

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON OCTOBER 4, 2016
FROM:	JOHN BRAAM, P. ENG. MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	MUD CREEK MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STUDY -- STATUS UPDATE AND SCOPE CHANGE

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the consulting engineer appointment for the Mud Creek Municipal Class Environmental Assessment (ES2681):

- (a) This report **BE RECEIVED** for information;
- (b) The engineering fees for CH2M Hill Company **BE INCREASED** by \$150,000 (including contingency), from \$318,312 to a total EA cost of \$468,312, excluding HST to address stakeholder comments and finalize the Mud Creek Municipal Class Environmental Assessment process, in accordance with the estimate on file, which is based upon the Fee Guideline for Professional Engineering Services, 2015, recommended by the Ontario Society of Professional Engineers, and in accordance with Section 15.2 (g) of the Procurement of Goods and Services Policy;
- (c) the financing for these works **BE APPROVED** in accordance with the Sources of Financing Report attached hereto as Appendix "A";
- (d) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with these works;
- (e) the approvals given herein **BE CONDITIONAL** upon the Corporation entering into a formal contracts with these consultants for the works; and
- (f) the Mayor and City Clerk **BE AUTHORIZED** to execute any contracts or other documents, if required, to give effect to these recommendations.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Planning and Environment Committee. June 13, 2016. The London Plan. Public Participation Meeting.

Civic Works Committee. November 3, 2015. Appointment of Consulting Engineers for Design and Construction of Stormwater Management Facilities.

Civic Works Committee, August 25, 2014. Mud Creek Municipal Class Environmental Assessment.

Planning & Environment Committee, September 10, 2013, Application By: Bluestone Properties Inc. 450 Oxford Street West

2015-2019 CORPORATE STRATEGIC PLAN ALIGNMENT

The Mud Creek EA aligns with the Corporate Strategic Plan goal of providing new stormwater servicing to facilitate future growth across London (BUILDING A SUSTAINABLE CITY: 1. B. Robust Infrastructure).

EXECUTIVE SUMMARY

The following report provides an update on the status of the Mud Creek Municipal Environmental Class Assessment (Mud Creek EA) and provides a comprehensive discussion of three independent but interrelated processes that impact the development of lands in the Mud Creek EA study area (Appendix "B" - Mud Creek Development Lands).

Mud Creek EA Process

The Mud Creek EA provides a solution to a flooding problem that has been studied by the City and UTRCA for over 30 years. The proposed solution recommends replacement of an approximately 140 year old culvert and creek remediation to reduce flooding at a critical location on Oxford Street. The new CN Rail culvert included in the EA solution will impact the depth and extent of the upstream floodplain and will impact a large area of trees within a Significant Woodland. A comprehensive Environmental Impact Study (EIS) has been prepared to identify a mitigation/compensation strategy which will ensure a net environmental benefit to the Natural Heritage System (NHS). The following report suggests an extension of the current consultant assignment in order to address a significant quantity of comments provided by EEPAC, the UTRCA, and the developers of the flood-impacted lands. Once this additional work is complete, a future report will be submitted to Committee recommending a Notice of Completion be issued which is the first step to concluding the EA process.

Development Approvals Process

The development lands within the Mud Creek EA study area include land holdings by BlueStone Properties, Sam Katz Holdings Limited (ESAM Lands) and Edmar Land Ltd. These lands are in various stages of the development approvals process with the ESAM lands representing the largest parcel with original draft plan approval granted on September 26, 1990 and a revised draft plan approval granted on July 31, 2000 with no expiry date. A key step in the development approvals process is setting of the spatial limit of development. Through the development approvals process, the extent of the floodplain and NHS will play a major role in determining the limit of future development. As all of the development lands are impacted by regulated floodplain, the Mud Creek EA needs to be completed before the development approval process can determine a limit of development.

Owners of the development lands have suggested modifying (re-grading) their lands with the goal of reducing the extents of the regulatory floodplain, freeing-up more land for development. Once the Mud Creek EA's preferred option has been finalized, applicants would be in a position to propose alternative floodplain development concepts through the development approvals process. Acceptance of these concepts is subject to the Floodplain Regulation Process.

Floodplain Regulation Process

The mandate of the Upper Thames River Conservation Authority (UTRCA) is to define the extents of the Regulatory Floodplain and control development within the regulated area. It has been suggested by the development landowner's agents that the EA process is the appropriate mechanism to consider alternative flood plain development concepts on private lands. It is the position of Staff that the EA in itself is not a tool to minimize the size of the floodplain and maximize development on private lands. It is the role of the development approvals and floodplain regulation process to determine the limit of development on floodplain impacted lands. This report suggests that the most appropriate process for considering alternative floodplain development concepts is through a parallel development approvals and floodplain regulation process. This combined process will allow the development application to progress subject to final regulatory approval by the UTRCA.

Conclusion

This report provides an update of the status of the Mud Creek EA, summarizes the comments received on the draft EA document, and clarifies the role of the Mud Creek EA within the context of the development approvals and floodplain regulation processes.

BACKGROUND

Purpose

To provide a status update of the Mud Creek Environmental Assessment and award additional funding for the consultant to address stakeholder and Environmental and Ecological Planning Advisory Committee comments and finalize the Environmental Study Report.

Context

The Mud Creek Subwatershed is a highly urbanized subwatershed with a history of frequent flooding along Oxford Street and Proudfoot Lane and adjacent private properties. Oxford Street is designated as a future Rapid Transit corridor in the London Plan. Statistically, the Oxford Street culvert currently floods every 1 in 1.2 years. Ministry of Transportation standards dictate a 1:50 year Design Model event should be conveyed under arterial road culverts.

Mud Creek has been highly altered with channel realignments to accommodate development over the past 100-years. These alterations include channel straightening to accommodate the construction of a sanitary sewer, the enclosure of the creek outlet to the Thames River, and realignment along Oxford Street.

The areas north of the CN Rail Culvert provide infill and intensification opportunities. The City of London's (City's) Official Plan (OP) (2006) designates 54 ha within the subwatershed that are subject to future land use changes.

The City has attempted to complete three separate stormwater studies for the Mud Creek Subwatershed since 2008. However, these studies never concluded with a viable solution which fulfilled the interests of the City, the Upper Thames River Conservation Authority (UTRCA) and the stakeholders. In August 2014, the City retained CH2M as the engineering consultant to commence a Schedule B Municipal Class Environmental Assessment (Mud Creek EA) to develop a stormwater management strategy.

The Mud Creek EA seeks to reduce the floodplain elevation of the east branch of the subwatershed for all properties while balancing the flooding concerns downstream at the Thames. As the area continues to develop, it is important to create a strategy to rehabilitate the creek, protect the important natural environment, and mitigate future flooding potential in the area to acceptable levels.

Draft Preferred Alternative

The draft preferred alternative of the Mud Creek EA includes a number of major works, the most significant of which is the replacement and upsizing of a culvert that is over 100 years old, which will need to be tunneled through a CN Rail embankment. Other works include adjustments/replacements to existing culverts at Oxford Street and Proudfoot Lane, realigning the Mud Creek channel at Oxford Street. In addition to these "grey infrastructure" improvements, environmental enhancements (green infrastructure" improvements) including in-stream remediation works to create a natural channel design to improve the aquatic habitat, reduce sedimentation, and enhance floodplain storage are included in the preferred alternative. The Mud Creek East Branch project is identified as a Growth Management Implementation Strategy (GMIS) (ES2681) project with a capital budget of approximately \$10M.

In essence, the EA is limited to engineering infrastructure improvements. However, the EA may indirectly influence the extent of the Regulatory Floodplain thereby influencing the selection of associated land use for the properties upstream of the CN Rail Culvert.

Land Use and Development

As part of the London Plan discussions detailed in a report submitted to the June 13, 2016 meeting of the Planning and Environment Committee, Council resolved that the land uses for several undeveloped properties north of the CN Rail culvert would be subject to change and may be influenced by the outcome of the Mud Creek EA.

As this EA has a major impact on several properties, a draft copy of the EA report was circulated to the landowners upstream of the CN Rail culvert. Through this process, substantial comments were received from all parties involved. In order to adequately address these comments it is recommended that further technical work be completed as part of the EA study. The Mud Creek EA document will be presented to Council prior to the 30-day public review period once the comments have been addressed (anticipate submission of report in winter 2017).

DISCUSSION

The preferred Mud Creek EA alternative recommends the construction of infrastructure to maximize flow conveyance and flood reduction upstream of the CN Rail culvert without increasing the flood risk to properties downstream. This will require lowering the CN Rail culvert by over two meters which triggers significant grading adjustments along the Mud Creek channel from south of Oxford Street to Wonderland Road. These adjustments to the grading also result in the temporary removal of a substantial section of Significant Woodlands.

As a result of the anticipated amount of tree removals, the City conducted an Environmental Impact Study (EIS) in tandem with the EA process to ensure that the preferred recommended solution would also result in a net positive benefit to the Natural Heritage System.

Environmental Impact Study

The EIS was conducted concurrent to the Mud Creek EA. Mud Creek provides habitat for many species of wildlife (birds, amphibians, mammals) and contains several valuable terrestrial features, particularly large trees and animal refuge areas. However, it has a history of substantial environmental degradation, including bank erosion and sediment deposition; many natural indicators of aquatic health, including benthic organisms, fish species, and water quality parameters, underline the poor aquatic and terrestrial health within the creek system.

The main findings of the EIS are as follows:

- There are four identified Species at Risk (SAR) in the area including two threatened species (snapping turtle and wood thrush) and two endangered species (little brown bats and northern long-eared bats). These species do not have habitat protection but the well-being of these species is an important consideration in this EA study.
- The EIS evaluation identified all unevaluated vegetation patches within the study area to be Significant Woodlands. The proposed project would initially remove up to 4 hectares of the Significant Woodlands between Oxford Street and Wonderland Road to lower the channel upstream and downstream of the CN culvert and reduce the associated floodplain elevations. This is the most significant tree removal to occur in the City of London for a stormwater management project.

- The EIS assessed the impacts of the proposed infrastructure works on the Natural Heritage System and recommend an enhanced mitigation/compensation strategy in accordance with Official Plan Policy 15.3.3.

In order to comply with Official Plan Policy 15.3.3, the EIS included a proposed mitigation/compensation strategy. The strategy aims to achieve a net environmental benefit by greatly improving the aquatic habitat in the short-term and creating an enhanced terrestrial habitat in the medium to long term. The strategy includes a 3:1 tree replacement ratio with native species, buckthorn removal and eradication strategy south of Oxford Street, a multi-use pathway to facilitate existing sewer maintenance, habitat re-creation for SAR and other wildlife and creation of 300m of a natural channel corridor with pools and riffles to enhance the aquatic habitat.

Public Participation

The Mud Creek EA has included a substantial public and stakeholder engagement process. Two public meetings were conducted. Notifications for this meeting were published in the weeks preceding the Public Information Centre and a letter was sent to the surrounding landowners. The meetings were held on November 20th, 2014 and April 23, 2015 at St. Aidan's Church, situated at 1246 Oxford Street West. These meetings were attended by the public and affected property owners.

In addition, the City and CH2M conducted two site walks with affected homeowners downstream of the CN Rail on August 18, 2015 and August 26, 2015. The consultant and the City described the project as well as the proposed mitigation measures to protect the environment and wildlife. The site walk was well-received by the eight residents who attended.

Throughout the EA process, the City and UTRCA have also held a number of meetings and shared communications with the landowners with development interests in the area, namely landowners of 415 Oxford Street West, 450 Oxford Street West, 92 Proudfoot Lane, and 39T-99502.

Notifications of the project were also sent to Federal, Provincial, County, and Municipal stake holders and consultation with local First Nation's was also undertaken.

Circulation of the Draft EA report

Typically, an EA report is only circulated at the time of the Notice of Completion for the 30-day public review period. Due to the high interest of developers and significant environmental work associated with this project, the City distributed the draft EA/EIS documents in advance of finalizing the study to the City's Environmental and Ecological Planning Advisory Committee (EEPAC) and the landowners with development interests.

EEPAC Comments

City staff proceeded as a delegation to present the draft Mud Creek EA and EIS to EEPAC on July 21, 2016. EEPAC submitted comments on the EA/EIS on August 25, 2016 and a follow-up meeting was held with City staff on September 1 to clarify the impacts to the Significant Woodlands, the objectives of the fishery restoration and establish clear requirements for detailed design.

EEPAC's comments generally support the net environmental benefits of completing the preferred option. See Appendix "C" – UTRCA and EEPAC Comments. The City will be able to address these comments as part of this EA at a high level. Due to the specific ecological concerns, City staff will also be engaging EEPAC in the detailed design process to ensure all EA recommendations are implemented.

Developer comments

The developers in this subwatershed have three shared primary concerns: (1) establishing the limits of development related to the Regulatory Floodplain, (2) impacts to lands due to Natural Heritage System, and (3) next steps to advance planning applications in the subwatershed. A summary of these concerns are provided as Appendix “D” – Comments from Developers of Flood Impacted Lands. Satisfying these three interests have proven to be a complex undertaking for which the City has attempted to provide clarity for over 10 years in multiple studies. At this point, the landowners are ready to proceed with development and require clear direction to advance through the development application process. The following sections provide clarity on the various approval processes moving forward.

1. Establishing Development Limits: Floodplain Regulation

One significant component which influences development limits on the parcels include the Regulatory Floodplain (with setbacks). The Mud Creek EA defines a draft floodplain, however, in Ontario, it is the mandate of the Conservation Authority to define and update the Regulatory Floodplain for applicable watercourses within its jurisdiction. The assumptions used in floodplain modelling development are based on provincial methodology prepared by the Ministry of Natural Resources and Forestry (MNRF). As such, the UTRCA have the jurisdiction to apply the methodology and manage the outputs of the modelling results to regulate the floodplain in the Mud Creek subwatershed.

On December 9, 2015, Council approved a consultant appointment to undertake Regulatory Floodplain modelling to define the impacts of the preferred Mud Creek EA alternative. The City would typically not be involved in preparation of Regulatory Floodplain modelling or mapping for development purposes. However, since it was certain that the preferred alternative would impact the Regulatory Floodplain upstream and downstream of the CN Rail culvert, City Staff recommended to Council that Regulatory Floodplain modelling be completed as changes to the Regulatory Floodplain would have a significant impact on properties upstream of the CN Rail culvert. This additional task was completed and the output and models were circulated to the impacted upstream landowners and reviewed by the UTRCA.

On June 6, 2016, the City of London and the UTRCA met with all landowners with development interests in the Mud Creek Subwatershed. At this meeting, landowners were provided maps showing the draft Future Post-Construction Regulatory Floodplain associated with the recommended preferred option of the Mud Creek EA. Following this meeting, the City received several letters from landowners since the revised floodplain had expanded in several areas.

The recommendations of the Mud Creek EA do not preclude landowners from exploring opportunities with the UTRCA to protect individual properties or to consider development alternatives related to reducing the extent of the Regulatory Floodplain. The City provided the hydraulic and hydrologic modelling to the developers during the draft EA review period. These modelling tools were made available to landowner’s consultants to explore design concepts related to floodplain mitigation opportunities.

The UTRCA has expressed that they are willing to work with the landowners to modify floodplain limits outside of the EA process. This would primarily include cut and fill on private lands, subject to UTRCA approval and reasonable analysis. Ultimately, the UTRCA has jurisdiction to manage and approve development in floodplain areas under the authority of Section 28 of the Conservation Authorities Act and the development approvals process.

2. Establishing Development Limits: Natural Heritage System (NHS)

The second significant component which influence development limits on the parcels is the Natural Heritage System and its associated buffers. The Mud Creek EIS was completed in the spirit of determining the impacts of the engineering solutions; the EIS

also confirmed that all vegetation patches in the EA study area to be Significant Woodlands.

To determine the development limits, each developer will need to conduct its own EIS study to determine appropriate buffers from the NHS based on the proposed development and conduct a geotechnical report to determine appropriate erosion and maintenance setbacks from the floodplain.

3. Land Use and Development Approvals

The designated land uses for undeveloped lands in the subwatershed may be subject to change in accordance with the June 24, 2016 Council Resolution related to The London Plan report which states:

“IT BEING FURTHER NOTED THAT Municipal Council may consider further changes to *The London Plan* as identified in this report (Shift Rapid Transit Environmental Assessment, outstanding Ontario Municipal Board hearings, Secondary Dwelling Unit policies, Near-Campus Neighbourhoods policies and the Mud Creek Environmental Assessment) at a future meeting of Council. Depending on the timing of Council’s approval of these further changes, they may be forwarded to Minister of Municipal Affairs and Housing for inclusion in their review and approval of *The London Plan*.

The PEC report more specifically states that the Mud Creek EA,

“may result in changes to Map 1 – Place Types, Map 5 – Natural Heritage, and Map 6 – Hazards and Natural Resources as a result of the approved EA. These changes will be presented to the Planning and Environment Committee for consideration, and once approved the updated policies and maps will replace the existing policies and maps in The London Plan. This includes, but is not limited to, the lands located at 323 Oxford Street West and 92 Proudfoot Lane within the draft approved plan of subdivision 39T-99502.”

To implement changes to the London Plan, Official Plan Amendments are necessary outside of the Mud Creek EA process to inform the above identified maps. These potential Official Plan Amendments are as follows:

- The results of the Mud Creek EIS could implicate changes to the London Plan’s Map 1 – Placetypes and Map 5 – Natural Heritage. The timing of this Official Plan Amendment can occur any time based on the results of the EIS.
- The City worked with the UTRCA to include a floodplain analysis within the EA document to establish a draft limit of the future Regulatory Floodplain. This future floodplain can only come into effect following the construction of the recommended EA works, subject to UTRCA review and approval. A new floodplain would implicate changes to the London Plan Map 6 – Hazards and Natural Resources. The timing of this Official Plan Amendment would occur after the construction of the EA works.

Consultant Assignment

Due to the complexity of this project and the number of comments received, staff recommend a continued investment with the current engineering consultant to address the comments on the EA/EIS and resolve any technical discrepancies.

As of December 9, 2015, the total cost allocated to the Mud Creek EA is \$318,312. We recommend an additional \$150,000 (including contingency) be awarded to CH2M to complete the EA process, for a total EA cost of \$468,312. The work associated with this additional assignment includes hydraulic modelling to optimize flow through the Proudfoot Lane and Oxford Street culverts, addressing the comments received by EEPAC, UTRCA, and land owners with flood-impacted lands as well as addressing any forthcoming comments which may arise during the EA’s official 30-day review period.

The total amount for this EA is consistent with other engineering studies of this magnitude in complexity where there is a high level of land development interests, stakeholder engagement, and environmental impacts.

Recommended Next Steps

Finalize Mud Creek EA

- Consultant will finalize the Mud Creek EA document while addressing the comments provided by the developers in flood-impacted lands, EEPAC, and UTRCA.
- The City will present a final report to CWC in winter 2017 and advertise the Notice of Completion to start the 30-day public review process.
- Once the EA is complete, the detailed design of the preferred alternative would commence. EEPAC and landowners will be involved in reviewing the detailed design drawings.
- Subject to Council approval of the tender award, construction will proceed in accordance with the proposed phasing strategy.

Update the Regulatory Floodplain

- Once the recommended infrastructure is constructed, the UTRCA will be in a position to review the as-built information of the constructed works and evaluate updating the Regulatory Floodplain. Upon approval, an Official Plan Amendment to The London Plan Map 6 could be made in collaboration with the UTRCA.

Process Development Applications

It is recommended that landowners progress development applications in parallel with the timing of the design and construction of the preferred recommended works. At the risk of the developer, the basis of the applications could be based on the floodplain limits of the future Regulatory Floodplain, subject to any necessary adjustments which may be required to the Regulatory Floodplain following construction of the works. As part of the Development Application Process the developer will complete an EIS to determine appropriate buffers from the NHS and the site specific development.

CONCLUSIONS

The Mud Creek EA is a complex and important study that is nearing completion. It is recommended CH2M be awarded additional funding to address stakeholder comments and conclude the EA process. A subsequent report will be presented to Civic Works Committee identifying the notice of completion and 30 day review period.

This report attempts to summarize and provide clarity around the Mud Creek EA process and the related but independent development approvals process under the Planning Act.

The infrastructure improvements recommended in this EA reduce the frequency of flooding in the Mud Creek drainage area while proposing a plan to achieve a net positive benefit to the natural environment.

This EA also provides all parties open modelling data on a shared basis for evaluating development scenarios and aiding in the Conservation Authority regulatory approval process.

The draft preferred alternative provides important improvements to the City’s stormwater infrastructure system by protecting a key future rapid transit corridor from flooding while allowing development opportunities to proceed in a key location for infill development.

Acknowledgements

This document has been prepared within the Stormwater Engineering Division by Shawna Chambers, P.Eng.

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September 26, 2016

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Attach: Appendix “A” – Sources of Financing
 Appendix “B” – Mud Creek Development Lands
 Appendix “C” – EEPAC and UTRCA Comments
 Appendix “D” – Comments from Developers of Flood-Impacted Lands