

STAFF REPORT – September 18, 2025

TO: Chair and Members of Ganaraska Region Conservation Authority

RE: Garden Hill Dam

A presentation will accompany this staff report.

Background

The Ganaraska Region Conservation Authority (GRCA) constructed the Garden Hill Dam on the North Ganaraska River within the village of Garden Hill in 1959. The structure was part of the construction of Northumberland County Road #9. The dam outlets within a large extended concrete box culvert road structure, with an approximate size of 12m x 12m. The original purpose of the structure was to manage flows in the North Ganaraska River, provide recreational opportunities and to provide habitat for wildlife.

The reservoir is also used by the Port Hope Fire Department as a source of water for fire suppression and a dry hydrant is accessed off of Mill Street North.

2023 Dam Inspection and Report

In 2023, GRCA received a small amount of funding from the Water and Erosion Control Infrastructure (WECI) Fund to retain a consultant to complete a formal dam inspection and prepare a summary report. The report was released in December 2023 and included a number of recommendations for the GRCA, including:

- Ongoing monitoring of dam elements, particularly the possible movement in the upstream wingwalls
- Complete a condition assessment of the concrete and prepare plans for remediation
- Prepare an updated Dam Safety Review (DSR)
- Complete a Public Safety Risk Assessment and prepare an updated Public Safety Plan
- Review safety signage
- Remove vegetation along the north embankment (ongoing)
- Relocate shoreline anchors for safety booms away from the sluiceway (completed by GRCA in 2025)
- Install additional erosion protection/stone
- Re-seal the construction joints between the upstream wingwalls and abutment walls
- Reinforce the south wall of the control building
- Replace the deteriorating stoplogs

The report included a number of recommendations for the County as well, relating to the maintenance of the road and culvert, road drainage, safety measures, etc.

The report estimated \$253,000 in costs for GRCA to implement all of the assigned recommendations. As some of the recommendations could be carried out by staff in place of consultants, a degree of cost savings can be achieved, putting the costs closer to \$200,000.

Water and Erosion Control Infrastructure (WECI) Program

The Water and Erosion Control Infrastructure (WECI) program is a Ministry of Natural Resources (MNR) capital cost share program with municipalities to provide matched funding to Conservation Authorities (CAs) for major maintenance or related studies of water or erosion control structures that are either owned or maintained by Conservation Authorities. This program contributes to public safety and natural hazard prevention at the local watershed level.

Since the significant reductions in provincial funding in the mid-nineties, Conservation Authorities no longer have budget for the maintenance of flood and erosion control infrastructure and rely heavily on the WECI program. The province provides \$5,000,000 annually to the WECI program and these funds are allocated to priority projects across the 36 Conservation Authorities. If local (matching) funding can be secured through municipal partners, Conservation Authorities submit project proposals to the WECI Committee for review and approval.

A recent change to the WECI program has reduced the frequency of submission of applications from annually to every other year. The next application intake is spring of 2026.

GRCA staff have reached out to staff at the Municipality of Port Hope to request funding support to enable GRCA to submit an application for funding to the WECI program and were advised that they are facing a number of pressures and it is very difficult to support this initiative. It was suggested that this request for funding would have to be a specific ask of Council amongst all of the other considerations.

Priority Issues

Within the last two years, the original stoplogs at the bottom of the dam have deteriorated, are leaking, and will require replacement in the summer/fall of 2026. At the current rate of deterioration, the stoplogs will no longer be able to maintain water levels in the reservoir. The proposed replacement work will require that the reservoir be drawn down significantly to facilitate the work. It would be beneficial

to undertake concrete repairs and painting of the stoplog gains in conjunction with this work to simplify logistics and save costs. The drawdown will also require significant efforts to mitigate environmental impacts to the reservoir and minimize the transport of sediment that has been accumulating in the reservoir over the past 66 years.

RECOMMENDATION:

THAT the Ganaraska Region Conservation Authority receives the staff report regarding the Garden Hill Dam for information;

AND FURTHER THAT staff be directed to seek sources of matching funding to support a 2026 WECl application for dam maintenance and repairs.

Prepared by:

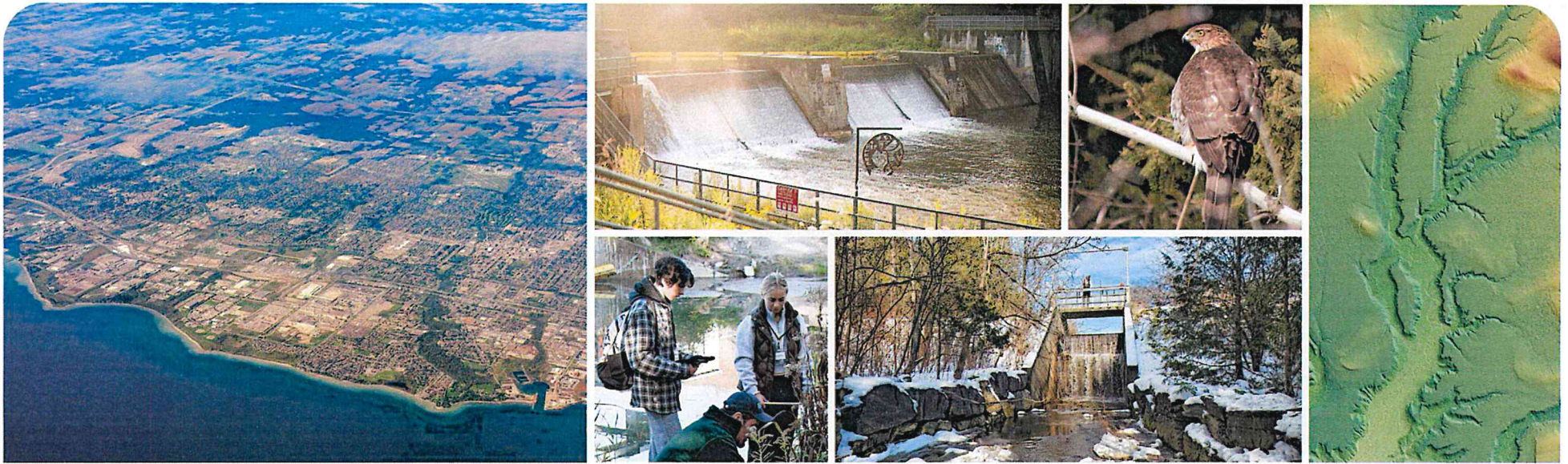


Cory Harris, P.Eng.
Watershed Services Coordinator

Recommended by:



Linda J. Laliberte, CPA, CGA
CAO / Secretary-Treasurer



Garden Hill Dam – Maintenance and Repairs

Cory Harris, P.Eng.
Watershed Services Coordinator, GRCA

GRCA Board Meeting
September 18, 2025





Outline

- Brief History of the Dam
- Ownership of Outlet Structure
- 2023 Dam Inspection Report Recommendations
- Priority Items
- Funding
- Looking to the Future





Brief History

- The GRCA constructed the Garden Hill Dam on the North Ganaraska River within the village of Garden Hill in 1959.
- The structure was part of the construction of Northumberland County Road #9 and the dam outlets within a large extended concrete box culvert road structure, with an approximate size of 12m x 12m.
- The original purpose of the structure was to manage flows in the North Ganaraska River, provide recreational opportunities and to provide habitat for wildlife.





Brief History - continued

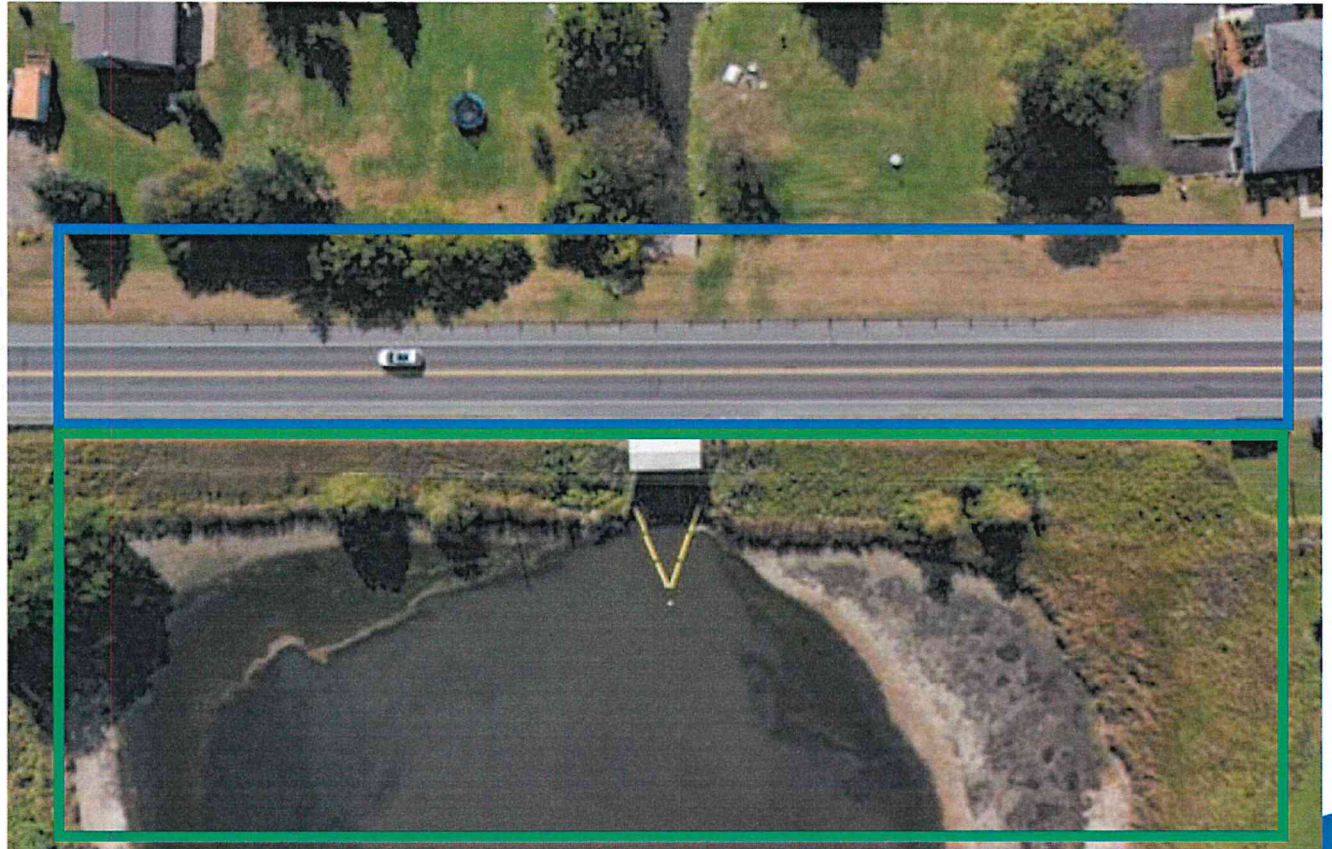
- The reservoir is also used by the Port Hope Fire Department as a source of water and a dry hydrant is accessed off of Mill Street North.





Ownership of Outlet Structure

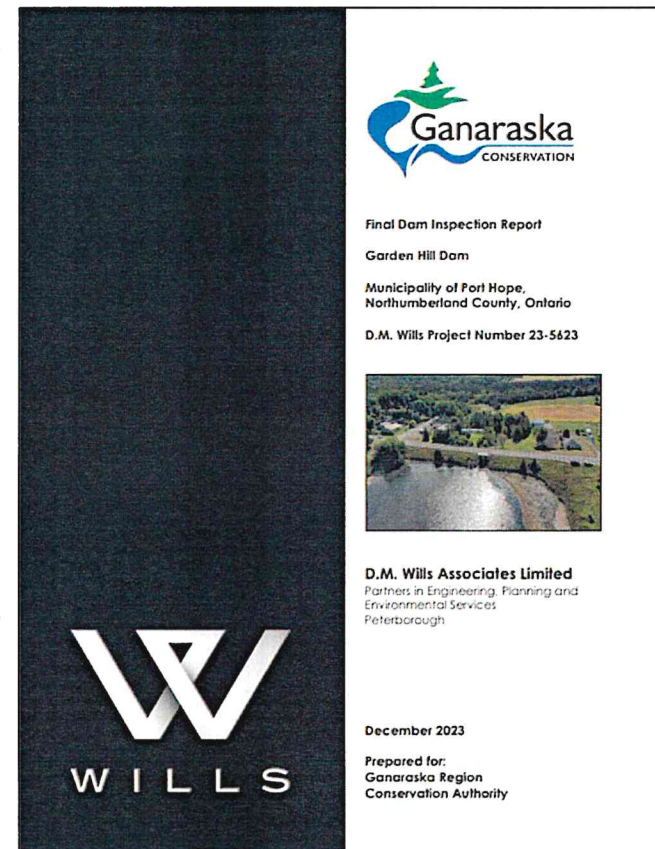
- The roadway, embankment and culvert is owned and managed by Northumberland County
- The reservoir and dam outlet structure is owned and managed by GRCA





Dam Inspection Report

In 2023, GRCA received a small amount of funding from the Water and Erosion Control Infrastructure (WECI) Fund to retain a consultant to complete a formal dam inspection and prepare a summary report. The report was released in December 2023 and included a number of recommendations based on assessing condition of dam components and the risk of component failure .





Dam Inspection Report Recommendations

- Ongoing monitoring of dam elements, particularly the possible movement in the upstream wingwalls
- Complete a condition assessment of the concrete and prepare plans for remediation
- Prepare an updated Dam Safety Review (DSR)
- Complete a Public Safety Risk Assessment and prepare an updated Public Safety Plan
- Review safety signage
- Remove vegetation along the north embankment (ongoing)
- Relocate shoreline anchors for safety booms away from the sluiceway (completed by GRCA in 2025)
- Install additional erosion protection/stone
- Re-seal the construction joints between the upstream wingwalls and abutment walls
- Reinforce the south wall of the control building
- Replace the deteriorating stoplogs

Estimated Costs for GRCA to Implement Recommendations: \$253,000

Dam Inspection Report – Wingwalls



Dam Inspection Report – Concrete Condition



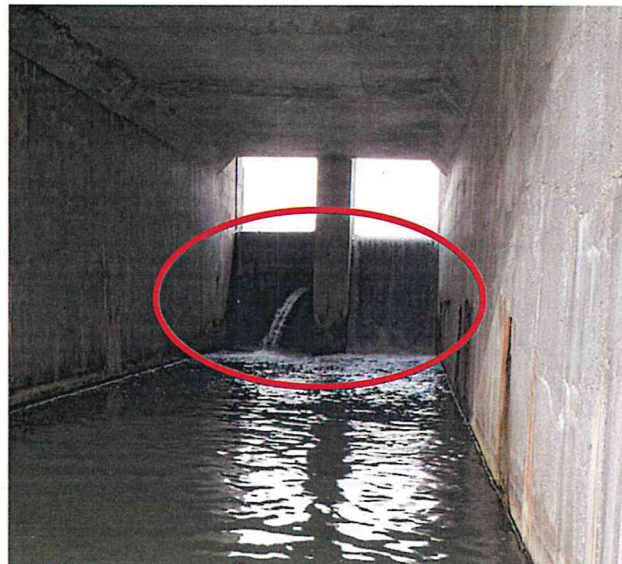
Dam Inspection Report – Control Building



Dam Inspection Report – Stoplogs



Fall 2023



Fall 2024

- Within the last two years, the original stoplogs at the bottom of the dam have deteriorated, are leaking, and will require replacement in the summer/fall of 2026.
- At the current rate of deterioration, the stoplogs will no longer be able to maintain water levels in the reservoir.

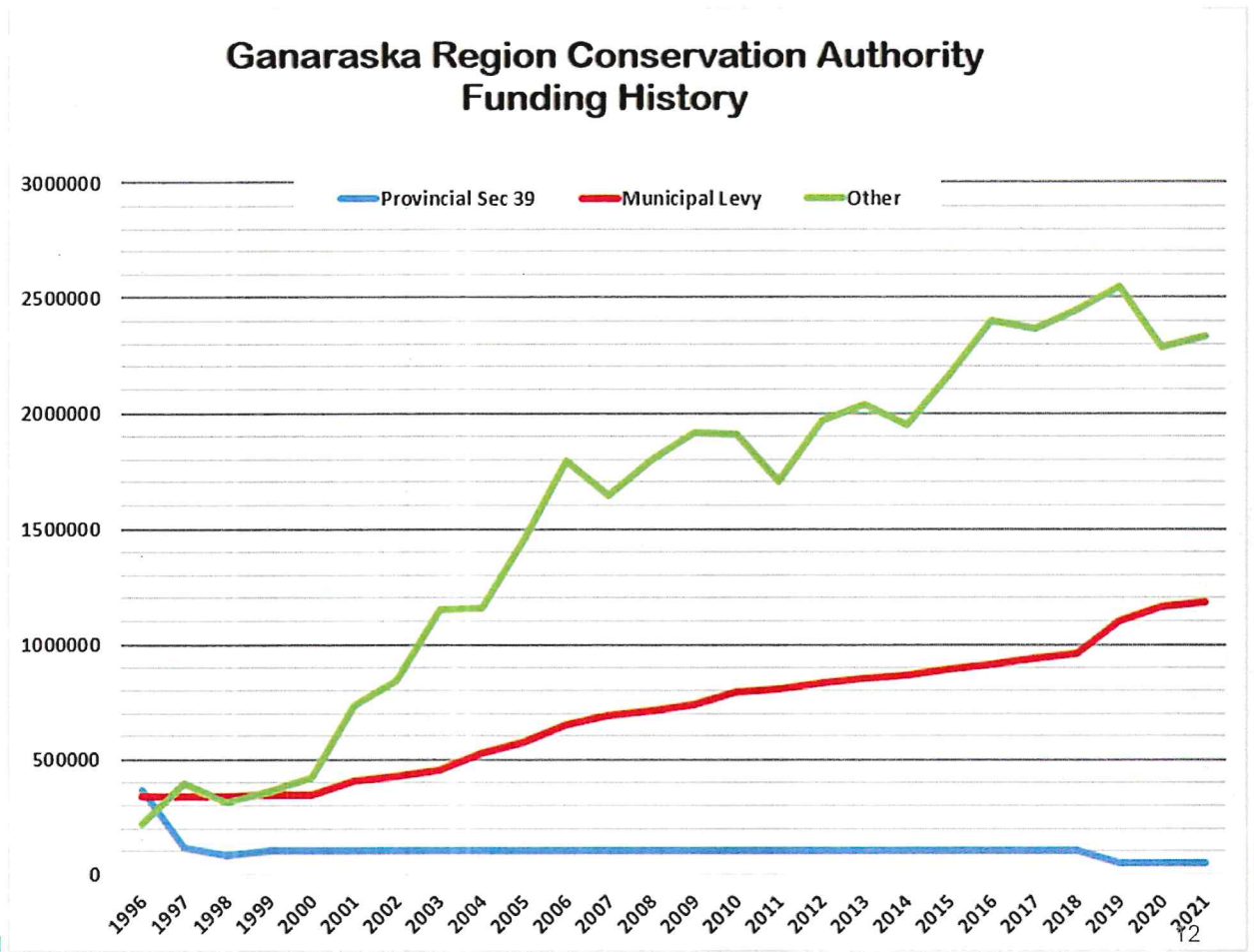


Summer 2025



Funding Challenges

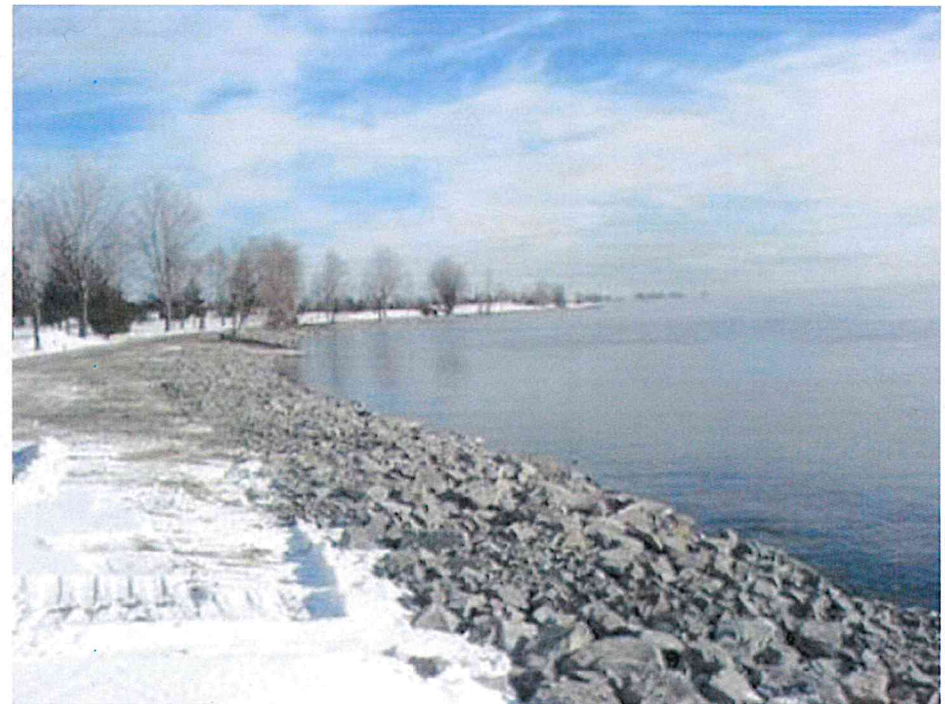
- Previous to the cuts in the mid-1990s, CAs had received provincial funding to support capital projects, including maintenance of dams, flood control channels, etc.
- In 1997, this funding was drastically reduced (see blue line)





Water & Erosion Control Infrastructure (WECI) Program

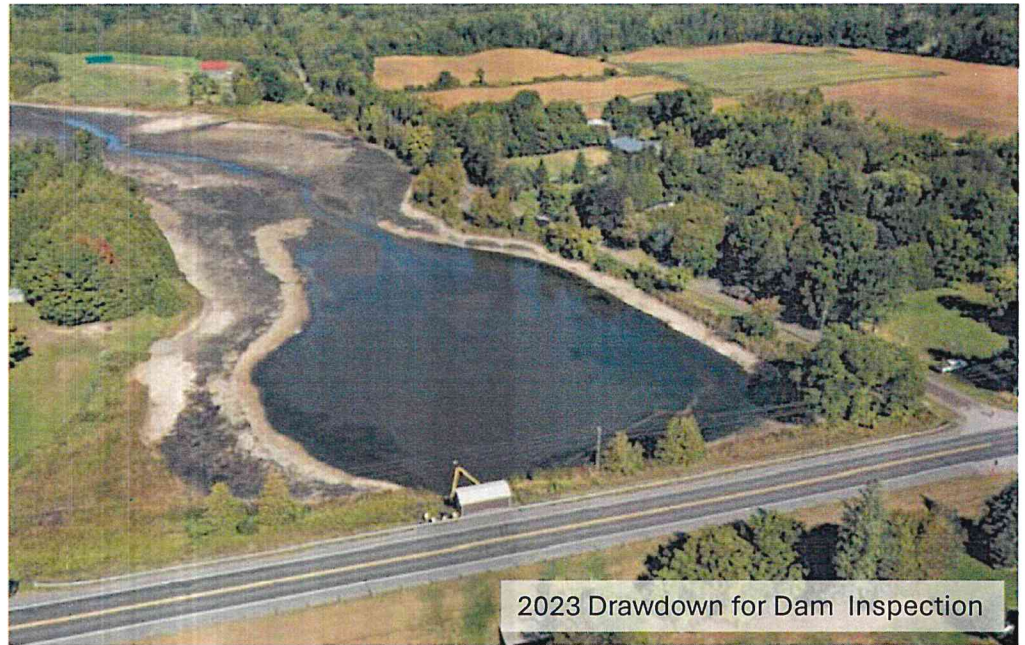
- The Water and Erosion Control Infrastructure (WECI) program is a Ministry of Natural Resources (MNR) capital cost share program with municipalities to provide matched funding to Conservation Authorities (CAs) for major maintenance or related studies of water or erosion control structures that are either owned or maintained by Conservation Authorities.
- Cost share funding is 50% Local Municipality and 50% Province
- This program contributes to public safety and natural hazard prevention at the local watershed level.



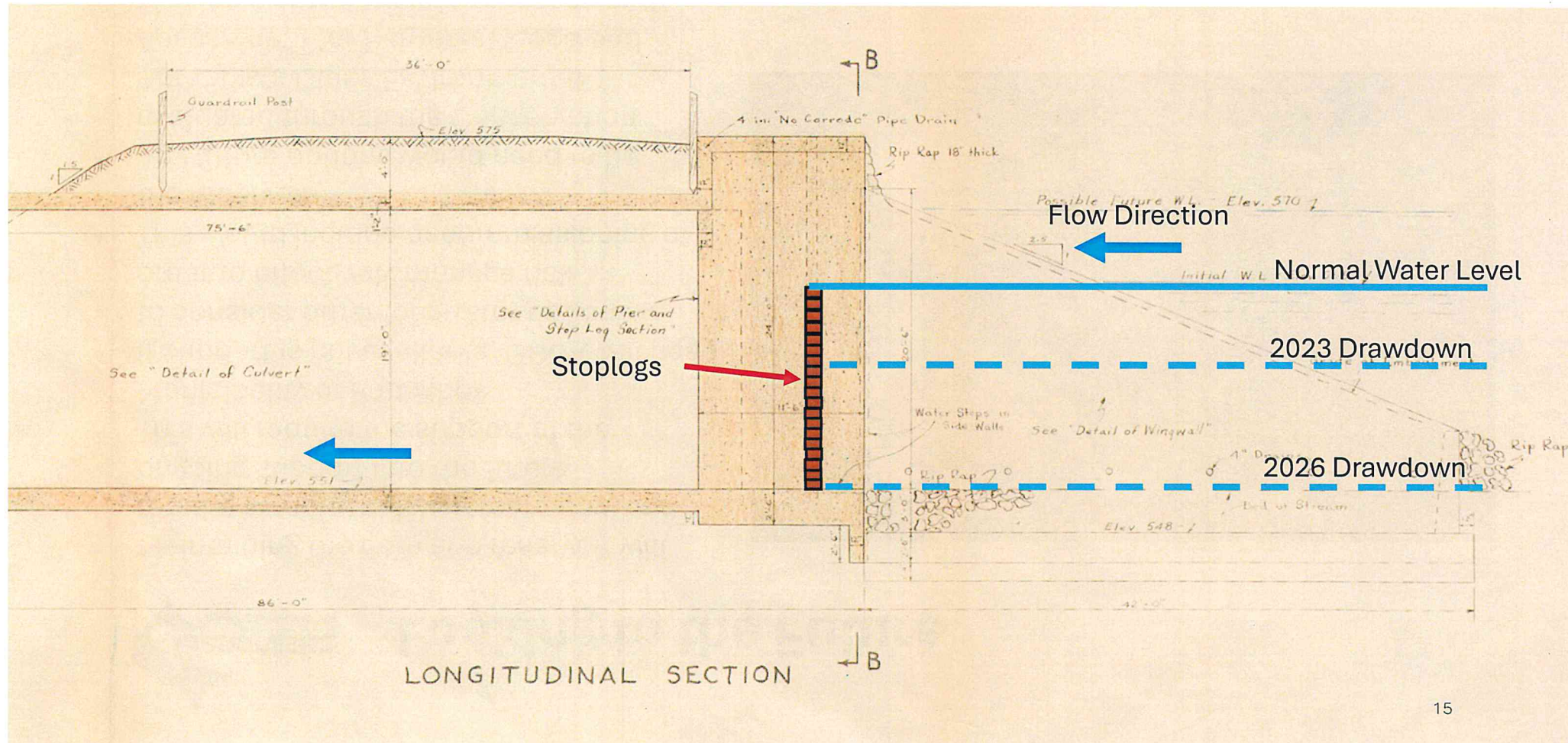


Logistics for Replacement of Stoplogs

- 2023 drawdown for the inspection was significant (removed 7 of the 19 logs per side)
- 2026 drawdown to replace stoplogs would be significantly lower, essentially draining the reservoir
- It would be beneficial to undertake concrete repairs and painting of the stoplog gains in conjunction with this work to simplify logistics and save costs.
- Would need to implement mitigation options to protect aquatic life, particularly fish, turtles, frogs, etc. and manage discharge of accumulated sediment



Side View of Dam Outlet Structure





Looking to the Future

- Maintaining the dam and reservoir will require significant investment now and ongoing support into the future
- This will require the support of the Municipality of Port Hope
- If support is not available, GRCA will need to consider other long-term options in order to effectively manage risk
- This would include decommissioning of the reservoir
- Any future options would need to be evaluated through the [Conservation Authority's Class Environmental Assessment for Remedial Flood and Erosion Control Projects](#) process and would include public input/comment





Thank you!

