




INFORMATION REPORT

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	March 17, 2021
SUBJECT/REPORT NO:	Chedoke Creek Order – Cootes Paradise Report (PW19008(k)) (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 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 CSO discharge that occurred between January 2014 and July 2018. The first part of the Order required the City to develop the Chedoke Creek Workplan, which was submitted to the Director on February 22, 2021 and identified the remedial strategy for targeted dredging in Chedoke Creek.

The second part of the Order requires the City to, by March 22, 2021, submit the Cootes Paradise Report, to propose remediation and mitigation works to offset the impacts associated with the added nutrient loading to Cootes Paradise and the Western Hamilton Harbour Area.

The Cootes Paradise Report, as prepared by Wood Environment and Infrastructure Solutions (Wood) and GM Blue Plan (GMBP), is attached to Report PW19008(k) as Appendix "A". The content of the report is, for the most part, outlined by the MECP in

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.

the Order, and is subject to MECP Director approval. Within six (6) weeks of the approval by MECP, the City is required to submit a Cootes Paradise Workplan which will outline the detailed actions and timelines for the approved remediation and mitigation options for Cootes Paradise and the Western Harbour.

In September 2020, prior to the Order being issued, the Chedoke Creek Water Quality Improvement Framework Study (Framework Study) was initiated by Hamilton Water. GM BluePlan was retained as the prime consultant, including advisory services from Jemma Consultants and Wood Environment and Infrastructure Solutions. That study's scope involved consolidating previous information and ongoing analyses related to remediation activities, integrating staff and stakeholder input, and launching a broad watershed level evaluation of potential improvements to the water quality of Chedoke Creek.

The Framework Study's mandate was not to address the requirements of the Order, but rather to more broadly establish a framework for assessing and implementing solutions which improve the water quality in Chedoke Creek, and by extension the receiving waters of Cootes Paradise and Hamilton Harbour. The requirements of the second part of the Order and the content of the Framework Study have commonality, hence it has been heavily relied upon to address the Order requirements. The Framework Study identified 39 project opportunities that were then further reviewed, screened and assessed as part of the Cootes Paradise Report, leading to a set of recommendations for consideration by the MECP.

It should be noted that the Framework Study is currently in final draft form, having been released for Stakeholder review in January 2021. As of February 26, 2021, final comments have been received from stakeholders which are now under evaluation by the City and its consultants. The MECP has also provided comments as it pertains to the Framework Study and its applicability toward satisfying the second part of the Order, through further discussions with the MECP the City has obtained their general support.

Cootes Paradise Report Overview

The Director's Order requires the City to submit a Cootes Paradise Report by March 22, 2021. The objectives of the report include detailing a series of short to long term solutions for improving water quality in Cootes Paradise and the Western Hamilton Harbour Area. The report includes a high-level evaluation of various proposed initiatives, as per the Framework Study and assesses their feasibility and establishes preliminary implementation strategies. The proposed initiatives were based on existing information and ideas generated through discussions with stakeholders, which was conducted during the Framework Study process; further consultation will be required through the implementation process associated with these initiatives.

The potential initiatives focus on restoration and mitigative works to offset the impacts associated with the added nutrient loading, primarily total phosphorus, associated with the Main/King CSO discharge that occurred between January 2014 and July 2018.

Summary of Consultation

Stakeholder engagement is a vital part of the process to address the requirements described in the Order. The City was able to leverage the benefit of having conducted broad stakeholder consultation through the previously initiated Framework Study which has allowed for an initial level of feedback on those options being considered to address the Order requirements. This consultation included discussions, meetings and correspondence with key stakeholders and agencies, including:

- Royal Botanical Gardens (RBG), with MT Planners (RBG Consultants)
- Hamilton Conservation Authority (HCA)
- Ministry of Transportation (MTO)
- Fisheries and Oceans Canada (DFO)
- Bay Area Restoration Council (BARC)
- Environment Hamilton (EH)
- Independent Indigenous Representatives
- Conservation Halton (CH)
- Hamilton Harbour Remedial Action Plan (HH RAP)
- MPP Hamilton West (Sandy Shaw)

Screening Process

Building on the approach from the Framework Study, the Wood/GMBP Team screened and reviewed potential solutions at a high-level and carried forward those with potential net benefits, specific to the requirements of the Order. This screening considered:

- Economics (from a life cycle perspective, including initial capital and operations)
- Extent and Type of Benefits (spatial extent, whether preventative, mitigative, or restorative)
- Implementation Needs (land, timelines, further studies and approvals)
- Effectiveness (basic nutrient loading mitigation/offset and water quality improvements)
- Visibility (public sensitivities and solution effectiveness in establishing objectives)

The screened solutions were then categorized into Near- and Long-Term Capital Programs, Near- and Long-Term Operations and Maintenance Programs and those related to Policy and Engagement. These categories were further subdivided for the express purpose of addressing the requirements of the Order into those works which

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would be considered normal or planned by the City to deal with infrastructure operations and capital upgrades and those works which would be considered additive or unplanned (“Added Value”).

Planned Works

As noted, planned works represent normal operations and maintenance programs and infrastructure renewals that are either already underway or scheduled/programmed to occur; these include:

Type	#	Project	Lead/Process
Near-Term Capital	1	Highway 403 Trunk Sewer Twinning	City
	2	Chedoke Creek Targeted Removal (First Part of Order)	
Long-Term Capital	3	Inlet Controls in Combined Sewer Areas	City - via Flooding and Drainage Master Servicing Study
		Sewer Separation	
	4	Expand Storage Elsewhere in System	City - via Water/ Wastewater/ Stormwater Master Plan
		Increase Capacity Downstream of Main-King CSO Tank	
Near-Term O&M	5	CSO Monitoring Improvements and Active Management	City
	6	Inspection and Repair – Facilities	
		Inspection and Repair – Trunk Sewers	
	7	Cross Connection Program	
	8	Wet Weather Flow in Separated Sewers – Targeted in Chedoke Watershed and broader Main-King Catchment	City - Initiate Inflow & Infiltration Monitoring
Long-Term O&M	9	Water Quality Program Management and Monitoring	City
Policy and Engagement	10	Low Impact Development Best Management Practices Policy / Stormwater User Rate	City

Unplanned (“Added Value”) Works

Unplanned works, or those deemed to potentially provide “added value” and benefits to the ecology and health of Cootes Paradise and the Western Harbour, represent

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activities that are not currently planned or programmed by the City or other stakeholders (e.g.; MTO) through any current initiative; these include:

Type	#	Project	Lead	
Near-Term Capital	1	Rehabilitate existing Highway 403 Culvert (Landfill)	MTO	
	2	Highway 403 Water Quality Improvements		
	3	Leachate Collection System Monitoring & Data Collection	City - Additional data required before any capital works	
	4	Aeration System (Major)	Based on RBG's 25yr Master Plan	City - via Lower Chedoke Master EA Study
		Constructed Wetland		
		Stream Naturalization		
Other Remediation and Mitigation Works				
5	Retrofits Throughout Watershed	City via Chedoke Watershed Stormwater Retrofit Master EA Study		
Long-Term Capital	6	Golf Course – Stream Naturalization	City	
	7	Expand/Fix Leachate Collection System (dependant of findings of item 3)		
	8	Lower Chedoke Master EA Capital Works	City – Scope conditional on the outcomes of each EA	
	9	Chedoke Watershed Stormwater Retrofit Master EA Capital Works		
Near-Term O&M	11	Golf Course – Runoff Management	City	
Long-Term O&M	12	Enhanced Salt Management – Highway 403	MTO	
	13	City Street Management – Enhanced Street Sweeping and Snow/Salt Management	City - Develop and Initiate Program	
Policy and Engagement	14	Engage Residents, Stakeholders, and City	City	
	15	Redevelopment Sites - Stormwater Management Policy	City - Develop Policy & Implement through	

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	16	Retrofits for Road Rehabilitation Projects / Low Impact Development Best Management Practices Policy	Future Projects
	17	Wet Weather Flow in Separated Sewers – Policy / Future Infrastructure Projects	









The Master Planning Environmental Assessment (EA) studies, specifically unplanned item numbers 4 and 5 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*. The alternatives identified in the respective EA studies, will be evaluated through fieldwork, analysis (modelling) and agency/stakeholder/Indigenous engagement. This will ultimately lead to a set of preferred projects, including implementation guidance associated with timing, capital budgets, and design requirements.

Monitoring Plan













The Order requires that a monitoring plan be developed to collect information on the efficacy of the proposed works. The monitoring data will then 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.

Schedule

The estimated timelines to implement the Policy and Engagement initiatives and the unplanned near-term remediation or mitigation measures is shown below. The selected initiatives have been chosen for their direct applicability toward satisfying the second part of the Order.





	Year 1	Year 2	Year 3	Year 4
Lower Chedoke Master EA Study*				
Chedoke Watershed Stormwater Retrofit Master EA Study**				
Golf Course – Runoff Management				

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Leachate Collection System Monitoring & Data Collecting				
Redevelopment Sites - Stormwater Management Policy	 			
Retrofits for Road Rehabilitation Projects / Low Impact Development Best Management Practices Policy	 			
Wet Weather Flow in Separated Sewers – Policy / Future Infrastructure Projects	 			
Rehabilitate existing Highway 403 Culvert (Landfill)	City	MTO		
Highway 403 Water Quality Improvements	   			

* Implementation of first recommendations – will be a medium-term ~5-year plan

** Implementation of first recommendations – will be a long-term ~20-year plan

 City endorsement to MTO
  EA Study / Monitoring
  Design/ Approvals
  Construction / O&M (dependant on scope)

Next steps

Submit the Cootes Paradise Report, attached to Report PW19008(k) as Appendix “A”, to the MECP and await comments for approval. Within six (6) weeks of final approval, develop, draft and submit the Cootes Paradise Workplan.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report PW19008(k) – Chedoke Creek Order – Cootes Paradise Report,
Wood Environment and Infrastructure Solutions