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TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON MARCH 3, 2015
FROM:	JOHN BRAAM, P. ENG. MANAGING DIRECTOR, ENVIRONMENTAL and ENGINEERING SERVICES & CITY ENGINEER
SUBJECT:	POLLUTION PREVENTION AND CONTROL PLAN INFOWORKS MODELLING ASSIGNMENTS ADDITIONAL FLOW MONITORING

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services & City Engineer, the following actions **BE TAKEN** with respect to extension of Infoworks modelling assignments as part of Phase II of the Pollution Prevention and Control Plan:

- a) The following Consulting Engineering fees **BE INCREASED** for the completion of Infoworks hydraulic modelling assignments, in the amounts identified below (all including contingency but exclusive of HST):
 - (i) Assignment 1: Dillon Consulting Limited, from \$199,832.00 to \$228,958.00;
 - (ii) Assignment 5: XCG Consultants Ltd., from \$195,667.00 to \$219,547.00;
 - (iii) Assignment 6: WSP Canada Inc., from \$138,708.00 to \$162,003.00;
 - (iv) Assignment 8: GM BluePlan Engineering Limited, from \$269,812.00 to \$312,412.00;
- b) the financing for the projects identified in (a) above, **BE APPROVED** in accordance with the Sources of Financing Report attached hereto as Appendix "A";
- c) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with these projects;
- d) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations; and
- e) it **BE NOTED** that due to a lack of rain events in Fall 2014, insufficient flow monitoring information was generated to support the assignments, creating the need to extend the monitoring programs into Spring 2015.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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"Pollution Prevention and Control Plan Infoworks Modelling Consultant Appointment", Civic Works Committee, August 25 2014.

"Pollution Prevention and Control Plan Consultant Appointment Continuation", Civic Works Committee, February 3 2014.

"Consultant Appointment Pollution Prevention and Control Plan Project ES5419", Civic Works Committee, May 14 2012.

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BACKGROUND

Purpose:

The purpose of this report is to recommend the increase of consulting fees for four Infoworks modelling assignments for the purpose of obtaining additional sewer flow monitoring data in Spring 2015.

Context:

London is currently in the process of completing a Pollution Prevention Control Plan (PPCP), which is a multi-year master plan project, split into three phases, designed to provide a long term solution for conveyance system sewer overflows and bypasses. It is an effort to meet system wide conformance with Ministry of Environment and Climate Change (MOECC) Procedure F-5-5 and to mitigate impacts on the Thames River.

Phase II of the PPCP is currently underway. The scope of Phase II includes 12 hydraulic sewer modelling and flow monitoring assignments to characterize all sewer system overflows. In August 2014, the City of London awarded six sanitary hydraulic modelling assignments to six different consultants to satisfy this Phase II requirement. The remaining six assignments are anticipated to be awarded in Summer 2015.

Discussion:

PPCP Infoworks Modelling Assignments:

An important component of completing a sanitary hydraulic model is that of wet weather calibration. This ensures that model simulations provide accurate representation of sanitary sewer flows during rain events. To acquire raw, real time data to permit wet weather calibration, each consultant team had multiple sewer flow monitors installed in strategic locations. These flow monitors were installed in the latter part of September 2014.

Ideally, a range of wet weather events is preferred in order to confidently calibrate the sanitary hydraulic model under small, medium and large rain events. Without such a range of rain events being captured a conservative extrapolation of recorded event data is required. Such extrapolation can lead to the oversizing of mitigating capital works designs and their corresponding construction costs. While a number of small to medium rain events were successfully recorded last fall, there remains a data gap for larger rain events.

Staff recommends the extension of four modeling assignments to allow for a more accurate wet weather calibration of the hydraulic models. The resulting accurately calibrated hydraulic models will then lead to the most efficient overflow mitigation designs and corresponding project costs.

This additional flow monitoring is beyond the original scope of the modelling assignments. Consultants have provided cost estimates to the City to provide up to two months of additional flow monitoring (April, May). If sufficient rain events are recorded in April, flow monitors will be removed; saving one months' worth of data collection costs. The following program changes are recommended:

- Assignment #1, Dillon Consulting Limited: \$29,126.00 for a total project upset limit of \$228,958.00;
- Assignment #5, XCG Consultants Ltd.: \$23,880.00 for a total project upset limit of 219,547.00;
- Assignment #6, WSP Canada Inc.: \$23,295.00 for a total project upset limit of \$162,003.00;
- Assignment #8, GM BluePlan Engineering Limited: \$42,600.00 for a total project upset limit of \$312,412.00;

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The total additional funding identified above is \$118,901.00. It is noted that, where available, existing contingencies within the projects totaling \$53,062 were used to absorb some of the costs related to additional flow monitoring, thus reducing the total additional funding request.

Other monitoring and modeling assignments being undertaken as part of the project do not require additional data.

The consultants and City staff are confident that this additional flow monitoring period will provide the raw data necessary to complete wet weather calibration of hydraulic models.

Acknowledgements:

This report was prepared within the Wastewater and Drainage Engineering Division by Kyle Chambers, P.Eng., Environmental Service Engineer.

PREPARED BY:	REVIEWED AND CONCURRED BY:
TOM COPELAND, P. ENG. DIVISION MANAGER, WASTEWATER AND DRAINAGE ENGINEERING	JOHN LUCAS, P. ENG. DIRECTOR, WATER AND WASTEWATER
RECOMMENDED BY:	
JOHN BRAAM, P.ENG. MANAGING DIRECTOR, ENVIRONMENTAL and ENGINEERING SERVICES & CITY ENGINEER	

February 23, 2015

/kjc

Attach: Appendix "A" – Sources of Financing

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c.c. Pat Shack, Budget Analyst