7. Preferred Undertaking – Project Description

7.1 Design Considerations

7.1.1 Storm Sewers

A new 1500 mm storm sewer (307 m in length) is proposed to be constructed on the south side of the TTC tracks on Lake Shore Boulevard West. The local storm sewer on Legion Road will also be upsized to a 450 mm and 750 mm pipe.

Construction will involve road excavation within City property limits (primarily road right-of-way) and removal of old sewer and structures (manholes & catchbasins) as well as disconnection of sewer service line(s).

7.1.2 High Capacity Inlets

Four high-capacity inlets are proposed to be installed on Lake Shore Boulevard West. This involves the addition of “speed bump” and/or “curb cut” to redirect overland flow to new high-capacity inlets, such as a large “curb drain”.

This is in combination with the storm sewer upsizing will convey the larger resulting sewer flows.

7.1.3 Inlet Control Devices

Inlet control devices are proposed on the upstream portion of Legion Road and Greystone Court. This involves a plastic or metal plate / device installed inside the catchbasin outlet and keeps more water on the surface.

7.1.4 Mimico Creek Outfall

Alternative 2 involves upsizing the existing Mimico Creek outfall from 600 mm to 1500 mm at Humber Bay Park. This involves the establishment of construction access to the existing outfall, including clearing vegetation within the construction footprint. The outfall will be reconstructed with temporary diversion.

7.1.5 Property and Easement Requirements

All proposed works are anticipated to be within City or Toronto Region Conservation Authority properties or road right of way (ROW). Property and easement requirements will be reviewed and confirmed during the preliminary and detailed design phases of the Project.

7.1.6 Climate Change Considerations

The City of Toronto design standards followed in the capacity assessment studies do not increase flows or rainfall to account for potential increases due to climate change. The alternatives are proposed to meet the City's basement flooding design criteria to alleviate basement and surface flooding. Based on the results of the analysis, in terms of Hydraulic Grade Line (HGL) in the sewer system and water depth in the overland flow system, the system performance was assessed by:

- HGL in the storm sewer shall not be less than 1.8 m below the surface elevation under 100-year design event
- Surface water level within the ROW exceeds the city's maximum depth criteria, and overland depths and velocities shall not exceed the following combination: velocity of 2.0 m/s corresponding to a permissible flow depth of 0.21 m and a velocity of 3.0 m/s corresponding to a permissible flow depth of 0.09 m
- Assign the higher lake level of 76.1 m as the boundary condition

In support of climate change mitigation, a hydraulic analysis is recommended to be completed prior to the installation of new upsized outfall to predict proposed velocities and shear stresses compared to existing conditions. This can be used to assess whether current bed and bank materials will be susceptible to erosion and/or depositional processes due to changes in velocity and shear stress.

In addition, climate change mitigation includes reduction of carbon emissions both during construction and over the long term operation of the proposed sewer system and Mimico Creek outfall. Alternative 2 (compared to Alternative 3) is anticipated to result in lower carbon emissions as it has a shorter construction duration (avoids TTC streetcar track crossing) and potentially lower traffic impacts (less vehicle idling). Other considerations include maintaining construction equipment to ensure exhaust emissions are within industry standards.

7.2 Cost Estimate

The preliminary estimated cost of the preferred undertaking (excluding sanitary sewers associated with Assignment 53-33) is $4.5 million. A more detailed breakdown is provided below in **Table 7-1**.

Table 7-1: Preliminary Construction Cost Estimate

Component	Total
Part 1 - Sanitary Sewers	$0
Part 2 - Storm Sewers	$1,365,620
Part 3 - Laterals	$126,169
Part 4 - Maintenance Holes Sanitary Sewer	$0
Part 5 - Maintenance Holes Storm Sewer	$409,686
Part 6 - Storage	$0
Part 7 - Watermain Replacement	$136,562
Part 8 - Watermain Service Connections	$68,281
Part 9 - Permanent Restoration	$546,248
Part 10 - Miscellaneous	$409,686
Part 11 - Allowances	$237,325
1B. Contingency	$989,873
1C. Base Construction Total	$4,289,449
2C. Property Acquisition / Easement Total	$159,237
3F. Additional Scope Total	$0
4C. Provisional Allowances Total	$0
5. Base Construction Cost	$3,422,066
8. Total Assignment Cost (Net of Tax)	$4,448,686
9. HST 13%	$578,329
10. Total Cost With Tax	$5,027,015
11. Net Cost to City	**$4,526,983**

7.3 Approvals and Permits

The anticipated environmental permits and approvals required for the proposed storm sewer works and upsizing of the Mimico Creek outfall prior to construction are summarized in **Table 7-2**. Permitting requirements will be confirmed during the preliminary and detailed design phases of the Project and where required, will require additional consultation with the applicable regulatory agencies.

Table 7-2: Anticipated Environmental Permits and Approvals

Permit / Approval	Timing
■ Environmental Compliance Approval (ECA) - Sewers from Ministry of Environment, Conservation and Parks	Detailed Design
■ Permit to Take Water (PTTW) or Environmental Activity and Sector Registry (EASR) from Ministry of Environment, Conservation and Parks	Detailed Design
■ O. Reg.166/06 permit required as Alternative 2 is located within TRCA Regulated Area	Detailed Design
■ No permit required for the *Migratory Birds Convention Act, 1994.* There are no permits to be obtained for incidental take. Contravention of the *Migratory Birds Convention Act, 1994* is not anticipated provided vegetation removal occurs outside of the breeding bird season (April 1 to August 31)	Detailed Design
■ There are no permits to be obtained under the Provincial Policy Statement; however, mitigation measures and best management practices will reduce the likelihood of effects on identified candidate Significant Wildlife Habitat	Detailed Design
■ Ministry of the Environment, Conservation and Parks will be consulted to confirm additional survey requirements and permitting needs during the detailed design phase of the Project	Detailed Design
■ In total, 71 tree permit acquisitions are required prior to the tree removals and injuries being undertaken. ■ All 42 trees that would require removal based on the current Anticipated Impact Area will require a permit to be removed from the City under Category 4. Category 4 is described as trees of all diameters situated on lands designated under City of Toronto Municipal Code, Chapter 658, Ravine and Natural Feature Protection (RNFP) within the Tree Inventory Area ■ A further 29 trees will require permits to be injured; 21 of these trees are Category 4 (RNFP) and 8 are Category 5 (Trees of all diameters situated on City's road allowance and within the Tree Inventory Area). ■ Appendix A1 of the **Arborist Report and Tree Preservation Plan (Appendix B)** provides details of permitting requirements for each individual tree ■ Tree compensation is summarized in **Section 8.1.1** and detailed in the **Arborist Report and Tree Preservation Plan (Appendix C)**.	Detailed Design

7.4 Additional Studies and Commitments

In addition to the mitigation measures identified in **Section 8**, the following additional future work should be completed during the detailed design phase of the Project for the proposed storm sewer works and upsizing of the Mimico Creek outfall:

- Species At Risk habitat assessment may need to be updated as habitat conditions and protection statuses of species may change over time.
- Breeding bird surveys should be completed as the Fresh – Moist Willow Lowland Deciduous Forest (FOD7-3) may provide suitable habitat for provincially Threatened Red-headed Woodpecker.
- Phase II: Identification of Suitable Maternity Roost Trees and Phase III: Acoustic Surveys of the Survey Protocol for Species at Risk Bats within Treed Habitats: Little Brown Myotis, Northern Myotis and Tri-coloured Bat (MNRF, 2017) are recommended within the construction disturbance limits confirmed during preliminary and detailed design for Alternative 2, which overlap the Fresh – Moist Willow Lowland Deciduous Forest (FOD7-3), representing suitable bat SAR habitat.
- Archaeological field review needed to confirm potential impacts to archaeological resources
- It is recommended that the proposed work as part of the Project is reviewed alongside the results of the tree impact analysis during detailed design when the construction footprint is confirmed, and that proposed impacts to trees are reduced wherever feasible to maximize tree preservation. Should the limits or nature of the proposed work change, an ISA Certified Arborist should be retained to review the additional impacts and determine whether the recommended actions in this report are still applicable.

7.5 Implementation

All City basement flooding projects, including this Area 53 Bundle B Municipal Class Environmental Assessment project are prioritized and scheduled to protect the greatest number of properties as soon as possible, within approved budgets and coordinated with other construction work as per Council approved criteria.