



INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	June 17, 2019
SUBJECT/REPORT NO:	Hamilton's Beaches (PW19057) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
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SIGNATURE:	

COUNCIL DIRECTION

On May 23, 2018, Council received Report BOH16008(b) and provided staff with the following direction regarding the Suitability of Bayfront Beach as a Public Beach:

That the General Manager of Public Works report back to the Public Works Committee on permanently addressing the suitability of Hamilton's beaches in consultation with Public Health.

INFORMATION

At the May 14, 2018 Board of Health meeting, staff reported on activities completed in 2017 in support of recommendations from the Bayfront Beach Water Quality Investigations Study ("Beach Study") for the rehabilitation and maintenance of Bayfront Park Beach to achieve reliable safe water quality for swimming (report BOH16008(b)).

The purpose of this report is to inform Council of the outcome of direction given to staff on permanently addressing the suitability of Hamilton's beaches; specifically, those within Hamilton Harbour at Bayfront Park and Pier 4 Park.

The Beach Study has concluded that undertaking further remedial efforts to restore the beach for swimming is not currently practicable due to the inability to control Blue-Green Algae (BGA). In response, the Study Team is proposing that a BGA Strategy be

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developed that would assist experts and decision-makers in the implementation of mitigation measures to address the algae problem such that the harbour beaches could achieve reliable safe water quality for swimming in accordance with Hamilton Harbour Remedial Action Plan (HHRAP) targets. In the interim, the Beach Study recommends investigating other opportunities for swimming such as deep-water swimming in the harbour.

➤ Background

Water quality problems at the beaches are caused by E.coli contamination from waterfowl and toxic cyanobacteria from algal blooms which form in the harbour during the summer and migrate to shore. They are separate and distinct issues that contribute to water quality at the beaches that, for the majority of the swimming season in recent years, does not meet provincial standards.

To address the water quality issue, the Beach Study recommended a set of interventions to reduce the impact of both E.coli and toxic cyanobacteria. Bird control enhancements were implemented and demonstrated the ability to reduce E.coli contamination and improve water quality, but a pilot project designed to control cyanobacteria (Blue-Green Algae or BGA) proved ineffective. With results of the pilot and the benefit of having subject experts on the Study Team, staff learned that seasonally excessive BGA represents the new norm in the harbour and elsewhere in the Great Lakes and that without a practical way to control them it is unlikely that there will be a consistent and verifiable improvement in water quality even with significant reduction in E.coli contamination of the beach.

➤ Work Toward a Permanent Solution

Subsequent to Council direction in May 2018, the Study Team met with subject matter experts in provincial and federal ministries and key staff to discuss the scope of work generated from recommendations of the Beach Study. In particular, the intention was to get insights and support on options given the worsening trends related to cyanobacteria, and what are otherwise described as Harmful Algal Blooms (HABs) and discuss opportunities to develop a strategy to potentially manage them such that water quality could be improved and eventually become suitable for swimming at the harbour beaches.

Key stakeholders included in the ongoing discussions include:

- City of Hamilton Public Health Services and Public Works
- Ministry of Environment, Conservation, and Parks (MECP)
- Hamilton Harbour Remedial Action Plan Office (HHRAP Office)
- Environment and Climate Change Canada (ECCC)
- Bay Area Restoration Council (BARC)
- Hamilton Waterfront Trust (HWT)

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Given the emergence of HABs as a harbour-wide concern as it relates to health of the harbour and the ability to delist it under Hamilton Harbour Remedial Action Plan (RAP) stakeholders agreed to focus on a coordinated approach to data collection and management, operational planning and response, and communication.

➤ Next Steps

The goal to find a permanent solution for the swimmable beaches in the harbour is one that intends to address both the interests of the public who want clean water to swim in and that of the broader community as it relates to the delisting of the harbour. To solve the localized problem at the beaches, a better understanding of the broader issues centered on the ability to control and manage HABs is required.

Given the complexities of the harbour ecosystem combined with ongoing efforts being made to improve conditions in the harbour (e.g. Woodward plant upgrades) a definitive date cannot be provided for finding a solution. A solution, if there is one, will require time through a focused effort to better understand the effects of ecological changes in the harbour by tracking and monitoring algal blooms.

This will require a coordinated approach with key stakeholders including the City of Hamilton, ECCC, MECP, DFO, BARC, and the HHRAP Office. In that regard, staff is continuing discussion with experts and stakeholders to further scope the development of a HAB strategy that is focused on:

1. Data Collection and Management

- Enhanced monitoring of the presence of HABs to establish a baseline to which the effects of changes being implemented in the harbour can be measured.
- Establishing an early warning system to inform decision makers on beach closures and other matters that could affect human health and/or the economy.

2. Operational Planning and Response

- The use of data to inform planning of future remedial efforts (e.g. goal for swimmable beaches) and how we respond to trends and specific events that affect the use of City's public amenities (e.g. removal of algal blooms along the West Harbour shoreline) as well as planned investment in waterfront renewal.

3. Communication

- The use of data to better inform the public about changes in the ecological conditions of the harbour (e.g. early warning system).
- Keeping the public informed about ongoing successes (and setbacks) as it relates to the health of the harbour and water quality.

Going forward, staff intends to continue investigating recommendations from the Beach Study to address the public's desire for swimming in the harbour. This includes revisiting

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interim uses for the beach until a permanent solution is found and investigating opportunities for deep water swimming that can provide a suitable alternative to swimming at the beach.

Relevant background to the work completed to date including an overview of the Beach Study, discussion of the broader issues related to delisting of the harbour, and results of a key stakeholder meeting in November 2018 as outlined in report PW19057 as Appendix "A". The meeting was critical in focusing the discussion and consensus on a coordinated approach to finding solutions to the HAB problem.

➤ **City's Response to Algal Blooms in 2018**

In 2018 the beaches were not the only areas affected by algae. Seasonally problematic typically starting in July, the marinas at Macassa Bay and Piers 5-7 experienced the most intense algae blooms that many have seen.

It's become a significant issue as the City is investing multi-millions of dollars in redevelopment of the waterfront and as such it will be important for the City to employ good practices in controlling the presence of algae so that it doesn't become a detriment to the City's vision for the waterfront.

Typically, the nuisance of algae is handled with in-water bubblers that disrupt the water and prevent algae from forming along the shoreline; however, 2018 was so significant City forces had to respond by vacuuming the algae from the surface along the water's edge using hydro-vac trucks typically used for cleaning manholes. While effective, this procedure cost approximately \$45,000.

In addition to the potential for being toxic, algal blooms are unsightly and often associated with the stench of decay so if not managed appropriately, the waterfront could lose its appeal as a place to visit recreationally. As is done with bird control, funding needs to be available for the annual management of algal blooms and should be incorporated in to the City's Operating Budget.

It's important to note that these activities represent a response to manage the nuisance effect of algae blooms along the shoreline, but they have limited ability to prevent them from occurring. To further mitigate the impacts, increased use of impellers and bubblers are being implemented in strategic locations as part of the renewal of waterfront shoreline infrastructure.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report PW19057 - Hamilton Harbour Overview, Implications & Work to Date