

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON NOVEMBER 21, 2017
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR OF ENVIRONMENTAL AND ENGINEERING SERVICES & CITY ENGINEER
SUBJECT:	POLLUTION PREVENTION AND CONTROL PLAN UPDATE

RECOMMENDATION

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

PREVIOUS REPORTS PERTINENT TO THIS MATTER

- May 24, 2017 “Pollution Prevention and Control Plan Phase Three Consultant Appointment Continuation”, Civic Works Committee
- March 8, 2016 “Pollution Prevention and Control Plan InfoWorks Modelling Consultant Appointments”, Civic Works Committee
- August 25, 2014 “Pollution Prevention and Control Plan InfoWorks Modelling Consultant Appointment”, Civic Works Committee
- February 3, 2014 “Pollution Prevention and Control Plan Consultant Appointment Continuation (ES2464-11)”, Civic Works Committee
- May 14, 2012 “Consultant Appointment Pollution Prevention and Control Plan Project ES5419”, Civic Works Committee

2015-2019 STRATEGIC PLAN

The 2015 – 2019 Strategic Plan identifies this objective under building a sustainable city; 1B – manage and improve our water, wastewater and stormwater infrastructure and services; and 3E – work together to protect all aspects of our natural environment including woodlands, wetlands, river and watercourses, and air quality as our city grows.

BACKGROUND

Purpose

The purpose of this report is to respond to item a) of the following resolution of Municipal Council at its February 14 and 15, 2017 meeting:

- “12. *That the Civic Administration BE DIRECTED to report back to the Civic Works Committee by June 30, 2017 with respect to the following:*
- a) *A report summarizing the Pollution Prevention and Control Plan (PPCP) Phase 1 Report, and providing the status of the PPCP Phase 2 Report, with the later to include details on work to date, findings and next steps for measuring overflows and bypasses; and,*

- b) *A report providing historical and current data on the amount of untreated sewage being discharged from pollution control plants and other wastewater infrastructure to the Thames River and other waterways, the reason for the aforementioned discharges, a summary of system improvements in the last 10 to 20 years, a summary of system improvements included in the Capital Budget, as well as any other related information that may be educational for both Municipal Council and the public.”*

This report includes a summary of Phase 2 of the Pollution Prevention and Control Plan.

Context

London's Pollution Prevention and Control Plan is a multi-year master planning project split into three phases, designed to provide a long-term solution to address conveyance system sewer overflows and bypasses, and to mitigate the associated impacts of these discharges on receiving watercourses, including the Thames River, Pottersburg Creek, Medway Creek, the Coves and Dingman Creek. Sewer system overflows and bypasses that exist in the sewer system were originally built to provide sewer system relief during extreme wet weather events, thus protecting homes from basement flooding.

The Ministry of the Environment and Climate Change (MOECC) Procedure F-5-5 requires that the municipality or operating authority develop a Pollution Prevention and Control Plan. Procedure F-5-5 outlines the need to eliminate the occurrence of dry weather sewer overflows, and to minimize the potential for impacts of sewer overflows on human health and aquatic life.

DISCUSSION

The Pollution Prevention and Control Plan is being undertaken as a master plan in accordance with the environmental assessment guidelines, outlined in the Municipal Engineers Association Municipal Class Environmental Assessment document (as amended in 2015).

The development of the plan is being reviewed by a technical steering committee which includes membership from the City, MOECC, Upper Thames River Conservation Authority and the consultant team. Throughout the project, there have been opportunities for input from the public, agencies and stakeholders, interest groups, and First Nations through public information centres and consultation. Phase one included a public information centre on October 3, 2012 and phase two included a public information held May 28, 2014. A final public information centre was held on November 1, 2017.

Phase 1

Phase 1 of the plan involved a review and analysis of background information available for the receiving watercourse water quality, and the sewer system including overflows, and pumping station and wastewater treatment plant bypasses. As part of this phase, 149 sewer system overflows were confirmed in the City which correspond to 51 discharge points to the receiving watercourses. There are also six treatment plant and 36 wastewater pumping stations in the City. Each treatment plant has a plant bypass, and 28 of the 36 pumping stations have bypasses that may discharge untreated wastewater directed to receiving watercourses during extreme wet weather events. Phase 1 of the Pollution Prevention and Control Plan was completed in 2014.

Phase 2

Phase 2 of the plan was intended to further develop the benthic and water quality

characterization of the receiving watercourses in relation to the impacts of sewer system overflows and bypasses. Twelve hydrologic and hydraulic modelling assignments were also completed between 2014 and 2016 for selected sewersheds to better characterize the sewer system overflows, in terms of the frequency and volume of overflow corresponding to different events, and assess compliance with Procedure F-5-5.

Since the Pollution Prevention and Control Plan was initiated in 2012, a total of eleven of the 149 sewer system overflows have been removed from the system through various infrastructure renewal projects. The City has made progress with the elimination or mitigation of sewer overflows in parallel with the development of the plan. Various pumping station and wastewater treatment plant upgrades and expansions have also taken place since 2012 to improve the overall system. A summary of wastewater system improvements since 2008 is outlined in the "Wastewater System Improvement Summary," Civic Works Committee (November 21, 2017).

As each wastewater treatment plant and pumping station undergoes a modification, upgrade or expansion in the City, efforts are taken to reduce the potential for bypasses associated with wet weather flows. As the City reviews and prioritizes sewer overflows and bypasses to mitigate or eliminate, the plan will specifically focus on sewer system overflows in the conveyance system and bypasses at pumping stations.

Priority sewer overflows and pumping station bypasses have been identified during this Phase 2 based on:

- The reach of the watercourse being identified as "impaired", based on the selected approach for water quality characterization, at the discharge location.
- Overflow volume at the location being greater than 1,000 m³ for the typical year.

A long list of alternative mitigation strategies was outlined during Phase 2, and then screened to a short list based on the characteristics of the sanitary sewage system for each of the priority overflows. These strategies include:

- Source controls,
- Conveyance controls, and
- End-of-pipe controls.

The Phase 2 analysis provided a prioritized list with six groups of sewer system overflows and five pumping stations. Phase 3 of the plan will involve an evaluation of alternative strategies for each of the prioritized discharges, and the development of a preferred strategy for mitigation or elimination of the overflow/bypass. The lower priority overflows and bypasses will continue to be monitored by the City and addressed in the future through infrastructure projects, and as the plan is reviewed and updated.

Appendix 'A' includes the executive summary of the plan's Phase 2 report and provides further details.

Phase 3

Phase three of this project has been initiated and includes an evaluation of the short list of alternative mitigation strategies for the six groups of sewer system overflows and five pumping station bypasses. A preferred strategy will be identified for each prioritized overflow/bypass, along with conceptual layout drawings, implementation plan and associated costs. Phase 3 of the plan is scheduled to be completed by the end of 2017.

CONCLUSIONS

The Pollution Prevention and Control Plan provides the City with a road map to address priority sewer overflows through selected strategies and infrastructure improvements, to mitigate the impacts of wet weather system overflows on the receiving watercourses.

The plan will be reviewed and updated on a regular basis, in accordance with the Environmental Assessment guidelines outlined in the Municipal Engineers Association Municipal Class Environmental Assessment document (as amended in 2015) for Master Plans.

Acknowledgements

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

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