

INFORMATION REPORT

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| TO: | Mayor and Members Board of Health |
| COMMITTEE DATE: | March 21, 2016 |
| SUBJECT/REPORT NO: | Suitability of Bayfront Beach as a Public Beach (BOH16008) (City Wide) |
| WARD(S) AFFECTED: | City Wide |
| PREPARED BY: | Eric Mathews (905) 546-2424 ext. 2186 |
| SUBMITTED BY & SIGNATURES: | Rob Hall Director, Health Protection Division Public Health Services Department |

Council Direction:

Not Applicable

Information:

Hamilton Public Health Services has informed Hamilton Public Works that Bayfront Beach is not a suitable recreational area and that Bayfront Beach should be closed until action is taken to improve the water quality (Appendix A). This action was taken by Public Health Services due to:

- (a) A history of poor water quality at Bayfront Beach (Appendix C), and,
- (b) The Recreational Water Protocol under the Ontario Public Health Standards requires that Public Health Unit staff determine the suitability of the Public Beach for public recreational use.

In 2015, the waters at Bayfront Beach were not safe for swimming 78% of the time between Victoria Day and Labour Day, based on the water sampling program conducted by Public Health Services. The cause of the unsafe water quality in 2015 was either excessive concentrations of E. coli bacteria or the presence of microcystin producing Cyanobacteria (Blue Green Algae).

Public Health Services received confirmation from Public Works that Bayfront Beach will be closed as a recreational water use area in 2016 (Appendix B).

Background:

Waterfront Redevelopment is a City Strategic Project and involves improving, maintaining, and enhancing the waterfront and shoreline by providing:

- Clean and sustainable parks, recreational spaces, trails and amenities,
- Neighbourhood planning; and,
- Opportunities for investment from the business community.

As part of the West Harbour Secondary Plan, Setting Sail, the West Harbour Waterfront Recreation Master Plan (Appendix “C” to Report PW09004a / PED10108) was received by the Committee of the Whole on May 10, 2010. The West Harbour Waterfront Recreation Master Plan shows Bayfront Beach as a swimming area.

Theme 4 – Clean and Green, in the Hamilton Community Vision currently being developed, mentions building and maintaining beaches for all residents to enjoy and that success looks like Hamilton’s beaches are open for everyone to enjoy.

Reported previously in the Board of Health Report BOH15004, the Ontario Ministry of Health and Long-Term Care issued a new Recreational Water Protocol under the Ontario Public Health Standards (OPHS). A new activity in the 2014 Recreational Water Protocol requires Boards of Health to determine the suitability of Public Beaches for public recreational use supported by a water sampling program and appropriate level of surveillance, in collaboration with the owner/operator.

Public Health Services began collaborating with the City of Hamilton Public Works Department, Environment and Climate Change Canada, and Hamilton Harbour Remedial Action Plan (RAP) in 2004. This group evolved over time to include the Bay Area Restoration Council (BARC) and became the Harbour Beach Management Group. These members currently meet semi-annually to collaborate, share information, and undertake research and recommend beach changes to improve the water quality at two Public Beaches in Hamilton Harbour; Bayfront Beach and Pier 4 Beach.

To satisfy the Hamilton Harbour RAP the water quality at Hamilton Harbour public beaches (Bayfront Park and Pier 4 Park) must meet the provincial beach management protocol 80% or more of the swimming season for a minimum of three consecutive years. The water quality at Bayfront Beach has not met Hamilton Harbour RAP criteria since 1999. The water quality at Pier 4 Beach has met Hamilton Harbour RAP criteria twice since 1999.

Members of the Harbour Beach Management Group and Public Works Parks Section were informed by Public Health Services in late 2014 regarding the new OPHS protocol actions to determine the suitability of Public Beaches for public recreational use and the potential impact on Bayfront Beach. The Board of Health was informed similarly in the Board of Health Report BOH15004 in April 2015.

Bayfront Beach is a man-made amenity created by the City of Hamilton, Public Works Department during the development of Bayfront Park in 1993. The land mass was created by filling in water lots sometime between 1968 and 1983. During 1983 and 1984, the City expropriated the land to create the park. Site remediation began in 1990 and was immediately followed by development of the park that opened in August 1993.

Creation of the park was in response to repeated calls from the public for more and higher quality access to the harbour. A swimming area was provided to satisfy recommendations of the Hamilton Harbour RAP. The shape of the park includes a large circular mass with two distinct peninsulas projecting westerly towards the harbour. A beach was created in the bay formed by these peninsulas and the land was shaped in an open amphitheatre style rising from the beach. The shape and contours of the beach shoreline and adjacent shorelines in the embayment are not natural or conducive to water quality conditions that are safe for swimming.

Published and unpublished research indicates that the most likely factors contributing to excessive E. coli concentrations and the seasonal occurrence of microcystin producing Cyanobacteria (Blue Green Algae) is:

- Presence of Canada geese and gulls,
- Poor water circulation in the Bayfront Beach area,
- Surface water run-off onto the beach,
- Slope of the beach; and,
- Moisture of the beach sand and proximity to the water table.

As part of the West Harbour Strategic Initiatives, the Waterfront Development Office in Public Works, in collaboration with the Hamilton Waterfront Trust is undertaking to find a solution to the problem. Public Works staff are initiating a water quality study with the assistance of AECOM Canada Engineering Consultants to investigate the issues behind the water quality concerns at the beach and recommend a strategy that could include a beach re-design, remedial measures such reducing nutrient loading in the harbour, or replacing the beach with another feature that is sustainable. To obtain this end goal, the work plan includes reviewing similar conditions and strategies used in other jurisdictions to determine what has worked elsewhere and whether they would be applicable in Hamilton Harbour. Public Works staff will implement a comprehensive stakeholder and public consultation plan that will provide direction to the alternatives being considered. It is intended to have the study completed by the end of summer in 2016. Depending on the recommendations coming out of the study, remedial work at the beach could start as early as 2017.

Appendices Attached:

Appendix A to Report BOH16008 - Letter to the City of Hamilton Public Works Department, Environmental Services Division Parks Section that instructs the closure of Bayfront Beach as a Public Beach for the upcoming season and beyond.

Appendix B to Report BOH16008 - Response to Appendix A from Public Works indicating that Bayfront Beach will be closed.

Appendix C to Report BOH16008 - Public Health Services 2015 Beach Monitoring Report. In this Report Table 1, Figure 1, and Figure 2 show the Bayfront Beach water quality history relative to the water quality of other Public Beaches in Hamilton.

Appendix D to Report BOH16008 - Published and unpublished research pertinent to Bayfront Beach water quality. This most valuable and appreciated research was done by the following;

- Environment Canada, Aquatic Ecosystem Management Research Division, Water Science and Technology Branch, Burlington, Ontario,
- Environment Canada, Watershed Hydrology and Ecology Research Division, Water Science and Technology Directorate, Burlington, Ontario,
- National Water Research Institute, Environment Canada, Burlington, Ontario,
- Bay Area Restoration Council, Hamilton, Ontario,
- City of Hamilton Public Works Department, Environmental Services Division, Parks District North; and,
- City of Hamilton Public Health Services Department, Health Protection Division.