

Welcome!

Public Information Centre (PIC) West London Dyke Erosion Control Municipal Class Environmental Assessment

Members of the study team are available to answer any questions you may have.

We encourage you to tell us your thoughts on the information presented!

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Purpose of Tonight's PIC

We are here tonight to:

Provide an overview of the Municipal Class EA process

Provide an overview of the existing environmental conditions

Provide an overview of the evaluation and preliminary recommendations for public review and comment

Provide a description of the problems being addressed

Present the list of alternative solutions

Answer questions and get your feedback

We want ***your*** input!
Ask questions and share your input with the team.

Please fill out a comment sheet and leave it in the box provided, or submit comments directly to the study team.





Definitions and Acronyms

- **WLD:** West London Dyke flood control structure
- **TVP:** Thames Valley Parkway trail system
- **Scour:** The process of wearing away river bed or bank material caused by the flow of water. Another term for 'erosion' when referring to river processes
- **Weir:** a structure that modifies flow characteristics of a river
- **Vanes:** structures within a riverbed used to slow and direct flow.
- **Fluvial Geomorphology:** the study of the way flowing water shapes the land
- **Riffle:** a rocky, shallow part of a stream – riffles positively contribute to aquatic habitats by providing diversity in the river bed, and improve water quality through oxygenation
- **EA:** Environmental Assessment – a holistic process of evaluating a project's impact on the social, cultural, natural, economic and technical environments
- **Toe:** base or foundation of the WLD flood control structure

What is a Municipal Class Environmental Assessment (Class EA)?

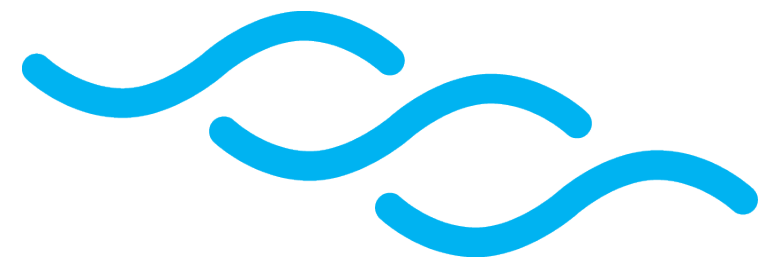
- A process approved under the *Environmental Assessment Act* which municipalities follow for the planning and design of municipal infrastructure projects
- This study is being undertaken as a **Schedule B project**, which follows Phases 1 and 2 of the planning process:

PHASE 1 Project Initiation

PHASE 2 Alternative Solutions



The planning and decision making process is documented in a **Project File** and placed on **public record for a minimum 30-day public review** period. If there are outstanding concerns that cannot be addressed through discussions with the project team, any member of the public has the right to send a request to the Minister of the Environment and Climate Change to issue an order to comply with Part II of the EA Act (a 'Part II Order', or 'Bump Up' request). See the project team for more information.



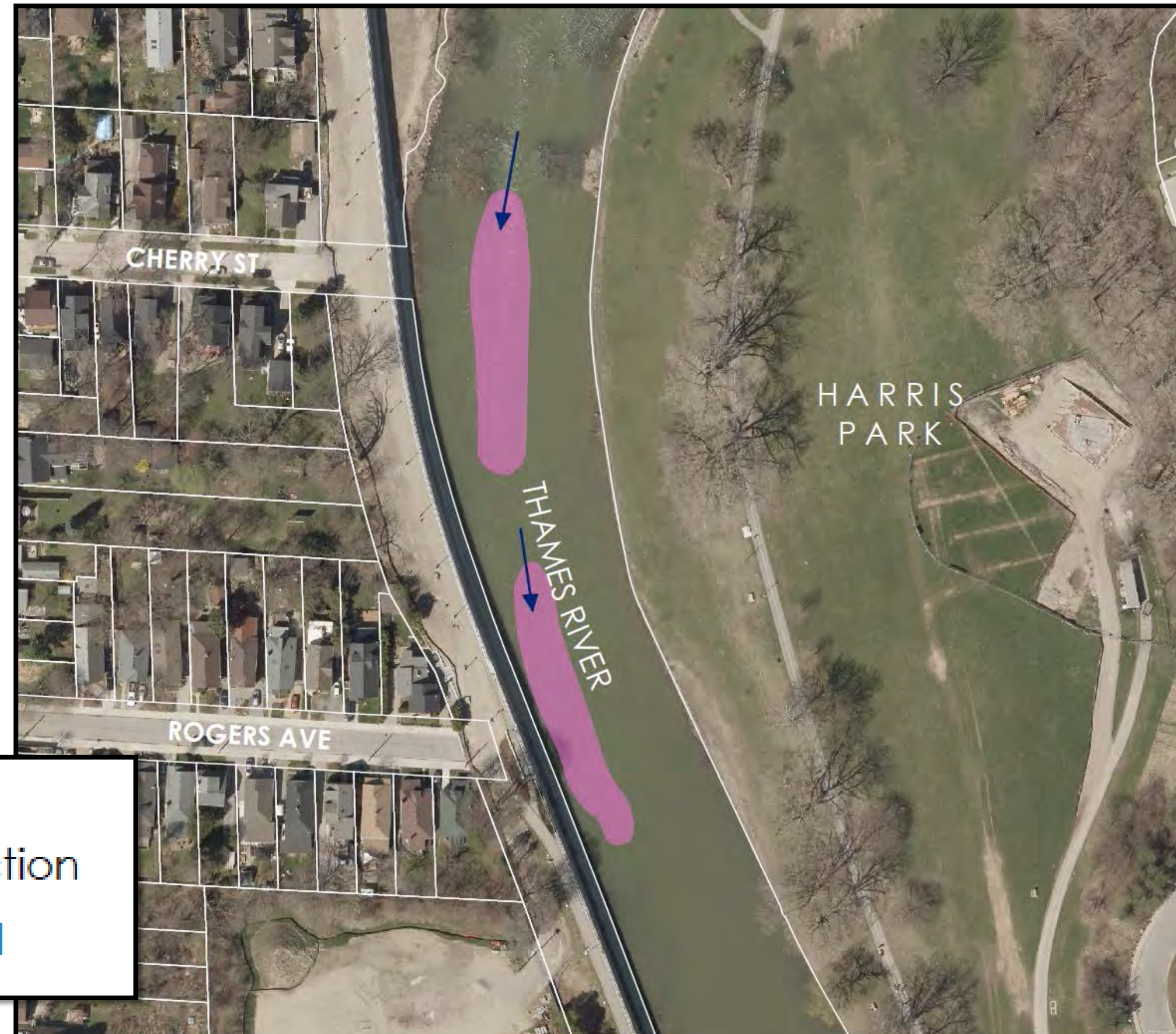
Why are we doing this study? Problems and Opportunities

While undertaking the West London Dyke (WLD) Master Repair Plan, two locations of erosion (or scour) were identified. Existing structures within the river in each location are directing flows towards the west bank, causing erosion at the toe of the WLD:

Ann Street Site

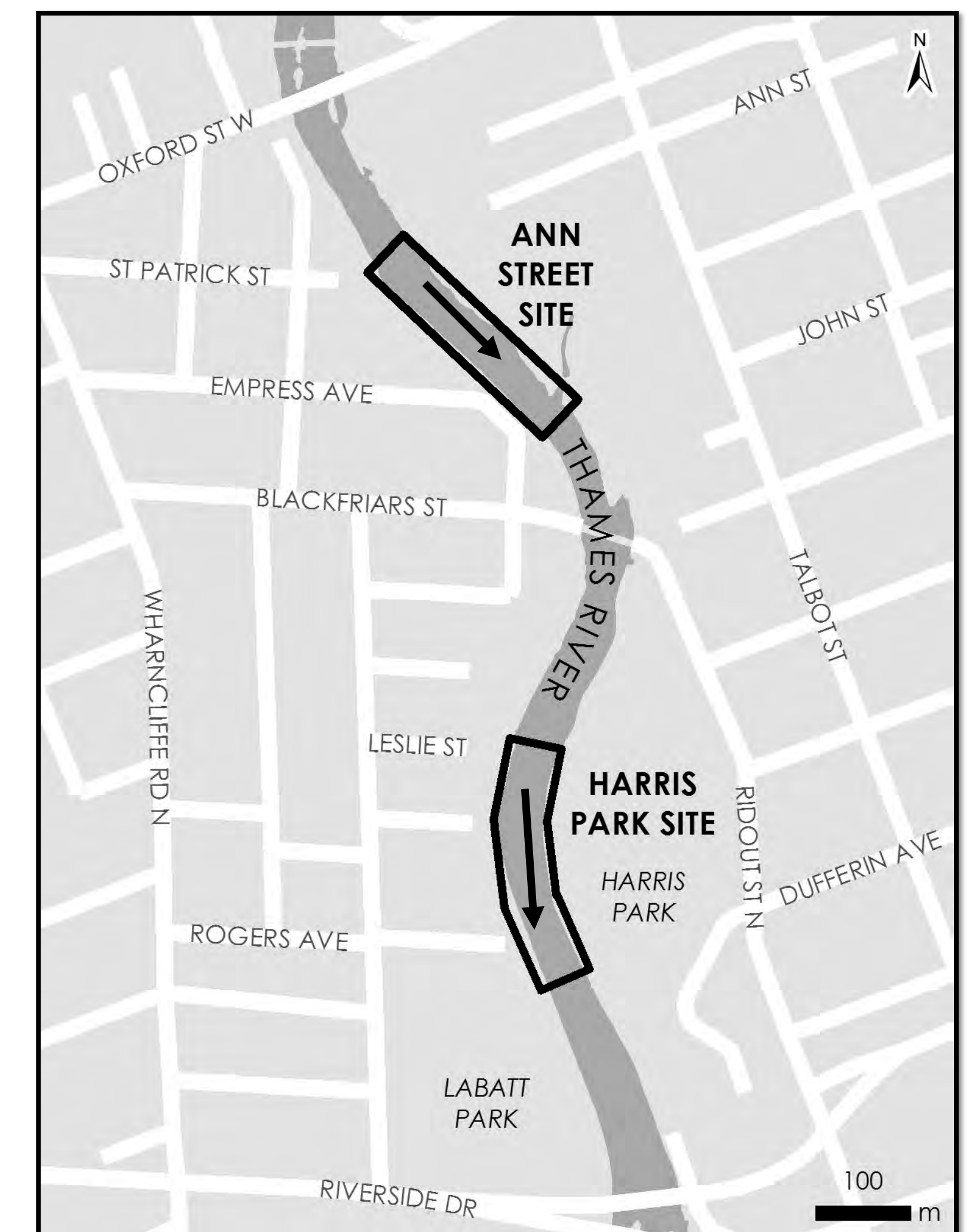


Harris Park Site



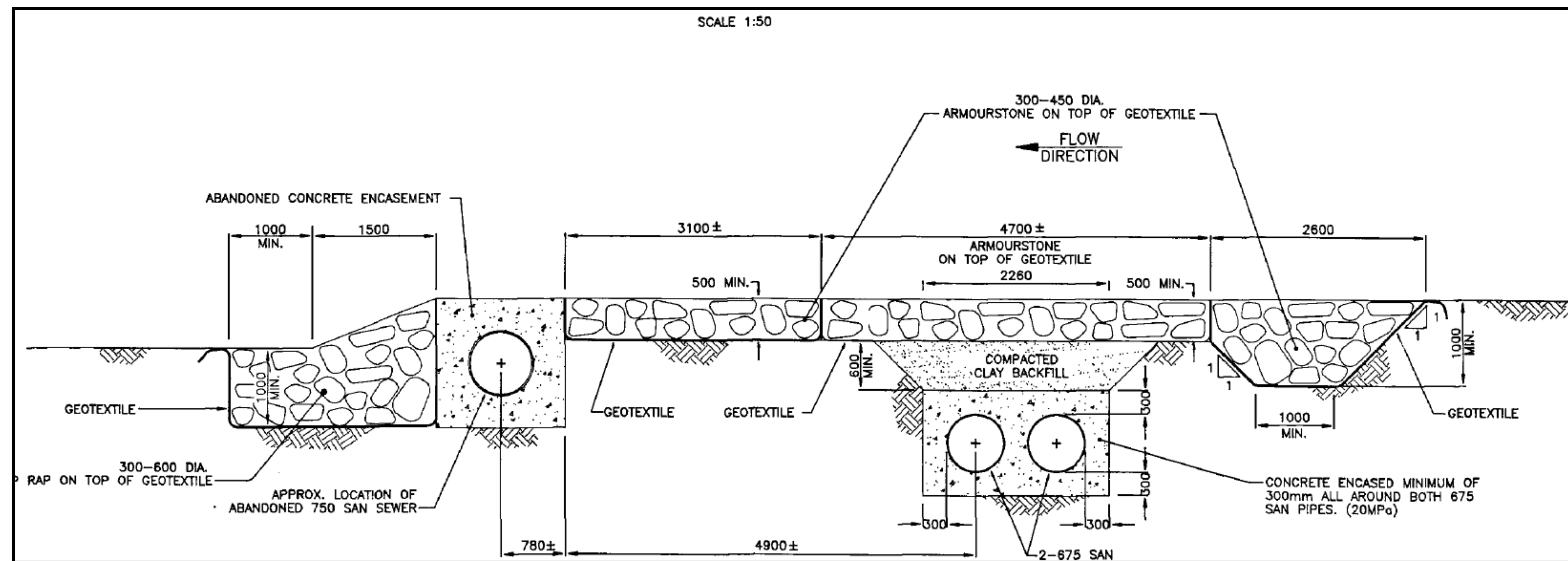
Legend

- ➔ Flow Direction
- Scour Pool

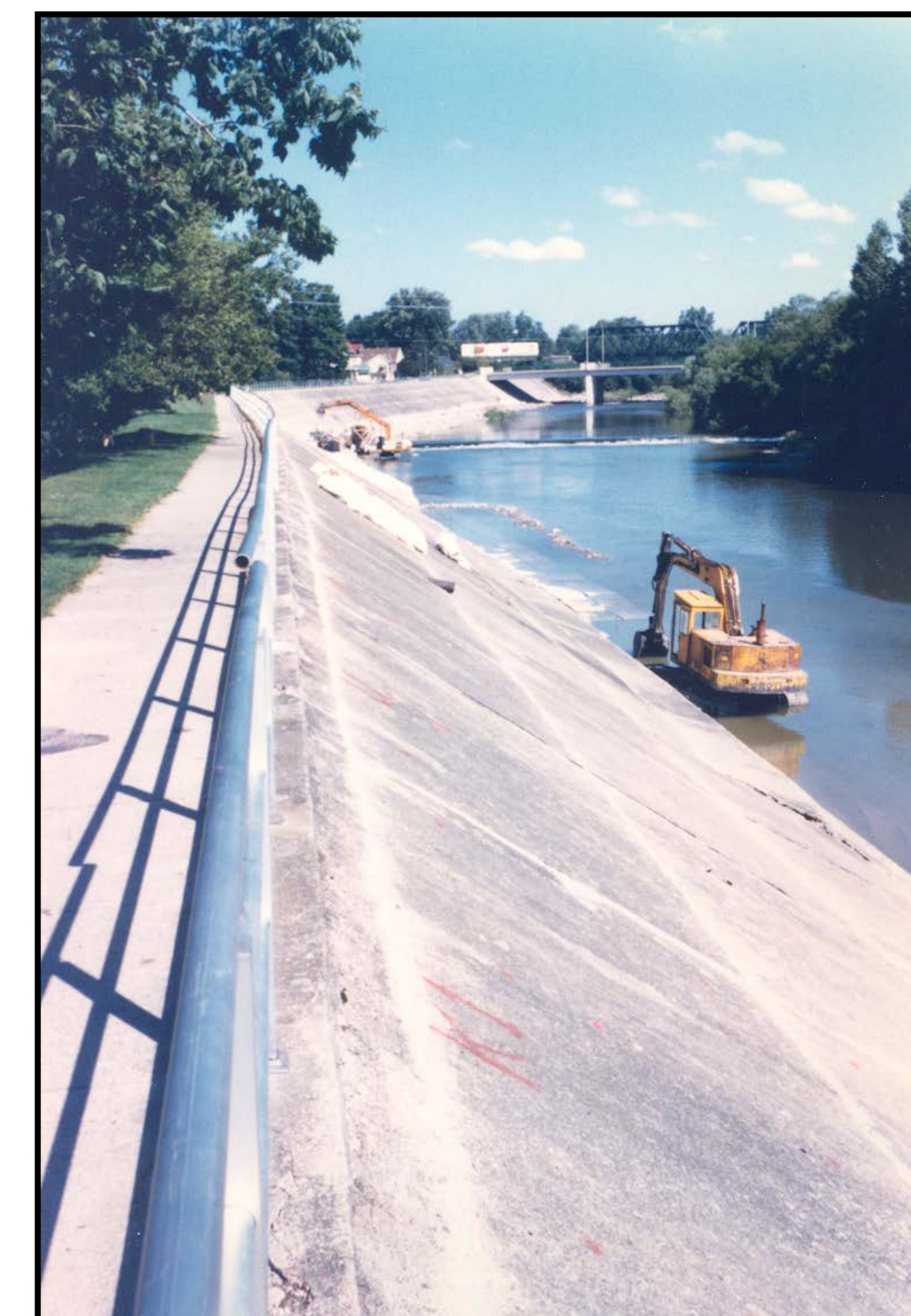


Existing Conditions Ann Street

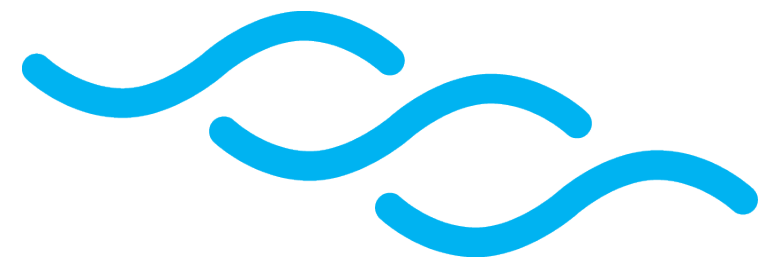
- An abandoned concrete-encased sanitary sewer crosses the Thames River between Ann Street and St. Patrick Street, forming a weir (a portion of pipe was removed, and the rest filled with concrete c. 1994).
- This sewer was replaced in 1994 with a deeper, twinned sewer. The new sewer crossing is located just upstream of the abandoned crossing.
- Riffles exist both upstream and downstream of the weir crossing.
- This is a popular spot for fishing, and the existing notch provides boaters a place to practice traversing a mini-rapid.



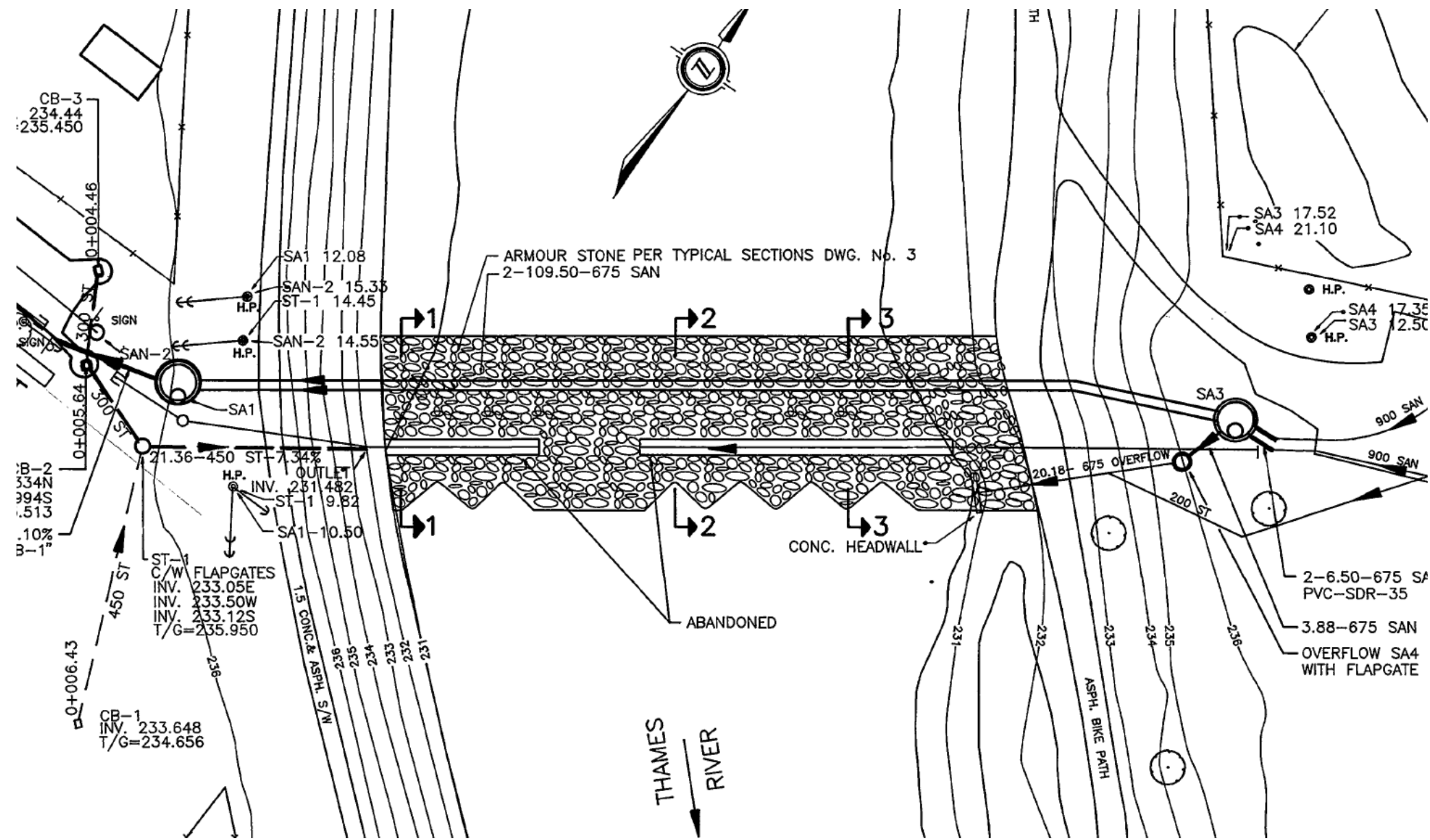
As-Built drawing of sewer crossing - 1994



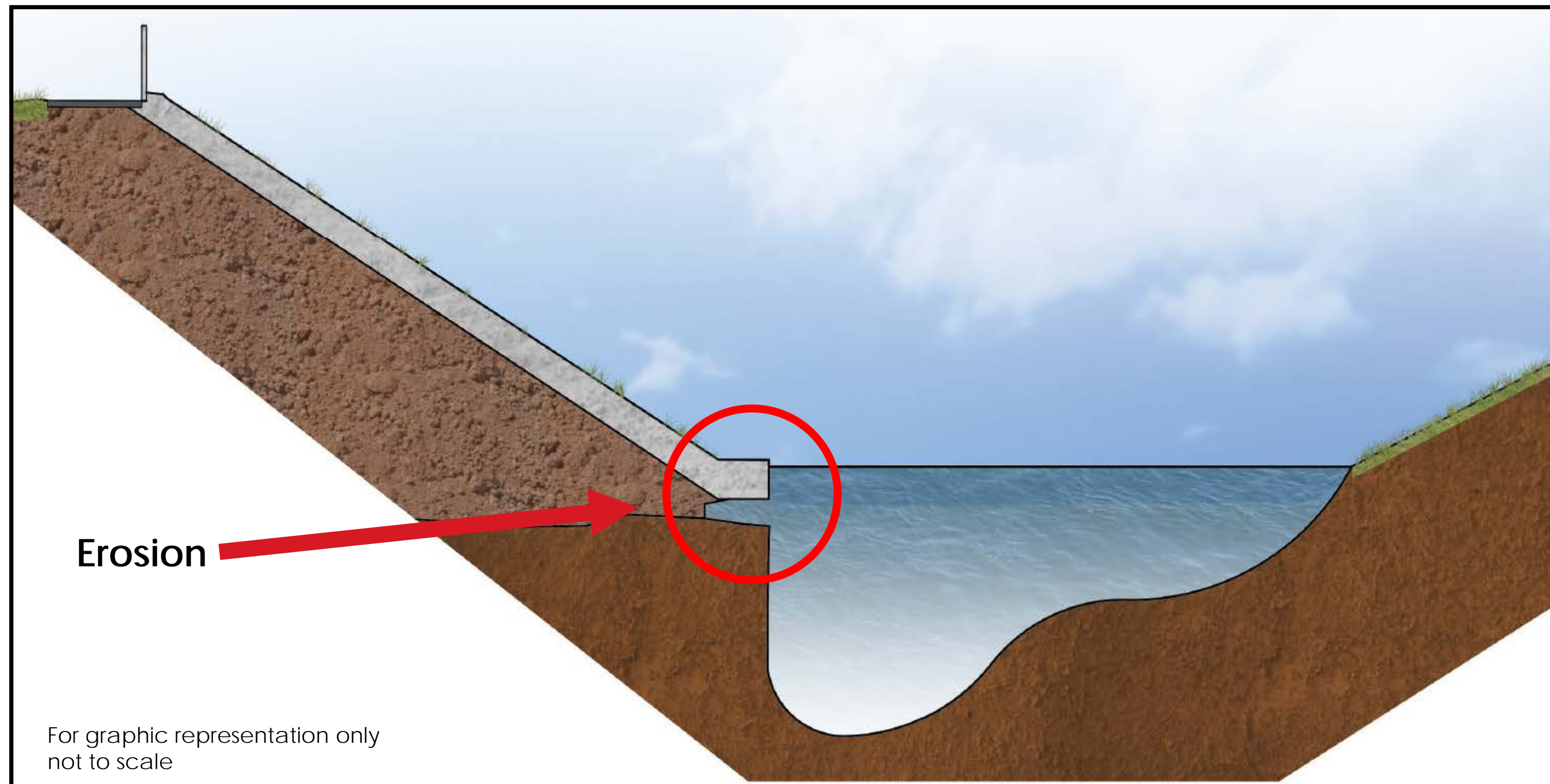
← Installation of concrete ballast block along dyke toe c. 1982



What does the erosion look like? Ann Street

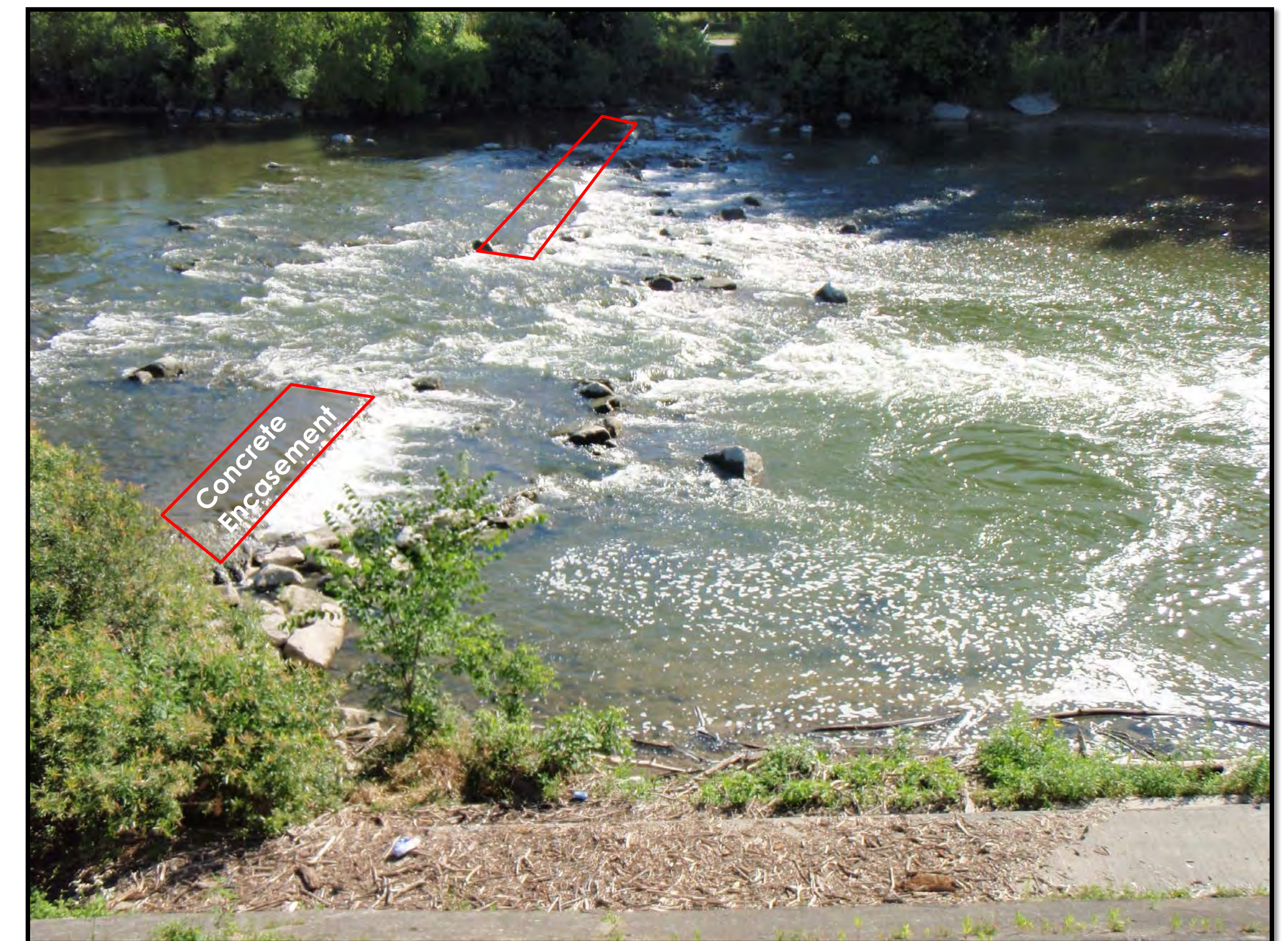


As-Built drawing from the Ann Street Crossing, 1994



For graphic representation only
not to scale

Ann Street Site – Conceptual Cross Section



Alternative Solutions – Ann Street Site

Alternative solutions being considered include both flow modification (addressing the source of the erosion), and WLD toe protection (to protect the toe from further erosion). The Do Nothing alternative is being considered as a baseline against which to evaluate the impacts of improvements.

- Construction access for all alternatives will be off Ann Street and the Thames Valley Parkway (TVP)
- Construction will occur in the River under low flow conditions, during approved periods, and with appropriate mitigation measures to avoid adverse affects on aquatic life

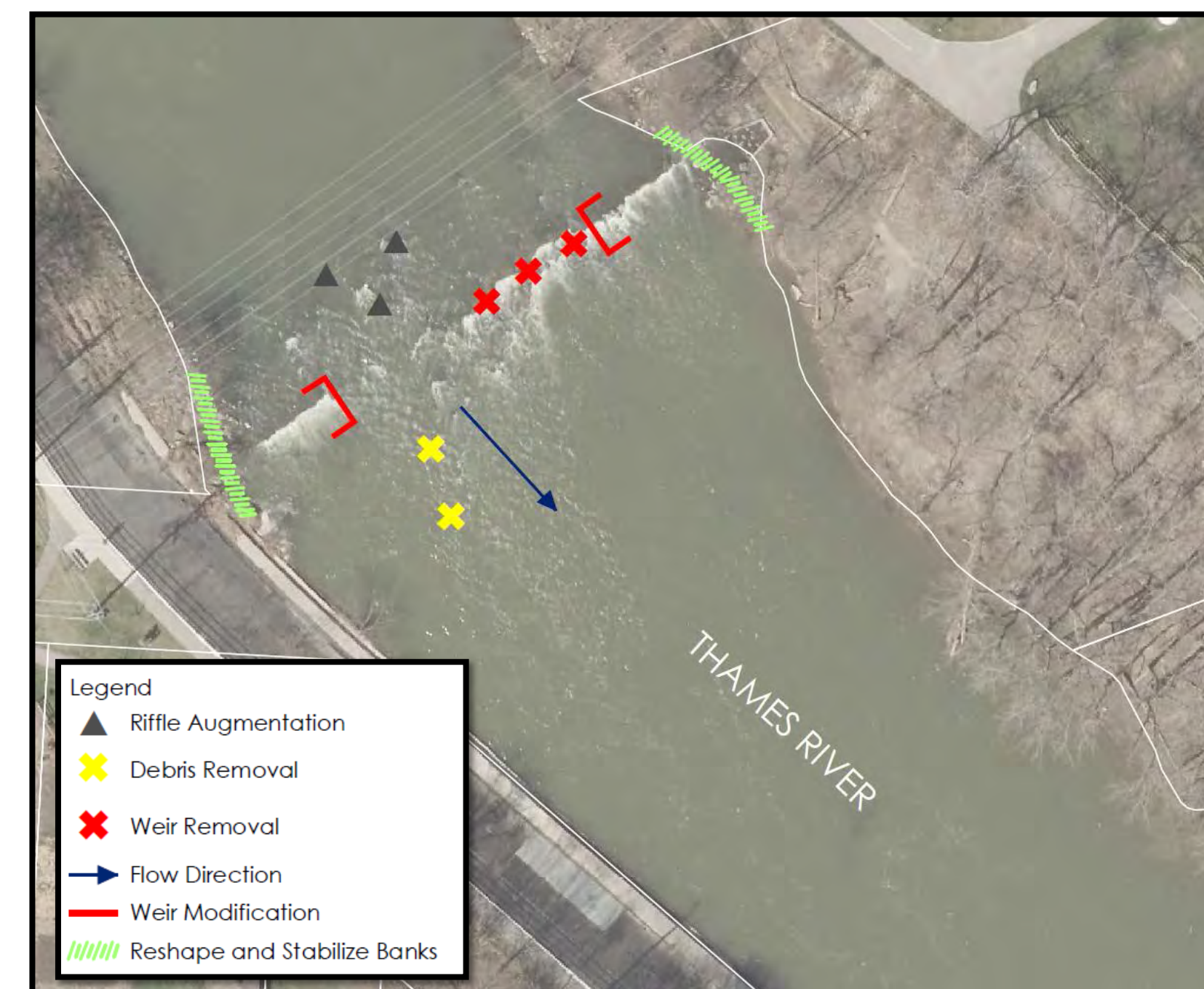
Flow Modification

Alternative 1 – Remove Weir



The existing concrete weir would be removed, eliminating the effect of the weir notch that is directing flow toward the west bank. Shaping or regrading of the banks may be required where the weir may have exacerbated erosion.

Alternative 2 – Modify Weir



Portions of the existing concrete weir would be removed to eliminate the effect of the existing weir notch. Shaping or regrading of the banks may be required where the weir may have exacerbated erosion.

Toe Protection

Alternative 3 – Boulder Toe Protection



Boulders would be installed along the toe of the dyke, for a stretch of approximately 60 m. Treatment would be approximately 5 m wide. Under this alternative, grading and reshaping the east bank is recommended to compensate for the reduction in river cross section from the installation of boulders.

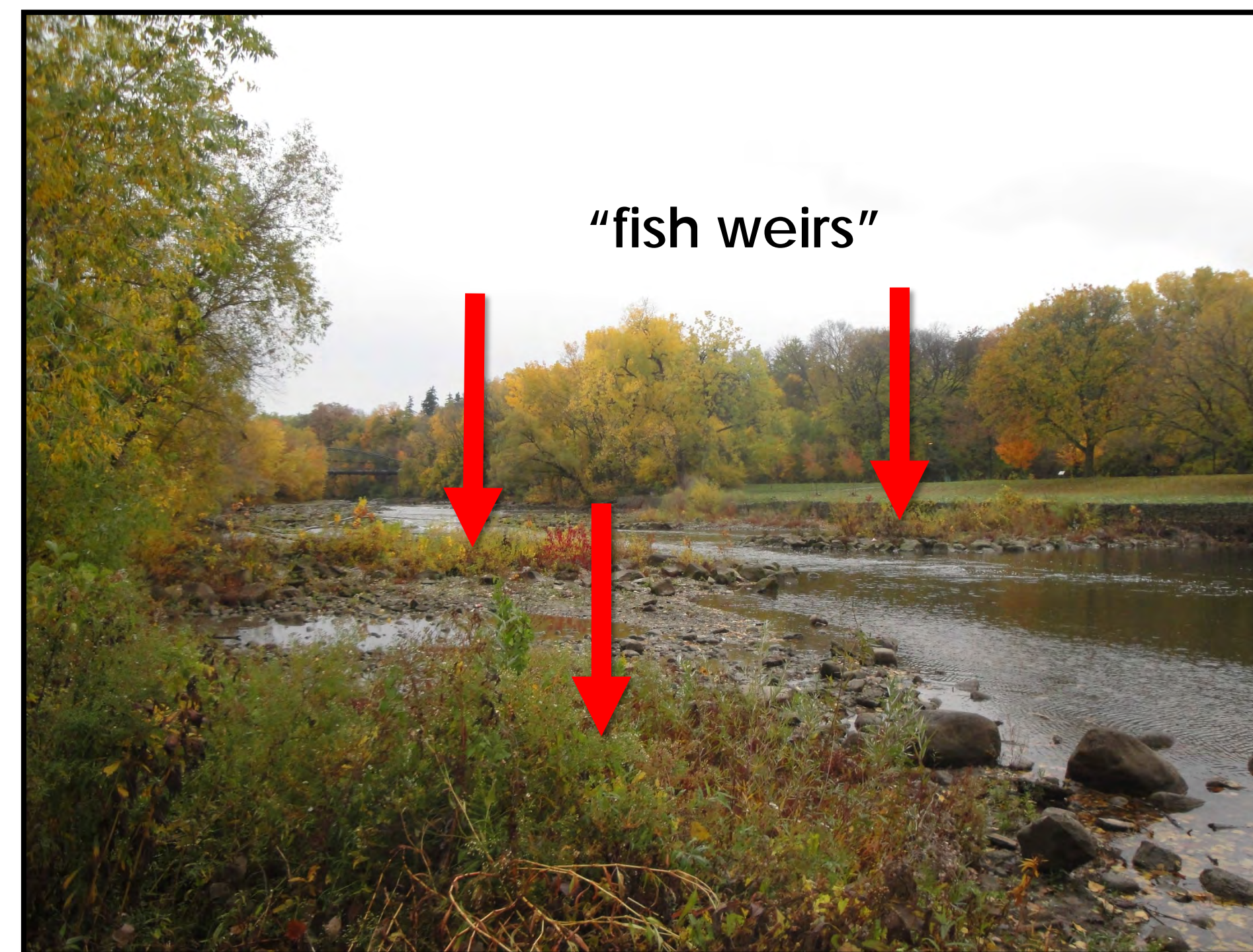
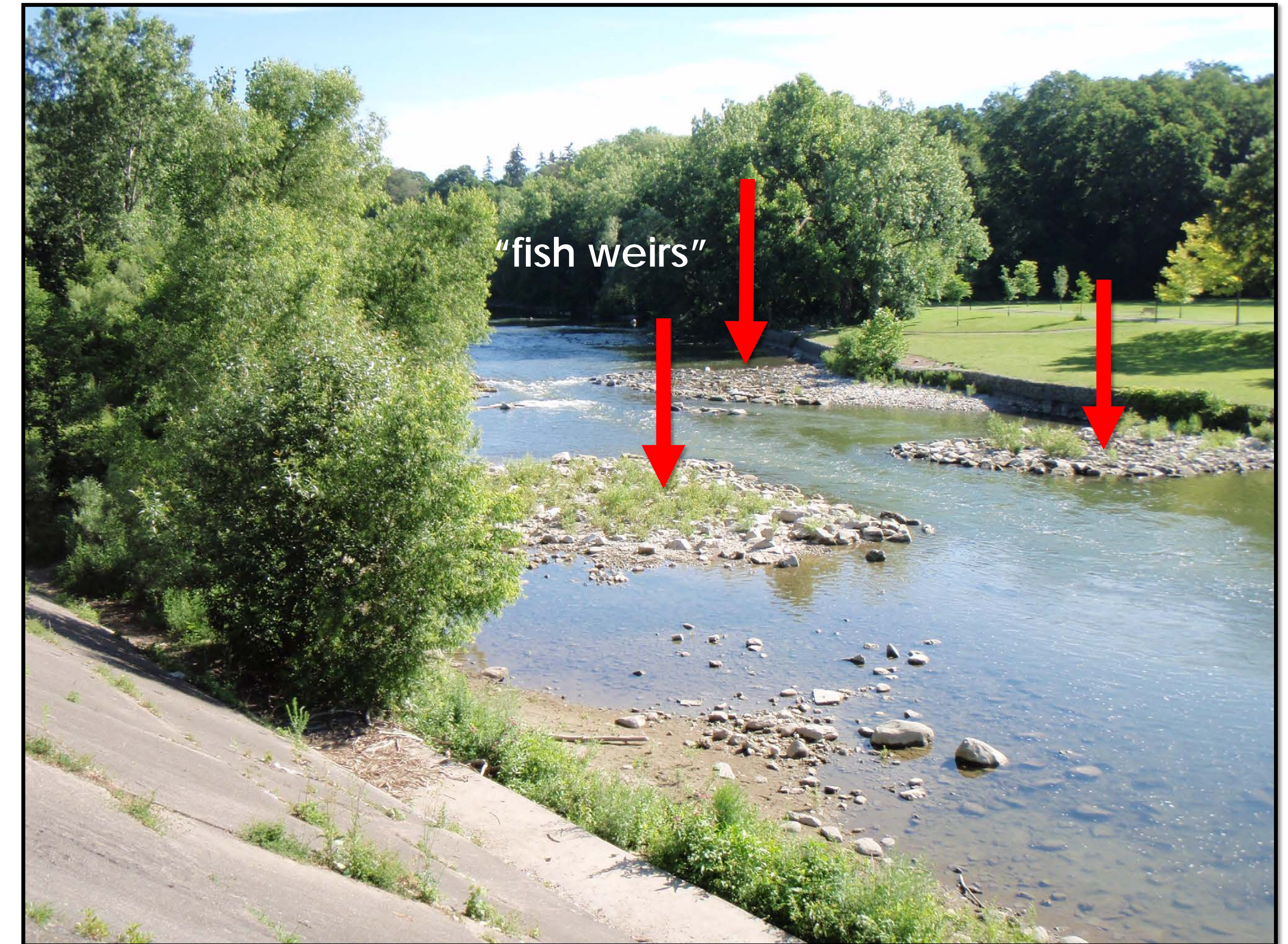
Alternative 4 – Bench and Vanes

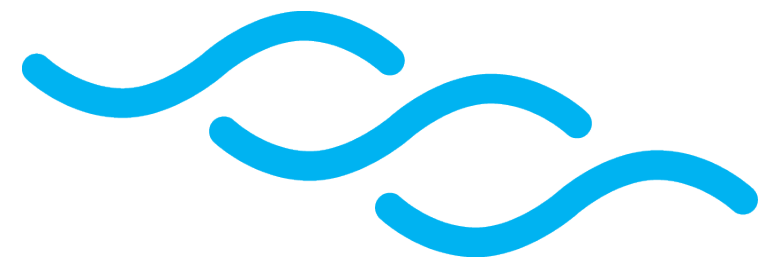


A bankfull bench composed of engineered fill (boulders, concrete, granular material) would be installed and planted with deeply rooting vegetation. Vanes consist of boulders or armourstone anchored into the stream bank pointing upstream to slow flow and turn it towards the centre of the river channel.

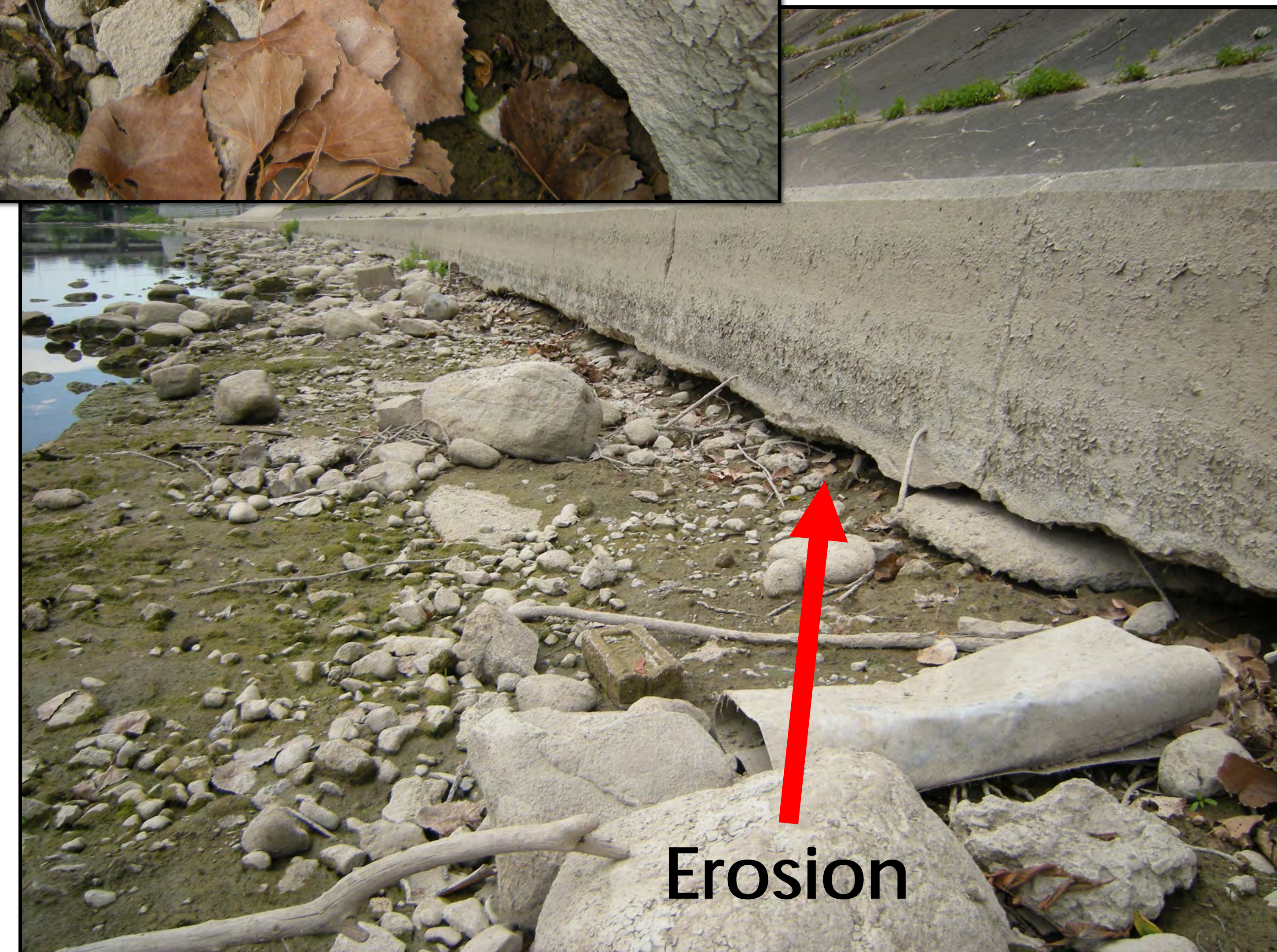
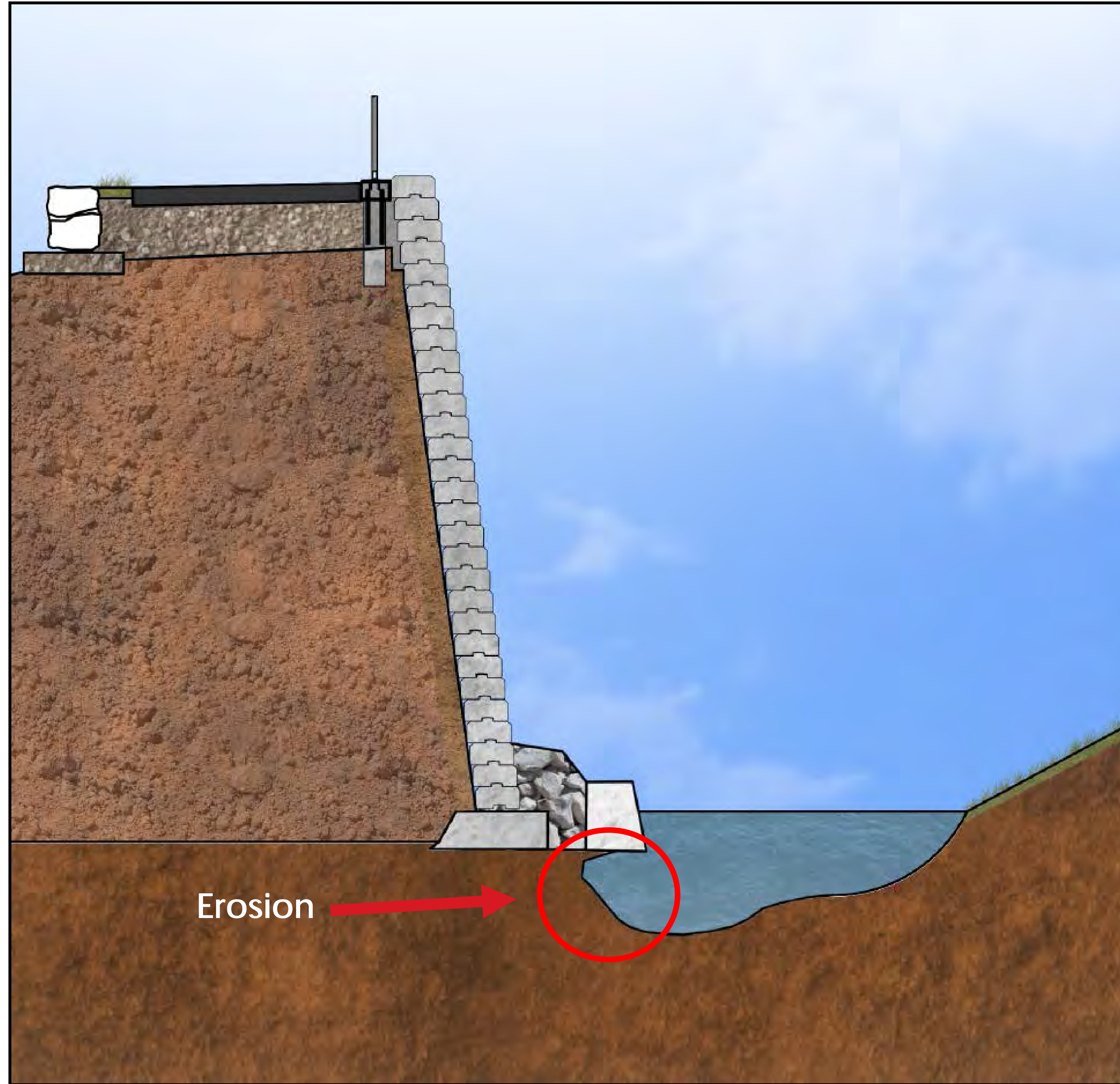
Existing Conditions Harris Park

- The Ministry of Natural Resources and Forestry (MNRF) installed rocks features (referred to as fish weirs) c. 1980's to improve fish habitat and passage in the area.
- This is a popular spot for fishing (and boating).
- The potential exists for species at risk, and species of special concern turtles in this area of the river.
- This area is just upstream of the Forks of the Thames – an area of focus for the One River Master Plan Environmental Assessment and Back to the River. Any recommendations for shoreline improvements will need to be coordinated with those projects.





What does the erosion look like? Harris Park Site



Alternative Solutions – Harris Park Site

Alternative solutions being considered include both flow modification (addressing the source of the erosion), and WLD toe protection (to protect the toe from further erosion). The Do Nothing alternative is also being considered as a baseline against which to evaluate the impacts of the other alternatives.

Toe Protection

Alternative 1 – Boulder Toe Protection



Boulders would be installed along the toe of the dyke for a stretch of approximately 240 m. The treatment would be approximately 5 m wide.

Flow Modification

Alternative 2 – Remove Gabions and Reshape Point Bar



The existing gabion baskets would be removed, and the point bar would be reshaped and graded to create a depositional environment typical of a point bar on the inside of a meander belt. This alternative increases the River's cross section and reduces flow velocities which lowers scour and erosion potential.

Alternative 3 – Modify MNRF 'Fish Weirs'



This alternative involves modification to the most downstream MNRF fish weir structure to divert flows towards the centre of the river bed, away from the toe of the dyke.

Evaluation Process

A qualitative evaluation is used to assess the impacts of each alternative in relation to each other and to the Do Nothing alternative.

Common elements among alternatives:

- Potential release of sediment during construction; sediment control measures and monitoring to be undertaken during construction
- Temporary disruption to habitats during construction
- Ann Street: construction access off of Ann Street and TVP (east bank)
- Harris Park: construction access on west bank (same construction access used for recent WLD construction)



Social/Cultural Environment

- Recreational Boating
- Recreational Fishing
- Public Safety
- Cultural Heritage and Archaeology
- Aesthetics
- Parks and Open Space
- First Nations



Natural Environment

- Water Quality
- Aquatic Habitat and Fish Passage
- Terrestrial Habitats
- Species at Risk
- Climate Change



Technical/Economic

- Fluvial Geomorphology
- Long Term Operations and Maintenance
- Approvals/Permitting
- Constructability
- Construction Access
- Coordination with Existing and Planned
- Thames Valley Corridor Projects



Summary of Preliminary Evaluation

Ann Street Site

Environmental Component	Flow Modification		Toe Protection	
	Alternative 1 - Remove Weir	Alternative 2 - Modify Weir	Alternative 3 - Boulder Toe Protection	Alternative 4 - Bench and Vanes
Social / Cultural	<ul style="list-style-type: none"> Greatest impact to existing boating over all other alternatives 	<ul style="list-style-type: none"> Potential to maintain some of the existing recreational boating uses 	<ul style="list-style-type: none"> Potential for positive impacts to recreational fishing with additional fish habitat 	<ul style="list-style-type: none"> Potential for positive impacts to recreational fishing with additional fish habitat
Natural	<ul style="list-style-type: none"> No significant impacts to habitat (upstream riffles to be maintained) Potential improvement to wildlife movement based on slower velocities (turtles) 	<ul style="list-style-type: none"> No significant impacts to habitat (upstream riffles to be maintained) Potential improvement to wildlife movement based on slower velocities, but less potential than Alternative 1 (turtles) 	<ul style="list-style-type: none"> Additional fish habitat provided 	<ul style="list-style-type: none"> Greatest potential for improved aquatic and terrestrial habitats
Technical / Economic	<ul style="list-style-type: none"> Effective in redirecting flows and addressing source of scour Should be implemented in conjunction with toe protection In-water work required \$ 	<ul style="list-style-type: none"> Effective in redirecting flows and addressing source of scour Should be implemented in conjunction with toe protection In-water work required \$\$ 	<ul style="list-style-type: none"> Does not address source of erosion; should be implemented in conjunction with flow modification for best results \$\$ 	<ul style="list-style-type: none"> Most robust treatment of existing erosion, should be implemented in conjunction with flow modification for best results \$\$\$\$
Overview	Less preferred over modification to weir structure	Recommended in conjunction with Flow Modification	Recommended in conjunction with Flow Modification	Less preferred over Boulder Toe Protection

Harris Park Site

Environmental Component	Toe Protection	Flow Modification	
	Alternative 1 - Boulder Toe Protection	Alternative 2 - Remove Gabion Baskets and Reshape Point Bar	Alternative 3 - Modify MNRF Weirs
Social / Cultural	<ul style="list-style-type: none"> Potential for positive impacts to recreational fishing with additional fish habitat 	<ul style="list-style-type: none"> Impacts to parkland and TVP; coordination required with One River Master Plan considerations 	<ul style="list-style-type: none"> Least overall impact
Natural	<ul style="list-style-type: none"> Additional fish habitat provided 	<ul style="list-style-type: none"> Improves floodplain access and floodplain habitats 	<ul style="list-style-type: none"> Least overall impact
Technical / Economic	<ul style="list-style-type: none"> Does not address source of erosion; should be implemented in conjunction with flow modification for best results \$\$\$ 	<ul style="list-style-type: none"> Effective in reducing flow velocities and further erosion, should be implemented in conjunction with toe protection \$\$ 	<ul style="list-style-type: none"> Effective in directing flow away from the WLD, should be implemented in conjunction with toe protection \$\$
Overview	Recommended in conjunction with Modification to MNRF Fish Weirs	Less preferred over Alternative 1	Most efficient for addressing source of erosion, least overall impact Recommended in conjunction with Boulder Toe Protection

Preliminary Recommendations

The preliminary recommendations at each site include a combination of toe protection to address the existing areas of erosion and flow modification to address the source and mitigate further erosion.

Ann Street Site
Modification to Weir Structure and Boulder Toe Protection



Harris Park Site
Modification to MNRF Fish Weirs and Boulder Toe Protection



Next Steps



Please share your thoughts and opinions on the information presented tonight. Comment sheets are available, or you can submit comments directly to members of the project team.

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