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<b>TO:</b>	<b>CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON MAY 14, 2012</b>
<b>FROM:</b>	<b>JOHN BRAAM, P. ENG. ACTING EXECUTIVE DIRECTOR, PLANNING, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER</b>
<b>SUBJECT:</b>	<b>CONSULTANT APPOINTMENT POLLUTION PREVENTION AND CONTROL PLAN PROJECT ES5419</b>

<b>RECOMMENDATION</b>
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That, on the recommendation of the Acting Executive Director Planning, Environmental and Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the award of the City of London Pollution Prevention and Control Plan.

- a) CH2M Hill Limited, 72 Victoria Street South, Suite 300, Kitchener ON N2G 4Y9 **BE APPOINTED** Consulting Engineers for the preparation of a Pollution Prevention and Control Plan in the amount of \$105,425 for Phase 1, including contingency and excluding HST, in accordance with Section 15, Clause 15.2 (e) of the Procurement of Goods and Services Policy it being noted that the appointment for subsequent phases will be contingent on satisfactory performance and a future recommendation by Committee and Council;
- b) the financing for the project **BE APPROVED** in accordance with the "Sources of Financing Report" attached hereto as Appendix "A";
- c) the consulting fees for the project identified in (a), above, **BE IN ACCORDANCE** with the estimate, on file, which are based upon the Fee Guideline for Professional Engineering Services, 2006, recommended by the Ontario Society of Professional Engineers;
- d) the approvals given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract with the consultant for the work; and
- e) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

<b>PREVIOUS REPORTS PERTINENT TO THIS MATTER</b>
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NONE

<b>BACKGROUND</b>
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**Purpose:**

The purpose of this report is to recommend the award of the Pollution Prevention and Control Plan (PPCP) to CH2M Hill Limited (CH2M Hill).

**Context:**

The Ontario Ministry of the Environment released Procedure F-5-5 *Determination of Treatment Requirements for Municipal and Private Combined and Partially Separated Sewer Systems* in the mid 1990s as a procedure for Municipalities to follow. A combined sewer system conveys

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sanitary wastewaters (domestic, commercial and industrial wastewaters) and storm water runoff (from catch basins) through a single pipe system to a wastewater treatment plant.

Combined sewers were the norm when sewers were first introduced to manage sewage and storm water in urban centers. In sewer separation projects (when storm sewers are added to collect storm water from the streets) the existing sanitary sewers are only partially separated if inflow from weeping tiles remain connected. This is often the case, since removing weeping tiles from older buildings involves work on private property which has been historically been avoided by municipalities. Other sources of inflow include roof leaders that are tied into the sanitary sewers.

Ground water infiltration through cracks, leaky gaskets or holes due to tree roots or settlement contributes to increased sanitary flow. Surface water infiltration through maintenance hole (MH) covers in older areas also adds more flow.

Modern sewers now have completely separate storm sewers to convey foundation drains and street flow to storm water management facilities for treatment. MH inserts are mandatory in newer subdivisions to reduce infiltration into sewers through lifting holes.

When excess inflow and infiltration occurs during the spring snow melt or severe wet weather events, sewers become overwhelmed and the additional flow will either enter basements through floor drains and toilets, overflow into storm sewers or river outlets, or end up at treatment plants.

While the City of London has been working towards meeting Procedure F-5-5 on an ad hoc basis, the Ministry of the Environment has requested that the City prepare a comprehensive PPCP using the Municipal Engineers Association's Class Environmental Assessment planning process for a Master Plan level study. The PPCP will include the entire treatment and collection system.

**Background:**

*A Draft Terms of Reference – City of London Pollution Prevention and Control Study to Work Towards Conformance with Procedure F-5-5 and the Municipal Class Environmental Assessment Process* was prepared in 2011 with the assistance of CH2M Hill and the Ministry of the Environment (MOE). Several meetings were held to develop the Terms of Reference to the satisfaction of the City and MOE's London District and South West Regional Offices.

Given the anticipated fees for the project and the complexity of the assignment the procurement of consulting services followed a two stage process with Requests for Expressions of Interest and Requests for Proposals.

The Draft Terms of Reference was combined with a Request for Expressions of Interest (EOI) 12-01 that was posted on the City of London website and advertised in the London Free Press on December 24, 2011 and January 6, 2012. Notice of the impending EOI was also provided to consulting firms through emails on December 21, 2012. The EOI closed on January 20, 2012.

Seven (7) EOI submissions were received and reviewed by a team of staff from Wastewater and Drainage Engineering (WADE) and Wastewater Treatment Operations (WTO). An evaluation was undertaken and reviewed by Purchasing and the two highest scoring consulting teams were invited on March 13, 2012 to submit proposals through RFP 12-11. Proposals were received on March 28, 2012.

An evaluation by WADE and WTO was conducted and it was determined that the proposal from CH2M Hill was ranked highest and would offer the best value to the City of London.

**Discussion:**

In the past, deliberate overflow structures (i.e., chambers with weirs or flap gates) were constructed to protect homes, businesses and institutions from widespread basement flooding.

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Storm relief sewers were constructed to protect homes, businesses and institutions from basement flooding.

The City of London has 127 confirmed conveyance system overflows leading to 44 discharge points in the Thames River sewer shed. There are also 28 pumping station and 6 wastewater treatment plant bypasses located throughout the City.

Efforts are underway at the City's treatment plants to capture and treat wet weather flow to Procedure F-5-5 standards. New mechanical screens, vortex grit removal and chemically enhanced primary treatment (CEPT) at the Vauxhall Wastewater Treatment Plant will capture and treat up to 10 times the permitted plant flow. CEPT uses flocculants and coagulants in the primary clarifiers to improve settling and removal of contaminants. The expansion and upgrade of Greenway will include CEPT and budgets are in place to add CEPT at the Pottersburg and Adelaide treatment plants.

WADE has completed a number of projects to investigate and assess sewer conditions and document CSOs locations. The hiring of the CH2M Hill team to complete the PPCP will accelerate the City's efforts.

### **Pollution Prevention and Control Plan**

London's PPCP will be a multi-year project designed to provide a long term solution for combined sewer overflows and bypasses in an effort to meet system wide conformance with Procedure F-5-5 and mitigate impacts on the Thames River.

The objectives of the PPCP are to:

- Complete the study following the Phase 1 and Phase 2 components of the Class EA Master Planning process.
- Create a detailed CSO and bypass inventory.
- Create a ranked list of discharge points for CSOs and bypasses, based on theoretical maximum capacity.
- Characterize the receiving stream environment (Thames River) in regard to water quality, CSO and bypass impacts.
- Estimate CSO and bypass volumes and frequencies through theoretical hydrologic and hydraulic modelling.
- Compile and screen a comprehensive list of CSO and bypass control alternatives.
- Determine the preferred control measures for the reduction of CSO and bypasses.
- Develop a prioritized implementation plan for the preferred control measures that will allow the City to meet MOE Procedure F-5-5 on a system wide basis and mitigate the impact on water quality in the Thames River.

A Technical Steering Committee (TSC) will be formed at the outset of the project and include membership from the City, MOE, the Upper Thames River Conservation Authority (UTRCA) and the consultant team. Regular meetings and input from the TSC will provide direction for the development of the PPCP.

The project will be delivered in three phases with Phase one including initiation of the project and master plan, collection of background data and documentation, a review of benthic studies and water quality data, determination of flow monitoring requirements and a preliminary ranking of CSO and bypass discharge points.

The outcome of the first phase will include the theoretical maximum capacity of all CSOs and bypasses at the discharge points, the theoretical contaminant loadings and an assessment of the receiving stream conditions downstream of the discharge points.

Phase Two will continue the Master Plan Process, with characterization of the Thames River including benthic and water quality at sites downstream of priority CSOs, hydrologic and hydraulic modelling of the different sewer sheds to determine CSO frequencies and volumes, and the development of a long and short list of CSO and bypass control measures.

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The prioritization of the CSO and bypass discharge points will be refined in Phase Three and alternative selection criteria and evaluation for a preferred alternative for CSO and bypass control will be made. Deliverables from the project will include an implementation plan with costs and schedule in a Draft and Final EA Master Plan Report. The Master Plan will be filed for public and agency review and be reported to Council for adoption by the City.

Throughout the project, there will be opportunities for input from the public, agencies, interest groups, non-governmental organizations and First Nations including public information centres and consultation through the Class EA process.

**Conclusions:**

A Pollution Control and Prevention Plan will provide the City, Ministry of the Environment and Upper Thames River Conservation Authority and community with a long term plan for managing combined sewer overflows and bypasses in London. The project will include investigations, development of models, and documentation to identify the problem areas and opportunities for reducing the discharge of untreated sewage into the Thames River.

The procurement of engineering services followed a two stage process where Requests for Expressions of Interest were received from consulting teams made up of experts in project management, environmental assessment, flow monitoring, hydrologic/hydraulic modelling, benthic studies and PPCP planning. EOIs were evaluated to select a short list of consultants who were invited to submit detailed proposals.

Following a review of the proposals by a team from WADE, WTO and Purchasing, it is recommended that the CH2M Hill team be awarded the Pollution Prevention and Control Plan.

The proposal from the CH2M Hill team includes a detailed budget of \$105,425.00 for Phase 1, and budgetary estimates of \$250,265.00 and \$149,495.00 for Phases 2 and 3 providing a total estimated budget of \$505,185.00 (all excluding HST) for the entire project. This report recommends approval for Phase 1. The scope of work for subsequent phases is dependent on the results of Phase 1 and the Request for Proposal requested only budgetary estimates for Phases 2 and 3. Approval for Phases 2 and 3 will be contingent on satisfactory performance during Phase 1 and Committee and Council Approval.

**Acknowledgements:**

This report was prepared within the Wastewater Treatment Operations Division by Richard Todd, P. Eng. Environmental Services Engineer.

<b>SUBMITTED BY:</b>	<b>RECOMMENDED BY:</b>
<b>GEORDIE GAULD DIVISION MANAGER WASTEWATER &amp; TREATMENT OPERATIONS</b>	<b>JOHN BRAAM, P.ENG. ACTING EXECUTIVE DIRECTOR, PLANNING, ENVIRONMENTAL AND ENGINEERING SERVICES</b>

May 9, 2012

RJT/rjt

Attach: Appendix "A" – Sources of Financing  
Appendix "B" – *Terms of Reference– City of London Pollution Prevention and Control Study to Work Towards Conformance with Procedure F-5-5 and the Municipal Class Environmental Assessment Process*

c.c. Tom Mahood, P.Eng. – CH2M Hill Limited.