Agenda Item # Page #

TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON FEBRUARY 2, 2016**
FROM:	**JOHN BRAAM, P. ENG. MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**
SUBJECT:	**SPRINGBANK DAM**

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services & City Engineer, the following report **BE RECEIVED** for information.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Planning and Environment Committee – December 14, 2015 – Back to the River Design Competition

Strategic Priorities and Policy Committee – January 28, 2016 – Downtown Infrastructure Planning and Coordination

Civic Works Committee – February 2, 2016 – West London Dyke Master Repair Plan Municipal Class Environmental Assessment Study

2015-19 STRATEGIC PLAN

The 2015 – 2019 Strategic Plan identifies these objectives under Building a Sustainable City: 1B – Managing our infrastructure; 3E -- Strong and Healthy environment through protection of the natural environment; 4E – Beautiful places and spaces through investing in making London's riverfront beautiful and accessible for all Londoners. Under Growing our Economy: 2A – promote Urban regeneration through investing in London's downtown as the heart of our city.

BACKGROUND

Purpose

To update Council on the current status of the Springbank Dam and briefly highlight some of the issues associated with any future actions that may be taken.

This report should be read in tandem with the *Downtown Infrastructure Planning and Coordination* staff report to Strategic Priorities and Policy Committee on January 28, 2016, which recommended an approach to advance the objectives of the City relative to the Thames River.

Agenda Item # Page #

Context

The dam's newly constructed Gate 1 failed during commissioning in June, 2008. That failure led the City of London to initiate litigation to recover costs. A $3.775M settlement was concluded in December 2015.

A significant period of time has passed since the failure of Gate 1. During that time there have been changes to:

- Federal and Provincial legislation that affect necessary permits and approvals:
- The natural environment in the area of the Springbank Reservoir (from the dam upstream to the Forks of the Thames and Harris Park); and,
- The physical condition of the dam.

In a recent report to the Strategic Priorities and Policy Committee, a principled approach to managing a number of interrelated City initiatives was presented. The dam and its relationship to the Back to the River design concepts, and the West London Dykes Municipal Class Environmental Assessment were found to share social, economic and natural environment objectives. The advancement of which should be considered together in a Municipal Class Environmental Assessment study.

DISCUSSION

Introduction

The Springbank Dam has been a historical public asset that provides multiple social benefits. See Appendix 'A' for a brief history of the structure. When the Springbank Dam rehabilitation project was initiated, after the dam was bypassed by flood waters in 2000, the key issue was to address safety concerns related to the structure. The conclusion of the approved Municipal Class Environmental Assessment (EA) process was to replace the stop logs with hydraulically operated steel gates to allow for more safe and effective gate operations.

Preliminary engineering for repair options and enhancements were investigated during the litigation efforts; however, there remains further technical work that will depend on scope of work direction. Based on the January 28 report to Strategic Priorities and Policy Committee (SPPC), the broader social, economic and natural environment issues associated with the Thames River, as it runs through the City core area, should be considered. Therefore, this report provides a detailed update on the dam to provide better context for the proposed One River EA study.

The January 28 SPPC report, *Downtown Infrastructure Planning and Coordination*, articulated Principles to guide the direction of a number of interrelated initiatives. The principles continue to provide guidance in the case of the Springbank Dam, and are reproduced below:

1. Council maintains a vision for the Downtown that promotes city building, enhances our transportation mobility options, recognizes intensification opportunities, embraces the river and respects the environment.
2. Agencies continue to play a pivotal role through their decision making under their regulatory authority.

Agenda Item # Page #

3. Funding is prioritized; the City will continue to consider best value in their investment decisions.
4. The City will continue to respect past, current and future public processes that have brought the numerous initiatives to where they are now.
5. Deliver Council's priority projects in a time-effective and well-coordinated fashion.

Permits and Approvals

General

There are three regulatory agencies that will be involved in any future actions on Springbank Dam. They are: Federally – Department of Fisheries and Oceans (DFO); Provincially – Ministry of Natural Resources and Forestry (MNRF) -- Ministry of Environment and Climate Change (MOECC); and, locally – Upper Thames River Conservation Authority (UTRCA).

From time to time, case by case, some responsibilities of a "senior" regulatory agency may be delegated to the "junior" regulatory agency. One of the first steps for staff to help determine the future of Springbank Dam is to get a clear understanding of whom to discuss which regulatory or approval issue with. Staff level discussions were initiated in November and December 2015 to develop a current understanding with the Agencies. Changes have been made to both federal and provincial legislation and processes regarding the river over the past seven years. The above noted Principles recognize the significant role of approval Agencies on decisions affecting the river.

Federal Government – Department of Fisheries and Oceans (DFO)

There are two Federal Acts that are of concern regarding any work that needs to take place in the water at the location of the Springbank Dam, those being the *Fisheries Act* and the *Species at Risk Act.*

Staff level discussions have started with DFO to determine the latest regulatory framework and to identify the appropriate DFO staff person to have those discussions with for the City to advance its objectives. The DFO contact is in Winnipeg; therefore these discussions have been taking place via telephone and emails rather than in face to face meetings.

The following is an excerpt from a November 27, 2015 DFO letter, requested by the City, in order to clarify federal regulatory requirements, in order to help determine the future of the Springbank Dam.

> "The City of London's *Fisheries Act* Section 20 approval, issued on June 25, 2012, expires December 31, 2017. Condition 6 states: *"The City of London shall provide to DFO and OMNR* (now titled MNRF) *by December 31, 2016 their plan for fish mitigation of impacts to fish passage. This shall include consideration of improved fish passage through the Springbank Dam by either extending the period that the dam is not operated (i.e., in the gates down position) or by constructing other means of passing fish which could include decommissioning the dam for fish passage."* Repairs to the dam, operation of the dam, and any associated upstream or downstream works, undertakings, or activities require review to determine whether they will result in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a

> fishery which is prohibited under subsection 35(1) of the *Fisheries Act*, and whether they will adversely impact listed aquatic species at risk and contravene sections 32, 33, or 58 of the *Species at Risk Act* (SARA)."

Additionally, as a condition of approval for a Work Permit from MNRF for the dam rehabilitation project, a stated requirement is to maintain "status quo" regarding fish passage. This was required since the new gate installation has slightly increased the bottom elevation of the river at the dam. The overall footprint of the dam remained unchanged. Based on staff recommendations, City Council agreed to complete a three year (2008-2010) post-construction fish passage monitoring program.

Since no fish passage research had ever been conducted in the Thames River, city staff voluntarily agreed to implement a baseline investigation in 2006, termed "pre-construction monitoring" in order to compare the post-construction results.

The three year post-construction fish movement monitoring and study work was completed in 2010 by Biotactic Research Inc., on behalf of the City and UTRCA. It provides the results of three years of data comparisons to the previous 2006 baseline work. The monitoring included 3 fish species (White Sucker, Small Mouth Bass, and Shorthead Redhorse), the frequency that the 20 tagged fish of each species swam through the dam and over what period of time this occurred. This was then compared to water temperature data and flow regime to determine behavioural characteristics. The fish were tagged and tracked using implanted transmitters (60 in total) and an array of antennae at the dam.

The combined results of three years of monitoring show a similar time before and after gate repair in the speed that tagged fish swam up to the dam (termed "attraction efficiency"). The number of fish to pass through the dam (termed "passage efficiency") was lower in all three species.

Statistical values from the research indicate that although fish passage was not blocked by the presence of the new gates, some interference did occur. Those fish that did swim through the open gates of the dam were not delayed (termed "mean time for passage"). Underwater video recording completed to augment the research showed that many other species of fish were regularly passing through the dam.

Although every attempt was made to control variables associated with the site as part of the experimental design, both environmental conditions (e.g. water temperature, river flows) as well as some unexpected conditions (e.g. equipment vandalism, gate positions) varied over the years studied. Also, the conditions comparing 2006 with post construction monitoring were not exactly replicated due to the time needed to remove the stop logs in 2006. No comprehensive aquatic monitoring of this type had previously been done in the Thames River. A proposed Thames River Fish Management Study was initiated by MNRF and the Conservation Authorities but has not been completed.

Biotactic Research Inc. has completed three years of fish monitoring studies to date and has satisfied the requirement that the City obtain a minimum of three years Post-Construction Fish Movement Data as per the original conditions stipulated in the MNRF work permit for the Springbank Dam Project.

Fish passage will be an important point of discussion in determining the future of the dam.

Agenda Item # Page #

Province of Ontario – Ministry of Natural Resources and Forestry (MNRF)

As with DFO, staff discussion has been initiated with our local (Aylmer District) office of the MNRF. Approval of the MNRF through the *Lakes and Rivers Improvement Act (LRIA)* and the *Endangered Species Act, 2007 (ESA 2007)* are suggested.

The LRIA provides the Minister of MNRF with the legislative authority to regulate the design, construction, operation, maintenance and safety of any structure in or near open water in Ontario. Dam owners must obtain MNRF approval under Section 16 of the LRIA prior to making alterations, improvements or repairs to an existing dam. Approval is required for those works that may affect the dam's safety or structural integrity, the waters or natural resources.

The ESA 2007, which took effect in 2008, protects endangered and threatened species from being killed, harmed, or harassed. If a species is listed as endangered or threatened, the act also prohibits damaging or destroying the species' habitat unless a permit is received.

There are now known species at risk in the area of the Springbank Dam and the part-time reservoir that it creates. They are as follows: Spiny Softshell Turtle, Queensnake, Eastern Hog-nosed Snake, Salamander (Mudpuppy) Mussel and Silver Shiner (fish), as well as species of special concern such as the Northern Map Turtle, Snapping Turtle and Green Dragon (perennial wildflower).

It is important to note that the habitat for these mentioned species includes the Springbank reservoir area that extends from the Springbank Dam up to and including the Forks of the Thames and Harris Park.

Based on the above, various approvals and permits are required for any undertaking within the Thames River. The MNRF's role is not only to simply grant or deny permits and agreements. The MNRF's staff can also provide advice to help identify species at risk in the project area and to help understand how they may be impacted by project construction and operation. The MNRF can also provide input about the best approach to take, what official processes to complete and any key timelines that may impact the proposed project.

Province of Ontario – Ministry of Environment and Climate Change (MOECC)

MOECC administers the Environmental Protection Act under which Municipal Environmental Assessments are completed. A Schedule B, Municipal Class Environmental Assessment (EA) for the dam rehabilitation project has been completed. The Notice of Completion was published indicating that the final EA Report was available for public review from December 15, 2003 to January 12, 2004. The comments received during the public review period were primarily regarding design issues.

In order to address the dam's structural deterioration and to improve its operational effectiveness for flood handling by improving its ability to pass debris and minimize potential blockage, five alternatives were identified in the EA report as follows:

- Alternative 1 – Maintain the status quo (i.e. do nothing)
- Alternative 2 – Conduct maintenance repairs to the dam and tailrace, replace stop logs, improve hoist facilities, and implement a debris management system
- Alternative 3 – Replace the existing stop logs and gates with overflow gates
- Alternative 4 – Remove the existing stop logs and gates and install an overflow rubber dam downstream of the existing piers
- Alternative 5 – Decommission and remove the dam

Following a comparative evaluation of the dam rehabilitation alternatives that included an assessment of effectiveness, potential environmental effects and costs, Alternative 3 was selected as the preferred solution. The installation of overflow gates in the dam was intended to greatly improve the debris passage capability of the dam and provide increased operator and public safety during high river flows.

Since the EA was approved and the construction started there is no regulatory requirement to initiate another Springbank Dam focused EA in order to take actions consistent with the original EA purpose.

Province of Ontario – Upper Thames River Conversation Authority (UTRCA)

Section 28 of the *Conservation Authorities Act* empowers the UTRCA to prepare regulations within its area of jurisdiction regarding restriction and regulation of water, alteration of watercourses and wetlands and development within areas prone to flooding and riverine erosion. Several objectives provide the basis for the decision-making process for implementing the Authority's regulation and its permit process. These include protecting lives and property from flooding and erosion, reducing public and private expenditure for emergency operation, evacuation and restoration and reduction of soil erosion.

In issuing a permit in 2005 for the original dam reconstruction project (UTRCA Application #4/04), the Conservation Authority placed particular focus on control of flooding, dam safety, erosion and sediment controls as well as staging and timing of project implementation. Persistent high flow conditions prolonged the project and a permit extension was granted in June of 2007.

In moving forward with any activities involving Springbank Dam, the City of London will need to consult with UTRCA regulations staff to determine contemporary permit requirements pursuant to Section 28 of the *Conservation Authorities Act.*

Other Issues

Current Gate Conditions

The dam's four gates are numbered, with Gate 1 being closest to the north shore. Gate 1 has a broken hinge and cannot be operated.

Gate testing was carried out in July, 2015. Two gates, Gates 2 & 4, were successfully operated, while adhering to strict skew control measures. Gate 3 could not overcome prescribed skew limits. The specific cause of this issue is not fully understood.

Other mechanical and structural parts of the dam have aged, become outmoded or

have changed in physical condition due to a lack of use and regular maintenance. More than one technical solution to these issues is possible, as suggested by preliminary technical evaluation work undertaken as part of the litigation file. Depending on the progress of the proposed One River EA, more technical work will be needed.

Water Quality

The issue of the Springbank Dam affecting Thames River water quality has been raised in the past. Most of the technical literature regarding impacts of dams on surface water quality generally relate to fulltime dams, such as the Fanshawe Dam, and not dams that are only operated for a fraction of a calendar year.

Water quality in the Thames River is of concern to everyone who recognizes the importance of the river in London. The upper watershed of the Thames River has an area of 3,482 square kilometres. The watershed is mainly rural except for the larger urban centres of London, Stratford and Woodstock, and has a total population of approximately 485,000. Agriculture is the main component of the landscape with approximately 3,600 farms, including over 2,000 livestock operations.

The watershed's location in Southern Ontario results in pressures from both urban and rural land uses. The water quality of the Thames River and its tributaries is impacted by both urban and rural drainage practices, treated discharge from wastewater treatment plants, private septic systems, manure storage, overland runoff, spills and bank alterations, among other activities.

The quality of Thames River water continues to improve within the city limits in response to urban investments in pipe improvements, overflow reduction and treatment plant performance. Weather patterns produce annual fluctuations by affecting point source and nonpoint source contributions, both upstream and within the limits of London.

London is a co-leader of the Thames River Clear Water Revival, developing a Water Management Plan for the entire watershed with all stakeholders. It is also preparing a Pollution Prevention and Control Plan to optimize investments and continue the continuous improvement program.

Springbank Dam / Back to the River / West London Dyke Coordination

Coordination between the three Thames River focused initiatives is critical to meeting a number of corporate strategic goals related to the river and the waterfront: Building a Sustainable City, 1B – managing our infrastructure; 1E – climate change adaptation; 3E – protecting our environment; and, 4E – investing in the riverfront to make it beautiful and accessible for all Londoners.

Back to the River

The Back to the River project is a third transformational project stemming from Council's Downtown Plan. The London Community Foundation has partnered with the City to undertake an international design competition and comprehensive public participation process to establish a plan for the Forks of the Thames River. The area of the Thames

Agenda Item # Page #

River that is covered by the long term plan emanates from the Forks in three directions – to Wharncliffe Road, to Adelaide Street and to Oxford Street.

On January 4, 2016, direction was provided by Council to report back on the scope of the Inaugural Project at the Forks of the Thames, its potential implications for other City Projects in the area and the implementation process for the Inaugural Project. A business plan (Additional Investments Business Case #18) was previously prepared for consideration during the multi-year budget process. The investment request totals $5.35M in funding to support the inaugural Forks of the Thames project within the 2016-19 period.

The first step in implementing the winning “The Ribbon of the Thames” concept plan will be to undertake a Municipal Class Environmental Assessment (EA) study as required by the provincial Environmental Assessment Act. This legislatively mandated study would have to consider how the social, economic and natural environment goals of the concept plan could be met. One of the fundamental principles of the concept plan is to create access to the waterfront for leisure and recreational purposes.

The scope of an EA should not be limited to the inaugural project area because it would not sufficiently address broader social and natural environment issues, would not position the city to take advantage of future senior government funding that may become available for other phases of a Back to the River Plan and would not consider the impact that the Springbank Dam may have on water levels. These matters could be managed and addressed through an EA covering a broader area, and incorporating the consideration of Springbank Dam and West London Dyke project objectives.

West London Dyke

The West London Dyke is approximately 2.4 km long and runs along the westerly bank of the North Branch of the Thames River from Oxford Street to the forks of the Thames River and then along the northerly bank of the Main Branch to the west side of the Wharncliffe Road Bridge. The City of London owns the dyke. It is maintained through agreement by the Upper Thames River Conservation Authority (UTRCA). The dyke is a major component of the City of London’s flood control system and is the primary source of flood protection for the West London/Blackfriars area. The West London Dyke improvement program has a budget of over $26M that anticipates matching funding from the provincial Water and Erosion Control Infrastructure (WECI) program. Following the completion of the current West London Dyke EA, the City and UTRCA will be in a position to apply to the province for the funding to complete the design and construction of the next phase of the dyke.

As a portion of the dyke is within the Forks area, the West London Dyke will be an important consideration during works related to the Back to the River initiative. If any significant changes are suggested after its completion, then a minor addendum to the West London Dyke EA may be necessary. With this in mind it was recommended to finalize the West London Dyke EA in order to move ahead with the next phase of critical infrastructure improvements and to maximize provincial funding. The next phase of the dyke to be reconstructed is the portion between Rogers Ave. and Cummings Ave. at an estimated cost of $7.3 M and scheduled to proceed 2016-2017. A report requesting that the West London DykeEA be placed on public record is on the Agenda of the February 2nd meeting of the Civic Works Committee.

Agenda Item # Page #

Springbank Dam / Back to the River / West London Dyke Integration Direction

At the Strategic Priorities and Policy Committee on January 28, 2016, a recommended approach to advance the objectives of the City relative to the Thames River was made. The Principles for Project Coordination used to guide a number of directions suggest that these projects must collectively balance the need for public recreational opportunities while protecting the natural environment in accordance with provincial policy and our Official Plan within our highly urbanized downtown core.

These issues are not isolated to the Forks of the Thames or Springbank Park. In order to meet the multiple objectives involving the river, a holistic, sustainable plan is required under a 'One River' approach. The multiple objectives cannot be achieved in isolation either by project or by location. A piecemeal approach will only lead to duplication of effort and a reduced solution set. A comprehensive approach will provide flexibility in addressing the key issues, drive greater public approval, and provide clarity to the approval agencies. Better outcomes will be derived from a comprehensive knowledge and opinion base created through this 'One River' approach. Furthermore, the City will be well-positioned to seize on senior government funding programs that may emerge in the future, with a completed environmental assessment in hand relating to a broader range of projects within the Back to the River and West London Dykes plans.

To implement this direction, an Environmental Assessment Study was recommended to best manage the 'One River' key issues together. Various options can be considered, including the role of Springbank Dam. Subject to the approval of this key project planning direction, a future Civic Works Committee report would recommend a study scope, budget and multiple sources of financing for "One River – Managing Objectives for the Thames River within our Urban Environment".

SUMMARY

This report has provided a summary of the state of the dam, the prevailing regulatory framework that any future action plan would fall within the two other City initiatives (Back to the River and West London Dykes) that share common social, economic and environmental issues. Coordination between these three Thames River focused projects is critical to achieving a number of corporate strategic goals. Principles for Project Coordination suggest that these projects should collectively balance the need for public recreational opportunities with a respect for the natural environment within our highly urbanized downtown core. In doing so, there will be clarity for the public and regulatory authorities.

A recommendation for a "One River – Managing Objectives for the Thames River within our Urban Environment" Environmental Assessment was made to the Strategic Priorities and Policy Committee on January 28, 2016 in the *Downtown Infrastructure Planning and Coordination* report in recognition that social and natural environment issues are not isolated to the Forks of the Thames or Springbank Park. In order to create a holistic plan for the river, these three initiatives cannot be completed in isolation either by project or by location. A piecemeal approach will only lead to duplication of

Agenda Item # Page #

effort and a reduced solution set. A comprehensive approach will provide flexibility in addressing the key issues, drive greater public approval, and provide clarity to the approval agencies. Better outcomes will be derived from a comprehensive knowledge and opinion base created through this approach. For the Springbank Dam project, it will provide direction for next steps.

PREPARED BY:	**SUBMITTED BY:**
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RECOMMENDED BY:
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cc.
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Appendices:
APPENDIX ‘A’ -- Brief History of the Springbank Dam
APPENDIX ‘B’ -- Heritage / Culture / Recreation
APPENDIX ‘C’ -- Photos of Present Conditions (photos were taken Oct 27, 2015)

Agenda Item # Page #

APPENDIX 'A'

Brief History of the Springbank Dam

Historically, a dam has been located in this reach of the river since the 1870's. Its original purpose was to create power to operate pumps (Springbank Pump House) which lifted potable water to the reservoirs at the top of Reservoir Hill. The Springbank Dam is owned by the City of London (City) and was constructed, in its current location, in 1929 to provide recreation opportunities for the city.

The present purpose is primarily for leisure activities, canoeing and rowing for example. It is a "part-time dam" due to that 5 months of the year it remains closed (June – October) (forming a reservoir behind it) and 7 months it remains open (November – May) allowing the river run free through it. The South Bank of the river located immediately downstream of the dam serves as an emergency spillway in the event of extreme rivers flows.

In the past several decades, the operation and maintenance of the dam was provided by the Upper Thames River Conservation Authority (UTRCA) in partnership with the City. Prior to the rehabilitation project in 2000, the gate operation used the original technology of "stop logs" which manually placed "logs" in sequence into the gate brackets in order to back-up water. This process was slow, taking approximately seven days to install and the same timeframe to remove.

The dam was extensively rehabilitated in 1969. Erosion along the south bank of the Thames River was mitigated by the installation of 30 metres of erosion protection (i.e. grouted rip rap slope protection) in 1971, and by limiting the flow through the south gate. Erosion issues continued further downstream from the end of the grouted rip rap section. This erosion was repaired in 1979 by the installation of additional protection (i.e. 150 metres of a grout-filled nylon mattress). A section of this slope protection was damaged by high floodwaters and subsequently repaired in 1986. In 1996, an overshot gate (flap gate and spillway) was installed to help alleviate erosion problems along the south bank.

In July 2000, a heavy rain storm caused a significant and rapid increase in water levels in the Thames River. During this flooding event "floating" debris blocked the spillway and prevented the safe removal of the stop logs resulting in high water levels bypassing the dam and flowing down the emergency spillway by overtopping the south wing wall and embankment. The overtopping of the south bank resulted in erosion damage to the top of the embankment, the downstream slope of the abutment, the riverbank slope protection, and the existing roadway and parking areas.

In 2006 and 2007, after the completion of a Municipal Class Environmental Assessment, the antiquated stop logs and manual control systems were replaced with a new automated control system and overflow gates. The intention was to improve the function of the dam (e.g. debris passage capability) and provide increased operator and public safety during high river flows.

In June 2008, the operation of one of the gates failed during final commissioning and the project was put on hold.

The City of London initiated litigation which has now ended through a mediated settlement.

Agenda Item # Page #

APPENDIX 'B'

Heritage / Culture / Recreation

There is a long history of boating in the Thames River in London. That history includes canoes, paddlewheel boats, rowing sculls and steam boats:

- Aboriginal residents and voyageurs used canoes to travel the Thames River from Lighthouse Cove (Lake St. Clair) to points eastward (Dundas and Lake Ontario) using the Forks of the Thames as a portage route.
- The War of 1812 saw canoe traffic near Reservoir Hill where one of the infamous battles was fought (formerly called Hungerford Hill).
- The first location of Springbank Dam, built in 1870, related to London's waterworks and provided a reservoir upstream for pleasure boating and business trade.
- Steam boats regularly plied the waters of the Thames in the 1880's between The Forks and Springbank Park (the *Princess Louise*, the *Thames*, and the *Victoria*) and on the busiest day, 1,650 passengers would be transported between locations. More recently, the *Storybook Queen*, a miniature riverboat travelled the same route until 1969.
- The most well-known and ill-fated boating event ended in tragedy in 1881 with 182 lives lost from the sinking of the Victoria steamer in 5 metres (17 feet) of water. The sunny Sunday afternoon tragedy was the result of an imbalanced ship when passengers moved to one side to view a passing rowing scull.
- The London Rowing Club (formed in 1870) and the London Canoe Club (formed in 1971) have used the Thames River for decades with interruptions during the World Wars and after the major floods. The most recent interruption was after the malfunction of the new gates at Springbank Dam in 2008.
- In 2005, the Rowing Club comprised 46 boats and over 200 members; provided eight programs covering all age groups, including high school programs; hosted two regattas and members attended 17 regattas in Ontario and other provinces with members winning numerous medals; trained and produced a number of elite champions, as well as youth trying out for Provincial and National teams.
- In 2005, the London Canoe Club had 163 boats and over 6000 members; provided canoe and kayak lessons to adults and high school; sprint marathon and tripping covered; its day camp supported 130 families; hosted three regattas and members attended 26 regattas in Canada and the U.S. with members winning numerous medals.
- In 2005, the club hosted an annual Dragon Boat festival with the London contingent being four boats with about 20 paddlers in each; the London teams have medaled in events across Canada.
- In 2005, the clubs employed 17 part-time and one full time persons.

Agenda Item # Page #

APPENDIX 'C'

Photos of Present Conditions
(photos were taken Oct 27, 2015)

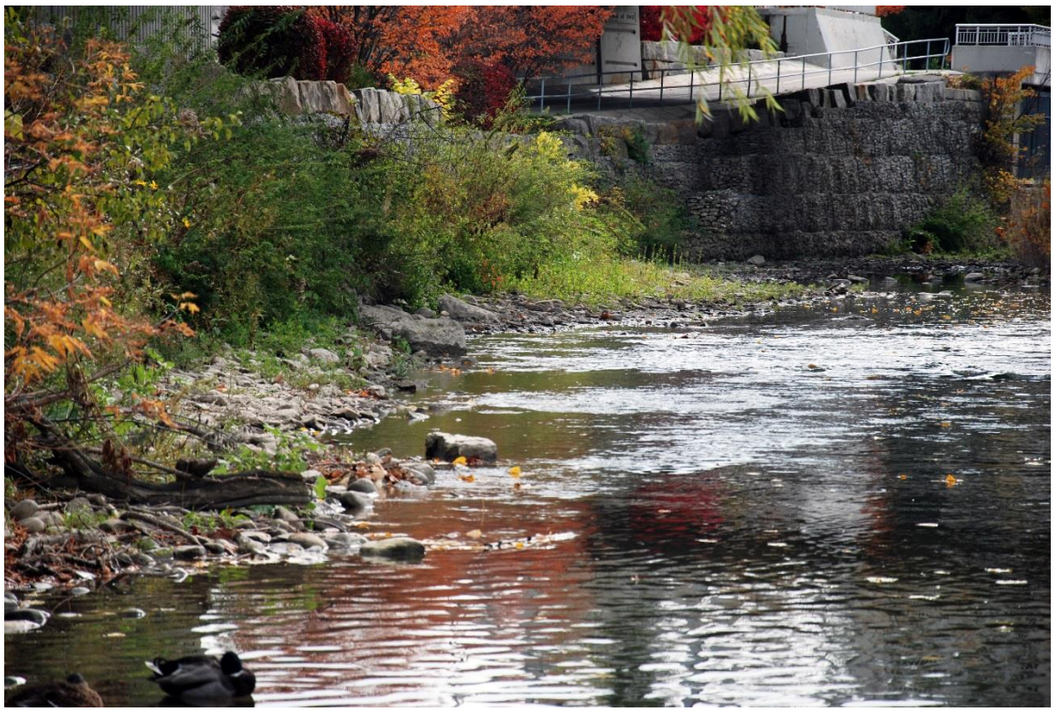

Photo #1: The Forks Overlook

Photo #2: Gabion basket wall at the Forks

Agenda Item # Page #

Photo #3: Storm Sewer outfall at the Forks

Photo #4: Fishing dock (on left) at Greenway Park - Wonderland Road

Agenda Item # Page #

Photo #5: Storm Sewer outfall & bleachers at Rowing Club

Agenda Item # Page #

Photo #6: Rowing Club Facility (photo taken May 2006)

Photo #7: Storm sewer outfall near Water Pumphouse