment Study Area.

The Area 53 Capacity Assessment study satisfies the planning requirements for Municipal Class Environmental Assessment Schedule A and A+ projects and provides the basis for potential Schedule B and C projects through the preferred solutions development (**Appendix A, Technical Memorandum 3**). A Schedule B project referred to as Alternative STM-53-49 under Assignment number 53-33 has been identified, which includes conveyance and Mimico Creek outfall capacity upgrades in the Lake Shore Boulevard West and Mimico Creek area.

AECOM has been retained by the City to complete a separate Schedule B Municipal Class Environmental Assessment study in support of this potential solution, which is described in this report.

1.2 Study Purpose

The City is undertaking the Area 53 Bundle B Basement Flooding Study to:

- Examine the existing stormwater drainage and sanitary sewer systems and identify the causes of basement flooding and/or surface flooding (severe ponding on streets during extreme storms)
- Analyse drainage system capacities
- Identify and evaluate alternative solutions
- Make recommendations to reduce the risk of future basement flooding in the area and increase capacity in the City's storm and sanitary collection and overland drainage systems

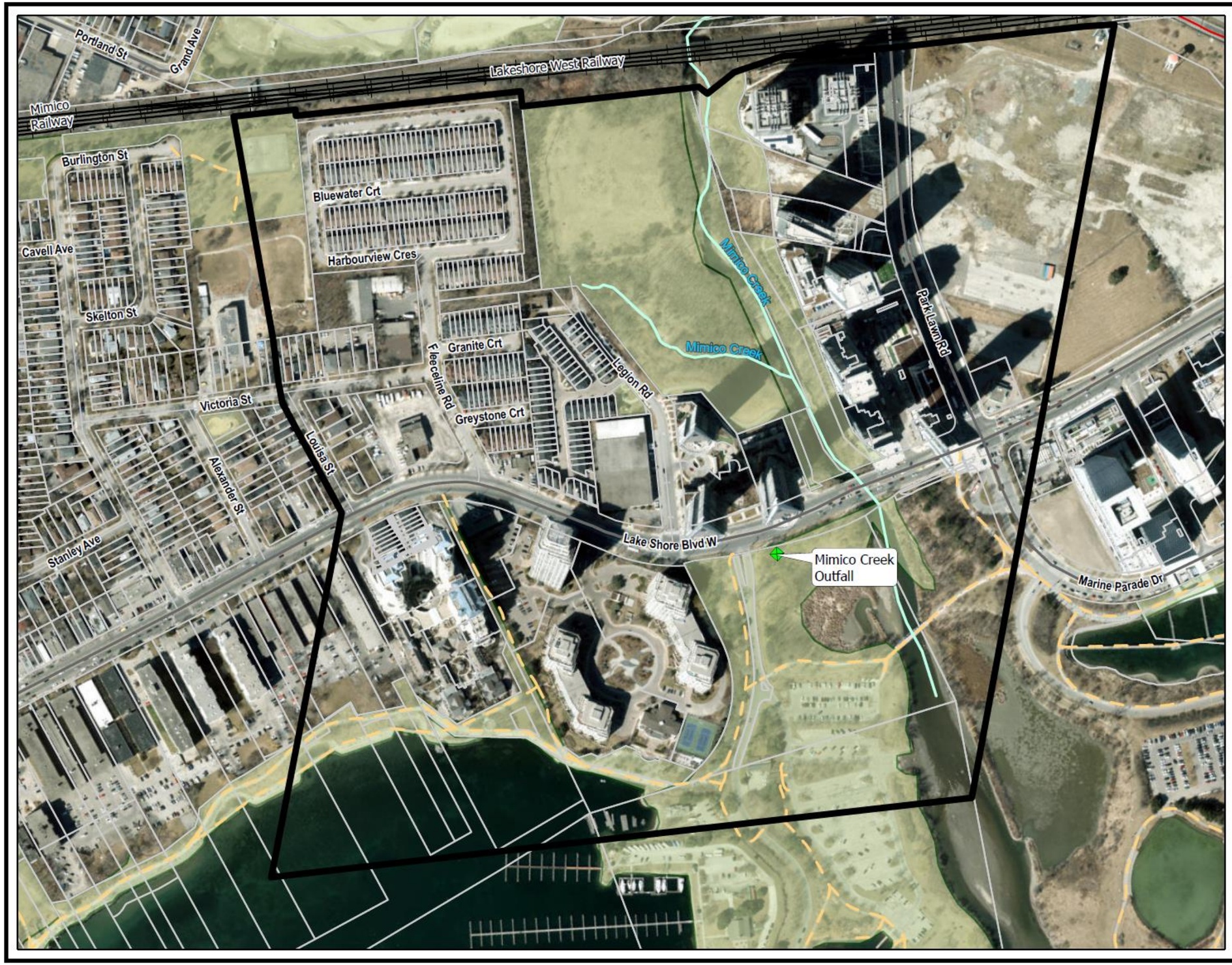
1.3 Study Area

The Study Area is located within Etobicoke – Lakeshore Ward 3 bounded by:

- Lakeshore West Rail Corridor (CN Rail line) to the north
- Park Lawn Road to the east
- Humber Bay Park to the south
- Louisa Street to the west

Refer to **Figure 1-1** for an overview of the Study Area.

Figure 1-2: MCEA Study Area



- MCEA Study Area
- Existing Outfall
- Expressway
- Collector/Arterial
- Local
- Railway
- Trail/Walkway
- Property Boundaries
- Watercourse
- Green Spaces

City of Toronto
Area 53 Bundle B MCEA Project

MCEA Study Area

0 100 200
Meters

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Figure 1-2

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1.4 Study Team Organization

This Municipal Class Environmental Assessment study has been a collaborative effort between the City and AECOM. The Project Managers and Public Consultation Coordinator are listed below.

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