TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON APRIL 16, 2019**
FROM:	**KELLY SCHERR, P.ENG. MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER**
SUBJECT:	**UPPER THAMES RIVER CONSERVATION AUTHORITY AND CITY OF LONDON SCHEDULE B MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT NOTICES OF STUDY COMPLETION**

RECOMMENDATION

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

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Civic Works Committee, July 17, 2018 – Water and Erosion Control Infrastructure (WECI) Program: 2018 Provincially Approved Project Funding (Sole Sourced)

Civic Works Committee, July 17, 2017 – Water and Erosion Control Infrastructure (WECI) Program: 2017 Provincially Approved Project Funding (Sole Sourced)

Civic Works Committee, July 29, 2016 – Water and Erosion Control Infrastructure (WECI) Program: 2016 Provincially Approved Project Funding (Sole Sourced)

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

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

Council, March 21, 2011 – UTRCA 2010 and 2011 Levies for Remediating Flood/Erosion Control, Dykes and Dam Structures within the City

Finance & Administration Committee, February 2, 2011 – Funding Agreement with UTRCA for Remediating Flood Control Works within the City

2015 – 2019 STRATEGIC PLAN

The following report supports the 2015 – 2019 Strategic Plan through the strategic focus area of Building a Sustainable City including:

- Building a Sustainable City: 1B-Manage and improve stormwater infrastructure and services; and
- Building a Sustainable City: 1E-Fund innovative ways to adopt to Climate Change.

BACKGROUND

Purpose

The Upper Thames River Conservation Authority (UTRCA) initiated and acted as the lead proponent to three Municipal Class Environmental Assessments (EAs). The purpose of these EAs was to review the feasibility and viability of supporting two of the City's earthen dykes as well as evaluating the erosion and scour issues at the West London Dyke. The City of London was a co-proponent to the Municipal Class EA processes to offer input and ensure compatibility with municipal interests and infrastructure as it relates to flood protection within the city limits.

Context

In response to major floods in 1937, the UTRCA and City of London constructed a system of flood protection dykes along the Thames River. The dykes have protected people and properties in areas that would otherwise be at a significant risk of flooding. The Broughdale Dyke, Riverview-Evergreen Dyke, and West London Dyke are all integral elements of a larger flood control network that include other dykes, flood control dams, and a flood forecasting and warning system. In recent years, slope stability concerns have been identified at many of the dykes and the existing dykes fail to provide flood protection up to the 250 year event, which is the Regulatory Flood event for the Upper Thames watershed.

Municipal Class EA Process

An assessment of the three project areas were carried out as Schedule 'B' Class EAs in accordance with the Ontario Municipal Engineers Association (MEA) Municipal Class EA document (October 2000, as recently amended in 2015 & 2017), which is approved under the Ontario Environmental Assessment Act (EAA). The reports document the need and justification for the specific projects, the planning processes undertaken to select the preferred solutions, and measures to mitigate impacts. Where feasible, recommendations for the sites should be integrated within future budgets associated with river improvements or development projects in order to ensure the long-term protection of these pieces of infrastructure.

DISCUSSION

The following section provides the background, risk assessment, and preferred alternative related to the dykes assessed by the three EAs:

1. Broughdale Dyke

Background

The Broughdale Dyke is located on the south side of the Thames River between Richmond Street and Meadowdown Drive and is 710m long (Refer to figure in Appendix A). Construction of the western section of the dyke, from Raymond Avenue to Meadowdown Drive, was completed after the 1937 flood. The eastern section in Ross Park was completed in 1990.

Risk Assessment

The Broughdale dyke hazard classification is Moderate/High based on potential impacts to life and property within the Broughdale area if the dyke was to fail. The minimum Design Flood for a Moderate/High classification is the Regulatory Flood (250 year event). The Broughdale dyke currently provides protection up to the 100 year flood

event. As a result, there are 191 properties identified between the 100-year and 250 year Regulatory Flood limit that are at a higher risk of flooding.

Preferred EA Alternative

Based on the evaluation of alternative solutions, the preferred alternative is to raise and extend the dyke to protect the area from the 250-year event, including a 0.9m freeboard for climate change resiliency, and relocate the dyke between Bernard Avenue and Meadowdown Drive closer towards the floodplain. By shifting the footprint of the dyke towards the floodplain, there is no need to acquire additional property. Appropriate architectural finishes or façades will be included as part of this section of the dyke. The dyke from Bernard Avenue to Meadowdown Drive will have the existing fill removed and the alignment will be shifted towards the floodplain and reconstructed using retaining walls, engineered fill, and a flood wall to raise the dyke and restrict encroachment into the floodplain. A maintenance path will be constructed on the dyke to facilitate future inspections and maintenance works. Further, an extension to the dyke will be added and facilitated through further discussions with King's College.

The current estimates for the overall cost of this project are approximately $7,000,000.

2. Riverview Evergreen dyke

Background

The Riverview Evergreen Dyke is approximately 250m long and is located in the central part of London. The dyke is aligned on the south side of the Thames River, bounded by the CP Rail line to the south, Wharncliffe Road to the east and the Thames River to the north and west (Refer to Appendix B).

Risk Assessment

The Riverview Evergreen Dyke hazard classification is Low/Moderate based on potential impacts to life and property within the Riverview area if the dyke were to fail. The minimum Design Flood for a Moderate/High classification is the Regulatory Flood (250 year event). The dyke currently provides protection up to the 80-year event. As a result, there are properties between the 80-year and 250 year regulatory flood limit that are at a higher risk of flooding.

Preferred EA Alternative

Based on the evaluation of alternative solutions, the preferred alternative is to repair and maintain the Riverview Evergreen dyke with future decommissioning. The preferred alternative maintains the current level of flood protection for the 80-year flood event. There is an opportunity to decommission this dyke through a long-term acquisition strategy of the 11 properties that are currently protected by the dyke. This was determined during the EA process to be significantly more cost effective than providing flood protection up to the Regulatory Flood for a limited number of properties. Until the properties are purchased, the deficiencies outlined in the 2013 Earth Dyke Stability Review would be repaired. Repairs, for example, would include the removal and relocation of trees planted on top of the dyke, removing hazard trees and overgrown vegetation, and re-grading to a more stable slope where possible.

The current estimates for the overall cost of this project are approximately $6,000,000. This includes studies and work to date, ongoing maintenance, and long term property acquisition.

3. West London Dyke

Background

The West London Dyke is 2374m long, running along the west bank of the North Thames River from approximately Oxford Street to the Forks of the Thames, and then along the north bank of the main Thames River to the west side of the Wharncliffe Road Bridge. The dyke is the focus of major ongoing rehabilitation efforts. Over the past four phases of construction approximately 830m of this dyke have been replaced and upgraded between Blackfriars Street and Riverside Drive. In 2019, approximately 325m of the dyke, from Blackfriars Bridge to St. Patrick Street is anticipated to be replaced and upgraded

Risk Assessment

The West London Dyke Erosion Control Class EA is being undertaken to identify environmentally sensitive and sustainable solutions to address existing erosion and scour processes of the Thames River at the Ann Street and Harris Park Sites that (Refer to Appendix C), if not addressed, have the potential to undermine the foundation of the West London Dyke flood control structure.

Preferred Alternative

The recommendations for the Ann Street Site include the installation of boulder toe protection along the west bank and modification to the existing weir structure to divert flows towards the centre of the channel. The treatment would be approximately 5m wide and extend along the toe of the dyke between the existing weir and approximately 60m downstream.

The recommendations for the Harris Park Site include modification to the downstream Ministry of Natural Resources and Forestry (MNRF) Fish Weir and the addition of boulder toe protection along the west bank. The treatment would be approximately 5m wide and extend along the toe of the dyke between the existing MNRF weir and approximately 240m downstream.
The current estimates for the construction costs at the two sites are approximately $440,000.

Public/Stakeholder Consultation

The UTRCA led the Municipal Class EA planning process and took several steps to inform stakeholders, study area residents, review agencies and Indigenous communities about the project, and to solicit comments at key stages of the study process. Consultation methods for each project file included:

- Publication of newspaper notices for all project milestones, including Notices of Study Commencement, Public Information Centre (PIC), and Study Completion.
- Placement of notices and other materials on the City's and UTRCA's websites.
- Direct mailing of project notices to stakeholders, study area residents, businesses, review agencies and Indigenous communities.
- Two Community Site Walks were organized to engage local residents early in the EA process, with an additional site walk to accommodate EEPAC members who had a scheduling conflict.
    - Broughdale Dyke – May 17th, 2019
    - Riverview Evergreen Dyke – May 31st, 2019
- A PIC for each EA to engage and obtain input from the public, review agencies, and stakeholders as follows:
    - Broughdale Dyke – June 20th, 2019 at Kings University College

    - Riverview Evergreen Dyke – July 25th, 2019 at London Children's Museum
    - West London Dyke Erosion Control - February 13th, 2018 at Kinsman Recreation Centre
- Individual meetings with residents/stakeholders as required or as opportunities arose.

The Notices of Completion were posted in The Londoner on February 14th and 21st, 2019 for the Broughdale Dyke and Riverview Evergreen Dyke EAs. The 30-day review public review period was between. February 14th to March 19th, 2019.

The Notice of Completion was posted in The Londoner on November 29th, 2018 and December 6th 2018 for the West London Dyke EA. The 30-day review period was from December 6th 2018 to February 15th 2019.

The EA reports were available for review at the UTRCA office, Masonville Branch Library, Landon Branch Library, the City Clerk's office and on the UTRCA and City of London websites.

In order to complete the public review portion, stakeholders were encouraged to provide input and comments regarding this study during the 30-day review period. If stakeholders felt that issues had not been adequately addressed, they had the opportunity to provide written notification within the 30 day review period to the Minister of the Environment, Conservation and Parks requesting further consideration. This process is termed a "Part II Order" (formerly known as a Bump-Up Request).

No requests for a Part II Order were received, thus the recommended projects will be in a position to move forward to the design and construction stages in accordance with the recommendations within the EA studies and as funding opportunities and budgets permit. A future report to committee will identify when the recommended works will be constructed.

Project Financing

The total estimated cost of infrastructure improvements recommended by the three EAs is $13,440,000. The UTRCA and City of London have historically offset these costs with provincial and federal funding opportunities, primarily through the Ministry of Natural Resources and Forestry (MNRF) Water and Erosion Control Infrastructure (WECI) program.

The WECI program is a MNRF capital cost share program that provides funding for flood or erosion control structures such as dams and dykes. This funding can only be accessed by Conservation Authorities, but can be used for infrastructure owned by municipalities in cases where the infrastructure is maintained by the CA.

The multi-year budget includes funding for the renewal of the City of London's flood and erosion control infrastructure. The multi-year budget item "ES2474 UTRCA Remediating Flood Control Works within City Limits" includes the 50% City share of WECI eligible maintenance and reconstruction works with a total of $6,100,000 over the four year period resulting in $12,200,000 in overall capital renewal works by 2020.

As such, the timing for dyke and dam projects are often determined by available funding opportunities and in consideration of other priorities related to flood protection capital works.

CONCLUSIONS

Three project files have been prepared to document the Municipal Class EA planning process for Schedule B projects as outlined in the Environmental Assessment Act. The EA reports outline the process which the UTRCA and City of London have undertaken to address the problems identified, and the potential solutions to be implemented. This process has involved mandatory contact with the public, Indigenous communities, and review agencies to ensure that they are aware of the project and that their concerns have been addressed, along with an evaluation of a range of alternatives leading to the project recommendations. The Notices of Completion were posted for 30 day review, and all correspondence received during this period has been appended to the final report documents.

The total estimated cost of infrastructure improvements recommended by the three EAs is $13,440,000. The budget for constructing these works will be coordinated between the UTRCA and the City in association with provincial and federal funding opportunities.

Acknowledgements

This document has been prepared by Chris McIntosh, P.Eng., Environmental Services Engineer.

SUBMITTED BY:	**REVIEWED AND CONCURRED BY:**
SHAWNA CHAMBERS, P.ENG. **DIVISION MANAGER,** **STORMWATER MANAGEMENT**	**SCOTT MATHERS, MPA, P. ENG.** **DIRECTOR,** **WATER AND WASTEWATER**

RECOMMENDED BY:
KELLY SCHERR, P. ENG., FEC **MANAGING DIRECTOR,** **ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**

April 4, 2019

Attach: Appendix ‘A’ – Broughdale Dyke Executive Summary
Appendix ‘B’ – Riverview Evergreen Executive Summary
Appendix ‘C’ – West London Dyke Erosion Control Executive Summary

cc: Fraser Brandon-Sutherland - UTRCA
Dave Charles - UTRCA