

**Item No. 2**  
**Halifax Regional Council**  
**December 3, 2013**

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

**SUBMITTED BY:** Original Signed  
\_\_\_\_\_  
Carl D. Yates, M.A.Sc., P.Eng – General Manager, Halifax Water

**DATE:** November 7, 2013

**SUBJECT:** Halifax Regional Water Commission 2012/13 Annual Report

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**INFORMATION REPORT**

**ORIGIN**

Annual operational requirement.

**LEGISLATIVE AUTHORITY**

Halifax Regional Water Commission Act

**BACKGROUND/DISCUSSION**

Halifax Water staff are pleased to present the Annual Report for the 2012/2013 fiscal year. The theme of the 2012/2013 Annual Report is “Strategy” recognizing the completion of three strategic initiatives that will guide Halifax Water’s infrastructure planning, fiscal framework, and rate structure for the future.

The three key strategic projects completed were; the Integrated Resource Plan to guide infrastructure investments over the next 30 years; Debt Strategy to ensure financing of these investments is made in the most efficient manner; and Cost of Service Manual/Rate Structure to ensure fair and equitable rates across all customer classes. These projects involved extensive internal and external stakeholder engagement and collaboration.

To fund the long term infrastructure investments needed, Halifax Water filed a two year rate application with the NSUARB in January 2013. The rate increases for water, wastewater and stormwater services came into effective on July 1, 2013 and April 1, 2014.

Many capital projects were commenced or continued during this period including; the upgrade and expansion of the Eastern Passage wastewater treatment facility, Phase 2 of the Dunbrack St. Sliplining Project, Springfield Lake Forcemain Twinning project, and a solution to provide wastewater capacity within the Beechville/Lakeside/Timberlea sewershed.

Through staff efforts, many projects were advanced in reducing electricity usage at a number of water and wastewater treatment facilities. These projects include upgrades to lighting, heating, and ventilation systems, solar domestic hot water, and installation of a variable frequency drive pump at the Dartmouth Wastewater Treatment Facility (WWTF); energy audits completed for the three Harbour Solutions WWTFs, and water supply plants at Pockwock Lake, Lake Major, and Bennery Lake. Progress continued on the development of five renewable energy generation projects including a wind turbine farm near Pockwock Lake, and an in-line turbine at the Orchard control chamber in Bedford. These efforts, along with a number of other energy saving initiatives, saw a 4.1 % decline in consumption over the previous year, demonstrating continued value for money to our customers.

Halifax Water also improved on leakage control in the water distribution system during 2012/13 with annual real losses at 164 litres/service connection/day, setting another record. These numbers show a utility that is not satisfied with the status quo, but focused on continuous improvement.

With a long term strategy for financial and infrastructure sustainability, Halifax Water has set a clear course to serve existing and future customers.

We appreciate the support of Regional Council and our customers as we continue to implement the strategy that will guide Halifax Water in the delivery of high quality, affordable water, wastewater and stormwater services.

### **FINANCIAL IMPLICATIONS**

N/A

### **COMMUNITY ENGAGEMENT**

N/A

### **ATTACHMENTS**

Halifax Regional Water Commission 2012/13 Annual Report

Report Prepared by: James Campbell, Communications & Public Relations Coordinator, 490-4604

Report Approved by: Carl Yates M.A.Sc., P.Eng., General Manager, 490-4840

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Seventeenth  
Annual Report  
March 31, 2013



*Cover images:*

The cycle of water: from source (Lake Major), to tap, and back again (Halifax Harbour). Child drinking from fountain: BIGSTOCK.COM



# OUR MISSION

*To provide world-class services for  
our customers and our environment.*

# OUR VISION

- *We will provide our customers with high quality water, wastewater, and stormwater services.*
- *Through the adoption of best practices, we will place the highest value on public health, customer service, fiscal responsibility, workplace safety and security, asset management, regulatory compliance, and stewardship of the environment.*
- *We will fully engage employees through teamwork, innovation, and professional development.*



# LETTER FROM THE CHAIR



September 23, 2013

Mayor Mike Savage and Members of Council

Re: 2012/13 Annual Report

On behalf of the Halifax Water Board, we are pleased to submit the utility's annual report for the year ending March 31, 2013. Significant milestones were reached last year with the completion of the Integrated Resource Plan (IRP), Cost of Service (COS) Manual and Debt Strategy.

- The IRP is the framework for asset investments over the next 30 years to ensure renewal of infrastructure, compliance with environmental regulations and capacity for growth.
- The COS manual allocates costs for the three services provided to customers in a fair and equitable manner, consistent with the principles of the Public Utilities Act.
- The Debt Strategy is a guidance document for financing capital assets to ensure intergenerational equity between current and future customers, respecting the debt capacity and finance policies of HRM, the Province of Nova Scotia and the Nova Scotia Utility and Review Board [NSUARB].

These three documents were developed collaboratively with HRM and utility stakeholders as directed by the NSUARB in recognition that the wastewater and stormwater assets became regulated when they were transferred from HRM to Halifax Water in 2007. Collectively, these documents are a strategic blueprint for sustainability.

The utility submitted a rate application to the NSUARB in January, 2013 based on the new cost of service manual and a focus on investments in wastewater and stormwater. The application also proposed a revised and separate rate structure for stormwater service based on cost causation principles. In essence, stormwater charges were proposed to correlate with surface runoff instead of water consumption, a first in Canada.

With the NSUARB decision in June, rate increases for water, wastewater and stormwater came into effect on July 1, 2013 with another increase in April 1, 2014. The biggest driver for the increases were tied to debt servicing and further allocation of depreciation as an expense tied to wastewater assets. Capital investment based on depreciation funds is a cornerstone principle of a regulated utility.

The utility finished the year with a financial outcome better than budgeted, but with a loss of \$2.2 million, supporting the need to increase rates. Debt for the utility increased by \$33.8 million with total outstanding debt as of March 31, 2013 at \$182.4 million.

The past year saw significant accomplishments by staff in day to day operations, policy development and completion of capital projects. Of particular note was a drive to develop more sustainable policies around stormwater services recognizing the multi-jurisdictional responsibilities of HRM, Halifax Water, and the Province. The Eastern Passage Wastewater Treatment facility expansion and upgrade continued on schedule and on budget with a commissioning date of January, 2014. The second phase of the

Pockwock transmission main on Dunbrack Street in Halifax was completed using trenchless technology. This innovative technology saves time, money, and reduces the inconvenience to our customers and the motoring public.

A focus for the current year will be cost containment with a goal to be in a break even position by the end of the fiscal year. In co-operation with HRM, we also hope to make further inroads on stormwater policy and investment. The utility will be ramping up its wet weather management program with an emphasis on the reduction of inflow and infiltration (I & I) within the wastewater collection system. Staff will be bringing the same vigour and discipline to I & I reduction as they did with leakage control in the water distribution system which is holding at a world class position.

A special thank-you to our customers and HRM Council who have entrusted us with the stewardship responsibility to deliver water, wastewater, and stormwater services in a holistic manner.

Respectfully Submitted,

Original Signed

Colleen Purcell, CA  
Chair of the Board



# STRATEGY



The 2012/13 year saw the completion of many strategic initiatives that were set in motion after the transfer of wastewater and stormwater assets in 2007 from HRM to Halifax Water. The accomplishments include the completion of an integrated resource plan to guide capital investments over the next 30 years; a debt strategy to ensure an efficient funding plan for these investments; and cost of service manual to allocate costs in a fair and equitable manner across all customer classes. All three were guided by the oversight of the Halifax Water Board and carried out in a consultative manner to fulfill directives from our regulator, the Nova Scotia Utility and Review Board (NSUARB).

A strategy to invest in critical water, wastewater, and stormwater assets requires a long term approach to ensure the utility remains on a sound financial footing, and each generation pays their fair share. This must all be accomplished while being aware of the impact to ratepayers. With this in mind, Halifax Water filed a two year rate application with the NSUARB in January 2013. The rate increases for water, wastewater and stormwater services came into effective on July 1, 2013 and April 1, 2014.

Taking the long view to the financial and infrastructure needs of Halifax Water and the customers we serve is a hallmark for a world class utility.

With a sound governance, finance, and infrastructure model in place, Halifax Water is well positioned to deliver services for existing and future customers.

Yours in service,

Original Signed

Carl D. Yates, M.A.Sc., P.Eng.  
General Manager

A handwritten signature in black ink, appearing to be 'C. Yates', written over the printed name.

## BOARD OF COMMISSIONERS

March 31, 2013



**Colleen Purcell, CA**  
Chair



**Councillor  
Russell Walker**  
Vice Chair



**Councillor  
David Hendsbee**  
Commissioner



**Councillor  
Barry Dalrymple**  
Commissioner



**Mayor Mike Savage**  
Commissioner



**Richard Butts**  
Commissioner



**Tony Charles, Ph.D.**  
Commissioner



**Rick Paynter, B.Eng., DPA**  
Commissioner

## EXECUTIVE STAFF



**Carl Yates, M.A.Sc., P.Eng.**  
General Manager



**Cathie O'Toole, BA, CGA, MBA**  
Director, Finance and  
Customer Service



**Jamie Hannam, MBA, P.Eng.**  
Director, Engineering and  
Information Services



**John Sheppard, P.Eng.**  
Director, Environmental  
Services



**Susheel Arora, M.A.Sc., P.Eng.**  
Director, Wastewater and  
Stormwater Services



**Reid Campbell, M. Eng., P.Eng.**  
Director, Water Services



**Eric Rowley, B.Comm.**  
Director, Human Resources

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### How to reach us:

For more information about Halifax Water and its services, visit our website at [www.halifaxwater.ca](http://www.halifaxwater.ca), contact Customer Service at (902) 490-4820, e-mail us at [Cust\\_Inq@halifaxwater.ca](mailto:Cust_Inq@halifaxwater.ca), fax us at (902) 490-4749, or write us at P.O. Box 8388 RPO CSC, Halifax, N.S., B3K 5M1. You can also reach us via Twitter at @HalifaxWater.

# GENERAL INFORMATION OF UTILITY

Year Ended March 31, 2013

## WATER

### Precipitation

Measured at Pockwock	
Rainfall	1 169.5 mm
Snowfall	163.3 cm
Measured at Lake Major	
Rainfall	1 356.6 mm
Snowfall	124.4 cm

### Sources of Supply and Watershed Areas

Pockwock Lake	5 661 ha
Safe Yield	145 500 m <sup>3</sup> /day
Chain Lake	206 ha
Safe Yield	4 500 m <sup>3</sup> /day
Lake Major	6 944 ha
Safe Yield	65 900 m <sup>3</sup> /day
Lake Lamont/Topsail	346 ha
Safe Yield	4 500 m <sup>3</sup> /day
Bennery Lake	644 ha
Safe Yield	2 300 m <sup>3</sup> /day

### Water Supply Production (Cubic Metres)

Pockwock Lake	30 295 470
Lake Major	14 098 936
Bennery Lake	324 954
Small Systems	58 084
<b>Total</b>	<b>44 777 444</b>

### Storage Reservoirs (Elevation Above Sea Level)

Lake Major	( 60 m)	9 092 m <sup>3</sup>
Pockwock	(170 m)	13 600 m <sup>3</sup>
Geizer 158	(158 m)	36 400 m <sup>3</sup>
Geizer 123	(123 m)	31 800 m <sup>3</sup>
Cowie	(113 m)	11 400 m <sup>3</sup>
Robie	( 82 m)	15 900 m <sup>3</sup>
Lakeside		
/Timberlea	(119 m)	5 455 m <sup>3</sup>
Mount Edward 1	(119 m)	22 728 m <sup>3</sup>
Mount Edward 2	(119 m)	22 728 m <sup>3</sup>
Akerley Blvd.	(119 m)	37 727 m <sup>3</sup>
North Preston	(125 m)	1 659 m <sup>3</sup>
Meadowbrook	( 95 m)	9 091 m <sup>3</sup>
Sampson	(123 m)	12 273 m <sup>3</sup>
Stokil	(123 m)	23 636 m <sup>3</sup>
Waverley	( 86 m)	1 364 m <sup>3</sup>
Middle		
Musquodoboit	(81m)	275 m <sup>3</sup>
Aerotech	(174 m)	4 085 m <sup>3</sup>
Beaver Bank	(156 m)	6 937 m <sup>3</sup>

**Total Storage Capacity 259 213 m<sup>3</sup>**

### Transmission and Distribution System

Size of mains	19 mm - 1 500 mm
Total water mains	1 556 km*
Main valves	14 526
Fire hydrants	8 092
Distribution Pumping Stations	22
Pressure Control/Flow	
Meter Chambers	134

\*Count is main valves only. 2012 figure included some service valves.

### Services and Meters

WATER	
Sprinkler services	
(25 mm - 300 mm)	2 024
Supply services	
(10 mm - 400 mm)	83 254
Meters	
(15 mm - 250 mm)	81 861
Wastewater services	78 987

### Treatment Processes

#### J. Douglas Kline Water Supply Plant

Source	- Pockwock Lake
Process	- Dual media direct filtration
	- Iron and manganese removal
8 filters	143 m <sup>2</sup> /each
Max. flow rate	0.137 m <sup>3</sup> /m <sup>2</sup> /min
Design capacity	227 000 m <sup>3</sup> /day
Average production	91 872 m <sup>3</sup> /day

#### Lake Major Water Supply Plant

Source	- Lake Major
Process	- Upflow clarification and trimedia filtration
	- Iron and manganese removal
4 filters	85 m <sup>2</sup> /each
Max. flow rate	0.192 m <sup>3</sup> /m <sup>2</sup> /min
Design capacity	94 000 m <sup>3</sup> /day
Average production	43 742 m <sup>3</sup> /day

### Small Systems

#### Bennery Lake

Source	- Bennery Lake
Process	- Manganese removal, sedimentation, dual media filtration
2 filters	26.65 m <sup>2</sup> /each
Max. flow capacity	0.10/m <sup>3</sup> /m <sup>2</sup> /min
Design capacity	7 950 m <sup>3</sup> /day
Average production	3 400 m <sup>3</sup> /day

### Collins Park

Source - Lake Fletcher  
Process - Ultra Filtration / Nano Filtration  
Average production 64 m<sup>3</sup>/day

### Middle Musquodoboit

Source- Musquodoboit River  
Process- Raw water infiltration gallery  
- Ultra Filtration / Nano Filtration  
Average production 61 m<sup>3</sup>/day

### Five Island Lake

Source - 1 well  
Process - Ultraviolet disinfection  
Average production 8 m<sup>3</sup>/day

### Silver Sands

Source - 2 wells  
Process - Green sand pressure filters  
-Iron and manganese removal  
Average production 27 m<sup>3</sup>/day

### Miller Lake

Source - 3 wells  
Process - Arsenic removal with G2 Media  
Average Production 24 m<sup>3</sup>/day

ha - hectare  
m - metre  
m<sup>2</sup> - square metre  
m<sup>3</sup> - cubic metre  
mm - millimetre  
km - kilometre  
cm - centimetre

### Population Served

Halifax Regional Municipality  
Estimated population served 355 000  
Consumption per capita (all customers) 302 litres/day

# GENERAL INFORMATION OF UTILITY

Year Ended March 31, 2013

## WASTEWATER/STORMWATER

### Wastewater Treatment

Facilities	Process	Design Capacity	Area Served	Receiving Water
Halifax	Enhanced Primary - U.V.	139 900 m <sup>3</sup> /d	Halifax	Halifax Harbour
Dartmouth	Enhanced Primary - U.V.	83 800 m <sup>3</sup> /d	Dartmouth	Halifax Harbour
Herring Cove	Enhanced Primary - U.V.	28 500 m <sup>3</sup> /d	Halifax-Herring Cove	Halifax Harbour (Outer)
Mill Cove	Secondary - U.V. / Pure oxygen activated sludge	28 400 m <sup>3</sup> /d	Bedford-Sackville	Bedford Basin
Eastern Passage	Primary - Chlorine	17 700 m <sup>3</sup> /d	Cole Hbr-East Passage	Halifax Harbour
Timberlea	Secondary - Sodium Hypochlorite / RBC	4 540 m <sup>3</sup> /d	Beechville-Lakeside-Timberlea	Nine Mile River
Aerotech	Tertiary - U.V. /SBR	1 360 m <sup>3</sup> /d	Aerotech Park-Airport	Johnson River
Springfield Lake	Secondary - Sodium Hypochlorite/ Activated sludge	543 m <sup>3</sup> /d	Springfield Lake	Fenerty Lake
Fall River	Tertiary - U.V. / Activated sludge and post filtration	454.5 m <sup>3</sup> /d	Lockview-McPherson Road	Lake Fletcher
North Preston	Tertiary - U.V. / SBR and engineered wetland	345 m <sup>3</sup> /d	North Preston	Winder Lake
Middle Musquodoboit	Secondary - U.V. / RBC	114 m <sup>3</sup> /d	Midd Musquodoboit	Musquodoboit River
Uplands Park	Tertiary - U.V. / Trickleling filter and wetland	91 m <sup>3</sup> /d	Uplands Park	Sandy Lake
Wellington	Tertiary - U.V. / Activated sludge / reed bed	68 m <sup>3</sup> /d	Wellington Station	Grand Lake
Frame SD	Secondary - Sodium Hypochlorite / Activated sludge	80 m <sup>3</sup> /d	Frame Sub-Division	Lake William
Belmont SD	Secondary - Sodium Hypochlorate Extended Aeration	114 m <sup>3</sup> /d	Belmont Sub-Division	Halifax Harbour

RBC = Rotating Biological Contactor;

SBR = Sequencing Batch reactor;

U.V. = Ultra Violet

### Wastewater & Stormwater Collection System

Size of pipes	200 mm - 4 450 mm
Total sewer length	2 191 km
Total manholes	33 744
Total Pumping Stations	173

## STORMWATER CONTROL STRUCTURES

Stormwater	Capacity (m <sup>3</sup> )	Stormwater	Capacity (m <sup>3</sup> )
C Meadowbrook Retention Pond	190	E Countryview Drive Retention Pond	3,200
C Chandler Drive Holding Tank	263	E Commodore Drive Retention Pond	9,400
W Oceanview Drive Retention Pond	3,700	E Lemlair Row Retention Pond	15,300
W Transom Drive Retention Pond	9,900	E Forest Hills Retention Pond	5,000
W Glenbourne Estates Retention Pond	430	E Cole Harbour Commons	2,000
W Parkland Avenue Retention Pond	36,000	E Guysborough Retention Pond	9,000
W Glen Forest Weir / Retention Pond	12	E John Stewart Dr Retention Pond A&B	550
W Lacewood Retention Pond	5,300	E Stewart Harris Drive Retention Ponds	160
W Susie Lake Control Structure	35,600	E Cranberry Lake Retention Pond	108
W Volvo West Retention Pond	55,600	E Gregory Drive Retention Pond	80
W Old Sambro Road Retention Pond	20	E Main Street Retention Pond	130
W Tamarack Drive Retention Pond	270	E Kuhn Marsh Dam	60,000
W Roaches Pond Holding Tank	6,120	E Bissett Lake Holding Tank	4,546
E Heritage Hills Retention Pond	13,800	E Ellenvale Holding Tank	780
E Clement Street Retention Pond	244,000	E Valleyford Holding Tank	1,650
E Maynard Lake Dam	172,000	E Sullivan's Pond Culvert	44,000
E Shubie Drive Retention Pond	19,500		

C = Central; W = West; E = East

*FINANCIAL OVERVIEW*  
*Abbreviated Financial Information*  
*March 31, 2013*

**ASSETS**

**Fixed**

Utility Plant in Service at Cost	\$ 1,207,507
Provision for Depreciation	\$ (269,815)

<b>Net Book Value</b>	<b>\$ 937,692</b>
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<b>Plant Under Construction</b>	<b>\$ 44,597</b>
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<b>Regulatory Asset</b>	<b>\$ 4,156</b>
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<b>Current</b>	<b>\$ 50,371</b>
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<b>TOTAL ASSETS</b>	<b>\$ 1,036,816</b>
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**LIABILITIES**

Long Term Debt	\$ 166,879
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Other Than Long Term Debt	\$ 47,714
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<b>TOTAL LIABILITIES</b>	<b>\$ 214,593</b>
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**EQUITY**

Special Purpose Reserves	\$ 22,670
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Contributed Capital Surplus	\$ 786,170
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Operating Surplus used to Fund Capital, Cumulative	\$ 12,380
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<b>\$ 821,220</b>
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Operating Surplus April 1, 2012	\$ 3,244
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**2012/13 OPERATIONS**

<b>Operating Revenue</b>	\$ 104,070
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<b>Financial Revenue</b>	\$ 2,969
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<b>Revenue From all Sources</b>	<b>\$ 107,039</b>
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**Expenditures**

Operating Expenses	\$ 68,860
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Depreciation	\$ 14,177
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Grant in lieu of taxes HRM	\$ 3,971
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Financial Expenses	\$ 22,259	\$ 109,267
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Excess of Expenditures over Revenue	\$ (2,228)
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Operating Surplus used to Fund Capital, Current Year	\$ (0)
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Stewardship Contributions	\$ (13)
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<b>Accumulated Operating Surplus March 31, 2013</b>	<b>\$ 1,003</b>
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<b>TOTAL EQUITY</b>	<b>\$ 822,223</b>
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<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>\$ 1,036,816</b>
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# HIGH QUALITY WATER

## Water Loss Control

Halifax Water has an international reputation as a world leader in water loss control and is committed to making sure the water leaving the treatment plants makes it to the customers' taps. In 2012/2013 our annual real losses were 164 litres/service connection/day, setting another record.

With our reputation for innovation and success in water loss control well known across the industry, others have sought our help in achieving their goals. We recently assisted the City of Kingston, Ontario, Moncton, New Brunswick, and the government of Quebec with launching water loss initiatives.

Detecting leaks early before they become a problem for customers or the general public involves constant diligence. We continue to pilot advanced tools for detecting leaks and determining the condition of buried underground piping.

## Geosmin

In the fall of 2012 some customers served by the Pockwock water supply in the Halifax, Bedford, Sackville, Fall River, Waverley and Timberlea area began to report a taste and odour in their tap

water. Water Quality staff immediately initiated an on-going testing program through a private, third party accredited laboratory to determine what might be occurring in the Pockwock water supply. Tests results soon confirmed the presence of geosmin in the Pockwock water supply.

Geosmin, a naturally occurring compound found in surface waters, produces an earthy, musty-type taste and odour in the water. Geosmin is commonly experienced by water utilities across Canada and other jurisdictions. The water does not pose a health risk and is safe to drink. On-going testing continues to show an absence of harmful bacteria and other pathogens in the water.

While testing continued throughout the winter months, Water Quality staff took a number of initiatives to determine the best way to deal with geosmin. Halifax Water allocated funds to study treatment options to reduce geosmin. Any engineered treatment solution must first be evaluated to ensure the installation

of a system to treat geosmin does not negatively impact current treatment processes.

In conjunction with on-going water research being undertaken at our Pilot Plant Facility at the Pockwock Water Treatment Plant, Halifax Water is

conducting research into biofiltration, advanced oxidation processes (AOPs), and granular activated carbon and their potential to control taste and odour related to geosmin.

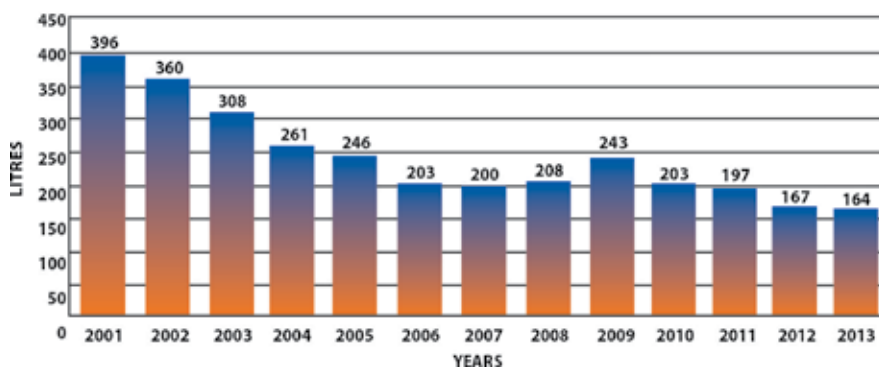


## Continuous water quality research at the Pockwock Pilot Plant

The implementation of a multi-million dollar engineered solution could take 2-3 years and involve continued research, pre-design, detailed design, regulatory approval, and construction activities.

In an effort to keep customers informed, the Halifax Water website was updated to provide weekly geosmin levels in Pockwock lake, a Frequently Asked Questions document created, numerous media interviews conducted, and a targeted email list created for customers

Real Losses - Litres Per Service Connection Per Day



looking for direct notification.

### SCADA Master Plan

Securing critical infrastructure from cyber-attack requires vigilance, keeping one step ahead of constantly evolving threats. The Technical Services group continued to advance the integrity of our network through the SCADA (Supervisory Control and Data Acquisition) Master Plan. These advances include upgrading the security of industrial control systems from outside attack. Staff also upgraded the control system software at the Lake Major and Pockwock water treatment plants improving the ability of operators to monitor plant processes.

### Lead Service Replacement Program

Halifax Water continued its efforts to permanently get lead out of the distribution system. The Lead Service Replacement Program involves the



#### Getting the lead out of the distribution system through our Lead Service Replacement Program

proactive removal of lead service lines in conjunction with street or paving projects, and water main infrastructure upgrades. The complete removal of lead from the distribution system requires the joint efforts of Halifax Water and customers.



#### Pockwock Lake Dam. A critical asset for supplying a safe, secure, and reliable water supply

Halifax Water also maintains a residential sampling program to monitor lead levels in customers' homes throughout the distribution system.

### Dam Safety Review

Monitoring and maintaining critical water infrastructure is essential to the safety, security, and quality of the water we supply to customers. Dams comprise a critical component of our water infrastructure, and can act as an essential feature in the migratory routes of fish. Halifax Water operates and maintains six dams throughout the region.

In an effort to ensure the integrity of these dams, Halifax Water completed a Dam Safety Review as mandated by Canadian Dam Association. The safety review included a rigorous review of the hydraulic and structural capacity of our dams to ensure safety of the water supply, downstream populations and infrastructure.

### Water System Assessment

Halifax Water operates eight water supply plants. Every ten years Nova Scotia Environment requires a system assessment to compare the state of all water systems in the province against current drinking water standards.

Halifax Water successfully completed the assessment reports for all 8 water systems. This quality control helps ensure customers receive high quality water that meets or exceeds regulatory guidelines.

#### A pristine watershed at Bennery Lake helps ensure high quality water to customers





# RESPONSIBLE FINANCIAL MANAGEMENT

Halifax Water's financial statements are presented in accordance with the recommendations of the Accounting and Reporting Handbook (Handbook) for Water Utilities as issued by the NSUARB. The results include the total cost of debt servicing. The Utility received a clean audit opinion for the fiscal year ended March 31, 2013.

The 2012/13 fiscal year resulted in a loss of \$2.2 million, a significant improvement compared to the budgeted loss of \$11.1 million. There were several factors that contributed to the improved operating results.

Rates for the Urban Core & Satellite System increased on June 25, 2012 and the Aerotech/Airport System rates increased August 1, 2012.

Consolidated operating revenue of \$104.1 million was \$5.3 million (5.3%) ahead of revenue reported for the same period in the prior year (the prior year actual and current year budget figures were based on the previous rate structure). Consolidated operating expenses of \$83.0 million were \$5.8 million (7.5%) higher than the same period last year, but when compared to the current year budget, were under by \$3.0 million. Prior year expenses were positively impacted by milder winter weather conditions.

As a result of higher investment income, financial revenue was ahead of the prior year and budget. Financial expenses were on par with budget, however the debt principal appropriation expense was higher than the previous year, reflecting the new debt issues acquired this fiscal

year. Debt interest expense was lower as some existing debt issues were renewed at lower rates and the interest on approximately half of the new debt was charged directly to the Eastern Passage Wastewater Treatment Facility project as interest during construction.

Metered consumption was down approximately 1% from the prior year, marking a departure from the last few years where annual consumption has decreased approximately 1.5%. The spring and summer seasons last year were relatively dry, which tempered the decrease.

Consolidated operating expenses were 7.5% or \$5.7 million higher than last year. The largest increase in operating expenses is attributable to increased depreciation which increased \$2.8 million or 25% over prior year. As Halifax Water's capital program continues to grow to address significant asset renewal,

environmental compliance, and growth requirements, depreciation will continue to increase.

Financial expenses have increased by \$1 million or 4% over the prior year due to increasing debt payments, also driven by growth in Halifax Water's capital budget.

## International Financial Reporting Standards

There continues to be uncertainty around future financial reporting requirements for the Utility. Halifax Water is an autonomous, self-financed municipal water, wastewater and stormwater utility falling under the jurisdiction of the Nova Scotia Utility and Review Board (NSUARB). The NSUARB requires that Halifax Water file Financial Statements and rate applications with the Board based on the NSUARB Handbook for Accounting and Reporting for Water Utilities, "The Handbook". Although the

## Eastern Passage wastewater treatment facility upgrade and expansion





Handbook generally follows Canadian Generally Accepted Accounting Principles (GAAP) there are a couple of significant differences centred around the recording of principal debt payments and the treatment of the disposal of fixed assets that result in reporting differences between the NSUARB Handbook and GAAP. Canadian GAAP for Government Business Enterprises, which would include Halifax Water, is now International Financial Reporting Standards, or IFRS.

Halifax Water qualifies for a deferral to become compliant with IFRS on the basis that it: A) has activities subject to rate regulation as defined in Generally Accepted Accounting Principles, Section 1100 in Part V of the Handbook; and, B) in accordance with Accounting Guideline AcG-19, Disclosures by Entities Subject to Rate Regulation, also in Part V of the Handbook, discloses that it has accounted for a transaction or event differently than it would have in the absence of rate regulation (i.e., has recognized regulatory assets and regulatory liabilities).

The deferral means that Halifax Water must be compliant for fiscal years beginning on or after January 1, 2014. The first fiscal year statements that will be produced in IFRS will be 2014/2015, however the 2013/2014 fiscal year will have to be re-stated for comparative purposes.

It is Halifax Water's intention to become compliant with IFRS within the prescribed period, however it creates significant challenges, with limited benefit for Halifax Water financial statement users. Halifax Water will be required to produce two sets of financial statements – one for regulatory purposes, and one for audit and consolidation with the statements of the Halifax Regional Municipality.

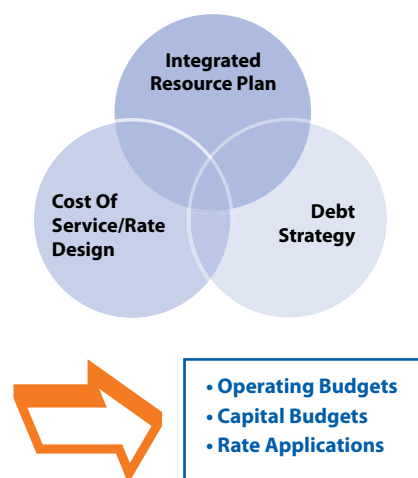
As our regulator, the NSUARB mandates continued use of the Handbook and is the main user of Halifax Water's financial statements. It must approve rates, capital spending, long term borrowing, and rules and regulations to ensure that the cost of providing services is delivered in a fair and equitable manner.

The International Accounting Standards Board has an on-going project for Rate Regulation which may result in provisions in IFRS which lessen the impact and barriers to first time adoption for rate regulated utilities.

### Regulatory Activity

During the 2012/13 year, Halifax Water met several significant goals set by the NSUARB, with completion and filing of a Cost of Service Manual, an Integrated Resource Plan, and a Debt Strategy. These documents are the framework that will serve as a touch-stone for future operating/ capital budgets and rate applications as indicated below.

Development of the three pillars of the strategic framework involved many years of effort and substantial stakeholder consultation. The resulting documents were subject to scrutiny as part of the utility's most recent public hearing to increase rates.

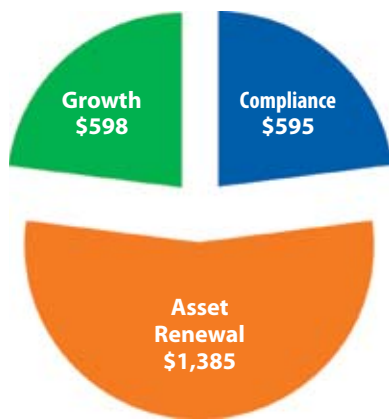


**Cost of Service / Rate Design** - Halifax Water has established a Cost of Service model that is in accordance with established methodologies from the American Water Works Association (AWWA), and the Water Environment Federation (WEF), and achieves a substantial improvement over the previous rate structure in terms of the fairness, defensibility, and relationship to costs. Cost allocations are tailored to reflect system characteristics, and the approach is adaptable to changing circumstances. This model is more complex than the previous rate design in place, however it is appropriate given the fact that Halifax Water's operations are increasingly complex, and a cost of service and rate design are required that can adapt to change, and allocate costs in a fair and equitable manner.

**Integrated Resource Plan (IRP)** – The IRP identifies and prioritizes future capital and operational programs, taking into consideration environmental, societal, and financial risks and constraints, as well as examining supply and demand-side management options and challenges. The IRP outlines the revenue requirements to support the future capital investments needed.

The IRP incorporates three strategic drivers: Regulatory Compliance, Asset Renewal, and Growth. A series of objectives related to each of these drivers was used to identify a range of capital investment needs for water, wastewater, and stormwater infrastructure over the next 30 years. Projects and programs were reviewed to allocate the proportion of the benefits to each of the objectives/ drivers to understand cost causation.

The total 30 Year Net Present Value (NPV) of the IRP is \$2,578 million as broken down in the following graphic.



**Debt Strategy** – The Debt strategy examines Halifax Water's capital structure as a local government enterprise providing water, wastewater and stormwater services in Nova Scotia. The Debt Strategy takes into account the policies of other utilities, HRM and the Province, long-term capital needs, and alternatives that would result in an efficient funding mechanism that is fair to present and future ratepayers. Capital spending and debt impact the operating budgets and, therefore, future rate requirements. The debt strategy offers information and alternatives that will help inform future decision making.

#### **Rate Application Urban Core and Satellite Systems**

Infrastructure needs are driving the rate increases right across the rate base. Additions to Utility Plant in Service are causing increased depreciation, debt servicing, an increased dividend to HRM, and increased operating costs. Building institutional capacity to deliver the Integrated Resource Plan and fill data gaps is also an infrastructure related budget driver.

With this in mind, on January 9, 2013 Halifax Water submitted a two year rate application to increase rates for Water, Wastewater and Stormwater Services effective July 1, 2013, and April 1, 2014. Some unique features of the Rate Application were:

- First Rate Application based on the new Cost of Service manual
- First Rate Application relying upon the Integrated Resource Plan and Debt Study
- Proposed consolidation of the Urban Core and Airport/Aerotech System
- Proposed separate rates for Stormwater Service
- Included Rules and Regulations updated to reflect modern day legislative drafting conventions

The Rate Hearing was held April 15th – 17th, and the NSUARB released a decision on June 24, 2013. Halifax Water was directed to file a Compliance Filing on the new rates effective July 1st.

The granted rate increases by meter size for Water and Wastewater services for the two year period range from -0.8% to 27.4%. Residential customers will see a 24.3% increase over the two test year period, compared to the 29.8% increase requested. This is largely due to the fact that the NSUARB has directed a smoother and more gradual transition to the new cost of service based rates. Some of the key factors that enable the gradual transition and reduce the actual amount

of the rate increases are:

- Removal of the consolidation of the Airport/Aerotech system from the rates
- Maintaining existing base charges and not increasing volumetric charges by as much for water and wastewater
- Maintaining Public Fire Protection at a higher rate than initially proposed, and doing a gradual reduction in Public Fire Protection
- Introducing increased charges for Private Fire Protection, but capping the level of increase to 3x the average increase in water rates
- Charging HRM as a customer for the right of way portion of the stormwater costs
- Some minor adjustments in revenue requirements

The results from the rate decision overall were positive, with approval and acceptance of the Integrated Resource Plan, the Cost of Service Manual, and the Efficient Funding Mechanism (Debt) Study. The decision recognizes that these three documents are living documents that will need to be updated and reviewed periodically.

The decision also provides some direction for additional work that must be

#### **Using innovative pipe sled technology for phase 2 of Dunbrack St. watermain sliplining project**







#### Repairing a watermain to keep customers in service

completed during 2013.

#### Service Excellence

The Commission ended the year with 81,861 water customer connections and 78,987 wastewater/stormwater customer connections. These included both the Urban Core, Satellite and Airport/ Aerotech systems.

Customer service staff answered 63,818 telephone enquiries during the year, a slight decrease from last year. The average call wait time to answer was 106 seconds which was over the benchmark of 70 seconds. Staff turnover, combined with projected increasing call volumes related to changing rate structures will continue to stretch the organization to achieve the benchmark of 70 seconds for the average call wait time.

Halifax Water offers a variety of payment options to customers, and processed 421,000 payments in 2012/13, 30%

manually, and 70% electronically.

In 2012/13, with recognition of advancements in technology and metering, Halifax Water issued an RFP to undertake an Advance Metering Infrastructure (AMI) Technology Assessment & Feasibility Study. The study, to be completed in 2013/14, will evaluate the feasibility to move to AMI, and provide information that will help guide future meter purchases.

The conversion of meters ranging from 20 mm (3/4") to 50 mm (2") to a radio frequency (RF) read system continued with an anticipated completion in the 2014/15 fiscal year. With the installation of the RF read system in 2009/10, new meters are switched to monthly reading and billing. The program to install RF meters in all new 15 mm accounts as well as routine replacements continued through the year. This will facilitate the conversion of the largest customer base to enable more frequent reading and

billing without incurring significant operational cost. As of March 31, 2011, 100% of the large meters(75mm and above) had been converted. By March 31, 2013, 78% of the mid-sized meters(20-50mm), and 31% of the small meters(15mm) had been converted. Meter replacements ramped up during 2012/13 with the introduction of a new approach to schedule appointments with customers (cards at the door), and the introduction of some extended hours of service with an evening shift.

# EFFECTIVE ASSET MANAGEMENT

## Asset Management: Integrated Resource Plan

As previously noted the IRP was a unique project for Halifax Water. It was the first long-term, comprehensive planning project undertaken by Halifax Water as a combined water, wastewater and stormwater utility and involved collaboration with the NSUARB through their external consulting team led by the Tellus Institute, HRM and other interested stakeholders.

The IRP provides a solid long term strategic direction for capital and operating programs that will promote efficiency and effectiveness.

Halifax Water will need to use an adaptive management approach to respond to changing regulations, realization of projected growth estimates, and new information about asset condition and performance. Accordingly, the IRP



**Springfield Lake Forcemain Twinning Project. Interdepartmental synergy provides improved environmental performance**

should be the first step in an on-going and evolving process of continuous

improvement and strategic long-term planning.

## Strategic Master Planning Framework



## Capital Infrastructure Program:

Construction of the Eastern Passage Wastewater Treatment Facility (EPWWTF) Expansion and Upgrade Project continued throughout the 2012/13 year. The contractor for the Project, Maple Reinders/Maxim Joint Venture is on schedule for completion by December 2013. The EPWWTF project, budgeted at \$61,769,000, will see an expansion in capacity to accommodate projected population growth in the serviceable boundary over the next 25 years, as well as an upgrade in treatment level from primary to secondary, consistent with national performance standards.

The new Cowie Hill Operations Facility was successfully commissioned in



January 2013 and now hosts the combined Operation's staff for water, wastewater and stormwater services for the West service region. The facility provides a modern and efficient work environment and will facilitate the synergies of our Operations groups working together under one roof.

Core water distribution and wastewater collection system renewals were completed in conjunction with HRM's Street Renewal program. This approach continues to provide a cost effective means to deliver renewal projects. For the 2012/13 reporting period, 5461 m of watermain were renewed (1617 m rehabilitation and 3844 m replacement).

Phase 2 of the Dunbrack St. Transmission Main Rehabilitation Project was completed. The section of watermain being rehabilitated was approximately 1.5 kilometres in length running along Dunbrack St. from Wentworth Dr. to Lacewood Dr. The project involved sliplining the existing 1200mm diameter transmission main with a new 1067mm diameter steel pipe utilizing the same technology as in the 2010 project along Kearney Lake Rd.



**Combined water, wastewater, stormwater operations facility for improved operations efficiency and customer service**

#### WATER MAIN RENEWAL/REHABILITATION PROGRAM



#### Crews repair a sewer forcemain to minimize environmental impacts



The slipling methodology involves inserting a new pipe inside the larger host pipe through a series of launch and retrieval pits excavated along the pipeline. These pits are located at key points such as bends, connections and new valve locations.

As part of this project, HRM partnered with Halifax Water to renew asphalt on two sections of Dunbrack St.

#### Engineering Approvals

The Engineering Approvals section of the Engineering & IS Department reviewed and approved in excess of



### Pipe preparation as part of Dunbrack St. Transmission Main Rehabilitation Project

450 Subdivision, 500 Building Permit, and 75 Planning Applications related to water, wastewater and stormwater service expansion as HRM continues to experience significant residential and commercial growth.

#### Energy Efficiency

Energy use in municipal water and wastewater/stormwater treatment facilities and their respective distribution and collection systems remains among the highest in North America, typically

consuming over 30% of Municipal energy usage and over 4% of the total National energy usage. With this in mind, Halifax Water has developed a strategic approach to improve its energy footprint. 2012/13 activities included:

- Energy Management Plan with specific energy reduction targets and activities for 2012/13.
- Energy audits completed for the three Harbour Solutions Wastewater Treatment Plants and the JD Kline, Lake

Major and Bennery Water Supply Plants.

- Equipment upgrades completed, resulting in over 480,000 kWh (Kilowatt Hours Equivalent), in annual energy savings. Projects included lighting upgrades, heating and ventilation system upgrades, new solar domestic hot water systems, and a new variable frequency drive at the Dartmouth WWTF.
- Continued development of five





**Pockwock water treatment facility with Pockwock Lake in background**

renewable energy generation projects including one wind energy development near the J.D. Kline Water supply Plant, two wind energy projects for the Lake Major watershed area, and two In-Line Hydrokinetic Turbine projects to be installed within the water distribution system.

- Continued focus on early stage involvement in various infrastructure projects with a focus on energy efficiency and sustainability at the design stage. For example, improvements to the HVAC, aeration and lighting systems for the Eastern Passage WWTF are expected to deliver over 1,350,000 kWh/ of energy savings per year, resulting in a combined Net Present Value of over \$900,000 in operational cost savings over the 25 year life of the facility.

- When appropriate, Halifax Water has also taken advantage of Provincial energy efficiency rebate programs being offered by Efficiency Nova Scotia, which help to reduce capital costs and improve project payback.

Overall results for 2012/13 were excellent, with annual energy intensities for the organization being reduced by approximately 1,880,000 kWh (4.1%) in 2012/13 versus 2011/12.

#### **Information Services:**

In conjunction with the recruitment of a new Manager of Information Services, Halifax Water has developed an enhanced strategic approach to information technology and the opportunities to improve efficiency and effectiveness in many business processes. With a senior level team identifying and evaluating IT

opportunities across all departments, and an experienced implementation team, many high priority projects have been completed, including:

- Migration to Microsoft Outlook
- WiFi functionality in major facilities
- Concept planning for a Computerized Maintenance Management System

# REGULATORY COMPLIANCE

Drinking water and wastewater are regulated in Canada by the federal and provincial governments. Provincially, Nova Scotia Environment is the responsible regulator. Drinking water sources and treated drinking water in the distribution systems are sampled to ensure regulatory compliance. Treated wastewater (sewage) is also sampled to ensure compliance with discharge limits to protect both human health and the environment. All sampling is conducted in conformance with the requirements of Nova Scotia Environment. Halifax Water has a Regulatory Compliance group, part of the Environmental Services department, which conducts all of the compliance sampling, separate from the water and wastewater operational departments. All compliance samples are analysed by certified, independent laboratories.

Halifax Water continually assesses the performance of each system as part of our asset management responsibilities. Decisions are made on the need to expand, upgrade or replace equipment and facilities on a priority basis, with human health and environmental impact being the key factors. Allocations of funds are made in the annual capital and operating budgets to address the identified priorities and continually improve performance.

## Drinking Water

Total coliform bacteria provide an indication of the success of disinfection for drinking water. Of 3378 water samples collected between April 2012 and March 2013, 99.94% were absent of total coliform bacteria as compared to a target of 99.7%.

The occasional positive total coliform

Drinking Water Compliance Summary		
Total Coliform Sample Results		
Systems	April 2012 to March 2013	
	% Absent	# of Samples
HFX/Pockwock	99.9%	1019
HFX Pockwock Central	100.0%	508
Lake Major	99.9%	1174
Bennery	100.0%	153
Five Islands	100.0%	102
Silver Sands	100.0%	103
Middle Musquodoboit	100.0%	102
Collins Park	100.0%	100
Miller Lake	100.0%	117
<b>Totals</b>		
Absent (A)		3378
Present (P)		2
		3380
All Sites - % Absent	99.94%	

bacteria results were isolated instances. In each case, results were negative on immediate re-testing, and on subsequent tests.

## Disinfection

Chlorine in drinking water provides for continued disinfection within the distribution system. Nova Scotia Environment requires that a minimum level of chlorine residual be maintained throughout the drinking water distribution system. For the eight drinking water systems between April 2012 and March 2013, the percentages of samples compliant for chlorine residual were: Pockwock 96%, Lake Major 96%, Bennery 100%, Five Islands 100%, Silver Sands 100%, Middle Musquodoboit 100%, Collins Park 100%, and Miller Lake 96%. In total, of 3343 samples measured for residual chlorine in all systems, 3231 were compliant or 97%.

## Cross-Connection Control

The Cross Connection Control Program is a key component of Halifax Water's "Multiple Barrier Approach" to public health. Halifax Water has authority, through regulations approved by the NSUARB, to require the installation of Backflow Prevention Devices (BFP) on water service lines to all industrial, commercial, institutional properties and multi-unit residential buildings (greater than four units). The BFP devices are installed to minimize the risk of potential contaminants entering the public water distribution system through backflow from the customer's premises.

Property owners are responsible to have these devices tested, by a licensed tester, upon installation and annually thereafter. The licensed tester submits a written report to Halifax Water for data entry and record keeping.

Between April 1, 2012 and March 31, 2013 there were 201 BFP devices installed at 107 sites. This brings the total number of BFP devices to 5520 installed at 2882 sites as of March 31, 2013.

## Wastewater

Nova Scotia Environment sets limits on wastewater discharges for various chemical parameters, specific to each wastewater treatment facility. The table on the following page shows the percentage of treated wastewater effluent samples which met Nova Scotia Environment limits between April 2012 and March 2013, for each parameter and treatment facility. To be considered compliant, Nova Scotia Environment requires that 80% of samples meet the defined limits (green boxes). Not all parameters apply to all treatment



## Wastewater Treatment Facility Compliance Summary

Cumulative Performance - April 2012 to March 2013

Wastewater Treatment Facility	% of Samples Compliant with Nova Scotia Environment Discharge Requirements							
	CBOD5	Total Suspended Solids	Fecal Coliform	Phosphorus	Ammonia	pH	Dissolved Oxygen	Aluminum
AeroTech	91	48	89	100	7	83	N/A	N/A
Belmont	59	41	77	N/A	N/A	N/A	N/A	N/A
Dartmouth	85	90	76	N/A	N/A	N/A	N/A	N/A
Eastern Passage	7	36	79	N/A	N/A	N/A	N/A	N/A
Frame	90	10	90	N/A	N/A	N/A	N/A	N/A
Halifax	60	95	90	N/A	N/A	N/A	N/A	N/A
Herring Cove	98	96	96	N/A	N/A	N/A	N/A	N/A
Lakeside-Timberlea	87	32	90	99	30	N/A	99	N/A
Lockview-MacPherson	75	42	97	100	N/A	N/A	N/A	N/A
Middle Musquodoboit	96	85	76	N/A	N/A	N/A	N/A	N/A
Mill Cove	100	98	93	N/A	N/A	N/A	N/A	N/A
North Preston	93	93	100	100	75	71	N/A	N/A
Springfield	97	93	89	N/A	N/A	N/A	N/A	N/A
Uplands Park	95	80	95	N/A	N/A	N/A	N/A	N/A
Steeves Subdivision	100	47	100	0	100	100	N/A	100
Total (Average *by number of samples)	80	74	89	99	25	81	99	100

### LEGEND:

	NSE Achieved (>= 80%)
	NSE not Achieved (<80%)

N/A – Not Applicable

### Definitions:

CBOD5 – Carbonaceous Biochemical Oxygen Demand – a measure of the amount of organic material  
 Total Suspended Solids – a measure of the amount of particles in the wastewater  
 Fecal Coliform – bacteria which are present in the treated sewage  
 Phosphorus – a plant nutrient which can impact water bodies  
 Ammonia – a chemical compound containing nitrogen, another plant nutrient  
 pH – a measure of the acidity of water  
 Dissolved Oxygen – the amount of oxygen in the water, essential for fish and other aquatic organisms

while 8 of 15 facilities were compliant for Total Suspended Solids for the year. Four out of five of the facilities regulated for phosphorus were compliant.

Halifax Water continues to work on various initiatives to upgrade wastewater treatment facilities in order to improve performance. The Wellington facility has been replaced. The Eastern Passage facility is currently being expanded and upgraded, and the Belmont facility will be decommissioned and connected to the Eastern Passage facility when completed. Options are under consideration as a result of Environmental Risk Assessments conducted for the Lakeside-Timberlea, Frame, Lockview-MacPherson and Aerotech facilities. The Halifax and

Dartmouth facilities continue to optimize their treatment processes to improve performance.

### Federal Wastewater System Effluent Regulations

The Canadian Council of Ministers of the Environment (CCME) approved the Canada-wide Strategy for the Management of Municipal Wastewater in 2009. In response, the federal government developed the Wastewater System Effluent Regulations (July, 2012) which implement new national standards for CBOD, TSS, chlorine, and ammonia (un-ionized form). All wastewater treatment facilities are required to meet the national standards within specified

time frames. This will require upgrading the Halifax and Dartmouth Harbour Solutions facilities from advanced-primary to secondary level treatment by 2030. The Herring Cove facility is already able to meet the new requirements, including the CCME Strategy that requires wet-weather Combined Sewer Overflows (CSOs) be reduced over time, and Sanitary Sewer Overflows (SSOs) be eliminated eventually. The older parts of Halifax and Dartmouth contain combined sewer systems with CSOs, and some areas outside the downtown core have SSOs. Upgrading treatment plants and reducing overflows will require significant expenditures over time to meet the new national standards. Halifax Water is currently putting measures in place

to allow detection and measurement of sewer system overflows.

### Environmental Engineering

Halifax Water's Pollution Prevention staff regulate discharges into storm and wastewater systems to ensure environmental protection and compliance with Halifax Water's Regulations as approved by the NSUARB. Wastes such as hazardous chemicals, solvents, fuels, heavy metals and eroded soil, if discharged to our systems, may disrupt wastewater treatment processes; cause damage to the collection, pumping or treatment facilities; create hazardous conditions for both the public and staff; and result in pollution of our rivers, lakes and the harbour. Some discharges are immediate in nature resulting from an accident, failure of a storage or fuel tank, or an illegal dump of a noxious substance into a storm or wastewater system. Others are more permanent in nature, such as an ongoing discharge from an industrial or institutional facility, a cross connection of a wastewater lateral into a storm sewer (which then discharges into a freshwater or marine body), or the discharge of stormwater into the wastewater system.

Staff utilize a variety of tools to address such issues including education, system monitoring and investigations,



**Pumping a fuel spill from a catch basin to minimize environmental**

improvements to development and construction practices, Summary Offence Tickets, and other regulatory approaches as defined in our Regulations.

Halifax Water continues to find cross connections in which wastewater laterals from homes and buildings are incorrectly connected to the stormwater system. In the past three years, 23 such cross connections have been identified and corrected. Many of these conditions have existed for many years, but some are new. The discharge of wastewater into a stormwater system poses a direct risk to public health and the environment. Pollution Prevention staff also respond to environmental incidents, such as spills of materials that may enter the stormwater system, as well as conducting environmental investigations related to

our stormwater and wastewater systems. Environmental Engineering staff is responsible for administering the Stormwater Inflow Reduction (SIR) Program and the Private Outfall Elimination Program. The focus of the SIR program is designed to address the most serious operational and compliance issue facing Halifax Water, the discharge of stormwater into the wastewater system. These increased wet weather flows lead to wastewater overflows and disrupt the wastewater treatment process. These events pose a risk to public health and the environment, and cause Halifax Water to be out of compliance with Federal and Provincial Regulations.

The Private Outfall Elimination Program began in parallel with the Harbour Solutions Project in 2004. The objective of this program is to eliminate the direct discharge of wastewater into Halifax Harbour from old, privately-owned outfall pipes by requiring property owners to connect to the wastewater system. The program has eliminated over 60 outfall pipes, which had been discharging about 2300 cubic metres of wastewater per day directly into Halifax Harbour (an equivalent discharge from 7000 people).



**Sampling stormwater run off to assess possible downstream concerns**

# STEWARDSHIP of the ENVIRONMENT

## Wastewater and Stormwater Services

Halifax Water completed several strategic initiatives during the year. These initiatives, which include the Integrated Resource Plan (IRP) and Regional Wastewater Functional Plan (RWWFP), provide a long term direction for operational programs and projects that will help ensure the efficient management of resources and effective delivery of services. While the IRP and RWWFP set the strategy, Wastewater and Stormwater Services are bound by the Wastewater System Effluent Regulations as set out by Environment Canada which define the future compliance requirements for wastewater systems.

The Wastewater and Stormwater Services Departments continually works with other Halifax Water business units to identify and implement operational efficiencies. This year a key strategic initiative was launched to control and manage unwanted flows into our systems.

The Wet Weather Flow Management Program truly embraces the triple bottom line approach (ie. taking into account the financial, social, and environmental impacts of a project or program) to reduce unwanted flows in the system thus reducing overflows to the environment and sewer backups into private properties. This program is a coordinated effort that involves all Halifax Water business units and finds the right balance of departmental synergies to deliver enhanced service to Halifax Water customers.

The basis of this program originates from best management practices and environmental stewardship while

achieving operational efficiencies.

Wastewater and Stormwater Services Operations staff undertook several initiatives to better manage system flows through proactive maintenance and repair. In cooperation with Engineering Services, who provided design and construction support, the Springfield Lake Pumping Station Forcemain Twinning Project was successfully completed. This pumping station is one of the most active in the system handling a large quantity of the sewage from Springfield Lake sewershed. The additional force main has decreased the number of overflows into Springfield Lake. This has improved environmental compliance, increased system efficiency during high rain events by eliminating overflows and improving customer service within the sewershed.

This project also allowed Halifax Water to realize operational savings by eliminating the use of pumper trucks during wet weather events. This is an excellent example of inter-departmental cooperation and cost effective operations.

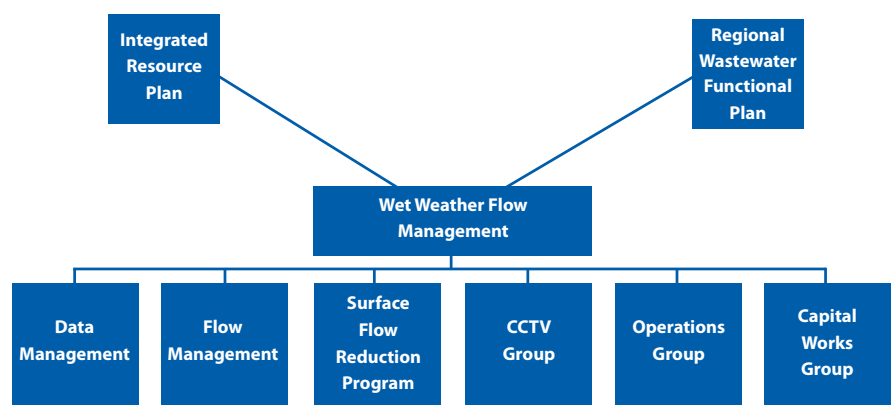
The wastewater treatment section of the department continued its operational efficiency and optimization efforts. The



**Sewer backups can be costly and pose potential health concerns**

Mill Cove wastewater treatment facility piloted a cutting edge technology for on-site Oxygen generation. This technology not only reduces the carbon footprint but also comes with significant cost savings, reliability and better working environment for staff. Preliminary results have been very successful.

The Halifax Harbour Solutions facilities began trials on alternate chemicals to reduce the chemical consumption and improve effluent discharge quality to Halifax Harbour. These facilities also saw several successful initiatives to reduce energy requirements. The projects involved the addition of new equipment as well as adjustments to existing major and minor equipment.





The department also undertook a strategic review of the operational philosophies at the Aerotech and Lockview MacPherson wastewater treatment facilities. This internal review was conducted from first principles and yielded several operational changes that have improved the performance of these plants. These changes were implemented throughout the year with appropriate performance measurements noted. The results to date are very promising. The optimization process continues.

Wastewater treatment staff participated in the Halifax Water initiative of extending the Environmental Management System (EMS) (ISO14001) to wastewater systems. The EMS program, which is currently being implemented at the Herring Cove Wastewater Treatment Facility, ensures a standardized approach for system operations, and will serve as the framework for extension to other wastewater facilities.

The Fleet Services section undertook a comprehensive review of external heavy equipment repair services and concluded that Halifax Water would be better served with in house maintenance of this equipment. The appropriate facilities were designed as part of the Cowie Hill Facilities expansion and a business plan was put in place to extend the services of the Fleet section.



**Springfield Lake Forcemain Twinning Project. Providing enhanced environmental protection and customer service in a cost effective manner**



## Water & Wastewater Service Districts and Supporting Infrastructure



Water Service District  
 Wastewater Service District  
 Common District  
 Wastewater Treatment  
 Primary Wastewater Pumping Station

Wastewater Trunk S  
 Water Treatment  
 Water Reservoir  
 Water Distribution S  
 Operations Depot





# WORKPLACE SAFETY and SECURITY

Halifax Water and its employees are committed to providing a healthy and safe work environment to help prevent occupational illness and injury, as well as ensure public safety. Health and safety is a core business function and treated as a priority in daily work activities.

This year, Halifax Water worked with Nova Scotia Power, Heritage Gas, and Maritimes Northeast to educate our employees and our contractors on underground utility locate requirements in Nova Scotia and specifically in HRM. Encountering underground infrastructure while excavating can result in a variety of problems, some of which are:

- risk of injury to the operator of the excavator, and to other employees and members of the public,
- damage to the infrastructure, including costs to repair,
- loss of service to customers and the general public while the infrastructure is being repaired,

- disruption of traffic flow if the infrastructure is in or near a street,
- in the case of damage to the wastewater system, risk to public health from the release of wastewater.

Knowing where underground infrastructure is located before digging is critical to preventing these and other related problems.

Halifax Water has also completed competency testing on all employees who operate excavators and backhoes to ensure safe operation of equipment. These employees were individually tested and evaluated while performing excavation work, and retrained where required.

To ensure effective communication in dealing with safety issues, Halifax Water has expanded its one central Joint Occupational Health and Safety Committee to eight committees located at various facilities. This allows Halifax



## Responding to critical infrastructure emergencies

Water and its employees to work together on Occupational Health and Safety issues at a grassroots level.

Halifax Water is responsible for critical water, wastewater and stormwater infrastructure that is essential to the health, safety, security, and economic well-being of residents of HRM. With this in mind, Halifax Water continually refines procedures for all-hazard emergency responses. This past year, Halifax Water completed training for all employees in the Incident Command System (ICS), and are now utilizing the ICS approach when responding to emergencies or significant planned events.

Halifax Water also continues to improve safety, security and emergency response practices and procedures by fostering relationships with Federal, Provincial and Municipal Emergency Management Agencies. This past year, staff participated in various meetings and tabletop exercises with these agencies, to ensure a well co-ordinated approach to any emergency situation which may arise.

## Proper personal protective equipment and using a trench box. Covering the safety bases





# MOTIVATED and SATISFIED EMPLOYEES

One of the greatest challenges that Halifax Water will be facing in the coming years will be its ability to develop future leaders. Half of Halifax Water's current group of leaders (defined as employees in supervisory, managerial, professional and executive roles) will be eligible to retire within the next five years. Planning for succession and achieving a smooth leadership transition will minimize the possible organizational "brain drain" that could be triggered by these retirements.

Halifax Water's strategic Integrated Resource Plan (IRP) will further impact the situation since the delivery of this program over the next 30 years will require a significant number of additions to the organization's current talent pool. Developing internal talent and tactically integrating external talent will have a significant impact on the continued success of the organization.

In order to address these challenges Halifax Water's Human Resources department realised the need to restructure its service delivery model. The main strategic focus of the department has now become succession planning.

An effective succession plan requires a broad functional approach. Areas such as training, compensation, recruitment, performance assessment, and leadership development all have to be carefully re-examined and aligned for maximum efficiency. Many new initiatives have already been undertaken to support this goal.

The priority was to establish a succession planning committee. The Succession Planning Review Committee was created with a mandate to determine competencies required for key

positions, assess the current talent in the organization, identify potential successors and talent gaps, provide training and development opportunities, design career paths, engage employees in career discussions, and build a talent pipeline.

Other significant initiatives that will support the work of the committee include the launch of the Supervisor Competency Training Program, the redesign of the Performance Appraisal Program to include a succession assessment, and the creation of the Halifax Water Talent Pipeline Strategic Recruiting Program.

Developing the next generation of Halifax Water leaders will ensure that we continue to deliver on our mission "To provide world class services for our

customers and our environment".

## **Carolyn Bruce Excellence in Customer Service Award**

In 2011, Halifax Water lost a valued employee who, through her passion and dedication, set a standard in customer service for Halifax Water. In 2012 the Carolyn Bruce Excellence in Customer Service Award was established in memory and honour of Carolyn's legacy. Each year Halifax Water recognizes an employee who has shown exemplary customer service by presenting this award at the annual service awards banquet. In 2012 this award was presented to Cedric Williams, Supervisor, Wastewater and Stormwater Collections for his exceptional Customer Service displayed on many occasions throughout the year.



**Carl Yates(L) presents Cedric Williams with the 1st Annual Carolyn Bruce Excellence in Customer Service Award**



## Fundraising Initiatives

Halifax Water employees continue to collectively recognize the importance of helping those who are in need. This year employees contributed \$4,788.00 to the United Way Campaign, \$884.00 to H2O (help to others) fund, \$7,184.00 to the Water for People fund, which sponsors water supply projects in Third World Countries, and raised \$1,900.26 for Carolyn's Angel Tree program through The Salvation Army, and delivered presents to 30 children in need at Christmas time. Halifax Water Employees were also very generous in donations to support Bryony House.

During the year the following employees retired after dedicated service to the utility:

Linda Duggan, Administrative Assistant - April 1, 2012  
Martin Parsons, Works Supervisor - June 1, 2012  
Julie Rayner, Manager, Information Services, October 1, 2012  
Paul Hanlon, Pumping Station Service Person - November 1, 2012

John Sibbald, Manager, Pollution and Prevention - February 1, 2013  
Virginia Veinot, Director, Human Resources - February 1, 2013  
Charles Muise, Lead Operator - March 1, 2013  
Dave Duggan, Superintendent, Water Quality - March 1, 2013  
Belinda Collier, Billing Coordinator - March 1, 2013

Long Service Awards were presented to:

### 35 years

Veinot Virginia  
Bourdeau Joe  
McCarthy Joe

### 30 years

Makin Tony  
Roache Stoney  
Burbine Tim

### 25 years

Seguin Robert  
Stewart Lewis  
Singer Heather  
Masters Todd

Boone Daryl  
MacMaster Daniel  
Vaughan Anthony  
Stewart Gregory  
Albert Marcel  
Graham Downey  
Belliveau Norma

### 20 years

Bellemare Pat  
MacNeil Harold  
Coolen Alan  
Isenor Michael  
Hanlon Paul  
Murphy Stephen  
Burke Michael  
MacDonald Shawn

### 10 years

Naugle Paul  
Martin Stewart  
Mannette Randy  
Piercey Robert  
Tooke Wayne Jr  
Greer Adam  
Pelley Thoren  
Kennedy Rachel

The Halifax Water Kiwanis Cystic Fibrosis Dragon Boat team braves the elements for a good cause



## TYPICAL ANALYSIS OF POCKWOCK/LAKE MAJOR WATER 2012 - 2013

(in milligrams per litre unless shown otherwise)

Note: All Regulatory Compliance Analysis are Processed by Third Party Laboratories

IMAGE: CANSTOCKPHOTO

PARAMETERS	(Halifax) POCKWOCK		(Dartmouth) LAKE MAJOR		GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	
	Raw Water	Treated Water	Raw Water	Treated Water	Maximum Acceptable Concentration	Objective Concentration
Alkalinity (as CaCO <sub>3</sub> )	<1.0	18.0	<1.0	17.0	-	-
Aluminum	0.131	0.094	0.219	0.064	-	*0.20 / 0.10
Ammonia (N)	<0.05	<0.05	<0.05	<0.05	-	-
Arsenic	<0.001	<0.001	<0.001	<0.001	0.010	-
Calcium	1.06	4.2	1.0	7.5	-	-
Chloride	7.2	8.8	5.9	8.2	-	≤250
Chlorate	<0.1	<0.1	<0.1	<0.1	1.0	-
Chlorite	<0.1	<0.1	<0.1	<0.1	1.0	-
Colour (True Colour Units)	15.0	3.0	39.0	3.0	-	≤15.0
Conductivity (µmho/cm)	35.0	85.0	33.0	96.5	-	-
Copper (Total)	0.082	0.005	0.116	<0.002	-	≤1.0
Fluoride	<0.10	0.62	<0.10	0.63	1.5	0.7 - 0.8
Hardness (as CaCO <sub>3</sub> )	4.4	12.5	4.3	20.5	-	-
Hardness (as CaCO <sub>3</sub> ) (Grains)	0.31	0.90	0.3	1.4	-	-
HAA5 (avg.)	-	0.059	-	0.068	0.080	-
Iron (Total)	0.061	<0.050	0.123	<0.050	-	<0.3
Langelier Index @ 5°C	-4.8	-2.3	-5.4	-2.2	-	-
Langelier Index @ 60°C	-4.4	-2.0	-4.4	-1.9	-	-
Lead (Total) (µg/l)	<0.50	<0.50	<0.50	<0.50	10.0	-
Magnesium	0.44	0.47	0.43	0.48	-	-
Manganese (Total)	0.045	0.007	0.077	0.016	-	≤0.05
Mercury (µg/l)	<0.013	<0.013	<0.013	<0.013	1.0	-
Nitrate (as N)	0.055	0.061	<0.050	0.06	10.0	-
Nitrite (as N)	<0.01	<0.01	<0.01	<0.01	3.2	-
pH (pH Units)	5.6	7.4	5.5	7.3	-	6.5 - 8.5
Potassium	0.32	0.41	0.40	0.37	-	-
Sodium	4.3	12.2	4.1	11.8	-	≤200
Solids (Total Dissolved)	22.0	49.3	24.0	60.0	-	≤500
Sulfate	4.0	9.1	2.7	16.8	-	≤500
Turbidity (NTU)	0.33	0.090	0.30	0.070	**0.2 / 1.0	≤5
Total Organic Carbon (TOC)	2.7	1.8	4.6	1.8	-	-
THM's (avg.)	-	0.074	-	0.094	0.100	-
Uranium (µg/l)	<0.10	<0.11	<0.10	<0.10	20.0	-
Zinc (Total)	0.005	0.109	0.011	0.100	-	≤5.0

\* Aluminum objective is related to type of plant filtration; the aluminum objective for direct filtration (i.e. Pockwock) is <0.20 mg/l and conventional filtration (i.e. Lake Major) is <0.10 mg/l. \*\*0.2/1.0 means the plant must produce water with turbidity of <0.2 NTU 95% of the time and <1.0 NTU 100% of the time, as required by Provincial Permit.

## TYPICAL ANALYSIS - SMALL SYSTEMS 2012 - 2013

(in milligrams per litre unless shown otherwise)

Note: All Regulatory Compliance Analysis are Processed by Third Party Laboratories

IMAGE: CANSTOCKPHOTO

PARAMETERS	BENNERY LAKE		FIVE ISLAND LAKE		GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	
	Raw Water	Treated Water	Raw Water	Treated Water	Maximum Acceptable Concentration	Objective Concentration
Alkalinity (as CaCO <sub>3</sub> )	<5.0	43.7	30.0	34.5	-	-
Aluminum	0.135	0.036	0.006	0.006	-	0.2
Ammonia (N)	<0.05	<0.05	<0.05	<0.05	-	-
Arsenic	<0.001	<0.001	0.005	0.004	0.010	-
Calcium	1.89	14.1	8.4	8.8	-	-
Chloride	5.8	9.1	4.0	5.2	-	≤250
Chlorate	<0.1	0.4	<0.1	0.2	1.0	-
Chlorite	<0.1	<0.1	<0.1	<0.1	1.0	-
Colour (True Colour Units)	33.0	<3.0	<5.0	<3.0	-	≤15.0
Conductivity (µmho/cm)	33.0	135.0	76.0	82.0	-	-
Copper (Total)	0.294	0.040	0.003	0.015	-	≤1.0
Fluoride	<0.10	<0.10	0.40	0.40	1.5	0.8 - 1.0
Hardness (as CaCO <sub>3</sub> )	7.2	38.0	25.0	27.0	-	-
Hardness (as CaCO <sub>3</sub> ) (Grains)	0.51	2.7	1.8	1.9	-	-
HAA5 (avg.)	-	0.00	-	<0.005	0.080	-
Iron (Total)	0.827	<0.050	<0.050	<0.050	-	≤0.3
Langelier Index @ 5°C	-2.8	-1.6	-1.9	-1.4	-	-
Langelier Index @ 60°C	-2.4	-1.3	-1.5	-1.1	-	-
Lead (Total) (µg/l)	0.64	<0.50	<0.50	<0.50	10.0	-
Magnesium	0.44	0.58	1.04	1.1	-	-
Manganese (Total)	0.291	0.026	<0.002	<0.002	-	≤0.05
Mercury (µg/l)	<0.013	<0.013	<0.013	<0.013	1.0	-
Nitrate and Nitrite (as N)	0.06	0.06	<0.050	<0.050	10.0	-
pH (pH Units)	6.42	7.5	7.3	7.7	-	6.5 - 8.5
Potassium	0.20	0.32	0.44	0.48	-	-
Sodium	3.7	13.0	5.7	6.9	-	≤200
Solids (Total Dissolved)	28.0	97.0	55.0	62.0	-	≤500
Sulfate	3.9	28.3	2.6	2.6	-	≤500
Turbidity (NTU)	1.11	0.20	0.12	0.27	*0.2 / 1.0 ***1.0	≤5
Total Organic Carbon (TOC)	3.8	1.8	<0.50	<0.60	-	-
THM's (avg.)	-	0.067	-	<0.001	0.100	-
Uranium (µg/l)	<0.10	<0.10	9.6	10.5	20.0	-
Zinc (Total)	0.007	0.093	0.005	0.007	-	≤5.0
PCB (µg/l)	<0.05	<0.05	<0.050	<0.050	-	-
Gross Alpha / Gross Beta (Bq/L)	<0.02 // 0.04	<0.06 / <0.05	0.16 / 0.24	0.22 / 0.10	0.5 / 1.0	-
Lead-210 (Bq/L)	-	-	-	<0.02	0.2	-

\*Facility construction does not allow for raw water sampling. \*\*The Bennery Lake plant must produce water with turbidity of <0.2 NTU 95% of the time and <1.0 NTU 100% of the time and Five Island Lake plant must produce water with turbidity of <1.0 NTU 95% of the time, as required by Provincial Permit.

## TYPICAL ANALYSIS - SMALL SYSTEMS 2012 - 2013

(in milligrams per litre unless shown otherwise)

Note: All Regulatory Compliance Analysis are Processed by Third Party Laboratories

IMAGE CANSTOCKPHOTO

PARAMETERS	MIDDLE MUSQUODOBOIT		COLLINS PARK		GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	
	Raw Water	Treated Water	Raw Water	Treated Water	Maximum Acceptable Concentration	Objective Concentration
Alkalinity (as CaCO <sub>3</sub> )	41.0	29.0	11.0	9.5	-	-
Aluminum	0.008	0.008	0.111	0.008	-	0.2
Ammonia (N)	<0.05	<0.05	<0.05	<0.05	-	-
Arsenic	<0.001	<0.001	0.003	<0.001	0.010	-
Calcium	14.5	3.0	5.9	0.31	-	-
Chloride	8.2	2.1	30.5	3.8	-	≤250
Chlorate	<0.1	<0.1	<0.1	0.2	1.0	-
Chlorite	<0.1	<0.1	<0.1	<0.1	1.0	-
Colour (True Colour Units)	<5.0	<5.0	26.0	<5.0	-	≤15.0
Conductivity (µmho/cm)	150.0	82.0	150.0	20.5	-	-
Copper (Total)	0.004	0.012	<0.002	0.004	-	≤1.0
Fluoride	<0.1	<0.1	<0.1	<0.1	1.5	0.8 - 1.0
Hardness (as CaCO <sub>3</sub> )	65.0	8.9	18.0	<1.0	-	-
Hardness (as CaCO <sub>3</sub> ) (Grains)	4.6	0.6	1.3	0.1	-	-
HAA5 (avg.)	-	<0.005	-	<0.005	0.080	-
Iron (Total)	<0.050	<0.050	0.175	<0.050	-	≤0.3
Langelier Index @ 5°C	-2.0	-2.8	-2.6	-4.6	-	-
Langelier Index @ 60°C	-1.8	-2.6	-2.3	-4.3	-	-
Lead (Total) (µg/l)	<0.70	<0.70	<0.50	<0.50	10.0	-
Magnesium	5.8	0.70	1.0	<0.10	-	-
Manganese (Total)	<0.002	<0.002	0.058	<0.002	-	≤0.05
Mercury (µg/l)	<0.013	<0.013	<0.013	<0.013	1.0	-
Nitrate and Nitrite (as N)	5.0	2.4	0.12	<0.06	10.0	-
pH (pH Units)	7.0	7.1	7.2	6.6	-	6.5 - 8.5
Potassium	0.93	0.46	1.1	0.15	-	-
Sodium	5.7	14.0	18.2	2.9	-	≤200
Solids (Total Dissolved)	103.0	48.0	77.0	13.2	-	≤500
Sulfate	5.3	<2.0	10.8	<2.0	-	≤500
Turbidity (NTU)	0.11	0.03	1.3	0.03	*0.1 / 0.3	≤5
Total Organic Carbon (TOC)	0.60	<0.50	3.7	<0.50	-	-
THM's (avg.)	-	<0.001	-	0.003	0.100	-
Uranium (µg/l)	<0.10	<0.10	<0.10	<0.10	20.0	-
Zinc (Total)	0.011	0.182	0.007	0.133	-	≤5.0
PCB (µg/l)	<0.05	<0.05	<0.05	<0.05	-	-
Gross Alpha / Gross Beta (Bq/L)	0.08 / 0.09	0.03 / 0.04	0.04 / 0.08	<0.02 / <0.02	0.5 / 1.0	-
Lead-210 (Bq/L)	-	-	-	-	0.2	-

\*Ultra-filtration membrane plants must produce water with turbidity of <0.1 NTU 99% of the time and <0.3 NTU 100% of the time, as required by Provincial Permit.



## TYPICAL ANALYSIS - SMALL SYSTEMS 2012 - 2013

(in milligrams per litre unless shown otherwise)

Note: All Regulatory Compliance Analysis are Processed by Third Party Laboratories

IMAGE: CANSTOCKPHOTO

PARAMETERS	SILVER SANDS		MILLER LAKE		GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	
	Raw Water	Treated Water	Raw Water	Treated Water	Maximum Acceptable Concentration	Objective Concentration
Alkalinity (as CaCO <sub>3</sub> )	66.0	65.0	160.0	54.0	-	-
Aluminum	0.009	0.008	0.006	0.063	-	0.2
Ammonia (N)	<0.050	<0.050	<0.050	<0.050	-	-
Arsenic	<0.002	<0.001	0.014	<0.003	0.010	-
Calcium	37.7	36.8	78.9	22.1	-	-
Chloride	62.0	64.0	120.0	33.0	-	≤250
Chlorate	<0.1	<0.3	<0.1	<0.1	1.0	-
Chlorite	<0.1	<0.1	<0.1	<0.1	1.0	-
Colour (True Colour Units)	<5.0	<5.0	<5.0	<5.0	-	≤15.0
Conductivity (µmho/cm)	370.0	355.0	730.0	240.0	-	-
Copper (Total)	<0.002	<0.002	0.003	<0.002	-	≤1.0
Fluoride	0.20	0.22	0.30	0.50	1.5	0.8 -1.0
Hardness (as CaCO <sub>3</sub> )	120.0	115.0	250.0	65.1	-	-
Hardness (as CaCO <sub>3</sub> ) (Grains)	8.5	8.1	17.6	4.6	-	-
HAA5 (avg.)	-	<0.005	-	0.054	0.080	-
Iron (Total)	0.620	<0.050	<0.500	<0.050	-	≤0.3
Langelier Index @ 5°C	-0.84	-0.49	+0.50	-0.85	-	-
Langelier Index @ 60°C	-0.60	+0.23	+0.8	-0.60	-	-
Lead (Total) (µg/l)	<0.50	<0.50	0.72	<0.50	10.0	-
Magnesium	5.4	5.2	11.7	3.0	-	-
Manganese (Total)	0.831	0.030	0.015	0.007	-	≤0.05
Mercury (µg/l)	<0.013	<0.013	<0.013	<0.013	1.0	-
Nitrate and Nitrite (as N)	<0.050	<0.050	0.08	0.06	10.0	-
pH (pH Units)	7.9	7.8	8.1	7.8	-	6.5 - 8.5
Potassium	0.83	1.1	1.5	0.59	-	-
Sodium	24.6	27.0	43.7	18.7	-	≤200
Solids (Total Dissolved)	210.0	200.0	400.2	128.0	-	≤500
Sulfate	18.0	19.3	19.5	12.3	-	≤500
Turbidity (NTU)	8.7	0.2	0.19	0.1	*1.0 **0.2 / 1.0	≤5
Total Organic Carbon (TOC)	<0.50	<0.50	<0.50	1.3	-	-
THM's (avg.)	-	<0.001	-	0.087	0.100	-
Uranium (µg/l)	<0.10	<0.10	2.4	<0.10	20.0	-
Zinc (Total)	<0.005	0.166	0.100	0.064	-	≤5.0
PCB (µg/l)	<0.05	<0.05	<0.05	<0.05	-	-
Gross Alpha / Gross Beta (Bq/L)	0.80 / 0.50	<0.11 / <0.09	0.5 / 0.40	0.07 / 0.09	0.5 / 1.0	-
Lead-210 (Bq/L)	-	-	-	-	0.2	-

\*The Silver Sands plant must produce water with turbidity of <1.0 NTU 95% of the time. \*\*The Miller Lake plant must produce water with turbidity of <0.2 NTU 95% of the time and <1.0 NTU 100% of the time, as required by Provincial Permit.

# Financial Statements

(NSUARB Accounting and Reporting Handbook)

Halifax Regional Water Commission

March 31, 2013

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## Independent auditor's report

To the Members of the Board of the  
Halifax Regional Water Commission

We have audited the accompanying financial statements of Halifax Regional Water Commission, which comprise the balance sheet as at March 31, 2013, and the statements of operations, contributed capital surplus, operating surplus, operating surplus used to fund capital and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information. The financial statements have been prepared by management based on the financial reporting provisions of the Accounting and Reporting Handbook for Water Utilities ("the Water Utility Handbook") issued by the Nova Scotia Utility and Review Board.

### Management's responsibility for the financial statements

Management is responsible for the preparation of these financial statements in accordance with the financial reporting provisions of the Water Utility Handbook, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

### Auditor's responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### Opinion

In our opinion, the financial statements of Halifax Regional Water Commission for the year ended March 31, 2013 are prepared, in all material respects, in accordance with the financial reporting provisions of the Water Utility Handbook.

### Basis of Accounting

Without modifying our opinion, we draw attention to note 2(a) to the financial statements, which describes the basis of accounting. The financial statements are prepared to assist the Halifax Regional Water Commission to comply with the financial reporting provisions of the Water Utility Handbook referred to above. As a result, the financial statements may not be suitable for another purpose.

### Other matters

Our audit was conducted for the purpose of forming an opinion on the financial statements taken as a whole. The current year's supplementary information included on pages 18 to 23 is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such supplementary information has been subjected to the auditing procedures applied, only to the extent necessary to express an opinion, in that audit of the financial statements taken as a whole.

Halifax, Canada  
June 6, 2013

Original Signed



Chartered Accountants



# Halifax Regional Water Commission

## Statement of operations

Year ended March 31, 2013

(in thousands)

		2013	2012
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Water service	\$ 30,572	\$ 32,218	\$ 30,562
Wastewater/stormwater services	54,221	57,896	54,383
Fire protection	9,502	9,844	9,502
Private fire protection services	367	370	366
Airport Aerotech system	1,295	1,397	1,352
Other operating revenue	2,399	2,345	2,662
	98,356	104,070	98,827
Operating expenditures			
Water supply and treatment	7,314	6,863	6,598
Water transmission and distribution	8,930	8,372	7,834
Wastewater/stormwater collection	15,808	12,781	15,008
Wastewater treatment	17,873	16,762	16,380
Engineering and information services	6,608	6,564	5,813
Environmental services	2,486	2,503	2,290
Customer service	3,513	3,793	3,330
Administration and pension	6,693	9,365	7,121
Airport Aerotech system	1,801	1,857	1,520
Depreciation	15,035	14,177	11,347
	86,061	83,037	77,241
Operating profit	12,295	21,033	21,586
Financial and other revenues			
Interest	480	674	402
Other	2,256	2,295	2,193
	2,736	2,969	2,595
	15,031	24,002	24,181
Financial and other expenditures			
Interest on long term debt	8,456	7,605	8,100
Repayment of long term debt	13,693	14,566	13,066
Amortization of debt discount	97	88	64
Grant in lieu of taxes (note 13)	3,932	3,971	3,944
	26,178	26,230	25,174
Excess of expenditures over revenues	\$ (11,147)	\$ (2,228)	\$ (993)

See accompanying notes to the financial statements.

# Halifax Regional Water Commission

## Balance sheet

Year ended March 31, 2013

(in thousands)

	2013	2012
<b>Assets</b>		
Current		
Cash and cash equivalents	\$ 22,353	\$ 16,403
Receivables		
Customer charges and contractual	23,861	20,563
Halifax Regional Municipality	2,115	1,385
Materials and supplies	1,294	1,154
Prepays	748	709
	50,371	40,214
Receivable from Halifax Regional Municipality	-	163
Regulatory asset (note 5)	4,156	4,156
Plant under construction	44,597	23,951
Utility plant in service (schedule A)	937,692	900,385
	\$ 1,036,816	\$ 968,869
<b>Liabilities</b>		
Current		
Payables and accruals		
Trade	\$ 17,203	\$ 15,484
Interest on long term debt	1,653	1,421
Halifax Regional Municipality	2,281	1,235
Contractor and customer deposits	194	177
Current portion of long term debt (schedule B)	15,553	13,109
Unearned revenue	117	119
	37,001	31,545
Long term debt (schedule B)	166,879	133,063
Accrued pension liability (note 4)	7,107	4,309
Accrued post retirement benefits (note 4)	677	741
Accrued long term service awards (note 6)	2,929	2,780
	214,593	172,438
<b>Equity</b>		
Special purpose reserves (note 8)	22,670	19,627
Contributed capital surplus (page 5)	786,170	761,180
Operating surplus (page 5)	1,003	3,244
Operating surplus used to fund capital (page 5)	12,380	12,380
	822,223	796,431
	\$ 1,036,816	\$ 968,869

Contingent liabilities (note 3)

Commitments (note 9)

Subsequent events (note 15)

On behalf of the Board

Original Signed

Commissioner

Original Signed

Commissioner

See accompanying notes to the financial statements.

# Halifax Regional Water Commission

## Statement of cash flows

Year ended March 31, 2013

(in thousands)

	2013	2012
Increase (decrease) in cash and cash equivalents		
<b>Operating</b>		
Excess of expenditures over revenues	\$ (2,228)	\$ (993)
Refund of Airport Aerotech stormwater revenue	-	(86)
Depreciation and amortization	15,328	12,270
Accrued pension liability	2,798	364
Decrease in accrued post retirement benefits	(64)	(62)
Repayment of long term debt	14,566	13,066
Increase in accrued long term service awards	149	180
	30,549	24,739
Change in non-cash operating working capital items (note 10)	(1,195)	14,807
	29,354	39,546
<b>Financing</b>		
Proceeds from issuance of long term debt	51,726	-
Decrease in receivable from Halifax Regional Municipality	163	13
Contributions to reserves	4,024	3,158
Debt issue costs	(357)	(54)
Principal repayment on Harbour Solutions long term debt	(6,500)	(6,500)
Principal repayments of long term debt	(8,609)	(6,772)
	40,447	(10,155)
<b>Investing</b>		
Capital cost contributions	2,643	1,492
Proceeds from sale of plant in service	670	71
Purchase of plant under construction	(33,388)	(14,199)
Purchase of utility plant in service	(33,776)	(16,082)
	(63,851)	(28,718)
Increase in cash and cash equivalents	5,950	673
Cash and cash equivalents, beginning of year	16,403	15,730
Cash and cash equivalents, end of year	\$ 22,353	\$ 16,403

See accompanying notes to the financial statements.

## Halifax Regional Water Commission Statement of contributed capital surplus

Year ended March 31, 2013

(in thousands)

	2013	2012
Contributed capital surplus, beginning of year	\$ 761,180	\$ 743,911
Contributions to plant in service	18,683	15,203
Transfer from special purpose reserve (note 8)	981	1,504
Debt repayment	14,566	13,066
Gain (loss) on sale of land	531	(37)
Capital surplus transferred with Halifax Harbour Solutions	-	(52)
	<b>795,941</b>	<b>773,595</b>
Less: amortization (note 2(b))	9,771	12,415
Contributed capital surplus, end of year	<b>\$ 786,170</b>	<b>\$ 761,180</b>

## Halifax Regional Water Commission Statement of operating surplus

Year ended March 31, 2013

(in thousands)

	2013	2012
Operating surplus, beginning of year	\$ 3,244	\$ 8,043
Operating surplus used to fund capital	-	(3,720)
Excess of expenditures over revenues	(2,228)	(993)
Refund of Airport Aerotech stormwater revenue	-	(86)
Stewardship contributions charged to current surplus	(13)	-
Operating surplus, end of year	<b>\$ 1,003</b>	<b>\$ 3,244</b>

## Halifax Regional Water Commission Statement of operating surplus used to fund capital

Year ended March 31, 2013

(in thousands)

	2013	2012
Operating surplus used to fund capital, beginning of year	\$ 12,380	\$ 8,660
Additions to utility plant in service funded by operating surplus	-	3,720
Operating surplus used to fund capital, end of year	<b>\$ 12,380</b>	<b>\$ 12,380</b>

See accompanying notes to the financial statements.



# Halifax Regional Water Commission

## Notes to the financial statements

Year ended March 31, 2013

(in thousands)

### 1. Nature of operations

The Commission is a public utility owned by the Halifax Regional Municipality (HRM). The Commission is responsible for the supply of municipal water, wastewater and stormwater services to the residents of the HRM.

### 2. Summary of significant accounting policies

#### (a) Regulation

In matters of administrative policy relating to rates, capital expenditures, depreciation rates and accounting matters, the Commission is subject to the jurisdiction of the Nova Scotia Utility and Review Board (NSUARB). Rates charged to and collected from customers are designed to recover costs of providing the regulated services. These statements have been prepared in accordance with the Accounting and Reporting Handbook for Water Utilities (Handbook) issued by the NSUARB. There are differences in the accounting treatment of certain transactions from Canadian generally accepted accounting principles including the accounting of principal debt payments and gains and losses on the disposal of fixed assets.

Regulatory assets represent costs incurred that have been deferred as approved by the NSUARB and will be recovered through future rates collected from customers.

#### (b) Utility plant

Utility plant in service (Schedule A) is recorded at cost, including interest capitalized on the financing of projects during construction. Contributions for capital expenditures are credited to contributed capital surplus. Structures and land taken out of service are removed from utility plant in service and placed in plant not in service at cost less accumulated depreciation. Losses or gains related to assets retired, demolished or sold are charged or credited to contributed capital surplus for the period.

The Handbook permits the recording of contributed assets. The estimated value of contributed assets is credited to contributed capital surplus. Commencing in fiscal 2005, contributed assets are depreciated over their estimated remaining useful lives. The related contributed capital surplus is being amortized on the same basis as the contributed assets to which it relates.

The Commission has implemented a policy to account for infrastructure extensions into its water and wastewater/stormwater service districts, which for the most part will be recovered by capital contributions from developers in current and future periods. The objective is for these extensions to be cost neutral to the Commission with regard to current customers, unless there is a benefit to them. The related infrastructure extensions may include costs incurred by the Commission to provide additional capacity, not required at the present time, but undertaken to allow for future expansion. The estimated portion of these costs that do not benefit existing customers are recorded as contributed assets. The

capital cost contribution is credited to contributed capital surplus when receivable and estimates adjusted, if required, when the development into the water service area is complete. The capital cost contributions are subject to approval by the NSUARB.

#### (c) Cash and cash equivalents

Cash and cash equivalents consist of cash on hand and balances with banks, net of bank indebtedness.

#### (d) Depreciation

Depreciation is provided using the straight-line method over the estimated useful lives of the assets.

The estimated useful lives for the major classifications of utility plant in service are as follows:

Structures and improvements	50 to 100 years
Pumping equipment	5 to 30 years
Purification equipment	20 to 50 years
Water and wastewater/stormwater mains	60 to 100 years
Services	50 to 60 years
Meters	20 to 25 years
Hydrants	50 to 80 years
Tools and work equipment	5 to 30 years
Office equipment and furniture and transportation equipment	3 to 10 years

#### (e) Depreciation fund

The Commission does not maintain a depreciation fund. The Commission has received NSUARB approval for exemption from setting up a depreciation fund as long as net depreciable additions to plant exceed the depreciation charged.

#### (f) Materials and supplies

Materials and supplies inventories are carried at the lower of cost and net realizable value with cost being determined on a moving average cost basis. The cost of materials and supplies recognized as an expense during the period was \$290 (2012 - \$277).

#### (g) Revenues and expenditures

All revenues and expenditures are recorded on an accrual basis with the exception of repayment of long term debt. Receivables include outstanding revenue billed by the Commission and estimated metered revenue not yet billed.

#### (h) Long term debt

Interest on long term debt is recorded on an accrual basis. Debt issue costs are deferred and amortized over the term of the debt to which it relates.

# Halifax Regional Water Commission

## Notes to the financial statements

Year ended March 31, 2013

(in thousands)

### (i) Reserves

Certain funds within the reserves can be used for capital expenditures only with the approval of the NSUARB. All reserve withdrawals in excess of \$250,000 require approval from the NSUARB. System connection charges approved by the NSUARB are added to these reserves as collected. The reserves are to be used for capital expenditures on the wastewater/stormwater system (note 8).

### (j) Measurement uncertainty

In preparing the Commission's financial statements, management is required to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and reported amounts of revenue and expenditures during the period. Significant estimates and assumptions are not limited to but include the following:

- At year end, revenue from water and wastewater services has been earned but not yet billed due to the timing of the billing cycles. Management estimates the unbilled revenue accrual based on historic billing trends.
- Management assumptions are also used in the actuarial determination of the accrued pension liability, accrued post retirement benefits, and accrued long term service awards. These assumptions are outlined in notes 4 and 6.

Actual results could differ from these estimates.

### (k) Financial instruments

The Commission initially recognizes and measures its financial assets and liabilities at fair value. Loans and receivables, held to maturity financial assets and other financial liabilities are subsequently measured at cost or amortized cost.

The Commission classifies financial assets and liabilities according to their characteristics and management's choices and intentions related thereto for the purposes of ongoing measurements. Classification choices for financial assets include: a) held for trading - measured at fair value with changes in fair value recorded in net earnings; b) held to maturity - recorded at amortized cost with gains and losses recognized in net earnings in the period that the asset is derecognized or impaired; and c) loans and receivables - recorded at amortized cost with gains and losses recognized in net earnings in the period that the asset is no longer recognized or impaired.

Classification choices for financial liabilities include: a) held for trading - measured at fair value with changes in fair value recorded in net earnings and b) other - measured at amortized cost with gains and losses recognized in net earnings in the period that the liability is no longer recognized. Any financial asset or liability can be classified as held for trading as long as its fair value is reliably determinable.

The Commission's financial assets and liabilities are classified and measured as follows:

Asset/Liability	Classification	Measurement
Cash	Held for trading	Fair value
Cash equivalents	Held for trading	Fair value
Receivables	Loans and receivables	Amortized cost
Receivable from HRM	Loans and receivables	Amortized cost
Payables and accruals	Other liabilities	Amortized cost
Long term debt	Other liabilities	Amortized cost
Deposits	Other liabilities	Amortized cost

Unless otherwise noted, it is management's opinion that the Commission is not exposed to significant interest, currency or credit risks arising from financial instruments. The fair value of the Commission's financial instruments approximates their carrying values.

### 3. Contingent liabilities

As a condition of the sale of a property, the Commission indemnified the purchaser from claims or actions resulting from migration of halocarbons. The environmental risk is assessed to be low and the likelihood of any related liability is not determinable.

The Commission has been named along with the contractor for a flooding incident that occurred as a result of an overflow of wastewater at a pumping station associated with the Halifax Harbour Solutions (HHS) project. The claim is being defended by the Commission's insurer and the Commission believes its exposure in this regard is minimal.

The Commission has certain outstanding grievances for alleged violations of the collective agreements with its unions. The financial risk of these grievances is not considered material.

### 4. Pension plan and post retirement benefits

The Commission is responsible for funding the employer share of the contributions to the HRM pension plan for certain employees that transferred from HRM as of August 1, 2007. HRM administers this defined benefit pension plan and the Commission reimburses HRM for the pension costs related to the Commission's proportionate share of the employees covered under the plan. Due to the nature of the plan, the Commission does not have sufficient information to account for the plan as a defined benefit; therefore, the multiemployer defined benefit plan is accounted for in the same manner as a defined contribution plan. An expense is recorded in the period when the Commission is obligated to make contributions for services rendered by the employee. During the year, the Commission funded \$709 (2012 - \$637) in contributions to the plan.

For all other employees, the Commission maintains a defined benefit pension plan and offers post retirement health and insurance benefits to all of its employees. The pension plan provides pensions based upon length of service and best five years' earnings. This defined pension plan is funded by employer and employee contributions, each contributing 10.47% of regular employee earnings. The Commission follows the

# Halifax Regional Water Commission

## Notes to the financial statements

Year ended March 31, 2013

(in thousands)

recommendations of Section 3461 "Employee Future Benefits" of the CICA Handbook, Part V (Pre-changeover accounting standards).

Employees who retired prior to July 1, 1998 have extended health benefits coverage for life and drug coverage until age 65. Employees who retired after July 1, 1998 and before December 31, 2008 have coverage for drug, extended health, dental and life insurance until age 65 on a 50/50 cost shared basis (100% basis for employees who retired after December 1, 2008). Extended health coverage for these retirees and their spouses after the age of 65 is available on an optional basis at 100% retiree cost and drug coverage is available through the provincially managed drug program.

Information about the Commission's plans, based on an actuarial extrapolation as at March 31, 2013, is as follows:

	2013	2012	2013	2012
	Pension Plan	Pension Plan	Post Retirement Benefits	Post Retirement Benefits
<b>Accrued benefit obligation</b>				
Balance, beginning of year	\$ 100,192	\$ 80,058	\$ 726	\$ 578
Current service cost	6,542	4,096	-	-
Interest cost	4,583	4,347	24	24
Actuarial loss	4,209	14,897	-	-
Benefit payments	(3,252)	(3,217)	(88)	(76)
Transfers in	17	11	-	-
Actuarial gain	-	-	74	200
Balance, end of year	112,291	100,192	736	726
<b>Fair value of plan assets</b>				
Balance, beginning of year	60,201	55,443	-	-
Actual return on plan assets	4,325	2,689	-	-
Transfers in	17	11	-	-
Benefit payments	(3,252)	(3,217)	-	-
Contributions: Employee	2,138	1,692	-	-
Employer	3,760	3,583	-	-
Balance, end of year	67,189	60,201	-	-
Plan deficit	45,102	39,991	736	726
Unamortized transitional asset	786	982	-	-
Unamortized experience (loss) gain	(38,144)	(35,932)	(59)	15
Unamortized plan amendments	(637)	(732)	-	-
Accrued benefit liability	\$ 7,107	\$ 4,309	\$ 677	\$ 741
Accrued benefit liability, beginning of year	\$ 4,309	\$ 3,945	\$ 741	\$ 803
Expense	6,558	3,947	24	14
Employer contributions	(3,760)	(3,583)	(88)	(76)
Accrued benefit liability recognized	\$ 7,107	\$ 4,309	\$ 677	\$ 741

# Halifax Regional Water Commission

## Notes to the financial statements

Year ended March 31, 2013

(in thousands)

Administration and pension expense includes pension expense of \$6,558 (2012 - \$3,947). This amount includes the amortization of experience gains and losses and plan improvements. Amortization is calculated on a straight-line basis over the estimated average remaining service life of the employee group, currently estimated at 19 years.

The following assumptions have been used in the actuarial extrapolation of the accrued benefit liability at March 31, 2013:

	Pension Plan	Pension Plan	Post Retirement Benefits	Post Retirement Benefits
	2013	2012	2013	2012
Discount rate	4.30%	4.50%	3.30%	3.60%
Expected return on plan assets	6.00%	6.00%	N/A	N/A
Rate of compensation increase	3.75%	3.75%	N/A	N/A
Expenses for life benefits as a % of claims	N/A	N/A	10%	10%
Health benefit inflation per year	N/A	N/A	4.50-8.23%	4.50-8.50%
Dental benefit inflation per year	N/A	N/A	4.50%	4.50%

Funding for the pension plan is based on regular actuarial reviews. The last actuarial valuation was completed January 1, 2011 and the next review is scheduled for January 1, 2014.

### 5. Regulatory asset

In June 2011, the NSUARB granted the Commission approval to defer depreciation charges on certain assets transferred in 2010 from HRM relating to the Halifax Harbour Solutions Project. Depreciation of \$2,078 was deferred in each of fiscal 2010-11 and 2011-2012. As a result, the Commission has recognized a \$4,156 regulatory asset. In absence of rate regulation, this regulatory asset would have been expensed as depreciation in fiscal 2010-11 and 2011-12. In May 2012, the NSUARB granted approval of the amortization of this asset over the remaining useful lives of the underlying assets, beginning in 2013-14.

### 6. Accrued long term service awards

The Commission has a non-funded long term service award that is accrued annually, but is payable on retirement, termination or death if the employee has at least 10 years of continuous service. The benefit is equal to three days' pay for each completed year of service, up to a maximum of six month's salary.

	2013	2012
Accrued long term service awards	\$ 2,929	\$ 2,780

The following assumptions have been used in the valuation of the Commission's accrued long term service awards at March 31, 2013:

	2013	2012
Discount rate	4.30%	4.50%
Rate of compensation increase	3.75%	3.75%

### 7. Return on rate base

	2013	2012
Rate of return on rate base for water service	2.42%	2.87%
Rate of return on rate base for wastewater/stormwater services	2.67%	2.62%
Rate of return on rate base for Airport Aerotech water service	(44.76)%	(3.88)%
Rate of return on rate base for Airport Aerotech wastewater service	(153.99)%	(74.07)%

### 8. Special purpose reserves

	Other Capital Reserves	Sewer Redevelopment Reserve	Wastewater Infrastructure Reserve	Wastewater & Stormwater Reserve	2013 Total	2012 Total
Reserve, beginning of year	\$ 397	\$ 4,112	\$ 11,327	\$ 3,791	\$ 19,627	\$ 17,973
Additions	-	-	-	-	-	-
Contributions and interest	4	1,784	2,236	-	4,024	3,158
Expenditures	(190)	(576)	-	(215)	(981)	(1,504)
Reserve, end of year	\$ 211	\$ 5,320	\$ 13,563	\$ 3,576	\$ 22,670	\$ 19,627

### 9. Commitments

An agreement with HRM for renewal of the dividend/grant in lieu of taxes for fiscal years 2011 to 2015 for water services was approved by the NSUARB as part of the January 1, 2011 rate decision. There was no dividend/grant in lieu of taxes approved for wastewater/stormwater. The Commission is committed to a payment of \$4,187 for the 2014 fiscal year.

At March 31, 2013, the Commission had \$35,494 in expenditures from current and past approved capital budgets not yet expended.

### 10. Supplemental cash flow information

	2013	2012
Changes in non-cash operating working capital items		
Receivables	\$ (3,298)	\$ 1,092
Payable to/receivable from HRM, net	316	12,302
Materials and supplies	(140)	(11)
Prepays	(39)	(56)
Payables and accruals, trade	1,719	1,581
Accrued interest on long term debt	232	(127)
Contractor and consumer deposits	17	27
Unearned revenue	(2)	(1)
	\$ (1,195)	\$ 14,807

Interest paid during the year was \$7,605 (2012 - \$8,100).



# Halifax Regional Water Commission

## Notes to the financial statements

Year ended March 31, 2013

(in thousands)

### 11. Capital management

The Commission's objective when managing capital is to ensure sufficient liquidity to support its financial obligations and execute its operating and capital plans. The Commission monitors and makes adjustments to its capital structure through additional borrowings of long term debt which are used to finance capital projects.

The Commission considers its total capitalization to include all long term debt and total equity. The calculation is set out as follows:

	2013	2012
Long term debt (current portion)	\$ 15,553	\$ 13,109
Long term debt	166,879	133,063
Funded debt	182,432	146,172
Equity	822,223	796,431
Capital under management	\$ 1,004,655	\$ 942,603

The Commission is a regulated utility and is subject to the regulations of the NSUARB. As part of this regulation, the Commission must obtain approval by the NSUARB for all borrowings. The Commission has obtained regulatory approval for all borrowings during the fiscal year. The Commission is not subject to financial borrowing covenants.

### 12. Financial risk management

#### Credit risk

Credit risk arises from the possibility that the Commission's customers may experience financial difficulty and be unable to fulfill their obligations. The Commission's maximum exposure to credit risk corresponds to the customer charges and contractual accounts receivable. However, the Commission's customers are numerous and diverse, which reduces the concentration of credit risk. The Commission considers the credit quality of its accounts receivables that are neither past due or impaired to be collectible.

#### Interest risk

Interest risk arises from the possibility that change in interest rate will cause the Commission a potential loss. All of the Commission's long term debt is at varying fixed rates and has staggered maturity dates. The Commission, therefore, considers its exposure to interest rate fluctuations to be minimal.

#### Market risk

Market risk arises from the possibility that the value of an investment will fluctuate as a result of changes in market prices. These changes could affect the market value of the investments in the Commission's employees' pension plan and consequently the plan's deficit.

#### Liquidity risk

Liquidity risk arises from the possibility of the Commission not being able to meet its cash requirements in a timely and cost effective manner. The Commission manages this risk by closely monitoring the cash on hand in comparison to upcoming cash commitments.

### 13. Related party transactions

Transactions with HRM are recorded at carrying value in accordance with Section 3840 "Related Party Transactions" of the CICA Handbook, Part V (Pre-changeover accounting standards).

The Commission is obligated to make payments on debt, held in the name of HRM, associated with wastewater and stormwater assets which were transferred to the Commission in 2007 and subsequent years.

Amounts receivable from and payable to HRM have normal credit terms.

During the year, the Commission had the following related party transactions with HRM:

- The Commission recorded revenue for provision of water, wastewater and stormwater services to HRM in the amount of \$552 (2012 - \$541).
- The Commission recorded fire protection revenue from HRM of \$10,000 (2012 - \$9,644).
- The Commission paid a grant in lieu of tax of \$3,971 (2012 - \$3,944).

### 14. Comparative figures

Certain of the comparative figures for 2012 have been reclassified to conform with the financial statement presentation adopted for 2013.

### 15. Subsequent events

Subsequent to year end, the Commission issued long term debt in the amount of \$27,512. Principal payments are due annually and interest semi-annually at rates ranging from 1.330% to 2.979%. Final maturity of this debt is in 2023.

Subsequent to year end, the Commission appeared before the NSUARB for a rate hearing during April 15 – 17, 2013. The Application requested a general rate increase contingent on meter size and a change in the method of billing stormwater customers, including the approval of the Cost of Service Rate Design Manual. The decision is pending and the approved rate adjustments will be effective immediately following the NSUARB order.

## Schedule A

## Halifax Regional Water Commission Schedule of utility plant in service

Year ended March 31, 2013

(in thousands)

			2013	2012
	Cost	Accumulated Depreciation	Net Book Value	Net Book Value
<b>Water</b>				
Intangible plant	\$ 1,353	\$ 260	\$ 1,093	\$ 381
Land and land rights	15,873	-	15,873	15,906
Structures and improvements	83,452	23,549	59,903	54,278
Pumping equipment	9,711	5,366	4,345	3,112
Purification equipment	26,044	16,344	9,700	10,770
Transmission and distribution mains	305,002	64,580	240,422	230,340
Services	31,223	4,280	26,943	25,506
Meters	12,766	3,159	9,607	8,851
Hydrants	17,581	2,784	14,797	14,486
Tools and work equipment	2,633	1,750	883	886
Transportation equipment	5,156	3,300	1,856	2,266
Office equipment and furniture	9,007	6,745	2,262	2,511
Small systems	8,473	1,255	7,218	6,738
Airport Aerotech system	666	200	466	433
	528,940	133,572	395,368	376,464
<b>Wastewater/stormwater</b>				
Intangible plant	5,695	1,497	4,198	2,872
Land and land rights	9,566	-	9,566	9,547
Structures and improvements	162,702	41,733	120,969	115,903
Pumping equipment	9,403	7,295	2,108	3,226
Treatment equipment	126,456	13,968	112,488	115,150
Collection system	310,107	62,404	247,703	239,963
Manholes and catchbasins	8,492	376	8,116	6,058
Laterals	10,506	382	10,124	6,433
Outfalls	15,383	591	14,792	15,150
Tools and work equipment	844	473	371	488
Transportation equipment	6,847	5,401	1,446	724
Office equipment and furniture	1,200	570	630	528
Small systems	8,251	1,135	7,116	5,073
Airport Aerotech system	3,115	418	2,697	2,806
	678,567	136,243	542,324	523,921
<b>Total</b>	<b>\$ 1,207,507</b>	<b>\$ 269,815</b>	<b>\$ 937,692</b>	<b>\$ 900,385</b>

During the year, \$944 of interest was capitalized to Utility Plant in Service (2012 - \$195).

# Halifax Regional Water Commission

## Schedule of long term debt

## Schedule B

Year ended March 31, 2013

(in thousands)

		Interest Rate	Final Maturity		Balance Remaining 2013	2012
Payable to Municipal Finance Corporation						
Water						
Debenture 22 A 1	4.250% to 6.125%		2012	\$ -	\$	2,310
Debenture 25 A 1	2.970% to 4.560%		2015	3,250		3,500
Debenture 96 A 1	5.500% to 8.000%		2016	320		400
Debenture 26 A 1	4.350% to 4.880%		2016	2,800		3,000
Debenture 27 A 1	4.650% to 5.010%		2017	5,059		5,937
Debenture 23 A 1	3.500% to 5.750%		2018	1,100		1,200
Debenture 28 A 1	3.750% to 5.088%		2018	1,600		1,700
Debenture 98 A 1	5.625% to 6.125%		2019	19,051		21,610
Debenture 99 A 1	6.500% to 6.750%		2019	1,575		1,800
Debenture 30 B 1	1.550% to 3.870%		2020	1,400		1,575
Debenture 31 A 1	1.630% to 4.221%		2021	1,350		1,500
Debenture 32 A 1	1.636% to 3.480%		2022	2,000		-
Debenture 32 C 1	0.000% to 3.160%		2022	10,734		-
Halifax Harbour Solutions						
Debenture 29 A 1	0.900% to 4.329%		2019	11,050		11,700
Wastewater/stormwater						
Debenture 30 A 1	1.510% to 4.500%		2020	3,060		3,230
Debenture 32 A 1	1.636% to 3.480%		2022	2,397		-
Debenture 32 B 1	1.380% to 3.156%		2022	32,000		-
Debenture 32 C 1	0.000% to 3.160%		2022	4,595		-
Payable to Halifax Regional Municipality						
Municipal Finance Corporation – Wastewater/stormwater						
Debenture 22 A 1	3.375% to 6.125%		2012	-		88
Debenture 22 B 1	3.250% to 5.625%		2012	-		44
Debenture 23 A 1	3.500% to 5.375%		2013	46		91
Debenture 23 B 1	2.750% to 5.000%		2013	4		9
Debenture 24 A 1	2.550% to 5.450%		2014	166		249
Debenture 24 B 1	2.840% to 5.940%		2024	66,069		71,604
Debenture 24 C 1	7.000% to 7.000%		2015	117		176
Debenture 25 A 1	2.970% to 4.560%		2015	522		696
Debenture 25 B 1	3.630% to 4.830%		2020	101		135
Debenture 26 A 1	4.350% to 4.880%		2016	502		628
Debenture 26 B 1	4.265% to 4.410%		2016	19		24
Debenture 27 A 1	4.450% to 4.625%		2017	329		394
Federation of Canadian Municipalities – Wastewater/stormwater						
Debenture GMIF 1599	1.330% to 3.127%		2014	12,000		13,000
				183,216		146,600
Less: debt issue costs				784		428
				182,432		146,172
Less: amount payable within one year				15,553		13,109
				\$ 166,879	\$	133,063

The debentures are repayable in fixed annual or semi-annual principal instalments plus interest payable semi-annually. Principal instalments for the next five years are as follows:

2014	\$ 15,553
2015	\$ 25,716
2016	\$ 14,765
2017	\$ 16,795
2018	\$ 14,737

## Schedule C

# Halifax Regional Water Commission Schedule of operations for water service

Year ended March 31, 2013

(in thousands)

		2013	2012
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Water service	\$ 30,572	\$ 32,218	\$ 30,562
Fire protection	9,502	9,844	9,502
Private fire protection services	367	370	366
Other operating revenue			
Bulk water stations	244	255	264
Customer late payment fees	254	277	206
Miscellaneous	170	143	155
	41,109	43,107	41,055
Operating expenditures			
Water supply and treatment	7,314	6,863	6,598
Water transmission and distribution	8,930	8,372	7,834
Engineering and information services	3,266	3,362	2,958
Environmental services	629	642	628
Customer service	1,790	1,934	1,696
Administration and pension	3,410	4,701	3,628
Depreciation	7,516	6,768	6,458
	32,855	32,642	29,800
Operating profit	8,254	10,465	11,255
Financial and other revenues			
Interest	240	337	201
Other	177	230	106
	417	567	307
Financial and other expenditures			
Interest on long term debt	2,834	2,249	2,472
Repayment of long term debt	5,357	5,140	4,904
Amortization of debt discount	60	57	51
Grant in lieu of taxes	3,932	3,971	3,944
	12,183	11,417	11,371
Excess of (expenditures over revenues)			
revenues over expenditures	\$ (3,512)	\$ (385)	\$ 191



# Halifax Regional Water Commission

## Schedule of operations for wastewater/stormwater services

## Schedule D

Year ended March 31, 2013  
(in thousands)

	2013		2012
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Wastewater/stormwater services	\$ 54,221	\$ 57,896	\$ 54,383
Other operating revenue			
Leachate and other contract revenue	785	475	807
Septage tipping fees	400	598	747
Overstrength surcharge	204	195	165
Customer late payment fees	120	184	141
Miscellaneous	222	218	177
	55,952	59,566	56,420
Operating expenditures			
Wastewater/stormwater collection	15,808	12,781	15,008
Wastewater treatment	17,873	16,762	16,380
Engineering and information services	3,342	3,202	2,855
Environmental services	1,857	1,861	1,662
Customer service	1,723	1,859	1,634
Administration and pension	3,283	4,664	3,493
Depreciation	7,519	7,409	4,889
	51,405	48,538	45,921
Operating profit	4,547	11,028	10,499
Financial and other revenues			
Interest	240	337	201
Other	2,079	2,065	2,087
	2,319	2,402	2,288
Financial and other expenditures			
Interest on long term debt	5,553	5,305	5,593
Repayment of long term debt	8,272	9,357	8,120
Amortization of debt discount	37	31	13
	13,862	14,693	13,726
Excess of expenditures over revenues	\$ (6,996)	\$ (1,263)	\$ (939)

## Schedule E

# Halifax Regional Water Commission Airport aerotech system Schedule of operations for water service

Year ended March 31, 2013

(in thousands)

	2013		2012
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Water service	\$ 516	\$ 537	\$ 537
Fire protection	142	156	142
Customer late payment charges	1	1	1
Miscellaneous	5	5	5
	664	699	685
Operating expenditures			
Water supply and treatment	754	742	563
Water transmission and distribution	155	103	94
Depreciation	44	36	42
	953	881	699
Operating loss	(289)	(182)	(14)
Financial and other expenditures			
Interest on long term debt	29	34	24
Repayment of long term debt	33	44	29
	62	78	53
Excess of expenditures over revenues	\$ (351)	\$ (260)	\$ (67)

# Halifax Regional Water Commission

## Airport aerotech system

### Schedule of operations for wastewater service

## Schedule E

Year ended March 31, 2013

(in thousands)

	<b>2013</b>		2012
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Wastewater service	\$ 492	\$ <b>459</b>	\$ 528
Dewatering	98	<b>182</b>	98
Airplane sewage	40	<b>56</b>	40
Customer late payment charges	1	<b>1</b>	1
	631	<b>698</b>	667
Operating expenditures			
Wastewater treatment	732	<b>906</b>	733
Wastewater/stormwater collection	68	<b>44</b>	62
Depreciation	48	<b>26</b>	26
	848	<b>976</b>	821
Operating loss	(217)	<b>(278)</b>	(154)
Financial and other expenditures			
Interest on long term debt	40	<b>17</b>	11
Repayment of long term debt	31	<b>25</b>	13
	71	<b>42</b>	24
Excess of expenditures over revenues	\$ (288)	\$ <b>(320)</b>	\$ (178)
Excess of expenditures over revenues for water and wastewater combined	\$ (639)	\$ <b>(580)</b>	\$ (245)

The Commission no longer provides stormwater services for the Airport Aerotech system effective November 18, 2011.

## Schedule F

## Halifax Regional Water Commission Schedule of regulated activities

Year ended March 31, 2013

(in thousands)

		2013		2012
	Budget	Actual		Actual
	(Unaudited)			
Operating revenues				
Water service	\$ 30,572	\$ 32,218	\$	30,562
Wastewater/stormwater services	54,221	57,896		54,383
Public fire protection	9,502	9,844		9,502
Private fire protection services	367	370		366
Airport Aerotech system	1,157	1,159		1,214
Other operating revenue	1,178	1,245		1,070
	96,997	102,732		97,097
Operating expenditures				
Water supply and treatment	7,299	6,855		6,584
Water transmission and distribution	8,930	8,372		7,834
Wastewater/stormwater collection	15,808	12,781		15,008
Wastewater treatment	17,180	15,949		15,716
Engineering and information services	6,608	6,564		5,813
Environmental services	2,486	2,503		2,290
Customer service	3,513	3,793		3,330
Administration and pension	6,693	9,365		7,121
Airport Aerotech system	1,801	1,857		1,520
Depreciation	15,035	14,174		11,347
	85,353	82,213		76,563
Financial and other revenues				
Interest	480	674		402
Other	2,074	2,061		2,044
	2,554	2,735		2,446
Financial and other expenditures				
Interest on long term debt	8,456	7,605		8,100
Repayment of long term debt	13,693	14,566		13,066
Amortization of debt discount	97	88		64
Grant in lieu of taxes	3,932	3,971		3,944
	26,178	26,230		25,174
Excess of expenditures over revenues	\$ (11,980)	\$ (2,976)	\$	(2,194)



# Halifax Regional Water Commission

## Schedule of unregulated activities

Year ended March 31, 2013

(in thousands)

## Schedule F

	2013		2012
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Dewatering	\$ 98	\$ 182	\$ 98
Airplane sewage	40	56	40
Leachate treatment & contract revenue	785	475	807
Septage tipping fees	400	598	747
Other operating revenue	36	27	38
	1,359	1,338	1,730
Operating expenditures			
Water supply and treatment	15	8	14
Wastewater treatment	693	813	664
Depreciation	-	3	-
	708	824	678
Financial and other revenues			
Other	182	234	149
Excess of revenues over expenditures	\$ 833	\$ 748	\$ 1,201

