

**Scarborough Waterfront Project
Environmental Assessment**

**ENVIRONMENTAL ASSESSMENT
COMPLIANCE MONITORING**

ANNUAL REPORT 2022

**Per Provincial Environmental Assessment
Notice of Approval Condition #4**

EA-03-02/14134

SUMMARY

The purpose of this report is to outline the results of the Scarborough Waterfront Project (SWP) Environmental Assessment (EA) Compliance Monitoring Program for the September 13, 2021 to September 13, 2022 period. All results of the monitoring program are enclosed in this annual report, as per the EA Notice of Approval Condition #4. This report constitutes the second submission for the SWP.

As described in the SWP EA Compliance Monitoring Program (TRCA, September 2020), Toronto and Region Conservation Authority (TRCA), in partnership with the City of Toronto, proceeded with the initiation of detailed design works for the SWP in Fall 2020. Detailed design and subsequent construction of the Project will continue to be undertaken in phases. The West Segment remains the priority as there continues to be an increasing need to ensure safe access to and through Bluffer's Park for thousands of annual visitors. Following completion of the West Segment detailed design phase, it is expected that Central Segment detailed design will be completed while West Segment construction is underway.

As per the conditions stipulated as part of the Notice of Approval issued to TRCA by MECP, further consultation with key stakeholders and MECP will be required prior to the implementation of any works within the East Segment. As such, East Segment design and construction are not anticipated to commence for another seven to ten years.

A summary of the proposed project phasing for each Segment is available in **Section 2** of the SWP EA Compliance Monitoring Program.

For the September 13, 2021 to September 13, 2022 monitoring and reporting period, refer to **Section 2.2** for the complete list of project activities throughout this period.

TABLE OF CONTENTS

1	PURPOSE	1
2	PROJECT OVERVIEW AND UPDATE	1
2.1	Overview.....	1
2.1.1	Project Vision and Objectives.....	1
2.1.2	Study Area.....	2
2.1.3	West Segment Overview – Bluffer’s Park to Meadowcliffe.....	4
2.1.4	West Segment Project Phases and Anticipated Timelines.....	7
2.2	Updates	8
3	REGULATORY OVERVIEW AND UPDATE.....	9
3.1	Overview.....	9
3.2	Updates	9
4	MONITORING PROGRAMS AND RESULTS.....	9
4.1	Overview.....	9
4.2	Environmental Assessment Compliance Monitoring	10
4.2.1	Environmental Assessment Compliance Monitoring Results	12
4.3	Baseline Conditions Monitoring	40
4.3.1	Baseline Conditions Monitoring Results	40
4.4	Environmental Performance Monitoring	41
4.4.1	Environmental Performance Monitoring Results	41

LIST OF FIGURES

Figure 1. Scarborough Waterfront Project Area and Shoreline Segment.....	3
Figure 2. West Segment from Bluffer's Park to Meadowcliffe	5
Figure 3. West Segment: Brimley Road South Multi-Use Trail.....	6

LIST OF TABLES

Table 1. West Segment: Monitoring Phases and Implementation Timelines	10
Table 2. Notice of Approval Conditions Fulfillment Status Monitoring – Checklist	13
Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist	15
Table 4. EA Commitments for Detailed Design, Construction and Establishment – Checklist	26
Table 5. EA Public Consultation Provisions Status Monitoring – Checklist.....	33
Table 6. Other EA Commitments, Additional Studies and Work Recommendations for Monitoring – Checklist	35

LIST OF APPENDICES

APPENDIX A – Notice of Approval.....	42
APPENDIX B – Condition #4 Approval Requirements	49
APPENDIX C – Annual Baseline Conditions Monitoring Report	55

1 PURPOSE

The purpose of this report is to outline the results of the Scarborough Waterfront Project (SWP) Environmental Assessment (EA) Compliance Monitoring Program for the September 13, 2021 to September 13, 2022 period. All results of the monitoring program are enclosed in this annual report, as per the EA Notice of Approval Condition #4. This report constitutes the third submission for the SWP.

2 PROJECT OVERVIEW AND UPDATE

2.1 Overview

Toronto and Region Conservation Authority (TRCA), in partnership with the City of Toronto, undertook an EA for the SWP, from Bluffer's Park east to East Point Park in the City of Toronto. This section of the Scarborough waterfront has been subject to many studies seeking to understand stressors on the ecosystem, public access issues and the nature of public safety and property risks posed by shoreline erosion. While the Scarborough Bluffs are an iconic feature of the Lake Ontario shoreline, due to limited public access and existing public safety hazards, the water's edge along this section of the waterfront is not formally accessible to the public. Ultimately, the SWP has the potential to create a regional destination park, which would provide formal public access along a currently inaccessible area of the Scarborough waterfront, while comprehensively addressing the risks to public safety and public property and enhancing the natural heritage system.

2.1.1 Project Vision and Objectives

The vision of the SWP is to create a system of greenspaces along the Lake Ontario shoreline which respect and protect the significant natural and cultural features of the Bluffs, enhance the terrestrial and aquatic habitat, and provide a safe and enjoyable waterfront experience.

The project objectives are as follows:

- 1) **Natural Environment:** Protect and enhance terrestrial and aquatic natural features and linkages.
- 2) **Risk:** Manage public safety and property risk.
- 3) **Experience:** Provide an enjoyable waterfront experience.
- 4) **Coordination:** Maintain consistency and coordinate with other initiatives.
- 5) **Value for Cost:** Maximize the benefits achieved through the Project in relation to the estimated Project cost.

Background information regarding the natural heritage elements and processes on adjacent lands can be found in the SWP EA and associated Appendices (TRCA, 2018): <https://trca.ca/swp-final-ea>

2.1.2 Study Area

Project works will be focused along the shoreline area, including both the toe and top of the Bluffs, and will include any identified access routes. This area is referred to as the Project Area (**Figure 1**). To help facilitate the Alternatives development and evaluation process, the Project Area was divided into three shoreline segments, recognizing the distinct characteristics along each:

- **West Segment – Bluffer’s Park to Meadowcliffe**
Bluffer’s Park is located at the foot of Brimley Road South and provides a range of active and passive recreational opportunities. A sand beach extends along the eastern portion of the segment but stops approximately 320 m west of the Meadowcliffe Drive erosion control project to the east.
- **Central Segment – Meadowcliffe to Grey Abbey**
Shoreline protection works exist along the length of this segment. There is no formal public access along the base of the bluffs, although it is frequently used by the public.
- **East Segment – Grey Abbey to East Point Park/Highland Creek**
While some shoreline protection works exist, most of the shoreline consists of a sandy shoreline, a cohesive profile overlain by a veneer of sand. East Point Park is located along the tablelands near the eastern portion of the segment and provides a range of active and passive recreational opportunities.

TRCA, in partnership with the City of Toronto, proceeded with the initiation of detailed design works for the SWP in Fall 2020. Detailed design and subsequent construction of the Project will be undertaken in phases. The West Segment is the priority as there continues to be an increasing need to ensure safe access to and through Bluffer’s Park for thousands of annual visitors. Following completion of the West Segment detailed design phase, it is expected that Central Segment detailed design will be completed while West Segment construction is underway.

As per the conditions stipulated as part of the Notice of Approval issued to TRCA by MECP, further consultation with key stakeholders and MECP will be required prior to the implementation of any works within the East Segment. As such, East Segment design and construction are not anticipated to commence for another seven to ten years.

For the purposes of this Annual Monitoring Compliance Report, only the West Segment of the SWP will be reported on until such date when the Central Segment, and the associated monitoring works, are underway.

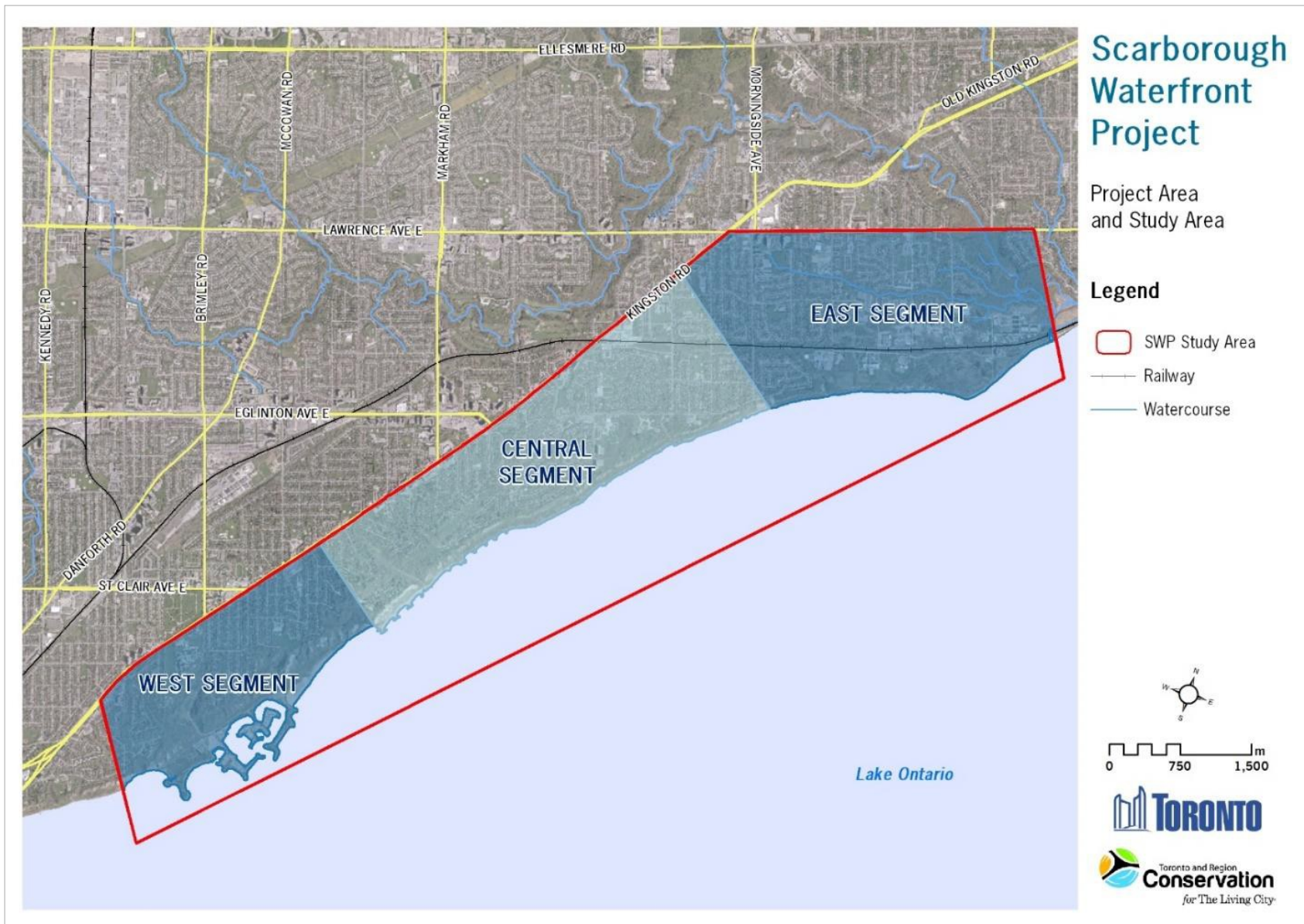


Figure 1. Scarborough Waterfront Project Area and Shoreline Segments

2.1.3 West Segment Overview – Bluffer’s Park to Meadowcliffe

Bluffer’s Park is a dominant physical feature and located at the foot of Brimley Road South on the Lake Ontario shoreline. The boat basin and headlands constructed for the Park in the 1970s have contributed to the stabilization and vegetation of the Bluffs located behind the Park and the accumulation of the sand beach to the east, which is designated as a Blue Flag Beach. The implementation of a berm and wetland along the backshore of this area in 2009 contributed to local water quality and habitat improvements, conditions which must be maintained or improved through the SWP.

The ‘Wide Beach’ concept will be completed as the preferred alternative for the West Segment of the SWP, as depicted in **Figure 2**. It involves lakeward extensions of both the east headland at Bluffer’s Park and the west headland at Meadowcliffe Drive to allow for the accumulation of sand along Bluffer’s Park Beach. This involves the development of an interim groyne mid-way along the beach, in addition to a raised berm to allow for the collection of beach sand. The expansion of Bluffer’s Park Beach has been designed to blend easily with the existing headland beach system at Meadowcliffe, closing the 320m gap below Cudia Park and providing a continuous connection between the West and Central Segments of the SWP.

The current access to Bluffer’s Park is via Brimley Road South, which is steep and provides limited safe access for pedestrians and cyclists along this roadway. While a separated informal off-road path does exist on the east side of the road for the lower third of the ravine, pedestrians and cyclists need to walk along the road shoulder above this section without adequate separation from traffic. Pedestrian usage of the roadway can be significant during the Summer when Bluffer’s Park parking spaces are all occupied.

Given the identified constraints, the construction of an at-grade path adjacent to Brimley Road South with a signed downhill cyclist route has been deemed to be the most viable improvement. A new ~1.12 km trail is proposed to the east of the existing roadway, at existing grades, from Barkdene Hills to Bluffer’s Park (**Figure 3**).

Completion of the Brimley Road South Multi-Use Trail will address concerns with pedestrian and cyclist safety who currently access Bluffer’s Park via the narrow and steep Brimley Road South, in alignment with the goals and objectives detailed in the Vision Zero Road Safety Plan. As road safety for pedestrians and cyclists is a key priority for the City, the first efforts of the SWP are to commence design and construction on the Brimley Road South Multi-Use Trail Project to provide safe access down to Bluffer’s Park.



Figure 2. West Segment from Bluffer's Park to Meadowcliffe

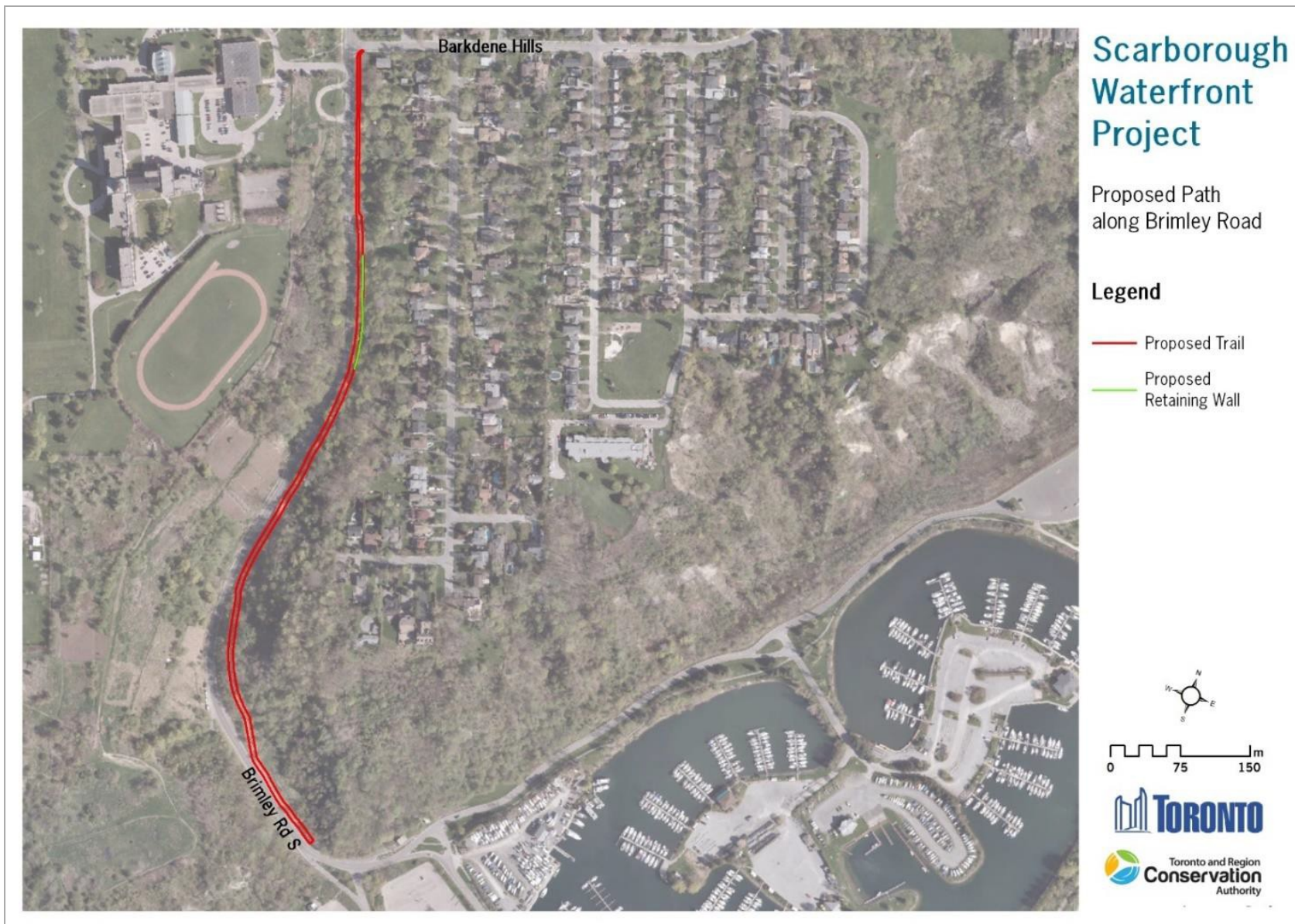


Figure 3. West Segment: Brimley Road South Multi-Use Trail

2.1.4 West Segment Project Phases and Anticipated Timelines

Project phases following the EA approval include detailed design, construction, and operation/establishment. The relationship between and timing of individual project phases are shown in **Figure 4**. Currently, the West Segment portion of the SWP is advancing through the detailed design phase (Phase 2). Central Segment is anticipated to move into Phase 2 in late 2023 or early 2024 (pending funding), while East Segment is expected to transition into Phase 2 in approximately seven to ten years, due to the necessary stakeholder consultation requirements stipulated by the Notice of Approval.

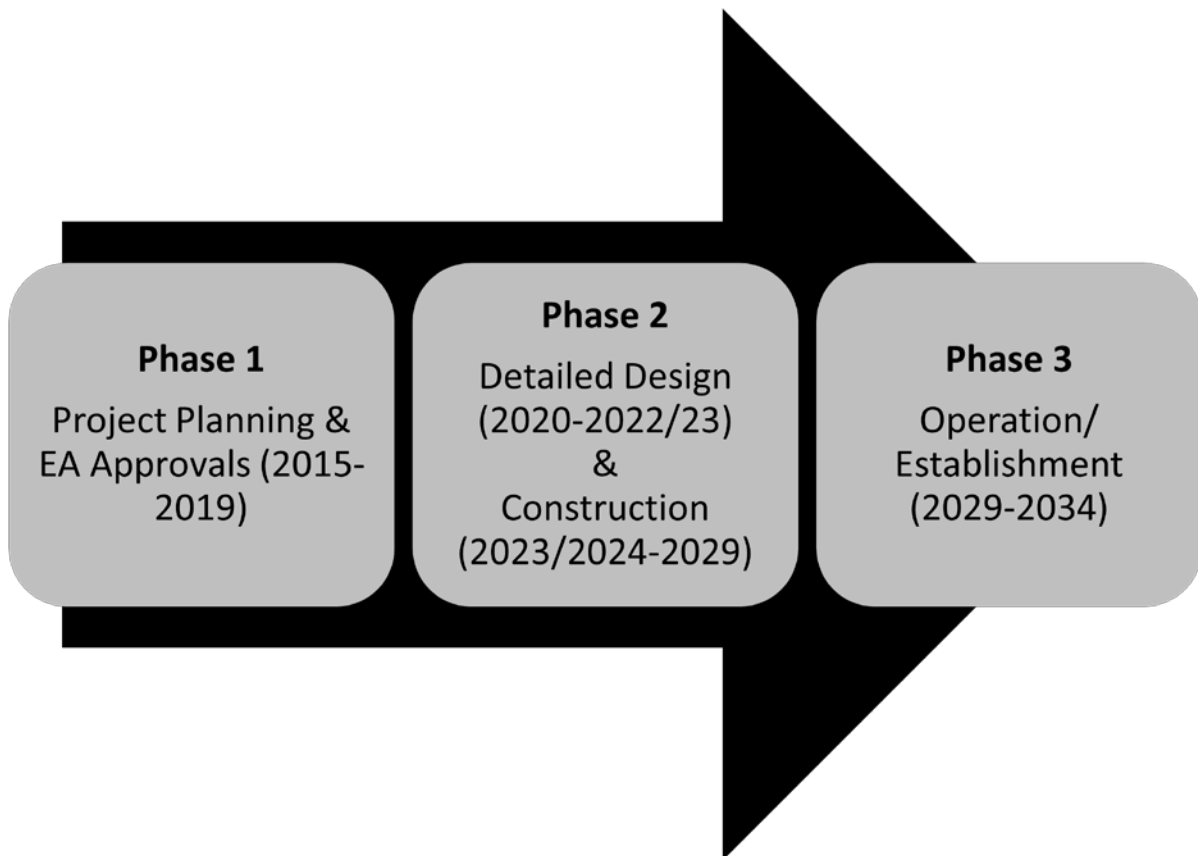


Figure 4. SWP West Segment Project Phases

2.2 Updates

To maintain alignment with project phasing, this report includes the status update specific to the SWP West Segment (Bluffer's Park to Meadowcliffe) portion of the project only.

The first component of the SWP West Segment detailed design is to provide pedestrians and cyclist safe access and egress to the waterfront via the Brimley Road South Multi-Use Trail. In further review of existing conditions for detailed design, the Brimley Road South Multi-Use Trail was affected by a number of factors (land ownership constraints; existing road condition; existing infrastructure locations; additional geotechnical, ecological, and hydrological constraints) which needed to be further addressed in the design project scope. Therefore, three preliminary options were brought forward to assess for feasibility during the detailed design of the multi-use trail:

- Option 1A: Trail alignment with swale (to maintain existing open drainage infrastructure);
- Option 1B: Trail alignment with curb for full length (to reduce slope cuts in the ecologically sensitive ravine system); and,
- Option 2: Trail alignment with road re-alignment to the west in the upper 355m-long stretch, starting from Barkdene Hills (to consider potential road reconstruction needs during trail construction and minimize land acquisition requirements).

All three options were carried through the 30% design phase; however, during the 60% design, Option 2 was discontinued as a potential option due to significant infrastructure, geotechnical and ecological constraints associated with the relocation of the roadway to the west. Following completion of the 60% detailed design phase and completion of additional geotechnical assessments, Option 1A was also eliminated from further consideration due to the significant slope cutting that would be required along the steep valley wall. Option 1B continues to move through the 90% design stage, with an anticipated design completion date of late 2022.

Detailed design of the SWP West Segment Shoreline and Multi-Use Trail is on-going and currently at the draft 60% design phase. Building off the modelling work completed in 2021 for the preliminary design of the Bluffer's Park expanded headland, the preliminary design of the sand beach, interim groyne and Meadowcliffe headland has undergone National Research Council (NRC) physical wave modelling refinements to ensure the expanded beach, groyne and headland are able to withstand Lake Ontario wave and shoreline current interactions under extreme weather conditions. The geotechnical review and refinement of the base-of-bluff risk line assessment for the shoreline portion of trail is complete and guided the safe placement of the waterfront beach trail, outside of the erosion hazard area. Detailed design for the West Segment Shoreline and Multi-Use Trail will continue through Fall/Winter 2022 with an anticipated completion date in early 2023.

For the September 13, 2021 to September 13, 2022 monitoring and reporting period, the following SWP West Segment project components were completed:

- SWP West Shoreline and Multi-Use Trail: 60% design in progress.
- Brimley Road South Multi-Use Trail: 90% design in progress.
- Field study components for West Segment Shoreline detailed design are on-going.
- NRC modelling, and wave and sediment transport modelling completed for SWP

- West Segment Shoreline sand beach, interim groyne and Meadowcliffe headland.
- Engagement with affected landowners is on-going as part of the Brimley Road South Multi-Use Trail Project.
- Completed a virtual Public Open House for the Brimley Road South Multi-Use Trail Design in December 2021.

3 REGULATORY OVERVIEW AND UPDATE

3.1 Overview

TRCA, on behalf of and in co-operation with the City of Toronto, undertook an EA for the SWP. The EA was completed in two stages as required by the *EA Act*. Stage one included the completion and approval of a Terms of Reference by the Ministry of Environment and Climate Change (MOECC) on December 15, 2015. Stage two of the Project included the completion of the EA planning process and preparation of the EA Report in accordance with the approved Terms of Reference. TRCA received approval for the Final EA from the Minister of MECP on November 5, 2019 (**Appendix A**).

The EA Notice of Approval Condition #4 requirements fulfillment status monitoring checklist can be found in **Appendix B**.

3.2 Updates

Due to delays in the Brimley Road South Multi-Use Trail and West Segment Shoreline and Multi-Use Trail detailed design processes through September 13, 2021 to September 13, 2022, no permits and approvals acquisition processes for SWP West Segment were further initiated and/or completed beyond those reported on in the 2021 Annual Compliance Monitoring Report. In the interim, baseline monitoring activities for fish community assessments along the West Segment shoreline and nearshore zone were on-going through 2022 to support the upcoming required Fisheries Act Authorization. It is expected that the appropriate permits and/or approvals acquisition processes will be further initiated in late 2022 to support anticipated construction in 2023 (Brimley Road South Multi-Use Trail) and late 2024 or early 2025 (West Segment Shoreline and Multi-Use Trail). Monitoring results available to date include the EA Compliance Monitoring and can be found in **Appendix C**.

4 MONITORING PROGRAMS AND RESULTS

4.1 Overview

A comprehensive monitoring program is a critical element of the SWP from the planning phase through to operation/establishment. The monitoring program is carried out throughout the life of the project and consists of three monitoring programs:

- 1) EA Compliance Monitoring;
- 2) Baseline Environmental Conditions; and,
- 3) Environmental Performance Monitoring.




The relationship between monitoring program components and high-level anticipated schedule for the West Segment are illustrated in **Table 1**. Similar tables for the Central and East Segment are available in the SWP EA Compliance Monitoring Program and will be included in subsequent Annual Compliance Monitoring reports once detailed design for each respective Segment has been initiated.

EA Compliance Monitoring for West Segment has commenced in the detailed design project phase and will continue until the successful end of construction. See **Section 4.2** for more information.

Baseline Conditions Monitoring was carried out prior to and during the planning and EA approvals phase, with a brief hiatus during the SWP EA Ministry Review period. Baseline Conditions Monitoring was re-initiated in Fall 2020 and will continue through to the end of the detailed design phase, and into the early construction phase for West Segment. Central and East Segment Baseline Conditions Monitoring programs will follow the same phasing once the applicable detailed design phase has commenced. See **Section 4.3** for more information.

Environmental Performance Monitoring will commence at the conclusion of the construction phase (final grading and as-built documentation) and will continue during the establishment periods to track project success. See **Section 4.4** for more information.

Table 1. West Segment: Monitoring Phases and Implementation Timelines

West Segment	Project Planning & EA Approvals (2015 – 2019)	Detailed Design (2020 – 2022/23) & Construction	Operation/ Establishment (2029 – 2034)
EA Compliance Monitoring			
Baseline Conditions Monitoring			
Environmental Performance Monitoring			

4.2 Environmental Assessment Compliance Monitoring

EA compliance monitoring will ensure compliance with commitments made in the EA, including the EA approval conditions.

In fact, undertaking a Compliance Monitoring Program is in itself a condition of the SWP EA approval. As per the EA Notice of Approval Condition #4, a Compliance Monitoring Program will:

- a) monitor implementation of the undertaking in accordance with the environmental assessment with respect to mitigation measures, public consultation, and additional studies and work to be carried out;*
- b) monitor compliance with the conditions in this Notice of Approval; and*
- c) monitor compliance with all commitments made in the environmental assessment with respect to mitigation measures, public consultation, Indigenous consultation, and additional studies and work to be carried out.*

To meet these objectives, the compliance program has the following components:

- 1) Notice of Approval conditions fulfilment status monitoring;
- 2) Mitigation measures EA provisions fulfilment status monitoring;
- 3) Consultation EA provisions fulfilment status monitoring;
- 4) Detailed design, construction and establishment EA commitments fulfilment status monitoring; and,
- 5) Additional studies and work EA provisions fulfilment status monitoring.

For clarity and reporting purposes, a series of checklists of commitments/EA provisions for each program component was prepared and presented in the SWP EA Compliance Monitoring Program. There are five checklists:

- 1) Checklist to monitor Notice of Approval conditions fulfilment. This checklist is based on the EA Notice of Approval conditions. The full list of Notice of Approval Conditions is found in **Appendix B**.
- 2) Checklist to monitor mitigation measures fulfilment. This checklist is based on the mitigation measures identified in Chapter 7 of the EA, and may be modified as more information becomes available following the completion of additional studies and work, as well as detailed design progression. Mitigation measures are categorized according to the effect they are intended to address as well as the EA project objectives. This framework will allow continuous monitoring of the EA objectives achievement as the project progresses.
- 3) Checklist to monitor consultation EA provisions fulfilment. This checklist is based on the post-approval recommendations made in the EA.
- 4) Checklist to monitor fulfilment of EA commitments for detailed design, construction and operation/establishment project phases
- 5) Checklist to monitor completion of additional studies and work identified or recommended in the EA.

The checklists are presented in **Section 4.2.1** along with the monitoring results. Should any checklist component(s) be modified, removed or added, an explanation will be provided.

4.2.1 Environmental Assessment Compliance Monitoring Results

The following five EA Compliance Monitoring checklists have been updated for the 2021-2022 period:

- 1) **Table 2** – Checklist to monitor Notice of Approval conditions fulfilment.
- 2) **Table 3** – Checklist to measure mitigation measures fulfilment.
- 3) **Table 4** – Checklist to monitor fulfilment of EA commitments for detailed design, construction and establishment project phases.
- 4) **Table 5** – Checklist to monitor EA public consultation provisions fulfilment.
- 5) **Table 6** – Checklist to monitor completion of additional studies and work identified or recommended in the EA.

Table 2. Notice of Approval Conditions Fulfillment Status Monitoring – Checklist

Notice of Approval Condition	Status (Not Started/In Progress/Complete)	2022 Comments
Public Record	In Progress	All documents required for public record are available on the project website, with appropriate EA reference number and file numbers documented, as per the Notice of Approval. All documents submitted to-date identify which condition of approval the document is meant to fulfill.
Compliance Monitoring Program	Complete	A Compliance Monitoring Program was submitted for MECP Director review and approved November 5, 2020, and is available as part of the public record: https://trca.ca/swp-compliance-plan
Compliance Reporting	In Progress	<p>The Compliance Monitoring Reports will be made available for the public record. Copies are retained at TRCA's head office and posted on the project website.</p> <p>The first Annual Report was submitted and subsequently approved on November 5, 2020. Annual compliance reports will be submitted as per the anniversary date of EA Approval, until all conditions in the Notice of Approval are satisfied, or until TRCA is instructed otherwise in writing by the MECP Director.</p>
Complaint Protocol	In Progress	<p>West Segment detailed design was initiated in Fall 2020 and is expected to carry through into late 2022 (Brimley Road South Multi-Use Trail) or early 2023 (West Segment Shoreline and Multi-Use Trail).</p> <p>A West Segment-specific complaint protocol will be developed during this time, in advance of implementation. Central and East Segment complaint protocol development is pending the initiation of detailed design for each respective Segment.</p>

Table 2. Notice of Approval Conditions Fulfillment Status Monitoring – Checklist

Notice of Approval Condition	Status (Not Started/In Progress/Complete)	2022 Comments
Consultation During the Detailed Design Phase	In Progress	<p>TRCA and the City of Toronto hosted a Virtual Public Open House in December 2021 for the Brimley Road South Multi-Use Trail Project. TRCA and the City expect to host a Public Open House in late Fall 2022 for the West Segment Shoreline and Multi-Use Trail Project.</p> <p>TRCA has engaged technical stakeholders in the design process and is working to address key objectives noted from the SWP EA Conditions of Approval, including the requirement for maintaining or maximizing sandy shorelines, where applicable.</p>
Change Process	Not Started	Noted. TRCA will notify the MECP Director in writing of any proposed change to the undertaking that could result in greater adverse environmental effects than were identified in the EA, as required. TRCA will follow the amendment procedure as set out in Chapter 9 of the EA, if required.
Duration of Approval	Not Started	Noted. If construction of the undertaking has not commenced within 10 years of the Date of Approval, TRCA acknowledges that the Notice of Approval shall expire, unless otherwise extended by the Minister.

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
Project and Enhance Terrestrial and Aquatic Natural Features	Alteration and loss of aquatic habitat	Incorporate a diversity of shoreline substrate types and increased shoreline irregularity into the Preferred Alternative Detailed Design, employing a variety of aquatic habitat enhancement techniques, including retrofitting existing revetment shoreline structures, and development and implementation of a compensation program.	In Progress	<p>TRCA aquatic biologists and the SWP West Segment detailed design team have completed wave modelling on the proposed aquatic habitat options for enhancements surrounding the Bluffer's Park expanded headland.</p> <p>Additional discussions will be completed with DFO/MNRF during design and as part of the applicable permitting processes.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the respective design phases.</p>

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
	Disruptions to fish and fish habitat	<p>Examples of mitigation measures to minimize negative effects associated with fish and fish habitat disruptions include:</p> <ul style="list-style-type: none"> • Use of Project-specific restricted activity timing windows for in-water works to be set in consultation with MNRF • Construct containment berm prior to placing any fill, which will minimize sedimentation • Remove any fish potentially trapped in a cell prior to commencement of filling • Sediment and erosion controls • Ensure equipment is free of leaks and fluids containing deleterious substances 	Not Started	<p>Appropriate construction BMPs to be re-confirmed during later stages of the applicable detailed design phase.</p> <p>To be implemented during applicable construction phase for each respective Segment.</p>

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
	Nuisance effects on wildlife	<p>Adhere to BMPs as outlined in Appendix H of the EA to minimize disturbance, noise and dust. In addition:</p> <ul style="list-style-type: none"> • Avoid construction activities at East Point Park during the Spring migration and breeding bird period (late April to late May) • Where Bank Swallow colonies are located within 50 m of active construction ensure works are underway prior to Bank Swallows return in Spring (~May) so they become habituated to the disturbance 	Not Started	<p>Appropriate construction BMPs to be re-confirmed during later stages of the applicable detailed design phase.</p> <p>To be implemented during applicable construction phase for each respective Segment.</p>
	Removal and disturbance of terrestrial habitat	Salvage plants, including sea rocket, for replanting, where appropriate	Not Started	<p>Plant salvage and relocation/ restoration plans to be developed during later stages of the applicable detailed design phase.</p> <p>To be implemented during applicable construction phase for each respective Segment.</p>

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
		Where appropriate, vegetation communities will be restored	In Progress	West Segment detailed design phase was initiated in Fall 2020 and restoration is being considered as part of this design phase. This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.
		Any habitat features (e.g., cavity trees) that will be impacted will be replaced with an artificial or constructed habitat (e.g., bird nesting boxes)	In Progress	Plant salvage and relocation/ restoration plans to be developed during later stages of the applicable detailed design phase. To be implemented during applicable construction phase for each respective Segment.
		Relocation and expansion of artificially created wetland at base of the Guild construction access route	Not Started	Pending the initiation of the Central Segment detailed design phase. Central Segment detailed design phase anticipated to commence in 2023.

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
	Area of habitat created	Development of an Operations and Maintenance Plan collaboratively with the City of Toronto to address inappropriate use and promote community stewardship	In Progress	<p>West Segment detailed design phase was initiated in Fall 2020. Development of the Operations and Maintenance Plan is expected to be initiated, in partnership with the City of Toronto, during the 90% design phase.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
Manage Public Safety and Property Risk	Safety associated with potential conflict between pedestrian/ cyclists and vehicles	Coordination with City of Toronto to evaluate necessary changes required to ease the traffic, congestion and resultant conflict in the Brimley Road area	In Progress	West Segment detailed design is underway and will address public safety through the implementation of the Brimley Road South Multi-Use Trail.

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
Provide an Enjoyable Waterfront Experience	Changes to access to and along the shoreline as a result of construction activities	Timing of restrictions to periods of lower use. Opening of access points where and when possible on weeknights and weekends.	Not Started	<p>Construction Access and Management Plans to be developed during detailed design.</p> <p>West Segment detailed design phase was initiated in Fall 2020. Development of the Construction Access and Management Plan is expected to be initiated in late 2022 or early 2023, between the 60%-90% design phases.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
	Potential for dust, vehicle emission and noise from construction activities including traffic to affect use and enjoyment	Use of BMPs for dust, emissions and noise associated with construction activities and vehicles	In Progress	<p>Appropriate construction BMPs to be re-confirmed during later stages of the applicable detailed design phase. Construction BMP identification is currently underway for the West Segment.</p> <p>To be implemented during applicable construction phase for each respective Segment.</p>

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
	Potential for change to character and use of existing sand beaches/shoreline	Areas of beaches/shoreline closed will be limited to only those areas under construction to minimize effects to users	In Progress	<p>Construction access and management plans to be developed during detailed design.</p> <p>West Segment detailed design phase was initiated in Fall 2020. Development of the Construction Access and Management Plan is expected to be initiated between the 60%-90% design phases for the West Segment Shoreline and Multi-Use Trail.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
	Potential for impact to water quality at Bluffer's Park Blue Flag Beach	BMPs will be used to reduce turbidity. Construction around Bluffer's Park Beach will likely occur outside of the Summer months.	Not Started	<p>Appropriate construction BMPs to be re-confirmed during later stages of the applicable detailed design phase.</p> <p>To be implemented during applicable construction phase for each respective Segment.</p>

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
	Potential to maintain navigation along the shore	Appropriate warnings and signage to be implemented	Not Started	<p>Appropriate signage and signage locations to be developed in consultation with City of Toronto and other key stakeholders.</p> <p>West Segment detailed design phase was initiated in Fall 2020. Appropriate signage and signage locations are expected to be identified and developed in early 2023, between the 90%-100% design phases.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
	Potential to meet AODA grade standard for access to and along the shoreline	Provision of level rest areas on access trails to the shoreline to meet AODA	In Progress	<p>On-going West Segment detailed design is underway and will explore opportunities to address AODA standards to the extent possible.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
	Potential to maintain navigation along the shore	Users of small watercraft will need to adapt to the new shoreline configuration and presence of new landforms. To mitigate these effects, navigation maps will be updated based on new shoreline configurations so that users are aware of any new potential hazards.	Not Started	<p>West Segment detailed design phase was initiated in Fall 2020. Appropriate agencies will be consulted to facilitate necessary shoreline updates once the 100% design has been confirmed.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
Consistency and Coordination with other initiatives	Potential impact to known or potential archaeological resources	Stage 2 assessments will be undertaken during Detailed Design where physical works are planned, prior to any ground disturbing activities where past soil disturbance has not previously been documented. In the event a land-based archaeological resource is found, avoidance of the resource will be practiced when determining final tableland trail alignment.	In Progress	<p>Stage 2 archaeology works have been accepted by Ministry of Heritage, Sport, Tourism and Culture in May 2021 for the Brimley Road South Multi-Use Trail.</p> <p>This objective will also be completed for East Segment, pending the initiation of the detailed design phase (note: not applicable for Central Segment).</p>

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
	Potential for disturbance effects to residents from construction related traffic	BMPs, such as well-maintained vehicles, adherence to construction traffic routes and minimal use of air brakes, will lessen the effects of construction traffic noise. In order to address issues and concerns throughout construction TRCA will have a dedicated community liaison officer who will respond to all community concerns and issues and seek resolution where possible.	In Progress	Appropriate construction BMPs to be re-confirmed during later stages of the applicable detailed design phase. BMP assessment is currently underway for the Brimley Road South Multi-Use Trail portion of the West Segment. To be implemented during applicable construction phase for each respective Segment.
	Potential disturbance effects to residents from construction activity	Construction activities will adhere to the City of Toronto Noise By-Law with respect to the hours of construction and all equipment will be kept in proper operating condition to minimize effects. All construction activities will use BMPs to minimize the disturbance effects of construction on local residents.	In Progress	Appropriate construction BMPs to be re-confirmed during later stages of the applicable detailed design phase. BMP assessment is currently underway for the Brimley Road South Multi-Use Trail portion of the West Segment. To be implemented during applicable construction phase for each respective Segment.

Table 3. Mitigation Measures Fulfilment Status Monitoring – Checklist

Project Objective	Effect(s)	Mitigation Measure(s)	Status (Not Started/In Progress/Complete)	2022 Comments
Achieve Value for Cost	Amount of water lot and private property acquisition required	Acquisition at market-based compensation.	In Progress	Property acquisition discussions were initiated with affected property owners for Brimley Road South Multi-Use Trail in June 2021. Discussions are on-going.

Table 4. EA Commitments for Detailed Design, Construction and Establishment – Checklist

EA Section Reference	EA Commitment	Status (Not Started/In Progress/Complete)	2022 Comments
Detailed Design			
6.2.2	Ensure minimum habitat recommendations are either maintained or enhanced as refinements are made through the Detailed Design process.	In Progress	<p>West Segment detailed design recommendations and enhancements are underway.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the respective detailed design phase.</p>
6.2.2	Establish site-level details and specific habitat components for terrestrial habitat features.	In Progress	<p>Being completed in consultation with in-house and contracted ecologists for the West Segment. Further consultation with reviewing/authorizing agencies continues to advance through 2022.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the respective</p>
7.3.1	Develop aquatic habitat compensation plan and mitigation in consultation with DFO and MNRF.	In Progress	<p>The compensation planning is underway for West Segment and will be and reported in the 2023 Annual Compliance Monitoring Plan following discussions with the appropriate regulatory agencies during the 60% and 90% design phases.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the respective detailed design phase.</p>

Table 4. EA Commitments for Detailed Design, Construction and Establishment – Checklist

EA Section Reference	EA Commitment	Status (Not Started/In Progress/Complete)	2022 Comments
6.2.2	Establish site-level details for aquatic habitat features along the newly created shoreline.	In Progress	<p>West Segment detailed design recommendations and enhancements are underway.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the respective detailed design phase.</p>
7.3.4	Explore options to mitigate traffic effects during construction on the Guildwood and Brimley Road communities.	Not Started	Exploration of mitigation on traffic effects on the West Segment/Brimley Road community are and will be reported in the 2023 Annual Compliance Monitoring Plan.
6.5	Develop a fill tracking system to account for and audit all fill coming into the site.	Not Started	<p>A fill tracking system for West Segment will be reported on in the 2023 Annual Compliance Monitoring Plan.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the respective detailed design phase.</p>
8.2	Establish specific triggers for potential adjustments, refinements or modifications that could occur as part of the adaptive management program.	Not Started	<p>To be addressed in West Segment detailed design during the 90%-100% design phase.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the respective detailed design phase.</p>

Table 4. EA Commitments for Detailed Design, Construction and Establishment – Checklist

EA Section Reference	EA Commitment	Status (Not Started/In Progress/Complete)	2022 Comments
7.3.3	Undertake a Revitalization Plan for Bluffer's Park and East Point Park in co-ordination with the City of Toronto.	Not Started	<p>To be addressed in West Segment detailed design during the 90%-100% design phase, in further consultation with the City of Toronto.</p> <p>East Segment detailed design not anticipated to commence for another 7-10 years.</p>
6.3	Develop an Operations and Maintenance Plan for the SWP in co-ordination with the City of Toronto.	Not Started	West Segment detailed design phase was initiated in Fall 2020. Development of the Operations and Maintenance Plan is expected to be initiated, in partnership with the City of Toronto, during the 90% design phase.
7.3	Undertake an updated Traffic Impact Assessment (TIA).	Not Started	<p>A TIA for West Segment will be initiated in early 2023, pending the confirmation of anticipated material load/ truck traffic volumes. Results will be reported in the 2023 Annual Compliance Monitoring Plan.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
7.3.3 and 10.9	Continue to engage with the surfing community regarding the Detailed Designs for the West Segment.	In Progress	Discussions initiated in early 2022, to be continued through late 2022/early 2023.

Table 4. EA Commitments for Detailed Design, Construction and Establishment – Checklist

EA Section Reference	EA Commitment	Status (Not Started/In Progress/Complete)	2022 Comments
7.3.1	Undertake the HEAT model on the final detailed designs.	Not Started	<p>West Segment detailed design phase was initiated in Fall 2020. HEAT modelling to be initiated between the 60-90% design phases.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
7.3.1	Assess effects to the cultural meadow on the industrial property east of Grey Abbey Ravine.	Not Started	East Segment detailed design not anticipated to commence for another 7-10 years.
7.3.4	Undertake appropriate archaeological recordings of marine resources S76 and S56, as recommended by the marine archaeologist as part of the mitigation measures.	Not Started	Central Segment detailed design not anticipated to commence until 2023.
6.1.7	Ensure detailed engineering design takes into account extreme weather events.	In Progress	<p>West Segment detailed design is based on revised a high water level of 76.2m IGLD (Baird, 2020) to account for lake level increases in recent years.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>

Table 4. EA Commitments for Detailed Design, Construction and Establishment – Checklist

EA Section Reference	EA Commitment	Status (Not Started/In Progress/Complete)	2022 Comments
10.9	On-going consultation with stakeholders throughout the detailed design period.	In Progress	<p>Website updates, newsletters, and direct engagement has been underway for West Segment, along with the completion of a virtual Public Open House in December 2021 for the Brimley Road South Multi-Use Trail. A Public Open for the West Segment Shoreline and Multi-Use Trail is anticipated in late Fall 2022.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
10.9	Commitment to discussions with Rohm and Haas Canada LP/Dow Chemical Company to address safety concerns east of Grey Abbey Ravine.	Not Started	East Segment detailed design not anticipated to commence for another 7-10 years.
10.9	On-going consultation with Stakeholders in the East Segment throughout the detailed design period, with respect to refinements.	Not Started	East Segment detailed design not anticipated to commence for another 7-10 years.

Table 4. EA Commitments for Detailed Design, Construction and Establishment – Checklist

EA Section Reference	EA Commitment	Status (Not Started/In Progress/Complete)	2022 Comments
Construction			
7.3.1	Develop tree removal (include plant salvage and relocation) and compensation/restoration plan.	In Progress	West Segment tree removal assessment and planning is underway and is expected to be completed by late Fall 2022. This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.
6.5	Monitoring of environmental site controls and mitigation measures during construction.	Not Started	Pending the completion of detailed design for each respective Segment.
6.5	Obtain all relevant municipal, provincial, federal and/or regional occupancy permits.	In Progress	Underway for West Segment as part of the detailed design phase. This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.
7.3.4	Retain a dedicated community liaison staff as a direct line of contact between the local communities and the Project Team.	Not Started	Pending the completion of detailed design for each respective Segment.
10.9	On-going consultation with stakeholders throughout the construction period.	Not Started	Pending the completion of detailed design for each respective Segment.

Table 4. EA Commitments for Detailed Design, Construction and Establishment – Checklist

EA Section Reference	EA Commitment	Status (Not Started/In Progress/Complete)	2022 Comments
Operation/Establishment			
8.1.3	Monitor environmental performance to measure desired outcomes; determine if they have been achieved; and trigger adaptive management where necessary.	Not Started	Pending the completion of detailed design and construction for each respective Segment.

Table 5. EA Public Consultation Provisions Status Monitoring – Checklist

Consultation Mechanism	Status (Not Started/In Progress/Complete)	2022 Comments
During the formal detailed design process for each Segment, a public open house be held to review the SWP and seek public input on any new information that is available to feed into the process, including similar engagement with other agencies, Indigenous communities and landowners.	In Progress	<p>West Segment detailed design is underway. Brimley Road South Multi-Use Trail completed a virtual Public Open House in December 2021. The anticipated timeline for a public event related to West Segment West Segment Shoreline and Multi- Use Trail is proposed for Summer/Fall 2022.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
Discussions with Rohm and Haas Canada LP/Dow Chemical Company to address safety concerns east of Grey Abbey Ravine during the detailed design phase of the West Segment.	Not Started	<p>Pending the initiation of the detailed design phase for East Segment. East Segment detailed design is not anticipated to commence for another 7-10 years.</p>
Regular project updates continue to be posted to the project webpage.	In Progress	<p>Website updates have continued since submission of the Final EA to MECP for the Ministry Review.</p> <p>Updates will continue through all phases of the project for all three Segments.</p>
SWP newsletter updates to be provided summarizing progress on Detailed Design and construction-related work.	In Progress	<p>Newsletter circulations are underway for West Segment detailed design and will continue through the detailed design and construction phases for all three Segments.</p>

Table 5. EA Public Consultation Provisions Status Monitoring – Checklist

Consultation Mechanism	Status (Not Started/In Progress/Complete)	2022 Comments
A working group composed of key stakeholders who will be involved during the detailed design and construction phases of each Segment.	In Progress	<p>A working group of technical experts was assembled in the detailed design phase for the West Segment detailed design. Other key stakeholders will continue to be engaged during design through individual meetings held in Fall/Winter 2022 and/or early 2023, as well as the general public through the planned Public Open House events.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>

Table 6. Other EA Commitments, Additional Studies and Work Recommendations for Monitoring – Checklist

Type of Study/Work	EA Report Reference	Study/Work Purpose and Other Details	Status (Not Started/In Progress/Complete)	2022 Comments
Traffic Impact Assessment (TIA)	Section 7.3	An updated TIA will be completed through detailed design to incorporate new and available information for other projects in the area to ensure impacts to residents and users are reduced when construction access routes are defined.	Not Started	<p>A TIA for West Segment will be initiated in early 2023, pending the confirmation of anticipated material load/ truck traffic volumes. Results will be reported in the 2023 Annual Compliance Monitoring Plan.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
Source Water Protection	Appendix N	Document and discuss how project adheres to policies in CTC Source Protection Plan, as applicable.	Not Started	Pending the completion of the detailed design phase for each respective Segment, when construction methodologies and associated BMPs are confirmed.
Archaeology Stage 2	Section 7.3.4 and Appendix E	Potential for artifacts in West and East Segments (Appendix E, Map 22 and 23). Stage 2 assessments will be conducted prior to any ground disturbing activities.	In Progress	<p>During the West Segment detailed design process for Brimley Road South Multi-Use Trail, the Archaeology Stage 2 assessment was completed and accepted by the Ministry of Heritage, Sport, Tourism and Culture.</p> <p>A Stage 2 assessment for East Segment will be completed during the detailed design process, once initiated in 7-10 years.</p>

Table 6. Other EA Commitments, Additional Studies and Work Recommendations for Monitoring – Checklist

Type of Study/Work	EA Report Reference	Study/Work Purpose and Other Details	Status (Not Started/In Progress/Complete)	2022 Comments
Minimal Archaeological Recordings of Marine Resources	Section 7.3.4	A marine archaeology assessment of the resources located in Central Segment will be required to identify impacts associated with natural elements and create an appropriate buffer to capture the resultant debris field.	Not Started	Pending the initiation of the detailed design phase for Central Segment. Central Segment detailed design anticipated to commence in early 2023.
Geotechnical Studies	Appendix B	<p>Additional studies for:</p> <ul style="list-style-type: none"> • Brimley Road South Multi-Use Trail for retaining wall(s) design and slope stability assessments. • In-depth slope stability assessments along the Bluffs in each Segment to refine the erosion hazard risk line at the top and toe of the Bluffs, to aid in multi-use trail design and positioning outside of the risk areas. 	Complete	<p>Additional geotechnical studies for the Brimley Road South Multi-Use Trail were completed in Spring 2022.</p> <p>Risk line assessments and geotechnical analysis was completed in Spring/Summer 2021 for the SWP West Segment Shoreline as part of the West Segment detailed design process.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>

Table 6. Other EA Commitments, Additional Studies and Work Recommendations for Monitoring – Checklist

Type of Study/Work	EA Report Reference	Study/Work Purpose and Other Details	Status (Not Started/In Progress/Complete)	2022 Comments
Bat Maternity Roosting Surveys	N/A	Prior to vegetation removal and clearing, leaf on/off surveys will be conducted to verify presence of bats and/or bat maternity roosts and reported to MECP for compensation advice.	In Progress	<p>Bat maternity roost surveys were completed for West Segment in Fall/Winter 2020. Pending final design, submission will be reported to MECP and impacts/compensation requirements to be determined.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
Bathymetry Surveys	N/A	Updated bathymetry survey along the shoreline in each Segment to inform detailed design of the shoreline erosion protection works.	In Progress	<p>Bathymetry survey was completed in Fall 2020 for the West Segment detailed design process.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
Tree Inventory and Survey Works	N/A	Tree inventory and survey works to inform multi-use trail design and alignment and to support the tree removal permit process prior to implementation.	In Progress	<p>Tree inventory and survey works were completed in Fall 2020 as part of the West Segment detailed design process.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>

Table 6. Other EA Commitments, Additional Studies and Work Recommendations for Monitoring – Checklist

Type of Study/Work	EA Report Reference	Study/Work Purpose and Other Details	Status (Not Started/In Progress/Complete)	2022 Comments
Aquatic Habitat Compensation Plan	Section 7.3.1	To be completed in consultation with DFO as part of the <i>Fisheries Act</i> Authorization process.	Not Started	<p>Anticipated initiation in late 2022 when the West Segment detailed design phase is nearing 90% completion.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>
Revitalization Plan for Bluffer's Park and East Point Park	Section 6.2.2 and 7.3.3	To be completed in partnership with the City of Toronto to support trail management objectives and other habitat restoration and management opportunities.	Not Started	<p>To be addressed in West Segment detailed design during the 90%-100% design phase, in further consultation with the City of Toronto.</p> <p>East Segment detailed design not anticipated to commence for another 7-10 years.</p>
Plant Salvage Plan	Section 7.3.1	For the necessary removal of regionally rare species prior to construction.	Not Started	<p>Plant salvage and relocation/restoration plans to be developed during applicable detailed design phase.</p> <p>To be implemented during applicable construction phase for each respective Segment.</p>

Table 6. Other EA Commitments, Additional Studies and Work Recommendations for Monitoring – Checklist

Type of Study/Work	EA Report Reference	Study/Work Purpose and Other Details	Status (Not Started/In Progress/Complete)	2022 Comments
Operations and Maintenance Plan	Section 6.3	To be completed in partnership with the City of Toronto for post-construction management of the park, trail and shoreline erosion protection infrastructure created as part of the SWP.	Not Started	<p>West Segment detailed design phase was initiated in Fall 2020. Development of the Operations and Maintenance Plan is expected to be initiated, in partnership with the City of Toronto, during the 90% design phase.</p> <p>This objective will also be completed for Central and East Segments, pending the initiation of the detailed design phase for each respective Segment.</p>

4.3 Baseline Conditions Monitoring

Baseline Conditions Monitoring provides data to inform detailed design elements and identify changes to the existing environment that may affect project outcomes. Any changes identified through Baseline Conditions Monitoring will be incorporated into the detailed design as necessary and will inform the potential need for EA amendments, if required.

As Baseline Conditions Monitoring is one of the EA commitments, its status will be reported on as part of the EA Compliance Monitoring Program, with the Baseline Conditions Monitoring report providing the details.

TRCA is responsible for the completion of the Baseline Conditions Monitoring. TRCA may retain qualified parties to carry out specific tasks included in monitoring, where necessary.

Detailed information will be provided in the Baseline Conditions Monitoring report(s) submitted as part of the Annual EA Compliance Monitoring reports. The Baseline Conditions Monitoring plan is based on the environmental monitoring that was undertaken during the planning and EA phases project study area (**Appendix C**). The majority of parameters monitored are (or have been) part of existing monitoring programs (e.g., TRCA waterfront monitoring program). Please note that this plan, including data collection methodology, may be modified or enhanced (e.g., monitoring locations or sampling methods added) as the Environmental Performance Monitoring plan is developed. The Baseline Conditions Monitoring plan will be used as the basis for developing the Environmental Performance Monitoring plan (to be completed in the later stages of each respective Segment's detailed design phase).

4.3.1 Baseline Conditions Monitoring Results

Baseline Conditions Monitoring took place during project planning and EA preparation, with a brief hiatus during the Ministry Review period. The three Baseline Conditions for the SWP West Segment include: Turbidity Monitoring, Fish Community Assessment and Terrestrial Biological Inventory.

1. Turbidity Sampling: Anticipated to commence in early to mid-2024, in advance of implementation activities. The monitoring locations will be determined during the later stages of design. In-water construction is not anticipated to commence until late 2024 or early 2025, at the earliest.
2. Fish Community Assessment: Baseline Conditions Monitoring for the West Segment Fish Community Assessment was re-initiated in Fall 2020, and will continue through to the end of the detailed design phase and into the early construction phase to ensure that the most up-to-date and relevant information is used to develop the design for the SWP in each Segment. The results for the 2021-2022 Fish Community Assessment can be found in Appendix C.

3. Terrestrial Biological Inventory: The original Terrestrial Biological Inventory utilizing remote-sensing and field data collection surveys for the project area was completed in 2012. An updated biological inventory of the project area will be conducted in 2027 (15 years after the original 2012 inventory and report).

4.4 Environmental Performance Monitoring

The purpose of the Environmental Performance Monitoring is to ensure the approved project is performing as intended, as indicated in the EA. Monitoring results may lead to adaptive environmental management (AEM) of the project, as described in Chapter 8 of the EA, in order to optimize performance and meet performance targets. The monitoring plan may also be modified in order to address design changes made through the AEM process, or to address new needs as the project progresses.

The SWP Environmental Performance Monitoring program development will be carried out by Segment in the later stages of each Segment-based detailed design phase. West Segment detailed design was initiated in Fall 2020; however, due to delays in detailed design of the West Segment, it is expected that the West Segment Environmental Performance Monitoring program will be developed in 2023, for inclusion in the following SWP EA Annual Compliance Monitoring Program report.

The monitoring itself will commence at the end of the construction phase (following final grading and as-built documentation). While not included in the EA Compliance Monitoring, Environmental Performance Monitoring results will be submitted to MECP in the form of a monitoring results report. Reporting frequency will be determined at the time of program development during the applicable detailed design project phase.

Monitoring results will be compared to the performance indicators (to be developed as part of the Environmental Performance Monitoring plan). The comparison of performance indicators to monitoring results is the key driver of the AEM process, which will be applied to continually adjust project components and ensure long-term project success and desired environmental performance.

4.4.1 Environmental Performance Monitoring Results

West Segment detailed design was initiated in Fall 2020; however, due to delays in detailed design of the West Segment, it is expected that the West Segment Environmental Performance Monitoring program will be developed in 2023, for inclusion in the following SWP EA Annual Compliance Monitoring Program report.

APPENDIX A

Notice of Approval

ENVIRONMENTAL ASSESSMENT ACT

SECTION 9

NOTICE OF APPROVAL TO PROCEED WITH THE UNDERTAKING

RE: An Environmental Assessment for the Scarborough Waterfront Project

Proponent: Toronto and Region Conservation Authority

EA File No.: 03-02

EA Reference No.: 14134

Take notice that the period for requesting that the application or matters related to the application be referred to the Environmental Review-Tribunal for a hearing and decision expired on March 29, 2019. I received no submissions requesting a hearing by the Environmental Review Tribunal before the expiration date.

Having considered the purpose of the Environmental Assessment Act, the approved terms of reference, the environmental assessment, the ministry review of the environmental assessment and submissions received, I hereby give approval to proceed with the undertaking, subject to the conditions set out below.

REASONS

My reasons for my decision are:

- (1) The proponent has complied with the requirements of the Environmental Assessment Act.
- (2) The environmental assessment has been prepared in accordance with the approved Terms of Reference.
- (3) On the basis of the proponent's environmental assessment and the ministry review, the proponent's conclusion that, on balance, the advantages of this undertaking outweigh its disadvantages appears to be valid.
- (4) The proponent has demonstrated that the environmental effects of the undertaking can be appropriately prevented, changed, mitigated or remedied.
- (5) The proponent has demonstrated that the preferred alternative achieves the most appropriate balance of advantages to disadvantages.
- (6) On the basis of the proponent's environmental assessment, the ministry review and the conditions of approval, the construction, operation and maintenance of the undertaking will be consistent with the purpose of the Environmental Assessment Act (section 2).
- (7) The ministry's review of: the government, public and Indigenous community submissions on the environmental assessment and the ministry review has indicated no outstanding concerns that have not been addressed or that cannot be addressed through commitments made during the environmental assessment process, through the conditions set out below or through future approvals that will be required.
- (8) I am not aware of any outstanding issues with respect to this undertaking which suggest that a hearing should be required; as such, a hearing is unnecessary and would cause undue delay to the implementation of the undertaking.

CONDITIONS

The approval is subject to the following conditions:

1. Definitions

1.1 For the purposes of these conditions:

"construction" means physical construction activities, including site preparation works, but does not include the tendering of contracts.

"Date of Approval" means the date on which the Order in Council pertaining to the approval of the environmental assessment was signed by the Lieutenant Governor in Council.

"Director" means the Director of the Environmental Assessment and Permissions Branch of the ministry.

"environmental assessment" means the document titled Scarborough Waterfront Project Environmental Assessment, as amended in September 2018.

"ministry" means the Ministry of the Environment, Conservation and Parks.

"proponent" means Toronto and Region Conservation Authority, its agents, successors, and assigns.

"Regional Director" means the Director of the ministry's Central Regional Office.

"undertaking" means the design, construction, and maintenance of a continuous multi-use trail along and near the waterfront, improved pedestrian access to the waterfront, and erosion control works to address risk to public safety and increase natural habitats, along approximately 11 kilometres of shoreline from Bluffer's Park east to East Point park/Highland Creek in the City of Toronto, as described in the environmental assessment.

2. General Requirements

- 2.1 The proponent shall implement the undertaking in accordance with the environmental assessment, which is hereby incorporated into this Notice of Approval by reference, except as provided in the conditions of this Notice of Approval and as provided in any other approval or permit that may be issued for this undertaking.
- 2.2 Should the proponent wish to make changes to any document required by these conditions after the document has been accepted or approved by the ministry, the proponent shall obtain the written approval for the proposed changes from the ministry decision-maker in the condition requiring the document.
- 2.3 For any document required by these conditions to be prepared, submitted and/or posted publicly by the proponent, the Director may determine that the proponent is no longer required to prepare, submit or post the document. The Director shall provide written notice of the decision to the proponent. Until such time as the proponent has received written notice from the Director, the proponent must continue to prepare, submit and/or post the document as required by the conditions.
- 2.4 The proponent shall fulfill all commitments made in the environmental assessment.
- 2.5 The conditions of the Notice of Approval do not prevent more restrictive conditions being imposed under other statutes.

3. Public Record

- 3.1 Where a document is required for the public record, the proponent shall post the document on the proponent's website and shall provide one hardcopy and one electronic copy of the document to the Director.
- 3.2 The environmental assessment Reference Number 14134 and File Number 03-02 shall be quoted on all documents submitted to the ministry pursuant to this Notice of Approval.

- 3.3 For every document submitted to the ministry, the proponent shall clearly identify which condition of approval the document is meant to fulfill.

4. Compliance Monitoring Program

- 4.1 The proponent shall prepare and submit to the Director for approval and for the public record an environmental assessment compliance monitoring program.
- 4.2 The compliance monitoring program shall be submitted to the Director within 60 days of the Date of Approval or such other date agreed upon by the Director in writing.
- 4.3 The compliance monitoring program shall include a description of how the proponent will:
- a. monitor implementation of the undertaking in accordance with the environmental assessment with respect to mitigation measures, public consultation, and additional studies and work to be carried out;
 - b. monitor compliance with the conditions in this Notice of Approval; and
 - c. monitor compliance with all commitments made in the environmental assessment with respect to mitigation measures, public consultation, Indigenous consultation, and additional studies and work to be carried out.
- 4.4 The compliance monitoring program shall include an implementation schedule for monitoring activities to be completed.
- 4.5 The Director may require the proponent to amend the compliance monitoring program at any time. Should an amendment be required, the Director will notify the proponent in writing of the required amendment and the date by which the proponent must complete and submit the amendment to the Director.
- 4.6 The proponent shall submit the amended compliance monitoring program to the Director within the time period specified by the Director in the written notice.
- 4.7 The proponent shall implement the compliance monitoring program, including any amendments to it.

5. Compliance Reporting

- 5.1 The proponent shall prepare an annual compliance report outlining the results of the compliance monitoring program (Condition 4).
- 5.2 The first compliance report shall be submitted to the Director for review and for the public record one year following the Date of Approval. Each subsequent annual compliance report shall be submitted on the date that is the anniversary of the Date of Approval thereafter. Each report shall cover the previous year.

- 5.3 The proponent shall submit annual compliance reports until all conditions in this Notice of Approval are satisfied or the proponent is instructed otherwise in writing by the Director.
- 5.4 The proponent shall notify the Director in writing when the final annual compliance report is being submitted. The ministry will confirm whether the annual compliance reporting requirements in Conditions 5.1-5.3 have been fulfilled and the Director will confirm this in writing to the proponent.
- 5.5 The proponent shall retain, either in the proponent's office or in another location approved by the Director, copies of the annual compliance reports for each reporting year and any associated documentation of compliance monitoring activities. The proponent shall post the annual compliance reports for each reporting year on its website.
- 5.6 The proponent shall make the compliance reports and associated documentation available to the Director or a designate in a timely manner when requested to do so by the ministry.

6. Complaint Protocol

- 6.1 The proponent shall prepare and implement a complaint protocol for dealing with and responding to inquiries and complaints during all stages of the undertaking. The complaint protocol shall include a procedure for notifying the Regional Director of any complaints received by the proponent.
- 6.2 The proponent shall submit the complaint protocol to the Director for approval and for the public record at least 30 days before the start of construction or such other date that is agreed upon by the Director in writing.
- 6.3 The Director may require the proponent to amend the complaint protocol at any time. Should an amendment be required, the Director shall notify the proponent in writing of the amendment required and when the amendment must be completed.
- 6.4 The proponent shall submit an amended complaint protocol to the Director within the time period specified by the Director.
- 6.5 The proponent shall implement the complaint protocol and any amendments to it.
- 6.6 The proponent shall include a summary of the complaints received and how they were addressed in each of the annual compliance reports required by Condition 5.

7. Consultation During the Detailed Design Phase

- 7.1 During the detailed design phase of the undertaking, the proponent shall consult with the Ministry of Natural Resources and Forestry and the Ministry of the Environment, Conservation and Parks on the following: mitigation and timing window for in-water works; shoreline treatments; multi-use trail and land requirements for permanent

infrastructure; and, restoration works, prior obtaining any necessary approvals and/or permits.

- 7.2. During the detailed design phase of the undertaking, the proponent shall consider maximizing, maintaining or creating new sandy shorelines, consistent with the undertaking's objectives as described in the environmental assessment.
- 7.3 Prior to any construction of the trail through the East Segment of the undertaking on Dow Chemical Canada ULC's ("Dow Chemical") land as described in the environmental assessment, the proponent shall:
- (a) consult with Dow Chemical on the impacts of the trail on the company's operations;
 - (b) address public safety and site security concerns identified by Dow Chemical related to its operations and advise the company in this regard; and,
 - (c) report to the Director about how concerns in clause (b) will be addressed.

Any refinements that may be required to the trail shall be carried out in accordance with the amending procedures in the environmental assessment.

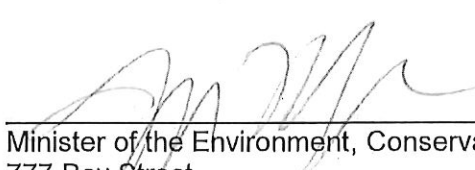
8. Change Process

- 8.1 The proponent shall notify the Director in writing of any proposed change to the undertaking that could result in greater adverse environmental effects than were identified in the environmental assessment. The proponent shall follow the amendment procedure as set out in Chapter 9 of the environmental assessment.

9. Duration of Approval

- 9.1 If construction of the undertaking has not commenced within 10 years of the Date of Approval, this Notice of Approval shall expire, unless otherwise extended by the Minister.

Dated the 5th day of Sept 2019 at TORONTO.


Minister of the Environment, Conservation and Parks
777 Bay Street
College Park 5th Floor
Toronto, Ontario
M7A 2J3

Approved by O.C. No. 1340/2019

Date O.C. Approved September 13, 2019

APPENDIX B

Condition #4 Approval Requirements

Appendix B

Detailed Notice of Approval Conditions Fulfillment Status Monitoring – Checklist

Condition #	Condition 4 Approval Requirement	Status (Noted/Complete/On-going/Not Started)
3.0 – Public Record		
3.1	Where a document is required for the public record, the proponent shall post the document on the proponent's website and shall provide one hardcopy and one electronic copy of the document to the Director.	Noted / On-going
3.2	The environmental assessment Reference Number 14134 and File Number 03-02 shall be quoted on all documents submitted to the ministry pursuant to this Notice of Approval.	Noted / On-going
3.3	For every document submitted to the ministry, the proponent shall clearly identify which condition of approval the document is meant to	Noted / On-going
4.0 – Compliance Monitoring Program		
4.1	The proponent shall prepare and submit to the Director for approval and for the public record an environmental assessment compliance monitoring program.	Complete
4.2	The compliance monitoring program shall be submitted to the Director within 60 days of the Date of Approval or such other date agreed upon by the Director in writing.	Complete
4.3	The compliance monitoring program shall include a description of how the proponent will: <ul style="list-style-type: none"> a) monitor implementation of the undertaking in accordance with the environmental assessment with respect to mitigation measures, public consultation, and additional studies and work to be carried out; b) monitor compliance with the conditions in this Notice of Approval; and c) monitor compliance with all commitments made in the environmental assessment with respect to mitigation measures, public consultation, Indigenous consultation, and additional studies and work to be carried out. 	Complete
4.4	The compliance monitoring program shall include an implementation schedule for monitoring activities to be completed.	Complete

Appendix B

Detailed Notice of Approval Conditions Fulfillment Status Monitoring – Checklist

Condition #	Condition 4 Approval Requirement	Status (Noted/Complete/On-going/Not Started)
4.5	The Director may require the proponent to amend the compliance monitoring program at any time. Should an amendment be required, the Director will notify the proponent in writing of the required amendment and the date by which the proponent must complete and submit the amendment to the Director.	Noted
4.6	The proponent shall submit the amended compliance monitoring program to the Director within the time period specified by the Director in the written notice.	On-going
4.7	The proponent shall implement the compliance monitoring program, including any amendments to it.	On-going
5.0 – Compliance Reporting		
5.1	The proponent shall prepare an annual compliance report outlining the results of the compliance monitoring program (Condition 4).	Complete Submission date: September 13, 2020 Approval date: November 5, 2020
5.2	The first compliance report shall be submitted to the Director for review and for the public record one year following the Date of Approval. Each subsequent annual compliance report shall be submitted on the date that is the anniversary of the Date of Approval thereafter. Each report shall cover the previous year.	Noted / On-going
5.3	The proponent shall submit annual compliance reports until all conditions in this Notice of Approval are satisfied or the proponent is instructed otherwise in writing by the Director.	Noted / On-going
5.4	The proponent shall notify the Director in writing when the final annual compliance report is being submitted. The ministry will confirm whether the annual compliance reporting requirements in Conditions 5.1-5.3 have been fulfilled and the Director will confirm this in writing to the proponent.	Noted / Not Started
5.5	The proponent shall retain, either in the proponent's office or in another location approved by the Director, copies of the annual compliance reports for each reporting year and any associated documentation of compliance monitoring activities. The proponent shall post the annual compliance reports for each reporting	Noted / On-going

Appendix B

Detailed Notice of Approval Conditions Fulfillment Status Monitoring – Checklist

Condition #	Condition 4 Approval Requirement	Status (Noted/Complete/On-going/Not Started)
	year on its website.	
5.6	The proponent shall make the compliance reports and associated documentation available to the Director or a designate in a timely manner when requested to do so by the Ministry.	Noted / On-going
6.0 – Complaint Protocol		
6.1	The proponent shall prepare and implement a complaint protocol for dealing with and responding to inquiries and complaints during all stages of the undertaking. The complaint protocol shall include a procedure for notifying the Regional Director of any complaints received by the proponent.	On-going Development of the West Segment complaint protocol is underway through the detailed design process while construction timelines are being refined and methodologies confirmed. The Complaint Protocol for subsequent Segments will be developed during the Detailed Design phase for each Segment.
6.2	The proponent shall submit the complaint protocol to the Director for approval and for the public record at least 30 days before the start of construction or such other date that is agreed upon by the Director in writing.	Noted / Not Started
6.3	The Director may require the proponent to amend the complaint protocol at any time. Should an amendment be required, the Director shall notify the proponent in writing of the amendment required and when the amendment must be completed.	Noted
6.4	The proponent shall submit an amended complaint protocol to the Director within the time period specified by the Director.	Noted
6.5	The proponent shall implement the complaint protocol and any amendments to it.	Noted

Appendix B

Detailed Notice of Approval Conditions Fulfillment Status Monitoring – Checklist

Condition #	Condition 4 Approval Requirement	Status (Noted/Complete/On-going/Not Started)
6.6	The proponent shall include a summary of the complaints received and how they were addressed in each of the annual compliance reports required by Condition 5.	Noted / Not Started
7.0 – Consultation During the Detailed Design Phase		
7.1	During the detailed design phase of the undertaking, the proponent shall consult with the Ministry of Natural Resources and Forestry and the Ministry of the Environment, Conservation and Parks on the following: mitigation and timing window for in-water works; shoreline treatments; multi-use trail and land requirements for permanent infrastructure; and restoration works, prior to obtaining any necessary approvals and/or permits.	On-going Consultation will continue to be addressed with MNRF and MECP through the Fall/Winter 2022 as the Brimley Road South Multi-Use Trail and SWP West Shoreline and Multi-Use Trail continue to advance beyond the 90% / 60% design phase, respectively.
7.2	During the detailed design phase of the undertaking the proponent shall consider maximizing, maintaining or creating new sandy shorelines consistent with the undertakings objectives as described in the environmental assessment.	On-going TRCA is maximizing new sandy shorelines in the West Segment through expansion of the Bluffer's Park sand beach area. Further exploration into the design for other Segments will be considered where applicable during the respective design phases.
7.3	Prior to the construction of the trail throughout the East Segment of the undertaking on Dow Chemical Canada ULC's ("Dow Chemical") land as described in the environmental assessment the proponent shall: a) consult with Dow Chemical on the	Noted / Not Started

Appendix B

Detailed Notice of Approval Conditions Fulfillment Status Monitoring – Checklist

Condition #	Condition 4 Approval Requirement	Status (Noted/Complete/On-going/Not Started)
	<p>impacts of the trail on the company's operations;</p> <p>b) address public safety and site security concerns identified by Dow Chemical related to its operations and advised the company in this regard; and,</p> <p>c) report to the director about how concerns in clause (b) will be addressed.</p> <p>Any refinements that may be required to the trail shall be carried out in accordance with the amending procedures in the environmental assessment.</p>	
8.0 – Change Process		
8.1	<p>The proponent shall notify the Director in writing of any proposed change to the undertaking that could result in greater adverse environmental effects than were identified in the environmental assessment the proponent shall follow the amendment procedure as set out in Chapter 9 of the environmental assessment. If construction of the undertaking has not commenced within 10 years of the date of approval this notice of approval shall expire unless otherwise extended by the Minister.</p>	Noted
9.0 – Duration of Approval		
9.1	<p>If construction of the undertaking has not commenced within 10 years of the date of approval, this notice of approval shall expire, unless otherwise extended by the Minister.</p>	Noted

APPENDIX C

Annual Baseline Conditions Monitoring Report



Scarborough Waterfront Project: West Segment Annual Baseline Conditions Monitoring Report

Prepared by: Toronto and Region Conservation Authority

September 2022

TABLE OF CONTENTS

1. Introduction	1
2. Turbidity Sampling	1
2.1 Methodology	1
2.2 Results	1
3. Fish Community Assessment	2
3.1 Methodology	2
3.1.1 Field Sampling	2
3.1.2 Data Preparation and Analysis	4
3.1.3 West Segment Aquatic Habitat Types	4
3.2 Results	5
4. Terrestrial Biological Inventory	7
4.1 Methodology	7
4.1.1 Desktop Study	7
4.1.2 Field Study	8
4.2 Results	8
5. References	9

LIST OF FIGURES

Figure 1: SWP West Segment Electrofishing and Seine Net Survey Monitoring Locations	3
---	---

LIST OF TABLES

Table 1: Electrofishing and Seine Net Surveys Conducted in SWP West Segment Study Area Between 2021-2022	5
Table 2: Fish Caught Within the SWP West Segment Study Area Between 2021-2022	6

1. INTRODUCTION

This report presents the results for the environmental baseline conditions monitoring activities conducted between September 13, 2021 and September 13, 2022 as part of the commitments made in the approved Scarborough Waterfront Project (SWP) Environmental Assessment (EA). Baseline conditions monitoring was carried out prior to and during the planning and EA approvals phase, with a brief hiatus during the SWP EA Ministry Review period. Baseline conditions monitoring was re-initiated in Fall 2020 for the SWP West Segment (Bluffer's Park to Meadowcliffe), and will continue through to the end of the detailed design phase and into early construction for West Segment. Central and East Segment baseline conditions monitoring programs will follow the same phasing once the applicable design phase has commenced and the results will be included in subsequent reports, once available.

The baseline conditions monitoring components to be described herein include the following:

- Turbidity Sampling
- Fish Community Assessment
- Terrestrial Biological Inventory

2. TURBIDITY SAMPLING

Turbidity is the cloudiness of water resulting from suspended material in the water column. This suspended material decreases the ability of light to pass through the water column. Reduced light penetration can limit plant growth. This in turn affects the fish and invertebrate communities which feed on and live in the plants. Turbidity may be caused by silt, micro-organisms and plant material. However, the most frequent causes of turbidity in water bodies are algae and inorganic material from soil weathering, erosion and construction activities.

High levels of turbidity can have the following effect on water:

- The loss of water clarity affects its ability to support a large variety and number of aquatic organisms. Where there is less light penetrating the water, there will be less photosynthesis occurring and this reduces the level of oxygen in the water.
- The water will also become warmer because any suspended material absorbs heat from the solar influences. This also decreases the amount of oxygen dissolved in the water.

Turbidity is normally measured by an instrument called a nephelometer. This instrument determines the scattering of light and is measured in standard Nephelometric Turbidity Units (NTU). Normal levels of turbidity can vary from less than one in clear pristine streams to very much greater than 200 NTU in murky rivers after flood events.

2.1 Methodology

Turbidity readings will be acquired by a TRCA technician using a HACH 2100Q Portable Turbidimeter. Readings will be collected at 0m, 100m and 200m from the shoreline at predefined locations within each of the West, Central and East Segments. Baseline turbidity sampling locations will be defined during the Detailed Design phase for each Segment.

2.2 Results

Turbidity surveying has not yet commenced. The sampling locations have not been defined and are pending the progression of the West Segment shoreline design phase throughout the Fall / Winter 2022. TRCA expects the turbidity monitoring program for baseline conditions will be developed through early 2023 and monitoring activities will commence in early 2024, in advance of an anticipated late 2024/early 2025 implementation for West Segment shoreline works.

3. FISH COMMUNITY ASSESSMENT

Seasonal fish surveys are conducted to collect samples of the fish community within the study area to determine composition, abundance, and significant fisheries. These investigations are also used to track any potential changes in the fish community.

Understanding fish community characteristics is necessary for regulatory requirements, approvals and to measure success. Data analysis will determine annual changes within the fish community structure related to the effectiveness and utilization of new shoreline and habitat compensation features.

Collected fish community information will be used as to evaluate the design features and structures within the construction project and provide insight and information about existing conditions. This in turn can be compared to historical data to provide a better understanding of trends and possible impacts. This information will inform the continuous fisheries monitoring program for the pre-, during- and post-construction process.

3.1 Methodology

3.1.1 Field Sampling

Electrofishing – Transect Sampling

Fish community data is being collected via a standardized electrofishing survey method conducted seasonally (Spring through Fall) each year at two sites along the SWP West Segment shoreline, as shown in **Figure 1** (Site 1 and 3).

Fish are sampled using an SR-18EH Smith-Root Electrofishing Boat equipped with a 7.5 kW pulsed DC electrofishing unit. Sampling time is 1,000 seconds per transect (site). Boat speed is kept as constant as possible depending on wind, current strength, and netting activity.

Netted fish are temporarily held in an onboard livewell to allow for recovery prior to processing. Fish processing includes the identification of each individual to species, total length measurement to the nearest millimeter, and weight measurement to the nearest gram. Where the number of individuals of a given species exceeds 20, the remaining fish of that species will be processed as a batch: smallest and largest individuals' lengths taken, number of individuals in a batch noted, and combined weight measured.

Collected fish data, in addition to air temperature (°C), water temperature (°C), current, water colour, bottom type, and aquatic vegetation, will be recorded on Ministry of Natural Resources and Forestry Fish Collection Record forms. Fish are to be released immediately after processing.

Seine Net Fishing – Point Sampling

Seine nets are used to sample the nearshore habitat which cannot be sampled effectively by larger survey boats. This data is used to supplement the electrofishing survey data; a different type of fish community is sampled with this method and tends to be biased toward the smaller species that are commonly overlooked as part of larger survey boat sampling methods. Seine net collections are conducted seasonally from Spring until Fall during daylight hours and are being completed at two sites along the SWP West Segment shoreline, as shown in **Figure 1** (Site 2 and 4).

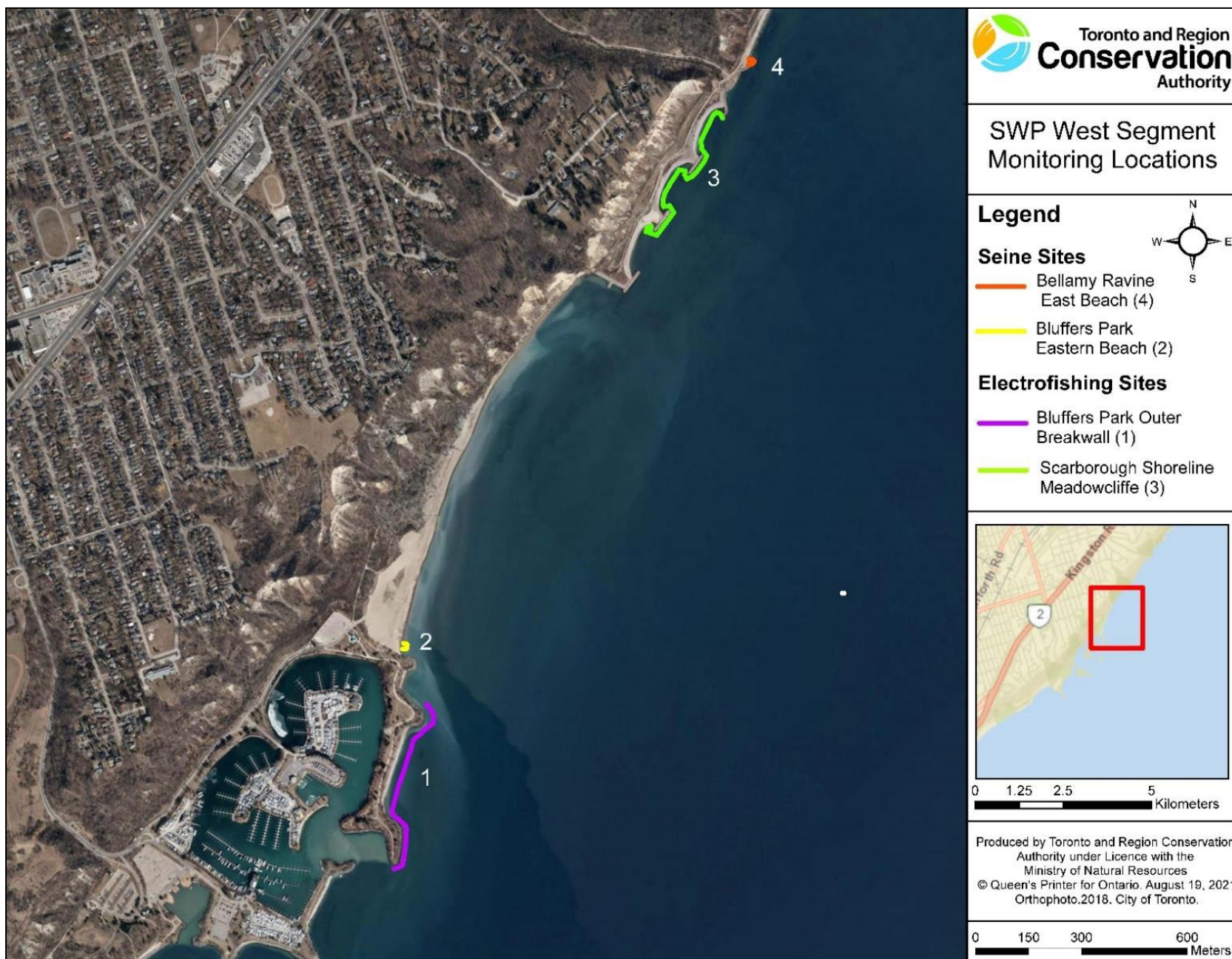


Figure 1: SWP West Segment Electrofishing and Seine Net Survey Monitoring Locations

The dimensions of the seine net are 1.5 m by 30 m. Seine nets are used along the shoreline and usually in open water areas that are free of logs and snags. Proper seine hauls are accomplished by two people, with one person stationed on shore to anchor the net, while the other drags the net and encircles the survey site. Both ends of the net are simultaneously hauled to shore where the fish are removed and placed into tubs for processing.

All fish are held alive and processed once the station is completed. Specimens are identified to species. When identification is not possible specimens will be preserved in 10% formalin and sent to the Royal Ontario Museum for taxonomic verification. All fish will be identified, enumerated, weighed, measured and released. Total length is measured to the nearest millimeter. Weights are measured on an electronic field balance to the nearest gram. Collected data is recorded on both MNRF field forms and standardized TRCA field collection forms. Fish are released live immediately following the processing.

3.1.2 Data Preparation and Analysis

Fish species were categorized as native or non-native to Lake Ontario according to Scott and Crossman (1998). Fish were also classified according to their thermal guild (cold, cool or warm) (Coker et al., 2001; Eakins, 2021).

Species richness refers to the total number of fish species detected. Species richness will be evaluated annually by habitat type. Richness can be influenced by a number of factors, such as the provision of more diverse aquatic habitat for spawning and foraging or thermal refuge, and typically reflects the number of species in an area that are adapted to local environmental conditions.

3.1.3 West Segment Aquatic Habitat Types

Non-Engineered Open Coast

These are areas where no shoreline protection works have been previously implemented, or areas of soft shoreline whose development and continued existence are dependent on adjacent existing shoreline protection works (i.e., Bluffer's Park Beach Eastern Beach). These areas are characterized by relatively linear shoreline profiles and primarily small-sized aggregate substrate. While these areas are primarily used as movement corridors, they can also be used for spawning under appropriate conditions by fish species that have a high affinity to small-sized aggregate as spawning substrate.

Open Coast with Revetment Features

These are areas where a linear revetment has been placed along the shoreline for erosion protection (i.e., Bellamy Ravine East Beach). These engineered structures typically did not incorporate aquatic habitat into their design. The linear shoreline profile and lack of diverse substrate typically associated with these features result in lack of cover, shelter and foraging opportunities for fish. Therefore, they are primarily used as movement corridors. Though revetments can be designed or retrofitted to incorporate aquatic habitat enhancements, the benefits to aquatic habitat quality afforded by these structures are less than those provided by headland beach systems.

Open Coast with Headland Features

These are areas where headland, headland beach and groyne features have been installed for shoreline protection (i.e., Bluffer's Park Outer Breakwall and Scarborough Shoreline Meadowcliffe). While the main property of these features is to address shoreline erosion, incorporating aquatic habitat enhancements into their design benefits aquatic habitat and organisms, where the benefits provided are typically higher than those provided by enhanced linear revetments. As demonstrated by historic Project Area fish community survey results (see Chapter 3 and Appendix D of the SWP EA [TRCA, 2018]), more structurally complex open coast habitat – headland beach systems with diverse substrates, irregular shoreline and complex vertical profile of the shoreline – is typically able to support a higher number of fish species and higher abundance of fish.

3.2 Results

The electrofishing and seine net surveys were conducted from Fall 2021 to Summer 2022. The number of completed surveys for the 2021-2022 Fish Community Assessment in the SWP West Segment can be found in **Table 1**.

Table 1: Electrofishing and Seine Net Surveys Conducted in SWP West Segment Study Area Between 2021-2022

Site Name (Site Number on Figure 1)	Habitat Type	Fall 2021	Spring 2022	Summer 2022	Total No. Surveys
		(September - October)	(April - June)	(July - August)	
Bluffer's Park Outer Breakwall (1)	Open Coast with Headland	1	1	1	3
Bluffer's Park Eastern Beach (2)	Non-Engineered Open Coast	-	1	1	2
Scarborough Shoreline Meadowcliffe (3)	Open Coast with Headland	1	1	1	3
Bellamy Ravine East Beach (4)	Open Coast with Revetment	-	1	1	2

During the 2021-2022 surveys, a total of ten (10) different fish species were captured (**Table 2**). These are further described by habitat type below.

Non-Engineered Open Coast

A total of four (4) fish species were caught at the Bluffer's Park Eastern Beach site during the 2021-2022 season. These include one (1) native cold-water species (Threespine Stickleback), one (1) native cool-water species (Emerald Shiner), one (1) non-native cold-water species (Rainbow Smelt), and one (1) non-native cool-water species (Round Goby). Given the linear shoreline profile and small-sized aggregate substrate (i.e., sand), low catch numbers and species diversity relative to other shoreline types is typical of this area, based on historic data collected for the Project Study Area SWP EA (TRCA, 2018). Emerald Shiner and Rainbow Smelt are expected species to be observed in this area as the linear shoreline profile with small-sized aggregate is most suitable for these forage species.

Open Coast with Revetment Features

No fish were caught at the Bellamy Ravine East Beach site during the 2021-2022 season. Low to no catch numbers for this habitat type are not unexpected due to the linear shoreline profile and lack of diverse substrate that provide limited cover, shelter and foraging opportunities for fish.

Open Coast with Headland Features

A total of nine (9) fish species were captured along the open coast with headland features.

One (1) native cold-water species (Threespine Stickleback), one (1) native cool-water species (White Sucker), one (1) native warm-water species (Pumpkinseed), two (2) non-native cold-water species (Alewife and Chinook Salmon), and one (1) non-native cool-water species (Round Goby) were caught within the Bluffer's Park Outer Breakwall site. Two (2) native cold-water species (Lake Chub and Threespine Stickleback), three (3) native cool-water species (Emerald Shiner, Rock Bass and White Sucker), two (2) non-native cold-water species (Alewife and Chinook Salmon) and one (1) non-native cool-water species (Round Goby) were caught at the Scarborough Shoreline Meadowcliffe site.

A higher species richness value is expected within this habitat type due to the more irregular and complex horizontal and vertical shoreline profile, as well as the inclusion of diverse aquatic habitat elements in the shoreline design which provide enhanced opportunities for foraging, shelter and cover along the open coast.

Alewife and Emerald Shiner are common forage fish species found along the open coast in the nearshore zone, as well as within the adjacent sheltered embayment habitat of the Bluffer's Park boat basin. Their usage of the headland features along the open coast is expected due to the enhanced cover and shelter provided by the varied substrate of the shoreline.

Chinook Salmon are predatory species whose presence along the Lake Ontario coastline is common, particularly near headland features. This is due to the foraging opportunities provided by a more prevalent volume of prey species, such as those species described above.

The non-native Round Goby have become increasingly prevalent since first being discovered in the Great Lakes in the 1990s. Their presence within this area of shoreline is anticipated given their diet of molluscs, aquatic insects, fish eggs, and small crustaceans that seek shelter among the diverse substrate provided by the headland structures.

Table 2: Fish Caught Within the SWP West Segment Study Area Between 2021-2022

Origin	Thermal Guild	Common Name	Bluffers Park Outer Breakwall (Site 1)	Bluffers Park East Beach (Site 2)	Scar. Shoreline Meadowcliffe (Site 3)	Bellamy Ravine East Beach (Site 4)
Native	Cold	Lake Chub			x	
		Threespine Stickleback	x	x	x	
	Cool	Emerald Shiner		x	x	
		Rock Bass			x	
		White Sucker	x		x	
	Warm	Pumpkinseed	x			
Non-Native	Cold	Alewife	x		x	
		Chinook Salmon	x		x	
		Rainbow Smelt		x		
	Cool	Round Goby	x	x	x	
Species Richness			6	4	8	0

4. TERRESTRIAL BIOLOGICAL INVENTORY

To assess and monitor the condition of the natural system the TRCA gathers information about the region through two main survey methods: remote-sensing (patch level data collected from the air by plane or satellite and interpreted on desktop) and field data collection (vegetation community and species data collected from the ground). Field data collection occurs in two ways, through systematic inventories and through fixed sites.

An updated biological inventory of the Project Area will be conducted in 2027 (15 years after the original 2012 inventory), at the levels of habitat patch (landscape analysis), vegetation community, and species (flora and fauna) according to the TRCA methodologies for landscape evaluation and field data collection. Habitat patch mapping will be excerpted from the most current regional mapping of broadly-defined patch categories (forest, wetland, meadow and coastal) and digitized using ArcView GIS software.

4.1 Methodology

4.1.1 Desktop Study

Natural cover data in the TRCA jurisdiction is captured using digital ortho-rectified aerial photography at a scale of 1:4000. This data is collected as a shape file using Geographical Information System (GIS) software 'on screen'. All natural cover is characterized into discreet polygons of habitat patches of beach/bluff, forest, meadow, successional, and wetland; and anthropogenic cover is categorized into urban or agricultural uses. Patches are generally defined by obvious changes in habitat or land use. Main roads and wide trails are considered as boundaries to habitat patches, and a width of 25 m was used to define breaks in habitat patches, or if an obvious split in the canopy could be detected at a scale of 1:2000 on the aerial photos. Wide rivers were also considered to be separate habitat patches; where rivers or creeks created an obvious break in the canopy, polygons were divided.

The first step in evaluating a natural system or an individual habitat patch is to interpret and map land cover using aerial photographs. The basic unit for the evaluation at all scales is the habitat patch in the region, which are then combined and evaluated as a system at any scale. A habitat patch is a continuous piece of habitat, as determined from aerial photo interpretation. The TRCA maps habitat according to four broad categories: forest, wetland, meadow, and coastal (beach, dune, or bluff). At the regional level, the TRCA jurisdiction is made up of thousands of habitat patches. This mapping of habitat patches in broad categories is conducted through remote-sensing and is used in the evaluation of quality, distribution and quantity of natural cover. It should not be confused with the more detailed mapping of vegetation communities obtained through field surveys and that is used to ground-truth the desktop interpretation.

A key component of data collection and analysis is the scoring and ranking of vegetation communities and flora and fauna species to generate local "L" ranks (L1 to L5); this process was undertaken in 1996-2000 and ranks are reviewed regularly. Vegetation community scores and ranks are based on two criteria: local occurrence and the number of geophysical requirements or factors on which they depend. Flora species are scored using four criteria: local occurrence, population trend, habitat dependence, and sensitivity to impacts associated with development. Fauna species are scored based on seven criteria: local occurrence, local population trend, continent-wide population trend, habitat dependence, sensitivity to development, area-sensitivity, and patch isolation sensitivity. With the use of this ranking system, communities or species of regional concern, ranked L1 to L3, now replace the idea of rare communities or species. Rarity (local occurrence) is still considered but is now one of many criteria that make up the L-ranks, making it possible to recognize communities or species of regional concern before they have become rare. In addition to the L1 to L3 ranked species, a large number of currently common or secure species at the regional level are considered of concern in the urban context. These are the species identified with an L-rank of L4. Although L4 species are widespread and frequently occur in relatively intact urban sites, they are vulnerable to long-term declines. Communities and species that are ranked L5 are considered to be generally secure, while a sixth rank exists – L+ – which denotes vegetation communities dominated by non- native species or indicates a species non-native in origin.

4.1.2 Field Study

The system used to delineate the vegetation communities contained within the Project Area was a modified version of the Ecological Land Classification (ELC) for Southern Ontario. A full ELC survey to the level of vegetation type is a very detailed and time-consuming process. The TRCA protocol for surveying vegetation communities strikes a balance between giving enough detail to provide meaningful descriptions of vegetation communities and the constraints of time and funding. For example, resources are unlikely to be available to pursue detailed soil analysis (as outlined in the ELC field guide) in every patch surveyed in the TRCA jurisdiction. Gathering detailed vegetation community data using the ELC protocol for Southern Ontario provides the information needed in order to track community diversity throughout the region, to assess community sensitivity to development and ecological needs, and to determine what that means to the health of the region. Species data are used to determine how species needs are being met in the region relative to their sensitivity to development, mobility (fauna), area-sensitivity (fauna), and habitat requirements.

Vegetation community and flora and fauna species data will be collected through field surveys. These surveys are done during the appropriate times of year to capture breeding status in the case of amphibians and birds, and during the optimal growing period of the various plant species and communities. Vegetation communities and flora species were surveyed concurrently.

Vegetation community designations are based on the ELC and determined to the level of vegetation type. Community boundaries will be outlined onto printouts of the most current digital ortho-rectified photographs (ortho-photos) to a scale of 1:2000 and then digitized in ArcView. Flora species of regional and urban concern (species ranked L1 to L4) will be mapped as point data with the approximate number of individuals seen. A list of all other species observed will be documented for the site.

As per the TRCA data collection protocol, breeding bird surveys will be carried out by visiting all parts of the site at least twice during the breeding season (last week of May to mid-July) to determine the breeding status of each mapped point. The methodology for identifying confirmed and possible breeding birds follows Cadman et al. (2007). All initial visits will be completed by the end of the third week of June. The field-season is to be organized so that by late June only repeat visits are being conducted. It is imperative that any visit made in the first half of June is subsequently validated by a second visit later in the season. Fauna regional species of concern (species ranked L1 to L3) will be mapped as point data with each point representing a possible breeding bird.

4.2 Results

The original Terrestrial Biological Inventory utilizing remote-sensing and field data collection surveys for the project area was completed in 2012. An updated biological inventory of the project area will be conducted in 2027 (15 years after the original 2012 inventory).

The existing Terrestrial Biological Inventory data is summarized in Chapter 3, Section 3.2.1 and further detailed in Appendix D, Section 2.2. of the SWP EA (TRCA, 2018).

5. REFERENCES

- Coker, G.A., Portt, C.B., and Minns, C.K. 2001. Morphological and Ecological Characteristics of Canadian Freshwater Fishes. Canadian Manuscript Report of Fisheries and Aquatic Sciences 2554, 89 pp. Burlington, Ontario: Fisheries and Oceans Canada.
- Eakins, R.J. 2022. Ontario Freshwater Fishes Life History Database. Version 5.13.
- Holm, E., Mandrak, N.E., and Burrige, M.E. 2010. The ROM Field Guide to Freshwater Fishes of Ontario. Toronto, Ontario: Royal Ontario Museum.
- Scott, W.B., and Crossman, E.J. 1998. Freshwater Fishes of Canada. Galt House Publications Ltd. Oakville, Ontario, Canada. xx+966 p.
- Toronto and Region Conservation Authority (TRCA). 2012. Scarborough Shoreline Terrestrial Biological Inventory and Assessment.
- Toronto and Region Conservation Authority (TRCA). 2018. Scarborough Waterfront Project Environmental Assessment.

