

Coldstream Dam Decommissioning Study

WECI Funding

WECI Program

- ▶ Water and Erosion Control Infrastructure Program
- ▶ WECI program is a cost sharing arrangement between the Ontario government and municipalities that funds repairs to conservation authority infrastructure
- ▶ funding proposals are submitted by conservation authorities
- ▶ SCRCA proposed dam decommissioning studies for the Coldstream dam and Head St. dam (Strathroy)
- ▶ WECI funding awarded this summer
- ▶ the St. Clair Conservation Foundation has committed to contributing funds to these studies to reduce the municipal investment
- ▶ **if there is no interest in completing this study on behalf of Middlesex-Centre, SCRCA will move forward with the Strathroy study only**

2021/22 Proposed Study

- ▶ cost of proposed study is \$40,000
- ▶ St. Clair Conservation Foundation contribution of \$10,000
- ▶ require \$10,000 from Middlesex-Centre to proceed with study

The Scope of Study will include:

- ▶ Existing structure condition
- ▶ estimated long-term maintenance expenses
- ▶ safety concerns
- ▶ floor and erosion concerns from dam removal
- ▶ community impacts
- ▶ dam removal alternative concepts
- ▶ estimated costs
- ▶ investigation into DFO approvals that would be required

Coldstream Dam History

- ▶ once the site of a grist mill, saw mill, dam, and pond
- ▶ original grist mill constructed in 1842 followed by a sawmill
- ▶ operated until 1948 when milling operation was closed
- ▶ spillway structure collapsed during a storm in 1953
- ▶ conservation authority constructed current dam in 1972
- ▶ intended uses were recreation, emergency water supply, improved streamflow, and raising the water table
- ▶ Enviro-friends of Coldstream (local community group) had a consultant develop a naturalization study in 1996 which included dam alternative recommendations

Old Mill Dam



Dam, Reservoir, and Beach After Construction



Beach on a Busy Day (1970'S ?)

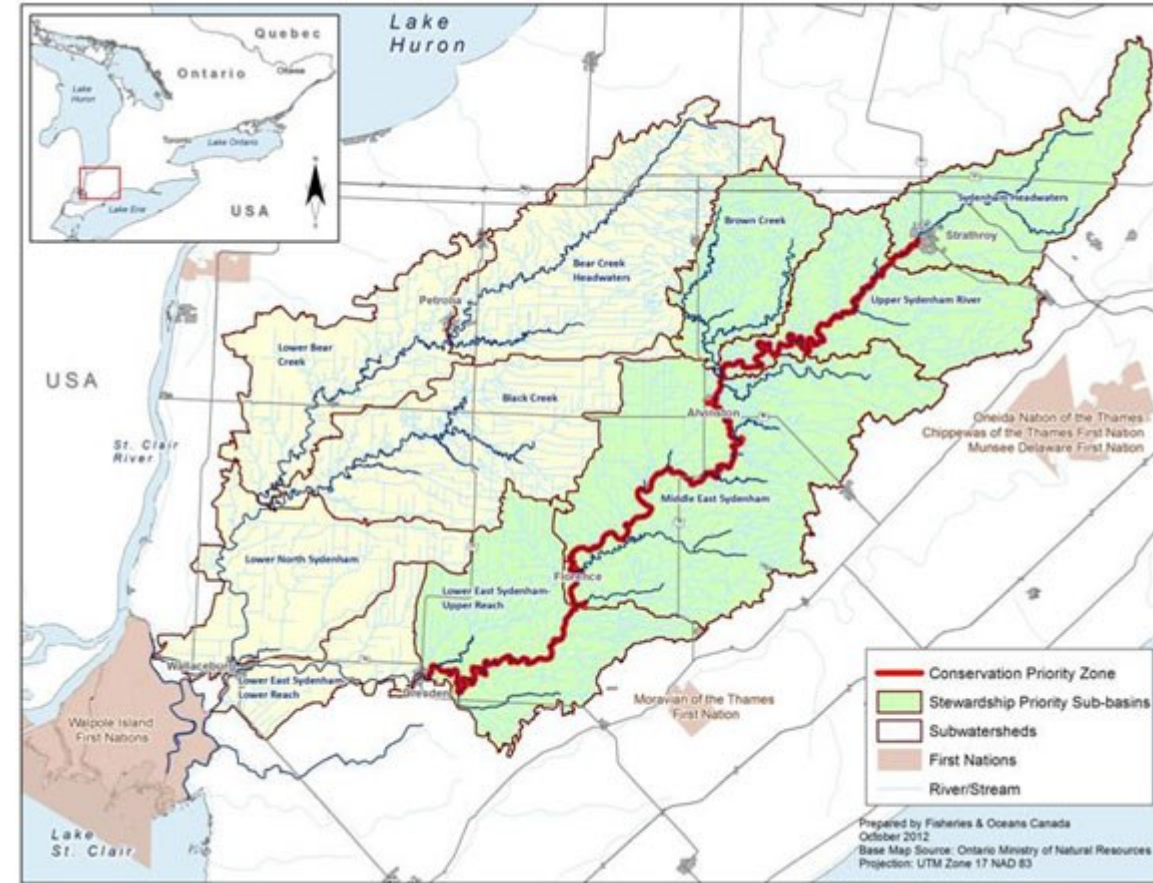


Coldstream Reservoir Today

- ▶ reduced recreational value
- ▶ bacteria levels have not permitted swimming since 1980's?
- ▶ reservoir has experienced in-filling due to sediment deposition
- ▶ nuisance algae growth in warm months, odour concerns when algae dies off
- ▶ poor aesthetics at times
- ▶ has experience abundant vegetation growth in the past
- ▶ still provides paddling, fishing, skating, and wildlife viewing opportunities
- ▶ has cultural/historical value

The Sydenham River

- ▶ two principal branches (east and north)
- ▶ east branch is 165km long from near Ilderton to Wallaceburg
- ▶ supports an amazing diversity of aquatic life
- ▶ greatest diversity of freshwater mussels of any watershed in Canada
- ▶ at least 34 species of mussels and 84 species of fish
- ▶ 13 species of mussels assessed as at risk, 6 species of fish
- ▶ many turtle species at risk



Environmental Impacts of Barriers and Reservoirs

- ▶ Fish Passage - dam acts as a barrier and prevents fish movement (impacts migration from spawning to nursery to feeding areas), impacts mussel migration as they use fish for distribution
- ▶ Alterations to thermal regime - summer temperatures are increased by 3°C on average as water travels through the reservoir (impacts fish/mussels/other aquatic organisms and causes increased algal growth)
- ▶ Alterations to Sediment transport – river will naturally carry sediment, when it is deposited in reservoir the river will have increased erosive power downstream
- ▶ Downstream areas deprived of sandy substrate (important for SAR mussels, Eastern Sand Darter, and Eastern Spiny Softshell Turtle)
- ▶ Increased algal growth
- ▶ Oxygen depletion - increased temperatures hold lower oxygen levels, algae die-off will cause oxygen levels to crash
- ▶ Water quality impacts - including increased bacteria and nutrients

Potential Next Steps

- ▶ Dam Study to determine lifespan, safety, deficiencies, removal options/alternatives
- ▶ If completed, and there is a viable alternative, conduct a Class Environmental Assessment to engage the public and stakeholders (when funding permits)
- ▶ Determine the future of the dam/reservoir