



P.O. Box 1749  
Halifax, Nova Scotia  
B3J 3A5 Canada

**Item No. 5**  
**Halifax Regional Council**  
**November 18, 2014**

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

**SUBMITTED BY:** Original Signed

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

**DATE:** October 22, 2014

**SUBJECT:** Halifax Regional Water Commission 2013/14 Annual Report

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**INFORMATION REPORT**

**ORIGIN**

Annual operational requirement.

**LEGISLATIVE AUTHORITY**

Halifax Regional Water Commission Act

**BACKGROUND**

On behalf of the Halifax Water Board, staff are pleased to present the Annual Report for the 2013/2014 fiscal year. The theme of the 2013/2014 Annual Report is "Strategy in Action" as we move ahead with implementation of projects after the development of a strategic framework that will guide our utility's infrastructure planning, fiscal framework, and rate structure for the next 30 years.

Putting strategy into action is truly where the rubber hits the road in any organization. With this in mind, Halifax Water is remaining true to its mission with a particular focus on sustainable infrastructure.

Last year saw the completion of the Eastern Passage Wastewater Treatment Facility, the largest capital project Halifax Water has implemented since the 2007 merger. This milestone reflects our focus on the renewal of aging infrastructure, ensuring compliance with strict federal regulations, and positioning the utility for service and growth to the Eastern Passage/Cole Harbour areas. The \$64 million Eastern Passage Wastewater Treatment Facility upgrade and expansion was completed on time and \$500,000 under budget. Reducing the facility's energy footprint was integral to its design process and construction. The facility is highly automated and energy efficient. The total cumulative energy savings are in excess of 49 GWh, or \$7.7 million over the design life of the facility. These energy savings significantly reduce the facility's carbon footprint, and are equivalent to avoiding 850 tonnes of greenhouse gas emissions per

year. In addition, the performance of the facility exceeds expectations and regulatory requirements for effluent quality.

Last year also saw the renewal of a 2 km section of the critical Pockwock water transmission main, and three significant stormwater management projects get underway, two in Sackville and one in Cow Bay. These prominent water, wastewater, and stormwater projects indicate the utility is focused on all three services under our mandate.

Halifax Water received a very favourable decision from the NSUARB this past summer with respect to a revised Regional Development Charge [RDC]. The charge ensures that growth pays for growth, and development can proceed with a level playing field in relation to water and wastewater services, consistent with the principles of the Public Utilities Act, and a key element of the Cost of Service Manual developed by the utility.

These accomplishments are a sampling of the many initiatives completed and underway. They further demonstrate that the current governance structure is working well for ratepayers, the municipality, and the environment.

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.

## **DISCUSSION**

N/A

## **FINANCIAL IMPLICATIONS**

N/A

## **COMMUNITY ENGAGEMENT**

N/A

## **ATTACHMENTS**

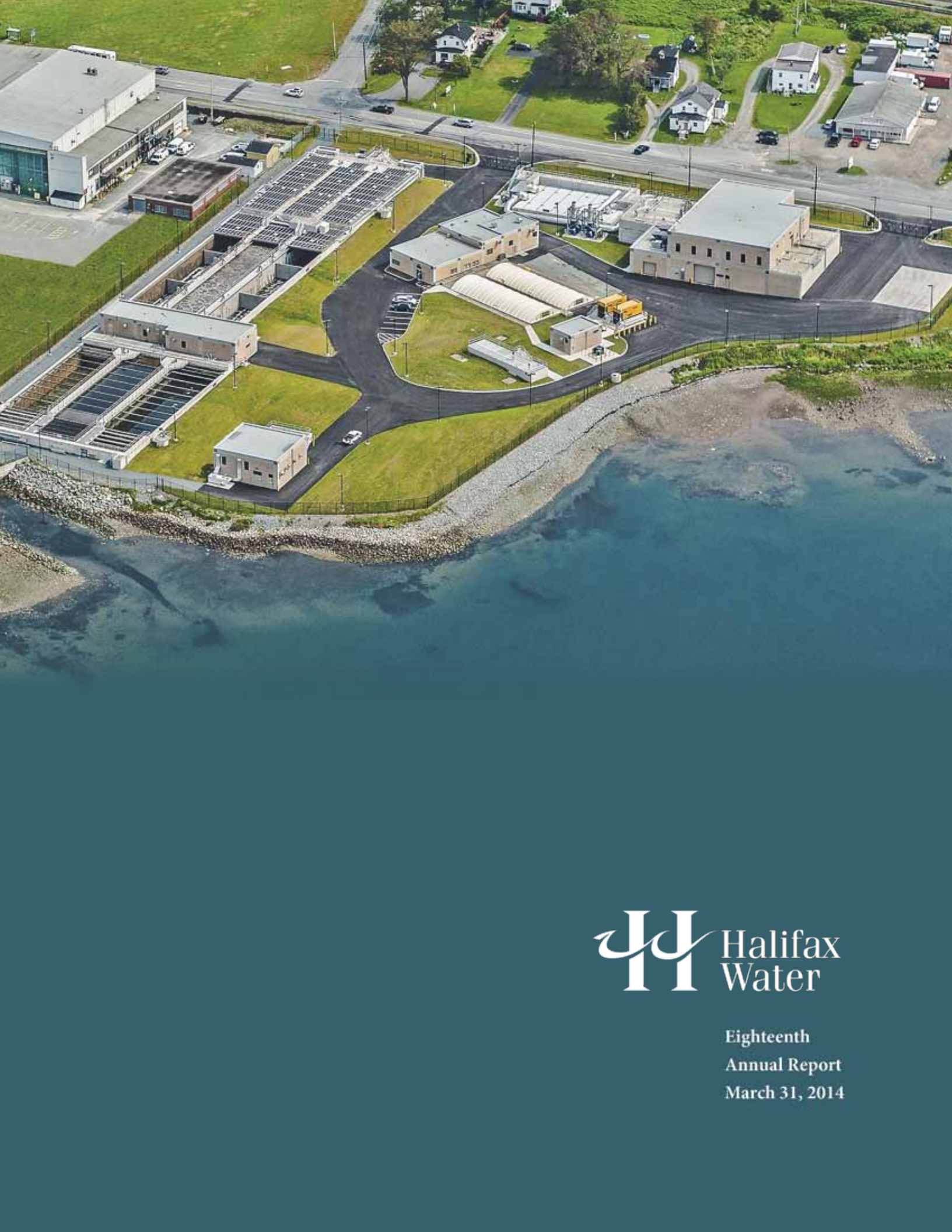
Halifax Regional Water Commission 2013/14 Annual Report

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A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.php> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: James Campbell, Communications & Public Relations Coordinator, 902-490-4604

Report Approved by: Carl Yates M.A.Sc., P.Eng., General Manager, 902-490-4840



Eighteenth  
Annual Report  
March 31, 2014

Cover image: Expanded and upgraded Eastern Passage  
wastewater treatment facility



# 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 15, 2014  
Mayor Mike Savage and Members of Council

Re: 2013/14 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, 2014. The 2013/14 fiscal year was a year of implementation following the completion of the Integrated Resource Plan (IRP), Cost of Service (COS) Manual, and Debt Strategy the year before. With the blueprint for sustainable infrastructure clearly in front of us, the utility received two decisions from the Nova Scotia Utility and Review Board [NSUARB] to realize the strategic goals of Halifax Water.

The NSUARB rendered a Decision in June facilitating rate increases for water, wastewater and stormwater on July 1, 2013 with another increase in April 1, 2014. The Decision also approved a revised and separate rate structure for stormwater service based on cost causation principles to ensure fair and equitable treatment of customers. In essence, stormwater charges are now based on impervious surface area instead of water consumption. Although this is considered best practice in other countries, we are amongst the first in Canada to implement the approach.

The impetus for the rate increases were mainly related to debt servicing and depreciation expense tied to wastewater assets. The rate increase on April 1, 2014 was largely driven by the construction of the Eastern Passage Wastewater Facility which was completed on schedule at a cost of \$64 million, \$0.5 million below budget. It was a privilege for me to participate in the sod turning in November 2011 and official opening earlier this month. This project is a model for what Halifax Water can do to advance the three main strategic drivers for the utility; renew aging infrastructure, comply with stringent federal regulations, and facilitate growth.

In relation to facilitation of growth, Halifax Water received a very favourable Decision from the NSUARB this past summer with respect to a revised Regional Development Charge [RDC]. The charge ensures that growth pays for growth, and development can proceed with a level playing field in relation to water and wastewater services, consistent with the principles of the Public Utilities Act, and a key element of the Cost of Service Manual developed by the utility.

Although funding of the wastewater infrastructure deficit was and is the prime focus of Halifax Water, last year saw the renewal of 2 km of the critical Pockwock transmission main along Kearney Lake Road. This construction project was also completed on time and under budget with some intricate interim connections to ensure supply of water to our customers without disruption. The continuous supply included interconnections between the transmission main and a temporary rider main, all under the watchful eye of engineering and operations staff who operated under the incident command system during the more critical connection work.



The utility finished the year with a financial outcome slightly better than budget, but with a loss of \$4.9 million. This was all the more challenging with a 4.5% drop in consumption over the fiscal year, significantly more than the 1.5 % originally projected in the five year business plan filed with the NSUARB in October, 2012. Through a concerted effort of staff, the consumption decrease was mitigated by the realization of \$2.2 million in cost savings through a cost containment program. These efforts helped the utility to come close to its goal of a break even position on a cash basis, which is the foundation for rate making in accordance with the NSUARB Accounting Handbook. Debt for the utility increased by \$32.9 million with total outstanding debt as of March 31, 2014 at \$216.1 million, bringing our debt service ratio to 22.9%, well below our maximum target threshold of 35%.

The past year saw significant accomplishments by staff in the implementation of capital projects tied to an interim stormwater policy developed in partnership with Halifax municipality. At the time of writing this letter, three significant projects are underway including the deep storm sewer in Cow Bay, the upgrading of the piped storm sewer along Metropolitan Avenue and the construction of a major storm route on First Laker Drive. In co-operation with Halifax, we also hope to make further inroads on stormwater policy and investment over the next fiscal year.

A focus for the current year will be the design for the upgrade and expansion of the Aerotech wastewater treatment facility which serves the Stanfield International Airport and Aerotech Industrial Park. This project, scheduled to start construction next year at an estimated cost of \$21 million, has received extensive support from Halifax Council, the Province, and the Halifax International Airport Authority [HIAA]. In that same spirit of cooperation, HIAA, Halifax, and, Halifax Water completed a settlement agreement last spring for presentation to the NSUARB for consolidation of the Airport rate structure with the Urban Core. A Decision from the NSUARB on the proposed consolidation is expected this fall.

As this year marks my third and final term on the Halifax Water Board, I want to express my gratitude to staff and my fellow Commissioners for their efforts to put the utility on a path toward sustainability. There is no doubt that the current governance model for the utility continues to serve our residents and will help ensure that future generations will not be unfairly burdened by a previous generations' infrastructure deficit. We trust that your and Council's support will continue to further the goals set out in 2007 when stewardship responsibility for wastewater and stormwater service was transferred to Halifax Water.

Respectfully Submitted,

A handwritten signature in cursive script, appearing to read 'Colleen Purcell', written in dark ink.

Colleen Purcell, CA  
Chair of the Board

# Strategy in Action



The previous year saw the completion of three visionary strategic initiatives; the integrated resource plan, cost of service manual and debt strategy, all major accomplishments by themselves. This year was all about action. Edison said it best when he quipped that “vision without implementation is hallucination”.

Implementation is always front and centre at Halifax Water as it continues to pursue its mission with a particular focus on sustainable infrastructure. Last year saw the completion of the Eastern Passage Wastewater Treatment Facility, the very symbol of why wastewater and stormwater assets were transferred from HRM (Halifax) to Halifax Water in 2007. The project reflects a renewal of aging infrastructure, ensures compliance with strict federal regulations, and positions the utility for service and growth to the Eastern Passage/Cole Harbour areas.

Last year also saw the renewal of a 2 km section of the critical Pockwock transmission main, as well as three significant stormwater management projects get underway. These prominent water, wastewater, and stormwater projects show staff is focused on the three services under our mandate.

These accomplishments are made possible under the rigour of the current governance structure and dedicated staff who believe in getting the job done....and done well!

A handwritten signature in black ink that reads "Carl Yates". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

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



## Board of Commissioners

March 31, 2014



**Colleen Purcell, CA**  
Chair



**Councillor  
Russell Walker**  
Vice Chair



**Councillor  
David Hendsbee**  
Commissioner



**Councillor  
Barry Dalrymple**  
Commissioner



**Mayor Mike Savage**  
Commissioner



**Richard Butts**  
Commissioner



**Ken Meech, MPA**  
Commissioner



**Don Mason, PEng., MCIP**  
Commissioner

## Executive Staff



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



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



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



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



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



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



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

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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, 2014

## WATER

### Precipitation

Measured at Pockwock	
Rainfall	1 598.8 mm
Snowfall	179.6 cm
Measured at Lake Major	
Rainfall	1 873.7 mm
Snowfall	233.3 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 Lemont/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	29 298 384
Lake Major	14 144 387
Bennery Lake	322 880
Small Systems	59 336
<b>Total</b>	<b>43 824 987</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	1 560 km
Main valves	14 633
Fire hydrants	8 146
Distribution Pumping Stations	22
Pressure Control/Flow	
Meter Chambers	134

### Services and Meters

Water	
Sprinkler services	
(25 mm - 300 mm)	2 051
Supply services	
(10 mm - 400 mm)	85 925
Meters	
(15 mm - 250 mm)	82 336
Wastewater services	79 159

### 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 43 m<sup>3</sup>/day

### Middle Musquodoboit

Source- Musquodoboit River  
Process- Raw water infiltration gallery  
- Ultra Filtration / Nano Filtration  
Average production 60 m<sup>3</sup>/day

### Five Island Lake

Source - 1 well  
Process - Ultraviolet disinfection  
Average production 10 m<sup>3</sup>/day

### Silver Sands

Source - 2 wells  
Process - Green sand pressure filters  
-Iron and manganese removal  
Average production 32 m<sup>3</sup>/day

### Miller Lake

Source - 3 wells  
Process - Arsenic removal with G2 Media  
Average Production 18 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) 291 litres/day

# General Information of Utility

Year Ended March 31, 2014

## 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	Secondary - U.V. / Pure oxygen Activated sludge	25 000 m <sup>3</sup> /d	Cole Harbour-Eastern 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. / Tricking 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	Grand Lake
Frame	Secondary - Sodium Hypochlorite / Activated sludge	80 m <sup>3</sup> /d	Frame Sub-Division	Lake William
Belmont	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	2 343 km
Total manholes	36 393
Total Pumping Stations	173

## STORMWATER CONTROL STRUCTURES

	Capacity (m <sup>3</sup> )		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 Pond	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, 2014*

*(In thousands)*

## ASSETS

### Fixed

Utility Plant in Service at Cost	\$	1,293,723
Provision for Depreciation	\$	(288,516)

<b>Net Book Value</b>	\$	<b>1,005,207</b>
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<b>Plant Under Construction</b>	\$	<b>10,676</b>
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<b>Regulatory Asset</b>	\$	<b>3,964</b>
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<b>Current</b>	\$	<b>64,684</b>
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<b>TOTAL ASSETS</b>	<b>\$</b>	<b>1,084,531</b>
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## LIABILITIES

Long Term Debt	\$	186,964
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Other Than Long Term Debt	\$	68,481
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<b>TOTAL LIABILITIES</b>	<b>\$</b>	<b>255,445</b>
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## EQUITY

Special Purpose Reserves	\$	18,030
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Contributed Capital Surplus	\$	802,636
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Operating Surplus used to Fund Capital, Cumulative	\$	12,380
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<b>\$</b>	<b>833,046</b>
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Operating Surplus April 1, 2013	\$	1,003
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## 2013/14 OPERATIONS

<b>Operating Revenue</b>	\$	111,501
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<b>Financial Revenue</b>	\$	3,007
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<b>Revenue From all Sources</b>	\$	114,508
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### Expenditures

Operating Expenses	\$	73,937
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Depreciation	\$	15,798
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Grant in lieu of taxes HRM	\$	4,187
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Financial Expenses	\$	25,549	\$	119,471
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Excess of Expenditures over Revenue	\$	(4,963)
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Operating Surplus used to Fund Capital, Current Year	\$	(0)
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Stewardship Contributions	\$	(0)
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<b>Accumulated Operating Surplus March 31, 2014</b>	<b>\$</b>	<b>3,960</b>
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<b>TOTAL EQUITY</b>	<b>\$</b>	<b>829,086</b>
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<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>\$</b>	<b>1,084,531</b>
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# High Quality Water

Since 2007 Halifax Water has sponsored an NSERC (Natural Sciences and Engineering Research Council of Canada) Industrial Research Chair for Doctor Graham Gagnon at Dalhousie University. Under this program, NSERC matches funds provided by Halifax Water to undertake research to improve water quality. This program enables Halifax Water to conduct necessary research at a fraction of the cost of other approaches, and trains dozens of young professionals, many of which go on to work in the water industry locally. Most importantly, this program provides insight into approaches to improve water quality for our customers.

One of the research approaches relates to Halifax Water's efforts to reduce customer exposure to lead in drinking water. Halifax drinking water is lead free in its own right but can pick up lead from the customer's service pipe or plumbing in older neighbourhoods.

The results of a research project undertaken by Eliman Camara were published in the August 2013 edition of the Journal of the American Water Works Association(AWWA). This journal is one of the most prestigious drinking water quality publications in the world. Further,

the article was recognized as the best paper of 2013, by the Plant Operations and Distribution System Division of AWWA. This indicates that Halifax Water is on the forefront of North American utilities in the understanding and prevention of the occurrence of lead in drinking water.

Building on the strength of this research, Halifax Water revised its lead service replacement policy. Recent research has shown that undertaking partial replacements (i.e replacing only the public or private portion, but not both) can actually make the occurrence of lead worse in the customer's premise plumbing. Based on this research, Halifax Water revised its lead service replacement policy to reduce partial lead service replacements and identify customers who are interested in having their service replaced in its entirety to reduce lead.

In 2013, Halifax Water became members of the AWWA Partnership for Safe Water. The partnership is a utility quality program aimed at improving the safety of drinking water beyond that demanded by regulations. Approximately 500 water treatment plants in the USA participate in this program which just recently became available in English Canada. Partnership utilities have achieved water



**Pockwock Pilot Plant – water research in action**

quality improvements that are on average 60% better than regulatory requirements through participation in the program.

Geosmin occurred again in the Pockwock system in September of 2013 and persisted into the spring of 2014. This is the second documented occurrence of geosmin since the commissioning of the Pockwock water supply. A geosmin occurrence study undertaken in the fall of 2013 confirmed that it is likely to continue to occur. Although geosmin is not a public health issue, it presents a taste and odour concern



**Recognition for the best paper in the AWWA Journal in the plant operations and distribution system division: Colleen Purcell, CA - Halifax Water Board Chair; Krysta Montreuil - Acting Water Quality Manager, Halifax Water; Reid Campbell, M.Eng, P.Eng - Director Water Services, Halifax Water; Eliman Camara, Dr. Graham Gagnon - Dalhousie University**

for our customers and thus a concern for the utility. Halifax Water is working with treatment experts to identify feasible technical solutions. This study will be completed in the Fall of 2014.

Halifax Water also began a filter surveillance program at its large surface water treatment plants. This industry best practice takes a systematic look at drinking water filters, enabling a better understanding of how they operate to proactively prevent problems, and determine more economical ways to produce high quality water.

Halifax Water continued to implement its SCADA(Supervisory Control and Data Acquisition) Master Plan. Operator interfaces were upgraded at all the large water supply plants, and the industrial



#### Backwashing filters at Pockwock Water Supply Plant for optimal performance

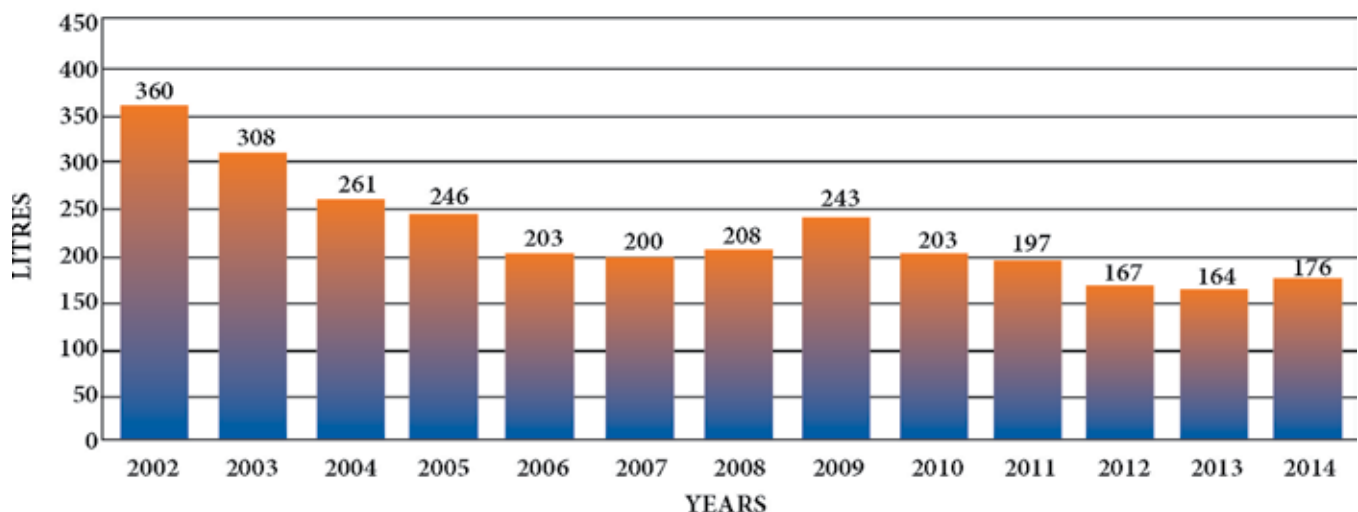
control system was upgraded at the three Harbour Solutions Wastewater Plants. Approximately 45 Remote Terminal Units (RTU's) were replaced enabling more secure and high speed communication with our remote facilities.

The Lake Major Water Supply plant passed a health and safety milestone, achieving 5000 days (13.5 years) without a lost time accident.

This is a testament to the dedication of Lake Major staff over the years.

The North Preston Water storage reservoir was cleaned, inspected and painted in 2013. All of our 16 reservoirs are on a cyclical maintenance program to ensure maximum value over the life of the asset, and maintain an acceptable aesthetic appearance within the communities we serve.

Real Losses - Litres Per Service Connection Per Day



Lake Major Water Supply Plant



Pockwock (J.D. Kline) Water Supply Plant



# Responsible Financial Management

The financial statements are presented in accordance with the recommendations of the Accounting and Reporting Handbook (Handbook) for Water Utilities as issued by the Nova Scotia Utility and Review Board (NSUARB). The Utility received a clean audit opinion for the fiscal year ended March 31, 2014.

The 2013/14 fiscal year resulted in a loss of \$4.9 million compared to a budgeted loss of \$5.0 million. For rate making purposes dictated by the NSUARB, Halifax Water finished the year at a near break even position on a cash basis.

This past year saw a decline in new customer connections, and consumption decreased more than anticipated. Halifax Water's budget and rates were prepared based on a projected net consumption decrease of 1.5%. The actual decrease in consumption for the fiscal year was 4.5% compared to the prior year. Decreasing consumption is a trend across North America. It is likely that increasing rates, with a higher proportion being volumetric (based on consumption), is encouraging conservation and leak reduction initiatives on the customer premises. Rates for the Urban Core & Satellite System increased

on July 1, 2013 and the Aerotech/Airport System rates increased August 1, 2013. Rates were also scheduled to increase on April 1, 2014 for the Urban Core and Satellite System.

Consolidated operating revenue of \$111.5 million is \$7.4 million (7.1%) ahead of revenue reported for the same period in the prior year. Consolidated operating expenses of \$89.7 million are \$6.7 million (8.1%) higher than the same period last year but, when compared to the current year budget, are under by \$2.5 million. Halifax Water started a number of formal cost containment initiatives in 2013/14 that resulted in cost savings of \$2.2 million.

Financial revenue is slightly ahead of the prior year and budget, as a result of higher investment income. Financial expenses are \$3.5 million greater than prior year, but \$1.7 million less than budget. Debt increased by \$32.9 million during this fiscal year with total outstanding debt at \$216.1 million by year end.

Consolidated operating expenses are 8% or \$6.7 million higher than last year. The increases in operating expenses are attributable to Depreciation (\$1.7M),

Pension costs (\$1 M), Wastewater Treatment (\$1.3 M) Wastewater Collection (\$1.4 M), and Water Supply and Treatment (\$1.6 M).

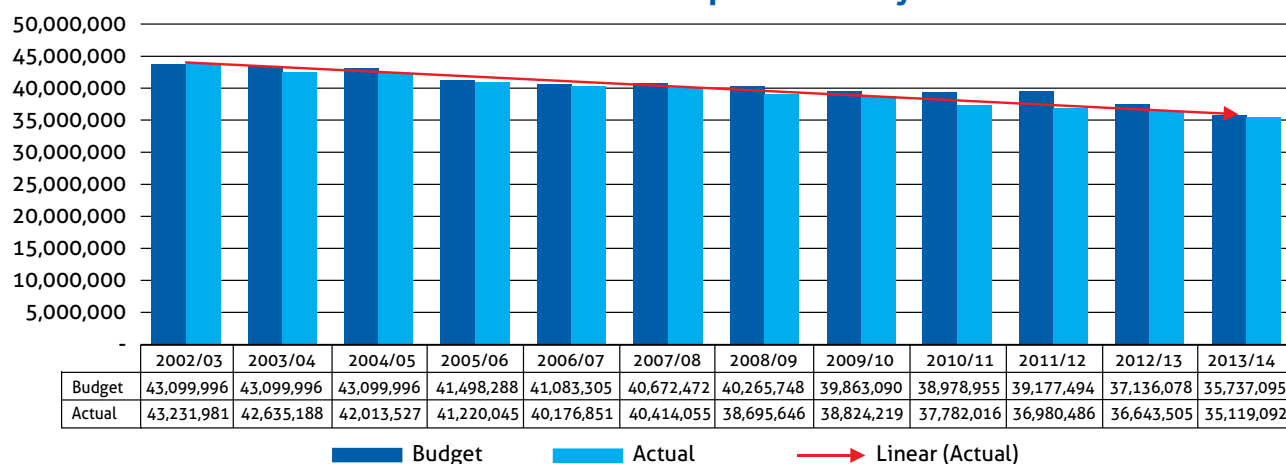
As Halifax Water's capital program continues to grow to address significant asset renewal, environmental compliance, and growth requirements, depreciation and debt servicing will continue to increase.

## Pension Plan Sustainability

An actuarial valuation was conducted as of January 1, 2014 in compliance with the Pension and Benefits Act. Although there has been improved performance in investments since the last valuation, the Going Concern deficit has increased from (\$14,387,000) to (\$27,110,200) and the plan is only 73% funded from a Going Concern perspective. Two key changes in assumptions have resulted in increased cost and funding requirements for the plan.

The discount rate decreased from 6.00% to 5.50% to reflect lower expectations for investment returns in the future. There has been a trend amongst public pension plans in recent years to ensure discount rates are conservative and reflective of projected future conditions. This is being driven by Actuarial guidelines.

## Metered Consumption History - m3





### Culvert replacements and ditch maintenance to improve stormwater management

New mortality tables were published in early 2014 in recognition that Canadians are living longer. The new mortality tables were expected to increase liabilities between 5 – 8% for most defined benefit pension plans.

The Actuarial Valuation indicates that pension plan contributions (Employer and Employee) will need to increase in 2014 from 10.47% to 12.95%, and additional going concern special payments will be required. As a result, pension is a topic of discussion during collective bargaining currently underway. A joint working group including members of the Pension and Benefit Committee, the CUPE Union Presidents, and CUPE National Representatives is being formed to work on Pension Sustainability, with a view to re-design the Halifax Water Pension Plan.

### International Financial Reporting Standards (IFRS)

There continues to be uncertainty around future financial reporting requirements for the utility in relation to IFRS. Halifax Water is a fully regulated government business enterprise, falling under the jurisdiction of the NSUARB. The NSUARB requires Halifax Water to 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 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 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 GAAP Handbook; and, B) in accordance with Accounting Guideline AcG-19, Disclosures by Entities Subject to Rate Regulation, also in Part V of the GAAP 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 to be produced in IFRS will be the 15/16 fiscal year, however the 14/15 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.

### Regulatory Activity

During the 2013/14 year, Halifax Water implemented new rates based on the Cost of Service Manual, Integrated Resource Plan, and Debt Strategy completed in 2012/13. These documents are the framework that will serve as a touch-stone for future operating and capital budgets, and rate applications.

The range of rate increase requested was -10.3% to 61.3% for varying meter sizes in relation to Water and Wastewater Service. The granted rate increases by meter size for Water and Wastewater range from -0.8% to 27.4%. Residential customers will see a 24.3% increase over the two year test 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 enabled the gradual transition and reduced the actual amount of the rate increases were:

- Removal of the consolidation of the Airport/Aerotech system from the rates
- Maintaining existing base charges and not increasing volumetric charges 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
- Some minor adjustments in revenue requirements

The results from the rate decision were positive overall, with approval and acceptance of the Integrated Resource Plan, the Cost of Service Manual, and the Efficient Funding Mechanism (Debt Strategy) Study. The decision recognizes that these three documents are living documents that will need to be updated and reviewed periodically. One unanticipated aspect of the decision was that the NSUARB directed that the Right of Way (ROW) portion of Stormwater Service costs should be charged to Halifax (the Municipality). Halifax Council subsequently requested Halifax Water collect a per property charge of \$39 on Halifax's behalf to fund the ROW portion of Stormwater Service, effective for the 2014/2015 fiscal year.

The most challenging aspect of new cost of service based rates during 2013/14 was the implementation of a separate rate for stormwater service. Several thousand customers in suburban areas have been receiving stormwater service historically, but have never been charged for it through their property taxes or through a utility bill.

#### **Consolidation of the Airport/Aerotech System with the Urban Core**

A major achievement during 2013/14 was the work completed with the Halifax Stanfield International Airport (HSIA) and Halifax to reach a settlement agreement for submission to the NSUARB regarding consolidation of the Airport/Aerotech System with the Urban Core. Halifax Water viewed a negotiated solution as being in the best interest of Halifax Water's



**Halifax Water staff monitor water levels during the critical Pockwock Watermain “switch over”**

rate payers, as it would result in:

1. Elimination of the 1987 Agreement and capacity commitments which are not realistic under 2014 environmental regulatory requirements.
2. Elimination of the requirement to maintain two rate structures and the resulting administrative burden and cost, including the requirement for separate Rate Hearings.
3. Improved cooperation between HSIA and Halifax Water on mutually beneficial issues such as water loss control, and inflow and infiltration reduction.
4. Improved cooperation between HSIA, Halifax Water, and Halifax on planning and development activity.
5. Cooperation between HSIA, Halifax Water, and Halifax to advocate for Provincial and Federal Infrastructure funding for the Aerotech Wastewater Treatment Facility (WWTF) upgrade.

The Aerotech WWTF treats wastewater from HSIA, Aerotech Business Park, and private septage haulers, including airlines

operating at the Airport. The WWTF also dewateres sludge generated by wastewater treatment facilities operated by Halifax Water. The upgrade to increase effluent/sludge capacity and comply with new federal regulations is currently projected to be a \$21 million project.

The presence of these effluent/sludge side streams, and on-going development within HSIA and Aerotech Park continue to increase the loads to the WWTF. The facility is experiencing difficulties meeting the stipulated effluent discharge objectives and is near its design capacity. Further growth is projected within HSIA and Aerotech Park. In order to accommodate the anticipated increase in wastewater, the Aerotech WWTF will need upgrades to improve performance and increase capacity.

Halifax Water has completed an Environmental Risk Assessment [ERA] for the WWTF in accordance with the Canadian Council of Ministers of the Environment [CCME] Municipal Wastewater Effluent Strategy. The ERA has identified environmental quality objectives and performance targets that the WWTF will need to meet. A preliminary design for the expanded facility is being completed

in 2014. Construction of the expanded facility could begin as early as 2015 pending project funding and regulatory approval.

Without the upgrade, growth at the Airport and Aerotech Park will not be possible. The Airport is a major economic contributor to the entire province, accounting for \$1.27 billion a year in economic output, and about 5,400 jobs.

**Capital Financing**

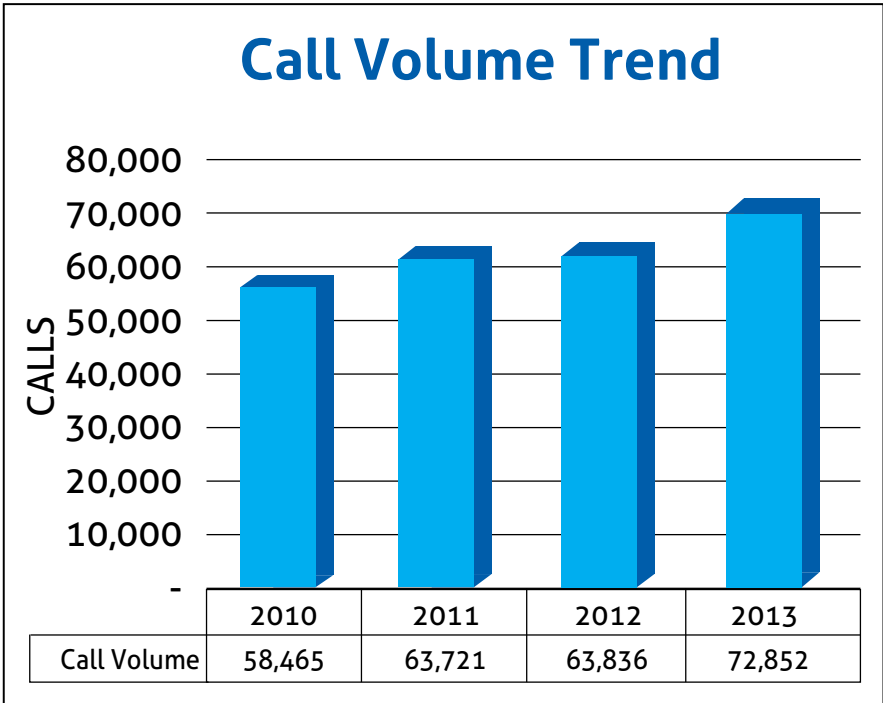
Halifax Water finances capital through depreciation funds, debt, and development related charges.

During 2013/14 Halifax Water issued \$48.5 million in new debt to finance additions to utility plant in service such as the Eastern Passage Wastewater Treatment Facility and the Kearney Lake Road Transmission Main. There were \$96.7 million in additions to Halifax Water’s Utility Plant in Service during 2013/14, bringing Plant in Service, net of depreciation, to \$1 billion.

Halifax Water filed for approval of a Regional Development Charge in July, 2013 to help finance growth related infrastructure with a hearing held in November 2013. The NSUARB released a Decision approving the creation of a new Regional Development charge for Water and Wastewater, and the elimination of three existing wastewater charges (Trunk Sewer Charge, Sewer Redevelopment Charge, and the Regional Wastewater Capital Cost Contribution). The Regional Development Charge became effective July 14, 2014.

**Service Excellence**

The Commission ended the year with 82,644 water customer connections, 79,159 wastewater customer connections, and 98,023 stormwater customers, including 15,379 customers who only receive stormwater service. These customer



numbers for water and wastewater include both the Urban Core, Satellite and Airport/ Aerotech systems.

Customers at March 31, 2014	
Water	82,644
Wastewater	79,159
Stormwater	98,023

Customer service staff answered 72,852 telephone enquiries during the 2013 calendar year, which were 14% more than the previous year. In total, calls have increased 25% since 2010. On a fiscal year basis, the 2013/14 average daily call volume was 348, with peak volume at over 500 calls on numerous days. In 2013/14 average speed of answer (ASA) was 75 seconds (target is 70). The volume of calls increased during the last quarter of the year, when Halifax Water starting billing stormwater only customers. It has become apparent that there is a great deal of misunderstanding regarding what constitutes stormwater infrastructure, what service is provided, and how people have paid for it in the past. Halifax Water is addressing customer inquiries in the order they were received and planning improvements for stormwater billing and

customer communication in future. In 2013/14, an Advance Metering Infrastructure (AMI) Technology Assessment & Feasibility Study was completed. During 2014/15 Halifax Water is undertaking additional work to evaluate potential conversion to monthly or bi-monthly versus quarterly billing, and develop a plan to implement new metering technology over a three to four year period.

AMI refers to a system whereby meter data is collected remotely by a communications network that communicates with radio devices on the meter. By its nature, AMI creates opportunities to provide a greatly enhanced level of customer service and make fundamental change to business processes. This is contrasted with Automated Meter Reading (AMR) whereby routes are driven in vehicles and data collection devices communicate with the meters as they drive past. AMR can reduce the cost of meter reading and improve its accuracy but does not fundamentally change the customer relationship. Halifax Water’s current practice is to use a hybrid of AMR and traditionally walked meter



routes. In future, Halifax Water will be transitioning to either full AMR, full AMI, or a hybrid AMR/AMI system with walked meter routes eliminated.

During 2013/14, the Halifax Water Board approved participation in an e-delivery project with the Property Valuation Services Corporation, Halifax and Cape Breton Regional Municipality. During 2014 e-delivery of bills through Canada Post's epost system will become available to Halifax Water customers. This is a service enhancement that many customers have been requesting, which will also result in financial savings for the utility associated with manually printing and mailing bills.

#### **Stormwater Service, Costs, and Rates**

During 2013/14 Halifax Water implemented a separate cost based rate structure for the delivery of stormwater service. Halifax Water's operating expenses to deliver stormwater service in 2013/14 were \$7,758,000 plus another \$3,635,000 of capital projects for a total annual expenditure of \$11.4 million.

Stormwater infrastructure includes storm pipes, manholes, catchbasins, culverts, ditches, retention ponds, drainage swales, berms, and related infrastructure. The most common service requests from customers relate to concerns about flooding, and culvert or ditch maintenance.

Halifax Water is responsible for municipal stormwater infrastructure located within a defined Stormwater Service Boundary. Halifax municipality and the Provincial Government also own or influence stormwater infrastructure within that boundary, and have a role in service delivery. The funds billed and collected by Halifax Water are used solely for the operation, maintenance, repair and replacement of stormwater infrastructure owned by Halifax Water.

As of March 31, 2014 Halifax Water identified 98,023 properties that are receiving stormwater service. Some properties (15,379) in suburban areas where there is no piped water or wastewater service were receiving stormwater service from Halifax municipality prior to 2007 but were not billed for the service through property taxes or a utility bill. The cost of providing the service was initially covered by other customers as part of a Wastewater/Stormwater management fee levied on the basis of volumetric water consumption. Correcting this historic inequity has been challenging but progress has been made to ensure fair and equitable treatment of all customers consistent with the Public Utilities Act.

As a regulated utility, Halifax Water can only bill when a service is being received. There is a defined process within the Rules and Regulations for property owners to request a review of their bill, if they believe they are not receiving a service. Further, if the property owner is not satisfied with the result of the review by Halifax Water, they can file a complaint with the NSUARB for final adjudication.

# Effective Asset Management

## Asset Management Roadmap

### Implementation

The Asset Management (AM) Team is responsible for four main programs: master planning, system modeling, asset management program development and support, and capital budget development. While the capital budget development process is well articulated, the other program areas are in various stages of development.

Utilizing the established Condition Assessment Approach developed in the Asset Management Roadmap Implementation (AMRI) Phase 1 project, and the Integrated Resource Plan (IRP) recommendation to begin addressing data gaps, several condition assessment projects were identified for completion over the next few years. The first of these projects (Wastewater Treatment Facility Condition and Performance Assessment) was initiated in 2013/14.

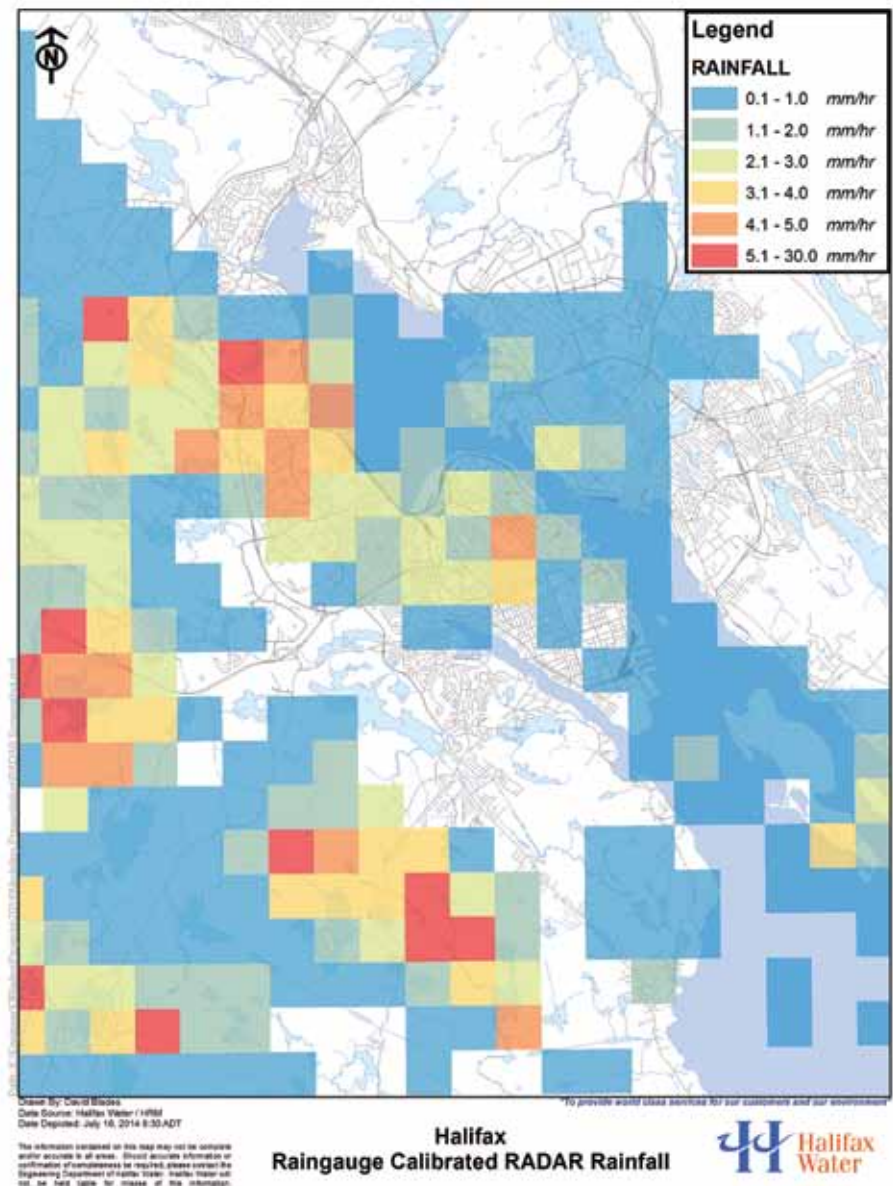
In 2013/14 Halifax Water established the long term planning framework originating from the IRP and the Regional Wastewater Functional Plan (RWWFP). The framework builds a clear vision of how infrastructure plans are influenced by internal and external drivers, and provides critical information to business and revenue planning.

System modeling efforts included a radar data interface for Halifax Water's existing hydraulic model. The use of remote sensing radar will supplement existing rain gauge data "by providing more detail on the spatial variation in rainfall intensity and movement of storm cells across a watershed or sewershed."

### Regional Development Charge

Regional infrastructure, such as water and wastewater treatment facilities are essential to the future growth of the region. Through the RWWFP and IRP, a number of projects

## Raingauge Calibrated RADAR Rainfall



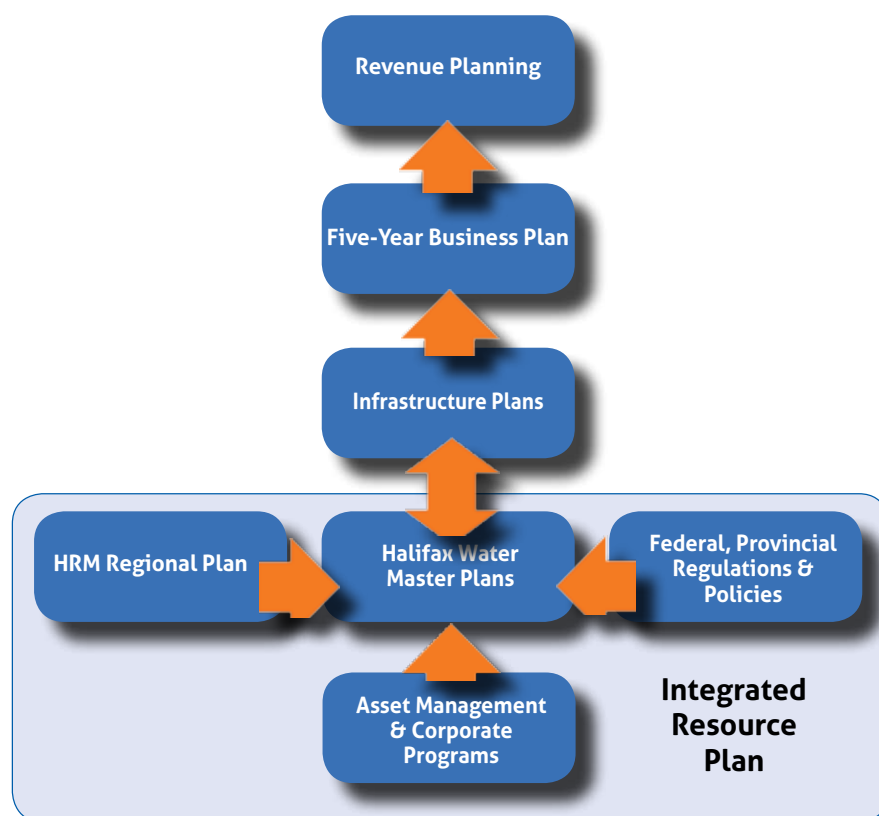
were identified to support growth over the next thirty years. Initially in 2010, staff had proposed an Availability Charge, but with the completion of the RWWFP and IRP, were able to explore the concept of a capacity based charge, the Regional Development Charge (RDC). The RDC provides a fair and equitable fee structure to cover the costs associated with adding capacity to the water and wastewater systems to accommodate new growth while ensuring existing customers do not subsidize new

development.

The formal Stakeholder Consultation and supporting consultant reports were completed in July of 2013 with an application for the RDC being made to the NSUARB on July 25, 2013. The Application proposed a charge for three development categories, single unit residential, multi-unit residential, and Industrial/Commercial/Institutional for both the Urban Core and Aerotech service areas. The Hearing for the



## Long Term Planning Framework



RDC was held in December of 2013, with Rebuttal Submissions being submitted in February 2014. A positive Decision and Order on the RDC were received from the NSUARB in the first quarter of 2014/15.

### Capital Infrastructure Program

Providing customers with effective, reliable, affordable wastewater service requires investment in infrastructure and people. The *Eastern Passage Wastewater Treatment Fa-*

*cility (EPWWTF) Expansion and Upgrade Project* is an excellent example of such investment where long term thinking and a commitment to balance financial, social and environmental concerns are integral to our service delivery.

The EPWWTF was originally constructed in 1974 and was further expanded in 1987 to a capacity of 18,000 m<sup>3</sup>/day (population equivalent of 38,000). The newly expanded

and upgraded facility provides secondary level of treatment with a capacity of 25,000 m<sup>3</sup>/day (population equivalent of 50,000).

The key drivers for the EPWWTF Project were asset renewal, growth, and regulatory compliance. At a total project cost of \$64 million dollars, it is the largest capital project that Halifax Water has implemented since the 2007 merger and involved a large, broad and diverse team in order to complete the complex, multidisciplinary work.

The project was executed using a Design-Build approach which assembles both the design and construction components of a project into a single team that deliver a full, performance based solution for a fixed fee. The benefits of this method were price certainty, shorter project schedule, and lower owner risk.

Construction of the facility got under way in November 2011 and was completed by December 2013. Following construction a rigorous performance test was conducted. The test was successfully completed in January 2014 resulting in the facility being deemed substantially complete. Since then the design-builder has been responsible for the operation of the new facility, and is required to operate the facility for a period of one year after which operations will be transferred back to Halifax Water in February 2015.

### Major Efficiency Upgrades - Eastern Passage Wastewater Facility

Measure	AVERAGE Annual Energy Savings (kWhe)*	Cumulative Energy Savings (kWhe)	AVERAGE Annual Cost Savings (\$)	Cumulative Cost Savings (\$)	Net Present Value (\$)	Annual GHG Savings (Tonnes/yr)
HVAC Upgrades	755,278	19,637,238	\$114,380	\$2,973,893	\$1,458,232	136.7
Aeration System Upgrades	820,210	21,325,467	\$132,034	\$3,432,873	\$1,439,599	486.7
Lighting Upgrade	20,268	526,968	\$10,398	\$270,356	\$118,840	17.0
Pumping Credit	250,000	6,500,000	\$40,069	\$1,041,806	\$581,454	209.5
<b>Totals</b>	<b>1,845,757</b>	<b>47,989,673</b>	<b>\$296,881</b>	<b>\$7,718,928</b>	<b>\$3,598,125</b>	<b>849.9</b>

\* kWhe = kilo-Watt-Hour equivalent, and includes electricity and natural gas energy



### Expanded and upgraded Eastern Passage Wastewater Treatment Facility

One of the greatest challenges throughout the project's schedule was the smooth transition from existing operations to new. The transition was made easier by the fact that Halifax Water operations staff originally assigned to the facility continued to be part of the operations team.

The performance of the facility exceeds expectations and regulatory requirements, is highly automated and energy efficient. An excellent example of the facility's efficiency is its aeration system which will deliver cumulative energy savings in excess of 22 GWh, or \$3.4 million over the 25 year design life of the facility. Achieving this level of efficiency was truly a team effort involving the Design-Builder, Efficiency Nova Scotia, and Halifax Water's technical team.

Overall the EPWWTF Project is a great example of teamwork and project execution considering the complex facility was completed under budget (\$0.5 million), exceeded quality expectations, and met schedule requirements.

Halifax Water continues to integrate infrastructure replacement and rehabilitation work with Halifax's Street Renewal program. This approach continues to provide a cost effective means to deliver core renewal projects. For the 2013/14 reporting period,

5763 m of watermain were renewed.

Wastewater and stormwater rehabilitation occurred on 17 streets. The capital value of the work was \$1.3M and \$500K respectively for wastewater and stormwater infrastructure.

Phase 1 of the Kearney Lake Road Transmission Main Replacement Project was completed. The section of 1200mm diameter transmission main replaced was approximately 1.7 kilometres in length running along Kearney Lake Road from the west end of Kearney Lake to Bluewater Road. The project involved the installation of a temporary above-ground watermain to maintain

### Installing temporary watermain in advance of the Kearney Lake Rd. Watermain Replacement project



supply to the greater Halifax area while the old pipe was removed and replaced. This temporary supply line is being reused in the next phase of the project in 2014.

As part of this project Halifax partnered with Halifax Water to carry out shoulder widening and install bike lanes.

Two significant wastewater designs were completed in 2013/14 - the Lakeside Pump Station Diversion to Halifax Sewershed, and the Bedford West Regional Wastewater System projects. The Lakeside Pump Station Diversion project involves the installation of approximately 8.5 km of new sewer pipe from Raines Mill Rd. in Lakeside to the area of the Atlantic Superstore on Joseph Howe Dr. It will redirect approximately one third of the flow currently going to the Beechville Lakeside Timberlea (BLT) WWTF to the Halifax WWTF. This diversion will enable development to continue within the BLT sewershed. The Bedford West Regional Wastewater System will enable development to proceed in the area of Kearney Lake to Highway 102 to Hammonds Plains Road with capacity for future growth beyond these limits. Construction for both of these projects is scheduled for 2014/15.



### GIS Data Enhancements

The 2013/14 year brought about a renewed focus on the Geographic Information Service (GIS) database. This was supported by a Corporate GIS Data Plan which has a multiyear goal of a full and complete infrastructure database for water, wastewater, and stormwater. This year saw the start and completion of the Burnside project which included the field collection and update of all infrastructure data for the Burnside Business Park. Another significant project started in 2013/14 is the sewer lateral database application and sewer modeling initiative. This project, which continued into

### GIS Data Updating team reviewing information



### WATER MAIN RENEWAL/REHABILITATION PROGRAM



### Sunrise over the Kearney Lake Road Transmission Main Replacement Project

2014/15, will ultimately see the building of a database for approximately 85,000 sewer lateral connections with a link to GIS. This year also saw the start of the Beechville, Lakeside, Timberlea GIS update which will be completed in mid 2014.

The end of this fiscal year also saw the launch of the next series of data projects including Dartmouth East, Dartmouth North, and Dartmouth Centre along with a significant project in Bedford. These projects will all contribute to meeting the Corporate Balanced Scorecard goal to update the database from 72% to 79% complete by March 31, 2015.

# Regulatory Compliance

Halifax Water undertakes a comprehensive drinking water testing program.

Bacteriological testing is done twice per week at 48 locations within the Urban Core, and weekly at each of the small water systems owned by Halifax Water. Approximately 3,400 tests for total coliform bacteria are conducted each year. Results of 99.9% of samples with total coliform bacteria absent are consistently achieved.

Drinking Water Compliance Summary		
Total Coliform Sample Results		
Systems	April 2013 to March 2014	
	% Absent	# of Samples
HFX/Pockwock	100.0%	1045
HFX/Pockwock Central	99.5%	645
Lake Major	100.0%	1201
Bennery	98.8%	163
Five Islands	100.0%	102
Silver Sands	100.0%	103
Middle Musquodoboit	100.0%	102
Collins Park	100.0%	106
Miller Lake	100.0%	218
Totals		
Absent (A)		3680
Present (P)		5
		3685
All Sites - % Absent	99.86%	

Additional testing of drinking water includes:

- Chlorine residual, pH, and turbidity of treated water leaving each water treatment plant, as well as at multiple locations within the plant, in order to optimize the treatment process.
- Quarterly sampling of treated water at two or three locations within the distribution system for approximately 40 chemical parameters.
- Quarterly sampling of raw lake water and water from contributing streams for approximately 40 chemical parameters.

- Bi-annual sampling of Lake Major and Pockwock Lake raw and treated water for all parameters in the Guidelines for Canadian Drinking Water Quality.
- Bi-annual testing and sampling for giardia and cryptosporidium of treated and raw water for all surface water systems.

Water test results are reported to Nova Scotia Environment, and the Nova Scotia Medical Officer of Health on a regular basis. Protocols have been established between Halifax Water and the provincial departments to clearly delineate roles and responsibilities in the event of a disruption in water quality.

## Federal Wastewater System Effluent Regulations

The Canadian Council of Ministers of the Environment (CCME) developed and signed the Canada-wide Strategy for the Management of Municipal Wastewater Effluent (the Strategy) in early 2009. The Strategy established national standards for wastewater treatment, equivalent

to secondary treatment. Facilities are provided timeframes in which to become compliant with this standard ranging from 10 to 30 years, depending on the degree of environmental risk posed by the effluent, and the nature of the receiving waters.

The Strategy also places restrictions on overflows from both sanitary sewer and combined sewer systems (sanitary sewage is combined with stormwater in the same pipe). Combined sewer overflows are to be reduced over time, and sanitary sewer overflows are to be eliminated eventually. In addition, both combined sewer overflows and sanitary sewer overflows should not increase as a result of development. Management plans are to be developed and approved by local provincial jurisdictions.

The federal government developed the Wastewater System Effluent Regulations (July 2012) as a result of the CCME Strategy, which implement new national standards for carbonaceous biochemical

## Halifax Wastewater Treatment Facility (building at top of picture)







**Upgraded Wellington Wastewater Treatment Facility**

oxygen demand, total suspended solids, chlorine, and ammonia (un-ionized form). This will require upgrading the Halifax and Dartmouth facilities from advanced-primary to the equivalent of secondary level treatment. The Herring Cove facility currently meets the new requirements. All treated wastewater effluent must not be acutely toxic to trout, beginning in January 2015.

Halifax Water is currently putting measures in place to facilitate detection and measurement of sewer system overflows. The new federal Regulations require combined sewer overflow reporting, and combined sewer overflow reduction plans to be developed with the province. Transitional Authorizations under the federal Regulations will allow certain periods of time for facilities to become compliant, inclusive of combined sewer overflow reduction. Based on the level of risk as defined under the federal Regulations, the Halifax and Dartmouth facilities could have up to 20 years under Transitional Authorizations.

The federal government has committed to further consultation with stakeholders on receiving water monitoring before including this in a future revision of the federal Regulations. Upgrading wastewater treatment plants

and reducing overflows will require significant expenditures over time to meet the new national standards. With costs for Halifax Water now estimated at \$595 million to implement these regulations, it is hoped a new funding program will be put in place by both the federal and provincial governments to help ease the financial burden to ratepayers.

#### **Wastewater Treatment Facility Compliance**

Wastewater treatment facilities in Nova Scotia are regulated by Nova Scotia Environment, who set effluent discharge limits for all wastewater facilities. The limits define maximum concentrations of parameters such as carbonaceous biochemical oxygen demand (a measure of the amount of material in water which will consume oxygen as it decomposes), total suspended solids (a measure of the amount of particulate matter in the water), and fecal coliform (bacteria associated with wastewater). For some facilities, parameters such as nutrients (nitrogen and phosphorus which cause excess growth of algae and plants) and pH (a measure of acidity) are also regulated.

At the time of the 2007 merger some older wastewater facilities – 12 in total – were in need of upgrading and/or were overstressed by the volume of wastewater, and

were therefore often non-compliant with Nova Scotia Environment effluent limits. In an effort to address these issues, Halifax Water has completely reconstructed the Wellington Wastewater Treatment Facility, and has completed a \$64 million expansion and upgrade to the Eastern Passage Facility. The wastewater collection systems for two treatment facilities – Wellington and Frame – were both completely replaced, resulting in significant improvements to the performance of both treatment facilities. The treatment processes at several other facilities have been significantly improved through optimization efforts on the part of Halifax Water staff. Also, a significant diversion of sewage from the BLT sewershed to the Halifax sewershed is now underway. This will reduce the loading on the existing BLT treatment facility, and improve its performance and compliance status.

In 2013, the federal government published the Wastewater System Effluent Regulations. These Regulations set national minimum standards for carbonaceous biochemical oxygen demand and total suspended solids in treated wastewater effluent effective January 1, 2015. All of Halifax Water's wastewater treatment facilities are expected to meet these standards, although the Halifax and Dartmouth advanced-primary treatment facilities will require upgrading to the equivalent of secondary treatment. The federal Regulations provide for defined periods to allow required upgrades to take place, based upon a system for ranking the environmental risk of each facility. Under this risk ranking, the Halifax and Dartmouth facilities could have up to 20 years to complete the upgrades.

At present, Nova Scotia Environment requires that 80% of samples collected must meet the effluent limits for each facility. Under these criteria and as indicated in the following tables, six of fifteen facilities were fully compliant for 2013/14 at year end.

For the last 5 months of the fiscal year

## Wastewater Treatment Facility Compliance Summary

Cumulative Performance - April 2013 to March 2014

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
Wellington	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 ( $\geq 80\%$ )
	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

(November 2013 to March 2014), the Nova Scotia Environment Approvals for the three Halifax Harbour Solutions Project facilities - Halifax, Dartmouth and Herring Cove - changed the basis for judging compliance from a requirement that 80% of the samples be less than the limits, to requiring that the quarterly average be less than the limits. On that basis for Q3 and Q4 of the fiscal year, performance for these facilities was as follows:

Wastewater Treatment Compliance				
Facility	Q1	Q2	Q3	Q4
Dartmouth	N/A	N/A	YES	NO
Halifax	N/A	N/A	YES	YES
Herring Cove	N/A	N/A	YES	YES

Capital and operational improvements undertaken by Halifax Water have resulted in performance improvements for several of our wastewater treatment facilities, which are partially reflected in the 2013-14 results and will continue in the future. However, as the compliance results demonstrate, many treatment facilities still require capital and operational improvements. Halifax Water has developed Compliance Plans to upgrade and/or expand these facilities to improve their performance and become fully compliant.



# Stewardship of the Environment

## Wet Weather Management Program

Like many municipalities and utilities across North America, Halifax Water's sanitary sewer system is subject to dramatic flow increases in response to precipitation events. In order to deal with the effects of wet weather generated flows within the sanitary sewer system, Halifax Water developed the Wet Weather Management Program. The program was developed around the core principle of keeping extraneous flows out of the sanitary sewer system.

Halifax Water maintains approximately 1,100 km of separated sanitary sewers, 350 km of combined sewers, and 173 wastewater pumping stations. Based on age, historical construction practices, maintenance, number of connections, as well as other factors, there is significant opportunity for inflow and infiltration (I/I) of the wastewater collection system. The program intends to systematically identify opportunities to reduce the volume/quantity of sanitary sewer flow that is collected, pumped, and treated.

I/I contributions can be grouped into

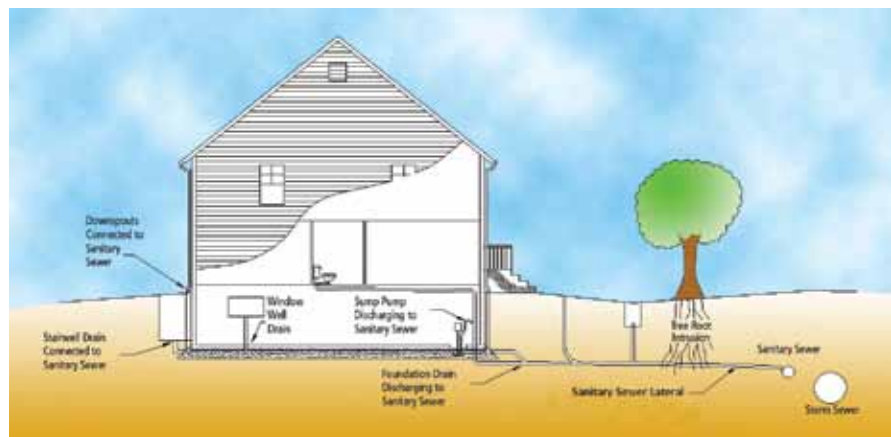


**Leaking pipes lead to added costs and possible sewage overflows**

two areas: Public Infrastructure (Mains, manholes, laterals up to the property line, etc) and Private Infrastructure (laterals from property line up to and including connections within buildings). There are

a number of challenges when dealing with either of the primary contributing areas, and specific strategies must be employed. The program employs a variety of tactics to reduce wet weather impacts such as pipe condition assessments, cured-in-place-pipe, sewer separation, flow monitoring, illegal connection investigations, public communications and modeling.

The benefits of reducing the volume of wet weather flows include a reduction in untreated discharges to the environment, reduction of effluent flows at WWTFs, reduction in operating & maintenance costs, and an increase in available system



**Potential sources of Inflow and Infiltration**

capacity. A number of pilot sewersheds have been targeted for improvements.

The Stuart Harris sewershed, constructed in the 1970's, is a residential sewershed that experiences dramatic sewer flow responses to precipitation events. Flow monitoring was installed at strategic locations in this sewershed to gather baseline information in advance of rehabilitation. These efforts will be ongoing in this sewershed over the next two years.

**Employing trenchless technology to line a leaking sewer pipe**





**Improper downspout connection**

No-corrode pipe material was commonly used in North America in the 1950's and 60's. A comprehensive rehabilitation is planned for Crescent Avenue that includes mainline and no-corrode lateral relining. There is presently flow monitoring installed in the sewershed to develop baseline flow status in advance of the rehabilitation. The rehabilitation is phased with mainline rehabilitation scheduled for summer 2014 and lateral relining to follow.



**Trenchless pipe liner moving through sewer pipe**

The planned Cow Bay Road project will provide the opportunity to quantify the volume of flow that can be removed from the sanitary system by the installation of a new deep storm sewer. Baseline information for this sewershed is being collected in advance of construction to facilitate a post construction comparison of the sewer generation rates.



**Wastewater pumping station maintenance to help improve system capacity and reduce potential odours**

### **GPS Technology to Optimize Vehicle and Equipment Use**

For more than 5 years Halifax Water has utilized Global Positioning Systems (GPS) technology to track and manage its mobile vehicle and equipment fleet. This GPS technology allows Halifax Water to monitor the location, speed, idle time, among other parameters, of all of its equipment with real time information available to all departments through web based technology.

The total distance driven by Halifax Water fleet vehicles has dropped every year since adopting GPS technology in 2008. Current forecasts for our 2014-15 business year project the vehicle fleet to travel 2.9 million kilometers which is a reduction of more than 400,000 KM since 2011/12, and 600,000 kilometers since 2008/09.

This reduction in total distance travelled has allowed Halifax Water to maintain stable overall costs for maintenance and fuel for the last three years, despite rising fuel prices and modest fleet growth.

Looking to the future, Halifax Water will be utilizing GPS Technology to manage fleet vehicle speed in relation to posted speed limits and reduce overall vehicle idling to reduce both costs and environmental footprint. With continued

focus on optimizing our vehicle and equipment resources, we are forecasting a slight reduction in overall fleet size for 2014-15.

### **Stormwater Infrastructure Maintenance and Upgrades**

Halifax Water's wastewater and stormwater operations staff conduct routine inspections, repair, and cleaning of stormwater infrastructure. This year the crews inspected and cleaned approximately 1,000 catchbasins, cleaned over 30 kilometers of storm pipe, repaired 182 stormwater manholes, repaired 288 catch basins, performed maintenance on over 31 kms of ditches, and replaced 133 culverts. This work is in addition to capital work undertaken on the stormwater system.

### **Regulatory Enforcement**

Halifax Water regulates discharges into its wastewater and stormwater systems to ensure compliance with Regulations approved by the Nova Scotia Utility and Review Board. Wastes such as hazardous chemicals, solvents, fuels, heavy metals and eroded soil, if discharged into 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 ocean.



Some discharges are immediate in nature, as a result of an accident, failure of a storage tank or a fuel tank, or an illegal dump of a noxious substance into a storm or wastewater system. Others are more permanent in nature. Key examples are an ongoing discharge from an industrial or institutional type of use, or a cross connection of a wastewater lateral into a storm sewer (which then discharges into a freshwater or marine water body), or the discharge of stormwater into the wastewater system, which causes huge operational and compliance problems within the wastewater system.

Halifax Water uses a variety of tools to address such issues, or to reduce the risk of occurrence, including education, system monitoring, investigations, and improvements to development and construction practices.

Halifax Water continues to find cross connections in which wastewater laterals from homes and buildings are incorrectly connected to the stormwater system. Nine such cross connections were identified and corrected in 2013/14. The discharge



**Environmental Services staff sample run off from a construction site**

of wastewater into a stormwater system poses a direct risk to public health and the environment, and is therefore addressed on a priority basis. Halifax Water also responds to environmental incidents, such as spills of materials that may enter Halifax Water's stormwater system.

Environmental Engineering staff are responsible for administering the Stormwater Inflow Reduction (SIR) Program. This program is intended to address the most serious operational issue facing Halifax Water's wastewater system – the increase in wastewater flow during wet weather. This increase in flow can cause

overflows into the environment and disrupt treatment processes. This poses a risk to public health and can put Halifax Water treatment facilities out of compliance with Federal and Provincial legislation. In 2013/14 the SIR Program investigated approximately 28 individual sites and another 40 streets or neighbourhoods searching for increased flows during rainfall, in support of the corporate Wet Weather Management Program.

#### **Private Outfall Elimination Program**

The Private Outfall Elimination Program was started in parallel with the Halifax Harbour Solutions Project in 2004. The objective of the program is to identify and eliminate privately owned wastewater pipes that are discharging directly into Halifax Harbour. The owner of each pipe is required to construct a proper connection to the wastewater system so that the wastewater is treated at one of Halifax Water's wastewater treatment facilities. In 2013/14, two private outfalls were connected to the wastewater system, eliminating the discharge of approximately 300 cubic metres per day of wastewater into the harbour. Since the program began, 64 outfall pipes discharging approximately 3000 cubic metres of wastewater per day have been eliminated, which is equivalent to the volume of wastewater from about 9000 people.



**Environmental Services staff checking a release into ditch infrastructure**

### Environmental Management Systems

The International Standards Organization (ISO) sets standards for a variety of different processes and products. One of these is the ISO 14001 Standard, which sets the basic requirements for Environmental Management Systems. Under this standard, an organization or a facility must define environmental goals, identify environmental impacts from its operations, document processes and procedures to reduce or control these impacts, and put in place procedures to audit performance. Audits are conducted by certified external auditors. There must also be a process to ensure continual improvement based on the findings of each audit.

Halifax Water currently has three facilities registered under ISO 14001 for drinking water supply and treatment – Pockwock, Lake Major, and Bennery Lake. In 2013/14, Halifax Water began expansion of the ISO 14001 program into wastewater facilities.

The Herring Cove Wastewater Treatment Facility was selected as the initial wastewater facility for ISO 14001 registration. During 2013/14, an analysis was done of the environmental impacts of this facility's operations. Standard operating procedures were documented to reduce or prevent these impacts, and staff training was provided on Environmental Management Systems and incident response.

In 2014/15, Halifax Water intends to conduct an audit of the Herring Cove Wastewater Treatment Facility as a prerequisite to ISO 14001 registration. The ISO program will then be extended over time to additional wastewater treatment facilities, and their collection systems. The benefit of ISO registration is that it ensures environmental stewardship in a productive manner.



**Environmental Services staff check monitoring equipment to help ensure environmental protection**



# Safety and Security

As an employer, Halifax Water is responsible for, and dedicated to, the health and safety of its employees and others working at or near our workplaces. Halifax Water and its employees strive to eliminate workplace hazards by adopting best practices that meet or exceed regulatory requirements. Our “Near Miss” reporting program continues to mature and provides a valuable source of information to assist in refining and developing safe work procedures and practices.

This year two Codes of Practices for Traffic Control were developed and subsequently approved by the Department of Labour and Advanced Education, related to specific work activities in the streets. These Codes of Practices allow employees to perform this work not only safely, but also efficiently, and effectively.

Halifax Water continues to recognize North American Occupational Safety and Health week in May by holding Safety and Healthy Living presentations at major work locations. Our Joint Occupational Health and Safety Committee ensures all employees have an opportunity to participate in this very important event.

Halifax Water provides training to all employees for specific jobs to ensure each employee is able to work safely. This year, Diffusing Hostile Situations, and Electrical Awareness Safety training was conducted along with our regular core safety training.

Recognizing that water, wastewater, and stormwater services are vital to the sustainability of communities throughout the municipality, Halifax Water maintains an active Emergency Response Program, and a corporate Security Program. Employees are trained to respond to, or assist in, the management of emergencies

under the Incident Command System. Staff utilize the Incident Command System when responding to such incidents as water main breaks, wastewater releases, and environmental emergencies. Halifax Water staff regularly participate in multi-agency exercises with Halifax Fire, Police, Transportation and Public Works, Metro Transit, Emergency Health Services, and the RCMP. These exercises enable employees to be prepared to respond specifically to water, wastewater, and stormwater incidents, and develop working relationships with other participating agencies, which is critical to success in multi-agency responses to emergencies.



**Proper training and equipment for a confined space entry**

**Proper traffic control for the safety of the public and Halifax Water staff**





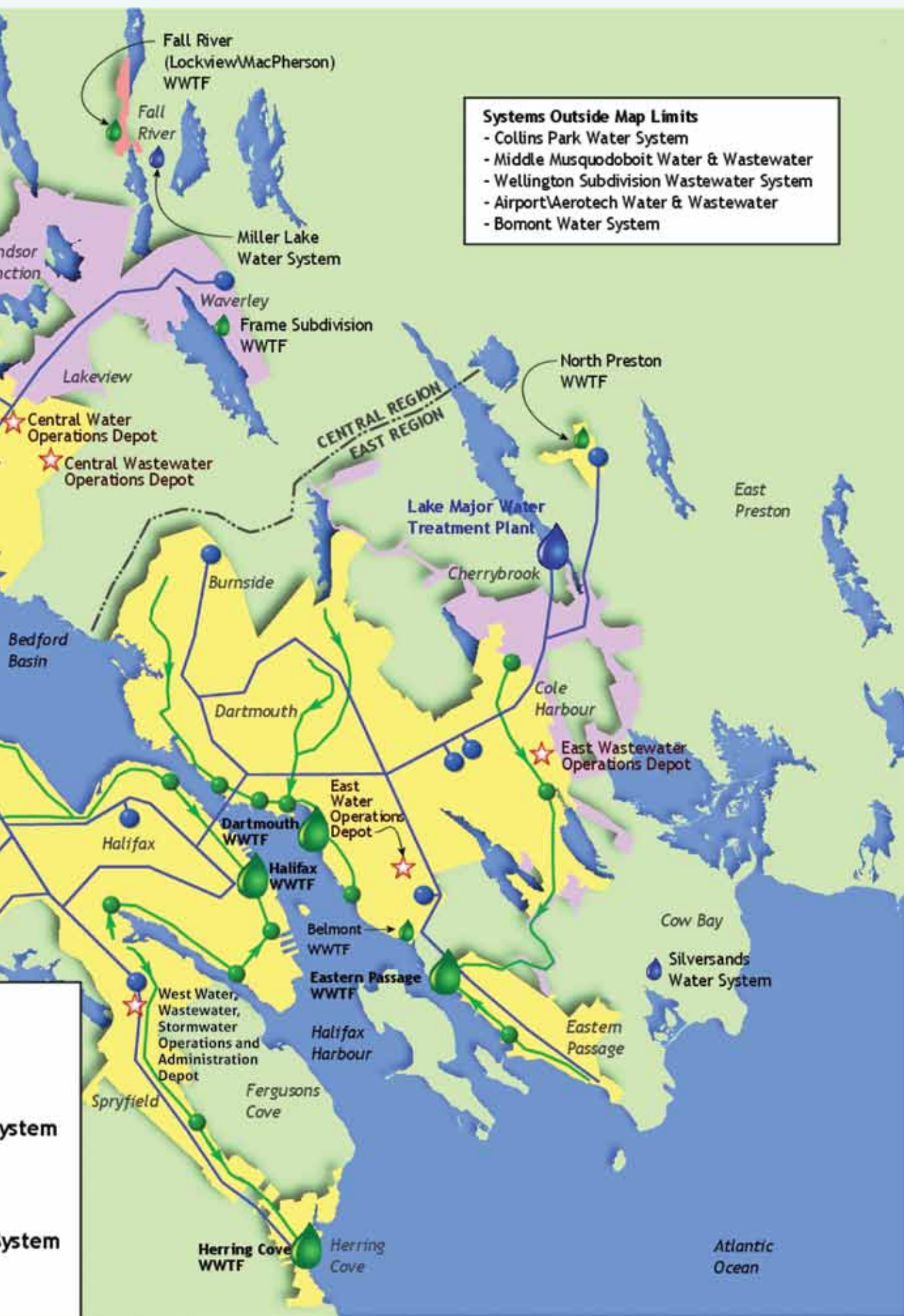
## Water & Wastewater Service Districts and Supporting Infrastructure



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





# Motivated And Satisfied Employees

## Performance Matters - Halifax Water's Strategic Supervisor Training Program

Halifax Water, as part of its commitment to continuous learning and employee development, designed and launched, *Performance Matters*, a customized supervisory competency training program. The program consists of a series of nine individual workshops intended to develop and enhance the people management skills of participants. Each workshop is comprised of a theory section, group and case work, individual homework as well as role play to practice the skill being taught. This training also provides participants with the ideal setting to build relationships with supervisors from different departments who bring a different perspective to the table. Building this internal network allows supervisors to call on colleagues to discuss issues and develop solutions. Feedback was provided after every workshop and has been used to improve the program. Here is what one supervisor had to say about the program:

*"I have and continue to apply skills learned from this training. I have been enrolled in numerous supervisory courses over the years but I have to say the momentum of this training plus working with peers was truly beneficial. There was opportunity to practice the skills and circle back with the instructor. I have had positive feedback from the employees I manage in terms of how I manage positive feedback and constructive corrective feedback."*

The *Performance Matters* program aligns strategically with Halifax Water's succession plan to develop future leaders and its mission "to provide world class services for our customers and our environment".

## Carolyn Bruce Excellence Award

In 2012 the Carolyn Bruce Excellence in

Customer Service Award was established in memory of and to honor Carolyn's unforgotten legacy. Each year Halifax Water recognizes an employee who has

shown exemplary customer service. In 2013 this award was presented to Debby Leonard, Manager of Metering & Billing for her exceptional customer service skills.



**Debby Leonard, Manager of Metering and Billing receives 35 Year Service Award from General Manager Carl Yates**

## Service Awards Banquet

At the Service Awards Banquet in 2013 awards were presented to the following:

### 35 Year Awards:

Finance & Customer Service -  
Belinda Collier, Debby Leonard  
Water Services - Graham MacDonald,  
Raymond Morris

### 30 Year Awards:

Wastewater/Stormwater Services -  
Wayne Foggoa

### 25 Year Awards:

Administration - Carl Yates  
Finance & Customer Service -  
Margaret MacDonald  
Wastewater/Stormwater Services -  
Edward Brine, Darren Higdon,  
Christopher McSweeney,  
Water Services - Stephen Baxter,  
Robert Goguen

### 20 Year Awards:

Engineering & Information Services -  
Derek McElmon, Stephen Skinner



Finance & Customer Service -  
Michelle Comeau, Sharon Harding,  
Peter Johnson, Richard Lilly  
Wastewater/Stormwater Services -  
Dereck Avery, Collette Cleary,  
Joseph Hazelden, Derrick Langille,  
Murray Pictou, Phillip Pynn,  
Cedric Williams  
Water Services - Garry Oxner,  
Michael Vardy

#### 10 Year Awards:

Finance & Customer Service -  
David Balcom, Heather Corkum,  
Brittany Pottie, Lorna Skinner  
Wastewater/Stormwater Services -  
Wendell Hebert, John Keirstead,  
Kerry-Anne Taylor,  
Water Services - Todd Connolly,  
Richard Doucet

During the year the following employees  
retired from Halifax Water with many  
years of dedicated service to the Utility:

Chuck Muise - March 1, 2013  
Dave Duggan - March 1, 2013  
Belinda Collier - March 1, 2013  
Jim Murphy - May 1, 2013  
Dan Cosh - June 1, 2013  
Steve Bezanson - July 1, 2013

Frank Purdy - July 1,  
2013  
Peter Jensen - August  
1, 2013  
Bruce Steadman -  
September 1, 2013  
Bill Lackie - January  
1, 2014  
Bob Towers - March  
1, 2014  
Joe Boudreau - April  
1, 2014

James Roache - June 1, 2014  
Raymond Morris - August 1, 2014

#### Fundraising Initiatives at Halifax Water:

Halifax Water continues its fundraising  
initiatives supporting Community groups  
such as the United Way Halifax. For the 2013  
Campaign, Halifax Water staff raised a total  
of \$5,473.00.

The Halifax Water/Salvation Army H2O  
(Help to Others), Water Assistance  
Program raised a total of \$1,072 to help  
those customers who are truly in need  
of help with their water/wastewater/  
stormwater bill. This internal staff  
fundraising effort is in addition to the  
annual \$25,000 Halifax Water provides in



#### Halifax Water's entry in the Special Olympics' Truck Convoy

funding. Funds donated by Halifax Water  
employees are matched by Halifax Water.  
Staff donated a total of \$7,420 to the "Water  
for People" fund. This program sponsors  
water supply projects in Third World  
Countries.

The Christmas Families Fundraising  
initiative raised \$3,279.36 for Carolyn's  
Angel Tree program through the Salvation  
Army.

Halifax Water Employees were also very  
generous in donations to support Bryony  
House, support of the Kiwanis Dragon  
Boat Festival in Support of Cystic Fibrosis,  
and the Special Olympics Nova Scotia-  
Truck Convoy Event.

#### Halifax Water's Kiwanis Dragon Boat Festival team



## TYPICAL ANALYSIS OF POCKWOCK/LAKE MAJOR WATER 2013 - 2014

(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	20.0	<1.0	18.0	-	-
Aluminum	0.110	0.088	0.224	0.047	-	*0.20 / 0.10
Ammonia (N)	<0.050	<0.050	<0.050	<0.050	-	-
Arsenic	<0.001	<0.001	<0.001	<0.001	0.010	-
Calcium	1.15	4.0	1.0	9.4	-	-
Chloride	7.2	9.0	6.4	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	42.0	3.0	-	≤15.0
Conductivity (µmho/cm)	38.0	85.0	33.0	115.0	-	-
Copper (Total)	0.077	<0.002	0.080	<0.002	-	≤1.0
Fluoride	<0.10	0.65	<0.10	0.56	1.5	0.7 - 0.8
Hardness (as CaCO <sub>3</sub> )	4.8	12.0	4.4	26.0	-	-
Hardness (as CaCO <sub>3</sub> ) (Grains)	0.34	0.88	0.31	1.83	-	-
HAA5 (avg.)	-	0.060	-	0.055	0.080	-
Iron (Total)	0.054	<0.050	0.123	<0.050	-	<0.3
Langelier Index @ 5°C	-4.7	-2.4	-5.6	-2.3	-	-
Langelier Index @ 60°C	-4.3	-2.1	-4.6	-2.0	-	-
Lead (Total) (µg/l)	0.54	<0.50	<0.50	<0.50	10.0	-
Magnesium	0.49	0.46	0.43	0.50	-	-
Manganese (Total)	0.035	0.008	0.068	0.011	-	≤0.05
Mercury (µg/l)	<0.013	<0.013	<0.013	<0.013	1.0	-
Nitrate (as N)	0.057	0.057	<0.059	0.058	10.0	-
Nitrite (as N)	<0.010	<0.010	<0.010	<0.010	3.2	-
pH (pH Units)	5.7	7.3	5.3	7.2	-	6.5 - 8.5
Potassium	0.37	0.39	0.44	0.38	-	-
Sodium	4.4	14.0	3.8	9.5	-	≤200
Solids (Total Dissolved)	29.0	49.0	30.0	71.0	-	≤500
Sulfate	3.4	8.5	2.3	23.3	-	≤500
Turbidity (NTU)	0.26	0.06	0.25	<0.12	**0.2 / 1.0	≤5
Total Organic Carbon (TOC)	2.5	1.5	4.7	1.8	-	-
THM's (avg.)	-	0.047	-	0.078	0.100	-
Uranium (µg/l)	<0.10	<0.10	<0.10	<0.10	20.0	-
Zinc (Total)	0.006	0.79	0.010	0.091	-	≤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

### 2013 - 2014

(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> )	<6.1	31.8	34.0	34.0	-	-
Aluminum	0.120	0.015	0.006	0.006	-	0.2
Ammonia (N)	<0.050	<0.050	<0.050	<0.05	-	-
Arsenic	<0.001	<0.001	0.005	0.005	0.010	-
Calcium	2.62	16.4	9.9	9.0	-	-
Chloride	6.8	10.0	3.5	5.1	-	≤250
Chlorate	<0.1	0.4	<0.1	<0.1	1.0	-
Chlorite	<0.1	<0.1	<0.1	<0.1	1.0	-
Colour (True Colour Units)	32.4	<3.0	<5.0	<3.0	-	≤15.0
Conductivity (µmho/cm)	35.0	130.0	81.0	79.0	-	-
Copper (Total)	0.310	0.047	<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> )	8.9	44.0	30.0	27.0	-	-
Hardness (as CaCO <sub>3</sub> ) (Grains)	0.63	3.8	2.1	1.9	-	-
HAA5 (avg.)	-	0.071	-	<0.005	0.080	-
Iron (Total)	0.662	<0.050	<0.050	<0.050	-	≤0.3
Langelier Index @ 5°C	-2.9	-1.7	-2.2	-1.4	-	-
Langelier Index @ 60°C	-2.5	-1.4	-1.9	-1.1	-	-
Lead (Total) (µg/l)	0.51	<0.50	<0.50	<0.50	10.0	-
Magnesium	0.57	0.65	1.24	1.1	-	-
Manganese (Total)	0.254	0.28	<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)	6.23	7.3	7.2	7.6	-	6.5 - 8.5
Potassium	0.24	0.29	0.59	0.55	-	-
Sodium	34.1	13.9	6.1	7.1	-	≤200
Solids (Total Dissolved)	43	102.7	59.0	62.0	-	≤500
Sulfate	3.4	26.3	2.1	2.5	-	≤500
Turbidity (NTU)	1.27	0.10	0.19	0.03	*0.2 / 1.0 ***1.0	≤5
Total Organic Carbon (TOC)	3.9	1.7	<0.50	1.0	-	-
THM's (avg.)	-	0.067	-	<0.001	0.100	-
Uranium (µg/l)	<0.10	<0.10	11.7	11.0	20.0	-
Zinc (Total)	0.008	0.084	0.005	0.067	-	≤5.0
PCB (µg/l)	<0.05	<0.05	<0.050	<0.050	-	-
Gross Alpha / Gross Beta (Bq/L)	<0.02 // 0.04	<0.07 / <0.08	0.16 / 0.28	0.22 / 0.10	0.5 / 1.0	-
Lead-210 (Bq/L)	-	-	-	<0.1	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

### 2013 - 2014

(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> )	39.0	52.0	12.0	10.0	-	-
Aluminum	0.008	0.006	0.053	0.006	-	0.2
Ammonia (N)	<0.050	<0.050	<0.050	<0.050	-	-
Arsenic	<0.001	<0.001	0.003	<0.001	0.010	-
Calcium	15.2	1.5	6.9	0.27	-	-
Chloride	10.2	3.2	36.0	35.5	-	≤250
Chlorate	<0.1	0.2	<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	25.0	<5.0	-	≤15.0
Conductivity (µmho/cm)	150.0	64.0	160.0	25.0	-	-
Copper (Total)	0.007	0.010	<0.002	<0.002	-	≤1.0
Fluoride	<0.10	<0.10	<0.10	<0.10	1.5	0.8 - 1.0
Hardness (as CaCO <sub>3</sub> )	60.0	5.9	21.0	<1.0	-	-
Hardness (as CaCO <sub>3</sub> ) (Grains)	4.2	0.4	1.5	0.1	-	-
HAA5 (avg.)	-	<0.005	-	<0.005	0.080	-
Iron (Total)	<0.050	<0.050	0.165	<0.050	-	≤0.3
Langelier Index @ 5°C	-2.9	-3.2	-2.6	-4.6	-	-
Langelier Index @ 60°C	-2.6	-2.9	-2.4	-4.3	-	-
Lead (Total) (µg/l)	<0.50	<0.50	<0.50	<0.50	10.0	-
Magnesium	5.32	0.44	1.0	<0.10	-	-
Manganese (Total)	<0.002	<0.002	0.058	<0.002	-	≤0.05
Mercury (µg/l)	<0.013	0.03	0.80	0.018	1.0	-
Nitrate and Nitrite (as N)	2.6	1.4	0.12	<0.050	10.0	-
pH (pH Units)	6.7	6.9	7.0	6.6	-	6.5 - 8.5
Potassium	1.1	0.37	1.0	0.19	-	-
Sodium	5.7	18.0	19.3	4.3	-	≤200
Solids (Total Dissolved)	97.0	43.0	79.0	15.0	-	≤500
Sulfate	11.5	<2.0	7.3	<2.0	-	≤500
Turbidity (NTU)	<0.10	0.03	0.80	0.017	*0.1 / 0.3	≤5
Total Organic Carbon (TOC)	0.50	<0.50	3.2	<0.50	-	-
THM's (avg.)	-	<0.001	<1.0	0.002	0.100	-
Uranium (µg/l)	<0.10	<0.10	<0.10	<0.10	20.0	-
Zinc (Total)	0.005	0.205	0.005	0.094	-	≤5.0
PCB (µg/l)	<0.05	<0.05	<0.05	<0.05	-	-
Gross Alpha / Gross Beta (Bq/L)	0.011 / 0.15	0.05 / 0.08	0.04 / 0.08	<0.03 / <0.03	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

### 2013 - 2014

(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> )	71.0	72.0	140.0	48.0	-	-
Aluminum	<0.005	0.006	0.007	0.041	-	0.2
Ammonia (N)	0.058	<0.050	<0.050	<0.050	-	-
Arsenic	<0.001	<0.001	0.014	<0.003	0.010	-
Calcium	37.0	37.0	77.5	22.8	-	-
Chloride	70.5	69.4	120.0	33.5	-	≤250
Chlorate	<0.1	0.2	<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	<5.0	<5.0	-	≤15.0
Conductivity (µmho/cm)	360.0	390.0	690.0	230.0	-	-
Copper (Total)	<0.002	<0.002	0.005	<0.002	-	≤1.0
Fluoride	0.21	0.21	0.26	0.52	1.5	0.8 - 1.0
Hardness (as CaCO <sub>3</sub> )	110.0	115.0	240.0	68.0	-	-
Hardness (as CaCO <sub>3</sub> ) (Grains)	7.5	8.1	16.9	4.8	-	-
HAA5 (avg.)	-	<0.005	-	0.058	0.080	-
Iron (Total)	0.633	<0.050	<0.050	<0.050	-	≤0.3
Langelier Index @ 5°C	-0.55	-0.62	+0.20	-1.25	-	-
Langelier Index @ 60°C	-0.30	-0.37	+0.60	-0.90	-	-
Lead (Total) (µg/l)	<0.50	<0.50	<0.50	<0.50	10.0	-
Magnesium	5.1	5.4	11.3	2.83	-	-
Manganese (Total)	0.810	0.045	0.020	0.003	-	≤0.05
Mercury (µg/l)	<0.013	<0.013	<0.013	<0.013	1.0	-
Nitrate and Nitrite (as N)	<0.050	<0.050	<0.050	0.06	10.0	-
pH (pH Units)	7.7	7.6	8.0	7.6	-	6.5 - 8.5
Potassium	0.82	1.2	1.4	0.65	-	-
Sodium	27.0	27.5	42.5	19.4	-	≤200
Solids (Total Dissolved)	215.0	205.0	375.1	130.0	-	≤500
Sulfate	20.0	19.5	19.5	19.0	-	≤500
Turbidity (NTU)	7.6	0.13	<0.10	0.09	*1.0 **0.2 / 1.0	≤5
Total Organic Carbon (TOC)	<0.50	<0.50	<0.50	1.6	-	-
THM's (avg.)	-	<0.001	-	0.078	0.100	-
Uranium (µg/l)	<0.10	<0.10	1.9	0.18	20.0	-
Zinc (Total)	<0.006	0.082	0.021	0.061	-	≤5.0
PCB (µg/l)	<0.05	<0.05	<0.05	<0.05	-	-
Gross Alpha / Gross Beta (Bq/L)	0.13 / 0.08	<0.10 / <0.10	0.26 / 0.23	0.010 / 0.10	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, 2014

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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, 2014, and the statements of operations, contributed capital surplus, operating deficit, 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, 2014 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 49 to 56 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 19, 2014

*Grant Thornton* LLP  
Chartered Accountants

# Halifax Regional Water Commission

## Statement of operations

Year ended March 31, 2014

(in thousands)

	2014		2013
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Water service	\$ 34,981	\$ 34,341	\$ 32,218
Wastewater service	58,089	54,698	52,140
Stormwater service	8,434	8,446	5,756
Fire protection	9,575	9,575	9,844
Private fire protection services	443	429	370
Airport Aerotech system	1,746	1,717	1,397
Other operating revenue	2,355	2,295	2,345
	115,623	111,501	104,070
Operating expenditures			
Water supply and treatment	7,251	7,284	6,863
Water transmission and distribution	9,334	8,495	8,372
Wastewater collection	9,160	10,671	9,289
Stormwater collection	5,548	4,055	3,492
Wastewater treatment	18,486	18,079	16,762
Engineering and information services	6,543	6,774	6,564
Environmental services	2,562	2,559	2,503
Customer service	3,542	3,930	3,793
Administration and pension	9,655	10,388	9,365
Airport Aerotech system	1,685	1,702	1,857
Depreciation	18,448	15,798	14,177
	92,214	89,735	83,037
Operating profit	23,409	21,766	21,033
Financial and other revenues			
Interest	660	689	674
Other	2,297	2,318	2,295
	2,957	3,007	2,969
	26,366	24,773	24,002
Financial and other expenditures			
Interest on long term debt	8,519	8,161	7,605
Repayment of long term debt	18,556	17,256	14,566
Amortization of debt discount	134	132	88
Grant in lieu of taxes	4,249	4,187	3,971
	31,458	29,736	26,230
Excess of expenditures over revenues	\$ (5,092)	\$ (4,963)	\$ (2,228)

See accompanying notes to the financial statements.



# Halifax Regional Water Commission

## Balance sheet

March 31, 2014  
(in thousands)

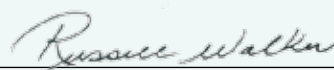
	2014	2013
<b>Assets</b>		
Current		
Cash and cash equivalents	\$ 38,290	\$ 22,353
Receivables		
Customer charges and contractual	23,437	23,861
Halifax Regional Municipality	818	2,115
Materials and supplies	1,445	1,294
Prepays	694	748
	<b>64,684</b>	50,371
Regulatory asset (note 5)	3,964	4,156
Plant under construction	10,676	44,597
Utility plant in service (schedule A)	1,005,207	937,692
	<b>\$ 1,084,531</b>	<b>\$ 1,036,816</b>
<b>Liabilities</b>		
Current		
Payables and accruals		
Trade	\$ 20,202	\$ 17,203
Interest on long term debt	2,026	1,653
Halifax Regional Municipality	3,796	2,281
Contractor and customer deposits	190	194
Current portion of long term debt (schedule B)	28,139	15,553
Unearned revenue	118	117
	<b>54,471</b>	37,001
Long term debt (schedule B)	186,964	166,879
Accrued pension liability (note 4)	10,234	7,107
Accrued post retirement benefits (note 4)	617	677
Accrued long term service awards (note 6)	3,159	2,929
	<b>255,445</b>	214,593
<b>Equity</b>		
Special purpose reserves (note 8)	18,030	22,670
Contributed capital surplus (page 43)	802,636	786,170
Operating (deficit) surplus (page 43)	(3,960)	1,003
Operating surplus used to fund capital (page 43)	12,380	12,380
	<b>829,086</b>	822,223
	<b>\$ 1,084,531</b>	<b>\$ 1,036,816</b>

Contingent liabilities (note 3)  
Commitments (note 9)  
Subsequent events (note 15)

On behalf of the Board



Commissioner



Commissioner

See accompanying notes to the financial statements.

# Halifax Regional Water Commission

## Statement of cash flows

Year ended March 31, 2014  
(in thousands)

	2014	2013
Increase (decrease) in cash and cash equivalents		
<b>Operating</b>		
Excess of expenditures over revenues	\$ (4,963)	\$ (2,228)
Depreciation and amortization	17,090	15,328
Accrued pension liability	3,127	2,798
Decrease in accrued post retirement benefits	(60)	(64)
Repayment of long term debt	17,256	14,566
Increase in accrued long term service awards	230	149
	32,680	30,549
Change in non-cash operating working capital items (note 10)	6,508	(1,195)
	39,188	29,354
<b>Financing</b>		
Proceeds from issuance of long term debt	48,457	51,726
Decrease in receivable from Halifax Regional Municipality	-	163
Contributions to reserves	2,283	4,024
Debt issue costs	(231)	(357)
Principal repayment on Harbour Solutions long term debt	(6,500)	(6,500)
Principal repayments of long term debt	(9,053)	(8,609)
	34,956	40,447
<b>Investing</b>		
Capital cost contributions	324	2,643
Proceeds from sale of plant in service	278	670
Purchase of plant under construction	(6,089)	(33,388)
Purchase of utility plant in service	(52,720)	(33,776)
	(58,207)	(63,851)
Increase in cash and cash equivalents	15,937	5,950
Cash and cash equivalents, beginning of year	22,353	16,403
Cash and cash equivalents, end of year	\$ 38,290	\$ 22,353

See accompanying notes to the financial statements.

## Halifax Regional Water Commission Statement of contributed capital surplus

Year ended March 31, 2014  
(in thousands)

	2014	2013
Contributed capital surplus, beginning of year	\$ 786,170	\$ 761,180
Contributions to plant in service	4,259	18,683
Transfer from special purpose reserve (note 8)	6,923	981
Debt repayment	17,256	14,566
Loss on disposal of assets	(2,252)	(52)
Gain on sale of land	152	583
	<b>812,508</b>	<b>795,941</b>
Less: amortization (note 2(b))	9,872	9,771
Contributed capital surplus, end of year	\$ 802,636	\$ 786,170

## Halifax Regional Water Commission Statement of operating deficit

Year ended March 31, 2014  
(in thousands)

	2014	2013
Operating surplus, beginning of year	\$ 1,003	\$ 3,244
Operating surplus used to fund capital	-	-
Excess of expenditures over revenues	(4,963)	(2,228)
Stewardship contributions charged to current surplus	-	(13)
Operating (deficit) surplus, end of year	\$ (3,960)	\$ 1,003

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

Year ended March 31, 2014  
(in thousands)

	2014	2013
Operating surplus used to fund capital, beginning of year	\$ 12,380	\$ 12,380
Additions to utility plant in service funded by operating surplus	-	-
Operating surplus used to fund capital, end of year	\$ 12,380	\$ 12,380

See accompanying notes to the financial statements.

# Halifax Regional Water Commission

## Notes to the financial statements

March 31, 2014  
(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, wastewater and 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 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

In the year of acquisition, depreciation is calculated at 50% of the above rates unless a project is significant, in which depreciation is prorated for the number of months the asset was in use.

#### (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 basis. The cost of materials and supplies expensed during the period was \$292 (2013 - \$290).

#### (g) Revenues and expenditures

All revenues and expenditures are recorded on an accrual basis. Receivables include outstanding revenue billed by the Commission and estimated 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.

#### (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 systems (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.
- Allowance for doubtful accounts includes a provision for successful stormwater exemption appeals.
- Management assumptions are 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.



# Halifax Regional Water Commission

## Notes to the financial statements

March 31, 2014  
(in thousands)

### (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 in prior year, 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 management believes exposure in this regard is minimal.

There are active claims against the Commission; however, the likelihood of actual liability is not determinable at this time. If the Commission's defense of active claims is unsuccessful, the potential exposure would be \$2 - 2.5 million.

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 \$643 (2013 - \$709) 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 benefit pension plan is funded by employer and employee contributions, each contributing 10.47% of regular employee earnings. The Commission follows the 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, 2014, is as follows:

	2014	2013	2014	2013
	Pension Plan	Pension Plan	Post Retirement Benefits	Post Retirement Benefits
<b>Accrued benefit obligation</b>				
Balance, beginning of year	\$ 112,291	\$ 100,192	\$ 736	\$ 726
Current service cost	6,823	6,542	-	-
Interest cost	4,905	4,583	23	24
Actuarial loss	4,687	4,209	-	-
Benefit payments	(3,300)	(3,252)	(83)	(88)
Transfers in	21	17	-	-
Actuarial gain	-	-	192	74
Balance, end of year	125,427	112,291	868	736
<b>Fair value of plan assets</b>				
Balance, beginning of year	67,189	60,201	-	-
Actual return on plan assets	7,758	4,325	-	-
Transfers in	21	17	-	-
Benefit payments	(3,300)	(3,252)	-	-
Contributions: Employee	2,112	2,138	-	-
Employer	3,698	3,760	-	-
Balance, end of year	77,478	67,189	-	-
Plan deficit	47,949	45,102	868	736
Unamortized transitional asset	590	786	-	-
Unamortized experience loss	(37,763)	(38,144)	(251)	(59)
Unamortized plan amendments	(542)	(637)	-	-
Accrued benefit liability	\$ 10,234	\$ 7,107	\$ 617	\$ 677
<b>Accrued benefit liability, beginning of year</b>				
	\$ 7,107	\$ 4,309	\$ 677	\$ 741
Expense	6,825	6,558	23	24
Employer contributions	(3,698)	(3,760)	(83)	(88)
Accrued benefit liability recognized	\$ 10,234	\$ 7,107	\$ 617	\$ 677

# Halifax Regional Water Commission

## Notes to the financial statements

March 31, 2014  
(in thousands)

Administration and pension expense includes pension expense of \$6,825 (2013 - \$6,558). 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 extrapolations of the accrued benefit liability at March 31, 2014:

	Pension Plan	Pension Plan	Post Retirement Benefits	Post Retirement Benefits
	2014	2013	2014	2013
Discount rate	4.50%	4.30%	3.70%	3.30%
Expected return on plan assets	5.50%	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	4.50-7.97%	4.50-8.23%
Dental benefit inflation per year	N/A	N/A	4.50%	4.50%

Funding for the pension plan is based on regular actuarial reviews and the next valuation was performed as at 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 2011-12. As a result, the Commission 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. The expense recognized in 2013-14 is \$192 (2013 - \$0).

### 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.

	2014	2013
Accrued long term service awards	\$ 3,159	\$ 2,929

The following assumptions have been used in the valuation of the Commission's accrued long term service awards at March 31, 2014:

	2014	2013
Discount rate	4.50%	4.30%
Rate of compensation increase	3.75%	3.75%

### 7. Return on rate base

	2014	2013
Rate of return on rate base for water service	2.32%	2.42%
Rate of return on rate base for wastewater service	2.08%	2.75%
Rate of return on rate base for stormwater service	10.02%	0.75%
Rate of return on rate base for Airport Aerotech water service	(2.41)%	(44.76)%
Rate of return on rate base for Airport Aerotech wastewater service	10.76%	(153.99)%

### 8. Special purpose reserves

	Other Capital Reserves	Sewer Redevelopment Reserve	Wastewater Infrastructure Reserve	Wastewater & Stormwater Reserve	2014 Total	2013 Total
Reserve, beginning of year	\$ 211	\$ 5,321	\$ 13,562	\$ 3,576	\$ 22,670	\$ 19,627
Additions	-	-	-	-	-	-
Contributions and interest	1	1,055	1,227	-	2,283	4,024
Expenditures	-	(740)	(6,000)	(183)	(6,923)	(981)
Reserve, end of year	\$ 212	\$ 5,636	\$ 8,789	\$ 3,393	\$ 18,030	\$ 22,670

### 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 \$4,349 for the 2015 fiscal year.

At March 31, 2014, the Commission had \$54,191 in expenditures from current and past approved capital budgets not yet expended.

### 10. Supplemental cash flow information

	2014	2013
Changes in non-cash operating working capital items		
Receivables	\$ 424	\$ (3,298)
Payable to/receivable from HRM, net	2,812	316
Materials and supplies	(151)	(140)
Prepays	54	(39)
Payables and accruals, trade	2,999	1,719
Accrued interest on long term debt	373	232
Contractor and consumer deposits	(4)	17
Unearned revenue	1	(2)
	\$ 6,508	\$ (1,195)

Interest paid during the year was \$8,161 (2013 - \$7,605).

### 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:

	2014	2013
Long term debt (current portion)	\$ 28,139	\$ 15,553
Long term debt	186,964	166,879
Funded debt	215,103	182,432
Equity	829,086	822,223
Capital under management	\$ 1,044,189	\$ 1,004,655

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

# Halifax Regional Water Commission

## Notes to the financial statements

March 31, 2014  
(in thousands)

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. The risk is mitigated by the pension plan diversifying the types of investments in its portfolio.

#### *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 \$3,304 (2013 - \$552).
- The Commission recorded fire protection revenue from HRM of \$9,758 (2013 - \$10,000).
- The Commission paid a grant in lieu of tax of \$4,187 (2013 - \$3,971).

### 14. Comparative figures

Certain of the comparative figures for 2013 have been reclassified to conform with the financial statement presentation adopted for 2014.

### 15. Subsequent events

Subsequent to year end, the Commission received the actuarial valuation results as at January 1, 2014. The results indicated the employer current service cost and going concern special payments associated with the period January to March

2014 will increase. A going concern special payment accrual of \$434 was made at March 31, 2014. The \$138 current service cost estimate for the contribution rate change from 10.47% to 12.95% was not accrued at March 31, 2014. The additional contributions will be recorded as employee deductions are matched, through the period of July to December, retroactive to January 1, 2014.

Subsequent to year end, the Commission issued long term debt in the amount of \$5,569. Principal payments are due annually and interest semi-annually at rates ranging from 1.245% to 3.347%. Final maturity of this debt is in 2024.

# Halifax Regional Water Commission

## Schedule of utility plant in service

## Schedule A

Year ended March 31, 2014  
(in thousands)

			2014	2013
	Cost	Accumulated Depreciation	Net Book Value	Net Book Value
<b>Water</b>				
Intangible plant	\$ 1,654	\$ 411	\$ 1,243	\$ 1,093
Land and land rights	15,875	-	15,875	15,873
Structures and improvements	85,028	24,840	60,308	59,903
Pumping equipment	9,711	5,577	4,014	4,345
Purification equipment	26,239	17,514	8,725	9,700
Transmission and distribution mains	317,382	67,958	249,424	240,422
Services	31,850	4,717	27,133	26,943
Meters	13,689	3,419	10,270	9,607
Hydrants	17,814	3,038	14,776	14,797
Manholes	236	6	230	
Tools and work equipment	2,641	1,870	771	883
Transportation equipment	5,324	3,780	1,544	1,856
Office equipment and furniture	10,310	7,435	2,875	2,262
Small systems	8,473	1,515	6,958	7,218
Airport Aerotech system	829	239	590	466
	547,055	142,319	404,736	395,368
<b>Wastewater</b>				
Intangible plant	5,787	1,884	3,903	4,198
Land and land rights	9,585	-	9,585	9,566
Structures and improvements	165,667	39,240	126,427	112,711
Pumping equipment	10,261	7,272	2,989	2,108
Treatment equipment	165,923	20,864	145,059	112,488
Collection system	223,542	44,782	178,760	176,081
Manholes and catchbasins	3,203	141	3,062	2,639
Laterals	10,964	526	10,438	8,300
Outfalls	19,029	821	18,208	14,792
Tools and work equipment	882	640	242	343
Transportation equipment	7,135	5,459	1,676	1,446
Office equipment and furniture	2,814	959	1,855	630
Small systems	8,302	1,412	6,890	7,116
Airport Aerotech system	3,229	538	2,691	2,697
	636,323	124,538	511,785	455,115
Carried forward	1,183,378	266,857	916,521	850,483



## Schedule A

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

Year ended March 31, 2014  
(in thousands)

	2014			2013
	Cost	Accumulated Depreciation	Net Book Value	Net Book Value
Brought forward	\$ 1,183,378	\$ 266,857	\$ 916,521	\$ 850,483
<b>Stormwater</b>				
Structures and improvements	8,802	554	8,248	8,258
Collection system	92,094	20,490	71,604	71,623
Manholes and catchbasins	6,186	440	5,746	5,476
Laterals	2,269	103	2,166	1,824
Tools and work equipment	32	4	28	28
Transportation equipment	191	19	172	-
Office equipment and furniture	771	49	722	-
	110,345	21,659	88,686	87,209
Total	\$ 1,293,723	\$ 288,516	\$ 1,005,207	\$ 937,692

During the year, \$1,023 of interest was capitalized to Utility Plant in Service (2013 - \$947).

# Halifax Regional Water Commission

## Schedule of long term debt

## Schedule B

Year ended March 31, 2014

(in thousands)

	Interest Rate	Final Maturity	Balance Remaining	
			2014	2013
Payable to Municipal Finance Corporation				
Water				
Debenture 23 A 1	4.250% to 6.125%	2018	\$ 1,000	\$ 1,100
Debenture 25 A 1	2.970% to 4.560%	2015	3,000	3,250
Debenture 96 A 1	5.500% to 8.000%	2016	240	320
Debenture 26 A 1	4.350% to 4.880%	2016	2,600	2,800
Debenture 27 A 1	4.650% to 5.010%	2017	4,139	5,059
Debenture 28 A 1	3.750% to 5.088%	2018	1,500	1,600
Debenture 98 A 1	5.625% to 6.125%	2019	16,334	19,051
Debenture 99 A 1	6.500% to 6.750%	2019	1,350	1,575
Debenture 30 B 1	1.550% to 3.870%	2020	1,225	1,400
Debenture 31 A 1	1.630% to 4.221%	2021	1,200	1,350
Debenture 32 A 1	1.636% to 3.480%	2022	1,800	2,000
Debenture 32 C 1	1.510% to 3.160%	2022	10,197	10,734
Debenture 33 A 1	1.330% to 3.489%	2023	10,112	-
Debenture 33 B 1	1.285% to 4.114%	2023	7,412	-
Halifax Harbour Solutions				
Debenture 29 A 1	0.900% to 4.329%	2019	10,400	11,050
Wastewater/stormwater				
Debenture 30 A 1	1.510% to 4.500%	2020	2,890	3,060
Debenture 32 A 1	1.636% to 3.480%	2022	2,277	2,397
Debenture 32 B 1	1.380% to 3.156%	2022	30,400	32,000
Debenture 32 C 1	1.510% to 3.160%	2022	4,365	4,595
Debenture 33 A 1	1.330% to 3.489%	2023	16,860	-
Debenture 33 B 1	1.285% to 4.114%	2023	10,893	-
Stormwater				
Debenture 33 A 1	1.330% to 3.489%	2023	540	-
Debenture 33 B 1	1.285% to 4.114%	2023	2,639	-
			143,373	103,341
Payable to Halifax Regional Municipality				
Municipal Finance Corporation – Wastewater/stormwater				
Debenture 23 A 1	3.500% to 5.375%	2013	-	46
Debenture 23 B 1	2.750% to 5.000%	2013	-	4
Debenture 24 A 1	2.550% to 5.450%	2014	83	166
Debenture 24 B 1	2.840% to 5.940%	2024	60,534	66,069
Debenture 24 C 1	7.000% to 7.000%	2015	59	117
Debenture 25 A 1	2.970% to 4.560%	2015	348	522
Debenture 25 B 1	3.630% to 4.830%	2020	68	101
Debenture 26 A 1	4.350% to 4.880%	2016	376	502
Debenture 26 B 1	4.265% to 4.410%	2016	15	19
Debenture 27 A 1	4.450% to 4.625%	2017	263	329
Federation of Canadian Municipalities – Wastewater/stormwater				
Debenture GMIF 1599	1.330% to 3.127%	2014	11,000	12,000
			72,746	79,875
			216,119	183,216
Less: debt issue costs			1,016	784
			215,103	182,432
Less: amount payable within one year			28,139	15,553
			\$ 186,964	\$ 166,879

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:

2015	\$ 28,139
2016	\$ 19,687
2017	\$ 18,968
2018	\$ 16,809
2019	\$ 17,350

## Schedule C

## Halifax Regional Water Commission Schedule of operations for water service

Year ended March 31, 2014  
(in thousands)

	2014		2013
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Water service	\$ 34,981	\$ 34,341	\$ 32,218
Fire protection	9,575	9,575	9,844
Private fire protection services	443	429	370
Other operating revenue			
Bulk water stations	261	241	255
Customer late payment fees	228	256	277
Miscellaneous	149	140	143
	45,637	44,982	43,107
Operating expenditures			
Water supply and treatment	7,251	7,284	6,863
Water transmission and distribution	9,334	8,495	8,372
Engineering and information services	3,272	3,416	3,362
Environmental services	669	693	642
Customer service	1,804	2,006	1,934
Administration and pension	4,919	5,305	4,701
Depreciation	7,605	7,118	6,768
	34,854	34,317	32,642
Operating profit	10,783	10,665	10,465
Financial and other revenues			
Interest	330	344	337
Other	216	235	230
	546	579	567
Financial and other expenditures			
Interest on long term debt	2,437	2,487	2,249
Repayment of long term debt	6,262	6,295	5,140
Amortization of debt discount	67	70	57
Grant in lieu of taxes	4,249	4,187	3,971
	13,015	13,039	11,417
Excess of expenditures over revenues	\$ (1,686)	\$ (1,795)	\$ (385)

# Halifax Regional Water Commission

## Schedule of operations for wastewater service

## Schedule D

Year ended March 31, 2014

(in thousands)

	<b>2014</b>		2013
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Wastewater service	\$ 58,089	\$ 54,698	\$ 52,140
Other operating revenue			
Leachate and other contract revenue	437	412	475
Septage tipping fees	715	633	598
Overstrength surcharge	180	226	195
Customer late payment fees	148	192	166
Miscellaneous	128	101	139
	59,697	56,262	53,713
Operating expenditures			
Wastewater collection	9,160	10,671	9,288
Wastewater treatment	18,486	18,079	16,762
Engineering and information services	2,715	2,787	2,657
Environmental services	1,293	1,282	1,275
Customer service	1,442	1,597	1,543
Administration and pension	3,931	4,219	3,871
Depreciation	10,417	8,370	7,409
	47,444	47,005	42,805
Operating profit	12,253	9,257	10,908
Financial and other revenues			
Interest	330	345	337
Other	2,081	2,083	2,065
	2,411	2,428	2,402
Financial and other expenditures			
Interest on long term debt	5,636	5,223	4,922
Repayment of long term debt	11,532	10,225	8,772
Amortization of debt discount	67	61	31
	17,235	15,509	13,725
Excess of expenditures over revenues	\$ (2,571)	\$ (3,824)	\$ (415)



## Schedule E

# Halifax Regional Water Commission

## Schedule of operations for stormwater service

Year ended March 31, 2014  
(in thousands)

	<b>2014</b>		2013
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Stormwater site generated service	\$ 5,763	\$ 5,775	\$ 5,755
Stormwater right-of-way service	2,671	2,671	-
Other operating revenue			
Customer late payment fees	16	19	18
Miscellaneous	93	75	79
	8,543	8,540	5,852
Operating expenditures			
Stormwater collection	5,548	4,055	3,492
Engineering and information services	556	571	544
Environmental services	600	584	586
Customer service	296	327	316
Administration and pension	805	864	793
Depreciation	426	310	-
	8,231	6,711	5,731
Operating profit	312	1,829	121
Financial and other expenditures			
Interest on long term debt	398	394	383
Repayment of long term debt	664	652	585
Amortization of debt discount		1	
	1,062	1,047	968
Excess of revenues over expenditures (expenditures over revenues)	\$ (750)	\$ 782	\$ (847)

# Halifax Regional Water Commission

## Airport Aerotech system

### Schedule of operations for water service

## Schedule F

Year ended March 31, 2014  
(in thousands)

	2014		2013
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Water service	\$ 628	\$ 620	\$ 537
Fire protection	183	183	156
Customer late payment charges	1	1	1
Miscellaneous	5	5	5
	817	809	699
Operating expenditures			
Plant operations	606	652	722
Pumping stations	28	24	20
Water transmission and distribution	110	109	103
Depreciation	50	37	36
	794	822	881
Operating loss	23	(13)	(182)
Financial and other expenditures			
Interest on long term debt	30	30	34
Repayment of long term debt	54	46	44
	84	76	78
Excess of expenditures over revenues	\$ (61)	\$ (89)	\$ (260)

# Halifax Regional Water Commission

## Airport Aerotech system

### Schedule of operations for wastewater service

## Schedule F

Year ended March 31, 2014  
(in thousands)

	2014		2013
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Wastewater service	\$ 624	\$ 622	\$ 459
Dewatering	210	210	182
Airplane effluent	94	75	56
Customer late payment charges	1	1	1
	929	908	698
Operating expenditures			
Wastewater treatment	761	806	906
Wastewater/stormwater collection	68	37	44
Depreciation	62	37	26
	891	880	976
Operating profit (loss)	38	28	(278)
Financial and other expenditures			
Interest on long term debt	18	27	17
Repayment of long term debt	44	38	25
	62	65	42
Excess of expenditures over revenues	\$ (24)	\$ (37)	\$ (320)
Excess of expenditures over revenues for water and wastewater combined	\$ (85)	\$ (126)	\$ (580)

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

## Schedule G

## Halifax Regional Water Commission Schedule of regulated activities

Year ended March 31, 2014  
(in thousands)

	2014		2013
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Water service	\$ 34,981	\$ 34,341	\$ 32,218
Wastewater service	58,089	54,698	52,140
Stormwater service	8,434	8,446	5,756
Public fire protection	9,575	9,575	9,844
Private fire protection services	443	429	370
Airport Aerotech system	1,442	1,432	1,159
Other operating revenue	1,182	1,229	1,245
	114,146	110,150	102,732
Operating expenditures			
Water supply and treatment	7,238	7,274	6,855
Water transmission and distribution	9,334	8,495	8,372
Wastewater collection	9,160	10,671	9,289
Stormwater collection	5,548	4,055	3,492
Wastewater treatment	16,889	17,012	15,949
Engineering and information services	6,543	6,774	6,564
Environmental services	2,562	2,559	2,503
Customer service	3,507	3,904	3,774
Administration and pension	9,635	10,369	9,290
Airport Aerotech system	1,685	1,702	1,857
Depreciation	18,448	15,792	14,174
	90,549	88,607	82,119
Financial and other revenues			
Interest	660	689	674
Other	2,088	2,069	2,061
	2,748	2,758	2,735
Financial and other expenditures			
Interest on long term debt	8,519	8,161	7,605
Repayment of long term debt	18,556	17,256	14,566
Amortization of debt discount	134	132	88
Grant in lieu of taxes	4,249	4,187	3,971
	31,458	29,736	26,230
Excess of expenditures over revenues	\$ (5,113)	\$ (5,435)	\$ (2,882)

# Halifax Regional Water Commission

## Schedule of unregulated activities

## Schedule G

Year ended March 31, 2014

(in thousands)

	<b>2014</b>		2013
	Budget	Actual	Actual
	(Unaudited)		
Operating revenues			
Dewatering	\$ 210	\$ 210	\$ 182
Airplane sewage	715	633	56
Leachate treatment & contract revenue	437	412	475
Septage tipping fees	94	75	598
Other operating revenue	21	21	27
	1,477	1,351	1,338
Operating expenditures			
Water supply and treatment	13	10	8
Wastewater treatment	1,597	1,067	813
Other	55	45	94
Depreciation	–	6	3
	1,665	1,128	918
Financial and other revenues			
Other	209	249	234
Excess of revenues over expenditures	\$ 21	\$ 472	\$ 654



