

Wilket Creek Geomorphic and Habitat Systems Master Plan

WELCOME TO Public Workshop #2 – December 18, 2013

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Study Purpose and Objectives

Creating a long-term plan for the management of Wilket Creek

The Wilket Creek Geomorphic Systems and Habitat Master Plan Class Environmental Assessment study is being undertaken by City of Toronto and Toronto and Region Conservation Authority (TRCA).

The purpose of the study is to develop a long-term management plan (i.e. Master Plan) for Wilket Creek that takes account of natural processes, wildlife habitat and public amenities.

The key objective of the project is to protect infrastructure, including exposed manholes, sewers, pedestrian bridges and pathways, which is at risk due to erosion impacts from large storm events.



Why are we developing a Master Plan for Wilket Creek?

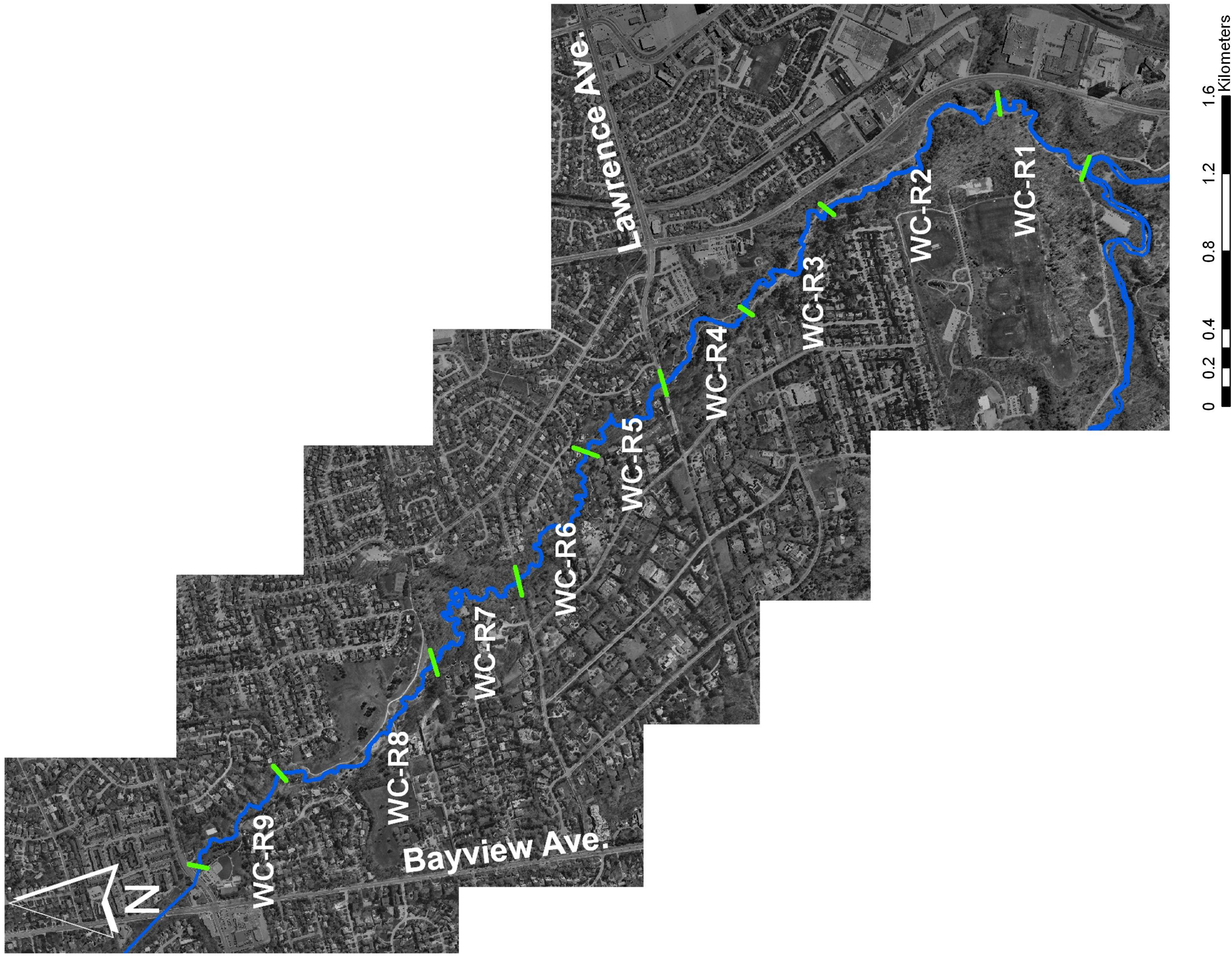
- Significant storm events from 2000-2008 have caused major damage to the channel and local infrastructure
- After the August 19th, 2005 event the City of Toronto identified 26 areas of concern relating to infrastructure including bridges, pathways, manholes and sanitary sewers
- The City requested that TRCA assist in developing and implementing an interim repair and stabilization program to address critical areas
- Following the interim repair efforts, additional damage occurred during subsequent storm events
- The ongoing erosion impacts and infrastructure damage confirms the need for the development of a longer term management plan that takes into account natural channel processes.

What will be the outcome?

The Master Plan will:

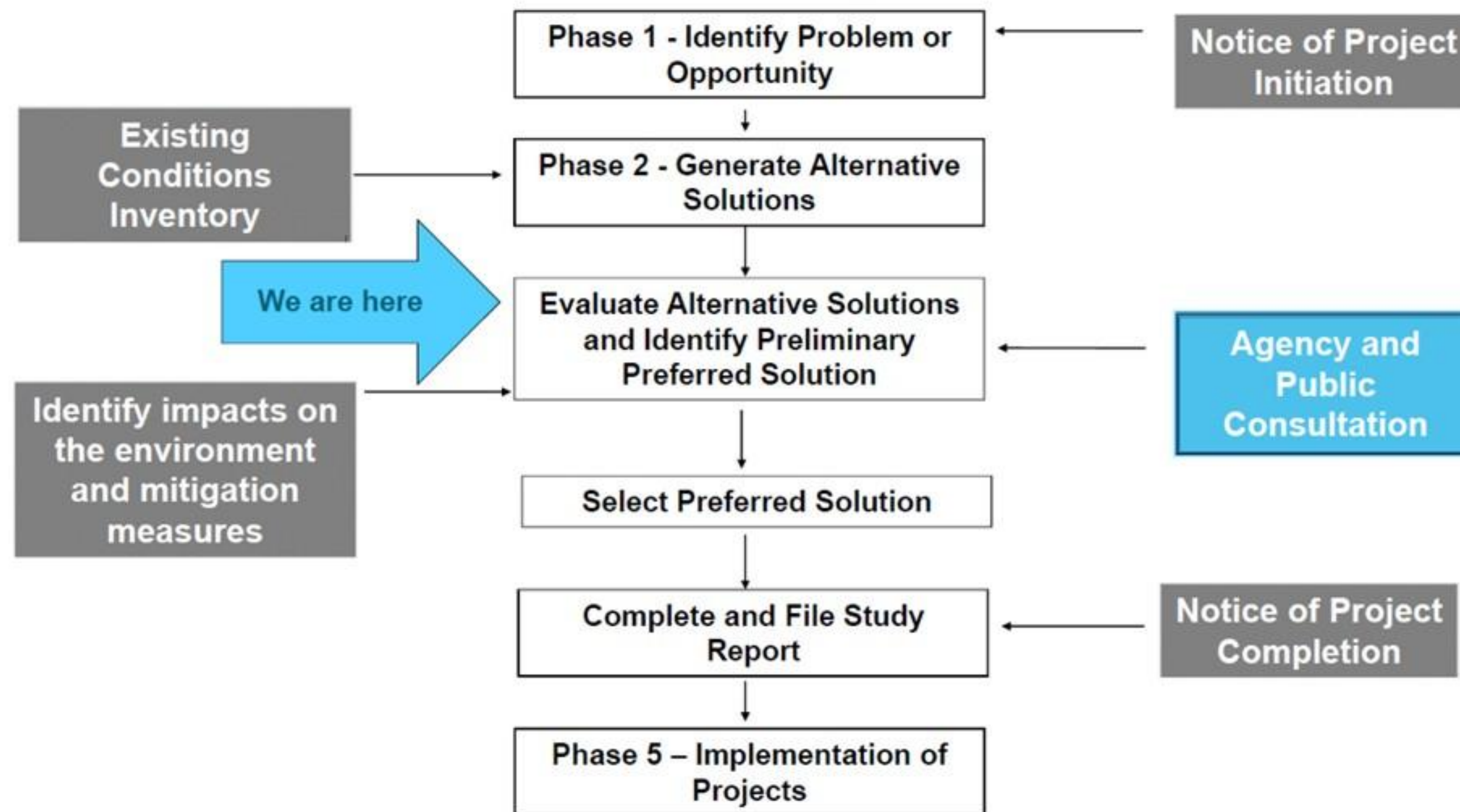
- Recommend projects to stabilize sections of Wilket Creek and protect infrastructure from future erosion impacts.
- Incorporate habitat considerations to improve riparian and wildlife habitat within the channel
- Prioritize projects (e.g. short-term, medium term, long-term)
- Identify mitigation measures to reduce impacts of recommended projects to the greatest extent possible

Wilket Creek – Key Map



Municipal Class Environmental Assessment

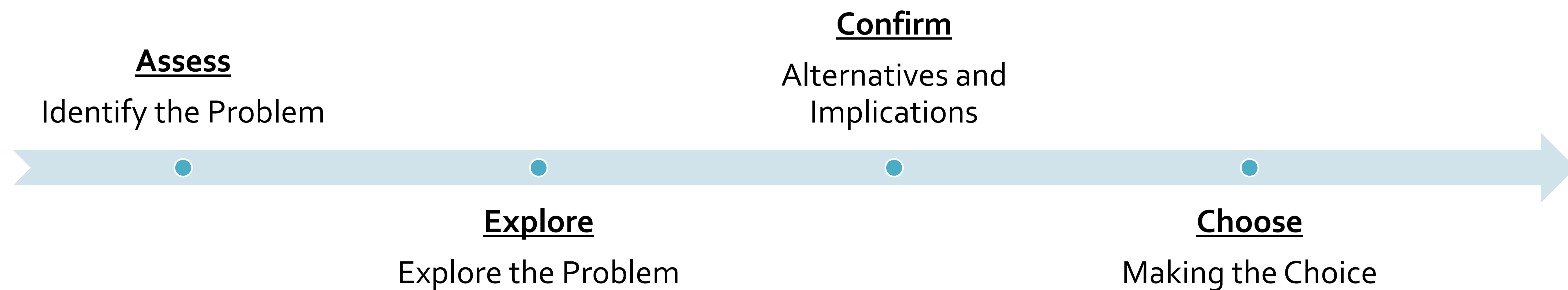
This study is following the *Master Planning* provisions of a Municipal Class Environmental Assessment



Following Adaptive Management Principles within the Class EA Process

This study is following a process founded in the principles of **Adaptive Environmental Management (AEM)**, as outlined in the document ***"The Adaptive Management of Stream Corridors in Ontario (2001)"***

This process has **Four Phases**:



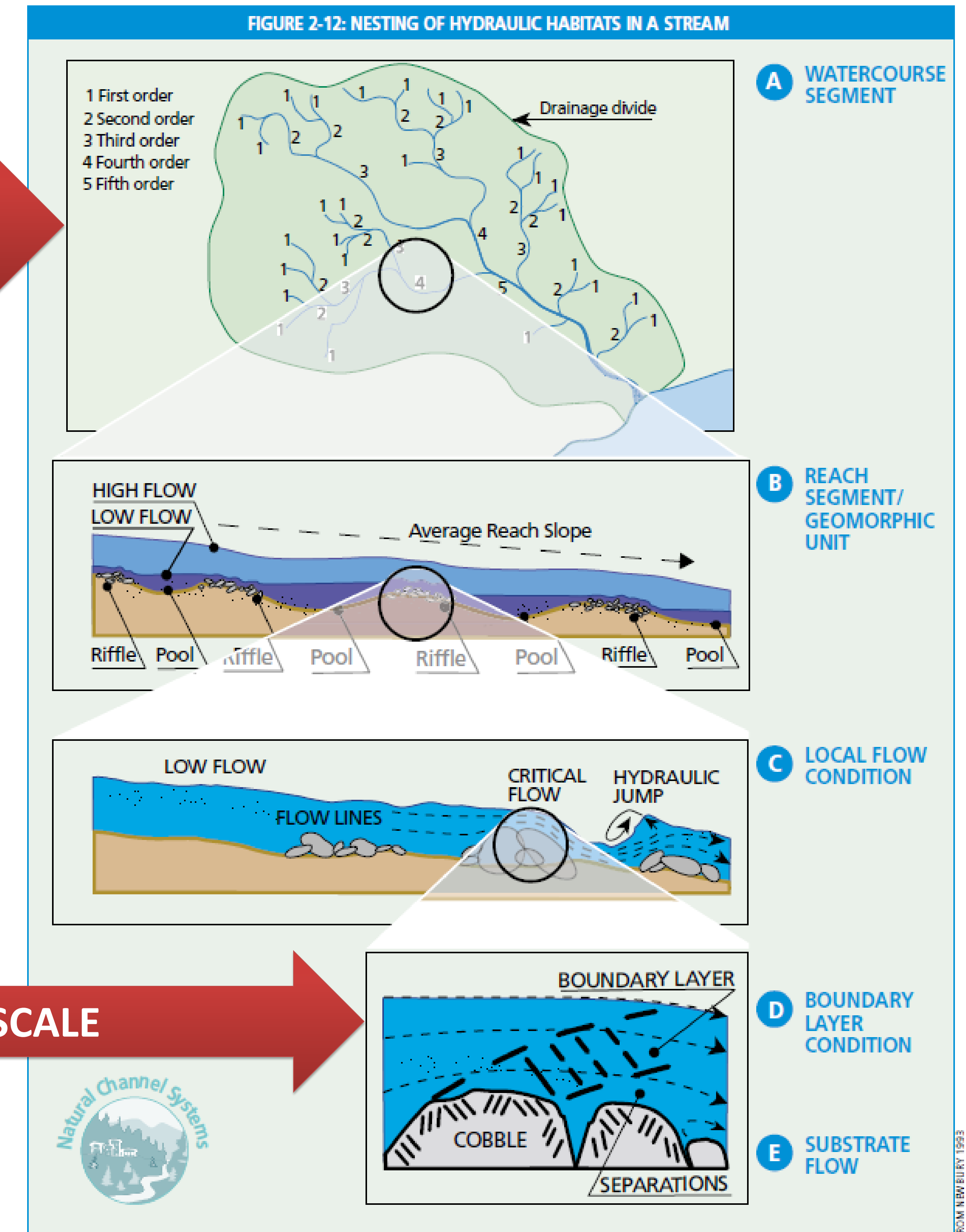
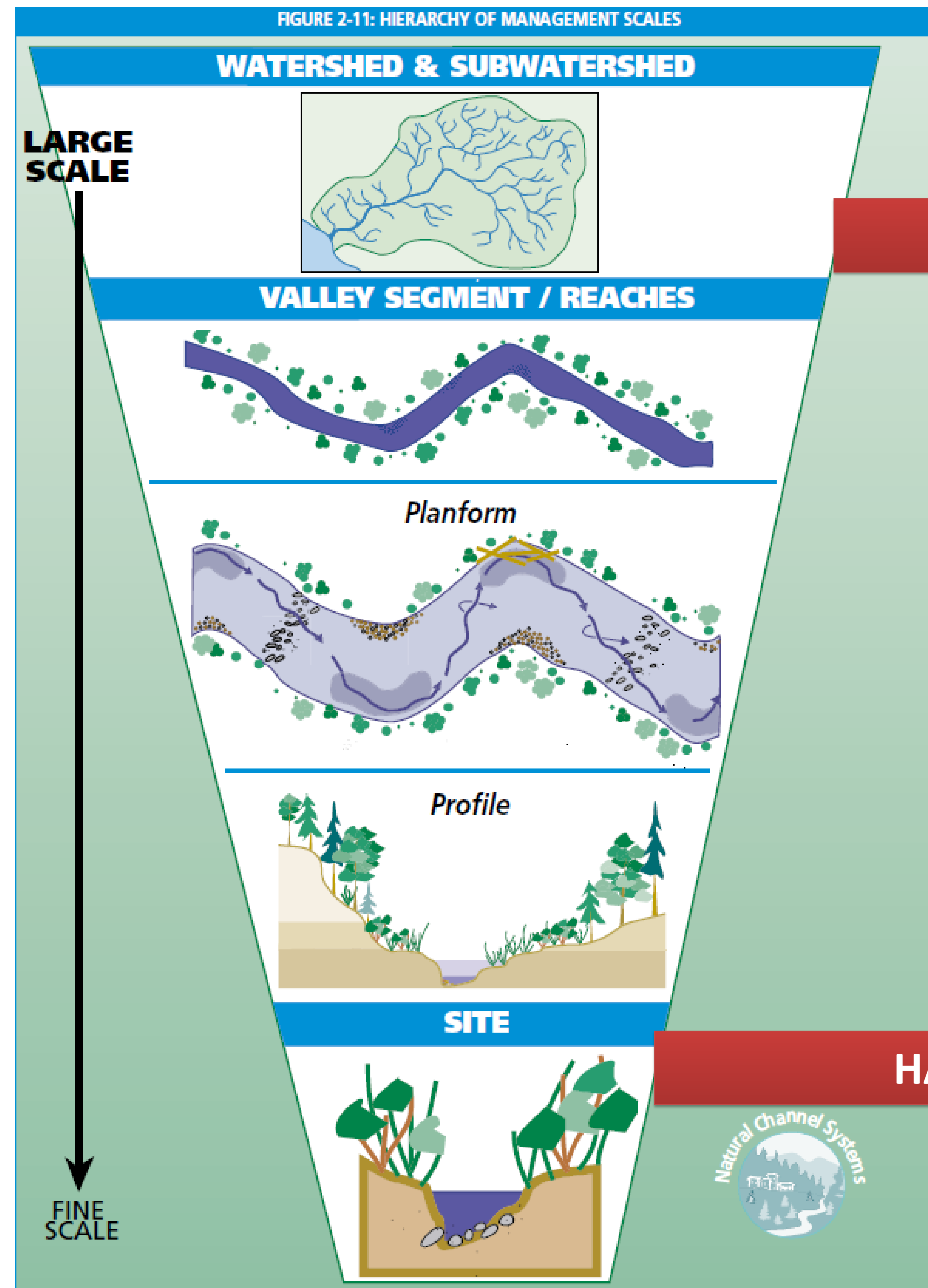
When making the choice of what to do, we can:

1. **Do Nothing** – monitor the situation
2. **Use Land-use Planning Tools** – land-use designations / zoning, protect the feature
3. **Design** – detailed analysis for planning and design
4. **Manage the existing situation** – best management practices, habitat restoration



Natural Channel Processes – Fluvial Geomorphology

Stream analyses must consider the *reach scale* (large) to the *habitat / aquatic organism scale* (fine)



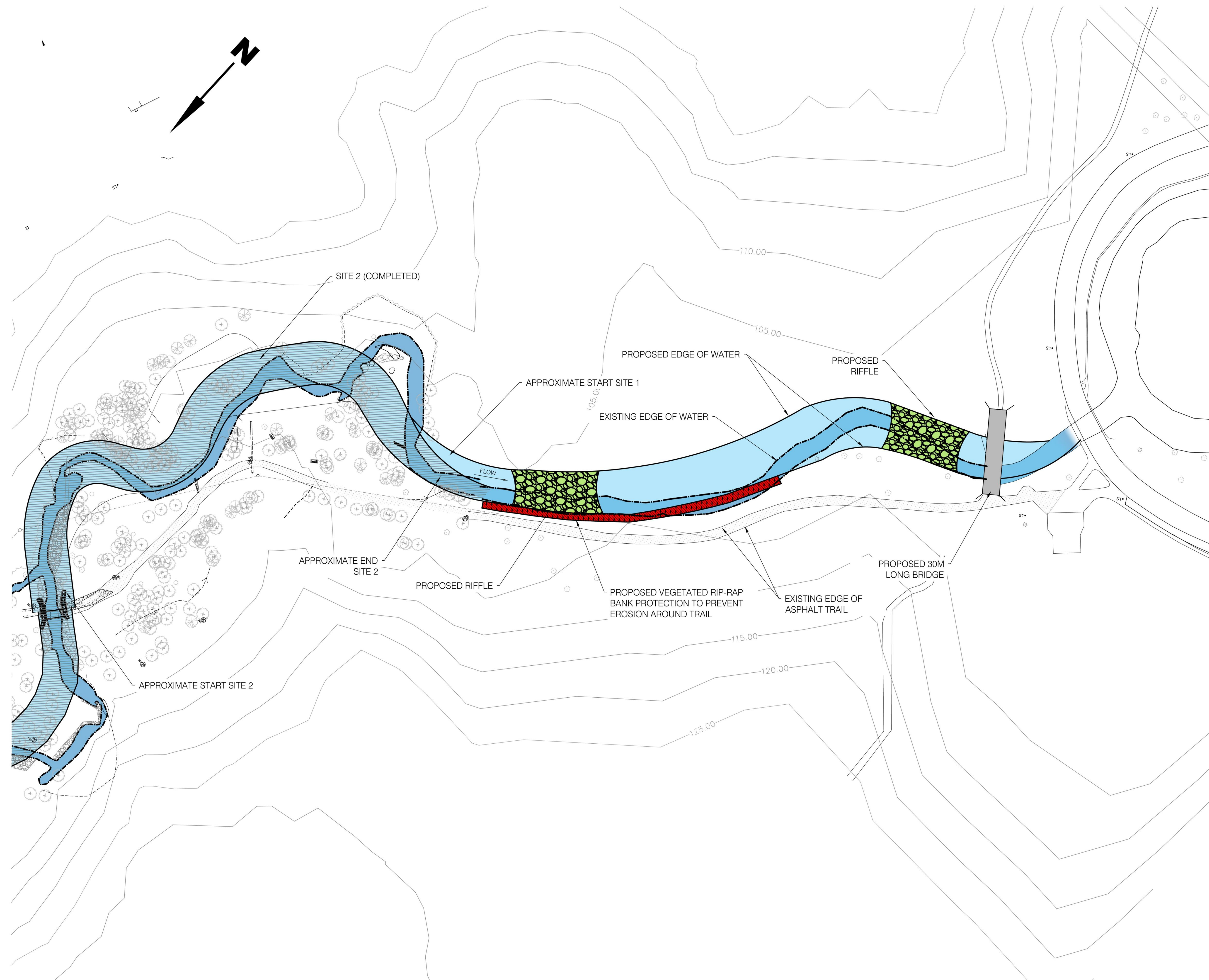
Wilket Creek Park

Conceptual Solutions



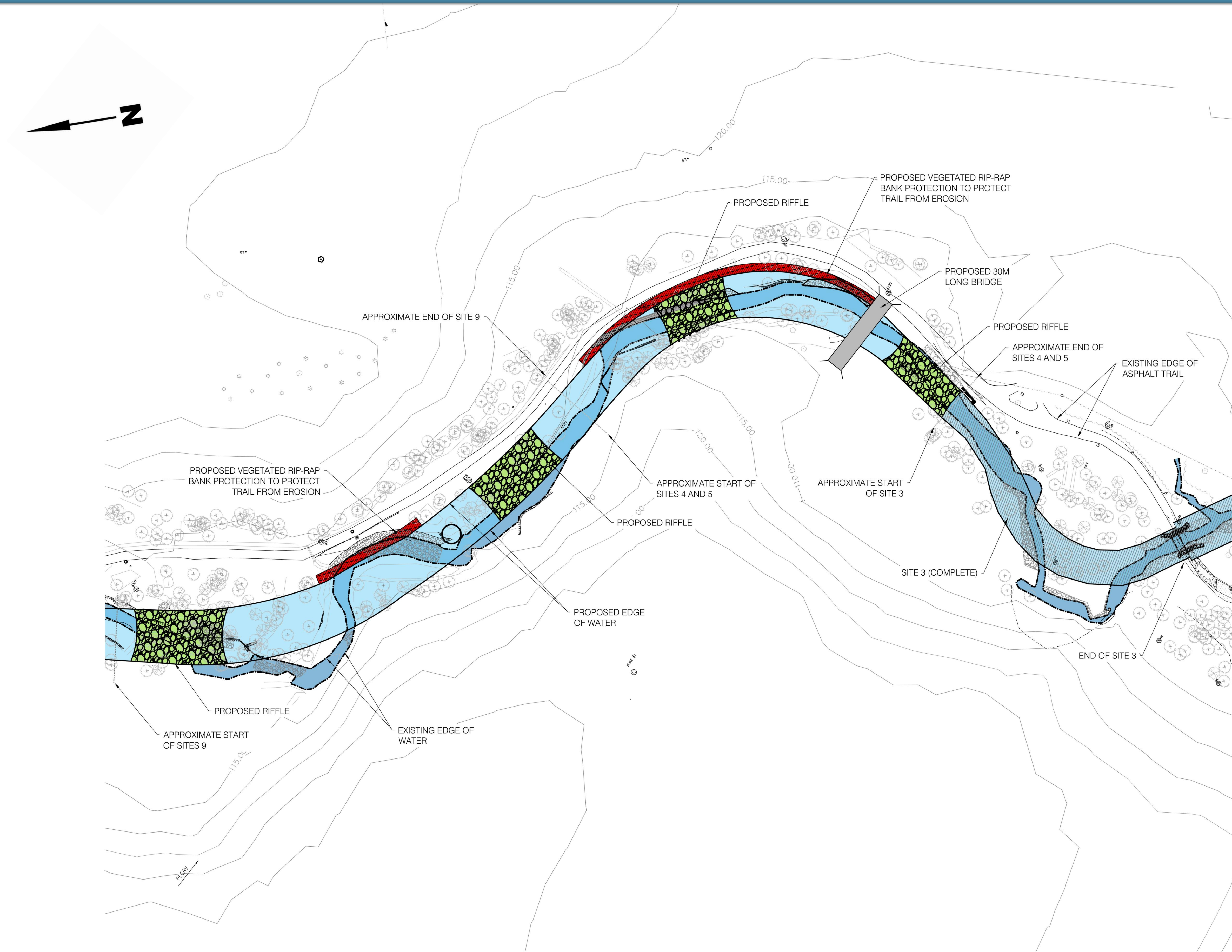
Wilket Creek Park

Proposed Solution Sites 1-2



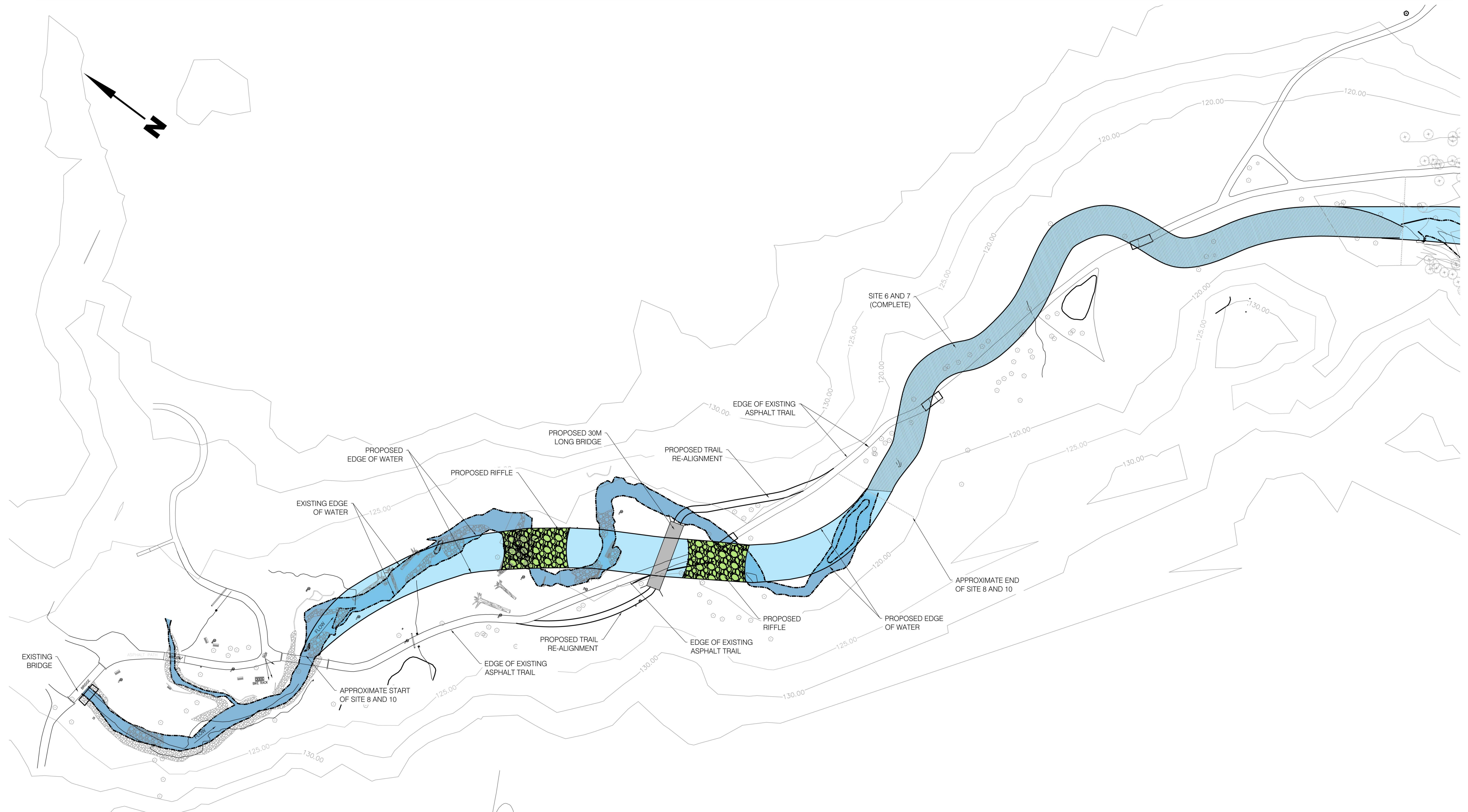
Wilket Creek Park

Proposed Solution Sites 3-9



Wilket Creek Park

Proposed Solution Sites 6-10



Wilket Creek Reach 5 - Problems and Opportunities

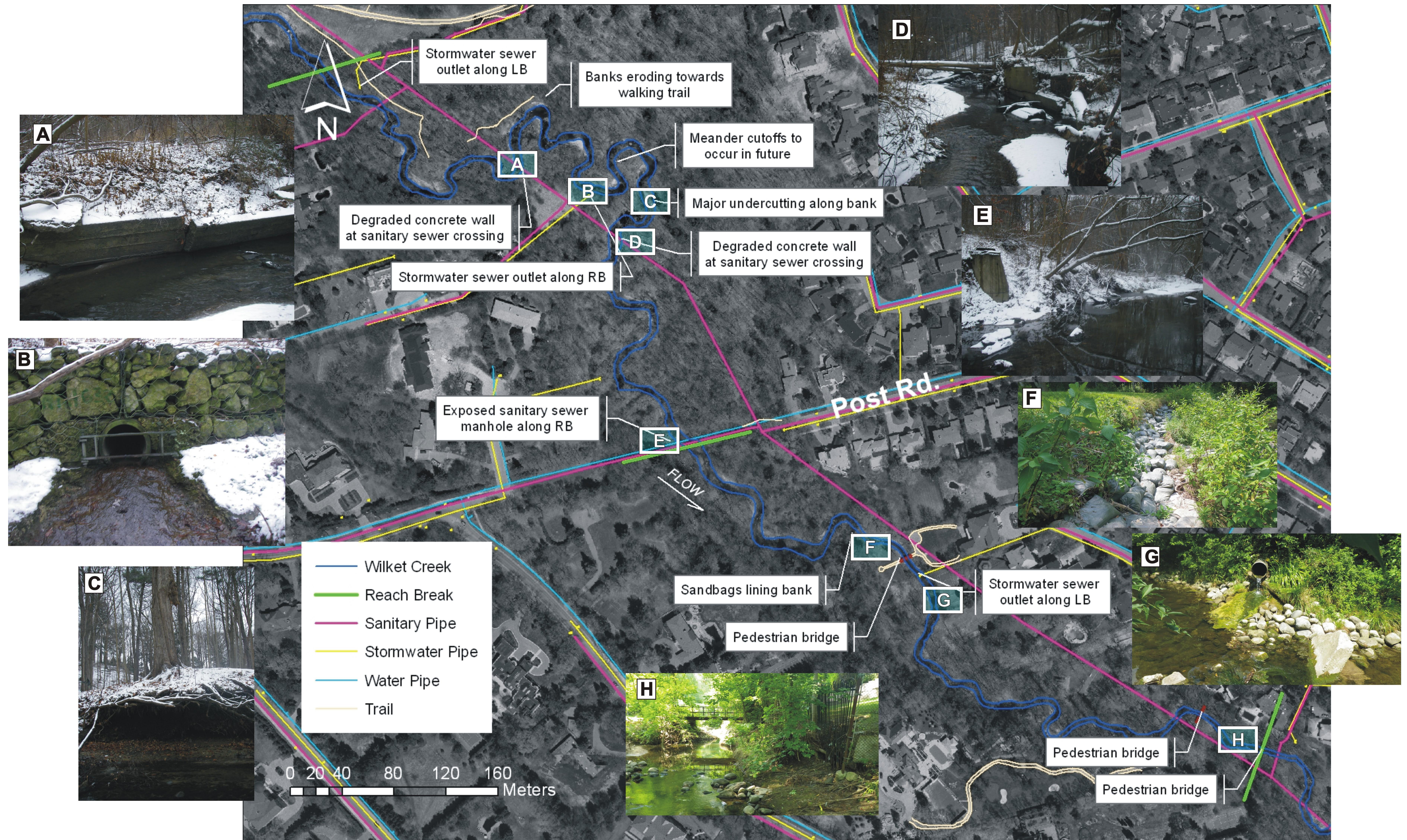


Wilket Creek Reach 5

Possible Solution



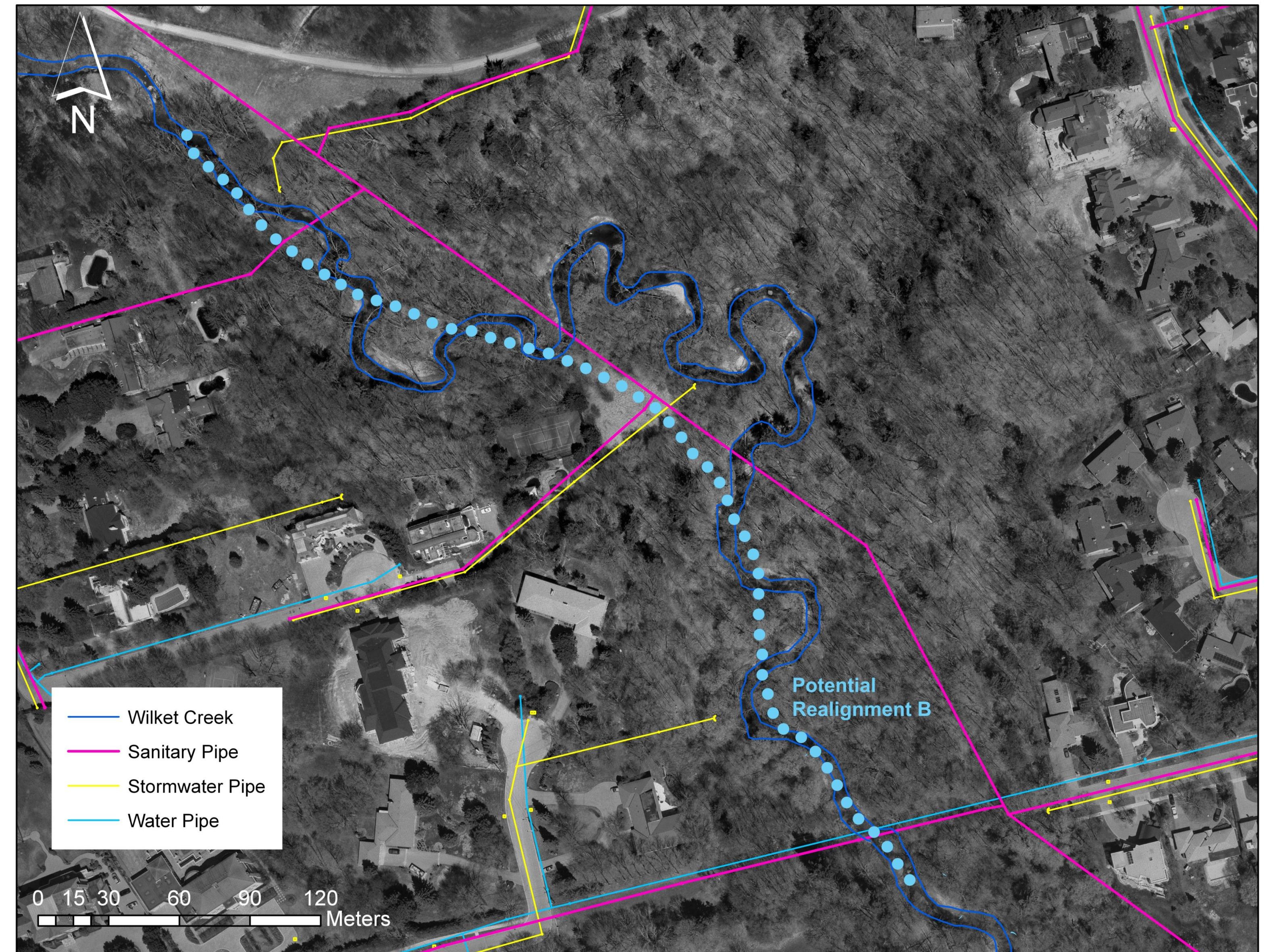
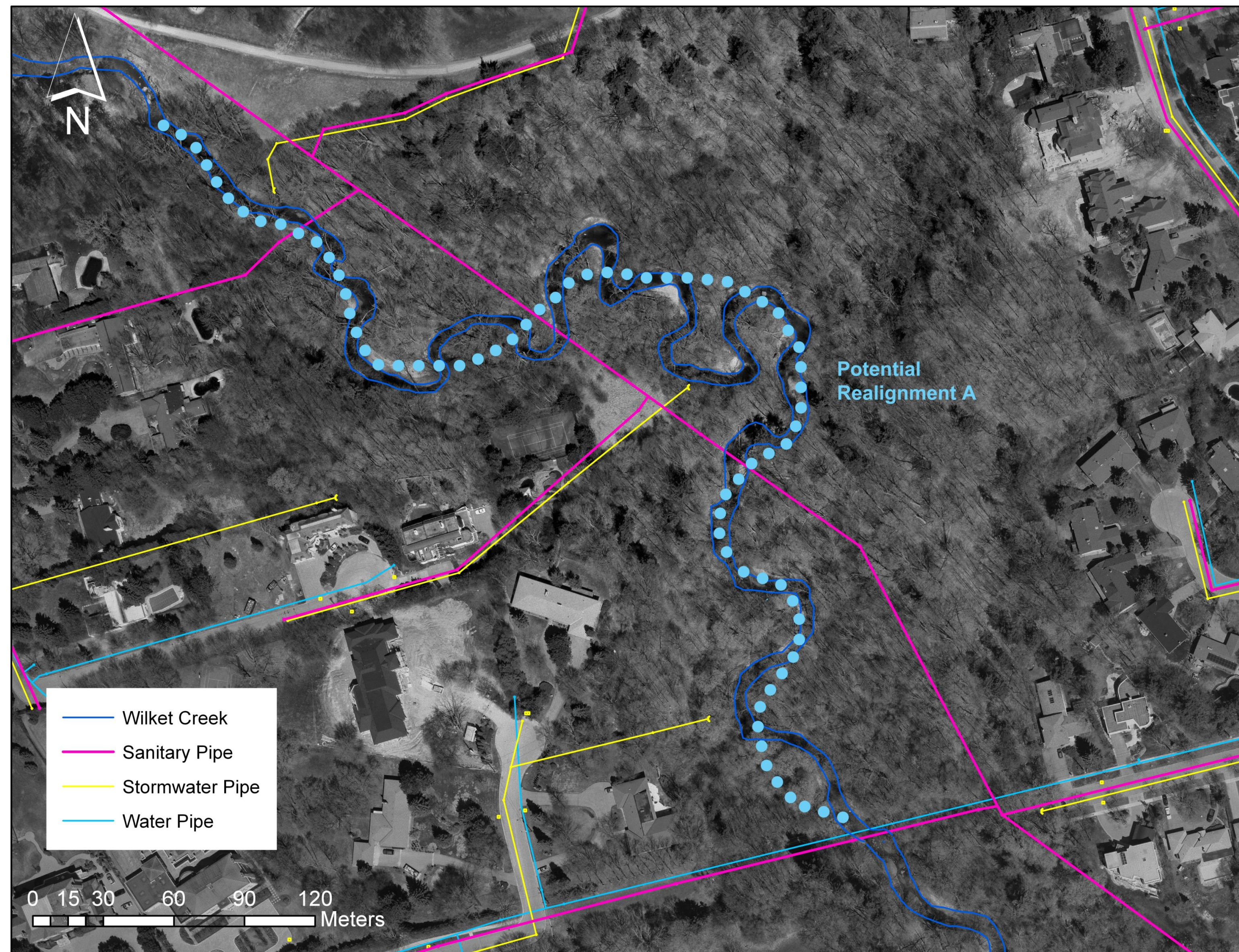
Wilket Creek Reach 6 & 7 - Problems and Opportunities



US and DS refer to Upstream and Downstream
 LB and RB refer to Left Bank and Right Bank
 (left bank and right bank are identified based on looking in the downstream direction)

Wilket Creek Reaches 6 & 7

Possible Solutions



Wilket Creek Reach 8 & 9 - Problems and Opportunities



US and DS refer to Upstream and Downstream
 LB and RB refer to Left Bank and Right Bank
 (left bank and right bank are identified based on looking in the downstream direction)

Alternative Solutions

1. Do Nothing

- No human intervention, creek conditions monitored.

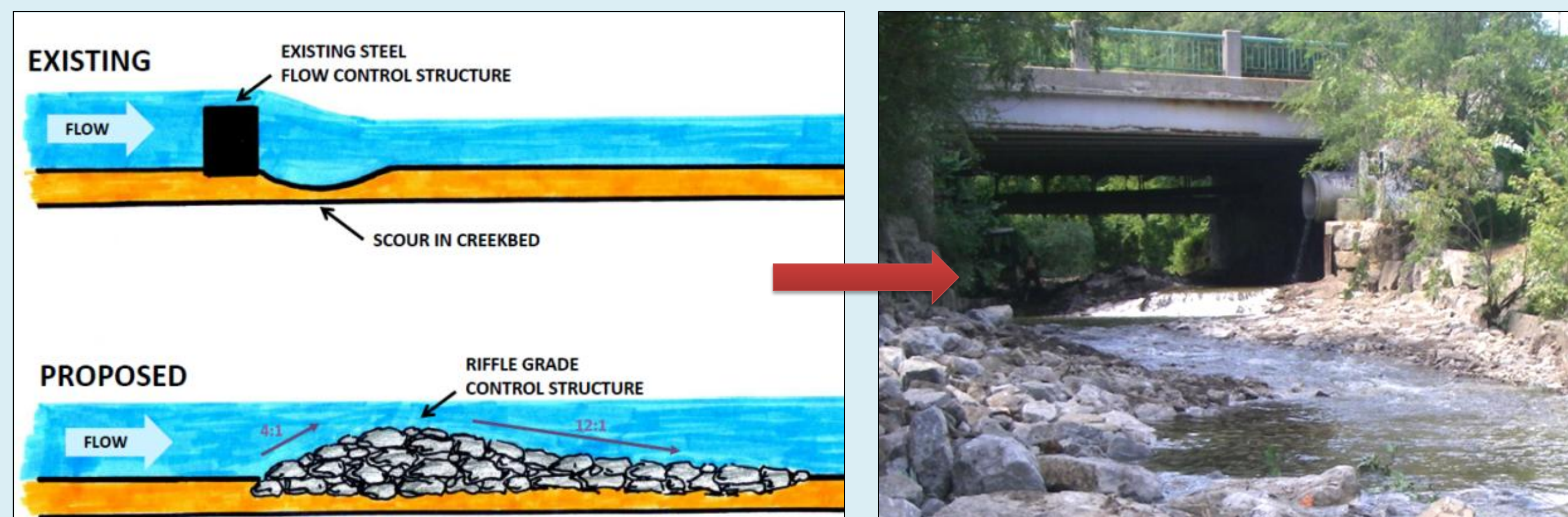
2. Infrastructure Realignment

- Relocate infrastructure away from creek.

3. Local Improvements

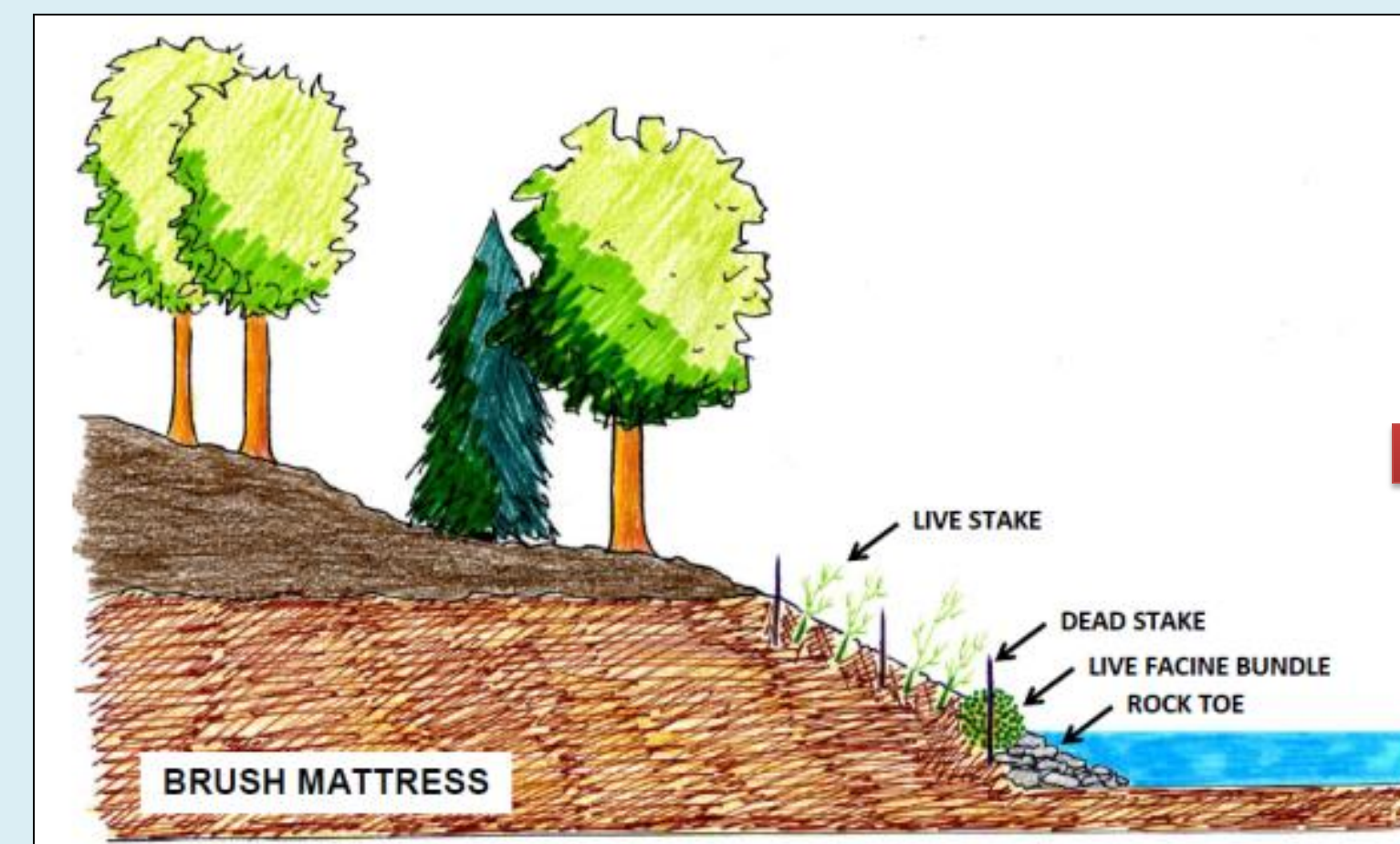
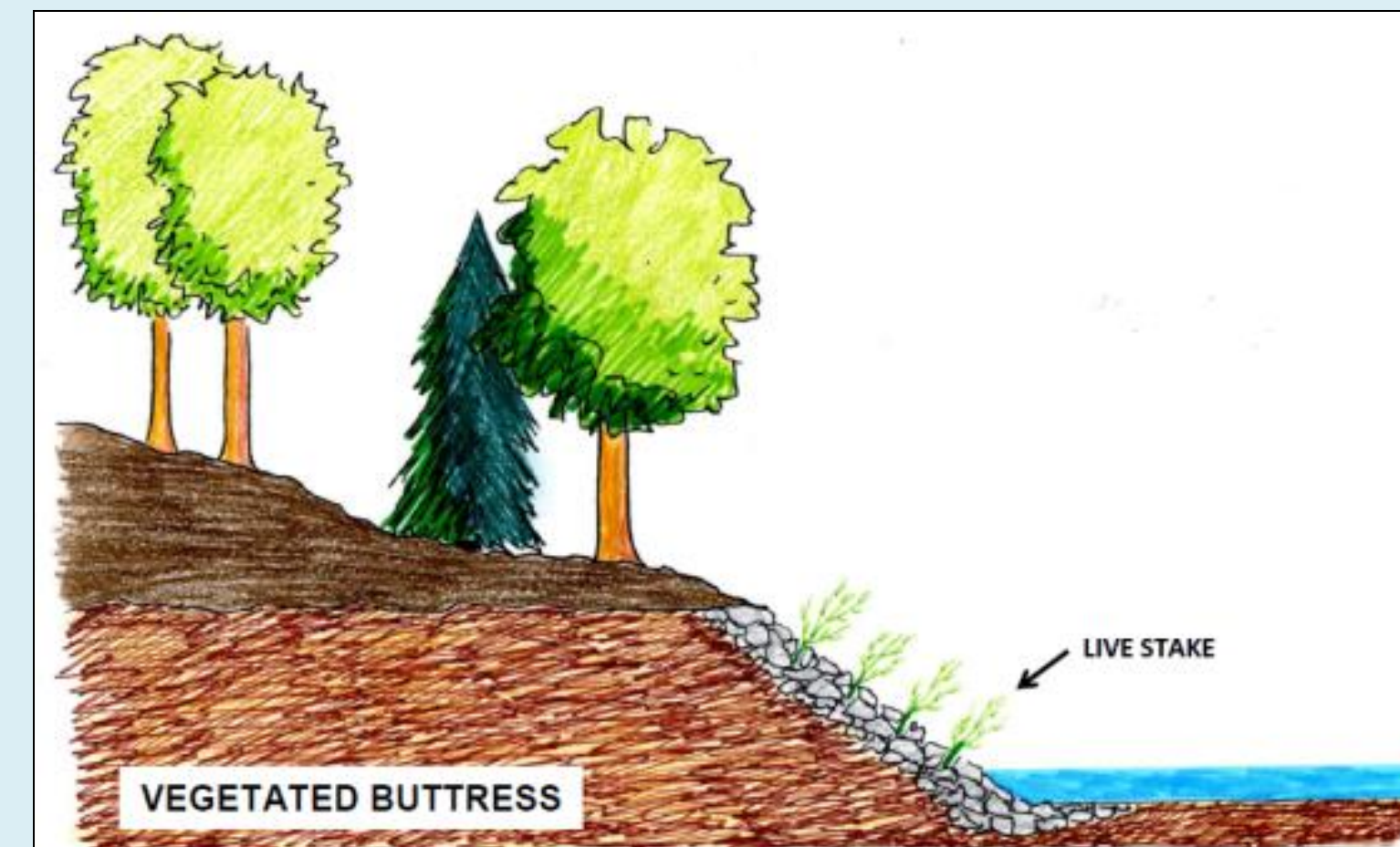
- Repairs and bank stabilization
- Reduce impacts on public infrastructure and private lands

Bed Stabilization Options

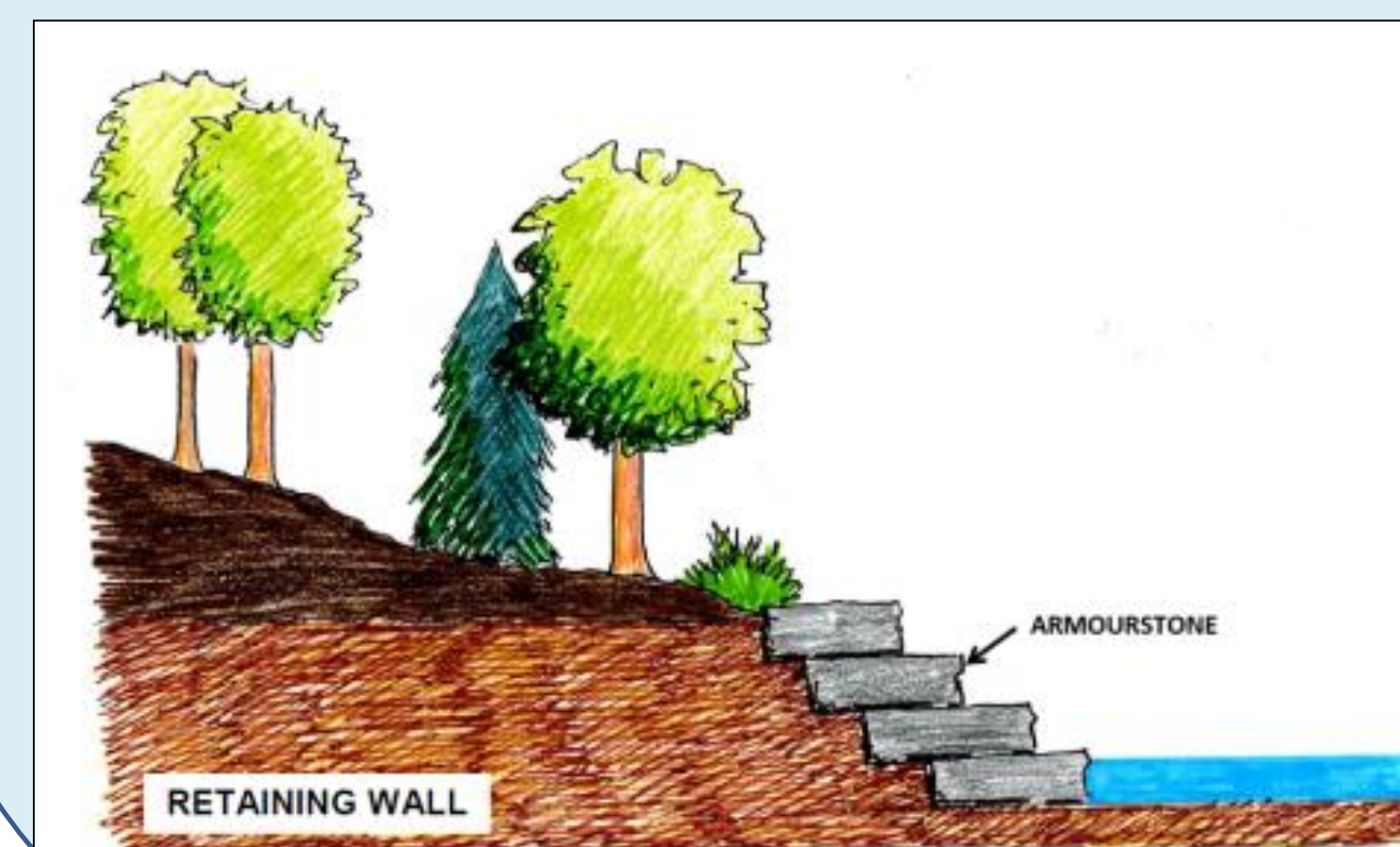


Bank Stabilization Options

Bioengineering Methods



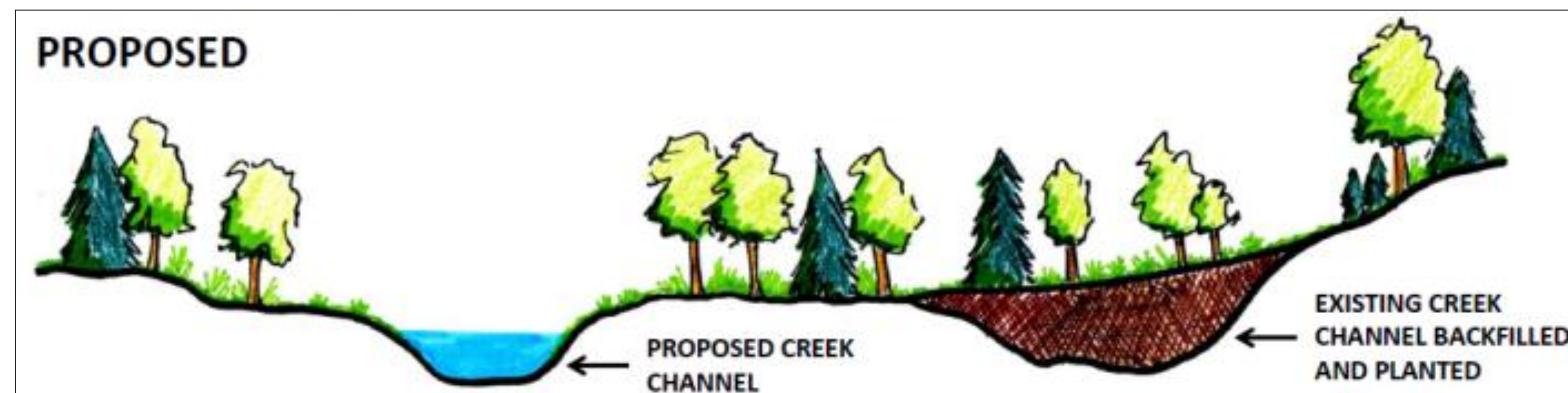
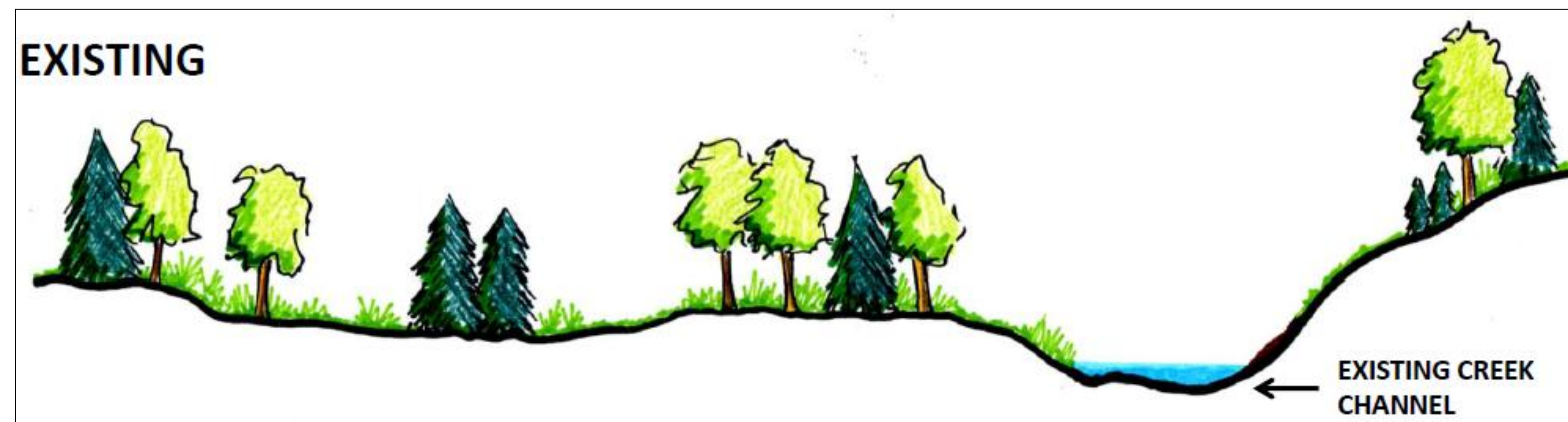
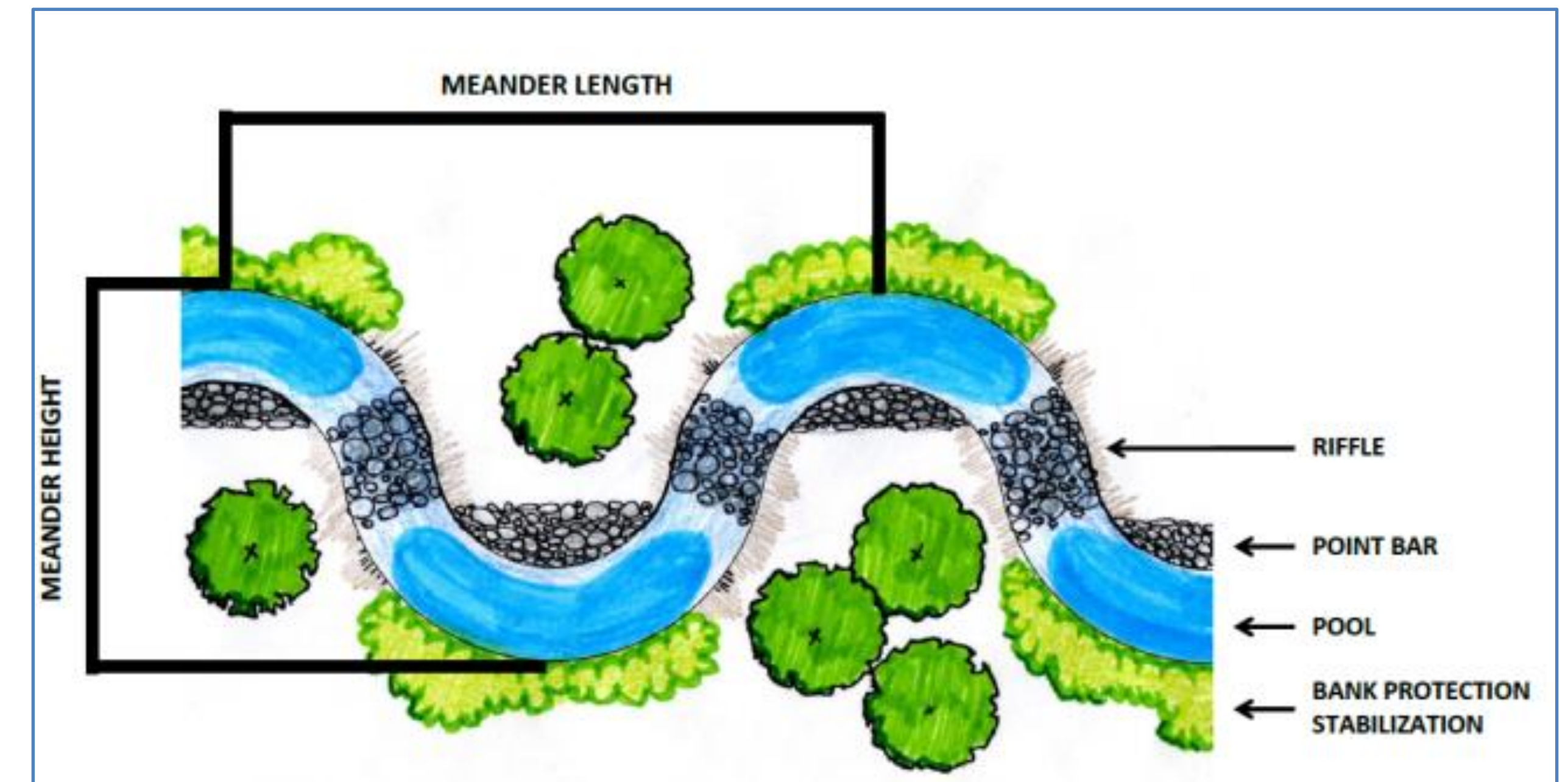
Engineered Methods



Alternative Solutions

4. Complete Channel Realignment

- Re-establish natural meandering pattern with pools and riffles
- Remove structures (e.g. gabion baskets), construct new channel within constraints of available property.
- Restore bank stability, erosion and grade controls, and natural vegetation within new creek corridor.



Evaluation Criteria

1. Natural environment

- a) **Erosion Protection** – will this alternative protect the creek bed and banks from future erosion?
- b) **Sediment Transport** – does this alternative provide natural sediment transport through the creek system?
- c) **Natural Environment** – what will be the impacts on aquatic and terrestrial habitats?

2. Social and cultural environments

- a) **Planning initiatives** – how will this alternative fit into other ongoing planning studies?
- b) **Private property** – how will this alternative impact lands under private ownership?
- c) **Trails and Recreation** – will this alternative have impacts on trail / recreational uses and public safety?
- d) **Archaeological resources** – will this alternative have impacts on known or unknown cultural resources?

3. Economic environment

- a) **Costs** – how much will it cost to implement and maintain this alternative?
- b) **Lifecycle** – how long will the alternative last? Will additional work need to be completed again, and when?

4. Technical factors

- a) **Constructability** – are there limits or constraints to construction of this alternative? E.g. slopes, property ownership, significant environmental features
- b) **Access** – is the site accessible for the required construction machinery / techniques to build the alternative and maintain it in the future?
- c) **Permits and approvals** – will this alternative be approved by agencies such as Toronto and Region Conservation Authority, Ministry of Natural Resources, Ministry of Environment?

Next Steps

After tonight's workshop,

- Compile and review input received from public consultation into the study report
- Identify and confirm preferred management alternatives
- Present and receive feedback on preliminary preferred solutions
- Establish a risk-based implementation plan
 - identify when alternatives should be implemented, e.g. immediately, 0-5 years, 5-10 years...
- Issue Notice of Completion for the Master Plan; 30-day public and agency comment period

Upon Completion of Environmental Assessment Process (pending regulatory and budgetary approvals)

- Implementation / Construction of preferred alternatives
- Monitor resulting conditions – successes, failures, adaptation

Contact Information

Thank you for participating in this study.

Your input is important. Please submit your completed **Comment Sheet** to staff at the Registration Table. Alternatively, your comments can be submitted by Fax, Email, or Mail, using the contact information below, by **January 10, 2014**. Pre-addressed envelopes are available upon request.

Contact: Patricia Newland, Environmental Engineering Projects - Restoration Services Division

Address: Toronto and Region Conservation Authority, 1 Eastville Avenue, Toronto, ON, M1M 2N5

Phone: 416-392-9690 Fax: 416-392-9726 Email: pnewland@trca.on.ca

For more information about this project and to access the workshop materials, please visit the study website at <http://www.trca.on.ca/wilketcreek/>