



**WELCOME**

**Class Environmental Assessment for  
Cooksville Creek South of Lakeshore Road  
PUBLIC INFORMATION CENTRE  
October 29<sup>th</sup>, 2024**

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



# LAND ACKNOWLEDGEMENT



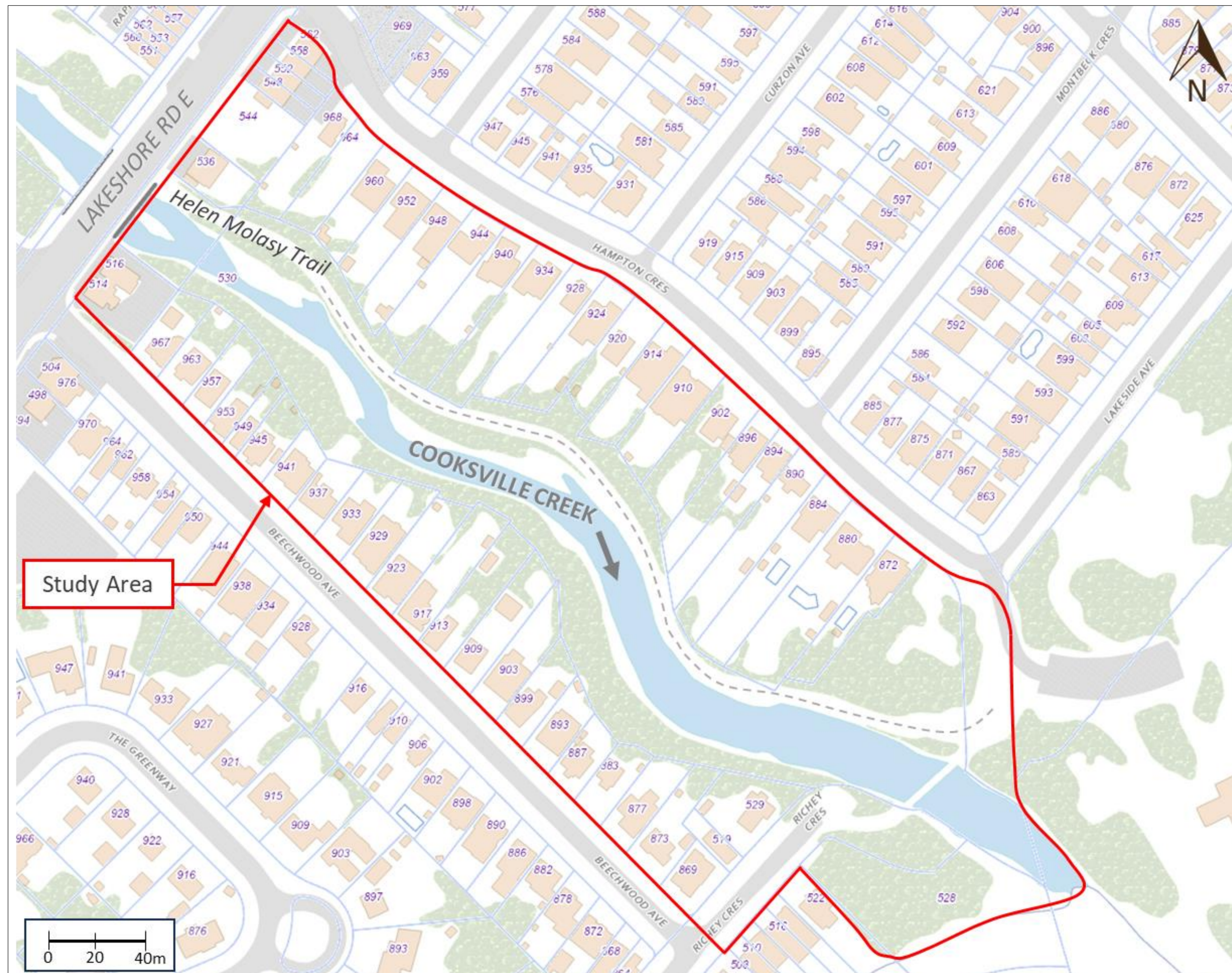
Cooksville Creek Environmental Assessment  
Lakeshore Road to Lake Ontario

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.

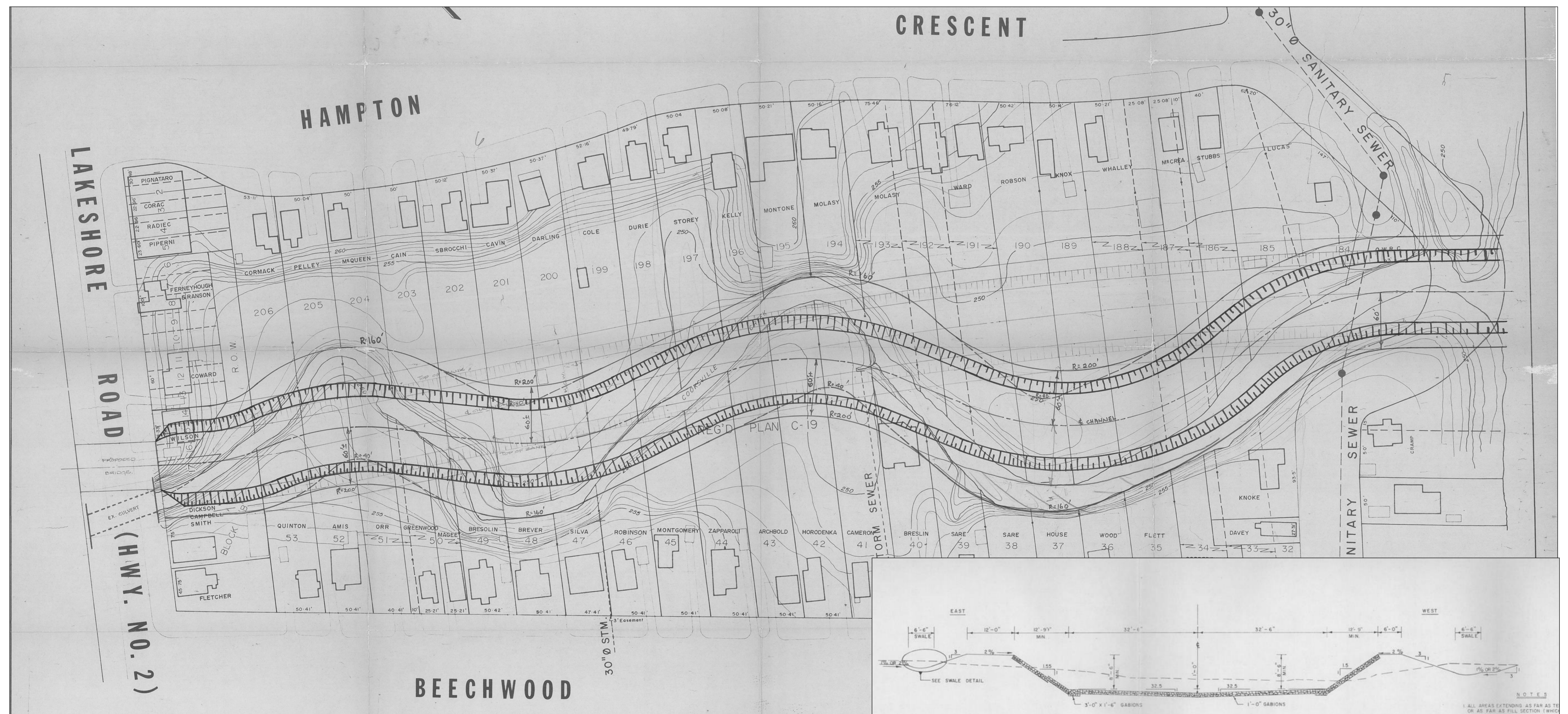
# STUDY AREA

The study area includes the Cooksville Creek corridor from Lakeshore Road East to Lake Ontario, as well as adjacent segments of the Helen Molasy Trail.



# CVC's HISTORICAL CHANNELIZATION

Within the study area, Credit Valley Conservation (CVC) undertook the Channelization of Cooksville Creek in the 1970s. The channel was straightened, and lined with stone filled wire gabion baskets to provide erosion protection.



Historic Engineering Drawing of the Cooksville Creek Channel Realignment (1975)

Aerial view of channelization a few years after channel realignment. The Helen Molasy Trail is clearly visible, which runs from Lakeshore Road to Lake Ontario



Study Area Conditions After Creek Realignment (1981)

# HISTORICAL IMAGE COMPARISON

The below images show the changes to the Creek's planform as part of CVC's historical channelization project.



Study Area Conditions in 1975  
(Before Realignment)



Study Area Conditions in 1977  
(During Realignment)



Study Area Conditions in 1980  
(After Realignment)

# STUDY AREA IMAGES

Presently, the study area experiences widespread erosion, with deteriorated erosion protection measures such as gabion baskets. Erosion within the Creek has placed the trail system at an elevated risk.



Trail Conditions Along Helen Molasy Trail



Creek Conditions at Lake Ontario



Deteriorated Gabion Baskets Throughout Study Area



Armourstone Retaining Wall Along Trail

## STUDY PURPOSE / PROBLEM DEFINITION

The City of Mississauga is undertaking a Municipal Class Environmental Assessment (Class EA) Study for the Cooksville Creek Erosion Control Project South of Lakeshore Road.

The City of Mississauga recognizes that this section of Cooksville Creek has been impacted by recent storm events and high lake levels and is in need of rehabilitation. Plans will also need to consider the deteriorated condition of the adjacent city trail through Helen Molasy Memorial Park that sits above the east bank of the creek, as well as the neighboring properties which have experienced ongoing drainage issues.

## PUBLIC INFORMATION CENTRE PURPOSE



### **This Public Information Centre (PIC) is Designed to:**

- Present information on existing conditions
- Present alternative approaches to erosion protection



### **To Gain Community Input on:**

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



# MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROCESS

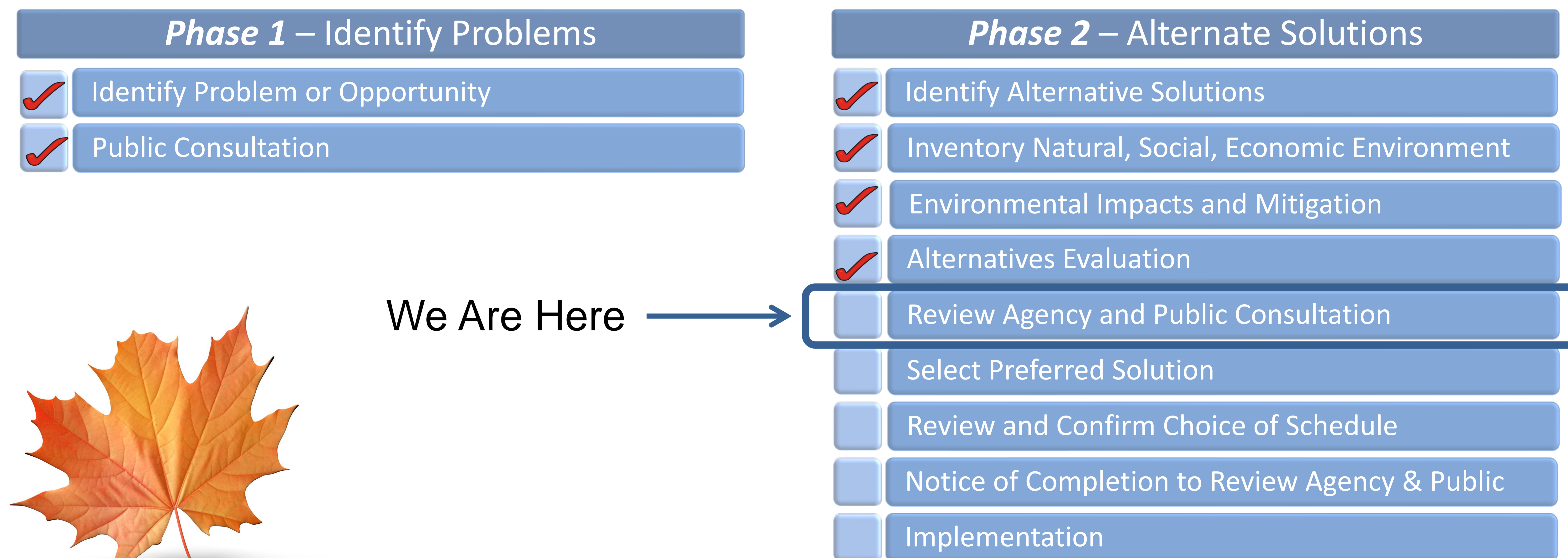


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## CLASS EA PROCESS - SCHEDULE B

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.



# 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.



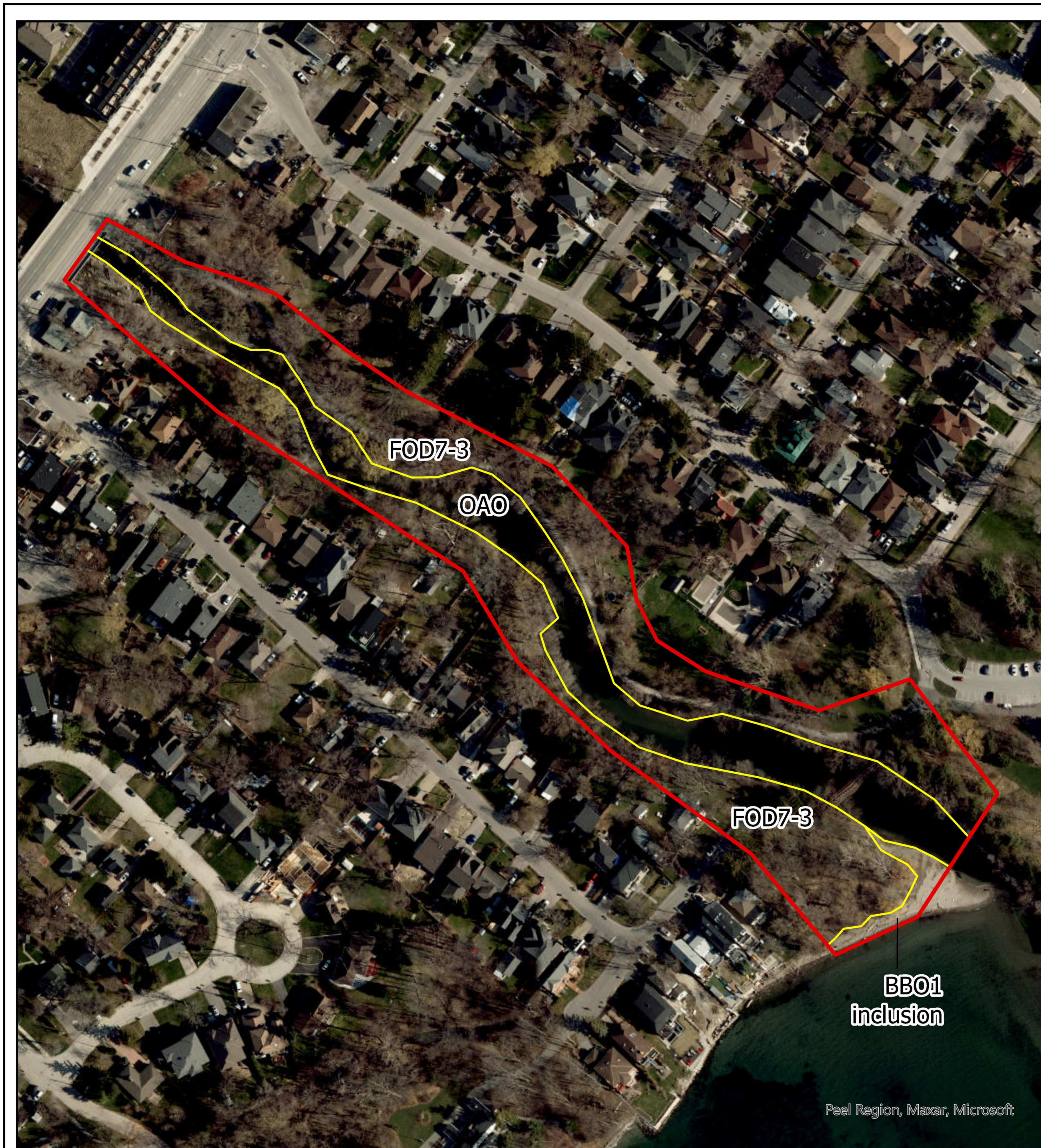
## SPECIES AT RISK

For the purpose of this study, Species at Risk (SAR) and Species of Conservation Concern (SOCC) 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).

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 15 SAR and SOCC were determined to be present or have some potential to be present in the study area.** These species include:

1. Barn Swallow – Threatened
2. Bald Eagle – Special Concern
3. Eastern Wood-Pewee – Special Concern
4. Monarch Butterfly – Special Concern
5. Eastern Red Bat – Endangered
6. Eastern Small Footed Myotis – Endangered
7. Hoary Bat – Endangered
8. Little Brown Myotis – Endangered
9. Northern Myotis - Endangered
10. Silver Haired Bat – Endangered
11. Tricoloured Bat – Endangered
12. Eastern Milksnake – Special Concern
13. Midland Painted Turtle – Special Concern
14. Northern Map Turtle – Special Concern
15. Snapping Turtle – Special Concern

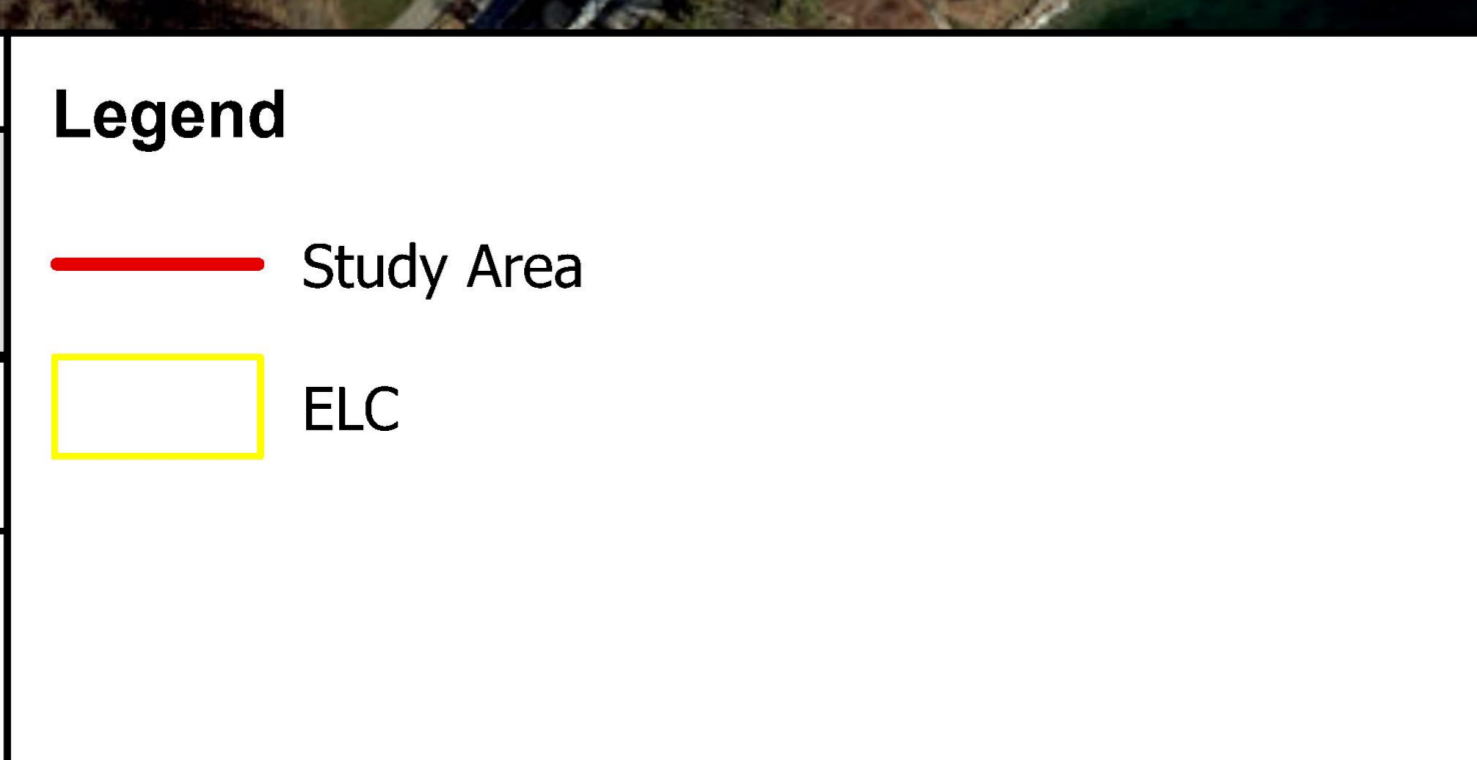
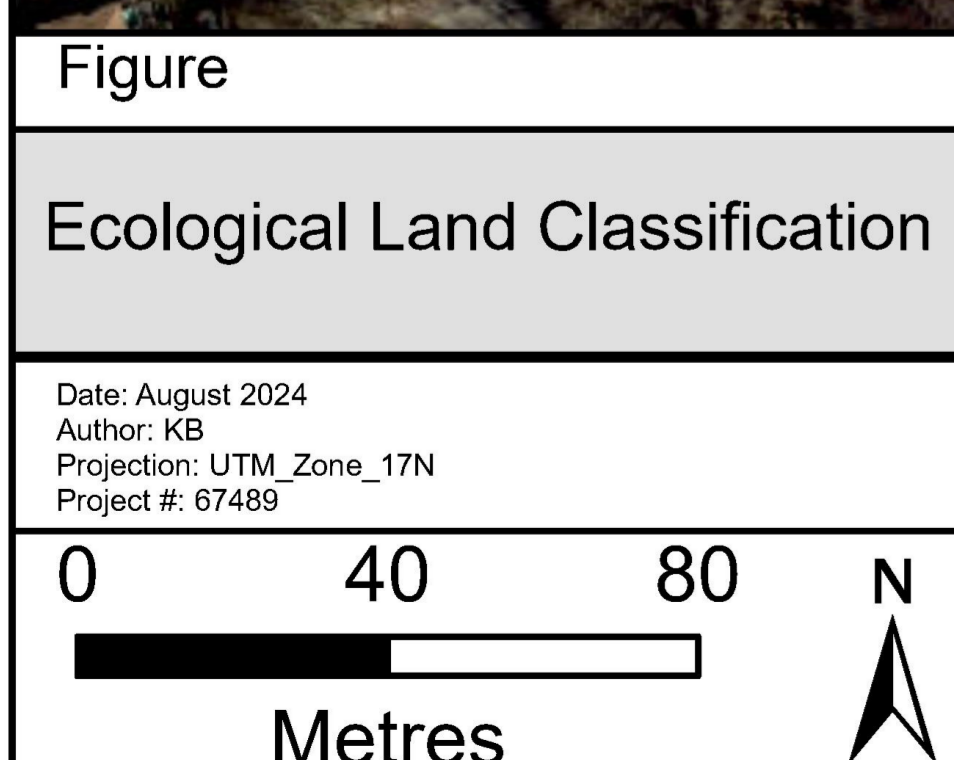
# VEGETATION COMMUNITY CLASSIFICATION



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

In total, 3 vegetation communities are within the study area. The 3 vegetation community types are included within the categories summarized in the table below.

Code	Vegetation Community
FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest
OAO	Open Water
BBO1	Mineral Open Beach/Bar



# 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)
Rhinichthys atratulus	Blacknose dace
Pimephales notatus	Bluntnose minnow
Culaea inconstans	Brook stickleback
Salmo trutta	Brown trout
Cyprinidae and Leuciscidae	Carp and Minnows
Luxilus cornutus	Common Shiner
Semotilus atromaculatus	Creek chub
Pimephales promelas	Fathead minnow
Carassius auratus	Goldfish
Couesius plumbeus	Lake chub
Rhinichthys cataractae	Longnose dace
Oncorhynchus mykiss	Rainbow trout
Neogobius melanostomus	Round goby
Catostomus commersonii	White sucker

## Key Findings:

- The fish species present within the study area are quite diverse and predominantly warmwater species.
- No records of Aquatic Species at Risk within the Study Area
- 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.



Representative Aquatic Habitat

Flooding within the study area and surrounding properties is caused by the following factors:

- **High Flows within Cooksville Creek** spilling over into the surrounding areas
- **High Water Levels within Lake Ontario** causing backwatering effect within Creek
- **Precipitation and Snowmelt Events** unable to drain below trail berm

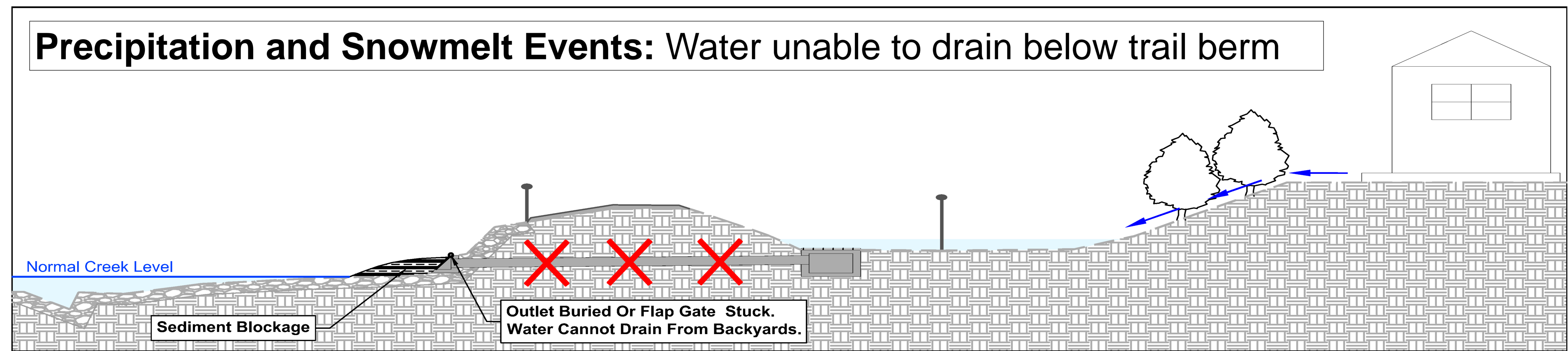
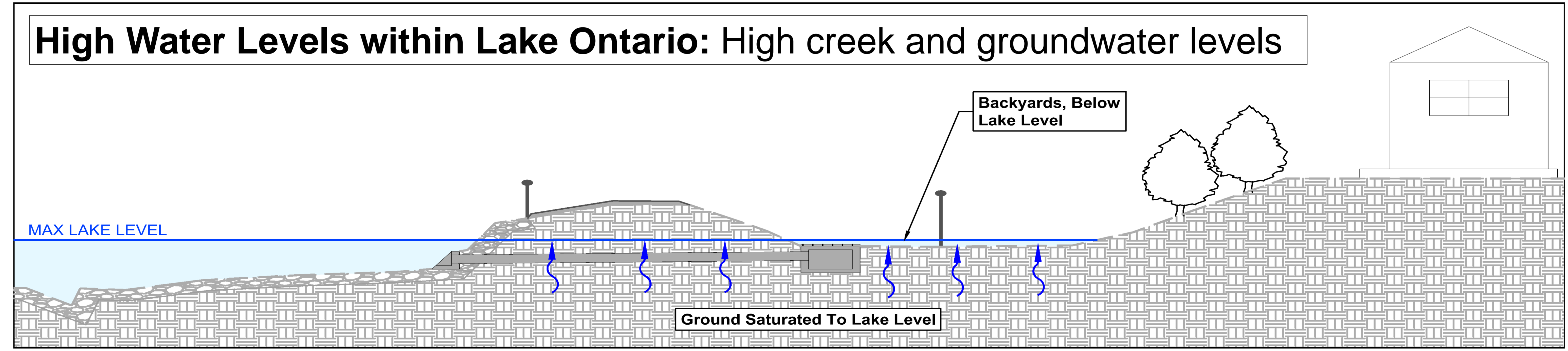
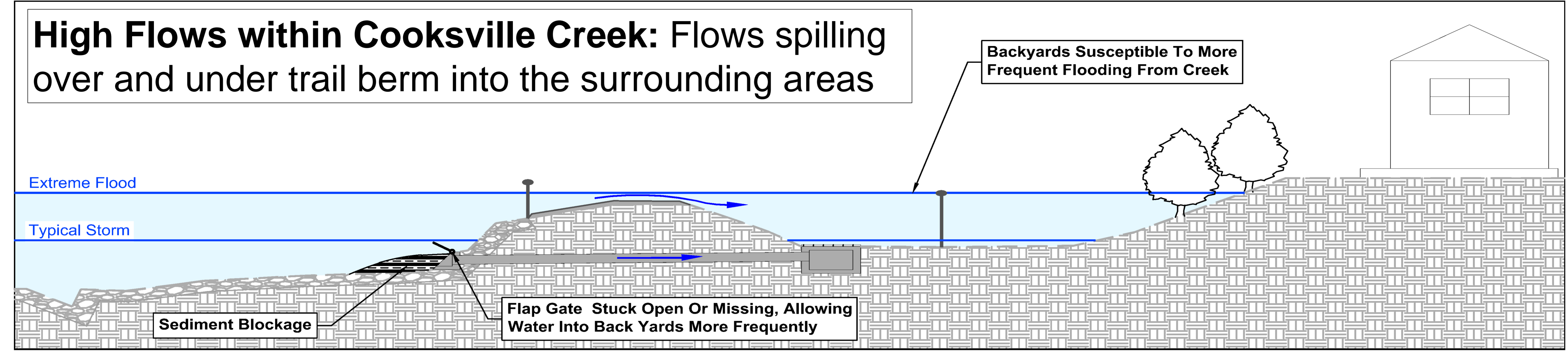


Ponded Water in Backyards After Spring Snowmelt

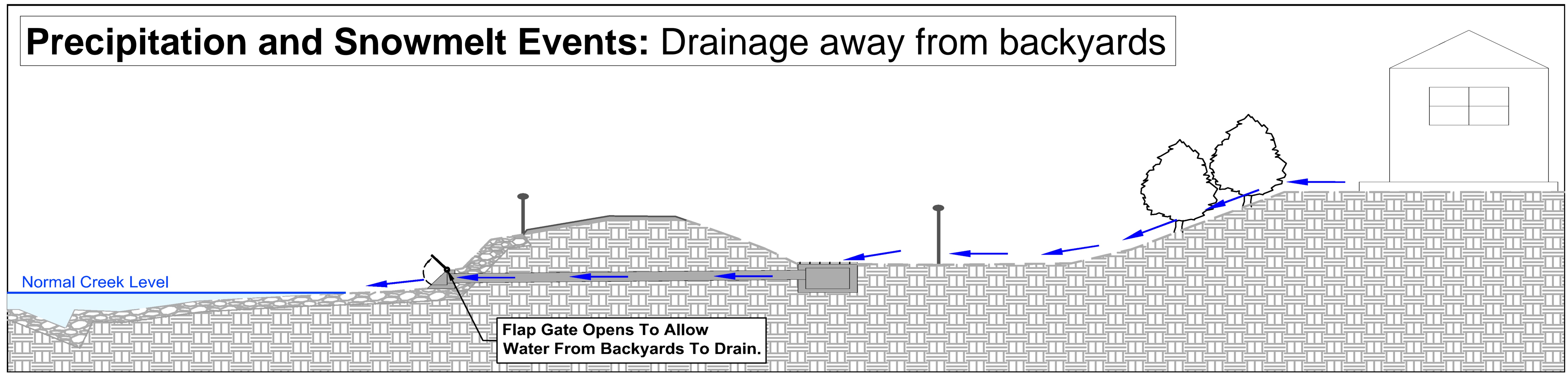
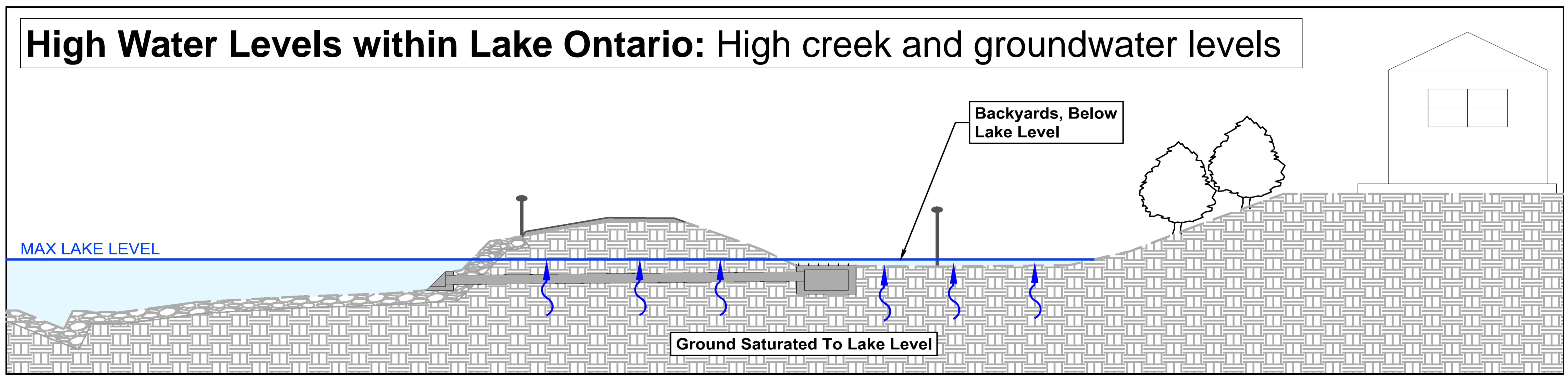
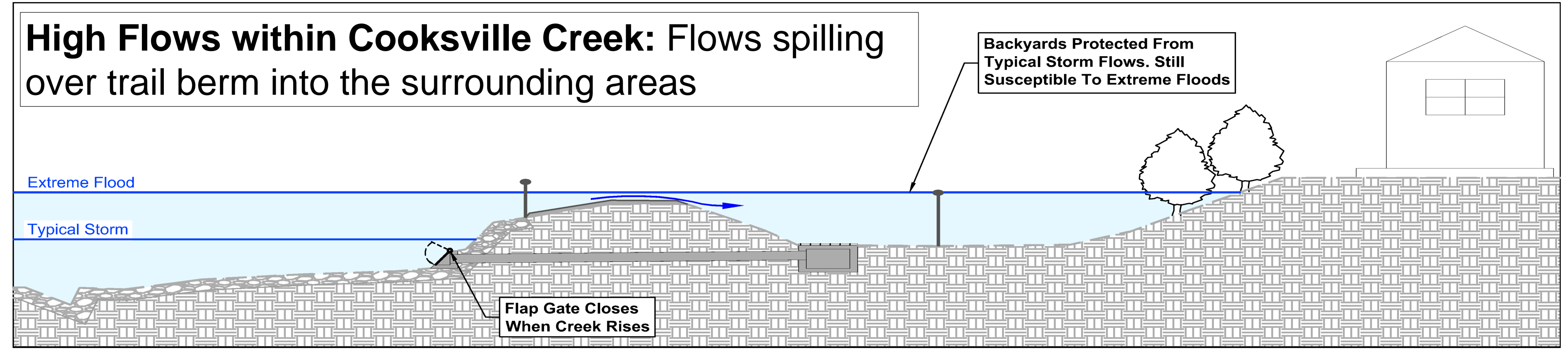


Evidence of Ponded Water After July 16<sup>th</sup> Storm Event

## Current Operational Conditions

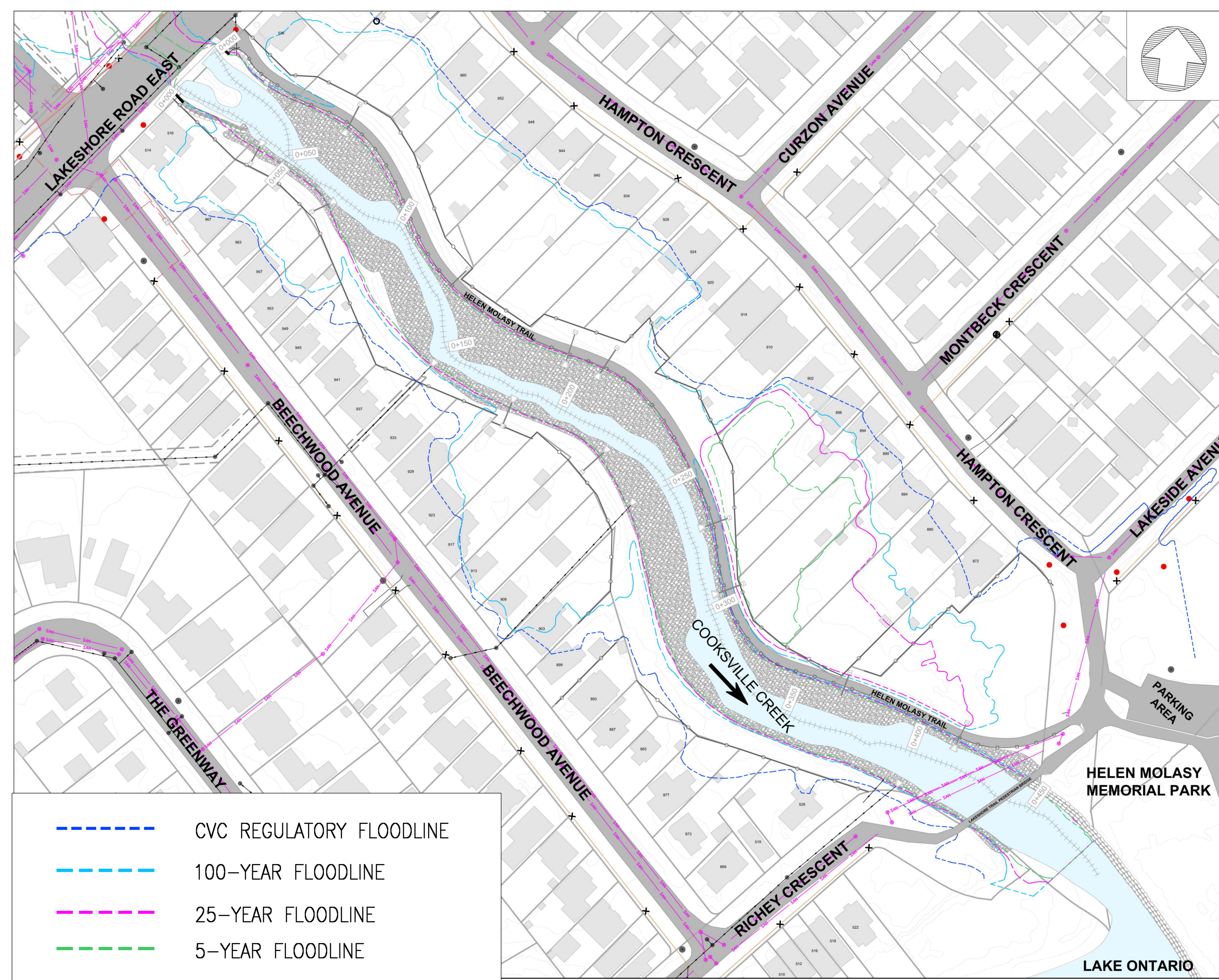


## Intended Operational Conditions



# HYDROLOGY AND EXISTING FLOODING CONDITIONS

- The existing berm below Helen Molasy Trail only provides a limited amount of flood protection under less extreme storm events
- The existing modelled floodlines are shown in the below image





# ARCHAEOLOGY

- A Stage 1 Archaeological Assessment was completed for the Study Area, to determine areas of Archaeological potential
- The locations within the study area which contain archaeological potential will have a Stage 2 assessment completed prior to any proposed construction



# EVALUATION CRITERIA



Cooksville Creek Environmental Assessment  
Lakeshore Road to Lake Ontario

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

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

## Technical and Engineering Criteria

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

## Social and Cultural Criteria

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

## Economic Criteria

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

# EVALUATION APPROACH



## Cooksville Creek Environmental Assessment Lakeshore Road to Lake Ontario

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. The alternative with the highest score will define which alternative is preferred within the study area.

The ranking score has been normalized to provide equal weighting for each category of evaluation criteria, with a maximum score of 25 per category, and a maximum total score of 100.

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

Evaluation Criteria	Alternative 1 - Do Nothing	Alternative 2 - Local Channel Restoration Works	Alternative 3 - Extended Channel Restoration Works
Erosion	0	1	4
Water Quality	1	2	3
Aquatic Habitat	1	2	3
Terrestrial Habitat	3	2	1
Terrestrial Vegetation	3	2	1
Flooding	1	3	4
<b>Criteria Subtotal</b>	<b>9.00</b>	<b>12.00</b>	<b>16.00</b>
<b>Weighted Score (maximum of 25 points)</b>	<b>9.38</b>	<b>12.50</b>	<b>16.67</b>
Public Safety	1	2	2
Landowner Impacts	0	1	2
Benefit to Community	0	2	3
Aesthetic Value	2	3	3
Archaeological Impacts	4	2	2
<b>Criteria Subtotal</b>	<b>7.00</b>	<b>10.00</b>	<b>12.00</b>
<b>Weighted Score (maximum of 25 points)</b>	<b>11.25</b>	<b>12.50</b>	<b>15.00</b>
Impact on Existing Infrastructure	0	3	4
Constructability	4	3	2
Lifespan of Works	0	3	4
<b>Criteria Subtotal</b>	<b>4.00</b>	<b>9.00</b>	<b>10.00</b>
<b>Weighted Score (maximum of 25 points)</b>	<b>8.33</b>	<b>18.75</b>	<b>20.83</b>
Capital Costs	4	3	2
Operations & Maintenance Costs	0	3	4
<b>Criteria Subtotal</b>	<b>4.00</b>	<b>6.00</b>	<b>6.00</b>
<b>Weighted Score (maximum of 25 points)</b>	<b>12.50</b>	<b>18.75</b>	<b>18.75</b>
<b>Total Score (maximum of 100 points)</b>	<b>41.46</b>	<b>62.50</b>	<b>71.25</b>

Highest Score = Preferred Alternative

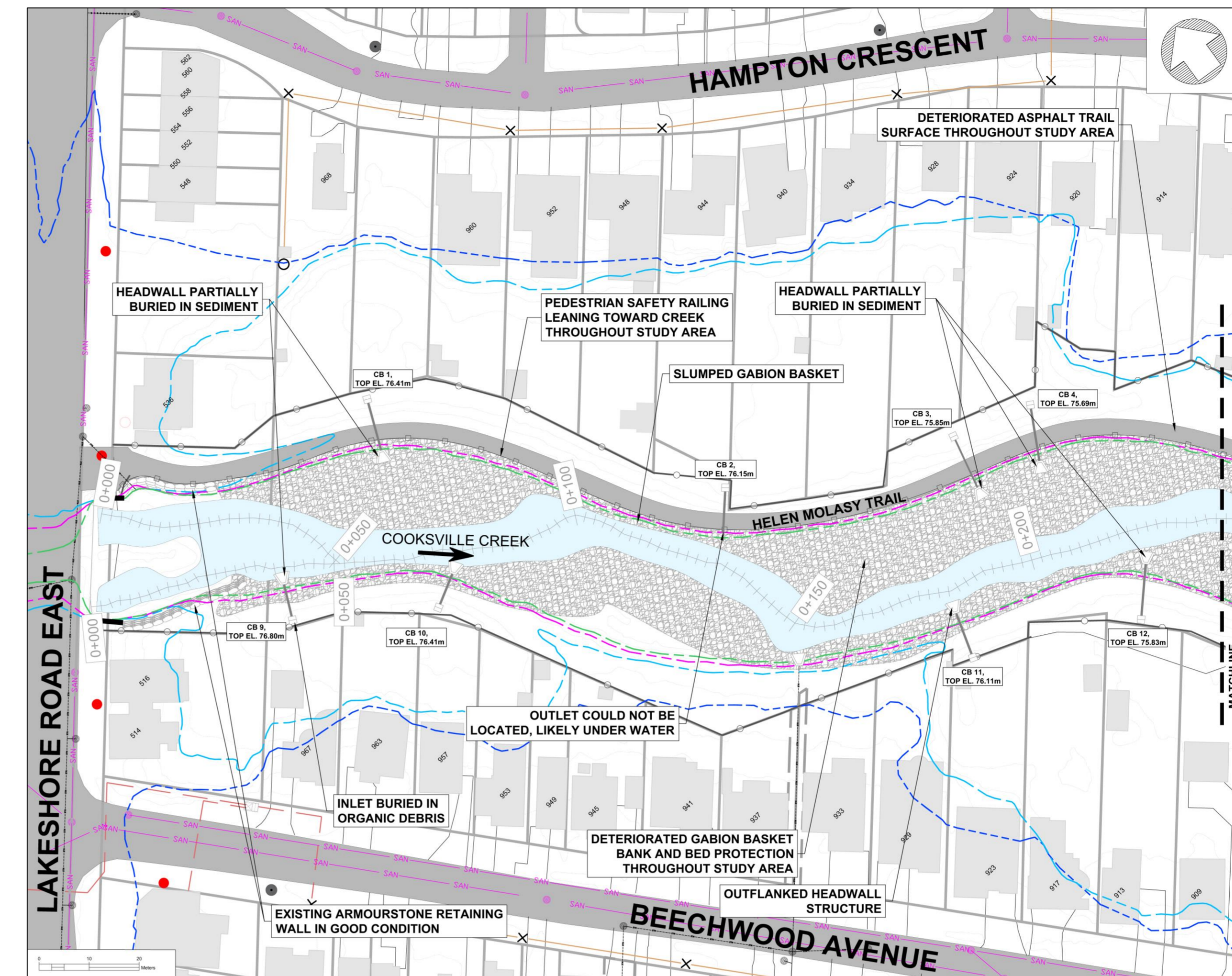
# Alternative 1 – Do Nothing

## Creek Restoration Alternative – Do Nothing

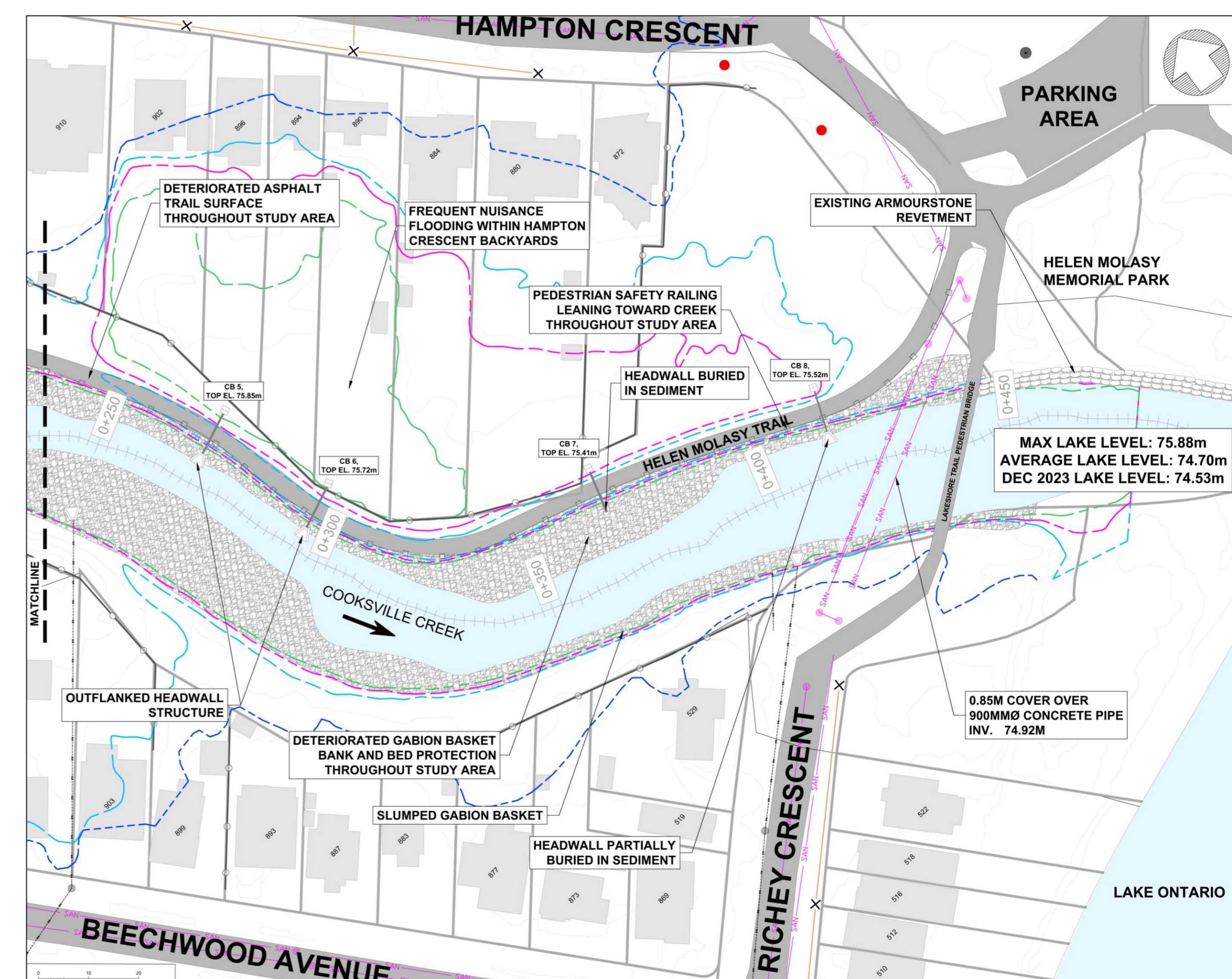
- Continued failure of existing bank protection measures, leading to continued erosion and deterioration of the stormwater infrastructure within the study area.

## Drainage Alternative – Do Nothing

- Continued deterioration of the Helen Molasy Trail, and the associated risks to public safety within the study area.
- The drainage concerns resulting in ponding water in the adjacent properties will not be resolved.
- Continued maintenance activities will be required, including patching the deteriorating asphalt surface, and pumping standing water out of the residential backyards.



Alternative #1: Do Nothing – Upstream Segment



Alternative #1: Do Nothing – Downstream Segment

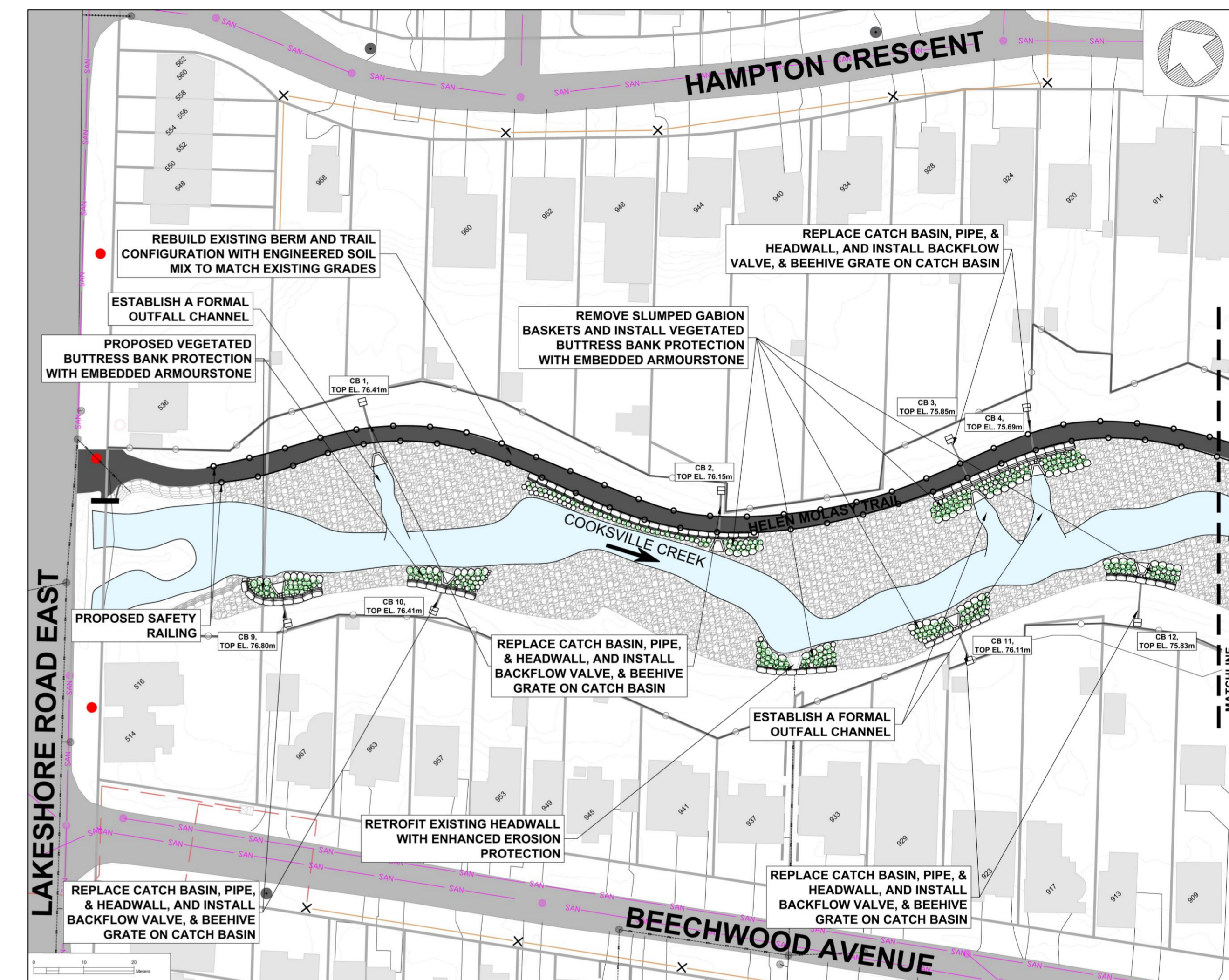
# Alternative 2 – Local Channel Restoration Works & Like For Like Drainage Replacement

## Creek Restoration Alternative – Local Channel Restoration Works

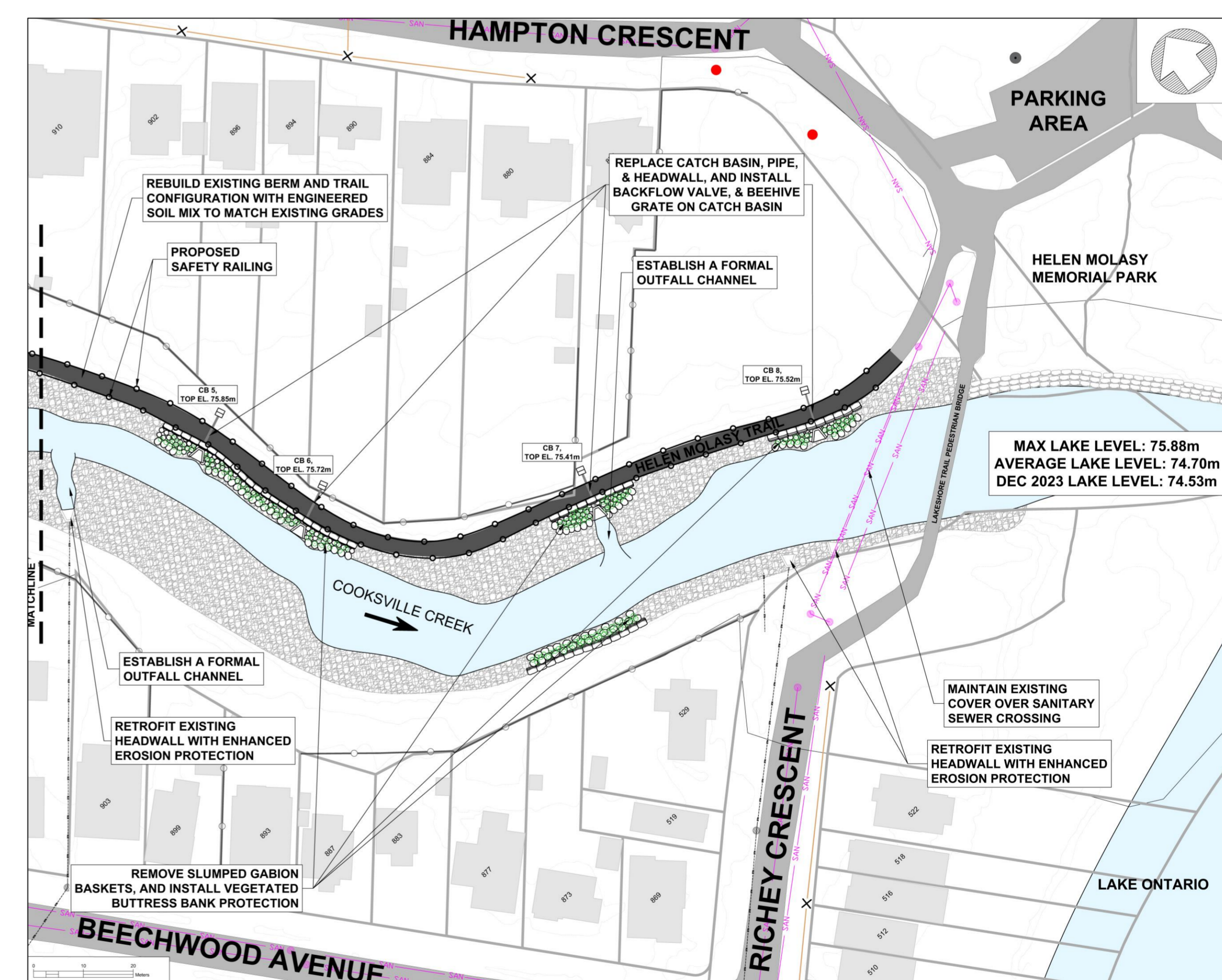
- Localized protection of stormwater infrastructure within the study area
- Restoration of a few key areas of severe bank protection failure, through the use of vegetated buttress bank protection treatment with embedded armourstone retaining walls

## Drainage Alternative – Like for Like Drainage Replacement

- Like-for like replacement of the drainage infrastructure that connects the backyards within the adjacent residential neighborhoods to Cooksville Creek, including the eight (x8) catchbasin-outfall pairs along the East Bank, and the four (x4) catchbasin-outfall pairs along the West Bank
- Full depth restoration of the berm with engineered materials



Alternative #2: Local Channel Restoration Works & Like for Like Drainage Replacement – Upstream Segment



Alternative #2: Local Channel Restoration Works & Like for Like Drainage Replacement – Downstream Segment

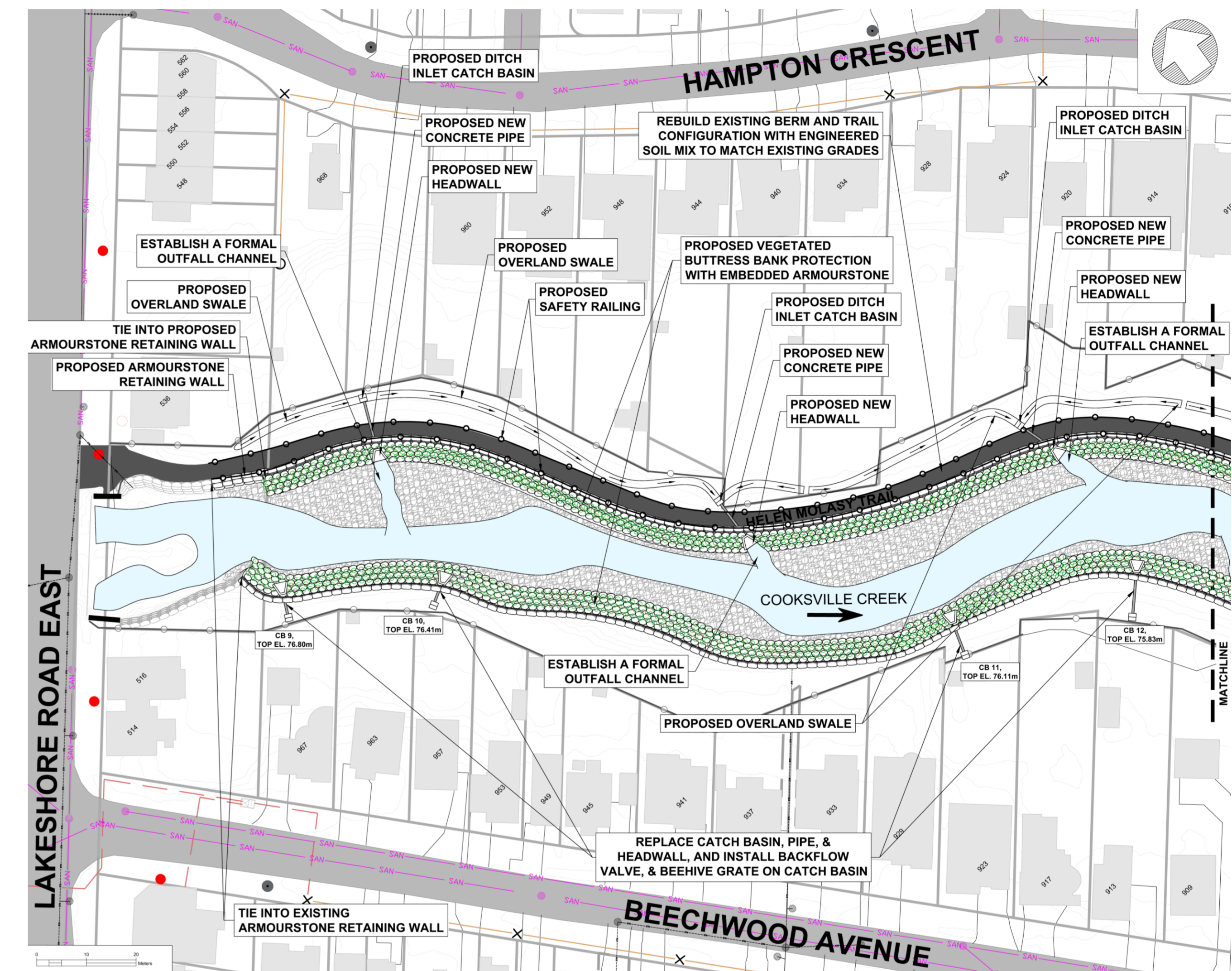
# Alternative 3 – Extended Channel Restoration Works & Partial Drainage Consolidation

## Creek Restoration Alternative – Extended Channel Restoration Works

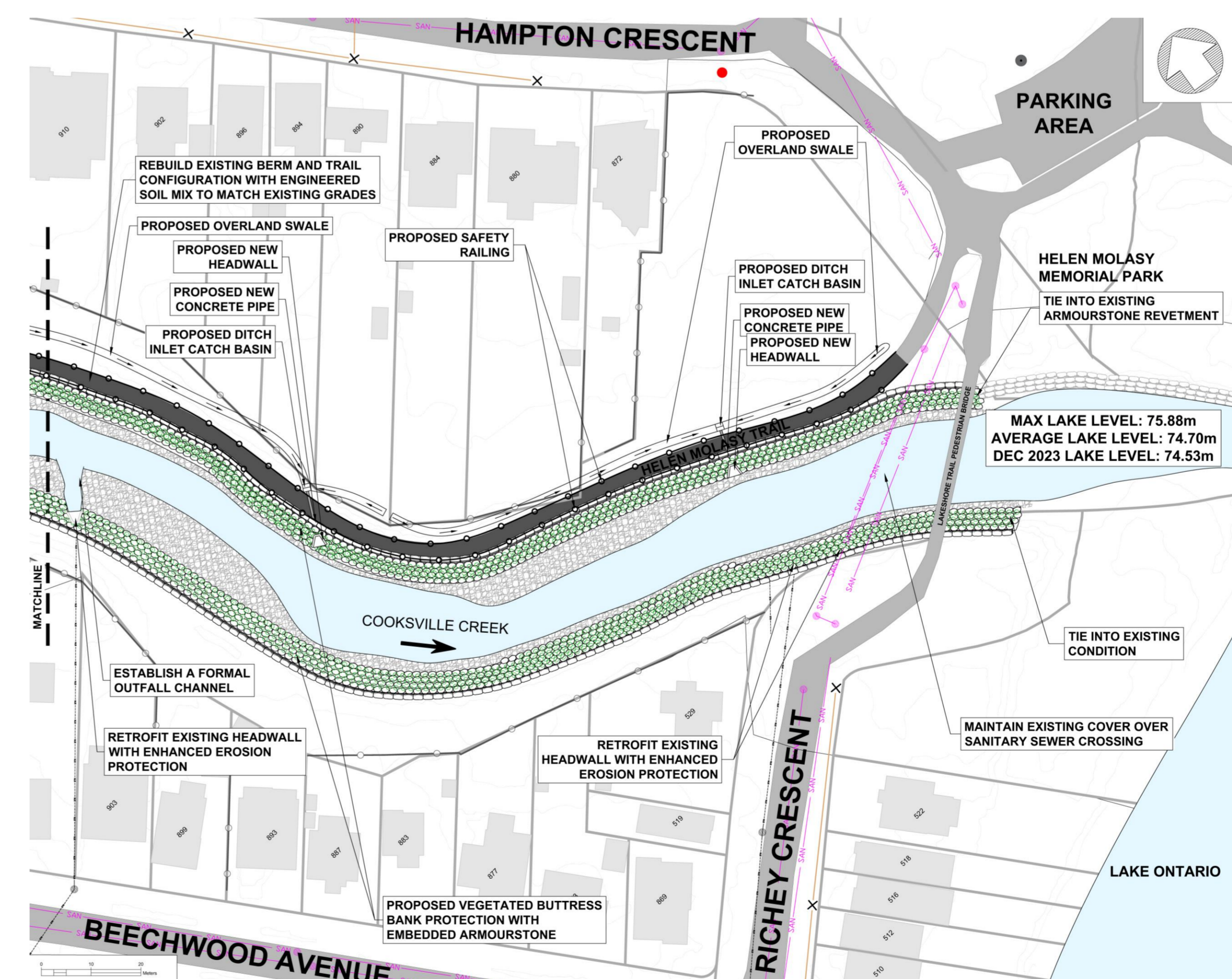
- Continuous bank restoration to provide comprehensive erosion protection within the entire study area, through the use of vegetated buttress bank protection treatment with embedded armourstone retaining walls

## Drainage Alternative – Partial Drainage Consolidation

- This alternative would consist of the consolidation of drainage infrastructure within the study area,
- Reducing the catchbasin-outfall pairs on the East Side from eight (x8) to four (x4), through regrading of the drainage swales
- Full depth restoration of the berm with engineered materials



Alternative #3: Extended Channel Restoration Works & Partial Drainage Consolidation - Upstream Segment



Alternative #3: Extended Channel Restoration Works & Partial Drainage Consolidation – Downstream Segment

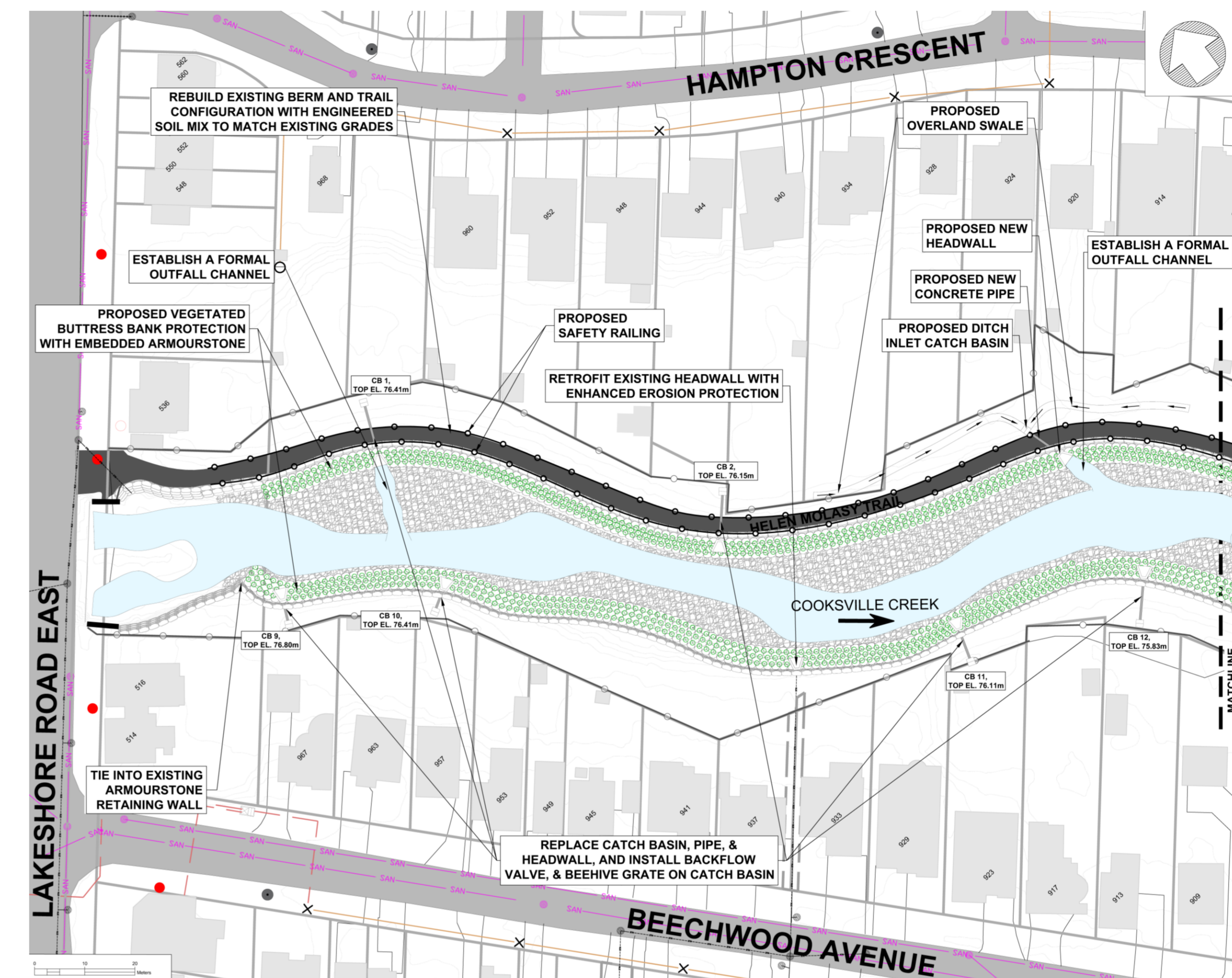
# Alternative 4 – Extended Channel Restoration Works & Hybrid Drainage Solution

## Creek Restoration Alternative – Extended Channel Restoration Works

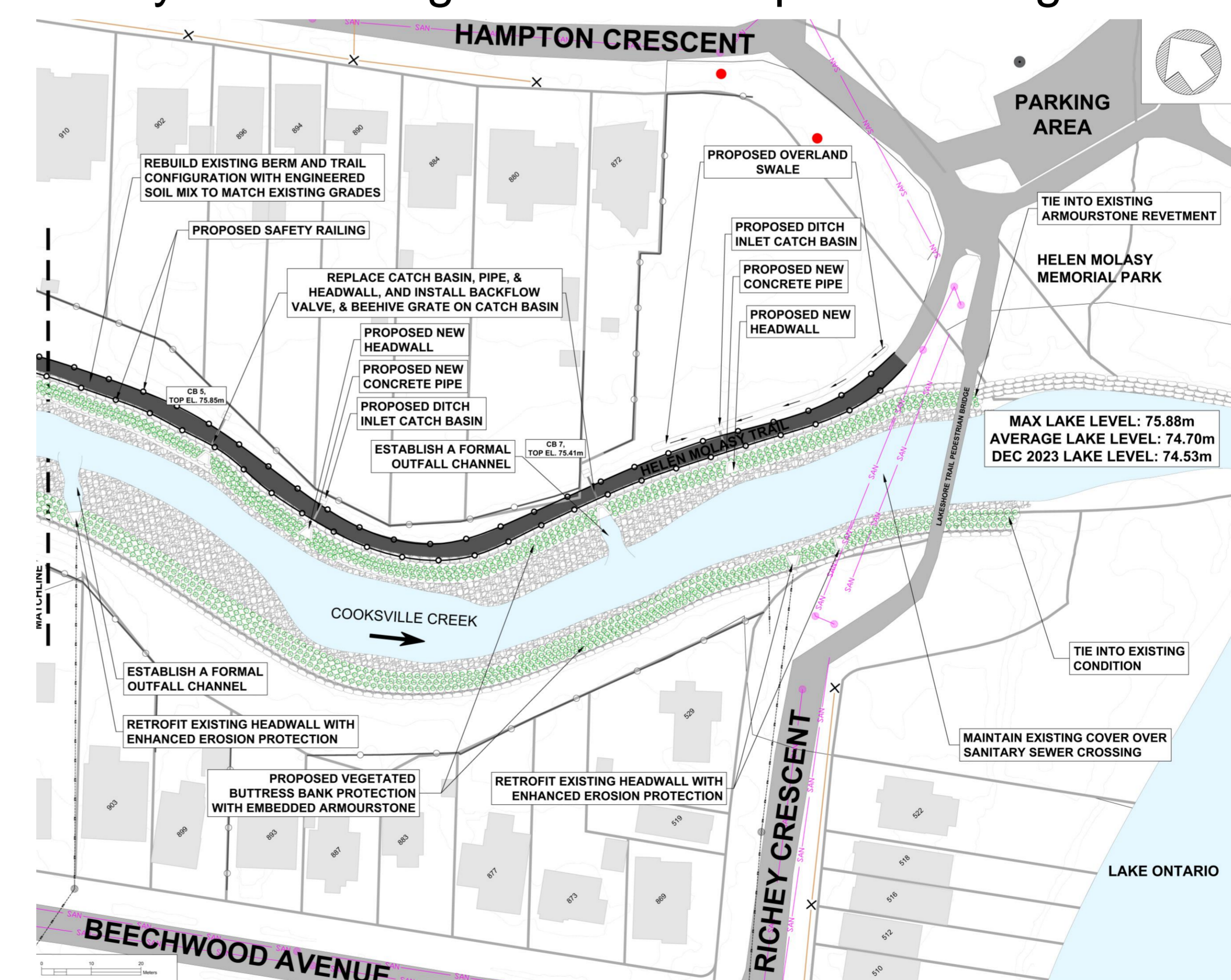
- Continuous bank restoration to provide comprehensive erosion protection within the entire study area, through the use of vegetated buttress bank protection treatment with embedded armourstone retaining walls

## Drainage Alternative – Hybrid Drainage Solution

- Combination of like-for-like replacement and partial consolidation, recognizing the unique conditions and constraints throughout the study area
- Drainage swales will be regraded and optimized, and pipes will be upsized where required
- Full depth restoration of the berm with engineered materials



Alternative #4: Extended Channel Restoration Works & Hybrid Drainage Solution – Upstream Segment



Alternative #4: Extended Channel Restoration Works & Hybrid Drainage Solution – Downstream Segment

# EVALUATION OF CREEK RESTORATION ALTERNATIVES



Cooksville Creek Environmental Assessment  
Lakeshore Road to Lake Ontario

Cooksville Creek - Lakeshore Road to Lake Ontario Evaluation Matrix - Channel Restoration					
Category	Evaluation Criteria	Indicator	Alternative 1 - Do Nothing	Alternative 2 - Local Channel Restoration Works	Alternative 3 - Extended Channel Restoration Works
Physical and Natural Criteria	Erosion	Rate of erosion, slope failures, and loss of tablelands	0	1	4
	Water Quality	Impact on water quality	1	2	3
	Aquatic Habitat	Impact on contributing aquatic habitat	1	2	3
	Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	3	2	1
	Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	3	2	1
	Creek/Lake Flooding	Impact on flooding caused by high water levels from Cooksville Creek and Lake Ontario	1	1	1
	<b>Criteria Subtotal</b>			<b>9.00</b>	<b>10.00</b>
<b>Weighted Score (maximum of 25 points)</b>			<b>9.38</b>	<b>10.42</b>	<b>13.54</b>
Social and Cultural Criteria	Public Safety	Impact on public safety	1	2	2
	Landowner Impacts	Impacts to adjacent private property	0	1	2
	Benefit to Community	Enjoyment of surrounding parkland, improvement to shared spaces	0	2	3
	Aesthetic Value	Impact on existing and proposed aesthetic value	2	3	3
	Archaeological Impacts	Impact on lands that have archaeological potentials	4	2	2
<b>Criteria Subtotal</b>			<b>7.00</b>	<b>10.00</b>	<b>12.00</b>
<b>Weighted Score (maximum of 25 points)</b>			<b>11.25</b>	<b>12.50</b>	<b>15.00</b>
Technical and Engineering Criteria	Impact on Existing Infrastructure	Protection of infrastructure (bridge, trail, and storm outfalls)	0	3	4
	Constructability	Easiness to access, move equipment and construct	4	3	2
	Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	0	3	4
	<b>Criteria Subtotal</b>			<b>4.00</b>	<b>9.00</b>
<b>Weighted Score (maximum of 25 points)</b>			<b>8.33</b>	<b>18.75</b>	<b>20.83</b>
Economic Criteria	Capital Costs	One time cost to City	4	3	2
	Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	0	3	4
	<b>Criteria Subtotal</b>			<b>4.00</b>	<b>6.00</b>
<b>Weighted Score (maximum of 25 points)</b>			<b>12.50</b>	<b>18.75</b>	<b>18.75</b>
<b>Total Score (maximum of 100 points)</b>			<b>41.46</b>	<b>60.42</b>	<b>68.13</b>

Highest Score = Preferred Alternative



# EVALUATION OF DRAINAGE ALTERNATIVES



Cooksville Creek Environmental Assessment  
Lakeshore Road to Lake Ontario

Cooksville Creek - Lakeshore Road to Lake Ontario Evaluation Matrix - Drainage						
Category	Evaluation Criteria	Indicator	Alternative 1 - Do Nothing	Alternative 2 - Like-for-Like Drainage Replacement	Alternative 3 - Partial Drainage Consolidation	Alternative 4 - Hybrid Drainage Solution
Physical and Natural Criteria	Erosion	Rate of erosion, slope failures, and loss of tablelands	0	1	2	2
	Water Quality	Impact on water quality	1	2	2	2
	Aquatic Habitat	Impact on contributing aquatic habitat	1	2	3	3
	Terrestrial Habitat	Impact on connectivity, diversity and quantity/quality of habitat	4	3	1	2
	Terrestrial Vegetation	Impact on existing riparian vegetation and mature trees	4	3	1	2
	Backyard Drainage	Impact on flooding caused by flow conveyance under berm	1	3	4	4
	<b>Criteria Subtotal</b>			<b>11.00</b>	<b>14.00</b>	<b>13.00</b>
<b>Weighted Score (maximum of 25 points)</b>			<b>11.46</b>	<b>14.58</b>	<b>13.54</b>	<b>15.63</b>
Social and Cultural Criteria	Public Safety	Impact on public safety	1	4	4	4
	Landowner Impacts	Impacts to adjacent private property	0	4	2	3
	Benefit to Community	Enjoyment of surrounding parkland, improvement to shared spaces	0	4	4	4
	Aesthetic Value	Impact on existing and proposed aesthetic value	2	3	3	3
	Archaeological Impacts	Impact on lands that have archaeological potentials	4	2	2	2
	<b>Criteria Subtotal</b>			<b>7.00</b>	<b>17.00</b>	<b>15.00</b>
<b>Weighted Score (maximum of 25 points)</b>			<b>13.75</b>	<b>21.25</b>	<b>18.75</b>	<b>20.00</b>
Technical and Engineering Criteria	Impact on Existing Infrastructure	Protection of infrastructure (bridge, trail, and storm outfalls)	0	3	4	4
	Constructability	Easiness to access, move equipment and construct	4	2	2	2
	Lifespan of Works	Expected lifespan / years of works before intervention needs to be repeated	0	2	3	3
	<b>Criteria Subtotal</b>			<b>4.00</b>	<b>7.00</b>	<b>9.00</b>
<b>Weighted Score (maximum of 25 points)</b>			<b>8.33</b>	<b>14.58</b>	<b>18.75</b>	<b>18.75</b>
Economic Criteria	Capital Costs	One time cost to City	4	3	2	2
	Operations & Maintenance Costs	Requirement for regular, irregular or no maintenance activities and ensure effectiveness of implemented measures	0	2	3	3
	<b>Criteria Subtotal</b>			<b>4.00</b>	<b>5.00</b>	<b>5.00</b>
<b>Weighted Score (maximum of 25 points)</b>			<b>12.50</b>	<b>15.63</b>	<b>15.63</b>	<b>15.63</b>
<b>Total Score (maximum of 100 points)</b>			<b>46.04</b>	<b>66.04</b>	<b>66.67</b>	<b>70.00</b>

Highest Score = Preferred Alternative

# EXAMPLES OF RESTORATION SOLUTIONS



Example of Vegetated Butress with Embedded Armourstone Retaining Wall



Example of Asphalt Trail Restoration with Safety Fencing



Example of Headwall Replacement with Enhanced Erosion Protection



Example of Vegetated Drainage Swale

# NEXT STEPS

## PUBLIC CONSULTATION – Fall 2024

- PIC commenting window is open for 30 day period. Comment submission deadline is November 26<sup>th</sup>, 2024
- Receive PIC feedback, incorporate input and update results
- Compile and review feedback. Confirm or adapt preliminary preferred alternatives.

## SUBMIT EA PROJECT FILE – Winter/Spring 2025

- EA Project file posted for 30 day review period.

## DETAILED DESIGN & IMPLEMENTATION

- Detailed design and permitting to proceed in 2025/2026.
- 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 COOKSVILLE  
CREEK SOUTH OF LAKESHORE ROAD CLASS  
ENVIRONMENTAL ASSESSMENT**