Upper Thames River Conservation Authority

Virtual Public Meeting
March 28, 2024

Fullarton Dam Rehabilitation Project Environmental Assessment

Stantec

Agenda

1. Study Area
2. Purpose of Public Meeting
3. Class EA Process
4. Problem / Solutions
5. Evaluation Criteria
6. Alternative Solutions
7. Evaluation of Alternatives
8. Recommended Alternative
9. Next Steps

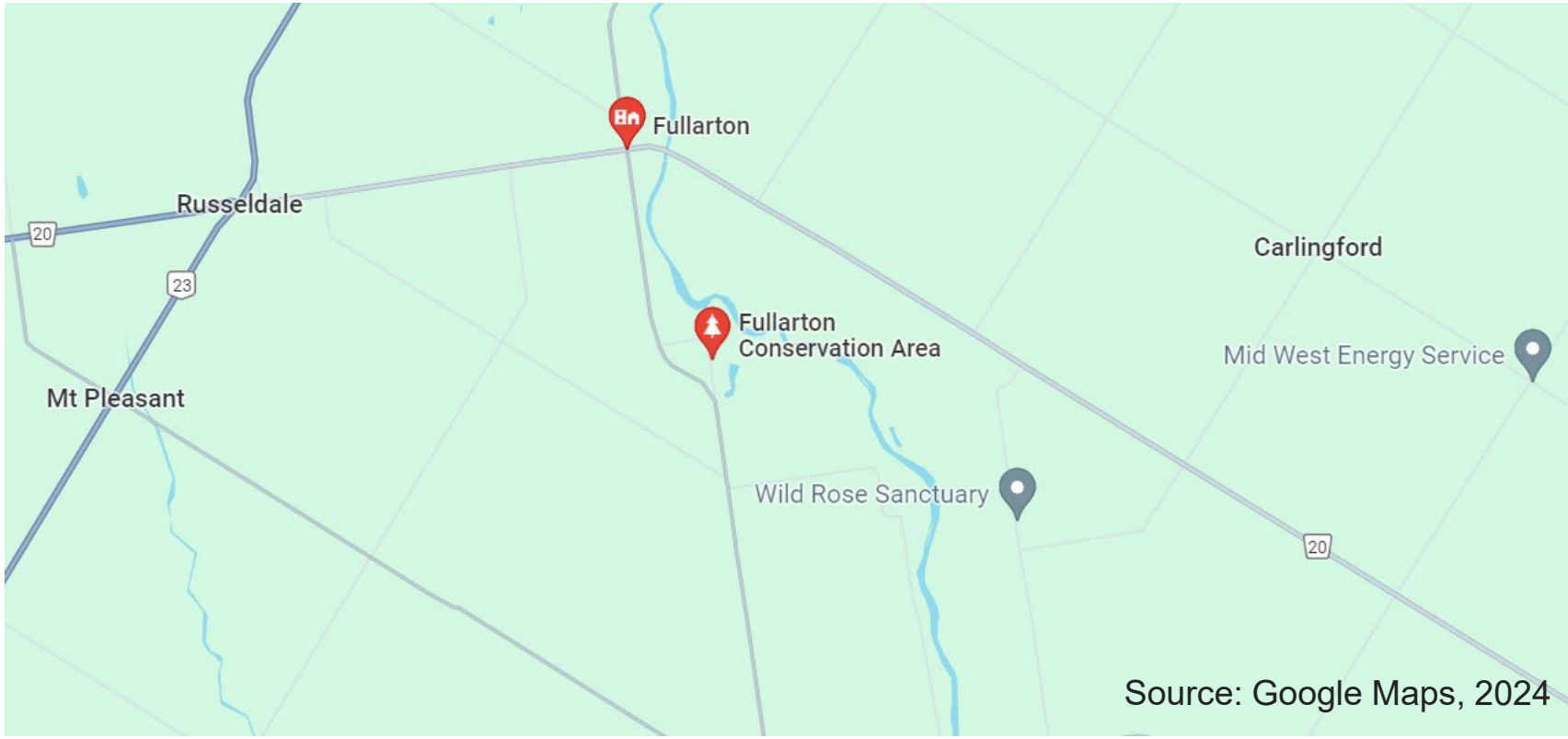
Study Area

Project Location

The Fullarton Dam and reservoir are located at the Fullarton Conservation Area in the Municipality of West Perth, Ontario.

Environmental Assessment

Class Environmental Assessment for Remedial Flood and Erosion Control Projects (the Class EA) is being prepared to support long-term planning of the Fullarton Dam.



Thames River Watershed & Traditional Territory

- Upper Thames River Watershed is located within the Traditional territory of the Attawandaron, Anishinaabeg, Haudenosaunee, and Lunaapeewak peoples

- 10 First Nations whose traditional territory overlaps with the Upper Thames River Watershed, including Chippewas of the Thames First Nation

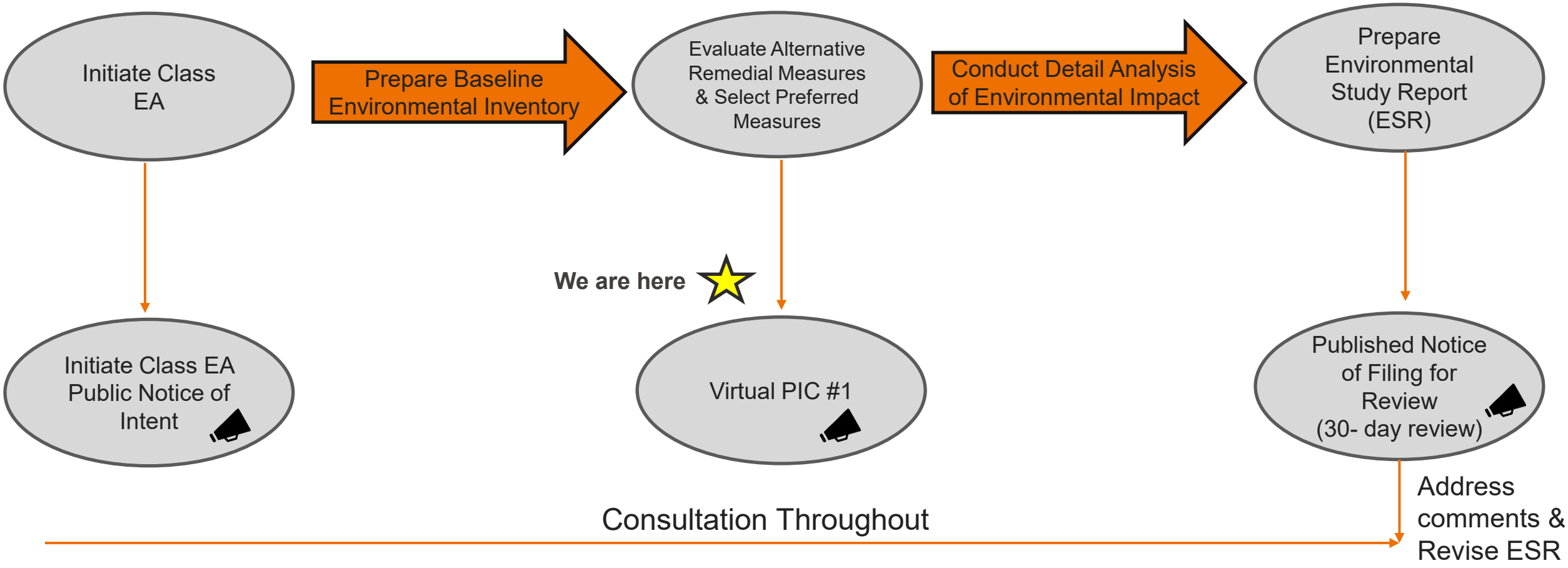
- Fullarton Conservation Area is located on the North Thames River, which feeds into Fanshawe Lake and the Thames River

What is the purpose of this meeting?

To present and gather your input on the:

- Study background & purpose
- Existing and future dam needs
- Problem and opportunities
- Existing environmental conditions
- Evaluation of Alternative Solutions
- Recommended Solution
- Potential impacts to the environment and proposed mitigation measures
- Next Steps in the process

Conservation Ontario Class Environmental Assessment for Remedial Flood and Erosion Control Projects



Site Background

The Upper Thames River Conservation Authority (UTRCA) operates the Fullarton Dam. The dam is an earth dam that was constructed in the 1950's and is in the Fullarton Conservation Area.

In 2007, UTRCA completed a Dam Safety Assessment that identified the need to undertake improvements to the dam structure to meet appropriate safety and stability standards.

Problem Statement

EA Category

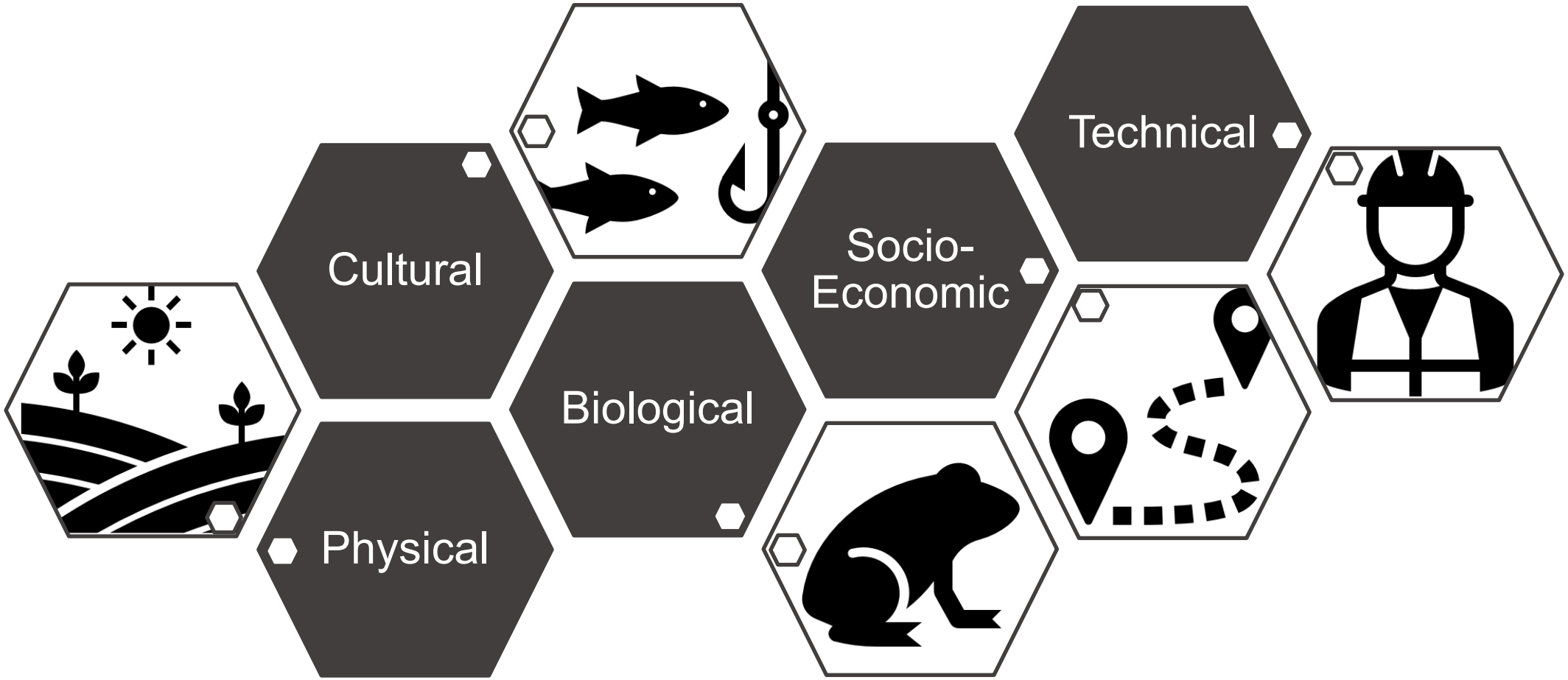
Riverine Flooding

The purpose of this EA is to identify alternatives that address the dam safety deficiencies. The preferred management strategy for the dam will be selected based on natural environment considerations and the social uses associated with the dam, reservoir and rest of the Fullarton Conservation Area.

Potential Solutions

- Riverine flooding and dam safety issues can be mitigated by:
  - Dam Decommissioning to address safety, enhance local environmental conditions, and restore stream function
  - Channel Realignment to support flow conveyance and capacity

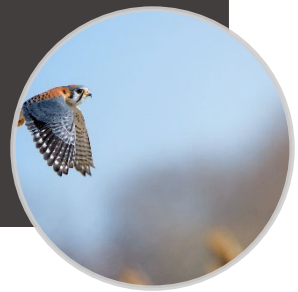
Evaluation Criteria: What is considered during the evaluation?



Environmental Evaluation Criteria

- Fish and fish habitat
- Wildlife habitat
- Significant vegetation communities

Biological



- Unique Landforms
- Geomorphology
- Earth Science - Areas of Natural and Scientific Interest

Physical

Environmental Evaluation Criteria

- Traditional Land Uses
- Recreational Use of Existing Shoreline Access Locations (hike, fish, canoe)
- Aesthetic or Scenic Landscapes or Views
- Heritage

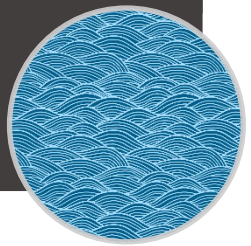
Cultural

- Surrounding Neighborhood or Community (park users)
- Existing Infrastructure
- Pedestrian Traffic Routes (trail over dam)

Socioeconomic

- Rate of Erosion in Ecosystem (sediment transport)
- Flood Risk in Ecosystem
- Slope Stability (dam)

Engineering/ Technical



Alternative 1

Do Nothing: Repair existing dam and maintain reservoir at the site

- Age of dam and outlet infrastructure may present a safety risk related to leaks developing at the outlet location
- Outlet structure is not fish passable
- Thermal warming in reservoir increasing water temperature, impacting water quality
- Dam would require further assessment; maintaining dam in compliance with safety regulations would require upgrades to flow controls and safety measures

Alternative 2

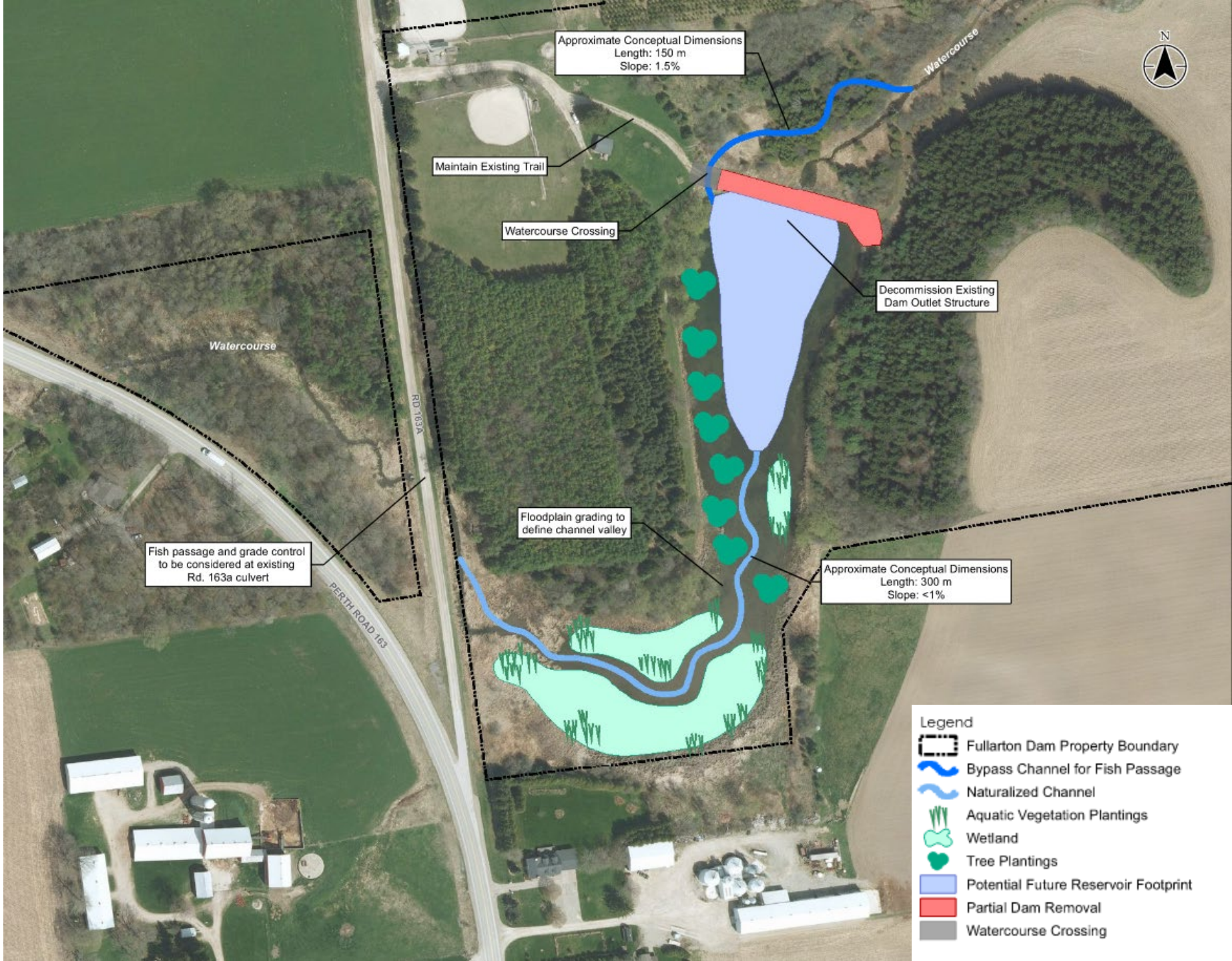
Maintain Reservoir & Dam with New Fish Bypass Channel

- Maintain dam, eliminate drop inlet reservoir outlet
- Construction of fish passage channel
- High flows will continue to spill over the dam
- Fish passage will increase connectivity and fish diversity
- Does not resolve risks associated with dam structure, requires ongoing maintenance and safety plans

Alternative 3

Partial Dam Removal & New Constructed Bypass Channel

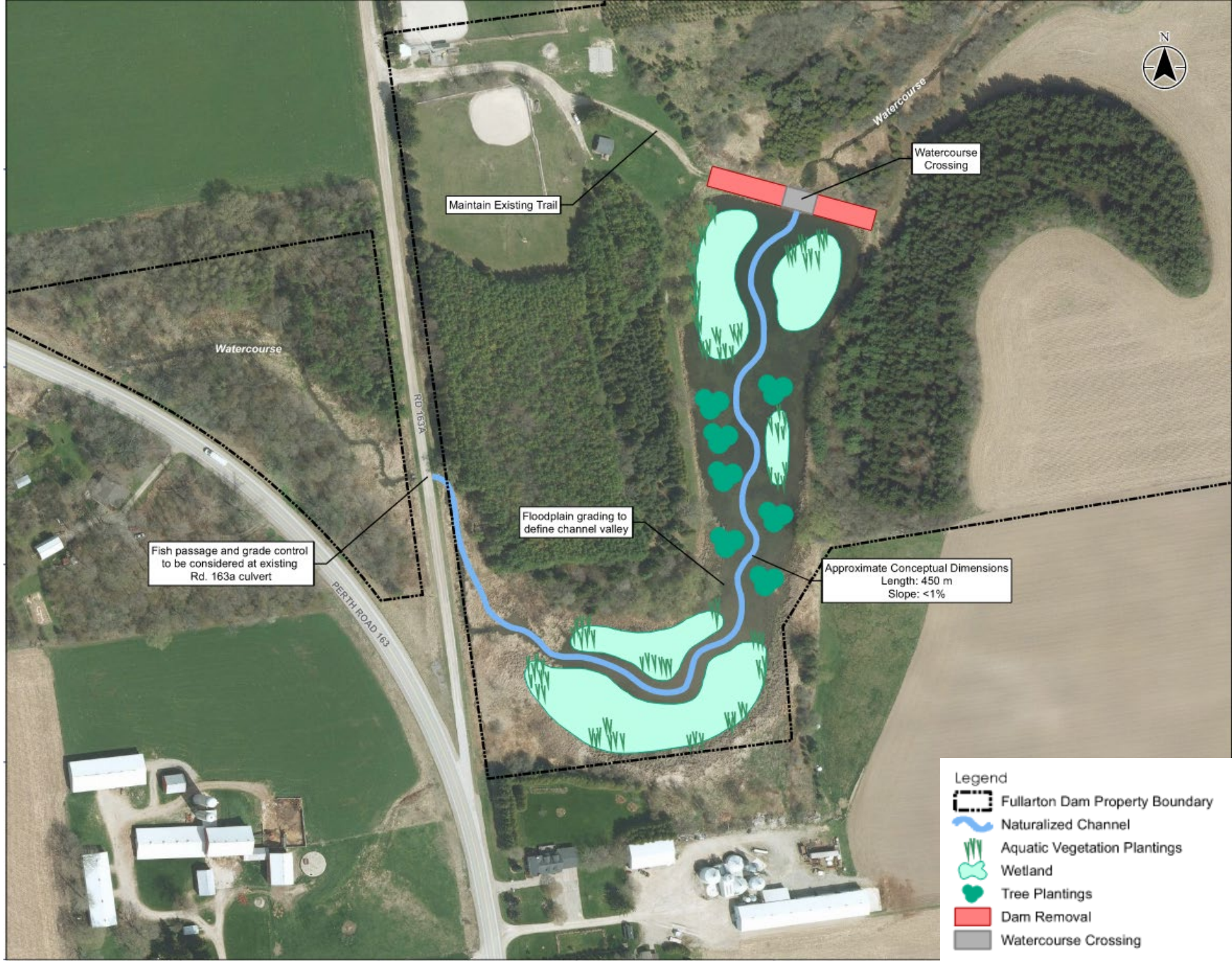
- Lower dam height to reduce reservoir water levels
- Eliminate drop inlet reservoir outlet and construct fish passage channel
- Increased terrestrial habitat upstream in former reservoir area



Alternative 4

Dam Decommissioning & Watercourse Restoration

- Eliminate dam and restore watercourse
- Create naturalized channel through former reservoir
- Wetlands will be constructed on floodplain to offset loss of reservoir habitat
- Dam safety and maintenance no longer required



Evaluation of Alternative Solutions

	Alternative 1: Maintain existing dam and reservoir at the site	Alternative 2: Maintain Reservoir & Dam with New Fish Bypass Channel	Alternative 3: Partial Dam Removal & New Constructed Bypass Channel	Alternative 4: Dam Removal & Watercourse Restoration
Physical	●	◉	◉	○
Biological	◉	◉	◉	○
Cultural	◉	◉	◉	○
Socioeconomic	◉	◉	○	○
Engineering/ Technical	●	◉	◉	○
Conclusion	Least Preferred	Somewhat Preferred	Moderately Preferred	Preferred

Least Preferred ● → ◉ → ◉ → ○ **Most Preferred**

Recommended Solution

Alternative 4: Dam Removal and Watercourse Restoration is the preferred solution

- Addresses Riverine Flooding through Dam Decommissioning and Channel Realignment
- Enhances terrestrial and aquatic habitat
- Re-establishes natural function and appearance of the watercourse
- Creation of habitat linkages with fish passage
- Removal of thermal warming and water quality effects caused by the reservoir
- Low future ongoing dam maintenance and safety costs

Mitigation Measures & Environmental Considerations

Surface Water / Soil Stabilization

- Erosion and sediment control measures employed

Terrestrial

- Avoid vegetation removal from April 1 to August 31
- Permits may be required from MECP, UTRCA

Aquatic

- No in-water work from May 1 to July 15
- Approval from DFO with Request for Review for working within fish and mussel habitat
- Permits may be required from DFO, MECP

Noise

- Adhere to Municipality of West Perth By-Law (NO. 053-2009) which prohibits construction-related noise from 9:00 PM to 7:00 AM daily

Groundwater

- Conduct supply well survey

Built Heritage

- North Thames River
- 2955 Perth Road 163

Archaeology

- Undertake Stage 2 Archaeological Assessment as required

Social

- Re-establish trail crossing

Climate Change

- Improve flood resilience
- Improve water quality and habitat conditions

Next Steps & Feedback

For more information, please visit:

https://thamesriver.on.ca/water-management/recreational-dams/fullarton-dam-class-ea/

To submit your feedback on the project, please contact:

Jillian Smith
Upper Thames River
Conservation Authority
Phone: (519) 451-2800, ext 320
smithj@thamesriver.on.ca

Heather Amirault
Stantec Consulting Ltd.
Phone: (519) 585-7453
heather.amirault@stantec.com

Next Steps:

- Review feedback from consultation and incorporate into alternatives & evaluations where possible
- Notice of Completion (Filing Environmental Study Report)