



INFORMATION REPORT

TO:	Mayor and Members City Council
COMMITTEE DATE:	July 5, 2021
SUBJECT/REPORT NO:	Chedoke Creek Order - Cootes Paradise Workplan (PW19008(m)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Cari Vanderperk (905) 546-2424 Ext. 3250
SUBMITTED BY:	Andrew Grice Director, Hamilton Water Public Works Department
SIGNATURE:	

COUNCIL DIRECTION

Not Applicable

INFORMATION

The City of Hamilton (City) was served Director's Order No.1-PE3L3 (Order) by the Ministry of the Environment, Conservation & Parks (MECP) on December 4, 2020, as a result of the Main/King Combined Sewer Overflow discharge that occurred between January 2014 and July 2018.

Chedoke Creek Workplan Update

The first part of the Order required the City to develop the Chedoke Creek Workplan, which was submitted to the MECP Director (Director) on February 22, 2021 and approved on June 11, 2021. It identifies the remedial strategy for targeted dredging in Chedoke Creek and as indicated by MECP, is a living document and subject to change as potential new information is discovered while executing the targeted dredging work.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

In advance of MECP approval, in order to mitigate any delays, the City started to execute low risk field activities as part of the proposed workplan. A status update on these activities is provided below:

Completed

- Topographic survey using LiDAR
- Sediment investigation field work
- Prequalification of contractors
- 30% design discussion with MECP and Royal Botanical Gardens (RBG)

Ongoing

- Species at risk field work
- Hydrologic and hydraulic modelling
- Indigenous Nations engagement
- Permitting and approvals consultation

Next steps consist of completing the ongoing work listed above while advancing into the 60% design stage which will include locating utilities, evaluating the method of dredging (hydraulic/mechanical) and dewatering techniques (passive/mechanical) along with location assessments of any Dredge Material Management Area (DMMA) including construction staging areas. It is also during this stage that the local community will be engaged while developing plans for trucking routes and odour control technologies.

Cootes Paradise Report Update

The second part of the Order required the City to develop the Cootes Paradise Report, which was submitted to the Director on March 22, 2021 and was also approved on June 11, 2021. It proposed the remediation and mitigation works to offset the impacts associated with the added nutrient loading to Cootes Paradise and the Western Hamilton Harbour Area, that cannot be recovered by dredging Chedoke Creek.

On February 21, 2020, prior to the Order being issued, Hamilton Water staff was directed by Council to “meet with RBG staff to review potential solutions to Chedoke Creek and report back to General Issues Committee (GIC) with their findings”. To complete this review, the Chedoke Creek Water Quality Improvement Study (Study) was initiated. As part of the study, internal and external stakeholders, including RBG, proposed solutions that could be technically analysed and evaluated amongst other water quality improvement solutions, on a more holistic watershed basis.

The Study resulted in a framework of projects to contribute to the overall health of the Chedoke Creek watershed. With the Order being issued to the City in December 2020, and the Study entering into the final reporting stage in January 2021, there was an opportunity to finalize the Study in a way to also proactively address some requirements

of the Order. Contributions from the Study were included in the development of the Cootes Paradise Report and subsequently will be applied in the development of the Cootes Paradise Workplan.

An update on the Study was provided to Public Works Committee (PW20083) on December 7, 2020, shortly after the Order was issued and was summarized during the March 17, 2021 GIC meeting (PW19008(k)), prior to the submission deadline of the Cootes Paradise Report to the MECP. Of the projects recommended in the Study, a subset have been identified as priority works directly related to helping to address the Order. Remaining projects recommended in the Study are being evaluated independently and will be incorporated into the capital budgeting process. The Study was finalized by GM BluePlan Engineering Limited in April 2021 and is attached to Report PW19008(m) as Appendix "A". The final report of the Study will be distributed to the stakeholders who provided their input and will be posted to the City's website.

Cootes Paradise Workplan Overview

The Order requires that within six weeks of MECP approval of the Cootes Paradise Report, the City shall submit a Cootes Paradise Workplan which outlines the detailed actions for the approved remediation and mitigation options for Cootes Paradise and the Western Harbour.

The Cootes Paradise Workplan, will be prepared by Wood Environment & Infrastructure Solutions (Wood) by the July 23, 2021 due date. The structure of the Cootes Paradise Workplan is, for the most part, outlined by the MECP in the Order, and is subject to MECP Director approval. As with the Cootes Paradise Report, the Cootes Paradise Workplan will consider priority projects identified by internal and external stakeholders in the Study. The projects under evaluation are shown in the table below.

Remediation/Mitigation Measures Under Evaluation

#	Project
Annual Nutrient Removal	
1	Lower Chedoke Combined EA Study Outcomes
2	Large Scale Floating Vegetative Mats
One-Time Nutrient Removal	
3	Sediment Nutrient Inactivation

**SUBJECT: Chedoke Creek Order - Cootes Paradise Workplan
(PW19008(m)) (City Wide) - Page 4 of 5**

#	Project
Point & Non-Point Annual Nutrient Removal	
4	Chedoke Watershed Stormwater Retrofit EA Study Outcomes
5	Ainsley Woods Sewer Separation EA Study Outcomes
6	Rehabilitate existing Highway 403 Culvert (Landfill)
7	Highway 403 Water Quality Improvements
8	Leachate Collection System Monitoring & Data Collection Outcomes
9	Golf Course – Runoff Management
10	Enhanced Salt Management – Highway 403
11	City – Enhanced Street Sweeping and Snow/Salt Management
12	Redevelopment Sites - Stormwater Management Policy
13	Wet Weather Flow in Separated Sewers – Policy/Future Infrastructure Projects
14	Retrofits for Road Rehabilitation Projects/Low Impact Development Best Management Practices Policy

For each shortlisted project, the Cootes Paradise Workplan will include information on data requirements, task descriptions, proposed timelines, detailed scope summaries and information on expected outcomes.

The three Master Planning Environmental Assessment (EA) studies identified in the table above, will involve a detailed environmental, social and economic assessment of opportunities to improve water quality and habitat conditions, in compliance with the *Environmental Assessment Act*. Each EA study will be completed concurrently with a one year expected completion timeline. Any alternatives identified will be evaluated through fieldwork, analysis (modelling) and agency/stakeholder/Indigenous engagement. This will ultimately lead to a set of additional projects, including implementation guidance associated with timing, capital budgets, and design requirements. It is anticipated that the RBG solution presented to Committee in 2020 will be evaluated as one of the projects during the Lower Chedoke Combined EA process.

It is important to note that the Order does not specify completion deadlines for the proposed initiatives identified in the Cootes Paradise Workplan. The estimated timelines to implement the proposed initiatives will be included in the Cootes Paradise Workplan

and are subject to MECP approval. Another requirement of the Order is the inclusion of nutrient loading offsetting calculations which will identify the proposed offset goal to achieve remediation and/or mitigation with respect to the approximate equivalent loadings from the sewage discharge. The proposed methodology is intended to address the added Total Phosphorus (TP) and Total Nitrogen (TN) loading from the discharge event.

In addition, the Cootes Paradise Workplan will include a monitoring plan to collect information on the efficacy of the proposed works. The monitoring data will offer insights into the need for any adaptive management to ensure the recovery and effectiveness of the mitigative works are realized to offset the added nutrient loading to Cootes Paradise and the Western Hamilton Harbour Area.

MECP approval of both the Chedoke Creek Workplan and the Cootes Paradise Report also included a requirement to implement short-term direct measures, in a timely manner, in areas around lower Chedoke Creek and Princess Point. Short term direct mitigation measures include ideas such as small-scale aeration systems or floating vegetated mats. The City and Wood are currently evaluating these technologies with the objective of deployment within the next 4 to 6 weeks.

Compliance with the first part of the Order represents a significant cost to the City. The preliminary estimate is \$6.2M, which includes the consulting services for the design and construction of the targeted dredging work in Chedoke Creek. Staff will return to Committee with a future report outlining more accurate costs and requesting authorization to access reserves to fulfil the requirements of the targeted dredging work. Likewise, as previously reported to GIC on February 17, 2021 (PW19008(j)), the City retained the services of Wood to satisfy the requirements of the Order. To date, Wood's services have been procured under a Policy 10 and are expected to exceed \$250,000.

Prior to submitting the Cootes Paradise Workplan to the MECP on July 23, 2021 staff will send a Communications Update to Council with a summary of the final details included within the workplan.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report PW19008(m) – Chedoke Creek Water Quality Framework Study, GM BluePlan Engineering Limited