To:	**COUNCIL**	**Meeting Date:** 06/26/2018
Subject:	**Riverside Dam Class Environmental Assessment**	**Report No:** 18-103(CD)
From:	**Scott MacDonald, P.Eng., Project Engineer**	**File No:** C11-01

RECOMMENDATION(S)

THAT Report 18-103 (CD), regarding the Riverside Dam Class Environmental Assessment, be received;

AND THAT Council authorizes Staff to finalize the Class Environmental Assessment Project File including authorization for staff to post the Notice of Study Completion for the public review period;

AND FURTHER THAT Council approve of initiating the Detailed Design of the Preferred Alternative in 2018, if there are no requests for a Part II review received by the Minister of Environment and Climate Change.

EXECUTIVE SUMMARY

Purpose

- Provide information to Council regarding the additional work and consultation that was completed recently to update the Class Environmental Assessment (Class EA) Project File
- Present the preferred alternative, which is to rebuild Riverside Dam, to Council
- Request Council's authorization to finalize the Project File and post the Notice of Study Completion for the public review period

Key Findings

- A Municipal Class EA to study the Riverside Dam and determine a management alternative has been completed
- Following input from Council on March 6, 2018, the criteria used to evaluate the alternatives were reviewed and the 'cost' and 'liability' criteria had their weighting reassessed to more completely reflect the sentiments of Council and some members of the public

- After the weightings for ‘cost’ and ‘liability’ were adjusted, Rebuild the Dam has been selected as the preferred alternative through the evaluation process
- Upon completion of the study, the Notice of Study Completion will be posted and the Project File will be available for review

Financial Implications

- There is no direct financial impact if Council authorizes staff to finalize the Class EA Study and approves starting the detailed design. Existing capital accounts are in place to implement the preferred alternative

BACKGROUND

On March 6, 2018, staff delivered **Report 18-016(CD)** along with the consultant’s presentation recommending “that Council authorizes staff to finalize the Class Environmental Assessment (EA) Project File including authorization for staff to post the Notice of Completion for the 30-day review period”. The draft Class EA Project File included a preliminary preferred alternative to remove Riverside Dam and Naturalize the Speed River.

In response to a significant community appeal to rebuild or repair Riverside Dam, Council acknowledged that the existence of a dam and mill pond in Preston is an asset of significant historical value and pride to the community that should be maintained. Riverside Dam is considered to be essential to the enjoyment of Riverside Park and the identity of Preston.

As a result, Council deferred the proposed recommendations in **Report 18-016(CD)** and asked staff to report back to Council on how to incorporate this feedback. On April 17, 2018 **Report 18-066(CD)** was received by Council for information which outlined an approach to include and incorporate Council feedback into the evaluation process for the Riverside Dam Class EA.

This current report is to inform Council that the additional work has been completed and that a preferred alternative to Rebuild Riverside Dam is being recommended in the Class EA Study. The report is also requesting Council’s authorization to finalize the Project File and post the Notice of Study Completion for the public review period.

ANALYSIS

Strategic Alignment:

PLACE: To take care of, celebrate and share the great features in Cambridge that we love and mean the most to us.

Goal #5 - Parks and Recreation

Objective 5.3 Develop a strategic approach to programs and services that tie investments/ resources to community outcomes.

The Riverside Dam and mill pond in Preston is an asset of great pride to the community that has cultural heritage significance and should be designed, built and maintained as a feature that enhances the experience of Riverside Park visitors.

Comments

The following provides a review of the work completed to incorporate Council feedback into the evaluation process for the Riverside Dam Class EA. Details regarding the Riverside Dam Class EA Study can be found in the draft **Executive Summary** of the Environmental Study Report (ESR), prepared by the City's Consultant (Wood, formerly Amec Foster Wheeler), attached as **Appendix A**.

Revisiting the Environmental Assessment Evaluation Criteria

In order to undertake any work on the Riverside Dam, it is necessary to complete the Riverside Dam Class EA under the Provincial Environmental Assessment Act.

Various criteria have been used in the Riverside Dam Class EA to evaluate the alternatives and determine a preliminary preferred alternative. In response to Council feedback, delegation concerns, and other comments received at and after the March 6th General Committee Meeting, the 'flooding', 'cost' and 'liability' criteria were revisited to more completely reflect the sentiments of Council and some members of the public.

Taking into consideration the comments received and the outcome of the March General Committee and Council meetings, the following conclusions were made regarding the three evaluation criteria that were revisited.

- **Flooding** – the greatest impact of flooding is within Riverside Park, which is City owned land. Council, representing the City, did not express any concerns related to the ongoing flooding of Riverside Park if a dam was rebuilt. The project team concluded that flooding of the park is not a significant criteria and the weighting for flooding should remain ***Low***.

- **Life Cycle Cost** – the estimated capital costs to Rebuild Riverside Dam (+/- $5.4M) is only $100K more expensive than to Naturalize (+/- $5.3M). The estimated average Operating and Maintenance cost for a new dam used in the EA Study is $30K per year. Council comments and other comments received indicated that this was not a significant enough relative capital cost difference when comparing the naturalize vs. rebuild alternatives, and further Council

accepts the Operating and Maintenance costs. Therefore, the project team concluded that Life Cycle Cost should have a low weighting and the weighting in the evaluation was changed from ***Medium*** to ***Low***.

- **Liability** – similar to Life Cycle Cost, the message from Council was that Liability was not a significant concern and that the City will accept the risks associated with a dam and its operations. The project team concluded that Liability should have a low weighting and it was changed from ***Medium*** to ***Low*** in the evaluation.

When Life Cycle Cost and Liability had their weighting changed from medium to low, the result is that the Rebuild and Naturalize alternatives are tied when the scoring is compared. Since the City, and particularly Council, is the proponent for this project and given the revised weightings of the above criteria are more reflective of the community and Council, the Project Team is recommending a preferred alternative to rebuild Riverside Dam which will be brought forward in the finalized Class EA Project File. A copy of the revisited **Alternative Evaluation Matrix** showing the scoring for the Rebuild and Naturalize alternatives can be found in **Appendix B.**

Additional Consultation

Due to the change in the recommended preferred alternative to Rebuild Riverside Dam since the last round of consultation, it was important to provide notification and ask for comments from the study participants, stakeholders, agencies and Indigenous Communities.

The following is a summary of the recent consultation that has occurred:

- A letter dated April 27, 2018 was sent to members of the public on the project mailing list and to project stakeholders notifying them of the update to the evaluation criteria and preferred alternative and requesting their comments. Comments from members of the public and stakeholders were received.
- An email notification was sent to the Grand River Conservation Authority (GRCA) and a meeting took place with GRCA staff on May 10, 2018. GRCA provided comments in a letter dated June 13, 2018.
- An email notification was sent to the Ministry of Natural Resources and Forestry (MNRF) and the Ministry of Environment and Climate Change (MOECC) and a meeting took place with staff on May 8, 2018. MNRF provided comments in a letter dated May 17, 2018.
- An email notification was sent to the Region of Waterloo. The Region responded that they had no additional comments beyond the original comments they provided.
- An email notification was sent to Six Nations of the Grand River (SNGR) and a meeting took place with SNGR on May 31, 2018.

- An email notification was sent to Mississaugas of the New Credit First Nation (MNCFN) and a meeting took place with MNCFN on June 13, 2018.
- An email notification was sent to the Haudenosaunee Development Institute (HDI).

Thirty-two (32) responses from the public and stakeholders were received and are included in **Appendix C.** Copies of the letters from the agencies are also included in Appendix C.

The key information from this additional consultation includes:

- The 32 responses received from the public and stakeholders were split 17 in favour of rebuild and 15 opposed to rebuild.
- The GRCA continues to support the removal of the dam and naturalize the Speed River and would encourage the City to consider the benefits and opportunities available by doing that.
- MNRF continues to support the alternative to naturalize the Speed River and encourages the City to reconsider the merits of naturalizing.
- In context of the recommendation to rebuild the dam, MNRF provided new comments regarding the Public Lands Act (PLA). MNRF said that given the uncertainty of ownership, the bed of the Speed River at the location of the dam is likely Crown land and under the PLA, the Crown will need to dispose of this land to support the implementation of the rebuild alternative. This means the Crown (Province) will need to lease or sell this land to the City of Cambridge; the value of land would be calculated at market value. The Crown has a duty to consult with Indigenous communities when considering a potential disposition of Crown land and the City would need to complete this consultation with Indigenous communities.
- If the City receives the necessary approvals to rebuild the dam, the MNRF would consider the City to be responsible for the rebuilt dam under the Lakes and Rivers Improvement Act (LRIA).
- SNGR and MNCFN continue to support the naturalization alternative, however if the dam is rebuilt they would want to see the new dam designed to allow the migration of fish.

Next Steps

- With Council authorization the Notice of Study Completion can be posted starting the public review period when the full Environmental Study Report (ESR) will be available for review.

- Members of the public who have unresolved concerns can request that the Minister of Environment and Climate Change (MOECC) ask the City to prepare an Individual Environmental Assessment (EA), known as a “Part II Order”.
- In the event of a Part II Order request, MOECC staff will review the Class EA and the Minister will make a final decision on whether an Individual EA is required.
- If there are no Part II Order requests the City can proceed with implementing the preferred alternative, tentatively as follows:
    - 2018 through 2019, project planning and detailed design
    - 2019 into 2020, approvals and permitting
    - 2020, construction.

It should be noted that during the public review period there is an opportunity for the proponent (City) and the party considering a Part II Order request to have further discussions to resolve any outstanding issues before a Part II Order request is submitted. This approach is strongly encouraged by the MOECC.

Existing Policy/By-Law:

The study of alternatives for the future of Riverside Dam has been carried out in accordance with the current Municipal Class EA process and the Environmental Assessment Act.

Upon completion of the Class EA, the proposed design and implementation plan would then be subject to approvals and conditions by a variety of regulatory agencies including, but not limited to:

- Lakes and Rivers Improvement Act (LRIA) Approval – Ministry of Natural Resources and Forestry
- Public Lands Act (PLA) – Ministry of Natural Resources and Forestry
- Endangered Species Act – Ministry of Natural Resources and Forestry
- Ontario Water Resources Act – Ministry of the Environment and Climate Change
- Alterations to Waterways Permit – Grand River Conservation Authority
- Ontario Heritage Act – Ministry of Tourism, Culture and Sport
- Navigable Waters Permit – Transport Canada
- Fisheries Act - Federal Department of Fisheries and Oceans

The agencies’ review and determination of conditions would inform the full scope of work required to ensure the following:

- that any in-river work is designed according to current standards,
- the safe construction, operation and maintenance of any infrastructure,
- protection against unnecessary flooding,
- to facilitate the movement of fish, and

- protection of Species at Risk.

Financial Impact:

There is no direct financial impact if Council authorizes staff to finalize the Class EA Study and approves of starting the detailed design. Existing capital accounts are in place to implement the preferred alternative.

The actual costs to build, operate and maintain a new dam will not be fully known until the detailed design and approval process is completed. The new dam will be required to meet current Provincial guidelines and permitting requirements. As a result, the LRIA approval could include conditions to fully mitigate the impacts of a dam that are not currently associated with the existing dam including:

- operating gates and valves to reduce flooding potential and help pass sediment
- a fish ladder to facilitate fish passage
- health and safety apparatus for safe access and protection of operations staff
- fencing, signage and river barriers to prevent recreational use near the dam, and
- an operations and maintenance plan to ensure the ongoing safe use and functioning of the dam.

Also as per the PLA the bed of the river that the dam will be built on will need to be disposed of by the Crown. The City will be required to enter into a long-term Crown lease or sale. Both of these tenure options would be calculated at market value.

Public Input:

Public consultation as required by the Municipal Class EA Process has been completed throughout the study. The study was carried out as a Schedule ‘B’ Class EA, however significantly more public consultation has been completed than is required using a Schedule ‘B’ process.

The main points of contact with the general public were at four Public Information Centres (PICs). PIC #4, held in November 2017, presented a preliminary preferred alternative to Naturalize the Speed River. Public input was requested and received at all four of the PICs.

As summarized above, since revisiting the evaluation criteria and updating the preferred alternative, notification letters were sent to members of the public on the project mailing list and comments were received. These latest comments will be incorporated in the Class EA Project File along with all previous comments received.

Internal/External Consultation:

Throughout the Class EA Study consultation with internal City committees, stakeholders and external agencies was completed. Given the wide range of technical, environmental

(natural), social and economic considerations required for the assessment of the baseline inventory and the management alternatives, and to facilitate consultation, the Project Team formed Technical and Stakeholder Advisory Committees at the beginning of the study. Four meetings with the Technical Advisory Committee (TAC) and Stakeholder Advisory Committee (SAC) were held during the Class EA Study.

Input from City Council was received at the General Committee meeting on March 6th, 2018. Council acknowledged that the existence of a dam and mill pond in Preston is an asset of significant historical value and pride to the community that should be maintained. Riverside Dam is considered to be essential to the enjoyment of Riverside Park and the identity of Preston.

As summarized above, since revisiting the evaluation criteria and updating the preferred alternative, notification was given to stakeholders, agencies and Indigenous communities and some meetings were held. The latest comments and letters received from these groups will be incorporated in the Class EA Project File.

CONCLUSION

Riverside Dam is structurally in poor condition and failure remains imminent. There is a critical need for a management alternative to be implemented. The City assumed responsibility of the dam and has completed a Class EA Study as part of that responsibility. This Study was needed to understand the constraints and opportunities associated with the future of Riverside Dam, with the purpose of determining a preferred management alternative.

Due to a significant community appeal the City acknowledged that the existence of a dam and mill pond in Preston is an asset of significant historical value and pride to the community that should be maintained. Riverside Dam is considered to be essential to the enjoyment of Riverside Park and the identity of Preston.

The Project Team has revisited the evaluation criteria and updated the preferred alternative for the Riverside Dam Class EA. The evaluation criteria were reviewed, and adjustments to the weighting for cost and liability were made. Based on these weighting adjustments the Project Team is recommending Rebuilding Riverside Dam as the preferred alternative. Notifications were sent out to the public, stakeholders, agencies and Indigenous communities, and meetings took place with agencies and Indigenous communities. Comments received will form part of the final Project File.

By completing the Class EA Study and filing it for the public review period, the City can move into the next phases of the project (if a Part II Order request is not received) and ultimately implement the preferred management alternative.

SIGNATURE

Prepared by:

Name: Scott MacDonald
Title: Project Engineer

Departmental Approval:

Name:
Title:

Acting City Manager Approval:

Name: Hardy Bromberg
Title: Deputy City Manager – Community Development

ATTACHMENTS

Appendix A – Riverside Dam Class Environmental Assessment, Executive Summary

Appendix B – Riverside Dam Class EA, Alternative Evaluation Matrix

Appendix C – Riverside Dam Class EA, Recent Comments and Letters Received

Riverside Dam Class Environmental Assessment

Executive Summary

City of Cambridge

Prepared for:

City of Cambridge

Prepared by:

Wood Environment & Infrastructure Solutions
3450 Harvester Road
Burlington, ON L7N 3W5
(905) 335-2353

June, 2018

Project No. TP111118

Riverside Dam Class Environmental Assessment
Executive Summary
City of Cambridge

Submitted to:

City of Cambridge

Submitted by:

Wood Environment & Infrastructure Solutions
3450 Harvester Road, Suite 100
Burlington, ON L7N 3W5
Tel: (905) 335-2353

June 14, 2018

TP111118

EXECUTIVE SUMMARY

ES 1.0 INTRODUCTION

Purpose

Wood Environment & Infrastructure Solutions (Wood) has been retained by the City of Cambridge (City) to undertake the Riverside Dam, Municipal Class Environmental Assessment (Class EA). The study purpose has been to assess various management alternatives to address the concerns related to the deteriorating Riverside Dam, under the guiding principles of the Municipal Class Environmental Assessment process [ref. MEA Class EA, October 2000 (as amended in 2007, 2011, and 2015)]. This study has defined the current environment (physical, social and natural) as a baseline condition and from this established a long-list of management approaches for the Riverside Dam and related alternative solutions. This study has systematically (in accordance with MEA Class EA principles) conducted an evaluation of each alternative using appropriate criteria leading to a short-list of alternatives. Further technical analyses have been completed for the short-listed alternatives, including generation of conceptual designs which have taken into consideration public and agency input. Following public and agency consultation, a Preferred Alternative has been advanced and recommended for implementation by the City.

Study Team

The City of Cambridge has been the proponent and overall Project Manager for the Riverside Dam Class Environmental Assessment. The Consulting Team has been comprised of the following:

- Wood Environment & Infrastructure Solutions– Project Management & Engineering
- Matrix Solutions Inc – Stream Geomorphology & Ecology
- Brook McIlroy – Landscape Architects & Public Consultation
- Unterman McPhail Associates – Cultural Heritage
- LURA Consulting – Public Consultation and Facilitation

Background

The Riverside Dam and associated mill race were constructed between 1860 and 1880 to support the partial diversion of the Speed River and provide hydraulic power to the Erb saw and flour mills (now P&H Milling). The mill became an economic hub in the Waterloo/Wellington region and the community of Cambridge Mills developed around it as a result. Today, this community is locally known as Preston and forms a part of the City of Cambridge.

At some point in the mill's history, the mill race was no longer relied upon as a source of water and hydraulic power, at which time the Riverside Dam ceased to provide a commercial function and served only social functions (i.e., recreation, culture, aesthetics). It is evident that regular maintenance decreased or ceased once the dam and mill race no longer had economic utility and, combined with the overall age of the structure, their condition began to decline. The Riverside Dam and mill race have since exceeded their intended design life and have continued

to deteriorate. Due to concerns related to quality control for their current operations, P&H Milling completed works to replace the leaky stoplogs in the mill race with a concrete wall in order to stop the flow through the mill property. Specifically, in 2015 / 2016 P&H Milling worked with the Grand River Conservation Authority (GRCA) on approvals and permitting for works to permanently close off the mill race. These works were formally constructed in 2016.

Given the deteriorating dam condition, the City of Cambridge assumed a level of responsibility for the dam and mill race inlet structures in May 2008. In the interest of public safety, the City of Cambridge initiated a structural evaluation of the respective structures (Sanchez, 2009). The inspection determined the dam was in poor condition with numerous cracks, spalling and surface pitting. The Sanchez Study triggered an emergency repair of the south control structure in December 2008 which included the placement of large riprap stone downstream of the dam, proximate to the south control structure to support the abutment. This was recognized to be a short-term temporary solution by the City and as part of the emergency permit, the Ministry of Natural Resources at that time, as a condition of its approval, required that the City complete a Class Environmental Assessment and implement a permanent long-term solution.

Description of the Study Area

The Riverside Dam and the associated mill race control structure and headpond are located immediately upstream of the King Street crossing of the Speed River, in the community of Preston, in Cambridge Ontario (ref. Figure ES-1.1). The Speed River discharges to the Grand River some 1.8 km downstream of King Street (ref. Figure ES-1.2).

Figure ES-1.1: Local Study Area

Figure ES-1.2: Study Area Context to Grand River

The Riverside Dam is well over 100 years old and pre-dates Provincial legislation for dams in Ontario [Lakes and Rivers Improvement Act (LRIA) 1990]. The structure is a concrete gravity dam approximately 1.5 m (+/-) high and 67 m (+/-) long and spans the Speed River (ref. Figure ES-1.3 for dam plan and cross-section). There are two stone and concrete control structures near the northern and southern limits of the dam which contained stop-logs; these were historically used for water level control associated with the operation of the mill. Water levels are no longer controlled and the dam does not provide any formal flood control or function to augment base flows. In its current state, the dam's only function is creating the upstream headpond which is considered an aesthetic and recreational feature of the neighbouring Riverside Park.

The inlet structure at the north limit of the dam (ref. Figure ES-1.3) historically diverted flow to the mill race and through the existing P&H Milling property. The inlet was a concrete structure which controlled water levels by stoplogs. The mill race historically conveyed flow under the Canadian Pacific (CP) Railway, King Street, and industrial buildings on the P&H Milling property, before rejoining the Speed River downstream. As noted, the stoplogs have been replaced with a concrete wall to permanently stop flow within the mill race.

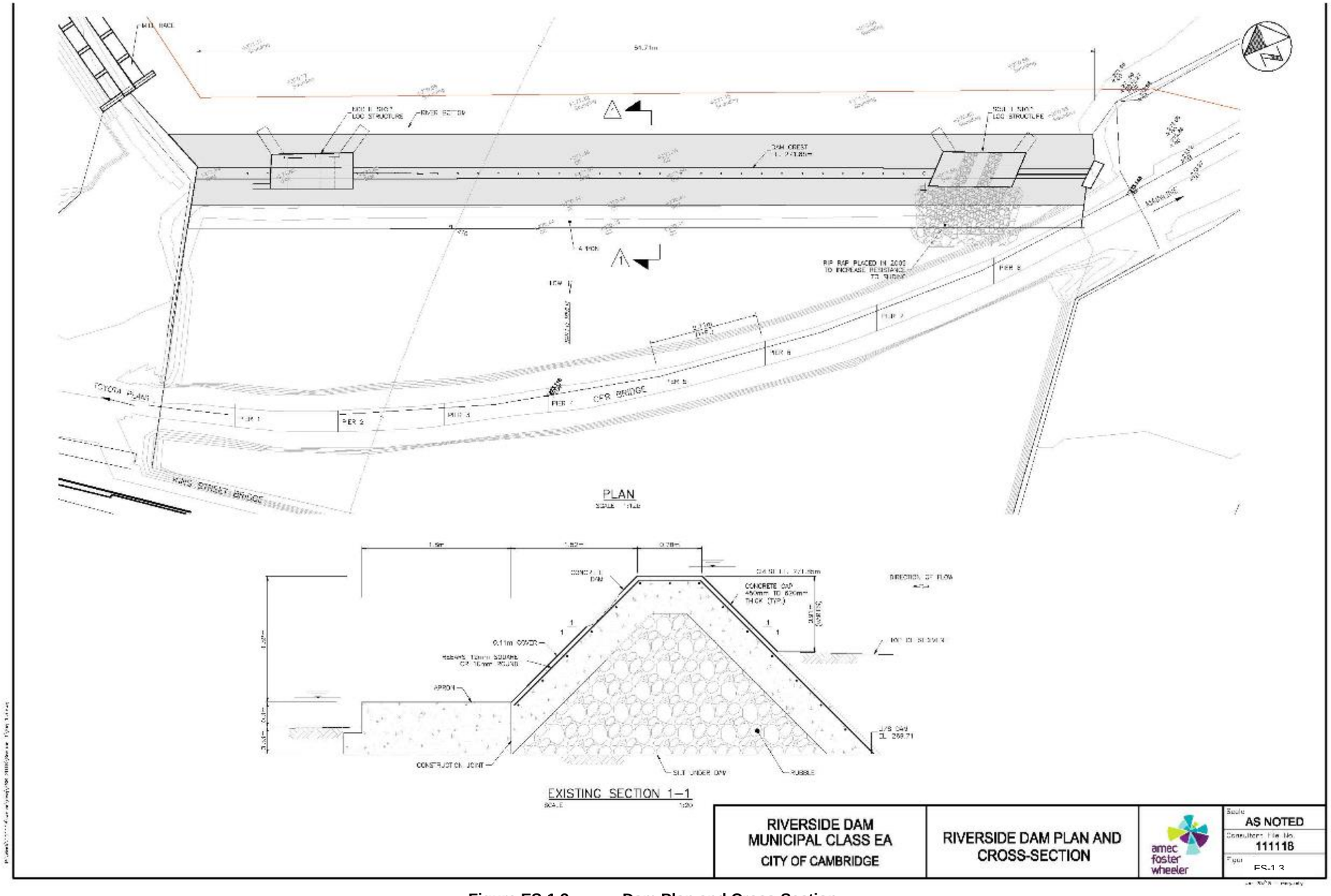

Figure ES-1.3 Dam Plan and Cross-Section

The CP Railway follows the southeast bank of the headpond and turns west to cross the Speed River between Riverside Dam and King Street East. Bathymetric (below water) survey and sediment sampling within the headpond has confirmed significant historical accumulation of sediment. There is no information suggesting the headpond has ever been dredged; water levels in the headpond average little more than 1.0 m (+/-).

Riverside Park is the largest park in the City of Cambridge covering approximately 102 hectares (+/-). It is also one of the most popular, drawing visitors beyond the immediate community. The park offers visitors an interface with the Speed River, as well as other natural areas, active park programming, passive leisure, extensive trail/road networks and built heritage features, including Riverside Dam. Rogers Drive and Leisure Lodge Road offer vehicular access throughout the park and connect to King Street at the western limit, and Speedsville Road at the eastern limit. Sulphur Creek diverges from the Speed River and flows through Riverside Park; it has two municipally operated control structures within the park: one at its source at the Speed River, which controls flow into the creek from the Speed River, and one at Rogers Drive, which controls the elevation of the small online pond within the park.

The Speed River through the study area is classified as a *warmwater* fishery supporting mixed water fish habitat. Nearly two (2) dozen fish species have been recorded downstream of Guelph; further, the habitat below the dam supports several species-at-risk (SAR) fish and mussel species, including the Wavy-rayed lampmussel. In terms of terrestrial habitat and resources, the study area has been largely culturally impacted, however many of the adjacent features are designated as significant natural heritage features.

The Speed River has a drainage area of approximately 780 km^2 to the Riverside Dam and joins the Grand River approximately 1.8 km downstream of the dam (ref. Figure ES-1.2). The Regulatory (Regional Storm) floodplain is approximately 500 m (+/-) wide through the study area and includes the Riverside Dam, Riverside Park, significant lengths of King Street and the CP Railway, as well as private commercial/industrial and residential property. Land use in the study area is highly mixed, including recreation, infrastructure, industrial/employment, medium/high density residential and commercial.

The headwaters of the Speed River include several municipalities including the City of Guelph and a number of smaller communities, however the watershed maintains a significant forest cover relative to other subwatersheds of the Grand River. The Riverside Dam is one of several control structures on the river. Given the size of the Speed River, it supports a wide range of fish and aquatic species, while the near shore riparian area supports considerable wildlife and birds. The river also provides for recreational activities through the study area and beyond, including fishing and boating.

Dam Ownership

The formal legal ownership of the Riverside Dam is unclear. It is possible that it is tied to one of the earlier mill operations, however it is uncertain as to whether this extends to the current Mill

operator. Furthermore, the Crown is acknowledged as the owner of the bed and bank of the river.

As noted in 2008, the City, concerned about public safety, initiated the study of the dam's structural condition (ref. Sanchez, 2009). A condition of the emergency repair of the south abutment was the execution of a Class Environmental Assessment (Class EA) study (this project). On this basis, the City of Cambridge has assumed the role as proponent of the study to determine the future of the Riverside Dam. Once the preferred solution is established, the City of Cambridge will seek legal guidance specific to defining the formal ownership of the Riverside Dam.

Municipal Class Environmental Assessment Process

This study has followed the process outlined in the Municipal Engineers Association (MEA), Municipal Class Environmental Assessment, October 2000 (as amended in 2007, 2011, and 2015). The Municipal Class EA process defines mandatory principles, details of project consultation and technical requirements. A Municipal Class EA is considered a legal document which outlines project recommendations and next steps, based on a technical assessment, public input and consultation with technical practitioners, agencies and Indigenous Communities.

Each Municipal Class EA undertaking, depending on the scope of work and the range of predicted environmental impacts, is classified using Schedules. The type of Schedule depends on the scope of the recommended works. Generally, management alternatives for dam structures include rehabilitation, modification, replacement or removal of the existing dam, all of which would require undertaking a "Schedule B" process or lower (i.e., Schedule A or A+) in the MEA document (ref. Figure ES-1.4). The various Phases of the Class EA process have been conducted by this study based on the Schedule (i.e., Schedule B: Phases 1 and 2), while Phase 5 will be conducted based on the recommendations herein being continued through to detail design and subsequently to construction and monitoring (ref. Municipal Engineers Association (MEA), Municipal Class Environmental Assessment, October 2000 (as amended in 2007, 2011, and 2015).

As part of the Class EA process the following key principles are considered:

- Establish a Problem and Opportunity Statement;
- Consult with affected parties early in, and throughout, the process, such that the planning process is a cooperative venture;
- Consider a reasonable range of alternatives, both functionally different "alternatives" and "alternative methods" of implementing the solution;
- Systematic evaluation of alternatives in terms of their advantages and disadvantages, to determine their net environmental effects; and,
- Provision of clear and complete documentation of the planning process followed, to allow "traceability" of decision-making with respect to the project.

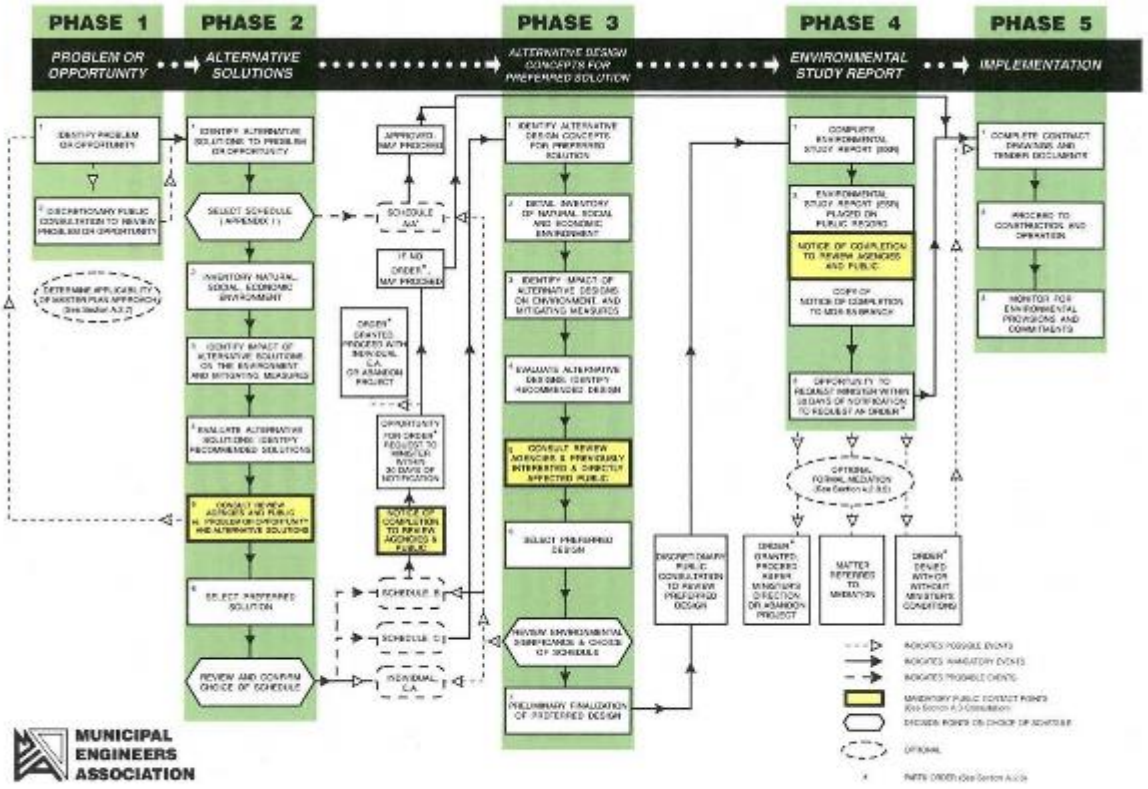

Figure ES-1.4: Municipal Engineers Association (MEA), Municipal Class Environmental Assessment, October 2000 (as amended in 2007, 2011, and 2015)

ES 2.0 ENVIRONMENTAL ASSESSMENT CONSULTATION

Project Committees

Given the wide range of technical, environmental (natural), social and economic considerations required for the assessment of the baseline inventory and the management alternatives, the City of Cambridge has formed Technical and Stakeholder Committees to help guide the Class Environmental Assessment (Class EA) study process.

The Technical Committee has been comprised of representatives from various City departments, stakeholder agencies, and the Consulting Team. The Technical Committee provides project guidance on technical and regulatory matters.

The Stakeholder Committee's members represent municipal committees and local businesses, as well as user and interest groups with a specific tie to Riverside Park and the Riverside Dam.

Over the course of the project, four (4) Stakeholder and four (4) Technical Committee meetings were held.

Communications and Consultation Program Overview

For the current study, the City of Cambridge has conducted a consultation program as required by the Municipal Class EA process. Considering the level of public interest in the study, the City has conducted additional public consultation beyond the basic or minimum requirements of a "Schedule B" project. The Riverside Dam Class Environmental Assessment has included the following stakeholder consultation:

i. Riverside Dam Municipal Class Environmental Assessment (EA) Notice of Study Commencement (issued November 2011)
ii. Public Information Centre #1 held April 3rd, 2012
iii. City of Cambridge Council presentation held March 4th, 2013
iv. Public Information Centre #2 held June 18th, 2013
v. City of Cambridge Council presentation October 15th, 2013
vi. Meeting hosted to provide the Save the Dam group an opportunity to discuss the project with MNRF and the Project Team on February 26th, 2014
vii. Public Information Centre #3 held June 27th, 2016
viii. Consultation with Indigenous Communities
ix. Technical and Stakeholder Committee meetings [four (4) each]
x. Stakeholder Workshops (May 24th and June 27th, 2017)
xi. Public Information Centre #4 held November 29, 2017
xii. General Committee Meeting #1 held March 6, 2018
xiii. Notice of Completion and circulation of Final Class EA Report for 30 day public review to be issued following completion of the EA study (pending)

ES 3.0 BACKGROUND INFORMATION REVIEW

For this project, considerable background data have been collected for the various technical and social disciplines involved in this study (i.e., engineering, cultural heritage, natural systems, park use, water quality and stream morphology) from the City of Cambridge and other agencies including Grand River Conservation Authority (GRCA), Region of Waterloo, Ministry of the Environment and Climate Change (MOECC) and Ministry of Natural Resources and Forestry (MNRF).

ES 4.0 BASELINE INVENTORY

A comprehensive baseline inventory of existing conditions, consisting of desktop review of background information, physical survey and technical investigations, and field inventories was conducted for the range of social, cultural, natural, and physical environmental elements potentially affected by the alternative solutions under investigation. As summarized in the

Environmental Study Report (ESR) document, and presented in greater detail in the ESR Appendices, baseline inventories have been conducted for the following:

- Topographic Survey
- Hydrology and Hydraulics
- Stream Morphology
- Aquatic Resources
- Terrestrial Resources
- Water Quality and Sediment Quantity / Quality
- Park Use and Inventory
- Cultural Heritage
- Structural Investigations

ES 5.0 PROBLEM AND OPPORTUNITY STATEMENT

The Riverside Dam is well over 100 years old and well beyond its design life. Structural assessments (Sanchez 2009, AMEC 2014) have determined that various components of the dam are in poor condition with potential for failure in the short-term. Given the age of the structure, its location in a natural watercourse, adjacency to Riverside Park, and its popularity with the public, the future management of the Riverside Dam must consider several constraints and opportunities related to safety, riverine processes, flooding, cultural heritage, natural habitat, public uses and aesthetics.

The Preferred Alternative must address the Problem while balancing study area constraints and opportunities, in order to best meet the needs of the various stakeholder groups invested in the Riverside Dam.

ES 6.0 ALTERNATIVE DEVELOPMENT AND LONG-LIST SCREENING

Eight (8) alternatives have been considered as part of the Long-List to address the future management of the Riverside Dam and local environs:

A. Do Nothing
B. Repair Riverside Dam
C. Rebuild Riverside Dam
D. Lower Dam Crest
E. Naturalize Speed River (Remove Dam)
F. Construct In-stream Rock Structures (Remove Dam)
G. Build Offline Dam and Naturalize Speed River (Hybrid)
H. Incremental Decommissioning of Dam

Summary of Long-List Screening

Based on the assessment and long-list screening the following alternatives have been screened from the long-list.

Alternative 'B': Repair Riverside Dam – SCREENED: Repairing the dam has not been considered to offer any benefit over *Alternative 'C': Rebuild Riverside Dam.* Specifically, Rebuilding the Riverside Dam offers the ability to maintain the historic dimensions and aesthetics of the dam at an overall lower cost. Further, there is an intrinsic engineering and design life improvement with a new versus a repaired structure.

Alternative 'D': Lower Dam Crest – SCREENED: Lowering the dam offers the positive effect of minor reductions in upstream flood elevations, however this is not considered sufficient to balance the negative effect related to the loss of the historic dimensions and aesthetics of the dam, and the reduction in headpond area. Further, small adjustments to the dam crest could be considered as an implementation option for *Alternative 'C': Rebuild Riverside Dam*, if advanced.

Alternative 'H': Incremental Decommissioning of Dam – SCREENED: This alternative would ultimately mimic the Naturalize alternative, however with more risk of adverse impacts, due to unmanaged conditions.

The remaining alternatives were considered to offer a greater number of positive effects overall, or provide certain key positive effects along with acceptable negative effects and as such, have been short-listed for further consideration by the Project Team, agencies and the public.

The following alternatives have been "short-listed" and advanced for evaluation:

Alternative 'A': Do Nothing (base alternative per Class EA protocol)
Alternative 'C': Rebuild Riverside Dam [see Figure ES-3.1]
Alternative 'E': Naturalize Speed River (Remove Dam) [see Figure ES-3.2]
Alternative 'F': Construct Instream Rock Structures [see Figure ES-3.3]
Alternative 'G': Build Offline Dam and Naturalize [see Figure ES-3.4]

Alternative 'A': Do Nothing, despite being considered infeasible from a regulatory and practical perspective, has been included in the short-list evaluation to provide a fulsome comparison to the baseline condition.

The following describes the selection of appropriate technical, natural, social and economic criteria, and the associated evaluation of each of the short-listed alternatives with respect to these criteria.

Figure ES-3.1: Visualization of Alternative 'C' Rebuild Dam

Figure ES-3.2: Visualization of Alternative 'E'
Naturalize Speed River (Remove Dam)

Figure ES-3.3: Visualization of Alternative 'F'
Construct In-Stream Rock Structures (Remove Dam)

Figure ES-3.4: Visualization of Alternative 'I'
Build Offline Dam and Naturalize

ES 7.0 ALTERNATIVE EVALUATION (SHORT-LIST)

The short-listed alternatives described in the previous section have been assessed on the basis of evaluation criteria established specifically for the current study. As required by the Municipal Environmental Assessment process, the selected criteria relate to the consideration of potential impacts and opportunities generated by the alternatives within four (4) environments:

(i) **Functional Environment** - Considers the ability of the alternative to address the Problem Statement and how it may impact existing physical systems. It also includes regulatory considerations.

(ii) **Natural Environment** - Impacts or opportunities that an alternative may have related to the natural environment (i.e., fisheries, wildlife, water quality, etc.).

(iii) **Social Environment** - Impacts or opportunities created by the alternative as they relate to the people and their current or historic relationship with the study area.

(iv) **Economic Environment** - Capital, operation and maintenance costs associated with an alternative, both in the short-term and long-term. For the current study, risk and liability has been included in the economic environment.

Within each environment, relevant and representative criteria have been considered for the evaluation. Each evaluation criterion has been assessed to ensure it is quantifiable and results in a meaningful comparison between the short-listed alternatives. The criteria selected for evaluation have been assigned a significance weighting based on consultation with the public, agencies and other stakeholders, and each alternative has been assigned a score for each evaluation criterion.

Table ES-7.1 provides a qualitative summary of the initial assessment based on the established evaluation criteria.

Table ES-7.1 Alternative Evaluation

Environment	Evaluation Criteria	Weighting	Measure	Alternative				
				A: Do Nothing	C: Rebuild Riverside Dam	E: Naturalize Speed River	F: Construct In-Stream Rock Structures	G: Build Offline Dam & Naturalize Speed River
Functional (Physical)	Flooding	Low	Flood depth	No change	No change	Flooding is minimized	Flooding is reduced, some impact remains	Flooding is minimized
	Fluvial Stability / Sediment transport	Medium	Presence of barrier	No change	No change	Natural channel regime reinstated	Improved sediment transport	Natural channel regime reinstated
Natural	Fish Passage	High	Presence and nature of barrier	No change	Assumes fish ladder incorporated	Barrier eliminated	Barrier eliminated	Barrier eliminated
	Aquatic Habitat / Health	High	Unimpaired vs. impaired benthic community	No change	No change	Riverine conditions restored	Riverine conditions restored	Riverine conditions restored
	Water Quality and Temperature	Medium	Presence and extent of headpond	No change	No change	Headpond eliminated	Although minor backwater areas will exist, conditions will be improved relative to a dam	Offline headpond is considered an improvement relative to existing online headpond
	Natural Heritage	Low	Extent of riparian habitat	No change	Some opportunity for riparian rehabilitation	Significant opportunity for riparian rehabilitation	Some opportunity for riparian rehabilitation	Some opportunity for riparian rehabilitation
Social	Cultural Heritage	Very High	Extent of impact to built heritage	Dam will continue to deteriorate and ultimately be lost	Dam will be reconstructed to historic condition	Dam would no longer function. Elements of original structure would be retained / restored	Dam would no longer function. Elements of original structure would be retained / restored	New dam would have historical sympathetic design, but alternate dimensions
	Boating	Medium	Type of boating experience	No change	No change	Boating experience changes from flat water to riverine. Considered less desirable by majority of park users. Navigation barrier eliminated	Provides neither a consistent flat water nor riverine boating experience. Rocky ramps may continue to be barriers	Navigation barrier eliminated. Boating experience changes from flat water to riverine
	Fishing	Medium	Type of fishery	No change	No change	Changes in prevalent species to riverine community, considered negative by majority of park users and local business	Create mix of riverine and pond fish communities, considered negative by majority of park users and local business	Create mix of riverine and pond fish communities, considered negative by majority of park users and local business
	Park Vistas	Very High	The headpond vista is generally preferred by the public	No change	No change	Headpond eliminated	Ponded areas behind the rocky ramps would persist, however the vistas would change significantly	Headpond area reduced significantly
	Public Safety	High	Considers condition and presence of dam as well as water depth and velocity	Dam will continue to deteriorate and risk of failure increases	Dam would meet Provincial safety criteria, however its existence represents a hazard	Hazards related to the dam are eliminated	Steep slopes associated with rocky ramps will increase velocities locally	Dam would meet Provincial safety criteria, however its existence represents a hazard
Economic	Life Cycle Cost	Medium	Estimated Cost ($)	$4.9M +/- No capital cost. Dam would ultimately fail and resultant sediment release would require downstream clean-up	$8.5M +/- High capital cost. Perpetual Inspection, operation and maintenance required, including future sediment removal. Dam would need to be replaced at the end of design life (assumed 100 years)	$5.1M +/- High capital cost. Minor maintenance associated with bank erosion expected after implementation	$7.4M +/- High capital cost. Minor maintenance associated storm damage to rocky ramps	$8.2M +/- High capital cost. Perpetual Inspection, operation and maintenance required, including future sediment removal. Dam would need to be replaced at end of design life (assumed 100 years)
	Liability	Medium	Potential for damage to persons or property	High risk of failure and associated damages if dam stability not addressed	Low risk of failure, however presence of a dam introduces some liability	Liability minimized	Higher velocities and ponding considered to introduce marginally higher risk relative to Alternative E	Low risk of failure, however presence of a dam introduces some liability
Summary				**Screened.** Does not address structural / safety issues of the existing dam.	**Short-listed.** Preferred from a Social perspective, not preferred from Functional, Natural, or Economic perspective.	**Short-listed.** Preferred from a Functional perspective. Natural and economic perspective. Not preferred from a Social perspective.	**Short-listed.** Preferred from a Functional, Natural, and Economic perspective. Not preferred from a Social perspective.	**Screened.** Modifications to the dam geometry and reductions in headpond area, change in park vistas, and capital cost are less preferred.

Legend: Positive | Positive Neutral | Neutral | Neutral-Negative | Negative

The matrix in Table ES-7.1 intentionally uses qualitative evaluation weighting and ratings, however applying a numerical basis to the assessment can be used to more definitely compare alternatives. To this end, the Project Team initially applied the following weighting and ratings to support the short-listed assessment:

Criteria Weighting

Very High	5
High	3
Medium	2
Low	1

And,

Net Rating

Negative	-2
Negative-neutral	-1
Neutral	0
Positive-neutral	1
Positive	2

Stakeholder Workshops

In an effort to further improve the transparency of the Alternative Assessment process, the City of Cambridge hosted Stakeholder Workshops over 2017, so as to solicit input from a broad cross-section of stakeholders, agencies and Indigenous Communities.

The core objective of these Stakeholder Workshops was to provide selected Stakeholders with a direct role in offering input to the Alternative Assessment process and allow them, and some members of Council, to actively participate in the review/assessment process.

The following questions were asked of the attending Stakeholders:

1. Do you agree with the selected short-listed alternatives?
   - Alternative ‘C’: Rebuild Riverside Dam
   - Alternative ‘E’: Naturalize Speed River (Remove Dam)
   - Alternative ‘F’: Construct In-stream Rock Structures (Remove Dam)
   - Alternative ‘G’: Offline Dam and Naturalization
2. Should the Project Team have considered other Alternatives?
3. Do you agree with the Evaluation Criteria (ref. Table ES-7.2) advanced by the Project Team
4. Are there any others that should have been included?

Table ES-7.2 Evaluation Criteria

Functional/ Physical	Natural	Social	Economic
Flooding	Fish Passage	Cultural Heritage	Life Cycle Cost (capital and O&M)
Stream Stability/ Sediment Transport	Aquatic Habitat/Health	Boating	Liability
	Water Quality and Temperature	Fishing	
	Natural Heritage	Park Vistas	
		Public Safety	

The other main objective of the Stakeholder Workshops was to "step-through" an example of the Alternative Assessment process using the "Smart Spreadsheet" prepared by the Project Team. As part of Stakeholder Workshop No.1, Stakeholder Representatives were asked to complete the Alternative Assessment "Smart Spreadsheet" for the short-listed alternatives, including: Alternative 'C': Rebuild Dam, Alternative 'E': Naturalize Speed River, Alternative 'F': In-stream Rock Structures, and Alternative 'G': Off-line Dam/Naturalize River.

Some stakeholders suggested that *Tourism* be added as an Evaluation Criteria, hence for the initial assessment *Tourism* was added. However, as evident from Table ES-7.3, *Tourism* was ranked quite differently amongst the Project Team versus the stakeholders.

Table ES-7.3 Initial Evaluation Criteria Ranking

Environment		Evaluation Criteria	Project Team	Stakeholder Majority
1	Functional/Physical	(a) Flooding	Low	Low
		(b) Stream Stability/ Sediment Transport	Medium	Medium
2	Natural	(a) Fish Passage	High	High
		(b) Aquatic Habitat/Health	High	High
		(c) Water Quality and Temperature	Medium	Medium
		(d) Natural Heritage	Low	Low
3	Social	(a) Cultural Heritage	Very High	Very High
		(b) Boating	Medium	Medium
		(c) Fishing	Medium	Medium
		(d) Park Vistas	Very High	Very High
		(e) Pubic Safety	High	High
4	Economic	(a) Life Cycle Cost (capital and O&M)	Medium	Medium
		(b) Liability	Medium	Medium
		(c) Tourism	Low	High

The Project Team then undertook a comparison of the net ratings provided by the Stakeholder Representatives for each of the Short-listed Alternatives. From this, it became clear that there was general consistency between the application of the Evaluation Criteria for most alternatives, however there were also inconsistencies in others. Table ES-7.4 indicates which Evaluation Criteria were, in the opinion of the Project Team, applied consistently and those that were inconsistently applied. Inconsistency was evident when there was a wide spread of ratings and outliers.

Table ES-7.4 Initial Summary of Application of Evaluation Criteria

Environment		Evaluation Criteria	Alternative 'C': Rebuild	Alternative 'E': Naturalize	Alternative 'F': In-Stream	Alternative 'G': Off-Line
1	Functional/ Physical	(a) Flooding	Consistent	Consistent	Consistent	Consistent
		(b) Stream Stability/ Sediment Transport	Consistent	Consistent	Consistent	Consistent
2	Natural	(a) Fish Passage	Consistent	Consistent	Consistent	Consistent
		(b) Aquatic Habitat/Health	Consistent	Consistent	Consistent	Consistent
		(c) Water Quality and Temperature	Consistent	Consistent	Consistent	Consistent
		(d) Natural Heritage	Consistent	Consistent	Consistent	Consistent
3	Social	(a) Cultural Heritage	Consistent	**Inconsistent**	**Inconsistent**	**Inconsistent**
		(b) Boating	Consistent	**Inconsistent**	**Inconsistent**	**Inconsistent**
		(c) Fishing	Consistent	**Inconsistent**	Consistent	Consistent
		(d) Park Vistas	Consistent	**Inconsistent**	**Inconsistent**	Consistent
		(e) Pubic Safety	Consistent	**Inconsistent**	**Inconsistent**	Consistent
4	Economic	(a) Life Cycle Cost (capital and O&M)	Consistent	Consistent	**Inconsistent**	Consistent
		(b) Liability	**Inconsistent**	Consistent	**Inconsistent**	**Inconsistent**
		(c) Tourism	**Inconsistent**	**Inconsistent**	**Inconsistent**	**Inconsistent**

Inconsistent Application of Evaluation Criteria

The following Evaluation Criteria were considered by the Project Team to have been inconsistently applied in the ratings by the respective Stakeholder Representatives:

- Cultural Heritage
- Boating
- Liability
- Tourism

Overall Ranking

The Project Team then compared the Overall Ranking (1 through 4) of the Short-Listed Alternatives by the Stakeholders (ref. Table ES-7.5).

Table ES-7.5 Initial Overall Ranking of Alternatives

Respondent	Alternative 'C': Rebuild		Alternative 'E': Naturalize		Alternative 'F': Instream		Alternative 'G': Offline	
	Value	Ranking	Value	Ranking	Value	Ranking	Value	Ranking
1	-6	4	108	2	158	1	12	3
2	4	4	33	2	13	3	35	1
3	45	4	124	1	78	3	86	2
4	71	1	-67	2	-111	4	-68	3
5	71	1	-67	2	-111	4	-68	3
6	17	1	2	3	-5	4	4	2
7	21	1	-1	2	-13	3	-13	3
8	-2	4	52	1	22	2	20	3
9	12	2	22	1	-5	4	2	3
Net Rating by Stakeholder Representatives		2.4		1.8		3.1		2.6
Project Team	8	3	14	1	3	4	10	2

The intent of Table ES-7.5 was to illustrate if there was a consensus amongst the Stakeholders in their ranking of alternatives and to identify if there were any differences between the Stakeholder rankings. The information in Table ES-7.5 suggests that most Stakeholders considered Alternative 'E': Naturalize as either their first or second choice, which results in it becoming the consensus alternative selection on the basis of the ranking comparison. In terms of Alternative 'C': Rebuild, the rankings are much more polarized, with respondents generally either ranking this alternative as the most preferred or least preferred. The other two (2) alternatives, Instream Structures (Rocky Ramps) or Offline Dam were consistently ranked lower than the other two (2) by the vast majority of Stakeholders.

A further assessment was done by the Project Team to establish the rankings using the Majority Ratings, as developed by the Stakeholder Representatives. For this assessment, two (2) approaches were considered; the first applied all of the information as received, whereas the second removed the *Tourism* criterion due to its inconsistent application and lack of clear metrics. On this basis, the results of the alternative rankings are listed in Table ES-7.6.

Table ES-7.6 Overall Ranking Applying Majority Ratings With and Without Tourism

Respondent	Alternative 'C': Rebuild		Alternative 'E': Naturalize		Alternative 'F': Instream		Alternative 'G': Offline	
	Value	Ranking	Value	Ranking	Value	Ranking	Value	Ranking
Stakeholder Majority	13	1	12	2	-3	4	0	3
Stakeholder Majority (without *Tourism*)	10	2	15	1	0	4	3	3

As evident in Table ES-7.6, using all criteria results in a slight preference for Alternative 'C': Rebuild, however if the *Tourism* criteria is screened, Alternative 'E': Naturalize becomes preferred.

ES 8.0 REGULATORY AND INDIGENOUS COMMUNITY CONSULTATION

Regulatory Agencies' Perspectives

The Ministry of Natural Resources and Forestry (MNRF), the Grand River Conservation Authority (GRCA), and the Region of Waterloo were also invited to attend and participate in the Stakeholder Workshops. Including the regulatory agencies in the discussion of the Alternative Assessment was intended to allow the other Stakeholder representatives to gain a better understanding of the agencies' point of view and areas of concern related to their mandate. None of these organizations submitted an Alternative Assessment 'Smart Spreadsheet'. The following however provides a summary of the respective agencies' Regulatory Position, based on correspondence received from the agency.

Ministry of Natural Resources and Forestry (MNRF): Correspondence dated May 31, 2017 provides direction that from a natural environment and a public safety perspective, the MNRF supports an alternative that would include decommissioning of the Riverside Dam for the following reasons:

- This alternative would contribute to the recovery of provincial species-at-risk fish and mussels (Silver Shiner and Wavy-rayed lampmussel) that are known for this stretch of the Speed River.
- This alternative would enhance the native fish communities as outlined in the Grand River Fisheries Management Plan. A healthy fishery provides multiple benefits to the watershed.
- Decommissioning the dam would also eliminate the potential hazard that would be associated with the infrastructure over the long-term.

Grand River Conservation Authority (GRCA): GRCA provided comments on October 18, 2016 which included the detailed assessment of alternatives and stated that the GRCA continues to be supportive of the alternative to naturalize the Speed River (Alternative 'E'), as the preferred alternative to address the problem statement of this Class EA.

Region of Waterloo: The Region of Waterloo provided comments on May 13, 2013 and additional comments on May 25, 2016 indicating that the Region has no fundamental disagreement with the preferred alternative identified at the time (Naturalize Speed River). It is noted that the removal of the dam and the naturalization of the upstream portion of the river with riffle areas would provide natural aeration of the water.

Indigenous Communities

Consultation with Indigenous Communities is an important component of the Class EA process. The following communities have been contacted during the Class EA process:

- Six Nations of the Grand River
- Mississaugas of the New Credit First Nation
- Haudenosaunee Development Institute

These First Nation communities were not invited to participate in the Stakeholder Workshops, however the City has separately consulted with the Indigenous Communities outside of the Stakeholder Workshops.

In brief, area Indigenous Communities were notified of the project at start-up, and also of the Public Information Centres (PICs) over the course of the project. Furthermore, the City and its Consultant Team met face to face with the Six Nations of the Grand River and the Mississaugas of the New Credit First Nation in September, 2017 (the Haudenosaunee Development Institute was also contacted, however no meeting was held). Verbal support for the Naturalize Speed River alternative was provided from those Indigenous Communities who the City met with. Additional consultation with the Indigenous Communities was initiated in May 2018, as a follow-up to earlier one-on-one meetings.

ES 9.0 COUNCIL DIRECTION

On March 6, 2018 City of Cambridge staff delivered a report to Council, asking Council to authorize staff to file the Class EA Project File and post the Notice of Completion for the thirty (30)-day review period. The draft Class EA Project File at that time included a preliminary preferred alternative to remove Riverside Dam and Naturalize the Speed River.

In response to a significant community appeal to rebuild or repair Riverside Dam, Council acknowledged that the existence of a dam and mill pond in the Preston Community is an asset of significant historical value and pride to the community that should be maintained. Council also considered Riverside Dam to be essential to the enjoyment of Riverside Park and the identity of Preston. As a result, Council deferred the proposed recommendation at the March 6,

2018 meeting and asked City staff to report back on how to proceed with rebuilding and / or repairing the dam. In response, staff and the Project Team revisited the criteria assessment and considered next steps to complete the Class EA.

On April 17, 2018, City staff provided a report back to Council that outlined an approach to incorporate the feedback received from Council into the evaluation process for the Riverside Dam Class EA. This approach included revisiting the Class EA evaluation criteria, which represent the natural, social, cultural, economic, and technical aspects of the environment under study. These evaluation criteria were weighted for relative importance in consultation with agencies, stakeholders and Indigenous Communities, and then applied during the Class EA process to determine the "preliminary preferred alternative". In response to community input and feedback received from Council, the significance of the *economic, liability* and *flooding* evaluation criteria have been revisited to align with the direction of Council and some of the public.

For context, these three (3) evaluation criteria are described as follows:

- **Flooding:** The presence of an in-stream structure has an impact on upstream flood levels in a watercourse. Generally reducing flood levels is considered positive as it reduces the extent of lands impacted by floods and associated risks. Conversely, a proponent cannot increase flood levels on adjacent properties under the natural hazards policies of the Provincial Policy Statement of the Planning Act.
- **Life Cycle Cost (Capital and Operations and Maintenance):**
  - ***Capital Cost:*** Capital costs are related to the initial construction works, including any land costs.
  - ***Maintenance / Operation Cost:*** Maintenance cost will vary widely between alternatives. Maintenance costs for each alternative are presented as 'relative' to each other, rather than absolute.
- **Liability:** All dam structures have an associated risk of failure. Dam failure can result in a flood wave being released downstream and damaging persons and property (CP Railway, King Street, various private properties). The owner of the dam can be found liable for these damages through failure to maintain and / or operate the structure.

Based on the comments received and the outcome of the March 6, 2018 General Committee and Council meetings, the following direction was provided regarding the three (3) evaluation criteria that were revisited.

- **Flooding:** The greatest impact of flooding is on the Riverside Park that is City owned land. Council, representing the City, did not express any concerns related to the ongoing nuisance flooding of Riverside Park if a dam was rebuilt. Based on this perspective, the Project Team concluded that flooding of the park is not a significant criteria and hence the weighting for flooding should remain ***Low***.
- **Life Cycle Cost:** The estimated capital costs to Rebuild Riverside Dam (+/- $5.4M) versus Naturalize (+/- $5.3M) are only $100K different. The estimated average

Operating and Maintenance cost for a new dam applied in the Class EA Study is $30K per year. Council comments, align with other comments received, indicating that this was not a significant determinant when comparing the naturalize and rebuild alternatives, and further Council indicated acceptance of the Operating and Matintence costs. The Project Team hence concluded that Life Cycle Costs should have a reduced weighting and therefore the weighting in the evaluation was changed from ***Medium*** to ***Low***.

- **Liability:** Similar to Life Cycle Cost, the message from Council was that Liability was not a significant concern and that the City will accept the risks associated with dam operation. The Project Team hence concluded that Liability should have a reduced weighting and it was changed from ***Medium*** to ***Low*** in the evaluation.

Table ES-8.1 provides the details associated with the Updated Alternative evaluation based on Council Direction with respect to evaluation criteria for: Flooding, Life Cycle Cost and Liability. Based on the revised weighting, the numerical assessment results in a tie, with each alternative receiving the same score. Given that City Council acts on behalf of its citizens, and Council has indicated clear support for keeping the Riverside Dam, the preliminary preferred alternative has been advanced as Rebuilding the Riverside Dam.

Table ES- 8.1
UPDATED ALTERNATIVE EVALUATION MATRIX

	Evaluation Criteria					Alternatives			
	ENVIRONMENT	EVALUATION CRITERIA	WEIGHTING		MEASURE	C.Rebuild Dam		E. Naturalize Speed River	
			Description	Value		Rating		Rating	
						Description	Value	Description	Vallue
1	Functional/Physical	(a) Flooding	Low	1	Flood depth	Neutral	0	Positive	2
		(b) Stream Stability/ Sediment Transport	Medium	2	Presence of Barrier	Neutral	0	Positive	2
2	Natural	(a) Fish Passage	High	3	Presence and nature of barrier	Positive-Neutral	1	Positive	2
		(b) Aquatic Habitat/Health	High	3	Condition of Benthic community	Neutral	0	Positive	2
		(c) Water Quality and Temperature	Medium	2	Presence and extent of headpond	Neutral	0	Positive	2
		(d) Natural Heritage	Low	1	Extent of riparian habitat	Positive-Neutral	1	Positive	2
3	Social	(a) Cultural Heritage	Very High	5	Extent of impact to built heritage	Positive	2	Negative-Neutral	-1
		(b) Boating	Medium	2	Type of boating experience	Neutral	0	Negative-Neutral	-1
		(c) Fishing	Medium	2	Type of fishery	Neutral	0	Negative	-2
		(d) Park Vistas	Very High	5	Preferred Public View	Neutral	0	Negative	-2
		(e) Pubic Safety	High	3	Condition/presence of dam Water depth and velocity	Neutral	0	Positive	2
4	Economics	(a) Life Cycle Cost (capital and O&M)	Low	1	Estimated costs ($)	Negative-Neutral	-1	Positive-Neutral	1
		(b) Liability	Low	1	Potential for damage to persons or property	Negative-Neutral	-1	Positive	2
						NET SCORE	12	NET SCORE	12

From April to June, 2018, City staff and the Project Team have re-engaged the active members of the Technical and Stakeholder Communities. This has included correspondence, as well as one-on-one meetings.

The following is a summary of the recent consultation that has occurred:

- A letter dated April 27, 2018 was sent to members of the public on the project mailing list and to project stakeholders notifying them of the update to the evaluation criteria and preferred alternative and requesting their comments. Comments from members of the public and stakeholders were received.
- An email notification was sent to the Grand River Conservation Authority (GRCA) and a meeting took place with GRCA staff on May 10, 2018. GRCA provided comments in a letter dated June 13, 2018.
- An email notification was sent to the Ministry of Natural Resources and Forestry (MNRF) and the Ministry of Environment and Climate Change (MOECC) and a meeting took place with staff on May 8, 2018. MNRF provided comments in a letter dated May 17, 2018.
- An email notification was sent to the Region of Waterloo. The Region responded that they had no additional comments beyond the original comments they provided.
- An email notification was sent to Six Nations of the Grand River (SNGR) and a meeting took place with SNGR on May 31, 2018.
- An email notification was sent to Mississaugas of the New Credit First Nation (MNCFN) and a meeting took place with MNCFN on June 13, 2018.
- An email notification was sent to the Haudenosaunee Development Institute (HDI).

In addition, following the March 6, 2018 General Committee meeting, a number of written commentaries have been provided to City staff generally reflecting a split opinion amongst the Rebuilt versus Naturalize alternatives.

ES 10.0 PREFERRED SOLUTION

The objective of the Class EA study has been to develop a long-list of alternative solutions to manage the future of the deteriorating Riverside Dam. The long-list of alternatives has been reduced to a short-list through a preliminary screening process based on technical and regulatory feasibility. The short-list has then been evaluated using a broad range of criteria representing the technical, natural, social and economic environments surrounding the Riverside Dam, including engagement with Stakeholders, Technical Agencies and Indigenous Communities, eventually leading to a Preferred Alternative that balances the priorities of the various stakeholder groups. A recommendation was taken to the General Committee of Council, which resulted in Council direction to amend various evaluation criteria based on Council's acceptance of flooding and liability, as well as long term Operations and Maintenance costs.

Based on the updated assessment and incorporating Council's feedback, Alternative 'C': Rebuild the Riverside Dam provides a management solution that addresses key aspects of the Problem Statement, notably the least impacts to the social environment. Although Alternative 'C' has the largest impact on the technical and natural environments, various measures have been identified that can be incorporated into the implementation of Alternative 'C' which can reasonably mitigate those impacts. Therefore, with all factors considered, Alternative 'C': Rebuild the Riverside Dam has been advanced as the Preliminary Preferred Alternative.

The Project Team has identified the alternative to Rebuild the Riverside Dam as being the preferred solution for the following reasons:

- Stakeholder Workshop engagement essentially established the Rebuild alternative as the first or second choice amongst those participating, resulting in it having a high ranking.
- The Capital Cost associated with the Rebuild alternative is essentially the same as the Naturalize alternative.
- The Short and Long-term Liability to the City is considered acceptable by City Council.
- The existence of a dam and mill pond in Preston is considered by many to be an asset of significant historical value and pride to the community that should be maintained.
- Council also considered Riverside Dam as essential to the enjoyment of Riverside Park and the identity of Preston.

The following secondary elements are also recommended to be considered / implemented with the Preferred Alternative:

- Incorporation of a fish ladder to facilitate seasonal movement of aquatic species
- Operable water level gates / valves to allow for the automated adjustment of headpond water levels to facilitate sediment management, and flood impact mitigation
- Additional Dam Safety features in accordance with provincial standards and requirements
- Incorporation of interpretive / educational elements to improve interaction of park patrons with the history of the Riverside Dam

The following additional analysis/study should be completed in association with the next stages of design:

- Borehole drilling of the existing dam structure to the depth of the foundation to generate more accurate detail on the make-up and depth of the core of the structure;
- Detailed core drilling of the headpond area, including additional sediment sampling to establish detailed information on the depth, extent and quality of the sediment;
- Generation of a sediment management plan that meets provincial regulations with a goal of maximizing the amount of sediment managed on-site to minimize the economic impact;

- Detailed hydraulic modelling of the study area with consideration for two-dimensional analyses including an update to the Regulatory floodplain and associated 2-zone policy area;
- Assessment of the existing Sulphur Creek inlet structure and redesign of the inlet structure or incorporation of features within the Speed River to maintain existing inflow; and,
- Full recording and documentation of the existing dam and its associated cultural heritage landscape, including the stoplog sluiceway structure, the Cambridge Mills site, and Riverside Park in the area of the dam prior to its rebuilding.

In terms of the Implementation process, subject to the Project successfully clearing the Public Review period (i.e. no Part II Orders) and receiving Council funding, the next steps will be as follows:

- Preliminary Design / Project Planning
- Public Consultation on matters of public interest, including cultural heritage and riparian space planning
- Initial Detailed Design
- Further review with Technical Agencies, public stakeholders and Indigenous Communities
- Finalize Detailed Design
- Permitting / Approvals, including:

Act	Agency
Lakes and Rivers Improvement Act	Ministry of Natural Resources and Forestry
Public Lands Act	Ministry of Natural Resources and Forestry
Ontario Water Resources Act	Ministry of the Environment and Climate Change
Navigation Protection Act	Transport Canada
Fisheries Act	Department of Fisheries and Oceans
Conservation Authorities Act	Grand River Conservation Authority
Cultural Heritage Act	Ministry of Tourism, Culture and Sport
Species at Risk	Federal
Endangered Species Act	Ministry of Natural Resources and Forestry

- Tendering
- Construction
- Monitoring

As noted under the Environmental Assessment Act, the Municipal Class Environmental process includes a provision whereby:

Any member of the public who has unresolved concerns with a proposed project can request that the Minister require the proponent (of the project) to prepare an Individual Environmental Assessment – Part II Order (Bump-up)

In the event of a Part II Order(s), Ministry staff reviews the issues and concerns raised. The Minister may also enlist input from other ministries and technical agencies. Pending input and review, The Minister will make a final decision whether or not to require an individual Environmental Assessment be prepared by the City.

APPENDIX B - ALTERNATIVE EVALUATION MATRIX

RIVERSIDE DAM CLASS EA
ALTERNATIVE EVALUATION MATRIX

	Evaluation Criteria					Alternatives							
	ENVIRONMENT	EVALUATION CRITERIA	WEIGHTING		MEASURE	C.Rebuild Dam				E. Naturalize Speed River			
			Description	Value			Rating				Rating		
						Project Team Comments	Description	Value	Stakeholder Comments	Project Team Comments	Description	Vallue	Stakeholder Comments
1	**Functional/Physical**	(a) Flooding	Low	1	Flood depth	No Change	Neutral	0		Flooding is minimized	Positive	2	
		(b) Stream Stability/ Sediment Transport	Medium	2	Presence of Barrier	No Change	Neutral	0		Barrier eliminated	Positive	2	
2	**Natural**	(a) Fish Passage	High	3	Presence and nature of barrier	Fish ladder incorporated	Positive-Neutral	1		Barrier Eliminated	Positive	2	
		(b) Aquatic Habitat/Health	High	3	Condition of Benthic community	No Change	Neutral	0		Riverine Conditions Restored	Positive	2	
		(c) Water Quality and Temperature	Medium	2	Presence and extent of headpond	No Change	Neutral	0		Headpond Eliminated	Positive	2	
		(d) Natural Heritage	Low	1	Extent of riparian habitat	Potential Riparian Habitat restoration	Positive-Neutral	1		Significant Opportunity for Riparian Habitat	Positive	2	
3	**Social**	(a) Cultural Heritage	Very High	5	Extent of impact to built heritage	Dam constructed to historic condition	Positive	2		Loss of Functional dam/weir Elements can be preserved	Negative-Neutral	-1	
		(b) Boating	Medium	2	Type of boating experience	No Change	Neutral	0		Flat water converted to riverine Barrier removed	Negative-Neutral	-1	
		(c) Fishing	Medium	2	Type of fishery	No Change	Neutral	0		Change in current species mix More riverine species	Negative	-2	
		(d) Park Vistas	Very High	5	Preferred Public View	No Change	Neutral	0		Headpond eliminated	Negative	-2	
		(e) Pubic Safety	High	3	Condition/presence of dam Water depth and velocity	Dam would meet MNRF safety criteria but remains a hazard	Neutral	0		Dam-related hazards eliminated	Positive	2	
4	**Economics**	(a) Life Cycle Cost (capital and O&M)	Low	1	Estimated costs ($)	High Capital Cost Perpetual O&M;longer life than Repair	Negative-Neutral	-1		High Capital cost Negligible future O&M	Positive-Neutral	1	
		(b) Liability	Low	1	Potential for damage to persons or property	Reduced Risk of Failure Liability remains	Negative-Neutral	-1		Liability minimized	Positive	2	
							NET SCORE	12			**NET SCORE**	12	

Legend: Evaluation Criteria

Description	Value
Low	1
Medium	2
High	3
Very High	5

Legend:

Negative	-2
Negative-Neutral	-1
Neutral	0
Postive-Neutral	1
Positive	2

Legend:

Negative	-2
Negative-Neutral	-1
Neutral	0
Postive-Neutral	1
Positive	2

C1 – Comments Received by Email after Change to Rebuild Alternative

The following is a consolidation of the email comments received:

Thanks Scott

I have been following this saga in the newspaper. What is the point of going through an EA when the proponent can disregard all of the environmental factors and choose the worst option for the environment? Hoping the review agencies challenge this direction.

[redacted]

I originally was in favor of keeping the mill pond but after getting more info I firmly believe the best thing for the long term for the river habitat and the people of the community is to naturalize it.

[redacted]

Hi Scott,

Thanks for the opportunity to comment. Admittedly, I have not been as involved in this as I had hoped. I did not get a chance to see the proposed plans for naturalization of the river without the dam but I imagine that this could be made to be a very attractive option and it would be better for the health of the river as well. Based on my understanding, the dam currently provides very little, if any, flood protection because it is has very little storage capacity and it is not used to generate energy, and the pond it forms is not used for water supply nor can it be used for swimming due to the volume of goose dropping lining the bed. The only apparent purpose of the dam at this point is to make a very shallow pond that provides a nice selling feature for the apartments located adjacent to them. Even then, from mid-July to the middle of September the pond has a layer of green scum on the surface that does little to lend to the aesthetics of the area.

I am not sure what economic, social or aesthetic benefits the dam adds. I would imagine that a nicely designed meandering river with interesting vegetation and greenspace and walkways replacing the pond would be equally as pleasing and provide more environmental benefit than a dam.

But hey, that's just one person's opinion on the matter.

[redacted]

Thanks for the update Scott

I was hoping the city would favour the consultants and naturalists recommendations but such was not the case. As an avid canoeist and outdoor enthusiast, I am unfortunately a member of the silent majority. I do have a request however.

As per the Hespeler dams, please install some form of steps or a ramp around the dam for canoeists and Kayakers. I feel like I am taking a huge risk portaging my canoe across King Street. The Park street bridge in Galt used to have an excellent portage but for some reason the city blocked it off under the bridge with a drain pipe.

Thanks once again for the update, [redacted]

Scott MacDonald
Preston Towne Centre is very passionate about retaining the body of water at the riverside park dam.

Anything that Council can do to determine the preferred alternative to rebuild the dam is a significance response to our mandate; to retain the body of water.

So much of our original heritage has been removed from the commercial core and we're trying to keep the heart of our community alive. This Dam is the entrance to our community and we need to rebuild on our future.

Preston Towne Centre Bia

Dear Scott MacDonald,

I'm writing to oppose the preliminary preferred alternative to rebuild the Riverside Dam.

Since it is across the Speed River it obviously has caused the Speed River and the surrounding environment (or should I call it 'nature'?) a certain amount of damage. The reason it was constructed 128 years ago was to power the Dover Mill. There is no longer any need for that. However, the City of Cambridge, its Council and majority of its residents do not seem to understand that blocking the flow of the Speed River is unnatural and is indeed harmful.

The Speed River itself is giving the message loud and clear by distroying the dam! So my advice to anybody interested is to take the dam out and let the river flow. Naturalizing is indeed the way to go 'with the flow'. Once the Riverside Dam has been removed and the Speed River naturalized, the river and the environment will finally be at ease. Plus the City of Cambridge and its residents will no longer have to pay for the upkeep or rebuilding

the dam. I'm sure that a newly build dam will eventually need replacing again. Would it last another 128 years? Maybe, but there is no guaranty. Nature has its way of saying 'This is enough!!' The Speed River is now giving the City of Cambridge the chance to undo and correct the mistake done 128 years ago. I cannot see how repeating a mistake has any value at all.

I urge the City of Cambridge council, its residents and its staff to reconsider the decision to rebuild the dam, but to remove the dam and naturalize it.

Regards,

[redacted]

Dear Scott:

Thank you for the opportunity to confirm that the 1,542 members of the Friends of Riverside Park Dam and Millpond believe that the Riverside Park Dam and Millpond are a municipal heritage asset with economic, social and recreational benefit to the entire community and are worthy of restoration and development for future generations.

While the original purpose of the dam was to divert water for a mill race to power the dam, it also provided a recreational area of still water for those who like to kayak or boat without the hassle of needing a drop off and pick up point. It is home to flora and fauna that have existed for nearly 150 years who would not find it “natural” if the dam were to be removed. Any improvements to fish habitats are minimal since there is a recently repaired dam about a mile upstream, and another one that is a little ways downstream. With the mill pond intact, boating can be enjoyed for several months of the year, while without it, at best canoeists can only use it during spring runoff or after a very heavy, prolonged rainfall. It is the heart of Preston and is a very big part of the attraction to Riverside Park, a destination for many out of town guests who also make use of local services like shopping, accommodations and restaurants. Recent development of high rise buildings also take advantage of the wonderful vista provided by the mill pond and increase their property values. With the population intensification already approved for the area, this beautiful recreation area will be more important than ever! It fits well within the City of Cambridge "Back to the River" focus as well.

We have two examples of naturalization projects within the city: Soper Park and the Fisher Mill Dam site. Both were once popular recreational areas but now are rarely enjoyed by the public. Soper Park unfortunately is mostly used by undesirable and homeless people and a recent clean up netted several hundred discarded drug needles and paraphernalia associated with them. We are hoping to stop this from happening in Riverside Park!

We believe that equal weight should be given to the humans who enjoy the dam and resulting mill pond as to the potential new aquatic life that could be introduced by its

removal. We are also aware of the fact that while the dam may impede some fish migration, that is not always a bad thing especially if one considers the predatory gobi fish already in our Great Lakes and moving upstream.

Kindest regards,

[redacted]

Please repair or rebuild the dam.

It is a beautiful park and should remain so.

Thanks

[redacted]

Hi Scott,

I am 100% opposed to the Riverside Dam rebuild. I previously did not provide feedback because the evidence from all major stakeholders applying science and best practices (MNRF, GRCA) overwhelmingly supported naturalization. Further, Council originally made the correct decision so there was seemingly no reason to get involved.

What constitutes an unresolved concern for appeals to the Minister of Environment and Climate Change? I don't even know where to begin with my unresolved concerns on this decision. With a global movement to remove dams that are no longer in service, Councillors of the City of Cambridge are passing up a chance to showcase what "back to the river" initiatives should really look like by utilizing an archaic approach to infrastructure projects.

Kind regards,

[redacted]

Good Day Scott

[redacted] is my name, I am from Preston.

I would like to say a big thank you to you and the City for the courageous and right decision to save Riverside Dam. You will have my support 100%.

While attending the many meetings we could see a lot of emotion from our Neighbours and a lot of conflicting science. For some reason, only the science below the dam appeared to be important, but of course the science above the dam is likewise, very important. There are 4 threatened species above the dam and one Endangered, at least according to information found on the internet.

One thing I would like to mention at this time, I understand there is thoughts of a Fish Ladder to be incorporated into the dam, while I support the movement of fish and other species, I would like to caution the powers to be, that we have at least one Invasive species living in the Grand River, above Parkhill Dam, a fish ladder could facilitate the movement of that Invasive, up stream to possible affect the Speckled Trout up stream of Riverside, presuming they could get past the Hespeler Dams .

Regardless, thanks for taking the steps to Save the Dam

Best Regards

[redacted]

Hi Scott,

I have reviewed your email which contained a lot of information concerning the riverside park dam. I attended a meeting at the Knights of Columbus Hall and have after reviewing all the suggestions I have come to a decision, that the naturalization of the dam was the best route to go. It would allow free flow of the waters and avoid the buildup of silt and avoid flooding of the park and downstream.

While the dam has some history my feeling is the best decision would be to naturalize the water way at that point. I assume this option would be the least expensive cost wise as it stands this area of the park looks more like a swamp or lagoon. I am a life-long resident of the Preston area and used the park a lot while growing up.

[redacted]

Dear Mr. MacDonald,

I wish to comment on the preliminary preferred alternative for removal of the Speed River Dam in Cambridge.

I believe we should remove the dam altogether and naturalize the Speed River for the following reasons:

1. We have already paid for a study that indicates this to be the best option over rebuilding or repairing the dam.

2. Removal of the dam and naturalization of the river would avoid the annual flooding of Riverside Park in the spring and the significant algal buildup in the summer.

3. Rebuilding the dam comes at a significant cost to the city and the taxpayers which is a higher cost than removal of the dam, adding insult to injury by simply ignoring the study we already paid for indicating removal of the dam as the best option.

4. Nostalgia is not a reason to ignore a scientific study and rebuild the dam. “My grandparents swam in the river, my parents swam in the river, I swam in the river, and I want my kids to swim in the river above the dam.” is not a reason to rebuild a dam at significant cost to taxpayers.

5. The mill was originally built to provide a millrace for the P&G mill in Preston. I’m fairly certain they aren’t using that millrace to power anything in the mill thereby negating any need for it.

6. What was there before the dam was built? Nothing. The river was already naturalized and was that way for centuries before we came along and started messing with nature. Now the dam is in disrepair, an eyesore, and at risk of failing potentially injuring an individual or further damaging property. Nature wins. Nature always wins.

Thanks very much for your time.

[redacted]

Hello Scott,

I am writing to you in regards to the City of Cambridge's letter for the Riverside Dam Class EA – Update to Preliminary Preferred Alternative (dated April 27, 2018). As mentioned in this letter, the City is preparing to finalize the Class EA and is seeking feedback and comments on recent updates being made to the Project File, however, a significant component excluded from the letter is the cost of the rebuild (i.e., the preliminary preferred alternative). Originally, the rebuild was presented as the most expensive option, and as I mentioned in my correspondence with you a couple weeks ago, we have been informed that the calculations for the rebuild have been reassessed and, from our understanding, is now possibly less expensive than some of the other shortlisted alternatives. In order for us to adequately provide comment and feedback, we must have this information. The preparation and submission of the report to Council is quickly approaching and is planned for next month, however, presently I feel we don't have all the information needed to adequately respond. If you could please provide the updated associated costs for each shortlisted preferred alternative and the calculations used to determine such, would be appreciated. Regardless, Linda Heron of the ORA will

be sending out a letter to the City of Cambridge, with a number of additional signatories, prior to this week's deadline. I've reattached the letter the OFAH previously submitted to the Mayor and members of Council regarding the Riverside Dam rebuild. Thank you for your time and consideration.

Yours in Conservation,

[redacted]

Please find attached a Joint Submission by the Ontario Rivers Alliance and Partners, regarding the Riverside Dam Class EA, Update to the Preliminary Alternative.

We would be pleased to meet with you and Council to discuss this further.

Thank you for this opportunity to comment.

[redacted]

Chair, Ontario Rivers Alliance

OntarioRiversAlliance.ca

[redacted]

Good morning Scott

I have attached my comments regarding the 'preliminary preferred alternative' for the Riverside Dam.

The City of Cambridge within the Strategic Plan - and by virtue of being a recipient of tax dollars - has a responsibility to manage city resources in a responsible and sustainable manner - considering future needs for resiliency and community adaptation. A rebuilt dam requires ongoing maintenance which is and ongoing expense not calculated and not in the ongoing budgets. Professionals were hired (at a considerable expense) to investigate the structure, the waterways the ecosystems, consulted the stakeholders and the community, the Class EA Project file preferred alternative was to remove Riverside Dam and Naturalize the Speed River.

Will you be notifying us once the Notice of Study Completion has been posted? If indeed the City continues down the path of rebuild/repair the dam I have every intention of appealing that decision to the Minister of Environment and Climate Change asking the City to prepare an Individual EA (a 'Part II Order').

Attached Comments:

I understand how important Riverside Park is to our city. It has been the gateway for millions to come a play, fish and enjoy the vista. That will not change if the Speed River is naturalized as strongly recommended by the consulting firm. Allowing the river to flow will ensure that natural environment will flourish for generations to come.

The further opportunities that could be developed are endless when the park is not flooded and closed for many weeks in the spring due to the dam. Bike/pedestrian paths separate from the roadway, board walks over the wetlands, nature centres, educational sign boards that local schools could use, etc.

I believe in the future and leaving the environment place better for my Grandchildren and their Grandchildren. The decision should be made on science-based facts presented by the engineering firm along with the cost of rebuilding the dam, not on nostalgia or on 'how it looks' or vote getting by our elected officials.

If science and doing the right thing on all environment standards doesn't matter to some - then the simple math should.

City of Cambridge Strategic Plan

Environment and Rivers Goal 4:

Be good stewards of the rivers, waterways and natural environment that this community enjoys. Objectives:

4.1 Ensure that sustainability principles are a part of city decision- making processes.

- A Naturalized River is sustainable
- Rebuild Dam, public infrastructure which needs to be maintained in perpetuity by City

4.2 Encourage innovative approaches to address environmental challenges.

Naturalize River	Rebuild Dam
• Natural process reinstated • Aligns with objectives of GRCA Fisheries Management Plan and Provincial Endangered Species Act • Improved water quality • Lower downstream	• Dam blocks natural sediment movement flow • Fish passage impaired • Wavy Ray Lamp Mussel negatively affected • Lower water quality in headpond • Higher temperature

temperature • Natural aeration • Significant opportunity for riparian zone rehabilitation	

4.3 Work with other partners to educate the public and help make changes to improve and protect our natural heritage features.

• Removes barrier to movement • Preferred by white water enthusiasts • Restores fishing to a more diverse and natural population	• Creates a barrier to movement • Provides an area for flatwater boating • Reduces diversity and numbers and prevents seasonal migration

4.4 Manage city resources in a responsible and sustainable manner, considering future needs for resiliency and community adaptation.

• $5.1 million	• $8.5 Million

[redacted]

[redacted]

Hey Scott,

Please find the attached Letter of Concern regarding the 'Update to the Preliminary Preferred Alternative for the Riverside Dam.

Let me know if you have any questions.

[redacted]

Hello Scott,

Thank you for providing this letter. The purpose of my response is simply to voice some support for naturalizing the river- that is, support for the option that was determined to be preferred based on detailed and logical assessments of cost, water quality, reduction of flooding etc.

It is reasonable to say that there is some historic value to the dam- surely the mill was quite important to the development of this community. I do seriously question the economic value of maintaining this dam- aside from minor recreational fishing and boating activities, this mill pond serves little purpose (and these same opportunities exist a short

distance up and down stream). As for customer flow in surrounding businesses, Riverside park will remain an attraction- it would still boast a beautiful riverside setting along with popular facilities like the skatepark, accessible playground, sportsfields etc.

However, the negative impacts of this dam are many. Riverside park floods and must be closed at least once annually (multiple times annually lately), when water floods over the current road and into the playground area. This is both a nuisance and safety concern, as residents often ignore the closures. The mill pond is indeed quite serene and beautiful looking at times- however in the prime season of park usage during the warmer months the water quality quickly degrades to yield a pond covered in a putrid scum. Lastly, the cost of replacement is considerably more than naturalization (initial, and on-going maintenance costs).

The pro-dam contingent in Preston is obviously quite strong. That being said, there are many who are in favour of naturalization who did not make such a serious presence and impact before council. Not everything historic can or should be saved, for example we do not still have an electric railway on King Street or horse racing in Riverside park and there are reasons for this. We need to balance the considerations of nostalgia and historic value with reality, and this plan to invest heavily to rebuild a dam which causes serious problems is backwards. Such investment could be used to genuinely revitalize the downtown core or other city projects.

Thanks,

[redacted]

To: The Ministry of the Enviroment

I have lived in Preston for 57 years and have enjoyed RIVERside park and the Speed RIVER.

In my opinion and thousands of others (remember the 5000+ signatures on the petition) the DAM must be saved.

Now in my senior years I enjoy my RIVER'S Edge apartment and watching and recording the wildlife on and around the park and RIVER.

Please do not consider any other option but to rebuild our DAM.

Trusting you will only do whats right !!

[redacted]

Please accept this as my support in regard to rebuilding the dam in Riverside Park. I think it is important for many reasons, first and foremost to retain the history and heritage of the park. I believe that the personality of the park would change completely and the overall experience would suffer. As someone born and raised here and a regular user over 5 plus decades I would be disappointed to see the front part of Cambridge's best park slide backwards.

Thanks

[redacted]

Dear Scott

I believe that the Riverside Park Dam and Millpond are a municipal heritage asset with economic, social and recreational benefit to the entire community and are worthy of restoration and development for future generations.

Soper Park and the Fisher Mill Dam site are two examples of what would happen here if the dam was not maintained. Overrun with undesirable and homeless people.

Please maintain the Dam.

Sincerely , [redacted].

Hello Scott,

I wish to express my support for maintaining the dam and not letting it be removed.

I do not wish to see the Mill Pond natuarlized.

Riverside Park and the Mill Pond are part of our heritage and I would like to keep it that way.

[redacted]

Hello Scott,

I wish to once again express my support for maintaining the millpond and the dam. I ***do not*** want to see it naturalized. Having grown up on Kress Hill I have spent many hours enjoying its beauty and wildlife. I consider the dam, park and millpond part of our heritage and wish it to remain intact for the enjoyment of my grandchildren and future generations.

Regards,

[redacted]

Dear Scott

In regards to Riverside Dam, I'm with many others that prefer saving the dam by rebuild or replace. The best option for either would be ok with me. From day 1, false information from staff has triggered this ongoing saga that has only benefited the consultants at tax payers expense.

Attempting to naturalize a river between dams doesn't make any sense at all. Also, as you are probably aware it hasn't worked out well for Mill Creek, and the mess it's created at Soper Park and upstream. If naturalization is a success there, why do they have to restock trout every year? I personally know a few locals that used to fish Mill Creek regularly, and have since gone elsewhere for not having the success they once had.

Another issue is the present problem the Trump administration has created with cutting environment funding for the Great Lakes that could develop into a catastrophe. The Grand River and tributaries flow into Lake Erie, and would be vulnerable for preditor fish to go upstream and destroy habitat and vegetation. Only deterrent being Dams that could slow the movement for anything that could take place.

Somewhere in your office area a petition of approximately 4500 names made it quite clear they want the dam saved. This attitude hasn't wavered, and now here we are back it again with the same enthusiasm for doing so.

I have been to all meetings during the past years in regards to the Riverside Dam issue. I was very objective in hearing both sides of the argument, in naturalizing the river, or saving the dam. To be honest, I have become more in tune with the group attempting to either rebuild or repair.

At a meeting at the Knights of Columbus Hall a few years ago Amec displayed “window dressing” with impressive looking display pictures of their past work with a pond effect they stated would be possible to do if the dam was removed. The save the dam group, took the initiative to inspect the site , and found it quite different, and nothing resembling the display. Also, the gentleman owning the land mentioned the fishing disappeared and the improved creek is now a mess of erosion.

Suggestions were also made for retaining the dam, with improvements such as fish ladders possible hydro electric functions and operating sluice gates to ease environmental concerns but they were never added to options under consideration.

The majority of people have spoken over and over again to keep what we already have. One only has to walk around Riverside Park during morning to see many species of wild life, as well as people that chose to fish. Not much has been said of the habitat that’s been here for many years, and how it can affect them with a drastic change.

The present park is the hub of the City, and the dam contributes to the beauty and serenity for leisure. There hasn’t been a dime spent on maintenance, and the dam is still here. Not bad for previous accusations of being in imminent danger of collapsing.

To sum it up Scott, when do the people count in all of this? Doug Craig’s back to the river theme should apply here as well.

Thank you for taking time reading my views.

[redacted]

Please, please leave our heritage here for future generations to enjoy!

Don't let this Happen to our Riverside Park.

See attachment

This is what happened to Crooks Hollow just north of Dundas when the dam was removed and Spencer Creek was naturalized.

You can walk the banks and hear the brook but you have to cut your way through the underbrush in order to see the water.

People used to line the banks to fish the millpond. No one fishes here today. You could sit and contemplate life as you watched the slow moving waters of the millpond. That's all gone now.

There was an entire ecosystem around this millpond. Removing the dam ignores Darwin's theory of evolution and adaptation and destroys life.

This is why we need to save the millpond in Riverside Park.

[redacted]

I would like to see the dam build to look like the old one so as to keep the historical look and to represent the history of Preston.

[redacted]

Hi Scott,

Thank you for taking the time to sift through all the information that I'm sure is being sent your way.

Wanted to send this as a letter of support to retain the dam, whichever way it remains. Either through rebuild or replacement.

The Millpond is the gateway to our City from the west. It is a beautiful focal point and a part of our Preston Heritage. We don't have a lot left in Preston and can't see our community suffering another loss.

Please save our mill pond.

Hope you have a super weekend.

[redacted]

Preston resident

My comments regarding saving the Riverside mill pond are;

I have traveled through the greater southwestern Ontario on road trips and have marveled at the small villages and towns that have a mill pond.

It is the focal point for all these places. The ability to enjoy the wild life and ecological systems which these ponds provide is a relaxation of the peace and tranquillity of what was once a thriving economic engine of our history.

There still are many areas of untouched natural waterways to enjoy.

Best regards

[redacted]

Cambridge (Preston)

Mr. MacDonald

Just a short and quick note to say I fully support the decision of council to rebuild the Riverside Park Dam on the Speed River.

I know it won't be a popular decision with everyone. I know that others have spoken out in hope of getting council to change their mind. Regardless, the decision council made is the right decision.

I hope city staff and council will take this opportunity to look at the possibilities for re-creative activity in, on and around a new millpond next to Riverside Park. This is an opportunity to increase the recreational value of the park and of one of the city's greatest assets; our rivers.

As to those with opposing views, I have to ask where have they been in the last 10 years. Why are they presenting arguments that have already been proven wrong, or one sided, or self-serving, or half true.

Arguments that removal will improve water quality have failed to properly consider other dams both up and down stream. Arguments that faster moving water will be cooler have failed to acknowledge that shallow water will be warmer. Arguments that leaving the dam will be detrimental to species of danger has failed to acknowledge and deal with other species that would be endangered by the removal of the dam.

To say that removing the dam would be better for the eco system completely opposes basic scientific understanding of Darwin's theory of evolution and adaptation.

No matter what is done it is going to have some impact on the current eco system. However, rebuild is the option that results in the least amount of disturbance to the current evolved eco system. It honors the people of Preston and showcases the industrial and recreational heritages of the community.

It's time to move forward and rebuild the dam and showcase the millpond and all the features surrounding it and Riverside Park.

Sincerely

[redacted]

Hi Scott

I've been to some of the meetings and read a lot about the dam issue.

Removing it & calling it "naturalizing" doesn't make any sense to me.

I support measure to rebuild/replace preserving the millpond.

Thanks

[redacted]

Hi Scott,

Please consider this email my formal support for rebuilding the dam as the 'preferred option' of a finalized EA.

At numerous times throughout the process I have voiced reasons for this, and hope that my previous comments - emails, delegations, and written feedback- will be included.

In an ideal world, ownership of the dam (significant built and cultural heritage in Cambridge and the Region) would have been maintained and ongoing maintenance undertaken, thereby enabling the dam to stand another 100 years.

In the apparent absence of such ownership, and with only limited intervention by the City, I understand that EA expert opinion has found the dam to be severely damaged. Expert opinion has also concluded that Repair is not a viable option.

My first choice is always appropriate ownership and management for this or any built and cultural heritage. In the occurrence of significant deterioration, I would, and still do in this instance, prefer repairing the dam. If this is no longer a viable option, then I support rebuilding the dam in order to at least maintain the cultural heritage value of the site and surrounding context:

- the dam served the first mill in the Region (across the street)
- it created the mill pond that is integral to the community experience of Riverside Park, another cultural site in of itself
- it speaks to the history/interplay between humans and the river and heritage watershed.

I would like to see the GRCA fulfilling the vision and commitment of its Grand Strategy.

I personally believe that this area should have been considered for a HCD or Cultural Heritage Landscape. I remain disappointed that more has not been done to protect the area, leading to the piece-meal dismantling of precious heritage assets. We have the opportunity to stop this devastation and preserve the future of the dam, mill pond, park and community.

As clearly articulated throughout the EA process by numerous people, the dam and related millpond, are core to residents' sense of community, identity and belonging.

Rebuilding the dam was also the preferred option of the stakeholder group when all original EA evaluation criteria were considered. And this was with very limited heritage expertise on the Stakeholder Group, a group created by invitation only.

Despite this, community members came forward to reclaim their heritage. I urge all parties to respect this and endorse the rebuilding of the dam, including a plan for silt management, ownership and maintenance.

Thank you,

[redacted]

Hello Scott
The Speed Valley chapter of Trout Unlimited would like to have input in the revised Riverside Dam Class Environmental Assessment.

We are in full agreement with all of the Public Agencies, Indigenous Groups and the City's own Environmental Advisory Committee in supporting naturalizing the Speed River in Riverside Park.

Please add me to your list as a representative.
Thank you

[redacted]

Thank you for the opportunity to provide comments on the Riverside Dam Class Environmental Assessment. I am disappointed that the City of Cambridge is proceeding with finalizing the Class EA with the rebuild option as the preferred. I was in attendance at the March council meeting I was extremely disappointed that Council chose to ignore

logic, the advice of professionals (including City staff, City engaged consultants, and professionals from the regulatory agencies) and members of the public who were in support of the Naturalize alternative.

As I have included in my previous correspondence the following are some of the reasons I was in support of the Naturalize alternative:

- The dam has no purpose as it does not provide any flood attenuation.
- The removal of the dam will reduce the amount of flood in Riverside Park especially during the spring season – it will allow for Riverside Park to be usable earlier in the season.
- Naturalization of the river bank and allowing the river to flow will provide better habitat and water quality for aquatic species.
- The removal of the dam will allow the Speed River to return to its natural state as a river.
- Key regulatory agencies including the MNRF, GRCA, and the Region are all in favour of the Naturalize Speed River alternative.

The other key consideration is the financial implications of ongoing maintenance of another piece of City infrastructure. It does not make sense to construct, operate, and maintain another piece of infrastructure (that has no purpose) when the City is unable to meet the current demand of its's existing infrastructure. Can you please elaborate why the City wants to accept the liability and risk associated with another piece of infrastructure?

I want to reiterate that the assessment provided by the consultants is logical, based on science and provided a balance assessment including consideration of public input. City Council is ignoring its own Strategic Plan which states the City of Cambridge needs to ensure that sustainability principles are part of city decision making processes – a naturalized river is sustainable.

I would also like to ensure that Council knows that even though the City proceeds with the Class EA with Rebuild Alternative does not mean that the dam will be rebuilt. There is still an opportunity for the public to voice their concerns and submit an Part II Order request. There is also the issue of acquiring the numerous permits required for such a structure which is not guaranteed. I am unsure if the Regulatory Agencies will be able to issue Permits for the structure as it may be in contravention of there polices and guidelines.

Thank you for the opportunity to provide comments at this time and I will be submitting comments when the EA is finalized. Can you please ensure that I am notified when the Class EA report goes to Council in June?

[redacted]

[redacted]

C2 – Letters Received after Change to Rebuild Alternative

Grand River Conservation Authority

Administration Centre: 400 Clyde Road, P.O. Box 729 Cambridge, ON N1R 5W6

Phone: 519-621-2761 Toll free: 1-866-900-4722 Fax: 519-621-4844 www.grandriver.ca

June 13, 2018

Via E-mail and Regular Mail

Mr. Scott MacDonald, P.Eng.
Development & Infrastructure
City of Cambridge
50 Dickson Street, 3rd Floor
P.O. Box 669
Cambridge, ON N1R 5W8

Dear Mr. MacDonald:

Re: Update to Preliminary Preferred Alternative
Riverside Dam Class Environmental Assessment Schedule 'B' Project
City of Cambridge
GRCA File: W.119.20

We are in receipt of your letter dated April 27, 2018 which provides an update on the Riverside Dam Class Environmental Assessment (EA). This notification includes a change in the preliminary preferred alternative, from remove the dam and naturalize the Speed River, to rebuild the dam.

Background

On May 10, 2018, GRCA staff met with City staff and received an updated evaluation matrix for this project. GRCA staff requested and received an extension to the May 18, 2018 deadline for comments. As a follow-up to our meeting, we received an email dated May 15, 2018 which detailed the weighting adjustments that were done to the evaluation criteria resulting in a tie score between the: rebuild the dam and naturalize the Speed River alternatives. You explained that since the City, as the proponent, is in favour of the rebuild Riverside Dam alternative, this modified alternative will be brought forward as the updated Preliminary Preferred Alternative in the updated Class EA Project File. The following Grand River Conservation Authority (GRCA) comments are provided for your consideration.

As a watershed management agency, the GRCA continues to support the dam removal and naturalization of the Speed River alternative (see correspondence dated December 4, 2017). This alternative addresses the majority of the evaluation criteria related to the GRCA's interests, including flooding, public safety, water quality, natural heritage, and fisheries. The EA document

outlines the benefit this alternative provides in relation to these criteria in greater detail. GRCA has outlined these benefits in EA Technical team meetings and past correspondence as well. A brief summary of these benefits are outlined below.

Public Safety and Flooding Impacts

The naturalization alternative eliminates the risk to public safety near dams and implementation of public safety measures such as fencing and on-going monitoring and maintenance of this infrastructure to the City of Cambridge.

With respect to the flooding criteria, the documentation provided in the EA process outlines that a rebuilt dam could be constructed to match the geometry of the existing dam essentially in kind. The EA notes that maintaining the geometry and elevation of a rebuilt dam would ensure no increased flooding over existing conditions. The naturalization option would provide greater opportunities to reduce frequent flooding upstream of the dam and reduce upstream flood elevations on properties adjacent to the river (e.g. along Eagle Street and Riverside Park).

This reach of the Speed River is designated as a Two-Zone Floodplain Policy Area, meaning the floodplain is divided into two portions being the floodway and flood fringe. No new development is permitted in the floodway and development associated with existing uses is limited. New development is permitted in the flood fringe if certain criteria are met. The removal of the dam has the potential to reduce the floodway portion of the floodplain. Hydraulic modelling and a review of the floodway has not been undertaken to quantify the flood reduction of dam removal/naturalization alternative and the potential to increase development opportunities if flood risks were reduced.

Water Quality

The removal of the dam and naturalization of the Speed River would provide a benefit by allowing more variation in the bed of the river such as riffle sections that enhances the ability for aquatic plants, bacteria and other organisms to uptake or assimilate more nutrients, such as nitrogen and phosphorus. This environmental service provided by the river builds a healthier aquatic system by capturing the nutrients within the river reach instead of letting them flow downstream. In addition, incremental improvements to the water quality in the river will improve the river's assimilative capacity that is affected by upstream inputs such as the Guelph and Hespeler wastewater treatment plants and stormwater inputs from the developed areas of both Preston and Hespeler.

Natural Heritage and Fisheries

The Speed River natural heritage features and functions and the ecological and social benefits they provide are important criteria as well. Removal of the dam and naturalizing the river EA alternative will provide a greater opportunity to enhance water quality by re-naturalizing the river and by creating additional wetland area. A re-naturalized watercourse and new wetland features would in turn provide greater functional benefits, including increased water storage and

conveyance, sediment removal, more effective nutrient assimilation, and habitat for fish and wildlife. As noted in the EA, provincially and federally listed aquatic species are known to be present in this section of the river. The ability to provide enhanced ecosystem functions and services will be limited if the dam were to be rebuilt.

The EA documentation indicates that a rebuilt dam will be constructed with the same geometry which is a physical barrier preventing the migration and movement of fish and other aquatic organisms. Recent correspondence indicates the rebuilt dam may include a fish passage component. One of the management goals identified in the Grand River Fisheries Management Plan is to improve fish passage. This plan was developed through public consultation with watershed stakeholders. A diverse, warm water fish community dominated by top predators, such as bass and pike, is a key objective for the Speed River which would be facilitated by the removal of the dam.

GRCA Permit and Other Approvals

We encourage the City of Cambridge to re-consider the updated preliminary preferred alternative, in favour of dam removal and naturalization. Ultimately, the construction of the final alternative as determined through the EA process will require a permit from the GRCA under Ontario Regulation 150/06 pursuant to the Conservation Authorities Act. Upon submission of an application, GRCA would review the project in the context of GRCA Policies for the Administration of Ontario Regulation 150/06 (October, 2015 or as amended).

Please consult with GRCA staff early in the design process to obtain a comprehensive list of GRCA permit requirements. For example, if a rebuild of the dam is the final alternative upon completion of the EA process, any changes to the top of the dam elevation or substantive changes to the geometry of a dam will trigger the need for updated floodplain modelling to assess flood impact. An environmental impact study to inform the design, identify mitigation measures, and develop a monitoring program and plans would also be required.

We wish to note that the GRCA does not review on behalf of the Federal Department of Fisheries and Oceans (DFO) under the Fisheries Act and/or the Species at Risk Act (SARA). The City would be responsible to undertake a self-assessment, and if necessary, obtain the necessary authorizations directly from DFO. Similarly, approvals from Ministry of Natural Resources and Forestry (MNRF) will be required and we encourage early consultation with all agencies.

Conclusion

The GRCA continues to support the removal of the Riverside Dam and naturalize the Speed River. We would encourage the City to consider the benefits and opportunities available by removing the dam and naturalizing the Speed River from a flooding, public safety, natural heritage and water quality perspective.

We trust you will find the above of assistance on this matter. Should you have any further questions or require clarification, please do not hesitate to contact the undersigned at ext. 2233 or jbrum@grandriver.ca.

Yours truly,

John Brum
Resource Planner
Grand River Conservation Authority

JB/

cc: Ron Scheckenberger, AMEC Environment & Infrastructure (via email)
James Etienne and Mike McGann, City of Cambridge (via email)
David Marriot, MNRF (via email)

Ministry of Natural Resources and Forestry

Ministère des Richesses naturelles et des Forêts

Guelph District
1 Stone Road West
Guelph, Ontario
N1G 4Y2

Telephone: (519) 826-4955
Facsimile: (519) 826-4929

Ontario

May 17, 2018

Scott MacDonald, P. Eng.
Project Engineer
Development & Infrastructure
City of Cambridge
Region of Waterloo, ON

Re: Riverside Dam - April 27, 2018 Letter – Schedule B Municipal Class Environmental Assessment, *Environmental Assessment Act* – City of Cambridge, Region of Waterloo – MNRF Preliminary Comments.

Mr. MacDonald,

The Ministry of Natural Resources and Forestry (MNRF) Guelph District Office appreciated the opportunity to meet with City staff, to discuss the City's April 27, 2018 letter for the Riverside Dam Municipal Class Environmental Assessment (EA). We understand that the purpose of this letter is to provide notification that the EA preliminary preferred alternative is going to be revised to support the rebuild of the Riverside Dam. The letter also describes that the decision to revise the EA at this stage of the project is based on direction from City Council.

As requested, we can offer the EA project team the following preliminary comments, regarding the proposed new direction for the project described in the City's letter.

MNRF Comments

The MNRF supported the EA's initial preliminary preferred alternative to naturalize the Speed River in principle. This includes decommissioning the Riverside Dam. This alternative aligns with our Ministry's mandate to promote healthy and sustainable ecosystems, conserve biodiversity, and wisely manage natural resources. Naturalizing the Speed River would contribute to the recovery of provincial species at risk fish and mussels that are known for this stretch of the Speed River, and would enhance the native fish communities as outlined in the Grand River Fisheries Management Plan. A healthy fishery provides multiple benefits to the watershed. Decommissioning the dam would also eliminate the potential hazard that would be associated with the infrastructure over the long-term. These natural environment and public health and safety benefits that would result from naturalizing the river have been documented in the EA reporting.

We do appreciate that the purpose of the Municipal Class EA is to consider, and to balance, the potential impacts of a project on the environment in a broad sense. However, we continue to support the alternative to naturalize the Speed River from a natural environment and public health and safety

perspective. We also encourage the City to reconsider the merits of naturalizing the river before making a final decision on the preferred alternative for the project.

Throughout the planning and design process for the EA, we have also provided preliminary technical comments on the legislation we administer to the EA project team. The purpose of these comments was to help inform the implementation stages of the project. We would like to take this opportunity to update our previous comments on the *Public Lands Act* (PLA) and the *Lakes and Rivers Improvement Act* (LRIA), in context to the proposed new direction for the project.

The EA reporting notes that there is uncertainty regarding ownership of the existing dam. Given the uncertainty of ownership, the bed of the Speed River at this location is likely Crown land. If the proposed rebuild of the dam is approved through the EA, long-term tenure under the PLA will be required to support the implementation of this alternative. This disposition of Crown land would be in the form of a long-term Crown lease or sale. Both of these tenure options would be calculated at market value. This will be determined during the review of the application. As part of the tenure process, a registered survey will also need to be completed by the proponent. It is recommended that the EA reporting reference these PLA requirements.

The Crown has a duty to consult with Indigenous communities as well, when considering a potential disposition of Crown land that may adversely impact asserted or established Aboriginal or treaty rights. While the duty to consult ultimately rests with the Crown, the City's consultation efforts may help to inform the Ministry's consultation under the PLA if the EA is approved. We recommend that the City review whether the nature and extent of its consultation through the EA has appropriately considered any interests that Indigenous communities may have with the project.

The EA reporting also notes that once the preferred solution is established, the City will seek guidance specific to defining the formal owner of the Riverside Dam. The definition of 'owner' under the LRIA includes the owner of the dam, structure or work, and includes the person constructing, maintaining or operating the dam. We appreciate that there is uncertainty regarding the ownership of the existing dam. However, if the City receives the necessary approvals to rebuild the dam, the MNRF would consider the City to be responsible for the rebuilt dam under the LRIA. It is recommended that this be referenced in the EA reporting, so the long-term commitments of this alternative are clear.

Closing

The MNRF appreciates the opportunity to comment on the proposed new direction for the Riverside Dam Municipal Class EA.

Please note that we will provide formal comments on the EA when the Notice of Completion for the project has been posted for review. Based on our Ministry's mandate, however, we continue to be supportive of the initial preliminary preferred alternative to naturalize the Speed River. We also encourage the City to reconsider the merits of naturalizing the river before making a final decision on the preferred alternative for the project.

We hope that the above comments will help to inform the EA process moving forward.

Please contact the undersigned if further comment or clarification is required.

Regards,

Dave Marriott, District Planner
Ministry of Natural Resources and Forestry, Guelph District
1 Stone Road West
Guelph, ON, N1G 4Y2
Phone: (519) 826-4926

cc: James Etienne, City of Cambridge
Doug Ryan, MNRF
Barb Slattery, MOECC
John Brum, GRCA

379 Ronka Road
Worthington, ON P0M3H0
LindaH@OntarioRiversAlliance.ca
OntarioRiversAlliance.ca

16 May 2018

Scott MacDonald, P. Eng.
Project Engineer
City of Cambridge
50 Dickson Street
P.O. Box 669
Cambridge, ON
N1R 5W8

By Email: MacDonaldScott@Cambridge.ca

Re: Riverside Dam Class Environmental Assessment - Speed River
Update to Preliminary Preferred Alternative

Dear Mr. MacDonald:

The Ontario Rivers Alliance (ORA) is a Not-for-Profit grassroots organization acting as a voice for several stewardships, associations, individual and Indigenous members who have come together to protect, conserve and restore riverine ecosystems.

ORA is writing in response to the Riverside Dam Class Environmental Assessment - Update to Preliminary Preferred Alternative, and its call for feedback and comments on recent updates made to the Project File.

Background:

ORA is aware that Cambridge City Council recently rejected a recommendation by the Project Team consultants and City staff to Naturalize the Speed River at Riverside Park, as set out in the Municipal Class Environmental Assessment (Class EA) as the preferred alternative.

It is surprising that Council rejected a recommendation that was so well supported by the Project Team, staff and stakeholders, and in a unanimous decision voted to rebuild the dam. It is even more surprising that the Project Team was directed to revisit the Class EA evaluation criteria to align with the direction of Council and members of the public. *"Council has asked staff to identify a process that enables the City to rebuild or repair Riverside Dam."*[1]

One must question the integrity of a Class EA that can be so easily rewritten to reach a totally different conclusion than the one just a little over two months ago – to go from recommending Naturalizing the river as the preferred alternative, to now recommending that it be rebuilt.

[1] *Riverside Dam Class Environmental Assessment, Report No: 18-066(CD), File No: T-04-060-RI, To: Council; From: James Etienne, P. Eng., City Engineer.*

In fact, the cost of rebuilding the Riverside Dam in the 6 March 2018 Riverside Dam Class EA Study Completion to Council[2] was estimated to be $8.5 million dollars, with Naturalization coming in at $5.1 million; whereas, the 17 April 2018 staff report to Council[3] indicated an estimated capital cost of +/- $5.4 million to rebuild, and +/- $5.3 million to Naturalize. In that short space of time (42 days), the rebuild cost estimate went down by $3.1 million and the estimated costs for Naturalization went up by $.2 million.

Additionally, cultural heritage is only one of many required criteria. Consideration must also be given to the environment, water quality, endangered species, the fishery, habitat, hazards, risks, full life-cycle costs, Indigenous consultation and interests, public safety and liability issues.

It appears that the integrity of the Riverside Dam Class EA has been compromised.

Resilience to a Changing Climate:

Naturalizing the Speed River meets all environmental objectives and legislation, would reinstate natural processes, allow transport of sediments downstream, remove a barrier to fish passage and boaters, lower water temperatures, improve water quality, improve fish habitat, restore the fishery to a more diverse and natural population, reduce flooding, increase public safety and improve the rivers resiliency to climate change.

According to a recent NASA and National Science Foundation funded study of more than half of the world's freshwater supply, climate change is rapidly warming lakes and rivers around the world and threatening freshwater supplies and ecosystems.[4]

"*Climate will interact with overexploitation, dams and diversions, habitat destruction, non-native species and pollution to destroy native freshwater fisheries.*"[5] "*Climate warming will adversely affect water quality and water quantity, as well as the magnitude and timing of river flows, lake levels and water renewal times.*" [6]

Our rapidly changing climate is a compelling reason to increase the resilience of our freshwater systems for the protection and safety of our communities. It is important to mitigate and adapt to the extremes of climate change as Paul Beckwith, who works on climatology in the Department of Geography at the University of Ottawa said, "We're getting a lot more extreme weather events around the planet, whether that be torrential rains leading to flooding, or really hot and dry temperatures leading to drought. These extreme weather events are much more severe, much more intense, they last longer, they're happening more frequently, and they're happening in areas where they didn't happen before."[7]

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[2] Riverside Dam Class Environmental Assessment Study Completion, Report No: 18-016 (CD), File No: T-04-060-RI, To: General Committee; From: Scott MacDonald, Project Engineer.
[3] Riverside Dam Class Environmental Assessment, Report No: 18-066(CD), File No: T-04-060-RI, To: Council; From: James Etienne, P. Eng., City Engineer.
[4] Study: Climate Change Rapidly Warming World's Lakes, 16 December 2015.
[5] Schindler, D.W., 2001. The cumulative effects of climate warming and other human stresses on Canadian freshwaters in the new Millennium. Canadian Journal of Fisheries and Aquatic Sciences. 58: 18-29.
[6] Schindler, D.W., 2001. The cumulative effects of climate warming and other human stresses on Canadian freshwaters in the new millennium. Canadian Journal of Fisheries and Aquatic Sciences. 58: 18-29.
[7] National Observer, 8 May 2017, Here are the climate science benchmarks of the Quebec floods.

Increased intensity of rain and melt events is already challenging manmade infrastructure such as dams like never before, and there is acknowledgement that old dams are becoming enormous liabilities, and significantly increase the risk to public safety.

Drought conditions can place additional stress on riverine ecosystems, while more extreme rainfall will heighten the risk of dam failures, as in October of 2015, when a South Carolina flood breached 18 dams and with rapid release of high volumes of water, resulted in 16 deaths.[8],[9] There have also been recent dam failures right here in Ontario – the Gorrie Dam failure last year in Gorrie was the most recent, putting more than 150 property owners at risk.

It is crucial that we recognize the hazards of infrastructure that would put citizens at risk, degrade water quality, threaten our fisheries, or that jeopardize the ecosystem services that healthy rivers provide.

Conclusion:

ORA understands the pressure municipalities are under when communities rally to maintain or rebuild their beloved mill ponds. However, it is up to all authorities and municipalities to take a leadership role that places public safety and landscape scale ecological integrity above local individual or group interests.

Anything we can do now to reduce that risk and any corresponding liability will be a positive for both local communities and the natural environment. Removing the dam would not only save taxpayer dollars in the short-term, but it would eliminate the long-term life-cycle costs of maintaining the dam.

The life-cycle costs associated with the Naturalize alternative are minimal, it avoids the substantial costs of the ongoing management of the contaminated sediment, and significantly reduces the City's short and long-term liability.

Naturalizing the Speed River is also in alignment with the City's Strategic Plan, and ranked highest in consultation with the regulators, agencies, Indigenous communities, and the City's Environmental Advisory Committee – who all expressed strong support for this alternative. There were only two stakeholders out of ten that expressed a desire to keep the Mill Pond.

ORA respectfully submits, that neither the public good, nor the environment are served in a decision to rebuild and maintain the dam. Naturalizing the Riverside Dam would be a strong action for the City of Cambridge to take in ensuring the Speed River and adjacent communities are more resilient to climate change and, most importantly, it would demonstrate that protecting the safety of its citizens is the top priority.

Naturalizing the Speed River at Riverside Park will improve its health and resilience and at the same time reduce public safety risks and liability.

[8] *18 Dams Breached And Death Toll Rises in S.C. Flooding*
[9] *Colorado flood: Dams break in Larimer and Adams counties; overflowing in Boulder. http://www.denverpost.com/environment/ci_24080336/dams-break-at-rocky-mountain-arsenal-and-larimer*

ORA is asking the City of Cambridge to look beyond the pure aesthetics of the dam and pond feature, to the greater long-term health and vitality of a revived and healthy fishery and natural environment, both now and far into the future.

We ask that the decision to rebuild the Riverside Dam be reconsidered, and that the best advice of the City's Project Team and staff be followed – to Naturalize the Speed River.

We would be pleased to meet with you to discuss this further in the hopes of finding the best alternatives for the City, local communities, and the ecosystem of the Speed River.

Thank you for your consideration.

Respectfully,

Linda Heron
Chair, Ontario Rivers Alliance
(705) 866-1677

Freshwater Future
Nancy Goucher, Manager, Partnerships
(647) 749-9472 – Ext 2
Nancy@FreshwaterFuture.org

Canadian Wildlife Federation
Nick Lapointe, Senior Conservation Biologist
Freshwater Ecology
(613) 599-9594 – Ext 219
NLapointe@cwf-fcf.org

Trout Unlimited Canada (3,800 members)
Kelly Mason, Ontario Provincial Biologist
Tel: 519 763-0888
KMason@TUCanada.org

Thames River Anglers Association
Robert Huber, President
(519) 630-1892
TRAA@Anglers.org

Ontario Nature (over 30,000 members)
Anne Bell, Director of Conservation and Communication
(416) 444-8419
AnneB@OntarioNature.org

Ontario Federation of Anglers & Hunters (100,000 members, subscribers and supporters, including 740-member clubs)
Adam Weir, Fisheries Biologist
(705) 748-6324 Ext 208
Adam_Weir@ofah.org

OFAH Zone J (23,500 Members)
Felix Barbetti, 1st Vice
(905) 892-4381
FBarbetti@cogeco.ca

Thames River Rally
Tom Cull, Founder
(519) 432-4067
Goodaywalter@gmail.com

Earthroots
Amber Ellis, Executive Director
(416) 599-0152, Ext 11
Amber@earthroots.org

Cc: Cambridge City Council
City Clerk
Dianne Saxe, Environmental Commission of Ontario

ONTARIO FEDERATION OF ANGLERS & HUNTERS

P.O. Box 2800, 4601 Guthrie Drive, Peterborough, Ontario K9J 8L5
Phone: (705) 748.6324 • Fax: (705) 748.9577 • Visit: www.ofah.org • Email: ofah@ofah.org

Ontario Conservation Centre

OFAH FILE: 333A
April 5, 2018

Mayor Doug Craig and
Members of Council
City of Cambridge
50 Dickson Street
PO Box 669
Cambridge, Ontario
N1R 5W8

Dear Mayor Craig and Members of Council:

Subject: Riverside Dam Rebuild

The Ontario Federation of Anglers and Hunters (OFAH) is Ontario's largest non-profit, conservation-based organization representing 100,000 members, subscribers and supporters, and 740 member clubs. We, along with many other stakeholders, have been actively supportive and engaged in collaborative fisheries management planning and projects in the Grand River watershed for more than 30 years.

Recent reports have identified that the City of Cambridge Council has rejected the recommendations presented by staff and outlined in the Municipal Class Environmental Assessment for naturalization of the Speed River through the removal of the Riverside Dam. The preferred alternative to rebuild the dam, as unanimously voted on by council, is viewed by many as counter-productive and a potential misuse of taxpayer dollars. Moreover, the rebuild does not take into consideration the environmental significance and positive ecological function that would result from the removal of this dam.

The Riverside Dam negatively impacts sediment transport resulting in the accumulation of fine materials in the headpond region above the dam. As presented by the City of Cambridge, nearly 13,000 m^3 of sediment has built up over the years, moreover, sampling has identified elevated concentrations of zinc, cadmium, copper, and lead that exceeded provincial guidelines. Rebuilding of the dam would inevitably result in a similar polluted impoundment.

The City's own presentation of alternative solutions for the Riverside Dam identifies various benefits associated with the naturalization of the Speed River including: restored fluvial function, improved water quality, improved aquatic habitat, restored fish passage, improved terrestrial habitat, lower cost, reduced flooding and protection of infrastructure, as well as improved public safety. Despite these benefits, the influence of a select few outweighed the importance of removing this dam and returning this region of the Speed River to a more natural state.

The City of Cambridge noted that naturalization of the Speed River supports functional, natural, and economic elements, but falls short from a social perspective. The OFAH is concerned about this viewpoint, as a free flowing river provides many important social benefits, including enhanced recreation and aesthetics that help to improve the quality of life for many in the community. The vote to rebuild the dam also conflicts with Indigenous perspectives. It is our understanding through dialogue with the Six Nations of the Grand River that naturalization over the dam rebuild is preferred.

...2

The Municipal Class Environmental Assessment process included the concerns and comments of many stakeholders, the majority of which supported water quality and riverine environmental enhancement by removing this dam. The scientific, engineering, and technical expertise was sound.

For the socio-economic and environmental reasons presented to date, the OFAH recommends reconsidering the dam rebuild and re-evaluating the benefits of naturalization, where appropriate, such as in the case of the Riverside Dam. We would be more than happy to further discuss an approach that balances sound science, ecological function, and a naturalized river that will provide benefits for the current generation and those to come.

Yours in Conservation,

Adam Weir
OFAH Fisheries Biologist

AW/gh

cc: OFAH Zone J Executive
OFAH Fisheries Advisory Committee
Angelo Lombardo, OFAH Executive Director
Matt DeMille, OFAH Manager, Fish & Wildlife Services
Mark Ryckman, OFAH Manager of Policy
OFAH Fish & Wildlife Staff

Trout Unlimited Canada  Truite Illimitée Canada

Scott MacDonald, P. Eng.
Project Engineer
City of Cambridge
50 Dickson Street
P.O. Box 669
Cambridge, ON
N1R 5W8

Re: Riverside Dam Class Environmental Assessment - Speed River Update to Preliminary Preferred Alternative

Dear Mr. MacDonald,

TUC is writing in response to the Riverside Dam Class Environmental Assessment - Update to Preliminary Preferred Alternative, and its call for feedback and comments on recent updates made to the Project File.

TUC is a national, not-for-profit, conservation charity that is science-based and volunteer-driven. Partners and volunteers are paramount to the numerous successful river restoration projects we implement every year. Our work protects and enhances water quality, water flow, aquatic life and community health, creating additional benefits of a healthier living environment for people as well as the environment. TUC is proud of the critical role our organization has played in the protection of Canada's aquatic environments for over 40 years and the value of this work to the lives of Canadians.

TUC is aware that Cambridge City Council recently rejected a recommendation by the Project Team consultants and City staff to 'Naturalize the Speed River' at Riverside Park, as set out in the Municipal Class Environmental Assessment (Class EA) as the preferred alternative. We are surprised that City Council would ignore the recommendation of the Project Team consultants and the science behind their recommendations, and are even more surprised that the EA is in for editing in order to mirror this vote. TUC is astonished by the short-sighted decision of City Council and question if they truly have the best interests of the overall community at heart as well as the interests and well-being of communities downstream of this dam. Removing the dam would benefit the community in many more ways, than retaining it for a bit of nostalgia and as a reflective surface.

The original EA outlined the opinions and concerns of many stakeholders, the majority of which supported the removal of the dam. How can these professional, technical, scientific and indigenous perspectives be ignored? In addition, all the experiences from across North America indicate that the costs of removal of old, obsolete dams are usually grossly over-estimated and the costs of rebuilding them are grossly under-estimated, especially when long-term maintenance costs and the risks of catastrophic dam failure are included. Given the challenges with public transit, healthcare, roads, and other infrastructure needs of the community, this appears to be not in the best interests of all citizens of the City, over and above the ongoing environmental costs of retaining an old obsolete dam.

Trout Unlimited Canada  Truite Illimitée Canada

The rejigging of the evaluation matrix in the revised Class EA is spurious at best, especially modifying social and cultural criteria in order to off-set environmental, economic and liability criteria. This is dishonest and does not reflect the intent and standards for Class Environmental Assessments.

This is an opportunity for the City of Cambridge to become part of an international movement to rebuild healthy river corridors in urban areas for its citizens and for the wildlife and fish communities that are part of the natural heritage of Cambridge, the Speed River and Ontario. This is even more important as climate variability increases with larger floods and deeper droughts. Removal of obsolete old dams can provide more flood capacity and reduce damages from severe floods than is currently the case. Water quality as well as water quantity will become bigger and bigger issues and obsolete old dams will become even greater liabilities to the communities and the river than ever before. The science speaks to this around the world.

As stated in the EA, removing the dam would contribute to the recovery of Silver Shiner and Wavy-rayed lampmussel, both provincial species at risk. This management strategy would also enhance the native fish community, decrease the risk of flooding due to failing infrastructure and improve water quality and diminish the potential for destructive and toxic algal blooms, created by shallow impoundments that can affect wildlife, fish and people.

TUC is hopeful that the river management strategy will be reconsidered and ensure a successful outcome for the overall health of the Speed River, not only through the City of Cambridge but for the benefit of communities downstream as well. We believe that we all need to prioritize true long-term environmental and human health benefits for the community over short-term, local and limited, nostalgic benefits.

The removal of the Riverside Dam would demonstrate that the City and community understand the value and importance of protecting our fresh water, improving and restoring the diverse number of species that inhabit the Grand River Watershed, reducing costs and liability to the taxpayers of the City and the importance of this protection and restoration to the well-being of people that live along this river.

With these thoughts in mind, TUC strongly urges the City Council to take the recommended advice of the Project Team consultants and choose to **naturalize the Speed River**. Thank you for the opportunity to provide input at this stage of the process.

Sincerely,

Kelly Mason

Ontario Biologist, Trout Unlimited Canada

Trout Unlimited Canada

519-763-0888 Unit 1-27 Woodlawn Rd W, Guelph ON N1H 1G8