



CLASS ENVIRONMENTAL ASSESSMENT FOR REMEDIAL FLOOD AND EROSION CONTROL PROJECTS

Parkview Hill Crescent Slope Stabilization Project
City of Toronto

PROJECT PLAN
OCTOBER 13, 2026

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Executive Summary

Toronto and Region Conservation Authority (TRCA) continues to work toward safeguarding people and property from the adverse impacts of flooding and other natural hazards and enhancing the health of watershed communities. Through programs that balance human, environmental, and economic needs, TRCA promotes healthy rivers and shorelines, protection of greenspaces and biodiversity, and sustainable and safe communities. TRCA's Erosion Risk Management Program (ERMP) is one such initiative established to encourage proactive prevention, protection, and management of erosion hazards on private and public property. The proposed works outlined in this Project Plan are remedial erosion controls supported by the ERMP to provide long-term protection for life and property.

The Parkview Hill Crescent Slope Stabilization Project is being completed in accordance with the Class Environmental Assessment for Remedial Flood and Erosion Control Projects, amended 2024 (Class EA), with the objective of reducing risk to life and property, as per the mandate of Conservation Authorities under the Conservation Authorities Act (R.S.O 1990).

Three primary objectives were identified for this project through this Class EA process:

1. **Risk Mitigation** - To protect human life and property from the hazards of erosion
2. **Naturalization** - To support a native terrestrial ecosystem habitat
3. **Compatibility** - To ensure that the project is compatible with existing infrastructure and the surrounding environment

TRCA was first made aware of concerns regarding slope instability behind Parkview Hill Crescent in the City of Toronto by reports of a large slope failure from homeowners at 96 and 98 Parkview Hill Crescent in May 2019. Following visual inspections later in 2019 by TRCA Erosion Risk Management staff, properties between 1 – 5 Welby Circle and 94 – 214 Parkview Hill Crescent were recommended to be included in an ongoing multi-site master Slope Stability and Erosion Risk Assessment (SS&ERA) to determine the type and extent of risk to essential structures at the top of slope. The SS&ERA was completed by AECOM Canada Ltd. in 2021 and identified several private residential dwellings to be at long-term risk from slope instability should no works take place.

Based on the results of this assessment, the Project limits were refined to incorporate a segment of valley slope located behind five (5) residential properties located at 94, 94A, 96, 98, and 100 Parkview Hill Crescent (Primary Area), and four (4) residential properties located at 2, 3, 4, and 5 Welby Circle (Secondary Area). Remedial conceptual alternatives were then developed to provide long-term, low-maintenance protection to the at-risk properties.

The Class EA for this Project was officially initiated on August 27, 2024, with the publication of a Notice of Intent (NoI) on the Metroland Media website advertised to those within the surrounding neighbourhoods. The NoI and subsequent official project update notices were also distributed to Indigenous communities, local community groups, homeowners within the vicinity of the Project, and regulatory agencies including Conservation Ontario (CO), the Ministry of Environment, Conservation and Parks (MECP), the Ministry of Citizenship and Multiculturalism (MCM), and the City of Toronto.

TRCA retained KGS Group in 2024 to undertake an evaluation of previous site assessments and conceptual design alternatives and to develop detailed designs upon identification of the preferred alternatives. During their evaluation, KGS identified data gaps which required additional geotechnical investigations to update slope stability analyses prior to advancing detailed designs. The extensive analysis completed between 2024 and 2026 justified

intensive remediation within the Primary Area (94A–100 Parkview Hill Crescent) due to active slope instability and the need for lighter, preventative erosion control treatments in the Secondary Area (2, 4 & 5 Welby Circle) as the slope was determined to be more stable than initially perceived.

Following their assessment, KGS prepared an updated set of conceptual designs which were reviewed and evaluated with input from a Community Liaison Committee (CLC) comprised of technical staff and stakeholders. The outcome of the assessment, the ensuing Conceptual Design Evaluation Report (KGS, 2026), and CLC meetings determined that installation of soil nails and an MSE Wall (Option 5b) behind 94, 94A, 96, 98, and 100 Parkview Hill Crescent, clearing debris and dead trees and erosion protection installation (Option 8) behind 2, 4, and 5 Welby Circle, and the ‘Do Nothing’ option behind 3 Welby Circle are the preferred alternatives.

Following the thirty (30) day stakeholder and public review period of this Class EA report and the successful resolution of any major concerns received during this review, TRCA intends to prepare a detailed design of the preferred alternative, secure funding, and obtain the necessary permits and approvals to proceed with its implementation.

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Appendix C	Phase I Environmental Site Assessment (OHE Consultants, 2024) Phase II Environmental Site Assessment (OHE Consultants, 2025)
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Glossary

Alluvial deposit - sediments deposited by flowing water, typically consisting of materials such as sand, silt, clay, gravel, and organic material.

Conveyance lands – parcel(s) of privately owned property subject to being transferred to TRCA ownership as part of the erosion control project.

Erosion – the displacement of soil particles by the forces of wind or water.

Phreatic surface - the upper surface of the groundwater table separating the saturated and unsaturated zones of the ground.

Ravine – a type of landform characterized by a low area of land bounded by steep sides. A watercourse typically runs through this feature. Ravines are similar in form to a valley but at a smaller scale.

Riverine – relating to something that is situated adjacent to a watercourse or riverbank, also referred to as riparian.

Seepage – the escape of liquid or gas through a porous material.

Slope stability – the capacity for a slope to withstand movement. Slope stability is dependent on the inclination of a slope and the ability of slope materials to resist loading forces.

Toe of slope – the point at which the bottom of a slope meets the ground.

Undercutting – the act of material being removed from the base of a feature.

Valley – a type of landform characterized by a depression in the Earth's surface that exists in between natural bounding features, such as hills. A watercourse typically runs through this feature.

Watercourse – a natural or artificial channel through which water flows.

Watershed – an area of land where precipitation collects and drains off into a single outlet, such as a river or other body of water. A watershed is also referred to as a drainage basin or catchment area.

1.0 INTRODUCTION

Toronto and Region Conservation Authority (TRCA) has proposed remedial slope stabilization works to address upper slope instability along a valley slope behind five (5) private residential properties located at 94, 94A, 96, 98, and 100 Parkview Hill Crescent (“Primary Area”) and three (3) private residential properties at 2, 4 and 5 Welby Circle (“Secondary Area”), in the City of Toronto. One additional property, located at 3 Welby Circle, was included in the background assessments but was found to not require slope stabilization treatments. The project site is located northwest of O’Connor Drive and Woodbine Avenue, with urban residential lands to the south and east, the Don Valley Parkway to the west, and TRCA-owned valley lands and the Don River to the north (**Figure 1**). TRCA was notified of the slope failure behind Parkview Hill Crescent in May 2019 by residents at 96 & 98 Parkview Hill Crescent.

The purpose of the Parkview Hill Crescent Slope Stabilization Project (hereinafter referred to as “the Project”), is to take action to protect human life and property from the hazards of valley slope erosion by providing long-term, low maintenance protection for the five (5) private properties within the Primary Area, and three (3) private properties within the Secondary Area, within the Project limits.

This Project Plan has been prepared as documentation of the decision-making process exercised when selecting the preferred measure(s) for carrying out the proposed remedial work. This Project Plan includes:

- The situation or problem to be addressed, including the cause(s) and history of the problem;
- The preparation of a baseline inventory to provide the information needed to evaluate the alternative measures;
- The examination of a full range of alternative remedial measures and the selection of a preferred option;
- Advantages and disadvantages of each option are considered in the analysis, including a “Do Nothing” option;
- The rationale underlying the selection of the preferred alternative method to carry out the remedial work;
- An environmental analysis of the preferred alternative, including a detailed study of the temporary and permanent net impacts of the proposed project;
- Identification of methods for avoiding or mitigating negative impacts;
- A record of consultation with Indigenous communities, government agencies, and community groups;
- An outline of the monitoring program which will commence upon completion of the work.

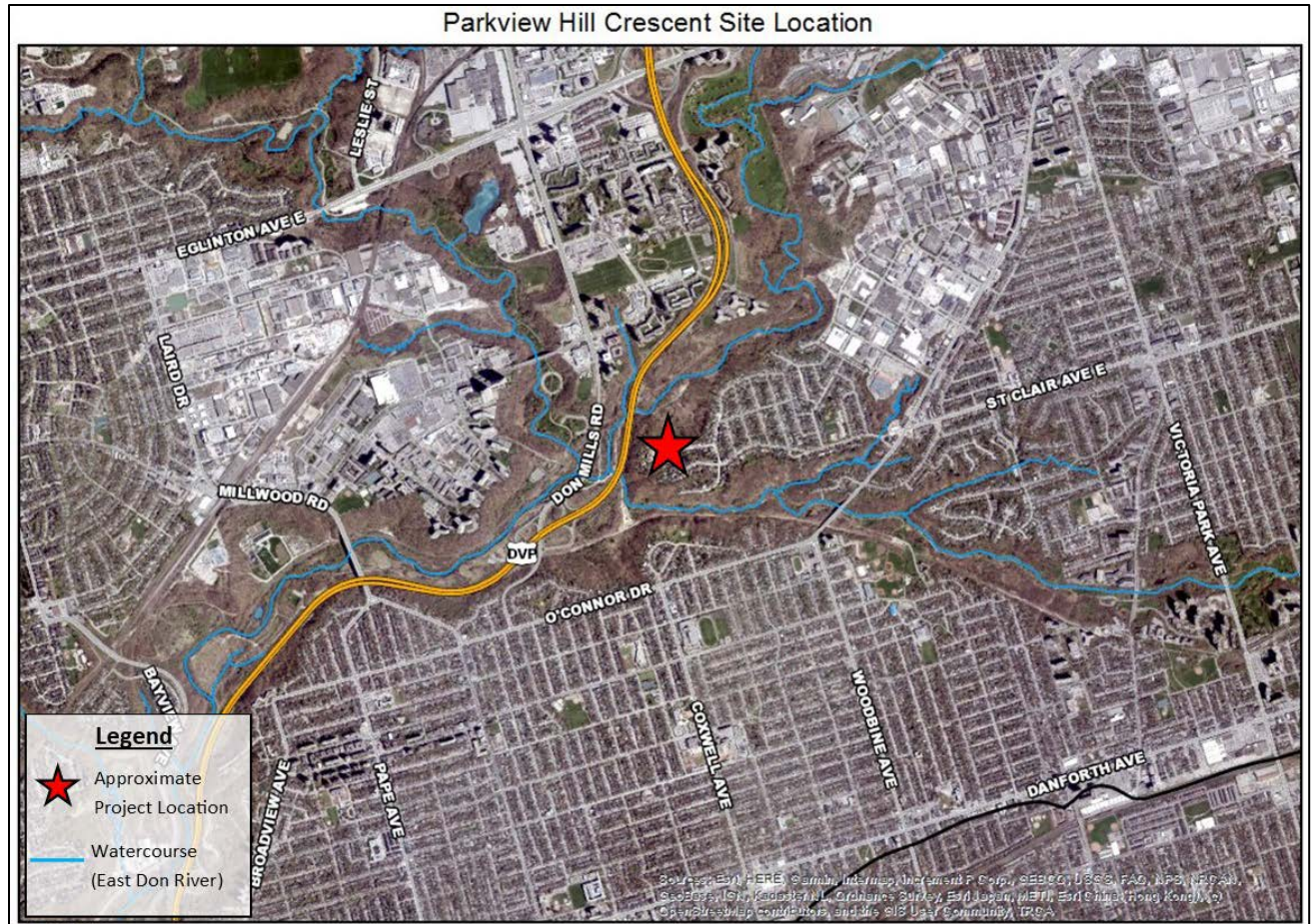


Figure 1: Approximate Project Location denoted by a red star. *Source: TRCA, 2026.*

1.1 Relationship of the Undertaking to the Environmental Assessment Act

TRCA is defined as a public body in Section 3 of Regulation 334/90 in the *Environmental Assessment Act (R.S.O. 1990)* (EA Act) and must conduct its remedial flood and erosion control projects in accordance with said Act.

Recognizing that common elements exist in addressing flood and erosion problems, a coordinated approach to environmental assessments was developed by Conservation Ontario (CO) in 1993 for use by all the Conservation Authorities (CAs), referred to as the Class Environmental Assessment for Remedial Flood and Erosion Control Projects (Class EA) (amended 2024). This project was completed in accordance with the Class EA process and aligns with the following excerpt from the Conservation Ontario Class EA document:

“This Class EA applies to undertakings by Conservation Authorities that are both: (i) required to protect human life and property, in previously developed areas, from an impending flood or erosion problem; and (ii) structural in nature or require capital works.” (Conservation Ontario, 2024).

Over thirty years of experience has demonstrated that using the Class EA approach is an effective way of complying with the EA Act’s requirements. Approval of the Class EA allows CAs to carry out these types of projects without applying for formal approval under the EA Act on the condition that all other necessary federal and provincial approvals are obtained (Conservation Ontario, 2024). A flow chart illustrating the key steps of the Class EA planning and design process is shown below in **Figure 2**.

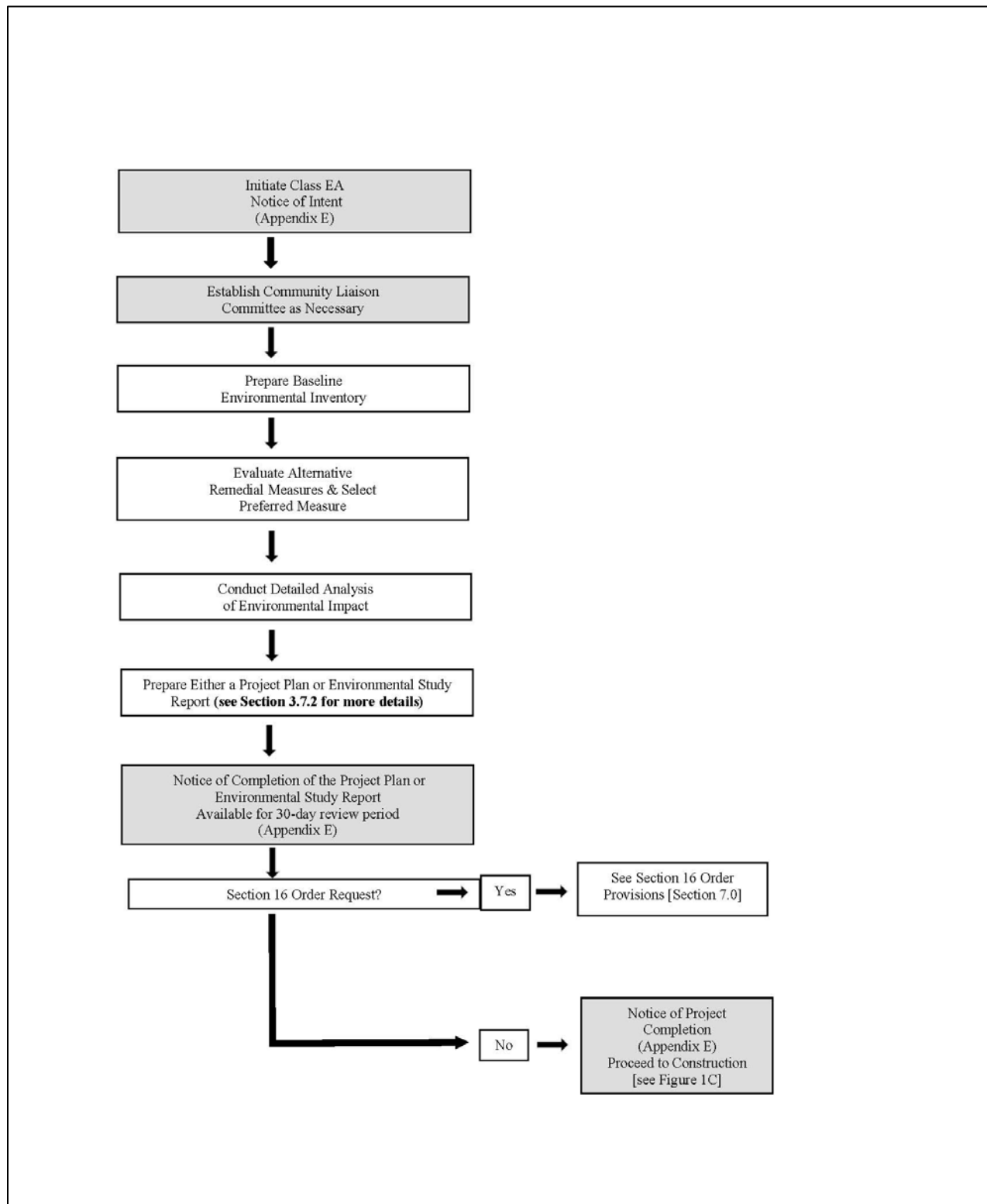


Figure 2: Class EA Planning and Design Process. Source: CO, 2024.

1.2 Purpose of the Undertaking

A. Risk Mitigation

The main objective of the Project is to safeguard human life and essential structures within the Project limits. Essential structures and property will be protected from the hazards of slope instability through the implementation of effective long-term, low maintenance slope stabilization solutions.

Concern of slope instability behind Parkview Hill Crescent in the City of Toronto was initially flagged to TRCA by homeowners of 96 and 98 Parkview Hill Crescent in May 2019 following a large slope failure behind their properties. After visual inspections by TRCA Erosion Risk Management staff, it was noted that multiple properties may be impacted by the same conditions. Based on a visual assessment by staff on site, it was recommended that properties between 1- 5 Welby Circle and 94 – 214 Parkview Hill Crescent be included in an ongoing multi-site master slope stability and erosion assessment procurement process. In 2019, TRCA retained AECOM Canada Ltd. to conduct a Slope Stability and Erosion Risk Assessment (SS&ERA) to determine the extent of risk to essential structures at this site.

The SS&ERA was completed in 2021 and identified multiple private residential dwellings as at-risk should no remedial erosion control works be undertaken. These sites include the properties from 94 to 100 Parkview Hill Crescent and 2 to 5 Welby Circle where localized erosion concerns exist. The properties from 102 to 214 Parkview Hill Crescent and 1 Welby Circle were determined to not be at risk and therefore were excluded from the Project limits and conceptual design development process.

In 2024, TRCA retained KGS Group to undertake detailed design development for the Primary and Secondary Areas and provide support throughout the Class EA process. During their evaluation of previously completed assessments, KGS identified data gaps requiring additional geotechnical investigations to update slope stability analyses prior to completing the Class EA process and advancing detailed designs. The ensuing investigations completed in 2026 verified the need for an intensive erosion control treatment in the Primary Area (94A–100 Parkview Hill Crescent) and lighter erosion control treatment in the Secondary Area (2, 4 & 5 Welby Circle).

In addition to being planned in accordance with the Class EA process, the Project will be carried out in accordance with The Living City Policies for Planning and Development in the Watersheds of TRCA (TRCA, 2014), which seeks to reduce and eliminate existing flood and erosion hazards to rehabilitate valley and stream corridors on private and public lands.

B. Naturalization

The second objective of the Project is to implement a solution that will not only result in slope stabilization but strives to improve the natural terrestrial habitat behind Parkview Hill Crescent & Welby Circle. The identified preferred solutions for slope stabilization, in conjunction with post-construction site restoration, are based on the incorporation of native plant species that will:

- Provide increased stabilization to the slope face;
- Increase resiliency to erosion resulting from rain and runoff;
- Improve linkages between habitats;
- Enhance biodiversity of terrestrial habitat species; and

- Improve the ecological health of the surrounding community by providing better resiliency to future changes in the environment.

C. Compatibility

The third objective recognizes that there are existing essential structures adjacent to the Project limits which must be considered when developing remedial design options to ensure compatibility between proposed works and the built environment. Compatibility has been achieved through the evaluation of a range of conceptual design solutions and the ensuing identification of a preferred solution that best integrates key design elements necessary to provide protection from the hazards of slope instability with existing physical, biological, and social environments surrounding the Project site.

1.3 Description of the Study Area

The Primary Project area is located behind private residential properties at 94, 94A, 96, 98, and 100 Parkview Hill Crescent and the Secondary Area behind private residential properties at 2, 3, 4, and 5 Welby Circle. To facilitate the SS&ERA and development of slope stabilization alternatives, AECOM (2021) subdivided the Secondary Area into three zones based on differences in slope characteristics: Zone 1 (2 Welby Circle), Zone 2 (3 Welby Circle), and Zone 3 (4 and 5 Welby Circle). KGS (2026) retained these zones when reassessing the Secondary Area.

The surrounding area is occupied by urban residential lands to the south and east, the Don Valley Parkway to the west, and TRCA owned valley lands and the Don River to the north. The predominant land-use surrounding the Project area is low to medium density residential land and East Don River valley lands (**Figure 3**).

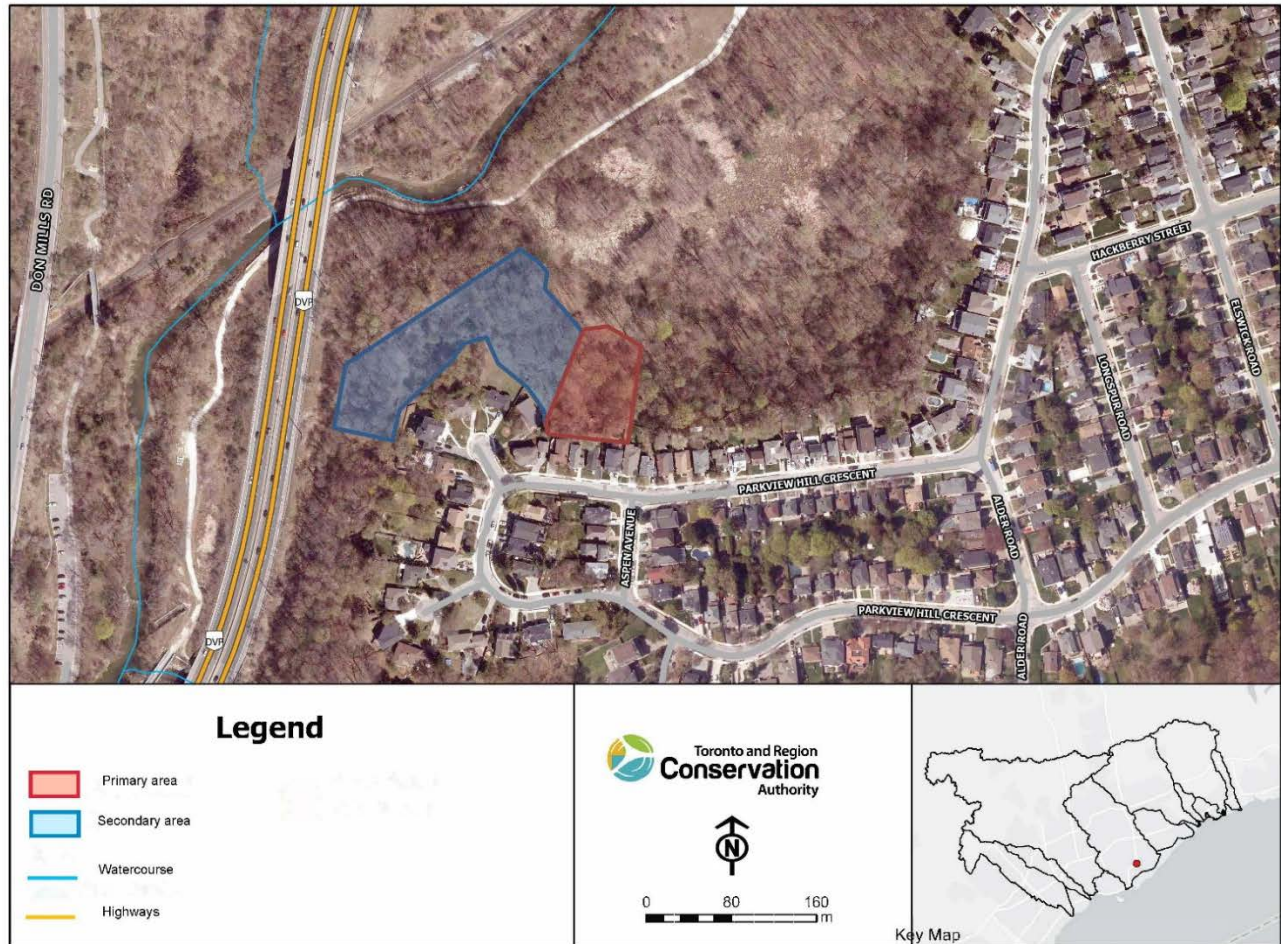


Figure 3: Map of approximate Project limits for Primary and Secondary Areas, Source: TRCA 2026.

Within the Study Area the Don River flows to the southwest approximately 77m to 340m to the north of the properties. The ravine landscape in the Project area is varied, with slopes from approximately 32m to 35m in height and with upper/mid slope gradients from approximately 1.4H:1V (horizontal to vertical) to 3.0H:1V, and lower slope gradients from approximately 10.6H:1V to 20.1H:1V. Locally, topography dips to the Don River, with a ground surface elevation of approximately 124 to 130 meters above sea level (mASL), and along the toe of the ravine slope from 93 to 123 mASL (AECOM, 2021).

The current land use within and surrounding the Study Area is primarily residential and green space, with partial ravine lands within E.T. Seaton and Linkwood Lane Parks. Minor institutional and commercial lands are located approximately 900m northeast of the Study Area, with a hydroelectric corridor approximately 400m to the south (Figure 4).



Figure 4: Categorized land use surrounding the Project area. Source: TRCA, 2026.

Historical aerial photographs suggest the urbanization of the land surrounding the Project limits, southeast of the East Don River, occurred in the late 1940s and early 1950s, and consists of mainly single-detached dwellings.

Figure 5 shows the Primary Project area and the slope failure to the rear of the participating properties. **Figure 6** shows the condition of the ravine slopes (Primary and Secondary Areas) including the observable erosion (rotational slump) behind 96 and 98 Parkview Hill Crescent originally reported to TRCA in 2019.

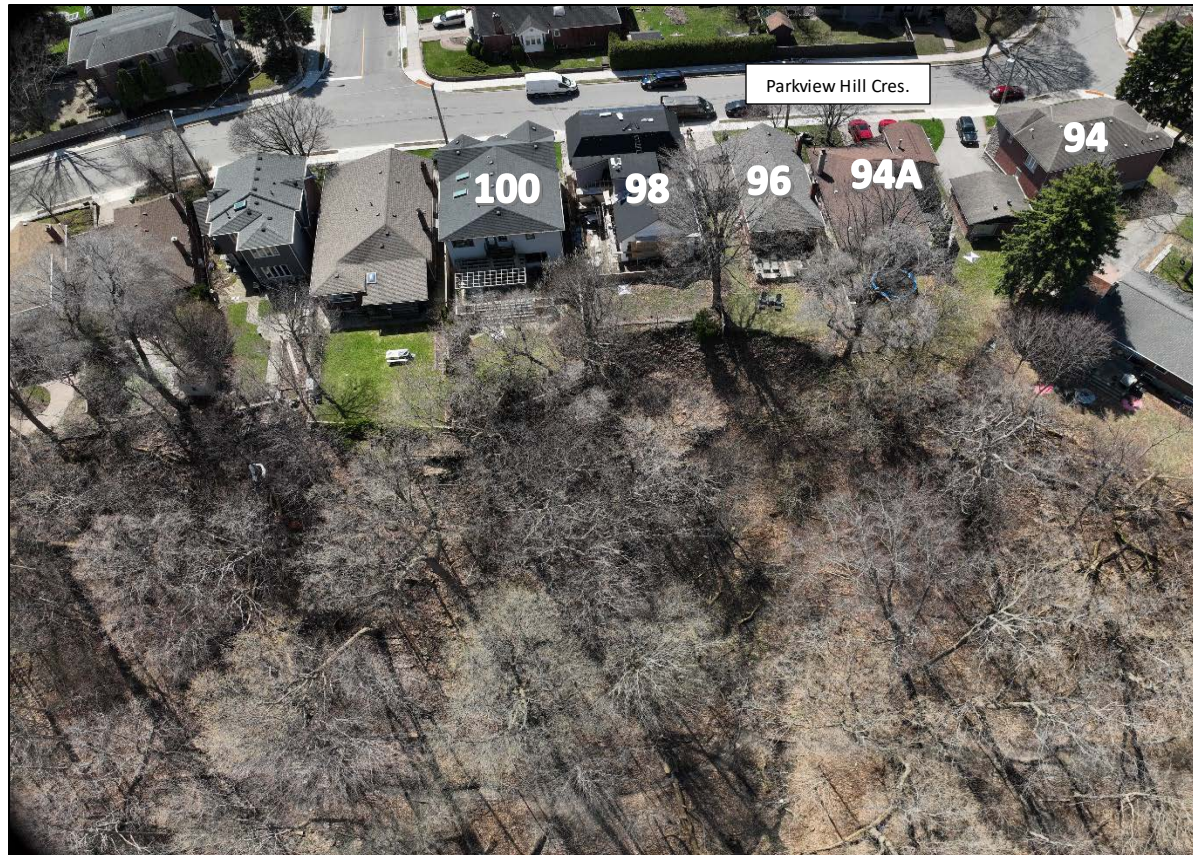


Figure 5: The Primary area of the Project including the slope failure. Source: TRCA, 2026.



Figure 6: Overview of the Project limits including the Primary (Parkview Hill Crescent) and Secondary (Welby Circle) Areas.
Source: TRCA, 2026.

1.4 General Description of the Undertaking

There are four situations in which remedial flood and erosion control projects may be undertaken within the Class EA framework:

1. Riverine flooding
2. Riverine and valley slope erosion
3. Shoreline flooding
4. Shoreline erosion

The slope instability behind the affected properties on Parkview Hill Crescent & Welby Circle is classified as riverine and valley slope erosion. However, the slope stabilization works planned for this project will be isolated to the upper valley slope at the rear of these five (5) Primary Area properties and three (3) Secondary Area properties and will not involve any riverine works.

In accordance with the Class EA planning process, a full range of alternatives must be developed, including both traditional and innovative approaches. The type and range of alternatives developed will vary by project as they

are based on the nature, cause and extent of the problem. The options developed must be tailored to the individual characteristics of each site.

The Project examined several remedial alternative solutions to achieve the objectives:

Primary Area – 94, 94A, 96, 98 and 100 Parkview Hill Crescent

Option 1 – ‘Do Nothing’

Option 2 – Improving Slope Drainage

Option 3 and 4 – Gravity Retaining Wall and Mechanically Stabilized Earth (MSE) Wall

Option 5 – Soil Nails

Option 5A – Regrade and Revegetate (Fill Buttress) + Soil Nails

Option 5B – Soil Nails + MSE Wall

Option 5C – Fill Buttress + Soil Nails + MSE Wall

Option 6 – Reinforced Pile Wall

Option 7 – Regrade Slope & Revegetate

Secondary Area – 2 to 5 Welby Circle

Option 1 – ‘Do Nothing’

Option 2 – Improve Slope Drainage

Option 3 – Gravity Retaining Wall

Option 4 – MSE Wall

Option 5 – Soil Nails

Option 6 – Reinforced Pile Wall

Option 7 – Regrade and Revegetate Slope

Option 7A – Regrade and Revegetate Slope + Improve Slope Drainage

Option 8 – Clear Debris/Dead Trees + Install Erosion Protection

In determining the preferred method of remediation for the erosion risk and slope instability problem, criteria grouped into the following categories were considered as part of the evaluation (KGS, 2026):

- Physical and Natural Environment
- Social Cultural Environment
- Technical Criteria
- Financial Criteria
- Constructability
- Public Safety

In all cases, the design of slope stabilization and erosion control works must provide protection compatible with TRCA's Design Criteria, which includes improvements to or enhancements of the existing terrestrial and aquatic habitat conditions through designs. Upon review, the proposed undertaking meets all TRCA planning and policy objectives and satisfies the needs and concerns of the affected property owners and public based on the input received during Community Liaison Committee (CLC) meetings and outreach activities.

The decision-making process used in the selection of the preferred remedial solution is documented in detail in **Section 4.0**.

A record of consultation activities, including copies of all CLC materials, can be found in **Appendix D**.

1.5 Rationale for the Undertaking

As part of its primary objective to prevent, eliminate, or reduce the risk to life and property from flooding and erosion hazards, TRCA has an Erosion Risk Management Program (ERMP) which monitors erosion and slope instability within TRCA's jurisdiction. The ERMP includes monitoring private residential properties, at the request of landowners, and assessing risks to public property or infrastructure. One component of the program is to monitor the rate of erosion at a site in relation to the position of permanent essential structures (e.g. houses, infrastructure). Signs of accelerated erosion may prompt further study through a formal investigation by a geotechnical engineer.

TRCA plans and implements major maintenance and remedial flood and erosion control works on a priority basis, informed by annual monitoring through the ERMP and hazard risk assessments based on the Long-Term Stable Slope Crest (LTSSC). The LTSSC represents the projected long-term position of a slope crest based on site-specific conditions and potential slope regression. The LTSSC is delineated using a Factor of Safety (FoS), a measure of slope stability that compares the forces resisting slope movement with those causing movement. An FoS of 1.0 represents the point at which a slope is at the limit of stability, while values above 1.0 indicate greater stability. The common range of minimum FoS for design under active land use is 1.3 to 1.5. TRCA applies a FoS of 1.3 for LTSSC delineation with existing developments present.

In 2024, TRCA retained KGS to advance the Parkview Hill Slope Stabilization Project by reviewing previously completed assessments and developing additional rehabilitation solutions for the Primary and Secondary Areas. KGS identified data gaps related to the geotechnical parameters and groundwater assumptions used in the earlier slope stability analyses, potentially impacting the position of the LTSSC. KGS subsequently completed site inspections and additional geotechnical investigations to address these data gaps, update the positioning of LTSSC, and develop additional conceptual designs.

The assessment confirmed that the Primary Area remains in critical need of slope stabilization measures to mitigate risk to private residential dwellings. This area has experienced previous slope failure and exhibits evidence of ongoing slope instability, including sloughing and groundwater seepage. The slope stability analyses indicate factors of safety below the applicable criteria, with the LTSSC corresponding to an FoS of 1.3 extending through portions of the existing building footprints. Accordingly, remediation is required to reduce the risk to the existing residential structures (**Figure 7**). KGS found the Secondary Area to be generally more stable in comparison to the Primary Area, although some locations remain marginally unstable and require minor erosion control treatments to prevent future destabilization of the slope (**Figure 8**).

Prior to initiating a Class EA and project plan for remedial action at this site, TRCA evaluated the 'Do Nothing' option, which assessed potential impacts should no remedial works be implemented. The SS&ERAs undertaken by

AECOM Canada Ltd. in (2021) and KGS (2026) indicated a likelihood for potential loss of property and injury of persons if the slope within the Primary Area is not adequately stabilized. Considering the potential risks of a 'Do Nothing' approach, TRCA initiated a Class EA with the intention to commence work immediately to provide erosion control and slope stabilization to hazardous lands within the Project limits.

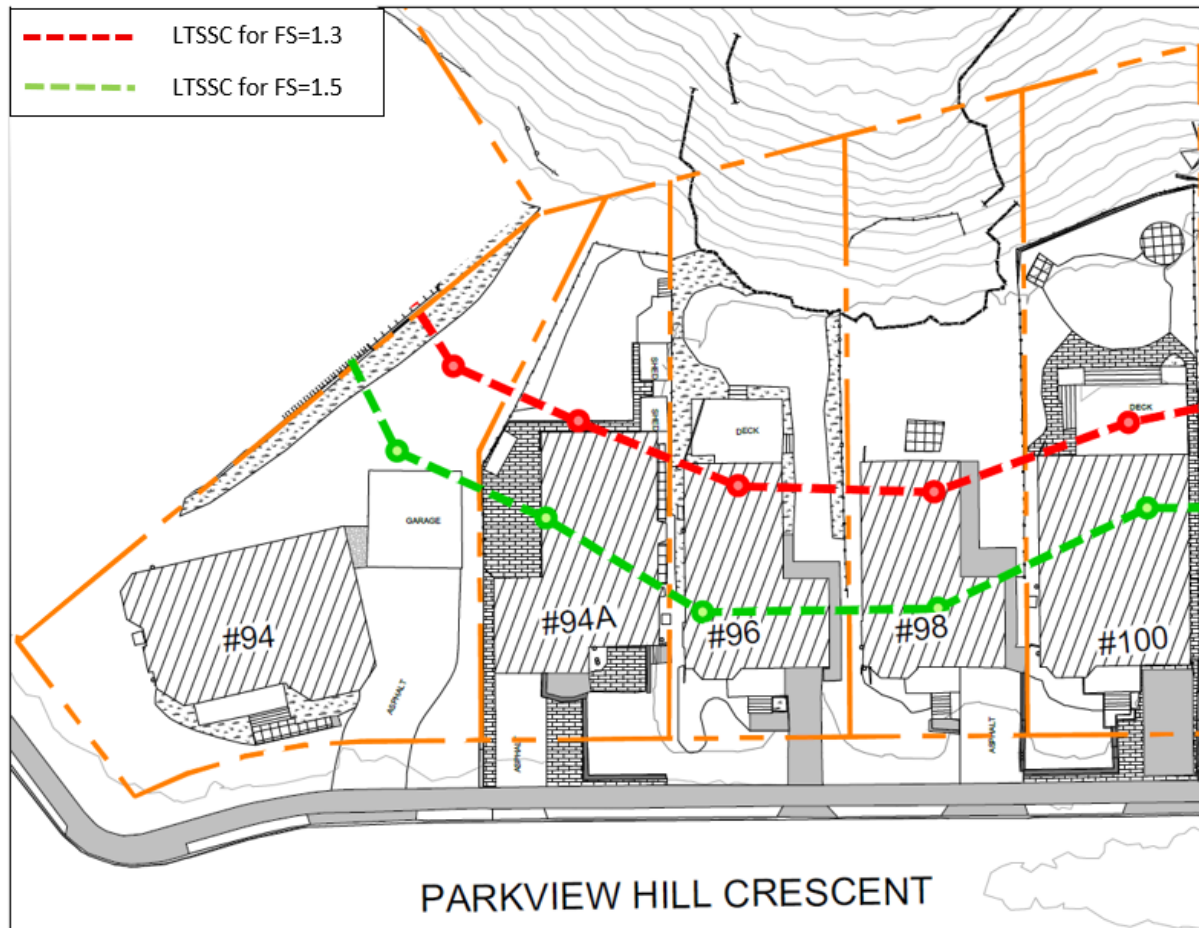


Figure 7: The LTSSC projected behind Parkview Hill Crescent, in the City of Toronto, with a factor of safety of 1.3 for existing development and 1.5 for new development. Source: AECOM Canada Ltd., 2021.

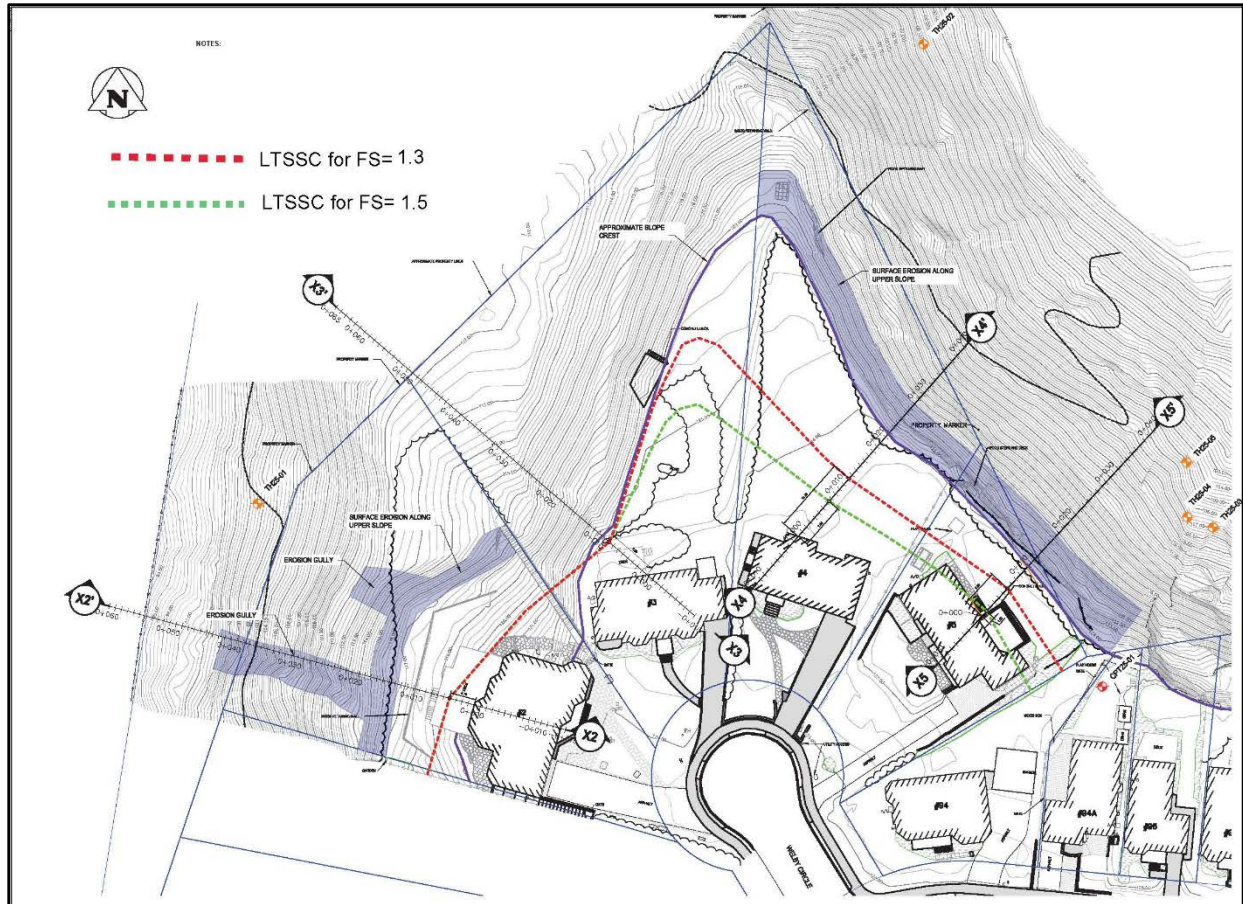


Figure 8: The LTSSC projected behind Parkview Hill Crescent- Secondary Area, in the City of Toronto, with a factor of safety of 1.3 for existing development and 1.5 for new development. Source: KGS Group., 2026.

2.0 BACKGROUND

This section provides information on the causes, effects, and extent of erosion and slope instability hazards impacting the Project site and includes justification for TRCA's involvement and approach to developing a remedial solution. The studies and assessments undertaken by TRCA to evaluate the Project site are listed and discussed in further detail under Section 3.0 BASELINE ENVIRONMENTAL INVENTORY.

2.1 Justification of Authority Involvement

TRCA has a mandate to carry out remedial erosion control works as set out in **Chapter 27, Section 20** of the *Conservation Authorities Act (R.S.O. 1990, updated 2024)*:

"The objects of an authority are to establish and undertake, in the area which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals (R.S.O. 1990, C.27, s.20)."

As part of this goal, CAs are considered to have prime responsibility over water management in terms of water quantity and related hazards through administrative and regulatory powers. In the 1980 Watershed Plan, TRCA developed and implemented its Erosion and Sediment Control Program (ESCP) with two major directions:

“To minimize the aggravation or creation of erosion or sediment problems as a result of new development, and to rectify existing problems through protective works” (TRCA, 1980).

These directions are categorized as either preventative or protective, respectively. The Project falls under the protective component of the ESCP, which aims to protect lives and minimize loss of property through the construction of suitable remedial works. Through annual capital funding from its member municipalities, TRCA can implement a program of major remedial works for erosion control and slope stabilization throughout the watersheds within its jurisdiction.

2.2 History of the Problem

Concerns regarding slope instability behind Parkview Hill Crescent were initially reported to TRCA by homeowners at 96 and 98 Parkview Hill Crescent in May 2019, following a large slope failure behind their properties. TRCA conducted visual inspections and it was determined that multiple properties could be affected by similar conditions. Properties between 1–5 Welby Circle and 94–214 Parkview Hill Crescent were therefore included in a broader Slope Stability and Erosion Risk Assessment. In 2019, TRCA retained AECOM Canada Ltd. to complete a Slope Stability and Erosion Risk Assessment (SS&ERA) to determine the extent of risk to essential structures at the site.

KGS completed additional geotechnical investigations to address data gaps in the geotechnical design parameters used in the 2021 AECOM assessment and to update the slope stability analyses. Based on investigations completed between 2024 and 2026, KGS confirmed the need for remediation within the Primary Area and identified localized erosion protection measures for the Secondary Area.

2.3 Planning Documents

In developing the range of alternatives for evaluation under the Class EA guidelines, TRCA incorporated the applicable guidelines from several municipal, provincial, and federal guidance and policy documents, as follows:

Toronto and Region Remedial Action Plan (1994)

The Toronto and Region Remedial Action Plan (RAP) was developed by all levels of government and other stakeholders. The RAP encompasses a 2,000 km² area within TRCA’s jurisdiction in the City of Toronto. This area includes the Lake Ontario waterfront and all of the watersheds between Etobicoke Creek in the west and Rouge River in the east. The Toronto RAP is managed by representatives from Environment and Climate Change Canada, Ontario Ministry of the Environment and Climate Change, MNRF, City of Toronto, and TRCA. The RAP has been working towards the following goals:

- Clean waters
- Healthy habitats
- Science and monitoring
- Sustainability
- Education and involvement

Terrestrial Natural Heritage System Strategy (2006)

TRCA’s Terrestrial Natural Heritage System Strategy (TNHSS) was designed to enhance biodiversity and quality of life for residents by increasing the amount of forest and wetland habitats. It uses a science-based analytical tool based on ecological criteria to identify an expanded and targeted land base for inclusion in a terrestrial natural heritage system. TNHSS was designed for the entire TRCA jurisdiction as terrestrial systems and their interactions

span watershed boundaries. The target system relates to the terrestrial component of the natural heritage system. TNHSS contains a number of strategic directions including proposed land use planning policies, land management, stewardship and education opportunities, and long-term monitoring.

Planning and Development Procedural Manual (2007)

TRCA's Planning and Development Procedural Manual provides guidance on the legislative, policy, and administrative framework governing TRCA's planning, permitting, and regulatory responsibilities under the Conservation Authorities Act. The manual supports the implementation of current provincial legislation, including Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits, which establishes the permitting requirements for development and other regulated activities within TRCA's jurisdiction.

The Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority (2014)

The Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority (LCP) is a CA policy document that guides the implementation of TRCA's legislated and delegated roles and responsibilities in the planning and development approvals process. Comparable to a combined municipal official plan and zoning bylaw, the LCP represents a compilation of existing plan and permit review policies and practices that have evolved over time. It also contains new policies related to TRCA programs, scientific research, and external planning and development initiatives.

TRCA's main program previously guiding the Authority in its planning and regulatory roles was the VSCMP endorsed by the Authority in October 1994. The LCP supersedes the VSCMP while continuing and expanding on the VSCMP's valuable foundation of principles and policy intent.

2.4 Supporting Studies and Assessments

2.4.1 Physical and Engineering Studies

A) Individual Geotechnical Reports – 2019 Slope Stability and Erosion Risk Assessments Within City of Toronto, Section 2 Site 8: 94-100 Parkview Hill Crescent, 1-5 Welby Circle (AECOM, 2021)

AECOM Canada Ltd. was retained by TRCA in February 2019 to undertake a comprehensive SS&ERA for multiple sites across the City of Toronto. Following reports of the slope failure in May 2019 behind 96 & 98 Parkview Hill Crescent, the ongoing study was expanded to include multiple residential properties along Parkview Hill Crescent and Welby Circle. The scope of work included twenty-four (24) boreholes with the installation of seven (7) groundwater monitoring wells to collect subsurface soil and groundwater data, a fluvial geomorphological assessment, collection of soil samples for stratigraphy classification, and environmental sampling to confirm soil quality and screen for contamination. This data was subsequently used to model the LTSSC position and anticipated regression of the slope based on various erosion and slope stability factors. The results of the investigation identify risk to multiple residential properties along Parkview Hill Crescent and Welby Circle. Using data from the assessment, conceptual remedial solutions to effectively stabilize the slope were developed.

B) Parkview Hill Slope Stabilization Detailed Design – 2026 Factual Geotechnical Investigation Report (KGS, 2026)

In October 2024, TRCA retained KGS Group to complete a Conceptual Design Evaluation Report (CDER) to evaluate the technical assessments and conceptual slope stabilization alternatives prepared by AECOM for the Primary (Parkview Hill Crescent) and Secondary (Welby Circle) Areas. Findings from the previous assessment, including the

identified slope stability conditions, geotechnical and groundwater information, LTSSC limits, and preliminary rehabilitation concepts were used to inform the CDER.

KGS supplemented this information with an additional site-specific geotechnical investigation to address identified data gaps to refine the slope stability assessment, positioning of the LTSSC, and update the proposed rehabilitation alternatives. Based on the findings from the updated geotechnical information and revised analyses, KGS maintained the need for extensive slope stabilization efforts in the Primary Area and determined the slope behind the Secondary Area to be marginally stable to stable, eliminating the need for robust structural slope stabilization measures (KGS, 2026).

Please refer to the full report provided in **Appendix A**.

2.4.2 Biological Studies

Baseline Conditions Report – Parkview Hill Crescent and Welby Circle Slope Stabilization Project (TRCA, 2023)

TRCA's Watershed Planning & Ecosystem Science Section prepared a Baseline Conditions Report to establish existing ecological conditions within and adjacent to the Project area and to support planning and environmental assessment for the proposed slope stabilization works. The report documents existing terrestrial vegetation communities, flora and fauna species, Species at Risk (SAR), and significant natural heritage features based on background data reviews and field investigations completed between 2022 and 2023. The study also identifies potential environmental impacts associated with the proposed works, recommends mitigation measures to avoid or minimize impacts, and outlines applicable environmental policies, permits, approval requirements, and recommended construction timing windows.

The complete Baseline Conditions Report is provided in **Appendix B**.

Environmental Site Assessments – Parkview Hill Crescent Slope Stabilization Project (OHE, 2024; 2025)

OHE Consultants completed Phase I and Phase II Environmental Site Assessments (ESAs) for the proposed conveyance lands associated with 94, 94A and 96–100 Parkview Hill Crescent. The Phase I ESA identified fill of unknown environmental quality as an Area of Potential Environmental Concern and recommended further soil investigation (OHE, 2024). The subsequent Phase II ESA included soil sampling to characterize environmental soil quality and support future land conveyance and excess-soil management. Analytical results were below the applicable MECP Table 1 Standards, and no soil contamination was identified within the investigated Phase II Property (OHE, 2025).

The complete Phase I and Phase II Environmental Site Assessment Reports are provided in **Appendix C**.

2.4.3 Cultural Studies

A) Stage 1 Archaeological Assessment

As required under the Environmental Assessment Act R.S.O. 1990, the Project area was evaluated for the potential to encounter archaeological resources that could be affected by the proposed erosion control and slope stabilization works. TRCA completed a Stage 1 assessment which included a review of historical land use in addition to geographic and cultural features existing within the vicinity of the Project. Results of the assessment indicate there is potential for buried cultural resources and identified areas as retaining archaeological potential for further Stage 2 archaeological assessment prior to undertaking ground disturbing works.

For a full account of the socioeconomic and cultural history within and near the Project limits, please refer to the Stage 1 Archaeological Assessment provided in **Appendix B**.

3.0 BASELINE ENVIRONMENTAL INVENTORY

Once it has been determined that remedial works are warranted at a given site, a baseline inventory is prepared. The baseline inventory provides the information needed to evaluate the alternative options developed through the Class EA process, and to evaluate the types and level of environmental impacts that may result from implementing the preferred alternative.

The inventory involves the examination and documentation of:

- the erosion problem;
- existing site conditions, including physical, biological, cultural and socioeconomic characteristics;
- engineering/technical aspects to be considered;
- previous protective measures that have been implemented within the Project limits;
- whether the site falls within a vulnerable area as identified in the local assessment report prepared under the *Clean Water Act*, 2006.

This baseline environmental inventory takes into consideration the directly and indirectly affected environment. The area indirectly affected by the Project includes the valley lands behind the privately-owned residential properties along Parkview Hill Crescent and Welby Circle. The ravine land at the top of the slope conveys water and drains into the Don River and partial ravine lands within E.T. Seton and Linkwood Lane Parks, though the Project works will not affect these properties. The private properties adjacent to the Project site may experience minor noise disturbances from the use of large machinery. However, all work will comply with the City of Toronto's Noise Bylaw.

Baseline environmental data was collected from the following organizations due to their specific expertise relevant to the regional and local Project area:

- TRCA
- City of Toronto
- Ministry of Northern Development, Mines, Natural Resources and Forestry
- Ontario Ministry of Natural Resources and Forestry (MNRF)

3.1 Existing Site Conditions

In accordance with the Class EA process, the broad definition of 'environment' as provided in the Environmental Assessment Act is applied to this section. The prepared environmental description is:

- "a) Air, land or water,
- b) Plant and animal life, including human life,
- c) The social, economic and cultural conditions that influence the life of humans or a community,
- d) Any building, structure, machine or other device or thing made by humans,
- e) Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or,

f) Any part or combination of the foregoing and the interrelationships between any two or more of them.”
(Conservation Ontario, 2024)

The inventory includes an evaluation of the presence and extent of physical, biological, cultural, social, economic, and technical engineering elements applicable to the Project limits.

Documents outlining existing conditions are included in **Appendix B**.

3.1.1 Physical Environment

Unique Landforms

The Project is located within an urban residential area and adjacent TRCA-owned valley lands associated with the Don River valley. There are no known unique landforms within or adjacent to the Project limits; therefore, there will be no impacts resulting from the proposed works.

Existing Mineral/Aggregated Resource Extraction Industries

There are no known existing mineral/aggregate resource extraction industries within or adjacent to the Project limits; therefore, there will be no impacts resulting from the proposed works.

Earth Science – Areas of Natural and Scientific Interest (ANSI)

There are no existing earth science areas of natural and scientific interest (ANSI) within or adjacent to the Project limits; therefore, there will be no impacts resulting from the proposed works.

Specialty Crop Area /Agricultural Lands or Production

There are no specialty crops or agricultural lands or production areas within or adjacent to the Project limits; therefore, there will be no impacts resulting from the proposed works.

Niagara Escarpment/Oak Ridges Moraine

The Project limits do not fall within the boundaries of the Niagara Escarpment or the Oak Ridges Moraine; therefore, there will be no impacts resulting from the proposed works.

Environmentally Significant Areas (ESA) – Physical

There are no physical Environmentally Significant Areas (ESA) within or adjacent to the Project limits; therefore, there will be no impacts resulting from the proposed works.

Air Quality

At a local scale, no significant sources of air pollution exist within or immediately surrounding the Project limits. No component of the Project is anticipated to significantly degrade air quality or be influenced by local or regional sources of air pollution. Any impacts from machinery and/or vehicles used as part of the construction phase will be temporary and minimal and therefore, deemed insignificant.

Agricultural Tile or Surface Drains

There are no known agricultural drains or surface drains within or adjacent to the Project limits; therefore, there will be no impacts as a result of the proposed work.

Noise Levels and Vibration

The Project area is primarily located adjacent to low to medium density residential areas and there are no current noteworthy sources of noise or vibration within the area. All construction activities will conform to the City of Toronto's noise (Toronto Municipal Code, Chapter 591) and vibration by-laws (Toronto Municipal Code, Chapter 363, Article 5).

Water Flow Regime (Baseflow conditions and storm conditions)

The reach of the East Don River north and west of the Project limits has an estimated bankfull width of 20–25m and bankfull depth of approximately 1.5–2m. Bank materials consist predominantly of fine-grained materials, including clay, silt and sand, while bed materials include clay, silt and sand, as well as gravel, cobble and small- to medium-sized boulders (AECOM, 2021).

AECOM (2021) calculated a toe erosion allowance of 8m for the sub-reach of the East Don River proximal to the Project limits, based on a reach-averaged 100-year erosion rate and excluding areas with existing bank protection. KGS (2026) subsequently reassessed conditions within the Secondary Area and determined that, at the assessed cross-sections, the nearest watercourse is more than 15m from the slope toe. Accordingly, a toe erosion allowance was not required in the updated Secondary Area slope stability analyses.

Vegetation along the riverbanks includes herbaceous species and mature deciduous and coniferous trees, with root systems that contribute to bank and slope stability. AECOM (2021) noted exposed roots and woody material within the watercourse at several locations and identified root reinforcement as an important factor contributing to the general stability of the steep ravine slopes. Loss of vegetation, including as a result of significant storm events, could therefore reduce slope stability.

The watercourse exhibits riffle-pool morphology, with an approximate spacing of 60m and a visually estimated moderate longitudinal gradient. Several locations within the Study Area contain existing armourstone and/or rip-rap protection along the southeast bank. Signs of active erosion have been observed where bank protection is absent (AECOM, 2021).

As no in-water works are proposed, impacts to the water flow regime of the East Don River are not anticipated.

Existing Surface Drainage/Groundwater Seepage/Groundwater Recharge and Discharge Zones

Curb and gutter infrastructure collects stormwater generated along the frontage of 94–100 Parkview Hill Crescent, 2–5 Welby Circle, and adjacent municipal roads and directs it to roadside catch basins discharging south toward Taylor/Massey Creek. This system ultimately flows west and north to the East Don River downstream of the Project limits.

Based on existing topography, stormwater generated within the rear yards of 94–100 Parkview Hill Crescent and 2–5 Welby Circle that does not infiltrate generally flows overland north and northwest toward the East Don River ravine system. The rear yards consist predominantly of permeable surfaces, including lawns, gardens and small aggregate areas, which allow infiltration and groundwater recharge.

AECOM (2021) observed groundwater elevations within the Study Area ranging from approximately 109.4 to 116.6 mASL, corresponding to approximately 8.5m to 14.9m below ground surface. AECOM concluded that precipitation and associated infiltration did not have a significant influence on the deeper groundwater levels and that regional groundwater flow is likely influenced by the Don River valley, with groundwater generally flowing toward and discharging to the valley system.

KGS completed additional groundwater investigations in 2025, including the installation and monitoring of five standpipe piezometers within the Primary and Secondary Areas. The investigation identified the potential presence of a perched phreatic surface within the upper silty sand and silt to clayey silt materials and indicated that the permanent phreatic surface within the underlying silty clay till may be deeper than previously calculated. The perched groundwater level observed near the top of the slope in the Primary Area was generally consistent with groundwater conditions identified during the previous AECOM investigation (KGS, 2026).

KGS also observed seasonal variability in groundwater and surface-water conditions. During the 2024 site inspection, less water was observed flowing through the gully behind 96 and 98 Parkview Hill Crescent than during TRCA's 2019 inspection, potentially reflecting seasonal variations in groundwater levels and/or snowmelt (KGS, 2026).

Within the Secondary Area, KGS observed erosion gullies and surface erosion along the slopes and crests behind 2, 4 and 5 Welby Circle. The observed erosion was considered likely associated with surface runoff during significant rainfall events. Continued erosion could progressively deepen the gullies and contribute to deterioration of slope conditions over time (KGS, 2026).

Littoral Drift/Other Coastal Processes

The Project Limits are not located within a coastal setting; therefore, there will be no impacts to littoral drift or other coastal processes resulting from the proposed works.

Water Quality

There will be no impacts to water quality resulting from the proposed works as there are no channel or in-water works involved.

Soil/Fill Quality

Based on AECOM's 2021 SS&ERA, most of the Study Area comprises Sand Plains consisting of coarse-textured glaciolacustrine foreshore and basinal deposits of sand and gravel with minor silt and clay, underlain by Paleozoic bedrock/bedrock-drift complexes. The ravine lands adjacent to the private properties along the Don River are generally composed of modern alluvial deposits consisting of clay, sand, silt, minor gravel and organic material (AECOM, 2021).

A review of available Quaternary geology mapping indicates that the primary surficial deposits within the Study Area are associated with glacial Lake Iroquois and generally consist of shallow-water and nearshore glaciolacustrine deposits of sand, silty sand, gravelly sand and gravel.

AECOM (2021) completed a detailed subsurface investigation that included 24 boreholes and seven groundwater monitoring wells within the broader SS&ERA study area. Although subsurface conditions vary between borehole locations, the investigation generally identified topsoil overlying fill materials consisting of clayey silt, silty clay, sandy silt, silty sand and sand. Native overburden deposits generally consisted of interbedded sand and sandy silt overlying silty clay soils.

KGS's additional geotechnical investigation in 2025 consisted of four boreholes, one cone penetration test (CPTu), installation and monitoring of five standpipe piezometers, and laboratory testing. The investigation generally confirmed the subsurface conditions identified by AECOM, with soils consisting of topsoil, clayey silt fill, silty sand, silt to clayey silt, and silty clay till. KGS also confirmed that the surficial geology in the vicinity of the Project area primarily consists of coarse-textured glaciolacustrine deposits overlying sedimentary bedrock (KGS, 2026).

The additional geotechnical and groundwater information collected by KGS was used to refine the soil parameters and groundwater assumptions applied in the updated slope stability analyses and to support the subsequent evaluation of conceptual slope stabilization alternatives for the Primary and Secondary Areas (KGS, 2026).

Contaminated Soils/Sediment/Seeps

OHE Consultants completed a Phase I Environmental Site Assessment (ESA) in 2024 for the potential conveyance lands associated with 94, 94A and 96–100 Parkview Hill Crescent. The Phase I ESA identified fill of unknown environmental quality as an Area of Potential Environmental Concern and recommended a Phase II ESA to characterize soils potentially subject to TRCA acquisition or excavation as part of the proposed slope stabilization works (OHE, 2024).

OHE subsequently completed a Phase II ESA, which included soil sampling to characterize environmental soil quality and support future land conveyance and excess-soil management. Soil samples were analyzed for petroleum hydrocarbons, volatile organic compounds, metals and other applicable parameters. Analytical results were below the applicable MECP Table 1 Full Depth Background Site Condition Standards, and no soil contamination was identified within the investigated Phase II Property (OHE, 2025).

Where possible, suitable soil generated during construction will be reused on-site. Any excess soil requiring off-site management will be handled in accordance with applicable MECP requirements and other relevant regulations and guidelines. Additional soil characterization will be undertaken during detailed design or construction, if required.

Groundwater seepage has been observed within the Primary Area, particularly within the gully behind 96 and 98 Parkview Hill Crescent. These conditions are discussed further under the 'Existing Surface Drainage/Groundwater Seepage/Groundwater Recharge and Discharge Zones' subsection and have been incorporated into the slope stability assessment (KGS, 2026).

Existing Transportation Routes

The main transportation routes surrounding the Project limits are the Don Valley Parkway to the west and northwest, Eglinton Avenue East to the north, and O'Connor Drive to the south and east. O'Connor Drive is the closest main transportation route and is approximately 1.5km away (driving distance). Major arterial roads that service the Project site include the Don Valley Parkway to the west and Highway 401 to the north. There will be no major alterations or impacts to existing transportation routes servicing the Project site. However, minor and temporary impacts are anticipated due to the delivery of material, machinery and other construction-related activities.

Constructed Crossings

There are no constructed crossings within the limits of the Project or the construction access route. The project will likely not involve construction of any watercourse crossings. Permitting requirements and construction details shall be determined following the thirty (30) day review period of this Project Plan. Following the successful resolution of any concerns identified during the review period, TRCA intends to finalize the detailed design of the preferred solution, secure necessary funding, and obtain the necessary permits and approvals to proceed with implementation of the preferred solution.

Geomorphology

The Project limits are terrestrial and are subject to surficial erosion processes associated with overland runoff and groundwater seepage. These processes can result in rilling, gully formation, localized sloughing and saturation of slope materials, which can reduce soil strength and contribute to slope instability. A rotational slope failure

occurred behind 96 and 98 Parkview Hill Crescent in 2019, demonstrating the potential consequences of these processes within the Primary Area.

AECOM (2021) identified the potential for short-term extreme weather events to result in increased slope saturation and reduced soil shear strength, potentially contributing to slope instability. AECOM also identified vegetation and associated root reinforcement as an important contributor to the stability of the steep ravine slopes. Accordingly, loss of vegetation through natural processes, storm events or disturbance could reduce localized slope stability.

KGS (2026) confirmed that surficial erosion and localized slope deterioration remain active within portions of the Project area. In the Primary Area, KGS observed that the failure scarp behind 96 and 98 Parkview Hill Crescent was wider than documented during the 2019 inspection, indicating ongoing sloughing. A soil-debris island was also observed within the mid-slope water gully, providing further evidence of ongoing erosion. However, the slope crest was generally unchanged from the 2019 inspection, with no additional loss of tableland observed following the 2019 failure.

Within the Secondary Area, KGS observed localized surface erosion and shallow sloughing behind 2 Welby Circle, including two erosion gullies with signs of ongoing erosion likely associated with significant rainfall events. Surface erosion was also observed along the upper slopes and crest areas behind 2, 4 and 5 Welby Circle. Dead trees and accumulated debris were also identified on these slopes and could contribute to localized instability if the trees become uprooted (KGS, 2026).

KGS's updated slope stability analyses determined that the existing slopes at 2, 4 and 5 Welby Circle are generally marginally stable to stable and that the LTSSC corresponding to a factor of safety of 1.3 is outside the existing building footprints. Although robust structural slope stabilization is therefore not warranted at these properties under current conditions, the observed erosion, dead trees and debris could contribute to progressive deterioration of the slopes over time. KGS recommended localized erosion protection and removal of dead trees and debris to address these conditions (KGS, 2026).

The proposed works are intended to address the identified slope instability within the Primary Area and localized erosion concerns within the Secondary Area, thereby reducing the potential for continued deterioration and associated risks to adjacent residential properties.

3.1.2 Biological Environment

A detailed review of the biological conditions within the Project area was completed by TRCA and documented in the *Parkview Hill Crescent and Welby Circle Slope Stabilization Project Baseline Conditions Report* (TRCA, 2023). The assessment incorporated a review of available background information together with existing and site-specific field monitoring data.

TRCA completed site-specific terrestrial fauna inventories in 2022 and botanical inventories in 2023. The fauna investigations included breeding bird surveys, assessment of potential bat maternity and day-roost trees, and acoustic bat monitoring. Earlier terrestrial fauna and flora inventories completed in 2015 and 2016, respectively, for the broader Charles Sauriol North area were also reviewed and used to supplement the more recent Project-specific information (TRCA, 2023).

TRCA's Baseline Conditions Report for the Project limits is included in **Appendix B**.

Wildlife Habitat

The lower limits of the Project area and adjacent valleyland provide significant urban wildlife habitat, as the area is densely vegetated and contains several forest and woodland vegetation communities. The Project area provides potential breeding, foraging and roosting habitat for a variety of wildlife species. Site-specific fauna surveys completed in 2022 identified bird and mammal species of urban conservation concern within and adjacent to the Project area, as well as potential bat roost habitat (TRCA, 2023).

In order to permit access for heavy machinery and create a suitable workspace for construction of the preferred slope stabilization solution, the proposed works will result in temporary disturbance to existing natural habitat within the Project limits. To minimize impacts, construction activities will be planned to maintain the smallest practical construction footprint, minimize vegetation and tree removals where possible, and avoid sensitive breeding periods. Trees requiring removal will be inventoried and assessed for potential bat habitat, as appropriate.

A comprehensive restoration plan will be developed following detailed design and implemented following construction. Disturbed areas will be restored using suitable native trees, shrubs and herbaceous species, with consideration given to the composition of the existing intact forest communities and control of invasive species (TRCA, 2023).

Habitat Linkages or Corridors

The Project limits are located within the valleylands and ravine system of the East Don River. This ravine system forms an important natural connector within an otherwise highly urbanized landscape and contributes to the broader Don River natural heritage system. The Project area contains forest and woodland vegetation communities that contribute to natural cover and provide habitat for wildlife moving through the valley system.

Although localized disturbance to habitat within the Project limits will occur as a result of the proposed works, the Project area comprises a relatively small portion of the broader valley corridor and the proposed works are not anticipated to fragment the overall corridor. Habitat disturbance will be minimized through appropriate construction limits and mitigation measures, and disturbed areas will be restored with suitable native vegetation following construction.

Significant Vegetation Communities

The Project area contains portions of five distinct vegetation communities, four of which are dominated by native species. The largest community and the only Community of Conservation Concern is a 0.69ha mature, bordering on old-growth Dry-Fresh Sugar Maple–Oak Deciduous Forest (L4). The canopy of this community is dominated primarily by sugar maple (*Acer saccharum*) and red oak (*Quercus rubra*), with middle and lower layers primarily consisting of sugar maple, alternate-leaved dogwood (*Cornus alternifolia*), ironwood (*Ostrya virginiana*) and choke cherry (*Prunus virginiana* var. *virginiana*) (TRCA, 2023).

The remaining vegetation communities include Dry-Fresh Sugar Maple Deciduous Forest (L5), Fresh-Moist Sugar Maple–Hardwood Deciduous Forest (L5), Native Deciduous Successional Woodland (L5), and Dry-Fresh Manitoba Maple Deciduous Forest (L+). The latter is the only vegetation community within the Project area dominated by introduced species. Portions of the forest communities exhibit pressures associated with the surrounding urban environment, including invasive species, soil and trash dumping, deer browsing and unofficial trails (TRCA, 2023).

During restoration of areas disturbed by construction, suitable native species will be planted and opportunities to control or remove invasive species will be incorporated where feasible.

Environmentally Significant Areas (ESA) – Biological

There are no Environmentally Significant Areas (ESA) within or adjacent to the Project limits; therefore, there will be no impact for the proposed works.

Fish Habitat

The Lower Don River is located approximately 80m north of the Project area. However, no work is expected to occur directly within the watercourse, and the Project area is separated from the watercourse by the Lower Don River Trail. As no in-water works are proposed, direct impacts to fish habitat are not anticipated (TRCA, 2023).

Species of Concern – Flora

Based on the site-specific botanical inventory completed in 2023, a total of 80 flora species were recorded within the Project area, comprising 48 native species (60%) and 32 exotic species (40%). The inventory identified eleven species of Urban Conservation Concern (L4) and two species of Regional Conservation Concern (L3). The two Regional Species of Conservation Concern are narrow-leaved spring beauty (*Claytonia virginica*) and broad-leaved sedge (*Carex platyphylla*). All thirteen species of Regional or Urban Conservation Concern are representative of intact forest communities (TRCA, 2023).

The Natural Heritage Information Centre (NHIC) SAR screening identified Butternut (*Juglans cinerea*), listed as Endangered, within the broader 2km catchment surrounding the Project area, but not within the Project area itself. During pre-construction tree inventories, consideration will be given to the potential presence of Butternut that may not have been identified during previous inventories. If a Butternut is identified within or adjacent to the proposed work limits, appropriate assessment, consultation and mitigation requirements will be determined prior to construction (TRCA, 2023).

Species of Concern – Fauna

The targeted 2022 fauna inventory recorded two L4-ranked species of Urban Conservation Concern within the Project area: White-breasted Nuthatch (*Sitta carolinensis*) and Eastern Chipmunk (*Tamias striatus*). Within a 100m buffer of the Project area, Grey Catbird (*Dumetella carolinensis*), Rose-breasted Grosbeak (*Pheucticus ludovicianus*) and Dekay's Brownsnake (*Storeria dekayii*) have also been recorded. The presence of these species within the surrounding ravine indicates potential for their occurrence within the Project area (TRCA, 2023).

NHIC SAR screening identified Bank Swallow (*Riparia riparia*), Butternut (*Juglans cinerea*) and Snapping Turtle (*Chelydra serpentina*) within the broader 2km catchment surrounding the Project area, but not within the Project area itself. Additional occurrence records in the surrounding area include Chimney Swift (*Chaetura pelagica*), Eastern Meadowlark (*Sturnella magna*), Eastern Wood-pewee (*Contopus virens*) and Wood Thrush (*Hylocichla mustelina*) (TRCA, 2023).

There is also potential for SAR bats to inhabit the area. Bat acoustic monitoring conducted over two weeks in June 2022 did not identify the four SAR bat species considered in the Baseline Conditions Report within the Project area; however, potential roost opportunities were identified during the bat tree-roost assessment. The acoustic monitoring identified Big Brown Bat, Hoary Bat and Silver-haired Bat regularly foraging within the Project area. A total of 57 potential roost trees were also identified within the Project area (TRCA, 2023).

All native bird species will be considered during detailed design and construction, including adherence to applicable breeding bird timing restrictions for vegetation and tree clearing. Trees identified for removal will also be assessed for potential bat habitat, with additional surveys and agency consultation undertaken where required.

Wildlife/Bird Migration Patterns

The breeding bird window occurs annually from early April to late August. Habitat destruction or construction activities that result in persistent disturbance during this period have the potential to affect breeding bird activities.

Site-specific breeding bird surveys were completed within the Project area in 2022, with surveys conducted on June 14 and July 7 to assess breeding status. The surveys confirmed that the Project area and surrounding ravine provide nesting and foraging opportunities for native bird species, including species of urban conservation concern (TRCA, 2023).

Construction activities have the potential to temporarily disturb nesting birds and remove nesting habitat where vegetation clearing is required. To minimize potential impacts, vegetation and tree removal will be avoided during the breeding bird window of April 1 to August 31. Tree protection measures will be implemented for trees identified for retention, and disturbed areas will be restored with suitable native vegetation following construction (TRCA, 2023).

Exotic/Alien and Invasive Species

The Baseline Conditions Report (TRCA, 2023) identified a number of exotic and invasive plant species within the Project area, including Norway maple (*Acer platanoides*), Manitoba maple (*Acer negundo*), common buckthorn (*Rhamnus cathartica*), garlic mustard (*Alliaria petiolata*), and dog-strangling vine (*Vincetoxicum rossicum*). Invasive species and other pressures associated with the surrounding urban environment were identified within several of the vegetation communities.

Opportunities to remove or control invasive vegetation and restore disturbed areas with suitable native species will be incorporated into detailed design and restoration planning where feasible. Appropriate invasive species management practices will be implemented during construction to minimize their spread. The post-construction restoration plan will also include measures for the control and prevention of invasive species (TRCA, 2023).

Wildlife Populations

The 2022 inventory identified two L4-ranked species of Urban Conservation Concern within the Project area: White-breasted Nuthatch (*Sitta carolinensis*) and Eastern Chipmunk (*Tamias striatus*). Additional species of conservation concern have been recorded within the surrounding 100 m buffer and broader East Don River ravine system, indicating potential for their occurrence within the Project area (TRCA, 2023).

The natural cover associated with the Project area provides nesting, foraging and other habitat opportunities for a variety of wildlife species. All native bird species will be considered in the planning and implementation of the proposed works through appropriate best management practices and timing restrictions for vegetation and tree clearing. Potential bat habitat will also be considered where tree removal is required.

Wetlands

There are TRCA and MNRF unevaluated wetlands associated with the East Don River valley north of the Project area. Though the footprint of the proposed erosion control treatments are outside of this boundary, there exists the potential for minor disturbance to the periphery of the wetland depending on the location of the access route

determined during the detailed design stage. Should the access route create potential negative impacts to the wetland, appropriate mitigation measures such as Erosion & Sediment Control (ESC) and wildlife barriers will be installed.

Microclimate

There is no microclimate within or adjacent to the Project limits; therefore, there will be no impacts resulting from the proposed works.

Unique Habitats

No provincially or regionally significant unique habitat features were identified within the Project area in the Baseline Conditions Report. The Project area consists primarily of forest and woodland vegetation communities associated with the East Don River valley. The mature Dry-Fresh Sugar Maple–Oak Deciduous Forest is identified as a Community of Conservation Concern within the urban landscape and will be considered in the planning and implementation of the proposed works (TRCA, 2023).

Areas of Natural Scientific Interest - Life Science (ANSI-LS)

There are no Life Science Areas of Natural Scientific Interest within or adjacent to the Project limits; therefore, there will be no impacts resulting from the proposed works.

3.1.3 Cultural Environment

Traditional Land Uses

The Project is located within the Traditional Territories and Treaty Lands of the Mississaugas of the Credit First Nation, Williams Treaties First Nations, and the Wendat Nation. No adverse effects on traditional land uses were identified during engagement with Indigenous communities.

Indigenous Reserve or Community

There are no known Indigenous reserves or communities within the Project limits; therefore, there will be no impact due to these works.

Outstanding Native Land Claim or Treaty Rights

The Project is located within the boundaries of the Toronto Purchase Treaty and is adjacent to Lake Ontario, which is subject to the 2016 Water Claim filed by the Mississaugas of the Credit First Nation.

Transboundary Water Management Issues

There are no transboundary water management issues within the Project limits; therefore, there will be no impacts resulting from the proposed works.

Riparian Uses

There are no significant riparian uses with the Project limits; therefore, there will be no impacts resulting from the proposed works.

Recreational or Tourist Uses of a Waterbody and/or Adjacent Lands

The adjacent corridor behind Parkview Hill Crescent is actively used for recreational purposes. There are three parks within this corridor which include: Linkwood Lane Dog Park, ET Seton Park, and Charles Sauriol Park. There will be temporary disturbances to Charles Sauriol Park during implementation of the proposed works.

Aesthetic or Scenic Landscapes or Views

There are no aesthetic or scenic landscapes or views within the Project limits; therefore, there will be no impacts resulting from the proposed works.

Archaeological Resources, Built Heritage Resources and Cultural Heritage Landscapes

TRCA undertook a Stage 1 Archaeological Assessment in 2026 to review the historical land use, and geographic and cultural features within the vicinity of the project. According to the assessment, the project is located on Lots 6 and 7, Concession 3, within Toronto's historic York County. These lots were settled by various families in the early 19th century through the establishment of homes, sawmills, and later a major paper mill before transitioning to an industrial hub in the late 1800s.

According to the Stage 1 Archaeological Assessment, the City of Toronto does not currently recognize the Project limits to have any listed heritage properties including plaques detailing historical events within one kilometer of the study area. This was determined through the review of several inventories to identify built heritage resources, features, or landscapes. In addition, the Project limits did not contain any registered cultural heritage landscapes within 300 meters of Project limits.

Results of the Stage 1 assessment indicate there is a potential for buried cultural resources and warrant a Stage 2 Archaeological Assessment. A Stage 2 involves a field investigation to confirm the presence or absence of archaeological resources within the Project limits; or to confirm the exemption of areas identified to have low archaeological significance due to existing physiographic features (i.e. permanently wet areas, steep slopes, etc.). The Stage 2 Archaeological Assessment will take place during the detailed design phase when the final Project limits and extent of disturbance are confirmed.

Historic Canals

There are no historic canals within or adjacent to the Project limits; therefore, there will be no impacts resulting from the proposed works.

Federal Property

There is no federal property within or adjacent to the Project limits; therefore, there will be no impacts resulting from the proposed works.

Heritage River System

The East Don River tributary that runs through the corridor where the Project site is located is not designated as part of a heritage river system; therefore, there will be no impacts resulting from the proposed works.

3.1.4 Socioeconomic Environment

Surrounding Neighbourhood or Community

The Project limits are located within City of Toronto Ward 19 (Beaches-East York) in the O'Connor-Parkview Neighbourhood. According to the 2021 Census, the O'Connor-Parkview Neighbourhood has a population of approximately 18,405 persons and a median household income of approximately \$77,000. The community surrounding the Project limits is primarily residential, with a mix of housing types and an average household size of approximately 2.5 persons. The surrounding neighbourhood also includes a range of community amenities and services (City of Toronto, 2022; Statistics Canada, 2021). There will be only minor temporary disturbances to the surrounding community during implementation of the proposed works.

Surrounding Land Uses and Growth Pressure

Situated in the City of Toronto, the Project area is subject to significant pressures resulting from the development of the surrounding urban environment. As can be observed in historical aerial imagery shown in **Figure 9**, **Figure 10** and **Figure 11**, the region surrounding the Project limits has been subject to significant urbanization over the past 70+ years, with original development of the subject lots in approximately 1949.

Urbanization changes the composition of the earth's natural surface and typically results in the severe limitation or complete eradication of natural areas, resulting in increased stresses on remaining natural areas and features impacting the health and wellbeing of local ecosystems.

The developed land use currently surrounding the Project site is predominantly low to medium density residential space. Much of the surface area within the surrounding area is comprised of impervious surface material (i.e. driveways, sidewalks, roads, permanent built structures, etc.). Impervious surfaces drastically affect the way in which water flows and drains over the surface, changing the dynamics of the hydrological system and resulting in increased impacts of erosion and pollution to local ecosystems.



Figure 9: 1949 historical aerial photograph of area surrounding the location of the Parkview Hill Crescent Slope Stabilization Project. Source: TRCA, 2026.



Figure 10 : 1954 historical aerial photograph of area surrounding the location of the Parkview Hill Crescent Slope Stabilization Project. Source: TRCA, 2026.

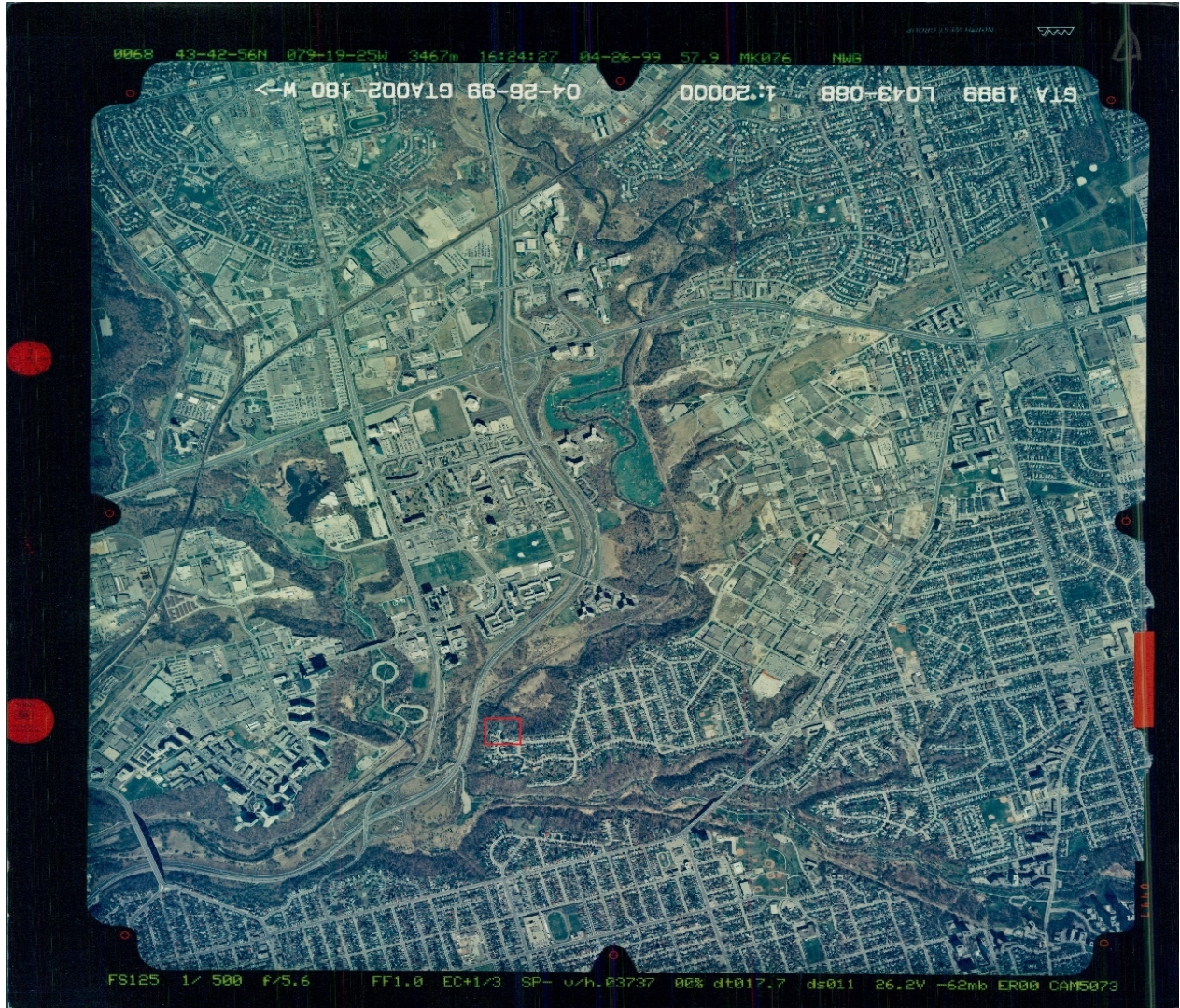


Figure 11: 1999 historical aerial photograph of area surrounding the location of the Parkview Hill Crescent Slope Stabilization Project. Source: TRCA, 2026.

Existing Infrastructure, Support Services, Facilities

There is infrastructure within the Project limits (**Figure 12**; DCAD, 2026). The subject properties (94–100 Parkview Hill Crescent and 2–5 Welby Circle) are serviced by municipal watermains and sanitary sewers. A trunk sanitary sewer is located northwest of the Project limits and may interfere with construction access. Appropriate mitigation measures will be implemented to protect the sewer during construction. Storm sewer infrastructure is present along Parkview Hill Crescent and Welby Circle, including curbs and gutters, catch basins, and sewer lines, and drains south toward Taylor/Massey Creek.

TRCA will procure public and private locates for the Project limits prior to any construction, and will ensure all buried infrastructure (pipelines, sewer, watermain, cable, fibre, etc.) are staked and protected for the Project duration.

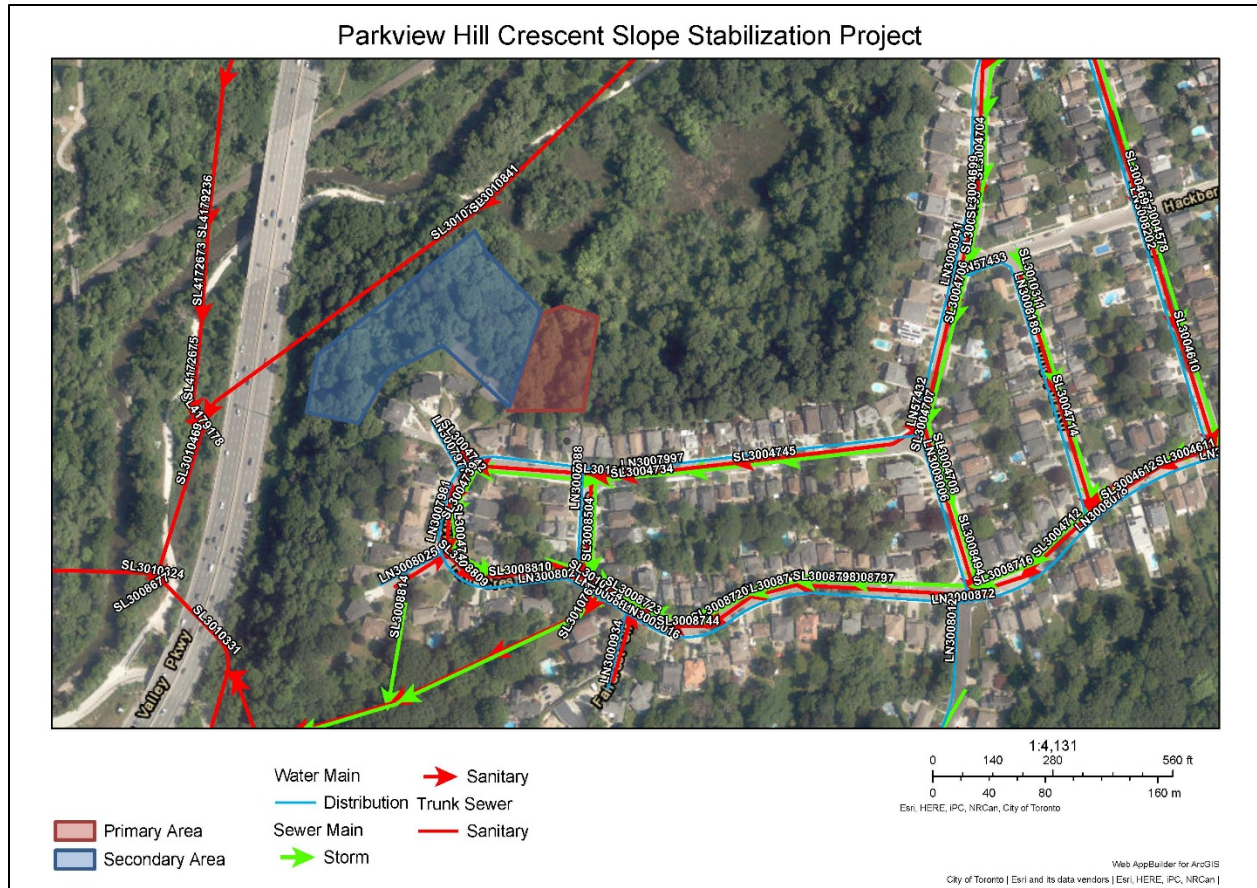


Figure 12: City of Toronto infrastructure surrounding the Project limits. *Source: DCAD, 2026.*

Pedestrian Traffic Routes

There is an existing multi-use trail (East Don Trail) located within the East Don River valley north of the Project area. The trail generally follows the east side of the East Don River and provides recreational access through the valley lands. An existing pedestrian bridge crosses the East Don River northwest of the Project area, providing connectivity between the trail network on the east and west sides of the river. The trail and bridge are located outside the Project limits and are not anticipated to be directly affected by the proposed works. Should temporary use of the trail be required during construction for access or staging, appropriate traffic management and public notification measures will be implemented to maintain public safety and minimize disruptions.

Property Values or Ownership

The Don River ravine north and west of the Project site is owned by TRCA. TRCA works on private property to benefit landowners will be subject to the *Private Landowner Contribution for Erosion Control Works* (Board of Director approved January 27, 2017, #A227/16).

Existing Tourism Operation

There are no existing tourism operations within or adjacent to the Project limits; therefore, there will be no impacts resulting from the proposed works.

Property Accessibility

The preferred construction access is anticipated to be primarily from the existing East Don Trail within the East Don River valley, north of the Project area (**Figure 13**). This access route would minimize disturbance to adjacent residential properties and reduce the need for construction traffic through the surrounding neighbourhood. However, periodic access between participating properties may be required to implement portions of the preferred treatment along the crest, particularly for construction of the proposed MSE wall. Temporary access and/or material storage at the top of the slope may also be required to facilitate construction activities.

The final construction access routes, laydown areas, and extent of top-of-slope access will be confirmed during the detailed design phase and in consultation with the Contractor and KGS, taking into consideration site conditions, environmental and archaeological constraints, public safety, constructability, and opportunities to minimize disturbance to property owners.

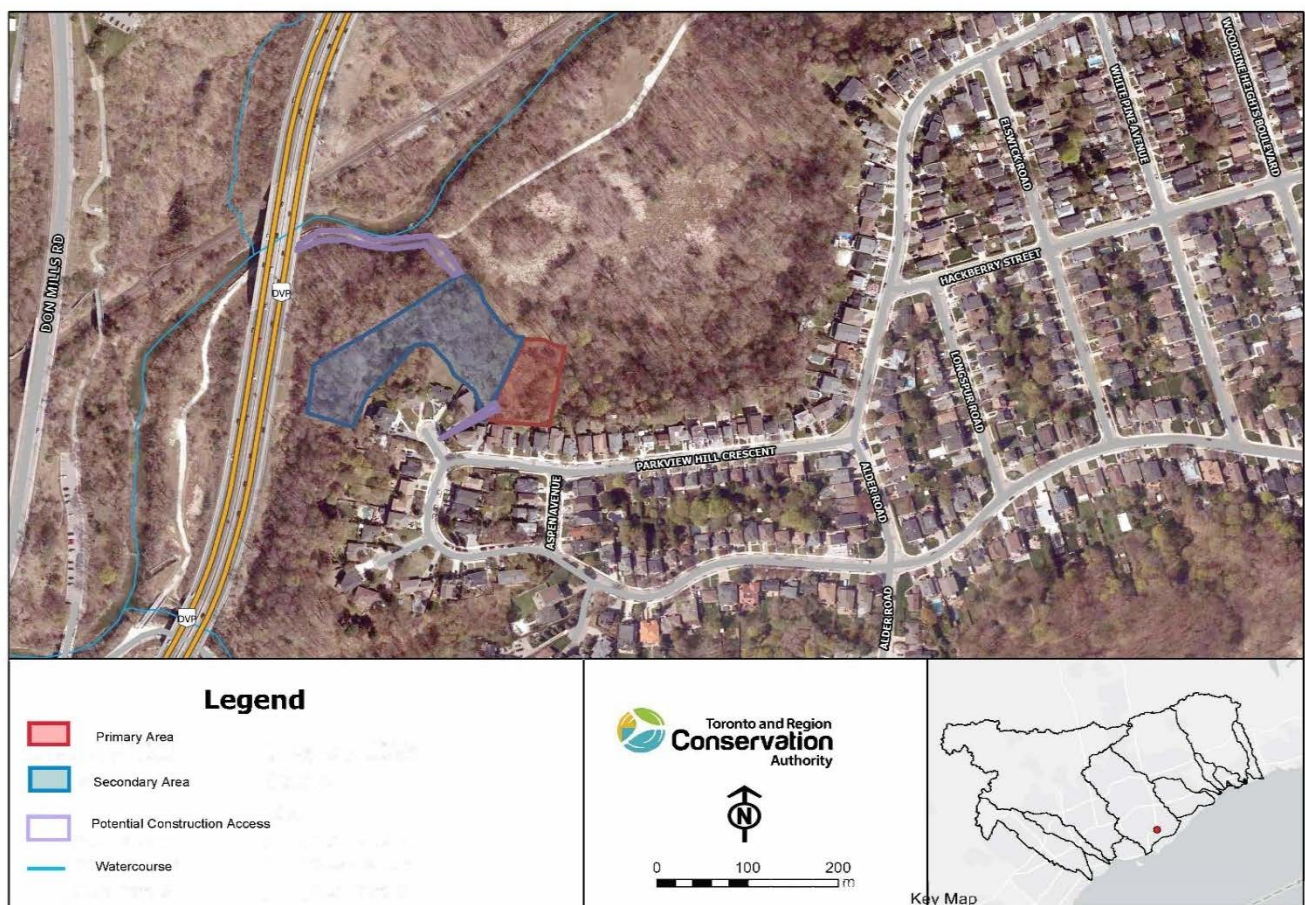


Figure 13 : Potential construction access route. *Source: TRCA, 2026.*

3.1.5 Engineering/Technical Environment

Rate of Erosion in Ecosystem

As a confined system, the reach of the East Don River proximal to the Project area requires an erosion hazard assessment that considers the toe erosion allowance, stable slope allowance, and erosion access allowance. By calculating the 100-year erosion rate within the Study Area, AECOM (2021) identified an applicable toe erosion allowance of 8m where the watercourse banks are not protected (e.g., rip-rap or armourstone) and where the valley slope toe is located within 15m of the channel. AECOM (2021) calculated a 100-year erosion rate of 7.82m (0.08 m/year) for the reach adjacent to the Project area. KGS's subsequent assessment confirmed that, for the slope stability cross-sections evaluated within the Secondary Area, the nearest watercourse is located more than 15m from the slope toes and, therefore, no toe erosion allowance was required in the updated analyses.

The potential for erosion and slope instability within the local ecosystem is influenced by surrounding land use, topography, vegetation cover, groundwater conditions, and surface drainage. Although the Project area is located within an urban environment, the surrounding East Don River valley is characterized by dense woodland vegetation that provides important erosion protection through interception of overland runoff, soil reinforcement by root systems, and increased infiltration. These natural features contribute to reducing the extent of surficial erosion and maintaining slope stability throughout much of the valley corridor.

TRCA has actively monitored erosion behind 94, 94A, 96, 98, and 100 Parkview Hill Crescent since the initial slope failure in 2019. KGS's 2024 site inspection confirmed that surficial erosion remains active within the Project area, with widening of the failure scarp and continued sloughing observed behind 96/98 Parkview Hill Crescent. In the Secondary Area, localized surface erosion and erosion gullies were observed behind 2, 4, and 5 Welby Circle, with surface erosion considered likely to be associated with heavy rainfall events. Continued erosion during significant rainfall events could progressively deepen these gullies and adversely affect long-term slope stability if left unmitigated. KGS identified two erosion gullies behind 2 Welby Circle, as well as surface erosion and dead trees/debris behind 2, 4, and 5 Welby Circle as conditions that could compromise slope stability over time.

The proposed works are intended to improve long-term erosion protection and slope stability by addressing the existing erosion hazards and reducing the potential for continued slope degradation within the Project area.

Sediment Deposition Zones in Ecosystem

There are no sediment deposition zones within the Project limits; therefore, there will be no impacts resulting from the proposed works.

Flood Risk in Ecosystem

Per TRCA's (2026) Regulation Mapping, the Project limits are not likely within the East Don River flood hazard up to and including under Regulatory flood conditions. However, the Regulatory flood hazard extends to immediately north of the Project limits, encompassing the wetland features and lowlands of the East Don River valleylands. Project engineered designs will be circulated to TRCA's Water Resource Engineering for permission under Section 28 of the *Conservation Authorities Act*, to ensure works are located outside of the flood hazard or are minimized to negate any impacts to flooding hazards. Proposed works will not improve water regime flow, floodplain continuity/retention, and will not impact flood susceptibility.

Slope Stability

The Project area is characterized by mature woodland vegetation along the valley slope and slope toe. AECOM (2021) identified the existing tree root systems as a critical component of slope stability, helping to reinforce

surficial soils and maintain the stability of the relatively steep ravine slopes. Loss of trees or vegetation, whether through natural events or removal, may reduce slope stability and increase the potential for erosion and slope failure.

To assess the stability of the slope in the Project area, AECOM (2021) delineated the LTSSC for FoS of 1.3 and 1.5 in both the Primary and Secondary Areas (**Figure 7** and **Figure 8**). The Primary Area was identified as high priority due to the positioning of the LTSSC for a FoS of 1.3 which intersected or extended into the dwelling footprints at each property. AECOM concluded that remediation was required within the Primary Area to reduce the risk to existing structures.

KGS completed supplementary geotechnical investigations and updated slope stability analyses to address data gaps related to soil shear strength parameters and groundwater assumptions and to reassess conditions within the Secondary Area. The updated Secondary Area assessment incorporated revised soil stratigraphy, shear strength parameters, and phreatic surface assumptions developed from the 2025 geotechnical investigation.

Based on the updated assessment, KGS classified the slope behind 2, 4, and 5 Welby Circle as marginally stable to stable under existing conditions. The updated LTSSC for a FoS of 1.3 does not intersect the existing dwelling footprints, with a minimum offset of approximately 4.1 m from the dwelling at 2 Welby Circle. Accordingly, the Secondary Area is considered to have a lower risk than the Primary Area, and robust slope stabilization measures are not considered necessary. However, localized erosion, erosion gullies, dead trees, and debris observed behind 2, 4, and 5 Welby Circle could contribute to deterioration of slope conditions over time. Proposed works within the Secondary Area are therefore considered preventative measures intended to mitigate the potential for increased future erosion and slope instability.

KGS did not complete an updated slope stability analysis for 3 Welby Circle because AECOM (2021) reported a minimum FoS of 1.77 and determined that the existing slope crest represented the LTSSC for both a FoS of 1.3 and 1.5. KGS's reanalysis of the existing data agreed with AECOM's recommendation that stabilization works are not required at 3 Welby Circle; therefore, this property was excluded from the proposed slope stabilization works outlined below.

The proposed works will be designed to provide long-term, low-maintenance protection of the ravine slopes within the Primary Area and preventative erosion protection within the Secondary Area.

Existing Structures

Several residential dwellings and accessory structures are located within or adjacent to the erosion and slope instability hazards identified within the Project area. The level of risk to these structures differs between the Primary and Secondary Areas.

Within the **Primary Area**, the residential dwellings at 94A, 96, 98, and 100 Parkview Hill Crescent are considered to be at high risk due to existing site conditions including the previous slope failure, steep slope geometry, active erosion and seepage, and the position of the LTSSC relative to the existing structures. Both AECOM (2021) and KGS (2026) determined that the LTSSC for a FoS of 1.3 intersected or extended to the building footprints at the Primary Area properties, supporting the need for remedial slope stabilization measures.

Within the **Secondary Area**, the residential dwellings at 2, 4, and 5 Welby Circle are considered to be at comparatively lower risk. KGS's updated assessment determined that the existing slopes are marginally stable to stable and that the updated LTSSC for a FoS of 1.3 does not intersect the existing dwelling footprints. The minimum offset between the LTSSC and an existing dwelling is approximately 4.1m at 2 Welby Circle. While robust

slope stabilization is not considered necessary within the Secondary Area, localized erosion and other observed slope conditions could increase the risk to these properties over time if conditions worsen. The proposed works in this area are therefore preventative in nature and are intended to reduce the potential for future slope degradation. KGS determined that stabilization works are not required at 3 Welby Circle based on the previously established FoS of 1.77 and the LTSSC coinciding with the existing slope crest.

Accessory structures, including detached garages, sheds, decks, and fences, are also present within the Project area and may be affected by existing erosion and slope conditions.

A primary purpose of the proposed remedial slope stabilization works is to provide long-term, low-maintenance protection of essential structures demonstrated to be at risk within the Primary Area, while implementing preventative erosion protection within the Secondary Area to mitigate the potential for increased future risk.

Hazardous Lands/Sites

Hazardous lands are defined as property or land that could be unsafe for development because of naturally occurring processes associated with flooding, erosion, dynamic beaches, or unstable soil or bedrock (*Conservation Authorities Act, 1990*). Observed and measured slope erosion and instability within the Project area meet the hazardous lands definition and present varying levels of risk to property and public safety.

Within the Primary Area, the existing slope failure, active erosion, seepage, and proximity of the LTSSC to existing residential structures represent a high erosion and slope instability risk. Within the Secondary Area, KGS's updated assessment indicates that the existing slopes are comparatively lower risk and that the dwellings are located outside the updated LTSSC for a FoS of 1.3; however, localized erosion and slope deterioration have the potential to increase risk over time if left unmitigated.

The proposed works will protect private properties and TRCA-owned public lands within the Project limits from existing erosion and slope instability hazards and reduce the potential for future deterioration within the East Don River valleylands.

4.0 EVALUATION OF PRELIMINARY OPTIONS

Conceptual slope stabilization alternatives were initially developed and assessed by AECOM Canada Ltd. as a component of the 2021 SS&ERA based on available topographic information, site investigations, and geotechnical investigations. In 2026, KGS reviewed, updated, and expanded the conceptual alternative package for the Primary and Secondary Areas in the CDER, incorporating findings from their site inspections, geotechnical investigations, slope stability analyses, and groundwater monitoring.

Based on the results of KGS's investigation, the extent of risk to essential residential structures at the top of the slope varies within the Primary Area and Secondary Area. As such, alternative remedial solutions were developed for both areas accordingly. The proposed remedial work will focus on alleviating slope instability issues on the slope throughout the entire project limit and protect adjacent private property from erosion hazards.

Each alternative was then assessed using a comparative evaluation framework that considered technical, environmental, social, financial, and implementation criteria, including constructability, impacts to the natural environment and adjacent properties, public safety, long-term performance, operation and maintenance requirements, and lifecycle costs. Evaluation results were then used to inform the selection of the preferred conceptual alternatives for both the Primary and Secondary Areas.

4.1 Description of Preliminary Options - Primary Area

The following solutions were developed and evaluated by KGS as part of the Class EA process to address the identified slope stability and erosion hazards and associated risks to properties within the Primary area.

Primary Area – 94 to 100 Parkview Hill Crescent

Option 1 – Do Nothing

Option 2 – Improve Slope Drainage

Option 3 – Gravity Retaining Wall

Option 4 – Mechanically Stabilized Earth (MSE) Wall

Option 5 – Soil Nails

- Option 5A – Regrade and Revegetate (Fill Buttress) + Soil Nails
- Option 5B – Soil Nails + MSE Wall
- Option 5C – Fill Buttress + Soil Nails + MSE Wall

Option 6 – Reinforced Pile Wall

Option 7 – Regrade Slope and Revegetate

The evaluation of the preliminary rehabilitation options considers their potential positive and negative effects with respect to the physical and natural environment, social and cultural environment, technical considerations, financial considerations, constructability, and public safety. The 2026 KGS assessment identifies 'Option 1 - Do Nothing' as the benchmark against which the consequences of the other options can be evaluated.

For the Primary Area, KGS determined that Options 1 and 2 provide limited to no mitigation of the identified slope failure risks, while Options 3 and 4 are not suitable as standalone stabilization measures. Option 7 was also not

considered as a standalone solution due to grading requirements resulting in substantial encroachment towards the existing dwellings. KGS pursued detailed evaluations of the remaining alternatives including soil nails, soil nails with a fill buttress and/or MSE wall, and a reinforced pile wall.

Please see the full report in **Appendix A** for additional description of the evaluated alternatives.

4.1.1 Option 1 - Do Nothing

The “Do Nothing” option is a mandatory alternative that is considered as part of the Class EA process and provides a benchmark against which the consequences and benefits of the other rehabilitation alternatives can be evaluated. Under this option, no active slope stabilization measures would be implemented, other than ongoing monitoring and routine management activities that may otherwise be required. The 2026 KGS assessment recommends regular monitoring of the slopes regardless of the rehabilitation option ultimately selected, including visual inspections for signs of sloughing, surface water erosion, seepage, tension cracking, progressive leaning of trees, or rotational slope failures.

Under the “Do Nothing” option, existing slope erosion and natural deterioration would be permitted to continue. Over the long term, continued erosion, localized sloughing, or larger slope failures could result in recession of the slope crest toward the limit of the predicted stable slope condition. Features located close to the slope crest or within the area potentially affected by slope recession could consequently be exposed to an increased risk of undermining or loss of ground.

The suitability of the “Do Nothing” option is dependent on the site-specific slope stability conditions and observed evidence of erosion or instability. In the Primary Area, “Do Nothing” was retained as the benchmark because the existing conditions include evidence of previous rotational slope failure, ongoing sloughing and seepage, and calculated minimum factors of safety below 1.0.

4.1.2. Option 2 – Improve Slope Drainage

The second option is improving slope drainage to reduce groundwater levels and/or pore water pressures within the slope. Elevated groundwater levels and pore pressures can reduce soil shear strength and contribute to slope instability. Drainage improvements may therefore be used to reduce pore pressure and improve slope stability where groundwater conditions are identified as a contributing factor.

Potential drainage measures may include:

- Diverting surface runoff at the top of the slope into solid pipes and conveying the runoff to an appropriate discharge location at or near the toe of the slope;
- Increasing and maintaining vegetation along the slope and slope crest, where appropriate, to reduce surface runoff and infiltration over the long term;
- Installing partially perforated or sub-horizontal drains within suitable soil layers to intercept and lower groundwater levels.

In the Primary Area, improving slope drainage is not considered effective as a standalone measure because the existing slope has experienced a rotational failure and continues to exhibit sloughing and seepage, with calculated minimum factors of safety below 1.0.

4.1.3 Option 3 – Gravity Retaining Wall

The third option is construction of a gravity retaining wall to provide localized support to the slope. Depending on the site-specific objectives and available space, a gravity wall could be positioned toward the top of the slope or near the base of the slope. A wall located near the slope crest could retain tableland and reduce the extent of regrading, while a wall near the slope toe could provide additional resisting forces and reduce the extent of backfilling or regrading required above the wall.

A gravity retaining wall is not considered suitable for stabilization of the full height of the slope, which can range from approximately 32m to 35m in height. KGS identified additional disadvantages of a gravity retaining wall to be a relatively high cost, significant temporary disturbance during implementation, potential effects on the natural environment and visual character, and substantial backfill and compaction requirements.

Where a gravity wall is proposed near the base of a slope, particularly in proximity to a watercourse or wetland, potential effects associated with toe erosion, flooding, construction access, and environmental disturbance would need to be considered during detailed design.

4.1.4 Option 4 – Mechanically Stabilized Earth Wall

The fourth option is the installation of a Mechanically Stabilized Earth (MSE) wall, potentially incorporating a vegetated or otherwise erosion-resistant facing. Depending on site-specific objectives, an MSE wall may be constructed toward the existing slope crest or near the base of the slope. As with a gravity retaining wall, an MSE wall would generally not be suitable as a standalone measure for stabilization due to the height of the slope.

MSE wall construction generally requires excavation, placement, and compaction of engineered backfill. At the Parkview Hill site, KGS identified significant excavation requirements, particularly where reinforcement would extend into the existing slope, as well as substantial backfill and compaction requirements. Temporary disturbance, construction access, and impacts to residents and the natural environment would also need to be considered.

For the Primary Area, an MSE wall is not suitable as a standalone remediation option. However, MSE walls were assessed as components of combined alternatives with soil nails and/or a fill buttress (Options 5B and 5C), where they can provide additional benefits such as eliminating or reducing tableland loss and improving surface drainage at the slope crest (KGS, 2026).

4.1.5 Option 5 – Soil Nail Wall

The fifth option is to stabilize the slope using soil nails with a flexible erosion control facing. Soil nails reinforce the existing slope with comparatively limited excavation, while GeoWeb or a similar system can provide erosion protection and support revegetation. Where practicable, the system may be configured around existing healthy trees to minimize vegetation removal and retain the natural character of the slope.

The soil nail configuration is determined based on site-specific soil conditions to achieve the required FoS of 1.3. This treatment utilizes shorter soil nails to reinforce the upper slope after regrading and longer nails extending into competent till to resist deeper-seated slope failures in the midslope. At the critical cross-section at 98 Parkview Hill Crescent (existing $FS_{min} = 0.87$), Option 5 improves the FS_{min} to 1.34 but would result in a net tableland loss of 2.6m from grading to achieve the ideal gradient.

Option 5 was further broken out into three subcategories, supplementing the installation of soil nails with additional erosion control treatments along the slope.

Option 5A – Regrade and Revegetate (Fill Buttress) + Soil Nails

Includes regrading and installing soil nails in the upper 10m of the slope where the headscarp is present, combined with backfilling the slope in the mid and lower sections of slope with a rubble fill buttress. Though effective at improving the FS_{min} to 1.50 at the critical cross section, the large rubble fill buttress would result in a substantial disturbance, negatively impacting wildlife habitat, vegetation communities, and the overall natural appeal of the area.

Option 5B – Soil Nails + MSE Wall

Similar to Option 5, two soil nail groups are installed to reinforce the slope. However, the upper 2.3m of the slope will be excavated and treated with a Mechanically Stabilized Earth (MSE) wall with the expected outcome of minimizing the loss of tableland. With the addition of maintaining the FS_{min} of 1.34 as with Option 5, the inclusion of the MSE wall has the added benefits of avoiding installing soil nails in loose fill in the upper slope and managing surface drainage along the crest.

The installation of an MSE wall with the soil nails treatment is expected to slightly increase disturbance to residents and increase construction cost and effort in comparison to Option 5 – Soil Nails.

Option 5C – Fill Buttress + Soil Nails + MSE Wall

This treatment combines soil nails with both additional treatments used in Options 5A and 5B. The upper portion of the slope is excavated and reinforced with an MSE wall, the lower portion is regraded and filled with a rubble fill buttress, and the near-vertical portion near the middle is regraded and treated with soil nails. Overall, this treatment results in the same FS_{min} of 1.50 as option 5A, as well as similar advantages and disadvantages.

4.1.6 Option 6 – Reinforcing Piles

This option stabilizes the slope through the installation of a reinforced wall with battered micropiles extending to a sufficient depth below the failure surface into stable soil to develop adequate resistance. The piles would be installed at close intervals and connected using a concrete capping beam to increase the overall stability of the structure. For the most critical property, 98 Parkview Hill Crescent, the reinforced pile wall would provide a minimum Factor of Safety of 1.37. However, the wall alone would not stabilize the slope in front of it, requiring additional soil nails and increasing the overall construction complexity and cost.

Other considerations include the need for a temporary working platform, access through the wetland, and significant construction disturbance.

4.1.7 Option 7 – Regrade & Revegetate

The seventh option is to regrade and revegetate the ravine slope. The slope would be graded to a stable angle using compacted fill, followed by topsoil, vegetation, and erosion protection. Imported fill would be placed in stepped sections along the existing slope to improve overall stability. Regrading could involve flattening the upper slope, placing fill at the lower slope to provide additional support, or a combination of both. The final approach would depend on the existing slope, soil conditions, available space, and required FoS. Following regrading, erosion control measures such as GeoWeb would be installed to protect the slope and support revegetation. Existing healthy vegetation would be retained where practicable.

KGS determined that regrading alone would require the slope to extend significantly toward the existing homes to achieve the required stability.

4.2 Description of Preliminary Options - Secondary Area

For the Secondary Area, KGS's analysis indicates that the existing slopes at 2, 4 and 5 Welby Circle are marginally stable to stable, with the LTSSC for a FoS of 1.3 located outside the building footprints. Consequently, the more robust stabilization options (Options 3 to 6) were not considered to be warranted for the Secondary Area. KGS proposed Option 8 – Clear Debris/Dead Trees + Install Erosion Protection for Zones 1 and 3 (2, 4 and 5 Welby Circle), while 'Option 1 – Do Nothing' remains the recommended approach for Zone 2 (3 Welby Circle).

The following rehabilitation alternatives were considered for the Secondary Area, comprising Zones 1 to 3 (2 to 5 Welby Circle):

Secondary Area – 2 to 5 Welby Circle

Option 1 – Do Nothing

Option 2 – Improve Slope Drainage

Option 3 – Gravity Retaining Wall

Option 4 – Mechanically Stabilized Earth (MSE) Wall

Option 5 – Soil Nails

Option 6 – Reinforced Pile Wall

Option 7 – Regrade and Revegetate Slope

- Option 7A – Regrade and Revegetate Slope + Improve Slope Drainage

Option 8 – Clear Debris/Dead Trees + Install Erosion Protection

4.2.1 Option 1 – Do Nothing

The "Do Nothing" option is used as the benchmark against which other rehabilitation alternatives are evaluated. KGS's analysis indicates that the slope at 2, 4 and 5 Welby Circle are marginally stable to stable, with the LTSSCs for a FoS of 1.3 located outside the building footprints. Despite the higher overall stability of the slope behind these properties, ongoing surficial erosion, erosion gullies, dead trees, and accumulated debris indicate a need for localized measures to reduce the potential for future deterioration of the slope.

For 3 Welby Circle, the reported minimum factor of safety is 1.77, which is well above the required threshold to be considered stable.

4.2.2 Option 2 – Improve Slope Drainage

This option involves measures such as surface water management and/or installation of sub-horizontal drains to reduce groundwater levels and pore pressures within the slope. Although drainage improvements were previously recommended for Zone 1 (2 Welby Circle) by AECOM, updated groundwater monitoring completed by KGS indicates that the groundwater within the deeper till is likely below the proposed drain elevations and is separate from the perched groundwater in the upper soil layers. Consequently, this option is not expected to materially improve the FoS.

4.2.3 Options 3 to 6 – Robust Solutions

Gravity retaining walls, MSE walls, soil nails, and reinforced pile walls were considered as robust slope stabilization measures for the Secondary Area. However, the updated stability analyses indicate that the slope in the Secondary

Area is marginally stable to stable, and there is no evidence of significant historical slope failures or ongoing slope movements. Given the current level of risk, intensive stabilization measures were considered disproportionate to the identified risk and were therefore not carried forward for the Secondary Area.

4.2.4 Option 7 – Regrade and Revegetate Slope

This option would involve flattening and/or buttressing the existing slope using compacted engineered fill, followed by erosion protection and revegetation. Although this approach was recommended by AECOM for Zones 1 (2 Welby Circle) and 3 (4 & 5 Welby Circle), KGS' analysis suggests that the existing slopes are sufficiently stable, concluding that this level of intervention is not necessary. In addition, the required regrading would result in significant tree removals and associated impacts to the natural character of the slope. Accordingly, this option was ruled out for the Secondary Area.

4.2.5 Option 8 – Clear Debris/Dead Trees + Install Erosion Protection

Updated site inspections and geotechnical investigations completed by KGS identified ongoing surface erosion, erosion gullies, dead trees, and accumulated debris within the Secondary Area. Following the assessment, Alternative 8 was developed to address identified localized concerns while maintaining the existing stable slope configuration. The proposed measures include removal of dead trees and accumulated debris and installation of turf reinforcement mat (TRM) along the erosion gullies and/or slope crest areas. The TRM can be installed around healthy existing trees to minimize vegetation removal and preserve the natural character of the site.

4.3 Evaluation of Preliminary Options

As part of the environmental assessment process, each of the identified alternatives is rated against a fixed set of evaluation criteria set out by CO's Class EA for Remedial Flood and Erosion Control Projects and is outlined in **Table 1**. The evaluation criteria typically include consideration for technical, economic, environmental and social factors or objectives. The evaluation consisted of a qualitative ranking that considered the impact or effect of each alternative (**Table 2 & Table 3**).

Table 1: Evaluation ranking criteria

Rank		Relation to the associated criteria
Increasing Positive Rank 	+H	Most positive, or least negative impact; easiest to implement; lowest cost
	+M	Moderate positive impact; moderate implementation; moderate cost
	+L	Minor positive impact; lesser ease of implementation; high cost
	NIL	Neutral or no impact; no implementation; no associated costs
	-N	Overall negative impact / effect

Table 2: Evaluation of Options – Primary Area

Objective	Criteria	Comment	Do Nothing (Option 1)	Soil Nails (Option 5)	Rubble Fill Buttress + Soil Nails (Option 5A)	Soil Nails +MSE Wall (Option 5B)	Rubble Fill Buttress + Soil Nails + MSE Wall (Option 5C)	Pile Wall (Option 6)
Physical and Natural Environment	Flooding	Impact on surface drainage, flooding; meet legislated criteria for flooding and water ⁽¹⁾	NIL	+H	+H	+H	+H	+H
	Erosion	Impacts on soils, geology, rate of erosion	-N	+M	+M	+H	+H	-N
	Terrestrial Habitat	Impact on connectivity, diversity and sustainability	NIL	+H	+M	+H	+M	+H
	Aquatic Habitat	Impact on connectivity, spawning and sustainability	NIL	NIL	NIL	NIL	NIL	NIL
Social/Cultural Environment	Aesthetic Value	Impact on existing and proposed development aesthetic value	-N	+M	+M	+H	+H	+L
	Benefit to Community	Access to trails, enjoyment of valley	NIL	NIL	NIL	NIL	NIL	NIL
	Archaeological Features	Impact on existing archaeological features	NIL	NIL	NIL	NIL	NIL	NIL
Technical Criteria	Regulatory Agency Acceptance	Satisfy TRCA, DFO, and MNRF mandates	-N	+M	+M	+H	+H	-N
	Impact on Existing Infrastructure	Protection or potential exposure of infrastructure (sanitary sewer, maintenance manhole)	NIL	NIL	NIL	NIL	NIL	NIL
	Maintenance Requirements ⁽²⁾	Requirement for regular, irregular or no maintenance activities, such as structural maintenance or vegetation maintenance	-N	+M	+M	+M	+M	+L
Financial Criteria	Capital Costs	Rough Order Magnitude (ROM) capital costs for the detailed design, permitting and installation of proposed concept ⁽³⁾	NIL	+M	+L	+H	+H	+L
	Maintenance Cost	Rough Order Magnitude costs to maintain the proposed structure ⁽³⁾	-N	+H	+M	+H	+M	+H
Constructability	Complexity of Treatment	Requirement for the specialized services to design or install unique or proprietary specifications that must be completed by a certified contractor/consultant	NIL	+H	+H	+M	+M	+L
Public Safety	Potential Risks to Trail and Park Users	Impact on public safety and requirement for safety features (e.g. safety fences)	-N	+H	+H	+H	+H	-N
Combined Rank			-N	+M (5H, 5M)	+M (3H, 6M, 1L)	+H (8H, 2M)	+H (6H, 4M)	+L (3H, 4L, -3N)

Table 3: Evaluation of Options – Secondary Area

Objective	Criteria	Comment	Do Nothing (Option 1)	Clear Debris/Dead Trees + Install Erosion protection (option 8)
Physical and Natural Environment	Flooding	Impact on surface drainage, flooding; meet legislated criteria for flooding and water	NIL	NIL
	Erosion	Impacts on soils, geology, rate of erosion	-N	+H
	Terrestrial Habitat	Impact on connectivity, diversity and sustainability	NIL	+M
	Aquatic Habitat	Impact on connectivity, spawning and sustainability	NIL	NIL
Social/Cultural Environment	Aesthetic Value	Impact on existing and proposed development aesthetic value	-N	+H
	Benefit to Community	Access to trails, enjoyment of valley	NIL	+H
	Archaeological Features	Impact on existing archaeological features	NIL	NIL
Technical Criteria	Regulatory Agency Acceptance	Satisfy TRCA, DFO, and MNRF mandates	-N	+H
	Impact on Existing Infrastructure	Protection or potential exposure of infrastructure (sanitary sewer, maintenance manhole)	NIL	NIL
	Maintenance Requirements	Requirement for regular, irregular or no maintenance activities, such as structural maintenance or vegetation maintenance	-N	+H
Financial Criteria	Capital Costs	Rough Order Magnitude (ROM) capital costs for the detailed design, permitting and installation of proposed concept ⁽¹⁾	T.B.D.	+H
	Maintenance Cost	Rough Order Magnitude costs to maintain the proposed structure ⁽¹⁾	T.B.D.	T.B.D.
Constructability	Complexity of Treatment	Requirement for the specialized services to design or install unique or proprietary specifications that must be completed by a certified contractor/consultant	NIL	+H
Public Safety	Potential Risks to Trail and Park Users	Impact on public safety and requirement for safety features (e.g. safety fences)	-N	+H
Combined Rank			-N	+H (8H, 1M)

4.4 Selection of the Preferred Options

The preferred rehabilitation options were identified based on the updated slope stability analyses, site observations, geotechnical investigations, and the Class EA evaluation completed by KGS. The evaluation considered physical and natural environmental effects, social and cultural considerations, technical criteria, financial considerations, constructability, and public safety. “Do Nothing” was retained as the benchmark against which the other rehabilitation alternatives were evaluated.

4.4.1 – Primary Area (Zone 4: 94 – 100 Parkview Hill Crescent)

Option 5B – Soil Nails + Mechanically Stabilized Earth (MSE) Wall

The KGS evaluation identified Alternative 5B – Soil Nails + MSE Wall as the preferred alternative for the Primary Area. The Primary Area represents the most critical slope condition within the Project limits, where a rotational slope failure occurred in 2019, ongoing sloughing and seepage have been observed, and the existing slope stability analyses indicate minimum factors of safety below 1.0, with the LTSSC corresponding to a factor of safety of 1.3 extending through building footprints. Consequently, a robust slope stabilization solution is warranted.

Alternative 5B combines soil nails with an MSE wall where the soil nails reinforce the upper and deeper portions of the slope, while the MSE wall is constructed near the slope crest. The assessed configuration provides a minimum factor of safety of 1.34. Compared with the soil-nail-only alternative, the MSE wall would eliminate the loss of land associated with the upper-slope regrading, avoid installation of soil nails within the upper loose fill material, and improve surface drainage at the slope crest.

The Class EA evaluation matrix (**Table 2**) ranks Option 5B as the highest total score among the Primary Area alternatives included in the evaluation with a ranking of +H (8H, 2M). This ranking reflects the overall balance of environmental, social, technical, constructability, and public-safety considerations.

4.4.2 – Secondary Area (Zones 1 and 3: 2, 4 & 5 Welby Circle)

Option 8 – Clear Debris/Dead Trees + Install Erosion Protection

The KGS assessment identified Alternative 8 – Clear Debris/Dead Trees + Install Erosion Protection as the preferred rehabilitation approach for Zones 1 and 3. Updated slope stability analyses indicate that the existing slopes are marginally stable to stable. However, site inspections identified localized erosion, dead trees, and accumulated debris pose a threat to the long-term stability of the slope. At 2 Welby Circle, two erosion gullies were also observed extending from the slope crest toward the pedestrian trail. Continued erosion during significant rainfall events could worsen these conditions and potentially affect slope stability over time.

The preferred alternative includes removing dead trees and accumulated debris and installing turf reinforcement mat (TRM) in areas of existing erosion. At 2 Welby Circle, TRM would also be installed within the two erosion gullies. The TRM can be installed around healthy existing trees to minimize vegetation removal and maintain the natural character of the slope. These measures are intended to reduce ongoing erosion and help maintain long-term slope stability without requiring more intensive structural stabilization.

The Class EA evaluation matrix (**Table 3**) ranks Option 8 as the highest total score among the Secondary Area alternatives included in the evaluation with a ranking of +H (8H, 1M). This ranking reflects the overall balance of environmental, social, technical, constructability, and public-safety considerations.

4.4.3 – Secondary Area (Zone 2: 3 Welby Circle)

Option 1 – Do Nothing

The results of the KGS assessment confirm ‘Option 1 – Do Nothing’ as the preferred approach for Zone 2. The 2021 AECOM assessment reported a minimum factor of safety of 1.77 for this property, and the LTSSC corresponding to a factor of safety of 1.3 coincides with the existing slope crest. KGS’s ensuing analysis supports the previous recommendation to maintain the existing site conditions.

Regular monitoring of the slope remains recommended to identify any future signs of sloughing, surface erosion, seepage, tension cracking, progressive tree leaning, or rotational slope failure.

This selected alternative for each zone meets all three (3) of the Project objectives:

1) Objective 1: Risk Mitigation

The preferred alternative for each zone incorporates a solution that will effectively control the localized slope instability issues within the Project area and provide long-term protection to essential privately owned structures located at the top of slope. The proposed work thereby effectively protects property and human life from the hazards of erosion and slope instability.

2) Objective 2: Naturalization

The preferred alternative for each zone will improve the terrestrial habitat by increasing biodiversity and resiliency. The preferred alternatives will result in the removal of invasive and alien species where possible and the incorporation of suitable native species. Restoration works planned following construction activities will effectively restore the disturbed areas and further support the naturalization of the local ecosystems.

3) Objective 3: Compatibility

While evaluating alternatives, preference was given to alternatives which would have a minimal construction footprint and machine access requirements in effort to reduce impacts to the surrounding natural and built environments. Resulting impacts to public safety were also considered during the evaluation process.

5.0 ENVIRONMENTAL SCREENING

5.1 Detailed Environmental Analysis of the Preferred Options

To complete the detailed environmental analysis of the preferred alternatives, the information collected for the baseline inventory is examined in greater detail to confirm potential impacts, refine methods of mitigation, and to identify any unforeseen impacts. The evaluation of impacts includes both temporary impacts during construction of the undertaking, and permanent impacts due to function and maintenance of the works after construction. **Table 4** and **Table 5** evaluate the potential negative and positive effects of the proposed undertaking on the environment during construction and maintenance phases for the Primary Area (Zone 4) and Secondary Area (Zones 1 and 3), respectively. This includes the consideration of the magnitude, geographic extent, duration, frequency, permanence or reversibility and ecological context of the effects, as well as proposed mitigation measures and any residual effects. A detailed environmental analysis for Zone 2 has been excluded as the preferred method is 'Do Nothing'.

Environmental components that have been identified as potentially influencing the environment, both positive and negative, are discussed herein. Those that have been determined as not applicable (NA) have been omitted from further discussion.

Screening of potential effects are considered to be negative (-), neutral (NIL) or positive (+) and are rated as relatively high (H), medium (M), low (L) or not applicable (NA) (Conservation Ontario, 2024).

Table 4: Detailed Environmental Analysis of the Preferred Option – Primary Area (Zone 4) –Soil Nails + MSE Wall

Screening Criteria	Rating of Potential Effects								
	-H	-M	-L	NIL	+L	+M	+H	NA	Comments
Physical									
Unique Landforms								•	
Existing Mineral/Aggregate Resources Extraction Industries								•	
Earth Science - Areas of Natural and Scientific Interest								•	
Specialty Crop Areas/Agricultural Lands or Production								•	
Niagara Escarpment/Oak Ridges Moraine								•	
Environmentally Sensitive/Significant Areas (physical)								•	
Air Quality				•					
Agricultural Tile or Surface Drains								•	
Noise Levels and Vibration			•						Impacts will be temporary.
Water Flow Regime				•					
Existing Surface Drainage/Groundwater Seepage/ Groundwater Recharge/Discharge Zones						•			
Littoral Drift/ Other Coastal Processes								•	
Water Quality				•					
Soil/Fill Quality				•					
Contaminated Soils/Sediment/Seeps (Sediment Quality)				•					
Existing Transportation Routes				•					Impacts will be temporary.
Constructed Crossings (e.g. bridges, culverts)								•	
Geomorphology							•		

Screening Criteria	Rating of Potential Effects								
	-H	-M	-L	NIL	+L	+M	+H	NA	Comments
Biological									
Wildlife Habitat						•			
Habitat Linkages or Corridors						•			
Significant Vegetation Communities					•				
Environmentally Sensitive/ Significant Areas (biological)				•					
Fish Habitat								•	No in- or near-water works.
Species of Concern					•				There will be no significant adverse impacts to Species of Concern within the Project limits.
Exotic/Alien and Invasive Species					•				Removal of non-native and invasive flora, as feasible.
Wildlife/Bird Migration Patterns						•			
Wildlife Population						•			
Wetlands			•						Potential temporary impacts to the unassessed wetland along the access route.
Microclimate					•				
Unique Habitats				•					
Life Science - Areas of Natural and Scientific Interest								•	
Cultural									
Traditional Land Uses				•					
Indigenous Reserve or Community								•	
Outstanding Native Land Claim or Treaty Rights				•					Recommendations from the Stage 1 & 2 Archaeological Assessment will be followed to ensure potential impacts are avoided.
Transboundary Water Management Issues								•	
Riparian Uses								•	

Screening Criteria	Rating of Potential Effects								
	-H	-M	-L	NIL	+L	+M	+H	NA	Comments
Recreational/Tourist Uses of Water Body and/or Adjacent Land								•	
Aesthetic or Scenic Landscapes or Views				•					
Culturally Significant Resources				•					
Historic Canals								•	
Federal Property								•	
Heritage River System								•	
Socioeconomic									
Surrounding Neighbourhood or Community						•			
Surrounding Land Uses or Growth Pressure						•			
Existing Infrastructure, Support Services, Facilities							•		
Pedestrian Traffic Routes				•					
Property Values or Ownership						•			
Existing Tourism Operations				•					
Property Accessibility				•					
Engineering/Technical									
Rate of Erosion in Ecosystem							•		
Sediment Deposition Zones in Ecosystem				•					
Flood Risk in Ecosystem				•					
Slope Stability							•		
Existing Structures							•		
Hazardous Lands/Hazardous Sites							•		

Table 5 : Detailed Environmental Analysis of the Preferred Option – Secondary Area (Zones 1 & 3) – Clear Debris/Dead Trees + install Erosion Protection

Screening Criteria	Rating of Potential Effects								
	-H	-M	-L	NIL	+L	+M	+H	NA	Comments
Physical									
Unique Landforms								•	
Existing Mineral/Aggregate Resources Extraction Industries								•	
Earth Science - Areas of Natural and Scientific Interest								•	
Specialty Crop Areas/Agricultural Lands or Production								•	
Niagara Escarpment/Oak Ridges Moraine								•	
Environmentally Sensitive/Significant Areas (physical)								•	
Air Quality				•					
Agricultural Tile or Surface Drains				•					
Noise Levels and Vibration				•					Impacts will be temporary.
Water Flow Regime				•					
Existing Surface Drainage/Groundwater Seepage/ Groundwater Recharge/Discharge Zones							•		
Littoral Drift/ Other Coastal Processes								•	
Water Quality				•					
Soil/Fill Quality				•					
Contaminated Soils/Sediment/Seeps (Sediment Quality)						•			
Existing Transportation Routes				•					Impacts will be temporary.
Constructed Crossings (e.g. bridges, culverts)								•	

Screening Criteria	Rating of Potential Effects								
	-H	-M	-L	NIL	+L	+M	+H	NA	Comments
Geomorphology						•			
Biological									
Wildlife Habitat				•					
Habitat Linkages or Corridors				•					
Significant Vegetation Communities				•					
Environmentally Sensitive/ Significant Areas (biological)								•	
Fish Habitat								•	No in- or near-water works.
Species of Concern				•					There will be no significant adverse impacts to Species of Concern within the Project limits.
Exotic/Alien and Invasive Species					•				Removal of non-native and invasive flora, as feasible.
Wildlife/Bird Migration Patterns				•					
Wildlife Population				•					
Wetlands			•						Potential temporary impacts to the unassessed wetland along the access route.
Microclimate								•	
Unique Habitats				•					
Life Science - Areas of Natural and Scientific Interest				•					
Cultural									
Traditional Land Uses				•					
Indigenous Reserve or Community								•	
Outstanding Native Land Claim or Treaty Rights				•					Recommendations from the Stage 1 & 2 Archaeological Assessment will be followed to ensure potential impacts are avoided.
Transboundary Water Management Issues								•	

Screening Criteria	Rating of Potential Effects								
	-H	-M	-L	NIL	+L	+M	+H	NA	Comments
Riparian Uses									
Recreational/Tourist Uses of Water Body and/or Adjacent Land									
Aesthetic or Scenic Landscapes or Views									
Culturally Significant Resources									
Historic Canals									
Federal Property									
Heritage River System									
Socioeconomic									
Surrounding Neighbourhood or Community									
Surrounding Land Uses or Growth Pressure									
Existing Infrastructure, Support Services, Facilities									
Pedestrian Traffic Routes									
Property Values or Ownership									
Existing Tourism Operations									
Property Accessibility									
Engineering/Technical									
Rate of Erosion in Ecosystem									
Sediment Deposition Zones in Ecosystem									
Flood Risk in Ecosystem									
Slope Stability									
Existing Structures									
Hazardous Lands/Hazardous Sites									

6.0 SUMMARY

This section of the Project Plan provides a summary of comments received during the planning and design phases of the Project, a discussion of how these concerns have been addressed, and an outline of the monitoring program once the Project is complete.

Documents related to the public outreach component of this project are included in **Appendix D**.

6.1 Public Notifications and Consultation

In accordance with the Class EA process, the first point of public contact occurred with the publication of the Notice of Intent (NOI) in the Metroland on August 27, 2024.

The NOI requested that interested individuals contact the Project Manager should they wish to participate further in the EA process or to be kept informed about the Project's status.

Public interest after issuance of the NOI was exclusively expressed by the residents immediately impacted by the works.

6.1.1 Role of the Community Liaison Committee (CLC)

The Project aligns with the following excerpt from CO's Class EA document:

"In an effort to facilitate more on-going public involvement at the project level, the Conservation Authority shall, based on its contact group mailing lists and expressions of interest from the local landowners, members of the general public, interest groups, or agencies, establish a Community Liaison Committee (CLC) to assist the Authority by obtaining additional public input concerning the planning and design process of an individual flood and/or erosion control project, and to review information and provide input to the Conservation Authority throughout the process. The Conservation Authority shall strive to ensure that the membership of the CLC is representative of all views respecting a proposed remedial and erosion control project.

As the name implies, the function of the CLC, in the Class EA process, will be to assist the Conservation Authority to reach out and maintain contact with community residents, groups, associations and organizations. The CLC will provide direct input into the process. At the end of the process, the entire committee will have been exposed to the entire process, will have understood how decisions have been reached and will have had their questions answered during the process.

To fulfill its function, the CLC will:

- *Identify items of public concern with regard to the impact and design of proposed remedial flood and erosion control reduction alternatives;*
- *Provide direct input on these concerns to the Conservation Authority to be utilized throughout the planning and design process;*
- *Co-host, with Conservation Authority Staff, meetings organized by the Conservation Authority to facilitate the resolution of concerns relating to a proposed remedial flood and erosion control work;*

- *Review any Section 16 Order requests and attempt to resolve the issues of concern between the Section 16 Order requesters and the Conservation Authority before the Minister makes a decision regarding the request; and*
- *Where appropriate, submit an assessment to the Conservation Authority, upon project completion, commenting on the effectiveness of the Class EA process for meeting public concerns for the specific project and, where relevant, identify possible improvements. (CO, 2024)”*

6.1.2 CLC Meeting #1 & #2

The first CLC meeting was hosted by TRCA on July 7th, 2026, at the Toronto Public Library Danforth/Coxwell Branch, 1675 Danforth Avenue, in the City of Toronto. The meeting provided an opportunity for TRCA project staff to present an overview of the Parkview Hill Crescent Slope Stabilization Project, including TRCA’s Erosion Risk Management Program, the project background and chronology, the erosion and slope instability hazards, the Class EA process, and the preliminary alternative remedial measures under consideration. The meeting also included a discussion of the evaluation of the alternative remedial measures and the preliminary preferred alternatives for the Primary and Secondary Areas.

The CLC meeting also provided an opportunity for interested residents and stakeholders to ask questions and provide input regarding the proposed slope stabilization and erosion protection measures. CLC members were invited to review the preliminary alternatives and provide feedback to TRCA to inform the planning and design process. Based on the feedback forms received following the meeting, support was expressed for the preliminary preferred alternative, Soil Nails + MSE Wall (Option 5B) for the Primary Area, and Clear Debris/Dead Trees + Install Erosion Protection (Option 8) for Zones 1 and 3 of the Secondary Area.

Feedback received from CLC members following the first meeting included, but was not limited to, questions and concerns regarding:

- Potential impacts of the proposed works on private properties;
- Potential impacts to trees and vegetation, including tree removal and replacement;
- Slope drainage and moisture conditions;
- The appearance and visibility of the proposed slope stabilization treatment;
- Potential fencing requirements at the top of the proposed wall, and;
- Additional details regarding the preliminary preferred alternative for the Primary Area.

The second CLC meeting was held by TRCA on July 30th, 2026, at the Main Street Library, 137 Main Street, in the City of Toronto. The second meeting focused on responding to feedback received at CLC Meeting #1, addressing frequently asked questions, reviewing updated plan and cross-sectional drawings for the preliminary preferred alternative in the Primary Area (Option 5b - Soil Nails + MSE Wall), and providing an opportunity for further discussion and questions.

Documentation related to both CLC meetings is available in **Appendix D**.

6.1.3 Notice of Completion (NoC) and Notice of Project Completion (NoPC)

As per the requirements of the Class EA document, the Project Plan shall be filed and made publicly available for a thirty (30) day review period.

The Project Plan has been digitally circulated to all stakeholders who expressed an interest in the Project. Hard copies shall be made available for review at the locations indicated in the Notice of Completion for the duration of the 30-day review period.

Following the 30-day review period of this Class EA report and the successful resolution of any concerns received during the review period, TRCA intends to proceed with the detailed design of the preferred solution, secure necessary funding, and obtain the necessary approvals to proceed with the implementation phase of the preferred alternative.

A Notice of Completion and a Notice of Project Completion shall be sent to all parties who expressed an interest in the Project, in addition to Conservation Ontario, the Ministry of Citizenship and Multiculturalism (MCM), City of Toronto and the MECP.

6.1.4 Indigenous Community Consultation

Prior to the delivery of Project notifications, the Ministry of the Environment, Conservation and Parks (MECP) was contacted for advice and information regarding the Indigenous communities that should be contacted as part of the Indigenous engagement and consultation process. TRCA's list of Indigenous communities was also considered.

A notification letter was sent on August 27, 2024, to the identified First Nations to inform them of the initiation of the Project. Interested communities were invited to contact TRCA regarding the Project. Project updates and invitations related to CLC Meetings #1 and #2 were subsequently distributed on July 17th, 2026, and July 22nd, 2026, respectively. The Indigenous communities contacted throughout the Project are summarized in **Table 6**.

To date, no concerns or questions regarding the Project have been raised by Indigenous groups.

Table 6: Summary of Indigenous group consultation for the project. *Source: TRCA, 2026.*

Community Name	Reason for Consultation	Notice of Intent	Project Update and CLC#1	CLC#2 Invitation
Alderville First Nation	asserted and established interest	27-Aug-2024	17-Jul-2026	22-Jul-2026
Beausoleil First Nation	asserted and established interest	27-Aug-2024	17-Jul-2026	22-Jul-2026
Chippewas of Georgina Island First Nation	asserted and established interest	27-Aug-2024	17-Jul-2026	22-Jul-2026
Chippewas of Rama First Nation	asserted and established interest	27-Aug-2024	17-Jul-2026	22-Jul-2026
Curve Lake First Nation	asserted and established interest	27-Aug-2024	17-Jul-2026	22-Jul-2026

Hiawatha First Nation	asserted and established interest	27-Aug-2024	17-Jul-2026	22-Jul-2026
Mississaugas of Scugog Island First Nation	asserted and established interest	27-Aug-2024	17-Jul-2026	22-Jul-2026
Mississaugas of the Credit First Nation	asserted and established interest	27-Aug-2024	17-Jul-2026	22-Jul-2026
Wendat Nation	asserted and established interest	27-Aug-2024	17-Jul-2026	22-Jul-2026
Williams Treaties Coordinator	asserted and established interest	27-Aug-2024	17-Jul-2026	22-Jul-2026

A full record of Indigenous community consultation including copies of all correspondence can be found in the Record of Indigenous Engagement for the Parkview Hill Crescent Slope Stabilization Project, dated October 2026, in **Appendix D**.

6.2 Discussion of Concerns

6.2.1 Discussion of Public Concerns

TRCA has considered all feedback during the public consultation phase of the Project. The feedback has been incorporated into the evaluation of alternatives and has helped to inform TRCA's planning decisions related to the Project.

Following CLC Meeting #1, TRCA received support for the preferred alternatives for both the Primary and Secondary Areas, while additional details were requested regarding the proposed treatment for the Primary Area.

Questions and concerns raised primarily related to potential impacts to private properties, impacts to existing trees and vegetation, slope drainage and moisture conditions, the appearance and visibility of the proposed treatment, and fencing at the top of the proposed MSE wall.

At CLC Meeting #2, TRCA provided further information on the preliminary preferred Primary Area alternative (Option 5b – Soil Nails + MSE Wall), including potential property and tree impacts, slope drainage and moisture management, the anticipated appearance of the treatment, and potential fencing above the wall. Updated plan and cross-sectional drawings were also presented to help address the questions and concerns raised during CLC Meeting #1.

The updated information and feedback received through the CLC process have been incorporated into the Class EA Project Plan and will inform the subsequent detailed design and implementation stages of the project.

There have been no major concerns raised about this project.

6.2.2 Discussion of Indigenous Community Concerns

TRCA considered feedback received from Indigenous communities throughout the Project's engagement and consultation process. No adverse effects on traditional land uses were identified during engagement with Indigenous communities. A full record of Indigenous community consultation, including copies of correspondence, is provided in **Appendix D**.

6.3 Monitoring Program

As the work is proposed to be completed by a contractor, once construction of the works is deemed complete, regular inspections will be conducted by staff through TRCA's long-standing Erosion Risk Management Program (ERMP) to ensure the works are performing as expected. These inspections will identify any maintenance requirements so that they can be scheduled and completed in a timely manner. The erosion control and slope stabilization structure will be included in TRCA's Stream, Erosion and Infrastructure Database (SEID) where construction specifications, photos, and structure conditions will be documented.

Visual inspections will be completed annually for the first three (3) years following construction, and after any major storm event as required. Following this initial three (3) year period, the structure will be classified as a legacy asset and be inspected at least once within a 5-year period based on its priority ranking, or sooner if warranted by a major storm event. Copies of these inspection reports can be provided to parties of interest upon formal request to TRCA's ERMP.

7.0 REFERENCES

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- Toronto and Region Conservation Authority. (2026). TRCA Data Viewer. Retrieved from: <https://maps.trca.ca/portal/home/index.html>
- Toronto and Region Conservation Authority (2023). Baseline Conditions Report, Parkview Hill Crescent and Welby Circle Slope Stabilization Project, prepared by Watershed Planning & Ecosystem Science, dated October 2023.

8.0 APPENDICES

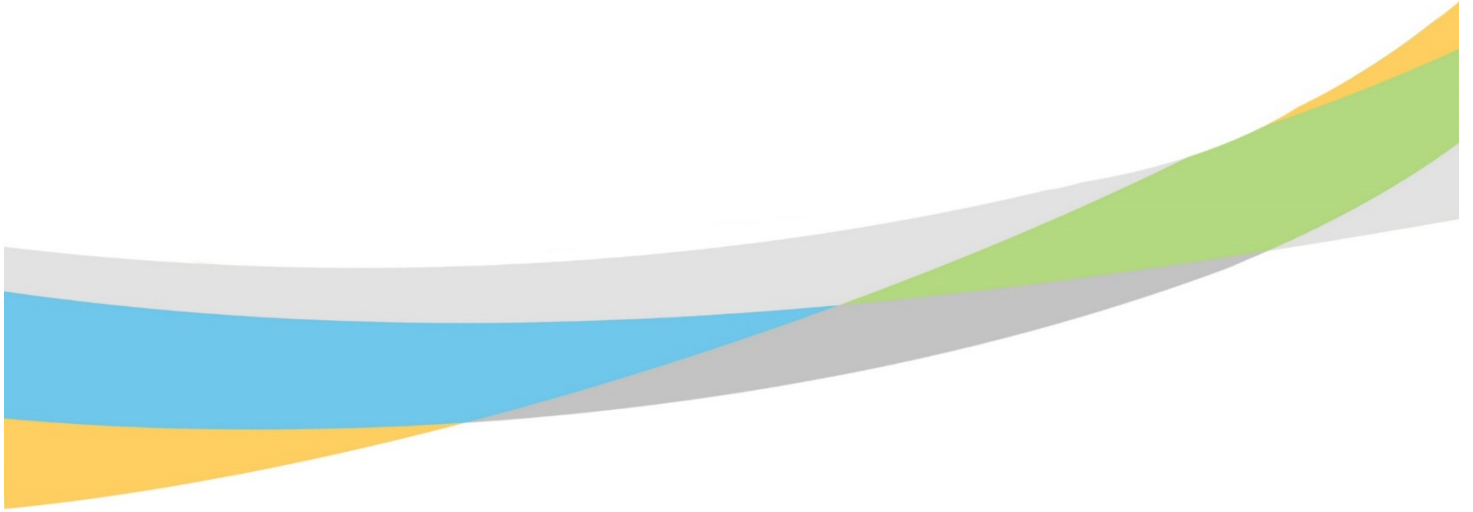
For digital copies of **Appendices A, B, C, & D**, please contact:

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