Municipality of Brockton
Class EA for Saugeen River Bank Erosion - Walkerton

Public Information Meeting

February 1, 2023

Brockton
Come home to community

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Agenda

- Background
- Erosion 101
- Sub-consultant Reports
- Class EA Process
- Class EA Alternatives
- Cost Estimates
- Recommended Approach
- Next Steps

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Project Study Area

Site photos (Nov. 2022)

Site photos (Nov. 2022)

Site photos (Nov. 2022)

Background

- Phase 1 of Class EA Initiated — June 2020
  - Mailed to Adjacent Properties and published in Walkerton Herald Times for two consecutive weeks
  - Letters sent to Agencies and Indigenous Communities
  - SVCA Provided copy of 1987 Geotech Report — May 2020
- Phase 2 of Class EA
  - Complete Topographic Survey — April 2021
  - Golder retained to update 1987 Report — June 2021
  - Class EA Alternatives Identified — June 2021
  - Cost Estimates Developed — March 2022
  - Fluvial Geomorphology Study — November 22
  - Council Selects Preliminary Preferred — Jan. 2023

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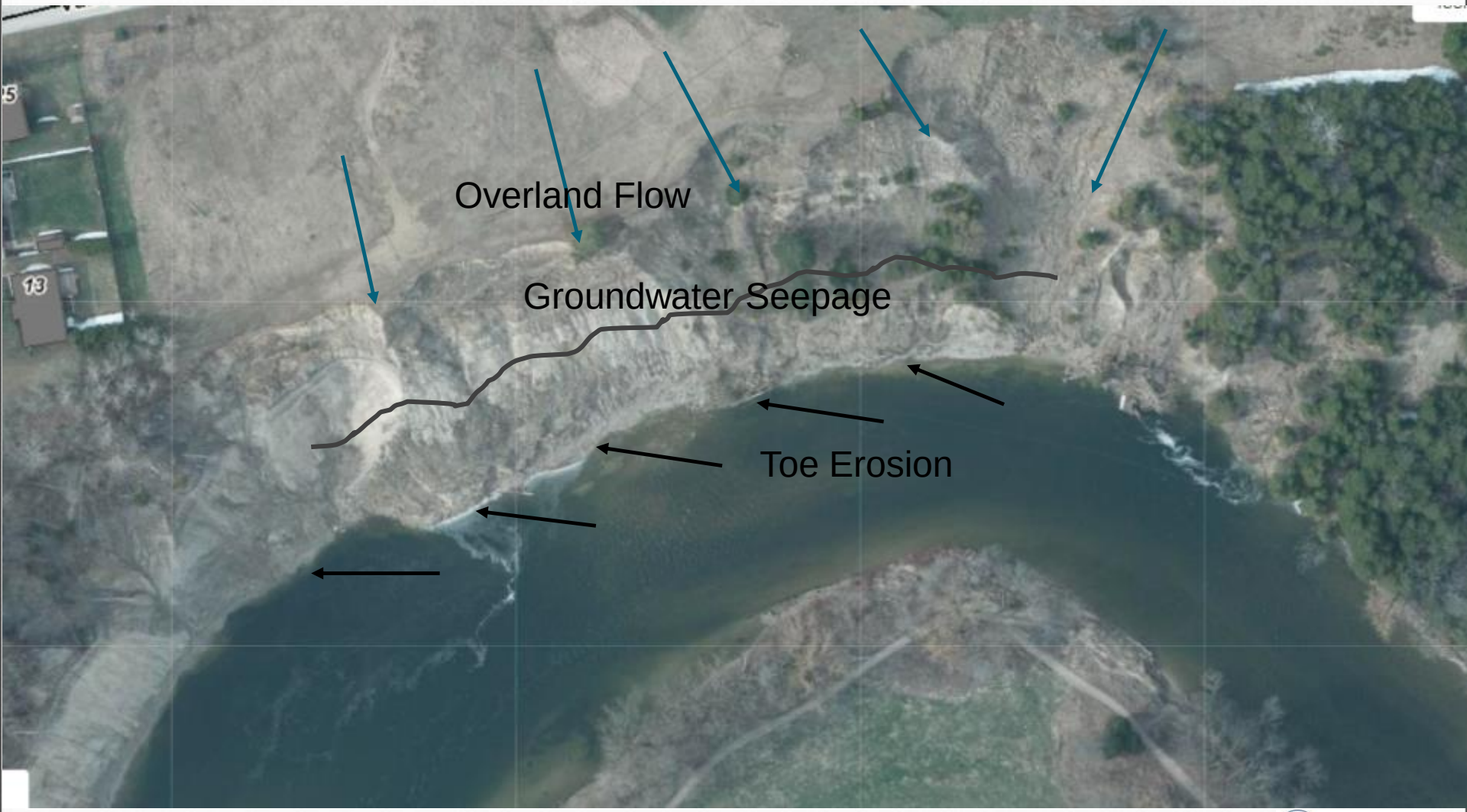
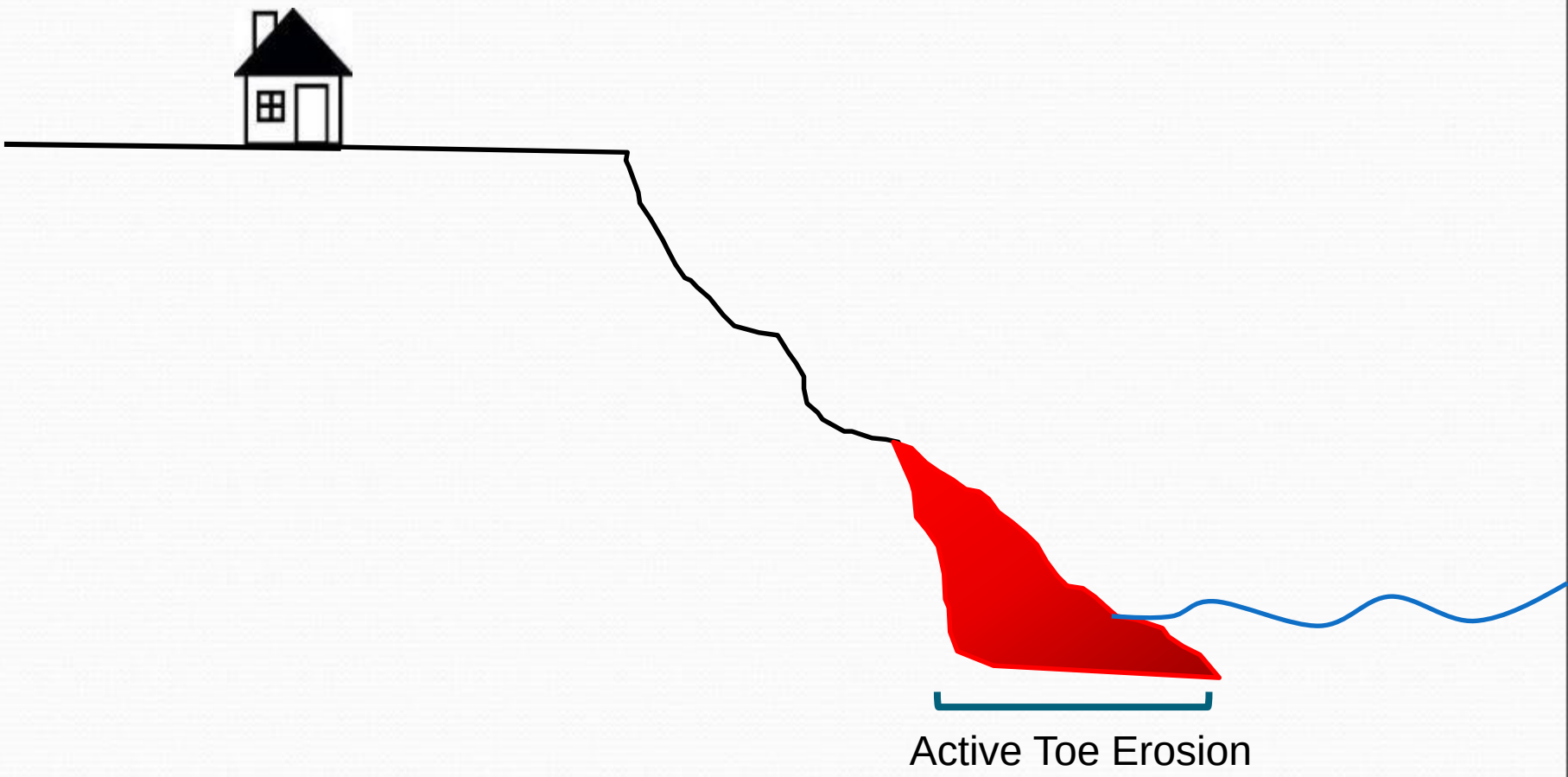
Erosive Forces



Erosion progression



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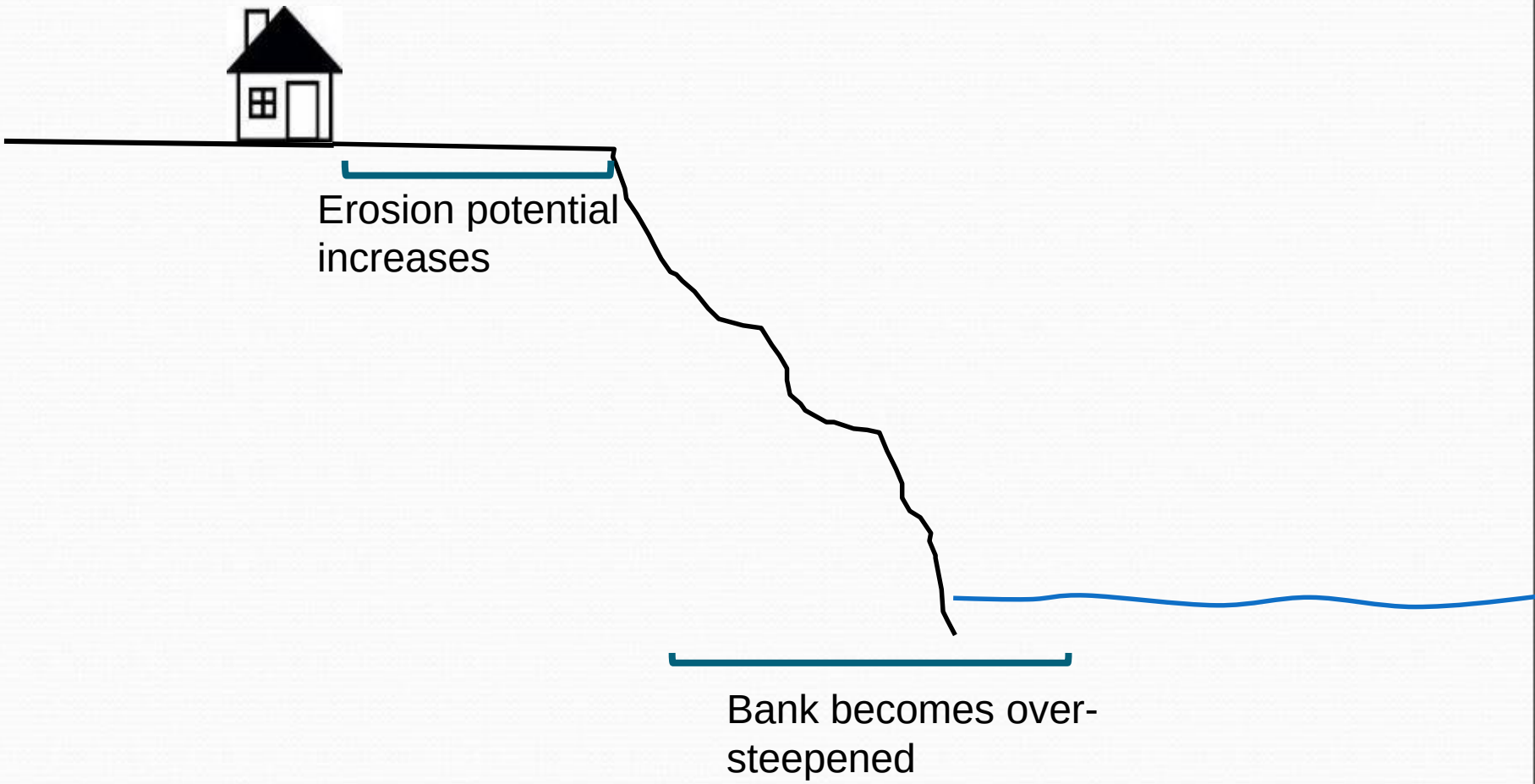
Bank is over-steepened



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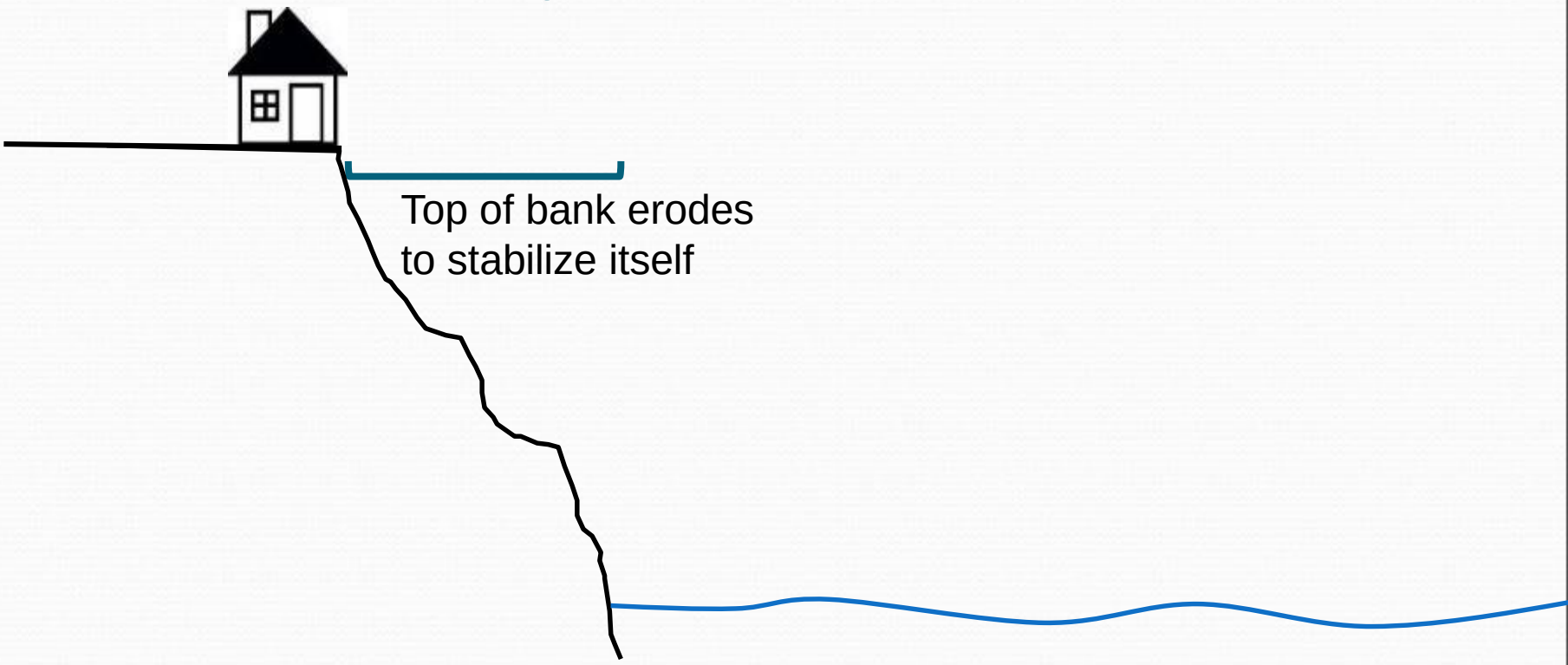
Top of bank fails



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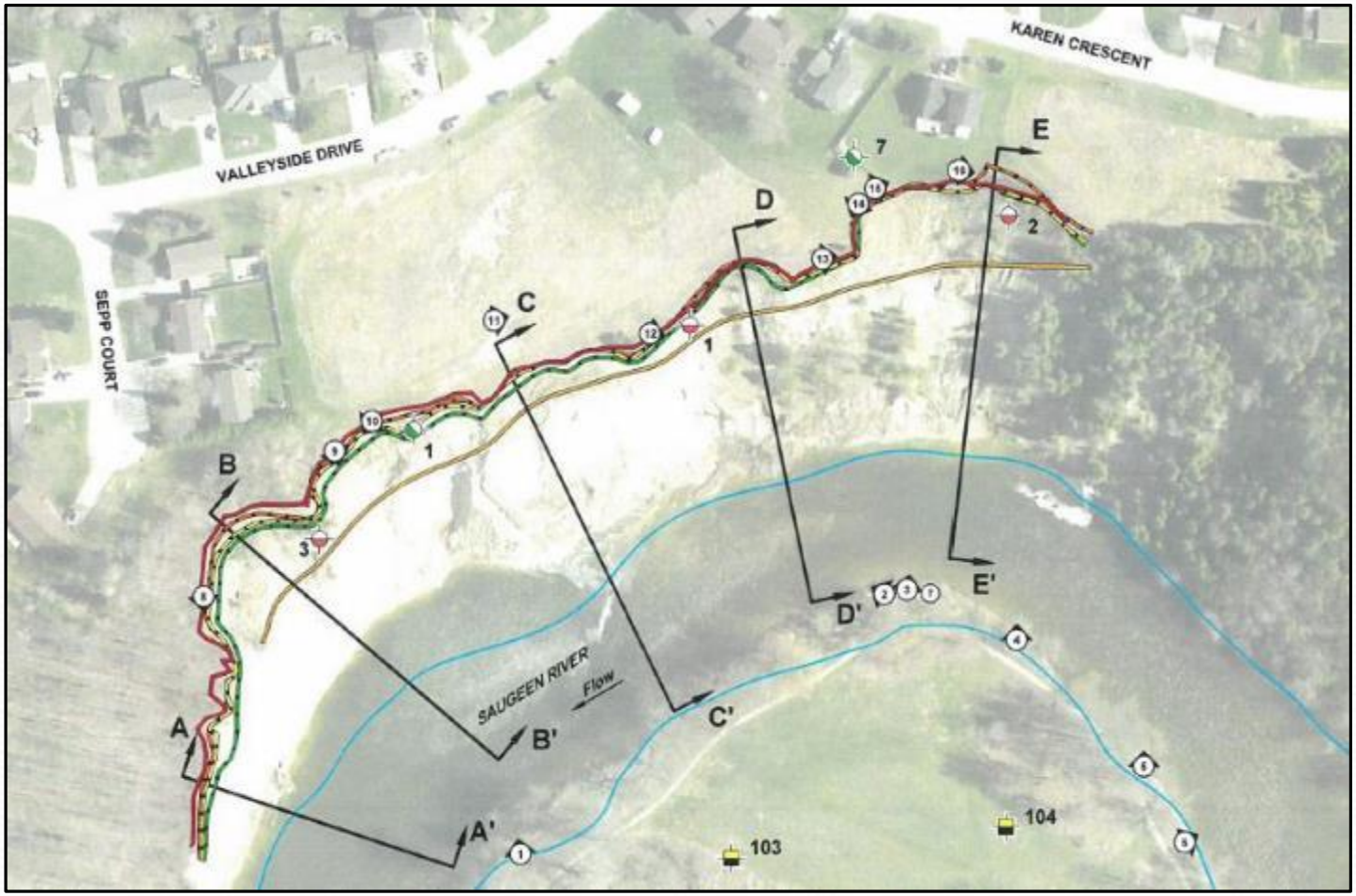
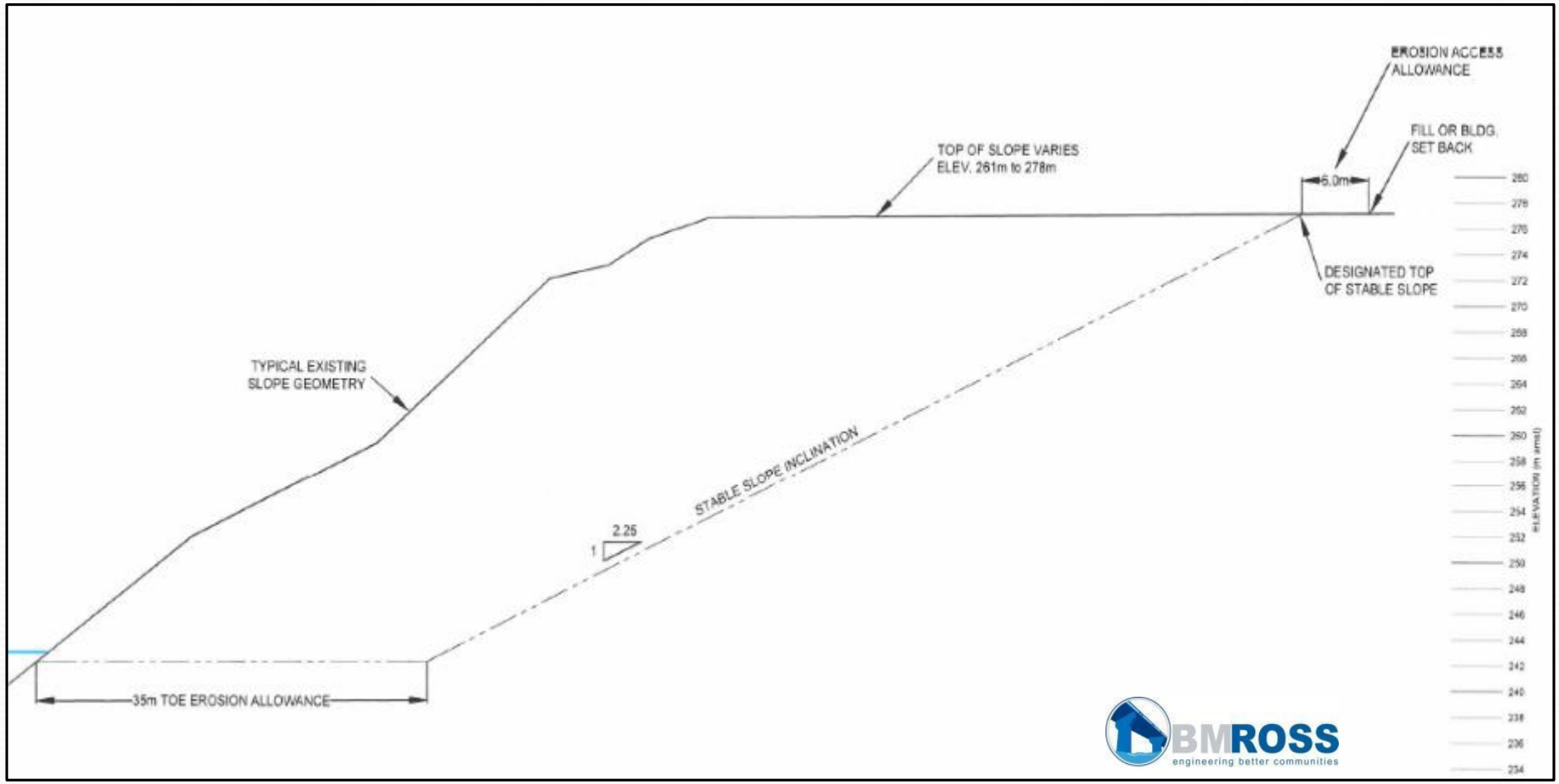
Erosion Recession Rate

- Based on historical reports and a review of aerial photos from 1970's to current – rate of 0.35m/year identified



Long term erosion hazard limit

- Using the MNR slope stability guidelines – toe erosion allowance + stable slope + erosion access allowance



100 year recession limit

Golder Associates Report

- 1987 Geotechnical Assessment completed by Golder at request of SVCA
- Report identified 4 Alternatives (including Doing Nothing
- Golder was retained in June 2021 to revisit the original report and update the recommendations
- Same 4 Alternatives were determined to be valid
  - Do Nothing
  - Provide Erosion Protection and Regrade Slope by Cutting
  - Realign River to the South and Regrade by Filling the Slope
  - Realign River to the South and Regrade by Filling and Cutting

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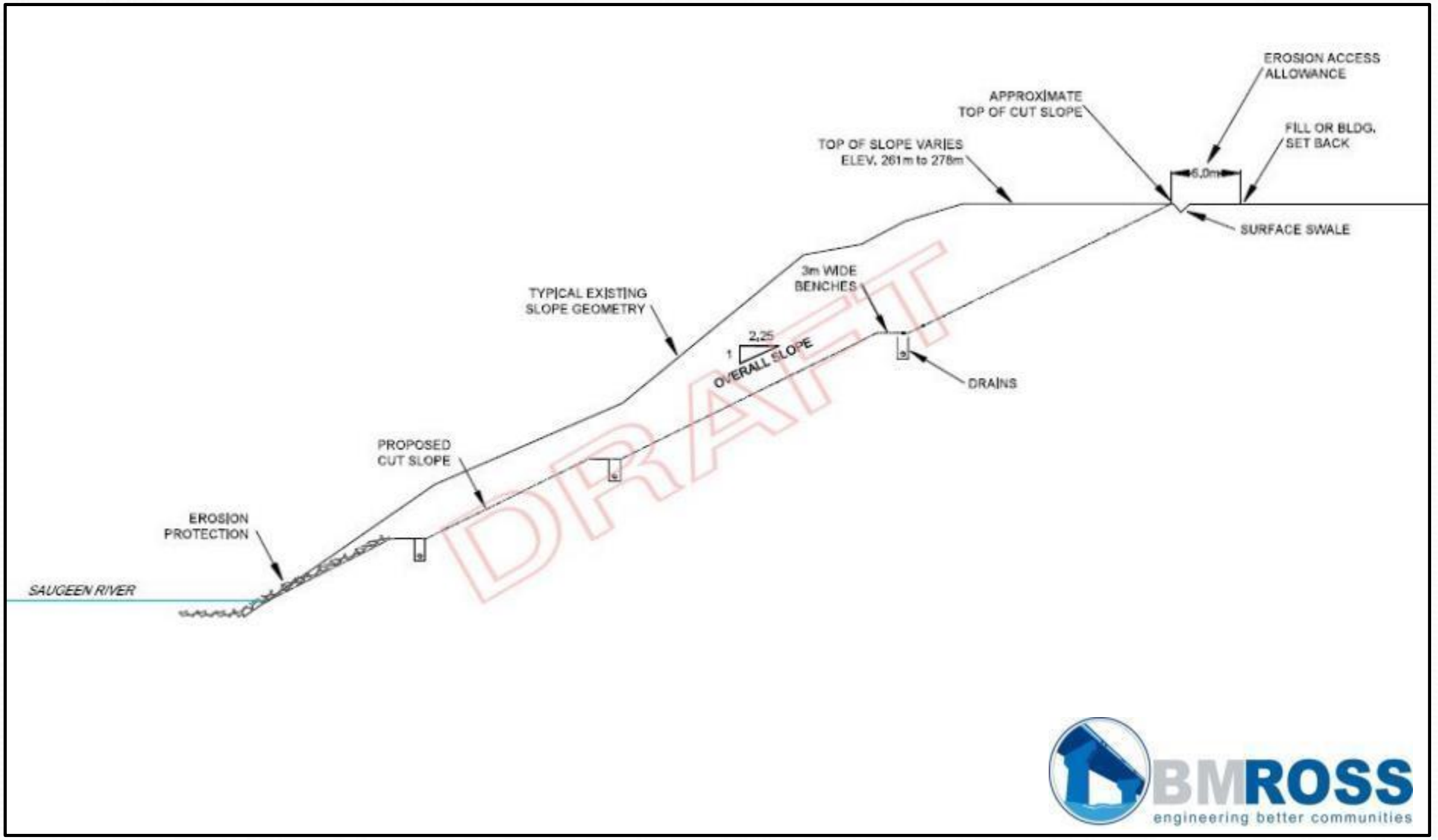
1) Erosion protection & regrade slope by cutting



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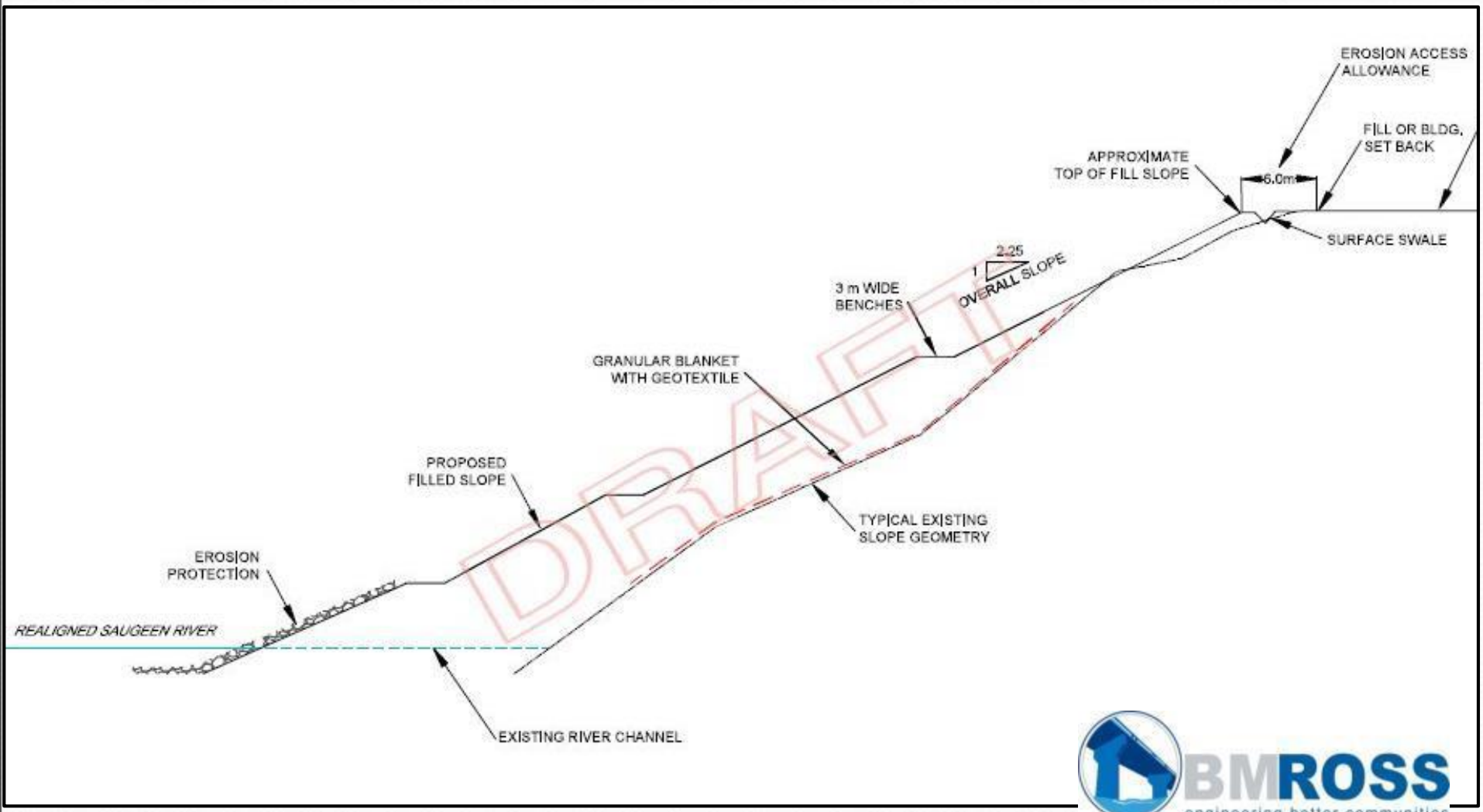
2) Realign river and regrade by filling slope



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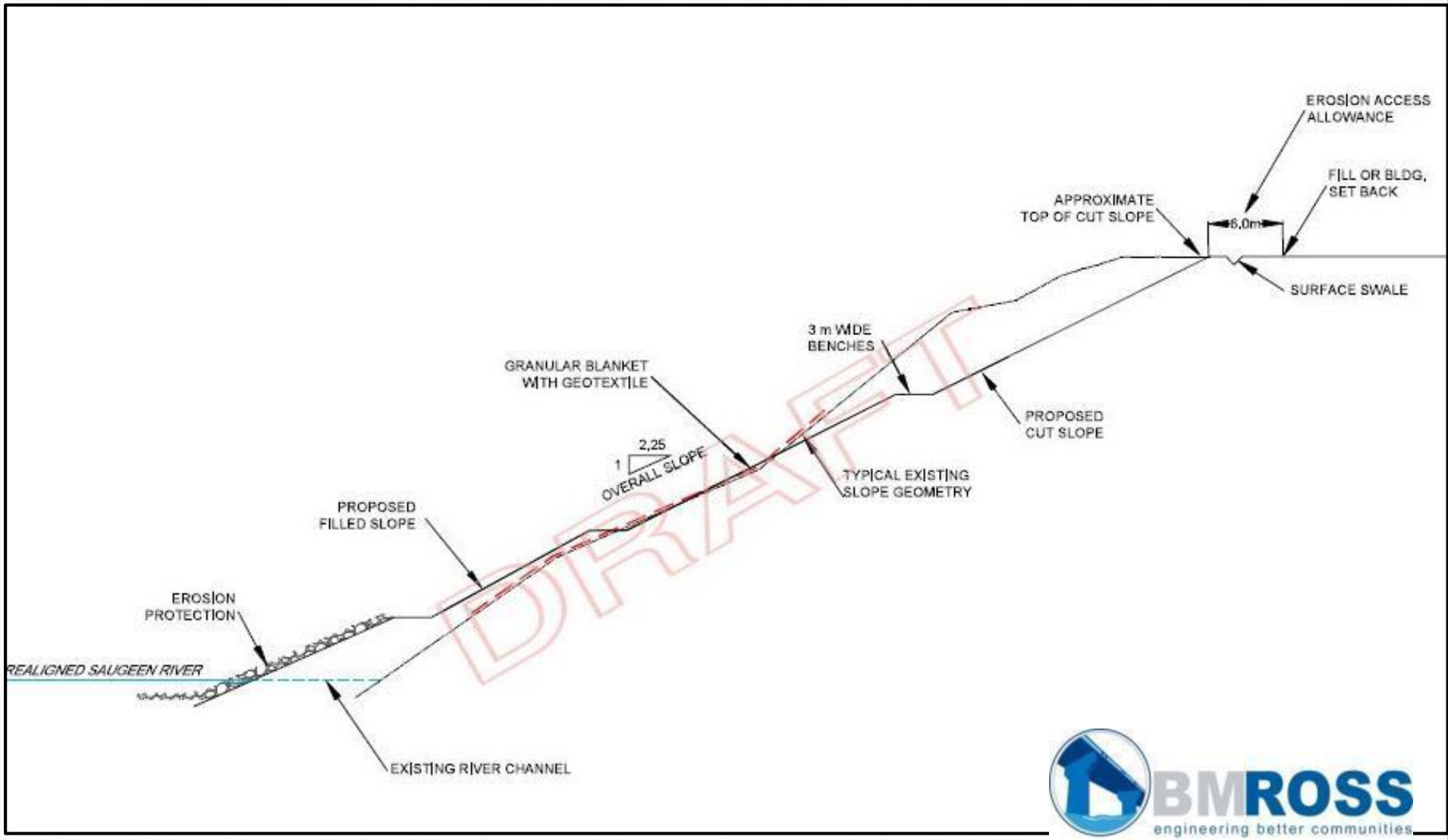
3) Realign river and regrade by filling & cutting



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Fluvial Geomorphology Assessment

- Water's Edge Fluvial Geomorphologists retained to examine the river system and provide input on selection of a preferred approach to address erosion
- The primary purpose of the assessment was to understand if protecting the toe of slope would negatively impact areas downstream
- The average 100 year erosion rate, across the entire site, is 50.3 m in 100 years or 0.503 m/year.
- Protecting the toe of slope is less impactful than allowing the slope area to continue eroding unabated (material deposited into the river from erosion could negatively impact downstream areas).

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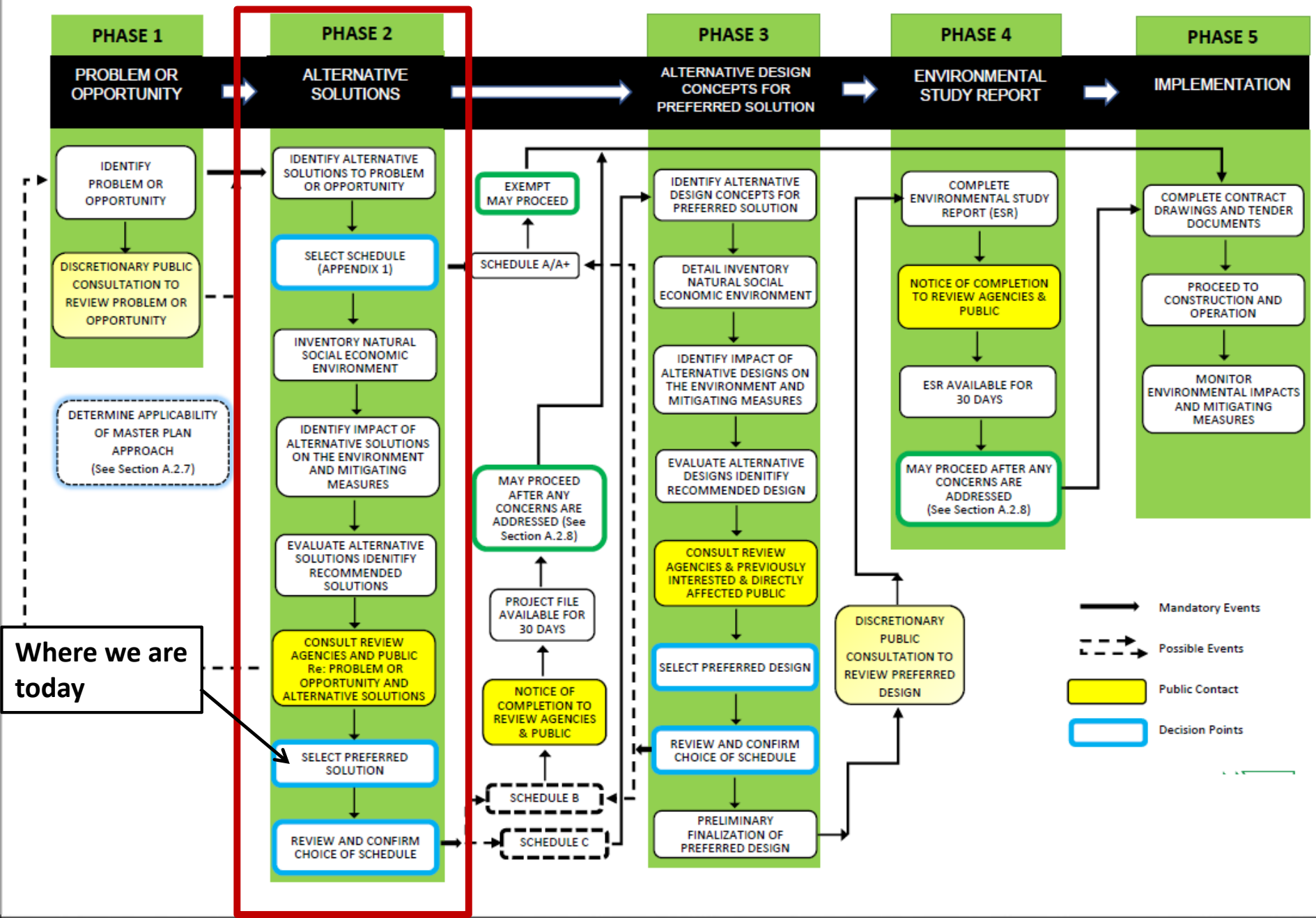
MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA



Class EA Alternatives

1) Provide erosion protection at toe and regrade slope by cutting
2) Realign river to south, protect toe, and regrade slope by filling
3) Realign river to south, protect toe, and regrade slope by filling and cutting
4) Protect toe of slope – leave bank as is
5) Do Nothing

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Cost Estimates

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Site Access

- Construction access is difficult due to steep bank and river
- Access from the top is very expensive and from the west would result in tree removal – route from the east is preferred

Construction Cost Estimates

Alternatives	Estimated Costs
1) Protect toe, regrade slope by cutting	$ 7,820,000 + HST
2) Realign river, protect toe, regrade slope by filling	>$ 7,820,000 + HST
3) Realign river, protect toe, regrade slope by filling and cutting	>$ 7,820,000 + HST
4) Protect toe of slope – leave bank	$ 3,100,000 + HST
5) Do Nothing	

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Preferred Approach

Alternative 4 – Protect Toe and Leave Slope As Is

- It addresses the identified problem statement;
- Is the most cost effective solution that addresses the problem;
- Minimizes impacts to adjacent properties;
- Results in fewer impacts to surface water and river hydraulics by maintaining the current location of the toe of slope.
- Results in the fewest impacts to aquatic and terrestrial species and their habitat, with any impacts being short-term in nature and mitigated through site specific measures.
- Is supported by results of the Fluvial Geomorphology review

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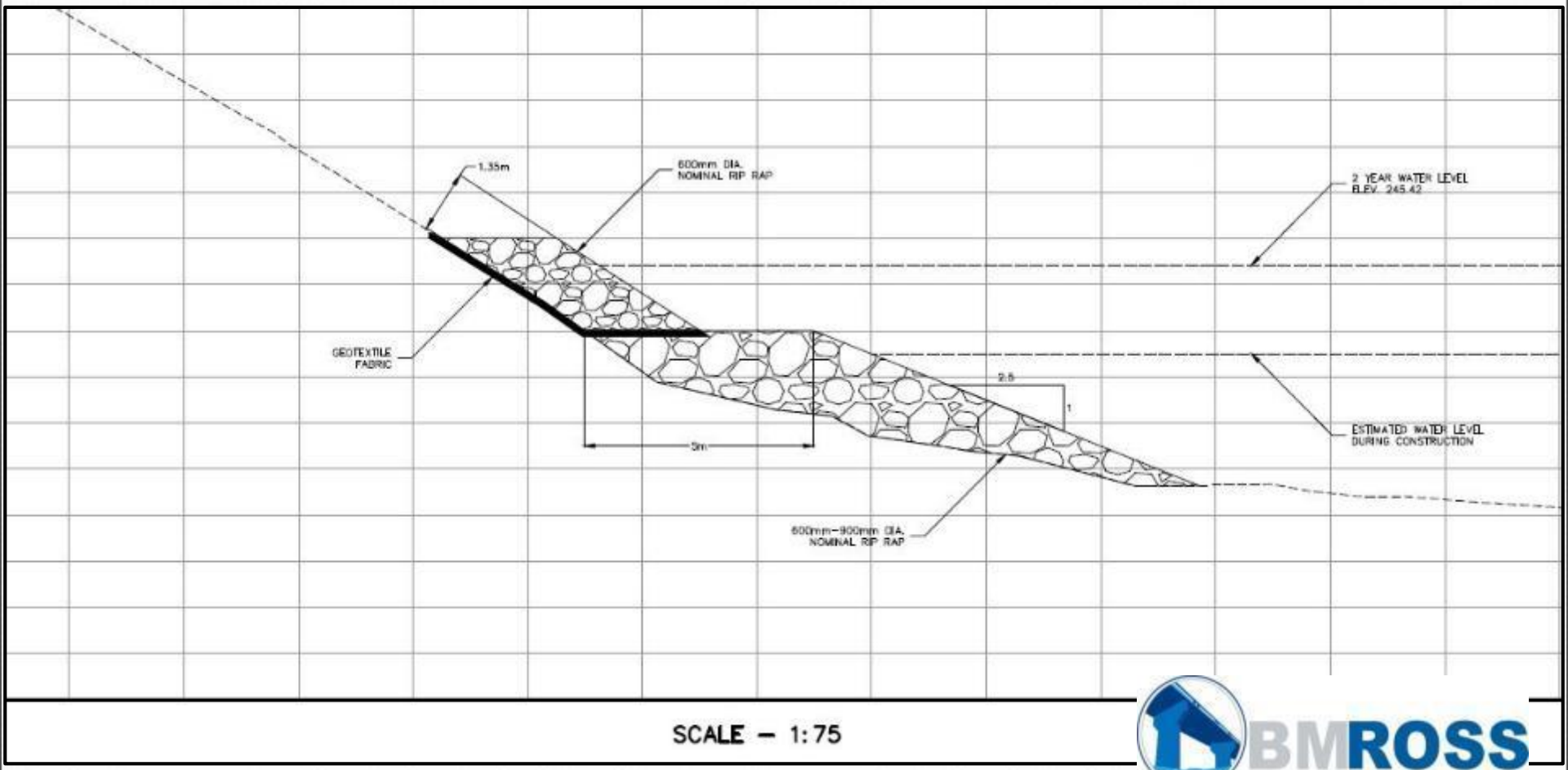
KARIN CRESCENT
VALLEYSIDE DRIVE
BOULTON STREET
DUKE STREET
CUNNINGHAM ROAD
Access Road
WILLIAM STREET NORTH
YONGE STREET NORTH
CATHERINE STREET
COLBORNE STREET NORTH
GENERAL CONCEPT - NOT TO SCALE

Cross-section of toe protection



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Approvals

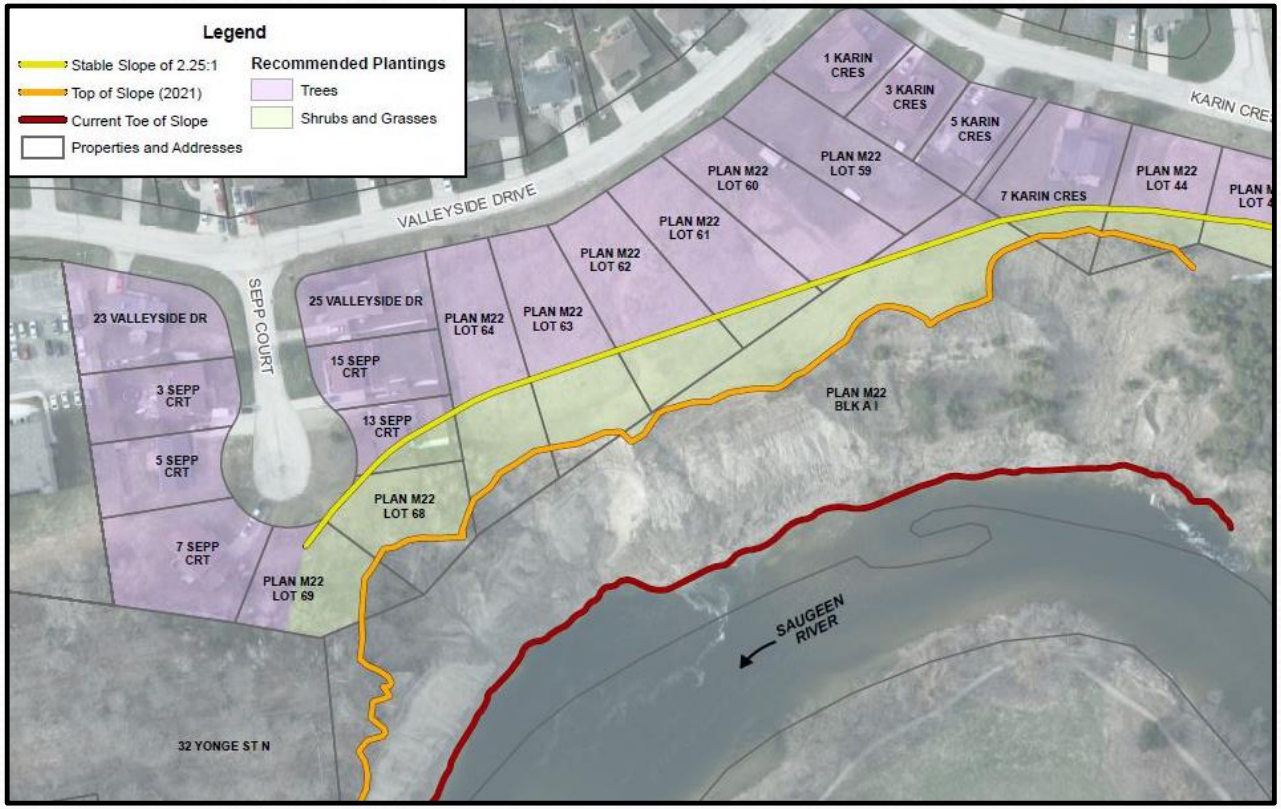
- Ministry of the Environment Conservation and Parks (MECP) – Permit may be required under ESA (Endanger Species Act)
- Saugeen Valley Conservation Authority (SVCA) –Conservation Authority Regulations
- Ministry of Natural Resources and Forestry (MNRF) – Permit Needed
- Fisheries and Oceans Canada (DFO) – Fish Habitat Impacts
  - Freshwater mussels
  - Alterations to fish habitat

Bank Swallow nesting habitat

What can residents do?

In addition to the erosion protection, residents can help by:

- Ensuring that lot drainage is directed away from the bank
- Continue to monitor the bank for signs of movement
- Plant trees/shrubs in areas shown on the map
- Don't dump yard waste or any debris, over the bank
- Don't drive or park vehicles near the top of bank



Next Steps

- Collect input from residents following public meeting
- Collect input from agencies, Indigenous communities and other project stakeholders as a result of update letters
- Feedback to be obtained from Geotechnical Engineer
- Council to confirm selection of Preferred Alternative
- Screening Report & Notice of Completion will be prepared
- Class EA process can then be finalized.
- Submit approval applications
- Complete Engineering Design and proceed to Tendering

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Questions?

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