



**CITY OF HAMILTON**  
**PUBLIC WORKS DEPARTMENT**  
Hamilton Water Division  
and  
**CITY MANAGER'S OFFICE**  
**Legal and Risk Management Services Division**

<b>TO:</b>	Mayor and Members General Issues Committee
<b>COMMITTEE DATE:</b>	February 13, 2020
<b>SUBJECT/REPORT NO:</b>	Chedoke Creek Ministry Order Update (PW19008(g)/LS19004(f)) (City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
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<b>SUBMITTED BY:</b>  <b>SIGNATURE:</b>	Andrew Grice Director, Hamilton Water Public Works Department
<b>SUBMITTED BY:</b>  <b>SIGNATURE:</b>	Nicole Auty City Solicitor Legal and Risk Management Services

**Discussion of Appendix B of this report in closed session is subject to the following requirement(s) of the City of Hamilton's Procedural By-law and the *Ontario Municipal Act, 2001*:**

- **Litigation or potential litigation, including matters before administrative tribunals, affecting the City**
- **Advice that is subject to solicitor-client privilege, including communications necessary for that purpose**
- **A position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board**

## **RECOMMENDATION(S)**

- (a) That Report PW19008(g)/LS19004(f) be received; and,
- (b) That the Legal Opinion of Rosalind Cooper attached as Appendix “B” to Report PW19008(g)/LS19004(f) respecting the ongoing investigation and potential litigation remain confidential and not be released as a public document.

## **EXECUTIVE SUMMARY**

This Report PW19008(g)/LS19004(f) contains information relating to the potential contamination of Chedoke Creek as a result of the discharge from the Main/King Combined Sewer Overflow (CSO) tank. More specifically it provides the following:

- An update on the status of the Director’s Order served on the City of Hamilton (City) by the Ministry of the Environment, Conservation and Parks (MECP);
- A summary of the consultant report, provided by SLR Consulting (Canada) Ltd. (SLR), titled “Ecological Risk Assessment, Chedoke Creek” required in the Director’s Order, outlining the results of Ecological Risk Assessment (ERA) for the specified study area of Chedoke Creek, attached as Appendix “A” to Report PW19008(g)/LS19004(f);
- The City’s decision on appropriate remedial actions, based on the results of the ERA that will be outlined in a letter that will be submitted to the MECP on February 14, 2020, as required in the Director’s Order;
- Privileged and confidential legal advice and an update relating to the investigation into this matter by the MECP’s Investigations and Enforcement Branch (IEB) that may potentially result in regulatory litigation if charges are laid against the City and/or City staff, attached as Appendix “B” to Report PW19008(g)/LS19004(f).

The City has been served Director’s Order No. 1-MRRCX (Director’s Order) by the MECP on November 28, 2019, pursuant to their authority under the *Environmental Protection Act (EPA)* and the *Ontario Water Resources Act (OWRA)*.

The Director’s Order requires the City to, by February 14, 2020, submit a written report setting out the results of an ERA in regard to the impacts to Chedoke Creek (creek) from the Main/King CSO discharge that occurred between January 2014 and July 2018. It also requires a review and selection of preferred remedial option, with justification and associated implementation timelines.

The Director’s Order requires the City to, by May 1, 2020, submit a written report evaluating the impacts of the sewage discharge to Cootes Paradise, and any proposed remedial recommendations and actions with associated timelines.

Staff have worked closely with SLR to satisfy the requirements of the Director's Order and intend to submit a letter identifying the City's remedial option for Chedoke Creek to the MECP Director, with the SLR report appended, by the February 14, 2020 deadline.

The ERA was completed to assess whether metals, polycyclic aromatic hydrocarbons (PAHs), nutrients and bacteria (E. coli), collectively known as Contaminants of Potential Concern (COPC), found in Chedoke Creek pose unacceptable risks to aquatic life, amphibians and aquatic-dependent wildlife. The findings show that prior to and after the 2014 to 2018 discharge event, there were persistent elevated levels of COPC in the sediment. In surface water, nutrient and bacteria levels were higher during the discharge event, but decreased in the study area after the discharge, to levels at or below those observed prior to the discharge event. In addition, E. coli levels observed in 2018-2019, after the discharge, were lower in the study area than at some locations upstream of the Main/King CSO.

The ERA notes that given these findings along with disadvantages associated with direct removal (dredging), the requirement for remediation of the creek would appear unnecessary to address effects from the sewage discharge.

With regards to long term monitoring, Staff are working on an internal water quality program, in consultation with external stakeholders, that will improve our overall governance of urban watercourses that receive discharges from City infrastructure.

#### **Alternatives for Consideration – Not applicable**

#### **FINANCIAL – STAFFING – LEGAL IMPLICATIONS**

Financial: There are costs associated with the regards to the development and implementation of an internal water quality program. The scope and timing of the program will be more accurately determined following the appropriate consultation process. A Full Time Equivalent (FTE) for Hamilton Water has already been approved by Council and recruitment is underway.

There are also potential costs associated with any charges that may be laid by the MECP against the City and/or its employees and any other litigation that may arise, which are reviewed under the Legal implications section below.

Staffing: There are no staffing implications at this time.

Legal: Legal and Risk Management Services staff will continue to provide legal assistance as this matter unfolds.

## **HISTORICAL BACKGROUND**

### Provincial Orders:

The City has been served three orders related to Chedoke Creek. Provincial Officer's Order No. 1-J25YB (1st Order) was served on the City of Hamilton (City) by the MECP on August 2, 2018; Provincial Officer's Order No. 1-J3XAY (2nd Order) was served on the City by the MECP on November 21, 2019, and the subsequent Director's Order No. 1-MRRCX (Director's Order) was served on the City by the MECP on November 28, 2019, pursuant to their authority under the *Environmental Protection Act (EPA)* and the *Ontario Water Resources Act (OWRA)*.

As the Members of the General Issues Committee were advised verbally by Legal Services staff on November 20, 2019, and in Report PW19008(d)/LS1904(d) on November 27, 2019, the MECP issued the 2nd Order on November 14, 2019 that included requirements related to Cootes Paradise which was unexpected to the City and would require a significant extension to the timeline. The 1st Order issued to the City by the MECP and the consultant studies that followed had been restricted to the effect of the discharge on Chedoke Creek.

Accordingly, on November 21, 2019, the City filed a formal request that this 2nd Order be reviewed by the MECP, with the hope that the new language in relation to Cootes Paradise be removed, or the timeline for completion of work be extended. Appended to the City's request for review was an opinion from the City's technical consultant, SLR Consulting (Canada) Ltd. (SLR), regarding the constraints to the feasibility of the additional work.

The results of the review by the MECP were received by the City on November 28, 2019, in the form of a Director's Order which, in summary, maintains the intent of the 2nd Order with a deadline of February 14, 2020 for the report related to Chedoke Creek, and separates the requirements for Cootes Paradise, assigning a deadline of May 1, 2020.

The Director's order also requires the City to provide the MECP with written, biweekly progress updates. Bi-weekly meetings with the MECP are ongoing and the progress reports are being posted on the City's website.

Staff have worked closely with SLR to satisfy the requirements of the Director's Order and intend to submit a letter identifying the City's remedial option for Chedoke Creek to the MECP Director by the February 14, 2020 deadline. To assist with the response to the Director's Order, the City retained SLR to fill gaps identified in the peer review of the original assessment by Wood Environment and Infrastructure Solutions (Wood), which was submitted in response to the 1st Order. The Wood Report included information on

the physical characteristics and the quality of the sediment found at the bottom of Chedoke Creek, the aquatic invertebrates living in this sediment, the fish living in or migrating to Chedoke Creek and the quality of the water in the creek. However, according to the peer review findings only sediment quality had been used to evaluate whether conditions in the creek potentially caused adverse effects to aquatic life. For this reason, SLR recommended re-analyzing the data presented in the Wood Report along with collection of additional data to fill in the identified data gaps for completion of an Ecological Risk Assessment (ERA) to determine and recommend appropriate remedial action(s) in Chedoke Creek.

## **POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS**

N/A

## **RELEVANT CONSULTATION**

Hamilton Water staff have been working closely with Public Health Services, Legal and Risk Management and Corporate Communications staff regarding this matter. In addition, external legal counsel who is a specialist in environmental law, and has significant experience with environmental investigations and charges, has been retained to assist City staff as this matter progresses.

## **ANALYSIS AND RATIONALE FOR RECOMMENDATION(S)**

Ecological Risk Assessment (ERA) Results:

SLR, in response to the MECP Director's Order, prepared an aquatic ERA to assess the environmental impacts to Chedoke Creek from the Main/King CSO discharge that occurred between January 2014 and July 2018. The subject area is defined as the lower section of Chedoke Creek, parallel to Highway 403 between Glen Road and Princess Point.

The objective of the ERA was to evaluate the potential risks to aquatic plants and invertebrates, fish, amphibians and aquatic-dependent wildlife associated with exposure to Contaminants of Potential Concern (COPC) in sediment and surface water in the study area. The COPC evaluated in the report included:

- Metals (in sediment and surface water)
- Polycyclic aromatic hydrocarbons, PAH (in sediment only)
- Nutrients (in sediment and surface water)

Fecal coliforms including E. coli were identified as uncertain COPC in surface water and sediment as there are no screening benchmarks for the protection of ecological

receptors. E.coli levels were, however, assessed within the report as well, as they may indicate fecal contamination.

The risk assessment methods used were based on established procedures recommended by MECP and Environment Canada. Field sample results representing reasonable spatial coverage were used to determine current exposure to selected ecological receptor groups/species, which included:

- 22 sediment samples (collected by Wood in 2018 and SLR in 2019)
- 8 surface water samples (collected by SLR in 2019)

Relevant sediment and surface water data was used to discuss trends prior to and following the Main/King CSO discharge event. SLR produced a series of calculations and analyses to determine the degree to which aquatic ecological receptors were likely exposed to COPC and an evaluation of the adverse effects posed by the COPC. The results of the analyses indicated that potential risks to aquatic life and amphibians exposed to surface sediment were negligible for select nutrients and negligible to low for metals. The analyses also identified potential low, moderate or high risks, depending on the location in the creek, for aquatic life and amphibians exposed to select PAHs in surface sediment. PAHs were identified as the risk drivers among the COPC.

The findings of the ERA indicate that elevated concentrations of COPC (PAHs, metals, nutrients and bacteria) have been a persistent and ongoing issue in Chedoke Creek sediment and/or surface water prior to and after the 2014-2018 discharge event, including in areas upstream of the Main/King CSO. These observations are consistent with the fact that Chedoke Creek is predominantly an urbanized watershed that has been altered over time as a result of intense urban development and continues to be subject to numerous point source (e.g., CSOs, stormwater outfalls) and nonpoint source discharges (e.g., highway runoff, runoff from urban and industrial areas). Comparable conclusions were also made in a report completed by Wood (MECP Order # 1-J25YB Item 1b Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report, City of Hamilton, January 24, 2019).

For the above reasons, the ERA notes that it is not possible to target remediation to COPC and sediments solely associated with the 2014-2018 Main/King CSO discharge. However, SLR evaluated four feasible remediation options to address potential risks, which were originally provided in the Wood 2019 report:

- Physical capping – applying cover of clean material over contaminated sediment;
- Chemical inactivation – use of a chemical to bind with phosphorus in sediment to reduce the release of it from sediment into the water column;
- Direct removal – hydraulic dredging of organic sediment;
- No action.

A technical analysis of these options was completed. A detailed review of the direct removal option found that the disadvantages outweighed the advantages. Key disadvantages of direct removal include potential disruption of aquatic habitat (including for species of potential concern), and it only provides short term benefits as Chedoke Creek continues to operate as an urban watercourse.

Options to remediate and monitor the creek, per Item 1 of the Director's Order, were contingent on the assessment of impact. Information available for review in the ERA showed nutrient contamination and phosphorus loading typically associated with sewage discharge have reduced and are comparable to pre-discharge levels, indicating no apparent and persistent impacts in Chedoke Creek resulting from the sewage discharge spill event. Given these findings, the requirement for remediation of the creek would appear unnecessary to address the effects from the sewage discharge.

As a result of the findings of the ERA staff are supportive of consultant's recommendation to not remediate the creek as a direct result of the discharge from the Main/King CSO tank between January 2014 and July 2018. Staff intend to submit a letter identifying this decision to the MECP Director, with the SLR report appended, by the February 14, 2020 deadline.

With regards to long term monitoring, staff are working on an internal water quality program, that will improve our overall governance of urban watercourses that receive discharges from City infrastructure. Staff have reached out to representatives from stakeholders such as Hamilton Conservation Authority, HHRAP, Environment Hamilton and the RBG, in order to solicit feedback for this program, and to ensure communication lines between the City and our community partners remain open.

## **ALTERNATIVES FOR CONSIDERATION**

Not applicable

## **ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN**

### **Community Engagement and Participation**

Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

### **Healthy and Safe Communities**

Hamilton is a safe and supportive City where people are active, healthy, and have a high quality of life.

**Clean and Green**

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

**Built Environment and Infrastructure**

Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

**Our People and Performance**

Hamiltonians have a high level of trust and confidence in their City government.

**APPENDICES AND SCHEDULES ATTACHED**

Appendix “A” – Ecological Risk Assessment, Chedoke Creek SLR Consulting (Canada) Ltd. (SLR)

Appendix “B” – Legal Opinion of Rosalind Cooper