



SUBJECT: Hamilton Harbour remedial action plan

TO: Committee of the Whole

FROM: Capital Works

Report Number: CW-47-17

Wards Affected: 1, 2 and 3

File Numbers: 580-11

Date to Committee: September 25, 2017

Date to Council: October 10, 2017

Recommendation:

Receive and file capital works department report CW-47-17 regarding the Hamilton Harbour Remedial Action Plan.

Purpose:

A Healthy and Greener City

- Healthy Lifestyles
- Environmental and Energy Leadership

An Engaging City

- Good Governance

Background and Discussion:

The Hamilton Harbour Remedial Action Plan has been ongoing since stakeholders first met in 1985 to consider the condition of the harbour. Since that time, much work has gone on to improve the environmental conditions of the harbour. In simple terms, the water quality is about twice as good as it was in the 1980s and the fish and wildlife conditions and habitat have improved considerably. The end goal of the Remedial Action Plan is to reach a point where the condition of the area is sufficiently improved to be removed from a list of sites on the Great Lakes known as "Areas of Concern".

Hamilton Harbour Remedial Action Plan (HHRAP) set up “Urban Runoff Task Groups” for Burlington and Hamilton with municipal, conservation authority, provincial, federal, Royal Botanical Gardens and community stakeholder representatives. The appended report is a collective overview of local stormwater management practice and it contains recommendations for opportunities to change. The recommended changes are not unique to this area, but are in line with changes already occurring in the understanding, practice, and resourcing of stormwater management throughout Ontario and North America. Stormwater management is undergoing an evolution. Historically, conveyance was the main focus of stormwater management (i.e.: efficiently collecting rain water and moving it quickly through pipes and channels to enter creeks and larger water bodies). It is now recognized that using ways to mimic a natural landscape and infiltrate rain where it falls will slow it down, provide opportunities for removal of excess nutrients and sediment, and decrease the potential for flooding. This practice is referred to as “Low Impact Development” or LID.

The key categories of recommendations from the Urban Runoff Burlington Task Group include:

- updating guidance and manuals;
- providing training;
- expanding implementation and maintenance of public and private stormwater facilities; and
- creating a stable and equitable financial model for stormwater.

This evolution in stormwater management is in line with the visions of the City of Burlington, Conservation Halton, and the Hamilton Harbour Remedial Action Plan. When stormwater management is done well, flooding will be reduced and nature will thrive with cleaner streams and lakes; when it fails, flooding occurs, streams struggle to sustain health and receiving water quality is impaired. Hamilton Harbour, the City of Burlington and Conservation Halton will benefit from this evolution to stormwater management as the harbour continues to strive to achieve delisting and become a vibrant centerpiece for the community.

For the first time in 100 years the quality of the water in Hamilton Harbour will soon be determined by its watershed runoff. By 2021 upgrades to wastewater treatment plants will be complete and no longer will impacts from the watershed be masked by wastewater effluent. The hundreds of millions of dollars invested in wastewater treatment upgrades won't on their own be enough to make sustainable changes in harbour water quality. If Hamilton Harbour is to be delisted as an Area of Concern, urban runoff will need to have lower phosphorus and sediment levels.

Strategy/process

The following is a summary of the recommendations included in the Hamilton Harbour Remedial Action Plan, dated October 20, 2016 (Appendix A). The responses identify jurisdictional responsibilities as well as ongoing or future actions recommended to be undertaken by the City of Burlington, Conservation Halton, Halton Region and the Province of Ontario.

Recommendations for Evolution of Stormwater Management Approach and Design

REPORTS & MANUALS

- B1) It is recommended that the Province of Ontario complete development of the Low Impact Development (LID) Guidance Manual to complement the current MOECC Stormwater Planning and Design Manual.

Response: The Province of Ontario is expected to release an LID guidance manual before the end of 2017. Capital Works will be incorporating recommendations from this manual in the development of new Stormwater Design Guidelines.

- B2) It is recommended that the Province of Ontario provide guidance with respect to the stormwater volume reduction that may be possible through crediting LID techniques as part of a treatment train approach to stormwater management, particularly implications for designing stormwater management wet ponds.

Response: Province of Ontario action item.

- B3) It is recommended that the Province of Ontario review the existing building code to include recommendations that support and/or promote implementing LID techniques for buildings and structures subject to the building code.

Response: Province of Ontario action item.

- B4) It is recommended that the City of Burlington, in consultation with Conservation Halton, develop or update the stormwater management manual and Master Plans for development in Burlington based on the Province of Ontario's LID Guidance Manual, the 2003 MOECC Stormwater Planning and Design Manual, and other relevant references.

Response: The manual development is currently in progress. As noted above, LID concepts will be included in the City's new Stormwater Design Guidelines. They will be based the new provincial document to be released later this year.

- B5) It is recommended that the City of Burlington and the Region of Halton develop LID guidance for reconstruction of urban roads based on LID stormwater management techniques developed by the Province, other municipalities, and Conservation Authorities.

Response: Halton Region will be consulted. The City does consider LID opportunities during road reconstruction, where feasible. Capital Works - Design & Construction has already incorporated LID's in their designs which include bottomless catch-basins, infiltration trenches, soak away pits, permeable pavers rain gardens, perforated pipes and Silva-Cell tree planting.

- B6) It is recommended that the City of Burlington and Conservation Halton review their watershed basin reports and develop a list to identify updates and priorities.

Response: The City is currently working with the Conservation Halton to coordinate the updating of creek stormwater models. Models for Roseland, Tuck and Sheldon Creeks are currently being updated by the City. Conservation Halton is currently reviewing Grindstone Creek.

- B7) It is recommended that the City of Burlington adopt a policy to maintain to the greatest extent possible infiltration through the road and swale system in Aldershot for existing, redevelopment, and new development and to utilize LID techniques for stormwater management.

Response: This is currently in practice and recommendations to continue the practice will be included in the updated Stormwater Design Guidelines. Current construction practices within Aldershot have included LID's (most recently the reconstruction of Townsend Avenue).

PROGRAMS

- B8) It is recommended that the Conservation Halton water quality monitoring program and the associated aquatic monitoring and terrestrial monitoring program continue and be expanded to ensure a thorough understanding of water quality issues from headwaters to Grindstone Creek Marshes/Hamilton Harbour.

Response: Conservation Halton action item.

TRAINING & EDUCATION

- B9) It is recommended that the City of Burlington, the Region of Halton, Conservation Halton, and the Province of Ontario develop a local workshop/conference for the development industry and practitioners to share new LID guidelines, LID construction and design tools, LID maintenance, and resources.

Response: The City will consult with Halton Region, Conservation Halton and the Province regarding this recommendation.

- B10) It is recommended that the City of Burlington, with support from the Province of Ontario, create and implement a training program in LID, SWM, and maintenance for municipal engineers, planners, building department staff, and maintenance operations staff (Parks and Rec, Roads and Parks Maintenance, etc.) involved in all stages of development to ensure full integration of changes/updates to LID and SWM guidelines and manuals.

Response: The City will consult with the province. LID courses through the HHRAP took place in February/March 2017. Additional courses are being planned for 2018.

- B11) It is recommended that the Region of Halton, with support from the Province of Ontario, create and implement a training program in LID, SWM, and maintenance for engineers, planners, and maintenance operations staff (Roads and Parks Maintenance, etc.) involved in all stages of development to ensure full integration of changes/updates to LID and SWM guidelines and manuals.

Response: Halton Region action item.

- B12) It is recommended that Conservation Halton, with support from the Province of Ontario, create and implement a training program in LID, SWM, and maintenance for its engineers, planners, enforcement, and ecology staff involved in all stages of development to ensure full integration of changes/updates to LID and SWM guidelines and manuals.

Response: Conservation Halton action item.

Recommendations for maintenance and opportunities to improve the existing stormwater system

REPORTS & MANUALS

- C1) It is recommended that the Province of Ontario include guidance regarding the frequency of quantity and/or quality monitoring of stormwater management infrastructure.

Response: The City currently has a comprehensive stormwater management pond maintenance program that has been in place since 2009. The City would welcome additional input from the province.

PROGRAMS

- C2) It is recommended that the City of Burlington inventory the area to confirm and update location and ownership of all stormwater management infrastructure and Oil & Grit Separator (OGS) systems on municipal and where possible private lands.

Response: The Asset Management group in Capital Works, in coordination with the Site Engineering group, update this GIS data on a regular basis.

- C3) It is recommended that the City of Burlington, in collaboration with Conservation Halton, develop a monitoring program to examine the functioning of stormwater management facilities to determine if they are addressing water quality requirements, functioning as designed, and if their performance can be optimized.

Response: Initial discussions with Conservation Halton have taken place. A review of the requirements of a monitoring program is required and will be undertaken.

- C4) It is recommended that the City of Burlington, within the Hamilton Harbour watershed, explore increasing frequency of maintenance to improve the efficiency of their catch basin cleaning program and explore addition of catch basin technologies to optimize performance.

Response: RPM follows a 4 year cleaning cycle for the entire City. The feasibility of increasing the frequency of cleaning within Aldershot is being reviewed with RPM.

- C5) It is recommended that the City of Burlington and Conservation Halton continue to update and maintain an inventory of erosion sites within the City and CA owned creek blocks and prioritize appropriate remedial actions.

Response: A 5 year cycle of comprehensive creek inspections is in place to identify erosion and debris locations as well as to identify infrastructure deficiencies and maintenance requirements.

Recommendations for Evolution of Stormwater Infrastructure Funding

- D1) It is recommended that the Province of Ontario provide guidance and direction for new financial models that allow stormwater infrastructure to be separately and predictably funded.

Response: Province of Ontario action item.

- D2) It is recommended that the City of Burlington examine a municipal financial model for stormwater management based on an equitable rate structure for a stable funding source.

Response: A preliminary review of a Stormwater User Fee was initiated in 2014. Stormwater infrastructure inventory and renewal needs have been included in the city's Council approved Asset Management financing plan. Further review regarding a Stormwater User Fee has been postponed for reconsideration in the next term of Council.

Recommendations for Evolution of Stormwater Management on Private Properties

REPORTS & MANUALS

- E1) It is recommended that the City of Burlington investigate and explore measures to ensure maintenance is carried out by private industrial, commercial, and institutional landowners to ensure the efficiency of all private stormwater management facilities and private Oil & Grit Separator (OGS) systems are maintained.

Response: Site Engineering has instituted a program for tracking the operation of 299 private OGS systems. A confirmation program is in place with the landowners.

- E2) It is recommended that the Province of Ontario provide updated guidance for storm sewers and include requirements related to nutrients for incorporation into municipal sewer use bylaws.

Response: Province of Ontario action item.

- E3) It is recommended that the City of Burlington review their Storm Sewer Discharge By-law regarding including a limit for total phosphorus and total suspended sediment discharged into storm sewers.

Response: An initial review of the Storm Sewer Discharge By-law has been completed. Target limits recommended by HHRAP for total phosphorus and total suspended sediment are currently being reviewed.

PROGRAMS

- E4) It is recommended that the City of Burlington, the Region of Halton, Conservation Halton, and local community groups provide and/or expand programs for social incentives to recognize community participation in sustainable stormwater management and the adoption of LIDs (e.g. awards, recognition programs).

Response: No such program is in place at this time. To be considered in the future.

- E5) It is recommended that the numerous existing outreach and education programs being delivered currently by Conservation Halton, the City of Burlington, the Region of Halton, and local non-profit agencies be enhanced and ensure that collaboration in these initiatives occurs.

Response: Enhancement opportunities will be examined.

- E6) It is recommended that the City of Burlington, the Region of Halton, and Conservation Halton investigate the opportunity to develop an incentive program to encourage the use of LIDs on private lands.

Response: To be reviewed with Halton Region and Conservation Halton.

TRAINING & EDUCATION

- E7) It is recommended that local government and community groups in the Hamilton Harbour Watershed collaborate on stormwater stewardship outreach and education initiatives to maximize effectiveness of messaging to urban residents

to promote acceptance and implementation at the lot level to address urban stormwater runoff.

Response: The City and province have assisted with the funding of the Home Flood Protection Program, being coordinated by the Intact Centre on Climate Adaptation at the University of Waterloo (\$50,000 was approved for funding by City Council in 2016). This is an outreach program that provides residents with the opportunity to receive a home inspection and recommendations on ways to reduce their risk of flooding. Lot level stormwater runoff is one of the focuses of this program.

Additionally, Capital Works staff have assisted Conservation Halton staff with the presentation of resident workshops called “Healthy Neighboursheds – Homeowner Workshop Series”. This provides residents with LID landscaping and Rain Garden design suggestions.

Options considered

Capital Works staff have been directly involved with the Hamilton Harbour Remedial Action Plan. Our staff has provided input to the studies and reports developed by this committee.

Financial Matters:

The recommended works are currently being incorporated into the existing and future Capital Works program.

The Stormwater Engineering group has ongoing projects referred to as “Stormwater Quality Control Improvements” and “Stormwater Management Pond Refurbishment” that include work related to some of the above recommendations.

The Site Engineering group reviews LID components of the stormwater design. Where feasible, LID’s are included in the design.

The Design and Construction group also incorporates LID components in road reconstruction projects where feasible.

With respect to the possibility of increasing the catch basin cleanout frequency in Aldershot, RPM staff will be consulted to review the effectiveness of the current cleanout program, if increasing the frequency would be of benefit and what the cost implications would be.

Total Financial Impact

Additional capital funds are not required at this time.

Public Engagement Matters:

Capital Works staff have established a webpage which includes the Hamilton Harbour Remedial Action Plan (Oct. 20, 2016) report as well as this staff report.

Outreach and education through updates to our webpage, Take Action Burlington blogs, social media and community networks will be provided as we work through the implementation of the various recommendations.

Conclusion:

Where the HHRAP recommendations are directly related to works that are a part of our capital program, Capital Works staff are incorporating the recommendations into capital projects. Capital Works will also coordinate with Conservation Halton and other agencies regarding the remaining recommendations to coordinate future action plans.

Respectfully submitted,

Cary Clark, P.Eng.

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Appendices:

- A. Hamilton Harbour Remedial Action Plan - Urban Runoff Burlington –
Report and Recommendations - October 20, 2016

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Report Approval:

All reports are reviewed and/or approved by Department Director, Director of Finance and Director of Legal. Final approval is by the City Manager.