Appendix F1 – Public Notices

CITY OF MISSISSAUGA – NOTICE OF STUDY COMMENCEMENT

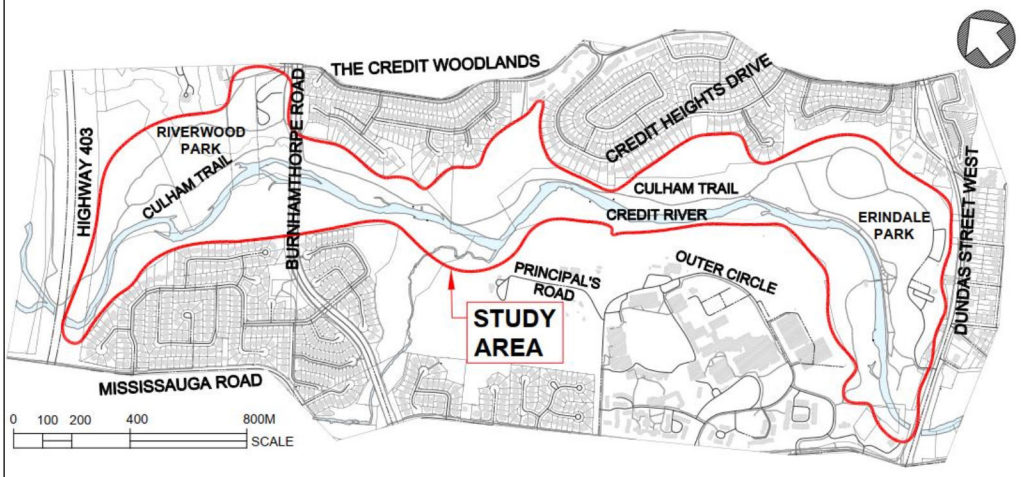
Municipal Class Environmental Assessment Study:
Credit River Erosion Control Project from Dundas St West to Highway 403

WHAT?

- The City of Mississauga is undertaking a Schedule B Class Environmental Assessment (Class EA) Study for erosion control and restoration of the Credit River between Dundas and Hwy 403.

WHY?

- The City of Mississauga recognizes that this section of the Credit River and adjacent Culham Trail is in need of rehabilitation to remediate existing erosion issues and improve safety.



HOW?

- The study will examine this section of the Credit River and Culham Trail to identify existing problems, potential risks, and opportunities for restoration and safety improvements.
- Through the Class EA process, the Study Team will develop and evaluate multiple alternative solutions and refine the options through public and agency consultation (see below). The Study Team will then select a Preferred Alternative and proceed with design of the recommended works.
- At the end of the study, a Project File, documenting the study process will be available for public review.

GET INVOLVED!

- Consultation is an important part of the Class EA process. Public input and comment are invited for incorporation into the planning and design of this project.
- A Public Information Centre (PIC) will be held to present the study findings, to consider alternative solutions, and to answer any questions you may have. Details regarding the PIC will be advertised publicly as the study progresses.
- Project information will be made available on the City's project website: www.mississauga.ca/creditrivererosionea
- If you have any questions or comments regarding the study, or wish to be added or removed from the study mailing list, please contact:

Anthony Di Giandomenico, P.Eng.
Project Manager
City of Mississauga
201 City Centre Dr, Suite 800
Mississauga, ON L5B 2T4
(905) 615-3200, ext. 3491
Anthony.DiGiandomenico@mississauga.ca

Robert Amos, P.Eng.
Consultant Project Manager
Aquafor Beech Ltd.
2600 Skymark Avenue, Unit 6-202
Mississauga, ON L4W 5B2
(905) 629-0099, ext. 284
Amos.R@aquaforbeech.com

COVID-19 Community Engagement Update:

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

This notice signals the commencement of the Class EA, a study which will define the problem, identify/evaluate alternative solutions, and determine a preferred design in consultation with regulatory agencies and the public. The study is being undertaken in accordance with the planning and design process for Schedule 'B' projects, as outlined in the "*Municipal Class Environmental Assessment*" document (October 2000, amended in 2015), which is approved under the Ontario *Environmental Assessment Act*.

Personal information is collected under the authority of the Environmental Assessment Act and will be used in the assessment process. With exception of personal information, all comments shall become part of the public records. Questions about this collection should be directed to the Project Manager listed above.

This notice was first issued September 7th, 2022.

CITY OF MISSISSAUGA – NOTICE OF PUBLIC ENGAGEMENT

Municipal Class Environmental Assessment Study:
Credit River Erosion Control Project from Dundas St West to Highway 403

WHAT?

- The City of Mississauga is undertaking a Schedule B Class Environmental Assessment (Class EA) Study for erosion control and restoration of the Credit River between Dundas and Hwy 403.

WHY?

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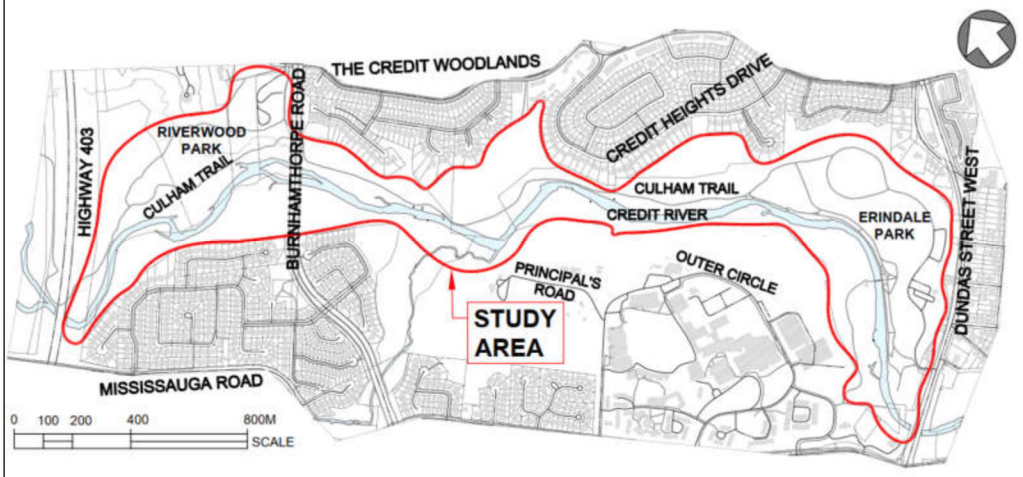

HOW?

- The study examined this section of the Credit River and Culham Trail to identify existing problems, potential risks, and opportunities for restoration and safety improvements.
- Through the Class EA process, the Study Team has developed and evaluated multiple alternative solutions and will refine the options through public and agency consultation (see below). The Study Team is seeking public input on the preliminary Preferred Alternatives that have been identified. After reviewing input gathered through the online public engagement process, the Study Team will finalize the Preferred Alternatives and proceed with design of the recommended works.
- At the end of the study, a Project File, documenting the study process will be available for public review.

GET INVOLVED!

- Consultation is an important part of the Class EA process. Public input and comment are invited for incorporation into the planning and design of this project.
- As part of the project, online public engagement has been arranged to allow local residents and interested members of the public an opportunity to review and comment on the project findings to date, the alternative solutions being considered, the evaluation process, and the preliminary Preferred Alternatives. Input gathered through the online public engagement will be used to support the EA study. Project information will be made available to the public on the City's project website below beginning **June 14, 2023** and will be open for comments until **July 14, 2023**:

  www.mississauga.ca/creditrivererosionea

- If you have any questions or comments regarding the study, or wish to be added or removed from the study mailing list, please contact:

Anthony Di Giandomenico, P.Eng.
Project Manager
City of Mississauga
300 City Centre Drive
Mississauga, ON L5B 3C1
(905) 615-3200, ext. 3491
Anthony.DiGiandomenico@mississauga.ca

Robert Amos, P.Eng.
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Amos.R@aquaforbeech.com

This notice signals the commencement of the Class EA, a study which will define the problem, identify/evaluate alternative solutions, and determine a preferred design in consultation with regulatory agencies and the public. The study is being undertaken in accordance with the planning and design process for Schedule 'B' projects, as outlined in the "*Municipal Class Environmental Assessment*" document (October 2000, amended in 2015), which is approved under the Ontario *Environmental Assessment Act*.

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This notice was first issued June 2023.

Appendix F2 – Stakeholder List

Federal Agencies	Organization	Suffix	First Name	Last Name	Position	Address	City	Province	Postal Code	Email	Telephone	Fax
	Crown-Indigenous Relations and Northern Affairs Canada											
Ontario Ministry	**Organization**	**Suffix**	**First Name**	**Last Name**	**Position**	**Address**	**City**	**Province**	**Postal Code**	**Email**	**Telephone**	**Fax**
	Ministry of Tourism, Culture and Sport	Ms.	Karla	Barboza	Heritage Land Use Planning	Suite 1700, 401 Bay Street	Toronto	ON	M7A 0A7	karla.barboza@ontario.ca	416-314-3108	416-314-7175
	Ministry of Northern Development, and Ministry of Natural Resources and Forestry	Mr.	Adam	Kennedy	Regional Planner / Southern Region					Adam.Kennedy@ontario.ca	705.761.3374	
	Ministry of Natural Resources		Steve	Varga	Management Biologist	50 Bloomington Road	Aurora	ON	L4G 0L8	steve.varga@ontario.ca	905-713-7370	
	Ministry of the Environment, Conservation and Parks		Trevor	Bell	Environmental Resource Planner & EA Co	135 St. Clair Ave. W., 8th Floor	Toronto	ON	M4V 1P5	trevor.bell@ontario.ca	905-319-9902	
	Ministry of the Environment, Conservation and Parks									SARontario@ontario.ca		
	Infrastructure Ontario		Katherine	Hotrum						Katherine.Hotrum@infrastructureontario.ca		
Conservation Authorities	**Organization**	**Suffix**	**First Name**	**Last Name**	**Position**	**Address**	**City**	**Province**	**Postal Code**	**Email**	**Telephone**	**Fax**
	Credit Valley Conservation	Mr.	Iftekhar	Ahmad	Planner, Environmental Assessment	1255 Old Derry Road	Mississauga	ON	L5N 6R4	iftekhar.ahmad@cvc.ca	905-670-1615 x 296	
	Credit Valley Conservation	Mr.	Jakub	Kilis	Senior Manager, Infrastructure & Regulat	1255 Old Derry Road	Mississauga	ON	L5N 6R4	jakub.kilis@cvc.ca		
	Credit Valley Conservation	Ms.	Lori	Cook		1255 Old Derry Road	Mississauga	ON	L5N 6R4	lori.cook@cvc.ca		
	Credit Valley Conservation	Mr.	Matteo	Destefano	Environmental Assessment Engineering A	1255 Old Derry Road	Mississauga	ON	L5N 6R4	matteo.destefano@cvc.ca		
	Credit Valley Conservation	Mr.	Jeff	Wong	Water Operations Engineer					Jeff.Wong@cvc.ca		
	Credit Valley Conservation	Mr.	John	Sinnige	Senior Manager, Water Resources and Flood Risk Management					John.Sinnige@cvc.ca		
	Credit Valley Conservation	Ms.	Sally	Betts	Fluvial Geomorphologist					Sally.Betts@cvc.ca		
	Credit Valley Conservation	Mr.	Graeme	MacDonald	Engineer, Hydrology and Hydraulics					Graeme.MacDonald@cvc.ca		
	Credit Valley Conservation									planning@cvc.ca		
City of Mississauga	**Organization**	**Suffix**	**First Name**	**Last Name**	**Position**	**Address**	**City**	**Province**	**Postal Code**	**Email**	**Telephone**	**Fax**
	City of Missisauga	Mr.	Joe	Horneck	Ward 6, Councillor	300 City Centre Drive	Mississauga	ON	L5B 3C1	joe.horneck@mississauga.ca	905-896-5600	
	City of Missisauga	Mr.	Matt	Mahoney	Ward 8, Councillor	300 City Centre Drive	Mississauga	ON	L5B 3C1	matt.mahoney@mississauga.ca	905-896-5800	
	City of Missisauga	Mr.	Anthony	DiGiandomenico	Project Manager	300 City Centre Drive	Mississauga	ON	L5B 3C1	Anthony.DiGiandomenico@mississauga.ca	905-615-3200 x 3491	
	City of Missisauga	Mr.	Raymond	Lau	Park Development	300 City Centre Drive	Mississauga	ON	L5B 3C1	Raymond.Lau@mississauga.ca	905-615-3200 x 8734	
					Erindale Cosmopolitan Cemetery	Mississauga Road	Mississauga	ON	L5K 2E1			
Region	**Organization**	**Suffix**	**First Name**	**Last Name**	**Position**	**Address**	**City**	**Province**	**Postal Code**	**Email**	**Telephone**	**Fax**
	Region of Peel	Mr.	Nicholas	Gan	Manager, Engineering Condition Assessment & Rehabilitation Engineering Services Division Public Works	10 Peel Centre Drive, Suite B	Brampton	ON	L6T 4B9		647-403-3711	
	Region of Peel	Ms.	Asha	Saddi	Technical Analyst, Infrastructure Programming and Studies	10 Peel Centre Drive, Suite B	Brampton	ON	L6T 4B9	asha.saddi@peelregion.ca	905-791-7800 x 7794	
First Nations	**Organization**	**Suffix**	**First Name**	**Last Name**	**Position**	**Address**	**City**	**Province**	**Postal Code**	**Email**	**Telephone**	**Fax**
	Mississaugas of the New Credit First Nation											
	Six Nations of the Grand River											
	Haudenosaunee Development Institute											
	Huron-Wendat Nation									wendat@huron-wendat.qc.ca		
Utilities	**Organization**	**Suffix**	**First Name**	**Last Name**	**Position**	**Address**	**City**	**Province**	**Postal Code**	**Email**	**Telephone**	**Fax**
	Alectra Inc.											
	Hydro One											
	Enbridge											
	Bell Canada											
	Rogers Communication											
	Telus											
Residents / Other	**Organization**	**Suffix**	**First Name**	**Last Name**	**Position**	**Address**	**City**	**Province**	**Postal Code**	**Email**	**Telephone**	**Fax**
	Credit River Anglers Association	Mr.	John	Kendell	President	PO Box 42093, 128 Queen Street South	Mississauga	ON	L5M 1K8	info@craa.on.ca [redacted]	[redacted]	
	South Peel Naturalists' Club		Alison	Forde	Coordinator	PO Box 40047	Oakville	ON	L6H 0G1	[redacted]		
	Mississauga Mountain Bike Association									info@mississaugamba.ca		
	Credit Valley Golf and Country Club	Mr.	Jason	Hanna	Chief Operating Officer	2500 Old Carriage Road	Mississauga	ON	L5C 1Y7	jhanna@creditvalleygolf.com	905-275-2505 x 225	905-275-6201
	CVGCC	Mr.	Chris	Bouwers	Course and Property Manager	2500 Old Carriage Road	Mississauga	ON	L5C 1Y7	cbouwers@creditvalleygolf.com	905-275-2505 x 226	905-275-6201
	Mississauga Golf and Country Club	Mr.	Jon	Smith	Golf Course and Property Manager	1725 Mississauga Road	Mississauga	ON	L5H 2K4	jsmith@mississauguagolf.com	905-278-4857 x 272	
	University of Toronto Mississauga		Maria	Codispoti	Manager, Project Administration and Technical Services, Facilities Management and Planning					maria.codispoti@utoronto.ca	905-301-7299	
	University of Toronto Mississauga		Brian	Hoppie	Operations Manager, Parking & Transportation Services					brian.hoppie@utoronto.ca		
	University of Toronto Mississauga		Kristian	Horvath	Assistant Director, Grounds, Dept. of Facilities Management and Planning					kristian.horvath@utoronto.ca		
	University of Toronto Mississauga		Deborah	Brown	Chief Administrative Officer					cao.utm@utoronto.ca	905-828-3705	
	The Riverwood Conservancy					Chappell House, 4300 Riverwood Park Lane	Mississauga	ON	L5C 2S7	info@theriverwoodconservancy.org	905-279-5878	
	The Riverwood Conservancy	Ms.	Sara	Wilbur-Collins	Executive Director					sara.wilburcollins@theriverwoodconservancy.org		
	The Riverwood Conservancy	Mr.	Derek	Stone	Conservation Program Manager							
	The Riverwood Conservancy		Margy	De Gruchy	Stewardship Committee Chair							
	St. Peter's Anglican Erindale					[redacted]				stpeters@stpeterserindale.org	905-828-2095	905-828-1588
	Former City Councillor	Mr.	David	Culham		[redacted]				[redacted]	[redacted]	
	Resident Adjacent to Study Area		Nancy	Corkill		[redacted]				[redacted]		
	Resident		Tina	Mola						[redacted]		
	Resident	Mr.	Derm	Holwell		[redacted]				[redacted]		
	Resident	Mr. and Mrs.	Mike and Debi	Hearsum						[redacted]		
	Resident		David	Carroll						[redacted]		
	Resident	Mr.	John	Moore						[redacted]		
	Resident	Mr.	Brian	Smith						[redacted]	416-518-7611	
	Erindale Orthopaedic Sports Injuries & Rehabilitation Centre					1645 Dundas St W	Mississauga	ON	L5C 1E3		905-306-1200	905-306-1201
	Erindale Family Clinic					1645 Dundas St W, Suite 204	Mississauga	ON	L5C 1E3		905-232-1015	
	B.F. O'Neill's Vacuum Centre					1615 Dundas St W	Mississauga	ON	L5C 1E3		905-273-6111	
	Unknown					1563 Dundas St W	Mississauga	ON	L5C 1E3			
	MacKinnon Calderwood Advertising					1555 Dundas St W	Mississauga	ON	L5C 1E3		905-281-6146	
	Aliquot Law					1555 Dundas St W	Mississauga	ON	L5C 1E3		905-896-6952	
	UltimateStager™ Academy					1555 Dundas St W	Mississauga	ON	L5C 1E3			
	Resident Adjacent to Study Area	Mr.	William	Fifield		[redacted]				[redacted]		
	Resident	Mr.	Guy	Winchester		[redacted]				[redacted]	[redacted]	
	Resident	Ms.	Joanne	Foote		[redacted]				[redacted]	[redacted]	
	Resident	Ms.	Natalie	Halff		[redacted]				[redacted]	[redacted]	
	Resident	Ms.	Heather	Shaw						[redacted]		

	Resident	Ms.	Christina	Woodward		[redacted]				[redacted]		
	Resident	Mr.	Andreas	Steinzel						[redacted]		
	Resident	Mr.	Marc	Johnson	Professor and Canada Research Chair	[redacted]				[redacted]		
	Resident	Mr.	Peter	Hossack						[redacted]		
	Resident	Ms.	Dorothy	Tomiuk						[redacted]		
	Resident	Mr.	Leonard	Verwey		[redacted]				[redacted]	[redacted]	

Appendix F3 – Public Information Centre Materials

WELCOME

Credit River Erosion Control Project from Dundas Street West to Highway 403

ONLINE PUBLIC INFORMATION CENTRE

June 14, 2023

Your comments are encouraged and appreciated, as this will provide us an opportunity to address project issues and concerns.

Aquafor Beech Limited

MISSISSAUGA

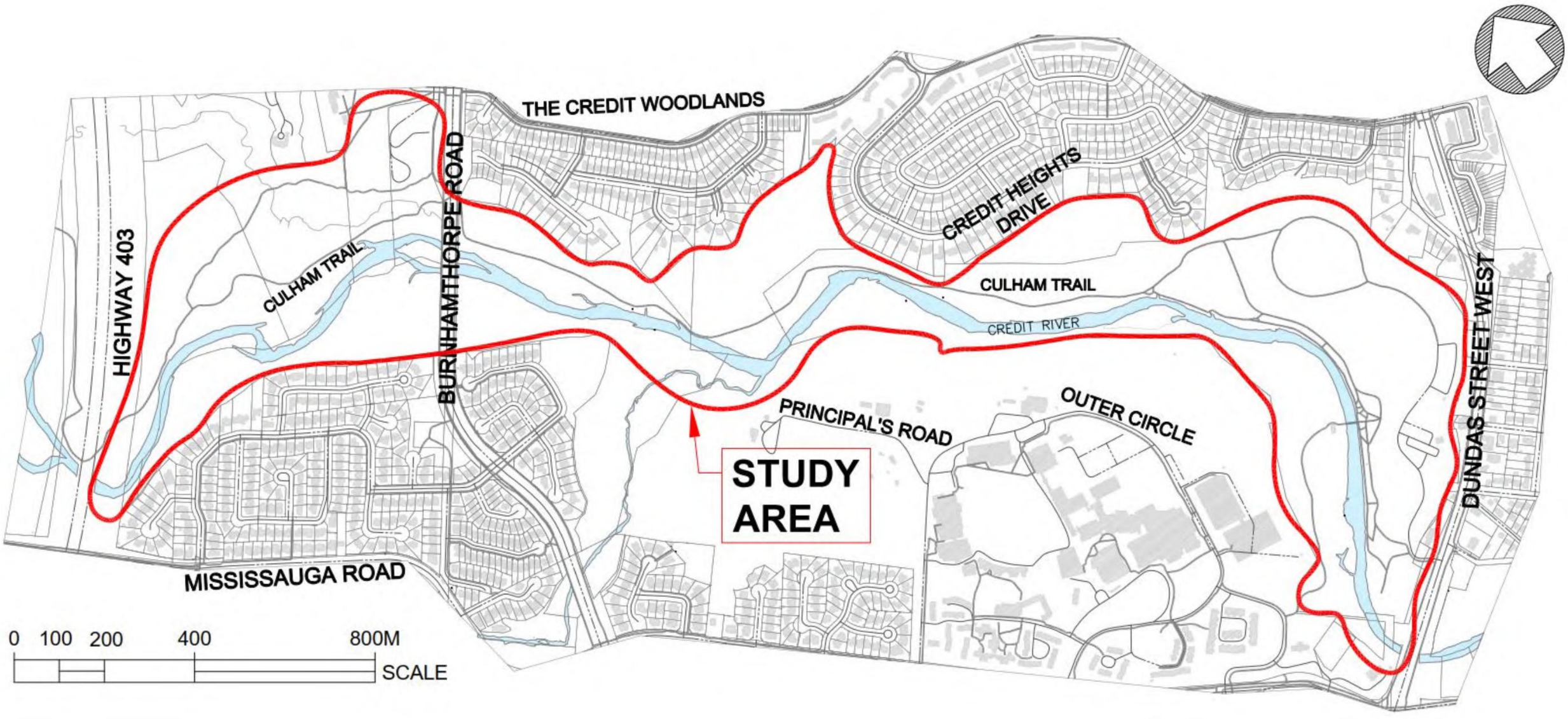
LAND ACKNOWLEDGEMENT

We acknowledge the lands which constitute the present-day City of Mississauga as being part of the Treaty and Traditional Territory of the Mississaugas of the Credit First Nation, The Haudenosaunee Confederacy, the Huron-Wendat and Wyandot Nations. We recognize these peoples and their ancestors as peoples who inhabited these lands since time immemorial. The City of Mississauga is home to many global Indigenous Peoples.

As a municipality, the City of Mississauga is actively working towards reconciliation by confronting our past and our present, providing space for Indigenous peoples within their territory, to recognize and uphold their Treaty Rights and to support Indigenous Peoples. We formally recognize the Anishinaabe origins of our name and continue to make Mississauga a safe space for all Indigenous peoples.

STUDY AREA

The study area includes the Credit River corridor from Dundas Street West to Highway 403, as well as adjacent segments of the Culham Trail.



STUDY AREA

Within the study area, Credit River is generally characterized by active erosion, with localized channel bank protection measures such as armourstone walls and gabion baskets. In some locations these channel engineering structures are failing.

Bank Erosion Along Culham Trail

Valley Wall Erosion and Slope Instability

Trail Washout

By-Passed Ice Control Structure

STUDY PURPOSE / PROBLEM DEFINITION

The City of Mississauga is undertaking a Class Environmental Assessment Study for erosion control and restoration of the Credit River between Dundas Street West and Highway 403.

The City recognizes that this section of the river and trail is in need of rehabilitation and remediation. The study is being carried out to identify existing problems, potential risks and opportunities for restoration and safety improvements.

PUBLIC INFORMATION CENTRE PURPOSE

This Public Information Centre (PIC) is Designed to:

- Present information on existing conditions
- Present alternative approaches to erosion protection
- Present study process and timelines

To Gain Community Input on:

- Existing conditions information
- Identification of opportunities and constraints
- Alternative evaluation criteria and scoring
- Selection of preferred solutions

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROCESS

CLASS EA PROCESS - SCHEDULE B

Many projects related to municipal systems that are similar in nature, are carried out routinely, and have predictable and mitigatable environmental effects are addressed in accordance with the Municipal Engineers Association "Municipal Class Environmental Assessment" (October 2000, as amended in 2007, 2011, 2015 & 2023).

This study is being undertaken as a "Schedule B" project under the Municipal Class Environmental Assessment process. The flow chart below illustrates the key steps to be undertaken as part of the EA process.

Phase 1 – Identify Problems

- ✓ Identify Problem or Opportunity
- ✓ Public Consultation

We Are Here →

Phase 2 – Alternate Solutions

- ✓ Identify Alternative Solutions
- ✓ Inventory Natural, Social, Economic Environment
- ✓ Environmental Impacts and Mitigation
- ✓ Alternatives Evaluation
- Review Agency and Public Consultation
- Select Preferred Solution
- Review and Confirm Choice of Schedule
- Notice of Completion to Review Agency & Public
- Implementation

NATURAL HERITAGE ASSESSMENT

The existing natural environment within the study area was reviewed through preliminary studies and background data, with the intention of identifying high-level constraints and sensitivities. The current scope of work included:

- Review and confirmation of prior vegetation community classification (Ecological Land Classification protocol);
- Terrestrial wildlife and habitat assessment;
- Species at Risk (SAR) screening and habitat assessment;
- Significant wildlife habitat (SWH) screening and assessment;
- Aquatic habitat and fish community characterization

More detailed field assessments are scheduled to be undertaken within the proposed mitigation project areas.

SPECIES AT RISK

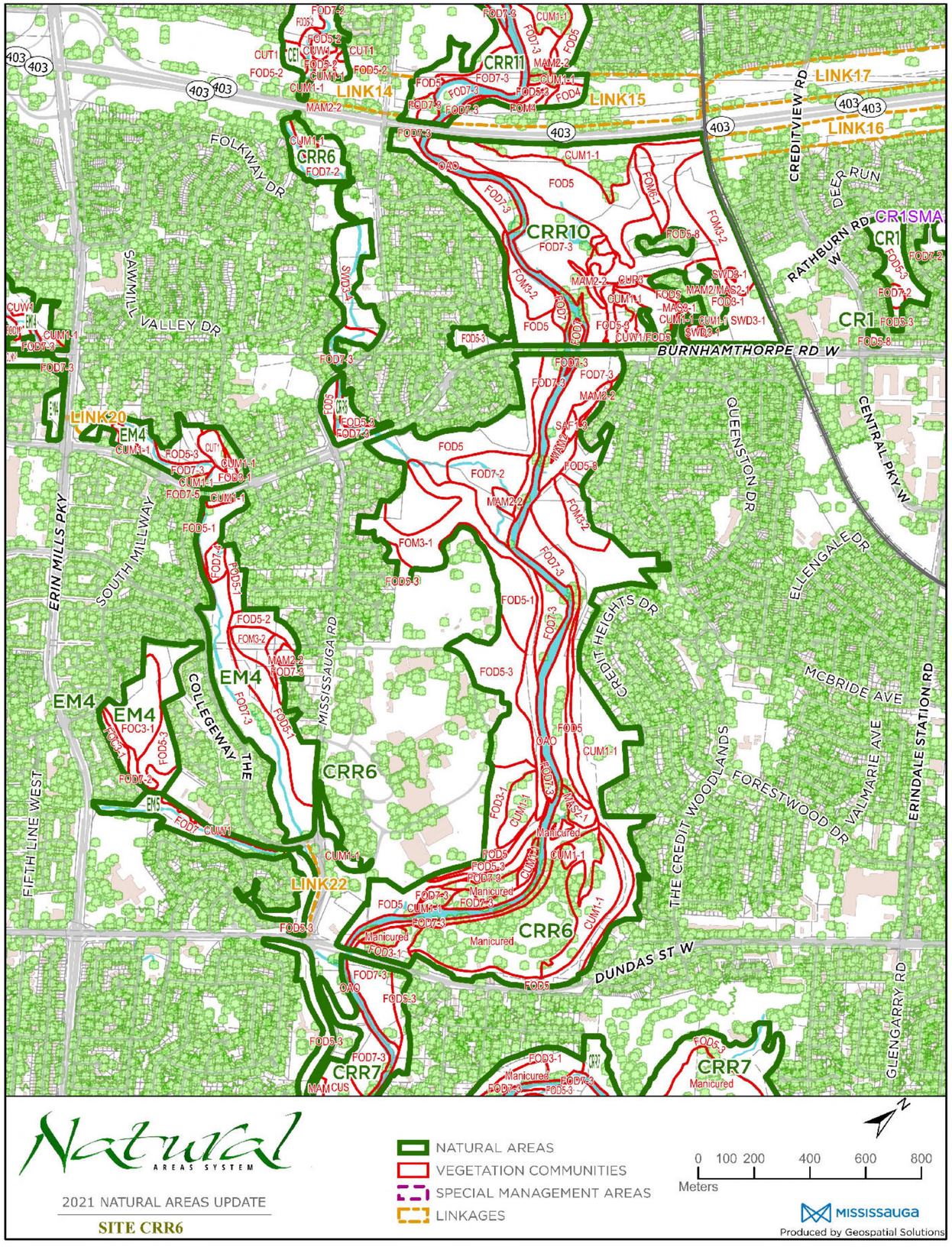
For the purpose of this study, Species at Risk (SAR) are defined as species listed as Endangered (END), Threatened (THR), or Special Concern (SC) under the Provincial Endangered Species Act (ESA) and/or the Federal Species at Risk Act (SARA). Other Species of Conservation Concern (SOCC) are those with Global ranks of G1-G3 and/or Subnational/Provincial ranks of S1-S3, and species considered rare within the Credit Valley Conservation Authority (CVC) watershed (L-Ranks 2017) or in Eco-region 7E-4 (Oldham, 2017), where those species were not already considered under the SAR assessment noted above.

Species included in the screening assessment include those provided by secondary sources and those documented via direct observations by Aquafor Beech Limited. **A total of 12 SAR and SOCC were determined to be present or have some potential to be present in the study area.** These species include:

1. Butternut – Endangered
2. Eastern Wood-Pewee – Special Concern
3. Wood Thrush – Special Concern
4. Midland Painted Turtle – Special Concern
5. Northern Map Turtle – Special Concern
6. Snapping Turtle – Special Concern
7. Blanding's Turtle – Threatened
8. Eastern Small-footed Myotis – Endangered
9. Little Brown Myotis – Endangered
10. Northern Myotis – Endangered
11. Tricolored Bat – Endangered
12. Rapids Clubtail – Endangered

VEGETATION COMMUNITY CLASSIFICATION

Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403



Ecological Land Classification (ELC) is a standard practice used to describe, identify, classify and map vegetation communities on the landscape.

In total, 22 vegetation communities are within the study area. The 22 vegetation community types are included within the categories summarized in the table below.

Code	Vegetation Community
CUM	Cultural Meadow
CUP	Plantation
CUW	Cultural Woodland
FOD	Deciduous Forest
FOM	Mixed Forest
MAM	Meadow Marsh
MAS	Shallow Marsh
OAO	Open Aquatic
SAF	Floating-leaved Shallow Aquatic
SWD	Deciduous Swamp

FISHERIES & AQUATIC HABITAT

To assess the existing fisheries and aquatic habitat within the study area the following studies were undertaken:

- Aquatic community assessments of historic data;
- SAR screening and potential habitat identification; and,
- Field confirmation of site conditions.

Summary of Fish Community Assessment

Scientific Name	Common Name (Family)
Petromyzontidae	Lamprey
Clupeidae	Herring
Salmonidae	Salmon and Trout
Esocidae	Pike
Umbridae	Mudminnow
Catostomidae	Sucker
Cyprinidae	Minnow
Ictaluridae	Catfish
Cyprinodontidae	Killifish
Gasterosteidae	Stickleback
Centrarchidae	Sunfish
Percidae	Perch
Cottidae	Sculpin

Key Findings:

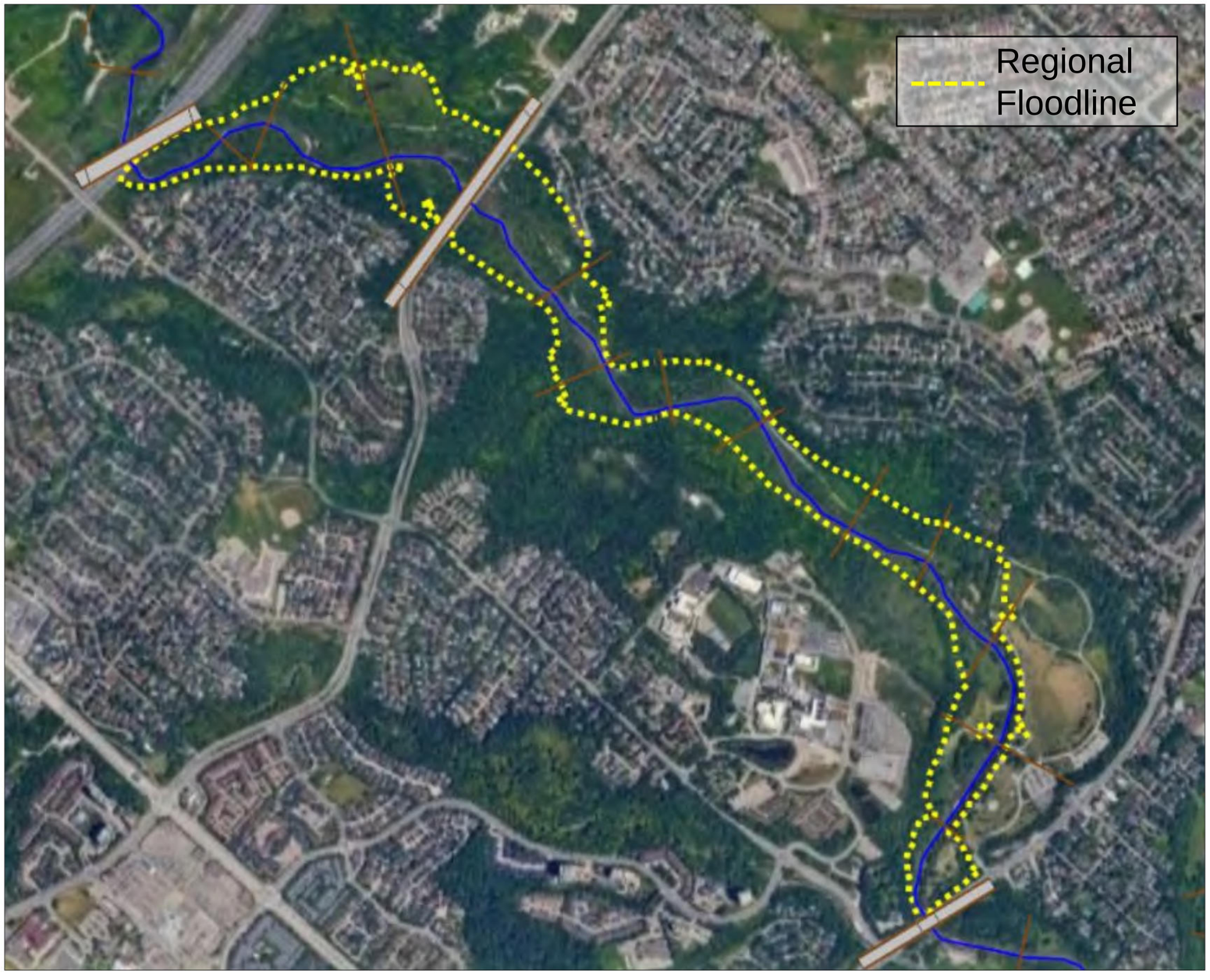
- Aquatic SAR identified within the subwatershed include American Brook Lamprey & Redside Dace.
- The fish species present within the study area are quite diverse and predominantly coolwater species.
- Migratory salmonids such as Pacific Salmon, Atlantic Salmon, Rainbow Trout and Brown Trout use the system to spawn and rear.
- Habitat quality and quantity vary throughout the study area and is largely dependent on surrounding land uses.
- No fish barriers were observed throughout the study area.
- There are opportunities to improve fish habitat such as addition of rock vanes, and rerouting of pedestrian trails.

Representative aquatic habitat photo

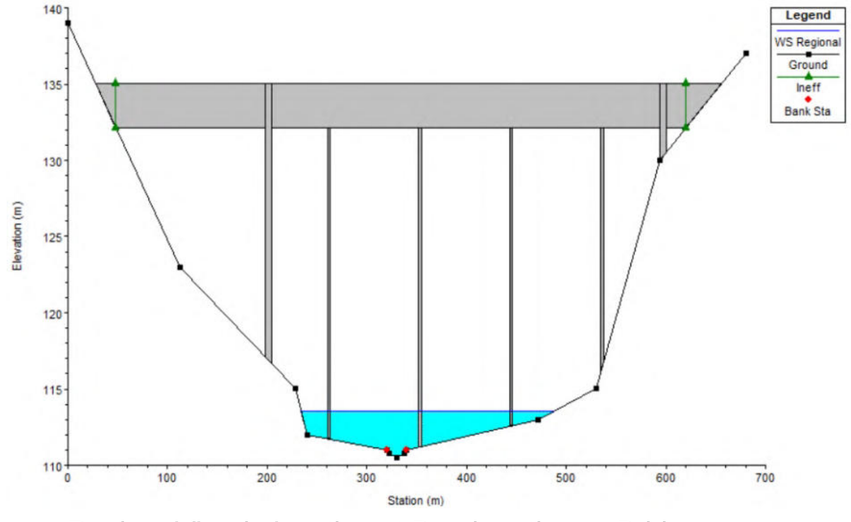
HYDROLOGY AND EXISTING FLOODING PROFILE

Flows under various rainfall events are presented in the figure below along with the Regional floodline extents.

The existing floodplain is generally contained within parklands between Dundas Street West and Highway 403.



Profile	Flow Rate (m^3/s)
2-Year	90
5-Year	202
10-Year	264
25-Year	353
50-Year	428.2
100-Year	510.8
Regional	732.6



Regional flood elevation at Burnhamthorpe Bridge

CULTURAL HERITAGE

A background historical research study was undertaken to identify areas of cultural heritage significance. A total of four (4) Cultural Heritage Landscapes (C.H.L.s) were identified, sixty-five (65) Built Heritage Resources (B.H.R.s) and one (1) potential B.H.R. were identified.

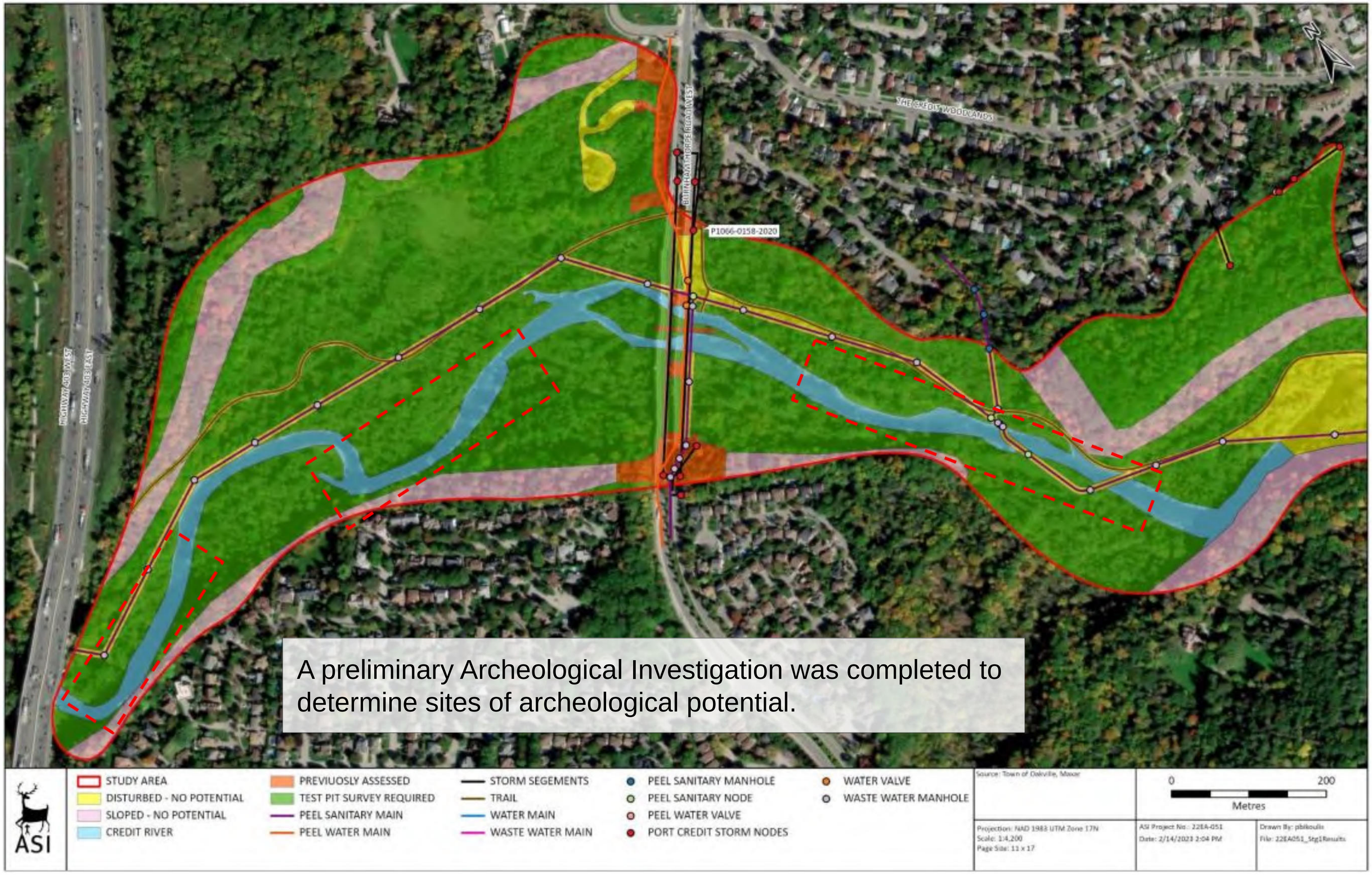
Recommendation: Construction activities should be suitably planned to avoid negative impacts on these sites including avoidance measures such as temporary fencing and buffer zones.

Study Area overlaid on 1859 *Tremaine's Map of the County of Peel* (Tremaine, 1859)

Pedestrian Bridge and covered picnic area within Erindale Park (A.S.I., 2023)

ARCHAEOLOGY

Credit River Erosion Control – EA & Design



A preliminary Archeological Investigation was completed to determine sites of archeological potential.

ARCHAEOLOGY

Credit River Erosion Control – EA & Design

Conclusions:

- A Baseline Conditions review was undertaken for entire study area
- A Comprehensive Stage 1 assessment will be undertaken for identified project sites (x8)
- Parts of the Study Area exhibit archaeological potential and will require Stage 2 survey prior to any proposed construction

STUDY AREA
CEMETERY
DISTURBED - NO POTENTIAL
SLOPED - NO POTENTIAL
CREDIT RIVER
TEST PIT SURVEY REQUIRED
PEEL SANITARY MAIN
PEEL WATER MAIN
STORM SEGEMENTS
TRAIL
ICE BREAKERS
WATER MAIN
WASTE WATER MAIN
ICE BREAKERS
PEEL SANITARY MANHOLE
PEEL SANITARY NODE
PEEL WATER NODE
PEEL WATER VALVE
PORT CREDIT STORM NODES
WATER NODE
WATER VALVE
WASTE WATER MANHOLE

Source: Town of Oakville, Maxar

0 200
Metres

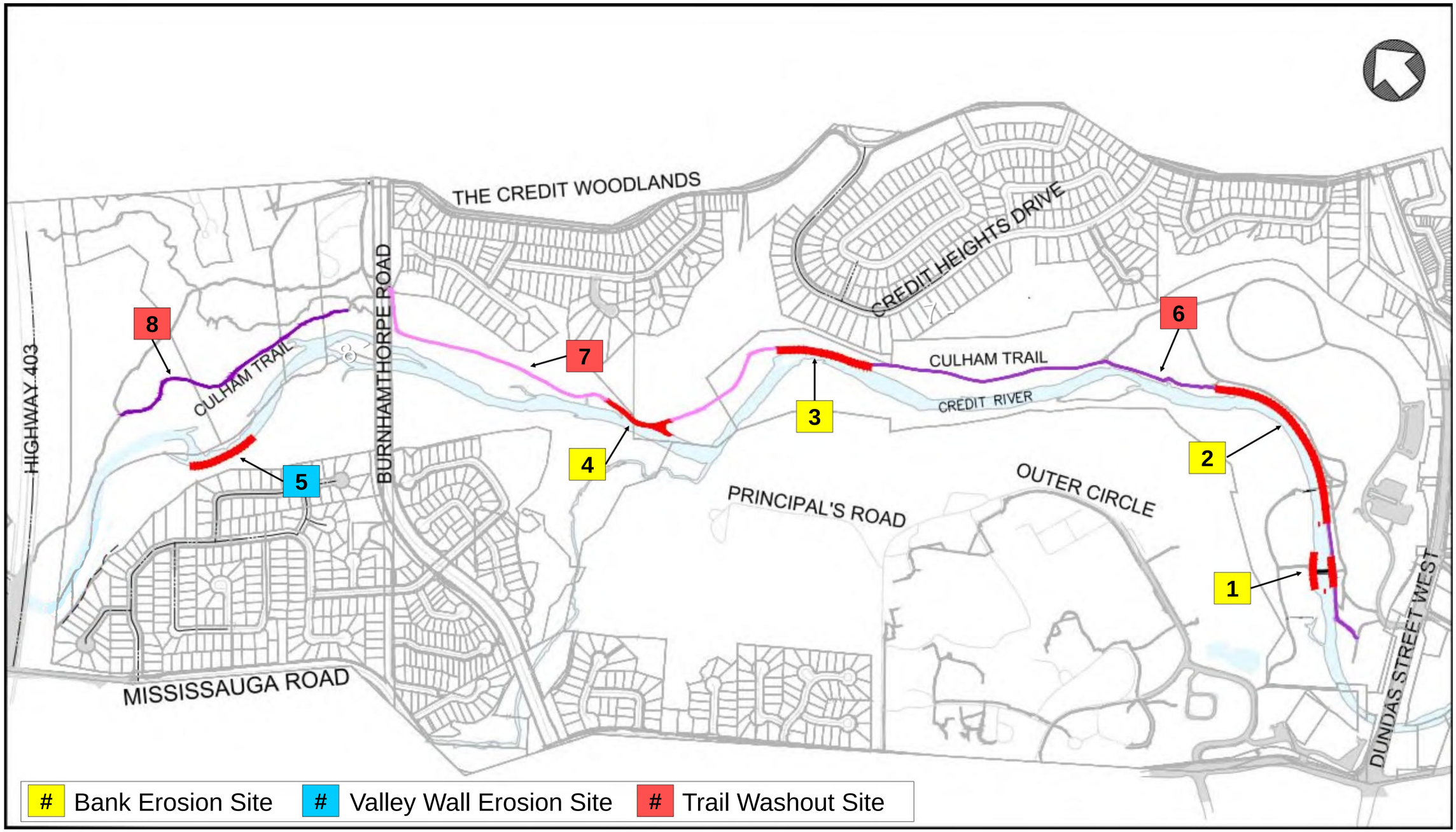
Projection: NAD 1983 UTM Zone 17N
Scale: 1:5,000
Page Size: 11 x 17

ASI Project No.: 22EA-051
Date: 2/14/2023 2:04 PM

Drawn By: pbikoulis
File: 22EA051_Stg1Results

EROSION INVENTORY

The main branch of Credit River flows south-east within the study area. The river is experiencing accelerated channel erosion due in part to ongoing urbanization. For the purpose of this study, the study area was divided into **eight (8)** erosion risk sites, including bank erosion sites, valley wall erosion sites, and trail washout sites.



EVALUATION CRITERIA

The following criteria are used to evaluate each alternative. It will help determine which alternative should be selected as the preliminary preferred alternative.

Comment sheets are provided to collect public feedback on the evaluation criteria and preliminary evaluation.

Physical and Natural Criteria

Erosion	Rate of Erosion, slope failures, and loss of tablelands
Water Quality	Impact on water quality
Aquatic Habitat	Impact on contributing aquatic habitat and linkage
Terrestrial Habitat	Impact on connectivity, diversity, and quantity/quality of habitat
Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees

Technical and Engineering Criteria

Impact on Existing Infrastructure	Protection or potential failure of infrastructure (bridges, trails, storm outfalls)
Constructability	Easiness to access, move equipment and construct
Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated

Social and Cultural Criteria

Public Safety	Impact on public safety
Landowner Impacts	Impact on adjacent private properties and the City-owned Park
Benefit to Community	Access to trails, enjoyment of surrounding lands
Aesthetic Value	Impact on existing and proposed aesthetic value
Archaeology and Cultural Heritage	Impact on lands that have archaeological or heritage resources

Economic Criteria

Capital Costs	One time cost to City
Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures

EVALUATION APPROACH

Each erosion site will be specifically evaluated to determine the preferred method for rehabilitation.

The evaluation uses a ranking scheme which accounts for Physical and Natural Environment, Social / Cultural Environment, Economic Environment and Technical / Engineering Considerations.

A preliminary ranking has been applied to each alternative for each reach. The alternative with the highest score will define which alternative is preferred for each erosion site.

The ranking score has been normalized to provide equal weighting for each category of evaluation criteria, with a maximum score of 2.5 per category, and a maximum total score of 10.

Comment Sheets are provided to gain public input on the preliminary ranking. The ranking will be finalized once public input has been incorporated.

An example is illustrated in the adjacent table:

Ranking Scale						
Unideal / Most Negative Impact	0	1	2	3	4	Ideal / Most Positive Impact

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Dundas Street West to Highway 403

Site 2 Erindale Park Bank Restoration		Alternative		
EVALUATION CRITERIA		Do Nothing	Armourstone Wall & Weirs	Armourstone Wall, Weirs & Trail Decommissioning
		Score	Score	Score
Physical and Natural Criteria		***0.88***	***1.50***	***2.13***
Erosion	Rate of erosion, slope failures, and loss of tablelands	**0**	**4**	**4**
Water Quality	Impact on water quality	**0**	**2**	**3**
Aquatic Habitat	Impact on contributing aquatic habitat	**0**	**2**	**3**
Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	**4**	**2**	**4**
Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	**3**	**2**	**3**
Social and Cultural Criteria		***1.25***	***1.75***	***1.75***
Public Safety	Impact on public safety	**0**	**4**	**4**
Landowner Impacts	Impact on adjacent private properties and the City-owned Park	**0**	**1**	**1**
Benefit to Community	Access to trails, enjoyment of surrounding lands	**4**	**3**	**1**
Aesthetic Value	Impact on existing and proposed aesthetic value	**2**	**3**	**4**
Archaeological Impacts	Impact on lands that have archaeological potentials	**4**	**4**	**4**
Technical and Engineer Criteria		***1.25***	***1.67***	***1.88***
Impact on Existing Infrastructure	Protection or potential failure of infrastructure (bridges, trails, and storm outfalls)	**1**	**3**	**4**
Constructability	Easiness to access, move equipment and construct	**4**	**2**	**1**
Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	**1**	**3**	**4**
Economic Criteria		***1.25***	***1.25***	***1.25***
Capital Costs	One time cost to City	**4**	**1**	**0**
Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	**0**	**3**	**4**
TOTAL SCORE		**4.63**	**6.25**	**7.00**

Highest Score = Preferred Alternative

SITE #1 – ICE CONTROL STRUCTURE

Existing conditions & erosion risks (Alternative #1 – Do Nothing)

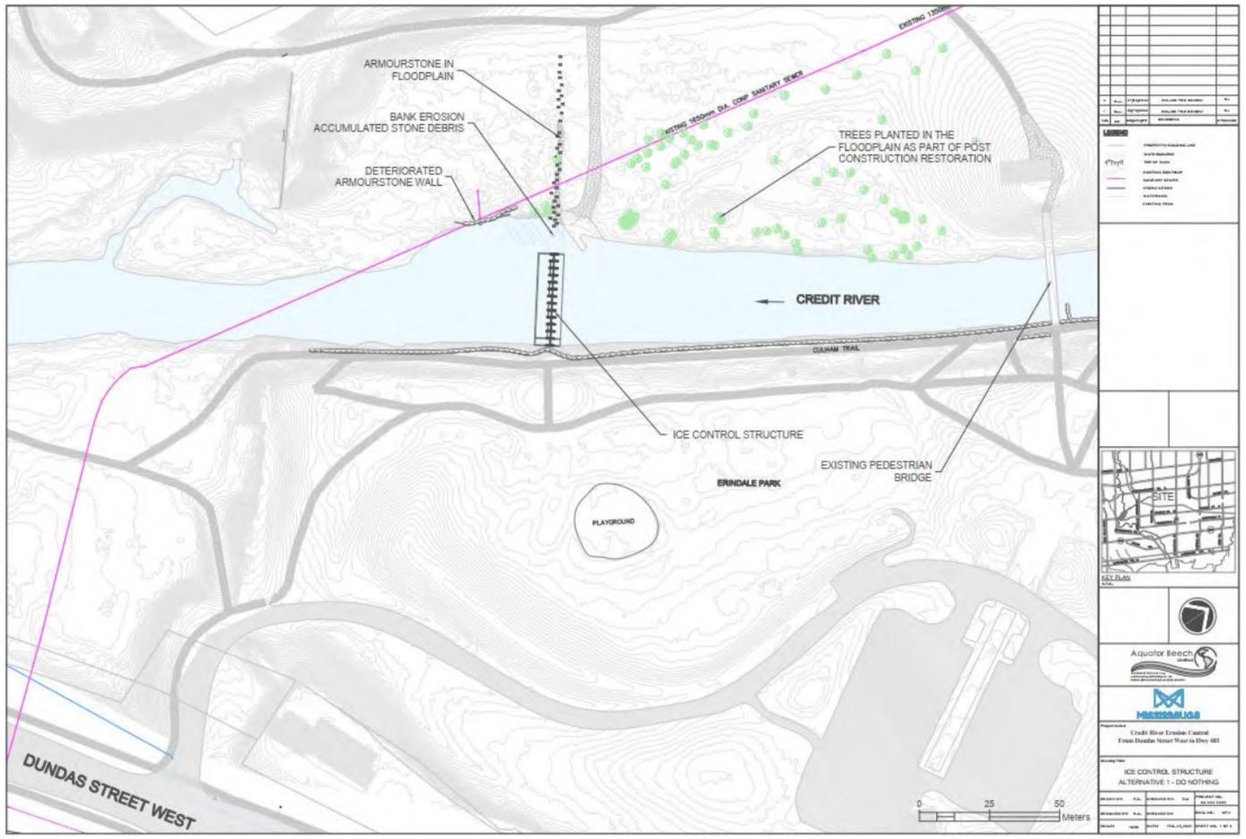
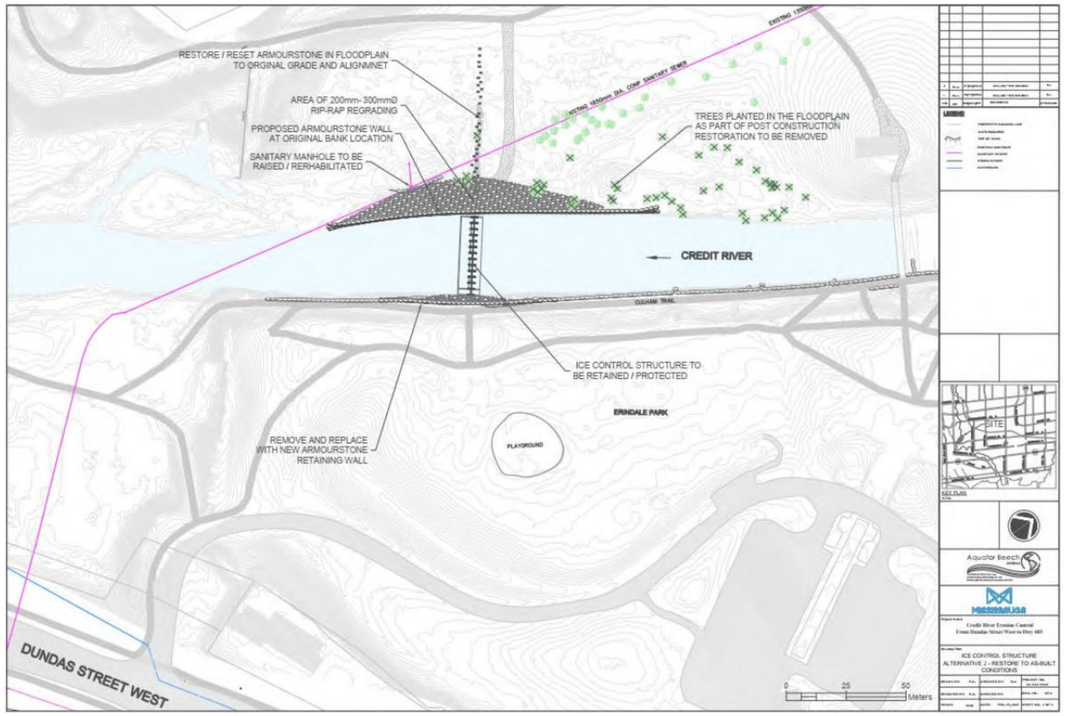


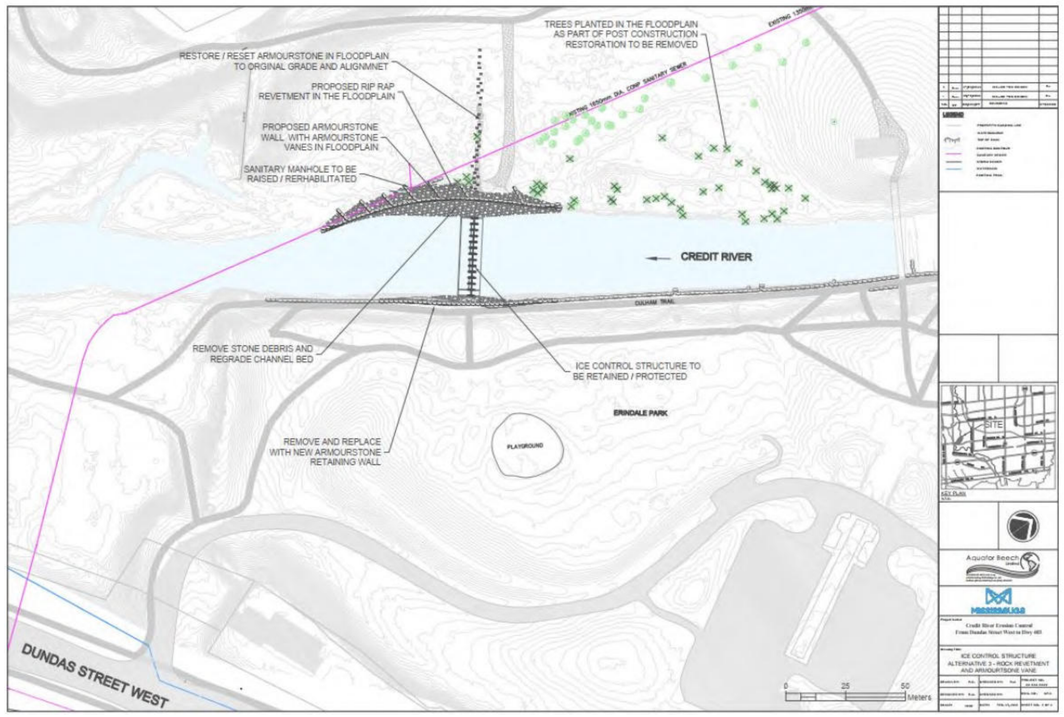
Photo A – Concrete ice control structure in Erindale Park with downstream debris build-up

Photo B – Outflanked ice control structure allowing flow bypass

Proposed restoration alternatives



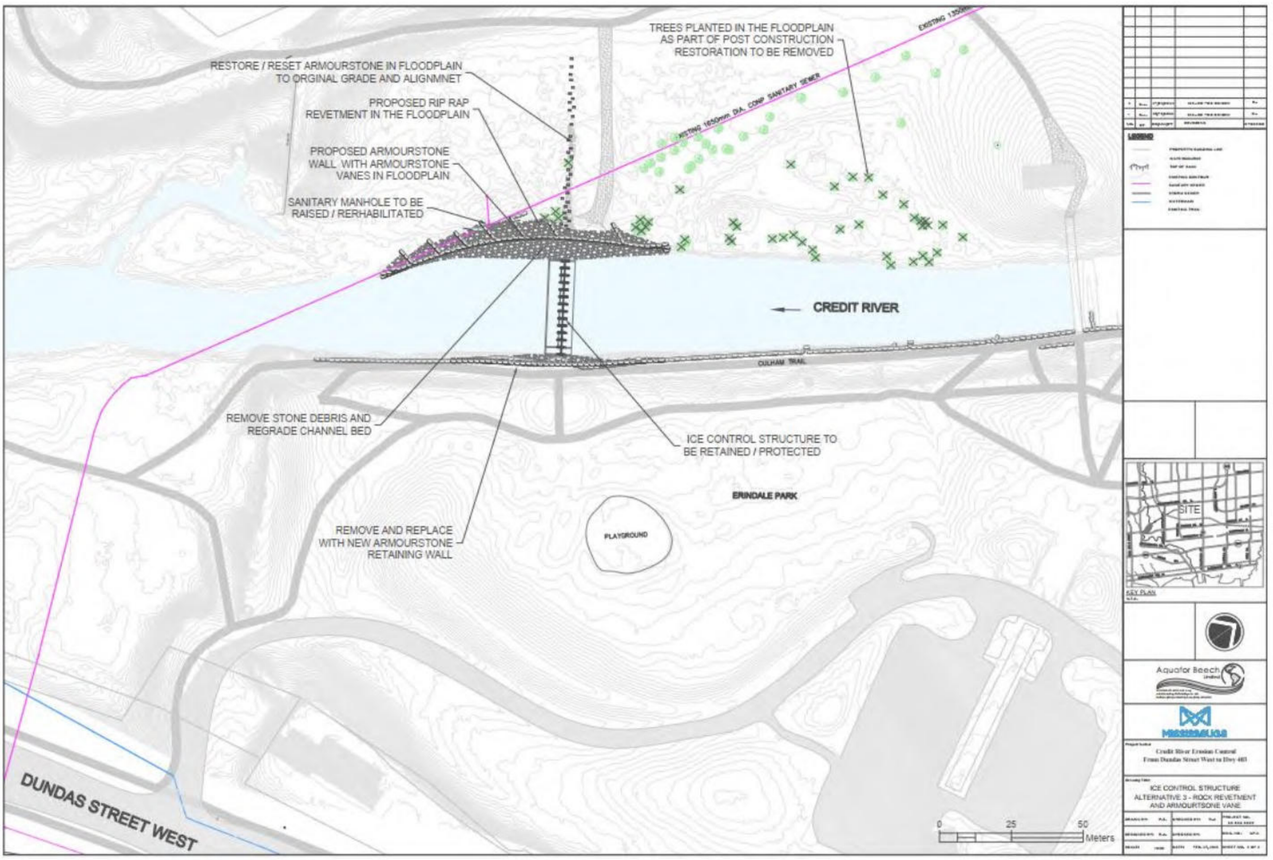
Alternative #2: Restore to As-Built



Alternative #3: Retain By-Pass Channel

SITE #1 – POTENTIAL PREFERRED ALTERNATIVE

Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403



		Alt 1: Do Nothing	Alt 2: Restore to As-Built	**Alt 3: Retain By-Pass Channel**
Evaluation Criteria	Physical and Natural			
	Social and Cultural			
	Technical and Engineer			
	Economic			
Score		4.54	5.88	**6.92**
Cost Estimate		-	$2.1M	$2.2M

Preliminary Preferred Alternative: Retain By-Pass Channel

- Retain Ice Control Structure
- Construct armourstone wall along west bank with armourstone vanes extending into floodplain
- Maintain narrow flow bypass channel between west bank and Ice Control Structure to improve conveyance capacity
- Remove and replace failing armourstone retaining wall on east bank
- Reset armourstone blocks in floodplain to intercept ice floes
- Remove trees in floodplain ice storage area to reinstate ice storage capacity
- Restores functionality of Ice Control Structure
- Maintains channel width to increase longevity of design

SITE #2 – ERINDALE PARK BANK RESTORATION

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Dundas Street West to Highway 403

Existing conditions & erosion risks (Alternative #1 – Do Nothing)

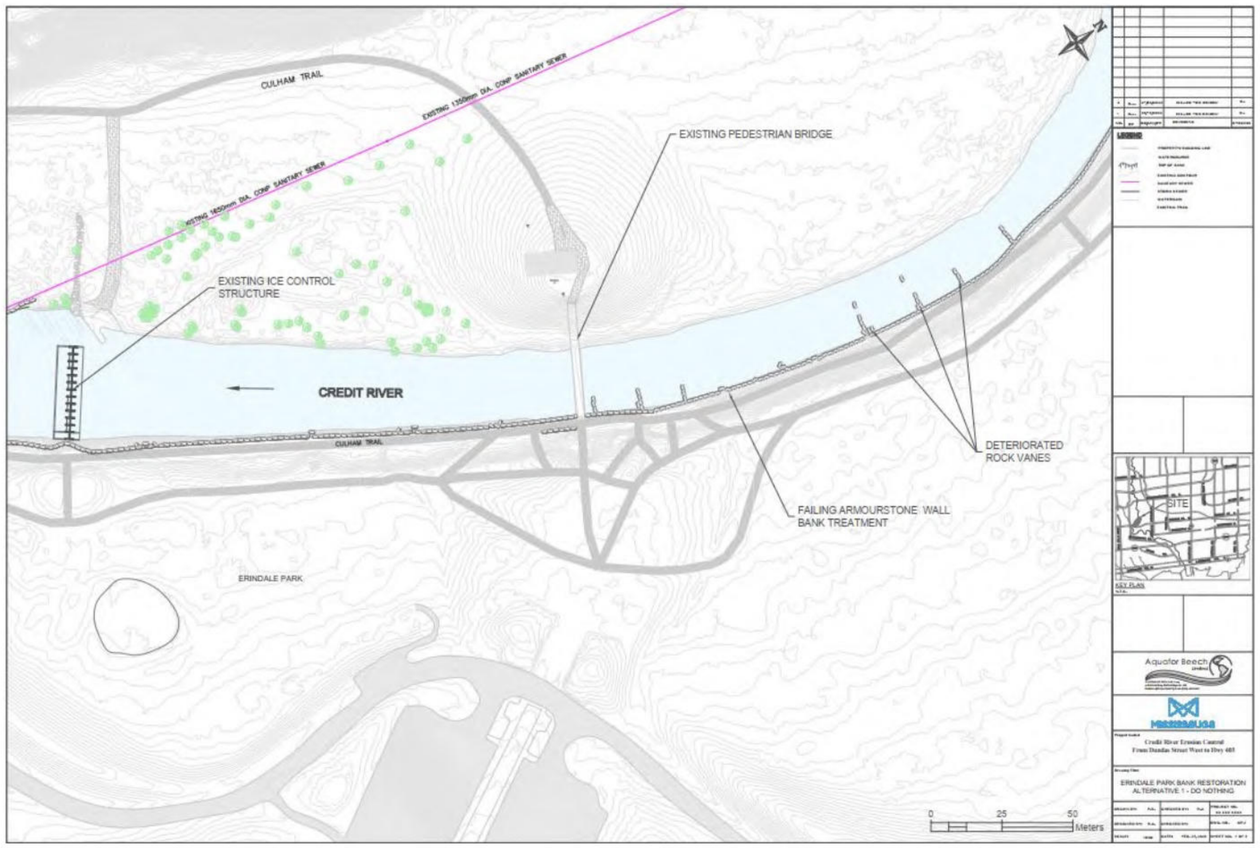
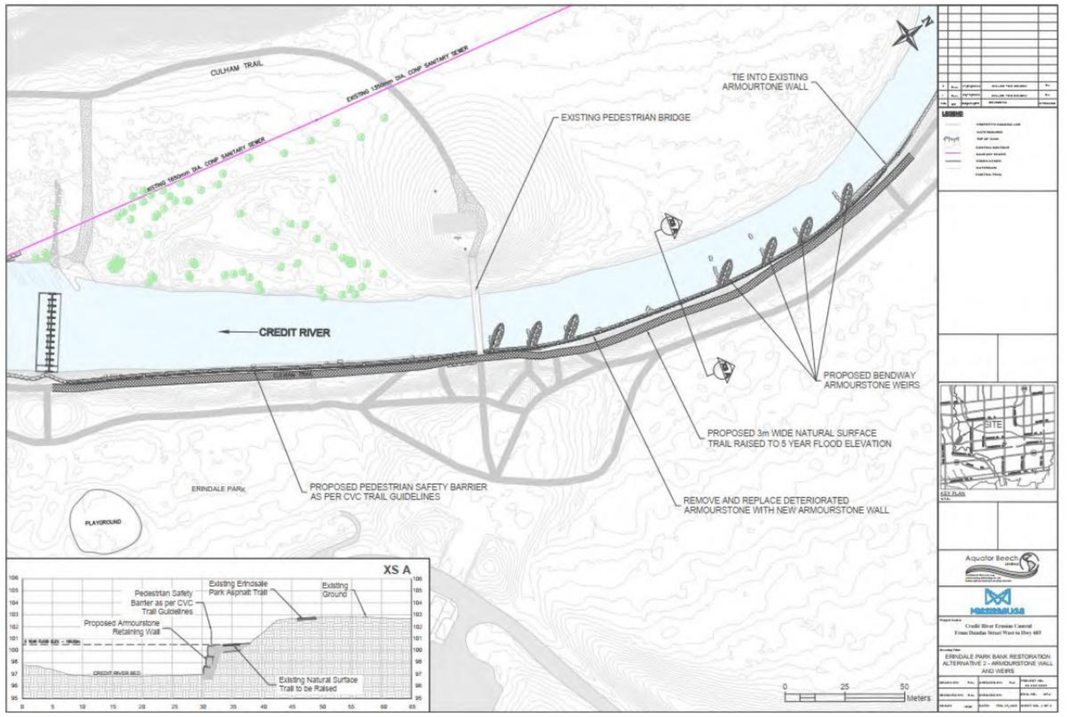


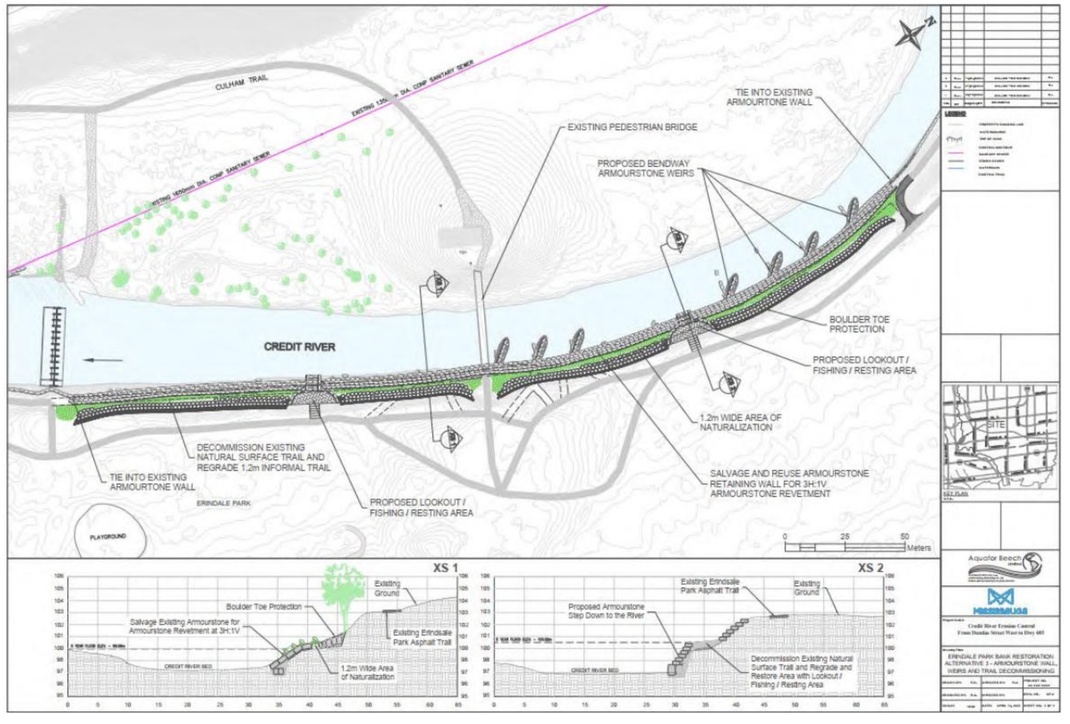
Photo A – Failing armourstone retaining wall adjacent to trail

Photo B – Failing armourstone retaining wall and rock vane

Proposed restoration alternatives



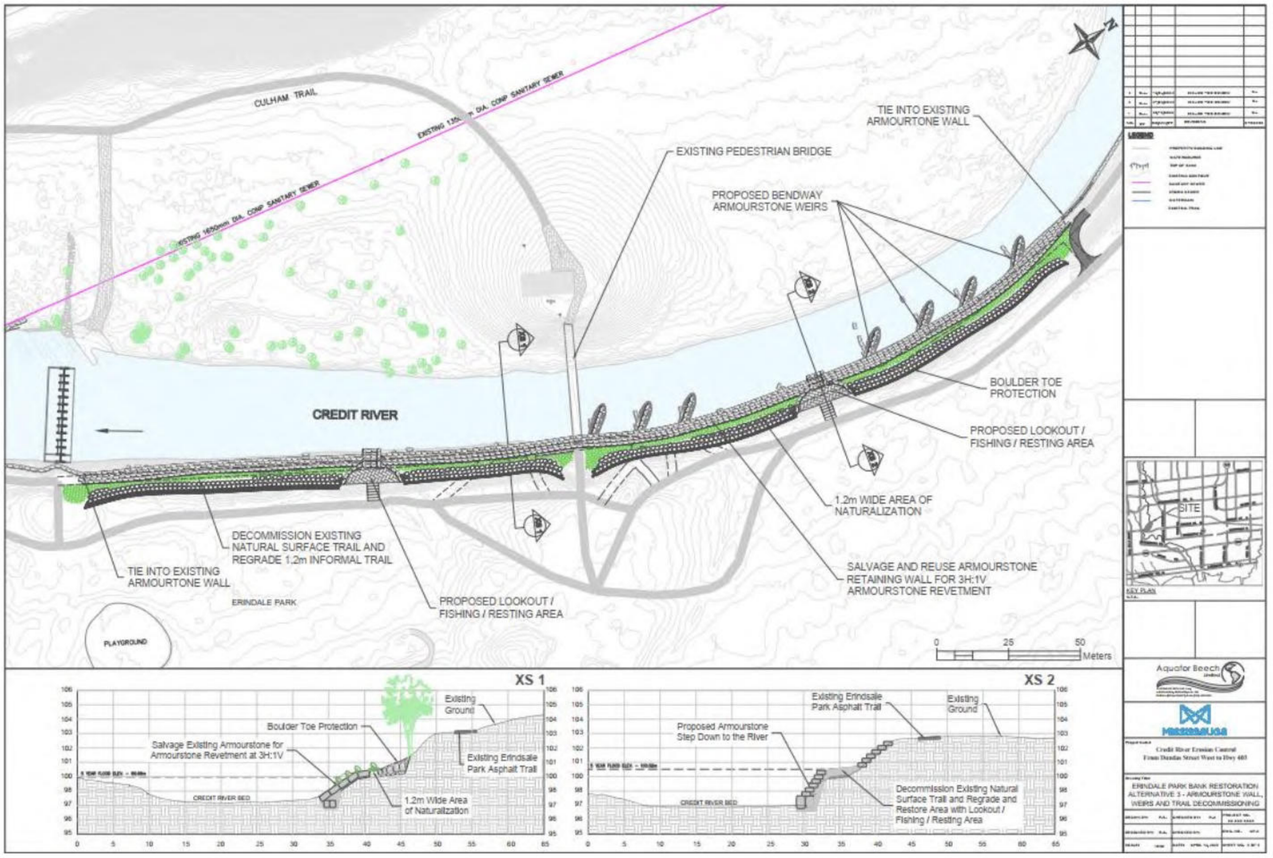
Alternative #2: Replace Deteriorated Armourstone Wall



Alternative #3: Replace with Revetment and Buttress

SITE #2 – POTENTIAL PREFERRED ALTERNATIVE

Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403



		Alt 1: Do Nothing	Alt 2: Replace Wall	**Alt 3: Revetment and Buttress**
Evaluation Criteria	Physical and Natural			
	Social and Cultural			
	Technical and Engineer			
	Economic			
Score		4.63	6.29	**7.00**
Cost Estimate		-	$3.3M	$3.4M

Preliminary Preferred Alternative: Revetment and Buttress

- Remove deteriorated armourstone wall
- Salvage armourstone for construction of stone revetment along river bank extending beyond the 5-year flood elevation to reduce the frequency of overbank flooding
- Decommission existing natural surface trail at top of bank and regrade area of naturalization
- Redirect pedestrian traffic to adjacent trail at top of slope to reduce safety risks due to flooding and ice floes
- Includes lookouts and fishing / resting areas to maintain views of river
- Bendaway armourstone weirs redirect flows to reduce bank erosion and enhance aquatic habitat

SITE #3 – CREDIT HEIGHTS BANK RESTORATION

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Dundas Street West to Highway 403

Existing conditions & erosion risks (Alternative #1 – Do Nothing)

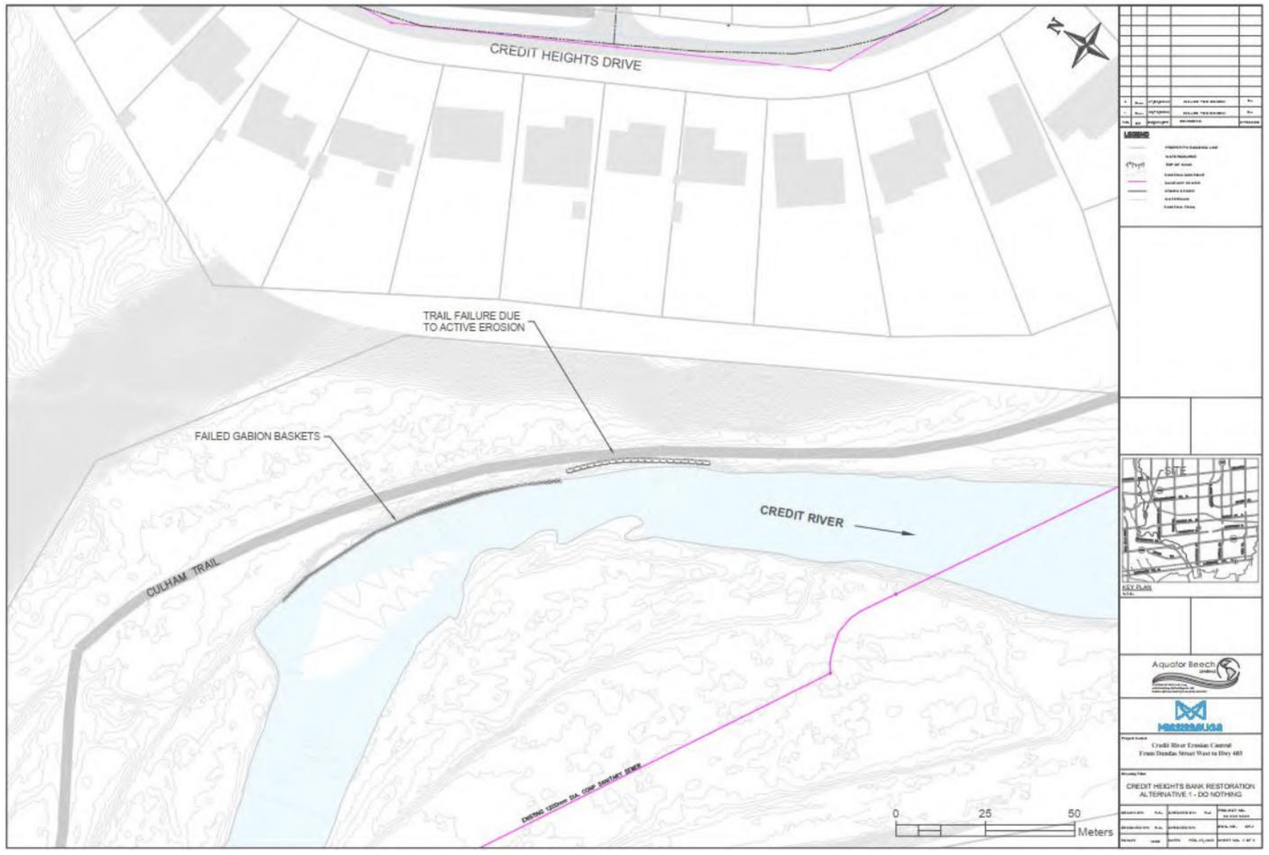



Photo A – Failed gabion basket bank treatments falling into river

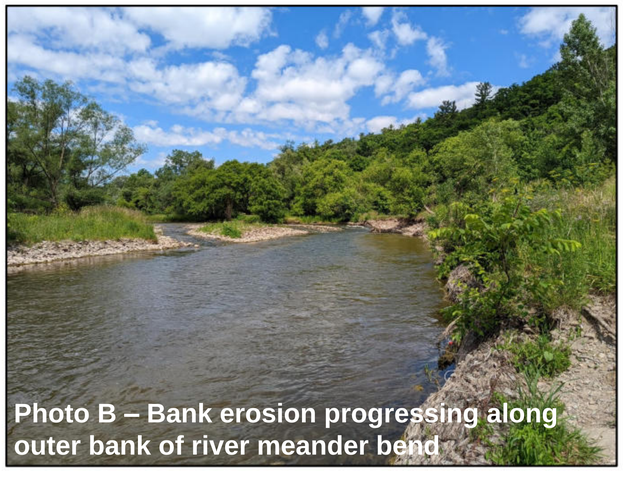
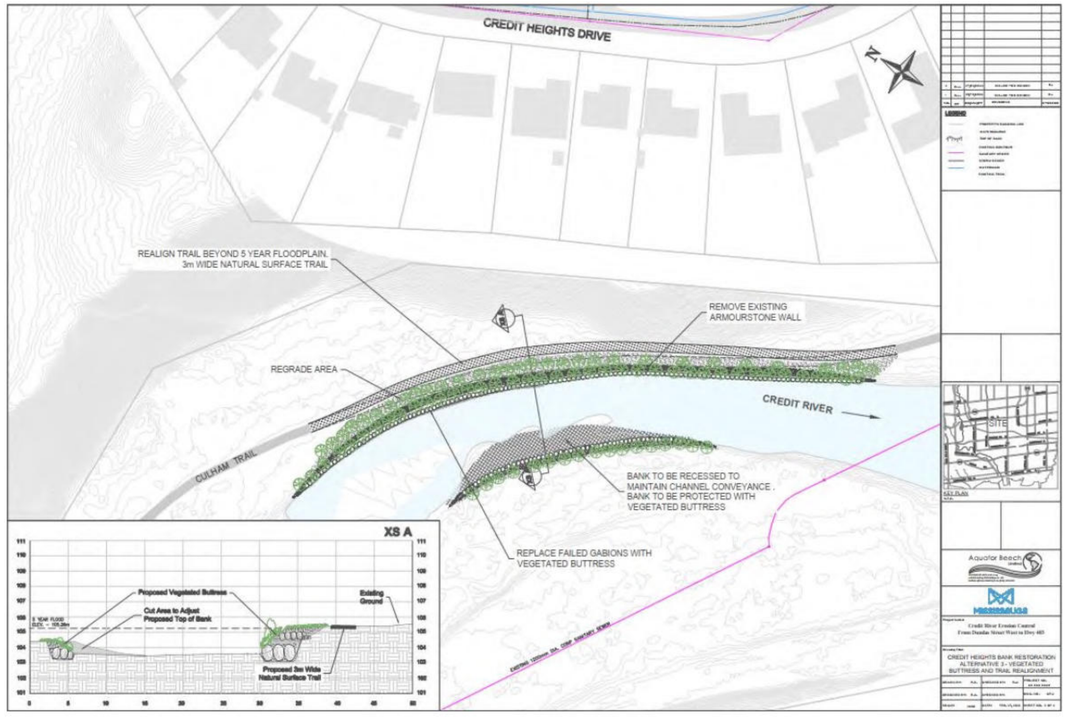


Photo B – Bank erosion progressing along outer bank of river meander bend

Proposed restoration alternatives

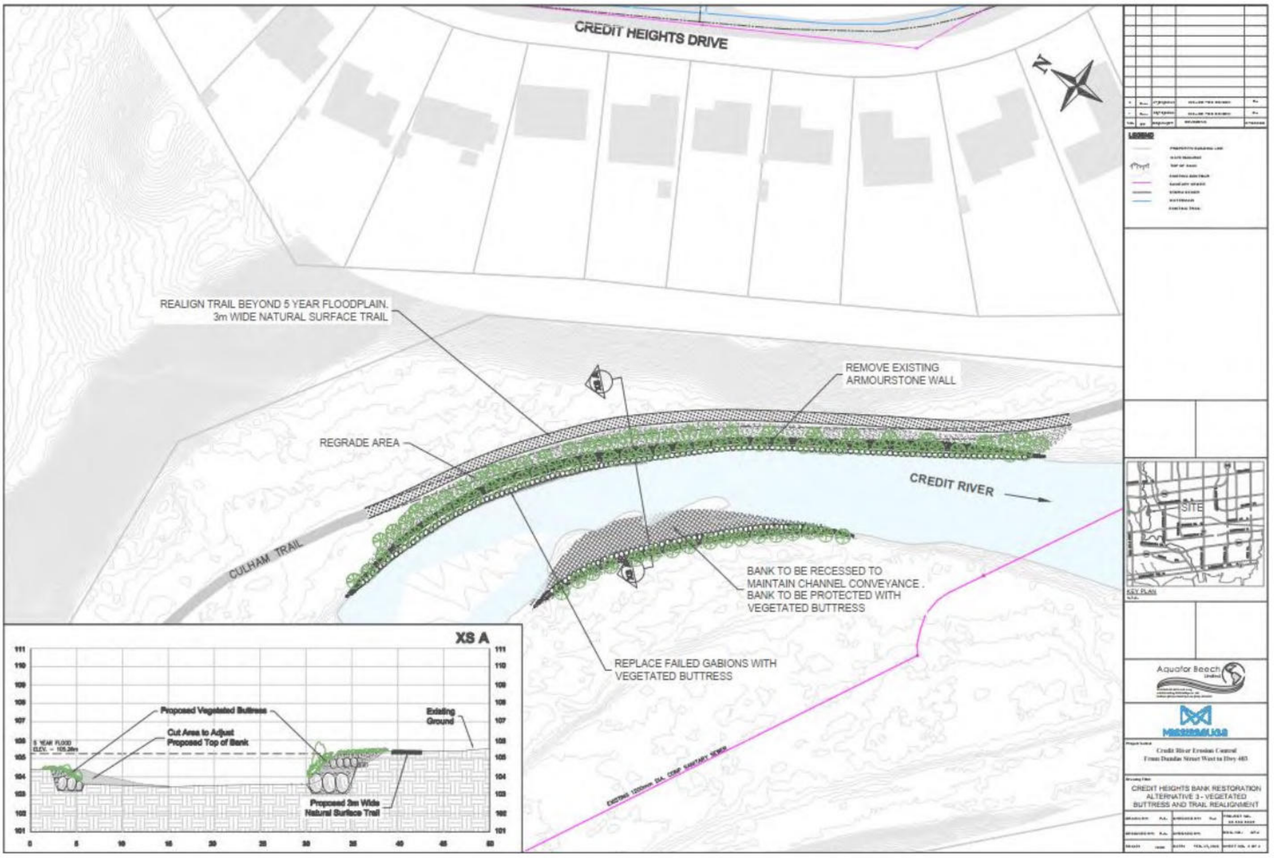
Alternative #2: Replace Gabion Baskets with Armourstone Wall



Alternative #3: Replace Gabion Baskets with Vegetated Buttress

SITE #3 – POTENTIAL PREFERRED ALTERNATIVE

Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403



		Alt 1: Do Nothing	Alt 2: Armourstone Wall	**Alt 3: Vegetated Buttress**
Evaluation Criteria	Physical and Natural			
	Social and Cultural			
	Technical and Engineer			
	Economic			
Score		4.83	6.23	**6.31**
Cost Estimate		-	$2.1M	$2.2M

Preliminary Preferred Alternative: Replace Gabion Baskets with Vegetated Buttress

- Remove failed gabion baskets
- Construct vegetated buttress along outer bank of river to mitigate erosion and protect trail
- Realign trail beyond 5-year floodplain to reduce frequency of flooding and wash-out
- Potential regrading of inner bank to maintain channel width and conveyance capacity
- Vegetated buttress provides habitat enhancement opportunities with native plantings along the bank

SITE #4 – ASHINGTON COURT RETAINING WALL

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Dundas Street West to Highway 403

Existing conditions & erosion risks (Alternative #1 – Do Nothing)

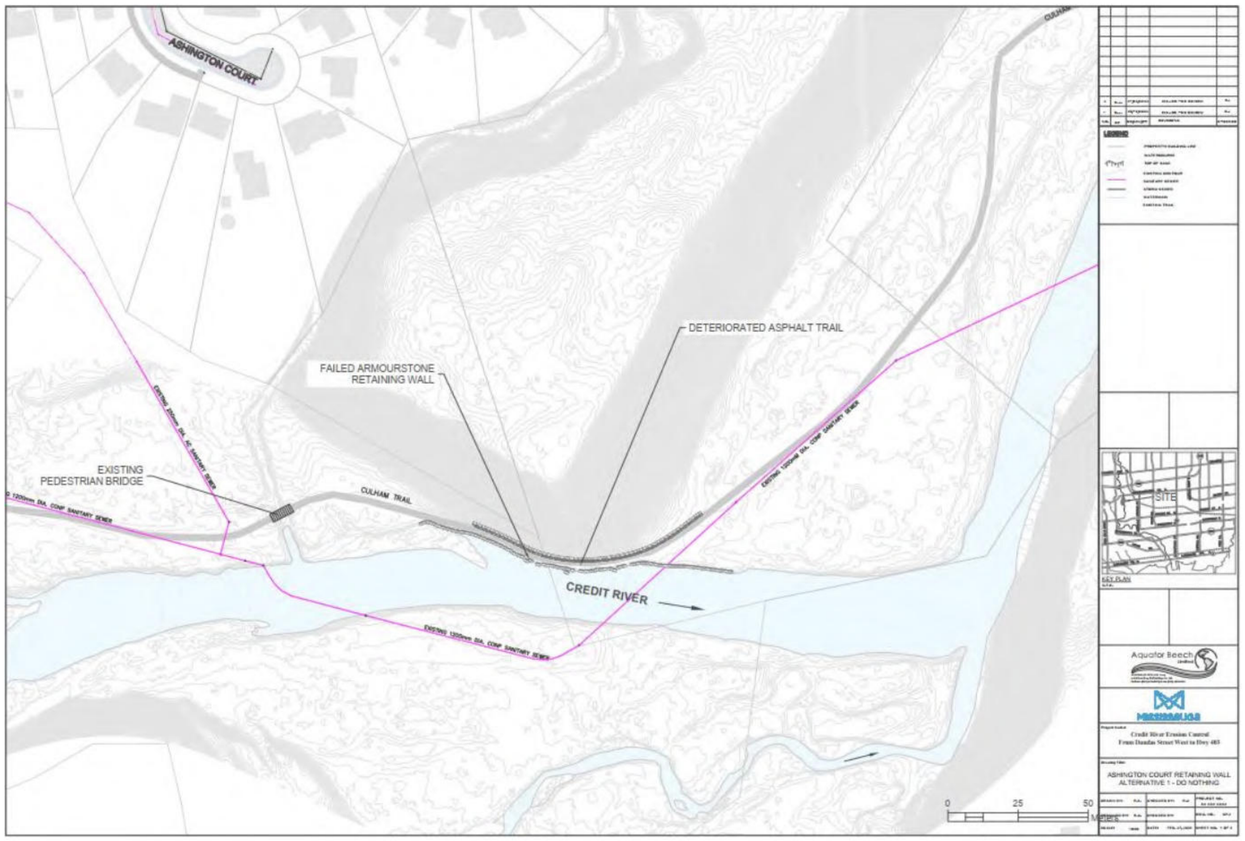
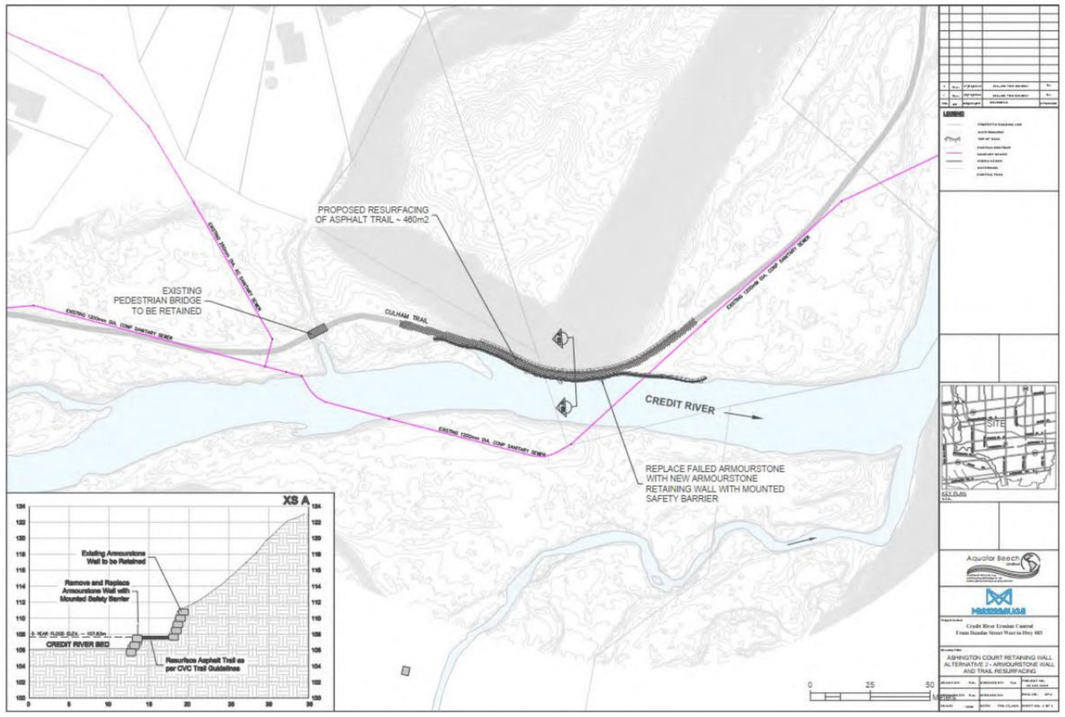


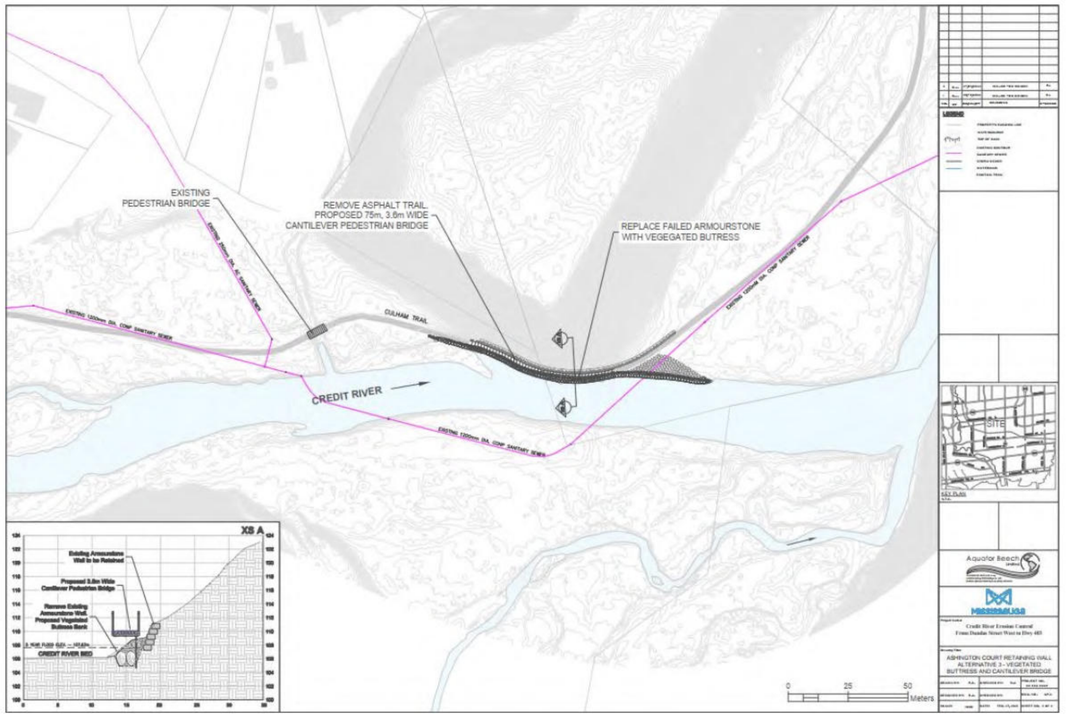

Photo A – Trail pinch point between armourstone retaining wall and Credit River


Photo B – Failed bank protection and deteriorating trail

Proposed restoration alternatives



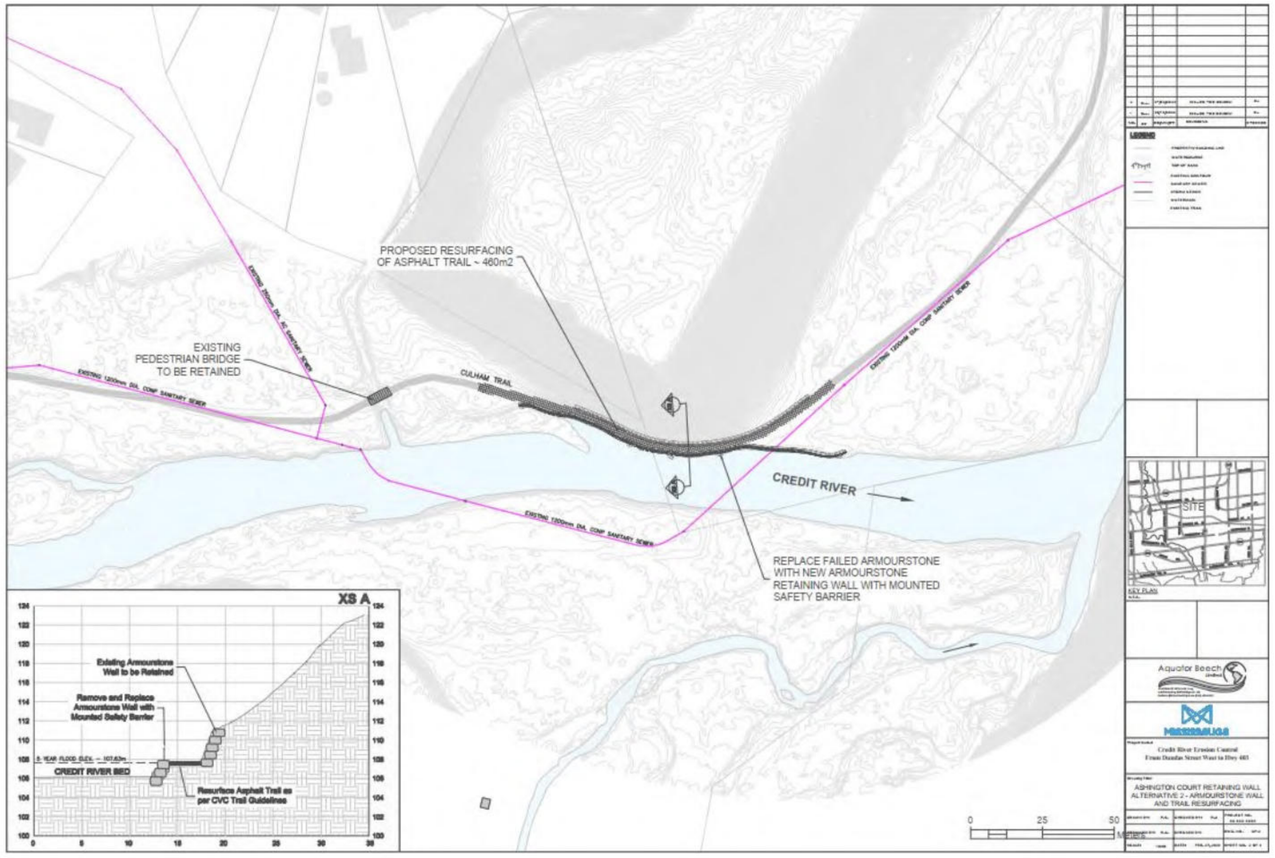
Alternative #2: Replace Armourstone Wall



Alternative #3: Cantilevered Trail

SITE #4 – POTENTIAL PREFERRED ALTERNATIVE

Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403



		Alt 1: Do Nothing	**Alt 2: Replace Wall**	Alt 3: Cantilevered Trail
Evaluation Criteria	Physical and Natural			
	Social and Cultural			
	Technical and Engineer			
	Economic			
Score		4.29	**6.04**	5.10
Cost Estimate		-	$1.2M	$2.8M

Preliminary Preferred Alternative: Replace Armourstone Wall

- Retain existing armourstone wall protecting slope behind trail
- Replace armourstone wall providing bank protection between the river and trail
- Wall replacement will include redesign to improve long-term stability and increase elevation to reduce frequency of flooding
- Install a safety barrier along the top of the armourstone bank protection to improve public safety

SITE #5 – SUMMIT COURT SLOPE

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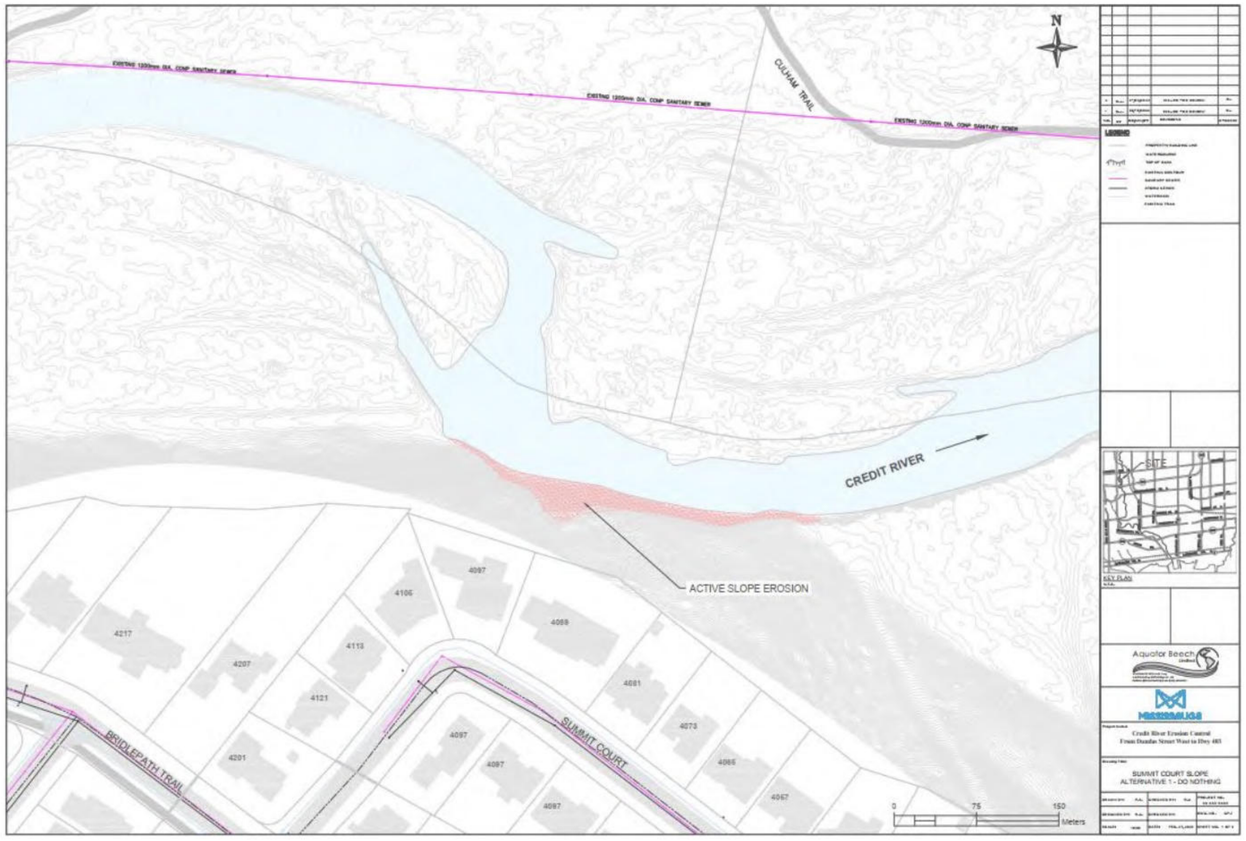
Dundas Street West to Highway 403

Existing conditions & erosion risks (Alternative #1 – Do Nothing)



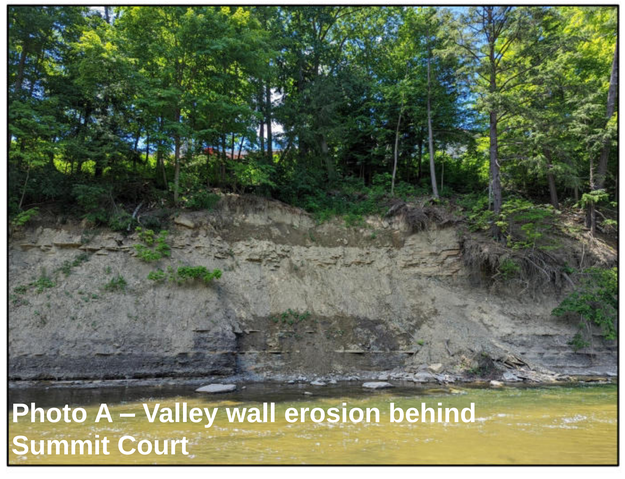


Photo A – Valley wall erosion behind Summit Court

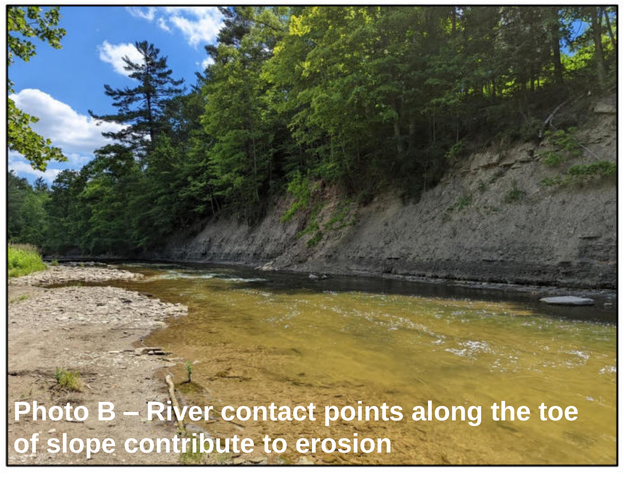
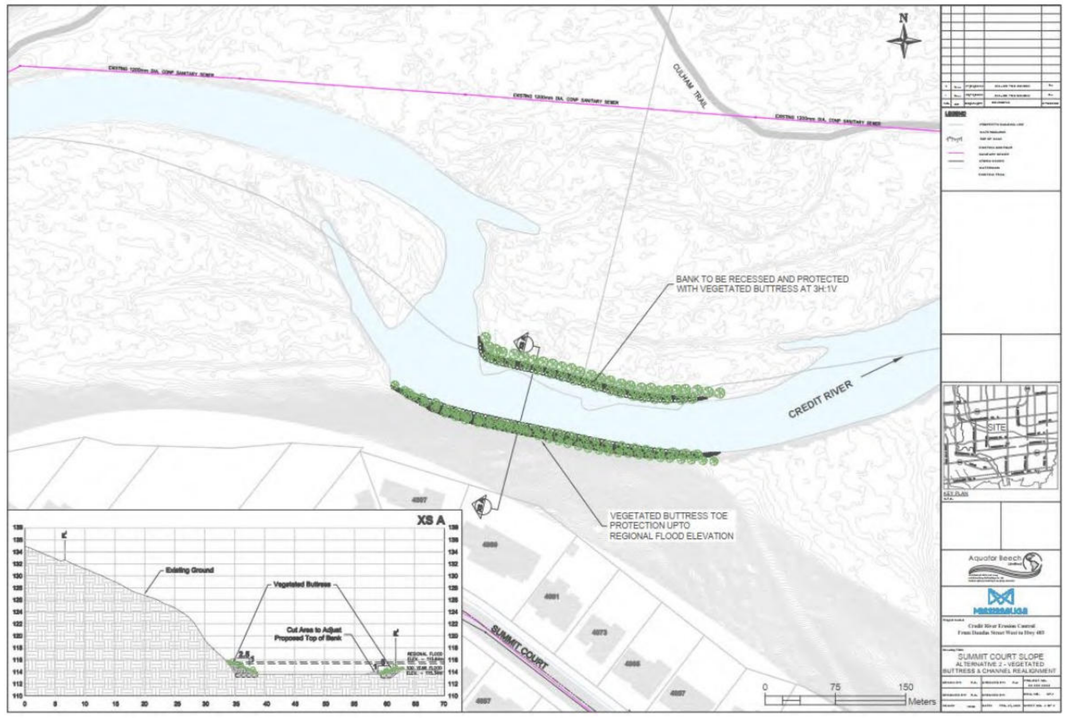
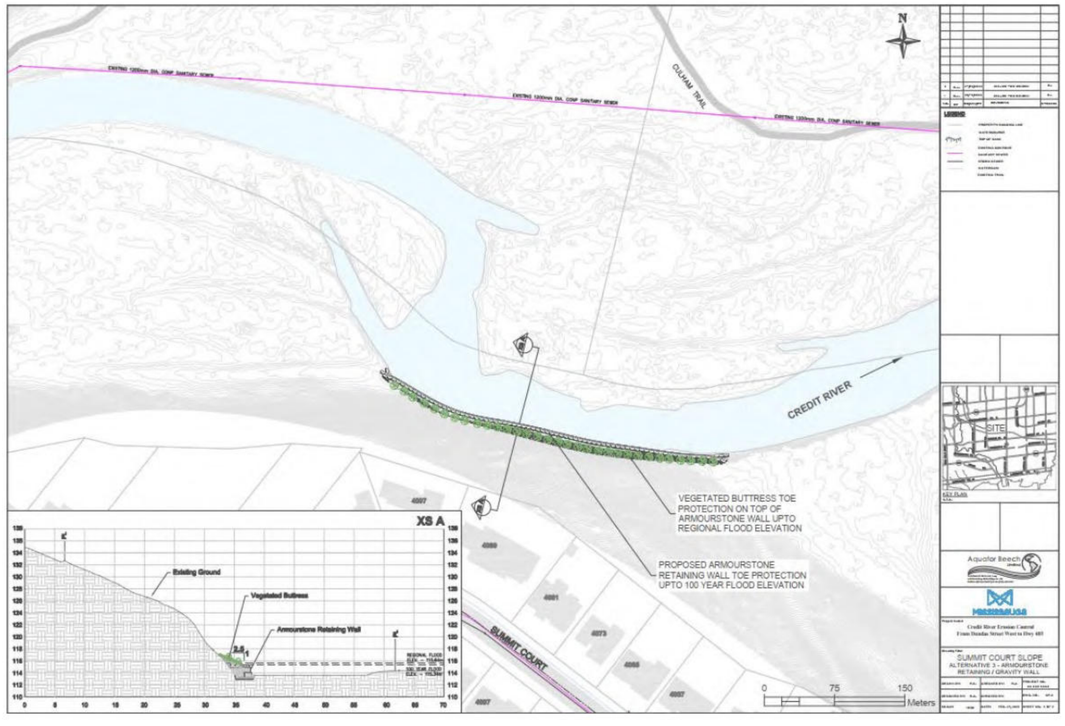


Photo B – River contact points along the toe of slope contribute to erosion

Proposed restoration alternatives



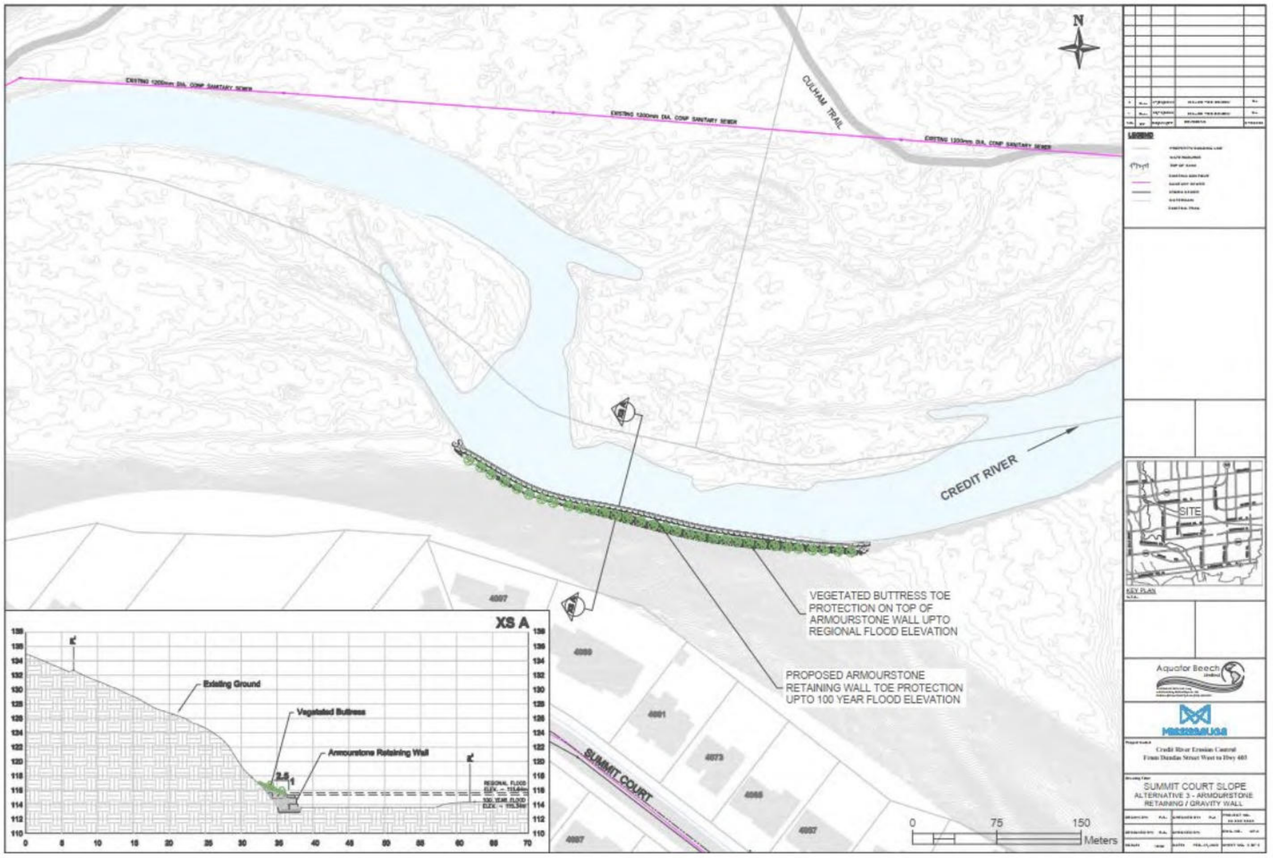
Alternative #2: Vegetated Buttress and Channel Realignment



Alternative #3: Armourstone Retaining / Gravity Wall

SITE #5 – POTENTIAL PREFERRED ALTERNATIVE

Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403



		Alt 1: Do Nothing	Alt 2: Vegetated Buttress	**Alt 3: Gravity Wall**
Evaluation Criteria	Physical and Natural			
	Social and Cultural			
	Technical and Engineer			
	Economic			
Score		4.17	6.02	**6.75**
Cost Estimate		-	$1.2M	$1.5M

Preliminary Preferred Alternative: Armourstone Retaining / Gravity Wall

- Construct armourstone retaining wall along the toe of the slope up to the 100-year flood elevation
- Construct vegetated buttress above armourstone wall up to at least the Regional flood elevation
- Gravity wall has smaller area of disturbance than vegetated buttress, but still incorporates native plantings along the top of the structure
- Armourstone retaining wall provides long term stability protecting against toe erosion
- The design has been used successfully on neighbouring reaches of the Credit River

TRAIL WASHOUT SITES (6-8)

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Dundas Street West to Highway 403

Site 7 – Granular trail washout and exposed CSP drainage pipe

Site 8 – Silt fence between turtle habitat and washout prone trail

Site 9 – Washed out section of trail between Highway 403 and Burnhampthorpe Road

Site 9 – Flood flows on trail between Highway 403 and Burnhamthorpe Road

SITE #6 – DOWNSTREAM TRAILS

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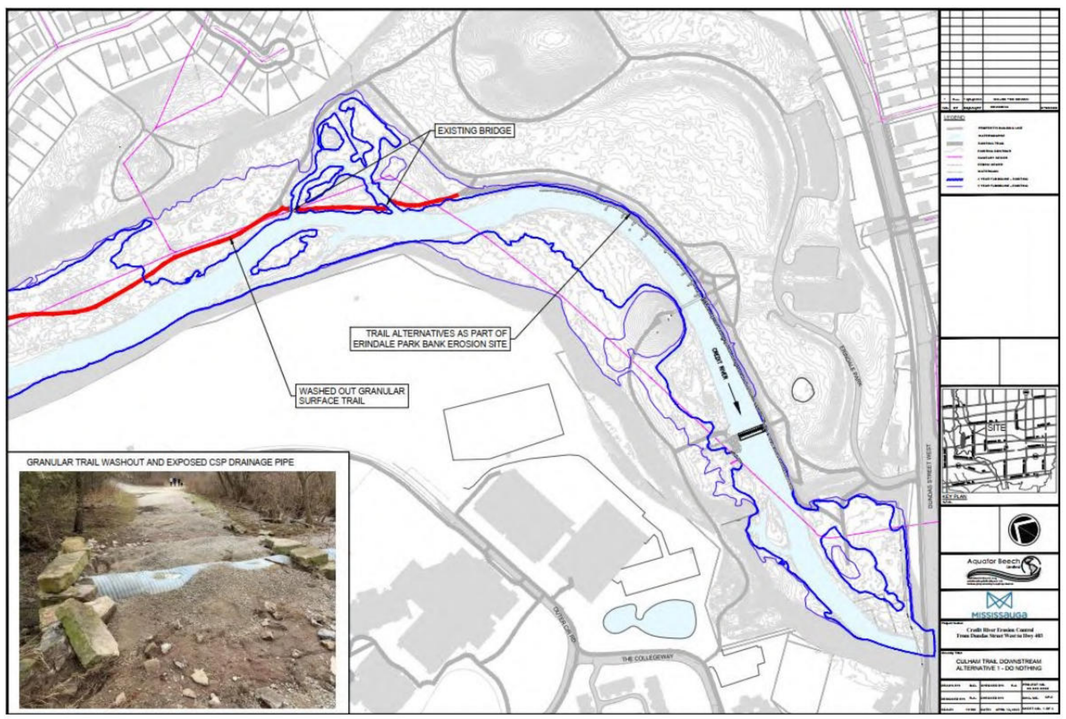
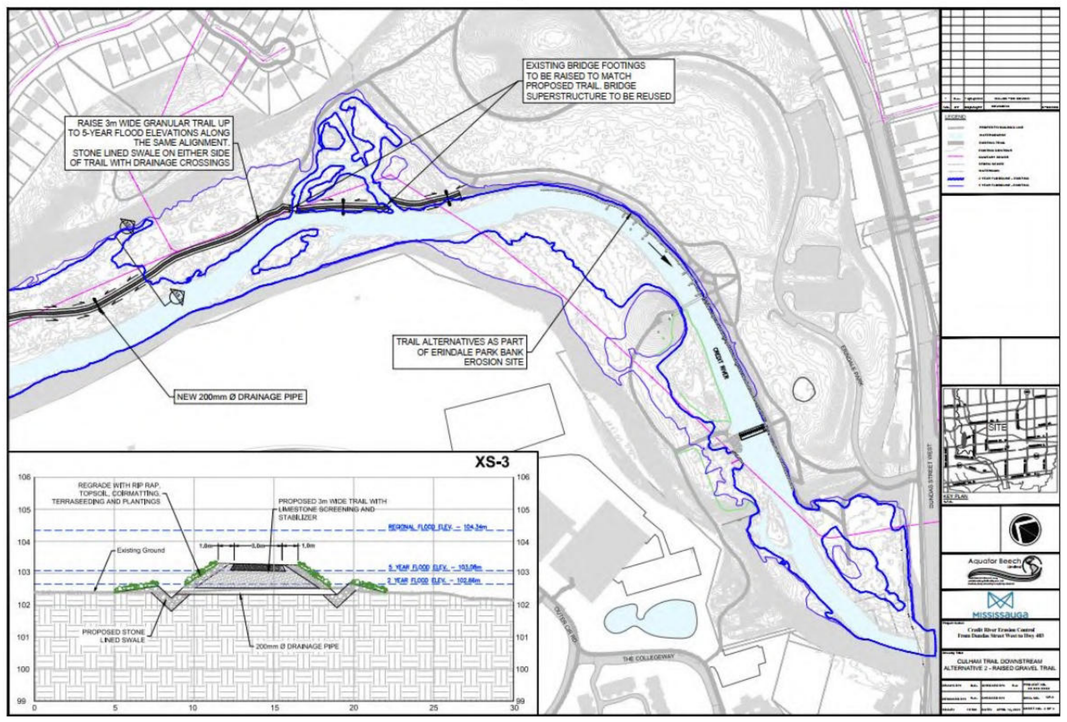
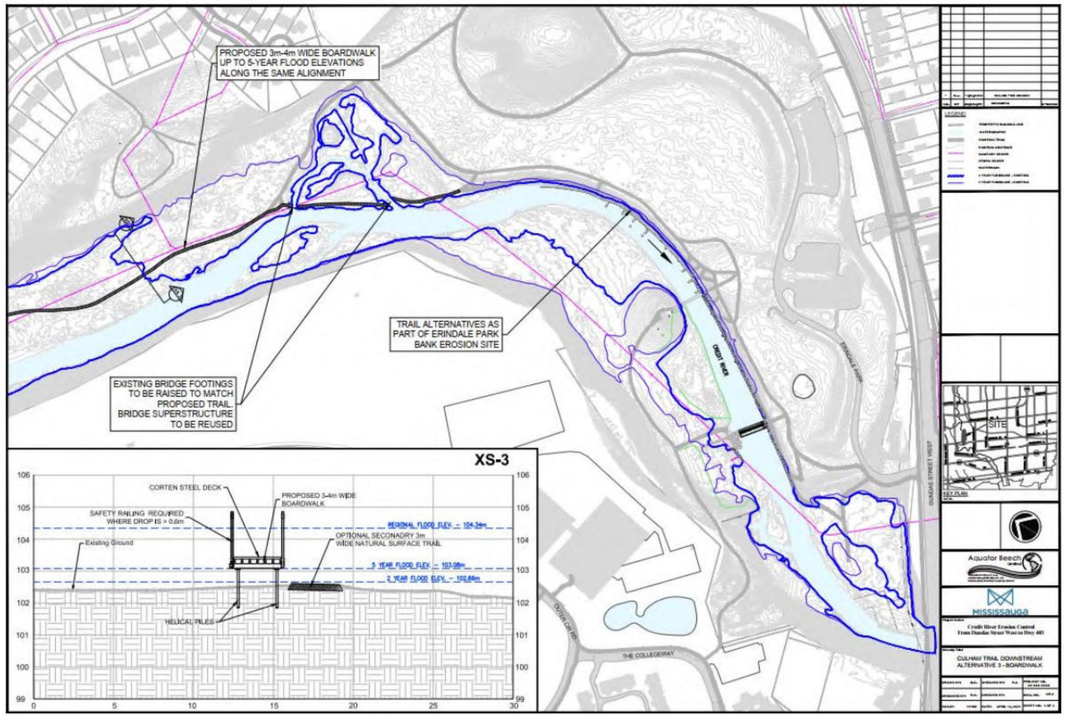
Dundas Street West to Highway 403

Existing conditions & erosion risks (Alternative #1 – Do Nothing)



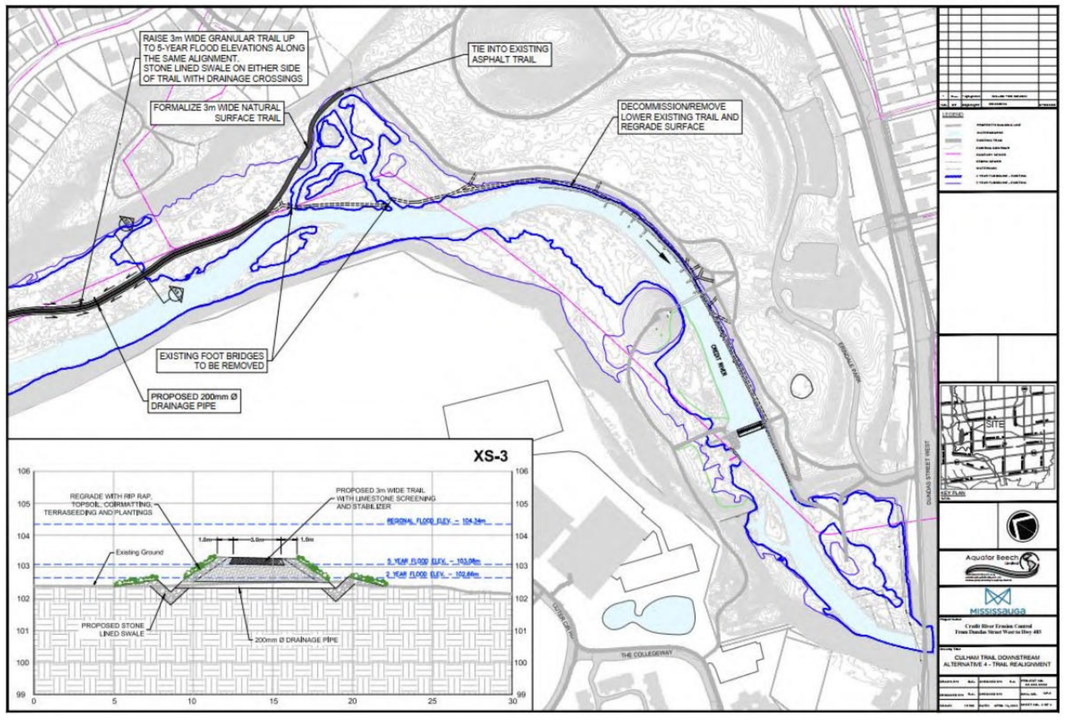
Proposed restoration alternatives





Alternative #3: Boardwalk

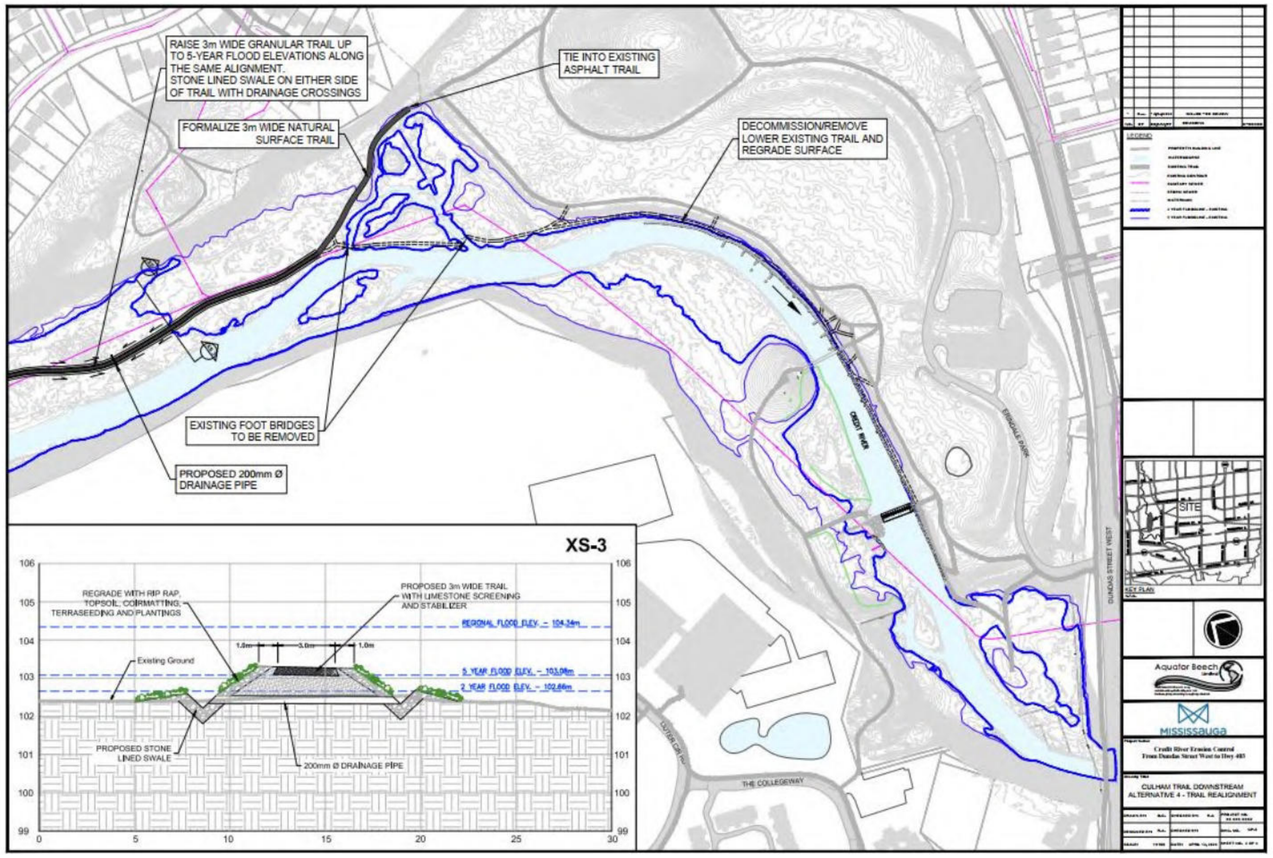
Alternative #2: Raised Gravel Trail



Alternative #4: Trail Realignment

SITE #6 – POTENTIAL PREFERRED ALTERNATIVE

Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403



		Alt 1: Do Nothing	Alt 2: Raised Gravel Trail	Alt 3: Boardwalk	**Alt 4: Realign Trail**
Evaluation Criteria	Physical and Natural				
	Social and Cultural				
	Technical and Engineer				
	Economic				
Score		3.83	5.77	5.42	**8.04**
Cost Estimate		-	$610K	$9.5M	$530K

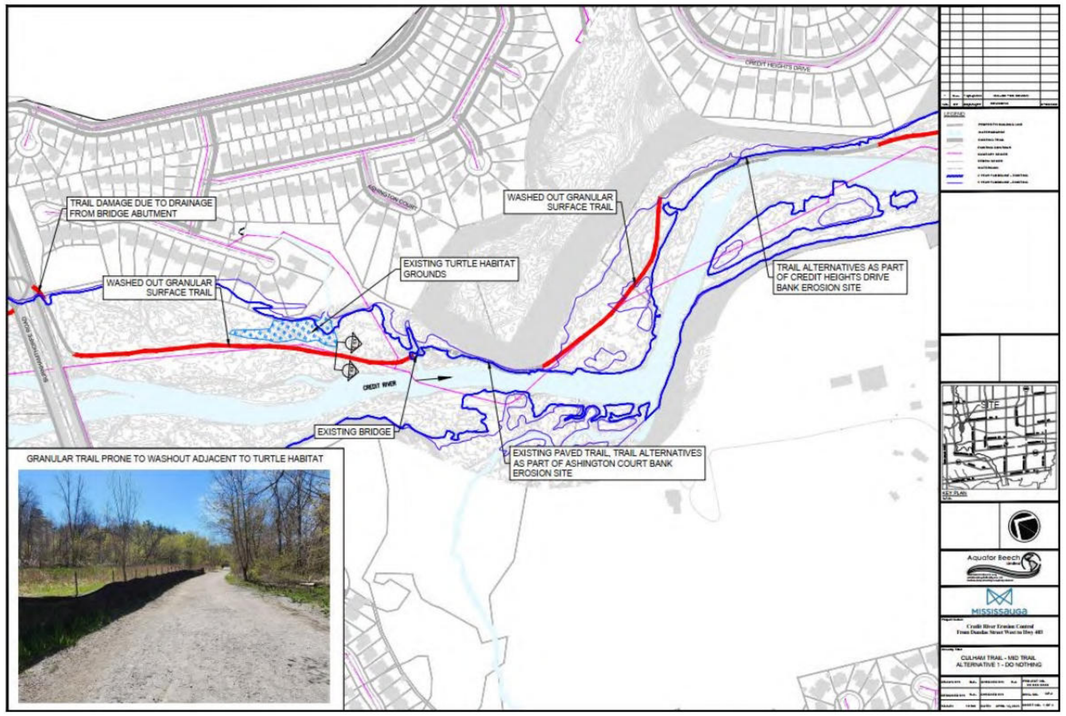
Preliminary Preferred Alternative: Trail Realignment

- Decommission lower trail through Erindale Park and reroute pedestrian traffic to upper trail to reduce safety risks due to flooding and ice floes
- Raise existing trail to 5 year flood elevation through northern section to reduce frequency of flooding and washouts
- Re-naturalize lower trail areas, improving habitat connectivity
- Reduce trail maintenance and repair costs associated with trail washouts

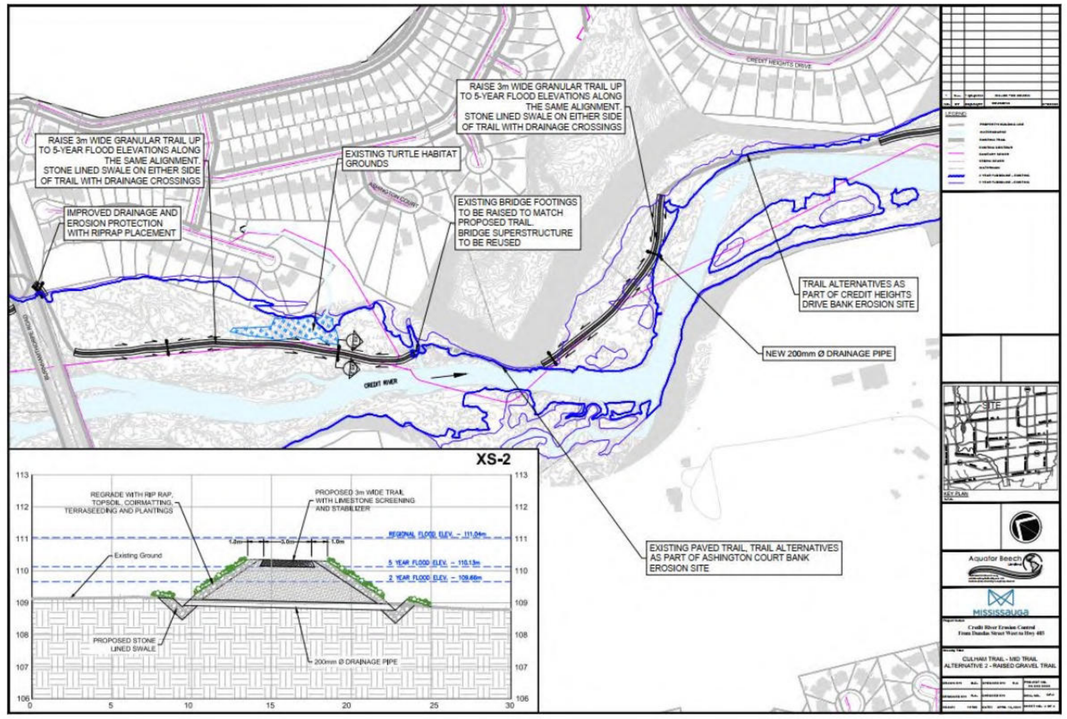
SITE #7 – MID TRAILS

Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403

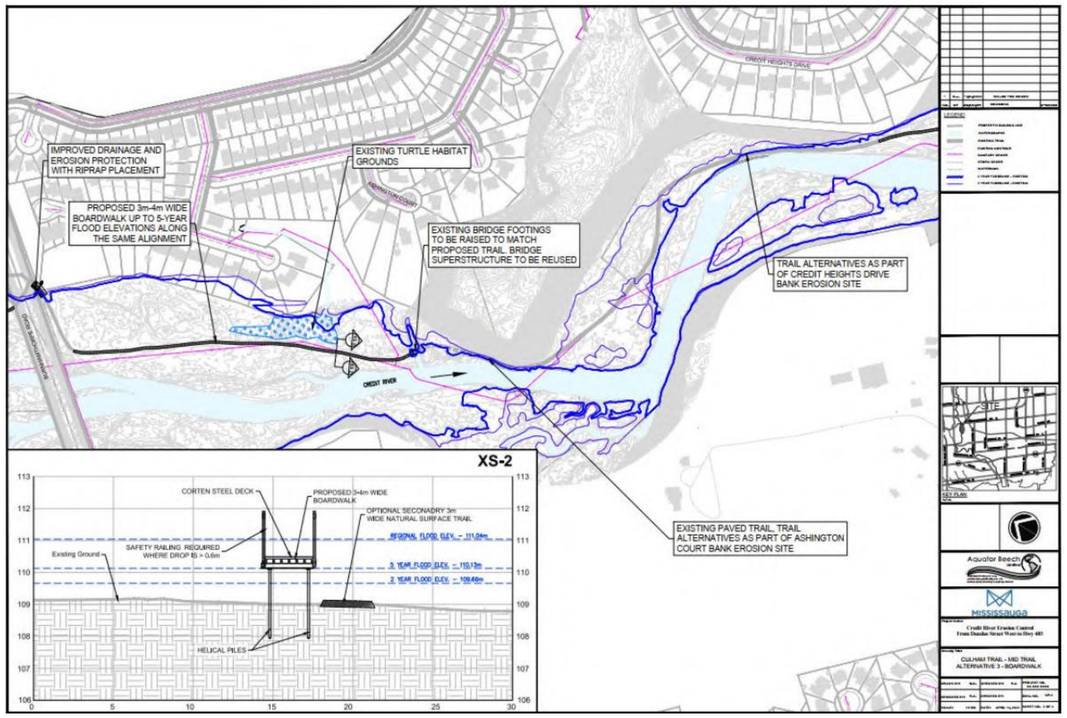
Existing conditions & erosion risks (Alternative #1 – Do Nothing)



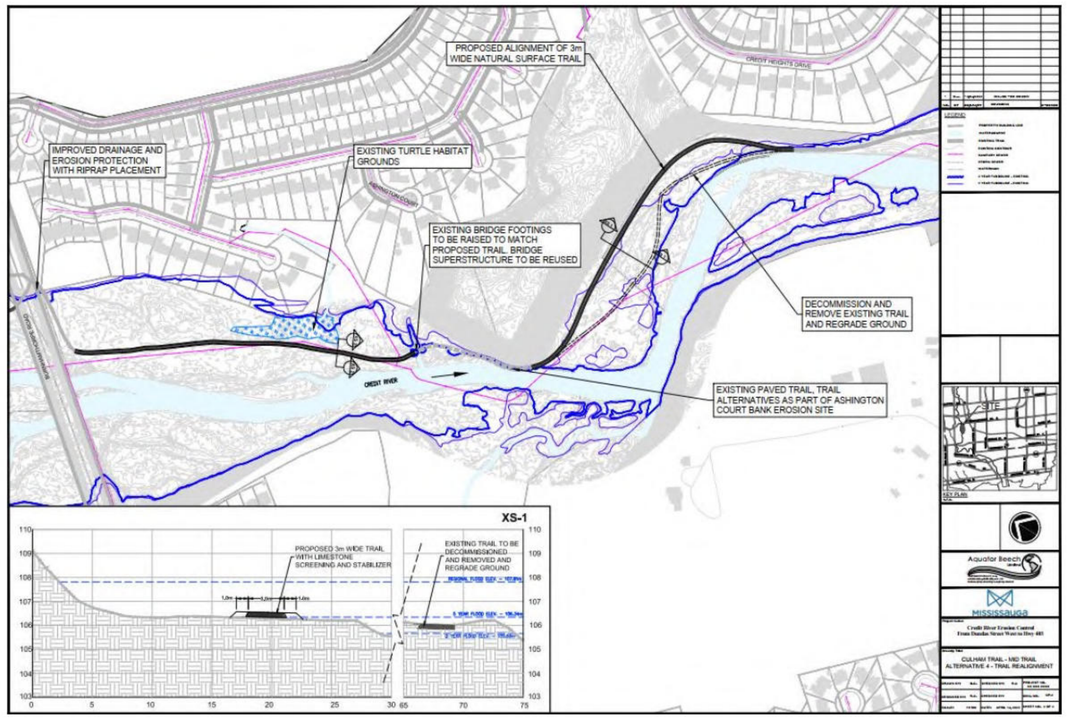
Proposed restoration alternatives



Alternative #3: Boardwalk



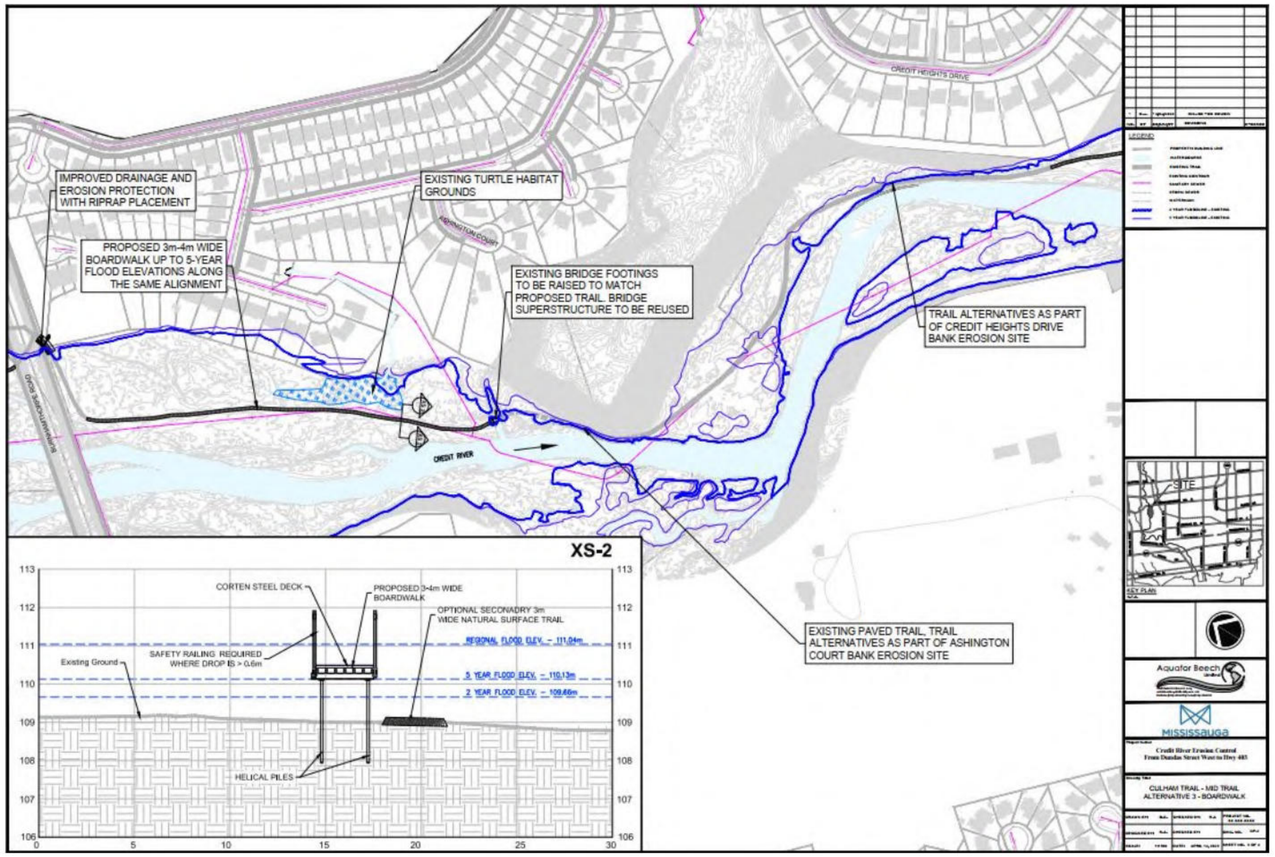
Alternative #2: Raised Gravel Trail



Alternative #4: Trail Realignment

SITE #7 – POTENTIAL PREFERRED ALTERNATIVE

Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403



		Alt 1: Do Nothing	Alt 2: Raised Gravel Trail	**Alt 3: Boardwalk**	Alt 4: Realign Trail
Evaluation Criteria	Physical and Natural				
	Social and Cultural				
	Technical and Engineer				
	Economic				
Score		3.79	5.21	**6.17**	5.73
Cost Estimate		-	$600K	$5.8M	$460K

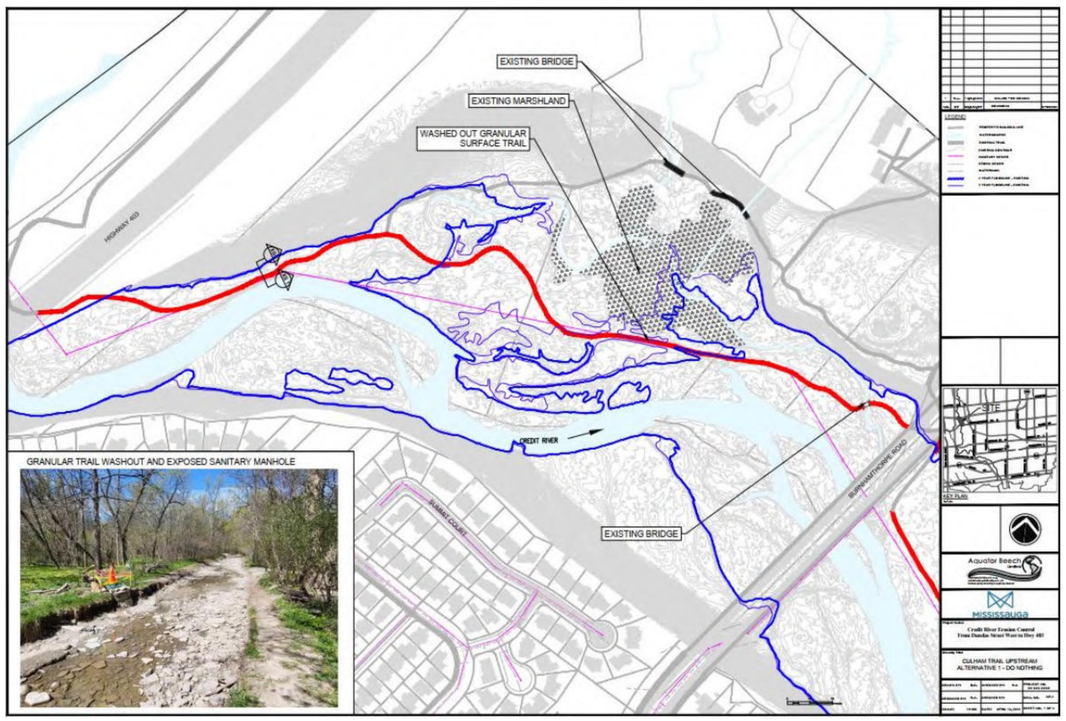
Preliminary Preferred Alternative: Boardwalk

- Install 430 m of boardwalk trail through turtle habitat area to improve habitat quality and connectivity
- Opportunities for secondary natural surface trail adjacent to boardwalk to separate bike and pedestrian traffic
- Footings of existing pedestrian bridges to be raised to match redesigned trails and reduce flooding
- Drainage improvements to be made under Burnhamthorpe bridge

SITE #8 – UPSTREAM TRAILS

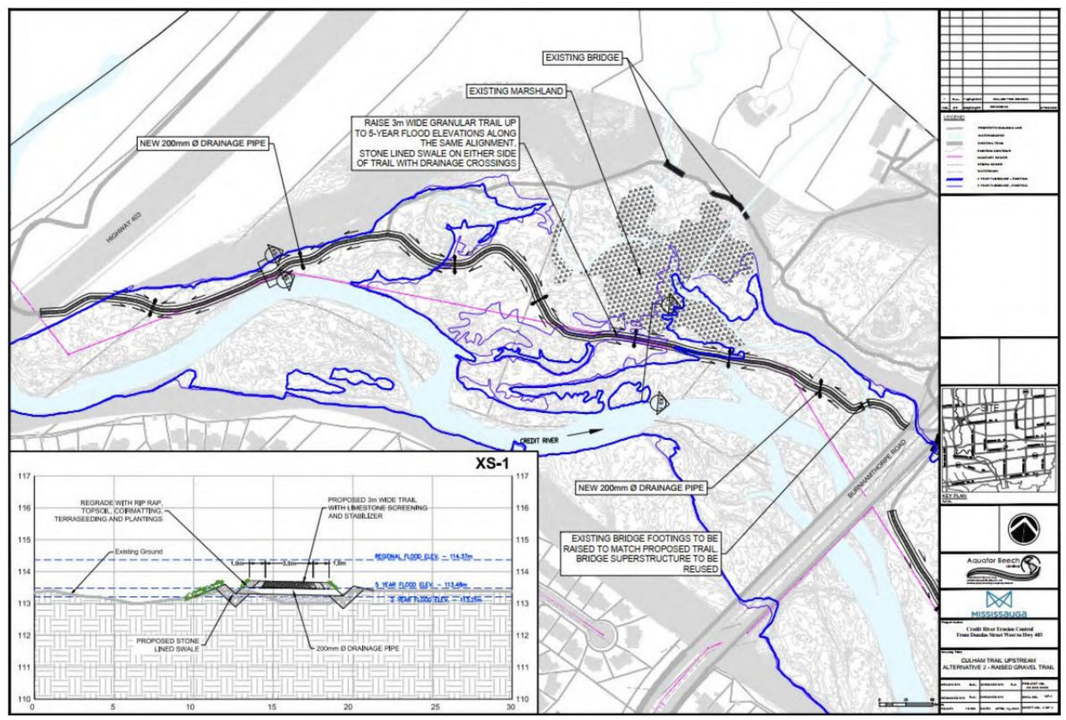
Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403

Existing conditions & erosion risks (Alternative #1 – Do Nothing)

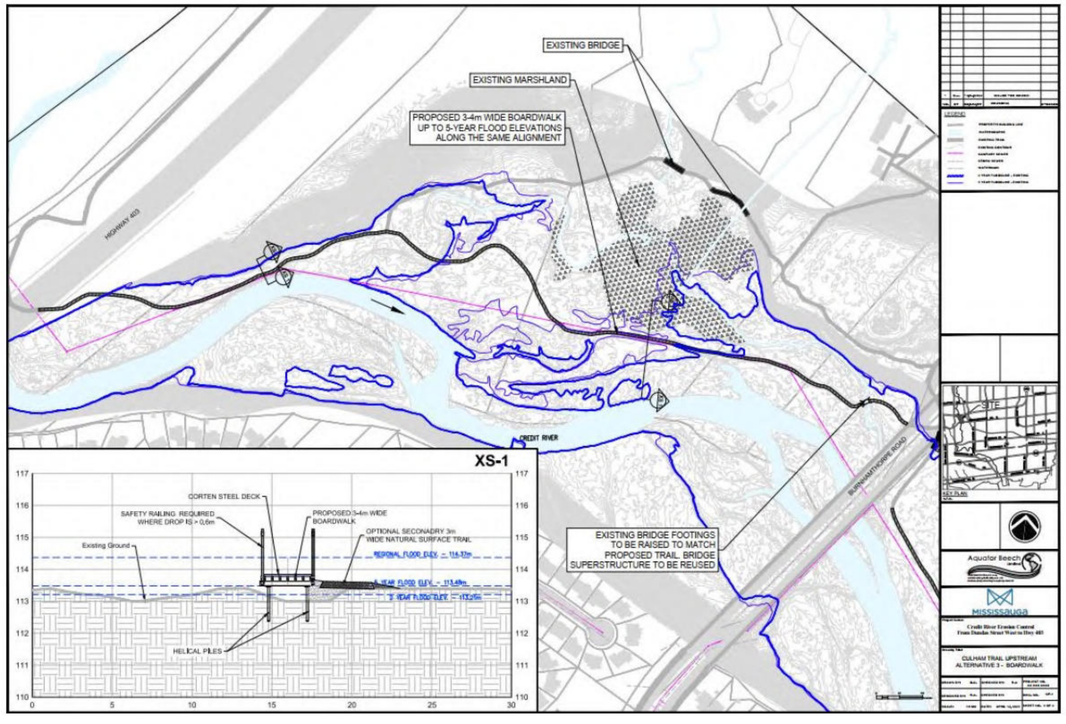


Proposed restoration alternatives

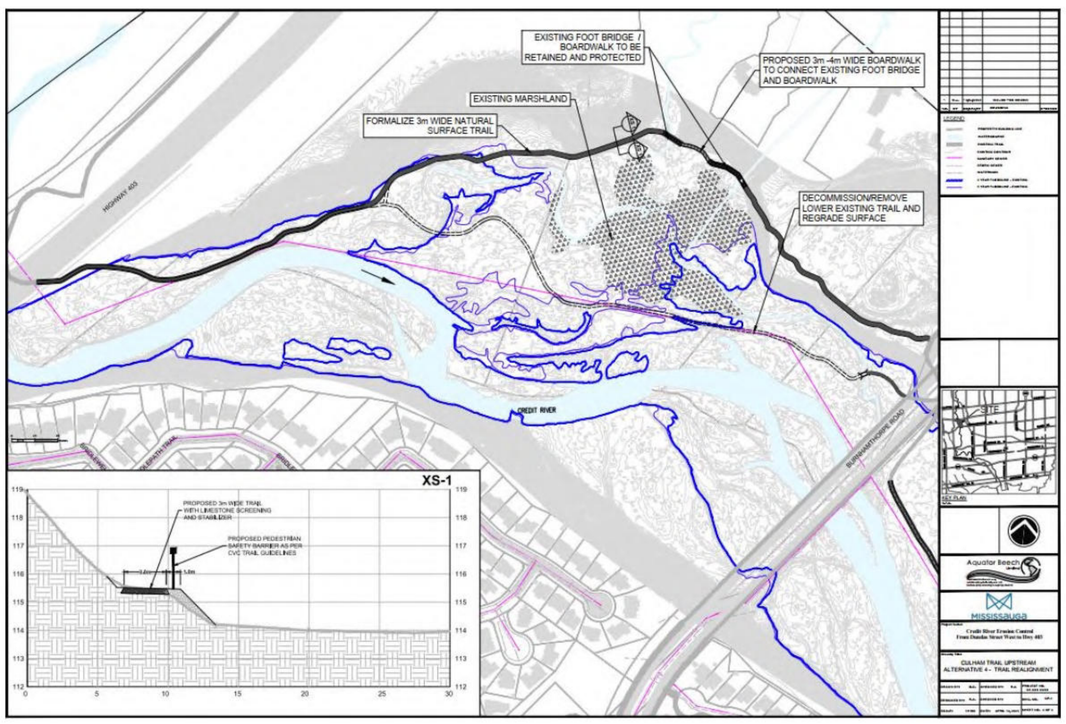
Alternative #2: Raised Gravel Trail



Alternative #3: Boardwalk

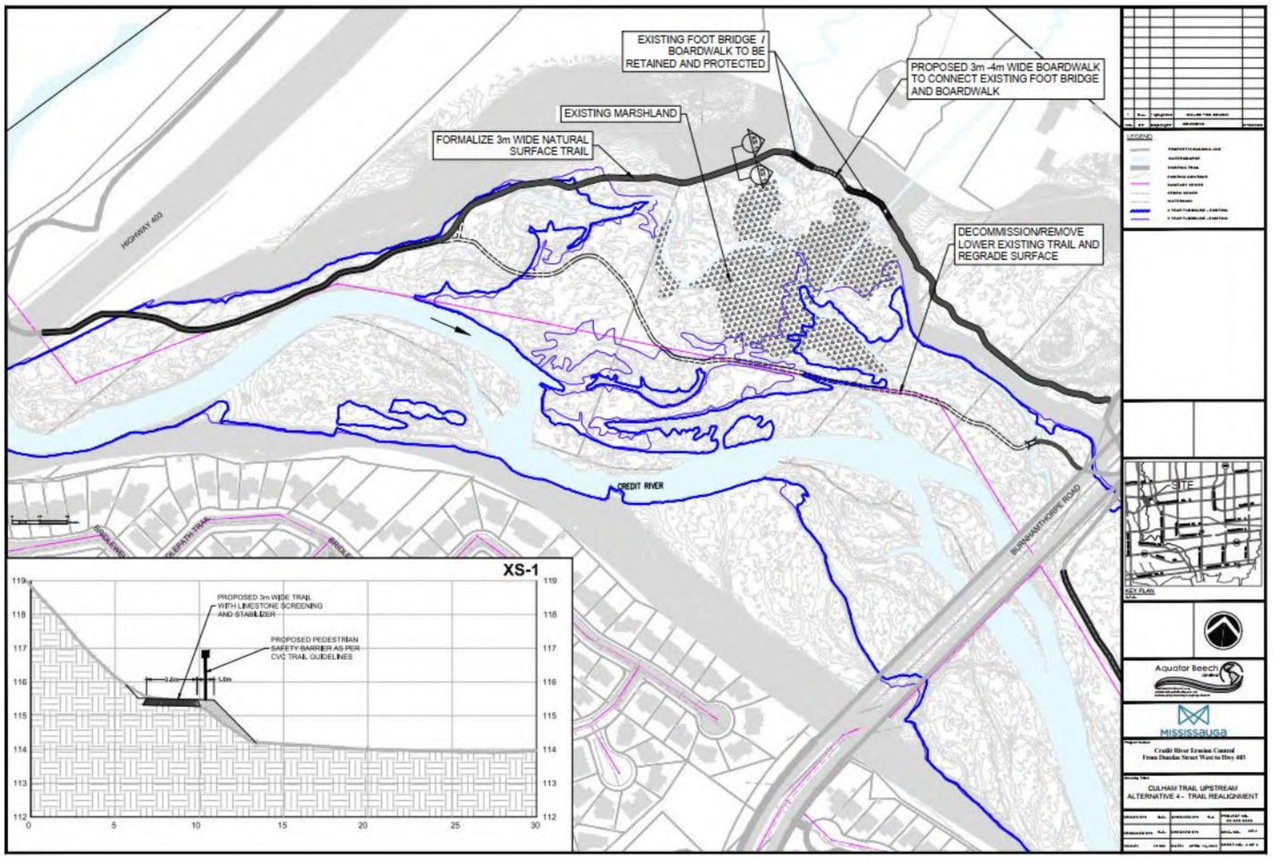


Alternative #4: Trail Realignment



SITE #8 – POTENTIAL PREFERRED ALTERNATIVE

Credit River Erosion Control EA & Detailed Design
Dundas Street West to Highway 403



		Alt 1: Do Nothing	Alt 2: Raised Gravel Trail	Alt 3: Boardwalk	**Alt 4: Realign Trail**
Evaluation Criteria	Physical and Natural				
	Social and Cultural				
	Technical and Engineer				
	Economic				
Score		3.71	5.46	5.33	**7.29**
Cost Estimate		-	$820K	$12.2M	$1.4M

Preliminary Preferred Alternative: Trail Realignment

- Decommission lower trail east of Highway 403 and reroute pedestrian traffic to upper trail to reduce safety risks due to flooding and ice floes
- Formalize natural surface trail with sections of boardwalks connecting existing foot bridges through marshy areas
- Re-naturalize lower trail areas, improving habitat quality and connectivity
- Reduce trail maintenance and repair costs associated with trail washouts

NEXT STEPS

PUBLIC CONSULTATION – June 2023

- PIC commenting window is open for 30 day period. Comment submission deadline is July 14, 2023.
- Receive PIC feedback, incorporate input and update results
- Compile and review feedback. Confirm or adapt preliminary preferred alternatives.

SUBMIT EA PROJECT FILE – SUMMER / FALL 2023

- EA Project file posted for 30 day review period.

DETAILED DESIGN & IMPLEMENTATION

- Detailed design and permitting to proceed in 2023.
- Construction timing dependant on City of Mississauga capital program

TO PROVIDE COMMENT, OR TO BE ADDED TO THE STUDY STAKEHOLDER LIST, PLEASE CONTACT:

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THANK YOU

FOR PARTICIPATING IN THE CREDIT RIVER EROSION CONTROL CLASS ENVIRONMENTAL ASSESSMENT

Appendix F4 – Consolidated Comments from Stakeholders and Public

No.	PIC Comment Form								
	Date Received	From	Q1 - Existing Conditions	Q2 - Evaluation Criteria	Q3 - Preliminary Scoring	Q4 - Preferred Alternatives	Q5 - Additional Comments	Q6 - Was the information provided helpful to you?	Q7 - Was the information provided:
1	2023-06-24	Guy Winchester	None. I have lived with trail issues for many years – including 2 meter tall ice blocks on the trail and Site #8 becoming problematic.	While the stated purpose for the study is "Credit River Erosion Control", any engineering solution for this problem must adequately consider and reject all potential detrimental impacts on the current public use and enjoyment of the adjacent existing public park and trail. As this park and trail currently attempt to satisfy multiple subjective and often competing interests among multiple user groups, while supporting Mississauga's desire to be a good place to live for its citizens, this study must consider the social interest as a top priority, even if it results in a less elegant or more expensive engineering solution. From my perspective as a frequent, four-season user of the study area, I am concerned that there does not appear to have been any consideration of: 1.How the study area as currently configured is actually experienced now by its various user groups (walkers, cyclists, cc skiers etc., of diverse ages and physical capabilities)? 2.What are the current use and traffic patterns for the current park/trail? 3.What do user groups seek and expect as they experience the current park/trail? 4.How would the proposed alternatives meet user needs and expectations? 5.How would the available user experience for the various user groups change as a consequence of implementing these proposals? May I suggest the current criteria fall short in considering the social impacts of the presented alternatives? Because your erosion control project appears to directly impact park/trail use, you must consider the impact any proposal will have on users relative to the starting condition.	As an engineer, I appreciate the attempt to objectively assess in black and white terms the various aspects of the erosion control issue, including aspects such as economics and engineering feasibility. However, it appears that those scoring the alternatives do not have an adequate understanding of how the park/trail is used and enjoyed by multiple user groups and how each alternative, if implemented, would impact or change park/trail use. Any evaluation of alternatives for meeting the erosion control objective must be subject to the primary constraint that current park/trail use may not be negatively impacted. Thus, any alternative that does negatively impact park/trail use should be excluded. With the current scoring system lacking this social impact consideration and lacking the indicated constraint, the current alternative scoring is moot and should be redone.	With current scoring system lacking a social impact consideration and lacking the indicated constraint, the current alternative scoring is moot and should be redone for those Sites that do have a social aspect. Site #1 – Users, including fishers, do utilize the current structure (including the lookout) and the west bank meadow area as well so retaining the status quo will have no impact on park users. Site #2 – The decommissioning of the current lower trail fro Site #2 and #6 as indicated will have a significant impact on the use and enjoyment of the park and should not occur. This trail is used by multiple user groups for access to the river bank and/or as part of a very popular primary walking/cycling/skiing loop in Erindale Park. Forcing all users to use only the upper trail will increase traffic density and create added conflict among groups such as walkers, skiers and cyclists. In addition to inhibiting access to the river, it will create a linear trail with greatly reduced attraction and reduced aesthetics. Simply a bad idea. Site #3 – No social negativity Site #4 - No social negativity, as long as new structure maintains a minimum trail width. Site #5 - No social negativity Site #6 - Decommissioning this extension of the lower trail (also cited in Site #2 above) and removing the two bridges will have a significant negative impact on the use of the park. This part of the trail is also used by multiple user groups for access to the river bank and/or is also part of a very popular primary walking/cycling/skiing loop in Erindale Park. And as with Site #2, routing all users to use the upper trail around the seasonal marsh area will increase traffic density and create added conflict among groups such as walkers, skiers and cyclists (already a safety and conflict issue). What should happen is the two bridges being replaced with wider versions and the trail preserved. Site #7 - The proposal to reroute the trail above the turtle habitat by building a very expensive boardwalk is perhaps classic engineering overkill. This stretch of current trail has only minor, infrequent erosion issues (easily resolved with a grader) that hardly would justify a $5.2 million expenditure. This issue could be better permanently resolved by reinforcing the river bank at Burnhamthorpe and/or the use of a berm to prevent water reaching the trail at that point and as needed, doing some contouring of the current trail to prevent water flow down the trail. Being a flood plain, let it flood, just not down the trail. While elegant and walker friendly, boardwalks present a utility and safety issues for cyclists and skiers and will generate significant added safety issues when walkers, cyclists and skiers use the same structure. The boardwalk on the Sawmill Valley trail and on the upper trail in Site #8 already present these kinds of significant issues for cyclists and skiers and are a current source of multiuser group confliction. If a boardwalk is built, a suitable cycling and skiing trial would be mandatory, both for safety/utility and to deconflict the needs of multiple users. However, logic would dictate that if a new cycling trail would be built in conjunction with the new $5.2 million boardwalk, it could also be built without the boardwalk and would be suitable for walkers. Again, the needs of all users for Site #7 need to be better recognized and if action is truly needed regarding erosion control, a much simpler answer can be found that will better satisfy that need while preserving the utility of the trail for all users. The boardwalk proposal appears to be a boondoggle. Site #8 - The proposed alternative to close the current lower trail and reroute users to the current upper/west side trail is significantly flawed. This re-routing would cause all users to have to climb the steep paved trail up the hill at Burnhamthorpe to join the exiting upper trail, then go steeply downhill on a dirt path to the current boardwalk and bridge stretch at and adjacent to McEwan Creek, moving down the frequently flooded trail skirting the marsh and then rejoining the Culham	I walk the Culham trail in the study area regularly 12 months of the year. I also cycle the trail in the study area on a regular basis, again 12 month a year, often from Erindale Park to Pine Hill or even to Meadowvale Conservation and then the Davidson to the 407. If you implement the concepts being proposed, my and other user's experiences will be diminished. When I and others use the trail, we will be less safe. I and others will be constrained in how we use the trail compared to today. So, why, if your task is to resolve Credit River erosion control issues, are we so impacted? I understand that it is an easier path to reach your erosion control objectives by assuming away certain issues such as you have done in Site #2, #6, #7 and #8 so that any erosion control measures related to those structures can be eliminated. A solution, yes, but at what cost? May I suggest that you revisit your findings and in doing so consider that whatever you do to address your erosion control objectives, you will not and may not in any way negatively impact the intended use of the park/trail for all users. Your task should be to do the required erosion control while positively enhancing the user experience for all. I am reminded of a first-year engineering class where an engineer's responsibility to society was highlighted. As P. Eng's, it is good to remind ourselves of this occasionally. I'm not sure I see this reflected in the current proposal. As it stands now, we will all be better off if nothing currently proposed is done and that's even with me at more than $500 from bike damage caused in multiple events riding the damaged trail section in Site #8.	Yes	Not detailed enough

No.	PIC Comment Form								
	Date Received	From	Q1 - Existing Conditions	Q2 - Evaluation Criteria	Q3 - Preliminary Scoring	Q4 - Preferred Alternatives	Q5 - Additional Comments	Q6 - Was the information provided helpful to you?	Q7 - Was the information provided:
						before the 403. This proposal will seriously change how the trail is being used. In addition to a higher traffic load from all user groups on the upper trail as it joins with the traffic from the gardens above, the utility of cycling and skiing will be negatively impacted. Cyclists will have an added challenge of the newly required up and down at Burnhamthorpe and then will be forced onto the boardwalk section, where, as with Site #7, there will be safety issues and conflict with other user groups. While cyclists such as myself regularly travel from the lower to upper trail to lower without issue, a parent and child or a less skilled rider may not be able to do so without risk. For cc skiers who currently can pass uninterrupted from Erindale Park along the Culham to the 403/up to Challenge Park, this will effectively terminate skiing at Burnhamthorpe as it will be very difficult and unsafe to climb up the paved hill and then to descend down to the boardwalk area without significant risk for most users. Being paved and with sun exposure, the up-hill at Burnhamthorpe is typically snow free or iced over in the winter and not climbable in cc skiis. As for walkers, this change will impact many who cannot climb or descend steeper hills. Impacted as well will be parents with strollers. Reality is that if this does happen, stairs will be required on the downhill slope, something incompatible with cycling, skiing and strollers. It appears that instead of dealing with the root causes of the trail damage by controlling the erosion caused by the river, for Site #8 it is proposed to simply move the trail. And in making this proposal, did anyone consider the upper trail also floods and is subject to ice damage? This appears to be an alternative that is another example of the park/trail dynamics not being well understood and is an option that will lead to a significantly negative changes to how the Culham trail is being used, without fixing the problem. Understanding that: 1)upstream changes to the river channel have increased flow volumes to and past Site #8, especially when it rains; 2)increased river volume puts added pressure on the riverbanks, especially for river bends such as at Site #8; 3)the river can overflow the current riverbanks, especially at bends; 4)increased river volume, especially at bends, can erode river banks, as has happened at Stie #8; 5)in an existing flood plain, the Culham trail cuts across the natural flood flow of river water into the adjacent marsh; 6)With the higher volume of flood water due to the damaged river bank, the trail on top of the sewer line is the new path of least resistance for flood water to flow downhill, to rejoin the river where McEwan Creek crosses the trail. The proper solution that would maintain trail utility for all users would appear to be: 1)Repair and reinforce the river bank and reduce the size of the eroded channel at the bend in Site #8, suitable for the increased river flow volumes. 2)Engineer a controlled inflow of water to the marsh area using culverts, berms and existing natural flows etc. 3)(Optional) Dredge the river at the river bend to control flow velocity and to assist the water to turn the corner without piling up. 4)Add three bridges to the Culham trail – one at McEwan Creek (replace concrete ford), one at the current damaged section where flood water naturally flows to the marsh and where small culverts were attempted a few years ago) and one at the top of the damaged section. The two bridges could be a single longer structure incorporating water flow control and ice protection per 2). 5)Raise the current trail back to up its original level above the sewer. 6)Protect the trail with berms etc as needed to control ice and water. Simply put, for Site #8, deal with the root cause by controlling the erosion and taking preventive steps. This will preserve the utility of the trail without any negative user impact and likely for much cheaper than what has been proposed.			
2	2023-06-27	David Culham	There is no recognition of the increased peak flows due to increased runoff from the urbanization of Brampton upstream. Surely historical records are available. Generally from the video and without detailed review of actual documents, I think the methodology is good. The actual preferred walking route of the public along the river will not easily be deterred and the alternatives in some areas will not be appreciated. They will depreciate the value of the walkway as presently experpienced.	No but I would like to look more closely at the Riverwood reach alternative suggested by the consultants than permitted by this video. Could a hard copy be sent to me.	Generally it is good but there is no reference to the Erindale pond as it changed over time. Removal of the trail along the river is not a good option in terms of desire patterns as I have witnessed over time. I have little confidence with vegetative buttresses with such peak flows	Well long before support should be detailed map review, and actual discussion of alternatives in public. there should be a drop in meeting with plenty of visuals. There are opportunities for current control under the 403 bridge and just downstream that could deflect flood water and ice to the central stream and to the west bank. Was this reviewed and what was the outcome as it is not mentioned.	I have been trying to determine what is going on with the study from the beginning without any results. I started the concept of a land dedication below the top of bank in May 1974, along with the naturalization of the valley and the connecting trail along with it. I caused well over 100,000 trees to be planted in the valley in at least 19 public volunteer plantings each year from 1981, ran public walks each year, did public slide lectures across the city and was initimately involved in all aspects of the valley policy until 2000 after which I still conducted public walks through the existing ward councillors. Respectively I would think some consultation would be in order djc	Yes	About right
3	2023-06-27	Joanne Foote	No	There was no mention of protecting the travel routes that the deer rely on	No	Gabion baskets are very effective & last longer than armour stone. You can also build trail on top of gabion baskets ie: Helen Mosley Park(Cooksville Creek) paved trail on top of gabion basket wall it over 30 years old. Would recommend this method for trail north of Burnhamthorpe up to Riverwood intersection allows water to flow through the gabion structure while having trail on top of the gabion structure.	Boardwalk like Rattray Marsh would be good through marsh area #7	Yes	About right

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4	2023-06-28	Muhanad Sidek, Managing Director, Planning, Design & Construciton	Please clarify if erosion concerns exist on the west side of the Credit River, south of the Burnhamthorpe Road bridge down to Dundas Street West, along the flanks of the UofT property. Regarding hydrology and hydraulics, are there any current and future concerns in this same area that will of interest to UofT? Lastly, what are the specific areas that were studied along this course, and when will that information become available to the public.	Clarify the approach to the application of weighing of points for each location, whether is alters between locations or remains the same throughout. Any clarifications with respect to concerns in specific areas that would alter the assessment and points allocated to each.	none	What, if any, considerations can be extracted from your studies with respect to a number of elements offered in the four (4) evaluation criteria and their effects on the west side of the Credit River, south of the Burnhamthorpe Road bridge down to Dundas Street West. A few elements, but not all, such as terrestrial vegetation, aesthetic value and capital costs to name a few. Slide 6, 'Phase 2 - Alternate Solutions' - is there an estimated time frame and phased schedule being considered at this time with respects to the remaining four (4) sections. The preliminary study and future development will further future proof and integrate the community safely down and along the banks of the Credit River for decades to come.	The restorative measures and addressing of erosion control measures, primarily seem to be located on the east side of the Credit River when reviewing the zones south of the Burnhamthorpe Road bridge down to Dundas Street West. Was this a conscience approach, backed up by the existing site engineering analysis conducted at the same time, that the west side of the Credit River shoreline and cliff areas are not negatively affected by the same erosion conditions that have been identified and addressed on the east side of the Credit River, which happens to be along the UTM property. For the same reasons that this study has been undertaken, we inquire what the preliminary findings of the west side have been, and if you would share such findings and projections of the same erosion measures as we all head into the coming decades and mid-21st century. At this point, the engineering analysis shows that the west side of the Credit River does not pose any negative affects now or in the future to the river course. We are open to discussions and or receiving any additional engineering or city documentation that was part of this study and relates to this larger flank of the west side of the Credit River. In addition, please advise when the archaeological, cultural heritage, etc., assessments will be made available as UTM is nearby and conducts similar assessments when growing and developing the UTM campus.	Yes	Not detailed enough
5	2023-07-05	Natalie Halff	I have some concern about the natural course of the Credit River and how we can work around it rather than fighting nature by building trails that will be washed out and constantly need expensive repairs (which I understand you are trying to avoid).	I'd like to know how you define the different criteria, especially social and cultural.	I like how you've given weight to different criteria in order to make a decision on the best alternative solution. I think natural criteria, i.e., the natural course of the river, should be given more weight so we are not constantly battling nature, but the social and cultural value of this natural area in a large urban centre cannot be underestimated in terms of its value to people's physical and especially mental health.	I support all but site 7 where the preferred alternative is a very expensive $5.8 million solution. I understand this money would protect a turtle habitat, which sounds ideal, but then wouldn't adding a bike trail on the side defeat the purpose? I am a cycling advocate so do like the bike trail idea, but wouldn't it harm the turtles? If not, why are we paying so much for a raised boardwalk? I guess I have questions about this site.	I fully support moving the walking trails to avoid naturally flood-prone areas - give the river the space it needs to meander. I am concerned how long the trail will be out of commission - hopefully it can be done in stages so parts remain accessible throughout the project. One thing I don't like - perhaps I misunderstand - but the suggestion of having safety barriers in several locations. By this, do you mean fencing? I really dislike how so many natural areas in Mississauga are bordered by fencing as it really detracts from the view and the naturalness of the area; however I also understand that people will trample nature to death where there are no barriers, which is very unfortunate - we saw this happen during COVID.	Yes	Not detailed enough
6	2023-07-06	David Carroll	-	-	-	-	There is a secondary trail that parallels the Culham Trail, to the east of it, in the vicinity of Chappel Creek. There is an excellent bardwalk structure that crosses the creek, but further north on this trail, there is a very low area that always ponds in the spring and on rainy days, which forces walkers to walk through the adjacent bush. It's near where the bird feeders used to be. It's a popular bird watching area. The City dumps woodchips in this low area, but it isn't a permanent solution. It's very annoying to walkers with nice footwear, many have to abandon their walk and return south. Others walk around it, but this ceates additional trails and damages the vegetation. There needs to be a culvert installed, or bettr still, an elevated boardwald should be reected as a permanent fix.	Yes	About right
7	2023-07-13	Christina Woodward	No	No	No	As a member of the Riverwood Board of Directors I have taken part in the discussions concerning the Credit River Erosion Control plan and I concur with the Summary of Concerns submitted by The Riverwood Conservancy. At the same time I have been a Volunteer for more than a decade with several of the Riverwood programs, and am responding here on an individual basis. Alternative 4, the preferred remediation in the Environmental Assessment Project, requires that the well-established and well-received Riverwood programs, which were designed to interact for educational purposes with specific terrestrial and aquatic wildlife and vegetative habitats on the designated #8 site, would be significantly compromised. With 10,000+ participants annually now in these programs this is a major concern. The above participant numbers are promising to increase in future. This adds to an already uncertain balance for adequate safety measures on the existing trail, compounded by the increasing interest in, and use of, trail biking on the current and proposed new trail re-alignment. I do not sense that the proposed remediation addresses the above issues adequately.	As planning proceeds, I am hopeful that compromises to the current planned Alternative can be reached. I have no doubt that further consideration will be given, to comments received, in the next iteration of the Study. Thank you.	Yes	About right
8	2023-07-14	Leonard Verwey	Erosion - From what I recall many years ago, a sanitary sewers put in through the river valley. The Culham trail was put in afterwards, running along the sewer alignment where the swath was cleared for construction. This resulted in loss of the vegetation rooting systems that reduce erosion. The worst sections of erosion of the trail are in these disturbed areas. - Hydrology - Is the 100 year storm based on Hurricane Hazel	Social/Cultural - This trail/valley system is the jewel of parks in Mississauga and has to be maintained for public use/access and in all four seasons	-	Economic - Based on the high costs of some of these alternatives, it needs to ensure that the trail is located in the safest and least susceptible to damage locations. Unfortunately this will probably mean moving it away from the river whenever possible. What is to prevent the replaced armour stone walls to washout in future? A boardwalk seems like a nice alternative but is very expensive and could it be damaged by ice? I have seen huge ice fields on the floodplain in severe winters with a quick spring thaw. Would it be preferable to move the trail as far away from the river, close to the valley slope, putting it in the safest location. Creek bank stabilization - I rely on your expertise and will agree with the various methods you are proposing, with reference to my point above about future washouts reoccurring. #1 - why was an ice control structure ever put in this location? the only one in the study area. #2 - although a shame to see loss of the lower trail, probably the top of bank is the best place for the trail. #3 - There is room here to relocate the trail away from the river.	Although if is nice to have the trail close to the river, to prevent future washouts due to even higher flow rates due to climate change, the trail should be relocated as far as possible from the river wherever there is room to do it	Yes	About right

No.	PIC Comment Form								
	Date Received	From	Q1 - Existing Conditions	Q2 - Evaluation Criteria	Q3 - Preliminary Scoring	Q4 - Preferred Alternatives	Q5 - Additional Comments	Q6 - Was the information provided helpful to you?	Q7 - Was the information provided:
9	2023-07-16	Peter Hossack	no	see below	please see concluding comments with extra thought to social and cultural criteria	Site #1 - support Site #2 - DO NOT SUPPORT. I believe the extent of work to combat potential erosion in this area has been over-stated and the extent of the detrimental affect on pedestrian use (citing "Social and Cultural" criteria) has been dramatically undervalued and underestimated in terms of negative impact. The proposed 1.2 m informal trail is a poor substitute for the HEAVILY used hard surface path that is at the lower level adajacent the first row of armour stone. This is also an area of relativeley straight river flow and over the last 30 years I have not observed overflow of the bank here - or at least such that it causes significant damage. The reinstatement of the fingers and any local armour stone displacement, is a good idea. Losing the footpath as proposed would seriously de-value visitors' experience in the immediate vicinity of the day-use park area. Further, I beleive a 1.2 m natural surface footpath WOULD suffer from degradation and could create a more dangerous situation for the many elderly and parents with young children ans strollers who use this particular area. Site #3 - support with proviso: The barrier proposed in Alternative #2 is an objectionable detail from a pedestrian perspective and Alternative # 3 thankfully does not propose this. However in the detail design it must be recognised that many people, including fishermen, want to closely approach the water edge. If the vegetative butress is proposed with round boulders, I feel it would be better designed to have large armour stone sections (where possible if they provide enough erosion resistance) to provide "mini-plateaus" for people to have spots for closer access to the water edge since the round boulders would be dangerous for those who try to walk out onto them. Please consider that unless there is at least 1 meter of flat vegetated area at the top of the butress, there should be sime locations for closer access off the edge of the trail. This is a nice detail and Ive seen a great deal of this use to observe the river over the years.I would not support any fencing along the trail regardless of the details used. Site #4 - Support. However, please consider a way to mount the armour stone to approx. 800 mm above the trail surface and eliminate the "safety barrier". Either can be climbed by those who choose, to me, but subtle warning signs ("do not climb wall") would seem less obtrusive than an un-natural railing/barrier. Site #5 - support Sites # 6 : DO NOT SUPPORT. I find the idea od decommissioning the lower trail, rather than raising it and futrher stabilizing the river edge to be not satisfactory. The original plan for the park has created an interesting area of temporary pond with inflow dn outflow that is safe, adequately harbours flora and fauna and the path allows a continuous river edge experience. To lose that is a shame. I do not agree with the support scoring criteria either. Please take another look and use the technical tools to improve, even if it does mean a raised path hybrid solution. This is currently a very nice section of the river edge trail along which many peple pause to enjoy. The upper Park area is an entirely different experience. Pleas take another shot at this. Site #7 - DO NOT SUPPORT. For the cost and extent I am surprised this is proposed. I also diagree with the high score for Social and Cultural as this is not an area immediatley adjacent the river and I fail to see how a long extent of boardwalk will add enjoyment. I also feel the raised boarwalk will also concentrate traffic with people, peoiple with dogs, fast trail/mountain bike and leisure bike riders, etc. I really would have thought a raised trail with sufficient drainage crossings would have been the preferred alternative. Site #8 - SUPPORT. Probably the best location to re-align the trail as this is a complex area of rivulets and low terrain. Perhaps moving the trail away and allowing internmittnent flooding to occur here is the best solution.	I am not sure how many itertaions are allowed for public consulation but I would encourage the City to NOT do the minimum in the EA. I suggest an open house while the proposed alternatives are still "live" and open for input. I recognise the consultant is extremely capable technically. I would ask that the "social" and "cultural" criteria be carefully weighed with higher value - recognising the various age groups and allowing emphasis on experiencing the trail via proximity to the river edge as much as possible, with spots to pause along the way.	Yes	About right
10	2023-07-21	Dorothy Tomiuk	Have documented the erosion at https://misscyclingnow.ca/Culham_Trail/ and in the past led community rides through this area, now so changed. Not as familiar with the other technical conditions, but am sure they all inform each other.	Just to say, the 3rd bullet is very important for a City where "A River Runs Through It". The human use and enjoyment of this extraordinary, signature feature must not be sacrificed solely to engineering solutions. I imagine Safety Criteria is included in Cultural and Social, but perhaps should be made explicit, especially when the trail is not lit and transitions not clearly seen. Economic criteria need to be measured with a long and holistic view.	As indicated below, a blend of too technical and just about right. Without subject specialty in hydrology, engineering, etc. it is tough to judge, but I have listed some general parameters below which I hope are part of the technical decisions.	Think we need to revisit Section 7 since the differential is so great between preferred vs other solutions ($5.8M vs $460-600K). Boardwalks in general need to be reviewed regarding multi-use requirements (e.g. traction), maintenance vs environmental issues and mitigation for conflicts. Safety at the edge also important (e.g. look at Sawmill Valley Trail boardwalk) especially with no lighting.	My comments are general rather specific to certain sections or technical: 1. Must maintain this multi-use jewel thru the City; it is worth saving by changing (which won't be popular with some, and will pay back in tourism (e.g. fishing), climate action plan, City building and other goals 2. Per above, aesthetics are important, and beautiful solutions will pay back in the long run (must be sound as well for durability, maintenance) 3. Need permanent solution into foreseeable future (anticipate changes in river banks, climate change, 4 season usage) so don't go half-measures 4. No contrived fighting of the river/flood force (won't work and trail can't remain where it is, or how it is, hard as that might be to accept); in other words, go with the flow 5. Retain a natural ambience and nature-friendly environment as much as possible in new design, but be practical and don't sweat built elements or taking out trees for a sustainable floodplain 6. Eliminate potential pedestrian/cyclist conflict where possible - anticipate at detail design, not fix later; err on side of caution - number of users including cyclists will greatly increase as the City grows and transitions to a more liveable, multimodal format (it will have to) 7. Need clear operations/ maintenance plan for 4-season safety of users without compromising built and natural components 8. Plan for minimal wayfinding needs, and keep trail route intuitive for users	Yes	Too technical

No.	PIC Comment Form								
	Date Received	From	Q1 - Existing Conditions	Q2 - Evaluation Criteria	Q3 - Preliminary Scoring	Q4 - Preferred Alternatives	Q5 - Additional Comments	Q6 - Was the information provided helpful to you?	Q7 - Was the information provided:
							8. Plan for minimal waymnding needs, and keep trail route intuitive for users as much as possible to reduce need for wordy signage (use symbols) 9. Ensure the aspirations for the Credit Valley Trail can be met through the redesign, including accessibility, reflection of Indigenous values and heritage, and continuity of experience 10. Keep trail open as much as possible throughout phased work; given costs, will need to be done in segments anyway, I'm sure, so make clear to the residents what is open and not open, and detours required, etc		
11	2023-07-11	Heather Shaw	no	Option 4 for SITE 8 shows the Social/Cultural Criteria as yellow - it should be ranked as orange. Unique to SITE 8, the alternative trail is used for programming as well as trail uses. An increase in traffice on the proposed alternative trail (which include casual users and mountain bike groups) presents not only a safety hazard to children, seniors or people with disabilities, but affects the enjoyment that people will have in the park area.	referring to site #8 - recommended option to realign the trail. The Riverwood Conservancy offers educational and recreational programs to students from the school boards and the general community. These activities take place on the trail which the Culham trail would be realigned to. An increase in pedestrian and bicyle traffic will have an undue and negative impact to programs offered, increasing safety risk and taking away from the enjoyment of relatively uncrowded trails. Other options need to be further explored	No - I ask the committee/consultants to take into consideration the special and varied uses of trails in Site #8 and to reassess the options and propose an alternative that would balance the needs of both casual users and users of Riverwood programs and classes, of which many people are young children, seniors and people with special needs/disabilities. Site #8 is unique in its use for community and educational programming and as such, needs to have an option which allows users hiking the CV trail onroute to another area AND Riverwood users to have alternate trails.	Other than SITE 8, the options and recommended results for the other sites seem well thought out	Yes	About right

Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

November 16, 2022

Anthony Di Giandomenico, P.Eng.
Project Manager
City of Mississauga
anthony.digiandomenico@mississauga.ca

BY EMAIL ONLY

Re: **Credit River Erosion Control Project from Dundas St. West to Highway 403**
City of Mississauga
Schedule B Municipal Class Environmental Assessment
Notice of Study Commencement

Dear Mr. Di Giandomenico,

This letter is in response to the Notice of Commencement for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the project is following the approved environmental planning process for a Schedule B project under the Municipal Engineers Association's Municipal Class Environmental Assessment (Class EA).

The attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please identify the areas of interest which are applicable to the project and ensure they are addressed. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed project**, the MECP is delegating the procedural aspects of rights-based consultation to the proponent through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on information provided to date and the Crown`s preliminary assessment the proponent is required to consult with the following communities who have been identified as potentially affected by the proposed project:

- Mississaugas of the Credit First Nation;
- Six Nations of the Grand River (Both the Six Nations Elected Council and the Haudenosaunee Confederacy Chiefs Council (HCCC)/Haudenosaunee Development Institute (HDI)); and
- Huron-Wendat (only if there is to be any digging/excavation that may result in a disturbance to any archaeological resources).

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process".

Additional information related to Ontario's *Environmental Assessment Act* is available online at: www.ontario.ca/environmentalassessments

Please also refer to the attached document "A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities" for further information.

The proponent must contact the Director of Environmental Assessment Branch under the following circumstances after initial discussions with the communities identified by MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities;
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right;
- Consultation with Indigenous communities or other stakeholders has reached an impasse; or
- A Section 16 Order request is expected based on impacts to Aboriginal or treaty rights.

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

Once the report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the Proponent.

Please ensure that the Notice of Completion advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Section 16 Order requests on those matters should be addressed in writing to:

Minister David Piccini
Ministry of Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and
Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON, M4V 1P5
EABDirector@ontario.ca

Please note the project cannot proceed until at least 30 days after the end of the public review period provided for in the Notice of Completion.

Further, the project may not proceed after this time if:

- a Section 16 Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights; or
- the Director has issued a Notice of Proposed Order regarding the project.

The public can request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent.

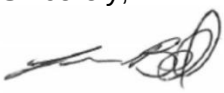
Once the requested information has been received, the Minister will have 30 days to make a decision or impose conditions on your project.

A draft copy of the report should be sent to me prior to the filing of the final report, allowing a minimum of 30 days for the ministry's technical reviewers to provide comments.

Please also ensure a copy of the final notice is sent to the ministry's Central Region EA notification email account (eanotification.cregion@ontario.ca) after the report is finalized.

Should you or your project team members have any questions regarding the material above, please contact me at trevor.bell@ontario.ca.

Sincerely,



Trevor Bell
Regional Environmental Planner

cc: Tina Dufresne, Manager, Halton Peel District Office, MECP
Solange Desautels, Supervisor, Project Coordination Unit, MECP
Robert Amos, Consultant Project Manager, Aquafor Beech Ltd.

Attachments: Areas of Interest
A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities

AREAS OF INTEREST

It is suggested that you check off each applicable area after you have considered / addressed it.

☐ **Species at Risk**

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario's Species at Risk program. For any questions related to subsequent permit requirements, please contact SAROntario@ontario.ca.

☐ **Planning and Policy**

- Ontario has released "A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019)" which replaces the "Growth Plan for the Greater Golden Horseshoe (2017)". More information, including the Plan, is found here: https://www.placestogrow.ca.

- Parts of the study area may be subject to the A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019), Oak Ridges Moraine Conservation Plan (2017), Niagara Escarpment Plan (2017), Greenbelt Plan (2017) or Lake Simcoe Protection Plan (2014). Applicable policies should be referenced in the report, and the proponent should describe how the proposed project adheres to the relevant policies in these plans.

- The Provincial Policy Statement (2020) contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the report, and the proponent should describe how the proposed project is consistent with these policies.

☐ **Source Water Protection (all projects)**

The *Clean Water Act*, 2006 (CWA) aims to protect existing and future sources of drinking water. To achieve this, several types of vulnerable areas have been delineated around surface water intakes and wellheads for every municipal residential drinking water system that is located in a source protection area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs) and surface water Intake Protection Zones (IPZs). Other vulnerable areas that have been delineated under the CWA include Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs). Source protection plans have been developed that include policies to address existing and future risks to sources of municipal drinking water within these vulnerable areas.

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e. systems that are not municipal residential systems). MEA Class EA projects may include activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and

prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- In October 2015, the MEA Parent Class EA document was amended to include reference to the Clean Water Act (Section A.2.10.6) and indicates that proponents undertaking a Municipal Class EA project must identify early in their process whether a project is or could potentially be occurring with a vulnerable area. **Given this requirement, please include a section in the report on source water protection.**

    - The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically, the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area.

    - If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.

- While most source protection plans focused on including policies for significant drinking water threats in the WHPAs and IPZs it should be noted that even though source protection plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk to impacts and within these areas, activities may impact the quality of sources of drinking water for systems other than municipal residential systems.

- In order to determine if this project is occurring within a vulnerable area, proponents can use this mapping tool: http://www.applications.ene.gov.on.ca/swp/en/index.php.The mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be applicable in the vulnerable area.

- For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. **Please consult with the local source protection authority to discuss potential impacts on drinking water. Please document the results of that consultation within the report and include all communication documents/correspondence.**

More Information

For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to Conservation Ontario's website where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in section 1.1 of Ontario Regulation 287/07 made under the *Clean Water Act*. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional "local" threat activities, as

approved by the MECP.

Climate Change

Ontario is leading the fight against climate change through the Climate Change Action Plan. Recently released, the plan lays out the specific actions Ontario will take in the next five years to meet its 2020 greenhouse gas reduction targets and establishes the framework necessary to meet its long-term targets. As a commitment of the action plan, **the province has now finalized a guide, "**Considering Climate Change in the Environmental Assessment Process**" (Guide).**

The Guide is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. **Proponents should review this Guide in detail.**

- The MECP expects proponents to:

    1. Consider during the assessment of alternative solutions and alternative designs, the following:
        a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
        b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).
    2. Include a discrete section in the report detailing how climate change was considered in the EA.

    How climate change is considered can be qualitative or quantitative in nature, and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "Community Emissions Reduction Planning: A Guide for Municipalities" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

Air Quality, Dust and Noise

- If there are sensitive receptors in the surrounding area of this project, an air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern. **Please contact this office for**

<u>further consultation on the level of Air Quality Impact Assessment required for this project if not already advised.</u>

- **<u>If a full Air Quality Impact Assessment is not required for the project, the report should still contain:</u>**

    - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
    - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
    - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
    - A discussion of potential mitigation measures.

- As a common practice, "air quality" should be used an evaluation criterion for all road projects.

- Dust and noise control measures should be addressed and included in the construction plans to ensure that nearby residential and other sensitive land uses within the study area are not adversely affected during construction activities.

- The MECP recommends that non-chloride dust-suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to *Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities*. report prepared for Environment Canada. March 2005.

- The report should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.

Ecosystem Protection and Restoration

- Any impacts to ecosystem form and function must be avoided where possible. The report should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.

- All natural heritage features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:

    - Areas of Natural and Scientific Interest (ANSIs)
    - Rare Species of flora or fauna
    - Watercourses
    - Wetlands
    - Woodlots

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these

sensitive features. In addition, you may consider the provisions of the Rouge Park Management Plan if applicable.

Surface Water

- The report must include enough information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area. Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.

- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's Stormwater Management Planning and Design Manual (2003) should be referenced in the report and utilized when designing stormwater control methods. **A Stormwater Management Plan should be prepared as part of the Class EA process** that includes:

    - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained
    - Watershed information, drainage conditions, and other relevant background information
    - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
    - Information on maintenance and monitoring commitments.

- Ontario Regulation 60/08 under the *Ontario Water Resources Act* (OWRA) applies to the Lake Simcoe Basin, which encompasses Lake Simcoe and the lands from which surface water drains into Lake Simcoe. If the proposed sewage treatment plant is listed in Table 1 of the regulation, the report should describe how the proposed project and its mitigation measures are consistent with the requirements of this regulation and the OWRA.

- Any potential approval requirements for surface water taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, except for certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information. Additionally, an Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

Groundwater

- The status of, and potential impacts to any well water supplies should be addressed. If the project involves groundwater takings or changes to drainage patterns, the quantity and quality of groundwater may be affected due to drawdown effects or the redirection of existing contamination flows. In addition, project activities may infringe on existing wells such that they must be reconstructed or sealed and abandoned. Appropriate information to

define existing groundwater conditions should be included in the report.

- If the potential construction or decommissioning of water wells is identified as an issue, the report should refer to Ontario Regulation 903, Wells, under the OWRA.

- Potential impacts to groundwater-dependent natural features should be addressed. Any changes to groundwater flow or quality from groundwater taking may interfere with the ecological processes of streams, wetlands or other surficial features. In addition, discharging contaminated or high volumes of groundwater to these features may have direct impacts on their function. Any potential effects should be identified, and appropriate mitigation measures should be recommended. The level of detail required will be dependent on the significance of the potential impacts.

- Any potential approval requirements for groundwater taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information.

Contaminated Soils

- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with *Part XV.1 of the Environmental Protection Act* (EPA) and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Please contact the appropriate MECP District Office for further consultation if contaminated sites are present.

- Any current or historical waste disposal sites should be identified in the report. The status of these sites should be determined to confirm whether approval pursuant to Section 46 of the EPA may be required for land uses on former disposal sites.

- The location of any underground storage tanks should be investigated in the report. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry's Spills Action Centre must be contacted in such an event.

- The report should identify any underground transmission lines in the study area. The owners should be consulted to avoid impacts to this infrastructure, including potential spills.

Excess Materials Management

- Activities involving the management of excess soil should be completed in accordance with the MECP's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014).

- All waste generated during construction must be disposed of in accordance with ministry requirements

Servicing and Facilities

- Any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste must have an Environmental Compliance Approval (ECA) before it can operate lawfully. Please consult with the Environmental Approvals Access and Service Integration Branch (EAASIB) to determine whether a new or amended ECA will be required for any proposed infrastructure.

- We recommend referring to the ministry's environmental land use planning guides to ensure that any potential land use conflicts are considered when planning for any infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

Mitigation and Monitoring

- Contractors must be made aware of all environmental considerations so that all environmental standards and commitments for both construction and operation are met. Mitigation measures should be clearly referenced in the report and regularly monitored during the construction stage of the project. In addition, we encourage proponents to conduct post-construction monitoring to ensure all mitigation measures have been effective and are functioning properly.

- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.

- The proponent's construction and post-construction monitoring plans must be documented in the report, as outlined in Section A.2.5 and A.4.1 of the MEA Class EA parent document.

Consultation

- The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the SR that identifies concerns that were raised and **describes how they have been addressed by the proponent** throughout the planning process. The Class EA also directs proponents to include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments.

Class EA Process

- The report should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.

- If this project is a Master Plan: there are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. The Master Plan should clearly indicate the selected approach for conducting the plan, by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to Section 16 Order requests under the

Environmental Assessment Act, although the plan itself would not be.

- The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the report that identifies concerns that were raised and **describes how they have been addressed by the proponent** throughout the planning process. The Class EA also directs proponents to include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments.

- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment. The report should include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments) such that all potential impacts can be identified, and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the report.

- Please include in the report a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations, ECAs, and Species at Risk permits, Conservation Authority permits, and approvals under the *Impact Assessment Act*, 2019.

- Ministry guidelines and other information related to the issues above are available at http://www.ontario.ca/environment-and-energy/environment-and-energy. We encourage you to review all the available guides and to reference any relevant information in the report.

Definitions

The following definitions are specific to this document and may not apply in other contexts:

Aboriginal communities – the First Nation or Métis communities identified by the Crown for the purpose of consultation.

Consultation – the Crown's legal obligation to consult when the Crown has knowledge of an established or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. This is the type of consultation required pursuant to s. 35 of the *Constitution Act, 1982*. Note that this definition does not include consultation with Aboriginal communities for other reasons, such as regulatory requirements.

Crown – the Ontario Crown, acting through a particular ministry or ministries.

Procedural aspects of consultation – those portions of consultation related to the process of consultation, such as notifying an Aboriginal community about a project, providing information about the potential impacts of a project, responding to concerns raised by an Aboriginal community and proposing changes to the project to avoid negative impacts.

Proponent – the person or entity that wants to undertake a project and requires an Ontario Crown decision or approval for the project.

I. Purpose

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that may adversely impact that right. In outlining a framework for the duty to consult, the Supreme Court of Canada has stated that the Crown may delegate procedural aspects of consultation to third parties. This document provides general information about the Ontario Crown's approach to delegation of the procedural aspects of consultation to proponents.

This document is not intended to instruct a proponent about an individual project, and it does not constitute legal advice.

II. Why is it Necessary to Consult with Aboriginal Communities?

The objective of the modern law of Aboriginal and treaty rights is the *reconciliation* of Aboriginal peoples and non-Aboriginal peoples and their respective rights, claims and interests. Consultation is an important component of the reconciliation process.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. For example, the Crown's duty to consult is triggered when it considers issuing a permit, authorization or approval for a project which has the potential to adversely impact an Aboriginal right, such as the right to hunt, fish, or trap in a particular area.

The scope of consultation required in particular circumstances ranges across a spectrum depending on both the nature of the asserted or established right and the seriousness of the potential adverse impacts on that right.

Depending on the particular circumstances, the Crown may also need to take steps to accommodate the potentially impacted Aboriginal or treaty right. For example, the Crown may be required to avoid or minimize the potential adverse impacts of the project.

III. The Crown's Role and Responsibilities in the Delegated Consultation Process

The Crown has the responsibility for ensuring that the duty to consult, and accommodate where appropriate, is met. However, the Crown may delegate the procedural aspects of consultation to a proponent.

There are different ways in which the Crown may delegate the procedural aspects of consultation to a proponent, including through a letter, a memorandum of understanding, legislation, regulation, policy and codes of practice.

If the Crown decides to delegate procedural aspects of consultation, the Crown will generally:

- Ensure that the delegation of procedural aspects of consultation and the responsibilities of the proponent are clearly communicated to the proponent;
- Identify which Aboriginal communities must be consulted;
- Provide contact information for the Aboriginal communities;
- Revise, as necessary, the list of Aboriginal communities to be consulted as new information becomes available and is assessed by the Crown;
- Assess the scope of consultation owed to the Aboriginal communities;
- Maintain appropriate oversight of the actions taken by the proponent in fulfilling the procedural aspects of consultation;
- Assess the adequacy of consultation that is undertaken and any accommodation that may be required;
- Provide a contact within any responsible ministry in case issues arise that require direction from the Crown; and
- Participate in the consultation process as necessary and as determined by the Crown.

IV. The Proponent's Role and Responsibilities in the Delegated Consultation Process

Where aspects of the consultation process have been delegated to a proponent, the Crown, in meeting its duty to consult, will rely on the proponent's consultation activities and documentation of those activities. The consultation process informs the Crown's decision of whether or not to approve a proposed project or activity.

A proponent's role and responsibilities will vary depending on a variety of factors including the extent of consultation required in the circumstance and the procedural aspects of consultation the Crown has delegated to it. Proponents are often in a better position than the Crown to discuss a project and its potential impacts with Aboriginal communities and to determine ways to avoid or minimize the adverse impacts of a project.

A proponent can raise issues or questions with the Crown at any time during the consultation process. If issues or concerns arise during the consultation that cannot be addressed by the proponent, the proponent should contact the Crown.

a) What might a proponent be required to do in carrying out the procedural aspects of consultation?

Where the Crown delegates procedural aspects of consultation, it is often the proponent's responsibility to provide notice of the proposed project to the identified Aboriginal communities. The notice should indicate that the Crown has delegated the procedural aspects of consultation to the proponent and should include the following information:

- a description of the proposed project or activity;
- mapping;
- proposed timelines;
- details regarding anticipated environmental and other impacts;
- details regarding opportunities to comment; and
- any changes to the proposed project that have been made for seasonal conditions or other factors, where relevant.

Proponents should provide enough information and time to allow Aboriginal communities to provide meaningful feedback regarding the potential impacts of the project. Depending on the nature of consultation required for a project, a proponent also may be required to:

- provide the Crown with copies of any consultation plans prepared and an opportunity to review and comment;
- ensure that any necessary follow-up discussions with Aboriginal communities take place in a timely manner, including to confirm receipt of information, share and update information and to address questions or concerns that may arise;
- as appropriate, discuss with Aboriginal communities potential mitigation measures and/or changes to the project in response to concerns raised by Aboriginal communities;
- use language that is accessible and not overly technical, and translate material into Aboriginal languages where requested or appropriate;
- bear the reasonable costs associated with the consultation process such as, but not limited to, meeting hall rental, meal costs, document translation(s), or to address technical & capacity issues;
- provide the Crown with all the details about potential impacts on established or asserted Aboriginal or treaty rights, how these concerns have been considered and addressed by the proponent and the Aboriginal communities and any steps taken to mitigate the potential impacts;
- provide the Crown with complete and accurate documentation from these meetings and communications; and
- notify the Crown immediately if an Aboriginal community not identified by the Crown approaches the proponent seeking consultation opportunities.

b) What documentation and reporting does the Crown need from the proponent?

Proponents should keep records of all communications with the Aboriginal communities involved in the consultation process and any information provided to these Aboriginal communities.

As the Crown is required to assess the adequacy of consultation, it needs documentation to satisfy itself that the proponent has fulfilled the procedural aspects of consultation delegated to it. The documentation required would typically include:

- the date of meetings, the agendas, any materials distributed, those in attendance and copies of any minutes prepared;
- the description of the proposed project that was shared at the meeting;
- any and all concerns or other feedback provided by the communities;
- any information that was shared by a community in relation to its asserted or established Aboriginal or treaty rights and any potential adverse impacts of the proposed activity, approval or disposition on such rights;
- any proposed project changes or mitigation measures that were discussed, and feedback from Aboriginal communities about the proposed changes and measures;
- any commitments made by the proponent in response to any concerns raised, and feedback from Aboriginal communities on those commitments;
- copies of correspondence to or from Aboriginal communities, and any materials distributed electronically or by mail;
- information regarding any financial assistance provided by the proponent to enable participation by Aboriginal communities in the consultation;
- periodic consultation progress reports or copies of meeting notes if requested by the Crown;
- a summary of how the delegated aspects of consultation were carried out and the results; and
- a summary of issues raised by the Aboriginal communities, how the issues were addressed and any outstanding issues.

In certain circumstances, the Crown may share and discuss the proponent's consultation record with an Aboriginal community to ensure that it is an accurate reflection of the consultation process.

c) Will the Crown require a proponent to provide information about its commercial arrangements with Aboriginal communities?

The Crown may require a proponent to share information about aspects of commercial arrangements between the proponent and Aboriginal communities where the arrangements:

- include elements that are directed at mitigating or otherwise addressing impacts of the project;
- include securing an Aboriginal community's support for the project; or
- may potentially affect the obligations of the Crown to the Aboriginal communities.

The proponent should make every reasonable effort to exempt the Crown from confidentiality provisions in commercial arrangements with Aboriginal communities to the extent necessary to allow this information to be shared with the Crown.

The Crown cannot guarantee that information shared with the Crown will remain confidential. Confidential commercial information should not be provided to the Crown as part of the consultation record if it is not relevant to the duty to consult or otherwise required to be submitted to the Crown as part of the regulatory process.

V. What are the Roles and Responsibilities of Aboriginal Communities' in the Consultation Process?

Like the Crown, Aboriginal communities are expected to engage in consultation in good faith. This includes:

- responding to the consultation notice;
- engaging in the proposed consultation process;
- providing relevant documentation;
- clearly articulating the potential impacts of the proposed project on Aboriginal or treaty rights; and
- discussing ways to mitigates any adverse impacts.

Some Aboriginal communities have developed tools, such as consultation protocols, policies or processes that provide guidance on how they would prefer to be consulted. Although not legally binding, proponents are encouraged to respect these community processes where it is reasonable to do so. Please note that there is no obligation for a proponent to pay a fee to an Aboriginal community in order to enter into a consultation process.

To ensure that the Crown is aware of existing community consultation protocols, proponents should contact the relevant Crown ministry when presented with a consultation protocol by an Aboriginal community or anyone purporting to be a representative of an Aboriginal community.

VI. What if More Than One Provincial Crown Ministry is Involved in Approving a Proponent's Project?

Depending on the project and the required permits or approvals, one or more ministries may delegate procedural aspects of the Crown's duty to consult to the proponent. The proponent may contact individual ministries for guidance related to the delegation of procedural aspects of consultation for ministry-specific permits/approvals required for the project in question. Proponents are encouraged to seek input from all involved Crown ministries sooner rather than later.

Ministry of Citizenship and Multiculturalism

Heritage Planning Unit
Heritage Branch
Citizenship, Inclusion and Heritage Division
5th Flr, 400 University Ave
Tel.: 416-301-4797

Ministère des Affaires civiques et du Multiculturalisme

Unité de la planification relative au patrimoine
Direction du patrimoine
Division des affaires civiques, de l'inclusion et du patrimoine
Tél.: 416-301-4797

Ontario

July 10, 2024 EMAIL ONLY

Anthony Di Giandomenico
Project Manager
300 City Centre Drive
Mississauga, ON L5B 3C9
Anthony.DiGiandomenico@mississauga.ca

MCM File	**:**	**0014094**
Proponent	**:**	**City of Mississauga**
Subject	**:**	**Municipal Class Environmental Assessment – Schedule B – Notice of Completion**
Project	**:**	**Credit River Erosion Control Program From Dundas Street to Highway 403**
Location	**:**	**City of Mississauga, Peel Region**

Dear Anthony Di Giandomenico:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Completion for the above-referenced project, and for making the Project File report available for review.

MCM's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage.

Project Summary
The City of Mississauga has completed a Schedule B Class Environmental Assessment (Class EA) Study for erosion control and restoration of the Credit River between Dundas Street West and Highway 403. The Study was undertaken to address existing erosion and safety issues along the river and adjacent Culham Trail. This section of the Credit River and Culham Trail are in need of rehabilitation to remediate existing river erosion, risk to property and infrastructure, and improve safety. Some of the impacts include segments of failed riverbank protection, washouts and damage to the trail, valley wall erosion and ice control.

Comments
We have reviewed the *Schedule B Class Environmental Assessment – Project File,* prepared by Aquafor Beech Limited, dated June 6, 2024. We have the following comments and observations:

Archaeological Resources
A Stage 1 Archaeological Assessment (AA) was undertaken for the study area under Project information Form (PIF) #P1066-0374-2023. The results of the Stage 1 report are summarized in Section 3.8 of the PFR, and the full report is included in Appendix B. The Stage 1 report recommended Stage 2 AA for portions of the study area determined to have archaeological

potential. Our records indicate that Stage 2 AA has since been initiated for these portions of the study area under PIF #P124-0254-2023.

Our records indicate that the Stage 1 and Stage 2 reports have not yet been submitted to MCM for review. Please note that archaeological concerns have not been fully addressed until reports have been entered into the Ontario Public Register of Archaeological Reports ('the Register') where those reports recommend that:

1. the archaeological assessment of the project area is complete and
2. all archaeological sites identified by the assessment are either of no further cultural heritage value or interest (as per Section 48(3) of the Ontario Heritage Act) or that mitigation of impacts has been accomplished through excavation or an avoidance and protection strategy.

Approval authorities and/or proponents should wait to receive the MCM's written confirmation that the archaeological assessment report(s) has been entered into the Register before issuing a decision or proceeding with any ground disturbing activities. The letter will also indicate either that there are no further concerns for impacts to archaeological resources or articulate next steps to mitigate those concerns. Until MCM's letter is received, the results of the archaeological assessments presented in this PFR should be considered preliminary. MCM may have additional comments on this section of the PFR pending the review of the archaeological reports.

Proponents must follow the recommendations of the archaeological assessment report(s). MCM recommends that further stages of archaeological assessment (if recommended) be undertaken as early as possible during detailed design and prior to any ground disturbing activities.

Built Heritage Resources and Cultural Heritage Landscapes
A *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* (CHR) was completed for the study area by ASI (dated April 2023, updated October 2023). The results of the CHR are summarized in Section 3.10 of the PFR, and the full report is included in Appendix C. The CHR identified a total of 65 known built heritage resources, one potential built heritage resource, and four potential cultural heritage landscapes within the study area. The preliminary impact assessment portion of the CHR identified direct, adverse impacts to two potential CHLs, and potential indirect vibration impacts on structures within these CHLs. The CHR recommended mitigation measures, including resource-specific Heritage Impact Assessments (HIAs) for the Erindale Dam, the Credit River, and the property at 1699 Dundas Street West.

We have reviewed the above-referenced CHR and find that the report is overall consistent with the requirements, guidance and standards of the Class EA and with best practice guidance prepared by MCM.

Section 3.10 of the PFR indicates that the CHR will be updated with a confirmation of impacts and mitigation measures for built heritage resources and cultural heritage landscapes once preferred alternatives have been selected. As this exercise has already been completed, the PFR should be revised to include the impacts identified in the CHR, and recommended mitigation measures, including the requirements for future technical cultural heritage studies.

We also recommend revising the title of Section 3.10 to be consistent with the full title of the report: *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment.*

Thank you for the opportunity to review the PFR and associated documents. If you have any questions or require clarification, please do not hesitate to contact me.

Sincerely,

Liam Smythe
Heritage Planner
Liam.Smythe@ontario.ca

Copied to: Robert Amos, Aquafor Beech Ltd.
Emma Schiller, Aquafor Beech Ltd.
Karla Barboza, MCM
EA Notices to Central Region, MECP

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with *Ontario Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

Ministry of Natural Resources and Forestry

Land Use Planning and Strategic Issues Section
Southern Region

Regional Operations Division
300 Water Street
Peterborough, ON K9J 3C7

Ministère des Richesses naturelles et des Forêts

Section de l'aménagement due territoire et des questions stratégiques
Region du Sud

Division des opérations régionales
300, rue Water
Peterborough (ON) K9J 3C7

Date : July 12, 2023

Dear Rob and Anthony

SUBJECT: MNRF Comments – PIC Notice – Credit River Erosion Control Project – Dundas St. West to Highway 403 – City of Mississauga

The Ministry of Natural Resources and Forestry (MNRF) received the Public Information Centre Notice for the above noted project June 14, 2023. Thank you for circulating this to our office.

Please note the MNRF comments below have been provided in an effort to support the evaluation of alternatives and provide some insight into the potential permits/ approvals/ authorizations which may be required from the MNRF. The comments are both general (where they can be) and specific to the preferred alternative. MNRF can not provide a definitive answer as to what permits/ approvals would be required until detailed designs/ plans have been forwarded for review. It is understood applying for required permits/ approvals from the multiple ministries/ agencies is part of another step in the EA process.

<u>Site 1 – Preliminary Preferred Alternative: Retain By-Pass Channel</u>

- More information would be required before MNRF could provide details regarding potential permits/ approvals.
    - Depending on the final design, it could require an MNRF approval under the *Public Lands Act* (PLA) and/or *Lakes and Rivers Improvement Act* (LRIA).
- MNRF records indicate the current ice control structure is owned by the Credit Valley Conservation Authority (CVCA), so if a MNRF permit/ approval is required the MNRF would require comments from the CVCA as part of the application submission.

<u>Sites 2-5 – Preliminary Preferred Alternative: Various</u>

- Review of the available information indicates a *Public Lands Act* permit would likely be required due to the proposed works impacting the bed of the Humber River, which is considered to be a navigable waterway and Crown lands managed by the MNRF.

<u>Sites 6-8 – Preliminary Preferred Alternative: Various</u>

- Preliminary review per the information provided indicates neither a PLA nor LRIA approval would be required as the preferred alternatives look to be either a Conservation Authority

review or works on private lands with no to minimal impact on the Crown bed of the Humber River.
    - However, if works require additional erosion control on any of the banks, a PLA permit may be required.
- More information would be required prior to MNRF providing definitive advice on whether a MNRF permit/ approval would be required.

Additional information regarding the *Public Lands Act* and *Lakes and Rivers Improvement Act* may be found at:

- *Public Lands Act* Work Permits: Crown land work permits | ontario.ca
- *Lakes and Rivers Improvement Act*: Lakes and Rivers Improvement Act administrative guide | ontario.ca

When an application is ready to be submitted, or for additional information/ clarification on the application requirements please send to the MNRF Aurora Owen Sound Work Centre at: scp.aurora@ontario.ca

For all proposed work, you may require an authorization under the *Fish and Wildlife Conservation Act*, where:

- The relocation of fish outside of the work area, a Licence to Collect Fish for Scientific Purposes under the *Fish and Wildlife Conservation Act* will be required. See: Licence to collect fish for scientific purposes | ontario.ca
- The relocation of wildlife outside of the work area (including amphibians, reptiles, and small mammals), a Wildlife Collector's Authorization under the *Fish and Wildlife Conservation Act* will be required.

Please keep the MNRF on the project notification list.

If you have any questions or concerns, please feel free to contact me.

Best Regards,

Adam Kennedy

Adam Kennedy
Regional Planner
Land Use Planning and Strategic Issues Section (LUPSI)
Southern Region
Ministry of Natural Resources and Forestry

(705) 761-3374
Adam.Kennedy@Ontario.ca

schiller.e@aquaforbeech.com

From: Anthony DiGiandomenico <Anthony.DiGiandomenico@mississauga.ca>
Sent: July 10, 2023 12:42 PM
To: Saddi, Asha
Cc: McMillen, Kayle; Robert Amos (amos.r@aquaforbeech.com); schiller.e (schiller.e@aquaforbeech.com)
Subject: RE: Credit River Erosion Control - Public Information Centre Notice

Hi Asha,

Thank you for the provided comments.

We will be reviewing all study comments received and providing formal responses.

Thanks,
Anthony

[cid:CAAA3CE2-EFCC-4490-B1A9-7D78571693F9]

Anthony Di Giandomenico P.Eng.
Storm Drainage Engineer, Environmental Services T 905-615-3200 ext.3491 | M 647-285-8291
anthony.digiandomenico@mississauga.ca<mailto:anthony.digiandomenico@mississauga.ca>

City of Mississauga<http://www.mississauga.ca/> | Transportation & Works Department Infrastructure Planning & Engineering Division

From: Saddi, Asha <asha.saddi@peelregion.ca>
Sent: Monday, July 10, 2023 12:14 PM
To: Anthony DiGiandomenico <Anthony.DiGiandomenico@mississauga.ca>
Cc: McMillen, Kayle <kayle.mcmillen@peelregion.ca>
Subject: FW: Credit River Erosion Control - Public Information Centre Notice

Hi Anthony,
Thank you for the opportunity to comment on the PIC materials. Our Public Health team has the following comments:

Public Health - Built Environment Team - Kayle McMillen

Trails provide opportunities for residents to be more physically active on a daily basis through recreational use and active transportation. Consider incorporating the health benefits related to walking and cycling within the evaluation criteria. In future projects, health benefits could be listed as part of the benefit to community (e.g. access to trails, enjoyment of surrounding lands and increased opportunities for physical activity).

I will be in touch again if other teams have comments and in the meantime we look forward to your response comments.

Thanks,

Asha Saddi, BA(Hons), PMP

Technical Analyst, Transportation Development Transportation Division, Public Works
10 Peel Centre Drive, Suite B, 4th Floor Brampton, ON L6T 4B9
Tel: 905 791 7800 ext. 7794

[Region of Peel]<https://peelregion.ca/> [Twitter]<https://twitter.com/regionofpeel> [Facebook] <https://www.facebook.com/regionofpeel> [youtube] <https://www.youtube.com/user/theregionofpeel> [Instagram] <https://www.instagram.com/peelregion.ca>

From: Rob Amos <amos.r@aquaforbeech.com<mailto:amos.r@aquaforbeech.com>>
Sent: June 14, 2023 12:38 PM
Cc: 'Anthony DiGiandomenico' <Anthony.DiGiandomenico@mississauga.ca<mailto:Anthony.DiGiandomenico@mississauga.ca>>
Subject: RE: Credit River Erosion Control - Public Information Centre Notice

CAUTION: EXTERNAL MAIL. DO NOT CLICK ON LINKS OR OPEN ATTACHMENTS YOU DO NOT TRUST.
Dear Stakeholder,

In accordance with the environmental assessment process, Aquafor is pleased to share the Notice of Public Information Centre for the Credit River Erosion Control Project from Dundas St. West to Highway 403.

Aquafor and the City of Mississauga have identified existing problems and risks along the Credit River and Culham Trail, and developed alternative solutions for consideration. These solutions will be refined through public consultation.

Project information is available on the City's website, with comments being requested prior to July 14th, 2023. (www.mississauga.ca/creditrivererosionea<http://www.mississauga.ca/creditrivererosionea>).

Upon your review should you have any questions, please feel free to contact the following:

Anthony Di Giandomenico, P.Eng.
Project Manager
City of Mississauga
201 City Centre Dr, Suite 800
Mississauga, ON L5B 2T4
(905) 615-3200, ext. 3491
Anthony.DiGiandomenico@mississauga.ca<mailto:Anthony.DiGiandomenico@mississauga.ca>

Robert Amos, P.Eng.
Consultant Project Manager
Aquafor Beech Ltd.
2600 Skymark Avenue, Unit 6-201
Mississauga, Ontario
(905) 629-0099, ext. 284
amos.r@aquaforbeech.com<mailto:amos.r@aquaforbeech.com>

Kind Regards,
Rob

_____
Robert Amos MASc. P.Eng.
Fluvial Geomorphologist
905.629.0099 x 284
amos.r@aquaforbeech.com<mailto:amos.r@aquaforbeech.com>

From: Rob Amos <amos.r@aquaforbeech.com<mailto:amos.r@aquaforbeech.com>>
Sent: September 7, 2022 1:42 PM
Cc: 'Anthony DiGiandomenico'
<Anthony.DiGiandomenico@mississauga.ca<mailto:Anthony.DiGiandomenico@mississauga.ca>>
Subject: Credit River Erosion Control - Notice of Commencement

Dear Stakeholder,

Aquafor Beech Limited has been retained by the City of Mississauga to undertake a Schedule B Class Environmental Assessment Study for the Credit River Erosion Control Project from Dundas St. West to Highway 403.

This project is being completed to address erosion issues associated with the watercourse and the need to rehabilitate the adjacent Culham Trail.

In accordance with the environmental assessment processes, Aquafor is pleased to share the Notice of Commencement for this project. Please see the attached document for further information.

Should you have any questions or comments, please feel free to contact the following:

Anthony Di Giandomenico, P.Eng.
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201 City Centre Dr, Suite 800
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Robert Amos, P.Eng.
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Mississauga, Ontario
(905) 629-0099, ext. 284
amos.r@aquaforbeech.com<mailto:amos.r@aquaforbeech.com>

Kind Regards,
Rob

_____
Robert Amos MASc. P.Eng.
Fluvial Geomorphologist
905.629.0099 x 284
amos.r@aquaforbeech.com<mailto:amos.r@aquaforbeech.com>

schiller.e@aquaforbeech.com

From: schiller.e@aquaforbeech.com
Sent: March 26, 2024 3:49 PM
To: schiller.e@aquaforbeech.com
Subject: FW: CVC Comments (Notice of Commencement) - EA 22/004 - Credit River Erosion Control Works (Dundas Street - Highway 403)

From: Ahmad, Iftekhar <Iftekhar.Ahmad@cvc.ca>
Sent: October 25, 2022 5:07 PM
To: Rob Amos <amos.r@aquaforbeech.com>
Cc: Anthony DiGiandomenico <Anthony.DiGiandomenico@mississauga.ca>
Subject: CVC Comments (Notice of Commencement) - EA 22/004 - Credit River Erosion Control Works (Dundas Street - Highway 403)

Hi Rob,

CVC staff have now had the opportunity to review the Notice of Commencement (NOC) and provide these high level preliminary comments for your consideration.

CVC Comments

1. It is our understanding that the City through its ongoing erosion monitoring program recognizes the need for rehabilitation of the section of the Credit River and the adjacent Culham Trail from Dundas Street to Highway 403 to address the existing erosion issues and improve safety and therefore is currently undertaking the Schedule B Municipal Class Environmental Assessment study for the proposed erosion control and restoration works within the specified reach.

2. Here are the site characteristics of the subject study area based on CVC mapping and site visit on June 23rd.

    a. REGULATED AREA - The study area is located entirely within CVC's Regulated Area. A permit from CVC will be required for any grading or construction works within this area.

    b. WATERCOURSE - The study area is traversed by the Credit River. Any alteration to a watercourse requires a permit from CVC. Our concerns for new construction would be to address the existing channel bank erosion, sediment control during construction, and to ensure no degradation to water quality.

    c. FLOODPLAIN - The study area is located within the regulatory storm floodplain. A permit will be required from CVC for any construction activity in this area. Our primary concern is the protection of life and property from flood hazard. We have specific criteria and requirements for construction in the floodplain.

    d. VALLEY SLOPE - The study area is traversed by valley slope. Our primary concerns are to protect the environmental integrity of the valley system and to ensure that slope stability is addressed in the proposed erosion control works if any disturbance to the valley slope is proposed.

    e. WETLAND - The study area is located within/adjacent to the wetlands. Wetlands are diverse and productive ecosystems that are hydrologically significant to a watershed. They store water during flood events and provide low flow augmentation during dry periods. The vegetation and organic soils of wetlands aid in the filtration of nutrients and sediments that enhances water quality and assists in the maintenance of cool water temperatures. Wetlands also provide habitat for diverse and uncommon species of flora and fauna. CVC does not support new development in wetlands.

f. MUNICIPAL GREENLANDS - The study area is within an area designated as Core Greenlands by the Region of Peel. It is the policy of the Region of Peel to protect the form and function of these natural areas. CVC provides technical support to this agency with respect to delineation of natural features and reviewing potential impacts from subsequent development within and adjacent to these lands.

g. ENVIRONMENTALLY SIGNIFICANT AREA (ESA) - The study area falls within the ESA (Credit River - Eglinton to Dundas). These areas contain significant natural features within the Credit River Watershed and include valley and watercourse corridors, wetlands and woodlands. The designation of these is based on criteria related to terrain, flora and fauna, hydrological significance, aesthetic qualities and educational values. Our objective is to protect these sensitive areas from impacts related to construction or development activities.

h. AREA OF NATURAL AND SCIENTIFIC INTEREST (ANSI) - The study area falls within the regionally significant Area of Natural and Scientific Interest (Credit River at Erindale). CVC and the Province of Ontario do not support incompatible development within or adjacent to ANSIs. Provincial policy states that development and site alteration may be permitted in an ANSI if it has been demonstrated that there will be no negative impacts on the natural features or the ecological functions for which the area is identified.

i. SIGNIFICANT WILDLIFE HABITAT - The study area is located within the Significant Wildlife Habitat.

j. MISSISSAUGA NATURAL HERITAGE SYSTEM & NATURAL AREAS SURVEY - The study area is located within the City of Mississauga's Natural Heritage System and Urban Forest. The City's Natural Heritage System is made up of Significant Natural Areas, Natural Green Spaces, Special Management Areas, Residential Woodlands and Linkages as described in the City's Official Plan. The study area is also located within the City's Natural Areas Survey and designated as Significant Natural Site (CRR6 & CRR10). CVC provides technical support to the City with respect to the identification and delineation of the natural heritage features or areas as well as reviewing proposals for potential negative impacts to the natural features or areas.

k. CREDIT RIVER WATERSHED NATURAL HERITAGE SYSTEM (CRWNHS) - The study area is located within the CRWNHS. The CRWNHS consists of High Functioning and Supporting terrestrial and aquatic natural heritage features, buffers, and complementary natural heritage areas (Centres for Biodiversity). Based on a watershed scale, the CRWNHS is intended to support Provincial, Regional and local municipal natural heritage systems as identified in their respective Strategies or Plans. As a watershed based management agency and landowner, CVC intends to implement the CRWNHS by using it as a strategic program guidance tool; to inform further development of CVC projects and policies; to assist CVC staff in providing technical advice to landowners and stakeholders on a watershed scale; and to promote a more consistent approach to natural heritage system planning across CVC's jurisdiction.

3. The extent of the proposed erosion control works are unclear at this time (based on the limited information provided in the NOC). Please note that hydraulic analysis demonstrating no negative impact to the floodplain on private properties will be required in support of the proposed erosion control works that will involve alteration (cut/fill) within the floodplain and/or channel. The hydraulic analysis will be completed by a qualified water resources engineer and include the following:

   a. Cut/fill balance calculations.

   b. CVC's HEC-RAS model for the existing conditions with a comparison to the updated existing and the modelled proposed conditions.

   The detailed requirements about the above can be found at: https://cvc.ca/wp-content/uploads//2021/06/rpt_TechnicalGuidelines-Floodproofing_v2_20201112.pdf. It is recommended that pre-consultation with CVC staff be completed prior to commencing any hydraulic analysis to discuss the submission expectations.

4. There are valley slopes specifically at the noted valley wall erosion sites downstream of Highway 403 which have slope heights greater than 2 m with slope inclinations greater than 1:1 which would be considered as slope hazards. Please note that the geotechnical investigation and slope stability analysis would be required if the proposed works involve disturbing or altering the valley slope, and/or altering the slope hazard (by any potential channel restoration works). A slope stability analysis is to be completed in accordance with CVC's Slope Stability Guideline at https://cvc.ca/wp-content/uploads//2021/06/Slope-Stability-Determination-Guidelines.pdf. Additional comments regarding the slope stability may be provided at the detailed design stage. It is recommended that pre-consultation with CVC staff be completed prior to commencing any geotechnical work.

5. Please provide details if/how the valley walls currently experiencing toe erosion will be stabilized and restored to the existing conditions. Confirmation of no negative impacts to the existing slope hazard will be required.

6. At this time, it is unclear whether the proposed erosion control works would involve any channel realignment and/or significant bank modification. Please note that an erosion hazard assessment may be required depending on the extent of the proposed erosion control works. Please note that the erosion assessment is to establish both the existing and proposed conditions erosion hazard limits to demonstrate that the proposed works do not result in the offsite impacts to the neighboring properties. It is recommended to consult with CVC staff prior to commencing the erosion hazard assessment for the submission expectations.

7. Based on discussion with our watershed management staff, it is our understanding that Jeff Wong previously provided comments on the proposed ice control structure (including 2018 concept prepared by Ecosystem Recovery Inc.). Please note that any additional comments on the ice control structure will be provided as the EA progresses and when additional information on the proposed design of the ice control structure is available.

8. The proposed erosion control project is located in a warmwater fish community reach of the Credit River. Taking a sensitive and green approach to the project is most recommended to ensure that fish habitat, passage, and instream cover are accounted for and enhanced where possible. Work should be completed within the warmwater timing window (July 1 to March 31st), in dry weather, and with a comprehensive ESC plan in place. This should be noted in any natural heritage/fisheries report prepared as part of the project.

9. Considering Significant Wildlife Habitat (SWH) along with other sensitive features such as NAS, Core Greenlands, the project planning should consider appropriate timing windows and construction/disturbance setbacks, as well as a reduced footprint to the extent possible. The access points and the timing, duration, and location of staging areas should be carefully considered to minimize the ecological footprint.

10. Please be aware of the updates to and requirements of the Migratory Birds Convention Act which governs the protection and conservation of migratory birds within Canada. Any potentially destructive or disruptive activity such as vegetation clearing should be avoided between April and August. It is the proponent's responsibility to adhere to all pertinent laws, regulations and permit requirements including but not restricted to the Migratory Birds Convention Act and the Migratory Birds Regulations. Further information on the general nesting periods of migratory birds in Canada can be found at https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html.

11. Given that the works are proposed in or near water, it is the responsibility of the proponent to ensure that works, undertakings or activities do not cause the death of fish or cause the harmful alteration, disruption or destruction of fish habitat under the *Fisheries Act*. Please review the complete list of

measures to avoid harm at http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html and implement those that are applicable to the proposed works. If it is not possible to avoid or mitigate impacts, the proponent can submit a request for review form to its region's Fish and Fish Habitat Protection Program office (via fisheriesprotection@dfo-mpo.gc.ca or 1 855 852-8320). Please refer to the Fisheries and Oceans Canada (DFO) website for additional information.

12. Please contact relevant agencies (MNDMNRF, MECP, DFO) for any necessary mitigation opportunities and permit requirements regarding fish, wildlife, and Species at Risk, as appropriate.

13. The NOC has identified that the proposed study will seek opportunities for restoration and environmental enhancement. Where possible, please consider softer bank stabilization techniques throughout the reach. This will contribute to water quality and habitat enhancement.

14. It is highly recommended to include fish passage and terrestrial wildlife passage as a goal within the proposed project.

Given our interest in the proposed project, CVC staff would like to be kept informed of future meetings and proceedings throughout the EA study. We also request to be invited to participate on any Technical Advisory Committee that may be formed for this EA. Please forward any information or reports when available to ensure that this Authority's policy and program interests are reflected in the planning and design components of the project. CVC's EA review fee for this project is $5,920 plus any applicable future permit fees. CVC will issue an invoice to the attention of City's PM (Anthony DiGiandomenico) shortly.

Please note that I will be the point of contact for this EA project and any discussion on the ice control structure going forward. I will coordinate internally with the relevant CVC staff members for the review of the future EA submissions (including any changes/modifications to the ice control structure) and comments as well as attending meetings with you/City as required.

If you have any questions, please contact me.

Thanks,

Apologies for any inconvenience caused by the late response.

Best regards,
Iftekhar

I'm working remotely. The best way to reach me is by email or Microsoft Teams.

Iftekhar Ahmad | he/him/his
Planner, Environmental Assessment | Credit Valley Conservation
905-670-1615 ext 296 | M: 647-449-5962
iftekhar.ahmad@cvc.ca | cvc.ca

Credit Valley Conservation

2022 CANADA'S GREENEST EMPLOYERS

View our privacy statement

From: Rob Amos <amos.r@aquaforbeech.com>
Sent: Wednesday, September 7, 2022 1:42 PM
Cc: 'Anthony DiGiandomenico' <Anthony.DiGiandomenico@mississauga.ca>
Subject: [External] Credit River Erosion Control - Notice of Commencement

Dear Stakeholder,

Aquafor Beech Limited has been retained by the City of Mississauga to undertake a Schedule B Class Environmental Assessment Study for the **Credit River Erosion Control Project from Dundas St. West to Highway 403**.

This project is being completed to address erosion issues associated with the watercourse and the need to rehabilitate the adjacent Culham Trail.

In accordance with the environmental assessment processes, Aquafor is pleased to share the Notice of Commencement for this project. Please see the attached document for further information.

Should you have any questions or comments, please feel free to contact the following:

Anthony Di Giandomenico, P.Eng.
Project Manager
City of Mississauga
201 City Centre Dr, Suite 800
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(905) 615-3200, ext. 3491
Anthony.DiGiandomenico@mississauga.ca

Robert Amos, P.Eng.
Consultant Project Manager
Aquafor Beech Ltd.
2600 Skymark Avenue, Unit 6-201
Mississauga, Ontario
(905) 629-0099, ext. 284
amos.r@aquaforbeech.com

Kind Regards,

Rob

Robert Amos MASc. P.Eng.
Fluvial Geomorphologist
905.629.0099 x 284
amos.r@aquaforbeech.com

schiller.e@aquaforbeech.com

From: Ahmad, Iftekhar <Iftekhar.Ahmad@cvc.ca>
Sent: May 25, 2023 3:50 PM
To: schiller.e@aquaforbeech.com
Cc: 'Anthony DiGiandomenico'; 'Rob Amos'; Kilis, Jakub
Subject: CVC's High Level Comments (concept design) - EA 22/004 - Credit River Erosion Control Works (Dundas Street - Highway 403)

Hi Emma,

Apologies for the delay in getting back to you.

CVC staff have now had the opportunity to review the provided information in your email below including concept drawings dated February 27, 2023 and provide these high-level comments for your consideration at this stage.

Engineering Comments

1. A hydraulic assessment will be required to confirm that all proposed changes to the channel and bank geometry have no impact on the existing flood hazard upstream or downstream of the works. The Credit River HEC-RAS model is to be provided by CVC to the proponent, who will model both an "updated" existing condition and the proposed condition. Both conditions are to be compared and should confirm zero impacts to the existing flood hazard as well as no increases in flow velocity, unless otherwise justified.

Site 1 (Ice Control Structure): Alternative 3 - Rock Revetment and Armourstone Vane Drawing

2. Since this location is within the regulatory floodplain of the Credit River, it is recommended that the sanitary maintenance hole be raised above the regulatory flood elevation, however this may expose the structure to ice impacts. Please clarify how this municipal infrastructure will be protected.

3. Please confirm that the sanitary sewer crossing downstream of the ice control structure is not at risk of any local scour that may be triggered by the upstream works.

Site 2 (Erindale Park Bank Restoration): Alternative 3 – Armourstone Wall, Weirs, and Trail Decommissioning Drawing

4. Please comment if the impact of the proposed bendway armourstone weirs on ice jamming has been considered.

Site 7 (Culham Trail Downstream): Alternative 4 – Trail Realignment Drawing

5. Regarding this note "Raise 3m wide granular trail up to 5-year flood elevations along the same alignment. Stone lined swale on either side of trail with drainage crossings," please note that this is proposed fill within the floodplain and compensatory cut must be provided to conserve floodplain storage.

Site 8 (Culham Trail – Mid Trail): Alternative 3 – Boardwalk Drawing

6. Regarding this note "Proposed 3m-4m wide boardwalk up to 5-year flood elevations along the same alignment," please note that this is proposed fill within the floodplain, compensatory cut must be provided to conserve floodplain storage.

Site 9 (Culham Trail Upstream): Alternative 4 – Trail Realignment Drawing

7. Regarding these notes "formalize 3m wide natural surface trail", "proposed 3m-4m wide boardwalk to connect existing foot bridge and boardwalk," please note that the details of this new trail are to be confirmed and whether fill is proposed within the regulatory floodplain. Any additional comments about the boardwalk construction can be provided once the required information is available.

Ecology Comments

8. Please work within the appropriate fisheries timing window, remembering that spring and fall migrants move up through this section of the river. Given that this project will likely need DFO review, we will defer the timing window selection to DFO.

9. In terms of tree removals, please work within the bird and bat windows such that no trees are removed between April 1 to October 31st.

10. Staging, phasing and access to each specific site will need to be carefully crafted to reduce the footprint and duration of impact. Please document all rationale and efforts made on this account in the Design Brief.

Geomorphology Comments

Ice Control Structure

Overall

11. The previous Ecosystem Recovery Inc. (ERI) Report (2018) stated that "the bank is proposed to be reconstructed using a revetment slope as opposed to a vertical wall." This has been proposed to promote longevity of the works." Please comment why this has been discounted (both proposed alternatives have walls).

12. Please comment what consideration have you given to the erosion control measures that dissipate energy i.e., can we anticipate and mitigate what we know will continue to happen? Please include in the report.

13. Please comment if there is a need to replace the armourstone on the south bank. The ERI report indicated that this was in a good condition.

14. Deposition of sediment (cobble and gravel sized shale/dolostone/limestone) was occurring upstream of the ice control structure, as a medial bar. Will it be left in situ?

15. Please comment what consideration have you given to the treatment of the transition zone between the armourstone and the natural bank.

Alternative 2

16. Please comment why does the armourstone extend so far upstream. The original design extended ~35m upstream and downstream. The proposed design appears to extend ~75m upstream but only ~50m downstream. There is no evidence of erosion in this upstream section.

Alternative 3

17. Please add a statement that the function of the ice control structure will not be impacted by leaving a gap between the bank and the ice control structure. We appreciate the inclusion of rock veins to direct flow away from the north bank. Please include a description in the report as to how these are intended to function.

Other sites

18. The bank protection on the inside bends (Credit Heights Alternative 3, Summit Court Alternative 2, Bridewell Court Slope Alternative 2) - There is no evidence of erosion or infrastructure at risk on the inside of bends under the existing conditions. CVC does not support these options as they have the potential to exacerbate erosion downstream by transferring energy.

19. Need for helical piles for trails - these are strongly not preferred as they introduce infrastructure into an erosion hazard. They should be setback from the bank if required.

Hydraulic Comments (ice control structure)

Alternative 2: Restore to As-Built Conditions Drawing

20. Please comment if we can get larger rip rap behind the retaining wall. We think 200-300mm diameter is very undersized for the shear stresses resulting from the large ice blocks and high velocities.

21. US Army Corps guidelines: Where large moving ice floes are anticipated to avoid rock movement, the D100 stone size twice the maximum expected ice thickness for shallow slopes (< 1V : 3H) is recommended.

22. Make sure that the tops of any restored retaining walls on the right bank are about 0.5m lower than the tops of the control structure piers (applies to Alternative 3 as well).

23. There's a gap in this design where the ice can travel between the retaining wall and floodplain armourstone – is that intentional?

Alternative 3: Rock Revetment and Armourstone Vane Drawing

24. We have observed a lot of scour on the right bank downstream of the piers, where a lot of the floodplain flow returns to the channel. The armourstone vanes should help prevent this in the future, so we favor this design alternative.

Additional Hydraulic Comments (ice control structure)

25. It is difficult to tell in the drawing where a ramp has been incorporated into the design for debris removal. The grades should transition into the water to allow for equipment to enter the water for the debris clean out.

26. CVC would like to place a debris curtain to direct debris to the (existing) access point on the river right side looking downstream such that future clean out can be done easier and possibly without entering the water. The downstream anchor point will be located on the river right side along the line of ice control piers. The upstream anchor point will be located somewhere on the river left side. The exact angle for the debris curtain (or the location of the 2 anchor points) will have to be determined. It is preferred that the anchor works be integrated into the design of the channel works and constructed at the same time to ensure the functionality of both systems. If the design of a debris curtain and associated anchors is out of scope for the EA, then please let us know and provide a timeline for receiving the anchor design. In such case, CVC will then coordinate with the consultant with the details; provided that, sufficient time is given to ensure the proper procurement process is followed in retaining a qualified engineer.

27. The need for an entrance ramp into the water is not a deal breaker, more like a nice to have. Our contractor said they can put in steel plates and drive down the drop.

28. There is no need to re-plant trees upstream of the ice control structure or the line of armourstones on the valley floor or floodplain side. By design, the ice is supposed to float into that area and stored in that location until it melts. If compensation for tree planting is required, that can occur downstream of the row of armourstones but not over the sanitary right-of-way or at the Region of Peel's discretion.

Land Comments

29. CVC recognizes the leadership and efforts of the City of Mississauga in managing public valley lands, including lands owned by CVC and leased to the City of Mississauga for long term management and park operations. The current EA builds off previous work completed by CVC and the City through the Credit River Adaptive Management Strategy (2005) and the Credit River Parks Strategy (2013), which have been endorsed by the CVC Board of Directors. Both strategies recognize the importance of providing a sustainable and appropriately planned and managed trail system within the valley lands to support recreation and appreciation opportunities. The David J Culham Trail, which is the primary subject of trail upgrade and protective measures being planned in this EA, is also the route of the Credit Valley Trail (CVT) – which is a series of trail links joining the headwaters of the Credit River in Orangeville to the mouth of the Credit in Port Credit. The Credit Valley Trail Strategy was approved by the CVC Board of Directors in 2017 and was endorsed by the City of Mississauga – a signatory to the municipal leadership pledge of CVT – and it recognizes the critical and optimum route that the Culham Trail provides for the continuity of the CVT in lower Mississauga. CVC is supportive of the goals and objectives of the current EA, particularly in providing long term erosion control, riverine restoration and trail asset renewal, and staff technical comments are provided within a strategic context of our continued partnership in land management, flood and erosion control, and recreational trail development.

If you have any questions, please contact me.

Thanks,

Best regards,
Iftekhar

I'm working remotely. The best way to reach me is by email or Microsoft Teams.

Iftekhar Ahmad | he/him/his
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Credit Valley Conservation

2022 CANADA'S GREENEST EMPLOYERS

View our privacy statement

From: schiller.e@aquaforbeech.com <schiller.e@aquaforbeech.com>
Sent: Thursday, April 13, 2023 3:19 PM
To: Kilis, Jakub <Jakub.Kilis@cvc.ca>; Ahmad, Iftekhar <Iftekhar.Ahmad@cvc.ca>
Cc: 'Anthony DiGiandomenico' <Anthony.DiGiandomenico@mississauga.ca>; Wong, Jeff <Jeff.Wong@cvc.ca>; 'Rob Amos' <amos.r@aquaforbeech.com>
Subject: RE: [External] RE: Mississauga's Credit River EA - Erindale Ice Control Structure Review

Hi Jakub and Iftekhar,

Thanks for a productive meeting this afternoon. As discussed, the presentation and revised concepts have been provided below. I request that you please forward the materials to your respective teams for comment.

We have updated the 2023_04_06 - Credit River Conceptual Drawings dropbox folder to include the slides from today's presentation, as well as the concepts for 9x areas within the Credit River study area, each with mapping of the existing conditions and two alternatives.

Credit River EA Presentation and Alternatives Download
https://www.dropbox.com/scl/fo/63btyd88s5xqy6nqi908y/h?dl=0&rlkey=qm4gjmnk0t0pgdggq5by7b24u

Thanks,
Emma

_____

Emma Schiller (Buckrell), M.Sc., P.Eng.
Water Resources Engineer

Aquafor Beech Limited
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F: 905.629.0089
schiller.e@aquaforbeech.com

From: Kilis, Jakub <Jakub.Kilis@cvc.ca>
Sent: April 6, 2023 12:24 PM
To: Rob Amos <amos.r@aquaforbeech.com>; schiller.e@aquaforbeech.com
Cc: 'Anthony DiGiandomenico' <Anthony.DiGiandomenico@mississauga.ca>; Wong, Jeff <Jeff.Wong@cvc.ca>
Subject: RE: [External] RE: Mississauga's Credit River EA - Erindale Ice Control Structure Review

Thanks Rob,

We'll share with our staff to prep for meeting discussion. Note your email below refers to a 3pm meeting next Wednesday. We're actually meeting next Thursday at 1pm

Good luck to Emma with any ice storm recovery.

Jakub

From: Rob Amos <amos.r@aquaforbeech.com>
Sent: Thursday, April 6, 2023 11:17 AM
To: Kilis, Jakub <Jakub.Kilis@cvc.ca>; schiller.e@aquaforbeech.com
Cc: 'Anthony DiGiandomenico' <Anthony.DiGiandomenico@mississauga.ca>; Wong, Jeff <Jeff.Wong@cvc.ca>
Subject: RE: [External] RE: Mississauga's Credit River EA - Erindale Ice Control Structure Review

Hi Jakub,

Thanks very much for the followup. Emma is out of power at the moment up in Ottawa so I'm filling in with a response.

Please find a download package below of 9x areas within the Credit River study areas, each with mapping of the existing conditions and two alternatives.

Credit River EA Alternatives Download
https://www.dropbox.com/scl/fo/63btyd88s5xqy6nqi908y/h?dl=0&rlkey=qm4gjmnk0t0pgdggq5by7b24u

We'll look forward to reviewing and discussing with the CVC team next Wednesday @ 3:30pm.

Thanks,

Rob

Robert Amos MASc. P.Eng.
Fluvial Geomorphologist
905.629.0099 x 284
amos.r@aquaforbeech.com

schiller.e@aquaforbeech.com

From: Abby LaForme <Abby.LaForme@mncfn.ca>
Sent: December 8, 2022 11:42 AM
To: Rob Amos
Cc: 'Anthony DiGiandomenico'; schiller.e@aquaforbeech.com; 'Mitchell Tulloch'; Mark LaForme; Adam LaForme
Subject: RE: Credit River Erosion Control Project - Schedule B Municipal Class EA

Good Morning Rob,

Thank you for reaching out to MCFN DOCA for Consultation. At this time, MCFN DOCA has no comments or concerns regarding the
Class EA report for the Credit River Erosion Control Project.
We are interested in receiving/reviewing the Stage 1 Archaeological Assessment.
Please contact Adam LaForme- MCFN DOCA Archaeological Operations Supervisor (Adam.LaForme@mncfn.ca).

Thank you

Abby (LaForme) Lee
Acting Consultation Coordinator

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

From: Rob Amos <amos.r@aquaforbeech.com>
Sent: Thursday, December 8, 2022 9:45 AM
To: Abby LaForme <Abby.LaForme@mncfn.ca>; Fawn Sault <Fawn.Sault@mncfn.ca>
Cc: 'Anthony DiGiandomenico' <Anthony.DiGiandomenico@mississauga.ca>; schiller.e@aquaforbeech.com; 'Mitchell Tulloch' <tulloch.m@aquaforbeech.com>
Subject: RE: Credit River Erosion Control Project - Schedule B Municipal Class EA

Dear Mississaugas of the Credit First Nation,

Aquafor Beech Limited has been retained by the City of Mississauga to undertake a Schedule B Class Environmental Assessment Study for the **Credit River Erosion Control Project from Dundas St. West to Highway 403**.

This project is being completed to address erosion issues associated with the watercourse and the need to rehabilitate the adjacent Culham Trail.

In accordance with the environmental assessment process, Aquafor is pleased to share the attached letter and Notice of Commencement. Additional information is also available from the project website at:

Project Website

http://www.mississauga.ca/creditrivererosionea

Should you have any questions or comments, please feel free to contact the following:

Anthony Di Giandomenico, P.Eng.
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201 City Centre Dr, Suite 800
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Mississauga, Ontario
(905) 629-0099, ext. 284
amos.r@aquaforbeech.com

We very much look forward to working with you throughout the project, and will ensure all documentation is available for your review and input.

Kind regards,

Rob

Robert Amos MASc. P.Eng.
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905 279 5878
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July 13, 2023

Anthony Di Giandomenico, P.Eng.
Project Manager
City of Mississauga
201 City Centre Drive, Suite 800
Mississauga, Ontario
L5B 2T4

Re: Credit River Erosion Control Environmental Assessment

Dear Anthony:

Thank you very much for taking time to meet with staff and volunteers from The Riverwood Conservancy (TRC) on July 6. We appreciate your team's consideration as you review alternatives for mitigation of the Culham Trail at Site 8 of the Credit River Erosion Control Environmental Assessment (EA).

As promised at the meeting, this letter summarizes TRC's organizational comments. Additional individual comments have been submitted through the City's online portal. At the point of writing, we understand that the examination of alternatives is at the feasibility stage only, and that significant additional work will be required to reach the detailed design stage.

Summary of Concerns:

a. Increased traffic created as a result of re-alignment of the Culham Trail to the Red Trail (Alternative Four)

   This alternative causes us a high level of concern for the health and safety of TRC staff, program participants and volunteers, as well as the public. The trails at Riverwood Park are generally crowded with foot and bicycle traffic at most times. The addition of a significantly higher number of through-travellers as a result of this alternative will have considerable impacts on TRC programming, public enjoyment and safety in general.

i> Impact on TRC Programming

TRC anticipates the need to materially alter the design of many programs should the preferred alternative be implemented.

About 7,000 students and a further 6,000+ public program participants took part in TRC programs in 2022. This number is expected to remain consistent or increase in the years to come. The Red Trail is an essential component of most programs, either as a conduit between program spaces or as a learning location itself. There is already limited space along the trail where program groups may safely stop.

The additional traffic will also have a material impact on wildlife behaviour and potentially habitat, as more and more people access the trails. All TRC programs focus on connecting people with nature; we anticipate that many fauna species will withdraw from the disturbance caused by increased trail use, reducing the opportunity for participants to view wildlife firsthand. Trailside flora will also be impacted as a result of more people moving off-trail to avoid other users.

We have particular concerns from a safety perspective. TRC programs encourage activity in nature for people of all ages and abilities. Examples of this include availability of an all-terrain wheelchair for individuals with significant mobility challenges and other special needs, as well as gentle hikes and other programs geared to individuals who may prefer lower-impact experiences such as seniors. Program participants also include young children and families who often bring strollers and wagons to support their visits. These are all visitors that may not be as alert to others on the trail nor able to move quickly to avoid collisions with other users, particularly bikers travelling at greater speeds.

TRC school programs take place throughout the day on weekdays; public programs can take place throughout the day all week, often in the evening and at night. Reduced visibility due to darkness is a significant safety concern.

ii> Public Enjoyment

Riverwood Park is known for the beauty of its trails. It is clear the proposed changes will have a large impact on public enjoyment. We observed considerable usage over a two-hour period on the Thursday morning of the onsite meeting; the traffic, congestion and user conflict on weekends and outside business hours will increase enjoyment materially should all users be routed through a single trail.

Moreover, as there is presently no opportunity for users to make a single loop through the park, there will be significant “there and back” two-way traffic if they are starting from Riverwood. If current infrastructure is maintained, we may expect significant crowding and pinch points along the trail. For example, boardwalks are presently approximately five-six feet wide, putting cyclists in close proximity to other users who wish to pause and view wildlife.

We noted that the category "Benefit to the Community" represented only a portion of the rubric (1 out of 5 points) within the social/cultural criterion, meaning that benefit to the community only presently accounts for 5% of the total ranking score. We would argue that the entire purpose of the trails is to benefit the community and that in any future exercise, this criterion should be on its own with a higher (e.g. 20-25%, or equivalent to the cost criterion) ranking.

We understand that there were no site traffic assessments conducted as part of the study, which seems key to forming a solution. During the meeting the consultants were not able to indicate how they distinguished a "high" vs "low" score within their rubric and were unaware of any data on trail usage. It seems therefore that the rubric upon which the alternative selection was subjective and based on incomplete data.

iii> Safety

Riverwood trails are used for many types of activities, about which TRC is already concerned. Trail bikers can reach significant speeds, particularly on downward slopes, that can put individuals, families and program participants in harm's way. Additionally, onsite mountain biking has increased recently, resulting in unsanctioned trails that in many cases intersect with the Red Trail in unexpected and difficult-to-see ways.

When combined with several terraces and significant drops immediately adjacent to the trail – with no barriers – the increased traffic created by the trail alignment becomes a very significant concern. At present, Emergency Medical Services can only access the lower trail on foot; should the trail alignment occur without upgrades to infrastructure, we expect both considerable safety issues and an inability for EMS to reach those who may be injured.

b. <u>Other Alternatives</u>

We noted at the onsite meeting that there was limited discussion of any alternative than the preferred. Comments made by some City staff suggested that Alternative Four may be a foregone conclusion and that there is limited interest in considering other options.

Current proposed solutions for Site 8 are either about avoiding the Credit River or resisting a short-term (five-year) flood cycle. We would encourage further investigation of engineering solutions as a means to mitigate the impact of river flows, specifically a strategy that could repair the integrity of the bank, channel flow more effectively into surrounding wetlands instead of the trail and make the trail more resilient by raising it.

Should Alternative Two (raised gravel trail along current Culham Trail route) remain in consideration, we suggest that more detailed plans include both ecological and hydrologic functions related to the floodplain including maintaining overbank flood routing to the wetland area and maintaining unobstructed wildlife movement linkages. At present it appears that the Alternative Two design largely blocks such movement between the river channel and the wetland areas.

More generally, we noted that Alternatives 2-4 have largely been designated to a five-year-flood standard. This may be too low, given the pace of climate change, resulting in a need to re-address the work sooner.

Suggested Approaches:

Given the significance of these concerns, we encourage you to develop a higher level of design prior to formalizing a preferred alternative. This will allow all parties to better understand and evaluate potential consequences. Specifically, we encourage you to:

- Locate any available data regarding usage of the Culham Trail and Red Trail, and/or commence a more comprehensive survey to inform the next iteration of plans
- Create a loop trail within the next design iteration to accommodate programming, enhance user experience, reduce extra “there-and-back” traffic and avoid creation of more unsanctioned trails
- Plan for signage along any decommissioned/reduced-use Culham Trail area, recognizing that many users will continue to travel that route
- Widen or twin existing boardwalks to accommodate competing uses and Emergency Medical Services
- Create sign and route marker options that clearly delineate bike and other user spaces
- Develop nodes along the trail for TRC programs and public scenic enjoyment
- Install barriers at key points along terrace edges and slopes
- Conduct constraint mapping and an impact analysis
- Consider needed access to the manholes along the sewer line on the existing Culham Trail, and whether that access could represent a reach of trail that could be retained for public use
- Survey the natural values of the site throughout a full growing season to ensure that invasives only present at certain times are captured in the Natural Heritage Assessment (e.g. Fig buttercup in May)
- Consider use of non-erodible materials in any stabilizations, given that trails and flood path areas will continue to be subject to erosion vulnerability
- Should Alternative Four remain preferred, make any alterations to the Red Trail prior to decommissioning the Culham Trail, to prepare for increased traffic

Opportunities:

As a registered charity that programs but does not own the Riverwood site, TRC has been challenged to secure grant and other funding for capital improvements on trails. For that reason, we see many opportunities in the EA, notwithstanding the challenges articulated above:

- In its current state the Red Trail barely accommodates current traffic without risk. A full restoration of the Red Trail and implementation of required infrastructure would be of very high value to the site and to TRC programming, particularly if the Culham Trail can remain reasonably traversable seasonally.
- Wayfinding signage has been a long-time challenge on the Riverwood site. We were pleased to hear that the proposed budget includes signage improvements. This may also present an opportunity to incorporate Indigenous languages to support the efforts of the Credit Valley Trail, as they are already planning involvement with the Moccasin Project and a Deer Dodem site at Riverwood.
- The alignment is an opportunity to address traffic concerns such as P gates and add calming signage (e.g. “please dismount bicycle”).
- As mentioned at the meeting, new habitat development opportunities along a decommissioned trail corridor could include turtle nesting areas and other habitats for species at risk.
- TRC has a significant number of dedicated volunteers who could support the restoration efforts associated with the trail realignment.
- It would be of value for TRC to be involved in assessment of what a “multi-use trail” means for trail users, along with opportunities to encourage more sustainable and less risky cycling behaviour.

We are grateful for your time and the opportunity to comment on this important work. As an organization with deep knowledge of the site, it is our hope that The Riverwood Conservancy may continue to be involved in subsequent stages of the EA. We would be pleased to provide information to support your next steps, including:

- Statistics and timing information about TRC programming and how it would impact the project
- A copy of the Credit Valley Trail plan, including the planned Deer Dodem site
- Information about the location of known species at risk onsite

We would appreciate receiving a copy of the draft report prior to filing, as mentioned by Rob Amos at the onsite meeting. We also note that closure of a section of the Culham Trail is planned from fall 2023 until spring 2025, in connection with retrofits of the Burnhamthorpe Bridge. It would be helpful to coordinate with City staff on the bridge project in parallel with the EA, in order to plan future program spaces.

We look forward to continuing to work together. If you have any questions, please do not hesitate to contact Sara Wilbur-Collins, TRC's Executive Director, at sara.wilburcollins@theriverwoodconservancy.org or (905) 279-5878 x24.

Sincerely,

Heather Shaw
Chair

For the TRC Board of Directors:
Jonathan Davis
Swaroop Dogra
Dr. Marc Johnson
Elinor Laffey
Alan Lytle
Clement Mbulu
Peter Newsome
Tim Pickering
Carolyn Sherk
Amy Tjen
Christina Woodward

cc. Robert Amos, P.Eng., Consultant Project Manager, Aquafor Beech Ltd.
Margy de Gruchy, Chair, TRC Stewardship Committee
Jamie Ferguson, Manager, Park Services, Park Operations
Joe Horneck, Ward Six Councillor, City of Mississauga
Andreas Stenzel
Sara Wilbur-Collins, Executive Director, The Riverwood Conservancy

schiller.e@aquaforbeech.com

From: schiller.e@aquaforbeech.com
Sent: March 26, 2024 3:25 PM
To: schiller.e@aquaforbeech.com
Subject: FW: Credit River Erosion Control - Dundas to 403 Status update and comments - Credit River Anglers

From: John Kendell <[redacted]>
Sent: Thursday, February 22, 2024 11:52 AM
To: Rob Amos <amos.r@aquaforbeech.com>
Cc: Anthony DiGiandomenico <Anthony.DiGiandomenico@mississauga.ca>
Subject: Re: Credit River Erosion Control - Dundas to 403 Status update and comments - Credit River Anglers

Hi Rob and Anthony,

I stumbled upon a YouTube video showing the PIC info the other day and wanted to follow up on the planning status. It seems this slipped by me as the notice only had the open house info and I was very busy last summer. I'd like a chance to review the planning with you and Anthony, as I have 35 years of detailed knowledge about the whole area having planned many projects and tree plantings, along with a strong knowledge of fluvial geomorphology.

Normally the city engineering department would stay in direct contact with me (representing CRAA) on each step of all direct river projects (same as they would for CVCA and MNRF), however that has slipped away in the past 5-6 years with staff turnover and more recently the pandemic. CRAA has planted over half a million trees in the watershed and completed well over 5 million in rehabilitation work since 1990 including dozens of projects in the study area.

I did note a couple potential concerns I wanted to follow up on as well.

Site 1 (known as the Ice Breaker) – Alt 3

- The removal of trees from the ice storage area. Since we have worked closely with the city and various councillors and both mayors and spent a great deal of money reforesting the river banks any tree removal near the river is a red flag. Removal of any riparian trees that provide shade is a problem. These trees provide shade, thermal protection, bank stabilization and erosion prevention benefits. Removal will cause negative impacts on thermal dynamics of the river and valley, lead to soil erosion and sedimentation. Note that a mature forest does not inhibit ice storage and the area noted has extremely limited ice storage potential even if clear. The removal of mature trees actually causes more severe ice accumulation and subsequent erosion. The severe ice damage in the downstream golf courses that often occurs is a prime example.
- Proposed rock veins (and repairs to armour stone walls built in the mid 80's) is good. However more detailed work is needed to ensure these veins are designed to build/restore lost holding pools for fish resting. Ever since this bank was hardened in the 1980's that section has struggled with near total loss of habitat function. Several large boulder placements CRAA completed in the 1990-2004 window have helped, but with work of this magnitude it can be better restored. Simple rock veins as shown is not

enough to achieve this, so accompanied boulders (mostly on site) and geomorphic design to create scour/pool/riffle habitat can be easily designed.

Site 2 (know as the wire mesh pool) – Alt 3

- Generally this design looks good – with a few items needed to truly achieve a best outcome:
  - nursery size (50mm calliper) native trees should be planted on the west bank during the works (minimal cost for 30-60 trees) to help stabilize the bank in future as well as provide shade and habitat to wildlife. That bank is a popular site for deer bedding and fawn rearing.
  - That site is also a key holding pool in the park, so preservation of this is important. Adding some rock veins and boulders to the work will help.
  - Vegetating the east bank with some faster growing trees and eventually some hardwoods will also benefit. Black walnut or eastern poplar are the two best options as establishment species that can withstand ice/flooding, etc.

Site 3 (know as the falling rocks pool) – Alt 2

- Replacing/repairing the armour stone bank as planned makes sense. Only key item here is maintaining the pool again. The river has incised roughly 50-70cm at the tail out over the past 35 years. Most erosion impacts here are the result of channel and thalweg changes in the 300m directly upstream.

Site 4 (Known as the lower white house pool) – Alt 3

- This has been flagged as needed for many years and overdue. An armourstone wall makes perfect sense here. However, structures to attenuate flow at the rear of the section are needed, a mix of rock veins and boulders would achieve this. The upper 3/4 of this section is all shale bottom and hitting the valley wall continues to cause severe erosion and thalweg change downstream. Armourstone will only make this worse unless energy is dissipated with rock veins or boulders.

If you would like to chat (or discuss via Zoom/Teams) or in person let me know. I have a busy but flexible schedule. I can be reached on my mobile anytime.

Kindest regards,

John Kendell
President, CRAA
www.craa.on.ca

[redacted]
info@craa.on.ca

From: Rob Amos
Sent: Wednesday, June 14, 2023 11:37 AM
Cc: 'Anthony DiGiandomenico'
Subject: RE: Credit River Erosion Control - Public Information Centre Notice

Dear Stakeholder,

In accordance with the environmental assessment process, Aquafor is pleased to share the Notice of Public Information Centre for the **Credit River Erosion Control Project from Dundas St. West to Highway 403.**

Aquafor and the City of Mississauga have identified existing problems and risks along the Credit River and Culham Trail, and developed alternative solutions for consideration. These solutions will be refined through public consultation.

Project information is available on the City's website, with comments being requested prior to July 14th, 2023. (www.mississauga.ca/creditrivererosionea).

Upon your review should you have any questions, please feel free to contact the following:

Anthony Di Giandomenico, P.Eng.
Project Manager
City of Mississauga
201 City Centre Dr, Suite 800
Mississauga, ON L5B 2T4
(905) 615-3200, ext. 3491
Anthony.DiGiandomenico@mississauga.ca

Robert Amos, P.Eng.
Consultant Project Manager
Aquafor Beech Ltd.
2600 Skymark Avenue, Unit 6-201
Mississauga, Ontario
(905) 629-0099, ext. 284
amos.r@aquaforbeech.com

Kind Regards,

Rob

Robert Amos MASc. P.Eng.
Fluvial Geomorphologist
905.629.0099 x 284
amosr@aquaforbeech.com

From: Rob Amos <amos.r@aquaforbeech.com>
Sent: September 7, 2022 1:42 PM
Cc: 'Anthony DiGiandomenico' <Anthony.DiGiandomenico@mississauga.ca>
Subject: Credit River Erosion Control - Notice of Commencement

Dear Stakeholder,

Aquafor Beech Limited has been retained by the City of Mississauga to undertake a Schedule B Class Environmental Assessment Study for the **Credit River Erosion Control Project from Dundas St. West to Highway 403**.

This project is being completed to address erosion issues associated with the watercourse and the need to rehabilitate the adjacent Culham Trail.

In accordance with the environmental assessment processes, Aquafor is pleased to share the Notice of Commencement for this project. Please see the attached document for further information.

Should you have any questions or comments, please feel free to contact the following:

Anthony Di Giandomenico, P.Eng. **Robert Amos, P.Eng.**

Project Manager
City of Mississauga
201 City Centre Dr, Suite 800
Mississauga, ON L5B 2T4
(905) 615-3200, ext. 3491
Anthony.DiGiandomenico@mississauga.ca

Consultant Project Manager
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2600 Skymark Avenue, Unit 6-201
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(905) 629-0099, ext. 284
amos.r@aquaforbeech.com

Kind Regards,

Rob

Robert Amos MASc. P.Eng.
Fluvial Geomorphologist
905.629.0099 x 284
amos.r@aquaforbeech.com

schiller.e@aquaforbeech.com

From: Rob Amos <amos.r@aquaforbeech.com>
Sent: July 12, 2023 8:51 AM
To: schiller.e@aquaforbeech.com; Mitchell Tulloch
Cc: amos.r@aquaforbeech.com
Subject: FW: Comment on Credit River Erosion Control Project (Dundas to 403)

Rob Amos
Aquafor Beech Ltd
Mobile: 416.705.2367

-------- Original message --------
From: Marc Johnson <[redacted]>
Date: 2023-07-11 9:25 p.m. (GMT-05:00)
To: Anthony D <Anthony.DiGiandomenico@mississauga.ca>, amos.r@aquaforbeech.com
Cc: Joe Horneck <Joe.Horneck@mississauga.ca>
Subject: Comment on Credit River Erosion Control Project (Dundas to 403)

Dear Mr. DiGiandomenico and Mr. Amos,

First, I would like to thank the Mississauga city staff and Aquafor Beech for the time and care they have taken in making an initial assessment of remediation needed to the trails and river from Dundas St. to Hwy 403. I am providing feedback on the preliminary plans provided to the public as part of your public consultation process. I am cc'ing my Councillor for Ward 6, Mr. Joe Horneck since we have discussed the importance of this project to his constituents.

For background, I am a resident of the Credit Woodlands neighbourhood, my property is adjacent to Erindale Park and falls within the conservation zone of the Credit River. I use the trails almost daily so I am very familiar with the park. I am also a Professor of Biology at University of Toronto Mississauga, the recent Director of the Centre for Urban Environments, the Canada Research Chair of Urban Environmental Science, and a Director at The Riverwood Conservancy. In my various roles I frequently consult on environmental issues and my research focuses on the impacts of urban environments on the ecology and evolution of plant and animals.

I recognize that a combination of recent storms and heavy human usage of the area has made remediation necessary. I try to provide feedback based on my intimate knowledge of the area and my professional expertise. I make this feedback after reviewing all of the materials provided and meeting with city staff and Aquafor Beech.

I break my comments into general comments on the assessment process and specific comments on specific sites.

GENERAL COMMENTS

I have three concerns with the methodology of assessment.

1. **Prioritization of project sites**: Eight project sites are identified and they are all presented as being equally important and urgent. In this way all projects are ranked independently and a "preferred alternative" is given based on a preliminary assessment. No information was given on how the city plans to prioritize the project sites, but it should be recognized that some areas are more heavily used by the public (e.g. Erindale Park), other areas are more degraded than others and therefore need urgent repair (e.g. Riverwood), while some areas are ecologically sensitive based on their location (e.g. Riverwood). This prioritization should be taken into account when determining allocation of resources. As one case in point, Site 7 (mid trails) has not been heavily damaged by flooding, it rarely washes out, and its public usage is less than Riverwood and Erindale. Despite, these facts, at $5.8M the "preferred alternative" is the most expensive of all 8 projects, even though it is possibly the least urgent.

2. **Benefit to the community:** The benefit to the community needs to be more heavily weighted in evaluation of alternative project plans. In general, I agree that a balanced ranking system is needed to evaluate competing restoration alternatives of sites and that this ranking system should be made as objective as possible to weight the relative strengths of proposals. However, the ranking system does not appropriately account for the importance the trails have to community through enjoyment and well-being. Collectively, Erindale and Riverwood are the largest green space in Mississauga and among the most heavily used parks in the region. The benefit of to the community is almost entirely realized through the trail system, and the trails are specifically intended for the benefit of the community. It is therefore surprising that "benefit to community" is one score among 5 within the "social and cultural criteria", which itself is only in 1/4th of the entire evaluation score. Thus, **benefit to the community only accounts for 5% of the total score**. For comparison, **the economic criterion makes up 25% of the total evaluation score.** Since the entire purpose of the trails is intended for people's benefit, benefit to the community should have a much larger and one that is on par with the economic criterion.

3. **Inaccurate scoring.** In my meeting with Aquafor Beech it is clear that the preliminary scoring is highly subjective and based on insufficient data. For example, in assessing "benefit to the community" for the Culham Trail vs the "Red Trail" at Riverwood, the consultants were unable to indicate what was the relative usage of each trail. There were provided no usage data before or after extreme degradation. It is therefore unclear how these scores are being created if they are not based on data. The explanation provided at the time was that it was based on safety, but "public safety" was itself not defined and has its own score within the "social and cultural criteria".

In conclusion, I think the evaluation criterion needs further consideration to identify priority sites, properly account for the benefit of the trail system to the community, and ensure that the scoring system is as accurate and objective as possible.

SPECIFIC COMMENTS

I provide comments and suggestions on specific project sites.

Site 1 (Ice Control Structure). This plan largely looks OK to me, but I am concerned with the plans to remove the forest on the west side of the bank upstream of the ice control structure. The explanation given is as follows: "remove trees in floodplain ice storage area to reinstate ice storage capacity". What empirical evidence is there that these trees impede ice storage? There are many large trees in this section and they provide habitat to wildlife, shade to the river, and do already capture ice in extreme floods. I do not see the need for the proposed tree removal and it will do considerable harm to the ecosystem.

Site 2 (Erindale Park Bank Restoration). Based on my experience, most people walking the trails at Erindale use the water-side trail. It has become a large area of cultural significance, exercise and sport (e.g., fishing, walking, running, regional cross-country meets). The "benefit to the community" scores 3 out of 4 for the armour stone wall and 3/4 for aesthetics. By contrast, the preferred remediatio, which would decommission the waterside trail, scores 1 on benefit to the community and 4 on aesthetics. Here is an example where I think the down-weighting of benefit to the community is very problematic. Decommissioning the waterside trail will greatly decrease the benefit to the community, and further increase congestion on the other trails. The cost estimates of the replacement of the existing armour wall is less than the "preferred alternative" and I would strongly recommend the existing waterside trail be maintained.

Site 5 (Summit court slope)

Why have engineering options not considered ways alleviate intensity of flow? There is a natural floodway that could be enhanced to take more water and alleviate energy. For example, cutting a deeper and wider channel along the two existing spillways (one into the marsh), and one into the depression immediately North of the river, will help to capture flood water and reduce the river's energy, which will decrease the rate of erosion to the summit court bank during floods.

Site 6 (Downstream trails). As with Site 2, I do not think the benefit to the community has been properly assessed. The majority of pedestrian and cyclist traffic flow follows the river. Decommissioning this trail will negatively impact community benefits and increase congestion on the one remaining trail at the base of Miraya Court.

Site 7 (Mid trails). Please see general comments related to prioritization. The urgency of this project is low and does not warrant the high cost of the "preferred alternative". Such funds could be diverted to other higher priority sites.

Site 8 (Riverwood)- Riverwood has become an important cultural center for Mississauga, and the main greenspace available to the large influx of residents in the downtown core. The Culham Trial is a large source of traffic for various uses, including education by the The Riverwood Conservancy, Visual Arts Mississauga, and residents from the various wards. Shutting down the Culham Trail will route all traffic to a single trail that is narrow and itself prone to flooding. This plan is made further problematic since there is large and increasing bike traffic through the park. Here again I believe the benefit to the community needs to be considered more centrally in any decision making.

Overall, I see little consideration of engineering solutions to absorb or divert the rivers energy during flooding. For example, upstream of site 6 there is a floodway on the north side of the river. This floodway holds a large amount of water during critical times of flooding, reducing energy in the river, effectively reducing flooding and damage. A similar floodway is found on the W side of the river, just downstream of the ice control structure, at the location of the old dam. The proposed plan for site 8 doesn't consider any possible solution like this, meaning that flooding will continue in the valley, which will continue to impact the Culham trail throughout site 8, and the existing Red Trail. I suggest considering a scenario that prioritizes Riverwood, maintains the Culham Trail, but also: i) strengthens the bank with armour walling, ii) enhances existing floodways to divert water into the marsh and existing lowland areas, iii) raise the Culham Trail and low areas of the Red Trail to a 10 year flood mark, and iv) installs foot bridge over an enhanced channel into the marsh, similar to those in place at site 6.

I hope my constructive criticisms are received in the spirit in which they are given – trying to help maintain and enhance some of Mississauga's most important natural spaces. I thank the staff again for leading this important and complex project.

Sincerely,

Dr. Marc Johnson

Marc T. J. Johnson, Ph.D. (he/him)

Professor and Canada Research Chair

Depts. of Biology & EEB

University of Toronto – Mississauga

www.evoeco.org (lab)

twitter: @evoecolab

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schiller.e@aquaforbeech.com

From: Anthony DiGiandomenico <Anthony.DiGiandomenico@mississauga.ca>
Sent: July 16, 2023 9:59 PM
To: Rob Amos
Cc: Emma Schiller
Subject: Fwd: Credit River Erosion Control EA and Detailed Design Dundas Street West to Highway 403 - Public Comment Submission

Hi Rob,

Please find below comments from Andreas Stenzel who joined us on the Riverwood site walk.

Thanks,
Anthony

Begin forwarded message:

> **From:** LOVLEEN BASSAN <[redacted]>
> **Date:** July 14, 2023 at 11:21:54 PM EDT
> **To:** Anthony DiGiandomenico <Anthony.DiGiandomenico@mississauga.ca>
> **Subject: Credit River Erosion Control EA and Detailed Design Dundas Street West to Highway 403 - Public Comment Submission**
>
> Hi Anthony,
>
> I would like to submit some comments in relation to the Credit River Erosion Control EA and Detailed Design Dundas Street West to Highway 403. I have been a resident of Mississauga for over 20 years with my residence being located adjacent to Erindale Park and my family and I make regular use of the Culham Trail. Through this Park use I have had the opportunity to observe the river dynamics, low flow and high flow conditions, and the progressive impacts of the flood events on the floodplain habitat, trails and the existing bank stabilization features over a relative long period of time. I have been involved in the aquatic habitat restoration industry for 30 years so am reasonably aware of the processes that have been documented in the studies, and my objective is to provide some comments that can perhaps be considered by the City and their study team based on these longer term observations and their application to my review of the findings and recommendations of the erosion study.
>
> I would like to note that the Culham Trail and the river-side trail segments through all the study site, where a true interactive experience with the river can be achieved, are very important to my family. Accordingly, I would like to express that I do have concerns with the considerable disconnection of the trail from the river channel that will occur with some of the suggested preferred alternatives, particularly in Erindale Park (Sites 1, 2, and 6). These stretches of the trail are some of the most heavily used by Park visitors, as the ability to walk, stop and sit on benches or the armourstone blocks adjacent to the river and simply enjoy the experience of this important river resource is a rare opportunity in an urban environment, and there would be considerable benefits to our community to continue to have available such an immediate and continuous river-side trail opportunity.

The following represent a few suggestions with respect to the trail design considerations and the objective of maintaining a river-side trail system that allows continued and facilitated passive enjoyment of the river channel, the vistas, and the fauna and flora associated with the aquatic and riparian habitat, and minimizes potential impact on the ecosystem functions and linkages between the river and its floodplain:

1. In Site #1 it would be preferred that as much treed vegetation on the west bank be maintained as opposed to complete removal for the purpose of ice storage.

* The present wooded area represents excellent and mature riparian treed habitat that serves various functions such as habitat for aquatic and terrestrial fauna and bank/floodplain stabilization, amongst other ecological functions. At present the area still allows ice to be attenuated amongst the trees and does not represent a full blockage to ice storage. Perhaps this can be reassessed to minimize the clearing requirements such that the various ecological and floodplain functions can be maintained, while still supporting some benefit of periodic ice storage.

* Although the ice scour, during the rare events that winter and subsequent winter/spring freshets conditions result in significant ice flows, is recognized to cause considerable damage, there have also been observed protracted periods of minimal Ice Dam maintenance where "substantial" woody debris often diverted flows to the west and around the ice dam (where the bypass channel eroded). During an ice flow year, such long term debris jamming could augment the accumulation of ice with consequent backwater affect that allows ice to distribute on the nearby trails. Potentially, there should be a long term strategic maintenance plan such that the Ice Dam remains clear and the debris accumulation does not exacerbate the erosion conditions experienced under subsequent winter/spring storm events.

2. At Site #2 Erindale Park, the design of a vegetated rock buttress is considered a good design for bank stabilization and combines the benefits of the rock based armouring and vegetation development to support knitting and stabilizing the entire treatment with riparian vegetation root development. This approach has been proven to be successful in various GTA bank stabilization applications including those in the City. However, I would disagree with the complete removal of river-side trail with full dependence on the lookouts by pedestrians and anglers (with the seasonal concentration of anglers this will result in major conflicts for limited space). It is requested that the City consider to have a trail be integrated within the treatment at an appropriate elevation such that a trail can be sustained with the upper trail serving as an alternative route should the lower trail become flooded. Of course the materials selected for the buttress and the trail will be critical to minimize damage to such a trail such that it can be sustainable. This waterside trail is recommended for the reasons noted above, to allow for a valuable river-side trail experience for park users rather than isolating pedestrians from the river. (Please see Comment 6 below regarding other potential angler impacts).

3. Removing the short piece of the trail in Site #6, is not recommended as again this represents a fragmentation or complete removal of the pedestrian river-side trail experience and diversion of considerable pedestrian traffic to the trail that is located close to the residential area of Miraya Court. It would be recommended that:

* The location and design of the pedestrian bridges be modified such that flood flows have a broader entry into the constructed side channel that conveys flow into the wetlands. Allow this floodplain flow routing function to have a better linkage between the side channel and main river channel. Also, the flood path moves well back into the wetland feature and a previously designed flow bypass channel also drains further to the south. This is a location of regular trail washout due to a culvert crossing. This has required regular if not annual repair due to continued placement of undersized culverts. A more sound design of a wider pedestrian bridge structure to replace the culvert and sized to accommodate the flood flow routing through this wetland would also minimize the long term damage and maintenance cost issues. The trail erosion could be minimized with a similar raised trail treatment as shown for the remainder of Zone #6 and an integrated vegetated rock buttress. Together with the wider pedestrian crossings, trail function could be maintained without trail compromise over a stretch that benefits pedestrian proximity to the river and the associated experience.

* There are also overbank flood plain flood channels that route flows into the above noted side channel and wetland, prior to the most northerly pedestrian bridge. Any modifications to the trail through elevating the surface will compromise this flood path and also consequently introduce further risk of damage to the trail. This will thereby result in additional maintenance irrespective of a trail rerouting as proposed for the solution. There have been several washouts over the years in the same location as flows route to the wetland. The loss of the trail materials in this location are usually deposited in the wetland inlet channel which then further has compromised the function of that flood route.

* For the two items above, it seems that more detailed design and assessment effort could be expended in this area to account for the complex flood flow patterns such that the benefits of an existing river-side trail can be maintained, and that any new trail development is not further compromised buy unforeseen overbank flood conditions. An elevated trail design throughout the original path and the existing trail now proposed as the alternative trail route, appear to be feasible and it is recommended that these considerations be reviewed further including critically placed and wider pedestrian bridges to further evaluate a functional preferred design.

4. In Site #8, the design details of Alternative 2 Raised Gravel Trail, appears to only address the need for a stable trail that will withstand the forces of Credit River floods up to the 5 year return. It is recognized this is a feasibility level study, but in this area this is perhaps somewhat of a simplified design with limited broader consideration of additional design criteria. It is recommended that this alternative include a more complete suite of design considerations that also take into account both ecological and hydrologic/hydraulic functions related to the floodplain including as a minimum:

* maintaining overbank flood routing to the wetland area and the associated hydrologic functions and linkage (present Alternative 2 design disrupts the frequent event overbank flood linkage to the wetland and associated functions)

* maintaining unobstructed wildlife movement corridors and linkage functions between the wetland area of the floodplain and the Credit River channel (present Alternative 2 design largely blocks wildlife and aquatic fauna movements between the river channel and the wetland)

Accordingly, rather than just addressing minor drainage from trailside ditch configuration through small diameter 200 mm diam culverts, it is recommended that the City consider identifying existing overland flood routing such that clear span pedestrian bridges can be incorporated that will maintain flood routing channels in and out of the wetland that accommodate the 5 year and less frequent flood event water levels as a minimum, and that will have suitable structure opening sizes to accommodate both the floodplain flood flow conveyance function and promote/maintain unrestricted wildlife movement at the inlet and outlet points through the Alternative 2 trail berm configuration as represented in the section detail. With the consideration of such broader design considerations then a more comprehensive alternative design sensitive to both the preservation of a long term raised river-side trail as per Alternative 2 as well as preservation/promotion of ecosystem/hydrologic/hydraulic functional linkages could be evaluated.

5. In Site # 8, the reestablishment of a trail in the existing location with a modified Alternative 2 design, would minimize impacts related to as yet undetermined design modification requirements to divert increased pedestrian and cycling traffic to the smaller woodland trail as indicated in the preferred alternative.

6. The original bank stabilizations in the Credit Heights Drive (gabion basket treatment area) Site #3 as well as a few of the armourstone rock treatments in the Park, also included considerable riparian tree and shrub plantings behind the scour protection. It should be noted that these tree and shrub plantings appeared to be largely compromised in the first year due to the extensive use of this area by anglers and pedestrians. Unfortunately, the rootzones of the trees and shrubs were significantly compacted and essentially none survived. Clearly this also compromised the intended additional stabilization function of the bank fill behind the gabions with incremental soil losses over the years (amongst other erosive processes at this sharp meander). Subsequently the trail also continued to widen with pedestrian use

due to lack of a vegetated riparian boundary (also thee is notable seepage in this area results in wet areas that pedestrians and cyclists avoided by widening the trail over time). It is recommended that all the future designs especially were dependent on vegetation as an integrated functional component of the bank stabilization, anticipate such riparian planting impacts.

I hope that the City will find the comments and considerations as provided useful in the advancement of the study. It would be appreciated if the City could continue to inform me directly of the progress through the duration of the study and design, as I have a sincere interest in a functional, sustainable and successful restoration of this reach of the Credit River and the Culham Trail.

Thanks for the opportunity to provide comments on this important project.

Andreas Stenzel
[redacted]

Brian F. Smith
[redacted]

Attn: Mr. Raymond Lau
Project Leader, Engineering
Park development
300 City Centre Drive
Mississauga, Ontario L5B 3C1

CREDIT RIVER TRAILS INFRASTRUCTURE REHABILITATION - RIVER RETRAINING AND PROPOSED NEW RIVER VIEW CABLE CAR ATTRACTION

- RIVER RETRAINING: I propose a strategic dredging and reclaiming of some of the original pathway of the river that has now been erased due to landslides and erosion. This would lessen the environmental impact on the critical northern and southern sanitary sewer infrastructure. The river kept shifting its course due to natural flooding over time and culminated in the erosion of vital systems and pathways. It would appear that the potential hazards posed by the encroaching natural erosions of the river pathway due to decades of neglect stand to ruin vital ecosystems if not urgently prioritized. The health of the ecosystem is but one of the many reasons why the utmost importance must be given to the retraining of the rivers path. By carefully dredging fallen rock, gravel, and sediment built up along several stretches of the riverbank away from the existing trail will save critically important systems. Bending the river paths only a few meters away would be a good investment in the long term. I have had the misfortune to witness a few accidents happen along the trails over the last 25 years. Nothing to date serious enough to warrant dialing 911 emergency services. However, it is only a matter of time before a call will be made given the increased volume of foot traffic in the area. Which is why I am advocating for widening an elevated composite and galvanized steel path for multipurpose traffic with safety railings in some areas.

- A notable observation of the 8 critical points along the area mapped out by the EA study, is the lack of plans to tackle river erosion aggressively. Shifting the river westward in meters, however slightly, would help to contain the increasing river erosion eastward year after year. There is no mention in the study to undertake even slightly any dredging of the western side of the riverbanks, so as to ease the constant shift of the landscape. What nature does is natural. However, it will take collective planning and engineering to push back on natures forces.

- Over the course of many years of traversing the river valley on foot or bicycle, I was surprised to observe the constant collapse of the pathways due to water erosion and how dangerously close these areas are to collapsing. Could cause foot and bicycle paths closed off in some areas and potentially putting the public at risk. Instead of designing solutions that may just last for 5 to 10 years, a more long-term solution would be a better investment of taxpayers' dollars. Presently the entire park system is underused by nature enthusiasts due to inadequate parking options and the absence of organized public transportation to the park.

- The Culham trail along the river is overdue to be expanded and raised higher. A series of prefabricated sustainable raised composite board structures should be built that will withstand the seasonal weather. Some areas could be lifted and stacked in a higher elevation safely. These portable sections could be built in 12'W X 20'L sections. During the winter and early spring, the area is more challenging to traverse due to snow, melted snow, and ice washout along the trail due to overflowing tributaries feeding into the river from the east side of the valley. The overflow of water would then be able to make its way beneath the raised structures uninhibited feeding into the adjacent wetlands and into the river via corrugated galvanized drainage pipes.

- TRIBUTARIES: The runoff of rain and flood water from the east of the trail along the stretch in question beyond the trail westerly towards the river has been ignored for many decades becoming backed up and stagnant. The wetlands tributaries channel will continue to erode as landslides and land slippage take the path of least resistance and go wherever nature sees fit. Therefore, waters heading west from the higher elevation of the Riverwood Conservation area are resulting in the constant washout of the Yellow, Red, and Culham trails, as well as the Credit River overflowing due to heavy rain and rapid snow melting north of the 403.

- Another area of the trail the EA did not make any reference to, is where the trails leaving from the Botanical Gardens grounds west back towards the existing boardwalk along northeast side of the Riverwood Conservation area towards lower levels. This area is vital for walking and bicycle traffic and has fallen apart structurally for several years. This path leads to Culham Trail and connects to the north end of the Yellow Trail which leads toward the 403 bridges. Therefore, I am proposing that a 9th area to added and be given urgent attention for expansion, rehabilitation, and a construction upgrade because it is a frequently used path going southeast to the higher elevation of the Riverwood Conservation area.

- EA STUDY: I couldn't find any references to the human head count of trail usage and park attendance per year for any decades going back to the 70s, 80s, or 90s to the past year 2023. I can not imagine that an EA would not includes people usage of the river basin. From my lived experience and observations of visiting the area on a regular basis, it is high time that thoughts be given to design and erect a sanitation facility at the north end of the trail towards the 403 end of the trail, something similar to that at Erindale Park south end, this would be a great investment and would entice more hiking activities. An investment in making parks and trails more accessible will result in an increase in usage and the improvement of the overall health of the community.

- EXPECTED BUDGET: Expenditure for the completion of the 8 areas designated by the EA for restoration could be as much as $10M. While that amount may seem to be a huge chunk from the City's capital budgets, it is still a small investment in the stabilization of the ecology of the Credit Valley River basin.

- PROJECT FUNDING - RIVER VIEW CABLE CAR DEVELOPMENT ATTRACTION: One possible source of funding the project would be to expand the recreational use of the Credit River Basin by installing a gondola cable car system crossing the east and west banks of the river and through the wooded

area. This would give passengers a birds-eye view of nature in all its splendour. Each direction could consist of approximately 50 cars with a capacity of six people per car. They would be designed to offer panoramic views and have a public Wi-Fi network powered by photovoltaic solar panels. The investment to design, install, and operate year-round weather permitting could be offset by charging a fee sufficient to recoup the investment cost over a 10 – 20 year period. It would also generate sufficient funds to cover cost and maintain the trails, parking expansion, and installation of EV charging stations in the Riverwood Conservation and Erindale Park parking lots. The cable car system could begin at the north end of Culham Trail traversing south to the Riverwood Conservation and end at Erindale Park. This project would attract more seniors to get out and exercise their limbs and subsequently their brains. As for the youth and middle aged people, this would give them an exciting opportunity to engaged in meet-up with their friends, while developing a love and passion for nature's beauty and wonder. The area could be developed so that there would be year-round activities like skateboarding, cross-country skiing, canoeing, kayaking, and bird watching. Throughout all of Mississauga, there are not many areas that are as natural, ecologically diverse, and unspoilt as the Credit River Basin.

- POPULATION GROWTH: An increasing number of Mississauga residents are trying to escape to be in touch with nature and the area is being used by diverse populations with a deeper love for outdoor activities such as hiking, picnicking, outdoor barbequing, and fishing. Mississauga's population will undoubtedly reach 1 million people within a few years. There are fewer and fewer open spaces available that are suitable to build large single-detached homes. Therefore, developers will have to build more vertical living spaces to accommodate the expected increase in population. All these people will flock to park and river trails to get away from cramped quarters to breathe fresh air and have fun outdoors.

- WESTERN SIDE OF THE RIVER: Consideration should be given to design and construct an elevated trail, parallel to Culham Trail, starting from the west side of the Burnhamthorpe Rd. bridge going south with a cantilever steel bridge crossing at midpoint over the river to Culham Train. This would allow for more access to the undiscovered area of the river basin. People cannot explore inaccessible areas, if those that are in charge sees no rational basis for it and not stand to personally benefit from it, it may not happen. Therefore, I am making the case as a visionary that the councillors and staff, take a constructive look at the points I put forward.

schiller.e@aquaforbeech.com

From: schiller.e@aquaforbeech.com
Sent: May 2, 2024 11:48 AM
To: schiller.e@aquaforbeech.com
Subject: FW: Credit River and Erindale Park Assessment

-----Original Message-----

From: William Mcmullen
[redacted]

Sent: Friday, June 23, 2023 4:51 PM

To: Anthony DiGiandomenico
<Anthony.DiGiandomenico@mississauga.ca<mailto:Anthony.DiGiandomenico@mississauga.ca>>; Amos.R@aquaforbeech.com<mailto:Amos.R@aquaforbeech.com>

Subject: Credit River and Erindale Park Assessment

Dear Sirs,

We have lived on Ballyclare Drive Mississauga since 1982. We have used the Credit River Erindale Park for as many years, even before it was redeveloped and improved. It was a bit of a dump back in 1982 and now is one of the best parks in the city. I do think that the pond in the Erindale Park should be cleaned and cleared up, deepened and the water flow inlet and outlet from the river be improved to keep the once excellent pond viable.

Now it has become an overgrown swamp which breeds mosquitos and while it does provide some habitat for frogs and the occasional wading bird, its recreational value has disappeared. It once made for an excellent skating rink that our children enjoyed and it was large enough to accommodate many skaters. A fresh water pond would provide more opportunity for small fish, amphibians, and waterfowl than the existing swamp. As i have seen it evolve, it became a product of neglect. The water inflow and outflow
allowed slit and debris and vegetation overgrowth. It is a great site for
a viable clean water pond.

Sincerely,

WR McMullen

schiller.e@aquaforbeech.com

From: schiller.e@aquaforbeech.com
Sent: May 2, 2024 11:58 AM
To: schiller.e@aquaforbeech.com
Subject: FW: Environmental assessment for Credit River Erosion

From: Tina Mola [redacted]
Sent: Tuesday, July 25, 2023 6:05 PM
To: Anthony DiGiandomenico <Anthony.DiGiandomenico@mississauga.ca>
Subject: Environmental assessment for Credit River Erosion

Hello,

I missed submitting the comment form due to printer problems.

My home is located at 3350 Credit Heights, which has a huge part of our backyard on the hill almost down to Culham trail.
Over the last 23 years we have lived here, I have noticed a major change on the hill behind our yard.....loss of old trees contributing to loss of eroding soil. Although it's private property, there seems to be many mountain bikers climbing up and destroying any possible growth of new trees.

I am glad that there is a study to deal with the erosion issue and I hope that replacing the Gabion basket with vegetation buttress will help the situation at Site #3.

I will say that I found the study a bit technical for me.

I would appreciate knowing what I can do to minimize the erosion on the hill.

Thank you.

Tina Mola

schiller.e@aquaforbeech.com

From: Margy de Gruchy [redacted]
Sent: June 24, 2023 1:55 PM
To: amos.r@aquaforbeech.com; derek.stone@theriverwoodconservancy.org; sara.wilburcollins@theriverwoodconservancy.org
Cc: 'Anthony DiGiandomenico'; 'schiller.e'
Subject: Re: Credit River Erosion Control - Public Information Centre Notice

Thanks Rob,

I can read the legend now. I have included Sara Wilbur-Collins, the Executive Director at The Riverwood Conservancy (TRC), in this email thread so she will be able to follow the thread and has access to the pdfs. The TRC board is meeting next Monday and I believe the project is on the agenda. The offer for a site meeting has been noted and is appreciated, but it may be more useful later on, when an alternative has been chosen, it's hard to say right now.

Thanks,

Margy

On 2023-06-23 5:32 a.m., amos.r@aquaforbeech.com wrote:

> Hi Margy,
>
> Thanks very much for your initial review of the PIC information.
>
> For site 8, I've uploaded the original / full size pdf's for your review, available from the link below. I believe this should make reading the legend and finer details more clear.
>
> **Site 8 – Upper Trails Alternatives**
> https://www.dropbox.com/scl/fo/2y3t9u6ale5zvw259bm2s/h?dl=0&rlkey=e1t6z7nuoodkbkeecbusxur8g
>
> With regards to your questions, please find responses below:
>
> 1. What are the requirements to maintain access to water mains on the floodplain in the Riverwood area? Would that require a gravel path of a certain width?
> **Response: There will not be any City requirements to maintain access as noted, but any existing points of access between Riverwood and the floodplain will be preserved.**
>
> 2. For other questions, what is the best way to address them? Contact you by email?
> **Response: Please feel free to use this email thread for questions. Also, Anthony and I would be happy to meet with the Riverwood group at a convenient time over the coming weeks to discuss.**
>
> Thanks very much,
>
> Rob Amos, MASc., P.Eng.
> Aquafor Beech Ltd.

Mobile: 416.705.2367

From: Margy de Gruchy [redacted]
Sent: Wednesday, June 14, 2023 2:47 PM
To: Rob Amos <amos.r@aquaforbeech.com>
Cc: Anthony DiGiandomenico <Anthony.DiGiandomenico@mississauga.ca>; Derek Stone <derek.stone@theriverwoodconservancy.org>
Subject: Re: Credit River Erosion Control - Public Information Centre Notice

Hi Rob,

Thanks so much for this update. Took a quick review and I am having a hard time reading the legends on the figures for the alternatives. They are blurry when I zoom in. Could you provide a screenshot of the legend, especiallly for site 8?

A few immediate questions come to mind:

1) What are the requirements to maintain access to water mains on the floodplain in the Riverwood area? Would that require a gravel path of a certain width?

2) For other questions, what is the best way to address them? Contact you by email?

Thanks,

Margy

On 2023-06-14 12:37 p.m., Rob Amos wrote:

> Dear Stakeholder,
>
> In accordance with the environmental assessment process, Aquafor is pleased to share the Notice of Public Information Centre for the **Credit River Erosion Control Project from Dundas St. West to Highway 403.**
>
> Aquafor and the City of Mississauga have identified existing problems and risks along the Credit River and Culham Trail, and developed alternative solutions for consideration. These solutions will be refined through public consultation.
>
> Project information is available on the City's website, with comments being requested prior to July 14th, 2023. (www.mississauga.ca/creditrivererosionea).
>
> Upon your review should you have any questions, please feel free to contact the following:
>
> **Anthony Di Giandomenico, P.Eng.**
> Project Manager
> City of Mississauga
> 201 City Centre Dr, Suite 800
>
> **Robert Amos, P.Eng.**
> Consultant Project Manager
> Aquafor Beech Ltd.
> 2600 Skymark Avenue, Unit 6-201

Mississauga, ON L5B 2T4
(905) 615-3200, ext. 3491
Anthony.DiGiandomenico@mississauga.ca

Mississauga, Ontario
(905) 629-0099, ext. 284
amos.r@aquaforbeech.com

Kind Regards,

Rob

Robert Amos MASc. P.Eng.
Fluvial Geomorphologist
905.629.0099 x 284
amos.r@aquaforbeech.com

From: Rob Amos <amos.r@aquaforbeech.com>
Sent: September 7, 2022 1:42 PM
Cc: 'Anthony DiGiandomenico' <Anthony.DiGiandomenico@mississauga.ca>
Subject: Credit River Erosion Control - Notice of Commencement

Dear Stakeholder,

Aquafor Beech Limited has been retained by the City of Mississauga to undertake a Schedule B Class Environmental Assessment Study for the **Credit River Erosion Control Project from Dundas St. West to Highway 403**.

This project is being completed to address erosion issues associated with the watercourse and the need to rehabilitate the adjacent Culham Trail.

In accordance with the environmental assessment processes, Aquafor is pleased to share the Notice of Commencement for this project. Please see the attached document for further information.

Should you have any questions or comments, please feel free to contact the following:

Anthony Di Giandomenico, P.Eng.
Project Manager
City of Mississauga
201 City Centre Dr, Suite 800
Mississauga, ON L5B 2T4
(905) 615-3200, ext. 3491
Anthony.DiGiandomenico@mississauga.ca

Robert Amos, P.Eng.
Consultant Project Manager
Aquafor Beech Ltd.
2600 Skymark Avenue, Unit 6-201
Mississauga, Ontario
(905) 629-0099, ext. 284
amos.r@aquaforbeech.com

Kind Regards,

Rob

Robert Amos MASc. P.Eng.

Fluvial Geomorphologist
905.629.0099 x 284
amos.r@aquaforbeech.com

846 Edison Court
Milton ON L9T 3W1
905-699-1175

July 14, 2023

Anthony Di Giandomenico, P.Eng.
Project Manager
City of Mississauga
201 City Centre Drive, Suite 800
Mississauga, Ontario
L5B 2T4

Re: Credit River Erosion Control Environmental Assessment - Comments and Questions

Dear Anthony,

Thank you for the site meeting on July 6, 2023 at the Riverwood site. It was very productive and many important questions were answered and vital information was exchanged. Please continue to reach out to Riverwood Staff and volunteers for any additional information you require.

I would like to offer some feedback on behalf of the Stewardship Committee based on my knowledge of the site and stewardship activities, and my experience as a terrestrial ecologist and user of multiple trails in the GTA. My comments are primarily centred around the Riverwood portion of the study area, but may apply to other areas. Some comments may be directed toward later stages of the project.

As you have come to understand, the trails at Riverwood are integral to the stewardship and education programs at Riverwood so this project may have substantial impacts to these activities and how they are planned. The Riverwood Conservancy (TRC) designs and hosts programs that educate and connect the community to the natural environment within urban Mississauga. Schools, community groups, and the public all benefit from Riverwood programs, and other entities use the site for group activities as well, outside of TRC programming.

TRC attracts many highly dedicated volunteers and I have had the pleasure of meeting and working with staff and stewardship volunteers who have extensive knowledge of the site and expertise and interest in gardening with native plant species, ecological restoration, field botany, insect ecology and identification, and native plant propagation.

Participation of corporations and businesses in group stewardship events provided by TRC at the Riverwood site increases annually, as businesses seek local opportunities to demonstrate participation in corporate social responsibility and sustainability initiatives. The City of Mississauga and Credit Valley Conservation (CVC) host similar group stewardship events, and also report a lot of interest and fully booked schedules. TRC Stewardship Committee meetings

provide an opportunity to network with these agencies, update each other on new initiatives and changes within our respective environments, and share experiences and information.

Interest in group stewardship programs has grown to the point where it can be been challenging for us to keep up with the demand. Community based groups also participate, and the events are appreciated for team building aspects and developing a sense of empowerment by making a contribution to combat environmental degradation and climate change. Primary activities for group stewardship events include planting, invasive species removal, and trail protection. This has become a seasonal focus of activity for stewardship staff.

All of the aforementioned stewardship and education activities are currently carried out within a context of high daily pedestrian and cyclist traffic levels. The trails are subject to intensive use for recreation, wildlife viewing, and connection to nature, and most certainly they play a significant role in maintaining the physical and mental well-being of the local community. Common activities include hiking, running, dog walking, cycling, and fishing.

It does not seem to be common knowledge, but it should be noted that the Riverwood site has parcels owned by CVC and the City, and of course CVC regulates all floodplains and valleylands in its jurisdiction. All proposals for this project will have pros and cons and it is my hope that stakeholders and agencies can work together to find solutions to the many challenges and determine the best alternatives. There is potential for mutually beneficial partnerships given TRC's knowledge of the site and expertise gained from previous onsite restoration efforts, as well as out our access to volunteers and experience organizing volunteer restoration events.

Plans for Site 8

Site 8 is the area of primary concern for Riverwood. Given flooding and ice flows in recent years, staff are deeply concerned about public safety, costs, and the sustainability of the Culham Trail over the long term. We have been witness to the effects of ice sour and flooding that has damaged trees, and trail washouts that have deposited gravel and limestone screenings into wetland habitat over the years.

Site 8 - Culham Trail Erosion Alternative 2 - Raised Gravel Trail

This option is appealing because the Culham Trail is retained and less pressure would be placed on other Riverwood trails. Local users might prefer this option, since access is maintained and no change in habitual use would be required once the work is complete.

This alternative could have negative impacts on wildlife movements which would need to be evaluated and addressed.

Given the focus on the 2 and 5 year flood elevations for this feasibility stage, does this imply a willingness by the city to close trails and repair damage to trails and infrastructure when a 10 or 15 year flood event occurs? It seems risky to accept this alternative if commitment to trail maintenance in the future is unclear.

Another concern with this alternative is that we may be in the same situation in the future, given continued development upstream, ageing storm water systems designed prior to upstream development, and the unknowns of climate change. I have conducted field work and been aware of many projects in creeks at the downstream end of GTA watersheds (e.g. Burlington, Oakville, Mississauga). Many creeks and watercourses are subject to severe erosion and now require rehabilitation, re-routing and engineered measures to fulfill storm water management functions and protect property and infrastructure.

For evaluating this alternative, is there any way of estimating a probability or providing a professional opinion on the likelihood of facing a similar decision to abandon or direct traffic off the Culham Trail, after considerable expense and effort may have been expended to retain the trail?

Site 8 - Culham Trail Erosion Alternative 3 - Boardwalk

As stated above, retaining access to the floodplain trail is appealing but again, I have concerns about annual flooding, and damage to trail infrastructure necessitating abandonment of the trail over the long term.

Boardwalks have the advantage of allowing most existing activities and appreciation of the environment to continue, while sending a clear message about where the trail is, and reducing the desire to go off trail and subsequent creation of ad hoc trails.

Please indicate how long the boardwalk would be.

The optional secondary surface trail presents an opportunity to separate pedestrians from cyclists to improve traffic flow and safety, however it negates the benefits of lifting the trail off the floodplain to accommodate fluctuating water levels. The preliminary diagram suggests there would be a barrier between the boardwalk and the fill for the surface trail. How much additional pressure would be exerted on the structure caused by the adjacent fill?

Additional concerns would be the high cost and maintenance. Can you provide any information on maintenance requirements for what is being proposed? (e.g. lifespan, frequency of replacement of piles and boardwalk, capacity of helical piles to withstand flood forces/ice jams/freeze thaw cycles, etc.?). I have seen boardwalks in Atlantic coastal areas so presumably they can withstand substantial pressure if properly designed.

Culham Trail Erosion Alternative 4 - Re-route trail upslope

Theoretically this is the best solution for the natural environment; reduction in trail use reduces noise, disturbance, pets, garbage, trampling etc. but these pressures would be diverted upslope. This is assuming there will be a reduction in trail use on the floodplain, however. There is a possibility there may not be much reduction in use of a decommissioned Culham Trail. I was relieved to learn that access to the floodplain would be maintained. Loss of this trail,

whether it be due to natural causes or other factors, would be a terrible loss for Riverwood and the greater community. Blocking off access would not be desirable or realistic but it is unclear how much use there would be under this “reduced use” .alternative. This may depend to some extent on how the trail is restored and maintained and how the upslope trail is configured.

From a social perspective, having to abandon old habits and favourite routes may lead to noncompliance and generation of ad hoc trails. Multiple ad hoc trails exacerbate edge affects and are highly detrimental to habitats due to excessive trampling, soil compaction, spread of invasive species and reduction in canopy cover at all canopy levels. Ad hoc trail creation can be mitigated if routes serve users well and are appealing and safe. Trail design on the floodplain should ideally consolidate multiple pathways to prevent excessive ad hoc trails. Fishing activities tend to produce multiple ad hoc trails at the edge of the river. It may be useful to collect information on the most desired locations/hotspots for fishing along the river.

Can any insight be provided on whether it is better to create a wider trail, versus separate trails for cyclists and pedestrians? Is it preferable to offer a bypass trail where possible, or separate boardwalks for example? What has been learned from other studies and trail projects in the GTA? Should separation of cyclists from pedestrians wherever possible along the length of the Culham Trail be considered?

Providing photo examples of recognizable or familiar trail designs will help readers understand final outcomes and configurations, and may help them estimate traffic flow and more easily predict usage patterns.

Note that cyclists are a diverse group of different ages, desires, and travel at different speeds on different types of bikes. Some may be leisurely or more focussed commuters, some might enjoy exploring long distances with few interruptions by vehicle traffic, and some prefer speed and fitness/training aspects of cycling. Cyclists also include family groups with small children, and as you may recall a children’s summer camp group that is not associated with Riverwood or Visual Arts Mississauga (VAM) was observed cycling the Red Trail during the site walk.

Mountain bikers are using the trails to get to more challenging and technical unsanctioned trails on the uplands and slopes. There are not many opportunities in Mississauga for this type of trail biking so they are persistent. Riverwood’s upland trails and slopes are being damaged by mountain bike activities and stunt features that have been created, and put other users at risk.

Another concern is that restoration plantings and associated soils placed along the Culham trail might be washed away, since the soil will be looser than on the adjacent floodplain and it will take some time for roots to establish to hold the substrate in place. We know that under current conditions, the trail is where the water tends to go.

Site 5 – Summit Court Slope-Valley Wall Erosion

It is hard to comment on this site as most of us have not been on this side of the river at Riverwood due to difficulties with access. We did not cover this area during the site walk but a few questions come to mind.

How accessible is the site? How would heavy equipment/armour stones be brought in?

Would de-watering be necessary for any of the alternatives, and for other works proposed downstream for that matter? What would be the potential impacts to the shoreline and aquatic environment of de-watering and other construction activities and how would they be mitigated?

Overall Comments/Concerns for performing works throughout the study area

<u>ELC mapping</u>

Existing ELC mapping requires confirmation and updating as necessary, especially any areas within or adjacent to where trail re-routing and other works are being considered. A good understanding of existing conditions, constraints and opportunities will be needed wherever impacts might be anticipated. Some of the mapping in background materials may be outdated given the scale and timing of natural areas surveys, successional processes, recent flooding and changes to hydrology and increasing dominance over time by invasive species.

<u>Invasive Plant Species</u>

There are many high priority invasive species at Riverwood, and presumably elsewhere in the study area, that can be spread easily by disturbance due to digging and construction, and propagules may be inadvertently moved to different areas on construction equipment. There is also potential to impact provincially significant habitats downstream of the study area if propagules are released into the river.

The photo below shows how the invasive species Fig Buttercup (*Ficaria verna*) carpets areas of the floodplain at Riverwood. This highly problematic species can only be detected in early spring. It disappears by the end of May so it is easily missed in surveys. Fig Buttercup produces small bulblets above ground, as well as root tubers below ground, both of which can be released during flooding, whereby they float downstream to start new populations. This species is threatening Riverwood's regionally rare population of White Trout Lily (*Erythronium albidum*), which is another species that is only detectable in spring. Some mapping of Fig Buttercup and White Trout Lily has been done in the past, prior to recent flooding issues.

Photo 1. Riverwood floodplain habitat taken May 5th, 2013. All of the green in this photo is Fig Buttercup, also known as Lesser Celandine. Yellow Fig Buttercup flowers are visible in the foreground.

Highly invasive aquatic species such as Yellow Iris (*Iris pseudoacorus*), Himalayan Balsam *(Impatiens glandulifera)* and Flowering Rush (*Butomus umbellatus*) have been observed in the floodplain and along the shoreline at Riverwood, but fortunately they did not persist. A small population of Common Reed (*Phragmites australis*) in the river was successfully managed, as was a population of Dog-strangling Vine on the west bank of the river and elsewhere on the site. Several species of invasive shrubs are present, and Garlic mustard (*Alliaria petiolata*) and Dame's Rocket (*Hesperis matronalis*) are widespread and abundant. These are but a few of the problematic species that have been observed at Riverwood.

Please communicate with the Derek Stone, Riverwood's Conservation and Stewardship manager for the most up to date and relevant information about invasive species and associated management projects at Riverwood. Our invasive plant populations are managed using strictly manual/mechanical means. We do not have access to herbicides. Giant Hogweed (*Heracleum mantegazzianum*) is managed by a city contractor using herbicides.

Will sites be screened for invasive species prior to anticipated disturbances?

How will the spread of invasive species be mitigated during construction in both aquatic and terrestrial environments?

Mitigation measures must consider the invasive species' life cycles and modes of dispersal and invasion. Would silt fences or barriers and careful storage of excavated soils be sufficient? Would treatment with herbicides be considered?

Riverwood staff and volunteers have spent countless hours managing invasive plant species, collecting seeds and propagating and rearing native plants in their backyards for plant back at Riverwood. They have worked hard to respect the local environment by restoring locally appropriate native species to the site. It would be appreciated if planting plans respect these efforts by continuing to use appropriate native species.

Habitat Sensitivities

Consideration will need to be given for seasonal timing of works in order to protect wildlife breeding, e.g. spawning/egg laying and seasonal movements and use of habitat by fish, reptiles, amphibians, birds and bats. CVC and/or the city will likely provide comments/guidance on timing. Movement and habitats of wildlife such as snakes, frogs, turtles, small mammals, deer, bats and recently a beaver need to be considered in designs.

Reports

I look forward to reading future reports that will summarize:

- context and background explaining trends and observed changes in the flow and hydrology of the Credit River; what has been happening and what should be anticipated in the future?
- methods and resources for data collection and timing of site visits
- report on existing conditions with updated ELC mapping
- constraint mapping/analysis, especially for trail locations
- impact analysis for alternatives
- justification for chosen alternatives
- proposals for mitigation of negative impacts
- detailed designs
- tree preservation and planting plans

Please keep in mind that engineering and design features, materials, and mitigation measures, are unfamiliar to many readers. Sample photos of proposed trail configurations, and design features such as vegetated buttresses, a gravity wall, corten steel deck etc. would be helpful for visualization and a deeper understanding of what is being proposed.

Many thanks again for encouraging a site walk, exchanging information and listening to our concerns. Feel free to contact me if you have any questions.

Sincerely,

Margy de Gruchy

Chair of The Riverwood Conservancy's Stewardship Committee
Author of The Riverwood Conservancy Stewardship Management Plan (2017)
Consulting Ecologist, BSc, MSc, de Gruchy Environmental

The Riverwood Conservancy

4300 Riverwood Park Lane
Mississauga ON L5C 2S7
905 279 5878
info@theriverwoodconservancy.org
theriverwoodconservancy.org

July 10, 2024

Anthony Di Giandomenico, P.Eng.
Project Manager
City of Mississauga
300 City Centre Drive
Mississauga, Ontario
L5B 3C9

Robert Amos, P.Eng.
Consultant Project Manager
Aquafor Beech Ltd.
2600 Skymark Avenue, Unit 6-201
Mississauga, Ontario
L4W 5B2

Delivered by email: Anthony.DiGiandomenico@mississauga.ca; Amos.R@aquaforbeech.com

Re: Credit River Erosion Control Environmental Assessment

Dear Anthony and Rob:

Thank you very much for taking time to meet with staff from The Riverwood Conservancy (TRC) on June 19. We appreciate your continuing attentiveness to TRC's observations, both as reflected in the new Hybrid Trail Option for Site 8, and during this new comment period.

This letter summarizes TRC's organizational comments related to the new Hybrid Trail Option. We have also circulated your invitation to comment on our social media and directly to TRC volunteers including our Board of Directors and other individuals with expertise in this area.

We are pleased to learn that the new option provides for both improvements to the Culham Trail (referred to in the study as the "secondary trail") as well as enhancements to the upper trail (the "primary trail"), in acknowledgement of the high levels of traffic there. We also appreciate the trail usage data that was included, which will be useful for us in additional ways.

We continue to be concerned with some elements of the proposed Hybrid Trail Option, as follows:

Proposed Elevation Level of Secondary (Culham) Trail

We note that the Hybrid Trail Option proposes that the secondary trail be built at a five-year flood elevation, incorporating stone-lined swales on both sides and installing four box culverts under the trail surface for drainage.

We appreciate that you took into consideration the ability for wildlife – particularly turtles – to cross when selecting the elevation of the trail. Understanding that in the final design there may be provision for additional culverts, we remain concerned that the proposed elevation is insufficient to resist ongoing river flows. We would strongly encourage consideration of a larger culvert width than the standard 200mm, in order to allow greater flow and mitigate against potential blockages.

In the course of our work we regularly experience the force of the Credit River. For example, in winter 2022 an ice dam formed upstream of Riverwood; when it burst, the force of flow pushed two-metre tall chunks of ice across the floodplain and onto the primary trail, a distance of about 200m. This had significant impacts on habitat and user safety.

Both the *Climate Trends and Future Projections in the Region of Peel* Report (2016) and the City of Mississauga's *Build Beautiful Mississauga Stormwater Master Plan* (2023) anticipate significant increases in precipitation in the short, medium and long term, and that extreme rain events are expected to become more frequent. In this decade alone, the City study states that the "Worst 1% of extreme precipitation events are on track to increase by 20%" (pg. 14). Further extrapolations illustrate a continuing trend.

Given this data and the general acknowledgement of climate change, there is a very real possibility that, even with additional/widened culverts, the present proposed trail elevation would not resist flows on an ongoing basis. The result could range from regular closings of the trail, to costly annual repairs, to the possibility of the trail being entirely washed away in an extreme weather event. This could return the situation to the Culham Trail's current impassable state, and continue to have negative impacts on local wetland ecosystems.

Boardwalk Linkage on Primary Trail

We are grateful that the Hybrid Trail Option contemplates formalization of the natural surface primary trail, including safety barriers where warranted. Last year, more than 7,700 students and an additional 6,700 program participants engaged in outdoor learning along this trail, and these improvements will do much to ensure a positive experience.

The Hybrid Trail Option proposes that a new section of boardwalk be created, to connect the two existing boardwalks over MacEwan and Chappell Creeks. These existing boardwalks along the trail were built some time ago, very likely to a different accessibility code than that of the present.

While we support the creation of the new boardwalk, it seems likely that current accessibility code will mean that the proposed connecting area will be wider than the original stretches of boardwalk. This has the potential to create "pinch-points" along the more narrow stretches that could impact safety and public

enjoyment. Additionally, at present EMS can only access the trail on foot, as existing boardwalks on the primary trail are too narrow (approx. 1.5 m) to accommodate even a smaller/quad-type vehicle.

To ensure a consistent and safe experience for trail users, and to safeguard Riverwood's flora and fauna from high human usage, we encourage consideration of widening the existing boardwalks in tandem with the development of the new connecting segment. This would create a "seamless" traversing of the creeks, significantly enhancing user enjoyment.

We also recommend consideration of cut-out observation areas along specific locations of the boardwalk, in order to accommodate traffic relief along this multi-use trail, and to provide opportunities for the public to engage in viewing areas that ensure safe and ecologically appropriate engagements with nature. These features would add very high value to the site and provide meaningful opportunities to the many visitors and program participants at Riverwood. One location to be considered for this should be the west end of the current boardwalk on the primary trail, where a proposed connecting boardwalk is being considered (noted as P2 on the attached map.)

Additionally, there is another location just west of the existing marshland where significant washout occurs throughout the season, preventing year-long access along the primary trail. This location (noted as P3 on the attached map) should be considered for an additional boardwalk section with possible cut-out, in order to maintain year-long access without damage to the associated wetlands and forest areas adjacent to the trail, which currently house a plethora of sensitive wildlife.

Signage

A consistent challenge along the primary and secondary trail is lack of directional, safety and interpretive signage. As noted in the EA, total annual trail visits at Riverwood ranged from 212,000 to 437,000 in select areas. While some basic signage exists in select locations – largely near the parking lots, which can be some distance from the trails – there are very few signs present along the trails themselves.
The addition of directional signage would be extremely helpful for trail users who are concerned about becoming lost, who wish to know the length of the trails prior to use, or who are apprehensive about being in nature.

Safety signage would advise trail users, particularly those with bicycles, strollers or mobility devices, of steep slopes, drop-offs adjacent to the trail and/or high-traffic areas.

Interpretive signage would enhance visitors' understanding of the natural values of the site and make them aware of any species to avoid, such as poison ivy. As the City's onsite partner, TRC would be pleased to assist in the creation of any signage associated with the project.

We further note that both the primary and secondary trails are contemplated as part of a broader through-trail being developed by Credit Valley Conservation, known as the Credit Valley Trail (CVT). As part of the effort to establish the CVT, participation in the Moccasin Identifier Project (https://moccasinidentifier.com/) has been suggested to TRC. As an organization with a firm commitment to reconciliation, and which has received endorsement by the Mississaugas of the Credit First Nation

regarding land-based programming, TRC encourages the City of Mississauga to contemplate participation in this effort.

Conclusion

At the point of writing, we understand that next steps following the comment period will take place over the coming six to ten months, and that any updates to design drawings will be available as part of the completed tender package. We would be happy to discuss any of the ideas within this comment with you, at your convenience.

We are grateful for your time and the opportunity to comment on this important work, and we look forward to continuing to work together. If you have any questions, please do not hesitate to contact me at sara.wilburcollins@theriverwoodconservancy.org or (905) 279-5878 x24.

Sincerely,

Sara Wilbur-Collins, MCL, CFRE
Executive Director

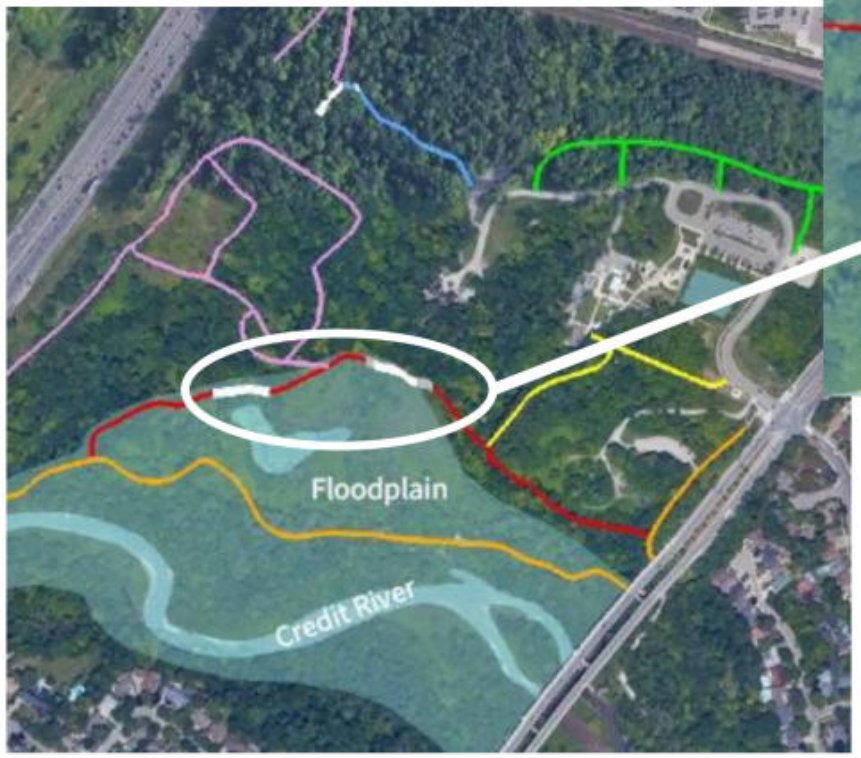
cc. Margy DeGruchy, Chair, Stewardship Committee, The Riverwood Conservancy
John Dunlop, Manager, Indigenous Relations, Heritage and Museums, City of Mississauga
Jamie Ferguson, Manager, Park Services, Park Operations, City of Mississauga
Quentin Hanchard, CAO, Credit Valley Conservation
Elder Carolyn King, Moccasin Identifier Project, Mississaugas of the Credit First Nation
Joe Horneck, Ward Six Councillor, City of Mississauga
Claire Sault, Ogimaa-Kwe, Mississaugas of the Credit First Nation
Heather Shaw, Board Chair, The Riverwood Conservancy

The Riverwood Conservancy

Credit River Erosion Control
Environmental Assessment/Site 8

July 10, 2024 Comment

Map attachment



Please note that the Red Trail is identified as “the primary trail” in the EA.

This image is for identification of areas P2 and P3 only. Trail Key does not conform exactly to the proposed EA Hybrid Trail Option.

Ministry of Citizenship and Multiculturalism

Heritage Planning Unit
Heritage Branch
Citizenship, Inclusion and Heritage Division
5th Flr, 400 University Ave
Tel.: 416-301-4797

Ministère des Affaires civiques et du Multiculturalisme

Unité de la planification relative au patrimoine
Direction du patrimoine
Division des affaires civiques, de l'inclusion et du patrimoine
Tél.: 416-301-4797

Ontario

July 10, 2024 EMAIL ONLY

Anthony Di Giandomenico
Project Manager
300 City Centre Drive
Mississauga, ON L5B 3C9
Anthony.DiGiandomenico@mississauga.ca

MCM File	**:**	**0014094**
Proponent	**:**	**City of Mississauga**
Subject	**:**	**Municipal Class Environmental Assessment – Schedule B – Notice of Completion**
Project	**:**	**Credit River Erosion Control Program From Dundas Street to Highway 403**
Location	**:**	**City of Mississauga, Peel Region**

Dear Anthony Di Giandomenico:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Completion for the above-referenced project, and for making the Project File report available for review.

MCM's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage.

Project Summary
The City of Mississauga has completed a Schedule B Class Environmental Assessment (Class EA) Study for erosion control and restoration of the Credit River between Dundas Street West and Highway 403. The Study was undertaken to address existing erosion and safety issues along the river and adjacent Culham Trail. This section of the Credit River and Culham Trail are in need of rehabilitation to remediate existing river erosion, risk to property and infrastructure, and improve safety. Some of the impacts include segments of failed riverbank protection, washouts and damage to the trail, valley wall erosion and ice control.

Comments
We have reviewed the *Schedule B Class Environmental Assessment – Project File,* prepared by Aquafor Beech Limited, dated June 6, 2024. We have the following comments and observations:

Archaeological Resources
A Stage 1 Archaeological Assessment (AA) was undertaken for the study area under Project information Form (PIF) #P1066-0374-2023. The results of the Stage 1 report are summarized in Section 3.8 of the PFR, and the full report is included in Appendix B. The Stage 1 report recommended Stage 2 AA for portions of the study area determined to have archaeological

potential. Our records indicate that Stage 2 AA has since been initiated for these portions of the study area under PIF #P124-0254-2023.

Our records indicate that the Stage 1 and Stage 2 reports have not yet been submitted to MCM for review. Please note that archaeological concerns have not been fully addressed until reports have been entered into the Ontario Public Register of Archaeological Reports ('the Register') where those reports recommend that:

1. the archaeological assessment of the project area is complete and
2. all archaeological sites identified by the assessment are either of no further cultural heritage value or interest (as per Section 48(3) of the Ontario Heritage Act) or that mitigation of impacts has been accomplished through excavation or an avoidance and protection strategy.

Approval authorities and/or proponents should wait to receive the MCM's written confirmation that the archaeological assessment report(s) has been entered into the Register before issuing a decision or proceeding with any ground disturbing activities. The letter will also indicate either that there are no further concerns for impacts to archaeological resources or articulate next steps to mitigate those concerns. Until MCM's letter is received, the results of the archaeological assessments presented in this PFR should be considered preliminary. MCM may have additional comments on this section of the PFR pending the review of the archaeological reports.

Proponents must follow the recommendations of the archaeological assessment report(s). MCM recommends that further stages of archaeological assessment (if recommended) be undertaken as early as possible during detailed design and prior to any ground disturbing activities.

Built Heritage Resources and Cultural Heritage Landscapes
A *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* (CHR) was completed for the study area by ASI (dated April 2023, updated October 2023). The results of the CHR are summarized in Section 3.10 of the PFR, and the full report is included in Appendix C. The CHR identified a total of 65 known built heritage resources, one potential built heritage resource, and four potential cultural heritage landscapes within the study area. The preliminary impact assessment portion of the CHR identified direct, adverse impacts to two potential CHLs, and potential indirect vibration impacts on structures within these CHLs. The CHR recommended mitigation measures, including resource-specific Heritage Impact Assessments (HIAs) for the Erindale Dam, the Credit River, and the property at 1699 Dundas Street West.

We have reviewed the above-referenced CHR and find that the report is overall consistent with the requirements, guidance and standards of the Class EA and with best practice guidance prepared by MCM.

Section 3.10 of the PFR indicates that the CHR will be updated with a confirmation of impacts and mitigation measures for built heritage resources and cultural heritage landscapes once preferred alternatives have been selected. As this exercise has already been completed, the PFR should be revised to include the impacts identified in the CHR, and recommended mitigation measures, including the requirements for future technical cultural heritage studies.

We also recommend revising the title of Section 3.10 to be consistent with the full title of the report: *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment.*

Thank you for the opportunity to review the PFR and associated documents. If you have any questions or require clarification, please do not hesitate to contact me.

Sincerely,

Liam Smythe
Heritage Planner
Liam.Smythe@ontario.ca

Copied to: Robert Amos, Aquafor Beech Ltd.
Emma Schiller, Aquafor Beech Ltd.
Karla Barboza, MCM
EA Notices to Central Region, MECP

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with *Ontario Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

Appendix F5 – Consolidated Responses to Stakeholders and Public

October 4, 2024

Attn: Iftekhar Ahmad, MES
Planner, Environmental Assessment
Credit Valley Conservation
1255 Old Derry Road
Mississauga, ON L5N 6R4
Tell: 905-670-1615 ext. 2960

Re: Credit River Erosion Control Project – Response to CVC Concept Design Comments

Dear Iftekhar,

Aquafor Beech is pleased to provide comment responses for the draft Project File Report (PFR) comments received on June 28, 2024.

If you have any questions or require any further information, please contact Robert Amos at 416.705.2367 or by email at amos.r@aquaforbeech.com.

Sincerely,

AQUAFOR BEECH LIMITED

Rob Amos, MASc, P.Eng.
Project Manager

Chunying Zhao, M.Eng.
Water Resources Analyst

Mara Peever, BASc.
Water Resources Analyst

APPENDIX A: CREDIT VALLEY CONSERVATION DRAFT PROJECT FILE COMMENTS AND AQUAFOR RESPONSES

ITEM	COMMENT TYPE	CVC COMMENTS June 28th, 2024	AQUAFOR RESPONSE August 9th, 2024
1.	Engineering	Please describe in the PFR if any impact to the existing flood hazard has been considered when selecting the preferred alternatives since the flood hazard is not included as an evaluation criterion. The expectation is that the proposed works will not impact the existing flood hazard unless the reasonable justification and mitigation is provided. CVC staff will not support any negative offsite impacts to the floodplain as a result of the proposed works.	As described in section 3.4.2 Credit River Hydraulics, the Credit River HEC-RAS model obtained from CVC was used to determine the existing hydraulics within the study area. The existing hydraulic parameters were reviewed and also compared to critical erosion thresholds for river bed and bank materials to inform the development of erosion control alternatives. As the existing regulatory floodplain limit encompasses the valley corridor of the Credit River, the proposed work on the trails and river banks are not expected to cause any significant impact to the regulatory limit. However, this will be confirmed through a hydraulic assessment of the preferred alternatives during the detailed design phase of this project.
2.	Engineering	Please submit the HEC-RAS model along with the hydraulic design brief as part of the detailed design submission. Any updates to the existing condition model should be documented and justified as this will serve as the basis for comparison for the preferred alternatives.	Comment is noted. The HEC-RAS model will be updated to include updated existing and proposed condition scenarios. The updated model and results will be included in the detailed design submission.
3.	Engineering	The geotechnical assessment must discuss the existing slope hazards in the valley and how the proposed wall features will improve/mitigate the existing hazard.	Geotechnical and slope stability analysis will be completed during the detailed design stage to support the design process of the proposed wall, notably in Sites 4 and 5.
4.	Engineering	The material sizing selected for the proposed works should be derived from the hydraulic model and explained in the hydraulic design brief.	Comment is noted. The hydraulic parameters calculated from the HEC-RAS model will be used to inform the sizing and resistance thresholds for materials.
5.	Ecology	We continue to emphasize the need for a balanced approach that would seek to minimize the footprint and extent of the works (including access and staging) in order to reduce direct impacts to the riparian areas and the need of tree removal. This should be further explored at the detailed design stage	Comment is noted. Construction access and staging will be carefully considered during the detailed design stage and will be informed by both the Consultant's engineering team and ecology team to minimize impacts.
6.	Ecology	All works that fall within the banks, valley and floodplain of the Credit River should incorporate natural channel design concepts, particularly the	As described in Section 3.4.2 of the Project File, preliminary hydraulic modelling of the area suggests shearing and

ITEM	COMMENT TYPE	CVC COMMENTS June 28th, 2024	AQUAFOR RESPONSE August 9th, 2024
		use of native materials to protect and enhance connectivity across the different valley gradients. Please clarify if the swales alongside the proposed trails need to be of stone cover. Natural cover should be used to the greatest extent possible (grassy swales are preferred).	velocity conditions will surpass the permissible thresholds for natural materials, and therefore careful attention to stone type/sizing and placement of material will be required to mitigate failure of the reconstructed channel banks. Stone swales are recommended at the inlet and outlet of all culverts under the trails to provide further stability and prevent washouts. Types of swales (i.e. stone vs. grass) will be further reviewed and discussed during detailed design, giving consideration to the hydraulic conditions within the overbank areas as well to the ecological benefits. Top soil and seed mixtures will also be included on top of the stone swales.
7.	Ecology	It is evident that the proposed works will result in vegetation removal. As such, all vegetation removed from CVC's regulated areas should be compensated/offset following CVC's Ecosystem Offsetting Guidelines (attached). Please reference this guideline in the PFR when discussing the restoration and compensation to be implemented during the detailed design.	Reference to the CVC's Ecosystem Offsetting Guidelines has been added in section 9.2.2 of the Project File, and will be carried forward through detailed design along with the City of Mississauga restoration standards.
8.	Ecology	Please also use the attached CVC's Healthy Soils Guideline, Buffer Enhancement Guideline, and Plant Selection Guideline, as appropriate, at the detailed design stage and reference them in the PFR.	Reference to the CVC's Healthy Soils Guideline, Buffer Enhancement Guideline, and Plant Selection Guideline have been added to Section 9.2.2 of the Project File.
9.	Ecology	Please provide the below information at the detailed design stage. a. Detailed drawings showing existing and proposed grades. b. Detailed vegetation removals and protection plans. c. Detailed restoration plans showing how the selected species complement the existing ELC communities and are consistent with the riparian conditions. d. Project phasing plan that also shows equipment access, storage, and staging details.	Aquafor confirms these will be included in the detailed design stage.
10.	Geomorphology	In reference to your response to our last comment 18 (see below), it should be noted in the PFR that the City will be committed to undertaking the	The detailed design will aim to maintain channel capacity without introducing erosion risk to the inner bends, which

ITEM	COMMENT TYPE	CVC COMMENTS June 28th, 2024	AQUAFOR RESPONSE August 9th, 2024
		proposed works including any design changes resulting from these works at the detailed design stage. The bank protection on the inside bends (Credit Heights Alternative 3, Summit Court Alternative 2, Bridewell Court Slope Alternative 2) - There is no evidence of erosion or infrastructure at risk on the inside of bends under the existing conditions. CVC does not support these options as they have the potential to exacerbate erosion downstream by transferring energy Comment is noted. Alternate approaches to maintain channel conveyance capacity without introducing erosion risk to inner bends will be explored during detailed design, and informed by the hydraulic assessment of proposed conditions.	will be informed by hydraulic assessment of the proposed conditions. This note will be added to Section 9.2.4 of the Project File.
11.	Hydraulic	Please confirm if the final design for the ice control structure will incorporate a cleanout access ramp and what will be the transition of the grade from the top of the protection to the riverbed for the cleanout access. Ideally, it is preferred that there would be a slope to the riverbed such that it can be used as an access road into the river for cleanout. Please also clarify if the design will incorporate the debris boom anchors. The shoal just upstream of the structure should be used as a temporary holding area for the debris during the cleanout. Please do not dredge the shoal.	The cross-section geometry including grading of slopes at the ice control structure and maintenance considerations will be further characterized and determined during detailed design through consultation with the CVC.
12.	Hydraulic	It appears that it should be 'ice floe' instead of 'ice flow' in sections 3.3.3, 4.1.1, 4.1.3 of the draft PFR. Please clarify if the first 'flow' in section 4.1.3 paragraph 1 is in the context of moving water and the second 'flow' is floe.	In Section 4.1.3, the first "flow" is referring to the flow of water, while the second is referring to the ice floe.
13.	Hydraulic	Please clarify and revise the wording as necessary in section 3.10 of the draft PFR (see below). 3.10 For the Ice Control Structure, the CVC is responsible for maintenance, repair and improvements. Built Heritage and Cultural Heritage Landscape Assessment	The captioning has been revised as noted.
14.	Hydraulic	When the project is complete, it is suggested that the consultant and/or City staff consider presenting their work to the Committee on River Ice and the Environment (CRIPE). They meet during the odd numbered years (i.e., 2025) somewhere in North America but mostly in Canada.	Thank you for the suggestion, comment is noted and look forward to an opportunity to work with Committee on River Ice and the Environment (CRIPE) in 2025.

October 4, 2024

Attn: Felicia Radassao
Natural Heritage Coordinator (Acting)
Parks, Forestry & Environment Division, City of Mississauga
T 905-615-3200 Ext. 8460

Re: Credit River Erosion Control from Dundas St. to Hwy 403 EA – Response to City Parks, Forestry & Environment Comments

Dear Felicia,

Aquafor Beech is pleased to provide the following responses to the comments received on July 31, 2023.

If you have any questions or require any further information, please contact Robert Amos at 416.705.2367 or by email at amos.r@aquaforbeech.com.

Sincerely,

AQUAFOR BEECH LIMITED

Rob Amos, MASc, P.Eng.
Project Manager

Chunying Zhao, M.Eng.
Water Resources Analyst

APPENDIX A: CITY PARKS, FORESTRY & ENVIRONMENT COMMENTS AND AQUAFOR RESPONSES

ITEM	CITY COMMENTS July 31st, 2023.	AQUAFOR RESPONSE August 9th, 2024
1.	All Natural Heritage System features within the Project Area need to be identified, along with any anticipated impacts to these features and how these features will be protected and impacts mitigated. Features within the System include vegetation communities, fish habitat, shorelines, breeding birds, and wildlife habitat. Compensation and restoration will also need to be identified for lost and impacted features and submitted to the City for review. Additionally, it is encouraged that opportunities to enhance and expand the City's Natural Heritage System be explored.	Since the time of these comments, Aquafor has prepared the Project File which identifies Natural Heritage Features and anticipated impacts. The report can be found on the City of Mississauga website at https://www.mississauga.ca/projects-and-strategies/environmental-assessments/credit-river-erosion-control-study/. CVC's Plant Selection Guideline and Healthy Soils Guideline for the Natural Heritage System will be reviewed when developing the restoration plan. Native trees and shrubs that fit the existing vegetation communities will be included within the restoration plan of the detailed design drawings. Opportunities for enhancement and expansion of the City's Natural Heritage system will also be evaluated at this time.
2.	Timing windows for wildlife species and in-water works within the Project Area need to be identified and stated on all relevant drawings and the Site Plan. Timing windows to avoid negative impacts to wildlife should be included for breeding and migrating birds, turtles, bat maternity roosting, fish, and any Species at Risk (SAR). a. Expected and potential impacts to wildlife will need to be determined, as well as mitigation measure to reduce the identified impacts; b. Please identify potential SAR that could be impacted by this project, and any related surveys and mitigation measures to protect them.	A list of potential SAR associations with the study area was compiled from background review. A request for information was submitted to MECP to confirm and supplement this review. Species which were determined to be present or potentially present in the study area, and therefore require some additional review or assessment as the project progresses, are listed in Section 3.7 of the Project File. Timing windows including no in-water works between March 15th and July 15th, as well as October 1st and May 31st of any given year have been identified based on fisheries data and on recommendations made by the MNRF In-water Work Timing Window Guidelines. Fisheries timing windows will be confirmed with the DFO through the request for regulatory review process. These requirements have been summarized in the Project File.
3.	There are known populations of priority non-native invasive species present along the Credit River including Giant Hogweed, Phragmites, Wild Parsnip, and Japanese Knotweed. The City actively manages some of these species, such as Giant Hogweed at Erindale Park by the ice dam. Any soil disturbance or moving, or use of machinery where these invasive species occur can cause them to spread along the Credit River and elsewhere. Thus, it should be a priority: a. That the Contractor is familiar with and follows the Clean Equipment Protocol for Industry by the Ontario Invasive Plant Council;	Comments are noted. All applicable protocols and priority species mapping will be included in detailed design drawings along with mapping of additional invasive species wherever feasible.

ITEM	CITY COMMENTS July 31st, 2023.	AQUAFOR RESPONSE August 9th, 2024
	b. That reference to the Protocol be made in all relavant drawings and documents; c. Grading and soil disturbance/movement be minimized to the greatest extent possible to avoid spreading non-native invasive species, and identify if any soil is being moved and/or taken off site; and d. Ensure these priority species are mapped on relavant drawings. Use the City's invasive species mapping along with field surveys to show where these non-native invasive species populations are on applicable drawings for the Contractor and that personnel are familiar with how to identify these plants. i. Invasive species mapping: iMaps, Planning, Invasive Species. Example presented below is the Credit River through Erindale Park. Note the Giant Hogweed and Wild Parsnip records and drawings 1 – Ice Control Structure and 2 – Erindale Park Bank Restoration. ii. Note that the City does not map all non-native invasive species, only priority ones. Many non-native species are not mapped, thus vegetation surveys are needed to determine species within the Project Area. Depending on survey timing, some plant species may be dormant, like Lesser Celandine (Ficaria verna) which is a non-native invasive spring ephemeral that is present along the Credit River.	
4.	For Drawing 1 – Ice Control Structure, Alternative 3 has been chosen which shows vegetation removals within a mapped woodland and areas planted by City contractors. In addition to the information still needed (outlined in the comments above), please indicate: a. If alternative designs have been explored that preserves more of the mapped woodland and justification for the proposed woodland impacts and soil disturbance; b. If wildlife habitat, including SAR bat roosting trees, are present within the woodland; and	The plantings to the south of the control structure were not intended in the original design of the structure. The select removal or thinning of trees in the floodplain recommended in the preferred alternative (Alternative 3) has also been proposed by CVC since 2016. The select removal of trees is intended to increase ice storage area in the floodplain and restore a key original design element of the ICS, as trees lining the riverbank tend to contain the ice within the channel (USACE Ice Engineering, Tuthill and Lever, 2006). The environmental benefit of mature trees in the riparian area will be carefully considered in future design stages of this project when a detailed tree removal, management, and compensation plan will be

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	c. Refer to comment number 3c regarding non-native invasive species present within this area.	provided. SAR habitat protection and invasive species will be further considered at the next stage of design.
5.	For Drawing 2 – Erindale Park Bank Restoration: a. Remove the proposed 1.2 m informal trail to maximize naturalization, especially since the bank will receive more hardening. That proposed informal trail should be densely planted with native trees and shrubs to increase bank stabilization and reduce fragmentation of riparian vegetation communities. There will be enough paved paths in the park to allow visitors access to the river and existing trail network. Reducing informal trails helps to concentrate visitor associated impacts in more appropriate areas and discourage vegetation trampling along the rivers banks. It also reduces confusion for visitors between formal/official trails and unofficial ones; and b. Proposed naturalization plantings will need to be very dense to both stabilize the bank, reduce surface water runoff into the river, and to act as a visual and physical barrier to visitors going off trail. Shrubs should be at least 75 cm tall and planted at a minimum density of 10,000 shrubs per hectare. Tree plantings of 1-3 gallon stock that is a minimum 1.5 m tall is also encouraged, which would be at a density of 1,200 trees per hectare.	The informal path notation was replaced with "decommission existing natural surface trail and regrade 1.2m naturalized buffer". The recommended density of plantings has been noted.
6.	For the area illustrated on Drawing 5 - Summit Court Slope: a. Has there been any consideration of the City purchasing the properties most affected by the bank erosion (4097 & 4089 Summit Court)? b. The exposed bank may be breeding habitat for bird species such as Belted Kingfisher and Bank Swallows. Surveys will need to be done prior to work starting and shared with the City for review to determine if the bank is being used by wildlife for breeding, identify any impacts as a result of the proposed works, timing windows for species affected, and identify any mitigation measures.	Proposed work is not expected to extend to boundaries of private properties at the top of slope, however long term stable slope will be confirmed through detailed design. Any required discussion with land owners will be undertaken by the City with City Purchasing during the detailed design stage. Protections for these species and other migratory birds will be provided during the nesting season (e.g., timing restrictions on vegetation removals) and breeding bird surveys will be completed during the nesting season to confirm the species assemblage associated with the project area(s).
7.	For the area illustrated on Drawing 6 – Bridewell Court Slope, there appears to be encroachments by several properties onto City property that should be confirmed and addressed on the south bank. Properties 1755 & 1735 Bridewell Crt appear to	The encroachments are noted, however, this study will not be enforcing them.

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	have built structures that should be moved onto the homeowners property and further away from the eroding slope. Will this project address these encroachments?	
8.	For Drawing 8- Mid Trails, which is adjacent to the turtle pond and breeding habitat: a. Remove the optional 3m wide natural surface trail. This is not necessary with a 4m wide boardwalk and will increase temporary and long-term impacts to the Natural Features (vegetation communities and the turtles); b. Ensure that the proposed boardwalk is aligned with the existing trail footprint; c. We support railings along the boardwalk to guide visitors; and d. Would it be possible to incorporate a gate along the boardwalk for City staff access only?	Comment is noted. Design details such as removal of the optional 3m wide trail and addition of a gate along the boardwalk will be considered during the detailed design process for this site. The proposed boardwalk will be aligned with the existing trail footprint. Support of the railings along the boardwalk has been noted.
9.	For Drawing 9 – Upstream Trails and following the site visit on Thursday, July 6th with Riverwood and City staff: a. In all areas where trail widening is being considered, there will need to be supporting documents and ecological surveys completed; b. Railings and trail delineation designs (natural materials ideal) are encouraged to help guide visitors to stay on official trails and reduce vegetation trampling and ad-hoc trails; c. Forestry supports the decommissioning of the lower Culham Trail segment due to flooding risk and disturbance from washed out gravel. However if this segment is decommissioned then it should be densely naturalized with native tree/shrub plantings and not kept as an informal trail. This would reduce fragmentation within the Natural Feature, increase the floodplains ecological functions, and greatly enhance the City's Natural Heritage System. Appropriate fencing and/or railings can be installed at each end to visually illustrate to visitors that the old trail segment is closed. Informative signage could be installed on each railing or fence to inform visitors why the trail is closed and show the official trail network. Turtle nesting habitat,	Ecological surveys will be completed during the detailed design process for this site. A new alternative, Alternative 5, was created in which the primary upper trail through Riverwood will be improved through formalization of the natural surface trail with limestone screenings and safety barriers where warranted. The secondary lower trail will be regraded above the 5-year flood elevation, stone lined swales will be added on both sides, and concrete box cross culverts will be added under the trail in order to reduce flooding risk and minimze required maintenance. This was selected ans the preliminary preffered alternative. Avoiding further engineering the Credit River will be considered whereever possible.

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	using sand and some of the existing gravel, could be explored to be added mid-way along the decommissioned segment (away from future visitor disturbance) when planning the Restoration Plan for this site; and d. It would be ideal to avoid further engineering the Credit River.	
10.	Compensation and Restoration Planting Plans will be required for review. Please ensure that native plant species that are common to the area are chosen, that heights and quantities are listed, and any native seed mixes, seed composition, and quantities are also included on these plans. Please incorporate and include on these plans: a. Tree planting density a minimum of 1,200 trees per hectare, stock at least 1.5m tall and disease/pest free; b. If any live staking is planned, species and quantities should be clearly stated and planting should be done during ideal conditions; c. All restoration areas clearly illustrated on all compensation/restoration drawings; d. Warranty of 2 years with plant care items detailed, such as watering during summer months and drought; and e. All vegetated buttresses require a native seed mix and/or plantings, and seeding/planting should be timed with the cooler and rainier seasons (spring & fall). Species chosen for vegetated buttresses and quantities should also be on the Restoration Plans.	These planting ratios and guidelines will be carried forward through detailed design and implementation.

October 4, 2024

Attn: **Margy de Gruchy**
de Gruchy Environmental
4300 Riverwood Park Lane
Mississauga, ON L5C 2S7

Re: Credit River Erosion Control Project – Response to Concept Design Comments

Dear Margy,

Aquafor Beech is pleased to provide comment responses for the draft Project File Report (PFR) comments received on July 10th, 2024.

If you have any questions or require any further information, please contact Robert Amos at 416.705.2367 or by email at amos.r@aquaforbeech.com.

Sincerely,

AQUAFOR BEECH LIMITED

Rob Amos, MASc, P.Eng.
Project Manager

Chunying Zhao, M.Eng.
Water Resources Analyst

Mara Peever, BASc.
Water Resources Analyst

APPENDIX A: THE RIVERWOOD CONSERVANCY DRAFT PROJECT FILE COMMENTS AND AQUAFOR RESPONSES

ITEM	TRC COMMENTS July 10th, 2024	AQUAFOR RESPONSE August 9th, 2024
1.	Given the project has been deemed a Schedule B EA, please clarify if TRC will be able to review detailed designs, tree preservation and planting plans and will there be opportunity to comment, even informally.	The TRC will be consulted during the detailed design process to provide comments on trail design and tree planting plans in Site 8.
2.	Will activities be staged so that wildlife movement is not impeded by extensive lengths of silt fencing during construction? Will an ecologist or wildlife biologist have input into sediment and erosion control plans?	Construction access, staging, and sequencing, including the Erosion and Sediment Control plan will be carefully considered during the detailed design stage and will be informed by both the Consultant's engineering team and ecology team (including ecologists and wildlife biologists) to minimize impacts. These efforts will include minimization of the construction footprint where feasible to prevent negative impacts to wildlife.
3.	What are the anticipated dimensions of the of the box culverts on figure 6-8? Detail 1 on Figure 6-8 is not to scale so there is no way of determining anticipated size. Dimensions will be important for wildlife passage, as well as culvert design. Road ecology resources and literature might be helpful when considering designs and substrates to accommodate various species using this habitat.	Specific dimensions of the box culverts and sizing of culverts will be determined during the detailed design phase. Wildlife passage and incorporation into habitat will be carefully considered during this process.
4.	Approximately how much higher would the new trail be relative to the level of the adjacent floodplain? How much fill will be required? According to cross-section 2 on Figure 6-8 it appears the new trail would only be perhaps 10-20cm above the existing grade. Is this diagram realistic, or merely for illustrative purposes? The height of fill may impede movement for some animals, so connectivity impacts would be easier to assess if an estimate were provided.	The trail will be raised to withstand the 5-year storm event, for which the exact height will be determined during detailed design following more detailed hydraulic modelling of Site 8. The height of the trail will also vary along the length of the trail depending on the hydraulic analysis of the area. Impacts on habitat connection will be assessed by the Consultants ecology team, and mitigation measures will be provided as required.
5.	It is likely that the swales will be dry most of the year. Stone size for the swale must be carefully chosen so as not to impede wildlife movement. Small round stones are preferred over larger rocks with sharp angles, which are avoided by deer. Smaller rocks also create fewer holes where small animals can get stuck. The drawing shows larger stones overlain with smaller ones, which is preferable, but there is no mention of this as a mitigation strategy so it is unclear if this is simply a drawing choice or a more specific wildlife-oriented choice.	Comment noted. We confirm that round stone will be used in the swales, however stone sizing will be evaluated during the detailed design stage following hydraulic assessment. Smaller stones will be added to the stone mixture to fill voids, and stone swales will be covered with top soil and seed mixture as part of the restoration plan.

ITEM	TRC COMMENTS July 10th, 2024	AQUAFOR RESPONSE August 9th, 2024
6.	Explain the rationale for the placement of the 4 culverts, and the change from seven 200mm drainage pipes in Alternative 2, to 4 box culverts in the hybrid alternative. I am supportive of larger culverts. Are the 4 culverts location mostly based on the trail/chute confluences on the Relative Elevation Model (Figure 3-20)? This seems like a logical approach. REM models and images are not my area of expertise, but on Figure 3-20 there is a location between the first two box culverts, (on the west side, closest to the 403), where there is a small but intense pale blue lobe on the north side trail. The lobe is located on the east side of the large bend in the trail and is accompanied by less intense light blue coloring on the opposite (south) side of the trail. Might a culvert be necessary here too?	Culvert locations were chosen based on the REM as well as onsite observation. Additional culverts may be added following further hydraulic analysis of the area during the detailed design phase
7.	What would be the approximate height and slope of the proposed vegetated buttresses for Site 8? This is hard to visualize since as I recall there is not much slope in those areas of the shoreline.	Vegetated buttresses typically have a slope of 1:2.5 or 1:3, however specific dimensions (i.e. Height and slope) will be confirmed during the detailed design stage following topographic survey and hydraulic modelling.
8.	Would any grading or fill be required west of the confluence of the upper and lower trails? It appears from Figure 6-8 that works and plantings are not required there.	The detailed design will ensure safe and smooth merging of the upper and lower trails, giving careful consideration to trail width, merging angles, grading and signage.
9.	Implementation Plan In Section 9.2.2 Tree Protection and Restoration Plan, fencing is recommended for planting areas for a period of two years to protect newly planted vegetation and to allow time for growth and to anchor soils. Protecting newly planted vegetation is desirable, but again wildlife movement across the floodplain may be impeded if long fences are erected, as trailside planting areas are extensive at Site 8. Vegetation will also be grazed by deer, rabbits, various small rodents and potentially beavers, so measures such as wire cages, and protective plastic coils or sleeves would be more suitable. The use of wildlife repellents could also be explored.	Comment is noted. Rodent guard protection of the newly planted materials will be included in the detailed design as per CVC and City standards.
10.	Invasive Species I will reiterate the concern raised in my letter from July 2023 - how will the spread of invasive plant species be mitigated? Have any agencies requested that this be considered? This is of most concern where soils full of invasive species propagules are dug up and moved, in winter or summer. Unfortunately there are currently no specific provincial policy directives around invasive species and it is left to municipalities to provide guidelines. TRC has a duty to protect our	We have received similar comments from the Parks, Forestry and Environment Division of the City of Mississauga. The Consultant will ensure that the City's invasive species mapping for priority species will be consulted, that the contractor will be familiar with Ontario Invasive Plant Council's Clean Equipment Protocol for Industry, and that soil disturbance/movement will be

ITEM	TRC COMMENTS July 10th, 2024	AQUAFOR RESPONSE August 9th, 2024
	goals and objectives for stewardship of biodiversity and to protect the work of thousands of corporate and community volunteers who have dedicated their time to managing invasive species. The Ontario Invasive Plant Council has posted Clean Equipment Protocols aimed at minimizing the spread of invasive species that are useful in sensitive natural areas: https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/Clean-EquipmentProtocol_June2016_D3_WEB-1.pdf As part of the tree preservation plan, problematic invasive plant species could be mapped in disturbance zones, so extra care can be taken to prevent spread of propagules that are above ground and in the soil in the form of seeds, bulbs, roots, etc. Note that Riverwood has been identified as having the highest priority for invasive species management out of all the natural areas in Mississauga in the City's Invasive Species Management Plan & Implementation Strategy (2021). What measures can be taken so that this project does not exacerbate the problem at this high priority site?	minimized. These measures will be taken to prevent the spread of invasive species. All other applicable protocols and mapping of invasive species will be included in the detailed design drawings.
11.	Sensitive and Significant Features I was pleased to see that the importance of snags and bat tree resources is recognized, given that rare bats have been caught in mist nets at Riverwood by the Royal Ontario Museum scientists during a Bioblitz. Presumably bat resources will be mapped on a figure such as the Tree Preservation Plan. Another provincially significant wildlife habitat potentially in the study area is mink denning and feeding sites. Other sensitivities that I am aware of that are close to the area of disturbance are adjacent to the Culham Trail. There are 2 regionally rare plant species that are also rare within the Greater Toronto Area, which is defined in species listings as the regions of Halton, Peel, York, Toronto and Durham. White Trout-lily (Erythronium albidum) occurs in scattered colonies on either side of the trail, and a mature Sycamore tree (Platanus occidentalis) is located very close to the trail on the northeast side of the trail. The White Trout-lily has been mapped several years ago but may be disappearing due to competition from invasive species such as Fig Buttercup (Ficaria verna) and Garlic Mustard (Alliaria petiolata). I trust there will be sufficient time and planning for TRC to move any remaining plants or and/or collect seed from such sites. This would have to be done in April/early May for White Trout-lily since these spring ephemerals are undetectable by late spring, as is Fig Buttercup. Can updated floral and faunal species lists from NAS Surveys be made available to Aquafor	Detailed terrestrial resource assessment will include review of all background information and mapping as well as field inventories. The Consultant and City will coordinate with TRC for the relocation of rare species as necessary during the detailed design stage.

ITEM	TRC COMMENTS July 10th, 2024	AQUAFOR RESPONSE August 9th, 2024
	Beech consultants by the City? These lists can be reviewed to determine what species have been documented over time by professional ecologists and wildlife biologists, in addition to the information gleaned from citizen science websites. This would be useful to help develop an ecological sense of the area, and screen for regionally rare and sensitive species of conservation concern. Review of these lists should also inform wildlife sensitivities, wildlife movement considerations and culvert design. The Riverwood site has been identified as a Centre for Biodiversity in the Credit Valley Conservation Authority's Natural Heritage System (2015).	
12.	One of the reasons the study area has been designated an ESA /Life Science ANSI/Mississauga Natural Area is the high biodiversity. This is typical of regionally designated sensitive areas, where you will often find a few provincially rare species and several regionally rare species. ESA and Natural Area criteria are set to capture these refuges for rare species in municipal and regional Natural Heritage Systems. Criteria are set for designation often when 10-20 regionally rare species are documented. Riverwood has records 47 regionally rare plant species and 68 Species of Urban Interest (Tier 3) in the CVC ranking system for Species of Conservation Concern. These are exceptionally high numbers for an urban natural area. More detail is needed to more specifically address how impacts to this function as a repository for rare species habitats, wildlife breeding grounds, and connectivity functions will be minimized. In addition, what common species might be impacted by this project? What common and rare species are you planning for in the design of culverts and trails?	Further in-depth ecological surveys, including habitat mapping and common and rare species surveys will be conducted in the detailed design phase of this project.
13.	I am thankful that the potential turtle nesting habitat has been considered and protection measures mentioned, but what specifically are the potential impacts to turtles during and after construction and please describe or at least name suitable protection measures. What will be done if a nest is encountered during construction?	Nesting screening will be completed prior to construction and exclusion fencing will be installed to prevent turtles from entering the construction zone. Should any nests be found before or during construction, they will be relocated by a qualified biologist to ensure no damage occurs to the nest or wildlife.

October 4, 2024

Attn: Alison Forde
Vice President
South Peel Naturalists' Club
Joshua Creek RPO
P.O. Box 40074
Oakville, ON L6H 0G1

Re: Credit River Erosion Control Project – Response to South Peel Naturalists' Club Concept Design Comments

Dear Alison,

Aquafor Beech is pleased to provide comment responses for the draft Project File Report (PFR) comments received on July 3rd, 2024.

If you have any questions or require any further information, please contact Robert Amos at 416.705.2367 or by email at amos.r@aquaforbeech.com.

Sincerely,

AQUAFOR BEECH LIMITED

Rob Amos, MASc, P.Eng.
Project Manager

Chunying Zhao, M.Eng.
Water Resources Analyst

Mara Peever, BASc.
Water Resources Analyst

APPENDIX A: SOUTH PEEL NATURALISTS' CLUB DRAFT PROJECT FILE COMMENTS AND AQUAFOR RESPONSES

ITEM	SPNC COMMENTS July 3rd, 2024	AQUAFOR RESPONSE August 9th, 2024
1.	It is unclear how the Site 8 alternative will function during winter washout events when ice and other debris flow relatively uninhibited over land. As a factor of climate change, we can only expect these events to continue. With this design the granular materials used will continue to be gauged by ice and washed into the floodplain habitats, which have already been severely impacted by gravel washouts in recent years. Table 6-2 mentions that the preferred Alternative 5 has a lower risk of ice damage to infrastructure when compared to a boardwalk but we did not see evidence in the report to support this conclusion. Are there any other surface types that could be considered if a boardwalk is truly not feasible? Gravel also comes at a significant environmental cost (aggregate mines) and it inevitably needs to be replaced.	Risk of washout events to the secondary lower trail will be reduced through raising the trail above the 5-year flood elevation, including stone lined swales on both sides, incorporating concrete box cross culverts under the trail to increase water conveyance. This will significantly decrease the frequency of washout. Additionally, the gravel trail will experience less damage than the boardwalk alternative, should significant ice floes occur, as the boardwalk may be lifted or impacted by the ice, while the gravel trail allows ice to flow overtop. Further details regarding materials used for the trail will be further evaluated during the detailed design phase of this project.
2.	Please provide details for Site 8 in Appendix E regarding why: a) Alternative 5 scored higher than Alternative 3 for Aquatic Habitats, Aesthetic Value, and Impact on Existing Infrastructure; and b) Alternative 3 and Alternative 5 scored the same for Terrestrial Habitat as well as Terrestrial Vegetation Particularly in light of the scoring for the boardwalk alternative at Site 7.	Alternative 5 scored higher than Alternative 3 for Aquatic Habitat due to the potential for fish habitat associated with the vegetated buttress. Scoring for Aesthetic Value for Alternative 3 will be updated to a score of 4 to be consistent with Site 7. Alternative 5 was scored higher than Alternative 3 for Existing Infrastructure due to improvements to drainage within the lower trail, as well as the application of bigger stones and swales that will protect sanitary sewer infrastructure. In terms of Terrestrial Habitat and Vegetation, Alternatives 3 and 5 were given the same scores due to similar footprints within the lower valley which would require similar removal of vegetation during construction.
3.	Under Section 7 why are there no potential environmental effects and mitigation measures identified for species at risk, terrestrial vegetation, terrestrial wildlife, aquatic wildlife, and fish & fish habitat? There are plenty of standard mitigation measures that could have been listed that apply across the alternatives, such as timing windows and exclusion fencing around work areas and stockpiles.	Mitigation measures including in-water work timing windows for aquatic wildlife/fish & fish habitat are provided in Section 3.5.2-3.5.3 of the Project File. Terrestrial vegetation and wildlife, including species at risk and associated mitigation measures are provided in Section 3.6.2-3.6.3 and 3.7 of the Project File. These sections

ITEM	SPNC COMMENTS July 3rd, 2024	AQUAFOR RESPONSE August 9th, 2024
		provide a more detailed breakdown of potential effects and mitigation measures.
4.	In Section 9.3 Permits, MNRF should also be consulted regarding known or potential Significant Wildlife Habitat (under the Provincial Planning Statement) that may be present, such as Bat Maternity Roosting Colonies, Amphibian Breeding Habitat, Turtle Nesting Areas and Reptile Hibernacula.	Significant Wildlife Habitat will be determined through the municipal Natural Heritage System in Official Plans, and evaluated through MNRF guidance documents. An additional consultation email may be sent to MNRF to request information, however there will not be a permit associated with this request.
5.	In light of more recent changes to the federal Migratory Birds Regulations it would be pertinent to conduct surveys at different times of the year (e.g., leaf-off, breeding) to identify Pileated Woodpecker nests, Great Blue Heron nests, and any other species that has an extended period of nest protection for any trees that may be removed, in addition to other identified biological surveys.	Further in-depth ecological surveys will be conducted in the detailed design phase of this project, and will include consideration for Migratory Birds Regulation as noted.

October 4, 2024

Attn: Sara Wilbur-Collins
Executive Director
4300 Riverwood Park Lane
Mississauga, ON L5C 2S7

Re: Credit River Erosion Control Project – Response to Hybrid Trail Option Comments

Dear Sara,

Aquafor Beech is pleased to provide responses for the comments on the draft Project File Report (PFR) regarding the Hybrid Trail Option, received from The Riverwood Conservancy (TRC) on July 10th, 2024.

If you have any questions or require any further information, please contact Robert Amos at 416.705.2367 or by email at amos.r@aquaforbeech.com.

Sincerely,

AQUAFOR BEECH LIMITED

Rob Amos, MASc, P.Eng.
Project Manager

Mara Peever, BASc.
Water Resources Analyst

APPENDIX A: THE RIVERWOOD CONSERVANCY HYBRID TRAIL OPTION COMMENTS AND AQUAFOR RESPONSES

ITEM	TRC COMMENTS July 10th, 2024	AQUAFOR RESPONSE September 25th, 2024
1.	**Proposed Elevation Level of Secondary (Culham) Trail** We note that the Hybrid Trail Option proposes that the secondary trail be built at a five-year flood elevation, incorporating stone-lined swales on both sides and installing four box culverts under the trail surface for drainage. We appreciate that you took into consideration the ability for wildlife - particularly turtles - to cross when selecting the elevation of the trail. Understanding that in the final design there may be provision for additional culverts, we remain concerned that the proposed elevation is insufficient to resist ongoing river flows. We would strongly encourage consideration of a larger culvert width than the standard 200mm, in order to allow greater flow and mitigate against potential blockages. In the course of our work we regularly experience the force of the Credit River. For example, in winter 2022 an ice dam formed upstream of Riverwood; when it burst, the force of flow pushed two-metre tall chunks of ice across the floodplain and onto the primary trail, a distance of about 200m. This had significant impacts on habitat and user safety. Both the *Climate Trends and Future Projections in the Region of Peel* Report (2016) and the City of Mississauga's *Build Beautiful Mississauga Stormwater Master Plan* (2023) anticipate significant increases in precipitation in the short, medium and long term, and that extreme rain events are expected to become more frequent. In this decade alone, the City study states that the "Worst 1% of extreme precipitation events are on track to increase by 20%" (pg. 14). Further extrapolations illustrate a continuing trend. Given this data and the general acknowledgement of climate change, there is a very real possibility that, even with additional/widened culverts, the present proposed trail elevation would not resist flows on an ongoing basis. The result could range from regular closings of the trail, to costly annual repairs, to the possibility of the trail being entirely washed away in an extreme weather event. This could return the situation to the Culham Trail's current impassable state, and continue to have negative impacts on local wetland ecosystems.	Comments regarding the trail elevation and culverts are noted. Risk of washout events to the secondary lower trail will be reduced through raising the trail above the 5-year flood elevation, including stone lined swales on both sides, and incorporating concrete box cross culverts under the trail to increase water conveyance. This will significantly decrease the frequency of washout; however some maintenance may still be required. Additional culverts may be added following further hydraulic analysis of the area during the detailed design phase. Culvert sizing will also be assessed at this time. Impacts on the wetland ecosystem will be assessed by the Consultants ecology team, and mitigation measures will be incorporated as required.

ITEM	TRC COMMENTS July 10th, 2024	AQUAFOR RESPONSE September 25th, 2024
2.	**Boardwalk Linkage on Primary Trail** We are grateful that the Hybrid Trail Option contemplates formalization of the natural surface primary trail, including safety barriers where warranted. Last year, more than 7,700 students and an additional 6,700 program participants engaged in outdoor learning along this trail, and these improvements will do much to ensure a positive experience. The Hybrid Trail Option proposes that a new section of boardwalk be created, to connect the two existing boardwalks over MacEwan and Chappell Creeks. These existing boardwalks along the trail were built some time ago, very likely to a different accessibility code than that of the present. While we support the creation of the new boardwalk, it seems likely that current accessibility code will mean that the proposed connecting area will be wider than the original stretches of boardwalk. This has the potential to create "pinch-points" along the more narrow stretches that could impact safety and public enjoyment. Additionally, at present EMS can only access the trail on foot, as existing boardwalks on the primary trail are too narrow (approx. 1.5 m) to accommodate even a smaller/quad-type vehicle. To ensure a consistent and safe experience for trail users, and to safeguard Riverwood's flora and fauna from high human usage, we encourage consideration of widening the existing boardwalks in tandem with the development of the new connecting segment. This would create a "seamless" traversing of the creeks, significantly enhancing user enjoyment. We also recommend consideration of cut-out observation areas along specific locations of the boardwalk, in order to accommodate traffic relief along this multi-use trail, and to provide opportunities for the public to engage in viewing areas that ensure safe and ecologically appropriate engagements with nature. These features would add very high value to the site and provide meaningful opportunities to the many visitors and program participants at Riverwood. One location to be considered for this should be the west end of the current boardwalk on the primary trail, where a proposed connecting boardwalk is being considered (noted as P2 on the attached map.)	Comments regarding the boardwalk linkage are noted. Consideration will be given to widening of the existing boardwalk, addition of cut-out observation areas, and an additional boardwalk section during the detailed design phase of this project.

ITEM	TRC COMMENTS July 10th, 2024	AQUAFOR RESPONSE September 25th, 2024
	Additionally, there is another location just west of the existing marshland where significant washout occurs throughout the season, preventing year-long access along the primary trail. This location (noted as P3 on the attached map) should be considered for an additional boardwalk section with possible cut-out, in order to maintain year-long access without damage to the associated wetlands and forest areas adjacent to the trail, which currently house a plethora of sensitive wildlife.	
3.	**Signage** A consistent challenge along the primary and secondary trail is lack of directional, safety and interpretive signage. As noted in the EA, total annual trail visits at Riverwood ranged from 212,000 to 437,000 in select areas. While some basic signage exists in select locations - largely near the parking lots, which can be some distance from the trails - there are very few signs present along the trails themselves. The addition of directional signage would be extremely helpful for trail users who are concerned about becoming lost, who wish to know the length of the trails prior to use, or who are apprehensive about being in nature. Safety signage would advise trail users, particularly those with bicycles, strollers or mobility devices, of steep slopes, drop-offs adjacent to the trail and/or high-traffic areas. Interpretive signage would enhance visitors' understanding of the natural values of the site and make them aware of any species to avoid, such as poison ivy. As the City's onsite partner, TRC would be pleased to assist in the creation of any signage associated with the project. We further note that both the primary and secondary trails are contemplated as part of a broader through trail being developed by Credit Valley Conservation, known as the Credit Valley Trail (CVT). As part of the effort to establish the CVT, participation in the Moccasin Identifier Project (https://moccasinidentifier.com/) has been suggested to TRC. As an organization with a firm commitment to reconciliation, and which has received endorsement by the Mississaugas of the Credit First Nation regarding land-based programming, TRC encourages the City of Mississauga to contemplate participation in this effort.	Comments regarding trail signage are noted. An opportunity for further coordination with TRC is planned for the detailed design phase of this project when the creation of signage in the Site #8 area will be discussed. Participation in the Moccasin Identifier Project will also be considered in the detailed design phase.