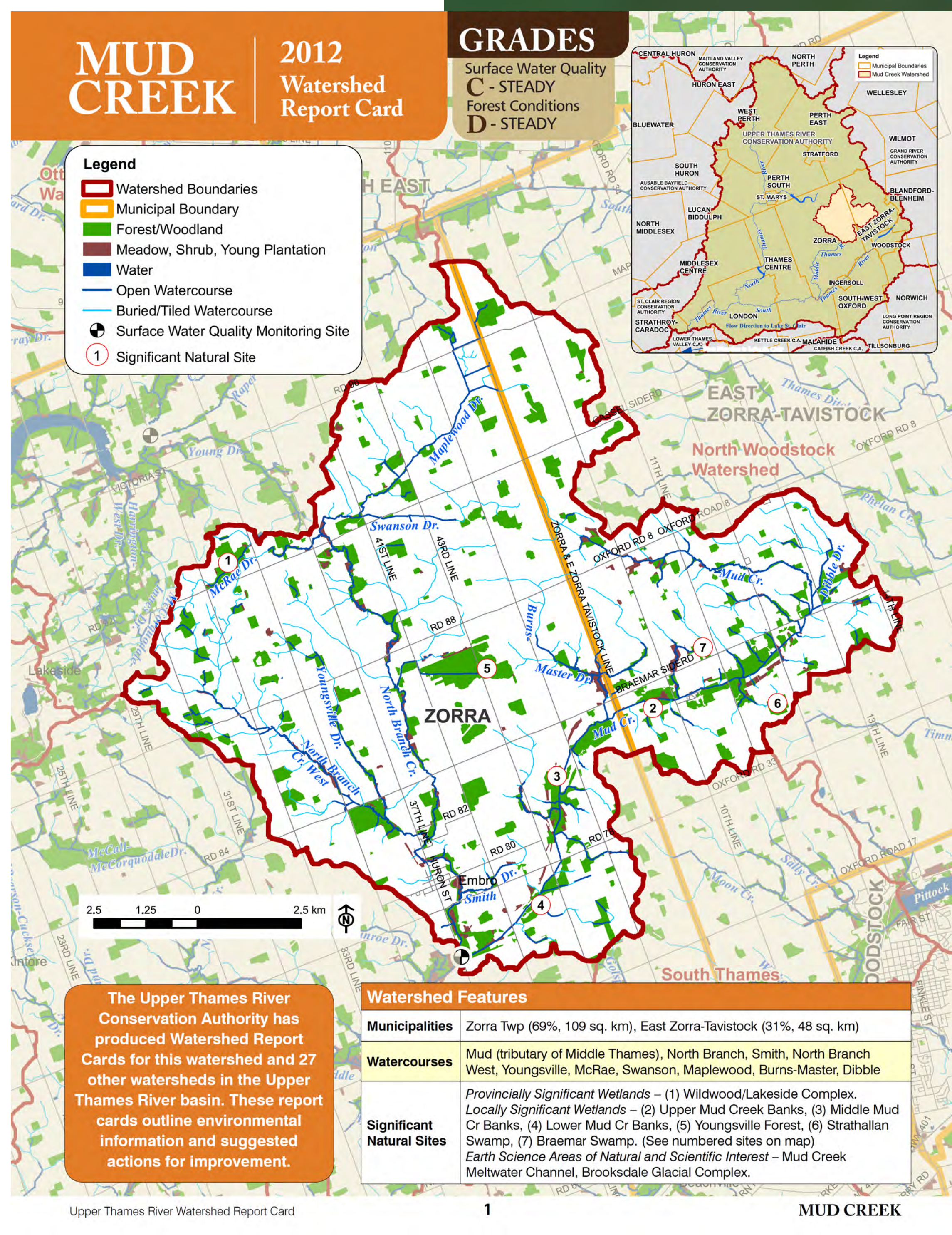




**Embroid Dam - Class Environmental Assessment  
Township of Zorra – Council Meeting  
March 1, 2023**



# STUDY LOCATION





# PROJECT HISTORY AND PROBLEM STATEMENT

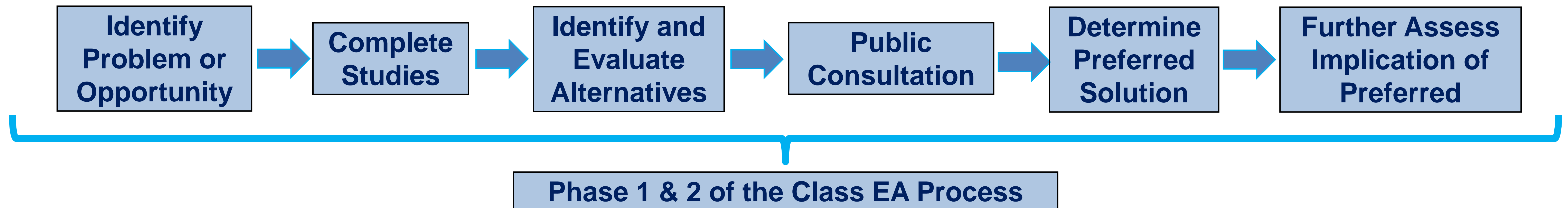
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- **Dam safety and stability assessment studies (2007/2008) identified related concerns with the structure.**
  - **Class EA project initially commenced in 2015**
  - **Draft EA project file report completed in 2017**
  - **Per comments received, UTRCA 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 km<sup>2</sup>; watercourse has high resiliency to drought / low flow conditions





# OVERVIEW OF KEY FINDINGS

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## 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

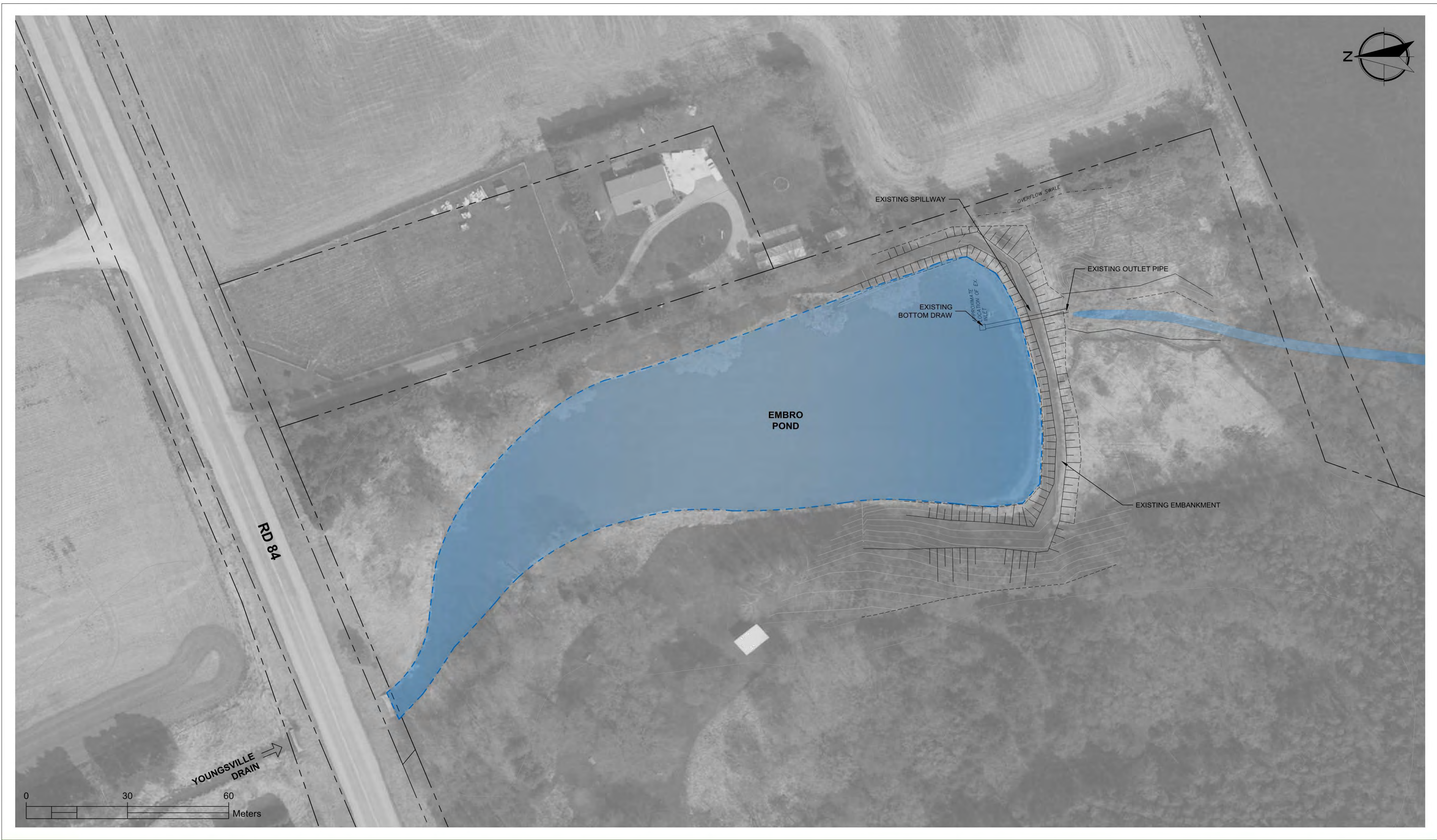
## Archaeology

- Site has a reduced archaeological potential



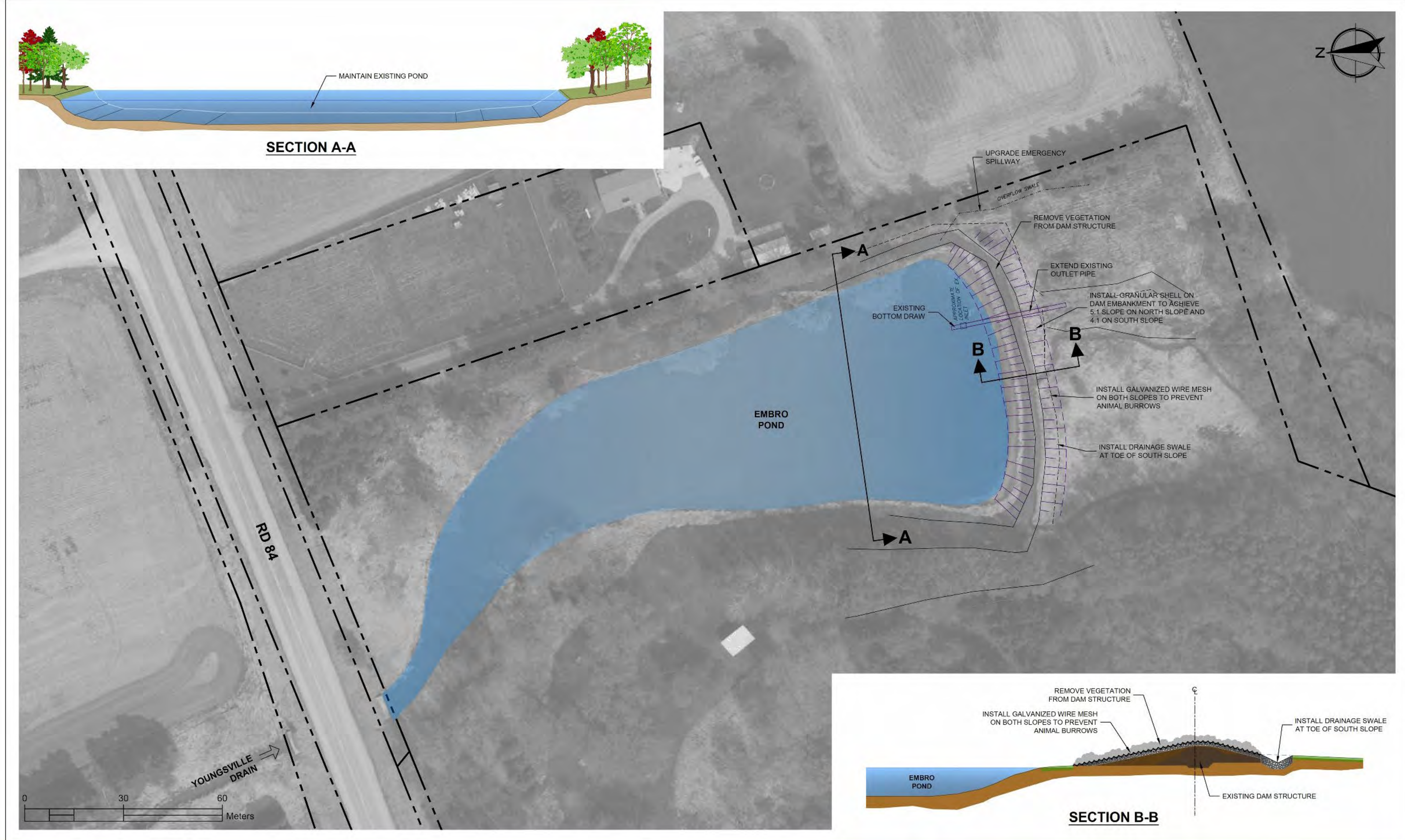


# ALTERNATIVE – DO NOTHING



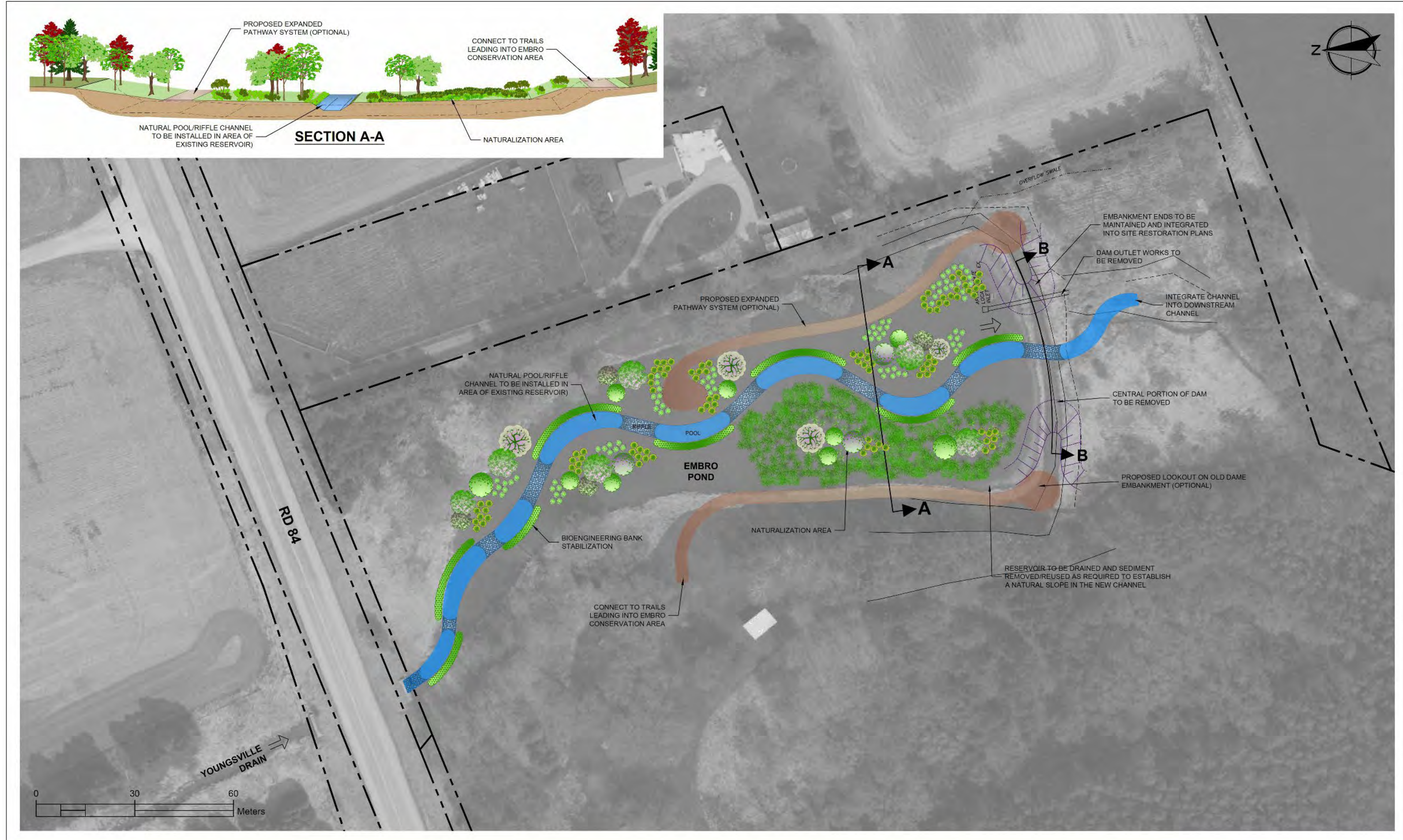


# ALTERNATIVE 2 – REPAIR / RECONSTRUCT EXISTING DAM



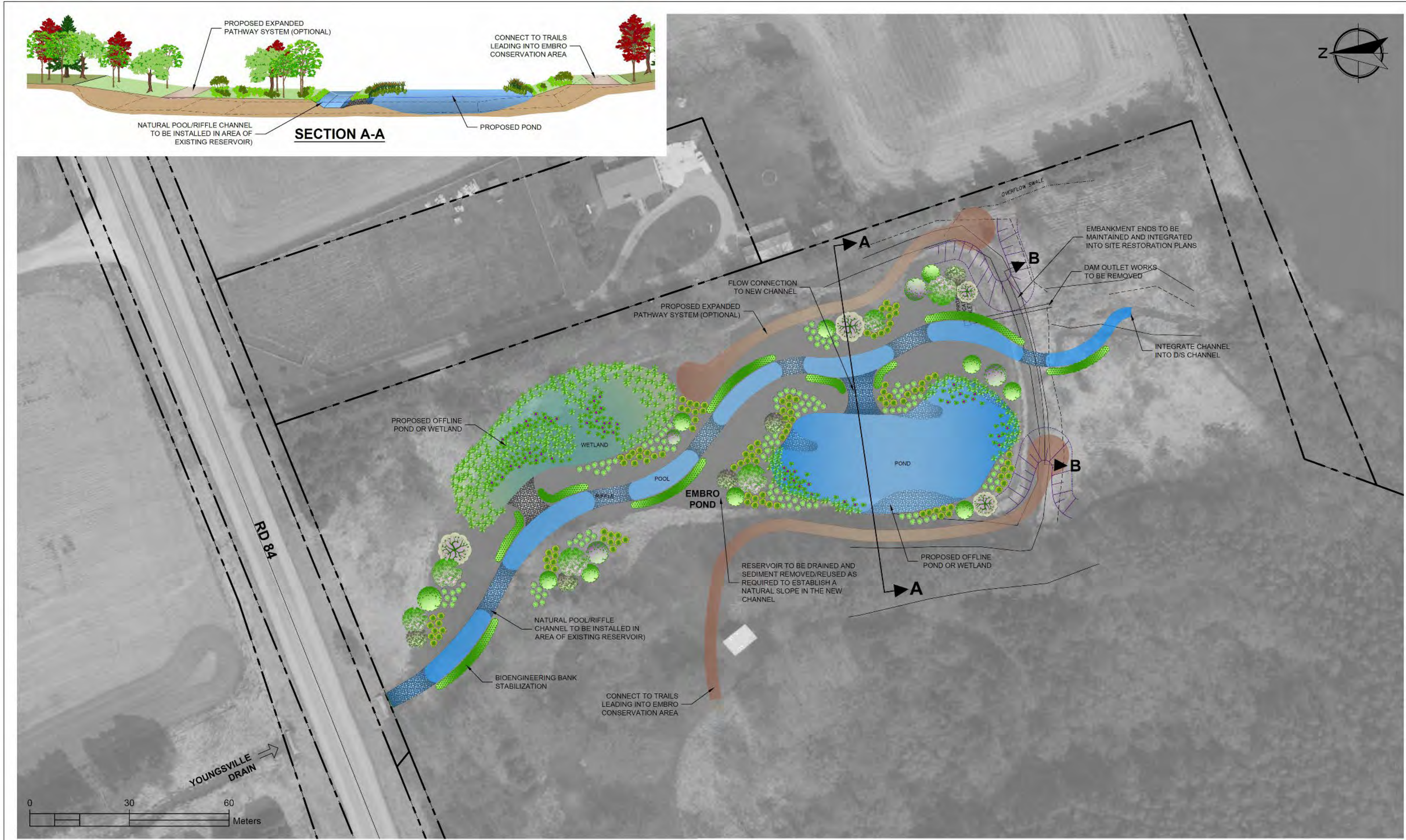


# ALTERNATIVE 3 – REMOVE DAM & CONTRUCT NATURAL CHANNEL





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





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





# ALTERNATIVE EVALUATION CRITERIA

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## 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](http://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:

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

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

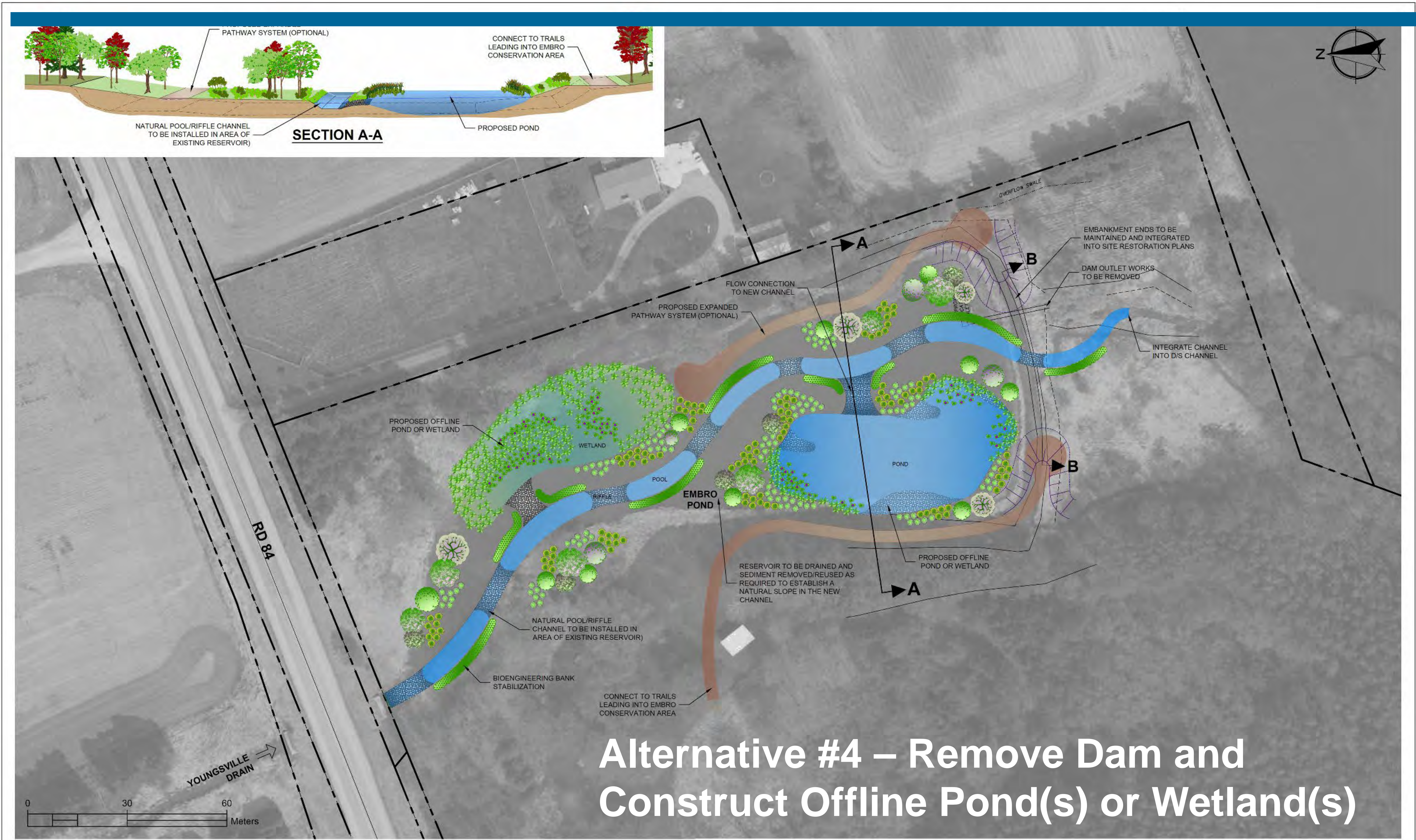
Alternative	Alternative 1 Do Nothing	Alternative 2 Repair/ Reconstruct Existing Dam	Alternative 3 Remove Dam and Construct Natural Channel	Alternative 4 Remove Dam and Construct Offline Pond(s) or Wetland(s)	Alternative 5 Lower Dam Crest and Outlet and Naturalize New Pond Perimeter
Rank	5	4	2	1	3

**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





# 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

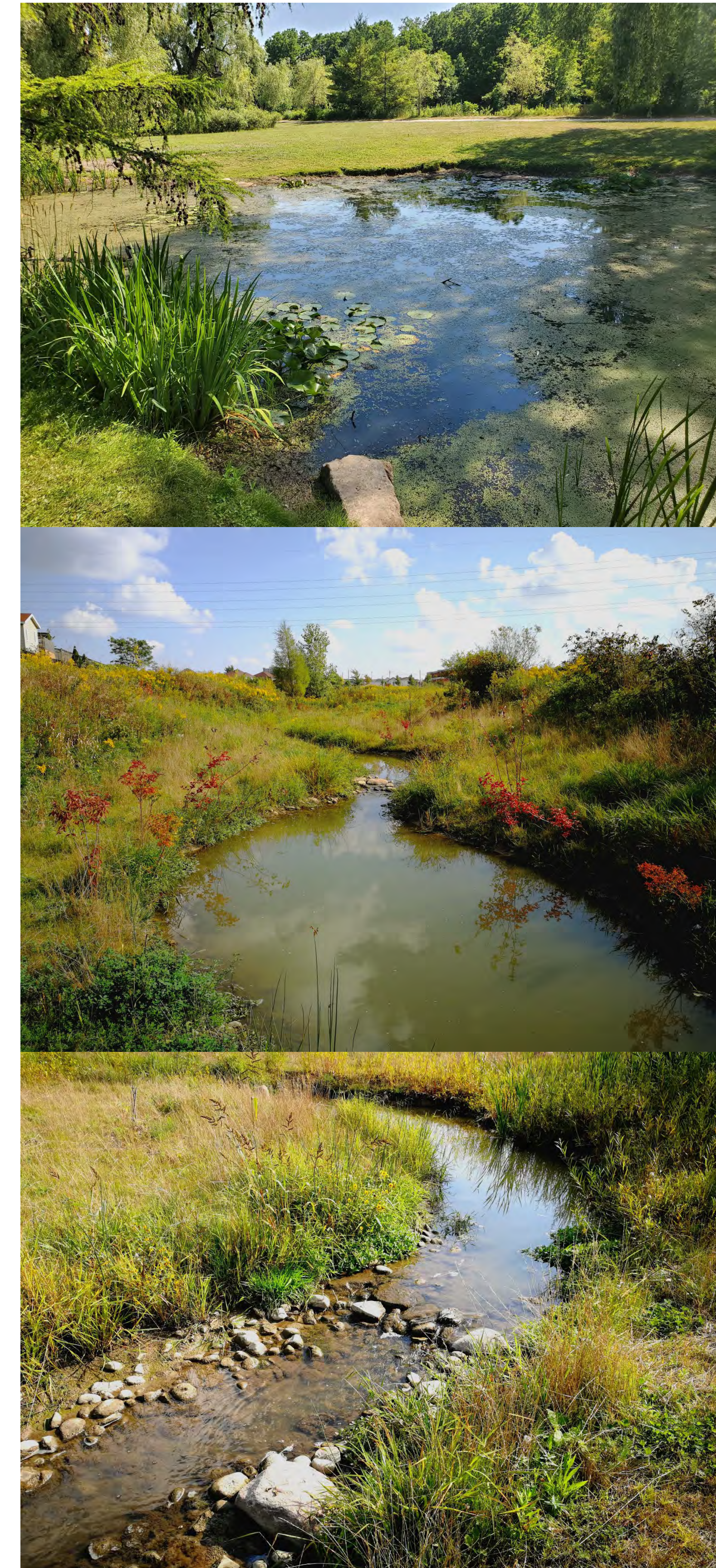
- Enhances terrestrial corridor and vegetation diversity
- Improved water cooling
- Removes fish migration impediment, improve species diversity
- Enhances aquatic habitat through channel restoration

## 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

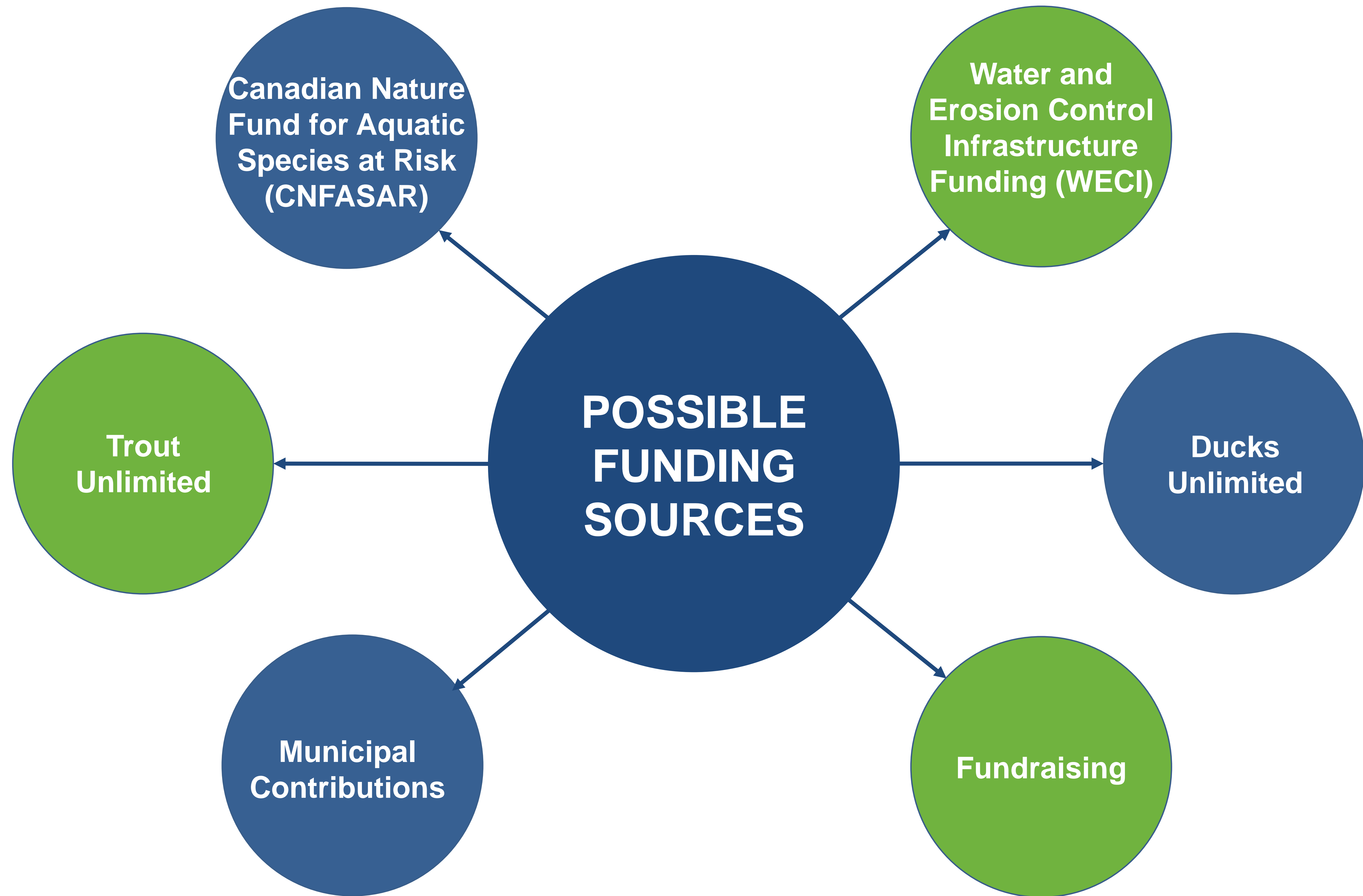
## Financial

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





# POSSIBLE FUNDING SOURCES





# NEXT STEPS AND CONTACT INFORMATION

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



## QUESTIONS?