




Hamilton

INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	December 7, 2020
SUBJECT/REPORT NO:	Chedoke Watershed Improvement Evaluation (PW20083) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Mark Bainbridge (905) 546-2424 Ext. 5929 Christina Cholkani (905) 546-2424 Ext. 6234
SUBMITTED BY:	Andrew Grice Director, Hamilton Water Public Works Department
SIGNATURE:	

COUNCIL DIRECTION

Not Applicable

INFORMATION

The City of Hamilton has been a partner in the Hamilton Harbour Remedial Action Plan since very early in its development. Over the course of many years working with stakeholders, a number of key projects are ongoing, or have been completed by the City of Hamilton (City) that currently provide positive benefits to our local watersheds. Since 1988, the City has invested over \$550M towards projects benefitting receiving waters, with approximately \$52M of those funds directed specifically to projects mitigating environmental impacts to Chedoke Creek and/or Cootes Paradise. Our work in this regard goes beyond the regulatory requirement for managing wastewater systems, in order to address more stringent goals under the Remedial Action Plan (RAP) process for Hamilton Harbour.

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.

Historically, focus has been placed on point sources of pollutants affecting local waters, for example combined sewer overflows, regulated plant discharges, or accidental spills. In more recent years, attention has been focussing more on non-point sources of material in conjunction with efforts to study non-point source contributions by the Hamilton Harbour RAP process. Non-point pollution sources, in the context of surface water quality, generally refers to stormwater runoff, which picks up various pollutants along its path and discharges to surface water throughout the watershed rather than at specific points. Hamilton Water has been proactively working on initiatives to look at these non-point sources affecting the broader watershed.

On February 21, 2020, Hamilton Water staff were directed by Council to “meet with Royal Botanical Gardens (RBG) staff to review potential solutions to Chedoke Creek and report back to General Issues Committee (GIC) with their findings”. To complete a wholesome review, a Chedoke Creek Water Quality Improvement Study was initiated by Hamilton Water, and included a number of external stakeholders in which RBG’s proposed solutions could be technically analysed and evaluated amongst other water quality improvement solutions on a more holistic subwatershed basis. This effort was developed in conjunction with the ongoing events surrounding Chedoke Creek, with the intent of a broader proactive focus.

Project Scope

In June, the Chedoke Creek Water Quality Improvement Study was initiated with the following objectives:

- Develop a series of short to longer term solutions for improving water quality in Chedoke Creek
- Engage internal and external stakeholders and facilitate solution development
- Technically evaluate solutions to determine feasibility and implementation strategies.

A multidisciplinary team consisting of GM BluePlan, Jemma Consultants and Wood Canada Ltd. was retained to provide best value services in achieving the above objectives. The project kicked off in September 2020 with a meeting that brought all of the project team players together.

The project approach at a high level includes: a background review of materials from the City and external stakeholders, a series of engagement workshops, solution compilation and technical evaluation, then ultimately a report outlining a proposed program framework for project implementation.

Stakeholder Collaboration

The stakeholders involved in this study are representatives from various internal (Public Works) and external groups, selected based on previous involvement in similar environmental initiatives. All groups have been contacted with initial and ongoing project information, with a majority participating in the online engagement workshops held to date. A list of the external consulted groups is shown in Table 1, below.

Table 1: Stakeholder Group

Stakeholder Group
Bay Area Restoration Council
Conservation Halton
Environment Hamilton
Fisheries and Oceans Canada
Hamilton Conservation Authority
Hamilton Harbour Remedial Action Plan
Indigenous Water Walker representatives
Ontario Ministry of Transportation
Royal Botanical Gardens (with MT Planners, Consultant)

To date, the following key milestones have been completed:

- September 21, 2020 - Project kick-off, with the project consultant team and various Hamilton Water internal stakeholders
- September 25, 2020 - Creek site visit with RBG
- September - October 2020 - Background review, including a set of over 80 documents (which is ongoing as additional documents are received from external stakeholders)
- October 27, 2020 - External Stakeholder Workshop #1, in which the project objectives were introduced, and initial comments were discussed
- November 4, 2020 - Internal Stakeholder Workshop #1, in which a first draft of potential solutions was introduced and discussed with internal stakeholders based on background review and the results of the first external workshop
- October - November 2020 - Compilation of a draft program framework

External Workshop #2 is scheduled for December 2, 2020, which is the final formal engagement point with external stakeholders for this assignment. The objective of this workshop is to present the preliminary framework vision and solutions developed by the consultants and to gather stakeholder feedback. This meeting will include the participation of Hamilton Water senior leadership to bridge the gap between 'internal' and 'external' stakeholder engagement.

Evaluation of Options

A long list of various water quality improvement solutions are being considered as a result of inputs and ideas generated through discussion with stakeholders and the technical expertise of the firms hired for this work. It should be noted that the technical evaluations of these options are still ongoing and prioritization or conclusive recommendations have not yet been made. The solutions include RBG's recommendation (of naturalization/floating wetlands and mechanical aeration at the mouth of Chedoke Creek), along with a series of others under the following three broad categories:

Capital Works:

- Capital improvements to the landfill and/or culvert at Kay Drage Park;
- Creek works such as constructed wetlands, floating wetlands, mechanical aeration, general naturalization, sediment capping, chemical inactivation or hydraulic dredging;
- Infrastructure improvements such as combined sewer separation (i.e. new storm sewers), sewer capacity upgrades, combined sewer overflow (CSO) tank capacity upgrades, new CSO tanks, continuation of cross connection program, new end of pipe or source stormwater management; and,
- Additional stormwater management by/for Ministry of Transportation (MTO) highway runoff contribution.

Operational Procedures:

- Inspections and state of good repair works at CSO tanks;
- Operation of Real Time Control Phase 2 for enhanced control and monitoring of combined sewer flows; and,
- Enhanced street sweeping.

Policy and Engagement:

- Requirement of Low Impact Development for road reconstruction projects;
- Stormwater user rate and/or incentive programs; and,
- Transparency in water quality monitoring programs, events, tours, educational outreach for internal City staff and residents.

The suite of solutions will be evaluated based on effectiveness, cost, implementation feasibility, and visibility. The criteria for effectiveness will be as quantitative as possible, e.g. how the solution impacts the frequency of combined sewer overflow events, permanency of solution effectiveness, the percent of urban runoff area receiving treatment, the percent area of creek channel naturalized, the predicted reduction of a

**SUBJECT: Chedoke Watershed Improvement Evaluation
(PW20083) (City Wide) - Page 5 of 5**

pollutant loading to the creek (e.g. phosphorus), etc. Cost will be evaluated from a life cycle perspective, including initial capital and ongoing operations and maintenance. Implementation will consider land ownership, required timelines, further studies and approvals. Visibility will consider public perceptions of the solutions and how effectively a solution can demonstrate progress in the subwatershed.

The benefits of the projects that will be recommended within this study will be both short term (1-2 years) and long term (10+ years) in improving the water quality of Chedoke Creek, and consequently Cootes Paradise. The consultants have defined this study as a first step, “Establishing the Roadmap”, towards achieving a long-term vision of a restored environment in Chedoke Creek. The study recommendations will provide the City with a suite of projects beneficial to the Chedoke Creek subwatershed, allowing for quick mobility and flexibility in implementation.

Next steps for this project include completing two more workshops (one external, one internal), completion of the solutions evaluation and a compilation of the recommendations into a summary report. The anticipated completion of the remaining scope for this project is expected for February 2021. Finalized conclusions will provide the basis for future decisions to be made moving forward with actions that will translate to positive watershed benefits in the future. These efforts will continue the progress that has been made over many years in Hamilton to improve Harbour Water quality.

APPENDICES AND SCHEDULES ATTACHED

None.