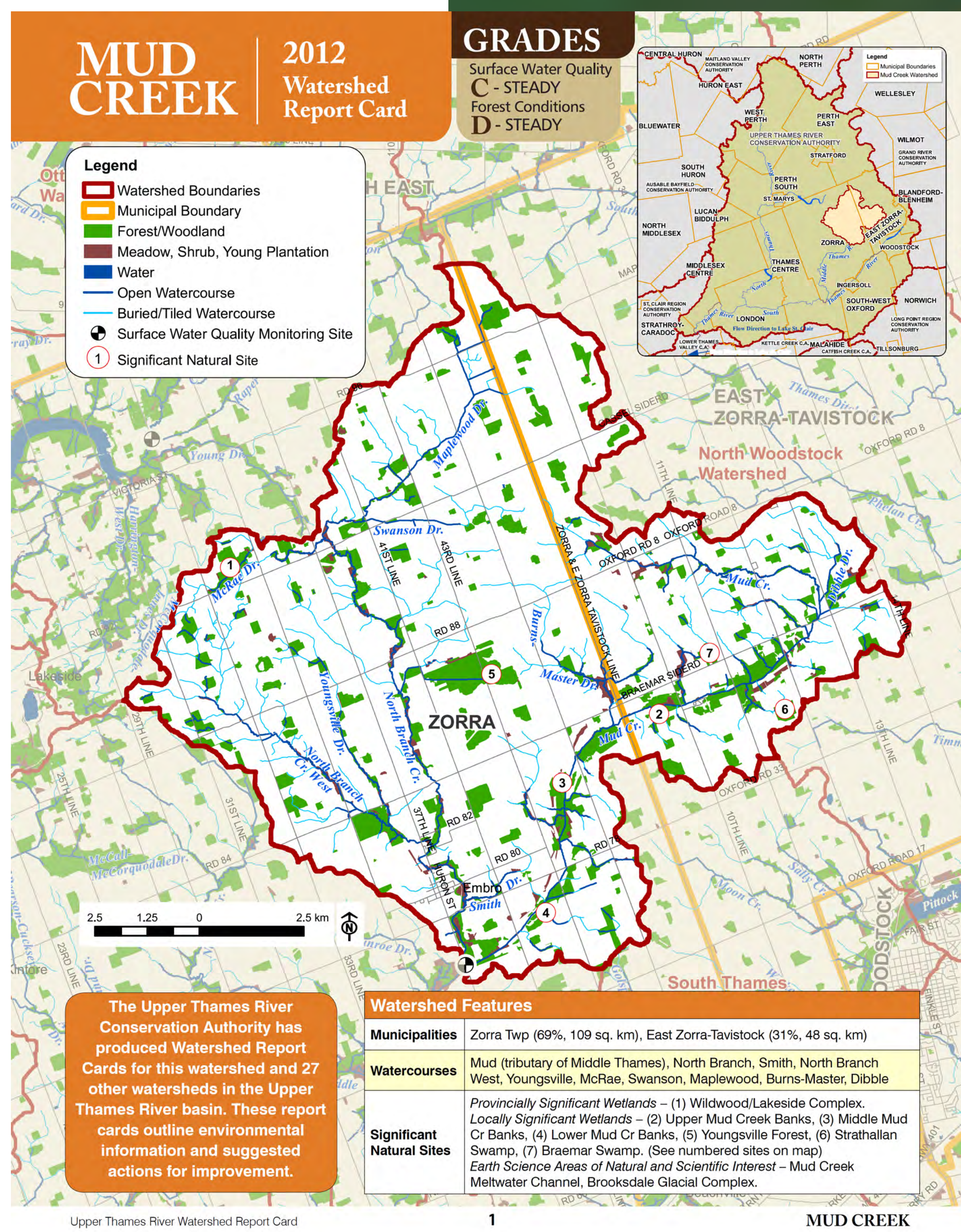




**Embro Dam - Class Environmental Assessment
Presentation to UTRCA Board of Directors
February 28, 2023**

STUDY LOCATION



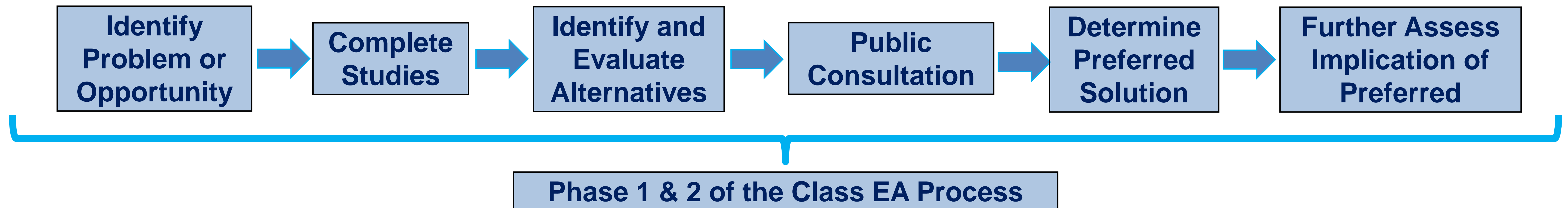
PROJECT HISTORY AND PROBLEM STATEMENT

- **Dam safety and stability assessment studies (2007/2008) identified related concerns with the structure.**
 - **Class EA project initially commenced in 2015**
 - **Draft EA project file report completed in 2017**
 - **Per comments received, UTRCA undertook additional cultural heritage assessments**
 - **EA process recommenced Fall 2022**
-

Significant concerns related to the structural integrity and hydraulic capacity of the Embro Dam have been identified through recent engineering assessments.

A Class Environmental Assessment was initiated to evaluate a range of alternatives to address the identified issues in consideration of the environmental, social, economic, and technical aspects of the dam.

CLASS ENVIRONMENTAL ASSESSMENT PROCESS



Conservation Ontario Class Environmental Assessment for Remedial Flood and Erosion Control Projects process requires the establishment of a Community Liaison Committee (as necessary).

OVERVIEW OF KEY FINDINGS

Dam

- 100m long crest, does not meet current safety or stability standards

Pond

- Reservoir of approximately 0.5 ha, 27-35% of available pond volume has filled with sediment

Hydrology

- Upstream drainage area is 7 km²; watercourse has high resiliency to drought / low flow conditions



OVERVIEW OF KEY FINDINGS

Social

- Conservation area used for passive recreation, hiking trails, cross country skiing trails and picnic areas

Cultural

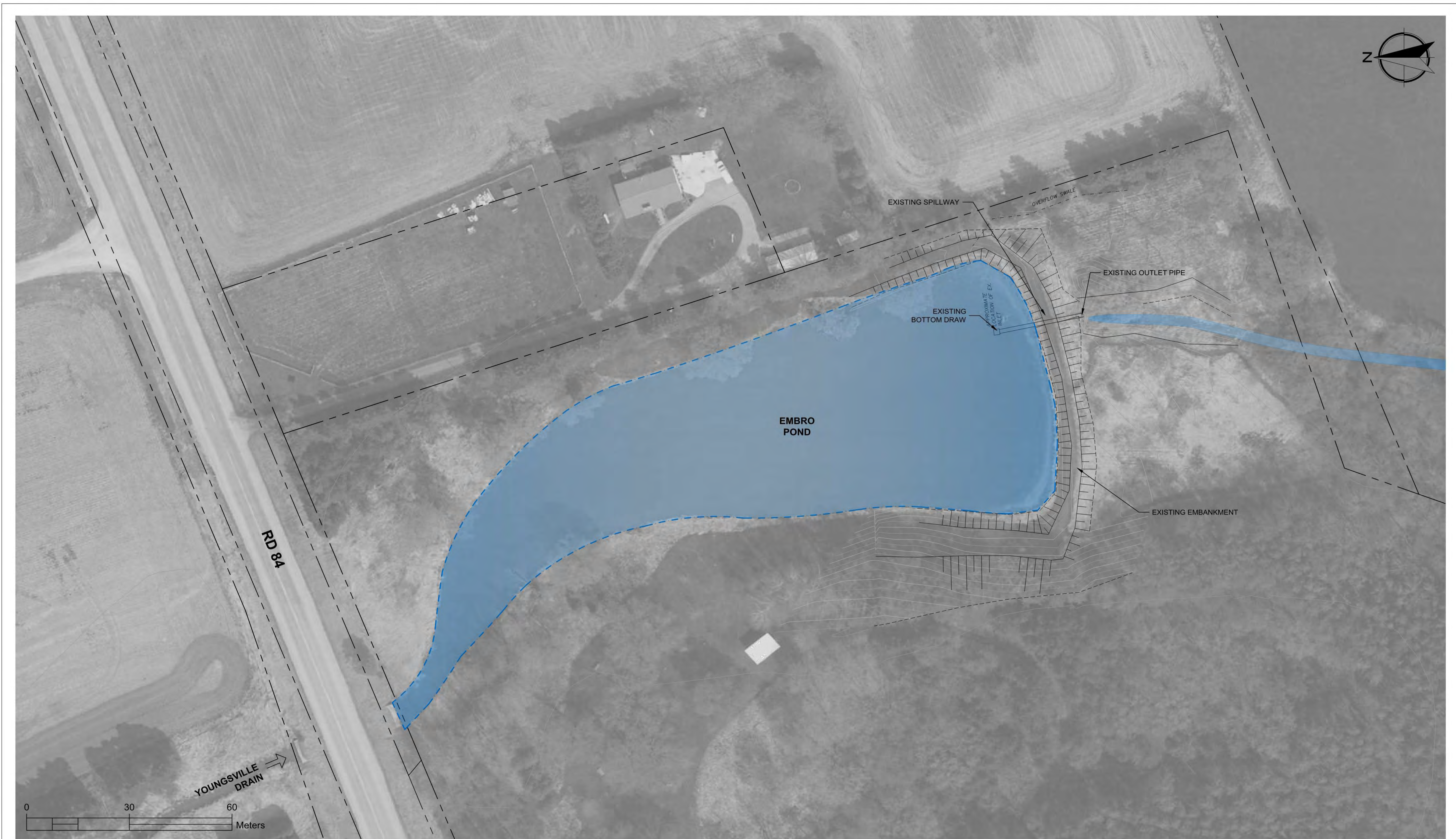
- Site does not meet O.Reg. 9/06 and therefore is not considered a landmark

Archaeology

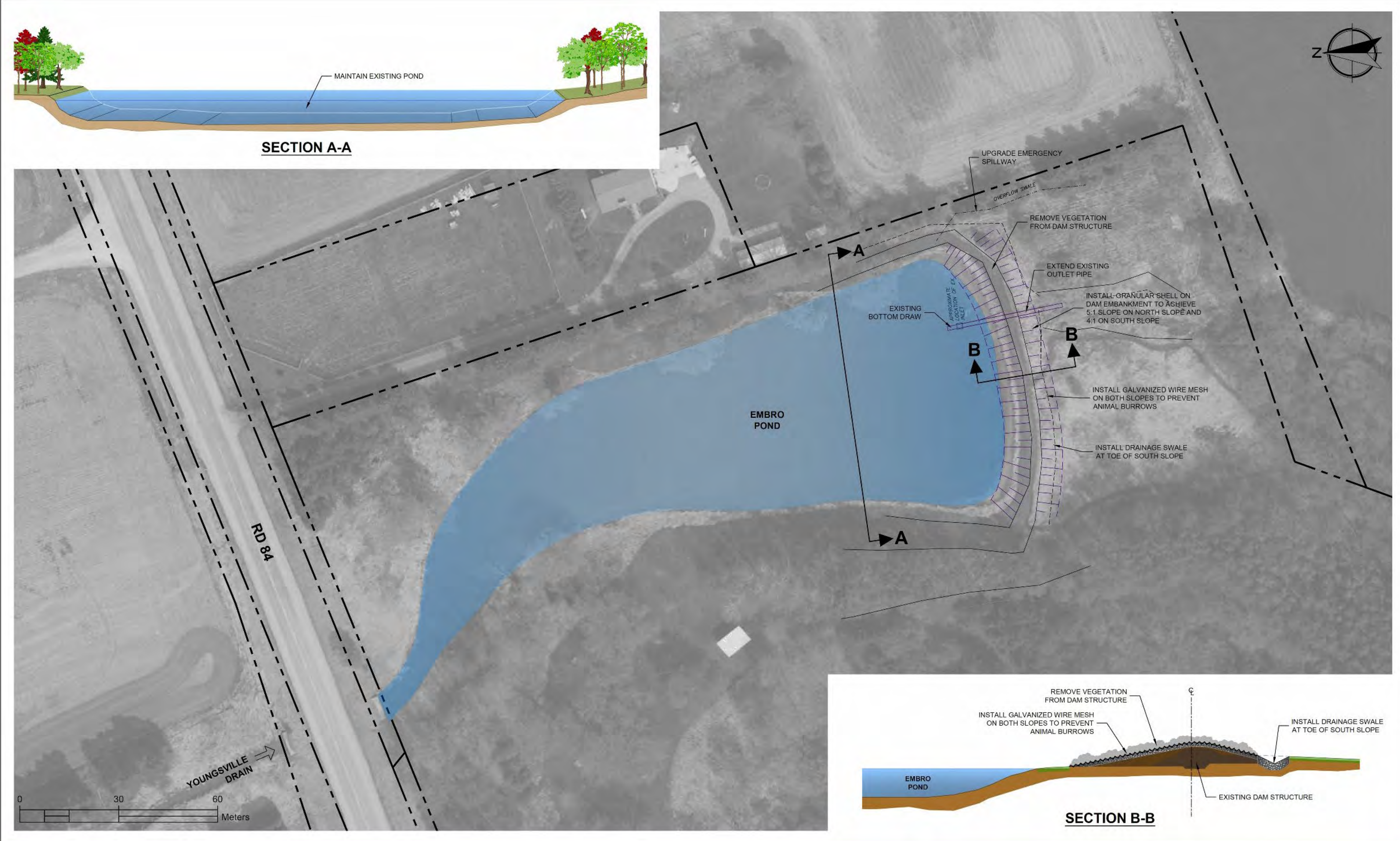
- Site has a reduced archaeological potential



ALTERNATIVE 1 – DO NOTHING



ALTERNATIVE 2 – REPAIR / RECONSTRUCT EXISTING DAM



ALTERNATIVE 3 – REMOVE DAM & CONTRUCT NATURAL CHANNEL



ALTERNATIVE 4 – REMOVE DAM & CONSTRUCT OFFLINE POND(S) WETLAND(S)



ALTERNATIVE 5 – LOWER DAM CREST AND OUTLET & NATURALIZE NEW POND PERIMETER



ALTERNATIVE EVALUATION CRITERIA

Four primary categories

- **Technical**
 - ability to reduce flooding impacts, improve safety, constructability, approvability
- **Natural Environment**
 - benefits to aquatic and terrestrial ecology, geomorphology, water quality
- **Social/ Cultural Environment**
 - impacts to cultural / heritage features, to public / private property, to recreational opportunities
- **Financial**
 - capital outlay, reduced short- and long-term operational costs, ability to access external funding


PUBLIC CONSULTATION

Public Information Centre #4 (Jan 30, 2023)

- 21 public participants
- Open-house format, display boards
- UTRCA and Matrix staff were present
- Public comments received using input forms and evaluation charts
- UTRCA invited “expressions of interest” from the public to engage in a Community Liaison Committee (CLC)
- Notice for public input issued Jan. 31, 2023 via e-mail and media release.
- 2-weeks comment period (Feb 13, 2023 deadline)

Results

- Input received from 8 individuals
- Public provided input to weighting of evaluation criteria
- 6 expressed interest in joining the CLC



Scan me for more info!

Upper Thames River Conservation Authority
Embro Dam
Class Environmental Assessment Continuation

Notice of Public Information Center #4

The Upper Thames River Conservation Authority (UTRCA), through their consultant Matrix Solutions Inc., is continuing work on the Class Environmental Assessment (EA) for the Embro Dam within the Township of Zorra. This work is the continuation of the 2015 Embro Dam Class EA. For more information, please visit: www.bit.ly/3QkrmzA


A fourth Public Information Centre (PIC) is being held to provide information on the project background, current project status, and receive public feedback on the proposed alternatives. The PIC will be an informal open house with presentation boards; project and UTRCA staff will be available to discuss the project with the visitors as they drop in.

Date/ Time
Monday, January 30th, 2023, 4 pm to 7 pm

Location
Embro Zorra Community Centre (EZCC), Small Hall
355644 35th Line, Embro, ON N0J 1J0

The Project Team invites public input and comments which will help inform the planning and design of this project. We will also invite expressions of interest from the interested stakeholders who would like to participate on the Community Liaison Committee during the EA and subsequent design stages. To submit comments, request further information, or to join the project mailing list, please contact:

Sarbjit Singh, E.I.T. Water Control Structures Technologist UTRCA 1424 Clarke Road, London, ON N5V 5B9 Tel: 519 451-2800 ext.245 singhs@thamesriver.on.ca	David Charles, P.Eng. Supervisor, Water and Erosion Control Structures UTRCA 1424 Clarke Road, London, ON N5V 5B9 Tel: 519 451-2800 ext.244 charlesd@thamesriver.on.ca
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OUTCOME OF ALTERNATIVE EVALUATION

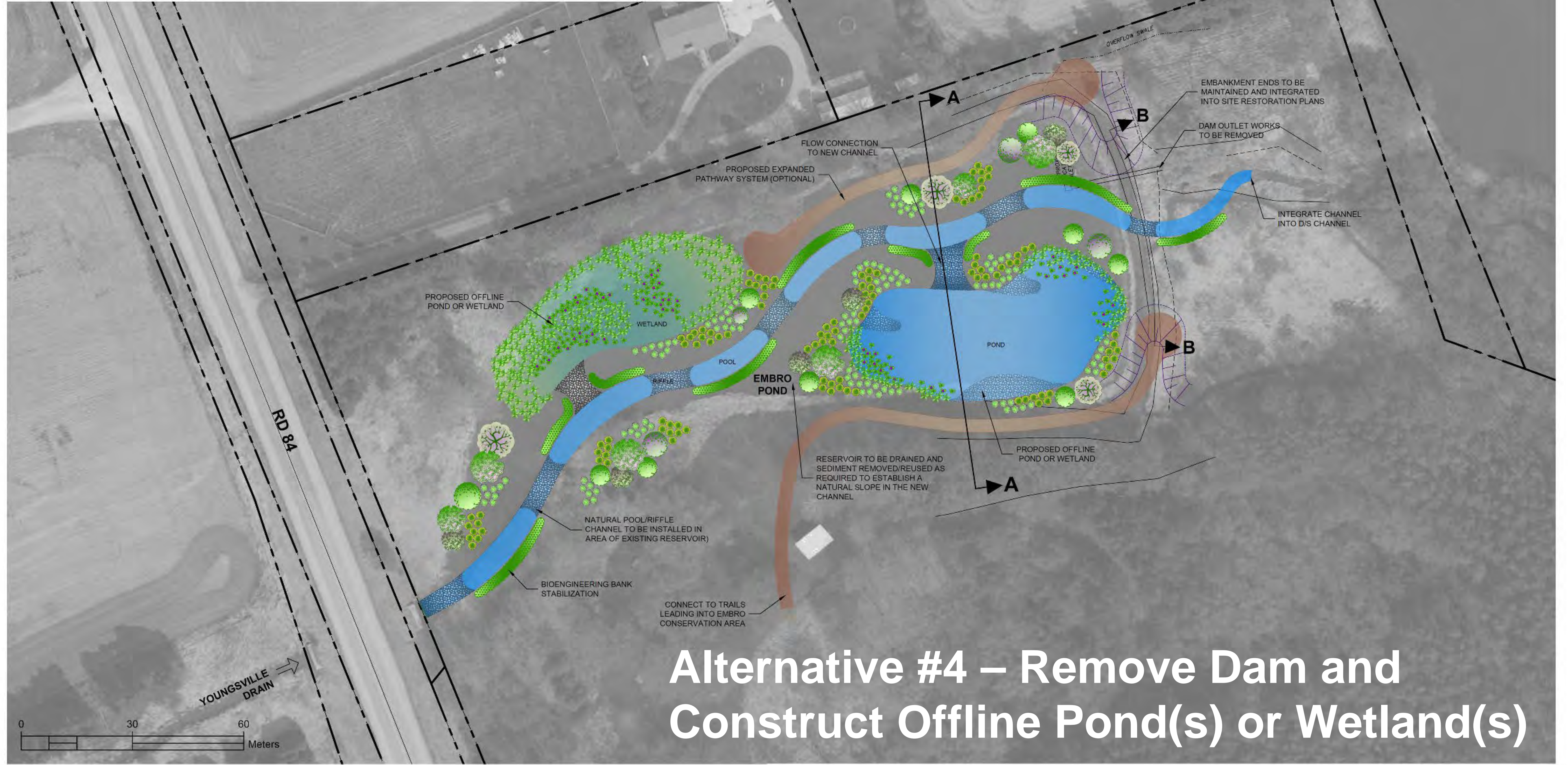
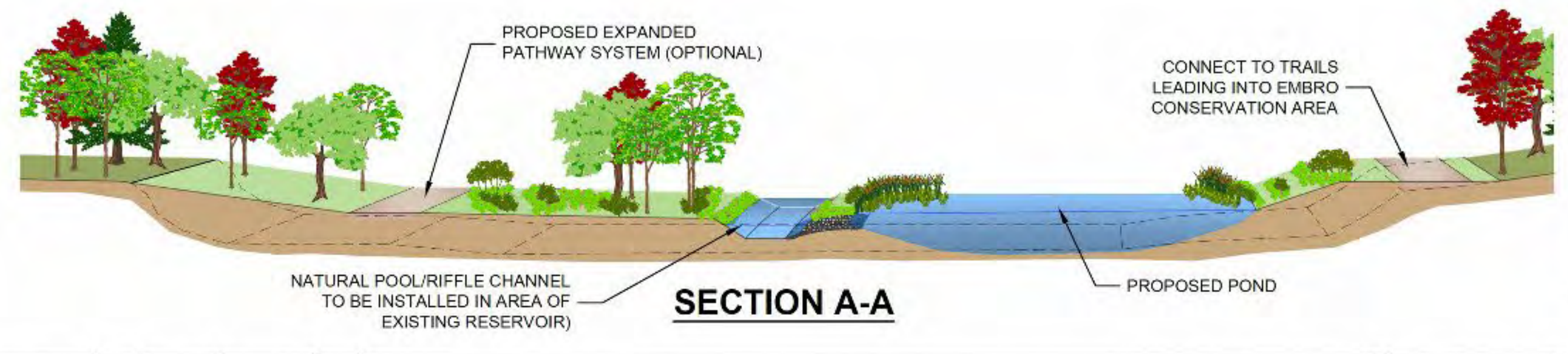
Alternative Rank (most preferred = 1, least preferred = 5):

Alternative	Alternative 1 Do Nothing	Alternative 2 Repair/ Reconstruct Existing Dam	Alternative 3 Remove Dam and Construct Natural Channel	Alternative 4 Remove Dam and Construct Offline Pond(s) or Wetland(s)	Alternative 5 Lower Dam Crest and Outlet and Naturalize New Pond Perimeter
Rank	5	4	2	1	3

The preferred alternative, determined through the evaluation process is Alternative 4

In this alternative the dam would be removed, a naturalized channel with offline ponds or wetlands would be established

PREFERRED ALTERNATIVE



Alternative #4 – Remove Dam and Construct Offline Pond(s) or Wetland(s)

Examples

Hodges Pond Removal



Cedar Creek Restoration



Example – Marden Creek/Pond Removal



Example – Marden Creek/Pond Removal



IMPACTS OF PREFERRED ALTERNATIVE

Technical

- May interfere with nearby shallow groundwater wells
- Eliminates dam safety hazard

Environmental

- Enhances terrestrial corridor and vegetation diversity
- Improved water cooling
- Removes fish migration impediment, improve species diversity
- Enhances aquatic habitat through channel restoration

Social/ Cultural

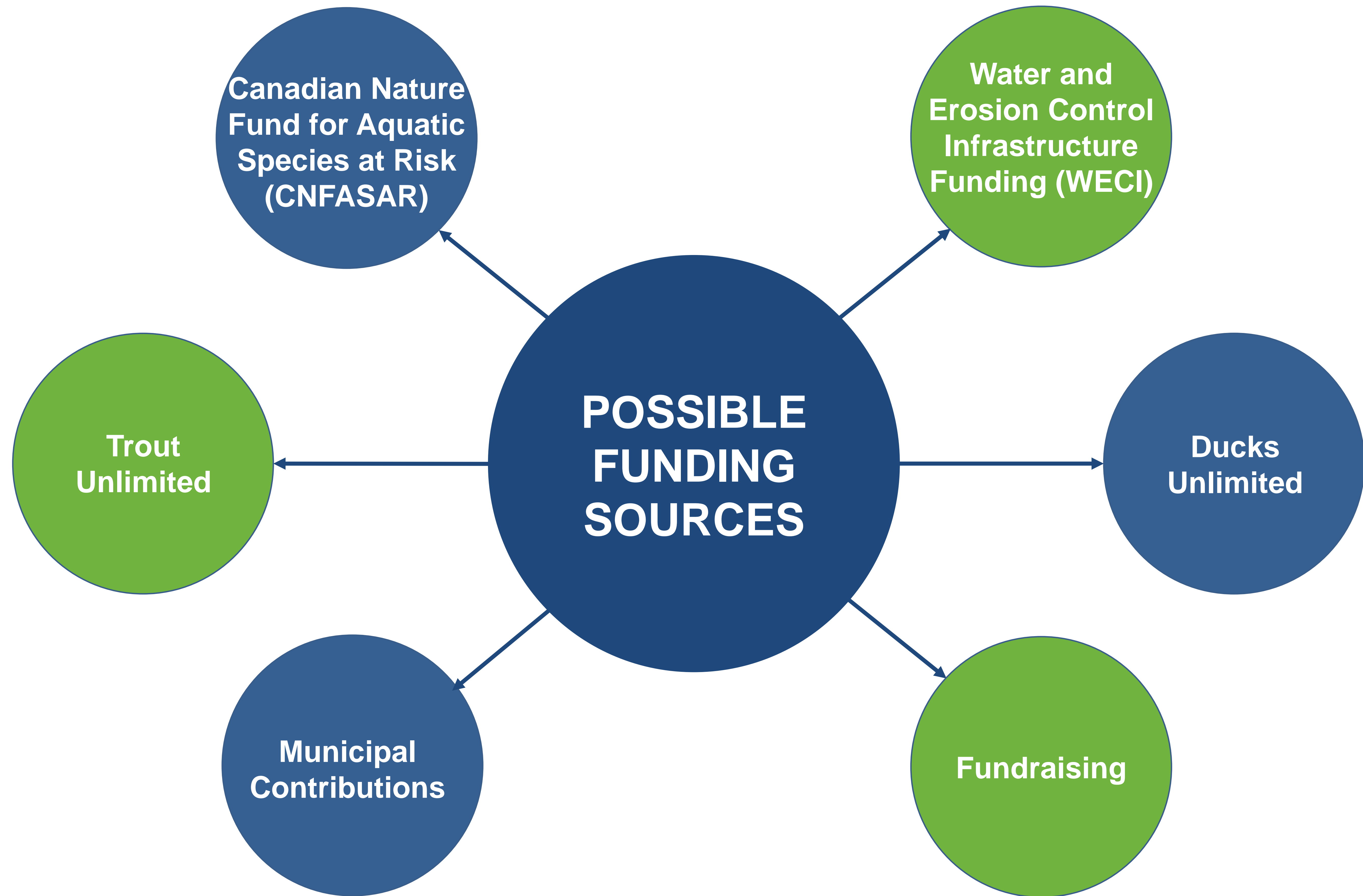
- Recreational opportunities will change
- Loss of still water fishing and recreation boating
- Possible trail enhancement, educational signage, and 'birding'/viewing of wildlife species

Financial

- Larger capital outlay, reduced short- and long-term operational costs



POSSIBLE FUNDING SOURCES



NEXT STEPS AND CONTACT INFORMATION

- **Meet with UTRCA Board**
- **Finish and File EA**
- **Obtain Funding**
- **Detailed Design**
- **Construction**



QUESTIONS?