

To: SPECIAL COUNCIL

Meeting Date: 1/31/2023

Subject: **Riverside Dam Monitoring Update**

Submitted By: Kevin De Leebeeck, Director of Engineering

Prepared By: Scott MacDonald, Project Engineer

Report No.: 23-155-CD

File No.: N/50083-80

Wards Affected: Ward 1
Ward 3

RECOMMENDATION(S):

THAT Report 23-155-CD Riverside Dam Monitoring Update be received as information.

EXECUTIVE SUMMARY:

Purpose

- This Report provides a summary of the findings from the Riverside Dam inspection completed under the passive management monitoring program in late August 2022.

Key Findings

- The inspection found that the condition of the north control structure has experienced some significant changes since the last inspection completed in 2018.
- It is recommended that maintenance repair work be completed on the north control structure within the next 1 – 2 years, including removal of accumulated debris in the vicinity.

Financial Implications

- The cost of the repair work is estimated at \$200,000, including design and construction. Capital project A/01432-40 has been submitted as part of the 2023 budget for Council consideration.

STRATEGIC ALIGNMENT:

- Strategic Action; or
- Core Service

Objective(s): Not Applicable

Strategic Action: Not Applicable

Program: Asset Management

Core Service: Asset Management Planning

A passive management approach for the Riverside Dam has been employed to monitor the condition of the dam on a regular basis. Any significant changes to the condition or short-term risk associated with the dam are to be promptly reported to Council. Appropriate repairs or other measures will need to be completed as necessary to minimize these risks.

BACKGROUND:

A Municipal Class Environmental Assessment (EA) was undertaken to assess various alternatives to address concerns related to the deteriorating condition of the Riverside Dam. The Class EA was completed in 2018, identifying the preferred alternative of rebuilding the dam. Detailed design began in 2019 and was subsequently paused at the 60% design milestone in late 2021 through Report 21-227-CD where Council adopted a passive management monitoring program. This approach involves regular inspections of the dam to monitor its condition and assess short-term risks with any substantive change in condition or short-term risk being promptly reported to Council.

ANALYSIS:

2022 Inspection Summary

An inspection of the dam was completed in late August 2022 with primary findings as summarized below:

- The inspection has established that the dam remains in poor condition, and has continued to deteriorate since the last inspection in 2018.
- Concrete blocks have since fallen out of the north control structure which is considered a significant change from the last inspection.

- A nearby retaining wall bordering City owned property (185 King Street) is at risk of failure due to a cavity forming below the retaining wall structure. This property is currently vacant, but has been identified as a potential future park revitalization location.
- The retaining wall on the north side of the Speed River, just downstream of the dam is in poor condition, with erosion around the footings and open joints.

The inspection report recommends:

- Barriers should be placed within the City owned property of 185 King Street, as soon as possible, at a minimum 10m radius from the face of the retaining wall to prevent vehicles or pedestrians from getting too close to the retaining wall.
- Repairs to the north control structure, including stabilization of the internal raceway similar to what was completed in 2009 for the south control structure, should be completed within the next 1-2 years. Failure of the control structure would compromise the structural integrity of the dam. Accumulated debris around the dam should also be removed as part of this repair work.
- Repairs to the north retaining wall structure should be completed within the next 3-5 years. The need for repair work should be confirmed through future inspections as per the passive management monitoring program.

185 King Street Property

Staff are coordinating the installation of barriers with Operations to prevent vehicles and pedestrians from getting too close to the retaining wall adjacent to the river.

North Control Structure Repair

Staff are recommending repairs be completed to the north control structure and have submitted a capital project (A/01432-40) in the amount of \$200,000 as part of the 2023 budget for Council consideration. The details of the repair work for the north control structure will be confirmed through detailed design, however at this time two options are being considered:

1. Install large rip-rap inside the raceways and in front of the structure; this is what was done at the south control structure in 2009.
2. Completely fill the raceways with grout.

Either of these repair options will require permits and approvals from the appropriate review agencies. Preliminary discussions with the Ministry of Environment, Conservation and Parks (MECP), the Ministry of Natural Resources and Forestry (MNR), and the Grand River Conservation Authority (GRCA) are ongoing to confirm permitting requirements.

As part of next steps, a design consultant would be retained to review repairs options, complete the design of the repair, and secure the required permits and approvals. A contractor would then be retained to complete the repair work.

North Retaining Wall

This retaining wall is separated from the dam and is a newly identified deficiency. As it is newly identified, a comparison with previous inspections cannot be made to determine if any significant changes have occurred. Staff are not recommending repairs at this time, but rather to continue assessing this retaining wall structure as part of the passive management monitoring program for any significant changes arising from subsequent inspections.

EXISTING POLICY / BY-LAW(S):

Not applicable.

FINANCIAL IMPACT:

- The cost of the repair work is estimated at \$200,000, including design and construction. Capital project A/01432-40 has been submitted as part of the 2023 budget for Council consideration.

PUBLIC VALUE:

Transparency:

The Community showed significant interest in what happens to Riverside Dam and this section of the Speed River during the Class Environmental Assessment. It is important that the City communicates any proposed work on the dam to the Community. This report provides a transparent update regarding the inspection completed this year and the required maintenance repairs being recommended.

ADVISORY COMMITTEE INPUT:

Advisory Committees Consulted:

The Municipal Heritage Advisory Committee (MHAC) would be kept informed of the planned repair work.

PUBLIC INPUT:

Posted publicly as part of the report process.

INTERNAL / EXTERNAL CONSULTATION:

The following external agencies will be consulted regarding repairs to the north control structure.

- Ministry of Environment, Conservation and Parks (MECP); preliminary discussions with MECP have taken place regarding the Class Environmental Assessment completed for the Riverside Dam. Further consultation will be completed, as required.
- Ministry of Natural Resources and Forestry (MNR); preliminary discussions have taken place regarding the Lake and Rivers Improvement Act. Further consultation will be completed as the design for the repair work progresses.
- Grand River Conservation Authority (GRCA); preliminary discussions have taken place and an application for a permit from GRCA will be submitted when design drawings for the repair work are available.
- Department of Fisheries and Oceans (DFO) would also be consulted for any in-water work associated with the repair as it relates to impacts on fish and fish habitat.

CONCLUSION:

In accordance with the passive management monitoring approach for the Riverside Dam, an inspection was completed in late August 2022. The inspection found a significant change to the north control structure has occurred that requires immediate repair. Detailed design and implementation of the north control structure repair work is subject to 2023 budget approval of the associated capital project A/01432-40.

REPORT IMPACTS:

Agreement: **No**

By-law: **No**

Budget Amendment: **No**

Policy: **No**

APPROVALS:

This report has gone through the appropriate workflow and has been reviewed and or approved by the following as required:

Director

Deputy City Manager

Chief Financial Officer

City Solicitor

City Manager

ATTACHMENTS:

1. 23-155-CD Appendix A – Inspection Report