

**Item No. 1**  
**Halifax Regional Council**  
**December 3, 2013**

**TO:** Mayor Savage and Members of Halifax Regional Council

**SUBMITTED BY:** Original Signed by Director  
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Jane Fraser, Director, Planning & Infrastructure

**DATE:** August 20, 2013

**SUBJECT:** Municipal Water Quality Data  
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### **INFORMATION REPORT**

#### **ORIGIN**

Regional Council, August 6, 2013, Item 11.3.1: Regional Council request that the CAO direct staff to explore the reinstatement of the Lakes Water Quality Sampling Program beginning in the 2014/15 fiscal year, in order to facilitate efforts to protect the water resources of the municipality.

#### **LEGISLATIVE AUTHORITY**

HRM Charter, Power to expend money, 79 (1) k, recreational programs; Purpose of municipal planning strategy, 228

**BACKGROUND**

**Summary of Jurisdiction Related to Surface Water:**

NS Environment Act, 1994-95, Nova Scotia Environment	Jurisdiction over watercourses broadly defined; includes requirement for Water Approvals (permit for work in a watercourse)
NS Crown Lands Act, 1989, Nova Scotia Department of Natural Resources	Jurisdiction over bed of watercourse as Crown Land
NS Beaches Act, 1989 Nova Scotia Department of Natural Resources	Marine waters protections may be applied to shores of lakes
Halifax Regional Municipality Charter, 2008	No jurisdiction over waters; Planning and Development, and Subdivision parts of Act include watercourses; planning authority given for lands adjacent to watercourse
Canada Fisheries Act, 1985, Fisheries and Oceans Canada	Jurisdiction of fisheries; applies to fish and fish habitat (containing fish or not)
Canada Navigable Waters Protection Act, 1985, Transport Canada	Approval may be required for structures over, across, through or under navigable waters
Canadian Environmental Protection Act, 1999, Environment Canada	Establishment of environmental standards, codes of practice and environmental quality guidelines protective of water resources

Halifax Regional Municipality has limited legislative authority with respect to environmental protection of lakes. Generally, the municipal role can be defined as:

- Responsible for management of development in the municipality;
- Responsible for management of municipal infrastructure operations and construction; and further, has interest in lake water quality for the following reasons:
- Provision of recreational amenity in lieu of hard infrastructure;
- Protection of property values, and the correlation to water quality and the aesthetic value, for the interest of tax base.

**DISCUSSION**

**HRM has six streams of water quality data:**

<b>Program</b>	<b>Purpose</b>
Beach program: approximately 25 beaches (100% of Supervised beaches) are tested for health concerns to compliment Recreation programming. That program continues at an approximate cost of \$10,000 annually, paid from D935 (Energy & Environment, Planning & Infrastructure).	Swimmer safety (Recreational)

Developer program: From a variety of development agreements, paid for by the developers, the municipality coordinates and receives water quality data. That program continues and will expand. The value of this work is approximately \$50,000 annually.	Development Management
Historical and external programs: Collectively, there is data that HRM has, or has access to, to inform land use planning decisions.	Development Management
Watershed Studies: As a requisite following adoption of the Regional Plan, a variety of comprehensive watershed studies have been completed or initiated. This work provides municipal data to inform land use planning decisions. Watershed studies continue and are a council priority. A watershed study is typically a \$250,000 project. These studies are paid for by Planning & Infrastructure.	Development Management
The interim baseline data collection program consisting of 71 lakes. That program has been completed. The value of the data is approximately \$500,000 and will provide baseline information for Planning and Development activities. This work was paid for from D935 (Energy & Environment, Planning & Infrastructure).	Development Management
Ongoing baseline data enrichment. The municipality will continue to obtain and acquire data, or access to data that supports municipal planning, development, and infrastructure decisions. It is anticipated that this activity will continue to have a value of approximately \$10,000 to \$20,000 annually. This work is paid for from D935 (Energy & Environment, Planning & Infrastructure).	Development Management

***Recreational Objectives:*** The testing protocol for recreational objectives is based on Health Canada Guidelines, primarily testing for E Coli and in some situations Enterococci. Full Guidelines can be viewed at: [http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/guide\\_water-2012-guide\\_eau/index-eng.php](http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/guide_water-2012-guide_eau/index-eng.php). Currently, supervised beaches in HRM are tested. Non-supervised beaches are not.

***Development Objectives:*** In support of Development Management and Community Planning Objectives, the municipality has a suite of water quality data sources. This includes historical and external data sources; the 2006 to 2011 Water Quality Data Program (which collected baseline data at 71 lakes); watershed studies; and programs required under development agreements.

Currently, HRM collects approximately \$50,000 worth of data annually from Development Agreement programs. Further, HRM has continued to enrich the suite of baseline data in 2013 by purchasing a data set and study from the Dalhousie Centre for Water Resource Studies. This \$9,800 purchase includes 12 years of data and study from Cranberry Pond Bayers Lake, Hail Pond, Witherod Lake, Long Lake, Second Chain Lake, Lily Pond, First Chain Lake and Chocolate Lake. It should be noted that all data collected for Development Objectives has limited correlation to Recreational Objectives. Often data results are reported several weeks after collection, and many of the parameters have no correlation to the Health Canada swimming guidelines, which has limited recreational value.

Staff anticipates to continue to enrich the dataset over time in a methodological manner, based on municipal need. Development data is long term in nature and snapshots in time. It is for informing long term infrastructure and development decisions.

### **Alternatives**

#### **Recreational Objectives:**

Purpose	Test and Standard	Cost	Annual Budget	Status
Supervised Beaches (25)	E Coli, Health Canada	\$400 per beach, plus staff collection	\$10,000 (not including Lifeguard collection)	Operational Program
Non Supervised Beaches	E Coli, Health Canada	\$640 per beach (which includes an estimate of 2 hours per collection x 8 weeks x \$15)	There are hundreds of non-supervised swimming locations in HRM	Non Operational

Staff do not recommend water quality testing at non-supervised beaches. Water quality is only one parameter related to public safety at swimming locations. Other factors such as access, amenities, and other potential hazards are not reviewed, programmed, or assessed by the municipality. With programmed beaches, the municipal response to negative test results (E Coli) is to close the beach until testing reveals water quality has returned to safe levels.

#### **Development Objectives:**

Purpose	Test and Standard	Cost	Annual Budget	Status
Developer paid monitoring required under Development Agreements	Water Quality Monitoring Protocol	Zero cost to Municipality; all testing is developer funded; value of existing work is \$50,000 per year	N/A	Operationalized Program
Watershed Studies	Water Quality Monitoring Protocol	\$250,000 per study	Within existing approved budgets	Operationalized Program
Baseline Data and enrichment	Water Quality Monitoring Protocol	Historically, \$100,000 per year; on a go forward basis will cost \$10,000 per year	Within existing approved budgets	Operationalized Program
Investigative Studies	As required	Variable	Within existing approved budgets	Operationalized Program

Historically, development related water quality standards for testing were developed by staff in collaboration with the Watershed Advisory Boards. The Water Quality Monitoring Protocol will standardize the requirement (which has been practically standardized to date).

HRM has sufficient data, and plans to enrich data, for municipal decisions with respect to the municipal role in development and community planning. Staff would require direction on what Community Planning or Development questions/decisions requires further support to develop a water quality testing protocol and recommend an increase to the program and budget. The existing data provides the information staff require to make recommendations and for Regional Council to make decisions on planning and development matters. Current water quality information enables decisions to be made with respect to stopping or changing development under development agreement sampling programs; assessing capacity and approving development; and it also enables the development of watershed specific policy requirements.

**Environmental Objectives:** Environmental Objectives require the most comprehensive water quality monitoring data and the largest suite of parameters and highest frequency, for scientists to understand the current and trending status of individual lakes. This objective would have estimated budget implications beyond the \$496,500 estimate created for the May 2009 Stantec Report: Water Quality Monitoring Functional Plan, which included 120 lakes in the municipality, includes benthic sampling but no flow sampling of rivers and streams. This remains an undefined objective. Staff would require direction or stakeholder input on what is required and prepare a recommended amendment to the HRM Charter to enable such expenditure. (It should be noted that water testing is an eligible activity for Community Grant applications.)

When developing a water quality monitoring program, staff needs to know:

1. What is the question that needs to be answered? and
2. With the answer, what is the municipal response and/or ability (or role) to respond?

Currently, questions related to municipal activities are answered within the existing water quality monitoring data program. Further, policy exists to direct what the municipal response is to different results.

### **FINANCIAL IMPLICATIONS**

There are no budget implications to the 2013/14 Operating or Project Budgets as a result of this report. Any testing requested from Regional Council outside the described regime would require alterations to future operating budgets.

### **COMMUNITY ENGAGEMENT**

This request resulted from submissions from environmental advocacy groups and a former watershed advisory board.

**ATTACHMENTS**

None

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A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

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