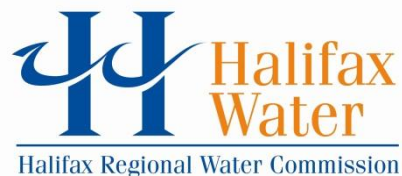


January 27, 2017



Ray Ritcey, Chair  
Halifax Water  
Halifax, Nova Scotia

The regular meeting of the Halifax Water Board will be held on Thursday, February 2, 2017 at 9:00 a.m. in the Boardroom at 450 Cowie Hill Road, Halifax.

## AGENDA

### In Camera Reports

- 1C Approval of Minutes of the In-Camera Meeting held on Thursday, November 24, 2016
- 2C Business Arising from Minutes
  - a)
- 3C Contractual Matter - *Verbal (5 minutes)*
- 4C Personnel Matter *(5 minutes)*
- 5C Governance Matter – *Verbal (5 minutes)*

### Regular Reports

- 1.
  - a) Ratification of In-Camera Motions
  - b) Approval of the Order of Business and Approval of Additions and Deletions *(5 minutes)*
- 2. Approval of Minutes of the Regular Meeting held on Thursday, November 24, 2016.
- 3. Business Arising from Minutes
  - a)
- 4. Operating Results for the Nine Months Ended December 31, 2016 *(5 minutes)*

### Capital Projects *(30 minutes)*

- 5. 2017/18 Capital Budget
    - 5.1 Northwest Arm Sewer Rehabilitation..... \$19,793,168
    - 5.2 Sullivan’s Pond Storm Sewer System Replacement Sullivan’s Pond Storm Sewer System Replacement..... \$9,581,993
    - 5.3 Quinpool Road / Peninsula Transmission Main Rehabilitation..... \$8,500,000
    - 5.4 Lake Major Dam Replacement ..... \$7,789,391
    - 5.5 J.D. Kline Filter Media and Underdrain Replacement Program..... \$5,747,060
- \$51,411,612**
- 6. 2017/18 Water, Wastewater and Stormwater Operating Budget *(30 minutes)*
  - 7. 2017/18 Annual Business Plan *(15 minutes)*

**Information Reports**

- 1-I Operations and Financial Monthly Update
- 2-I Capital Budget Approvals to Date
- 3-I Bank Balance
- 4-I Pension Plan Investment Performance 3rd Quarter, 2016
- 5-I 2016/17 Cost Containment
- 6-I AMI Project
- 7-I 2016 Customer Survey

*Original Signed By:*

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James G. Spurr  
Secretary

**HALIFAX REGIONAL WATER COMMISSION  
MINUTES**

**November 24, 2016**

**PRESENT:** Commissioner Ray Ritcey, Chair  
Commissioner Darlene Fenton  
Commissioner David Hendsbee  
Commissioner Don Mason (via teleconference)

**REGRETS:** Commissioner Russell Walker, Vice Chair  
Commissioner Mike Savage  
Commissioner Jacques Dube

**STAFF:** Carl Yates, General Manager, HRWC  
Cathie O'Toole, Director, Corporate Services & Human Resources, HRWC  
James Spurr, Legal Counsel, HRWC  
Reid Campbell, Director, Water Services, HRWC  
Lorna Skinner, Administrative Assistant, HRWC

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**1b. APPROVAL OF THE ORDER OF BUSINESS AND APPROVAL OF DELETIONS ..... 3**

**2. APPROVAL OF MINUTES - OCTOBER 27, 2016 ..... 3**

**3. BUSINESS ARISING FROM MINUTES..... 3**  
**a) None**

**4. OPERATING RESULTS FOR THE SEVEN MONTHS ENDED OCTOBER 31, 2016 ..... 3**

**5. CAPITAL PROJECTS (None)..... 3**

**6. LEAD SERVICE LINE REPLACEMENT PROGRAM - APPLICATION TO THE NOVA  
SCOTIA UTILITY & REVIEW BOARD..... 3**

**7. DATE OF NEXT MEETING ..... 4**



**CALL TO ORDER**

The Chair called the regular meeting to order at 10:30 a.m. in the Board Room of the HRWC, 450 Cowie Hill Road. The Board moved In Camera at 10:30 and the regular meeting reconvened at 11:25 a.m. The Board moved back into In Camera at 12:05 and the regular meeting reconvened at 12:14.

**1a. RATIFICATION OF IN-CAMERA MOTIONS**

**MOVED BY** Commissioner Fenton, seconded by Commissioner Hendsbee that the Halifax Regional Water Commission Board ratify the In-Camera motions.

**MOTION PUT AND PASSED.**

**1b. APPROVAL OF THE ORDER OF BUSINESS AND APPROVAL OF DELETIONS**

**MOVED BY** Commissioner Hendsbee, seconded by Commissioner Fenton that the Halifax Regional Water Commission Board approve the order of business and approve additions and deletions.

**MOTION PUT AND PASSED**

**2. APPROVAL OF MINUTES – October 27, 2016**

**MOVED BY** Commissioner Hendsbee, seconded by Commissioner Fenton that the Halifax Regional Water Commission Board approve the minutes of October 27, 2016.

**MOTION PUT AND PASSED.**

**3. BUSINESS ARISING FROM MINUTES**

None

**4. OPERATING RESULTS FOR THE SEVEN MONTHS ENDED OCTOBER 31, 2016**

A report dated October 20, 2016, was submitted.

**5. CAPITAL PROJECTS**

None.

**6. LEAD SERVICE LINE (LSL) REPLACEMENT PROGRAM – APPLICATION TO THE NOVA SCOTIA UTILITY & REVIEW BOARD**

A report dated November 18, 2016, was submitted.

Reid Campbell stated that, based on the submitted report, partial LSL replacements will no longer be carried out. The current plan is to have all LSL's replaced by 2050. This will

entail working closely with residents to ensure that the private side of the LSL's are replaced as well. Discussion followed regarding the financial aspects of the replacement of the private LSL's.

The meeting went back into In-Camera at 12:05.

The regular meeting reconvened at 12:14

**MOVED BY Commissioner Ritcey, seconded by Commissioner Fenton that the Halifax Regional Water Commission Board approve an application to the Nova Scotia Utility and Review Board to amend the Halifax Water Rules and Regulations, to enable Halifax Water to financially contribute to the replacement of Lead Service Lines (LSL's) on private property in the following two circumstances:**

- 1. Where Halifax Water, due to an unplanned or emergency circumstance disturbs or replaces a LSL, the LSL will be replaced in its entirety at Halifax Water's expense.**
- 2. In any other circumstance where a LSL's replacement is planned, including both customer initiated and Halifax Water initiated, Halifax Water will contribute 25% of the cost of the replacement of the LSL on private property up to a maximum contribution of \$2,500.00.**

**MOTION PUT AND PASSED.**

The next meeting is scheduled for February 2, 2017.

The meeting was adjourned at 12:15 p.m.

*Original Signed By:*

\_\_\_\_\_  
James G. Spurr  
Secretary

*Original Signed By:*

\_\_\_\_\_  
Commissioner Ray Ritcey  
Chair

The following Information Items were submitted:

- 1-I Operations and Financial Monthly Update
- 2-I Capital Budget Approvals to Date
- 3-I Bank Balance
- 4-I Wastewater Systems – Odour Management
- 5-I Halifax Regional Water Commission Employees' Pension Plan – 3<sup>rd</sup> Quarter, 2016 – Financial Report.

**TO:** Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
Cathie O'Toole, MBA, CPA, CGA, Director, Corporate Services

**APPROVED:** *Original Signed by:*  
Carl Yates, M.A.Sc., P.Eng., General Manager

**DATE:** January 23, 2017

**SUBJECT:** **Operating Results for the Nine Months Ended December 31, 2016**

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## **INFORMATION REPORT**

### **ORIGIN**

Financial Statements

### **BACKGROUND**

The Board is required to review periodic financial information throughout the year.

### **DISCUSSION**

Attached are the operating results for the first nine (9) months of the 2016/17 fiscal year, period ending December 31, 2016. The statements reflect direct operating costs by department and allocations among water, wastewater and stormwater for common costs shared across all the services provided by Halifax Regional Water Commission (HRWC).

HRWC is a fully regulated government business enterprise, falling under the jurisdiction of the Nova Scotia Utility and Review Board (NSUARB). The NSUARB requires that HRWC file Financial Statements and rate applications with the Board based on the NSUARB Handbook for Accounting and Reporting for Water Utilities. The Accounting Standards Board (AcSB) requires rate regulated entities to conform to International Financial Reporting Standards (IFRS). The Commission has converted the SAP financial records to IFRS for the purposes of the annual audit and consolidation of the financial statements with those of Halifax Regional Municipality (HRM). The budget for the 2016/17 fiscal year was prepared using the NSUARB format and financial results will continue to be provided in NSUARB format.

Summary information is provided for the Balance Sheet on Page 1 and the Income Statement on Page 2. A detailed presentation of the Balance Sheet and Income Statement is provided on Pages 3 and 4. Pages 5 through 8 provide Income Statements by Service and for Regulated and Un-Regulated Services. Pages 9 and 10 provide the Balance Sheet and Income Statement in IFRS format.

**Consolidated Income Statement - Page 2**

Consolidated operating revenue of \$105.3 million is \$5.2 million greater than revenue reported for the same year-to-date period last year. Consolidated operating expenses of \$68.8 million are \$1.8 million lower than the same period last year.

Summarized Consolidated Operating Results				
	Actual YTD 2016/17 '000	Actual YTD 2015/16 '000	\$ Change	% Change
Operating Revenue	<b>\$105,259</b>	\$100,045	\$5,214	5.2%
Operating Expenses	<b>\$68,790</b>	\$70,550	(\$1,760)	-2.5%
Operating Profit (Loss)	<b>\$36,469</b>	\$29,494	\$6,975	23.6%
Non Operating Revenue	<b>\$2,486</b>	\$2,395	\$91	3.8%
Non Operating Expenditure	<b>\$26,101</b>	\$25,151	\$950	3.8%
Net Surplus (Deficit)	<b>\$12,854</b>	\$6,738	\$6,116	90.8%

The Net Profit for the year is \$12.9 million, an improvement of \$6.1 million from the same time in the prior year. The budget for the year, approved at the January 28, 2016 Board meeting, was for a profit of \$154 thousand. Results for the year to date have been reviewed in conjunction with plans for the remainder of the year. An update to the Forecast reflects the change from the budget to a profit of \$6.5 million, a total change of \$6.3 million.

The Net Surplus to date is a result of both high Operating Revenue and low Operating Expenses relative to the Budget. Revenue is expected to follow the normal seasonal pattern and fall in line with the Budget and Forecast. It is anticipated that Operating Expenses will increase during the fiscal year as planned initiatives are completed and the impact of fall and winter seasons are realized.

**Balance Sheet - Page 3**

The cash balance of \$62.2 million is up \$2.9 million from the prior year. In response to the high cash balance, the amount of new debt to be issued in November was reduced from the budgeted amount of \$31.9 million to \$7.1 million. The cash balance and capital expenditures will continue to be monitored to determine if the additional cash is required from the Municipal Finance Corporation's Spring debenture.

The total Accounts Receivable balance of \$33.7 million is down \$0.8 million with a decrease in Customer Receivables offsetting an increase in Unbilled Services Receivables. The amounts

**ITEM # 4**  
**HRWC Board**  
**February 2, 2017**

receivable from HRM of \$2.8 million are down \$0.6 million from the prior year. The liquidity on the balance sheet (ratio of current assets divided by current liabilities) is 2.09, up from the ratio of 1.92 at the same time last year.

Accounts Receivable		
	2016/17	2015/16
Customer Receivables	<b>\$12,428</b>	\$13,675
Unbilled Services	<b>\$18,495</b>	\$17,437
Halifax Regional Mun.	<b>\$2,775</b>	\$3,395
<b>Total</b>	<b>\$33,698</b>	\$34,508

Balance Sheet Liquidity (Current Ratio)		
	2016/17	2015/16
Current Assets ('000)	<b>\$97,485</b>	\$95,725
Current Liabilities ('000)	<b>\$46,726</b>	\$49,845
<b>Current Ratio</b>	<b>2.09</b>	1.92

Plant in Service assets net of Accumulated Depreciation is \$1.0 billion and is \$47.2 million higher than at this time last year. Capital Assets Under Construction is down \$24.9 million to \$52.7 million. In the prior year, Assets Under Construction included significant balances for the Lakeside Diversion and Kearney Lake Road projects. The following table highlights the major projects currently underway:

Capital Assets Under Construction	
	Cumulative '000
MacDonald Bridge Transmission Main	<b>\$6,147</b>
Aerotech Wastewater Treatment Facility	<b>\$4,376</b>
Geizer 158 Reservoir Rehabilitation	<b>\$4,241</b>
All other projects	<b>\$37,902</b>
<b>Total</b>	<b>\$52,665</b>

Figures used in the various tables throughout the report may contain differences due to Excel rounding.

Current liabilities of \$46.7 million are down \$3.1 million from the prior year. Liabilities to HRM of \$6.4 million are down from the prior year as amounts have been cleared following updates to Service Level Agreements on valve box and manhole adjustment work and sewer lateral repairs resulting from tree roots. Unearned Revenue is down \$2.4 million. The current portion of Long Term Debt balance of \$23.2 million is up \$0.8 million from the prior year.

Long Term Debt is down \$14.8 million from last year, which is a net of new debt of \$7.1 million and repayments of \$21.9 million. The debt service ratio of 21.5% is well below the maximum 35% ratio allowed under the blanket guarantee agreement with HRM.

Long Term Debt by Service		
	2016/17	2015/16
	'000	'000
Water	<b>\$61,323</b>	\$65,269
Wastewater	<b>\$133,370</b>	\$144,355
Stormwater	<b>\$11,369</b>	\$11,245
<b>Combined</b>	<b>\$206,062</b>	\$220,869

Debt Servicing Ratio by Service		
	YTD Debt Servicing Cost Ratio	
	2016/17	2015/16
Water	<b>19.2%</b>	19.2%
Wastewater	<b>24.7%</b>	24.7%
Stormwater	<b>11.4%</b>	15.2%
<b>Combined</b>	<b>21.5%</b>	21.7%

The cumulative Operating Surplus of \$7.8 million at the beginning of the fiscal year has grown to \$20.7 million with the year-to-date profit of \$12.9 million.

**Income Statement – All Services - Page 4**

The following table compares the results with a nine month pro-rated forecast for the year. The forecast to the end of the year, can be seen on page 4 of the attachment to this report and shows a projected surplus of \$6.5 million dollars. The net surplus to date of \$12.9 million is \$8.0 million ahead of the pro-rated forecasted surplus of \$4.8 million. In the remaining three months of the fiscal year, revenue is expected to fall in line with forecasts and expenses to rise.

Summarized Consolidated Operating Results				
	Actual YTD	Nine Month	\$ Variance	% Variance
	2016/17	Forecast		
	'000	'000		
Operating Revenue	<b>\$105,259</b>	\$102,527	\$2,732	2.7%
Operating Expenses	<b>\$68,790</b>	\$72,891	(\$4,101)	-5.6%
Operating Profit (Loss)	<b>\$36,469</b>	\$29,636	\$6,832	23.1%
Non Operating Revenue	<b>\$2,486</b>	\$2,486	\$0	0.0%
Non Operating Expenditure	<b>\$26,101</b>	\$27,274	(\$1,174)	-4.3%
Net Surplus (Deficit)	<b>\$12,854</b>	\$4,848	\$8,006	165.1%

**Customer Rates**

The following table summarizes the most significant customer rates.

Summary of Rate Changes				
	Effective	Effective	\$ Change	% Change
	April 1/16	May 1/15		
<u>Volumetric Charges (per m3)</u>				
Water	<b>0.976</b>	0.845	0.131	15.5%
Wastewater	<b>1.753</b>	1.638	0.115	7.0%
Combined	<b>2.729</b>	2.483	0.246	9.9%
<u>Base Charges (per year)</u>				
Water	<b>Varies by meter size</b>		No Change	0.0%
Wastewater	<b>Varies by meter size</b>		Varies	1.1%-7.7%
Stormwater - Residential	<b>33.39</b>	33.39	No Change	0.0%
Stormwater- HRM ROW	-	41.00	Eliminated	-100.0%

**Operating Revenue**

Operating Revenue is \$2.7 million ahead of the pro-rated forecast for the year. This reflects the seasonal pattern of consumption that is typically higher for the summer months. In the autumn months, revenue did not recede as much as anticipated, so the forecast for several categories was adjusted. This includes Metered Sales, Bulk Water, and Septage Tipping.

Metered Sales revenue is up \$3.3 million (10.0%) for Water Service and \$2.3 million (4.5%) for Wastewater Service as compared to the prior year. Metered Sales consist of base and volumetric

charges. Base charges are on par with budget expectations. Volumetric revenue budgets for 2016/17 were based on a 3% decrease in metered consumption. Year-to-date billed water consumption is down only 2.0% compared to the prior year. On a 12 month rolling basis, billed consumption is down 1.8%. As most of the increase in revenue is attributable to higher rates and seasonality, the financial benefit realized to date from consumption is approximately \$0.7 million.

Wastewater Metered Sales also consists of a volumetric discharge component and a base charge component. For most customers, the discharge component is based on the metered water consumption, and the volumes and revenue reflect the decline in water consumption. The billed discharge volume to date has declined 2.7%, and on a rolling 12 month basis, the billed discharge volume has declined by 2.5%. The wastewater revenue budget for 2016/17 was also based on an assumed 3% decrease in discharge volume based on metered consumption.

Stormwater Site Generated revenue is on par with budget and the prior year. Other Services and Fees are currently ahead of budget and the prior year, with notable increases in Private Fire Protection and Septage Tipping fees.

**Operating Expenses**

Operating Expenses of \$68.8 million are \$1.8 million below the prior year and \$4.1 million below the pro-rated forecast for the year. All expense areas are below budget and forecast. Increases over prior year expenditures are seen in Engineering and Information Services, Small Systems, SCADA Control & Pumping, and Depreciation. Administration and Pension shows the most significant decline. The following table summarizes Operating Expenses by department and indicates that the reduced expenditures relative to budget are being realized across the organization.

Summary of Operating Expenses by Department					
	Actual YTD	Nine Month			
	2016/17	Forecast	2016/17		
	'000	'000	'000	\$ Variance	% Variance
Water Services	<b>\$12,801</b>	\$13,259	(\$458)	-3.5%	
WW Services	<b>\$21,921</b>	\$22,927	(\$1,006)	-4.4%	
SW Services	<b>\$3,093</b>	\$3,508	(\$416)	-11.9%	
Engineering & IS	<b>\$5,598</b>	\$5,848	(\$251)	-4.3%	
Regulatory Services	<b>\$1,679</b>	\$1,954	(\$275)	-14.1%	
Corporate Services	<b>\$9,970</b>	\$10,452	(\$482)	-4.6%	
Depreciation	<b>\$13,729</b>	\$14,942	(\$1,213)	-8.1%	
<b>Total Operating Expenses</b>	<b>\$68,790</b>	\$72,891	(\$4,101)	-5.6%	

**Financial Revenue**

Investment income is below budget and the prior year. The decline in investment income offset by an increase in miscellaneous revenue, which includes various un-regulated activities such as tower leases, energy generation and rental properties.

**Financial Expenses**

Long Term Debt costs are up from the prior year due to higher levels of debt. New debt acquired in the Fall was less than anticipated so costs are below budget.

The following table shows operating results for each service.

Year to Date Operating Results by Service		
	2016/17	2015/16
	'000	'000
Water	\$4,862	\$1,606
Wastewater	\$5,894	\$3,546
Stormwater	\$2,098	\$1,586
Net Surplus (Deficit)	\$12,854	\$6,738

**Water Operations - Page 5**

Water Operations show a profit of \$4.9 million, compared to a profit of \$1.6 million for the previous year at this time. Water revenue is up \$2.8 million (6.9%). A reduction in the Fire Protection rate which is charged to HRM is offset by higher Metered Sales. Operating Expenses have decreased by \$1.1 million (3.9%) which is primarily attributable to savings in Administration and Pension.

**Wastewater Operations - Page 6**

Wastewater Operations show a profit of \$5.9 million, up from a profit of \$3.5 million in the prior year. Wastewater revenue has increased \$2.5 million from the prior year, with Metered Sales and Septage Tipping Fees accounting for the increase. Operating expenses have decreased by \$0.5 million from the previous year. Higher costs in SCADA and Engineering allocated to Wastewater Services have been offset by savings in other categories.

**Stormwater Operations - Page 7**

Stormwater Operations show a profit of \$2.1 million, an improvement over the profit of \$1.6 million for the same period last year. Stormwater Revenue and Expenses are similar to the prior year figures.



**Regulated and Unregulated Operations - Page 8**

Activities regulated by the NSUARB show a profit of \$12.0 million, ahead of the \$6.1 million profit for the same period last year.

Unregulated activities show a profit of \$0.8 million, an increase from the profit of \$0.6 million for the prior year. Notable increases in Unregulated Revenue are seen in Septage Tipping Fees and Energy Projects.

Results by Activity		
	2016/17	2015/16
	'000	'000
Regulated Activities	<b>\$12,008</b>	\$6,150
Unregulated Activities	<b>\$846</b>	\$588
Net Surplus (Deficit)	<b>\$12,854</b>	\$6,738

**Results under International Financial Reporting Standards - Pages 9 & 10**

As noted previously, the AcSB requires HRWC, as a rate regulated utility, to report financial results using International Financial Reporting Standards (IFRS).

On the IFRS Balance Sheet, Accumulated Depreciation is higher producing a lower value for assets, Contributed Capital is treated as a long term liability and amortized rather than being treated as a contribution to equity, and the Operating Surplus is much higher due to changes in the Income Statement.

On the IFRS Income Statement, Operating Revenue is the same. Depreciation Expense is higher as contributed assets are depreciated and some assets are depreciated more quickly. Financial Revenue is higher as the amortization of contributed capital is treated as revenue. The most significant change is Financial Expenses are lower as there is no expense for the Long Term Debt Principal appropriation – a difference of \$16.0 million to date and \$22.7 million for the full year.

The IFRS Net Profit for the year is \$27.2 million.

**ATTACHMENT**

Unaudited Operating Results for the nine (9) months ended December 31, 2016

Report prepared by: Original Signed by:  
 Warren Brake, Manager, Accounting, B.Comm, CPA, CGA  
 902-490-4814

**HALIFAX WATER  
UNAUDITED BALANCE SHEET - CONSOLIDATED  
AS OF DECEMBER 31, 2016**

	2016 '000	2015 '000
<b>ASSETS</b>		
Cash	\$62,164	\$59,304
Amounts Receivable	\$33,698	\$34,508
Materials & Supplies	\$1,599	\$1,621
Prepaid Expenses	\$24	\$293
	<u>\$97,485</u>	<u>\$95,725</u>
Regulatory Asset	\$3,436	\$3,628
Plant in Service	\$1,039,477	\$992,132
Assets Under Construction	\$52,665	\$77,557
	<u>\$1,095,579</u>	<u>\$1,073,318</u>
Unamortized Debt Discount & Issue Expense	\$1,082	\$1,203
	<u><b>\$1,194,146</b></u>	<u><b>\$1,170,246</b></u>
<b>LIABILITIES &amp; CAPITAL</b>		
Trade Payables & Accrued Liabilities	\$21,752	\$23,291
Deposits & Unearned Revenue	\$1,780	\$4,181
Current Portion of LT Debt	\$23,195	\$22,374
	<u>\$46,726</u>	<u>\$49,845</u>
Pension & Accrued Retirement Benefits	\$60,781	\$71,364
RDC & Special Purpose Reserves	\$12,217	\$14,132
Long Term Debt	\$206,062	\$220,869
Total Liabilities	<u>\$325,786</u>	<u>\$356,210</u>
Capital Surplus, Committed Reserves, & Accumulated OCI	\$847,686	\$804,362
Operating Surplus	\$7,819	\$2,936
Excess (Deficiency) of Revenue over Expenditure - Consolidated	\$12,854	\$6,738
Total Capital & Surplus	<u>\$868,359</u>	<u>\$814,036</u>
	<u><b>\$1,194,146</b></u>	<u><b>\$1,170,246</b></u>

**HALIFAX WATER**  
**UNAUDITED INCOME STATEMENT - CONSOLIDATED**  
**APRIL 1/16 - DECEMBER 31/16 (9 MONTHS)**  
**75.00%**

ACTUAL (CURRENT MONTH)		DESCRIPTION	ACTUAL (YEAR TO DATE)		APR 1/16	APR 1/16	% of FORECAST
THIS YEAR '000	LAST YEAR '000		THIS YEAR '000	LAST YEAR '000	MAR 31/17 BUDGET* '000	MAR 31/17 FORECAST '000	
\$11,482	\$11,758	<b>OPERATING REVENUE</b>	\$105,259	\$100,045	\$135,675	\$136,703	77.00%
\$8,716	\$8,393	<b>OPERATING EXPENSES</b>	\$68,790	\$70,550	\$102,424	\$97,188	70.78%
<b>\$2,767</b>	<b>\$3,365</b>	<b>OPERATING PROFIT</b>	<b>\$36,469</b>	<b>\$29,494</b>	<b>\$33,251</b>	<b>\$39,515</b>	<b>92.29%</b>
		<b>FINANCIAL REVENUE</b>					
\$85	\$147	INVESTMENT INCOME	\$597	\$659	\$810	\$810	73.68%
\$167	\$167	PNS FUNDING HHSP DEBT	\$1,500	\$1,500	\$2,000	\$2,000	75.00%
\$49	\$39	MISCELLANEOUS	\$389	\$236	\$504	\$504	77.18%
<b>\$301</b>	<b>\$353</b>		<b>\$2,486</b>	<b>\$2,395</b>	<b>\$3,314</b>	<b>\$3,314</b>	<b>75.01%</b>
		<b>FINANCIAL EXPENSES</b>					
\$714	\$753	LONG TERM DEBT INTEREST	\$6,447	\$6,570	\$8,872	\$8,872	72.66%
\$1,822	\$1,784	LONG TERM DEBT PRINCIPAL	\$16,010	\$15,044	\$22,652	\$22,652	70.68%
\$17	\$17	AMORTIZATION DEBT DISCOUNT	\$149	\$137	\$199	\$199	74.56%
\$382	\$377	DIVIDEND/GRANT IN LIEU OF TAXES	\$3,455	\$3,396	\$4,663	\$4,578	75.46%
\$2	\$2	MISCELLANEOUS	\$40	\$4	\$24	\$64	63.15%
<b>\$2,937</b>	<b>\$2,933</b>		<b>\$26,101</b>	<b>\$25,151</b>	<b>\$36,410</b>	<b>\$36,365</b>	<b>71.77%</b>
<b>\$131</b>	<b>\$785</b>	<b>NET PROFIT (LOSS) BEFORE OTHER COMPREHENSIVE INCOME</b>	<b>\$12,854</b>	<b>\$6,738</b>	<b>\$156</b>	<b>\$6,464</b>	<b>198.86%</b>
\$0	\$0	<b>OTHER COMPREHENSIVE INCOME</b>	\$0	\$0	\$0	\$0	
<b>\$131</b>	<b>\$785</b>	<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<b>\$12,854</b>	<b>\$6,738</b>	<b>\$156</b>	<b>\$6,464</b>	<b>198.86%</b>

**HALIFAX WATER**  
**UNAUDITED BALANCE SHEET**  
**AS OF DECEMBER 31, 2016**

	2016 '000	2015 '000
<b>ASSETS</b>		
Cash	\$62,164	\$59,304
Amounts Receivable		
Customers & Contractual	\$12,428	\$13,675
Customers & Contractual - Unbilled Services	\$18,495	\$17,437
Halifax Regional Municipality	\$2,775	\$3,395
Materials & Supplies	\$1,599	\$1,621
Prepaid Expenses	\$24	\$293
	<u>\$97,485</u>	<u>\$95,725</u>
Regulatory Asset	\$3,436	\$3,628
Plant in Service - Water	\$584,609	\$567,562
Plant in Service - Wastewater	\$695,811	\$643,473
Plant in Service - Stormwater	\$131,419	\$119,102
Less: Accumulated Depreciation - Water	(\$168,704)	(\$158,253)
Accumulated Depreciation - Wastewater	(\$177,172)	(\$155,572)
Accumulated Depreciation - Stormwater	(\$26,486)	(\$24,179)
	<u>\$1,042,914</u>	<u>\$995,761</u>
Assets Under Construction	\$52,665	\$77,557
	<u>\$1,095,579</u>	<u>\$1,073,318</u>
Unamortized Debt Discount & Issue Expense	\$1,082	\$1,203
	<u><u>\$1,194,146</u></u>	<u><u>\$1,170,246</u></u>
<b>LIABILITIES &amp; CAPITAL</b>		
Trade	\$13,281	\$13,670
Interest on Long Term Debt	\$2,060	\$2,265
Halifax Regional Municipality	\$6,411	\$7,356
Contractor & Customer Deposits	\$188	\$188
Unearned Revenue	\$1,592	\$3,993
Current Portion of LT Debt	\$23,195	\$22,374
	<u>\$46,726</u>	<u>\$49,845</u>
Accrued Post-Retirement Benefits	\$466	\$458
Accrued Pre-Retirement Benefit	\$3,736	\$3,586
Deferred Pension Liability	\$56,580	\$67,320
Special Purpose Reserves not allocated to projects	\$1,822	\$5,477
Regional Development Charge	\$10,394	\$8,655
Long Term Debt-Water	\$61,323	\$65,269
Long Term Debt-Wastewater	\$133,370	\$144,355
Long Term Debt-Stormwater	\$11,369	\$11,245
Total Liabilities	<u>\$325,786</u>	<u>\$356,210</u>
Capital Surplus	\$876,852	\$832,361
Committed Reserves	\$2,391	\$13,946
Accumulated Other Comprehensive Income	(\$43,936)	(\$54,325)
Operating Surplus used to Fund Capital	\$12,380	\$12,380
Operating Surplus	\$7,819	\$2,936
Excess (Deficiency) of Revenue over Expenditure - Consolidated	\$12,854	\$6,738
Total Capital & Surplus	<u>\$868,359</u>	<u>\$814,036</u>
	<u><u>\$1,194,146</u></u>	<u><u>\$1,170,246</u></u>

HALIFAX WATER  
UNAUDITED INCOME STATEMENT - ALL SERVICES  
APRIL 1/16 - DECEMBER 31/16 (9 MONTHS)  
75.00%

ACTUAL (CURRENT MONTH)		DESCRIPTION	ACTUAL (YEAR TO DATE)		APR 1/16	APR 1/16	% of BUDGET*	% of FORECAST
THIS YEAR	LAST YEAR		THIS YEAR	LAST YEAR	MAR 31/17 BUDGET*	MAR 31/17 FORECAST		
'000	'000		'000	'000	'000	'000		
<b>REVENUE</b>								
\$3,924	\$3,737	METERED SALES - WATER	\$36,048	\$32,777	\$46,475	\$46,675	77.56%	77.23%
\$5,787	\$6,118	METERED SALES - WASTEWATER	\$52,993	\$50,715	\$68,052	\$68,652	77.87%	77.19%
\$570	\$568	STORMWATER SITE GENERATED SERVICE	\$5,038	\$5,045	\$6,708	\$6,708	75.10%	75.10%
\$590	\$669	FIRE PROTECTION	\$5,306	\$6,024	\$7,074	\$7,074	75.00%	75.00%
\$323	\$323	STORMWATER RIGHT OF WAY SERVICE	\$2,911	\$2,911	\$3,881	\$3,881	75.00%	75.00%
\$235	\$217	OTHER SERVICES AND FEES	\$2,289	\$1,871	\$2,586	\$2,859	88.52%	80.08%
\$33	\$32	CUSTOMER LATE PAY./COLLECTION FEES	\$378	\$383	\$530	\$485	71.26%	77.88%
\$21	\$94	MISCELLANEOUS	\$297	\$319	\$369	\$369	80.57%	80.57%
<b>\$11,482</b>	<b>\$11,758</b>		<b>\$105,259</b>	<b>\$100,045</b>	<b>\$135,675</b>	<b>\$136,703</b>	<b>77.58%</b>	<b>77.00%</b>
<b>EXPENSES</b>								
\$701	\$708	WATER SUPPLY & TREATMENT	\$5,215	\$5,472	\$7,983	\$7,658	65.33%	68.10%
\$812	\$856	TRANSMISSION & DISTRIBUTION	\$6,239	\$6,267	\$8,710	\$8,211	71.63%	75.99%
\$946	\$979	WASTEWATER COLLECTION	\$6,643	\$7,071	\$9,446	\$9,314	70.32%	71.32%
\$1,661	\$1,623	WASTEWATER TREATMENT PLANTS	\$12,841	\$12,669	\$19,425	\$17,979	66.10%	71.42%
\$464	\$426	STORMWATER COLLECTION	\$3,061	\$3,133	\$4,761	\$4,650	64.29%	65.82%
\$305	\$279	SMALL SYSTEMS AND OTHER SERVICES	\$2,256	\$2,140	\$3,132	\$3,026	72.03%	74.55%
\$231	\$194	SCADA, CONTROL & PUMPING	\$1,560	\$1,276	\$2,089	\$2,088	74.67%	74.71%
\$853	\$489	ENGINEERING & INFORMATION SERVICES	\$5,598	\$4,921	\$8,067	\$7,798	69.39%	71.78%
\$217	\$241	ENVIRONMENTAL SERVICES	\$1,679	\$1,789	\$2,605	\$2,605	64.48%	64.46%
\$442	\$399	CUSTOMER SERVICE	\$3,251	\$3,274	\$4,419	\$4,413	73.57%	73.65%
\$826	\$1,123	ADMINISTRATION & PENSION	\$6,719	\$9,257	\$10,631	\$9,523	63.21%	70.56%
\$1,258	\$1,078	DEPRECIATION	\$13,729	\$13,282	\$21,157	\$19,923	64.89%	68.91%
<b>\$8,716</b>	<b>\$8,393</b>		<b>\$68,790</b>	<b>\$70,550</b>	<b>\$102,424</b>	<b>\$97,188</b>	<b>67.16%</b>	<b>70.78%</b>
<b>\$2,767</b>	<b>\$3,365</b>	<b>OPERATING PROFIT</b>	<b>\$36,469</b>	<b>\$29,494</b>	<b>\$33,251</b>	<b>\$39,515</b>	<b>109.68%</b>	<b>92.29%</b>
<b>FINANCIAL REVENUE</b>								
\$85	\$147	INVESTMENT INCOME	\$597	\$659	\$810	\$810	73.68%	73.68%
\$167	\$167	PNS FUNDING HHSP DEBT	\$1,500	\$1,500	\$2,000	\$2,000	75.00%	75.00%
\$49	\$39	MISCELLANEOUS	\$389	\$236	\$504	\$504	77.18%	77.18%
<b>\$301</b>	<b>\$353</b>		<b>\$2,486</b>	<b>\$2,395</b>	<b>\$3,314</b>	<b>\$3,314</b>	<b>75.01%</b>	<b>75.01%</b>
<b>FINANCIAL EXPENSES</b>								
\$714	\$753	LONG TERM DEBT INTEREST	\$6,447	\$6,570	\$8,872	\$8,872	72.66%	72.66%
\$1,822	\$1,784	LONG TERM DEBT PRINCIPAL	\$16,010	\$15,044	\$22,652	\$22,652	70.68%	70.68%
\$17	\$17	AMORTIZATION DEBT DISCOUNT	\$149	\$137	\$199	\$199	74.56%	74.56%
\$382	\$377	DIVIDEND/GRANT IN LIEU OF TAXES	\$3,455	\$3,396	\$4,663	\$4,578	74.10%	75.46%
\$2	\$2	MISCELLANEOUS	\$40	\$4	\$24	\$64	169.98%	63.15%
<b>\$2,937</b>	<b>\$2,933</b>		<b>\$26,101</b>	<b>\$25,151</b>	<b>\$36,410</b>	<b>\$36,365</b>	<b>71.69%</b>	<b>71.77%</b>
<b>\$131</b>	<b>\$785</b>	<b>NET PROFIT (LOSS) BEFORE OTHER COMPREHENSIVE INCOME</b>	<b>\$12,854</b>	<b>\$6,738</b>	<b>\$156</b>	<b>\$6,464</b>	<b>8256.74%</b>	<b>198.86%</b>
\$0	\$0	<b>OTHER COMPREHENSIVE INCOME</b>	\$0	\$0	\$0	\$0		
<b>\$131</b>	<b>\$785</b>	<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<b>\$12,854</b>	<b>\$6,738</b>	<b>\$156</b>	<b>\$6,464</b>	<b>8256.74%</b>	<b>198.86%</b>

**HALIFAX WATER**  
**UNAUDITED INCOME STATEMENT - WATER OPERATIONS**  
**APRIL 1/16 - DECEMBER 31/16 (9 MONTHS)**  
**75.00%**

ACTUAL (CURRENT MONTH)		DESCRIPTION	ACTUAL (YEAR TO DATE)		APR 1/16	APR 1/16	% of FORECAST
THIS YEAR	LAST YEAR		THIS YEAR	LAST YEAR	MAR 31/17 BUDGET*	MAR 31/17 FORECAST	
'000	'000		'000	'000	'000	'000	
<b>REVENUE</b>							
\$3,924	\$3,737	METERED SALES	\$36,048	\$32,777	\$46,475	\$46,675	77.23%
\$590	\$669	FIRE PROTECTION	\$5,306	\$6,024	\$7,074	\$7,074	75.00%
\$74	\$62	PRIVATE FIRE PROTECTION SERVICES	\$621	\$503	\$840	\$840	73.84%
\$17	\$14	BULK WATER STATIONS	\$293	\$237	\$326	\$326	89.90%
\$19	\$15	CUSTOMER LATE PAY./COLLECTION FEES	\$203	\$145	\$203	\$253	80.36%
\$9	\$71	MISCELLANEOUS	\$122	\$157	\$142	\$142	85.89%
<b>\$4,631</b>	<b>\$4,568</b>		<b>\$42,593</b>	<b>\$39,842</b>	<b>\$55,061</b>	<b>\$55,311</b>	<b>77.01%</b>
<b>EXPENSES</b>							
\$701	\$708	WATER SUPPLY & TREATMENT	\$5,215	\$5,472	\$7,983	\$7,658	68.10%
\$812	\$856	TRANSMISSION & DISTRIBUTION	\$6,239	\$6,267	\$8,710	\$8,211	75.99%
\$87	\$92	SMALL SYSTEMS (inc. Contract Systems)	\$778	\$797	\$883	\$964	80.75%
\$79	\$71	SCADA, CONTROL & PUMPING	\$568	\$505	\$846	\$846	67.16%
\$411	\$245	ENGINEERING & INFORMATION SERVICES	\$2,829	\$2,447	\$3,848	\$3,799	74.48%
\$36	\$42	ENVIRONMENTAL SERVICES	\$355	\$381	\$515	\$515	68.94%
\$225	\$203	CUSTOMER SERVICE	\$1,656	\$1,669	\$2,251	\$2,249	73.67%
\$425	\$571	ADMINISTRATION & PENSION	\$3,435	\$4,711	\$5,416	\$4,852	70.79%
\$494	\$437	DEPRECIATION	\$5,549	\$5,460	\$8,561	\$8,131	68.24%
<b>\$3,270</b>	<b>\$3,224</b>		<b>\$26,625</b>	<b>\$27,709</b>	<b>\$39,013</b>	<b>\$37,225</b>	<b>71.53%</b>
<b>\$1,362</b>	<b>\$1,344</b>	<b>OPERATING PROFIT</b>	<b>\$15,968</b>	<b>\$12,133</b>	<b>\$16,048</b>	<b>\$18,087</b>	<b>88.29%</b>
<b>FINANCIAL REVENUE</b>							
\$38	\$73	INVESTMENT INCOME	\$269	\$332	\$365	\$365	73.80%
\$39	\$35	MISCELLANEOUS	\$276	\$196	\$432	\$432	63.80%
<b>\$77</b>	<b>\$108</b>		<b>\$545</b>	<b>\$528</b>	<b>\$796</b>	<b>\$796</b>	<b>68.37%</b>
<b>FINANCIAL EXPENSES</b>							
\$205	\$228	LONG TERM DEBT INTEREST	\$1,826	\$1,891	\$2,486	\$2,486	73.43%
\$724	\$689	LONG TERM DEBT PRINCIPAL	\$6,290	\$5,697	\$8,576	\$8,576	73.34%
\$8	\$8	AMORTIZATION DEBT DISCOUNT	\$71	\$66	\$100	\$100	70.77%
\$382	\$377	DIVIDEND/GRANT IN LIEU OF TAXES	\$3,455	\$3,396	\$4,663	\$4,578	75.46%
\$0	\$2	MISCELLANEOUS	\$9	\$4	\$24	\$24	37.51%
<b>\$1,319</b>	<b>\$1,304</b>		<b>\$11,650</b>	<b>\$11,055</b>	<b>\$15,848</b>	<b>\$15,764</b>	<b>73.90%</b>
<b>\$120</b>	<b>\$148</b>	<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<b>\$4,862</b>	<b>\$1,606</b>	<b>\$996</b>	<b>\$3,119</b>	<b>155.90%</b>

**HALIFAX WATER**  
**UNAUDITED INCOME STATEMENT - WASTEWATER OPERATIONS**  
**APRIL 1/16 - DECEMBER 31/16 (9 MONTHS)**  
**75.00%**

ACTUAL (CURRENT MONTH)		DESCRIPTION	ACTUAL (YEAR TO DATE)		APR 1/16	APR 1/16	% of FORECAST
THIS YEAR	LAST YEAR		THIS YEAR	LAST YEAR	MAR 31/17	MAR 31/17	
'000	'000		'000	'000	BUDGET*	FORECAST	
<b>REVENUE</b>							
\$5,787	\$6,118	METERED SALES	\$52,993	\$50,715	\$68,052	\$68,652	77.19%
\$0	\$11	WASTEWATER OVERSTRENGTH AGREEMENTS	\$23	\$106	\$0	\$23	100.00%
\$42	\$42	LEACHATE	\$255	\$226	\$389	\$389	65.60%
\$8	\$7	CONTRACT REVENUE	\$57	\$70	\$86	\$86	66.82%
\$17	\$17	DEWATERING FACILITY/SLUDGE LAGOON	\$157	\$142	\$210	\$210	74.99%
\$12	\$9	AIRLINE EFFLUENT	\$66	\$41	\$86	\$86	77.18%
\$65	\$53	SEPTAGE TIPPING FEES	\$817	\$547	\$650	\$900	90.82%
\$13	\$14	CUSTOMER LATE PAY./COLLECTION FEES	\$142	\$188	\$257	\$187	75.91%
\$8	\$14	MISCELLANEOUS	\$103	\$97	\$133	\$133	77.76%
<b>\$5,953</b>	<b>\$6,285</b>		<b>\$54,614</b>	<b>\$52,132</b>	<b>\$69,862</b>	<b>\$70,664</b>	<b>77.29%</b>
<b>EXPENSES</b>							
\$946	\$979	WASTEWATER COLLECTION	\$6,643	\$7,071	\$9,446	\$9,314	71.32%
\$1,661	\$1,623	WASTEWATER TREATMENT PLANTS	\$12,841	\$12,669	\$19,425	\$17,979	71.42%
\$109	\$93	SMALL SYSTEMS	\$865	\$738	\$1,251	\$1,225	70.62%
\$70	\$45	DEWATERING FACILITY/ SLUDGE MGM'T	\$322	\$335	\$556	\$396	81.46%
\$2	\$13	BIOSOLIDS TREATMENT	\$70	\$73	\$101	\$101	69.78%
\$37	\$37	LEACHATE CONTRACT	\$220	\$196	\$341	\$341	64.52%
\$148	\$119	SCADA, CONTROL & PUMPING	\$960	\$746	\$1,215	\$1,215	79.04%
\$380	\$210	ENGINEERING & INFORMATION SERVICES	\$2,380	\$2,128	\$3,629	\$3,439	69.21%
\$113	\$118	ENVIRONMENTAL SERVICES	\$837	\$859	\$1,254	\$1,225	68.34%
\$186	\$168	CUSTOMER SERVICE	\$1,371	\$1,381	\$1,864	\$1,862	73.64%
\$345	\$475	ADMINISTRATION & PENSION	\$2,825	\$3,910	\$4,485	\$4,017	70.32%
\$715	\$599	DEPRECIATION	\$7,738	\$7,476	\$11,982	\$11,157	69.36%
<b>\$4,711</b>	<b>\$4,478</b>		<b>\$37,073</b>	<b>\$37,582</b>	<b>\$55,549</b>	<b>\$52,270</b>	<b>70.93%</b>
<b>\$1,242</b>	<b>\$1,808</b>	<b>OPERATING PROFIT</b>	<b>\$17,541</b>	<b>\$14,550</b>	<b>\$14,312</b>	<b>\$18,394</b>	<b>95.36%</b>
<b>FINANCIAL REVENUE</b>							
\$38	\$73	INVESTMENT INCOME	\$269	\$327	\$365	\$365	73.80%
\$167	\$167	PNS FUNDING HHSP DEBT	\$1,500	\$1,500	\$2,000	\$2,000	75.00%
\$10	\$5	MISCELLANEOUS	\$114	\$40	\$72	\$72	157.07%
<b>\$215</b>	<b>\$245</b>		<b>\$1,883</b>	<b>\$1,867</b>	<b>\$2,437</b>	<b>\$2,437</b>	<b>77.26%</b>
<b>FINANCIAL EXPENSES</b>							
\$459	\$473	LONG TERM DEBT INTEREST	\$4,178	\$4,260	\$5,817	\$5,817	71.83%
\$1,041	\$993	LONG TERM DEBT PRINCIPAL	\$9,249	\$8,546	\$12,978	\$12,978	71.26%
\$8	\$8	AMORTIZATION DEBT DISCOUNT	\$71	\$65	\$89	\$89	80.00%
\$2	\$0	MISCELLANEOUS	\$31	\$0	\$0	\$40	78.31%
<b>\$1,510</b>	<b>\$1,474</b>		<b>\$13,529</b>	<b>\$12,871</b>	<b>\$18,884</b>	<b>\$18,924</b>	<b>71.49%</b>
<b>(\$53)</b>	<b>\$578</b>	<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<b>\$5,894</b>	<b>\$3,546</b>	<b>(\$2,135)</b>	<b>\$1,907</b>	<b>309.09%</b>

**HALIFAX WATER**  
**UNAUDITED INCOME STATEMENT - STORMWATER OPERATIONS**  
**APRIL 1/16 - DECEMBER 31/16 (9 MONTHS)**  
**75.00%**

ACTUAL (CURRENT MONTH)		DESCRIPTION	ACTUAL (YEAR TO DATE)		APR 1/16	APR 1/16	% of FORECAST
THIS YEAR	LAST YEAR		THIS YEAR	LAST YEAR	MAR 31/17 BUDGET*	MAR 31/17 FORECAST	
'000	'000		'000	'000	'000	'000	
<b>REVENUE</b>							
\$570	\$568	STORMWATER SITE GENERATED SERVICE	\$5,038	\$5,045	\$6,708	\$6,708	75.10%
\$323	\$323	STORMWATER RIGHT OF WAY SERVICE	\$2,911	\$2,911	\$3,881	\$3,881	75.00%
\$1	\$4	CUSTOMER LATE PAY./COLLECTION FEES	\$32	\$50	\$70	\$45	72.07%
\$4	\$10	MISCELLANEOUS	\$71	\$65	\$93	\$93	76.46%
<b>\$898</b>	<b>\$905</b>		<b>\$8,052</b>	<b>\$8,071</b>	<b>\$10,753</b>	<b>\$10,728</b>	<b>75.06%</b>
<b>EXPENSES</b>							
\$464	\$426	STORMWATER COLLECTION	\$3,061	\$3,133	\$4,761	\$4,650	65.82%
\$5	\$4	SCADA, CONTROL & PUMPING	\$32	\$25	\$28	\$28	115.05%
\$62	\$34	ENGINEERING & INFORMATION SERVICES	\$388	\$346	\$590	\$560	69.33%
\$69	\$81	ENVIRONMENTAL SERVICES	\$487	\$549	\$835	\$865	56.29%
\$30	\$27	CUSTOMER SERVICE	\$223	\$225	\$303	\$303	73.64%
\$56	\$77	ADMINISTRATION & PENSION	\$459	\$636	\$729	\$653	70.32%
\$49	\$42	DEPRECIATION	\$442	\$346	\$614	\$635	69.69%
<b>\$735</b>	<b>\$691</b>		<b>\$5,092</b>	<b>\$5,259</b>	<b>\$7,862</b>	<b>\$7,693</b>	<b>66.19%</b>
<b>\$163</b>	<b>\$213</b>	<b>OPERATING PROFIT</b>	<b>\$2,960</b>	<b>\$2,812</b>	<b>\$2,891</b>	<b>\$3,035</b>	<b>97.55%</b>
<b>FINANCIAL REVENUE</b>							
\$9	\$0	INVESTMENT INCOME	\$59	\$0	\$81	\$81	72.64%
\$0	\$0	MISCELLANEOUS	\$0	\$0	\$0	\$0	0.00%
<b>\$9</b>	<b>\$0</b>		<b>\$59</b>	<b>\$0</b>	<b>\$81</b>	<b>\$81</b>	<b>72.64%</b>
<b>FINANCIAL EXPENSES</b>							
\$50	\$52	LONG TERM DEBT INTEREST	\$443	\$419	\$569	\$569	77.79%
\$56	\$102	LONG TERM DEBT PRINCIPAL	\$471	\$801	\$1,098	\$1,098	42.95%
\$1	\$1	AMORTIZATION DEBT DISCOUNT	\$7	\$5	\$11	\$11	64.55%
<b>\$107</b>	<b>\$155</b>		<b>\$921</b>	<b>\$1,225</b>	<b>\$1,678</b>	<b>\$1,678</b>	<b>54.91%</b>
<b>\$64</b>	<b>\$59</b>	<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<b>\$2,098</b>	<b>\$1,586</b>	<b>\$1,294</b>	<b>\$1,438</b>	<b>145.88%</b>



**HALIFAX WATER**  
**UNAUDITED INCOME STATEMENT - REGULATED AND UNREGULATED OPERATIONS**  
**APRIL 1/16 - DECEMBER 31/16 (9 MONTHS)**  
**75.00%**

DESCRIPTION	ACTUAL (YEAR TO DATE)		APR 1/16 MAR 31/17	APR 1/16 MAR 31/17	% of FORECAST
	THIS YEAR	LAST YEAR	BUDGET*	FORECAST	
<b>REGULATED ACTIVITIES</b>					
<b>REVENUE</b>					
METERED SALES	\$94,078	\$88,537	\$121,235	\$122,035	77.09%
FIRE PROTECTION	\$5,306	\$6,024	\$7,074	\$7,074	75.00%
PRIVATE FIRE PROTECTION	\$621	\$503	\$840	\$840	73.84%
STORMWATER SERVICE	\$2,911	\$2,911	\$3,881	\$3,881	75.00%
OTHER OPERATING REVENUE	\$962	\$1,028	\$1,203	\$1,180	81.54%
	<b>\$103,878</b>	<b>\$99,003</b>	<b>\$134,234</b>	<b>\$135,011</b>	<b>76.94%</b>
<b>EXPENSES</b>					
WATER SUPPLY & TREATMENT	\$5,215	\$5,472	\$7,983	\$7,658	68.10%
TRANSMISSION & DISTRIBUTION	\$6,239	\$6,267	\$8,710	\$8,211	75.99%
WASTEWATER & STORMWATER COLLECTION	\$9,689	\$10,202	\$14,207	\$13,964	69.38%
WASTEWATER TREATMENT PLANTS	\$12,841	\$12,669	\$19,425	\$17,979	71.42%
SMALL SYSTEMS	\$1,631	\$1,530	\$2,116	\$2,170	75.16%
SCADA, CONTROL & PUMPING	\$1,560	\$1,276	\$2,089	\$2,088	74.71%
ENGINEERING & INFORMATION SERVICES	\$5,598	\$4,921	\$8,067	\$7,798	71.78%
ENVIRONMENTAL SERVICES	\$1,679	\$1,789	\$2,605	\$2,605	64.46%
CUSTOMER SERVICE	\$3,224	\$3,248	\$4,384	\$4,378	73.64%
ADMINISTRATION & PENSION	\$6,703	\$9,244	\$10,610	\$9,502	70.55%
DEPRECIATION	\$13,725	\$13,278	\$21,157	\$19,923	68.89%
	<b>\$68,104</b>	<b>\$69,896</b>	<b>\$101,352</b>	<b>\$96,277</b>	<b>70.74%</b>
<b>FINANCIAL REVENUE</b>					
INVESTMENT INCOME	\$597	\$659	\$810	\$810	73.68%
MISCELLANEOUS	\$1,698	\$1,532	\$2,125	\$2,125	79.92%
	<b>\$2,295</b>	<b>\$2,191</b>	<b>\$2,935</b>	<b>\$2,935</b>	<b>78.20%</b>
<b>FINANCIAL EXPENSES</b>					
LONG TERM DEBT INTEREST	\$6,447	\$6,570	\$8,872	\$8,872	72.66%
LONG TERM DEBT PRINCIPAL	\$16,010	\$15,044	\$22,652	\$22,652	70.68%
AMORTIZATION DEBT DISCOUNT	\$149	\$137	\$199	\$199	74.56%
DIVIDEND/GRANT IN LIEU OF TAXES	\$3,455	\$3,396	\$4,663	\$4,578	75.46%
MISCELLANEOUS	\$0	\$0	\$0	\$0	0.00%
	<b>\$26,060</b>	<b>\$25,147</b>	<b>\$36,386</b>	<b>\$36,302</b>	<b>71.79%</b>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<b>\$12,008</b>	<b>\$6,150</b>	<b>(\$570 )</b>	<b>\$5,368</b>	<b>223.71%</b>
<b>UNREGULATED ACTIVITIES</b>					
<b>REVENUE</b>					
SEPTAGE TIPPING FEES	\$817	\$547	\$650	\$900	90.82%
LEACHATE	\$255	\$226	\$389	\$389	65.60%
CONTRACT REVENUE	\$57	\$70	\$86	\$86	66.82%
DEWATERING	\$157	\$142	\$210	\$210	74.99%
AIRLINE EFFLUENT	\$66	\$41	\$86	\$86	77.18%
ENERGY PROJECTS	\$122	\$21	\$184	\$184	66.35%
MISCELLANEOUS	\$28	\$16	\$22	\$22	128.25%
	<b>\$1,503</b>	<b>\$1,063</b>	<b>\$1,625</b>	<b>\$1,875</b>	<b>80.14%</b>
<b>EXPENSES</b>					
WATER SUPPLY & TREATMENT	\$12	\$6	\$18	\$18	65.82%
WASTEWATER TREATMENT	\$627	\$606	\$998	\$837	74.92%
MISCELLANEOUS	\$38	\$2	\$37	\$37	104.01%
SPONSORSHIPS & DONATIONS	\$42	\$39	\$56	\$56	75.99%
DEPRECIATION	\$4	\$4	\$0	\$0	0.00%
	<b>\$724</b>	<b>\$656</b>	<b>\$1,109</b>	<b>\$948</b>	<b>76.39%</b>
<b>FINANCIAL REVENUE</b>					
MISCELLANEOUS	\$107	\$186	\$232	\$232	46.21%
	<b>\$107</b>	<b>\$186</b>	<b>\$232</b>	<b>\$232</b>	<b>46.21%</b>
<b>FINANCIAL EXPENSES</b>					
MISCELLANEOUS	\$40	\$4	\$24	\$64	63.15%
	<b>\$40</b>	<b>\$4</b>	<b>\$24</b>	<b>\$64</b>	<b>63.15%</b>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<b>\$846</b>	<b>\$588</b>	<b>\$726</b>	<b>\$1,096</b>	<b>77.17%</b>
<b>NET PROFIT (LOSS) AVAILABLE FOR TOTAL CAPITAL EXPENDITURES (REG &amp; UNREG)</b>	<b>\$12,854</b>	<b>\$6,738</b>	<b>\$156</b>	<b>\$6,464</b>	<b>198.86%</b>

**ITEM # 4**

HRWC BOARD

February 2, 2017

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**HALIFAX WATER  
UNAUDITED BALANCE SHEET - IFRS FORMAT  
AS OF DECEMBER 31, 2016**

	2016 '000	2015 '000
<b>ASSETS</b>		
Cash	\$62,164	\$59,304
Amounts Receivable		
Customers & Contractual	\$12,428	\$13,675
Customers & Contractual - Unbilled Services	\$18,495	\$17,437
Halifax Regional Municipality	\$2,775	\$3,395
Materials & Supplies	\$1,599	\$1,621
Prepaid Expenses	\$24	\$293
	<u>\$97,485</u>	<u>\$95,725</u>
Regulatory Asset	\$3,436	\$3,628
Plant in Service - Water	\$584,609	\$567,562
Plant in Service - Wastewater	\$695,811	\$643,473
Plant in Service - Stormwater	\$131,419	\$119,102
Less: Accumulated Depreciation - Water	(\$174,661)	(\$163,611)
Accumulated Depreciation - Wastewater	(\$184,272)	(\$162,216)
Accumulated Depreciation - Stormwater	(\$26,486)	(\$24,179)
	<u>\$1,029,857</u>	<u>\$983,759</u>
Assets Under Construction	\$52,665	\$77,557
	<u>\$1,082,522</u>	<u>\$1,061,316</u>
Unamortized Debt Discount & Issue Expense	\$1,082	\$1,203
	<u><u>\$1,181,089</u></u>	<u><u>\$1,158,245</u></u>
<b>LIABILITIES</b>		
Trade	\$13,281	\$13,670
Interest on Long Term Debt	\$2,060	\$2,265
Halifax Regional Municipality	\$6,411	\$7,356
Contractor & Customer Deposits	\$188	\$188
Unearned Revenue	\$1,592	\$3,993
Current Portion of Deferred Contributed Capital	\$12,526	\$12,526
Current Portion of LT Debt	\$23,195	\$22,374
	<u>\$59,252</u>	<u>\$62,371</u>
Accrued Post-Retirement Benefits	\$466	\$458
Accrued Pre-Retirement Benefit	\$3,736	\$3,586
Deferred Pension Liability	\$56,580	\$67,320
Deferred Contributed Capital	\$704,165	\$693,600
Long Term Debt-Water	\$61,323	\$65,269
Long Term Debt-Wastewater	\$133,370	\$144,355
Long Term Debt-Stormwater	\$11,369	\$11,245
Total Liabilities	<u>\$1,030,261</u>	<u>\$1,048,204</u>
<b>EQUITY</b>		
Accumulated Other Comprehensive Income	(\$43,936)	(\$54,325)
Accumulated Surplus	\$167,607	\$144,655
Excess (Deficiency) of Revenue over Expenditure	\$27,157	\$19,712
Total Equity	<u>\$150,828</u>	<u>\$110,041</u>
	<u><u>\$1,181,089</u></u>	<u><u>\$1,158,245</u></u>

HALIFAX WATER  
UNAUDITED INCOME STATEMENT - IFRS FORMAT - ALL SERVICES  
APRIL 1/16 - DECEMBER 31/16 (9 MONTHS)  
75.00%

ACTUAL (CURRENT MONTH)		DESCRIPTION	ACTUAL (YEAR TO DATE)		APR 1/16	APR 1/16	% of BUDGET*	% of FORECAST
THIS YEAR	LAST YEAR		THIS YEAR	LAST YEAR	MAR 31/17 BUDGET*	MAR 31/17 FORECAST		
'000	'000		'000	'000	'000	'000		
<b>REVENUE</b>								
\$3,924	\$3,737	METERED SALES - WATER	\$36,048	\$32,777	\$46,475	\$46,675	77.56%	77.23%
\$5,787	\$6,118	METERED SALES - WASTEWATER	\$52,993	\$50,715	\$68,052	\$68,652	77.87%	77.19%
\$570	\$568	STORMWATER SITE GENERATED SERVICE	\$5,038	\$5,045	\$6,708	\$6,708	75.10%	75.10%
\$590	\$669	FIRE PROTECTION	\$5,306	\$6,024	\$7,074	\$7,074	75.00%	75.00%
\$323	\$323	STORMWATER RIGHT OF WAY SERVICE	\$2,911	\$2,911	\$3,881	\$3,881	75.00%	75.00%
\$235	\$217	OTHER SERVICES AND FEES	\$2,289	\$1,871	\$2,586	\$2,859	88.52%	80.08%
\$33	\$32	CUSTOMER LATE PAY./COLLECTION FEES	\$378	\$383	\$530	\$485	71.26%	77.88%
\$21	\$94	MISCELLANEOUS	\$297	\$319	\$369	\$369	80.57%	80.57%
<b>\$11,482</b>	<b>\$11,758</b>		<b>\$105,259</b>	<b>\$100,045</b>	<b>\$135,675</b>	<b>\$136,703</b>	<b>77.58%</b>	<b>77.00%</b>
<b>EXPENSES</b>								
\$701	\$708	WATER SUPPLY & TREATMENT	\$5,215	\$5,472	\$7,983	\$7,658	65.33%	68.10%
\$812	\$856	TRANSMISSION & DISTRIBUTION	\$6,239	\$6,267	\$8,710	\$8,211	71.63%	75.99%
\$946	\$979	WASTEWATER COLLECTION	\$6,643	\$7,071	\$9,446	\$9,314	70.32%	71.32%
\$1,661	\$1,623	WASTEWATER TREATMENT PLANTS	\$12,841	\$12,669	\$19,425	\$17,979	66.10%	71.42%
\$464	\$426	STORMWATER COLLECTION	\$3,061	\$3,133	\$4,761	\$4,650	64.29%	65.82%
\$305	\$279	SMALL SYSTEMS AND OTHER SERVICES	\$2,256	\$2,140	\$3,132	\$3,026	72.03%	74.55%
\$231	\$194	SCADA, CONTROL & PUMPING	\$1,560	\$1,276	\$2,089	\$2,088	74.67%	74.71%
\$853	\$489	ENGINEERING & INFORMATION SERVICES	\$5,598	\$4,921	\$8,067	\$7,798	69.39%	71.78%
\$217	\$241	ENVIRONMENTAL SERVICES	\$1,679	\$1,789	\$2,605	\$2,605	64.48%	64.46%
\$442	\$399	CUSTOMER SERVICE	\$3,251	\$3,274	\$4,419	\$4,413	73.57%	73.65%
\$826	\$1,123	ADMINISTRATION & PENSION	\$6,719	\$9,257	\$10,631	\$9,523	63.21%	70.56%
\$2,735	\$2,727	DEPRECIATION	\$24,863	\$24,587	\$21,157	\$33,682	117.52%	73.82%
<b>\$10,193</b>	<b>\$10,042</b>		<b>\$79,925</b>	<b>\$81,855</b>	<b>\$102,424</b>	<b>\$110,947</b>	<b>78.03%</b>	<b>72.04%</b>
<b>\$1,290</b>	<b>\$1,716</b>	<b>OPERATING PROFIT</b>	<b>\$25,334</b>	<b>\$18,189</b>	<b>\$33,251</b>	<b>\$25,756</b>	<b>76.19%</b>	<b>98.36%</b>
<b>FINANCIAL REVENUE</b>								
\$85	\$147	INVESTMENT INCOME	\$597	\$659	\$810	\$810	73.68%	73.68%
\$167	\$167	PNS FUNDING HHSP DEBT	\$1,500	\$1,500	\$2,000	\$2,000	75.00%	75.00%
\$1,082	\$1,063	MISCELLANEOUS	\$9,816	\$9,470	\$504	\$13,029	1946.66%	75.34%
<b>\$1,334</b>	<b>\$1,377</b>		<b>\$11,913</b>	<b>\$11,629</b>	<b>\$3,314</b>	<b>\$15,839</b>	<b>359.45%</b>	<b>75.21%</b>
<b>FINANCIAL EXPENSES</b>								
\$714	\$753	LONG TERM DEBT INTEREST	\$6,447	\$6,570	\$8,872	\$8,872	72.66%	72.66%
\$17	\$17	AMORTIZATION DEBT DISCOUNT	\$149	\$137	\$199	\$199	74.56%	74.56%
\$382	\$377	DIVIDEND/GRANT IN LIEU OF TAXES	\$3,455	\$3,396	\$4,663	\$4,578	74.10%	75.46%
\$2	\$2	MISCELLANEOUS	\$40	\$4	\$24	\$64	169.98%	63.15%
<b>\$1,115</b>	<b>\$1,149</b>		<b>\$10,090</b>	<b>\$10,107</b>	<b>\$13,758</b>	<b>\$13,714</b>	<b>73.34%</b>	<b>73.58%</b>
<b>\$1,509</b>	<b>\$1,944</b>	<b>NET PROFIT (LOSS) BEFORE OTHER COMPREHENSIVE INCOME</b>	<b>\$27,157</b>	<b>\$19,712</b>	<b>\$22,807</b>	<b>\$27,882</b>	<b>119.07%</b>	<b>97.40%</b>
\$0	\$0	<b>OTHER COMPREHENSIVE INCOME</b>	\$0	\$0	\$0	\$0	0.00%	0.00%
<b>\$1,509</b>	<b>\$1,944</b>	<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<b>\$27,157</b>	<b>\$19,712</b>	<b>\$22,807</b>	<b>\$27,882</b>	<b>119.07%</b>	<b>97.40%</b>

**TO:** Mr. Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
\_\_\_\_\_  
Russell Walker, Chair, Audit & Finance Committee

**DATE:** January 26, 2017

**SUBJECT:** **Proposed 2017/18 Capital Budget**

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**ORIGIN**

Presentation at the Audit and Finance Committee meeting of December 5, 2017

**RECOMMENDATION**

The Audit and Finance Committee, with the advice and recommendation of the General Manager, recommends the Halifax Water Board approve the:

1. 2017/18 Capital Budget at a total value of \$109,507,501.
2. Routine capital expenditure items required for on-going departmental operation, at a total value of \$5,291,000 as indicated in Schedule 1.

**BACKGROUND**

Halifax Water's 2012 *Integrated Resource Plan (IRP)* identified a 30-year capital investment plan valued at \$2.6 Billion [net present value]. In relation to the IRP, the capital budget program focuses on providing required infrastructure for asset renewal, regulatory compliance and growth. The capital program helps ensure that we continue to provide services in a cost effective and efficient manner with a focus on long term sustainability.

## **DISCUSSION**

Attached is the proposed Capital Budget for Halifax Water for the fiscal year April 1, 2017 to March 31, 2018. It includes projects for Water, Wastewater, and Stormwater service delivery with a total value of \$109,507,501. The proposed budget includes a series of routine capital expenditures, not related to major projects that are required for ongoing operations. These items total \$5,291,000.

The Capital Budget document reflects the Integrated Resource Plan (IRP) completed in 2012. This 30 year plan provides a strong vision for the infrastructure requirements needed to ensure the long term integrity of the utility. The 2017/18 Capital Budget includes many early projects from the IRP that will begin to shape the overall direction of the capital plan for years to come.

The Capital Budget funds our traditional capital requirements for utility operation, along with a focus on several key capital initiatives. The following sections provide highlighted details of the Capital Budget by asset category.

**Water:** Major water capital projects include:

- Distribution System Main Renewal Program in conjunction with HRM Streets program: \$1,900,000
- Bedford Connector Transmission Main renewal – with **New Building Canada** Federal/Provincial Funding: \$4,569,717
- Peninsula Low South Transmission main rehabilitation – with **Clean Water & Wastewater Fund (CWWF)** Federal/Provincial funding: \$7,505,000.
- Lake Major Dam Replacement – with **CWWF** funding: \$7,089,391
- J.D. Kline Water Supply Plant Filter Media & Underdrain Replacement – with **CWWF** funding: \$4,447,060

**Wastewater:** Major wastewater capital projects include:

- Collection System Renewal Projects integrated with HRM Streets Program: \$1,000,000
- Sewer Lateral Replacement Program: \$1,900,000
- Northwest Arm Sewer Rehabilitation – with **CWWF** funding: \$19,493,168
- Leiblin Pump Station Elimination: \$3,495,000

**Stormwater:** Major Stormwater capital projects include:

- Stormwater System Renewal Projects Integrated with HRM Streets Program: \$1,060,000
- Culvert Renewals: \$2,736,000
- Sullivan’s Pond Storm Sewer Replacement – with CWWF funding: \$8,632,000
- Ellenvale Run Retaining Wall System Replacement Phase 1: \$1,535,000

**Corporate Projects:** Major Corporate Projects include:

- GIS Data Program: \$1,000,000
- Computer Network and Hardware Upgrades: \$510,000
- Computerized Maintenance Management System: \$2,000,000
- Corporate Fleet: \$1,905,000
- AMI Meter System Upgrade: \$11,685,000
- Asset Management Program: \$600,000

On December 5, 2016 the proposed 2017/18 Capital Budget was presented to the Halifax Water Audit & Finance Committee. Subsequent to the presentation, the Committee passed a motion for approval-in-principle of the 2017/18 Capital Budget. The budget presented in this report is consistent with the Committee approved version with a 0.2% variance on the initial budget total.

**BUDGET IMPLICATIONS**

The funds for the overall Capital Budget will be generated from a combination of sources, as detailed below:

**2017/18 Capital Budget Funding Sources**

<b>Water:</b>	Depreciation	\$9,631,878
	Debt	\$24,874,122
	RDC	\$0
	External Funding CWWF	\$11,849,853
	External Funding New Building Canada	\$ 1,406,667
	Capital Cost Contributions	\$0
	Energy Rebates	\$0
	<b>TOTAL</b>	<b><u>\$ 47,762,520</u></b>

<b>Wastewater:</b>	Depreciation	\$14,035,907
	Debt	\$17,617,093
	RDC	\$ 610,000
	External Funding Build Canada	\$12,257,781
	Capital Cost Contributions	\$ 540,000
	DES Debt	<u>\$ 1,600,000</u>
	<b>TOTAL</b>	<b><u>\$ 46,660,781</u></b>
<b>Stormwater:</b>	Depreciation	\$ 1,492,323
	Capital from Operating	\$ 1,000,000
	External Funding CWWF	\$ 6,321,893
	Debt	<u>\$ 6,269,984</u>
	<b>TOTAL</b>	<b><u>\$ 15,084,200</u></b>
	<b>TOTAL CAPITAL FUNDING</b>	<b><u>\$ 109,507,501</u></b>

The depreciation amounts shown as a funding source are the depreciation included within revenue requirements upon which the rates are based. Other known sources of funding such as external funding, CCCs, RDCs, or Energy Rebates are reflected, then the new debt requirement is calculated. The additional debt servicing for 2017/18 is included in the 2017/18 operating budget and does not affect Halifax Water's compliance with debt service ratio targets.

Individual requests for approval of specific capital projects (greater than \$5,000,000 in value) included within this budget will be brought back to the Board when project details are finalized. Staff are also requesting approval of a series of Capital Budget items deemed necessary for the ongoing operation of various departments. These are identified within the *Summary of Routine Capital Expenditures included within the Capital Budget* section of the budget document and total \$5,291,000.

The Capital Budget presented and the projected funding matches the projected capital expenditure within our current 5 Year Capital Budget.

### **ATTACHMENTS**

Schedule 1 - Halifax Water Capital Budget 2017/18

Report Prepared by: *Original Signed by:*  
\_\_\_\_\_  
Jamie Hannam, P. Eng., Director of Engineering & IS Department  
902490-4804

Financial Review by: *Original Signed by:*  
\_\_\_\_\_  
Cathie O'Toole, MBA, CPA, CGA, Director Corporate Services  
902-490-3685

Approved by: *Original Signed by:*  
\_\_\_\_\_  
Carl D. Yates, M.A.Sc., P.Eng., General Manager  
902-490-4840



**ITEM # 5**  
**HRWC Board**  
**February 2, 2017**  
**ATTACHMENT**



**2017-18**  
**Capital Budget**

**HALIFAX WATER**  
**Capital Budget 2017/18**  
**Summary**

Asset Category	Project Costs
----------------	---------------

<i>Water - Land -- T O T A L</i>	\$760,000
<i>Water - Transmission -- T O T A L</i>	\$13,150,717
<i>Water - Distribution -- T O T A L</i>	\$2,890,000
<i>Water - Structures -- T O T A L</i>	\$10,029,391
<i>Water - Treatment Facilities -- T O T A L</i>	\$10,405,060
<i>Water - Energy -- T O T A L</i>	\$656,352
<i>Water - Security -- T O T A L</i>	\$150,000
<i>Water - Equipment -- T O T A L</i>	\$50,000
<i>Water - Corporate Projects - T O T A L</i>	\$9,671,000
<b>TOTAL - Water</b>	<b>\$47,762,520</b>

<i>Wastewater - Trunk Sewers -- T O T A L</i>	\$19,843,168
<i>Wastewater - Collection System -- T O T A L</i>	\$9,144,000
<i>Wastewater - Forcemains -- T O T A L</i>	\$260,000
<i>Wastewater Structures -- T O T A L</i>	\$2,440,000
<i>Wastewater - Treatment Facility -- T O T A L</i>	\$2,528,000
<i>Wastewater - Energy -- T O T A L</i>	\$2,455,813
<i>Wastewater - Security -- T O T A L</i>	\$200,000
<i>Wastewater - Equipment -- T O T A L</i>	\$95,000
<i>Wastewater - Corporate Projects -- T O T A L</i>	\$9,694,800
<b>TOTAL - Wastewater</b>	<b>\$46,660,781</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Summary

Asset Category	Project Costs
<i>Stormwater - Pipes -- T O T A L</i>	\$9,942,000
<i>Stormwater - Culverts -- T O T A L</i>	\$2,736,000
<i>Stormwater - Structures -- T O T A L</i>	\$1,535,000
<i>Stormwater - Corporate Projects -- T O T A L</i>	\$871,200
<b>TOTAL - Stormwater</b>	<b>\$15,084,200</b>
<b>GRANDTOTAL</b>	<b>\$109,507,501</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Water

Project Number	Project Name	Project Cost
<b><u>Water - Land</u></b>		
3.36	Bennery Lake Watershed Land Purchase	\$210,000
3.383	Bennery Lake Watershed Land Purchase	\$330,000
3.384	Tomahawk Lake Watershed Land Purchase	\$220,000
<b><i>Water - Land -- T O T A L</i></b>		<b>\$760,000</b>
<b><u>Water - Transmission</u></b>		
3.293	Peninsula Low North Transmission Main Replacement (Windsor at Young)	\$435,000
3.006	Bedford Connector 750mm Replacement - Phase 3	\$4,569,717
3.234	Windsor Junction Transmission Main Oversizing	\$330,000
3.011	Peninsula Low South Transmission Main Rehabilitation	\$7,505,000
3.045	Bedford West Capital Cost Contribution - Various Phases	\$11,000
3.343	Northgate Oversizing	\$135,000
3.232	MacIntosh Estates Phase 1 Oversizing	\$115,000
3.373	Regional Development Charge Studies	\$50,000
<b><i>Water - Transmission -- T O T A L</i></b>		<b>\$13,150,717</b>
<b><u>Water - Distribution</u></b>		
3.022	Water Distribution - Main Renewal Program	\$1,900,000
3.067	Valve Renewals	\$125,000
3.068	Hydrant Renewals	\$75,000
3.069	Service Line Renewals	\$100,000
3.390	Lead Service Line Replacement Program	\$400,000
3.294	Automated Flushing Program	\$20,000
3.346	Bulk Fill Stations - Site Work Improvements	\$110,000
3.296	Water Sampling Station Relocation Program	\$30,000
3.375	Re-Chlorination Stations - Sampson and Stokil Reservoirs	\$30,000
	Distribution System Chlorine Residual Analyzer Upgrade Program	\$100,000
<b><i>Water - Distribution -- T O T A L</i></b>		<b>\$2,890,000</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Water

Project Number	Project Name	Project Cost
<b><u>Water - Structures</u></b>		
3.387	Geizer 158 Reservoir Floor Replacement	\$2,750,000
3.173	Lake Major Dam Replacement	\$7,089,391
3.342	Crestview Booster Station PRV Conversion	\$57,000
3.357	Silverside Booster Station - Control Panel Replacement	\$50,000
3.358	Blue Mountain Meter Replacement	\$20,000
3.381	Geizer 158 Reservoir Drainage Improvements	\$53,000
3.382	Pratt & Whitney PRV Communications Upgrade	\$10,000
<b><i>Water - Structures -- T O T A L</i></b>		<b>\$10,029,391</b>
<b><u>Water - Treatment Facilities</u></b>		
3.211	Chlorine Analyzer Replacement Program	\$23,000
3.276	Inline Zeta Potential Meters for Water Plants	\$100,000
3.377	450 Cowie - New DR7000 for Lab	\$14,000
3.376	Chlorine Analyzer Relocation - Geizer 158 Reservoir	\$33,000
<b>J D Kline Water Supply Plant:</b>		
3.157	Filter Media and Underdrain Replacement Program	\$4,447,060
3.353	Effluent Valve Actuator Replacement Program	\$50,000
3.352	New Mixers in Pre-Mix Chamber	\$277,000
3.319	Lime Feed and Delivery System Replacement	\$300,000
3.361	Turbidity Meters	\$50,000
3.236	Ampgard III to Vacuum Contactor Conversion	\$40,000
3.363	Chlorine Storage Room - System Modifications	\$70,000
3.351	Westinghouse Electrical Panels Replacement	\$5,000
3.368	pH Meter Replacements	\$10,000
3.369	Raw Water Pumping Station Ladder Extension and Fall Protection Equipment	\$9,000
3.370	VTS Alarm System Upgrade	\$7,000

# HALIFAX WATER

## Capital Budget 2017/18

### Water

Project Number	Project Name	Project Cost
3.372	Bench-top Turbidimeter	\$6,000
3.386	Slide Gate Actuators to Lagoons	\$44,000
3.280	Roof Replacement	\$220,000
<b>Lake Major Water Supply Plant:</b>		
3.159	MCC Contactors Replacement	\$34,000
3.162	Butterfly valve replacement program	\$100,000
3.207	Treatment Train Isolation	\$222,000
3.195	Filter Media Replacement	\$200,000
3.161	Lime Feed and Delivery System Replacement	\$380,000
3.278	Clarifier Upgrades	\$285,000
3.160	PLC Upgrade	\$420,000
3.320	New Raw Water Low Lift Pump	\$500,000
3.304	Dry Polymer Feed System Replacement	\$380,000
3.300	Dedicated Service Water Pumping Station	\$285,000
3.325	Basin Mixing Enhancements	\$800,000
3.193	Carbon Dioxide Feed System	\$215,000
3.366	Bench Top Turbidimeter	\$6,000
3.315	Blower Vent	\$35,000
<b>Bennery Lake Water Supply Plant:</b>		
3.272	Low Lift VFD Pump Replacement Program	\$110,000
3.347	Plant MCC Replacement	\$530,000
3.348	Post Filter Chemical Addition Optimization	\$62,000
3.274	Power Monitoring	\$20,000
3.359	Culvert Replacement	\$20,000
3.349	New Magnetic Flow Meters	\$29,000
3.350	New Chlorine Analyzer	\$14,000
3.378	Sludge Pumps and Valves Replacement	\$53,000
<b>Water - Treatment Facilities -- T O T A L</b>		<b>\$10,405,060</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Water

Project Number	Project Name	Project Cost
<b><u>Water - Energy</u></b>		
3.107	Chamber HVAC Retro-Commissioning Program	\$100,000
3.367	Lake Major WSP - HVAC Upgrades	\$556,352
<b><i>Water - Energy -- T O T A L</i></b>		<b>\$656,352</b>
<b><u>Water - Security</u></b>		
4.009	Security Upgrade Program	\$150,000
<b><i>Water - Security -- T O T A L</i></b>		<b>\$150,000</b>
<b><u>Water - Equipment</u></b>		
3.101	Miscellaneous Equipment Replacement	\$50,000
<b><i>Water - Equipment -- T O T A L</i></b>		<b>\$50,000</b>
<b><i>Water - Corporate Projects - T O T A L</i></b>		<b>\$9,671,000</b>
<b><i>GRAND TOTAL - WATER</i></b>		<b>\$47,762,520</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Wastewater

Project Number	Project Name	Project Cost
<b><u>Wastewater - Trunk Sewers</u></b>		
2.067	Northwest Arm Sewer Rehabilitation	\$19,493,168
2.467	Kearney Lake Road Wastewater Sewer Upgrades	\$350,000
<b><i>Wastewater - Trunk Sewers -- T O T A L</i></b>		<b>\$19,843,168</b>
<b><u>Wastewater - Collection System</u></b>		
2.052	Integrated Wastewater Projects - Program	\$1,000,000
2.460	Leiblin Pumping Station Gravity Sewer	\$3,495,000
2.437	Hines Road Rider Sewer Extension	\$50,000
2.462	Wastewater Conveyance System Upgrade - Dingle PS to Roach's PS via William's Lake PS	\$145,000
2.547	Balsam/Monroe Subdivision Sewer Upgrade	\$165,000
2.357	Manhole Renewals	\$29,000
2.358	Lateral Replacements (non-tree roots)	\$1,300,000
2.563	Lateral Replacements (tree roots)	\$600,000
2.223	Wet Weather Management Program	\$100,000
2.523	Sewer Condition Assessment	\$300,000
2.043	Corporate Flow Monitoring Program	\$1,000,000
2.558	East and Central Region Infrastructure Plan	\$600,000
2.559	West Region Infrastructure Plan - Ph.2	\$250,000
2.074	Bedford West Collection System CCC	\$60,000
2.548	Regional Development Charge Studies	\$50,000
<b><i>Wastewater - Collection System -- T O T A L</i></b>		<b>\$9,144,000</b>
<b><u>Wastewater - Forcemains</u></b>		
2.543	Kearney Lake Road Forcemain Extension	\$260,000
<b><i>Wastewater - Forcemains -- T O T A L</i></b>		<b>\$260,000</b>



# HALIFAX WATER

## Capital Budget 2017/18

### Wastewater

Project Number	Project Name	Project Cost
<b><u>Wastewater - Structures</u></b>		
2.42	Emergency Pumping Station Pump replacements	\$250,000
2.442	Wastewater Pumping Station Component Replacement Program - West Region	\$200,000
2.443	Wastewater Pumping Station Component Replacement Program - East Region	\$200,000
2.444	Wastewater Pumping Station Component Replacement Program - Central Region	\$200,000
2.512	Hines Road Sewer - Odour Management	\$100,000
2.466	Weybridge Lane Pumping Station CCC	\$540,000
2.005	Autoport Pleasant Street Pumping Station Replacement	\$750,000
2.366	Shipyards Road Pumping Station Upgrade	\$175,000
2.561	Outfall Location Inventory	\$25,000
<b><i>Wastewater Structures -- T O T A L</i></b>		<b>\$2,440,000</b>
<b><u>Wastewater - Treatment Facility</u></b>		
2.056	Plant Optimization Audit Program	\$125,000
2.522	Emergency Wastewater Treatment Facility equipment replacements	\$400,000
2.564	HSP Plants - Carbon replacement	\$400,000
<b>Halifax Wastewater Treatment Facility:</b>		
2.535	Screenings Compactor Replacement	\$200,000
2.532	Duct Work Replacement	\$150,000
<b>Dartmouth Wastewater Treatment Facility:</b>		
2.502	Duct Work Replacement	\$150,000
2.565	Odour Control Study	\$50,000
<b>Herring Cove Wastewater Treatment Facility:</b>		
2.539	Densadeg Inlet Penstocks Actuator Installation	\$50,000
2.55	Window Installation for Natural Light	\$20,000
2.566	Overhead Door	\$20,000
<b>Mill Cove Wastewater Treatment Facility:</b>		
2.531	Admin Building HVAC Renewal Preliminary Engineering	\$25,000
2.546	Odour Control Upgrade	\$530,000
2.567	Process Upgrade Options	\$50,000
<b>Eastern Passage Wastewater Treatment Facility:</b>		

# HALIFAX WATER

## Capital Budget 2017/18

### Wastewater

Project Number	Project Name	Project Cost
2.551	Control Building HVAC Upgrade	\$8,000
	<b>Biosolids Processing Facility:</b>	
2.126	Asset Renewal Program	\$250,000
2.568	Biosolids Management Plan	\$100,000
<b>Wastewater - Treatment Facility -- T O T A L</b>		<b>\$2,528,000</b>
	<b><u>Wastewater - Energy</u></b>	
2.491	Pump Station HVAC Retro-Commissioning Program	\$100,000
2.554	Wastewater Pumping Station Performance Testing	\$250,000
	<b>Dartmouth Wastewater Treatment Facility:</b>	
2.235	Ventilation Air Heat Recovery	\$250,000
2.553	MCC Ventilation Upgrades	\$100,000
	<b>Halifax Wastewater Treatment Facility:</b>	
2.555	Effluent Heat Recovery	\$25,000
2.552	MCC Ventilation Upgrades	\$130,813
	Cogswell Area District Energy System	\$1,600,000
<b>Wastewater - Energy -- T O T A L</b>		<b>\$2,455,813</b>
	<b><u>Wastewater - Security</u></b>	
4.008	Security Upgrade Program	\$200,000
<b>Wastewater - Security -- T O T A L</b>		<b>\$200,000</b>
	<b><u>Wastewater - Equipment</u></b>	
2.161	I&I Reduction (SIR) Program Flow Meters and Related Equipment	\$25,000
2.451	Miscellaneous Equipment Replacement	\$70,000
<b>Wastewater - Equipment -- T O T A L</b>		<b>\$95,000</b>
<b>Wastewater - Corporate Projects -- T O T A L</b>		<b>\$9,694,800</b>
<b>GRAND TOTAL - WASTEWATER</b>		<b>\$46,660,781</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Stormwater

Project Number	Project Name	Project Cost
<b><u>Stormwater - Pipes</u></b>		
1.038	Integrated Stormwater Projects - Program	\$1,060,000
1.043	Sullivan's Pond Storm Sewer System Replacement - Phase 1	\$8,632,000
1.156	Storm Sewer Condition Assessment	\$150,000
1.102	Manhole Renewals	\$24,000
1.103	Catchbasin Renewals	\$36,000
1.135	Lateral Replacements	\$15,000
1.019	Drainage Remediation Program Surveys/Studies	\$25,000
<b><i>Stormwater - Pipes -- T O T A L</i></b>		<b>\$9,942,000</b>
<b><u>Stormwater - Culverts/Ditches</u></b>		
1.104	Driveway Culvert Replacements	\$700,000
<b>Street Specific Culvert Replacements:</b>		
1.146	John Cross Drive (near #40)	\$200,000
1.147	Cole Harbour Road (near #1560)	\$210,000
1.148	Montague Road (near #1044)	\$155,000
1.15	Fletcher Drive (near #52)	\$270,000
1.151	Softwind Lane (near #31)	\$105,000
1.152	Yankeetown Road (near #16)	\$205,000
1.153	Terradore Lane (near #7)	\$96,000
1.154	Waverley Road (near #4132)	\$115,000
1.136	Blue Hill Road (near #77)	\$130,000
1.01	Kipawa Crescent (near #14)	\$220,000
1.012	Lucasville Road (near #1419)	\$170,000
1.023	Cobequid Road (near #510)	\$160,000
<b><i>Stormwater - Culverts/Ditches -- T O T A L</i></b>		<b>\$2,736,000</b>
<b><u>Stormwater - Structures</u></b>		
1.133	Ellenvale Run Retaining Wall System - Replacement	\$1,535,000
<b><i>Stormwater - Structures -- T O T A L</i></b>		<b>\$1,535,000</b>
<b><i>Stormwater - Corporate Projects -- T O T A L</i></b>		<b>\$871,200</b>
<b><i>GRAND TOTAL - STORMWATER</i></b>		<b>\$15,084,200</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Corporate Projects

Project Number	Project Name	Project Cost
<b><u>Corporate - Information Technology</u></b>		
4.011	Desktop Computer Replacement Program	\$290,000
4.012	Network Infrastructure Upgrades	\$220,000
4.013	Document Management Program	\$100,000
4.070	Computerized Maintenance Management System Phase 2	\$2,000,000
4.024	Sharepoint Implementation	\$100,000
4.043	AMI Meter System Upgrades (50 Water / 50 Wastewater)	\$11,685,000
4.014	IT Disaster Recovery Site	\$300,000
4.048	SAP Rate Structure Support	\$220,000
4.074	Asset Registry Build	\$600,000
<b><i>Corporate - Information Technology -- T O T A L</i></b>		<b>\$15,515,000</b>
<b><u>Corporate - GIS</u></b>		
4.040	GIS Data Program	\$1,000,000
4.038	GIS Hardware/Software Program	\$100,000
4.039	GIS Application Support Program	\$250,000
<b><i>Corporate - GIS -- T O T A L</i></b>		<b>\$1,350,000</b>
<b><u>Corporate - Asset Management</u></b>		
4.079	Climate Change Assessment and Policy	\$150,000
4.020	Asset Management Program Development	\$150,000
4.052	Long Term Planning Coordination Strategy (50 Water / 50 Wastewater)	\$75,000
4.049	Expand Prioritization Methodology	\$125,000
4.054	Assess AM Software and Tools	\$100,000
<b><i>Corporate - Asset Management -- T O T A L</i></b>		<b>\$600,000</b>
<b><u>Corporate - Facility</u></b>		
4.076	Heating / Ventilation Upgrades in New Phase 450 Cowie Hill Building	\$100,000
4.078	450 Cowie Renovation	\$75,000
<b><i>Corporate - Facility -- T O T A L</i></b>		<b>\$175,000</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Corporate Projects

Project Number	Project Name	Project Cost
<b><u>Corporate - SCADA &amp; Other Equipment</u></b>		
3.38	Total Station Survey Prisms	\$32,000
4.004	SCADA Control System Enhancements (50 Water / 50 Wastewater)	\$200,000
4.080	Large and New Customer Meters (50 Water / 50 Wastewater)	\$460,000
<b><i>Corporate - SCADA &amp; Other Equipment -- T O T A L</i></b>		<b>\$692,000</b>
<b><u>Corporate - Fleet</u></b>		
4.006	Fleet Upgrade Program Stormwater	\$280,000
4.006	Fleet Upgrade Program Wastewater	\$1,120,000
4.007	Fleet Upgrade Program Water	\$505,000
<b><i>Corporate - Fleet -- T O T A L</i></b>		<b>\$1,905,000</b>
<b><i>GRAND TOTAL - Corporate Projects</i></b>		<b>\$20,237,000</b>

### ***ALLOCATION BREAKDOWN:***

Water - Corporate Projects - T O T A L	\$9,671,000
Wastewater - Corporate Projects -- T O T A L	\$9,694,800
Stormwater - Corporate Projects -- T O T A L	\$871,200

***GRAND TOTAL - Corporate Projects*** **\$20,237,000**

*Note: All corporate projects are allocated as follows:*

*50% Water*

*40% Wastewater*

*10% Stormwater*

*(unless otherwise noted)*

# HALIFAX WATER

## Capital Budget 2017/18

### Summary of Routine Capital Expenditures included within Capital Budget

Project Number	Project Name	Project Cost
3.067	Valves Renewals	\$125,000
3.068	Hydrants Renewals	\$75,000
3.069	Service Lines Renewals	\$100,000
3.390	Lead Service Line Replacement Program	\$400,000
3.101	Miscellaneous Equipment Replacement	\$50,000
3.385	Leak Detection Equipment	\$27,000
4.007	Fleet Upgrade Program Water	\$505,000
2.357	Manhole Renewals WW	\$29,000
2.358	Lateral Replacements WW (non-tree roots)	\$1,300,000
2.563	Lateral Replacements WW (tree roots)	\$600,000
2.161	I&I Reduction (SIR) Program Flow Meters and Related Equipment	\$25,000
2.451	Miscellaneous Equipment Replacement	\$70,000
4.006	Fleet Upgrade Program Wastewater	\$1,120,000
1.102	Manhole Renewals SW	\$24,000
1.103	Catchbasin Renewals SW	\$36,000
1.135	Lateral Replacements SW	\$15,000
4.006	Fleet Upgrade Program Stormwater	\$280,000
4.011	Desktop Computer Replacement Program	\$290,000
4.012	Network Infrastructure Upgrades	\$220,000
<b>GRAND TOTAL - Routine Capital Projects</b>		<b>\$5,291,000</b>

**TO:** Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
\_\_\_\_\_  
Jamie Hannam, P. Eng., Director, Engineering & Information Services

**APPROVED:** *Original Signed by:*  
\_\_\_\_\_  
Carl Yates M.A.Sc., P. Eng., General Manager

**DATE:** January 24, 2017

**SUBJECT:** **Northwest Arm Sewer Rehabilitation**

---

### **ORIGIN**

Halifax Water Board Information Report, Federal/Provincial Infrastructure Funding – Clean Water & Wastewater Fund (CWWF) Approvals, dated September 16, 2016

### **RECOMMENDATION**

The Halifax Water Board approve the construction phase of the Northwest Arm Sewer Rehabilitation Project at a gross total project estimated cost of \$19,793,168.

### **BACKGROUND**

The existing Northwest Arm (NWA) trunk sewer system is approximately 100 years old and is at the end of its service life. It is a combined sewer (conveying wastewater and stormwater) and services a sewershed of approximately 650 hectares in area and a population base of some 22,000 people. The NWA sewer is 4.5 km in length and is typically 1200 mm in diameter and was constructed using a combination of materials and cross sections. Access to the sewer is difficult because of its location between the shore of the Northwest Arm and residences, buildings and other structures that were constructed along the shore.

A 2006 condition assessment of the sewer identified and confirmed deficiencies along the entire length of the sewer. Severe sedimentation, root penetrations, exfiltration, infiltration and some structural problems were identified, thus a rehabilitation design

strategy was initiated to eliminate these problems, extend the life of the sewer, and improve serviceability.

In 2009, a pilot project was conducted which resulted in approximately 460 metres of the 4.5 km NWA sewer rehabilitated with cured-in-place-pipe (CIPP) lining. The pilot project was successful in establishing that the CIPP method is viable and effective for rehabilitation of the round portion of the NWA sewer. The cost of the pilot project was \$1,435,000 including net HST or approximately \$3,100 per lineal metre.

### **DISCUSSION**

In June 2016, Halifax Water applied for funding from the Clean Water and Wastewater Fund (CWWF) Program to undertake the rehabilitation of the remaining 4.05 km of original system.

On August 16, 2016, Halifax Water received Federal and Provincial infrastructure funding for this project through the Clean Water and Wastewater Fund (CWWF). The CWWF provides for 75% funding of all eligible project costs. Specifically for this project, the CWWF provides \$12,257,781 in funding based on 75% of the total eligible project cost of \$16,343,708.

Ineligible costs include Halifax Water internal costs (staff time plus overheads) and external costs incurred prior to funding approval. A condition of the CWWF approval is that all eligible costs must be incurred by March 31, 2018. At the time of the application it was estimated that the total project cost would be in the order of \$17.15M of which \$810K was estimated to be ineligible.

In June 2016 a consultant was contracted by Halifax Water and the design services are in progress. The design work is nearing completion and it is expected that the work will be tendered in February 2017 followed by construction from May to December 2017.

The work will include the structural lining of 4.05km of the Northwest Arm sewer which has a nominally diameter of 1.2m and is constructed of either clay tile or a combination of clay tile and cast-in-place concrete. The cross section of the system includes both circular and horseshoe shape. The utilization of CIPP to rehabilitate the system will consist of curing a resin saturated felt tube (liner) within the existing pipe.

In order to successfully use CIPP, extensive cleaning of the existing system will be required. As well bypass pumping of existing flow will be required so that the Northwest Arm sewer is dewatered and dry when CIPP lining is undertaken. Currently dry weather flow from the Armdale area and combined wastewater from Chebucto Road flow into the upper end of the Northwest Arm sewer. The project includes modifications to the collection system and the Armdale pump station so that this flow is diverted to a sewer on Joseph Howe Avenue.



It is noted that the schedule is very aggressive but warranted as it is a condition of the funding that the work be completed by March 31, 2018. In addition, the nature of sewer lining construction is such that the work cannot be undertaken efficiently in winter months.

In November 2016 the consultant submitted the Northwest Arm Trunk Sewer Rehabilitation Phase 1 - Project Implementation Methodology Report. The report stated “...based on our experience, qualifications, best judgment, investigations to date and discussions with several rehabilitation contractors, our opinion of the probable construction cost for the NWA sewer rehabilitation ranges between \$16.5million and \$20 million.” To date Halifax Water has not received a revised cost estimate but it is acknowledged that this project, due the very restricted location of the trunk sewer, will be extremely difficult to estimate. Nationally there are few, if any, projects of a similar nature.

At this time Halifax Water, and the external consultant, recommend proceeding to the tender phase utilizing a construction cost estimate of \$18.1M (including 20% contingency and net HST) which is approximately the average of the estimate range provided by the consultant. Based on this construction cost estimate, the total estimated project cost is \$19,793,168 (see attached table).

### **BUDGET IMPLICATIONS**

The gross total project cost is estimated at \$19,793,168.

The Halifax Water funding approved to date totals \$300,000 as follows:

- Funding in the amount of \$300,000 including net HST was previously approved by Halifax Water on February 25, 2016.

External funding approved from the CWWF program is \$ 12,257,781.

The balance of the Halifax Water funding is available as follows:

- Funding in the amount of \$7,235,387 including net HST is available within the 2017/18 Capital Budget under (Northwest Arm Sewer Rehabilitation).
  - \$4,085,927 of this funding is the 25% matching funding for the CWWF program
  - \$3,149,460 of this funding is for CWWF ineligible costs including estimated total project costs exceeding the original CWWF application estimate.

The proposed expenditure meets the “No Regrets – Unavoidable Needs” approach of the 2012 Integrated Resource Plan. The proposed work meets the NR-UN criteria of ensure Infrastructure Integrity and Safety.

**ALTERNATIVES**

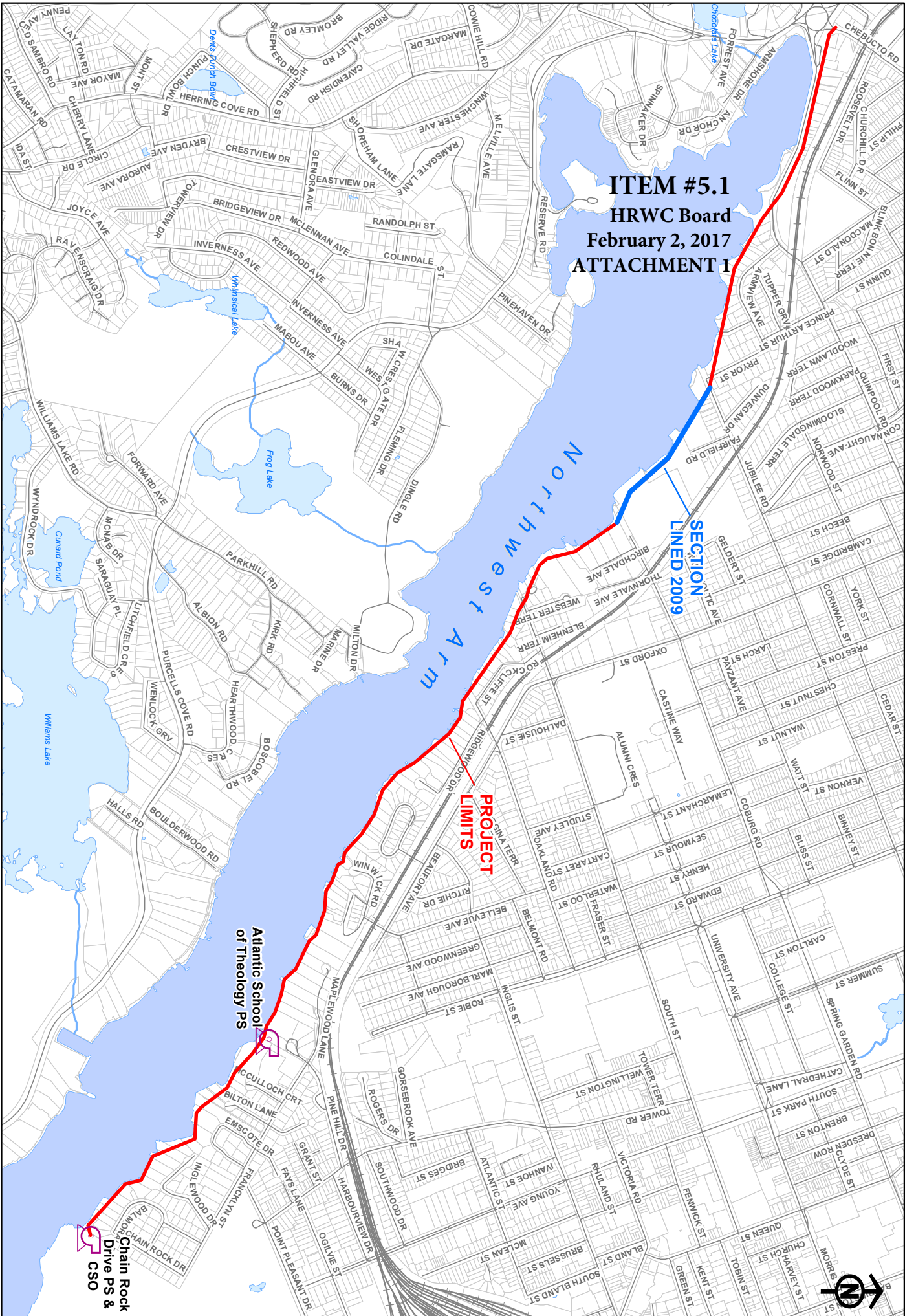
There are no recommended alternatives.

**ATTACHMENT**

Northwest Arm Sewer Rehabilitation - Sketch  
Project Cost Estimate

Report Prepared by:	<u>Original Signed by:</u> David Ellis, P. Eng., Manager Wastewater and Stormwater Infrastructure, 902-490-6716
Financial Reviewed By:	<u>Original Signed by:</u> Cathie O’Toole, MBA, CPA, CGA, Director of Corporate Services, 490-3685

# ITEM #5.1 HRWC Board February 2, 2017 ATTACHMENT 1



Data Source: Halifax Water / HRM  
Date: Tuesday, January 24, 2017

The information contained on this map may not be complete and/or accurate in all areas. Should accurate information or confirmation of completeness be required, please contact the Engineering Department of Halifax Water. Halifax Water will not be held liable for misuse of this information.

## Northwest Arm Trunk Sewer Rehabilitation

"To provide world class services for our customers and our environment"

HRWC Board  
Attachment  
Item #5.1



**Clean Water and Waste Water Fund - Cost Estimate**

**Project Name: Northwest Arm Sewer Rehab**

**Date of this Estimate: January 23, 2017**

<b>Item</b>	<b>Total Cost</b>
Engineering - Design Phase	\$ 500,000
Engineering - Construction Phase	\$ 450,000
Construction Cost	\$ 14,550,000
Contingency (20%)	\$ 3,100,000
Sub-total	\$ 18,600,000
Net HST 4.286%	\$ 797,196
Sub-total	\$ 19,397,196
Halifax Water Staff Cost	\$ 200,000
Sub-total	\$ 19,597,196
Interest & Overhead ( 1%)	\$ 195,972
<b>Total Project Cost Estimate</b>	<b>\$ 19,793,168</b>

**TO:** Mr. Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
\_\_\_\_\_  
Jamie Hannam, MBA, P. Eng., Director, Engineering & Information Services

**APPROVED:** *Original Signed by:*  
\_\_\_\_\_  
Carl Yates M.A.Sc., P.Eng., General Manager

**DATE:** January 24, 2017

**SUBJECT:** **Sullivan’s Pond Storm Sewer System Replacement**

---

**ORIGIN**

Halifax Water Board Information Report, Federal/Provincial Infrastructure Funding – Clean Water & Wastewater Fund (CWWF) Approvals, dated September 16, 2016

**RECOMMENDATION**

The Halifax Water Board approve the construction phase of the Sullivan’s Pond Storm Sewer Replacement Project at a gross total project estimated cost of \$9,581,993.

**BACKGROUND**

The Sullivan’s Pond Stormwater Outlet Structure and Pipe system in Dartmouth conveys stormwater from Sullivan’s Pond to Halifax Harbour. Sullivan’s Pond receives stormwater from a large watershed (1500 hectare) surrounding the upstream lakes that form part of the former Shubenacadie Canal System. The existing stormwater pipe system is constructed of 2700mm diameter corrugated steel pipe (CSP) that was installed in the later 60s/early 70s as well as a section of 2400mm diameter concrete pipe installed in 2005. The system is approximately 580 m long and transmits flows from Sullivan’s Pond to an open channel leading to Halifax Harbour. The system is now at the end of its life and requires replacement.

## **ITEM # 5.2**

**HRWC Board  
February 2, 2017**

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In 2011, \$300,000 was approved for engineering services to undertake preliminary design work and the scope was based on the premise that there would be a feasible option to rehabilitate the existing infrastructure (i.e. pipe lining) and that fish passage would not be required. The initial investigative work, which accounted for climate change, determined the system is under capacity and therefore at flood risk during extreme weather events. The only solution would be a new structure designed to convey larger flows. In accordance with the Federal Department of Fisheries regulations, the construction of a new storm sewer triggers the requirements to provide for fish passage within the new system from Halifax Harbour to Sullivan's Pond.

In 2014 and 2016, the HRWC Board approved total funding in the amount of \$950,000 to complete the preliminary design and undertake the detailed design to incorporate full system replacement and fish passage. The February 25, 2016 HRWC Board report provided an estimate of \$17.44M for the entire project and noted that the first phase could be constructed for an estimated cost of \$8.25M. The \$8.25M was estimated based on the assumption that the construction of the first phase would cost 50% of \$16.5M (\$17.44M less \$950K for design).

Early in 2016 it was anticipated that the first phase to be constructed would be the lower section adjacent to Halifax Harbour. Halifax Water has since been advised by HRM that they are investigating the potential for major street realignment in this area. Should this street realignment proceed, it would have significant implications for the Sullivan's Pond Storm Sewer and thus it has been decided that the first phase to be constructed should be the upper section (adjacent Sullivan's Pond). Pending approved funding, the lower section would proceed once HRM has finalized any changes to the street alignment. Potentially, the design and construction of this lower section of the stormwater system could be integrated with the design and construction of the new street alignment should it become a reality.

### **DISCUSSION**

On August 16, 2016, Halifax Water received Federal and Provincial infrastructure funding for this project through the Clean Water and Wastewater Fund (CWWF). The CWWF provides for 75% funding of all eligible project costs. Specifically for this project, the CWWF provides \$6,321,893 in funding based on 75% of the total eligible project cost which, at the time of the application, was estimated to be \$8,429,191.

Ineligible costs include Halifax Water internal costs (staff time plus overheads) and external costs incurred prior to funding approval. A condition of the CWWF approval is that all eligible costs must be incurred by March 31, 2018.

## ITEM # 5.2

HRWC Board

February 2, 2017

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The design for Phase 1 is now being finalized with the intent to tender this winter with construction to follow in 2017. The scope of work for Phase 1 of this project includes 290m of new storm sewer from Sullivan's Pond south towards Irishtown Road (see attached sketch of proposed project). The proposed storm sewer will have capacity for a 1 in 100 year storm event. The cross section of the storm sewer will vary along its length and will include a 6m wide bridge under Ochterloney Street, a segment of open channel with naturalized floodplain, and 4.3m by 4m buried segment. The system will be constructed with reinforced concrete (either pre-cast or cast-in-place) and a 1.2 m high baffle system will be incorporated into the bottom of the system to provide for fish passage.

On January 20, 2017 the consultant provided a construction cost estimated based on 80% complete detailed design drawings for Phase 1 (upper section). This estimated construction cost is \$6,241,287 plus 20% contingency and the total construction phase cost (including engineering, staff, overheads, and net tax) is estimated to be \$8,631,993. Based on this estimate, the total project cost to design and construct Phase 1 is estimated to be \$9,581,993 (see attached cost estimate).

### **BUDGET IMPLICATIONS**

The gross total project cost is estimated at \$9,581,993.

The Halifax Water funding approved to date totals \$950,000 as follows:

- Funding in the amount of \$300,000 including net HST was previously approved June 30, 2011.
- Funding in the amount of \$250,000 including net HST was previously approved February 27, 2014.
- Funding in the amount of \$400,000 including net HST was previously approved February 25, 2016.

External funding approved from the CWWF program is \$ 6,321,893.

The balance of the Halifax Water funding is available as follows:

- Funding for the construction of Phase 1 of this project, in the amount of \$2,310,100 is available within the 2017/18 Capital Budget under "*Stormwater Pipes - Sullivan's Pond Storm Sewer System Replacement - Phase 1 to Irishtown Rd*"
  - \$2,107,298 of this funding is the 25% matching funding for the CWWF program
  - \$202,802 of this funding is for CWWF ineligible costs.

## ITEM # 5.2

HRWC Board

February 2, 2017

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The proposed expenditure meets the “No Regrets – Unavoidable Needs” approach of the 2012 Integrated Resource Plan. The proposed work meets the NR-UN criteria of “Required to ensure infrastructure system integrity and safety”.

### ALTERNATIVES

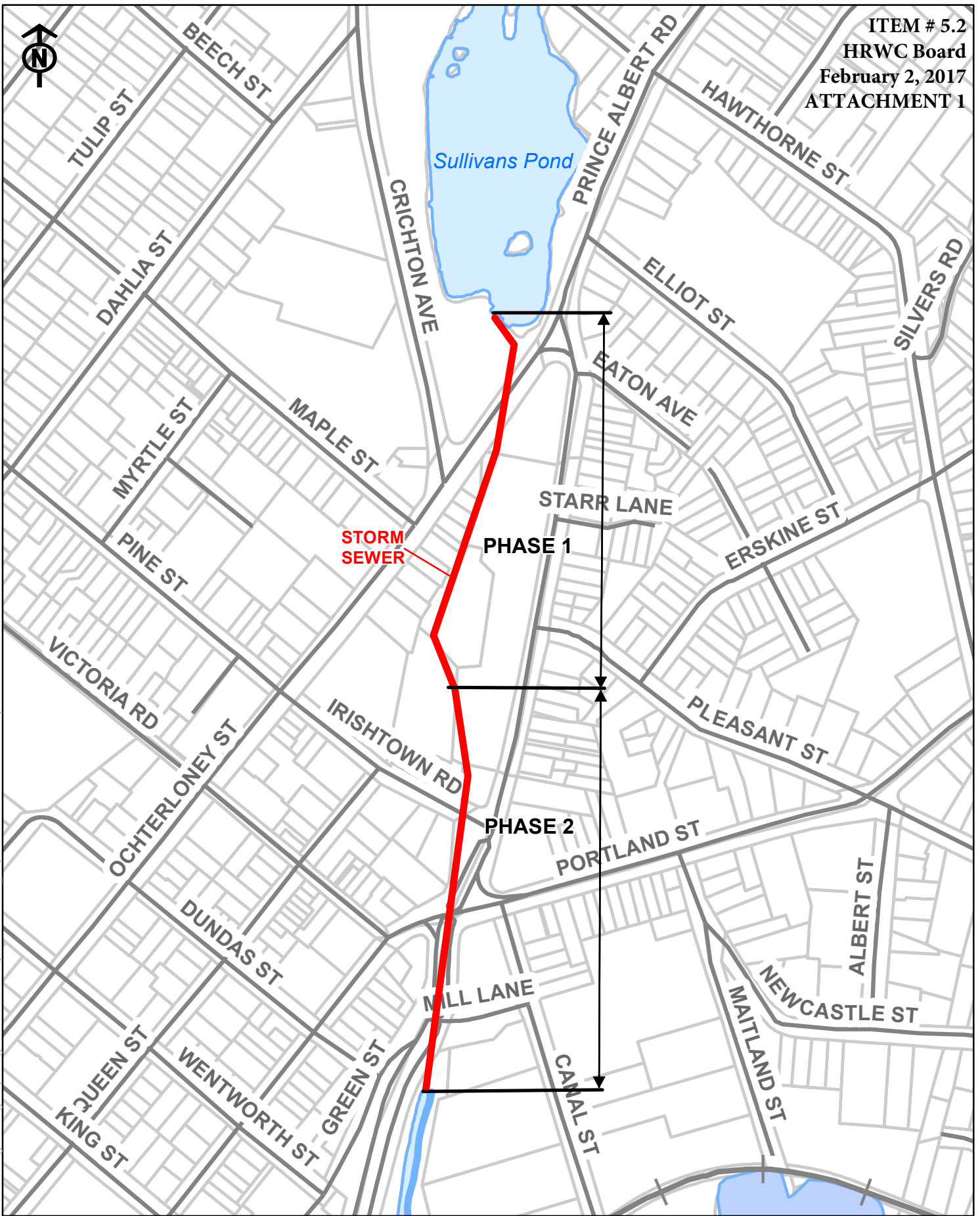
There are no recommended alternatives.

### ATTACHMENTS

Sullivan’s Pond Storm Sewer System Replacement - Sketch  
Project Cost Estimate

Report Prepared by:	<u>Original Signed by:</u> David Ellis, P. Eng., Manager Wastewater and Stormwater Infrastructure, 902-490-6717
Financial Review by:	<u>Original Signed by:</u> Cathie O’Toole, MBA, CPA CGA, Director, Corporate Services, 902-490-3685





Path: K:\Engineering\Dept\Eng\Information\Requests\Internal\_requests\David Ellis\Board Report-2016\Sullivan's Pond Storm Sewer Renewal.mxd

Data Source: Halifax Water / HRM  
Date: Tuesday, January 24, 2017

The information contained on this map may not be complete and/or accurate in all areas. Should accurate information or confirmation of completeness be required, please contact the Engineering Department of Halifax Water. Halifax Water will not be held liable for misuse of this information.

### Sullivan's Pond Storm Sewer Renewal



"To provide world class services for our customers and our environment"

## Clean Water and Waste Water Fund - Cost Estimate

**Project Name: Sullivan's Pond Sewer System Replacement -  
Design and Construction of Phase 1**

**Date of this estimate: January 23, 2017**

<b>Item</b>	<b>Total Cost</b>
Engineering	\$ 1,100,000
Construction Cost	\$ 6,241,287
Contingency (20%)	\$ 1,468,257
Sub-total	\$ 8,809,544
Net HST 4.286%	\$ 377,577
Sub-total	\$ 9,187,121
Halifax Water Staff Cost	\$ 300,000
Sub-total	\$ 9,487,121
Interest & Overhead ( 1%)	\$ 94,871
<b>Total Project Cost Estimate</b>	<b>\$ 9,581,993</b>

**TO:** Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
\_\_\_\_\_  
Jamie Hannam, P. Eng., Director, Engineering & Information Services

**APPROVED:** *Original Signed by:*  
\_\_\_\_\_  
Carl Yates M.A.Sc., P. Eng., General Manager

**DATE:** January 24, 2017

**SUBJECT:** **Quinpool Road / Peninsula Transmission Main Rehabilitation**

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**ORIGIN**

Halifax Water Board Information Report, Federal/Provincial Infrastructure Funding – Clean Water & Wastewater Fund (CWWF) Approvals, dated September 16, 2016

**RECOMMENDATION**

The Halifax Water Board approve the construction phase of the Quinpool Road/Peninsula Transmission Main Rehabilitation Project at a gross total project estimated cost of \$8,500,000.

**BACKGROUND**

The **24” Peninsula Low Transmission Main** (24” PLT Main) was constructed in 1862. This 600mm diameter transmission main was one of the original mains that conveyed water from Chain Lake to the City of Halifax. The alignment of the transmission main runs from the Chain Control Chamber, near North West Arm Drive, along Crown Drive, through easements to the Armdale Roundabout, through Flinn Park and then along Quinpool Road to the Halifax Commons by the Robie St/Cogswell St/Bell Rd Intersection. A portion of this main was cleaned and lined in 1995. Flow testing has found the unlined portions of this line to be heavily tuberculated and thus operating with significantly reduced hydraulic capacity.

The **27” Peninsula Low Transmission Main** (27” PLT Main) was constructed in 1892. The 675mm diameter transmission main was installed along Crown Drive from Chain

Control to Finch Lane in the same corridor as the 24" PLT. In most cases, there is less than 600mm separation between these pipes. The 27" PLT was cleaned and lined in the 1990s. Upstream sections of the 27" PLT have been previously replaced with 750mm (30") main.

In addition to the two large transmission mains noted above, the **15" Peninsula Intermediate Transmission Main** (15" PIT Main) was installed in 1856, and occupies the same corridor as the 24" PLT. Portions of this 375mm diameter transmission main were previously cleaned and lined in 1973.

A project was proposed for the installation of a structural liner inside the old transmission mains utilizing innovative 'trenchless technology' to extend the serviceable life of these critical transmission mains. Installing a structural liner inside the old pipes maximizes the flow capacity and reduces the operational liability. It also minimizes the disturbance of other buried utilities adjacent to the transmission mains.

## **DISCUSSION**

On August 16, 2016, Halifax Water received Federal and Provincial infrastructure funding for this project through the Clean Water and Wastewater Fund (CWWF). The CWWF provides for 75% funding of all eligible project costs. Specifically for this project, the CWWF provides \$5,631,446 in funding based on 75% of the total eligible project cost of \$7,508,594. The project scope included the renewal/rehabilitation of 2500 m of water transmission main.

Ineligible costs include Halifax Water internal costs (staff time plus overheads) and external costs incurred prior to funding approval. A condition of the CWWF approval is that all eligible costs must be incurred by March 31, 2018.

In order to meet project funding commitments, there was a need to initiate the design work immediately. In October 2016, WSP Consulting was awarded a contract to carry out the engineering services for this project.

During the preliminary design phase, the consultant identified that the renewal methodology of structural lining was more complex and would be more expensive and longer to construct than anticipated. It was determined during the preliminary design that the structural liner costs are much higher than originally estimated and in some locations may be more expensive than an open cut pipe replacement option.

Consistent with the project scope the consultant reviewed various combinations of open cut and trenchless construction methodologies to determine the most cost effective approach to constructing the 2500 m of transmission main renewal/rehabilitation as per the CWWF approval.

The consultant identified the following sections of the Quinpool/Peninsula Low Transmission main for renewal that would most cost effectively optimize the system improvements within this important transmission main.

- Cleaning and Structural Lining of a 460m long section of the 24" PLT main on Quinpool Road from approximately Parkwood Terrace to Beech Street. Access to this section of the main is not restricted by other buried utilities in the same trench. The area is outside the main business district along Quinpool Road.
- Full open cut replacement of 1020m of the 24"PLT main with a new 750mm diameter main, along Crown Drive from Chain Control site to Finch Lane.
- Full open cut replacement of 1020m of the 27"PLT main with a new 750mm diameter main, along Crown Drive from Chain Control site to Finch Lane.

In consideration of the full replacement of the 24"PLT and 27"PLT along Crown Drive, it is proposed to also replace the existing 15"PIT within the same trench for construction efficiency and an economic asset renewal opportunity. The 15"PIT work (1000m of new 500mm diameter main) would fall outside the scope of the CWWF project and be funded as part of Halifax Water's annual water main renewal program.

Based on the design work completed to date and the above project scope, the total estimated project cost is \$8,500,000 including net HST.(see attached cost estimate)

### **BUDGET IMPLICATIONS**

The gross total project cost is estimated at \$8,500,000.

The Halifax Water funding approved to date totals \$150,000 as follows:

- Funding in the amount of \$470,000 (including \$150,000 of Halifax Water Capital funds and \$320,000 CWWF funds) including net HST was previously approved October 31, 2016.

Balance of external funding approved from the CWWF program is \$5,311,446.

The balance of the Halifax Water funding is available as follows:

- Funding in the amount of \$2,193,554 is available within the 2017/18 Capital Budget under (*Quinpool Road / Peninsula Transmission Main Rehabilitation*).
  - \$1,877,149 of this funding is the 25% matching funding for the CWWF program
  - \$316,405 of this funding is for CWWF ineligible costs including estimated total project costs exceeding the original CWWF application estimate.

- Funding in the amount of \$525,000 is available within the 2017/18 Capital Budget under (*Water Distribution – Main Renewal Program*) to fund the renewal of the 15”PIT that is outside of the CWWF project scope.

The proposed expenditure meets the “No Regrets – Unavoidable Needs” approach of the 2012 Integrated Resource Plan. The proposed work meets the NR-UN criteria of “Required to ensure infrastructure system integrity and safety”.

**ALTERNATIVES**

There are no recommended alternatives.

**ATTACHMENTS**

Project Cost Estimate  
Quinpool Road/Peninsula Transmission Main – Sketch

Report Prepared By:	<i>Original Signed by:</i> _____ Tom Gorman, Manager, Water Infrastructure, 902-490-4716
Financial Reviewed By:	<i>Original Signed by:</i> _____ Cathie O’Toole, MBA, CPA, CGA, Director Corporate Services 902-490-3572

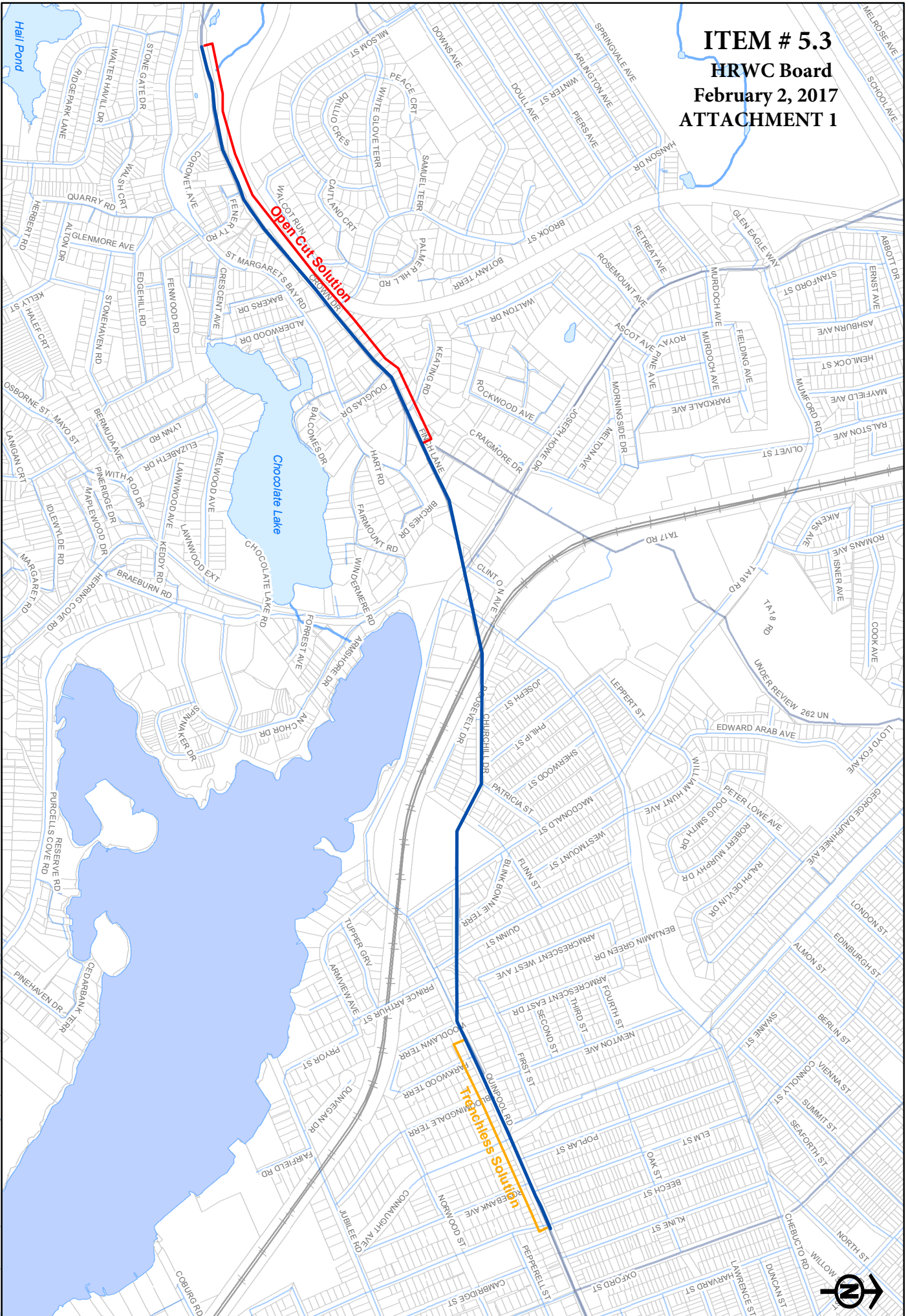


# ITEM # 5.3

## HRWC Board

### February 2, 2017

#### ATTACHMENT 1



Data Source: Halifax Water / HRM  
Date: Wednesday, January 18, 2017

The information contained on this map may not be complete and/or accurate in all areas. Should accurate information or confirmation of completeness be required, please contact the Engineering Department of Halifax Water. Halifax Water will not be held liable for misuse of this information.

## Quinpool Road/Peninsula Transmission Main Rehabilitation

To provide world class services for our customers and our environment



**Quinpool Road/Peninsula Transmission Main Rehabilitation Estimate**

<u><b>Consulting</b></u>				<u><b>Cost</b></u>
Engineering Design and Construction				\$ 360,000.00
<hr/>				
<u><b>Construction</b></u>	Unit	Quantity	Rate	
<b>Part A - Open Cut</b>				
Connection to Existing	LS	7	15000	\$ 105,000.00
750mm TR Flex	m	1020	1050	\$ 1,071,000.00
750 mm CL 52 DI	m	1020	1600	\$ 1,632,000.00
500mm CL 52 DI	m	1020	400	\$ 408,000.00
750 Valve	ea.	2	12000	\$ 24,000.00
500 Valve	ea.	1	8000	\$ 8,000.00
Services	ea.	47	6000	\$ 282,000.00
Road	m <sup>2</sup>	6000	80	\$ 480,000.00
Temp Water	m	2080	100	\$ 208,000.00
<b>Part A Total</b>				<b>\$ 4,218,000.00</b>
<b>Part B - Trenchless - Quinpool Rd, Parkwood to Beech</b>	Unit	Quantity	Rate	
600mm Trenchless Rehab	m	460	3000	\$ 1,380,000.00
Access Pit	ea.	6	50000	\$ 300,000.00
Services	ea.	10	10000	\$ 100,000.00
Samples		1	20000	\$ 20,000.00
Chlor/testing		1	17000	\$ 17,000.00
Test pits		6	1000	\$ 6,000.00
Traffic Control, bonding		1	250000	\$ 250,000.00
Valves		1	20000	\$ 20,000.00
<b>Part B Total</b>				<b>\$ 2,093,000.00</b>
Engineering and Construction Subtotal				\$ 6,671,000.00
Contingencies (20%)				\$ 1,334,200.00
Construction Subtotal				\$ 8,005,200.00
Net HST (4.286%)				\$ 343,102.87
SubTotal				\$ 8,348,302.87
HW Technical (Estimate)				\$ 60,000.00
SubTotal				\$ 8,408,302.87
Interest (1%)				\$ 84,083.03
<b>Total Estimated Project Cost</b>				<b>\$ 8,492,385.90</b>



**TO:** Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
\_\_\_\_\_  
Jamie Hannam, P. Eng., Director, Engineering & Information Services

**APPROVED:** *Original Signed by:*  
\_\_\_\_\_  
Carl Yates M.A.Sc., P. Eng., General Manager

**DATE:** January 24, 2017

**SUBJECT:** **Lake Major Dam Replacement**

---

### **ORIGIN**

Halifax Water Board Information Report, Federal/Provincial Infrastructure Funding – Clean Water & Wastewater Fund (CWWF) Approvals, dated September 16, 2016

### **RECOMMENDATION**

The Halifax Water Board approve the construction phase of the Lake Major Dam Replacement Project at a gross total project estimated cost of \$7,789,391.

### **BACKGROUND**

The existing Lake Major Dam is a rock-filled timber crib structure, originally built for a private milling operation in the 1940s. The former City of Dartmouth took over ownership of the Lake Major Dam in 1960 as part of overall improvements to the Dartmouth water supply system. Improvements included construction of the East Lake Dam, located upstream of Lake Major, as a storage structure to facilitate demand during periods of low inflow. Halifax Water assumed ownership of the dams as part of municipal amalgamation in 1996 and constructed the Lake Major Water Supply Plant in 1999.

The 2012 Dam Safety Review completed by MECO Engineering identified a number of problems with the existing dam. The study found that the structure was analytically

stable but found significant deterioration of its timber components. The recommended remedial action was the replacement of the dam.

In 2014, MECO Engineering was retained to complete an assessment of viable dam locations and concept design options. The location selected for the replacement structure is approximately 50 metres upstream of the existing dam. The proposed dam concept is a hybrid gated structure that will maintain a water level of 19.5m in the lake.

### **DISCUSSION**

With the support of HRM, Halifax Water, submitted applications for Federal/Provincial Infrastructure funding under the Clean Water & Wastewater Fund (CWWF) for a number of critical projects. The Lake Major Dam replacement was one of the submitted projects. On August 16, 2016, Halifax Water received Federal and Provincial infrastructure funding for this project through the Clean Water and Wastewater Fund (CWWF). The CWWF provides for 75% funding of all eligible project costs. Specifically for this project, the CWWF provides \$3,388,287 in funding based on 75% of the total eligible project cost of \$4,517,716. Ineligible costs include Halifax Water internal costs (staff time plus overheads) and external costs incurred prior to funding approval. A condition of the CWWF approval is that all eligible costs must be incurred by March 31, 2018.

Detailed design work began in the fall of 2016 and is nearing completion. The new dam will be a reinforced concrete structure and will be composed of earth filled abutments, spillway, fish ladder and two sluice gates. The purpose of the sluice gates will be to release water from the lake when the lake level is below the operable range of the fish ladder. The sluice gates can also be operated to release water from the lake before a major storm event, if required. The spillway is a labyrinth design, which will allow more water to spill over its crest than a conventional ogee shape. The entire structure will be founded on bedrock and will have an overall height of 5m to the top of the spillway and 7m to the top of the earth filled abutments on each side.

It is anticipated that the project will be tendered in March 2017, with construction beginning in April 2017. It is expected that the construction will be carried out in 2017 with full project completion by March 31, 2018

The current project cost estimate is based on the consultant's design-stage construction estimate for the construction of the Lake Major Dam. The total estimated project cost is \$7,789,391 (see attached cost estimate).

### **BUDGET IMPLICATIONS**

The gross total project cost is estimated at \$7,789,391

The Halifax Water funding approved to date totals \$600,000 as follows:

- Funding in the amount of \$200,000 including net HST was previously approved on March 27, 2014.
- Funding in the amount of \$400,000 including net HST was previously approved on May 31, 2015.

External funding approved from the CWWF program is \$ 3,388,287.

The balance of the Halifax Water funding is available as follows:

- Funding in the amount of \$100,000 including net HST is available within the 2016/17 Capital Budget under (*Lake Major Dam Replacement*).
- Funding in the amount of \$3,701,104 including net HST is available within the 2017/18 Capital Budget under (*Lake Major Dam Replacement*).
  - \$1,129,429 of this funding is the 25% matching funding for the CWWF program
  - \$2,571,675 of this funding is for CWWF ineligible costs including estimated total project costs exceeding the original CWWF application estimate.

The proposed expenditure meets the “No Regrets – Unavoidable Needs” approach of the 2012 Integrated Resource Plan. The proposed work meets the NR-UN criteria of ensures integrity and safety. Add cost estimate

### **ALTERNATIVES**

There are no recommended alternatives.

### **ATTACHMENT**

Project Cost Estimate

Report Prepared By:	<u>Original Signed by:</u> Tom Gorman, P. Eng., Manager Water Infrastructure, Engineering & IS Department, 902-490-4716
Financial Reviewed By:	<u>Original Signed by:</u> Cathie O’Toole, CGA, MBA, Director of Finance and Customer Service, 902-490-3685

**Lake Major Dam Replacement - Total Project Cost Estimate January 24, 2017**

Description	Amount
<b><i>Concept Design</i></b>	
Concept Design Cost (MECO) (completed)	\$133,763.35
Change Orders (MECO) (completed)	\$248,286.66
<b><i>Concept Design Sub-Total</i></b>	<b><i>\$382,050.01</i></b>
<b><i>Detailed Design &amp; Regulatory Approvals</i></b>	
Strum - Wetland Delineation (completed)	\$5,939.09
Strum - Environmental Assessment (completed)	\$48,500.00
Envirosphere Consultants (completed)	\$22,133.92
CRM Group (Archaeological) (completed)	\$40,000.00
Clean Foundations (DFO Offset Assessment) (completed)	\$21,222.00
MECO Detailed Design Services *	\$254,260.00
<b><i>Detailed Design &amp; Regulatory Approvals Sub-Total</i></b>	<b><i>\$392,055.01</i></b>
<b><i>Construction</i></b>	
MECO Tendering Services *	\$15,660.00
Estimated Construction Cost (incl 25% contingency)	\$5,626,119.00
Materials Testing/ QA-QC for Dam Construction *	\$100,000.00
Little Salmon River Monitoring During Construction (Envirosphere) *	\$20,000.00
DFO Offsetting (Method 1) *	\$240,775.00
MECO Construction Phase Services *	\$291,060.00
MECO Commissioning and Record Information *	\$35,621.00
<b><i>Construction Sub-Total</i></b>	<b><i>\$6,329,235.00</i></b>
<b><i>Construction and Design Total</i></b>	<b><i>\$7,103,340.02</i></b>
(* Contingency on uncompleted work) (20%)	\$191,475.20
Subtotal	<b><i>\$7,294,815.22</i></b>
Net HST (4.286%)	\$312,655.78
Sub Total	<b><i>\$7,607,471.00</i></b>
Halifax Water Staff Time to date	\$54,797.72
HW Technical Services and Engineering	\$50,000.00
Sub Total	<b><i>\$7,712,268.72</i></b>
Overhead/Interest (1%)	\$77,122.69
<b>Total Estimated Cost</b>	<b><i>\$7,789,391.41</i></b>

**TO:** Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
\_\_\_\_\_  
Jamie Hannam, P. Eng.  
Director, Engineering & Information Services

**APPROVED:** *Original Signed by:*  
\_\_\_\_\_  
Carl Yates M.A.Sc., P. Eng., General Manager

**DATE:** January 24, 2017

**SUBJECT:** **J.D. Kline Filter Media and Underdrain Replacement Program**

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**ORIGIN**

Halifax Water Board Information Report, Federal/Provincial Infrastructure Funding – Clean Water & Wastewater Fund (CWCF) Approvals, dated September 16, 2016

**RECOMMENDATION**

The Halifax Water Board approve the construction phase of the J.D. Kline Filter Media and Underdrain Replacement Program at a gross total project estimated cost of \$5,747,060.

**BACKGROUND**

The J.D. Kline Water Supply Plant has eight granular media filters. Of the eight filters, six still have the original ceramic underdrains and associated sand and anthracite filter media that was installed when the plant was commissioned in the late 1970s. Previous underdrain failures in the other two filters within the last 15 years resulted in new plastic underdrains being installed.

During the winter of 2013, the ceramic underdrain in Filter #8 failed. Since that time the facility has been operating with seven filters. In March 2014, AECOM was retained to complete a study of the filtration system to explore best technology and options that would fit the plant. In March 2015, AECOM provided a final report on the review of the filtration system and a specification for underdrains and filter media.

AECOM recommended new gravel-less style filter underdrains that are compatible with bio-filtration and can accommodate air-scour backwashing capabilities. The filter media design they recommended was similar to the current anthracite over sand filter media specification.

Considering that the majority of the filter media is well beyond its recommended life and that there is a risk that the remaining ceramic underdrains could fail, it was proposed to replace the underdrains and filter media in all eight filters over the coming years.

### **DISCUSSION**

Halifax Water started the plan for replacing two (2) filters annually in 2016/17 at a cost of \$1.3M each year for four years. In 2016, HRM, with support from Halifax Water, submitted applications for Federal/Provincial Infrastructure funding under the Clean Water & Wastewater Fund (CWWF) for a number of critical projects. The J.D. Kline Filter Media and Underdrain Replacement was one of the submitted projects.

On August 16, 2016, Halifax Water received Federal and Provincial infrastructure funding for this project through the Clean Water and Wastewater Fund (CWWF). The CWWF provides for 75% funding of all eligible project costs. Specifically for this project, the CWWF provides \$3,150,120 in funding based on 75% of the total eligible project cost of \$4,200,160.

Ineligible costs include Halifax Water internal costs (staff time plus overheads) and external costs incurred prior to funding approval. In addition, the first two of eight filters were included within the approved 2016/17 Capital budget and thus are not eligible for funding from the CWWF program. A condition of the CWWF approval is that all eligible costs must be incurred by March 31, 2018.

Detailed work to preselect the equipment for this project began in the fall of 2016 and is nearing completion. It is anticipated that the project will be tendered in February-March 2017, with construction beginning in April 2017. All eight filters are proposed to be completed by March 31, 2018 to maximize the CWWF funding opportunity.

The current project cost estimate is based on the consultant's design-stage construction estimate for the construction of the J.D. Kline Filter Media and Underdrain Replacement. The total estimated project cost is \$5,747,060 (see attached cost estimate).

**BUDGET IMPLICATIONS**

The gross total project cost is estimated at \$5,747,060.

The Halifax Water funding approved to date totals \$1,300,000 as follows:

- Funding in the amount of \$300,000 including net HST was previously approved on March 5, 2015.
- Funding in the amount of \$1,000,000 including net HST was previously approved on September 24, 2015.

External funding approved from the CWWF program is \$ 3,150,120.

The balance of the Halifax Water funding is available as follows:

- Funding in the amount of \$1,296,940 including net HST is available within the 2017/18 Capital Budget under (*J.D. Kline Filter Media and Underdrain Replacement*).
  - \$1,050,040 of this funding is the 25% matching funding for the CWWF program
  - \$246,900 of this funding is for CWWF ineligible costs.

The proposed expenditure meets the “No Regrets – Unavoidable Needs” approach of the 2012 Integrated Resource Plan. The proposed work meets the NR-UN criteria of ensures integrity and safety.

**ALTERNATIVES**

There are no recommended alternatives.

**ATTACHMENT**

Project Cost Estimate

Report Prepared by:	<u>Original Signed by:</u> Tom Gorman, P. Eng. Manager Water Infrastructure Engineering & IS Department, 902-490-4716
Financial Reviewed By:	<u>Original Signed by:</u> Cathie O’Toole, CGA, MBA, Director of Finance and Customer Service, 490-3572

**Clean Water and Waste Water Fund - Cost Estimate**

**Project Name: JD Kline Filter Media and Underdrain Replacement**

**Date of this estimate: January 20, 2017**

<b>Item</b>	<b>Total Cost</b>
Design/Engineering	\$ 475,000
Construction Cost (including equipment)	\$ 4,000,000
Contingency (20%)	<u>\$ 895,000</u>
Sub-total	\$ 5,370,000
Net HST 4.286%	<u>\$ 230,158</u>
Sub-total	\$ 5,600,158
Halifax Water Staff Cost	<u>\$ 90,000</u>
Sub-total	\$ 5,690,158
Interest & Overhead ( 1%)	<u>\$ 56,902</u>
<b>Total Project Cost Estimate</b>	<b>\$ 5,747,060</b>



**TO:** Ray Ritcey, Chair, and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
\_\_\_\_\_  
Cathie O'Toole, MBA, CPA, CGA, Director, Corporate Services

**APPROVED:** *Original Signed by:*  
\_\_\_\_\_  
Carl Yates, M.A.Sc., P.Eng, General Manager

**DATE:** January 24, 2017

**SUBJECT:** **2017/18 Water, Wastewater and Stormwater Operating Budget**

---

**ORIGIN**

The Halifax Regional Water Commission (HRWC) Board approves the Annual Operating Budget

**RECOMMENDATION**

It is recommended that the HRWC Board:

Approve the attached 2017/18 Water, Wastewater and Stormwater Operating Budget covering the period April 1, 2017 to March 31, 2018, including the proposed 2017/18 budget for un-regulated activities.

**BACKGROUND**

The Operating Budget prepared for 2017/18 is based on year three of the Five Year Business Plan approved by the HRWC Board in October 2014. The last rate increase for water and wastewater became effective April 1, 2016, and there are no further increases scheduled at the present time. The purpose of the 2017/18 Operating Budget is to detail the services provided by Halifax Water (HW) and to outline the costs and revenue required to provide these services. Managers will continue to monitor actual performance relative to the budget and provide periodic updates to the Board.

**DISCUSSION**

The Operating Budget shows a net loss of \$6.8 million and reflects the efforts required by the organization to maintain current levels of service, deliver projects already in progress or approved, address changing environmental regulatory requirements, and generate more funding to meet infrastructure investment demands.

<b>Pro Forma Income Summary</b>			
	Actual 2015/16	Approved Budget 2016/17	Proposed Budget 2017/18
Operating Revenues	\$131,716	\$135,675	<b>\$135,587</b>
Operating Expenditures	\$96,243	\$102,425	<b>\$106,241</b>
Operating Profit	\$35,473	\$33,250	<b>\$29,346</b>
Non-Operating Revenues	\$3,370	\$3,291	<b>\$2,787</b>
Non-Operating Expenditures	\$33,961	\$36,386	<b>\$38,882</b>
Net Surplus (Deficit)	\$4,883	\$154	<b>(\$6,750)</b>
<i>Note:</i>			
<i>Consolidated numbers reported above include regulated and unregulated activities of the Urban Core, Satellite and Airport/AeroTech Systems.</i>			

The 2017/18 Operating Budget is prepared on an accrual basis (similar to last year) to provide broader information for decision making and to be reflective of best practice for budgeting. Accrued amounts for 2017/18 include a liability for future employee benefits (pension) as calculated under the International Financial Reporting Standards (IFRS). Accrued amounts for the comparative years are calculated under the Canadian Institute of Chartered Accountants (CICA) Handbook Section 3461. The NSUARB Accounting and Reporting Handbook for Water Utilities is currently used in determining the revenue requirements for rate making purposes. If accrued pension expenses were omitted in 2017/18, there would be a projected net loss on a NSUARB Handbook basis of \$2.4 million. There is sufficient accumulated operating surplus to offset the budgeted operating loss in 2017/18.

The utility faces pressure associated with asset renewal, growth, and compliance with regulatory requirements, as described in the Integrated Resource Plan. Additions to Utility Plant in Service result in increased depreciation, debt servicing, an increased dividend to Halifax Regional Municipality (HRM), and in some cases increased operating costs. Building capacity to deliver the Integrated Resource Plan is also an infrastructure related budget driver, and requires new employees in some departments.

As outlined in the table below, operating expenses are budgeted to increase \$3.8 million or 3.7% compared to the 2016/17 Operating Budget. Depreciation expense will increase by \$1.4 million or 6.5%, as will debt servicing by \$2.3 million or 7.3% when compared to the 2016/17 Operating Budget.

	Actual 2015/16	Approved Budget 2016/17	Proposed Budget 2017/18
Operating Expenditures	\$96,243	\$102,425	\$106,241
Depreciation	\$20,909	\$21,158	\$22,538
Debt Servicing	\$29,403	\$31,723	\$34,040

The 2017/18 Operating Budget, appearing as Attachment One, provides a statement of revenues and expenditures on a consolidated basis, as well as separate statements for the services of Water, Wastewater and Stormwater. A budget for un-regulated activities is also included. All budgets are based on rates as currently approved by the NSUARB, effective April 1, 2016.

### **Regulated Operating Revenues**

Regulated operating revenues are based upon approved rates, with a net projected decline in consumption of 3% for the 2017/18 fiscal year. It is assumed approximately 700 new customer connections, or 0.8% are projected in the budget year, based on the 4 year historic average for the period 2011-2014.

The majority of HRWC's revenues come from rate-regulated activities, with approximately 64% of water, wastewater and stormwater revenues coming from volumetric rates and 36% from base charges. HRWC does have a small amount of revenue from miscellaneous fees and financial revenue from interest income.

## **Regulated Operating Expenses**

The largest components of Halifax Water's consolidated operating budgets are salaries & benefits, energy, debt servicing, depreciation, and chemical costs. Some of the key assumptions are outlined below:

**Salaries and Benefits** – The annual increase allowance approximates 3.1%, which includes an additional 0.5% to allow for the impact of step increases within salary bands or reclassification of positions, and increases in benefits. The budget for 2017/18 includes filling 20 full-time equivalent positions (FTEs), most of which are new positions, but some of which were positions previously approved but were vacant in 2016/17. Additionally, two 3-year term positions are being filled to support the AMI project. If all positions were filled, this is roughly 4% growth.

**Depreciation** – As Halifax Water's assets and future capital budgets increase so do depreciation expenses. Depreciation is an integral funding source to support renewal of existing infrastructure, as well as new infrastructure and upgrades to meet future servicing demands and changing environmental regulations. Depreciation is projected to increase from \$21.2 million in 2016/17 to \$22.5 million in 2017/18, an increase of 6.5%.

**Debt Servicing** – New debt payments are budgeted to support the 2017/18 additions to utility plant in service. The amount and timing of the increases will be determined by the date of timing of the completion of projects, and the financing rates and options available. It is estimated total debt servicing will increase to \$34.0 million, a 7.3% increase from 2016/17. Halifax Water's capital financing strategy is designed to maintain a debt service ratio of 35% or less; and to use a mixture of infrastructure funding, development related charges (reserves), depreciation, and debt. The debt service ratio based on the proposed 2017/18 Operating Budget is 25.1%.

**Energy** – Budgets were established based on an assumption of electricity, fuel, oil and natural gas rate increases in each specific year. The impact of these increases is expected to be partially offset by the formal Energy Management Program

- Electricity – 2%
- Furnace Oil – 5%
- Natural Gas – 5%

**Chemical Costs** – Chemicals are tendered annually in January for optimal pricing. Chemical cost increases of 5% are anticipated for 2017/18.

Expenses such as electricity and chemicals, which are subject to greater volatility when considering rates, have been afforded special attention due to the dependence placed on these commodities. In other expense categories that carry high dollar amounts, such as

contract services and materials/supplies, where there may be a certain discretionary component, these expenses are contingent upon other factors such as:

- ✓ Service expectations
- ✓ Regulatory requirements and compliance
- ✓ Maintenance and renewal of infrastructure.

This would be relevant across all services; water, wastewater and stormwater.

### **Consolidated Revenues and Expenditures**

The statement of consolidated revenues and expenditures compiled on an accrual basis, as detailed on page 1 of Attachment One, shows a budgeted net loss of \$6.8 million for 2017/18. As of March 31, 2016 Halifax Water had an accumulated operating surplus of \$7.8 million. The projected operating surplus as at March 31, 2017 is projected to be \$8.0 million, based on the October, 2016 projections. The proposed net operating loss of \$6.8 million would reduce the accumulated surplus to \$1.2 million. Halifax Water is targeting maintaining an accumulated operating surplus of 3% of operating expenses to mitigate risk. Accumulated operating surplus can also be used to fund future additions to utility plant in service. Based on the proposed operating budget for 2017/18 the accumulated surplus would be approximately 1% of total expenses; however it is likely the year-end surplus from 2016/17 will increase this.

### **Water Service**

Water operations are detailed on page 2 of Attachment One and are projected to have a net loss for 2017/18 of \$2.3 million.

Revenues are projected to be \$0.1 million higher than the 2016/17 budget. The small increase is primarily due to the fact there are no rate increases budgeted in 2017/18, with the last rate increases effective April 1, 2016.

Operating expenditures are projected at \$41.4 million, which is an overall increase compared to the 2016/17 Operating Budget of \$2.4 million or 6%. The largest cost increases reported are in the categories of Depreciation and Water Supply and Treatment, in the amount of \$0.7 and \$0.6 million respectively. Cost reductions appear in Engineering and Information Services in the amount of \$0.3 million.

Non-Operating revenues decrease slightly as a result of lower anticipated investment income. Non-Operating expenses are projected to increase by \$0.8 million or 5%, with the majority being a result of an increase in total debt servicing, consisting of interest, principal and discounting. The dividend payable to HRM increased from \$4.7 million to \$4.8 million, as a result of the projected water rate base increasing in relation to utility

plant in service. The dividend is calculated as 1.56% of the water rate base for the previous year.

### **Wastewater Service**

Wastewater operations are detailed on page 3 of Attachment One and are budgeted to have a net loss of \$4.5 million for 2017/18.

Budgeted operating revenues for 2017/18 in the amount of \$69.7 million are \$0.2 million lower than revenues included in the 2016/17 budget. The small decrease is primarily due to the fact there are no rate increases budgeted in 2017/18, with the last rate increases effective April 1, 2016.

Budgeted operating expenditures in 2017/18 have increased by \$1.0 million or 2% to \$56.5 million compared to the 2016/17 budget of \$55.6 million. The largest cost increases are reported in Administration and Pension, and Depreciation, in the amount of \$0.3 million and \$0.5 million respectively. These increases are offset somewhat by cost reductions in other categories, most notably Engineering and Information Services in the amount of \$0.2 million, and Wastewater Treatment Plants for \$0.2 million.

Non-Operating revenues decrease slightly as a result of lower anticipated investment income. Non-operating expenses increase by \$0.9 million or 5% due to higher debt servicing costs.

### **Stormwater Service**

Stormwater operations are detailed on page 4 of Attachment One and have a budgeted net profit of \$64 thousand for 2017/18.

Budgeted operating revenues for 2017/18 total \$10.7 million which are comparable to amounts reported in the 2016/17 budget. There have been no rate increases in Stormwater rates since April 1, 2014.

Budgeted operating expenditures in 2017/18 are \$8.3 million, representing a \$0.4 million or 5% increase over the 2016/17 budget, with increased costs associated with Regulatory Services and Depreciation.

On October 31, 2016 Halifax Water made a submission to the Nova Scotia Utility and Review Board (NSUARB) to adjust stormwater rates to reflect the revised Cost of Service Manual for Stormwater. The hearing will be held the week of February 13, 2017 and a Decision will be received early in the 2017/18 fiscal year. The proposed revenue requirement for Stormwater Service in 2017/18 is \$10.7 million, which is 3% higher than the revenue requirements upon which the current Stormwater rates are based.

**Un-Regulated Activities**

Halifax Water is projecting a small net profit of \$0.9 million from un-regulated activities in 2017/18.

Revenues from unregulated business activities are increasingly important to mitigate future revenue requirements from rates. Unregulated revenues are used to help pay for some expenses which would otherwise be funded by rate-regulated activities, and are also used to fund unregulated expenses. Some fees for un-regulated activities such as septage tipping, treatment of effluent from airplanes, and leachate are budgeted to be adjusted April 1, 2017 to ensure that Halifax Water is fully recovering expenses and generating some profit for the rate base. Revenues from un-regulated activities for 2017/18 report a slight increase compared to the prior year's operating budget.

Unregulated operating expenses are decreasing by \$0.2 million or 14% compared to the 2016/17 operating budget, primarily the result of a decrease in expenses related to unregulated wastewater treatment.

Sponsorships and donations, and the Help to Others (H2O) Program are treated as an un-regulated expense as a result of the 2012 NSUARB Urban Core Rate Decision. Expenses for these programs are budgeted at \$65,600 in 2017/18, which is \$10,000 higher than amount budgeted in 2016/17. Included in this amount is \$35,000 related to the H2O program, along with the following sponsorships:

**Sponsorships**

Other	\$	6,000
Committee on Environment (ISO TC207)		10,000
NSCC Scholarships First Nations		4,000
NSCC Scholarships RT Peacock		2,000
NSCC Scholarships HRWC Achievement		2,000
NSCC Scholarships Arnold Johnston		3,600
Special Olympics		1,000
Bluenose Marithon		2,000
	<b>\$</b>	<b><u>30,600</u></b>

Sponsorships and donations are relatively small value items but the Board is requested to approve the amounts noted above as part of the overall budget.

**BUDGET IMPLICATIONS**

The combined operations for the 2017/18 budget project a net loss of \$6.8 million.

**ALTERNATIVES**

The HRWC Board could direct staff to revise the proposed 2017/18 Operating Budget.

**ATTACHMENT**

Attachment - Proposed 2017/18 Operating Budget

Report Prepared by: *Original Signed by:* \_\_\_\_\_  
Allan Campbell, B.Comm, CPA, CMA  
Manager, Finance 902-490-4288



**HALIFAX WATER**  
**CONSOLIDATED SUMMARY OF ESTIMATED REVENUES & EXPENDITURES**  
**PROPOSED OPERATING BUDGET**  
**APRIL 1, 2017 to MARCH 31, 2018**  
(in thousands )

DESCRIPTION	ACTUAL APR 1/15 MAR 31/16	APPROVED BUDGET * APR 1/16 MAR 31/17	PROPOSED BUDGET APR 1/17 MAR 31/18
<b>OPERATING REVENUES</b>	\$131,716	\$135,675	\$135,587
<b>OPERATING EXPENDITURES</b>	<u>\$96,243</u>	<u>\$102,425</u>	<u>\$106,241</u>
<b>OPERATING PROFIT</b>	<u>\$35,473</u>	<u>\$33,250</u>	<u>\$29,346</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
INVESTMENT INCOME	\$883	\$810	\$346
PNS FUNDING HHSP DEBT	\$2,000	\$2,000	\$2,000
MISCELLANEOUS	<u>\$487</u>	<u>\$481</u>	<u>\$441</u>
	<u>\$3,370</u>	<u>\$3,291</u>	<u>\$2,787</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$8,889	\$8,872	\$9,532
LONG TERM DEBT PRINCIPAL	\$20,328	\$22,652	\$24,291
AMORTIZATION DEBT DISCOUNT	\$186	\$199	\$217
DIVIDEND/GRANT IN LIEU OF TAXES	\$4,528	\$4,663	\$4,827
MISCELLANEOUS	<u>\$29</u>	<u>\$0</u>	<u>\$15</u>
	<u>\$33,961</u>	<u>\$36,386</u>	<u>\$38,882</u>
 <b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	 <u>\$4,883</u>	 <u>\$154</u>	 <u>(\$6,750)</u>
<b>Adjustments:</b>			
Pension accrual	<u>(\$267)</u>	<u>\$3,086</u>	<u>\$4,358</u>
<b>Net Profit (Loss) on a Cash Basis</b>	<u>\$4,616</u>	<u>\$3,241</u>	<u>(\$2,392)</u>

\* 2016/17 Operating Budget approved by the Board of Directors, January 28, 2016.

**HALIFAX WATER**  
**ESTIMATED REVENUES AND EXPENDITURES - WATER OPERATIONS**  
**PROPOSED OPERATING BUDGET**  
**APRIL 1, 2017 to MARCH 31, 2018**  
**( in thousands )**

DESCRIPTION	ACTUAL APR 1/15 MAR 31/16	APPROVED BUDGET * APR 1/16 MAR 31/17	PROPOSED BUDGET APR 1/17 MAR 31/18
<b>REVENUES</b>			
METERED SALES	\$43,193	\$46,465	\$46,600
FIRE PROTECTION	\$8,032	\$7,074	\$7,074
PRIVATE FIRE PROTECTION SERVICES	\$679	\$840	\$857
BULK WATER STATIONS	\$265	\$326	\$314
CUSTOMER LATE PAY./COLLECTION FEES	\$198	\$203	\$212
MISCELLANEOUS	\$181	\$153	\$149
	<u>\$52,548</u>	<u>\$55,061</u>	<u>\$55,207</u>
<b>EXPENDITURES</b>			
WATER SUPPLY & TREATMENT	\$7,543	\$7,983	\$8,565
TRANSMISSION & DISTRIBUTION	\$8,405	\$8,710	\$8,969
SMALL SYSTEMS (incl. Contract Systems)	\$1,080	\$883	\$1,073
TECHNICAL SERVICES (SCADA)	\$689	\$846	\$873
ENGINEERING & INFORMATION SERVICES	\$3,528	\$3,848	\$3,515
REGULATORY SERVICES	\$505	\$515	\$1,034
CUSTOMER SERVICE	\$2,268	\$2,251	\$2,357
ADMINISTRATION & PENSION	\$4,919	\$5,416	\$5,836
DEPRECIATION	\$8,411	\$8,561	\$9,218
	<u>\$37,348</u>	<u>\$39,013</u>	<u>\$41,441</u>
<b>OPERATING PROFIT</b>	<u>\$15,200</u>	<u>\$16,048</u>	<u>\$13,766</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
INVESTMENT INCOME	\$442	\$365	\$156
MISCELLANEOUS	\$434	\$408	\$428
	<u>\$876</u>	<u>\$773</u>	<u>\$583</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$2,531	\$2,486	\$2,685
LONG TERM DEBT PRINCIPAL	\$7,766	\$8,576	\$9,014
AMORTIZATION DEBT DISCOUNT	\$90	\$100	\$98
DIVIDEND/GRANT IN LIEU OF TAXES	\$4,528	\$4,663	\$4,827
MISCELLANEOUS	\$29	\$0	\$15
	<u>\$14,945</u>	<u>\$15,825</u>	<u>\$16,639</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<u>\$1,130</u>	<u>\$996</u>	<u>(\$2,291)</u>

\* 2016/17 Operating Budget approved by the Board of Directors, January 28, 2016.

**HALIFAX WATER**  
**ESTIMATED REVENUES AND EXPENDITURES - WASTEWATER OPERATIONS**  
**PROPOSED OPERATING BUDGET**  
**APRIL 1, 2017 to MARCH 31, 2018**  
**( in thousands )**

DESCRIPTION	ACTUAL APR 1/15 MAR 31/16	APPROVED BUDGET * APR 1/16 MAR 31/17	PROPOSED BUDGET APR 1/17 MAR 31/18
<b>REVENUES</b>			
METERED SALES	\$66,601	\$68,052	\$67,756
WASTEWATER OVERSTRENGTH AGREEMENTS	\$135	\$0	\$0
LEACHATE	\$331	\$389	\$389
CONTRACT REVENUE	\$93	\$86	\$86
SEPTAGE TIPPING FEES	\$648	\$650	\$775
DEWATERING FACILITY/ SLUDGE LAGOON	\$210	\$210	\$210
AIRLINE EFFLUENT	\$51	\$86	\$86
CUSTOMER LATE PAY./COLLECTION FEES	\$238	\$257	\$240
MISCELLANEOUS	\$121	\$133	\$129
	<u>\$68,428</u>	<u>\$69,862</u>	<u>\$69,670</u>
<b>EXPENDITURES</b>			
WASTEWATER COLLECTION	\$9,537	\$9,446	\$9,653
WASTEWATER TREATMENT PLANTS	\$17,421	\$19,425	\$19,251
SMALL SYSTEMS	\$1,059	\$1,251	\$1,276
DEWATERING FACILITY/ SLUDGE MGMT	\$414	\$556	\$380
BIOSOLIDS TREATMENT	\$102	\$101	\$101
LEACHATE CONTRACT	\$290	\$341	\$341
TECHNICAL SERVICES (SCADA)	\$1,041	\$1,215	\$1,306
ENGINEERING & INFORMATION SERVICES	\$3,010	\$3,629	\$3,431
REGULATORY SERVICES	\$1,134	\$1,254	\$1,434
CUSTOMER SERVICE	\$1,877	\$1,864	\$2,064
ADMINISTRATION & PENSION	\$4,095	\$4,485	\$4,833
DEPRECIATION	\$11,975	\$11,983	\$12,465
	<u>\$51,954</u>	<u>\$55,551</u>	<u>\$56,534</u>
<b>OPERATING PROFIT</b>	<u>\$16,474</u>	<u>\$14,311</u>	<u>\$13,136</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
INVESTMENT INCOME	\$441	\$365	\$156
PNS FUNDING HHSP DEBT	\$2,000	\$2,000	\$2,000
MISCELLANEOUS	\$54	\$72	\$14
	<u>\$2,494</u>	<u>\$2,437</u>	<u>\$2,169</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$5,786	\$5,817	\$6,022
LONG TERM DEBT PRINCIPAL	\$11,462	\$12,978	\$13,699
AMORTIZATION DEBT DISCOUNT	\$89	\$89	\$107
MISCELLANEOUS	\$0	\$0	\$0
	<u>\$17,337</u>	<u>\$18,884</u>	<u>\$19,828</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<u>\$1,632</u>	<u>(\$2,136)</u>	<u>(\$4,523)</u>

\* 2016/17 Operating Budget approved by the Board of Directors, January 28, 2016.

**HALIFAX WATER**  
**ESTIMATED REVENUES AND EXPENDITURES - STORMWATER OPERATIONS**  
**PROPOSED OPERATING BUDGET**  
**APRIL 1, 2017 to MARCH 31, 2018**  
**( in thousands )**

DESCRIPTION	ACTUAL APR 1/15 MAR 31/16	APPROVED BUDGET * APR 1/16 MAR 31/17	PROPOSED BUDGET APR 1/17 MAR 31/18
<b>REVENUES</b>			
STORMWATER SITE RELATED SERVICE	\$6,713	\$6,708	\$6,700
STORMWATER RIGHT-OF-WAY SERVICE	\$3,881	\$3,881	\$3,881
CUSTOMER LATE PAY./COLLECTION FEES	\$63	\$70	\$39
MISCELLANEOUS	\$82	\$93	\$89
	<u>\$10,740</u>	<u>\$10,753</u>	<u>\$10,710</u>
<b>EXPENDITURES</b>			
STORMWATER COLLECTION	\$4,202	\$4,761	\$4,589
TECHNICAL SERVICES (SCADA)	\$34	\$28	\$31
ENGINEERING & INFORMATION SERVICES	\$480	\$590	\$558
REGULATORY SERVICES	\$729	\$835	\$1,242
CUSTOMER SERVICE	\$305	\$303	\$205
ADMINISTRATION & PENSION	\$666	\$729	\$786
DEPRECIATION	\$523	\$614	\$855
	<u>\$6,941</u>	<u>\$7,862</u>	<u>\$8,266</u>
<b>OPERATING PROFIT</b>	<u>\$3,799</u>	<u>\$2,891</u>	<u>\$2,444</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
INVESTMENT INCOME	\$0	\$81	\$35
MISCELLANEOUS	\$0	\$0	
	<u>\$0</u>	<u>\$81</u>	<u>\$35</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$571	\$569	\$825,070
LONG TERM DEBT PRINCIPAL	\$1,100	\$1,098	\$1,577,259
AMORTIZATION DEBT DISCOUNT	\$8	\$11	\$11,938
MISCELLANEOUS	\$0	\$0	\$0
	<u>\$1,679</u>	<u>\$1,678</u>	<u>\$2,414</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<u>\$2,120</u>	<u>\$1,294</u>	<u>\$64</u>

\* 2016/17 Operating Budget approved by the Board of Directors, January 28, 2016.

**HALIFAX WATER**  
**ESTIMATED REVENUES & EXPENDITURES, SEGREGATED BY REGULATED AND UNREGULATED ACTIVITIES**  
**PROPOSED OPERATING BUDGET**  
**APRIL 1, 2017 to MARCH 31, 2018**  
**( In thousands )**

DESCRIPTION	ACTUAL APR 1/15 MAR 31/16	APPROVED BUDGET * APR 1/16 MAR 31/17	PROPOSED BUDGET APR 1/17 MAR 31/18
<b>REGULATED ACTIVITIES</b>			
<b>REVENUES</b>			
METERED SALES	\$116,507	\$121,225	\$121,056
FIRE PROTECTION	\$8,032	\$7,074	\$7,074
PRIVATE FIRE PROTECTION	\$679	\$840	\$857
STORMWATER RIGHT-OF-WAY SERVICE	\$3,881	\$3,881	\$3,881
OTHER OPERATING REVENUE	\$1,262	\$1,213	\$1,151
	<u>\$130,361</u>	<u>\$134,234</u>	<u>\$134,020</u>
<b>EXPENDITURES</b>			
WATER SUPPLY & TREATMENT	\$7,543	\$7,976	\$8,559
TRANSMISSION & DISTRIBUTION	\$8,405	\$8,710	\$8,969
WASTEWATER & STORMWATER COLLECTION	\$13,723	\$14,195	\$14,229
WASTEWATER TREATMENT PLANTS	\$17,421	\$19,425	\$19,251
SMALL SYSTEMS	\$2,129	\$2,116	\$2,324
SCADA, CONTROL & PUMPING	\$1,765	\$2,087	\$2,209
ENGINEERING & INFORMATION SERVICES	\$7,018	\$8,058	\$7,495
REGULATORY SERVICES	\$2,369	\$2,605	\$3,710
CUSTOMER SERVICE	\$4,415	\$4,382	\$4,591
ADMINISTRATION & PENSION	\$9,660	\$10,549	\$11,363
DEPRECIATION	\$20,903	\$21,158	\$22,530
	<u>\$95,350</u>	<u>\$101,263</u>	<u>\$105,239</u>
<b>OPERATING PROFIT</b>	<u>\$35,011</u>	<u>\$32,971</u>	<u>\$28,782</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
INVESTMENT INCOME	\$883	\$810	\$346
MISCELLANEOUS	\$2,055	\$2,066	\$1,948
	<u>\$2,938</u>	<u>\$2,876</u>	<u>\$2,293</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$8,889	\$8,858	\$9,474
LONG TERM DEBT PRINCIPAL	\$20,328	\$22,632	\$24,212
AMORTIZATION DEBT DISCOUNT	\$186	\$199	\$217
DIVIDEND/GRANT IN LIEU OF TAXES	\$4,528	\$4,663	\$4,827
MISCELLANEOUS	\$158	\$0	\$0
	<u>\$34,089</u>	<u>\$36,353</u>	<u>\$38,730</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES - REGULATED ACTIVITIES</b>	<u>\$3,859</u>	<u>(\$506)</u>	<u>(\$7,655)</u>
<b>UNREGULATED ACTIVITIES</b>			
<b>REVENUES</b>			
AEROTECH SEPTAGE TIPPING FEES	\$648	\$650	\$775
LEACHATE	\$331	\$389	\$389
CONTRACT REVENUE	\$93	\$86	\$86
DEWATERING FACILITY/ SLUDGE LAGOON	\$210	\$210	\$210
AIRLINE EFFLUENT	\$51	\$86	\$86
ENERGY PROJECTS	\$198	\$184	\$184
MISCELLANEOUS	\$21	\$22	\$22
	<u>\$1,553</u>	<u>\$1,625</u>	<u>\$1,750</u>
<b>EXPENDITURES</b>			
<b>- DIRECT</b>			
WATER SUPPLY & TREATMENT	\$10	\$18	\$25
WASTEWATER TREATMENT	\$822	\$998	\$821
ENERGY PROJECTS	\$13	\$0	\$0
SPONSORSHIPS & DONATIONS	\$55	\$56	\$66
DEPRECIATION	\$6	\$0	\$0
	<u>\$906</u>	<u>\$1,072</u>	<u>\$912</u>
<b>- INDIRECT (ADMINISTRATION)</b>			
	\$0	\$91	\$91
	<u>\$906</u>	<u>\$1,163</u>	<u>\$1,003</u>
<b>OPERATING PROFIT</b>	<u>\$647</u>	<u>\$463</u>	<u>\$748</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
MISCELLANEOUS	\$248	\$231	\$310
	<u>\$248</u>	<u>\$231</u>	<u>\$310</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$0	\$14	\$58
LONG TERM DEBT PRINCIPAL	\$0	\$19	\$79
AMORTIZATION DEBT DISCOUNT	\$0	\$0	\$0
MISCELLANEOUS	(\$128)	\$0	\$15
	<u>(\$128)</u>	<u>\$33</u>	<u>\$152</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES - UNREGULATED ACTIVITIES</b>	<u>\$1,024</u>	<u>\$661</u>	<u>\$905</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES - COMBINED ACTIVITIES</b>	<u>\$4,883</u>	<u>\$154</u>	<u>(\$6,750)</u>

\* 2016/17 Operating Budget approved by the Board of Directors, January 28, 2016.

**TO:** Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
\_\_\_\_\_  
Carl Yates M.A.Sc., P.Eng., General Manager

**DATE:** January 26, 2017

**SUBJECT:** **Proposed 2017/18 Business Plan**

---

**ORIGIN**

Annual operational requirement

**RECOMMENDATION**

The Board approve the 2017/18 Business Plan in the substantive form attached and direct the General Manager to submit the 2017/18 Business Plan to Halifax Council for information.

**BACKGROUND/DISCUSSION**

In accordance with best practice, Halifax Water management develops long-term and short-term business plans for the approval of the Commission Board. The 2017/18 Annual Business Plan reflects the strategic direction envisioned in the 5-Year Business Plan approved by the Board in October, 2014, and is consistent with the Integrated Resource Plan [IRP] approved by the Board in September, 2012.

The coming year will see implementation of Advanced Metering Infrastructure [AMI], a revised rate structure for stormwater service, and a continued focus on sustainable infrastructure, all while maintaining or increasing current levels of service to customers.

With recent federal and provincial approval of infrastructure projects under the Clean Water and Wastewater Fund [CWWF], Halifax Water is well positioned to accelerate its capital program to more closely match the targets projected in the IRP. As can be seen from the attached document, the financial position of the utility has improved over the last two years, such that a general rate application is not planned for 2017/18.

Accordingly, management are requesting the Board approve the 2017/18 Business Plan in the substantive form attached.

As a result of the direction from the Halifax Water Board and Halifax Council, it is also recommended that the business plan be forwarded to Halifax Council for their information. Although the legislative amendments to the HRWC Act do not come into effect until April 1, 2017, the recommendation is put forward to foster good will between the two organizations which have a history of partnering together on strategic and operational initiatives. In accordance with recent legislative amendments, the 2018/19 business plan will be presented to Halifax Council for review and approval.

**ALTERNATIVES**

None

**ATTACHMENT**

2017/18 Annual Business Plan (electronic copy only)

# 2017/18 Annual Business Plan



**Presented to the Halifax Water Board  
February 2, 2017**



**HALIFAX WATER**  
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**Glossary**

AMI	Advanced Meter Infrastructure
AM	Asset Management
AMP	Asset Management Plan
AMR	Automated Meter Reading
BMP	Best Management Practice
CAD	Computer Aided Drafting
CCC	Capital Cost Contribution
CHP	Combined Heat and Power
COMFIT	Community Feed-In Tariff
CRM	Customer Relationship Management
DOE	Department of Energy
E&IS	Engineering & Information Services
EMAP	Energy Management Action Plan
EMS	Environmental Management System
ERU	Equivalent Residential Unit
GIS	Geographic Information System
H2O	Help to Others (Program)
HW	Halifax Water
I&I	Inflow and Infiltration
ICI	Industrial Commercial Institutional
IFRS	International Financial Reporting Standards
IRP	Integrated Resource Plan
NSE	Nova Scotia Environment
NSERC	Natural Sciences and Engineering Research Council
NSPI	Nova Scotia Power Incorporated
NSUARB	Nova Scotia Utility and Review Board
OMM	Operational Maintenance Management
RDC	Regional Development Charge
RDII	Rain Derived Inflow and Infiltration
SCADA	Supervisory Control and Data Acquisition
SOP	Standard Operating Practices/Procedure
UV	Ultraviolet
WCB	Workers Compensation Board
WRWIP	West Region Wastewater Infrastructure Plan
WSER	Wastewater System Effluent Regulations
WWTF	Wastewater Treatment Facility

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- B. Organizational Structure
- C. 2017/18 Capital Budget
- D. 2017/18 Operations Budget

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## **1. INTRODUCTION**

Following the 2007 transfer of wastewater and stormwater assets from Halifax Municipality, Halifax Water became the first regulated and integrated water, wastewater and stormwater utility in Canada. With this expanded mandate, the utility took on a new mission to “provide world class services to our customers and our environment” and vision as fully described in Appendix A. Since 2007, Halifax Water has established a framework for sustainable infrastructure with a focus on asset renewal, regulatory compliance and growth. This strategic framework is paramount to attaining a high level of service for over 95,000 customers and remaining committed to environmental stewardship. Halifax Water delivers three distinct services through five departments; Water Services; Wastewater and Stormwater Services; Corporate Services, Engineering and Information Services; and Regulatory Services as described within this document and illustrated in Appendix B.

The 2017/18 fiscal year marks the third year in the Five Year Business Plan approved by the Halifax Water Board in October, 2014. Much was accomplished over the last two years including the development and approval of a revised Cost of Service Manual to incorporate changes to the stormwater section. The changes reflected an administrative and best practice review after implementation of a distinct stormwater charge in July, 2013.

The 2016/17 fiscal year also saw convergence of a strategic initiative for the next generation of meter technology. The NSUARB approved a \$25.4 capital expenditure for the implementation of Advanced Metering Infrastructure [AMI] which will see the replacement or upgrade of over 83,000 customer meters and establish a smart network throughout the service area. The 2017/18 fiscal year will see the advancement of this project which will position the utility for enhanced customer service and operational efficiency.

## **2. EXECUTIVE SUMMARY**

Although the five year business plan is a touchstone for the 2017/18 business plan, it is also influenced by the Integrated Resource Plan (IRP) which is a 30 year framework for the strategic direction of the utility. The IRP projected expenditures of \$2.6 billion (net present value) over a 30 year period commencing in 2013/14 for; asset renewal (\$1,385 million); regulatory compliance (\$598 million); and growth (\$595 million). The 2017/18 fiscal year will see continued investment in these areas all while ensuring a high level of service for the customers of Halifax Water.

The 2017/18 Business Plan provides an overview of the services provided by Halifax Water (HW) and details on the operating and capital budgets to support the delivery of these services. The Business Plan projects a deficit, as indicated in the pro forma income summary below, and reflects the rates approved by the NSUARB in their 2015 Decision. The current rates became effective on April 1, 2016. Although the pro forma income

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summary indicates a loss for the fiscal year, the utility has accumulated an operating surplus over the last two years to defray this deficit position.

<b>Pro Forma Income Summary</b>			
	Actual 2015/16	Approved Budget 2016/17	<b>Proposed Budget 2017/18</b>
Operating Revenues	\$131,716	\$135,675	<b>\$135,587</b>
Operating Expenditures	\$96,243	\$102,425	<b>\$106,241</b>
Operating Profit	\$35,473	\$33,250	<b>\$29,346</b>
Non-Operating Revenues	\$3,370	\$3,291	<b>\$2,787</b>
Non-Operating Expenditures	\$33,961	\$36,386	<b>\$38,882</b>
Net Surplus (Deficit)	\$4,883	\$154	<b>(\$6,750)</b>
<i>*Amounts are stated in \$ Thousands</i>			
<i>Note:</i>			
<i>Consolidated numbers reported above include regulated and unregulated activities of the Urban Core, Satellite and Airport/AeroTech Systems.</i>			

The 2017/18 Operating Budget is prepared on an accrual basis (similar to last year) to provide broader information for decision making and to be reflective of best practice for budgeting. Accrued amounts for 2017/18 include a liability for future employee benefits (pension) as calculated under the International Financial Reporting Standards (IFRS). Accrued amounts for the comparative years are calculated under the Canadian Institute of Chartered Accountants (CICA) Handbook Section 3461. The NSUARB Accounting and Reporting Handbook for Water Utilities is currently used in determining the revenue requirements for rate making purposes. If accrued pension expenses were omitted in 2017/18, there would be a projected net loss on a NSUARB Handbook basis of \$2.4 million. There is sufficient accumulated operating surplus to offset the budgeted operating loss in 2017/18.

As outlined in the table below, operating expenses are budgeted to increase \$3.8 million or 3.7% compared to the 2016/17 Operating Budget. Depreciation expense will increase by \$1.38 million or 6.5%, as will debt servicing by \$2.3 million or 7.3% when compared to the 2016/17 Operating Budget.

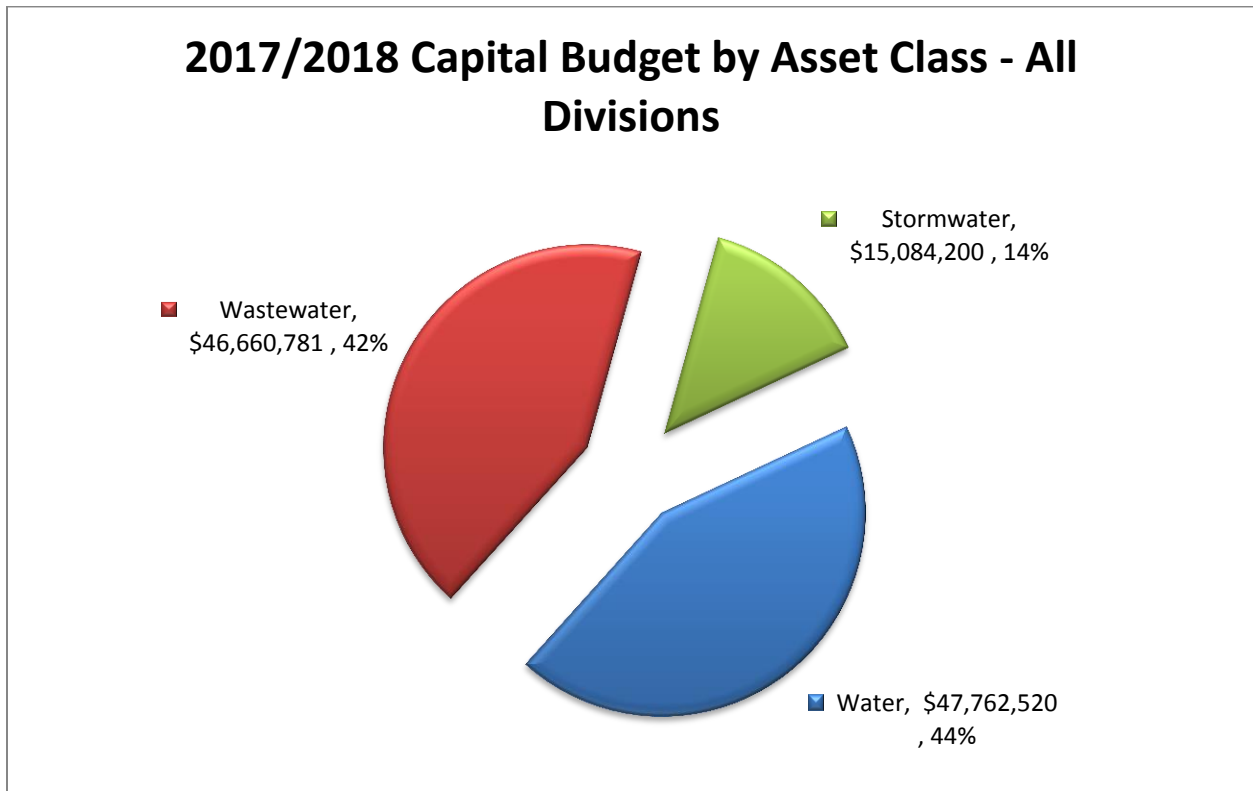
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Year Over Year Changes			
	Actual 2015/16	Approved Budget 2016/17	Proposed Budget 2017/18
Operating Revenues	\$131,716	\$135,675 <i>3.0%</i>	\$135,587 <i>-0.1%</i>
Operating Expenditures	\$96,243	\$102,425 <i>6.4%</i>	\$106,241 <i>3.7%</i>
Non-Operating Revenues	\$3,370	\$3,291 <i>-2.4%</i>	\$2,787 <i>-15.3%</i>
Non-Operating Expenditures	\$33,961	\$36,386 <i>7.1%</i>	\$38,882 <i>6.9%</i>
Depreciation	\$20,909	\$21,158 <i>1.2%</i>	\$22,538 <i>6.5%</i>
Debt Servicing	\$29,403	\$31,723 <i>7.9%</i>	\$34,040 <i>7.3%</i>
Debt Servicing Ratio	<i>22.3%</i>	<i>23.4%</i>	<i>25.1%</i>

*\*Amounts are stated in \$ Thousands*

The utility faces pressures associated with asset renewal, growth, and compliance with regulatory requirements, as described in the IRP. In recognition that these pressures require capital investment, Halifax Water has pursued external funding programs to mitigate impacts to the rate base. To that end, the utility has been successful in obtaining external funding to address capital needs through the federal New Building Canada Fund with formal approval received for the upgrade and expansion of the Aerotech Wastewater Treatment Facility and several water transmission main projects. In partnership with the Halifax Municipality, efforts have also been successful to secure \$31 million in funding from the Clean Water and Wastewater Fund [CWWF], more fully described in this document. The 2017/18 Capital Budget benefits greatly from these infrastructure programs and calls for expenditures of just under \$ 110 million as outlined in the graph below.

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Although a general rate application is not planned for this fiscal year, a stormwater rate application was filed with the NSUARB last fall to reflect the Cost of Service Manual approved by the NSUARB in September, 2016. In relation to the approved Cost of Service Manual, adjustments to the stormwater rate structure are proposed for fair and equitable treatment of all customers. The rate application, amongst other things, propose to implement a tiered rate structure amongst residential customers and bring in a credit system for non-residential customers to promote detention of peak stormwater flow. The rate application, as more fully described in this document, is not seeking to increase revenues but to better match costs to those customers who derive the benefits of service, consistent with the Public Utilities Act. A hearing is scheduled for February 14 to 17, 2017 with an anticipated Decision from the NSUARB in April, 2017.

Other major initiatives envisioned for 2017/18 include the implementation of AMI throughout the service area, implementation of a revised lead service replacement program, consideration of a district energy system with the Cogswell Interchange redevelopment and a renewed focus on source water quality. The latter initiative will benefit from a proposed renewal of our NSERC Industrial Research Chair with Dalhousie University for a five year period commencing April 1, 2017.

### **3. SERVICE OVERVIEW**

#### **3.1 Water Services**

The Water Services Department is responsible for operating and maintaining the municipal water system “from source to tap”. The Water Services Department also provides SCADA (Supervisory Control and Data Acquisition) and process control services for all of Halifax Water. The department is designed to both maintain and operate the water system as a holistic system, with managers assigned accountability for clearly defined parts of the system. The Water Services Department provides the following services:

- **Source Water Protection:** Managing and protecting watershed land, developing and maintaining source water plans, enforcement of Protected Water Area and other relevant source water regulations, source water community relations including working with and developing watershed advisory boards, real property maintenance of source water lands, and forestry management of watershed lands.
- **Water Quality Management:** Water quality planning, water quality monitoring, process support to treatment plants, customer inquiries and investigations, water quality support to capital projects, policy development, research and management of the Halifax Water – Natural Sciences and Engineering Research Council (NSERC) Industrial research chair at Dalhousie University.
- **Water Supply Plant Operations:** Operation and maintenance of 3 large water supply plants (Pockwock, Lake Major and Bennery Lake), 6 small systems, 6 dams, 2 emergency water supplies and 22 chlorine monitoring devices and rechlorination stations.
- **Distribution System Operations:** Operation and maintenance of the water distribution and transmission systems. The system is managed according to three geographic regions with responsibility for over 1500 km of transmission and distribution mains, 8,200 fire hydrants, 85,000 service connections, 134 pressure control/flow metering facilities, 22 pumping stations, 23,000 valves and 15 water storage facilities.
- **Technical Services:** Operation and maintenance of the SCADA system and the process communications network; implementation of the SCADA Master Plan, process control cyber security, instrumentation maintenance, electrical maintenance, maintenance of water pumping stations, and operation and development of the process data warehouse.

Further, embedded within the department, Water Services is responsible for the following major programs.

- **Water Loss Control:** Halifax Water was the first utility in North America to adopt the International Water Association (IWA) methodology for managing leakage in



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the distribution system. Efforts save \$650,000 per year in treatment chemical and electricity costs and have reduced water main breaks by 20%, saving \$500,000 in repair costs annually. The program has won several national awards and Halifax Water staff are in demand to share expertise with industry and other utilities.

- **NSERC-Halifax Water Industrial Research Chair in Water Quality and Treatment:** This program, carried out in partnership with Dalhousie University over the last ten years has realized significant operational savings, improved water quality and influenced Halifax Water policy. The Research Chair has produced 102 peer reviewed research papers in world recognized scientific journals over the last ten years and has allowed Halifax Water to become industry recognized leaders in areas such as lead service line replacement and biofilm control in distribution systems. Several Halifax Water employees were trained as students under the Research Chair. With the approval of the Halifax Water Board, an application is currently under review with NSERC for another five year extension of the Research Chair.
- **Supervisory Control and Data Acquisition (SCADA) Master Plan:** Subsequent to the 2007 merger, Halifax Water found itself with 6 legacy SCADA systems from the pre-existing utilities and regions and dozens of versions of control software licenses. The master plan completed in 2011 set a road map to consistent and standardized equipment and platforms for all services over a 5 year period through 6 major and 22 minor projects.
- **Lead Service Line Replacement Program:** In September 2016, the Halifax Water Board approved an initiative which will see all lead service lines replaced by 2050. This program is discussed in more detail in section 5.8 and is being developed and implemented by the Water Quality division in the Water Services Department.

### **3.2 Wastewater/Stormwater Services**

The Wastewater and Stormwater Services Department is responsible for operating and maintaining municipal systems from “drains back to the source again”. In this regard, the Wastewater and Stormwater Services Department has a mandate to protect the environment while providing world class collection and treatment services to its customers. The department also provides corporate Fleet and Building Services. These essential services are delivered through 6 managers who are responsible for both stormwater and wastewater activities in their regions. The supervisors and the field crews carry out both wastewater and stormwater related duties. The department is also supported by an Operations Engineer position.

### **3.2.1 Wastewater Services**

The Wastewater Services strives to provide uninterrupted delivery of the following services:

- **Wastewater Treatment Plant Operations:** Operation and maintenance of 16 wastewater treatment facilities (WWTFs) and associated infrastructure, regulatory reporting, and implementing and coordinating capital upgrades with other Halifax Water departments. As per new federal regulations; 2 plants are classified as very large, 3 are large, 2 are medium and 9 are small capacity.
- **Biosolids Processing Facility (BPF):** Liquid transport, dewatering and processing of sludge, operation and maintenance of various dewatering equipment at WWTFs, administering trucking contracts for dewatered biosolids and BPF operations contract, and processing of biosolids from on-site septic systems. This facility, located at the Aerotech Industrial Park, produces a soil amendment for beneficial use in agriculture. Staff from Treatment Plant Operations carry out these related activities.
- **Collection System Operations:** Operation, repair and maintenance of the wastewater collection and trunk sewer system. The system is managed according to three geographic regions with responsibility for over 1700 km of collection pipes, 172 Pump Stations, 21 Combined Sewer Overflow facilities and 85,000 service connections.
- **Fleet and Building Maintenance Services:** Maintenance and repair of approximately 200 vehicles ranging from smaller utility vehicles to large excavation equipment, replacement of vehicles on a life cycle costing basis, and records management. This section of the department is also responsible for maintenance and physical security of corporate buildings and any other logistical support required for efficient operation of the department.

### **3.2.2 Stormwater Services**

The Stormwater Services is responsible for operation and maintenance of stormwater infrastructure within the public right of way or within easements. This service has undergone significant changes over the past 2 years and continues to progress to achieve a higher level of service.

- **Collection System Operations:** Operation, repair and maintenance of the stormwater collection and trunk sewer system. The system is managed by shared crews with Wastewater Services within the three geographic regions with responsibility for over 850 km of stormwater collection pipes, 28 stormwater

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retention facilities and over 600 km of ditches and associated cross culverts and driveway culverts.

- **Service Review:** With the creation of the Stormwater Engineer position, resources are allocated to drainage investigations, stormwater billing exemption requests, and operations support. Drainage investigations may be triggered by a customer inquiry on private property or an operational issue on an HRWC owned infrastructure. The Stormwater Engineer will review drainage issues and render a position which may involve an operational fix or a capital improvement if required. Complaints stemming from stormwater billing will be vetted through the Stormwater Engineer and a decision will be provided to the Customer. As per the direction of the NSUARB, HRWC is hiring a Dispute Resolution Officer (DRO) to independently review appeals and render an independent Decision on any decisions provided by staff.

### **3.3 Engineering and Information Services**

The Engineering & Information Services (E&IS) Department is responsible for the provision of engineering and technical services relating to the planning, design, construction, and maintenance of water, wastewater and stormwater infrastructure and related asset information. E&IS also provide and support the hardware, software and related services for the electronic business applications required to support the utility. All E&IS staff work out of 450 Cowie Hill Road.

The E&IS Department has four core areas of responsibility and 7 specific sections delivering programs.

- ASSET MANAGEMENT
- INFRASTRUCTURE
  - Water
  - Wastewater/Stormwater
  - Wastewater Treatment Facilities
- ENERGY EFFICIENCY
- INFORMATION MANAGEMENT
  - Engineering Information
  - Information Services

The **Asset Management** section focuses on the development of the Asset Management program (including the overall strategy, inventories, condition and performance assessments), and the development and delivery of annual Asset management Plans (AMP). The section is also responsible for modelling and flow monitoring, long term infrastructure

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master planning (including implementation of the Integrated Resource Plan (IRP)), and the development of the 5 Year and 1 Year Capital Budget.

The **Infrastructure** sections are responsible for the design, construction and project management for water, wastewater and stormwater capital projects. These three sections also provide support for capital project prioritization, master planning and asset management relating to the core infrastructure.

The **Energy Efficiency** section is responsible for the provision of engineering services related to energy management and energy efficiency of water, wastewater and stormwater infrastructure.

The **Engineering Information** section is responsible for the corporate Geographic Information System (GIS) including the maintenance and distribution of all record information. The section is also responsible for on-going GIS development including both desktop and mobile GIS applications. This section also supports capital projects and other initiatives through Computer Aided Drafting (CAD) and map production.

The **Information Services** section provides administration of services relating to network resources (storage, servers, printers, etc.), users, access control and network security, server hardware and operating systems. All computer equipment is managed by the IS section. This includes desktops, laptops, monitors, printers and servers. The IS section is the first line of support for all IT related problems or requirements. Corporate desktop software is administered by the IS section. Provides business analysis and project management as required for IT projects.

### **3.4 Regulatory Services**

The Regulatory Services Department has been recently restructured and completed its first year of delivering services related to environmental engineering; development approvals; safety and security; and regulatory compliance. In the spring of 2016, a Stormwater Engineer was added to the group for focused approach on managing complaints and improved response to drainage investigations.

The **Environmental Engineering Group** has been focusing on finalizing Standard Operating Practices (SOPs) to better define the daily operations and tasks of the Environmental/Pollution Prevention Officers. The SOPs will focus on cross connection investigations, illegal stormwater connections, and ditch infilling. Environmental Engineering will be evaluating software to assist in tracking investigations and appurtenances (i.e. grease traps) installed in commercial/industrial customers' facilities. The group has been actively inspecting properties associated with connections to the deep stormwater system recently constructed on Cow Bay Road and will continue to finalize the last 10%. Efforts to support the Wet Weather Management Program will continue with ongoing investigations in the Leiblin Park, Springfield Lake and Uplands Park area.

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The **Development Approvals Group** continues to manage permit applications for service extensions and connections to HRWC's existing infrastructure, inclusive of the Cross Connection Control Program. The group recently developed a tracking system for permits and subdivisions, and will be a position to provide statistics throughout the coming year. The management of existing and new Capital Cost Contribution (CCC) charges for Master Plan communities remains a major component of the division's responsibilities. The CCC for Bedford West will be refiled with the NSUARB to reflect the infrastructure updates and staff will provide support for the preliminary infrastructure review for the Port Wallace Master Plan area, led by HRM.

The Regional Development Charge (RDC) was approved three years ago and Stakeholder consultations have commenced and a work plan has been developed to prepare for the five year review. The RDC update will incorporate the results from the West Region Wastewater Infrastructure Plan, anticipated to be completed spring 2017. The Local Wastewater Infrastructure Capacity Study for the Regional Centre on behalf of Halifax Municipality was managed by the group and has been finalized. The Municipality will be rolling out the outcomes to the community and developers. The Approvals group will provide technical support as Halifax develops an implementation plan for the installation and funding of the recommended infrastructure upgrades.

The Development Approvals Group also incorporates the Land Management program which supports Capital Projects and Operations in securing easements, land purchases for infrastructure and land leases.

The **Safety and Security Group** provides support for the entire organization with respect to the safety training program, including documentation of safety training requirements to ensure employees have the appropriate training to safely conduct their daily activities and manage risk to the utility. The safety training matrix for all positions within HRWC was updated and Human Resources is utilizing it to ensure all staff have the appropriate training and it remains current.

The group has sponsored the Workers Compensation Board's (WCB) workplace assessment program. The WCB Program involved the establishment of a Team of Doers to review the survey completed by staff and develop strategies to promote safety awareness and enhance the overall safety culture of HRWC.

The Safety and Security intranet site has been upgraded and electronic fillable forms have been created for the various forms within the OHS Manual. Based on feedback from users, enhancements are currently underway and should be completed in 2017. The enhancements will make the forms more user-friendly and allow for improved tracking and reporting.

The Safety and Security division is also responsible for the development and update of the corporate Emergency Response Plan including emergency response training. Halifax Water continues to participate in Public Safety Canada's Regional Resilience Assessment

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Program for treatment facilities. Facilities are evaluated using the Critical Infrastructure Resilience Tool, identifying areas where security and protection of critical assets can be improved or enhanced.

The **Regulatory Compliance Group** conducts sampling of the water treatment and distribution systems for bacteria and residual chlorine, ensuring compliance with Canadian Drinking Water Guidelines and Operational permits issued by Nova Scotia Environment (NSE). Similarly, sampling is completed for wastewater effluent parameters for compliance with permits issued by NSE, consistent with new federal regulations. The group is also tasked with compiling and submitting reports associated with the sampling results to NSE. Regulatory Compliance also ensures that operating permits are renewed prior to their expiry. The group continues to support Engineering & IS, and Wastewater Operations staff on changes to regulatory permits including the Wastewater System Effluent Regulations (WSER) and assists in developing an implementation plan for required upgrades.

The **Environmental Management System (EMS)** has been expanded to include wastewater and last year saw the ISO 14001 certification bestowed upon the Herring Cove WWTF. The ISO standard has been upgraded and the focus this year will be ensuring documents for the water facilities, Pockwock, Lake Major and Bennery, are updated to reflect the latest standard. Once this is completed, it is proposed to commence the certification process for the Dartmouth WWTF in January 2018.

### **3.5 Corporate Services**

Corporate Services consists of 6 divisions, with service to internal and external customers through Finance, Accounting, Procurement, Human Resources, Customer Service, and Metering and Billing.

The **Finance Group** is responsible for development of operating budgets, funding plans for the capital budget, rate applications and financial modeling for business plans. This group assists Engineering in the preparation of capital budgets and confirms availability of funding sources. The group is responsible for forecasting revenues and expenditures, including associated trend analysis, responsible for pension plan administration, internal control testing, and quality assurance activities around financial transactions including payroll.

The **Accounting Group** is responsible for timely and accurate financial reporting, financial accounting, financial statements, revenue and cash flow, development and implementation of accounting procedures and internal controls, fixed asset accounting, financial analyses and annual audit.

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**Procurement** directs the planning and delivery of Procurement services to the organization ensuring compliance with corporate policies and Provincial legislation. This group develops and implements monitoring and reporting of systems, programs, procedures for inventory and procurement to support acquisition of goods and services to enable delivery of the business plan, operating and capital budget objectives.

**Human Resources** is responsible for the effective delivery of all Human Resource initiatives including; effective workforce planning, organizational change and development, recruitment functions, disability management, health and wellness initiatives, labour/employee relations, compensation and benefit functions, pension administration, and employment equity.

**Customer Services** is responsible for customer service delivery to external and internal customers through the Customer Care Centre, and manages all customer contacts, establishes corporate customer service standards, goals and objectives, and coordinates business processes in the area of customer service with a focus on service and process improvement.

**Metering and Billing** is responsible for end to end functions of meter installation, maintenance, reading, sampling, testing, establishment of standards, and billing customers in a timely and accurate manner.

The most significant objectives for Corporate Services in the 2017/18 year are:

- Implementation of the Advanced Meter Infrastructure (AMI) project. This item is discussed in greater detail in section 5.2. The project was approved by the NSUARB on October 6, 2016 and the first AMI meters will be installed in 2017.
- Continued enhancement of Customer Service with improvements to the website, development of a Customer Portal in conjunction with the AMI project, and investigation of new telephony systems. With all water, wastewater, and stormwater directed to the Customer Care Centre in 2016/17, the utility is well positioned to take advantage of information received through AMI and the ongoing maintenance management system to track Operations activities. A corporate communications strategy is being developed that will facilitate website improvements and a new phone number H2O-WATR is proposed to make it easier for customers to access customer service.
- Implementing the Decision from the February 2016 Stormwater Rate Hearing, reflecting the Cost of Service model and rate design approach approved by the NSUARB in 2016. This item is discussed in detail in Section 5.8 Stormwater Cost of Service.
- Implementing changes to promote corporate productivity, safety, employee engagement and cost effectiveness. Some examples of initiatives that support this include providing support and training for managers and supervisors to manage

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performance and attendance, continuing civility and respect in the workplace training, introducing new health and wellness programs with a focus on mental health, and improving the work force planning and staffing/hiring processes.

- Completing a new Five Year Business Plan and updated long range financial modeling to support the next Water and Wastewater Rate Application, future update of the Integrated Resource Plan, and revised Regional Development Charge.
- Completing a consolidation of the Pension Plan text and Amendments to reflect changes to the NS Pension & Benefit Act which came into effect June 1, 2015. There will also be on-going work on governance, policies and administrative processes for the HRWC Employees' Pension Plan with a view to ensuring they reflect best practice and current standards.
- Improving communication and information available to employees on Pension and other Benefits through development of a pension plan website, and refreshing the HRWC Intranet site.

## **4. BUDGET SUMMARY**

### **4.1 Capital**

Halifax Water's 2012 IRP identified a 30 year capital investment plan valued at \$2.6 Billion (net present value). As part of the utility's overall mission, the capital budget program focuses on three main strategic drivers; asset renewal; regulatory compliance; and growth. The capital program helps ensure that Halifax Water continues to provide world class services in a cost effective and efficient manner with a focus on long term sustainability.

The Capital Budget includes an annual 1 year and 5 year capital plan. Capital projects are defined as newly acquired or constructed item with a value greater than \$5000 and a life expectancy beyond one year. The Capital Budget document includes four general asset categories: Water, Wastewater, Stormwater and Corporate Projects.

The detailed 1 year and 5 year Capital Budget documents are attached as Appendix C.

The summary totals for the four asset classes for the 1 Year and 5 Year capital budget are as follows:

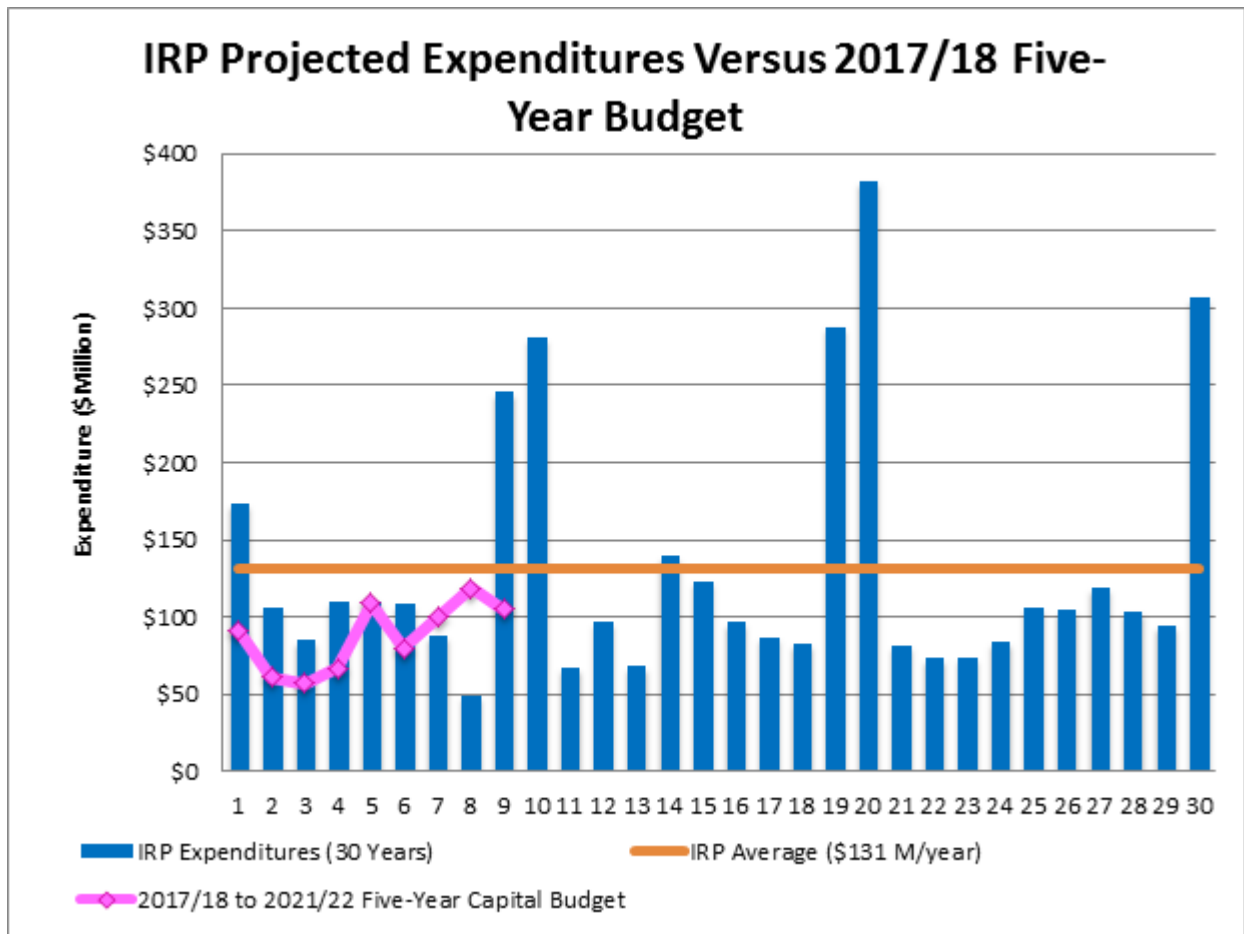


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Asset Class	Year 1 2017/2018	Year 1 - 5 2017/2018 - 2021/2022
Water	\$47,762,520	\$158,635,000
Wastewater	\$46,660,781	\$293,640,000
Stormwater	<u>\$15,084,200</u>	<u>\$ 61,180,000</u>
<b>TOTAL</b>	<b>\$ 109,507,501</b>	<b>\$ 511,855,000</b>

The capital program balances near-term needs with long-term investments across all asset classes.

The following chart shows the current proposed 5 year capital expenditure plotted against the IRP capital expenditure recommendation. The chart indicates a continued general increase in capital expenditures towards the target level.



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The following provides highlights of the 2017/18 Capital Budget.

**Water:** Major water capital projects include:

- Distribution System Main Renewal Program in conjunction with HRM Streets program: \$1,900,000
- Bedford Connector Transmission Main renewal – with **New Building Canada** Federal/Provincial Funding: \$4,569,717
- Peninsula Low South Transmission main rehabilitation – with **Clean Water & Wastewater Fund (CWWF)** Federal/Provincial funding: \$7,505,000.
- Lake Major Dam Replacement – with **CWWF** funding: \$7,089,391
- J.D. Kline Water Supply Plant Filter Media & Underdrain Replacement – with **CWWF** funding: \$4,447,060

**Wastewater:** Major wastewater capital projects include:

- Collection System Renewal Projects integrated with HRM Streets Program: \$1,000,000
- Sewer Lateral Replacement Program: \$1,900,000
- Northwest Arm Sewer Rehabilitation – with **CWWF** funding: \$19,493,168
- Leiblin Pump Station Elimination: \$3,495,000

**Stormwater:** Major Stormwater capital projects include:

- Stormwater System Renewal Projects Integrated with HRM Streets Program: \$1,060,000
- Culvert Renewals: \$2,736,000
- Sullivan’s Pond Storm Sewer Replacement – with **CWWF** funding: \$8,632,000
- Ellenvale Run Retaining Wall System Replacement Phase 1: \$1,535,000

**Corporate Projects:** Major Corporate Projects include:

- GIS Data Program: \$1,000,000
- Computer Network and Hardware Upgrades: \$510,000
- Computerized Maintenance Management System: \$2,000,000
- Corporate Fleet: \$1,905,000
- AMI Meter System Upgrade: \$11,685,000
- Asset Management Program: \$600,000

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The Capital Budget is funded from a variety of sources including capital asset depreciation accounts, debt, reserves, capital cost contributions and external cost sharing.

Capital funding sources:

- Depreciation (funded within the rates)
- Debt
- Development charge reserves
- External cost sharing

The Debt Strategy as approved by the Halifax Water Board, and accepted by the NSUARB, provides a funding strategy that is fair, equitable and cost effective. The debt strategy sets limits for the debt service ratio (DSR) at 35% and a target debt to equity ratio of 40%/60%.

The funds for the overall Capital Budget will be generated from a combination of sources, as detailed below. The planned utilization of debt is consistent with the Debt Strategy. HRWC will manage risk around projected Regional Development Charges through reprioritization of growth projects or additional utilization of debt if required.

**2017/18 Capital Budget Funding Sources**

Water:	Depreciation	\$ 9,631,878
	Debt	\$24,874,122
	RDC	\$ 0
	External Funding CWWF	\$11,849,853
	External Funding New Building Canada	\$ 1,406,667
	Capital Cost Contributions	\$ 0
	Energy Rebates	\$ 0
	<b>TOTAL</b>	<b><u>\$ 47,762,520</u></b>
Wastewater:	Depreciation	\$14,035,907
	Debt	\$17,617,093
	RDC	\$ 610,000
	External Funding Build Canada	\$12,257,781
	Capital Cost Contributions	\$ 540,000
	DES Debt	\$ 1,600,000
	<b>TOTAL</b>	<b><u>\$ 46,660,781</u></b>

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Stormwater:	Depreciation	\$ 1,492,323
	Capital from Operating	\$ 1,000,000
	External Funding CWWF	\$ 6,321,893
	Debt	\$ 6,269,984
	<b>TOTAL</b>	<b><u>\$15,084,200</u></b>

**Total Capital Funding:** **\$ 109,507,501**

## 4.2 Operations

The operating budget prepared for 2017/18 is based on year three of the Five Year Business Plan approved by the HRWC Board in October 2014. There will be no rate increases for water, wastewater and stormwater in 2017/18. There will be some adjustments to stormwater rates however, to reflect a NSUARB Decision expected early in 2017/18. The operating budget shows a loss of \$6.8 million on an accrual basis, and \$2.5 million on a cash basis. The cash basis reflects the requirements of the NSUARB Accounting and Reporting Handbook for Water Utilities which is used for rate making purposes. HRWC's operations have resulted in surpluses in recent fiscal years and HRWC is planning to delay increasing rates by utilizing accumulated operating surplus from previous years.

Some of the primary operating budget drivers and assumptions are:

### REVENUES

Total revenues are projected to be \$600,000 lower than last year, based on the following assumptions:

- Consumption will continue to decline related to water and wastewater. Consumption is projected to decrease 3.0%. The decrease in 2016/17 was less than this; however, it was an unusually dry summer. The 2017/18 budget assumes a return to normal weather conditions.
- 700 or roughly 0.8% new customer connections are projected based on the 4 year historic average (2011-2014).
- No increases for fees for un-regulated activities such as septage tipping, treatment of effluent from airplanes, and leachate are planned in 2017/18, as rates were adjusted in 2016/17.

**Alternative Revenue** - Revenues from unregulated business activities are increasingly important to mitigate future revenue requirements from rates. Unregulated revenues help to pay for some expenses which would otherwise be funded by rate-regulated activities, and are also used to fund unregulated expenses. Halifax Water has had success generating alternative revenues aside from user fees on both the regulated and unregulated side of the

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business. On the regulated side, Halifax Water has entered into agreements for the sale of land deemed to be no longer used or useful for utility purposes. With NSUARB approval, revenue from land sales can be used as a source of funds for capital projects related to the delivery of water services in recognition that the land was originally purchased with water-rate base funds. As much of the surplus land has been sold, this will not be a significant source of funds in the future.

Notwithstanding limitations for generating revenue from the regulated side of the business, there has and will continue to be opportunities from the unregulated side. Currently, Halifax Water generates revenue from third-party contracts for water and wastewater treatment operations.

Halifax Water also generates revenue for the lease of land for telecommunications facilities throughout the municipality, in recognition that reservoir sites are located on higher elevations that afford more direct line of site for telemetry. In conjunction with these leases, Halifax Water installs telecommunications equipment on these facilities for its own needs for the ultimate benefit of the water, wastewater, and stormwater rate base. As Halifax Water continues to expand the Supervisory Control and Data Acquisition (SCADA) system in accordance with its master plan, further opportunities for leases and hosting of Halifax Water equipment will be realized.

In recognition of Halifax Water's expertise in utility management and water-loss control, the utility offers a wide range of related services to generate revenue. These range from leak-detection services for Halifax Water customers and other municipalities to consulting services under contract to First Nations and municipalities. There is great potential to expand these services to generate additional revenue and, at the same time, provide professional development opportunities for staff.

Halifax Water also recognizes that its assets can be leveraged to bring in revenue from energy generation. This includes projects to generate electricity from wind turbines on watershed lands and distribution control chambers where water pressure is reduced. Both of these opportunities have been developed for interface with the Nova Scotia Department of Energy's Community Feed-In Tariff (COMFIT) program, which provides preferential rates to feed electricity into the Nova Scotia Power Incorporated (NSPI) distribution grid. Through efforts of Halifax Water staff, a Ministerial Directive was issued through the Department of Energy (DOE) in 2012 to approve the recovery of renewable energy within water distribution systems at "run-of-the-river" rates. To that end, Halifax Water has received two COMFIT certificates for the installation of hydrokinetic turbines in the Orchard and Lucasville control chambers. The Orchard installation went into commercial operation in October, 2014. The projected net revenues are in the current business plan. These projects are structured to ensure they are compliant with the Public Utilities Act with the recognition that regulated activities cannot subsidize the unregulated side of the business.

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In partnership with Halifax municipality, Halifax Water has also studied the potential for a green thermal utility whereby energy can be extracted from the heat in sewage and delivered through a local pipe distribution system in the vicinity of treatment facilities. The planned redevelopment of the Cogswell interchange in Halifax will provide an opportunity to advance this concept since the Halifax WWTF is adjacent to the Cogswell interchange. This project is currently being pursued as a regulated activity subject to the approval of the NSUARB. In an effort to be open and transparent to stakeholders including the NSUARB, Halifax Water discloses revenue and expenses associated with unregulated business separately within the financial statements and budgets. Net gains from these activities ultimately go to the benefit of the rate base as they are closed out to accumulated operating surplus/(deficit) each fiscal year.

Unregulated revenues are projected to be \$1.75 million in 2017/18, an increase of \$150 k or 9.3% from the budget of \$1.6 million in 2016/17. In a span of six years, unregulated revenues have almost doubled.

**EXPENSES**

Halifax Water's Operating Budget is shown on an accrual basis for 2017/18 to provide better information for decision making and be reflective of best practice for budgeting. There is an accrued amount regarding the liability for future employee benefits (pension) as calculated under IFRS that, for rate making purposes, is not currently included in the revenue requirements. There are also differences between the treatment of debt servicing expense and calculation of depreciation.

The utility faces pressure associated with growth, asset renewal, and compliance with regulatory requirements, as described in the Integrated Resource Plan. Halifax Water has taken significant steps to reduce risks in these areas with the development of the regional development charge, an asset management framework and capital projects to upgrade wastewater treatment facilities.

The largest components of Halifax Water's consolidated operating budgets are salaries & benefits, electricity, debt servicing, depreciation, and chemical costs.

**Salaries and Benefits** - The budget for 2017/18 includes filling 20 full-time equivalent positions (FTEs), most of which are new positions, but also include previously approved positions that were vacant in 2016/17. Additionally, two 3-year term positions are being filled to support the AMI project.

The annual increase included in the operating budget for existing employees is 2% with an additional 0.5% to allow for the impact of step increases within salary bands, reclassification of positions, and increases in benefits.

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**Electricity** – Budgets were established based on an assumption of electricity, fuel, oil and natural gas rate increases in each specific year. The impact of these increases is expected to be partially offset by the formal Energy Management Program.

- Electricity – 2%
- Furnace Oil – 5%
- Natural Gas – 5%

**Debt Financing** – Debt payments are budgeted to support the new debentures planned for the 2017/18 additions to utility plant in service. The amount and timing of the increases will be determined by the completion of the projects and the financing rates and options available. It is estimated total debt servicing will increase to \$34 million; a 7% increase from the 2016/17 budget. The capital financing strategy is designed to maintain a debt service ratio of 35% or less; and to use a mixture of infrastructure funding, development related charges (reserves), depreciation; and debt.

**Depreciation** - As Halifax Water's assets and future capital budgets increase so do depreciation expenses. Depreciation is an integral funding source to support rehabilitation of the existing infrastructure as well as new infrastructure and upgrades to meet future requirements related to servicing demands and changing environmental regulations. Depreciation is projected to increase to \$22.5 million in 2017/18 from \$21.2 million in the 2016/17 budget, which is an increase of 6%.

**Dividend to the Halifax municipality** - The water dividend agreement was renewed in September, 2014 for a 5 year term (April 1, 2015 - March, 2020). The dividend is calculated as 1.56% of the water system rate base and is projected to grow from \$4.7 million in 2016/17 to \$4.8 million in 2017/18.

**Chemical Costs** – Chemicals are tendered annually in January for optimal pricing. Chemical cost increases of 5% are anticipated for next year.

On a consolidated basis, operating expenses are projected to increase by \$3.9 million (4%) to \$106 million from \$102 million. Water Service expenses are projected to increase by \$2.6 million, Wastewater Service by \$1 million, and Stormwater Services by \$400,000. Many categories of expense are increasing at a rate greater than CPI, particularly depreciation which is 18% of total operating expenses and is increasing at 6.5 % as a result of increasing capital investments.

Operating revenues are projected to decrease by \$88,000, or 0.1% to \$135.6 million. Non-Operating revenues are projected to decrease by \$500,000, to \$2.7 million due to decreased investment income, as Halifax Water will have less cash available for investment. Non-operating expenses are projected to increase by \$2.5 million (7%) to \$38.8 million due to increases in debt-servicing driven by the capital program.

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**Pro-Forma Income Summary [NSUARB Accounting Format]**

Pro Forma Income Summary			
	Actual 2015/16	Approved Budget 2016/17	Proposed Budget 2017/18
Operating Revenues	\$131,716	\$135,675	<b>\$135,587</b>
Operating Expenditures	\$96,243	\$102,425	<b>\$106,241</b>
Operating Profit	\$35,473	\$33,250	<b>\$29,346</b>
Non-Operating Revenues	\$3,370	\$3,291	<b>\$2,787</b>
Non-Operating Expenditures	\$33,961	\$36,386	<b>\$38,882</b>
Net Surplus (Deficit)	\$4,883	\$154	<b>(\$6,750)</b>
<i>Note:</i>			
<i>Consolidated numbers reported above include regulated and unregulated activities of the Urban Core, Satellite and Airport/AeroTech Systems.</i>			

As of March 31, 2016, Halifax Water had an accumulated operating surplus of \$7.8 million. The projected operating surplus at March 31, 2017 is \$7.98 million (based on the October 2016 projections). It is important to note that favourable operating results are projected for the 2016/17 fiscal year and would increase the surplus at March 31, 2017. Halifax Water is targeting maintaining an accumulated operating surplus of 3% of expenses (operating and non-operating) to mitigate risk. Accumulated operating surplus can also be used to fund future additions to utility plant in service. Based on the financial position of the utility at March 31, 2016 and the proposed operating budget for 2017/18 the accumulated operating surplus would be approximately 1% of total expenses; however it is likely the year-end surplus from 2016/17 will increase this.



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Halifax Regional Water Commission						
Operating Surplus (Deficit)						
					Aerotech	
	Total	Water	Wastewater	Stormwater	Water	Wastewater
<b>2015/16 Fiscal Year</b>						
Surplus (Deficit) per Audited Financial Statements	\$4,883,000	\$1,130,000	\$1,633,000	\$2,120,000		
Year end balance March 31, 2016	<b>\$7,830,629</b>	\$1,339,022	\$8,150,785	(\$188,554)	(\$675,249)	(\$795,375)
<b>2016/17 Fiscal Year</b>						
Budgeted Surplus (Deficit) for 2016/17	\$154,000	\$995,000	(\$2,135,000)	\$1,294,000		
Projected Year end balance March 31, 2017	<b>\$7,984,629</b>	\$2,334,022	\$6,015,785	\$1,105,446	(\$675,249)	(\$795,375)

Halifax Water has an efficient capital structure which has been reviewed and accepted by the NSUARB and was developed based on the policies of other utilities, its longer-term capital needs, consideration of fairness to present and future ratepayers. Utilization of debt is a key component of the capital financing structure. Debt impacts the operating budget and, therefore, the future rate requirements in several ways:

1. Increased debt payments need to be accommodated through rates.
2. Increased depreciation as the capital program grows needs to be accommodated through rates.
3. Operating costs of new capital needs to be accommodated through rates.
4. Capital requirements not funded by debt will increase the requirement of capital from operating funding through rates.

Different financing alternatives were considered, taking into account rate stability and affordability, Halifax Water long term financial sustainability, and intergenerational equity. The debt strategy approved for Halifax Water concludes that appropriate ratios for Halifax Water to utilize are:

1. Maximum Debt Service Ratio of 35%
2. Target Debt/Equity Ratio of 40%/60%

In essence, the two targets serve as a framework for Halifax Water's utilization of debt. Long-term debt is projected to increase from \$240.1 million at March 31, 2016, to \$271.7 by March 31, 2018. It is estimated total debt servicing will increase from \$31.7 million in 2016/17 to \$34.0 million in 2017/18, and the debt service ratio will increase from 23.4% to 25.1%.

Halifax Water has a goal to keep rates for combined services below 2% of median household income, well below the rate affordability threshold recommended in several industry best practice studies. The cost of annual combined services for an average household is projected to be approximately 0.92% of median household income in 2017/18.

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Notwithstanding the rate position with regard to best practice, Halifax Water will be completing a review of rate affordability and support to low income customers by the end of 2016/17. This information will be further refined in 2017/18 and used as information in the next general water and wastewater rate application. Although Halifax Water considers rate affordability and has a rate smoothing strategy, some households on low income may still experience affordability issues. In recognition of the financial burden on households with low income, Halifax Water introduced the Help to Others (H2O) program on April 1, 2011 to mitigate the impact of rising water bills. The H2O program provides dedicated funding for low income households to offset water bills, administered through the Salvation Army, similar to other heating fuel or electricity bill assistance programs. Funds for the program are derived from unregulated activities of the utility with annual base funding of \$35,000 and additional utility funds to match employee donations.

### **4.3 Cost Containment**

Halifax Water reports semi-annually to the HRWC Board, and annually to the NSUARB the results of cost containment activities. The next cost containment report will be filed with the NSUARB by June 30, 2017. Halifax Water achieved cost containment savings of \$1.7 million in 2014/15, \$1.2 million in 2015/16. Some of these are on-going, and some are one time in nature. Halifax Water continues to develop a cost containment culture. As salaries and benefits are the largest element in the operating budget, the most significant opportunity identified in 2017/18 is to improve workforce planning and the staffing process. Another area of opportunity is focusing on productivity through enhanced business processes and technology, performance management, and improving time and attendance tracking.

## **5. STRATEGIC INITIATIVES**

### **5.1 Customer Service Enhancements**

The 2016 Customer Service (Quality of Service) Survey indicated that Halifax Water continues to perform admirably in with most respondents offering positive ratings about the service. Many initiatives are underway that ultimately will help us continue to enhance service to customers.

**Dispute Resolution** – The process to escalate customer issues and resolve them is changing in 2017/18, to reflect the addition of an independent Dispute Resolution Officer. As part of its on-going commitment to best-in-class customer service, Halifax Water, with the approval of the NSUARB, has established the position of Dispute Resolution Officer, a part-time independent mediator who will investigate and adjudicate service or billing complaints from customers who wish to pursue grievances beyond Halifax Water's customer service channels.

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The Dispute Resolution Officer will analyze the details and merits of customer complaints and concerns, as well as the position of Halifax Water, consult and interpret relevant regulations and standards, determine appropriate outcomes based upon an impartial examination of the issues, and provide clear and concise explanations of the decisions rendered.

**Customer Care Centre** – This year will see continued enhancement of customer service with improvements to the website, development of a Customer Portal in conjunction with the AMI project, and investigation of new telephony systems. With all water, wastewater, and stormwater calls directed to the Customer Care Centre in 2016/17, the utility is well positioned to take advantage of information received through AMI and the ongoing maintenance management system to track Operations activities. A corporate communications strategy is being developed that will facilitate website improvements and a new phone number H2O-WATR is proposed in 2017/18 to make it easier for customers to access customer service.

**Stormwater Education** - HRWC has been working on communications and education around stormwater, and will continue to work on this in 2017/18. A stormwater video was developed that explains what stormwater service is, how a customer receives it, and how they are billed. The video, along with a portal for customers to get some information about their property and stormwater service, was launched on October 31, 2016. At the same time, HRWC also prepared six static sketches showing typical configurations of how properties receive stormwater service. Stormwater Operations and Regulatory Services staff are now leaving “door-hangers” at properties when they visit, so customers know Halifax Water personnel visited their property and what follow up may occur. Also, there has been a lot more active tweeting of photos of stormwater work when maintenance and culvert installs are being done.

The most significant initiative underway that will enhance Customer Service is the AMI project, which is discussed separately in Section 5.3

Halifax Water is also participating on the municipality’s Corporate Customer Service Steering Committee to ensure the customer service approaches are aligned where possible.

## **5.2 Wastewater Regulatory Compliance**

Nova Scotia Environment operating approvals and the WSER set the parameters for regulatory compliance of various Halifax Water wastewater facilities. All Halifax Water facilities are currently compliant with WSER limits of discharge (i.e., 25 mg/L of BOD and 25 mg/L of Total Suspended Solids) with transitional authorizations for Halifax and Dartmouth WWTFs which have to fully compliant with WSER limits by 2040. In 2017-18, Halifax Water will also explore collaboration opportunities with Dalhousie University to conduct wastewater research to optimize treatment operations and at the same time explore leading edge solutions for upgrades of the facilities for full compliance with WSER regulations by 2040.

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Regulatory compliance of wastewater collection and treatment systems is the key focus area for HW. The Wastewater Infrastructure plans that are underway within HW lay out the framework for long term sustainability and compliance with all applicable regulations. The plant optimization initiatives are an ongoing effort that attempt to keep the WWTFs in compliance until they are upgraded or replaced. Such efforts have shown good results for Wellington, Frame, Aerotech, and Beechville-Lakeside WWTFs. These optimization efforts, in 2017-18, will focus on Dartmouth, Mill Cove and Beechville-Lakeside WWTFs. The optimization activities also provide valuable input to the overall Regional Wastewater Functional Plan and capital budgets to optimize investments.

### **5.3 Advanced Metering Infrastructure**

Halifax Water began looking at the feasibility of Advanced Metering Infrastructure (AMI) in 2012. AMI is a system whereby, in lieu of meter readers walking routes, or driving routes to read meters with radio devices, a fixed network of telemetry devices is established over the service area to read meters on a much more frequent basis (typically hourly).

On October 6, 2016, the NSUARB approved a \$25.4 million dollar multi-year project to complete the AMI project. This is a significant project that will touch all customers and will change how the utility provides service. The Decision to approve the AMI Project, also included some changes to Halifax Water's regulations to enable AMI. Also in 2016, contracts were successfully negotiated with two vendors for three AMI components [network technology, supply of meters, and installation of meters]. Itron was selected for the network technology component with Neptune Technologies selected for the supply and installation of meters. The project was formally launched in November 2016.

Up until the spring of 2017, AMI activity will consist of system design, software configuration, and development of business process to operate with the AMI system. In late spring 2016, Halifax Water will install approximately 300 AMI enabled meters in customers' homes as a pilot in the Beaverbank area. This pilot will enable refining of meter reading and billing processes prior to the larger deployment.

Beginning in the summer of 2017, Halifax Water will begin the deployment of AMI devices to all 83,000 customer premises. This will take place on an area by area basis until the fall of 2019. The AMI project is scheduled to be complete by the end of the 2019/20 fiscal year.

In addition to streamlining the meter reading process and reducing its cost, AMI promises many features that will improve the level of service Halifax Water can offer its customers. These include:

- The ability to offer monthly billing to residential and small commercial customers thus making it easier to for customers to manage cash flow and automated

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payments. Large institutional, commercial and industrial customers are currently billed on a monthly basis.

- Billing errors will be reduced and estimated meter readings will be eliminated.
- Halifax Water will be able to alert customers to high consumption due to things like plumbing leaks, almost as they happen, reducing billing disputes and high bill amounts.
- Customers will have the ability, through a web portal, to manage their water consumption in real time and see the effect of any conservation measures they take.

AMI will provide much more data about customer consumption and distribution system operations. This will enable earlier identification of distribution system leaks. Overall it will improve the customer focus of the organization by providing the ability to identify and rectify customer issues proactively, rather than after the fact upon the customers' receipt of a high bill. This will result in reduced costs for billing and collection, and reduce the need for the high cost activity of sending technicians to customer homes.

This upgrade to AMI will enable two-way digital communication between the utility and its customers. This technology forms the backbone of the utility of the future, which means more customer-focused and efficient service. Over time, Halifax Water will be more responsive to customer inquiries based on better data, provide enhanced leak detection services, and move to monthly billing which allows customers to manage their budgets more effectively.

The decision to install AMI technology is part of Halifax Water's broader goal of continuously improving the overall water infrastructure and customer service experience. This will allow for more effective system operations and cost savings. From an environmental standpoint, Halifax Water will reduce its environmental footprint due to reductions in vehicle travel to read meters and perform other basic services, which will be completed remotely once the meters are installed.

## **5.4 Operational Maintenance Management**

Halifax Water is currently implementing a Computerized Maintenance Management System (CMMS) in conjunction with Halifax Municipality. The project is a core component of the Halifax Enterprise Asset Management (EAM) program and identified as the Operational Maintenance Management (OMM) system.

Presently, maintenance information is available at a specific operations facility and is primarily available in hard copy. There is limited shared access to work related activities. This increases the complexity in delivering sound metrics on Halifax Water maintenance activities. The current methods for maintenance management are often inefficient and labour intensive in the preparation and processing of individual work orders. These

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current practices can lead to increased reactive versus preventative maintenance and even reduce the amount of maintenance work undertaken.

As most methods are centred on the specific work area, it can be difficult to compile data on common activities across the operational areas. Although information is coded and submitted to the corporate financial system (SAP), extracting information on work activities is limited to infrastructure type (i.e. water system versus wastewater/stormwater systems), geographic region (east, west, central), or by financial codes (general ledger, some by facility). Information is not easily tracked by asset class, task type, equipment, or man hours attributed to the asset/facility.

To improve the overall efficiency, effectiveness and consistency in maintenance management and facilitate the integration of these activities with the existing corporate GIS and financial systems, Halifax Water is implementing the OMM project, in partnership with Halifax municipality.. This approach is considered industry best practice for utilities in the management of vital infrastructure and facilities.

Once implemented, the OMM will enable a shift from a reactive to a proactive and ultimately an optimized work environment. It will automate the logistical functions performed by maintenance staff and management and generally includes the following functionality:

- work order generation, prioritization and tracking by asset class or equipment component
- tracking of scheduled (preventative) and unscheduled (reactive) maintenance activities
- storing of maintenance procedures and technical documentation
- historical tracking of all work orders including material and labour costs
- In addition, the project will provide the benefit of elimination of paperwork and manual tracking activities, saving time and allowing staff to remain productive and improves decision making with maintenance planning, asset management and inventory control.

Effective April 4, 2016, the OMM Deployment 1 went live with a subset of Water Distribution and Wastewater/Stormwater Collections. The expansion of Deployment 1 continued across the three regions in 2016. In 2017/18, OMM will continue with Deployment 2 and 3.

Deployment 2, including operations locates and preventative maintenance has an April 2017 Go Live date. Deployment 3, including pumping stations, wastewater treatment and water supply plants, is scheduled to Go Live in October 2017.

## **5.5 Wet Weather Management**

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. The Halifax Water Wet Weather Management Program was developed to effectively manage the impacts of wet weather generated flows within the sanitary sewer system. The program was developed around the core principle of keeping extraneous flows out of the sanitary sewer system where appropriate and managing the increased loadings where it is not possible to remove the extra burden. The sources of high wet weather flow in a wastewater system are derived from infiltration and inflow (I&I). I/I contributions can be grouped into two contributing 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 strategies to reduce wet weather impacts such as pipe condition assessments, cured in place pipe [CIPP] rehabilitation, sewer separation, flow monitoring, illegal connection investigations, public communications and modeling.

Halifax Water has developed a comprehensive Wet Weather Management Program (WWMP) with a mandate, "To efficiently manage the volume of wet weather generated flows entering the sanitary wastewater system." The program is the primary responsibility of Wastewater and Stormwater Services. The benefits of reducing the volumetric wet weather flow include a reduction in untreated discharges to the environment, reduction of treatment upset at WWTFs, reduction in O&M costs, and an increase in available system capacity.

In the near term, a number of pilot sewer sheds have been selected to mature the program and are ongoing. 2017/18 will see the completion of the public rehabilitation program for the pilots and the start of private side investigations. A status summary of each pilot is included below.

1. **Stuart Harris:** The Stuart Harris sewershed, constructed in the 1970's, is typical of residential sewersheds in Halifax for this generation and experiences dramatic sewer flow responses to precipitation events. Mainlining was completed in summer 2015 and manhole rehabilitation in summer 2017. Post rehabilitation flow responses will be collected in 2017/18. This sewershed will be reviewed for lateral renewal pending detailed assessment and may be a candidate for partial lateral renewal in 2017/18.
2. **Crescent Ave:** No-Corrode pipe material was commonly used in North America in the 1950's and 60's. While no longer used in new construction, legacy installations have experienced an unacceptable failure rate that leads to increased I/I. No-Corrode pipe was used for laterals in the Crescent Avenue sewershed when it was constructed. A comprehensive rehabilitation was performed over three construction seasons with manhole renewal being the final stage in 2016. Flow monitoring and cost benefit analysis will be the focus for 2017/18.

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3. **Cow Bay Road Deep Storm Implementation:** The Cow Bay Road Deep Storm implementation project will provide opportunity to quantify the flow reduction that can be achieved in the sanitary system by sewer separation. Baseline flow information was collected in this sewershed prior to construction and will be compared to post project flows in 2017/18.
4. **North Preston Renewal:** Sections of the North Preston sewershed experience high I/I flows that inhibit performance of the treatment plant. A small subsection of the sewershed was identified by pipe condition assessment as requiring rehabilitation. The rehabilitation was completed by CIPP lining in summer 2016. Flow monitoring and quantification of rain-derived inflow and infiltration [RDII] reduction will be the focus for 2017/18.
5. **Leiblin Park:** Sections of the Leiblin Park sewershed include deep storm implementation. During this implementation, the sanitary system was not renewed and recent CCTV investigation has revealed that it had reached the end of its useful life. Sections of the sanitary system requiring renewal were rehabilitated by CIPP lining in summer 2016. Flow monitoring and cost benefit analysis will be the focus for 2017/18.

In 2016, the Wet Weather Management Program [WWMP] entered phase III. In phase III, pre and post project flows are being analyzed and compared in the individual sewersheds and a cost benefit analysis will be conducted on the projects with respect to wet weather flow reductions. This pilot program is intended to gather sound information on the costs of various wet weather management techniques and the possible impact they can have on the flow response to wet weather.

The framework for conducting cost benefit analysis on this type of renewal will be the focus of 2017/18, and findings from the first year's data will be assessed. This information will be critical to successful implementation of phase IV. In phase IV, information gathered from phase III will be applied to the service boundary to recommend and implement wet weather management projects in specific sewersheds. This will allow Halifax Water to implement the most cost effective strategies to manage wet weather flows.

It is well documented that approximately 50% of RDII is generated on the private side. The WWMP will review Halifax Waters current approach to private side renewal and enforcement and refine the current strategy in 2017/18.

## **5.6 Biosolids Program**

The previous Halifax Harbour Solutions Project included a 10 year contract for Biosolids Processing and Biosolids Transportation, commencing in 2006. There were minor adjustments to the contract durations because of project delays and temporary shutdown of the Halifax WWTF in relation to the flooding incident in January, 2009. The current Biosolids Transportation Agreement is due to expire in December 2017 and the Biosolids



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Processing Agreement is due to expire in March 2019. Considering these timelines, HW will be engaging in a process during 2017/18 to either renegotiate these contracts for duration extension or request the industry to provide proposals.

## **5.7 Odour Control**

Most wastewater collection systems suffer from odour issues during extended dry weather and low flows in the systems. The summer of 2015-16 was particularly challenging for HW operations because of the record dry periods and high temperatures which lead to excessive odour generation in the systems. With the potential of such occurrences being more frequent in the future in relation to climate change predictions, it is prudent to enhance Halifax Water knowledge and adopt best practices to address the issues as they emerge. Halifax Water has identified several areas of the collection system network with chronic odour issues that need to be studied and solutions developed to enhance customer service. The focus areas for 2017-18 have been identified in relation to the Mill Cove WWTF, Dartmouth WWTF, Inglis Street area of Halifax and Hines Road area of Eastern Passage.

## **5.8 Energy Management**

Through its Energy Management Program, Halifax Water is committed to creating and ensuring an ongoing focus on sustainability and energy efficiency throughout all operating areas. This program, is carried out in relation to Halifax Water’s Energy Management Policy through the Energy Management Steering Committee. The annual Energy Management Action Plan (EMAP), defines the goals, objectives, accountabilities, and structure for activities related to energy efficiency, energy recovery, greenhouse gas (GHG) reductions, sustainability and environmentally responsible energy use.

For 2017/18 and beyond, initiatives have been identified in the following areas:

### **Infrastructure / Operational Improvements**

Capital projects that will result in improved energy efficiency, energy recovery, GHG reductions and operational cost savings have been identified throughout Halifax Water’s infrastructure. Projects being implemented or considered include:

<i>Ventilation Air Heat Recovery</i>	<i>UV Disinfection Upgrades</i>
<i>HVAC System Re-Commissioning</i>	<i>Pumping System Upgrades</i>
<i>Variable Frequency Drive Motor Controls</i>	<i>Lighting Upgrades</i>
<i>HVAC &amp; Building Envelope Upgrades</i>	<i>Pump/Meter Chamber Upgrades</i>

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New construction capital projects (e.g. wastewater treatment facilities, pumping stations, etc.) are also reviewed at the conceptual and detailed design stages to ensure best-in-class energy efficiency and the lowest life cycle costs throughout the life of the asset.

**Renewable Energy Generation**

Renewable energy generation is also a priority, utilizing Halifax Water’s extensive assets to recover thermal or electrical energy, where appropriate. Projects being implemented or considered include:

<i>Mill Cove Biogas CHP System (COMFIT)</i>	<i>Cogswell District Energy System (DES)</i>
<i>Energy Recovery Turbines (COMFIT)</i>	

To date, two renewable energy projects have been completed: the Pockwock Community Wind Farm, located near Pockwock Lake and the Orchard In-Line Energy Recovery Turbine, located in Bedford. These projects are operating above expectations, and will continue to generate revenue for the utility for decades to come.

**5.9 Source Water Quality**

Based on research conducted by Dr. Graham Gagnon at Dalhousie University, Halifax Water is now dealing with a new source water challenge related to lake recovery.

From the 1970’s onward, governments in the Canada and the United States have taken broad efforts to reduce air pollution broadly and specific efforts to reduce the effects of acid rain. Legislation to reduce sulfur oxide emissions and reduce pollution from coal burning has dramatically reduced air pollution. This has resulted in a measurable reduction in sulfate deposition into lakes in Atlantic Canada and elsewhere and a resultant rise in pH.

This is a positive development from an environmental perspective, however, it brings with it challenges from a drinking water treatment perspective. The rise in pH results in greater levels of natural organic matter (NOM) in source waters. NOM is a significant treatment challenge in treatment plants and we have observed that with increasing NOM levels come increased chemical costs and shorter filter run times. Increased pH levels also lead to increased levels of biotic activity in the water sources. Increased biotic activity promote greater occurrence of things like algae and taste and odour causing compounds such as geosmin.

These two effects of lake recovery have direct impacts on Halifax Water. Increased NOM increases treatment cost and may exert demands on treatment plants which ae beyond what was contemplated when they were designed. Increased biotic activity requires treatments approaches that were not contemplated when the facilities were designed.

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Source water management and, specifically, lake recovery, will be a focus area for research in 2017-18 and for several years beyond. The NSERC research chair with Dalhousie University will be a primary tool in addressing this issue. Halifax Water needs to quantify the degree to which source water will change in coming years and further, what changes in treatment techniques and infrastructure might be required to effectively and efficiently treat source water.

## **5.10 Lead Service Line Replacement Program**

Since the 1970's, Halifax Water has been proactively dealing with lead service lines. Halifax Water has always met its regulatory requirements related to lead in drinking water and further adopted several utility best practices such as free customer sampling, corrosion control treatment and working with interested customers to replace lead service lines. Despite that effort, Halifax Water still encounter residences with high levels of lead in drinking water drawn from within their home. As a result of this, Halifax Water requested Dalhousie University to direct research resources to the question of the occurrence of lead in our system. As a result of this research and Halifax Water experience, Halifax Water determined that to protect customers from the lead in drinking water, it is necessary for lead services to be removed in their entirety.

Lead service line ownership and responsibility is shared between the water utility and the customer, with the customer owning the portion on private property. Customers face many barriers to replace the portion on private property, with cost being the major impediment and utilities are restricted from working on private property assets. As a result, approximately only 10% of utility customers have replaced their lead service line when the utility has replaced the public portion as part of a capital project. The inability to address customer barriers to private service line replacement has prevented utilities like Halifax Water from doing more to replace lead service lines.

In the United States, the EPA asked the National Drinking Water Advisory Council (NDWAC) to make recommendation for a new regulatory framework for lead. The NDWAC report recommended a fundamental change in the way lead is managed with the most noteworthy recommendations being a commitment to removing all lead service lines by 2050. The recommendations also encouraged utilities to work with customers to ensure that lead service lines on private property are replaced. Subsequently, in April of 2016, the American Water Works Association (AWWA) endorsed the NDWAC recommendations signaling that the drinking water industry agrees that utilities must commit to removing lead service lines.

The NDWAC recommendations and the subsequent endorsement by AWWA confirmed for Halifax Water what we had determined in 2012, that the only complete solution to lead in drinking water is complete removal of lead service lines. Halifax Water staff prepared a business plan for lead service line management based on the NDWAC recommendations to complete the removal of all lead service lines by 2050.

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As a result of its efforts since the 1970's, Halifax Water has replaced all but 2500 lead services within the public right of way. Replacing all of these services by 2050 is a moderate challenge for Halifax Water but in order to do so safely, it will be necessary to convince customers to replace the private property portion at the same time. There are many barriers to customers having the desire or ability to replace LSL's and significant program effort will be directed towards working with those customers to improve their understanding of LSL issues and facilitate replacement.

Another significant aspect of this program will be working with the approximately 10,000 customers whose public portions of the LSL have been replaced but for whom the private LSL is still remaining. In order to do this, a cost effective reliable inventory of private LSL's will need to be developed.

Enabling all this will be the need to develop new business processes for dealing with LSLs and communicating information to customers about lead and lead programs.

## **5.11 Safety and Security Program**

As the WCB workplace assessment program enters the second half of its implementation, the safety group will continue to support the initiatives from the Team of Doers to enhance the safety culture and awareness within the organization. The goal is to develop a list of action items to implement.

The safety group has established a protocol for the frequency of field visit audits by various levels of management with the intent of implementing the scheduled audits this coming year.

With the development of Standard Operating Procedures and associated Safe Work Practices (SWPs), to gain awareness across the organization, staff will develop a communication strategy utilizing scheduled safety talks.

Public Safety Canada has updated the assessments at our Water Treatment Facilities (WTF) at Pockwock Lake, Lake Major, Bennery Lake, and Wastewater Treatment Facilities (WWTF) at Mill Cove, and Halifax. Plans are being developed this year to improve the security ratings at each facility.

## **5.12 Stormwater Cost of Service and Rates**

Halifax Water is taking several steps to improve delivery of stormwater service and communication with its customers as a result of observations made since implementation of the separate stormwater charges in 2013, feedback from the exemption review process, a review of best practice and community engagement.

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An application was filed on October 30, 2015 to amend the Stormwater section of the Cost of Service (COS) Manual, and a public hearing was held on February 15 – 17, 2016. The NSUARB approved a revised Cost of Service Model for Stormwater in the Decision from hearing M07147, and an updated COS Manual in September 2016.

On October 31, 2016, Halifax Water made a submission to the Nova Scotia Utility and Review Board (NSUARB) to adjust stormwater rates to reflect the revised Cost of Service Manual for Stormwater. A summary of the Application is provided below.

The proposed Rate Application includes changes to reflect items approved or identified for consideration during the Stormwater Cost of Service Hearing M07147. The proposed rates and a table showing a comparison to the current rates are shown below.

**Proposed Rates for Residential Customers:**

	Tier Parameters (Impervious area in square metres)		Proposed		Number of Customers affected
			Old Rate	New Annual Charge	
Tier 1	Less than	50m <sup>2</sup>	\$33.39	\$0.00	2,326
Tier 2	50	200m <sup>2</sup>	\$33.39	\$14.00	44,710
Tier 3	210	400m <sup>2</sup>	\$33.39	\$27.00	31,041
Tier 4	410	800m <sup>2</sup>	\$33.39	\$54.00	7,768
Tier 5	810	Or more	\$33.39	\$81.00	2,123

**Note:** Residential Customers are currently charged \$33.39. Under this proposal, the majority of residential customers (78,077) will see a decrease in their Site Related Flow Charge from Halifax Water.

**Proposed Rate for Non-Residential Customers**

The proposed rate for Non-Residential Customers is \$0.135 per m<sup>2</sup> of impervious area, compared to the \$0.149 per m<sup>2</sup> Non-Residential Customers are currently charged.

**Proposed Right of Way Charge to Halifax Regional Municipality**

The Right of Way Charge decreases slightly from \$3,881,408 to \$3,831,364. This is based on the proportion of impervious area in the street right of way to the total billable impervious area.

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<b>Stormwater Charges</b>		<b>Proposed Charges</b>	<b>Current Charges</b>
<b>Stormwater</b>			
	Right-of-Way Charge	\$3,835,012	\$3,881,408
	Site Related Flow		
	Residential Customers		
	Base Charge <sup>1</sup>	\$27.00	\$33.39
	Industrial, Commercial and Institutional Customers (ICI)		
	Charge per m2 of impervious area	\$0.135	\$0.149
<b>Footnote:</b>			
1	<i>The projected base charge is based on the standard median parcel size, whereas the current charge is based on the average parcel size for residential customers.</i>		
	<i>The base rate in the 2017 Rate Application varies depending on parcel size of the residential customer and whether it is higher or lower than the standard median. The proposed base rate ranges from \$14 - \$81 for each tier in the rate structure.</i>		

**Key changes reflected in the Application:**

- A. The definition of stormwater service is aligned with industry practice elsewhere in North America to recognize that most of the properties within the Boundary receive one or more of the following services from HRWC:
- Stormwater from the property enters any part of an HRWC’s stormwater system.
  - The property is accessed directly by a driveway which crosses over an HRWC culvert.

This enhances equity, understandability and will provide administrative simplicity.

- B. The Site Generated Flow Charge is renamed Site Related Flow Charge. The definition for “Site Related Flow Charge” is a charge for the services and benefits the customer is receiving including access to a property over an HRWC owned culvert, and management of stormwater from a property that enters any part of an HRWC stormwater system.

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- C. The municipality continues to be billed for the impervious area in the street right of way consistent with the approved Cost of Service methodology.
- D. Properties with less than 50 square meters of impervious area will become exempt (unless they have a driveway culvert).
- E. Most properties (2,411) that were previously exempted because they did not meet the stated stormwater service criteria will continue to be exempted, and 190 properties will not. Properties that are large, undeveloped and with no or little man-made impervious area and do not meet either of the two stated stormwater service criteria continue to be exempt until such time as their condition changes such that the criteria for service are met.
- F. Non-residential customers will not be billed for any portion of impervious area on their property which is outside the service boundary.
- G. The “Adjustment of Bills” section 11 of the HRWC Regulations is amended to permit adjustment of bills if, upon review from the Notice of Objection process, it is determined the billing determinant of chargeable impervious area is inaccurate or yields an inequitable result. For example, if a natural rock outcropping, water surface of a watercourse, man-made pond or swimming pool, or temporary or infrequent impervious surface is found. Two examples of temporary or infrequent impervious surfaces are plastic sheeting and frozen ground.
- H. Some complex properties such as pits, quarries and refineries which were previously exempted because they had “stormwater management facilities” on the property, are now included in billable impervious area. These properties will be treated like any other property, meaning that each will be considered to be exempt or not based upon the specific circumstances on or near the property. The NSUARB approved the concept of treating all properties the same, with exemptions based on the specific circumstances, including when part of a non-residential property is outside of the service boundary.
- I. Non-Residential Properties shall pay a Site Related Flow Charge based on a rate per 10 m<sup>2</sup> of Chargeable Impervious Area on the Property. If a part of a property is located outside HRWC’s Stormwater Service Boundary, that part of the property located outside the Boundary is exempt from the charge. As Non-Residential Customers are billed on the basis of actual impervious area and the properties in question are often large, this mechanism will enhance equity.
- J. Residential Properties shall pay a Site Related Flow Charge in a tiered rate structure based on impervious area. This would mean both Residential and Non-Residential properties with less impervious area would pay less than properties with more impervious area. The current residential charge based on the average impervious area would be eliminated. The tiered rate structure is based upon an Equivalent Residential Unit, or “ERU”. The full charge is required to be paid, even if a part of the

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property is located outside the Commission's Stormwater Service Boundary. As residential properties are generally smaller, and are not charged on the basis of the actual impervious area, billing on the basis of an average or a tier based upon "Equivalent Residential Units" provides sufficient equity in a cost effective manner.

- K. Customers will be billed in increments of 10 m<sup>2</sup> rather than billing based on 1 m<sup>2</sup> of impervious area. This aligns with industry best practice, reduces the impact of any small measurement errors, and removes the illusion of precision associated with billing in a 1m<sup>2</sup> increment. Impervious area would be rounded to the nearest 10 m<sup>2</sup> increment.
- L. A credit system is introduced for non-residential properties with stormwater Best Management Practices (BMPs) like detention ponds that help manage peak flows. The revenue requirements include the cost of the credit system, which is estimated at \$100,000 annually, as initially it is not expected that uptake will be significant. The NSUARB agreed with the concept that if all customers benefit from an action, then all customers should pay for that benefit (therefore the cost of implementing a credit program is included in the revenue requirements). Credits are proposed only for non-residential properties, which is a common practice among utilities. The NSUARB agreed with this approach given that the magnitude of the residential stormwater charge does not appear to warrant implementing a specific, residential credit system, but the details of the credit system will be decided as part of the current hearing.
- M. HRWC proposes to adjust the billing determinant for non-residential customers if the stormwater from the property does not reach an HRWC system, and they are only receiving the benefit of a culvert at the end of their driveway. This was part of the discussion at the Cost of Service Hearing, but has not yet been decided.
- N. Phase-in of depreciation on contributed assets in four phases with \$426,390 (25%) added to revenue requirements in 2017/18 and the remainder phased in over future rate adjustments.

The public hearing will be held the week of February 13, 2017 (commencing on the 14th) and a Decision will be received early in the 2017/18 fiscal year. The proposed revenue requirement for Stormwater Service in 2017/18 is \$10.65 M, which is 3% higher than the revenue requirement upon which the current Stormwater Rates are based. The proposed rates are designed to fully recover the revenue requirement, but not to generate a surplus.

### **5.13 Asset Management**

Continuing implementation of the Asset Management Roadmap and core asset management projects will be a focus of 2017/18 Asset Management (AM) Program. The team continues to improve system information and knowledge and to look for ways to simplify how information is presented back to the users.



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2016/17 saw the development of Halifax Water's first annual Asset Management Plan (AMP). Several projects and programs (e.g. the cross culvert inventory and condition assessment, the pumping station condition assessment, and the new contracts for sewer and manhole inspections) have provided valuable information in support of the AMP. Where detailed condition assessments had not been undertaken, the team used the best available corporate information to support the development of the AMP.

The AMP laid out the state of infrastructure for the fifteen identified asset classes and outlined where additional data collection, process enhancement, and sharing of internal information are needed. Recommendations will drive activities into 2017/18 including the update of the annual AMP. Coordination with other corporate initiatives will be needed (e.g. capital program, maintenance activities, engineering information management, wet weather management, financial forecasting).

The West Region Wastewater Infrastructure Plan (WRWIP) is expected to wrap up early in fiscal 2017/18. This project includes several foundational documents (e.g. the long term planning framework, the cost estimation framework, and the sewer systems evaluation guidelines) that will inform future planning decisions and capital work. Further activities related to field verification and intrusive testing of key projects (identified within the next 10 year horizon) are proposed to be undertaken later in 17/18.

Other master planning activities in 2017/18 will include commencement of the East and Central Wastewater Infrastructure Plan. This project is expected to carry over into 2018/19 for completion. The team will continue to work with Halifax municipality staff to streamline processes linked to long term infrastructure planning between the two organizations. The corporate modeling strategy is expected to conclude by the end of 2016/17 and, staff can proceed with model build out and calibration during 2017/18. The corporate flow monitoring program will also be expanded to bring the next round of monitors and analysis on line.

Key AM initiatives for 2017/18 include:

- Improve communications and availability of AM information and how information is shared with users
- Update the annual AMP
- Develop an enhanced prioritization methodology
- Complete the desktop condition assessment methods for pressurized pipes
- Expand corporate flow monitoring program
- Streamline the sewer inspection program
- Commence the East and Central Wastewater Infrastructure Plan
- Start the hydraulic model buildout and calibration, and implement the modelling strategy

## **5.12 CWWF Projects**

The 2016 Federal Budget announced the details of the federal government's overall plan to invest more than \$120 billion in infrastructure over 10 years. The plan will be implemented in two phases:

- Phase 1 of the Government's long-term infrastructure plan is currently being rolled out within a two year time horizon, with an immediate focus on maintenance and rehabilitation. The priority areas for spending are:
  - Modernize and rehabilitate public transit,
  - Water and wastewater systems
  - Affordable housing
  - Protect infrastructure systems from the effects of climate change.
- Phase 2 will occur in years 3 to 10 of the Government's long-term infrastructure plan. In this phase, the goals will be broader and more ambitious: a more modern, cleaner economy; a more inclusive society; and an economy better positioned to capitalize on the potential of global trade.

Federal funds available for Nova Scotia municipalities during Phase 1 include:

- \$86 million over 2 years for water and wastewater in the Clean Water & Wastewater Fund (CWWF). Eligible projects include rehabilitation and optimization of water, storm water and wastewater infrastructure, and upgrades to meet regulatory requirements. Projects are cost-shared 50% by the Federal government, 25% by the Provincial government and 25% by the respective municipality/utility under this fund and must be completed by March 31, 2018.

The Halifax Water Board approved a prioritized list of projects eligible for Phase 1 of the CWWF. These projects and several HRM projects were subsequently endorsed by HRM Council. The prioritized list of projects, were submitted on June 27, 2016 to the CWWF program for cost sharing consideration.

On August 16, 2016, Prime Minister Justin Trudeau, and the Honorable Stephen McNeil, Premier of Nova Scotia, announced that they had reached a bilateral agreement for funding CWWF projects. All seven of the CWWF projects submitted by HRM were approved for cost sharing. Under this agreement, the Government of Canada has made its funding retroactive to April 1, 2016, so projects can proceed without delay to ensure a productive construction season.

The following details the project specific approvals:

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**Halifax Water Projects:**

1. **Northwest Arm Sewer Rehabilitation:** The 4.5km Northwest Arm trunk sewer is over a century old. It is 1200 mm in diameter and a large part of the line is constructed of clay blocks mortared together. With 450 m being rehabilitated in 2009, the remaining 4.05 kms of this line needs to be structurally renewed to extend its service life, prevent leakage and overflows into Northwest Arm and bring it into line with modern environmental standards.
2. **Peninsula Transmission Main Rehabilitation:** This project involves the rehabilitation of a critical water transmission main in Halifax to extend the serviceable life. There has been significant development activity in peninsular Halifax in recent years, with more planned. Increased water supply is needed for future development and increased densities. The innovative use of a structural liner using trenchless technologies as a core methodology will rehabilitate one of the original pipes that have served the city for over 150 years, and minimize the impact on businesses and residents along the streets.
3. **Lake Major Dam:** A dam is required to impound water within Lake Major to provide water supply to the greater Dartmouth area. A new dam is required to replace the existing gravity timber and earthen structure which has reached the end of its service life.
4. **Sullivan's Pond Storm Sewer Renewal – Phase 1:** The existing storm sewer between Sullivan's Pond and Halifax Harbour has reached the end of its service life. A new 580 metre line is being designed, with the construction completed in two phases of approximately 290 m each. Phase one from Sullivan's Pond to Irishtown Road is the limits of the current approved phase.
5. **ID Kline Filter Media and Underdrain Replacement:** The J.D. Kline Water Supply Plant supplies treated water to the communities of Halifax, Bedford and Sackville, and provides the only specific barrier to prevent pathogens from entering the drinking water supply. This project involves the replacement of the existing filter media and underdrains in all eight filters, the majority of which are beyond their recommended life span.

**HRM Projects:**

6. **Fall River Water Servicing:** This is a new construction project that would install approximately 3.5 km of central water services from Windsor Junction Road to Fall River Centre via Fall River Road. As this falls outside the current service boundary, HRM must facilitate a planning process to determine project scope and would be responsible for the construction costs of the water system.

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7. **Herring Cove Servicing – Phase 2B:** This is the final phase of a new construction project that is providing central water and sewer service to the community of Herring Cove. In 1999 HRM Council agreed to extend water service to the area due to the co-location of a Harbour Solutions sewage treatment plant. By 2008, the first three phases were completed; however Phase 2B has never been initiated due to the fact that escalating construction prices exceeded the original budget and insufficient funds were available to complete it. This project is located inside the service boundary with HRM being responsible for the construction costs of the water system.

The specific CWWF funding is presented in the following table.

Halifax Water's Project Title	Category	Total Ask	Total Approved	Federal/Provincial
Northwest Arm Sewer	Wastewater	\$17,153,000	\$16,343,708	\$12,257,781
Sullivan's Pond	Wastewater	\$9,890,000	\$8,429,190	\$6,321,925
Peninsula Transmission Mains	Drinking Water	\$7,200,000	\$7,508,594	\$5,631,446
Lake Major Dam	Drinking Water	\$5,900,000	\$4,517,716	\$3,388,287
JD Kline Filter Media	Drinking Water	\$5,600,000	\$4,200,160	\$3,150,120
<b>TOTAL AMOUNTS:</b>		<b>\$45,743,000</b>	<b>\$40,999,368</b>	<b>\$30,749,559</b>

HRM's Project Title	Category	Total Ask	Total Approved	Federal/Provincial
Fall River Water	Drinking Water	\$7,600,000	\$7,925,739	\$5,944,305
Herring Cove Servicing	Wastewater	\$12,750,000	*\$4,561,952	\$3,421,464
<b>TOTAL AMOUNTS:</b>		<b>\$20,350,000</b>	<b>\$12,487,691</b>	<b>\$9,365,769</b>

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*\* The Total Approved for this project is calculated with an assumed 25% contribution from HRM relative to the reduced Federal/Provincial amount.*

The JD Kline Filter Media project approved total eligible cost was only 75% of the original estimate as 25% of the project cost was funded within the 2016/17 Halifax Water Capital Budget and thus ineligible. The balance of the Halifax Water projects were slightly under the original submission cost estimate due to some inclusion of ineligible costs and current year approval of design phase funding.

The Federal/Provincial cost sharing on the HRM Herring Cove project was limited to \$3,421,464, well below the submitted request. The information to date indicates that this was the last project on the list and the approved amount was the balance of program funds remaining.

Design work, through external consultants, is in progress on all Halifax Water CWWF projects. The projects are proposed for public tender in the December 2016 to March 2017 time frame, with construction planned for 2017, and final completion by March 31, 2018 (consistent with the phase 1 CWWF requirements).

The two HRM CWWF projects are administered by HRM staff. However, consistent with historical HRM water and sewer service extension projects, HRM Council has formally given Halifax Water “Agent” authority to manage the design and construction of these projects on behalf of HRM and design is in progress.



# Appendix A

## Mission, Vision & Values





## **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 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.*

## **Our Values:**

Halifax Water promotes a culture that:

- *Engages employees, partners and stakeholders in achieving success;*
- *Encourages openness and transparency;*
- *Demonstrates individual and corporate accountability for results;*
- *Fosters innovation and progressive thinking;*
- *Respects diverse ideas, opinions and people;*
- *Is committed to service excellence; and*
- *Nurtures leadership at all levels.*

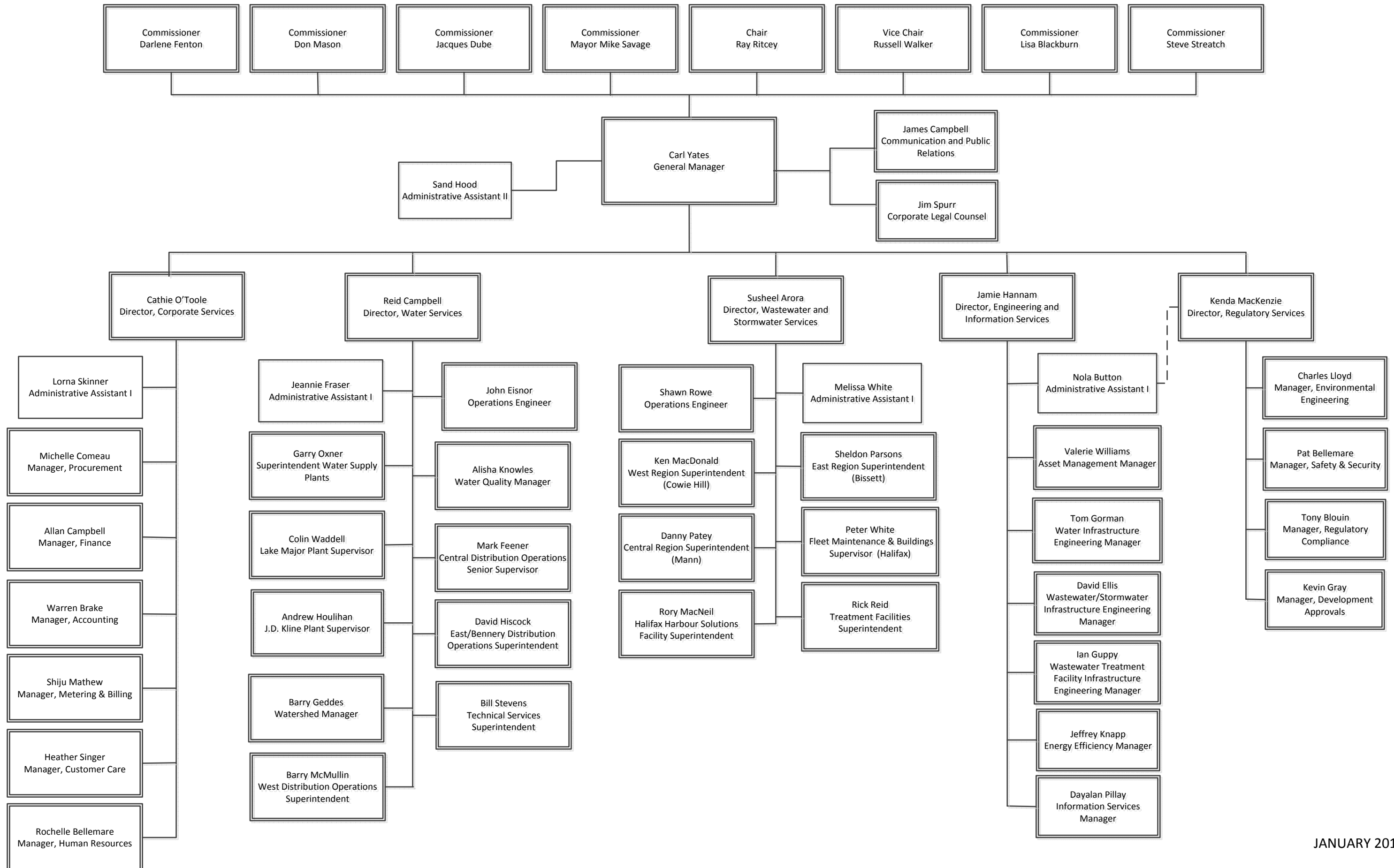


# Appendix B

## Organizational Structure



# HALIFAX WATER ORGANIZATIONAL STRUCTURE





# Appendix C

## 2017/18 Capital Budget



**HALIFAX WATER**  
**Capital Budget 2017/18**  
**Summary**

Asset Category	Project Costs
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<i>Water - Land -- T O T A L</i>	\$760,000
<i>Water - Transmission -- T O T A L</i>	\$13,150,717
<i>Water - Distribution -- T O T A L</i>	\$2,890,000
<i>Water - Structures -- T O T A L</i>	\$10,029,391
<i>Water - Treatment Facilities -- T O T A L</i>	\$10,405,060
<i>Water - Energy -- T O T A L</i>	\$656,352
<i>Water - Security -- T O T A L</i>	\$150,000
<i>Water - Equipment -- T O T A L</i>	\$50,000
<i>Water - Corporate Projects - T O T A L</i>	\$9,671,000
<b>TOTAL - Water</b>	<b>\$47,762,520</b>

<i>Wastewater - Trunk Sewers -- T O T A L</i>	\$19,843,168
<i>Wastewater - Collection System -- T O T A L</i>	\$9,144,000
<i>Wastewater - Forcemains -- T O T A L</i>	\$260,000
<i>Wastewater Structures -- T O T A L</i>	\$2,440,000
<i>Wastewater - Treatment Facility -- T O T A L</i>	\$2,528,000
<i>Wastewater - Energy -- T O T A L</i>	\$2,455,813
<i>Wastewater - Security -- T O T A L</i>	\$200,000
<i>Wastewater - Equipment -- T O T A L</i>	\$95,000
<i>Wastewater - Corporate Projects -- T O T A L</i>	\$9,694,800
<b>TOTAL - Wastewater</b>	<b>\$46,660,781</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Summary

Asset Category	Project Costs
<i>Stormwater - Pipes -- T O T A L</i>	\$9,942,000
<i>Stormwater - Culverts -- T O T A L</i>	\$2,736,000
<i>Stormwater - Structures -- T O T A L</i>	\$1,535,000
<i>Stormwater - Corporate Projects -- T O T A L</i>	\$871,200
<b>TOTAL - Stormwater</b>	<b>\$15,084,200</b>
<b>GRANDTOTAL</b>	<b>\$109,507,501</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Water

Project Number	Project Name	Project Cost
<b><u>Water - Land</u></b>		
3.36	Bennery Lake Watershed Land Purchase	\$210,000
3.383	Bennery Lake Watershed Land Purchase	\$330,000
3.384	Tomahawk Lake Watershed Land Purchase	\$220,000
<b><i>Water - Land -- T O T A L</i></b>		<b>\$760,000</b>
<b><u>Water - Transmission</u></b>		
3.293	Peninsula Low North Transmission Main Replacement (Windsor at Young)	\$435,000
3.006	Bedford Connector 750mm Replacement - Phase 3	\$4,569,717
3.234	Windsor Junction Transmission Main Oversizing	\$330,000
3.011	Peninsula Low South Transmission Main Rehabilitation	\$7,505,000
3.045	Bedford West Capital Cost Contribution - Various Phases	\$11,000
3.343	Northgate Oversizing	\$135,000
3.232	MacIntosh Estates Phase 1 Oversizing	\$115,000
3.373	Regional Development Charge Studies	\$50,000
<b><i>Water - Transmission -- T O T A L</i></b>		<b>\$13,150,717</b>
<b><u>Water - Distribution</u></b>		
3.022	Water Distribution - Main Renewal Program	\$1,900,000
3.067	Valve Renewals	\$125,000
3.068	Hydrant Renewals	\$75,000
3.069	Service Line Renewals	\$100,000
3.390	Lead Service Line Replacement Program	\$400,000
3.294	Automated Flushing Program	\$20,000
3.346	Bulk Fill Stations - Site Work Improvements	\$110,000
3.296	Water Sampling Station Relocation Program	\$30,000
3.375	Re-Chlorination Stations - Sampson and Stokil Reservoirs	\$30,000
	Distribution System Chlorine Residual Analyzer Upgrade Program	\$100,000
<b><i>Water - Distribution -- T O T A L</i></b>		<b>\$2,890,000</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Water

Project Number	Project Name	Project Cost
<b><u>Water - Structures</u></b>		
3.387	Geizer 158 Reservoir Floor Replacement	\$2,750,000
3.173	Lake Major Dam Replacement	\$7,089,391
3.342	Crestview Booster Station PRV Conversion	\$57,000
3.357	Silverside Booster Station - Control Panel Replacement	\$50,000
3.358	Blue Mountain Meter Replacement	\$20,000
3.381	Geizer 158 Reservoir Drainage Improvements	\$53,000
3.382	Pratt & Whitney PRV Communications Upgrade	\$10,000
<b><i>Water - Structures -- T O T A L</i></b>		<b>\$10,029,391</b>
<b><u>Water - Treatment Facilities</u></b>		
3.211	Chlorine Analyzer Replacement Program	\$23,000
3.276	Inline Zeta Potential Meters for Water Plants	\$100,000
3.377	450 Cowie - New DR7000 for Lab	\$14,000
3.376	Chlorine Analyzer Relocation - Geizer 158 Reservoir	\$33,000
<b>J D Kline Water Supply Plant:</b>		
3.157	Filter Media and Underdrain Replacement Program	\$4,447,060
3.353	Effluent Valve Actuator Replacement Program	\$50,000
3.352	New Mixers in Pre-Mix Chamber	\$277,000
3.319	Lime Feed and Delivery System Replacement	\$300,000
3.361	Turbidity Meters	\$50,000
3.236	Ampgard III to Vacuum Contactor Conversion	\$40,000
3.363	Chlorine Storage Room - System Modifications	\$70,000
3.351	Westinghouse Electrical Panels Replacement	\$5,000
3.368	pH Meter Replacements	\$10,000
3.369	Raw Water Pumping Station Ladder Extension and Fall Protection Equipment	\$9,000
3.370	VTS Alarm System Upgrade	\$7,000

# HALIFAX WATER

## Capital Budget 2017/18

### Water

Project Number	Project Name	Project Cost
3.372	Bench-top Turbidimeter	\$6,000
3.386	Slide Gate Actuators to Lagoons	\$44,000
3.280	Roof Replacement	\$220,000
<b>Lake Major Water Supply Plant:</b>		
3.159	MCC Contactors Replacement	\$34,000
3.162	Butterfly valve replacement program	\$100,000
3.207	Treatment Train Isolation	\$222,000
3.195	Filter Media Replacement	\$200,000
3.161	Lime Feed and Delivery System Replacement	\$380,000
3.278	Clarifier Upgrades	\$285,000
3.160	PLC Upgrade	\$420,000
3.320	New Raw Water Low Lift Pump	\$500,000
3.304	Dry Polymer Feed System Replacement	\$380,000
3.300	Dedicated Service Water Pumping Station	\$285,000
3.325	Basin Mixing Enhancements	\$800,000
3.193	Carbon Dioxide Feed System	\$215,000
3.366	Bench Top Turbidimeter	\$6,000
3.315	Blower Vent	\$35,000
<b>Bennery Lake Water Supply Plant:</b>		
3.272	Low Lift VFD Pump Replacement Program	\$110,000
3.347	Plant MCC Replacement	\$530,000
3.348	Post Filter Chemical Addition Optimization	\$62,000
3.274	Power Monitoring	\$20,000
3.359	Culvert Replacement	\$20,000
3.349	New Magnetic Flow Meters	\$29,000
3.350	New Chlorine Analyzer	\$14,000
3.378	Sludge Pumps and Valves Replacement	\$53,000
<b>Water - Treatment Facilities -- T O T A L</b>		<b>\$10,405,060</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Water

Project Number	Project Name	Project Cost
<b><u>Water - Energy</u></b>		
3.107	Chamber HVAC Retro-Commissioning Program	\$100,000
3.367	Lake Major WSP - HVAC Upgrades	\$556,352
<b><i>Water - Energy -- T O T A L</i></b>		<b>\$656,352</b>
<b><u>Water - Security</u></b>		
4.009	Security Upgrade Program	\$150,000
<b><i>Water - Security -- T O T A L</i></b>		<b>\$150,000</b>
<b><u>Water - Equipment</u></b>		
3.101	Miscellaneous Equipment Replacement	\$50,000
<b><i>Water - Equipment -- T O T A L</i></b>		<b>\$50,000</b>
<b><i>Water - Corporate Projects - T O T A L</i></b>		<b>\$9,671,000</b>
<b><i>GRAND TOTAL - WATER</i></b>		<b>\$47,762,520</b>



# HALIFAX WATER

## Capital Budget 2017/18

### Wastewater

Project Number	Project Name	Project Cost
<b><u>Wastewater - Trunk Sewers</u></b>		
2.067	Northwest Arm Sewer Rehabilitation	\$19,493,168
2.467	Kearney Lake Road Wastewater Sewer Upgrades	\$350,000
<b><i>Wastewater - Trunk Sewers -- T O T A L</i></b>		<b>\$19,843,168</b>
<b><u>Wastewater - Collection System</u></b>		
2.052	Integrated Wastewater Projects - Program	\$1,000,000
2.460	Leiblin Pumping Station Gravity Sewer	\$3,495,000
2.437	Hines Road Rider Sewer Extension	\$50,000
2.462	Wastewater Conveyance System Upgrade - Dingle PS to Roach's PS via William's Lake PS	\$145,000
2.547	Balsam/Monroe Subdivision Sewer Upgrade	\$165,000
2.357	Manhole Renewals	\$29,000
2.358	Lateral Replacements (non-tree roots)	\$1,300,000
2.563	Lateral Replacements (tree roots)	\$600,000
2.223	Wet Weather Management Program	\$100,000
2.523	Sewer Condition Assessment	\$300,000
2.043	Corporate Flow Monitoring Program	\$1,000,000
2.558	East and Central Region Infrastructure Plan	\$600,000
2.559	West Region Infrastructure Plan - Ph.2	\$250,000
2.074	Bedford West Collection System CCC	\$60,000
2.548	Regional Development Charge Studies	\$50,000
<b><i>Wastewater - Collection System -- T O T A L</i></b>		<b>\$9,144,000</b>
<b><u>Wastewater - Forcemains</u></b>		
2.543	Kearney Lake Road Forcemain Extension	\$260,000
<b><i>Wastewater - Forcemains -- T O T A L</i></b>		<b>\$260,000</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Wastewater

Project Number	Project Name	Project Cost
<b><u>Wastewater - Structures</u></b>		
2.42	Emergency Pumping Station Pump replacements	\$250,000
2.442	Wastewater Pumping Station Component Replacement Program - West Region	\$200,000
2.443	Wastewater Pumping Station Component Replacement Program - East Region	\$200,000
2.444	Wastewater Pumping Station Component Replacement Program - Central Region	\$200,000
2.512	Hines Road Sewer - Odour Management	\$100,000
2.466	Weybridge Lane Pumping Station CCC	\$540,000
2.005	Autoport Pleasant Street Pumping Station Replacement	\$750,000
2.366	Shipyards Road Pumping Station Upgrade	\$175,000
2.561	Outfall Location Inventory	\$25,000
<b><i>Wastewater Structures -- T O T A L</i></b>		<b>\$2,440,000</b>
<b><u>Wastewater - Treatment Facility</u></b>		
2.056	Plant Optimization Audit Program	\$125,000
2.522	Emergency Wastewater Treatment Facility equipment replacements	\$400,000
2.564	HSP Plants - Carbon replacement	\$400,000
<b>Halifax Wastewater Treatment Facility:</b>		
2.535	Screenings Compactor Replacement	\$200,000
2.532	Duct Work Replacement	\$150,000
<b>Dartmouth Wastewater Treatment Facility:</b>		
2.502	Duct Work Replacement	\$150,000
2.565	Odour Control Study	\$50,000
<b>Herring Cove Wastewater Treatment Facility:</b>		
2.539	Densadeg Inlet Penstocks Actuator Installation	\$50,000
2.55	Window Installation for Natural Light	\$20,000
2.566	Overhead Door	\$20,000
<b>Mill Cove Wastewater Treatment Facility:</b>		
2.531	Admin Building HVAC Renewal Preliminary Engineering	\$25,000
2.546	Odour Control Upgrade	\$530,000
2.567	Process Upgrade Options	\$50,000
<b>Eastern Passage Wastewater Treatment Facility:</b>		

# HALIFAX WATER

## Capital Budget 2017/18

### Wastewater

Project Number	Project Name	Project Cost
2.551	Control Building HVAC Upgrade	\$8,000
	<b>Biosolids Processing Facility:</b>	
2.126	Asset Renewal Program	\$250,000
2.568	Biosolids Management Plan	\$100,000
<b>Wastewater - Treatment Facility -- T O T A L</b>		<b>\$2,528,000</b>
	<b><u>Wastewater - Energy</u></b>	
2.491	Pump Station HVAC Retro-Commissioning Program	\$100,000
2.554	Wastewater Pumping Station Performance Testing	\$250,000
	<b>Dartmouth Wastewater Treatment Facility:</b>	
2.235	Ventilation Air Heat Recovery	\$250,000
2.553	MCC Ventilation Upgrades	\$100,000
	<b>Halifax Wastewater Treatment Facility:</b>	
2.555	Effluent Heat Recovery	\$25,000
2.552	MCC Ventilation Upgrades	\$130,813
	Cogswell Area District Energy System	\$1,600,000
<b>Wastewater - Energy -- T O T A L</b>		<b>\$2,455,813</b>
	<b><u>Wastewater - Security</u></b>	
4.008	Security Upgrade Program	\$200,000
<b>Wastewater - Security -- T O T A L</b>		<b>\$200,000</b>
	<b><u>Wastewater - Equipment</u></b>	
2.161	I&I Reduction (SIR) Program Flow Meters and Related Equipment	\$25,000
2.451	Miscellaneous Equipment Replacement	\$70,000
<b>Wastewater - Equipment -- T O T A L</b>		<b>\$95,000</b>
<b>Wastewater - Corporate Projects -- T O T A L</b>		<b>\$9,694,800</b>
<b>GRAND TOTAL - WASTEWATER</b>		<b>\$46,660,781</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Stormwater

Project Number	Project Name	Project Cost
<b><u>Stormwater - Pipes</u></b>		
1.038	Integrated Stormwater Projects - Program	\$1,060,000
1.043	Sullivan's Pond Storm Sewer System Replacement - Phase 1	\$8,632,000
1.156	Storm Sewer Condition Assessment	\$150,000
1.102	Manhole Renewals	\$24,000
1.103	Catchbasin Renewals	\$36,000
1.135	Lateral Replacements	\$15,000
1.019	Drainage Remediation Program Surveys/Studies	\$25,000
<b><i>Stormwater - Pipes -- T O T A L</i></b>		<b>\$9,942,000</b>
<b><u>Stormwater - Culverts/Ditches</u></b>		
1.104	Driveway Culvert Replacements	\$700,000
<b>Street Specific Culvert Replacements:</b>		
1.146	John Cross Drive (near #40)	\$200,000
1.147	Cole Harbour Road (near #1560)	\$210,000
1.148	Montague Road (near #1044)	\$155,000
1.15	Fletcher Drive (near #52)	\$270,000
1.151	Softwind Lane (near #31)	\$105,000
1.152	Yankeetown Road (near #16)	\$205,000
1.153	Terradore Lane (near #7)	\$96,000
1.154	Waverley Road (near #4132)	\$115,000
1.136	Blue Hill Road (near #77)	\$130,000
1.01	Kipawa Crescent (near #14)	\$220,000
1.012	Lucasville Road (near #1419)	\$170,000
1.023	Cobequid Road (near #510)	\$160,000
<b><i>Stormwater - Culverts/Ditches -- T O T A L</i></b>		<b>\$2,736,000</b>
<b><u>Stormwater - Structures</u></b>		
1.133	Ellenvale Run Retaining Wall System - Replacement	\$1,535,000
<b><i>Stormwater - Structures -- T O T A L</i></b>		<b>\$1,535,000</b>
<b><i>Stormwater - Corporate Projects -- T O T A L</i></b>		<b>\$871,200</b>
<b><i>GRAND TOTAL - STORMWATER</i></b>		<b>\$15,084,200</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Corporate Projects

Project Number	Project Name	Project Cost
<b><u>Corporate - Information Technology</u></b>		
4.011	Desktop Computer Replacement Program	\$290,000
4.012	Network Infrastructure Upgrades	\$220,000
4.013	Document Management Program	\$100,000
4.070	Computerized Maintenance Management System Phase 2	\$2,000,000
4.024	Sharepoint Implementation	\$100,000
4.043	AMI Meter System Upgrades (50 Water / 50 Wastewater)	\$11,685,000
4.014	IT Disaster Recovery Site	\$300,000
4.048	SAP Rate Structure Support	\$220,000
4.074	Asset Registry Build	\$600,000
<b><i>Corporate - Information Technology -- T O T A L</i></b>		<b>\$15,515,000</b>
<b><u>Corporate - GIS</u></b>		
4.040	GIS Data Program	\$1,000,000
4.038	GIS Hardware/Software Program	\$100,000
4.039	GIS Application Support Program	\$250,000
<b><i>Corporate - GIS -- T O T A L</i></b>		<b>\$1,350,000</b>
<b><u>Corporate - Asset Management</u></b>		
4.079	Climate Change Assessment and Policy	\$150,000
4.020	Asset Management Program Development	\$150,000
4.052	Long Term Planning Coordination Strategy (50 Water / 50 Wastewater)	\$75,000
4.049	Expand Prioritization Methodology	\$125,000
4.054	Assess AM Software and Tools	\$100,000
<b><i>Corporate - Asset Management -- T O T A L</i></b>		<b>\$600,000</b>
<b><u>Corporate - Facility</u></b>		
4.076	Heating / Ventilation Upgrades in New Phase 450 Cowie Hill Building	\$100,000
4.078	450 Cowie Renovation	\$75,000
<b><i>Corporate - Facility -- T O T A L</i></b>		<b>\$175,000</b>

# HALIFAX WATER

## Capital Budget 2017/18

### Corporate Projects

Project Number	Project Name	Project Cost
<b><u>Corporate - SCADA &amp; Other Equipment</u></b>		
3.38	Total Station Survey Prisms	\$32,000
4.004	SCADA Control System Enhancements (50 Water / 50 Wastewater)	\$200,000
4.080	Large and New Customer Meters (50 Water / 50 Wastewater)	\$460,000
<b><i>Corporate - SCADA &amp; Other Equipment -- T O T A L</i></b>		<b>\$692,000</b>
<b><u>Corporate - Fleet</u></b>		
4.006	Fleet Upgrade Program Stormwater	\$280,000
4.006	Fleet Upgrade Program Wastewater	\$1,120,000
4.007	Fleet Upgrade Program Water	\$505,000
<b><i>Corporate - Fleet -- T O T A L</i></b>		<b>\$1,905,000</b>
<b><i>GRAND TOTAL - Corporate Projects</i></b>		<b>\$20,237,000</b>

### ***ALLOCATION BREAKDOWN:***

Water - Corporate Projects - T O T A L	\$9,671,000
Wastewater - Corporate Projects -- T O T A L	\$9,694,800
Stormwater - Corporate Projects -- T O T A L	\$871,200

***GRAND TOTAL - Corporate Projects*** **\$20,237,000**

*Note: All corporate projects are allocated as follows:*

*50% Water*

*40% Wastewater*

*10% Stormwater*

*(unless otherwise noted)*

# HALIFAX WATER

## Capital Budget 2017/18

### Summary of Routine Capital Expenditures included within Capital Budget

Project Number	Project Name	Project Cost
3.067	Valves Renewals	\$125,000
3.068	Hydrants Renewals	\$75,000
3.069	Service Lines Renewals	\$100,000
3.390	Lead Service Line Replacement Program	\$400,000
3.101	Miscellaneous Equipment Replacement	\$50,000
3.385	Leak Detection Equipment	\$27,000
4.007	Fleet Upgrade Program Water	\$505,000
2.357	Manhole Renewals WW	\$29,000
2.358	Lateral Replacements WW (non-tree roots)	\$1,300,000
2.563	Lateral Replacements WW (tree roots)	\$600,000
2.161	I&I Reduction (SIR) Program Flow Meters and Related Equipment	\$25,000
2.451	Miscellaneous Equipment Replacement	\$70,000
4.006	Fleet Upgrade Program Wastewater	\$1,120,000
1.102	Manhole Renewals SW	\$24,000
1.103	Catchbasin Renewals SW	\$36,000
1.135	Lateral Replacements SW	\$15,000
4.006	Fleet Upgrade Program Stormwater	\$280,000
4.011	Desktop Computer Replacement Program	\$290,000
4.012	Network Infrastructure Upgrades	\$220,000
<b>GRAND TOTAL - Routine Capital Projects</b>		<b>\$5,291,000</b>



# Appendix D

## 2017/18 Operations Budget





**HALIFAX WATER**  
**CONSOLIDATED SUMMARY OF ESTIMATED REVENUES & EXPENDITURES**  
**PROPOSED OPERATING BUDGET**  
**APRIL 1, 2017 to MARCH 31, 2018**  
(in thousands )

DESCRIPTION	ACTUAL APR 1/15 MAR 31/16	APPROVED BUDGET * APR 1/16 MAR 31/17	PROPOSED BUDGET APR 1/17 MAR 31/18
<b>OPERATING REVENUES</b>	\$131,716	\$135,675	\$135,587
<b>OPERATING EXPENDITURES</b>	<u>\$96,243</u>	<u>\$102,425</u>	<u>\$106,241</u>
<b>OPERATING PROFIT</b>	<u>\$35,473</u>	<u>\$33,250</u>	<u>\$29,346</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
INVESTMENT INCOME	\$883	\$810	\$346
PNS FUNDING HHSP DEBT	\$2,000	\$2,000	\$2,000
MISCELLANEOUS	<u>\$487</u>	<u>\$481</u>	<u>\$441</u>
	<u>\$3,370</u>	<u>\$3,291</u>	<u>\$2,787</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$8,889	\$8,872	\$9,532
LONG TERM DEBT PRINCIPAL	\$20,328	\$22,652	\$24,291
AMORTIZATION DEBT DISCOUNT	\$186	\$199	\$217
DIVIDEND/GRANT IN LIEU OF TAXES	\$4,528	\$4,663	\$4,827
MISCELLANEOUS	<u>\$29</u>	<u>\$0</u>	<u>\$15</u>
	<u>\$33,961</u>	<u>\$36,386</u>	<u>\$38,882</u>
 <b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	 <u>\$4,883</u>	 <u>\$154</u>	 <u>(\$6,750)</u>
<b>Adjustments:</b>			
Pension accrual	<u>(\$267)</u>	<u>\$3,086</u>	<u>\$4,358</u>
<b>Net Profit (Loss) on a Cash Basis</b>	<u>\$4,616</u>	<u>\$3,241</u>	<u>(\$2,392)</u>

\* 2016/17 Operating Budget approved by the Board of Directors, January 28, 2016.

**HALIFAX WATER**  
**ESTIMATED REVENUES AND EXPENDITURES - WATER OPERATIONS**  
**PROPOSED OPERATING BUDGET**  
**APRIL 1, 2017 to MARCH 31, 2018**  
**( in thousands )**

DESCRIPTION	ACTUAL APR 1/15 MAR 31/16	APPROVED BUDGET * APR 1/16 MAR 31/17	PROPOSED BUDGET APR 1/17 MAR 31/18
<b>REVENUES</b>			
METERED SALES	\$43,193	\$46,465	\$46,600
FIRE PROTECTION	\$8,032	\$7,074	\$7,074
PRIVATE FIRE PROTECTION SERVICES	\$679	\$840	\$857
BULK WATER STATIONS	\$265	\$326	\$314
CUSTOMER LATE PAY./COLLECTION FEES	\$198	\$203	\$212
MISCELLANEOUS	\$181	\$153	\$149
	<u>\$52,548</u>	<u>\$55,061</u>	<u>\$55,207</u>
<b>EXPENDITURES</b>			
WATER SUPPLY & TREATMENT	\$7,543	\$7,983	\$8,565
TRANSMISSION & DISTRIBUTION	\$8,405	\$8,710	\$8,969
SMALL SYSTEMS (incl. Contract Systems)	\$1,080	\$883	\$1,073
TECHNICAL SERVICES (SCADA)	\$689	\$846	\$873
ENGINEERING & INFORMATION SERVICES	\$3,528	\$3,848	\$3,515
REGULATORY SERVICES	\$505	\$515	\$1,034
CUSTOMER SERVICE	\$2,268	\$2,251	\$2,357
ADMINISTRATION & PENSION	\$4,919	\$5,416	\$5,836
DEPRECIATION	\$8,411	\$8,561	\$9,218
	<u>\$37,348</u>	<u>\$39,013</u>	<u>\$41,441</u>
<b>OPERATING PROFIT</b>	<u>\$15,200</u>	<u>\$16,048</u>	<u>\$13,766</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
INVESTMENT INCOME	\$442	\$365	\$156
MISCELLANEOUS	\$434	\$408	\$428
	<u>\$876</u>	<u>\$773</u>	<u>\$583</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$2,531	\$2,486	\$2,685
LONG TERM DEBT PRINCIPAL	\$7,766	\$8,576	\$9,014
AMORTIZATION DEBT DISCOUNT	\$90	\$100	\$98
DIVIDEND/GRANT IN LIEU OF TAXES	\$4,528	\$4,663	\$4,827
MISCELLANEOUS	\$29	\$0	\$15
	<u>\$14,945</u>	<u>\$15,825</u>	<u>\$16,639</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<u>\$1,130</u>	<u>\$996</u>	<u>(\$2,291)</u>

\* 2016/17 Operating Budget approved by the Board of Directors, January 28, 2016.

**HALIFAX WATER**  
**ESTIMATED REVENUES AND EXPENDITURES - WASTEWATER OPERATIONS**  
**PROPOSED OPERATING BUDGET**  
**APRIL 1, 2017 to MARCH 31, 2018**  
**( in thousands )**

DESCRIPTION	ACTUAL APR 1/15 MAR 31/16	APPROVED BUDGET * APR 1/16 MAR 31/17	PROPOSED BUDGET APR 1/17 MAR 31/18
<b>REVENUES</b>			
METERED SALES	\$66,601	\$68,052	\$67,756
WASTEWATER OVERSTRENGTH AGREEMENTS	\$135	\$0	\$0
LEACHATE	\$331	\$389	\$389
CONTRACT REVENUE	\$93	\$86	\$86
SEPTAGE TIPPING FEES	\$648	\$650	\$775
DEWATERING FACILITY/ SLUDGE LAGOON	\$210	\$210	\$210
AIRLINE EFFLUENT	\$51	\$86	\$86
CUSTOMER LATE PAY./COLLECTION FEES	\$238	\$257	\$240
MISCELLANEOUS	\$121	\$133	\$129
	<u>\$68,428</u>	<u>\$69,862</u>	<u>\$69,670</u>
<b>EXPENDITURES</b>			
WASTEWATER COLLECTION	\$9,537	\$9,446	\$9,653
WASTEWATER TREATMENT PLANTS	\$17,421	\$19,425	\$19,251
SMALL SYSTEMS	\$1,059	\$1,251	\$1,276
DEWATERING FACILITY/ SLUDGE MGMT	\$414	\$556	\$380
BIOSOLIDS TREATMENT	\$102	\$101	\$101
LEACHATE CONTRACT	\$290	\$341	\$341
TECHNICAL SERVICES (SCADA)	\$1,041	\$1,215	\$1,306
ENGINEERING & INFORMATION SERVICES	\$3,010	\$3,629	\$3,431
REGULATORY SERVICES	\$1,134	\$1,254	\$1,434
CUSTOMER SERVICE	\$1,877	\$1,864	\$2,064
ADMINISTRATION & PENSION	\$4,095	\$4,485	\$4,833
DEPRECIATION	\$11,975	\$11,983	\$12,465
	<u>\$51,954</u>	<u>\$55,551</u>	<u>\$56,534</u>
<b>OPERATING PROFIT</b>	<u>\$16,474</u>	<u>\$14,311</u>	<u>\$13,136</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
INVESTMENT INCOME	\$441	\$365	\$156
PNS FUNDING HHSP DEBT	\$2,000	\$2,000	\$2,000
MISCELLANEOUS	\$54	\$72	\$14
	<u>\$2,494</u>	<u>\$2,437</u>	<u>\$2,169</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$5,786	\$5,817	\$6,022
LONG TERM DEBT PRINCIPAL	\$11,462	\$12,978	\$13,699
AMORTIZATION DEBT DISCOUNT	\$89	\$89	\$107
MISCELLANEOUS	\$0	\$0	\$0
	<u>\$17,337</u>	<u>\$18,884</u>	<u>\$19,828</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<u>\$1,632</u>	<u>(\$2,136)</u>	<u>(\$4,523)</u>

\* 2016/17 Operating Budget approved by the Board of Directors, January 28, 2016.

**HALIFAX WATER**  
**ESTIMATED REVENUES AND EXPENDITURES - STORMWATER OPERATIONS**  
**PROPOSED OPERATING BUDGET**  
**APRIL 1, 2017 to MARCH 31, 2018**  
**( in thousands )**

DESCRIPTION	ACTUAL APR 1/15 MAR 31/16	APPROVED BUDGET * APR 1/16 MAR 31/17	PROPOSED BUDGET APR 1/17 MAR 31/18
<b>REVENUES</b>			
STORMWATER SITE RELATED SERVICE	\$6,713	\$6,708	\$6,700
STORMWATER RIGHT-OF-WAY SERVICE	\$3,881	\$3,881	\$3,881
CUSTOMER LATE PAY./COLLECTION FEES	\$63	\$70	\$39
MISCELLANEOUS	\$82	\$93	\$89
	<u>\$10,740</u>	<u>\$10,753</u>	<u>\$10,710</u>
<b>EXPENDITURES</b>			
STORMWATER COLLECTION	\$4,202	\$4,761	\$4,589
TECHNICAL SERVICES (SCADA)	\$34	\$28	\$31
ENGINEERING & INFORMATION SERVICES	\$480	\$590	\$558
REGULATORY SERVICES	\$729	\$835	\$1,242
CUSTOMER SERVICE	\$305	\$303	\$205
ADMINISTRATION & PENSION	\$666	\$729	\$786
DEPRECIATION	\$523	\$614	\$855
	<u>\$6,941</u>	<u>\$7,862</u>	<u>\$8,266</u>
<b>OPERATING PROFIT</b>	<u>\$3,799</u>	<u>\$2,891</u>	<u>\$2,444</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
INVESTMENT INCOME	\$0	\$81	\$35
MISCELLANEOUS	\$0	\$0	
	<u>\$0</u>	<u>\$81</u>	<u>\$35</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$571	\$569	\$825,070
LONG TERM DEBT PRINCIPAL	\$1,100	\$1,098	\$1,577,259
AMORTIZATION DEBT DISCOUNT	\$8	\$11	\$11,938
MISCELLANEOUS	\$0	\$0	\$0
	<u>\$1,679</u>	<u>\$1,678</u>	<u>\$2,414</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES</b>	<u>\$2,120</u>	<u>\$1,294</u>	<u>\$64</u>

\* 2016/17 Operating Budget approved by the Board of Directors, January 28, 2016.

**HALIFAX WATER**  
**ESTIMATED REVENUES & EXPENDITURES, SEGREGATED BY REGULATED AND UNREGULATED ACTIVITIES**  
**PROPOSED OPERATING BUDGET**  
**APRIL 1, 2017 to MARCH 31, 2018**  
**( In thousands )**

DESCRIPTION	ACTUAL APR 1/15 MAR 31/16	APPROVED BUDGET * APR 1/16 MAR 31/17	PROPOSED BUDGET APR 1/17 MAR 31/18
<b>REGULATED ACTIVITIES</b>			
<b>REVENUES</b>			
METERED SALES	\$116,507	\$121,225	\$121,056
FIRE PROTECTION	\$8,032	\$7,074	\$7,074
PRIVATE FIRE PROTECTION	\$679	\$840	\$857
STORMWATER RIGHT-OF-WAY SERVICE	\$3,881	\$3,881	\$3,881
OTHER OPERATING REVENUE	\$1,262	\$1,213	\$1,151
	<u>\$130,361</u>	<u>\$134,234</u>	<u>\$134,020</u>
<b>EXPENDITURES</b>			
WATER SUPPLY & TREATMENT	\$7,543	\$7,976	\$8,559
TRANSMISSION & DISTRIBUTION	\$8,405	\$8,710	\$8,969
WASTEWATER & STORMWATER COLLECTION	\$13,723	\$14,195	\$14,229
WASTEWATER TREATMENT PLANTS	\$17,421	\$19,425	\$19,251
SMALL SYSTEMS	\$2,129	\$2,116	\$2,324
SCADA, CONTROL & PUMPING	\$1,765	\$2,087	\$2,209
ENGINEERING & INFORMATION SERVICES	\$7,018	\$8,058	\$7,495
REGULATORY SERVICES	\$2,369	\$2,605	\$3,710
CUSTOMER SERVICE	\$4,415	\$4,382	\$4,591
ADMINISTRATION & PENSION	\$9,660	\$10,549	\$11,363
DEPRECIATION	\$20,903	\$21,158	\$22,530
	<u>\$95,350</u>	<u>\$101,263</u>	<u>\$105,239</u>
<b>OPERATING PROFIT</b>	<u>\$35,011</u>	<u>\$32,971</u>	<u>\$28,782</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
INVESTMENT INCOME	\$883	\$810	\$346
MISCELLANEOUS	\$2,055	\$2,066	\$1,948
	<u>\$2,938</u>	<u>\$2,876</u>	<u>\$2,293</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$8,889	\$8,858	\$9,474
LONG TERM DEBT PRINCIPAL	\$20,328	\$22,632	\$24,212
AMORTIZATION DEBT DISCOUNT	\$186	\$199	\$217
DIVIDEND/GRANT IN LIEU OF TAXES	\$4,528	\$4,663	\$4,827
MISCELLANEOUS	\$158	\$0	\$0
	<u>\$34,089</u>	<u>\$36,353</u>	<u>\$38,730</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES - REGULATED ACTIVITIES</b>	<u>\$3,859</u>	<u>(\$506)</u>	<u>(\$7,655)</u>
<b>UNREGULATED ACTIVITIES</b>			
<b>REVENUES</b>			
AEROTECH SEPTAGE TIPPING FEES	\$648	\$650	\$775
LEACHATE	\$331	\$389	\$389
CONTRACT REVENUE	\$93	\$86	\$86
DEWATERING FACILITY/ SLUDGE LAGOON	\$210	\$210	\$210
AIRLINE EFFLUENT	\$51	\$86	\$86
ENERGY PROJECTS	\$198	\$184	\$184
MISCELLANEOUS	\$21	\$22	\$22
	<u>\$1,553</u>	<u>\$1,625</u>	<u>\$1,750</u>
<b>EXPENDITURES</b>			
<b>- DIRECT</b>			
WATER SUPPLY & TREATMENT	\$10	\$18	\$25
WASTEWATER TREATMENT	\$822	\$998	\$821
ENERGY PROJECTS	\$13	\$0	\$0
SPONSORSHIPS & DONATIONS	\$55	\$56	\$66
DEPRECIATION	\$6	\$0	\$0
	<u>\$906</u>	<u>\$1,072</u>	<u>\$912</u>
<b>- INDIRECT (ADMINISTRATION)</b>			
	\$0	\$91	\$91
	<u>\$906</u>	<u>\$1,163</u>	<u>\$1,003</u>
<b>OPERATING PROFIT</b>	<u>\$647</u>	<u>\$463</u>	<u>\$748</u>
<b>FINANCIAL REVENUES (NON-OPERATING)</b>			
MISCELLANEOUS	\$248	\$231	\$310
	<u>\$248</u>	<u>\$231</u>	<u>\$310</u>
<b>FINANCIAL EXPENDITURES (NON-OPERATING)</b>			
LONG TERM DEBT INTEREST	\$0	\$14	\$58
LONG TERM DEBT PRINCIPAL	\$0	\$19	\$79
AMORTIZATION DEBT DISCOUNT	\$0	\$0	\$0
MISCELLANEOUS	(\$128)	\$0	\$15
	<u>(\$128)</u>	<u>\$33</u>	<u>\$152</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES - UNREGULATED ACTIVITIES</b>	<u>\$1,024</u>	<u>\$661</u>	<u>\$905</u>
<b>NET PROFIT (LOSS) AVAILABLE FOR CAPITAL EXPENDITURES - COMBINED ACTIVITIES</b>	<u>\$4,883</u>	<u>\$154</u>	<u>(\$6,750)</u>

\* 2016/17 Operating Budget approved by the Board of Directors, January 28, 2016.

**TO:** Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:**

*Original Signed by:*  
\_\_\_\_\_  
Cathie O'Toole, MBA, CPA, CGA, Director, Corporate Services

*Original Signed by:*  
\_\_\_\_\_  
Reid Campbell, P.Eng., Director, Water Services

*Original Signed by:*  
\_\_\_\_\_  
Susheel Arora, M.A.Sc., P.Eng., Director, Wastewater & Stormwater Services

*Original Signed by:*  
\_\_\_\_\_  
Kenda MacKenzie, P.Eng., Director, Regulatory Services

**APPROVED:** *Original Signed by:*  
\_\_\_\_\_  
Carl D. Yates, M.A.Sc., P.Eng., General Manager

**SUBJECT:** **Financial and Operations Information Report**

**INFORMATION REPORT**

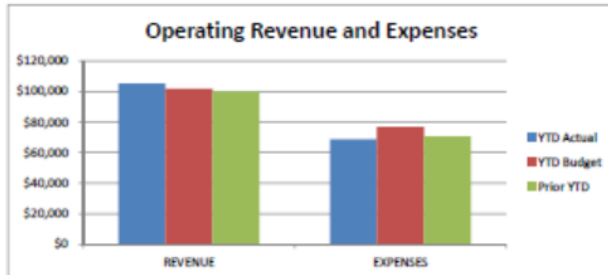
**ORIGIN:**

Regular update.

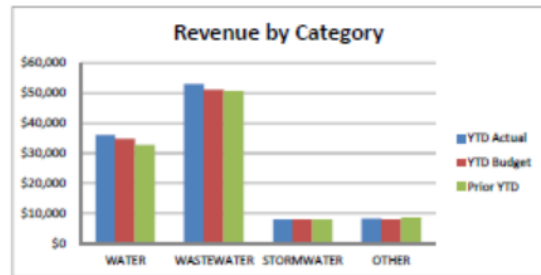
This report provides a high level overview of financial and operational performance for the utility. Financial results are presented first, followed by indicators and statistics for water and wastewater.

**FINANCIAL**

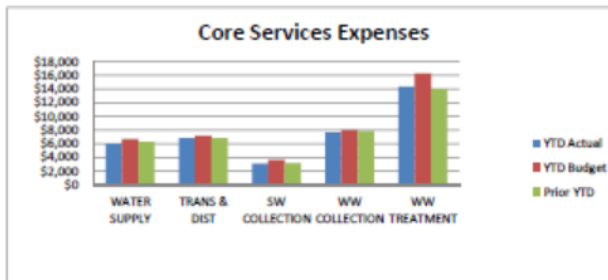
**HALIFAX WATER  
 UNAUDITED FINANCIAL INFORMATION  
 APRIL 1/16 – DECEMBER 31/16 (9 MONTHS)**



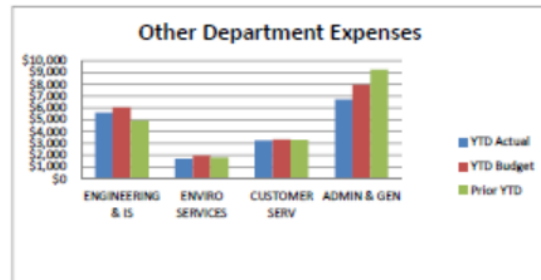
OPERATING REVENUE AND EXPENSES				
	YTD Actual	YTD Budget	Prior YTD	% of Budget
REVENUE	\$105,259	\$101,756	\$100,045	77.58%
EXPENSED	\$68,790	\$76,818	\$70,550	67.16%
	<b>\$36,469</b>	<b>\$24,938</b>	<b>\$29,494</b>	<b>109.88%</b>



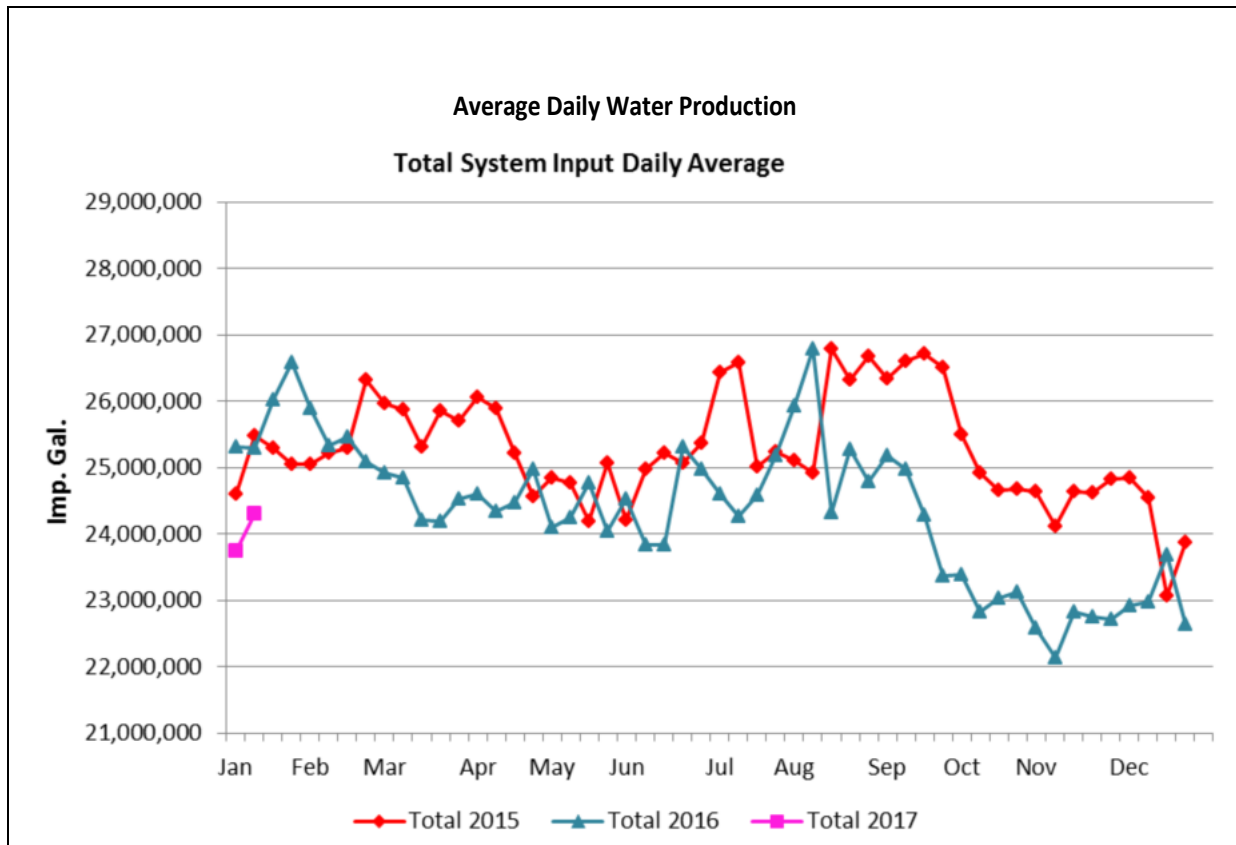
REVENUE BY CATEGORY			
	YTD Actual	YTD Budget	Prior YTD
WATER	\$36,048	\$34,856	\$32,777
WASTEWATER	\$52,993	\$51,039	\$50,715
STORMWATER	\$7,949	\$7,942	\$7,956
OTHER	\$8,270	\$7,919	\$8,597
	<b>\$105,259</b>	<b>\$101,756</b>	<b>\$100,046</b>



CORE SERVICES EXPENSES				
	YTD Actual	YTD Budget	Prior YTD	% of Budget
WATER SUPPLY	\$5,994	\$6,550	\$6,269	67.60%
TRANS & DIST	\$6,807	\$7,167	\$6,772	71.23%
SW COLLECTION	\$3,093	\$3,592	\$3,158	64.57%
WW COLLECTION	\$7,603	\$7,996	\$7,816	71.31%
WW TREATMENT	\$14,318	\$16,255	\$14,011	66.06%
	<b>\$37,814</b>	<b>\$41,869</b>	<b>\$38,026</b>	<b>88.08%</b>



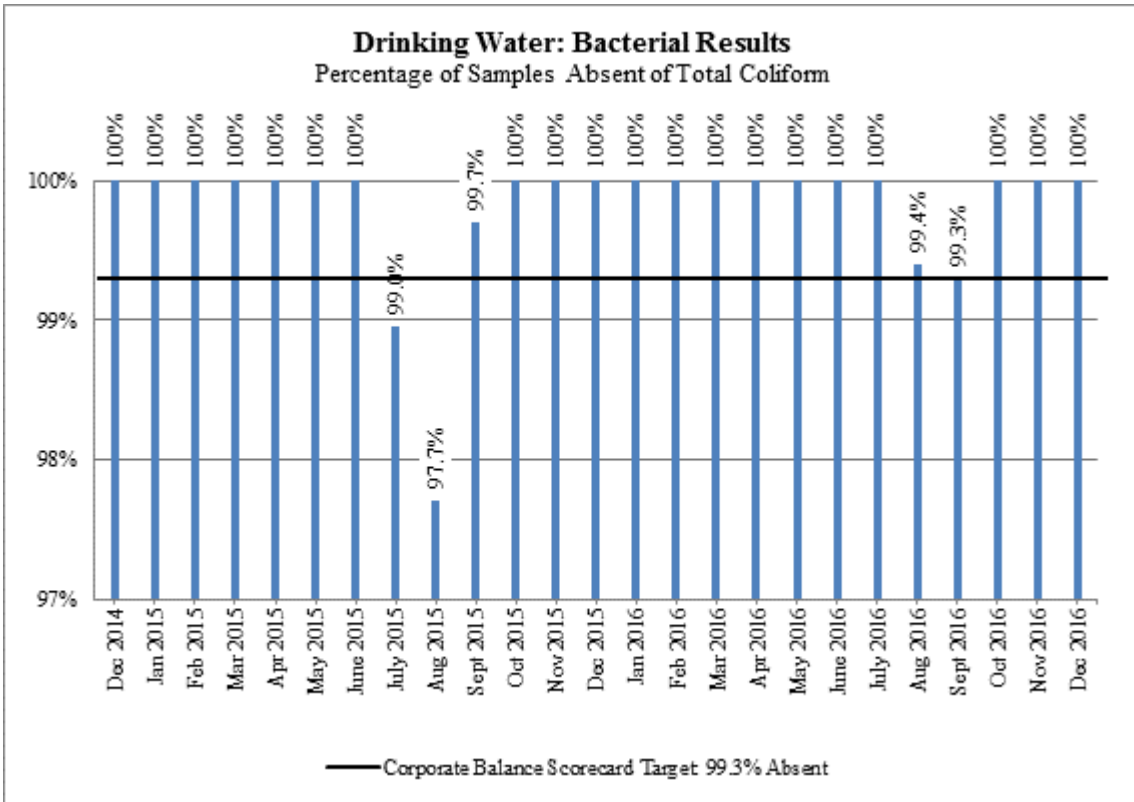
OTHER DEPARTMENT EXPENSES			
	YTD Actual	YTD Budget	Prior YTD
ENGINEERING & IS	\$5,598	\$6,050	\$4,921
ENVIRO SERVICES	\$1,679	\$1,953	\$1,789
CUSTOMER SERV	\$3,251	\$3,314	\$3,274
ADMIN & GEN	\$6,719	\$7,973	\$9,257
	<b>\$17,247</b>	<b>\$19,291</b>	<b>\$19,242</b>



Regional Water Main Break/Leak Data		
Year	Total Breaks/Leaks	Current 12 Month Rolling Total (up to August 31/16)
2015/16	226	229
2014/15	210	
2013/14	213	
2012/13	262	
2011/12	205	
<b>Total</b>	<b>1116</b>	
<b>Yr. Avg.</b>	<b>217.6</b>	

Water Accountability
Losses per Service Connection/Day (International Water Association Standard)
<i>Period Ending December 31, 2017</i>
Real Losses: 249 litres
CBS Target: 180





Water Quality Master Plan Objectives				
2016-2017 Q3				
Objective	Total Sites	% of Sites Achieving Target	All Sites: 90th Percentile < 15 µg/L	CBSC Awarded Points
Disinfection	66	97%	---	17
Total Trihalomethanes	24	100%	---	20
Halacetic Acids	21	95%	---	16
Particle Removal	5	100%	---	20
Corrosion Control*	69	---	6.1	20
<b>TOTAL</b>				<b>93</b>

Score: 93/100

In this report each facility is assessed using monthly or quarterly averages, depending on the averaging period specified in its Approval to Operate.

Wastewater Treatment Facility	Wastewater Treatment Facility Compliance Summary																Toxicity	Trend	
	Rolling Averages - October, November and December 2016																		
	CBOD <sub>5</sub> (mg/L)		TSS (mg/L)		E. coli (counts/100mL)		pH		Ammonia (mg/L)		Phosphorous (mg/L)		TRC (mg/L)		Dissolved Oxygen (mg/L)				
NSE Limit	Avg.	NSE Limit	Avg.	NSE Limit	Avg.	NSE Limit	Avg.	NSE Limit	Avg.	NSE Limit	Avg.	NSE Limit	Avg.	NSE Limit	Avg.	NSE Limit	Avg.		
Halifax	50	28	40	21	5000	1783	6-9	6.9	-	-	-	-	-	-	-	-	-	Not acutely lethal	Continued
Dartmouth	50	20	40	20	5000	355	6-9	6.8	-	-	-	-	-	-	-	-	-	Not acutely lethal	Improved
Herring Cove	50	11	40	11	5000	447	6-9	7.2	-	-	-	-	-	-	-	-	-	Not acutely lethal	Continued
Eastern Passage	50	7	40	9	5000	52	6-9	6.9	-	-	-	-	-	-	-	-	-	Not acutely lethal	Continued
Mill Cove	25	11	25	15	200	493	6.5-9	6.6	-	-	-	-	-	-	-	-	-	Lethal	Declined
Springfield	20	4	20	7	200	36	6-9	6.5	-	-	-	-	-	-	-	-	-	Not acutely lethal	Improved
Belmont	25	40	25	82	200	2686	6-9	7.0	-	-	0.02	0.29	-	-	-	-	-	-	Continued
Frame	20	10	20	37	200	256	6-9	7.2	-	-	0.02	<0.10	-	-	-	-	-	-	Declined
Middle Musq.	20	5	20	6	200	22	6-9	7.3	-	-	-	-	-	-	-	-	-	-	Continued
Uplands	20	6	20	4	200	79	6-9	7.0	-	-	-	-	-	-	-	-	-	-	Continued
Aerotech	5	4	5	3	200	10	6-9	7.2	5.7 W 1.2 S	0.7	0.5	0.2	-	6.5	8.8	-	-	Not acutely lethal	Continued
North Preston	10	5	10	3	200	10	6-9	6.9	3	0.2	1.5	0.5	-	-	-	-	-	-	Continued
Lockview	20	5	20	10	200	10	6.5-9	6.7	8.0 S	2.9	1.2 S	0.6	-	-	-	-	-	-	Continued
Steeves (Wellington)	20	5	20	1	200	10	6.5-9	7.4	14.4 S	0.1	1.0 S	0.1	-	-	-	-	-	-	Continued
BLT	15	13	20	26	200	20	6-9	7.5	5 W 3 S	7.3	3 W 1 S	2.1	0.02	0.14	5	7.7	-	Not acutely lethal	Declined
Avg. of all Facilities	12		17		418		7.0		2.2		0.7		0.18		8.3				

**NOTES & ACRONYMS:**

CBOD<sub>5</sub> - Carbonaceous 5-Day Biochemical Oxygen Demand

TSS - Total Suspended Solids

TRC - Total Residual Chlorine

W / S - Winter / Summer compliance limits

NSE requires monthly averages be less than the NSE Compliance Limit for each parameter (Dartmouth, Eastern Passage, Halifax, Herring Cove, Mill Cove)

NSE requires quarterly averages be less than the NSE Compliance Limit for each parameter (Aerotech, Lockview, Mid. Musq., Belmont, Frame, BLT, Uplands, North Preston, Steeves, Springfield)

Continued - All parameters remain essentially unchanged since the last report

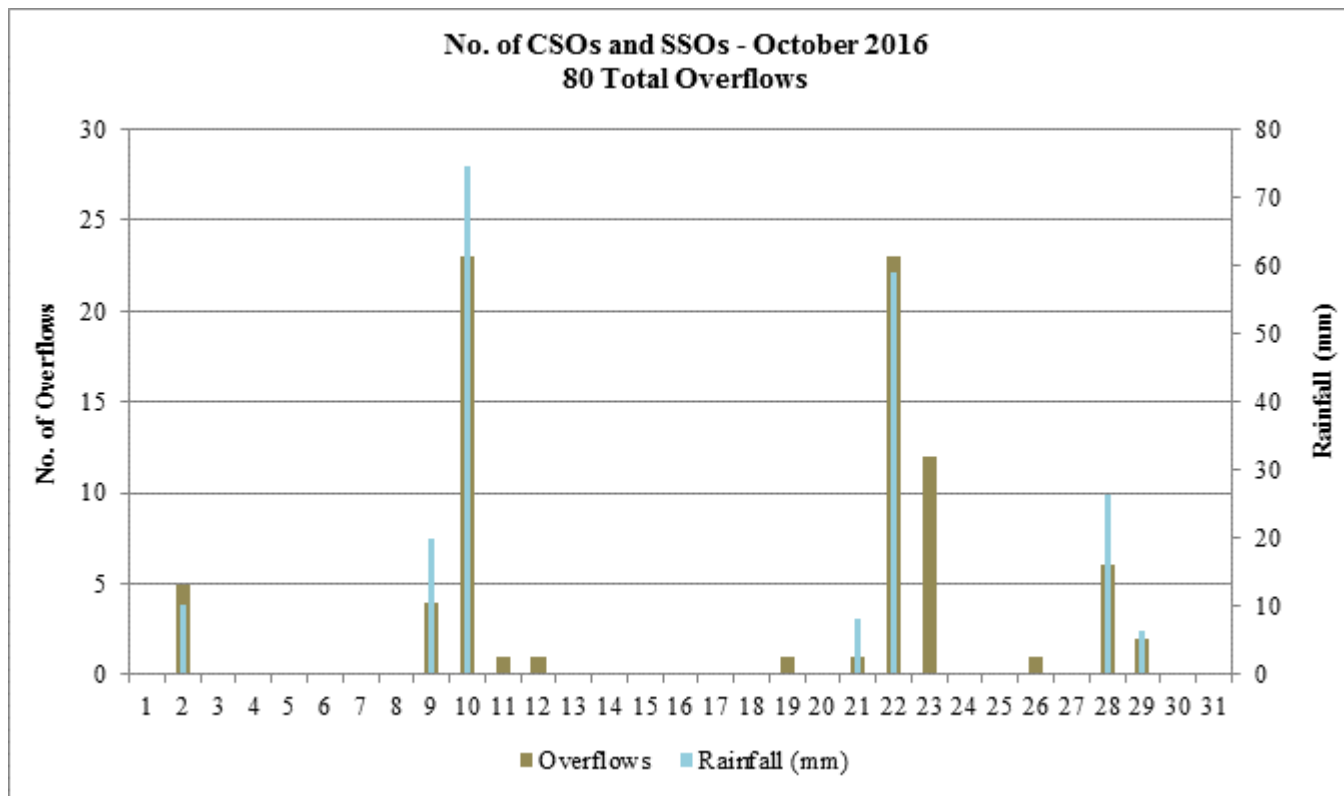
Improved - One or more parameter(s) became compliant since the last report

Declined - One or more parameter(s) became non-compliant since the last report

**LEGEND**

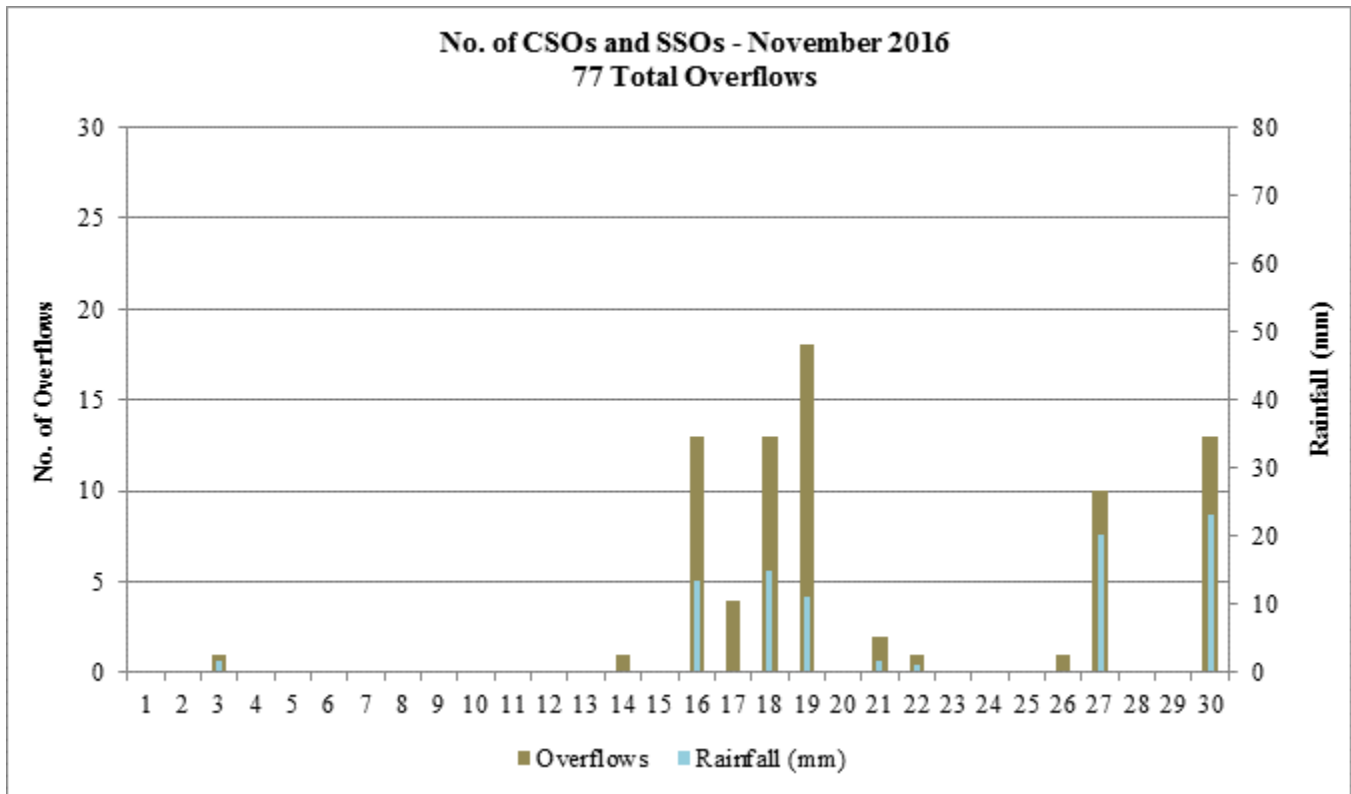
	NSE Compliant
	NSE Non-Compliant

NOTE: Belmont WWTF is being decommissioned January 2017.



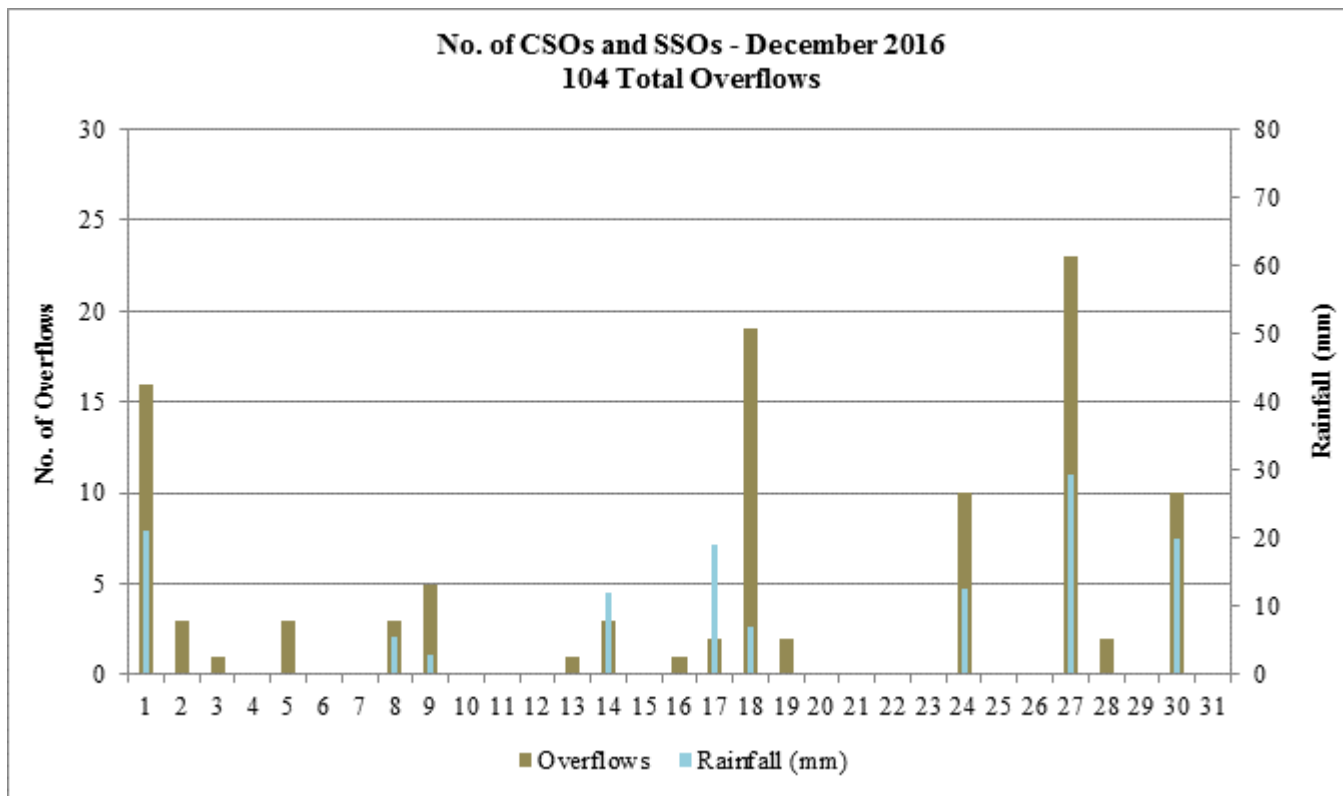
NOTES & ACRONYMS: CSO - Combined Sewer Overflow SSO - Sanitary Sewer Overflow

- Rainfall data is from Halifax Water’s rain gauge at the Halifax WWTF.
- There were sixteen overflows on days when there was no recorded rainfall, as follows:
  1. October 11: The CSO at the Melva St PS & CSO was due to heavy rainfall on the previous day.
  2. October 12: The CSO at the Melva St PS & CSO was due to mechanical issues.
  3. October 19: The CSO at the Ferguson Rd CSO was caused by maintenance conducted at the Jamieson St PS.
  4. October 23: The CSOs at the Ferguson Rd CSO, Lyle St CSO, Park Ave PS & CSO, Jamieson St PS & CSO, Maitland St PS & CSO, Old Ferry Rd PS & CSO and Melva St PS & CSO were due to heavy rainfall on the previous day. The SSO at the Beaver Cres PS was also due to heavy rainfall on the previous day.
  5. October 26: The CSO at the Wallace St CSO resulted from minimal rainfall.



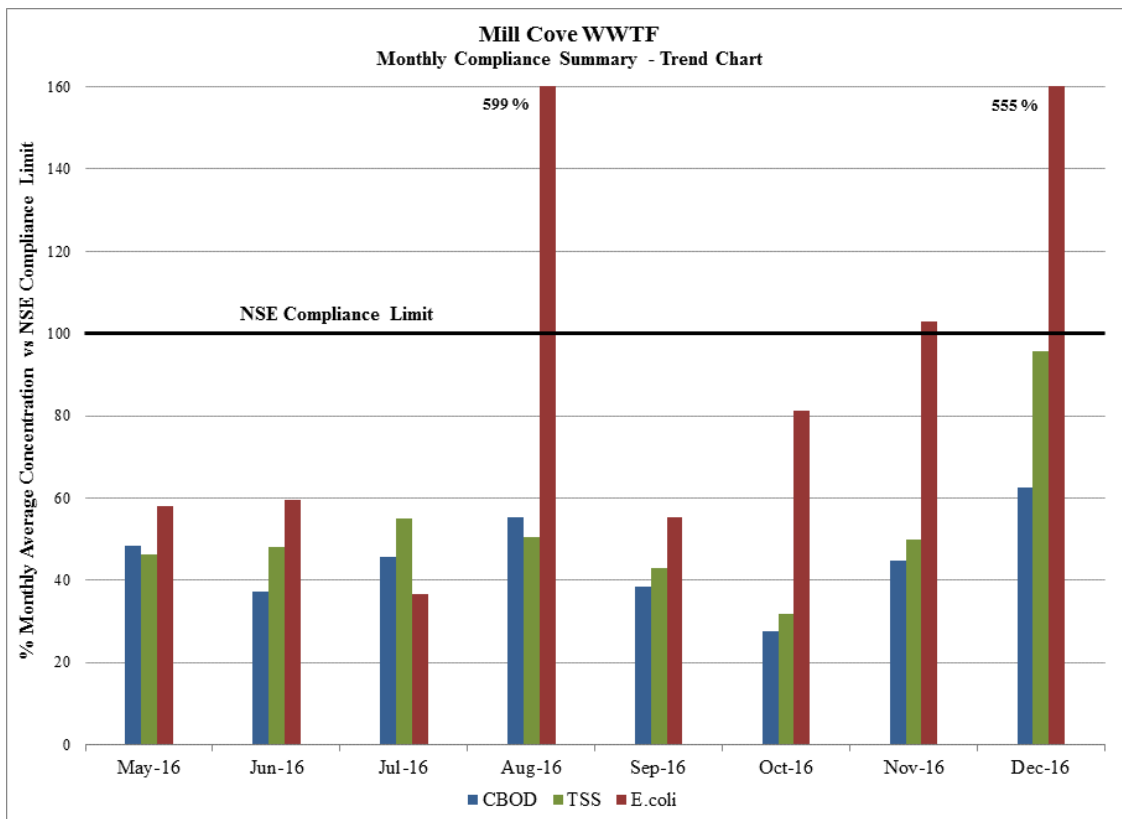
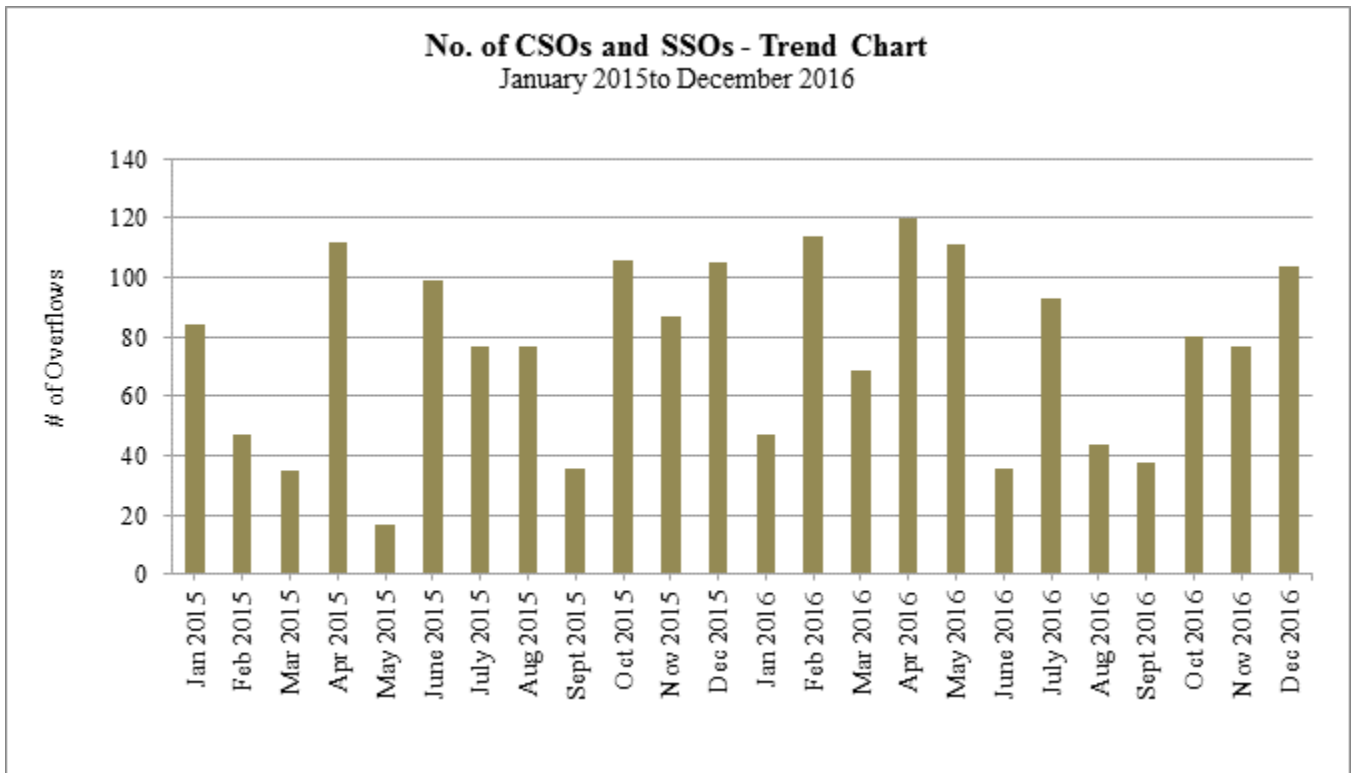
NOTES & ACRONYMS: CSO - Combined Sewer Overflow SSO - Sanitary Sewer Overflow

- Rainfall data is from Halifax Water’s rain gauge at the Halifax WWTF.
- There were six overflows on days when there was no recorded rainfall, as follows:
  1. November 14: The CSO at the Grove St CSO was due to valve blockages caused by debris.
  2. November 17: The CSO at the Grove St CSO was due to valve blockages caused by debris. The CSOs at the Lyle St CSO and Maitland St PS & CSO were due to rainfall on the previous day.
  3. November 26: The CSO at the Grove St CSO was due to valve blockages caused by debris.

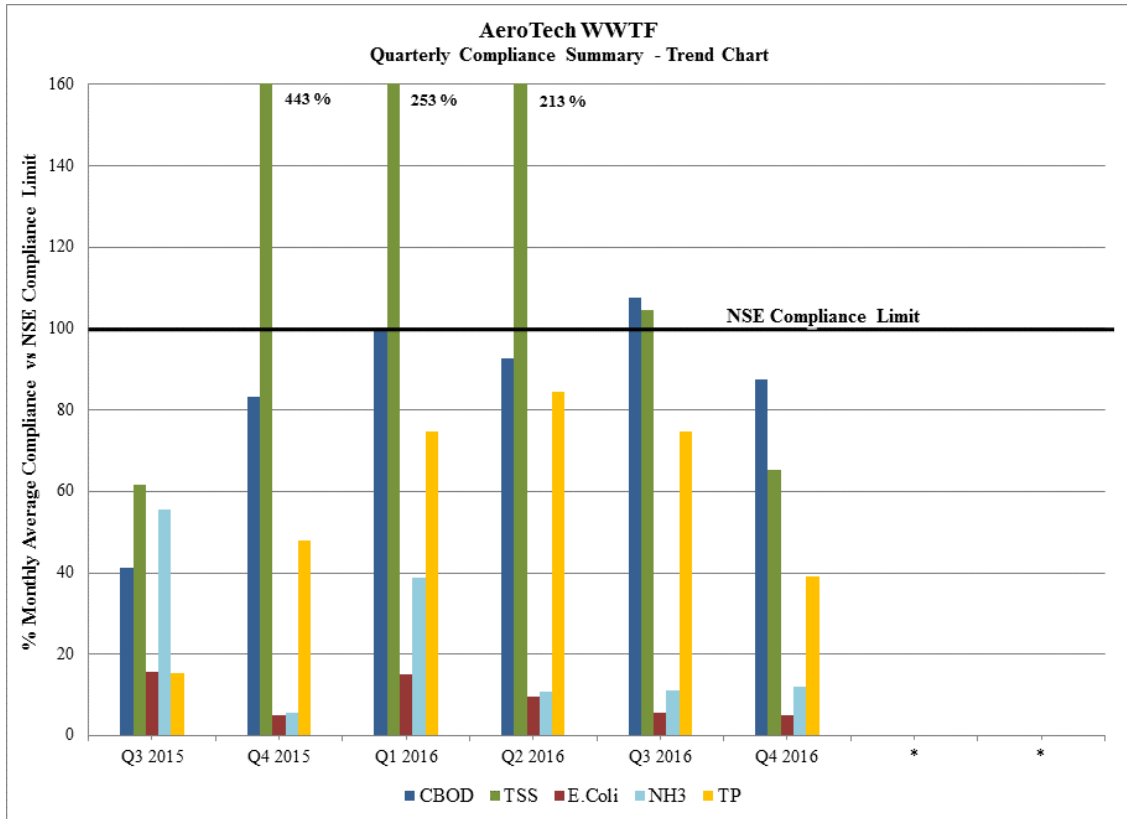


NOTES & ACRONYMS: CSO - Combined Sewer Overflow SSO - Sanitary Sewer Overflow

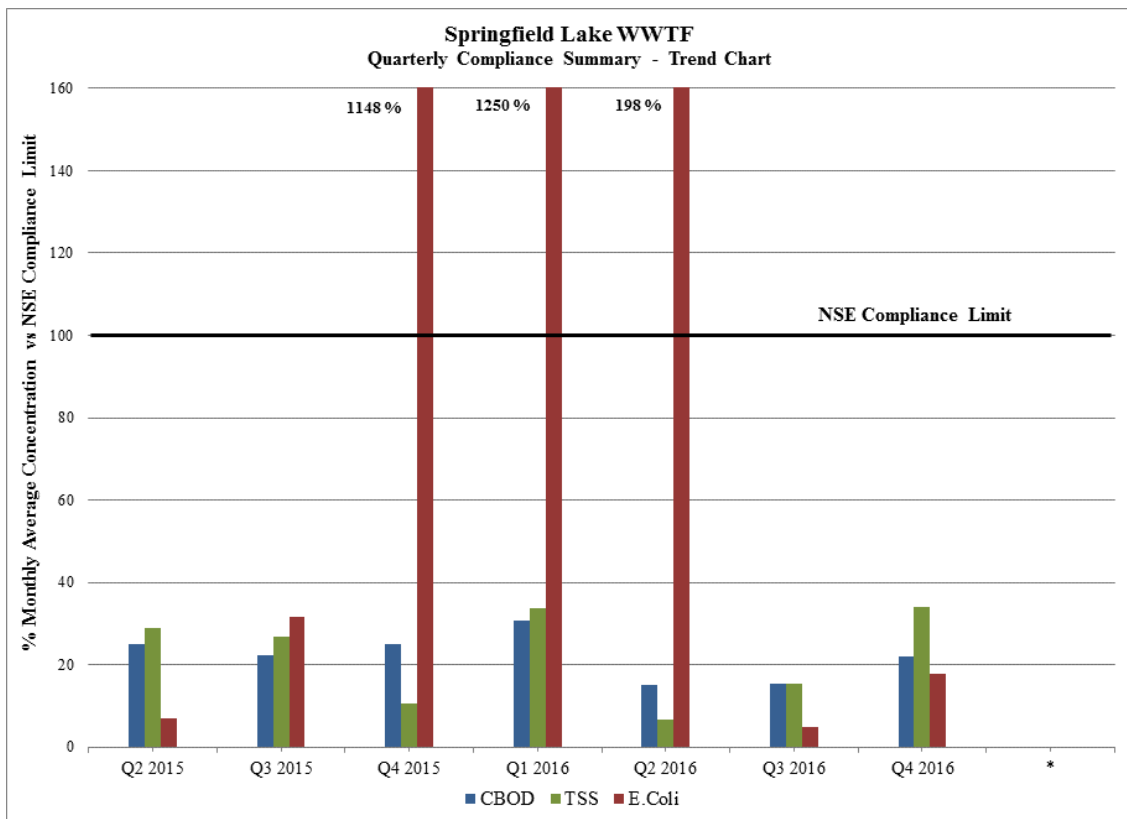
- Rainfall data is from Halifax Water’s rain gauge at the Halifax WWTF.
- There were thirteen overflows on days when there was no recorded rainfall, as follows:
  1. December 2: The CSOs at the Maitland St PS & CSO, Old Ferry Rd PS & CSO and Cuisack St CSO were due to rainfall on the previous day.
  2. December 3: The CSO at the Maitland St PS & CSO was due to valve blockages caused by debris.
  3. December 5: The CSOs at the Ferguson Rd CSO, Grove St CSO and Wallace St CSO were due to a planned maintenance at the Jamieson St PS & CSO.
  4. December 13: The CSO at the Wallace St CSO was due to blockages caused by debris.
  5. December 16: The SSO at the Bissett Lake PS was due to snow melt.
  6. December 19: The CSO at the Maitland St PS & CSO resulted from a combination of rainfall, snow melt and valve blockages caused by debris. The SSO at the Beaver Cres PS was due to snow melt.
  7. December 28: The CSO at the Maitland St PS & CSO was due to heavy rainfall the previous day. The SSO at the Weybridge PS was due to an electrical failure.



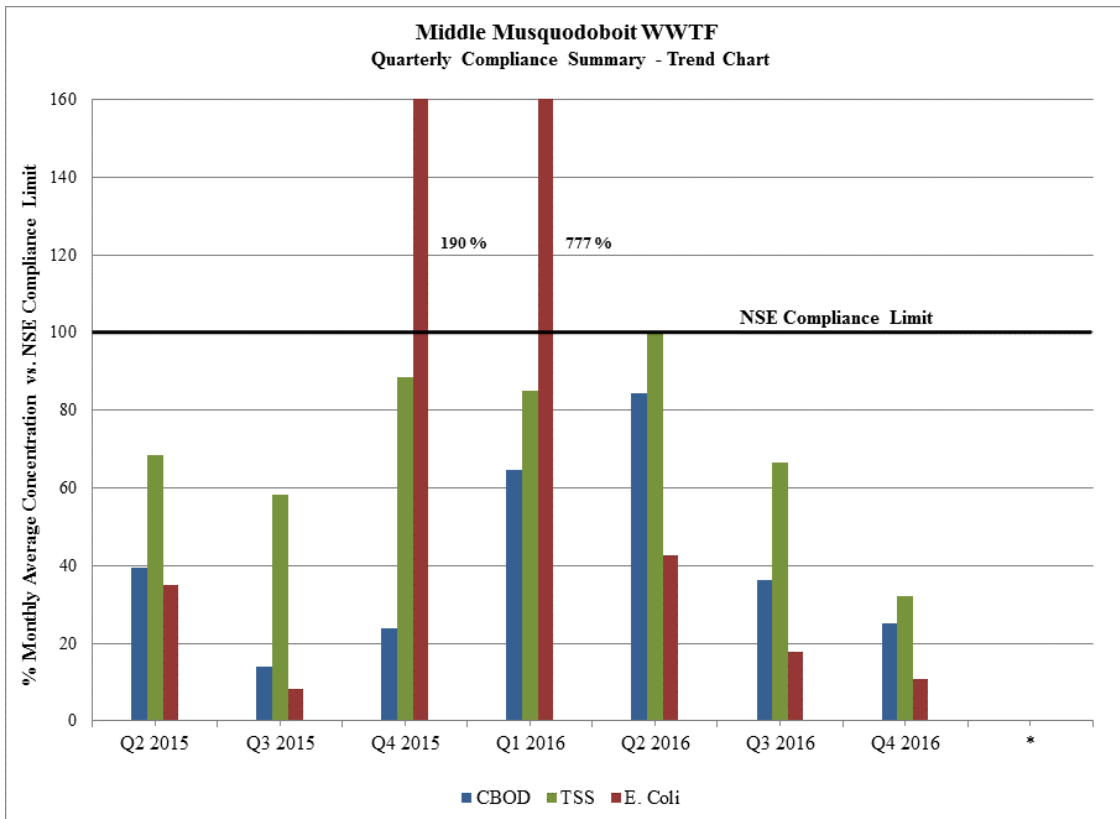
Lower numbers represent better performance



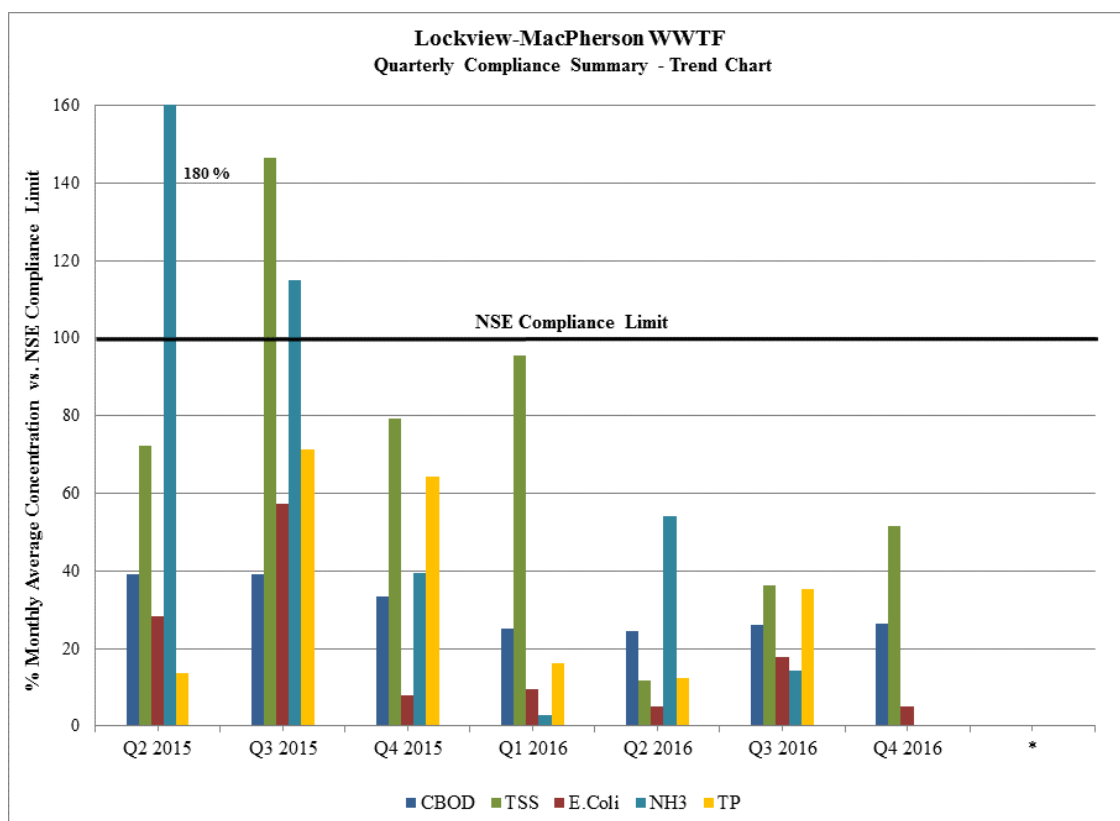
Lower numbers represent better performance.



Lower numbers represent better performance

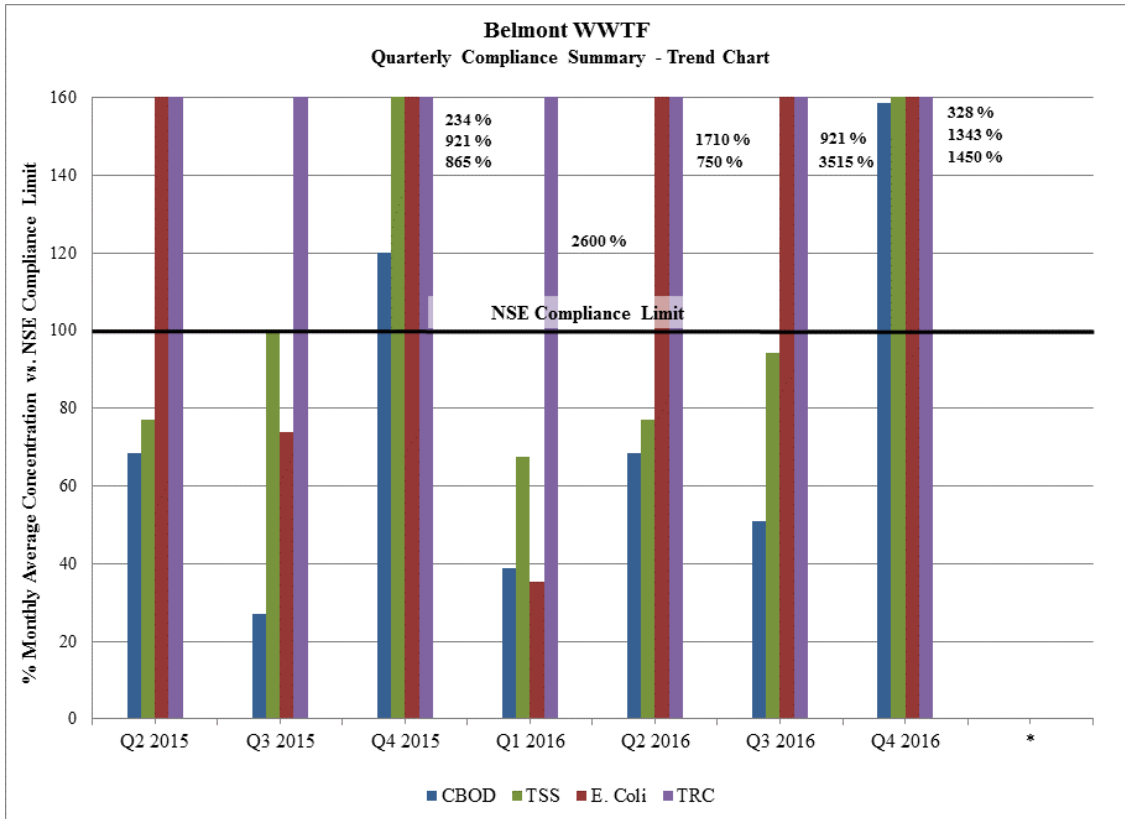


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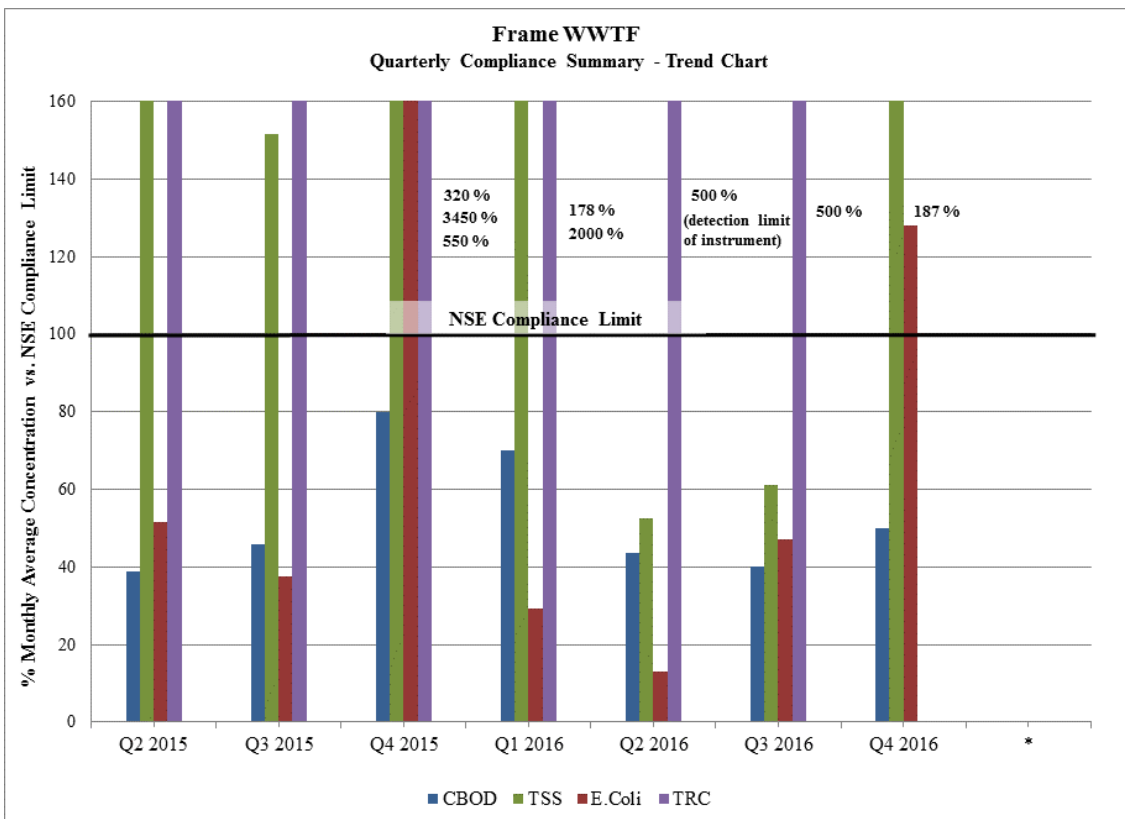


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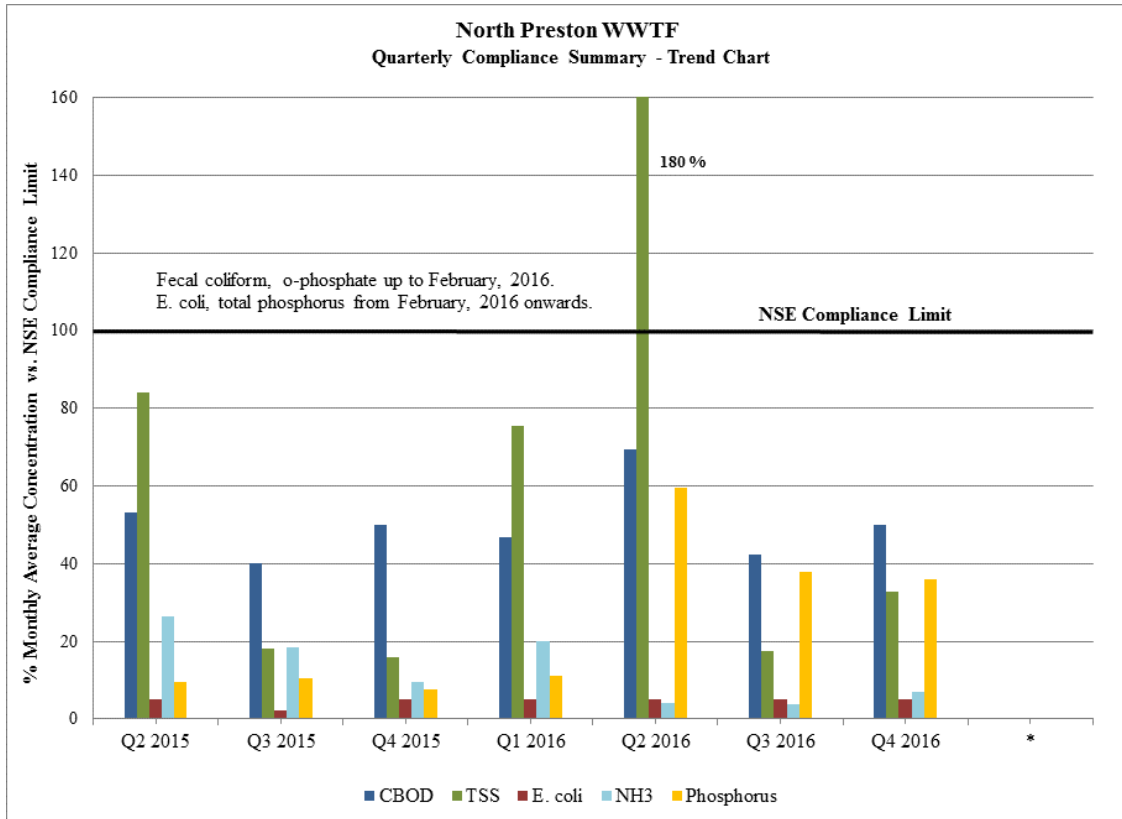




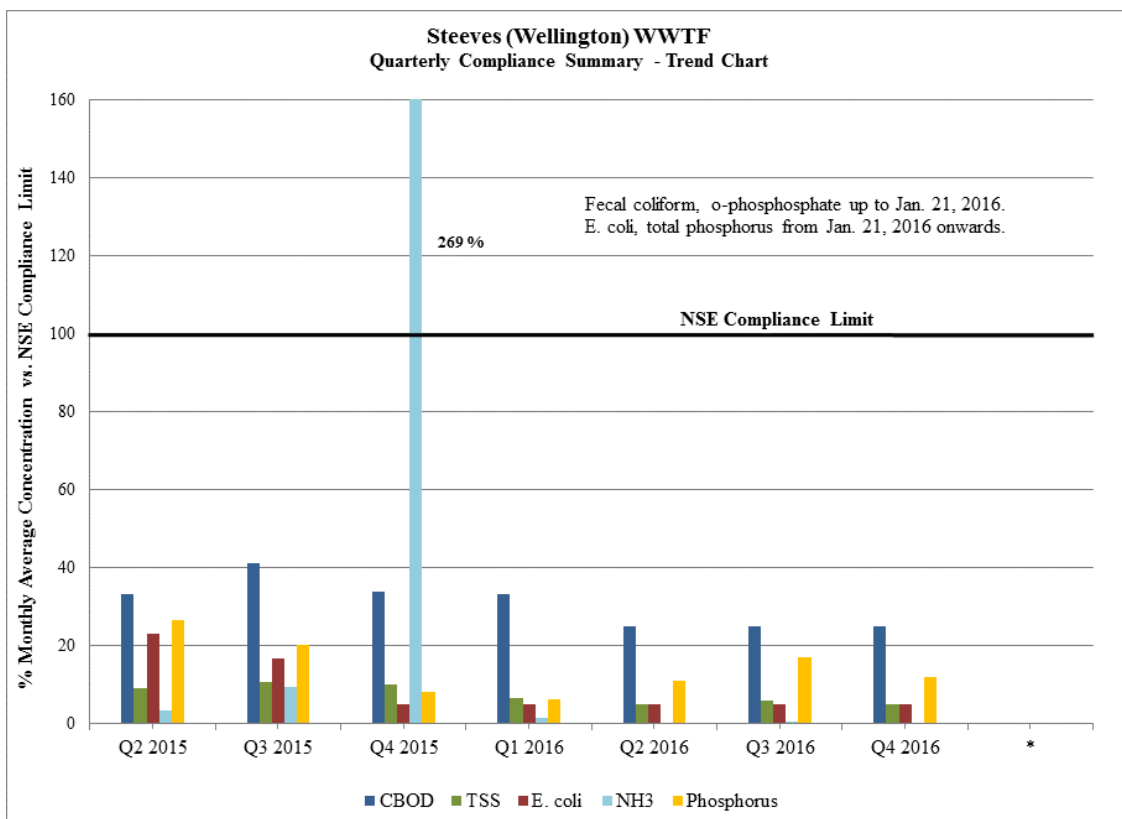
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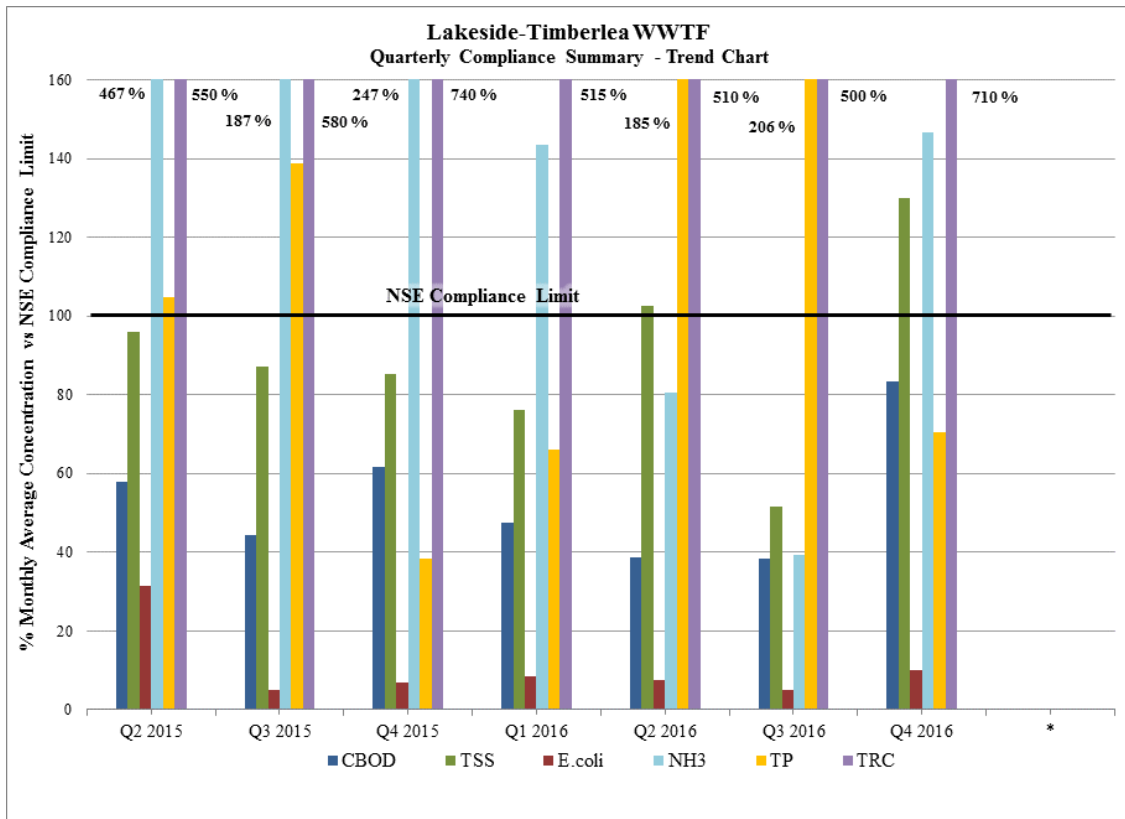
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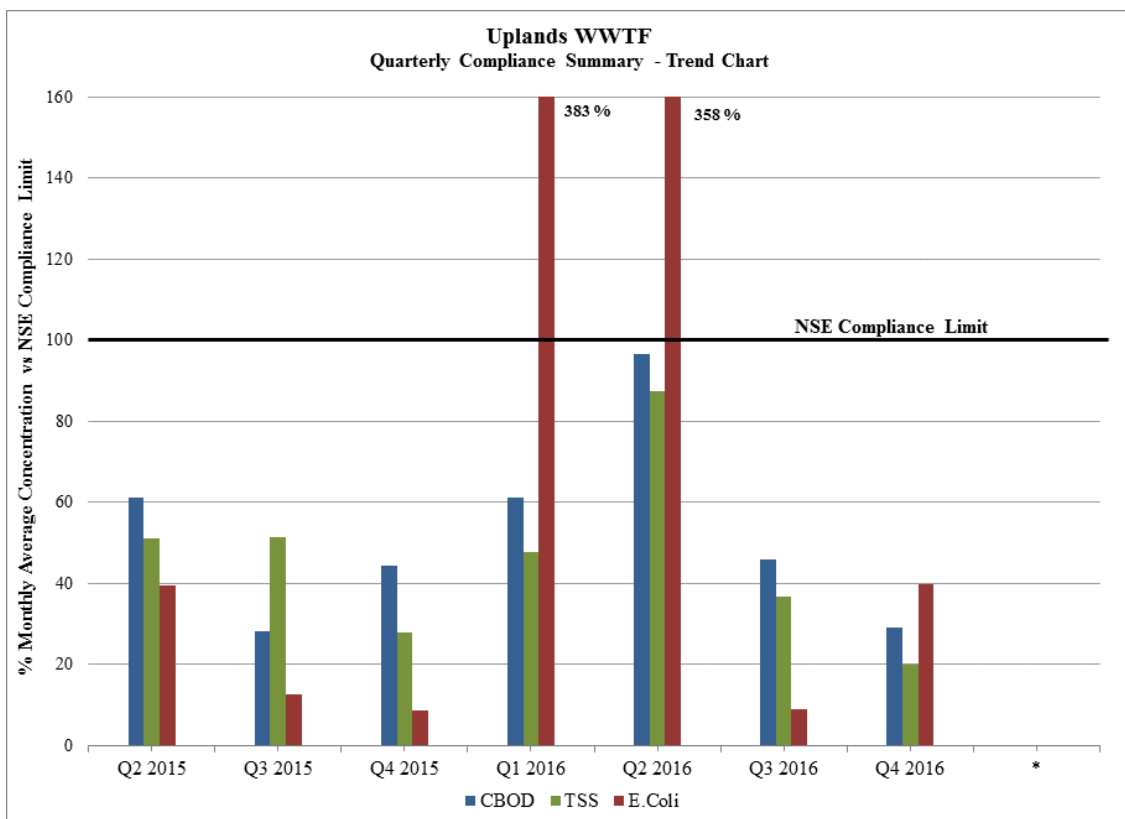
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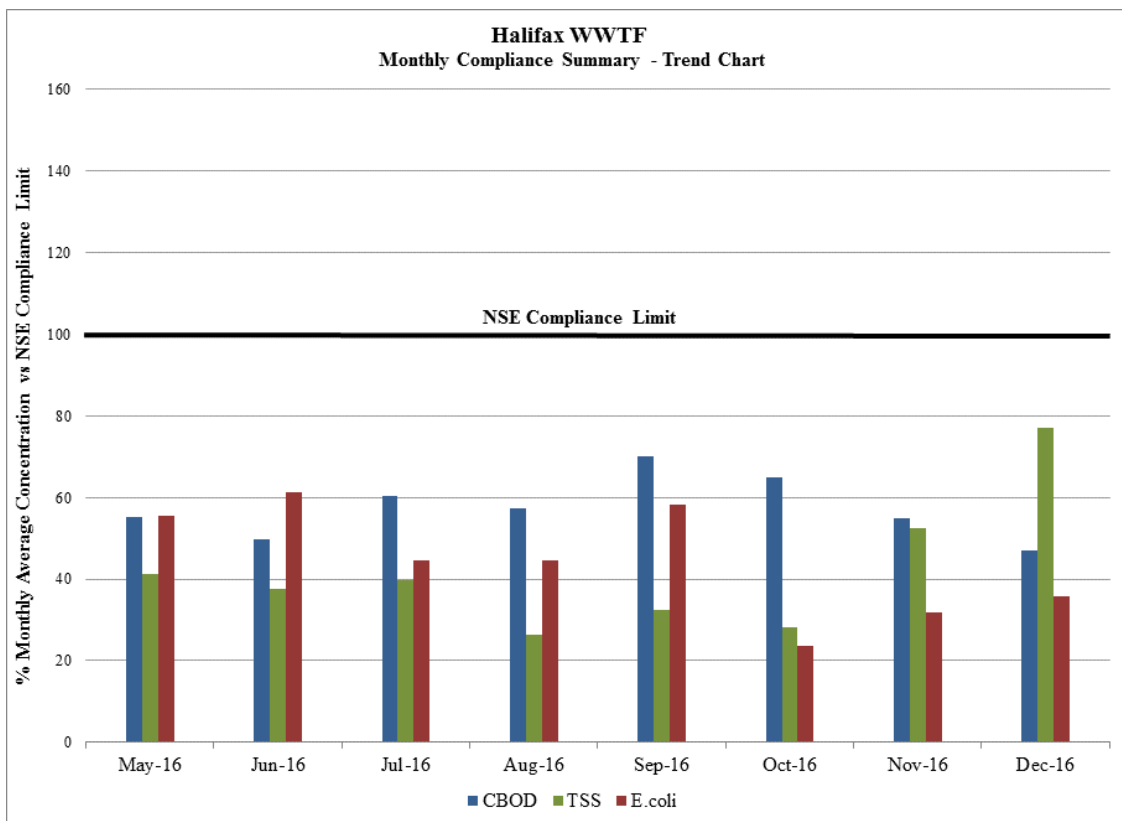
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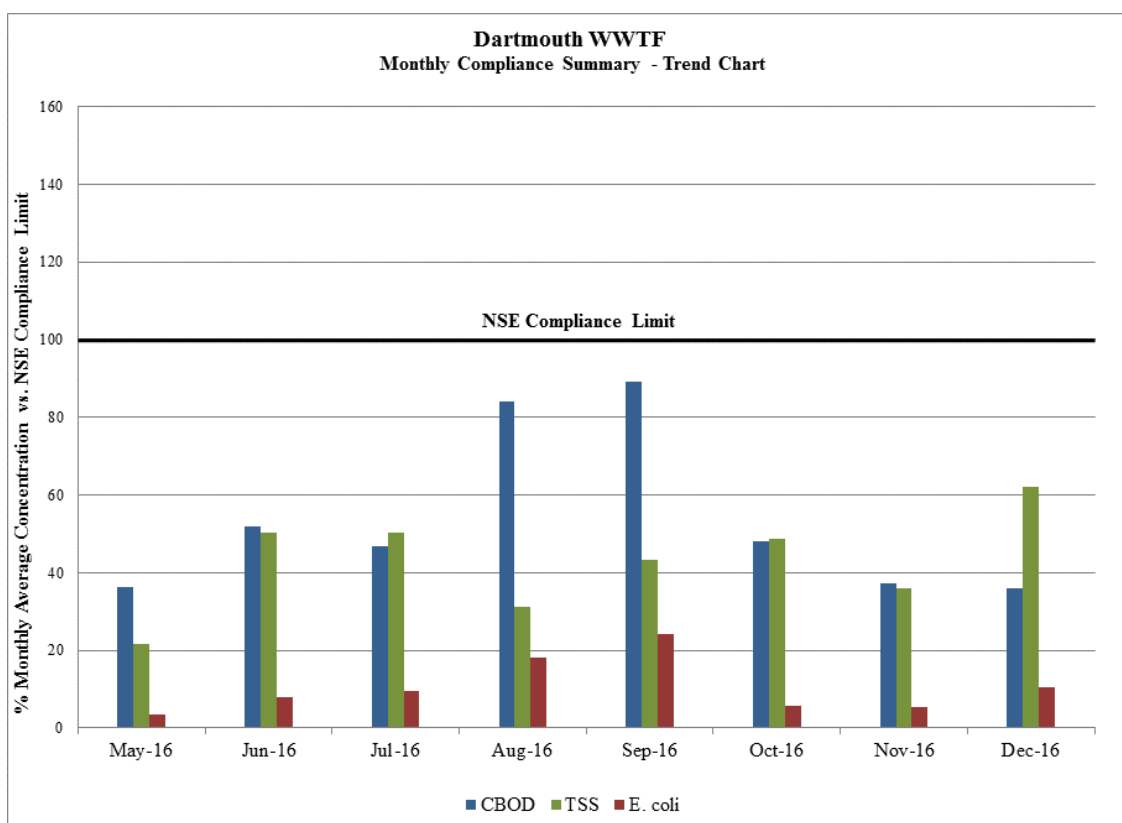
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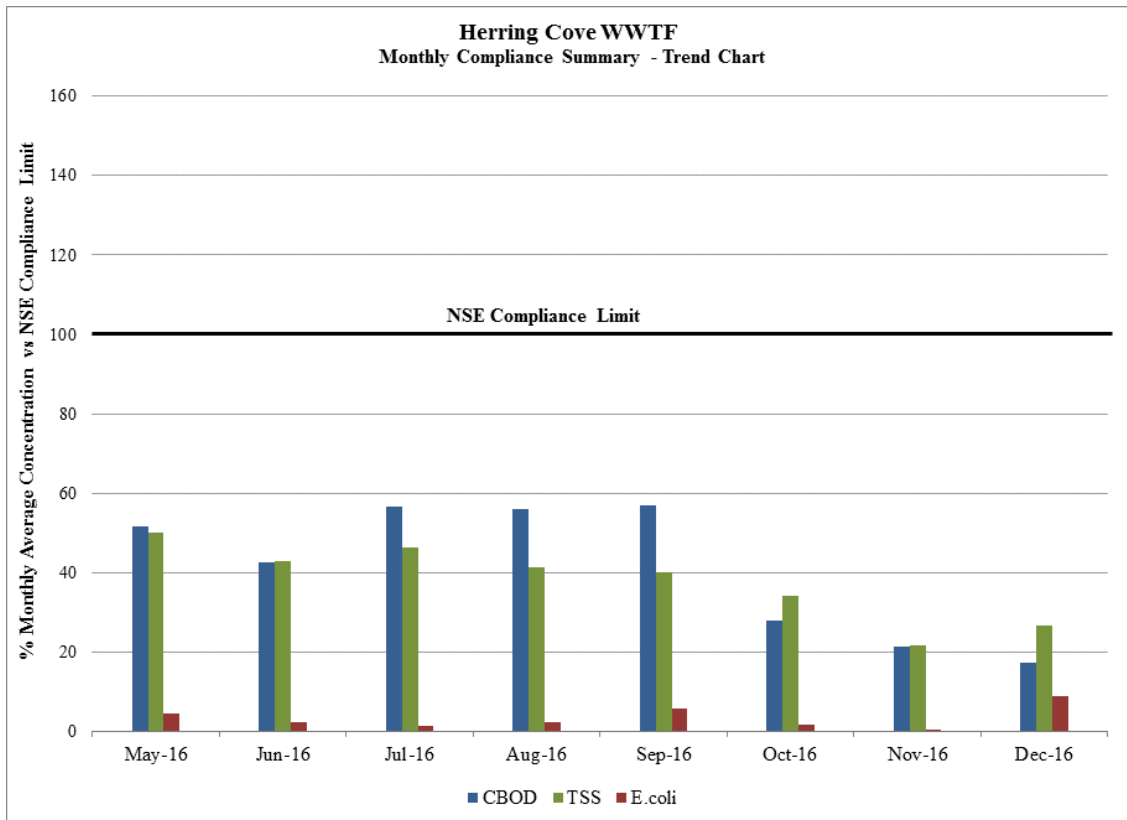
Lower numbers represent better performance



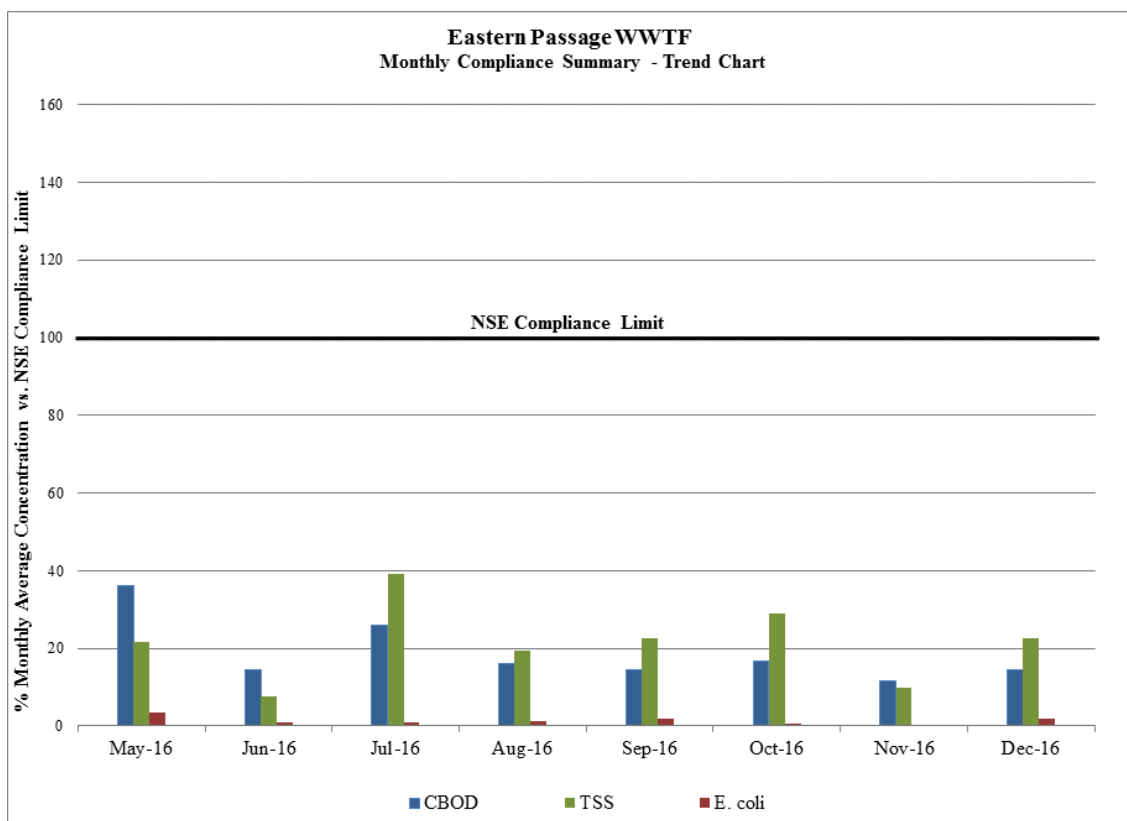
Lower numbers represent better performance



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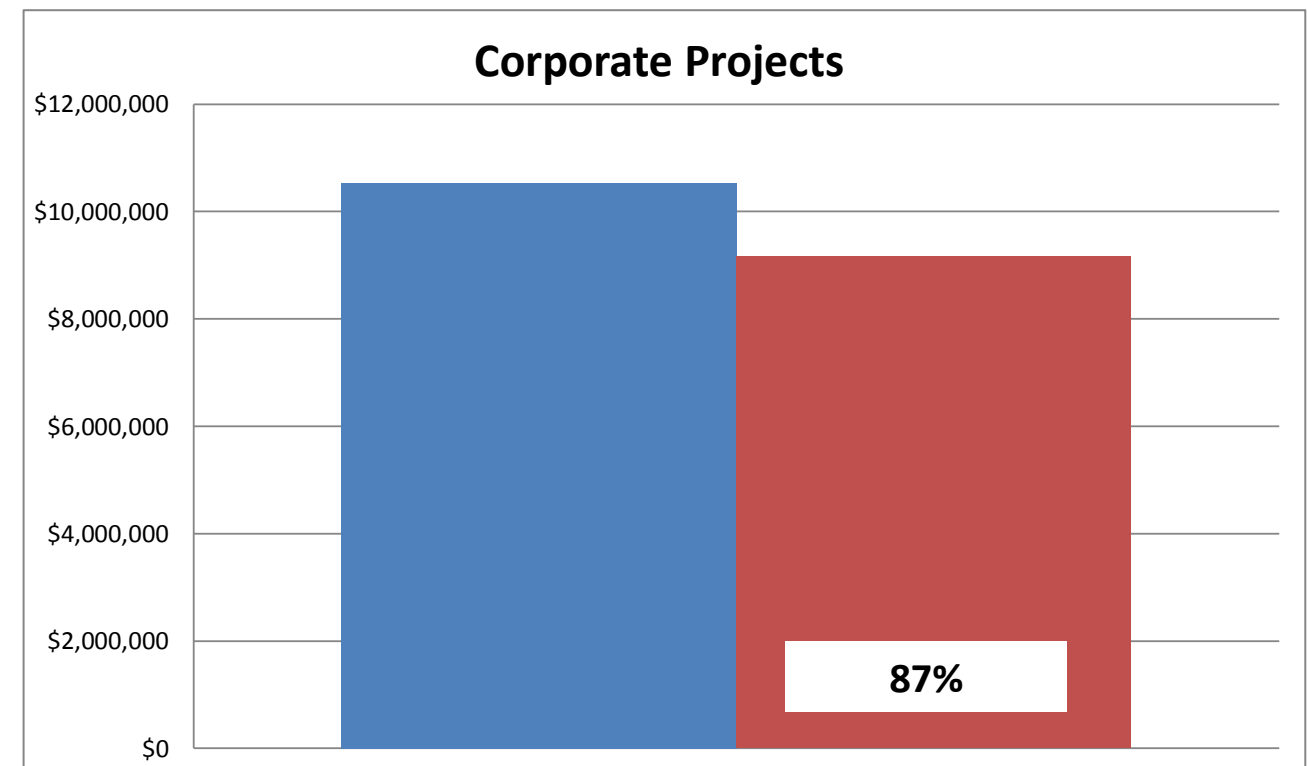
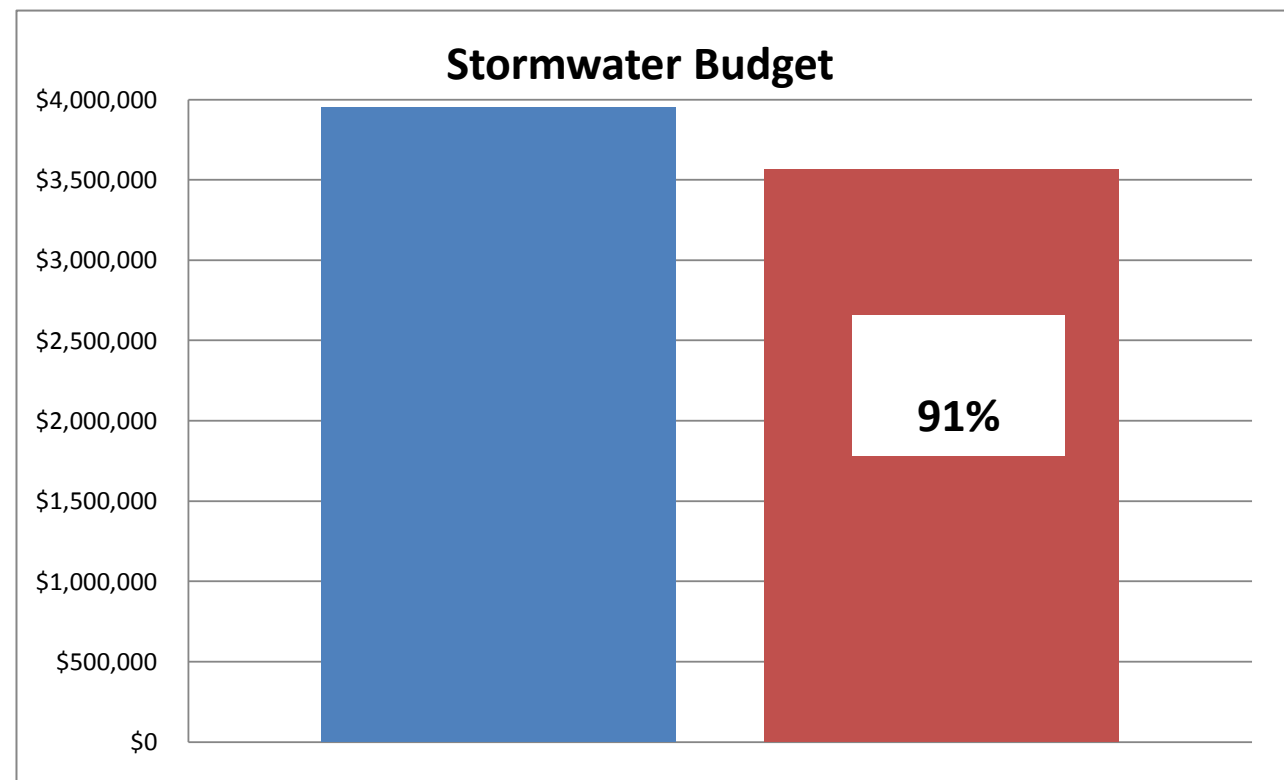
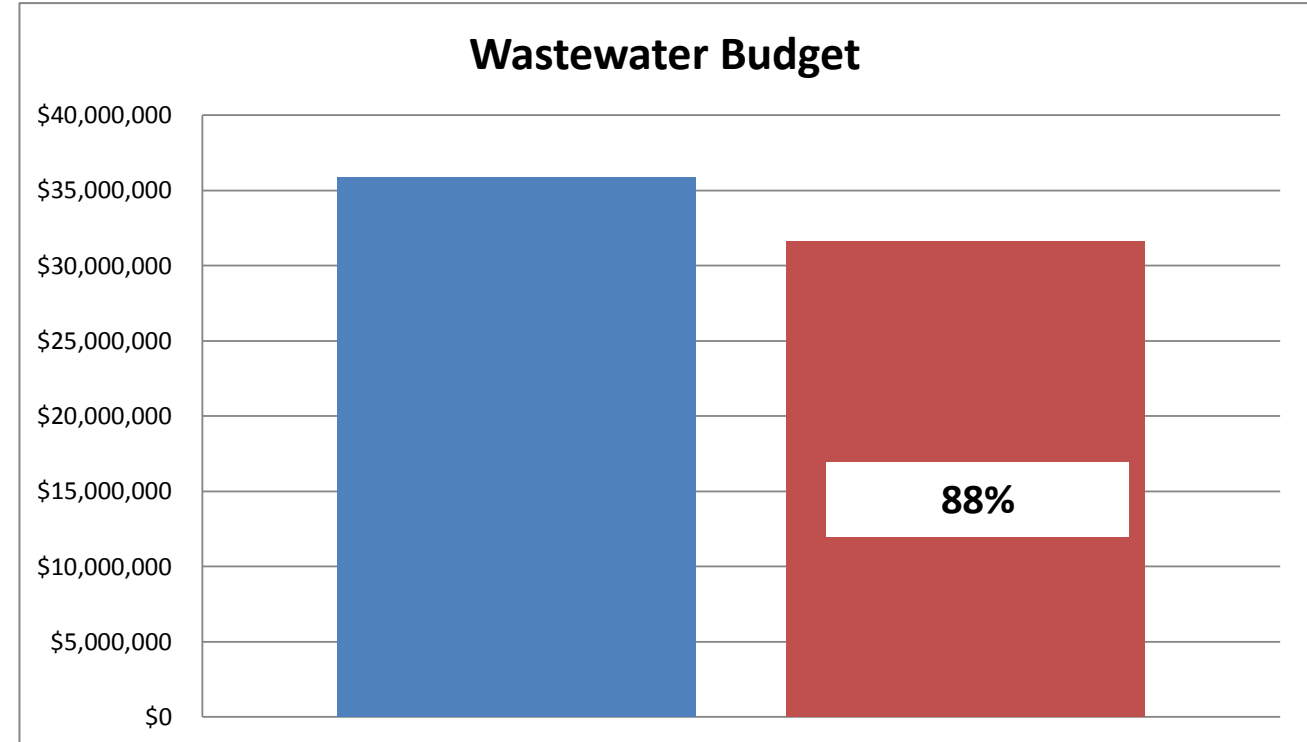
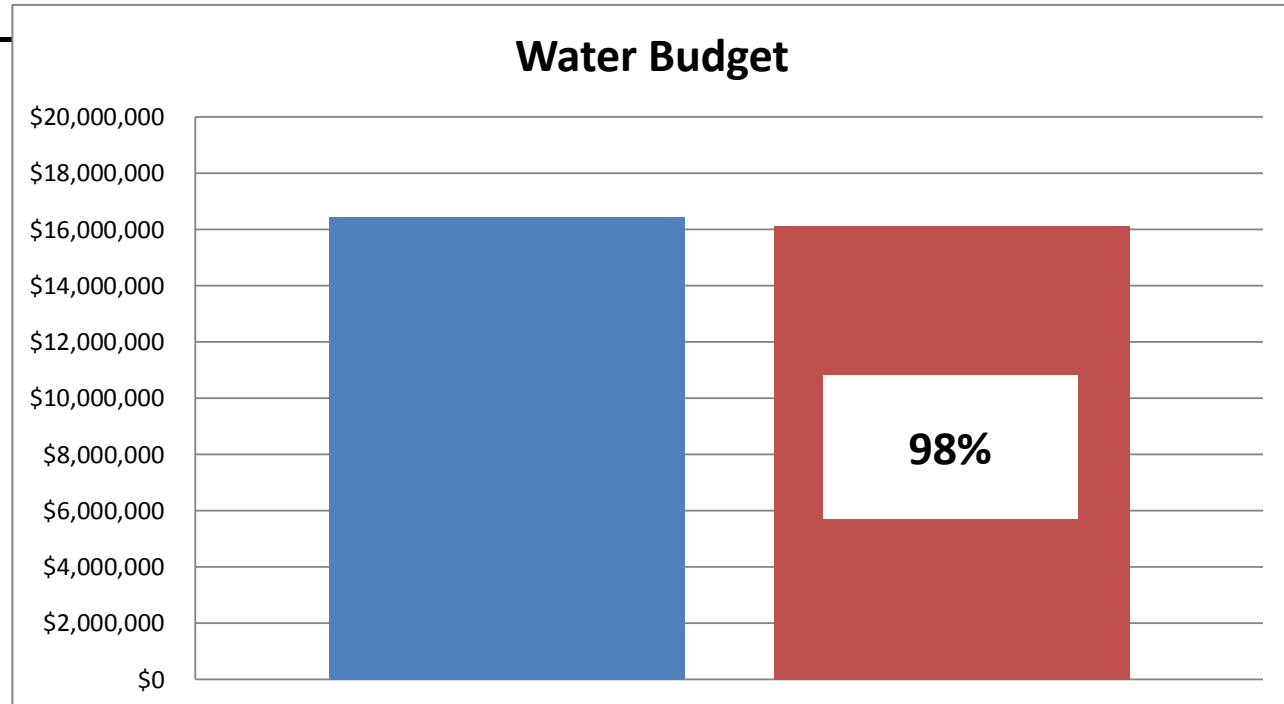


Lower numbers represent better performance



Lower numbers represent better performance

**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**



**WATER**

Approved Budget	\$16,453,000	98%
Approvals to date	\$16,132,600	

**STORMWATER**

Approved Budget	\$3,951,000	90%
Approvals to date	\$3,563,000	

**WASTEWATER**

Approved Budget	\$35,838,000	88%	Total Budget:	\$66,777,000.00
Approvals to date	\$31,580,200		Total To Date:	\$60,436,800.00

**CORPORATE PROJECTS**

Approved Budget	\$10,535,000	87%	Total % to date	91%
Approvals to date	\$9,161,000			

**WATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WATER \$16,453,000**

Date of Approval				Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB	Description					
<b>2016/17 Capital Budget</b>								
28-Jan-16		24-Mar-16	<b>Advanced Funding Integrated Projects</b>					
			<b>East</b>					
			Murray Hill Drive W/M Renewal	\$455,000	\$455,000	Dexter	\$377,077	\$479,730
			Farquharson Street Water Main Renewal	\$500,000	\$500,000	Dexter	\$387,693	\$458,858
			Brompton Road	\$215,000	\$215,000	Dexter	\$166,299	\$190,582
			Everette Street Water Main Renewal	\$410,000	\$410,000	Dexter	\$251,384	\$328,500
		24-Mar-16	<b>West</b>					
			Scarlet Rd	\$335,000	\$335,000	Dexter		
			Foxglove Lane	\$150,000	\$150,000	Dexter	\$563,792	\$631,009
			Parmbelle Lane	\$250,000	\$250,000	Dexter		
			George Dauphinee Drive	\$620,000	\$620,000	Deferred to 2017		
			Layton Road	\$325,000	\$325,000	Deferred to 2017		
			Inverness Avenue	\$260,000	\$260,000	Dexter	\$169,621	\$223,214
		24-Mar-16	<b>Central</b>					
			Tillock Drive	\$380,000	\$380,000	Sackville Trenching	\$256,059	\$351,245
			Tillock Court	\$100,000	\$100,000	Included in Tillock Drive Tender		
			<b>Total Integrated Project</b>	<b>\$4,000,000</b>	<b>\$4,000,000</b>			
<p>Macdonald Bridge Transmission Main Replacement project \$7,700,000: funding in the amount of \$354,000 is available from underspending on the Kearney Lake Road Water Transmission Main Phase 2: funding in the amount of \$3,750,000 is available from the 2015/16 Capital Budget under "Macdonald Bridge Transmission Main Replacement" and funding in the amount of \$3,295,000 will be included in the 2016/17 Capital Budget</p>								
5-Mar-15		13-Apr-15		\$7,700,000	\$3,295,000	CBCL		
28-Jan-16		13-Apr-16	Valve Renewals	\$125,000	\$125,000			
28-Jan-16		13-Apr-16	Hydrant Renewals	\$75,000	\$75,000			

**WATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WATER \$16,453,000**

Date of Approval			Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB						
28-Jan-16		13-Apr-16	Service Line Renewals	\$190,000	\$190,000			
28-Jan-16		13-Apr-16	Large Tapping Machine c/w electric operator and 4" to 12" cutters	\$34,000	\$34,000			
28-Jan-16		13-Apr-16	Small Hydro Vac for valve box maintenance	\$25,000	\$25,000			
28-Jan-16		13-Apr-16	Plastic Shell Cutters for Tapping Machine	\$12,000	\$12,000			
28-Jan-16		13-Apr-16	Portable valve Exerciser	\$10,000	\$10,000			
28-Jan-16		13-Apr-16	Confined Space Entry System for Bennery Lake Water Supply Plant	\$14,000	\$14,000			
28-Jan-16		19-Feb-16	Geizer 158 Reservoir Rehabilitation	\$2,170,000	\$2,170,000	MacDonald Appl.	\$1,711,189	\$1,971,005
					<b>\$5,950,000</b>			
<b>Accumulative Total - January, 2016</b>					<b>\$9,950,000</b>			
	23-Feb-16		JD Kline Replace Power Pole at Low Lift Station	\$40,000	\$40,000			
	23-Feb-16		Bedford Connector Transmission Main Phase 3 - Design	\$90,000	\$90,000			
	23-Feb-16		Lyle Street Control Chamber Access Improvement	\$30,000	\$30,000			
	23-Feb-16		Topsail Control Chamber - Confined Space Energy Retrofit - funding available from underspending in 2015/16 CB under "Geizer 158 Retrofit Chamber Retrofit which did not proceed last year	\$43,000	\$0			
	23-Feb-16		Confined Space Entry Retrofit - Bridgeview PRV Chamber	\$79,000	\$79,000			
	23-Feb-16		Robie 2 Chamber Upgrades	\$160,000	\$160,000			
	23-Feb-16		Automated Flushing Program	\$20,000	\$20,000			
	24-Feb-16		Relocated CT Calculation Equipment Lucasville Meter Chamber	\$31,000	\$31,000			



**WATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WATER \$16,453,000**

Date of Approval						Construction	Construction
HRWC BOARD	GM	NSUARB	Description	Approved Amount	Net Additions to Budget	Tender Price	Budget Estimate
	23-Feb-16		Critical Valves Bedford Hwy - funding in the amount of \$57,000 is available from underspending in SAP #3-1921 2015/16 Capital Budget	\$57,000	\$0		
25-Feb-16		6-Apr-16	Lake Major Water Supply Plant - New Diesel Generator	\$1,900,000	\$1,900,000		
<b>Accumulative Total - February, 2016</b>					<b>\$2,350,000</b>		
	8-Mar-16		Bennery Lake WSP Surge Protection	\$17,000	\$17,000		
	8-Mar-16		Lake Major WSP Purchase Fluorescence Meter	\$90,000	\$90,000		
	8-Mar-16		Lake Major WSP - Replace Contactors in the MCC	\$34,000	\$34,000		
	8-Mar-16		Lake Major WSP - Integrate Chlorine Alarms	\$50,000	\$50,000		
	8-Mar-16		Lake Major WSP Chemical Feed Pump Replacements	\$85,000	\$85,000		
	8-Mar-16		JD Kline WSP New Laptop system to Backwash Filters	\$12,000	\$12,000		
	8-Mar-16		JD Kline WSP - Ampgard III to Vacuum Contactor Conversion Program	\$40,000	\$40,000		
	8-Mar-16		Purchase Inline Zeta Potential Meters for Water Plants	\$100,000	\$100,000		
	8-Mar-16		Purchase Particle Counters for Water Plants	\$235,000	\$235,000		
	30-Mar-16		Lake Major WSP - Dewatering Equipment	\$100,000	\$100,000		
	30-Mar-16		Cliff Street Watermain Replacement was not originally budgeted for in 2016/17. Funding in the amount of \$60K is available from underspending in the "First Street Watermain Renewal Project" (SAP3-2028)	\$60,000	\$0		
	30-Mar-16		Lake Major WSP - Dedicated Service Water Pumping Station Design Phase	\$60,000	\$60,000		

**WATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WATER \$16,453,000**

Date of Approval			Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB						
	30-Mar-16		Bennery Lake WSP - Power Monitoring	\$20,000	\$20,000			
	30-Mar-16		Lake Major WSP - Replace Fluoride System	\$10,000	\$10,000			
	30-Mar-16		J.D. Kline Replace Turbidimeters and ph. Metersproject was not identified for 2016/17. Funding in the amount of \$11K is available from underspending in the 2015/16 JD Kline Chemical Feed Pump Replacement Program	\$11,000	\$0			
	30-Mar-16		2015/16 CB Governor's Brook Transmission Main Oversizing	\$197,000	\$0			
	30-Mar-16		Lakeside Timberlea CCC 2015/16	\$2,000	\$0			
31-Mar-16		22-Apr-16	JD Kline WSP - Replacement of the Lime Feed and Delivery System	\$300,000	\$300,000			
<b>Accumulative Total - March, 2016</b>						<b>\$1,153,000</b>		
	15-Apr-16	4-May-16	Bennery Lake WSP Plate Settlers	\$440,000	\$440,000			
<b>Accumulative Total - April, 2016</b>						<b>\$440,000</b>		
	25-May-16		Rechlorination Station Upgrades	\$26,000	\$26,000			
	25-May-16		Versa Valve Removal Project	\$20,000	\$20,000			
	25-May-16		Temporary Water Line - Pipe Materials Purchase East Region	\$18,000	\$18,000			
	25-May-16		Water Distribution Pressure Monitoring Equipment	\$10,000	\$10,000			
	25-May-16		Belmont PRV Valve Replacement	\$10,000	\$10,000			
	25-May-16		Chlorine Analyzer Replacement Program	\$23,000	\$23,000			

**WATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WATER \$16,453,000**

Date of Approval			Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB						
	25-May-16		Zinck PRV Meter Replacement	\$8,000	\$8,000			
	25-May-16		Bedford Reservoir Inflow Meter Replacement	\$8,000	\$8,000			
<b>Accumulative Total - May , 2016</b>					<b>\$123,000</b>			
	24-Jun-16		Gander Avenue Water Main Renewal Integrated Project This project was not budgeted for in 2016/17: Funding in the amount of \$140,000 from underspending in the Farquaharson Street WM Project, and \$100,000 is available from underspending in the Everette Street and Brompton Avenue Water Main Renewal IP	\$240,000	\$0	Dexter Construction	\$230,480	\$240,000
	27-Jun-16		Courtney Road Meter Chamber Abandonment project was not budgeted for in the 2016/17 CB. Funding in the amount of \$17,000 is available from the 2015/16 CB - Renfrew abandonment project which has been deferred to another budget year	\$17,000	\$0			
	29-Jun-16		Lake Major Water Supply Plant - Isolating the Treatment Trains	\$68,000	\$68,000			
30-Jun-16		7-Jul-16	Geizer 158 Reservoir Rehabilitation - Floor Replacement project was not budgetted for in 2016/17. Funding in the amount of \$2.75 M is available from underspending on the Macdonald Bridge Transmission main project which will be re-budgeted in 2017_18	\$2,750,000	\$0			
<b>Accumulative Total - June, 2016</b>					<b>\$68,000</b>			
	5-Jul-16		JD Kline WSP Industrial Water Pump Upgrade	\$160,000	\$160,000			
	13-Jul-16		JD Kline - Pump Station MCC Ventilation	\$72,000	\$72,000			
	22-Jul-16		JD Kline WSP Geosmin Taxonomy Study	\$165,000	\$165,000			
	29-Jul-16		Water Treatment Facility Security Upgrades	\$50,000	\$50,000			
	29-Jul-16		Horne's Road Bridge Watermain Replacement Project was not budgeted for in 2016/17: Funding in the amount of \$90,000 is available from underspending on the Tillock Drive WM Renewal Project (SAP \$3-2307)	\$90,000	\$0			
<b>Accumulative Total - July , 2016</b>					<b>\$447,000</b>			

**WATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WATER \$16,453,000**

Date of Approval						Construction	Construction
HRWC BOARD	GM	NSUARB	Description	Approved Amount	Net Additions to Budget	Tender Price	Budget Estimate
	22-Aug-16		Bennery Lake Water Supply Plant - Low Lift VFD Pump Replacement Program	\$110,000	\$110,000		
	23-Aug-16		Water Sampling Station Relocation Program	\$29,000	\$29,000		
	31-Aug-16		CSE Retrofits - Central Region project was not included in the 2016/17 CB: Funding in the amount of \$100K is available from underspending in the (SAP #3-2307) Tillock Court Water Main Project	\$100,000	\$0		
	31-Aug-16		Hare Lane WM Emergency Renewal Project was not budgeted for in 2016/17: Funding in the amount of \$25K is available from underspending in the Murray Hill WM Renewal Project	\$25,000	\$0		
<b>Accumulative Total - August, 2016</b>						<b>\$139,000</b>	
	06-Sep-16		Water transmission Main Condition Assessment Program	\$75,000	\$75,000		
	06-Sep-16		Water Structures Condition Assessment Program	\$150,000	\$150,000		
	15-Sep-16		JD Kline WS Plant Building Roof Renewal project was not identified in 2016/17: Funding in the amount of \$155K is available from the 2015/16 CB under: Wastewater - JD Kline Entrance Road Project which will be deferred to 2017/18	\$145,000	\$0		
	23-Sep-16		Lake Major HVAC Study	\$100,000	\$100,000		
	23-Sep-16		JD Kline WSP Raw Water Pump Upgrade Study	\$230,000	\$230,000		
	23-Sep-16		JD Kline WSP Uninterruptible Power Supply System Replacement project in the amount of \$30,000 was not budgeted for in 2016/17 Funding in the amount of \$30,000 is available from underspending in SAP #3-1420 (2010/11 CB) (JD Kline Replace Raw Water Pump) which is under budget	\$30,000	\$0		
	23-Sep-16		Peninsula Low North Transmission Main Rehabilitation Design	\$40,000	\$40,000		

**WATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WATER \$16,453,000**

Date of Approval			Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB						
29-Sep-16		31-Oct-16	Quinpool Road/Peninsula Transmission Main Rehabilitation was not budgeted for in 2016/17 funding from CWWF provides 75% cost sharing, with HW providing 25% of eligible costs, and 100% of ineligible costs. This will equate to \$469,500 from CWWF and \$206,500 from HW Funding in the amount of \$206,500 is available from underspending in the "Water - Critical Valves project which is not proceeding this year	\$676,000	\$676,000			
<b>Accumulative Total - September, 2016</b>						<b>\$1,271,000</b>		
	11-Oct-16		Lake Major WSP Fire Alarm System Upgrades project was not budgeted for in 2016/17: Funding in the amount of \$30K is available from underspending in the Lake Major WSP Replace Lime Feed & Delivery	\$30,000	\$0			
	12-Oct-16		Bedford West CCC (Wastewater) Various Phases 2016/17 \$6,600 from the \$14,000 in Item 3.045 Bedford West CCC and \$11,200 from the \$66,000 in Item 2.074 Bedford West CCC	\$6,600	\$6,600			
<b>Accumulative Total - October, 2016</b>						<b>\$6,600</b>		
	9-Nov-16		JD Kline Water Supply Plant - Man Down System was not budgeted for in 2016/17 Funding in the amount of \$10,000 is available from underspending in the 2016/17 CB under "JD Kline Electric Motor Power Efficiency Upgrades Projects (SAP #3-1521)	\$10,000	\$0			
	10-Nov-16		Wiring Upgrades - Water Supply Plants project was not identified in the 2016/17 CB. Funding in the amount of \$150,000 is available from underspending in ( SAP 3-2364) WSP Purchase Particle Counters	\$150,000	\$0			
	24-Nov-16		Operations Equipment Purchase was not budgeted for in 2016/17: Funding in the amount of \$34,000 is available from underspending in the "Water - Equipment Large Tapping Machine project" which will not be proceeding this year	\$34,000	\$0			
	24-Nov-16		JD Kline WSP Backwash Flow Control Improvements	\$185,000	\$185,000			
<b>Accumulative Total - November, 2016</b>						<b>\$185,000</b>		

**WATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WATER \$16,453,000**

Date of Approval						Construction	Construction	
HRWC BOARD	GM	NSUARB	Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Tender Price	Budget Estimate
	6-Dec-16		JD Kline WSP Crane and lifting systems upgrade project was not identified in the 2016/17 CB. Funding in the amount of \$20K is available from underspending in the JD Kline Replace Raw Water Pump (SAP #3-1420) which is not proceeding this year	\$20,000	\$0			
	6-Dec-16		Purchase Noise Correlators was not identified within the 2016/17 CB. Funding in the amount of \$40,000 is available from the "Water - JD Kline Replace Power Pole at Low Lift Station which will not proceed this year.	\$40,000	\$0			
	14-Dec-16		Bennery Lake Land Purchase was not budgeted for in 2016/17. Funding in the amount of \$19,000 for the down payment of the PID's is available from "Purchase Small Hydro-Vac project" which is not proceeding this year. The balance of the purchase in the amount of \$211,000 will be budgeted for in 2017/18	\$19,000	\$0			
<b>Accumulative Total - December, 2016</b>					<b>\$0</b>			
<b>Total To Date</b>					<b>\$16,132,600</b>			

WASTEWATER  
CAPITAL BUDGET APPROVALS TO DATE - 2016/17  
TOTAL CAPITAL BUDGET FOR WASTEWATER \$35,838,000

Date of Approval			Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB						
<b>2016/17 Capital Budget Advanced Funding Integrated Projects</b>								
28-Jan-16		24-Mar-16	<b>East</b>					
			Murray Hill Drive W/M Renewal	\$38,000	\$38,000	Dexter Construction	\$6,166	\$27,810
			Farquharson Street Water Main Renewal	\$109,000	\$109,000	Dexter Construction	\$56,966	\$78,215
			Brompton Road	\$278,000	\$278,000	Dexter Construction	\$141,471	\$199,881
			Everette Street Water Main Renewal	\$97,000	\$97,000	Dexter Construction	\$52,608	\$69,524
			Alfred Street	\$199,000	\$199,000	Dexter Construction	\$55,663	\$148,477
			Beckfoot Drive	\$9,000	\$9,000	to be undertaken by HW Ops		
			Strath Lane	\$226,000	\$226,000	Dexter Construction	\$86,977.00	\$147,739.00
			Westwood Drive	\$121,000	\$121,000	Dexter Construction	\$5,769.00	\$8,690.00
28-Jan-16		24-Mar-16	<b>West</b>					
			Scarlet Rd	\$206,000	\$206,000			
			Foxglove Lane	\$13,000	\$13,000			
			Parmbelle Lane	\$79,000	\$79,000			
			George Dauphinee Drive	\$54,000	\$54,000	deferred to 2017		
			Layton Road	\$13,000	\$13,000	work not required		
			Inverness Avenue	\$22,000	\$22,000	work not required		
28-Jan-16		24-Mar-16	<b>Central</b>					
			Tillock Drive	\$13,000	\$13,000	to be undertaken by HW Ops		
			Tillock Court	\$9,000	\$9,000	to be undertaken by HW Ops		
			Doyle Street	\$19,000	\$19,000			
			McQuarrie Bridge (Fall River)	\$150,000	\$150,000	work not required		
			Lydgate Drive	\$9,000	\$9,000	to be undertaken by HW Ops		
<b>Total Integrated Projects</b>					<b>\$1,664,000</b>			

**WASTEWATER  
CAPITAL BUDGET APPROVALS TO DATE - 2016/17  
TOTAL CAPITAL BUDGET FOR WASTEWATER \$35,838,000**

Date of Approval			Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB						
28-Jan-16		13-Apr-16	Manhole Renewals	\$32,000	\$32,000			
28-Jan-16		13-Apr-16	Lateral Replacements	\$2,190,000	\$2,190,000			
28-Jan-16		13-Apr-16	SIR Program Flow Meters and Related Equipment	\$40,000	\$40,000			
26-Nov-16		12-Jan-16	Corporate Flow Monitoring Program (2015/16, 2016/17)	\$660,000	\$660,000			
28-Jan-16		13-Apr-16	Miscellaneous Equipment Replacement	\$70,000	\$70,000			
28-Jan-16		10-Mar-16	Wastewater System - Trenchless Rehabilitation Program: Funding in the amount of \$300,000 from underspending in the 2015/16 Sewer Lining Program; and \$1,500,000 is available from the 2016/17 Capital Budget	\$1,800,000	\$1,500,000	Insituform Tec Limited	\$805,192	\$1,472,779
	29-Jan-16		Leiblin Pumping Station Elimination Preliminary Design Halifax	\$75,000	\$75,000	HW staff		
					<b>\$4,567,000</b>			
<b>Accumulative Total - January, 2016</b>					<b>\$6,231,000</b>			
03-Feb-16			The \$42,500 in regulated activity funding is available from two sources. \$20,000 is available from underspending on the <i>Mill Cove CHP Fatal Flaw/Due Diligence Analysis, and the Preliminary Design and Cost Analysis</i> , with the remaining \$22,500 available from projected under spending within the 2015/16 <i>Wastewater – Energy – Energy Management Capital Program</i> . The \$42,500 in unregulated activity funding is available from within the 2016/17 Unregulated Capital Budget - Mill Cove Biogas CHP.	\$85,000	\$0			
19-Feb-16			Bisset Pumping Station Forcemain Replacement project from 2015/16 Capital Budget	\$240,000	\$0			
25-Feb-16		8-Apr-16	Balsam Road Pumping Station (PS) Elimination	\$770,000	\$770,000	Dexter Construction		
25-Feb-16		5-Apr-16	Northwest Arm Sewer Rehabilitation - Detailed Design	\$300,000	\$300,000	Robinson Consultants	\$588,150	\$585,900
25-Feb-16		6-Apr-16	Waterfront Drive Wastewater System Replacement	\$500,000	\$500,000	Project deferred pending outcome of other capital work		
<b>Accumulative Total - February 2016</b>					<b>\$1,570,000</b>			



**WASTEWATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WASTEWATER \$35,838,000**

Date of Approval								
HRWC BOARD	GM	NSUARB	Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
	09-Mar-16		Wastewater Pump Station Upgrade Program - East Region 2015/16 Capital Budget	\$110,000	\$0			
	10-Mar-16		HRM Land Transfer - Subdivision Costs Project was not included in the 2016/17 Budget. Funding in the amount of \$75,000 is available from underspending in the Lakeside Pumping Station Diversion Project in the 2015/16 CB	\$75,000	\$0			
	29-Mar-16		Halifax WWTF - Various Upgrades: \$76,000: Funding available from underspending in 2012/13 CB in the following projects: Dartmouth WWTF HHSP Upgrades \$5,000 Herring Cove WWTF HHSP Upgrades 13/14 CB \$41,000 Halifax WWTF HHSP Upgrades 13/14 CB \$14,000 Lakeside PS Diversion to HFX Sewershed: \$16,000	\$76,000	\$0			
	29-Mar-16		WW Pump Station Upgrade Program Central Region (2015/16 CB)	\$70,000	\$0			
31-Mar-16		26-May-16	Bedford PS Rehabilitation (at Mill Cove WWTF) funding in the amount of \$2.85M is available from the 2016/17 CB The remainder of funds in the amount of \$400K is available from underspending in the 2015/16 Lakeside Pumping Station Diversion Project which came in under budget	\$3,250,000	\$2,850,000	Filtrum Inc.		\$1,495,600
31-Mar-16		14-Apr-16	2015/16 Wastewater Pumping Station Upgrade Program - West Region	\$420,000	\$0			
<b>Accumulative Total - March 2016</b>					<b>\$2,850,000</b>			
	04-Apr-16		North Park Upgrade Integrated Project - Additional scope funding in the amount of \$55K is available from under spending in the 2015/16 CB under Lahey Road Integrated Project	\$55,000	\$0			
	04-Apr-16		2015/16 Wet Weather Management Program	\$125,000	\$0			
	15-Apr-16		HWWTf Halifax Wastewater Treatment Facility Ventilation Air Heat Recovery Project This project was originally scheduled for 2017/18. Due to the successful results from Herring Cove WWTF Vent Air Heat Recovery project, it was decided to use the funds allocated from 2015/16 CB under "WW HCWWTF - Heat Recovery Phase 2 - Effluent Heat Recovery	\$250,000	\$0			

**WASTEWATER  
CAPITAL BUDGET APPROVALS TO DATE - 2016/17  
TOTAL CAPITAL BUDGET FOR WASTEWATER \$35,838,000**

Date of Approval								
HRWC BOARD	GM	NSUARB	Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
28-Apr-16		22-Aug-16	Aerotech WWTF Expansion and Upgrade Project - Construction / Design	\$22,755,000	\$13,960,000			
<b>Accumulative Total - April 2016</b>					<b>\$13,960,000</b>			
3-May-16			Eastern Passage WWTF Secondary Clarifier Launder Covers	\$49,000	\$49,000			
03-May-16			Mill Cove WWTF - Various Capital Projects: Compressor Replacement: \$20,000 Entrance Gate Replacement: \$20,000 Wet Scrubber Media Replacement: \$20,000 Digester Roof Coating: \$135,000	\$195,000	\$195,000			
04-May-16			Roach's Pond Pumping Station - Trash Rack	\$75,000	\$75,000			
24-May-16			EPWWTF Process Water Filter Upgrades	\$26,000	\$26,000			
24-May-16			EPWWTF Automation of RAS Gates	\$97,000	\$97,000			
24-May-16			EPWWTF - Fall Protection Grates - Sludge Tank and Inlet Chamber	\$6,000	\$6,000			
25-May-16			DWWTF - Influent Duty Pump Installation	\$160,000	\$160,000			
31-May-16			Mill Cove TF - Clarified Access - Project not budgeted for in 2016/17: Funding in the amount of \$55K is available under 2016/17 "Emergency Wastewater Treatment Facility Equipment replacement	\$55,000	\$55,000			
<b>Accumulative Total - May 2016</b>					<b>\$663,000</b>			
29-Jun-16			Pumping Station Standard	\$135,000	\$135,000			
29-Jun-16			Autoport Pleasant Street PS Replacement	\$200,000	\$200,000			
29-Jun-16			Additional Funding - Bedford CCC for Temporary Pumping Station#1 and Phase 5-4: Funding in the amount of \$12,000 is available from underspending in the 2016/17 CB under: Leiblin PS Elimination Project that came in under budget	\$12,000	\$0			
<b>Accumulative Total - June, 2016</b>					<b>\$335,000</b>			

**WASTEWATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WASTEWATER \$35,838,000**

Date of Approval			Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB					
	05-Jul-16		\$22,750	\$0			
	05-Jul-16		\$16,000	\$16,000			
	06-Jul-16		\$82,000	\$82,000			
	05-Jul-16	6-Sep-16	\$650,000	\$650,000			
	19-Jul-16		\$72,000	\$0	Dexter Construction	\$57,043	\$46,929
	25-Jul-16		\$167,000	\$167,000			
	27-Jul-16		\$245,000	\$0			
	27-Jul-16		\$25,000	\$0			
	22-Jul-16		\$75,000	\$0			

**WASTEWATER  
CAPITAL BUDGET APPROVALS TO DATE - 2016/17  
TOTAL CAPITAL BUDGET FOR WASTEWATER \$35,838,000**

Date of Approval								
HRWC BOARD	GM	NSUARB	Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
	29-Jul-16		Hines Road Sewer Odour Issue: Funding in the amount of \$25K is available under 2016/17 CB and the remainder of \$35,000 is available from underspending in the Shore Drive Forcemain Replacement & Twinning project:	\$60,000	\$25,000			
	29-Jul-16		Wastewater Treatment facility security upgrades	\$200,000	\$200,000			
	29-Jul-16		Hornes Road Bridge Wastewater Main Replacement project was not budgeted for in 2016/17: Funding in the amount of \$90K is available from the Waterfront Drive WW System Replacement project which will not proceed at this time	\$90,000	\$0			
<b>Accumulative Total - July, 2016</b>					<b>\$1,140,000</b>			
	11-Aug-16		Inglis Street Sewer - Hydraulic Analysis - Funding in the amount of \$33,000 is available from the 2015/16 CB and there is \$250K in the 2016/17 CB in which we are only using \$19K at this time					
	12-Aug-16		Emergency Pumping Station Pump Replacements	\$250,000	\$250,000			
	12-Aug-16		Wastewater Pumping Station Upgrade Program - West Region	\$210,000	\$210,000			
	12-Aug-16		Wastewater Pumping Station Upgrade Program - East Region	\$200,000	\$200,000			
	12-Aug-16		Wastewater Pumping Station Upgrade Program - Central Region	\$65,000	\$65,000			
	23-Aug-16		BLT WWTF Lighting Upgrade	\$35,000	\$25,000			
	31-Aug-16		EPWWTF - Storage Shed	\$41,000	\$41,000			
	31-Aug-16		HWWTf Pump Replacement Sludge Mixing Systems	\$82,000	\$82,000			
	31-Aug-16		Hammonds Plains Road SW IP (2016) was not budgeted for in the 2016/17 CB. Funding is available from underspending in the following three approved projects: Herring Cove Road Culvert: \$85,000 Drainage Remediation Program: \$25,000 and Sackville Cross Road Stormwater system: \$85,000	\$195,000	\$0			
	31-Aug-16		Mill Cove Biogas CHP - Detailed design and Cost Analysis Funding in the amount of \$16K is available from underspending in the HWWTf OCS VDF Project (SAP 6-1028) which came in under budget	\$16,000	\$0			
<b>Accumulative Total - August, 2016</b>					<b>\$873,000</b>			

**WASTEWATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR WASTEWATER \$35,838,000**

Date of Approval								
HRWC BOARD	GM	NSUARB	Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
	06-Sep-16	19-Sep-16	BFP - Front End Loader Replacement	\$253,000	\$253,000			
	06-Sep-16		Wastewater Forcemains Condition Assessment	\$75,000	\$75,000			
	06-Sep-16		East and Central Wastewater Infrastructure Plan	\$225,000	\$125,000			
	08-Sep-16		HWWTf - Emergency Raw Water Pump VFD Replacement: Funding in the amount of \$125K is available from the 2016/17 CB Under "WWTF - Emergency Equipment Replacement	\$200,000	\$125,000			
	12-Sep-16	5-Oct-16	Mill Cove WW Treatment Facility UV Upgrade	\$2,080,000	\$2,080,000			
	12-Sep-16		WWTF Plant Optimization Program	\$175,000	\$175,000			
29-Sep-16		27-Oct-16	Northwest Arm Rehabilitation - Detailed Design The project is funded from the CWWF, the total cost to HW is estimated to be \$187,500 (25% of eligible costs) (25% of \$550,000) plus 100% ineligible costs (100% of \$50,000)	\$300,000	\$300,000			
<b>Accumulative Total - September, 2016</b>					<b>\$3,133,000</b>			
	11-Oct-16		RWWP Projects MCs, MC3, WW Storage Project	\$245,000	\$245,000			
	12-Oct-16		Bedford West CCC (Wastewater) Various Phases 2016/17 \$6,600 from the \$14,000 in Item 3.045 Bedford West CCC and \$11,200 from the \$66,000 in Item 2.074 Bedford West CCC	\$11,200	\$11,200			
	18-Oct-16		Mill Cove Secondary Flow Instrumentation Replacement Project was not budgeted for in 2016/17. Funding in the amount of \$45K is available from underspending in the DWWTf Fine Screen Upgrade project which came in under budget	\$45,000	\$45,000			
	24-Oct-16		Harbour Solutions WWTF Fine Screen Upgrades projects (Various location): Dartmouth WWTF: \$109,000 Halifax WWTF Screen Upgrade: \$75,000 Herring Cove WWTF - Screen Upgrade: \$65,000 Funding in the amount of \$249,000 is available from underspending in the Dartmouth WWTF Fine Screen Upgrade Project	\$1,000,000	\$249,000			
<b>Accumulative Total - October 2016</b>					<b>\$550,200</b>			
	09-Nov-16		2016/17 Wet Weather Management Program	\$100,000	\$100,000			
<b>Accumulative Total - November 2016</b>					<b>\$100,000</b>			
	19-Dec-16		Hammonds Plains Road SW IP (2016) was not budgeted for in 2016/17: Funding in the amount of \$35K is available from underspending in the Wilson Drive Culvert replacement project (2013/14) which is now substantially completed and is under budget	\$35,000	\$0			
	22-Dec-16		Inglis Street Sewer - Hydraulic Improvement Project	\$25,000	\$25,000			
	23-Dec-16		Northwest Arm Rehabilitation Armdale Pump Station Modifications	\$150,000	\$150,000			
<b>Accumulative Total - December 2016</b>					<b>\$175,000</b>			
<b>Total To Date:</b>					<b>\$31,580,200</b>			

**STORMWATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR STORMWATER \$3,951,000**

Date of Approval			Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB						
<b>2016/17 Stormwater Advanced Funding Integrated Projects</b>								
<b>East</b>								
28-Jan-16		24-Mar-16	Murray Hill Drive W/M Renewal	\$28,000	\$28,000	Dexter Construction	\$17,520	\$21,292
			Farquharson Street Water Main Renewal	\$19,000	\$19,000	Dexter Construction	\$14,391	\$13,036
			Brompton Road	\$151,000	\$151,000	Dexter Construction	\$35,835	\$108,631
			Everette Street Water Main Renewal	\$28,000	\$28,000	Dexter Construction	\$5,319	\$21,075
			Alfred Street	\$11,000	\$11,000	work to be undertaken by HW Ops		
			Beckfoot Drive	\$9,000	\$9,000	work not required		
			Strath Lane	\$122,000	\$122,000			
28-Jan-16		24-Mar-16	<b>West</b>					
			George Dauphinee Drive	\$34,000	\$34,000	deferred to 2017		
28-Jan-16		24-Mar-16	<b>Central</b>					
			Tillock Court	\$19,000	\$19,000	work to be undertaken by HW Ops		
			Doyle Street	\$75,000	\$75,000	deferred to 2017		
			Baker Drive	\$52,000	\$52,000	work not required		
			Second Avenue	\$70,000	\$70,000	work to be undertaken by HW Ops		
			<b>Total Integrated Projects</b>	<b>\$618,000</b>	<b>\$618,000</b>			
28-Jan-16		13-Apr-16	Manhole Renewals	\$29,000	\$29,000			
28-Jan-16		13-Apr-16	Catchbasin Renewals	\$29,000	\$29,000			
28-Jan-16		13-Apr-16	Lateral Replacements	\$87,000	\$87,000			
					<b>\$145,000</b>			
			<b>Accumulative Total January, 2016</b>		<b>\$763,000</b>			

**STORMWATER  
CAPITAL BUDGET APPROVALS TO DATE - 2016/17  
TOTAL CAPITAL BUDGET FOR STORMWATER \$3,951,000**

<b>Date of Approval</b>							<b>Construction Tender Price</b>	<b>Construction Budget Estimate</b>
<b>HRWC BOARD</b>	<b>GM</b>	<b>NSUARB</b>	<b>Description</b>	<b>Approved Amount</b>	<b>Net Additions to Budget</b>	<b>Consultant/ Contractor</b>		
	23-Feb-16		Wilson Drive & Highway 2 - Culvert Replacement	\$223,000	\$223,000	Harbour Constr.	\$109,270	\$167,400
25-Feb-16		6-Apr-16	Sackville Cross Road Stormwater System Renewal	\$1,090,000	\$1,090,000	Dexter Construction	\$659,680.71	\$970,902.66
25-Feb-16		6-Apr-16	Bedford Highway at Shaunslieve Drive Culvert Upgrade	\$407,000	\$247,000	Brycon Construction	\$152,128	\$336,141
25-Feb-16		21-Mar-16	Sullivan's Pond Storm Sewer System Replacement - Design Funding in the amount of \$100,000 is available from 2015/16 CB under "Stormwater Pipes - Sullivan's Pond Storm Sewer Replacement - Phase 1 and \$300,000 is available from the 2016/17 CB Under "Stormwater Pipes Sullivan's Pond Storm Sewer Replacement Phase 1. The total approved to date is \$950,000	\$400,000	\$300,000	CBCL		
<b>Accumulative Total February, 2016</b>					<b>\$1,860,000</b>			
	7-Apr-16	25-Apr-16	2016/17 Driveway Culvert Program	\$450,000	\$450,000			
<b>Accumulative Total April, 2016</b>					<b>\$450,000</b>			
	30-May-16		Yankeetown Road (near Civic 258) Culvert Replacement was not budgeted for in 2016/17: Funding in the amount of \$200,000 is available from underspending in the 2015/16 CB under Cow Bay Road Deep Storm Sewer project which came in under budget	\$200,000	\$0	Harbour Construction		
<b>Accumulative Total for May, 2016</b>					<b>\$0</b>			
	6-Jun-16		Bank of Montreal Stormwater Lateral - 5151 George Street	\$90,000	\$90,000			
<b>Accumulative Total for June, 2016</b>					<b>\$90,000</b>			

**STORMWATER**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR STORMWATER \$3,951,000**

Date of Approval							Construction	Construction
HRWC BOARD	GM	NSUARB	Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Tender Price	Budget Estimate
	22-Jul-16		Bedford Hwy SW System Emergency Repair was not budgeted for in the 2016/17 CB: Funding in the amount of \$75K is available from underspending in the 2015/16 CB under the Lakeview Ave Twin Culvert Replacement Project which came in under budget	\$75,000	\$0			
	22-Jul-16		Clement Street Berm - SW Control System	\$264,000	\$264,000			
	29-Jul-16		Inverness Avenue Culvert Replacement Project	\$136,000	\$136,000	Harbour Construction	\$83,496.24	\$146,000.00
<b>Accumulative Total for July, 2016</b>					<b>\$400,000</b>			
	23-Sep-16		Sycamore Lane Storm Sewer Replacement project was not budgeted for in 2016/17 CB: Funding in the amount of \$150,000 is available from underspending in the Sackville Cross Road Stormwater System Renewal project which came in under budget	\$150,000	\$0			
<b>Accumulative Total for September 2016</b>					<b>\$0</b>			
	10-Nov-16		Ellenvale Run Retain Wall System project was not identified in the 2016/17 CB. Funding in the amount of \$125,000 is available from underspending in the Sackville Cross Road Stormwater System Renewal Project which came in under budget	\$125,000	\$0			
<b>Accumulative Total for November 2016</b>					<b>\$0</b>			
<b>Total to Date</b>					<b>\$3,563,000</b>			



**CORPORATE PROJECTS  
CAPITAL BUDGET APPROVALS TO DATE - 2016/17  
TOTAL CAPITAL BUDGET FOR CORPORATE PROJECTS \$10,535,000**

Date of Approval			Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB						
30-Jul-15		15-Oct-15	Computerized Management Maintenance System Phase 2 (Project was approved in October 15, 2015 by NSUARB)	\$1,500,000	\$1,500,000			
28-Jan-16		13-Apr-16	Desktop Computer Replacement Program	\$180,000	\$180,000			
28-Jan-16		13-Apr-16	Network Infrastructure Upgrades	\$200,000	\$200,000			
28-Jan-16		13-Apr-16	Survey Equipment - GPS Total Station	\$30,000	\$30,000			
28-Jan-16		13-Apr-16	Document Management Program	\$200,000	\$200,000			
28-Jan-16		13-Apr-16	SharePoint	\$200,00	\$200,000			
			AMI/AMR Meter System Upgrades	\$3,300,000	\$3,300,000			
28-Jan-16		13-Apr-16	Fleet Upgrade Program Water	\$505,000	\$505,000			
28-Jan-16		13-Apr-16	Fleet Upgrade Program Wastewater	\$920,000	\$920,000			
28-Jan-16		13-Apr-16	Fleet Upgrade Program Stormwater	\$230,000	\$230,000			
<b>Accumulative Total January, 2016</b>					<b>\$7,265,000</b>			
28-Apr-16		12-Aug-16	GIS Hardware/Software Program 2015/16	\$400,000	\$0			
	31-May-16		CRM Interfaces	\$200,000	\$200,000			
<b>Accumulative Total May, 2016</b>					<b>\$200,000</b>			

**CORPORATE PROJECTS  
CAPITAL BUDGET APPROVALS TO DATE - 2016/17  
TOTAL CAPITAL BUDGET FOR CORPORATE PROJECTS \$10,535,000**

Date of Approval			Description	Approved Amount	Net Additions to Budget	Consultant/ Contractor	Construction Tender Price	Construction Budget Estimate
HRWC BOARD	GM	NSUARB						
	15-Jun-16		Customer Service Portal	\$220,000	\$220,000			
<b>Accumulative Total June, 2016</b>						<b>\$220,000</b>		
	5-Jul-16		SCADA Control System Enhancements 2016/17 (cost are split 50/50 for W/WW	\$200,000	\$200,000			
	29-Jul-16		450 Cowie Hill Road External Lighting Project	\$25,000	\$23,000			
<b>Accumulative Total July, 2016</b>						<b>\$223,000</b>		
	6-Sep-16		Asset Management Program Development	\$100,000	\$100,000			
	6-Sep-16		Assess Asset Management Software - Part 2	\$50,000	\$50,000			
	23-Sep-16		Furniture & Building Improvements - Billing Services Project was not budgeted for in the 2016/17 Capital Budget Funding in the amount of \$60,000 is available from underspending in the 2016/17 CB Under "Corporate Projects - IT Disaster Recovery Site" which will not be proceeding this year	\$60,000	\$60,000			
<b>Accumulative Total September, 2016</b>						<b>\$210,000</b>		
	14-Dec-16	6-Jan-17	GIS Data Program	\$1,000,000	\$1,000,000			
<b>Accumulative Total November, 2016</b>						<b>\$1,000,000</b>		

**CORPORATE PROJECTS**  
**CAPITAL BUDGET APPROVALS TO DATE - 2016/17**  
**TOTAL CAPITAL BUDGET FOR CORPORATE PROJECTS \$10,535,000**

Date of Approval				Approved	Net Additions	Consultant/	Construction	Construction
HRWC	GM	NSUARB	Description	Amount	to Budget	Contractor	Tender	Budget
BOARD							Price	Estimate
	11-Jan-17		Customer Service Building Improvements project was not bugeted for in 2016/17: Funding in the amount of \$43,000 is available from the "Corporate Projects - Asset Management - Expand Prioritization Methodology project" which will not be proceeding this year	\$43,000	\$43,000			
<b>Total to date</b>					<b>\$9,161,000</b>			

# Item 3-I

09-Aug-17

## FINANCIAL REPORT

Consolidated balance of the four operating accounts maintained by the Commission as of:	9-Aug-17	\$59,307,252
Rate of interest on the above balance - Investment Rate of Return	0.075%	\$59,307,251.57

**TO:** Ray Ritcey, Chair, and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** Original Signed by:  
Cathie O'Toole, MBA, CPA/CGA, Director, Corporate Services

**APPROVED:** Original Signed by:  
Carl Yates M.A.Sc., P.Eng., General Manager

**DATE:** January 24, 2017

**SUBJECT:** **Pension Plan Investment Performance 3rd Quarter, 2016**

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### **INFORMATION REPORT**

#### **ORIGIN**

The Pension Plan investment performance is reported to the Commission periodically throughout the year.

#### **BACKGROUND**

None

#### **DISCUSSION**

The tables below and the attached Investment Report provide a performance update for the third quarter of 2016 (July to September) for the Halifax Regional Municipality (HRM) Pension Plan Master Trust, of which Halifax Regional Water Commission (HRWC) is a part. The fair value of the investment in the Master Trust is determined and updated at year-end, and HRWC's share of the total HRM Master Trust at December 31, 2015 was 5.87%, and totaled \$100.4 million.

**ITEM 4-I**  
**HRWC Board**  
**February 2, 2017**

Table 1 - Returns

	<b>Current Quarter (Jul to Sep)</b>	<b>Year to Date</b>	<b>1-Year</b>	<b>3 - Year Annualized</b>	<b>4 - Year Annualized</b>	<b>Since Inception (Oct 1999)</b>
Fund Return	4.18%	3.47%	7.66%	9.66%	9.32%	6.98%
Policy Benchmark	3.23%	4.38%	6.98%	6.93%	6.38%	5.56%
Excess Return	0.95%	-0.91%	0.68%	2.73%	2.94%	1.42%

Table 2 – Asset Mix, as at September 30, 2016

Asset:	<b>Actual</b>	<b>Policy</b>
Cash & Equivalents	1.11%	0.00%
Canadian Equity	7.96%	8.50%
Global Equity	30.29%	29.50%
Bonds	23.19%	28.40%
Minimum Target Return	37.45%	33.60%

The total fund returned 4.18% in the 3<sup>rd</sup> Quarter, which outperformed the policy benchmark of 3.23% by 0.95%. Year-to-date performance earned 3.47%, underperforming the policy benchmark of 4.38% by -0.91%. The return for the one-year period is 7.66%, outperforming the policy benchmark of 6.98% by 0.68%. Other historical returns are provided in the Table 1 above.

The total fund return is subject to investment management fees and plan expenses.

As at September 30, 2016, the Master Trust was in compliance with the Statement of Investment Policies and Procedures (SIP&P).

**ATTACHMENT**

Halifax Regional Municipality Pension Plan Investment Report 3rd Quarter, 2016

Report Prepared by: *Original Signed by:*

\_\_\_\_\_  
Allan Campbell, B.Comm, CPA, CMA  
Manager, Finance, 902-490-4288



# Investment Report

## Q3 2016



# Executive Summary

## Compliance

As at September 30, 2016, the Master Trust (MT) was in compliance with the SIP&P.

## Funded Status\*

As at December 31, 2015, the accounting funded position was 104%, the going concern funded status was 89.6%, and the solvency funded ratio was 60%.

## Master Trust Performance

In Q3, the MT earned 4.2%, outperforming the policy benchmark return by 1%.

For the one-year period ending September 30, 2016, the MT earned 7.7%, outperforming the policy benchmark by 0.7%.

The MT earned an annualized return of 9.3% over the 4-year ending September 30, 2016 outperforming the policy benchmark by 2.9% annualized.

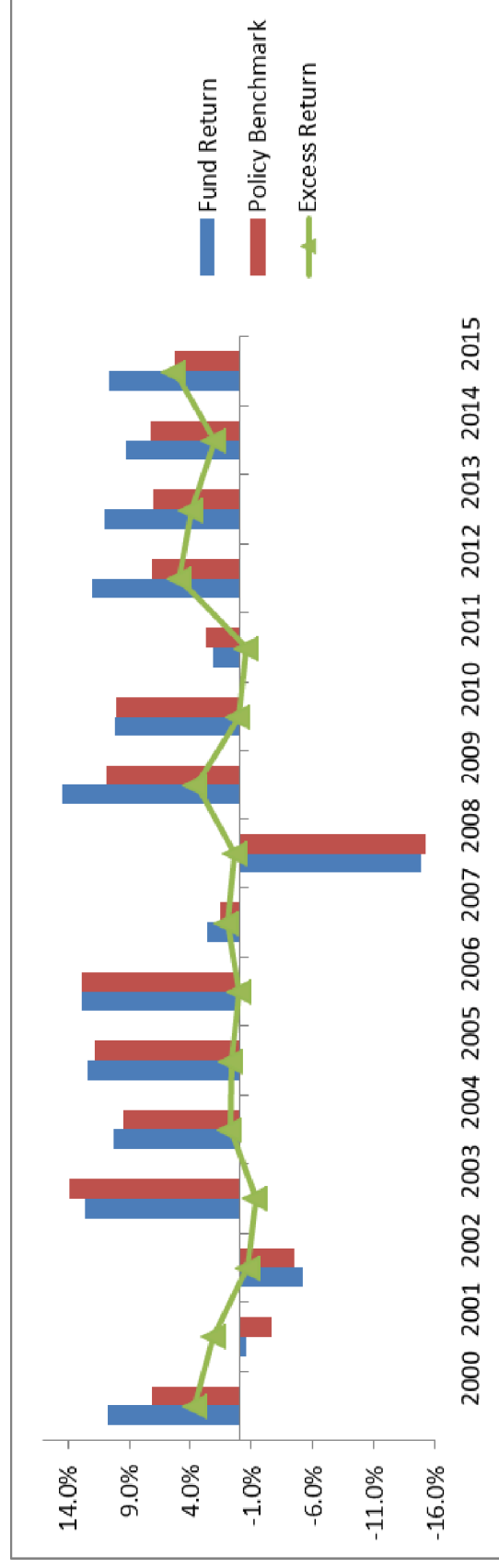
Since inception (October 1999), the MT earned 7% annualized outperforming the Plan's long-term rate objective of 6.5%. The table on the next slide summarizes the calendar year returns for the MT.

\*Source: AON



# Executive Summary – Cont.

## Calendar Returns



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fund Return	10.71%	-0.56%	-5.21%	12.60%	10.27%	12.38%	12.88%	2.60%	-14.83%	14.47%	10.12%	2.11%	12.01%	10.94%	9.27%	10.59%
Policy Benchmark	7.12%	-2.64%	-4.50%	13.91%	9.50%	11.76%	12.85%	1.58%	-15.20%	10.92%	10.08%	2.71%	7.12%	7.01%	7.24%	5.27%
Excess Return	3.59%	2.08%	-0.71%	-1.31%	0.77%	0.62%	0.03%	1.02%	0.37%	3.55%	0.04%	-0.60%	4.89%	3.93%	2.03%	5.32%

# Executive Summary – Cont.

## Added Value

In Q3 of 2016, the MT outperformed its benchmark by 0.95%. Attribution: Minimum Target Return +0.95%, Global Credit +0.30%, Universe Bonds +0.05%, Emerging Market Equity -0.01%, World Equity -0.19%, US Equity -0.04%, CAD Equity -0.04% and MSCI EAFE Equity -0.07%.

## Q3 Updates

- During Q3, the MTR portfolio generated realized gains of \$20.4mm CAD from three private equity investments.
- These investments generated a combined gross annualized return of 27%\* (individual returns for investments were 68% net, 43% gross and 9% gross).
- We allocated CAD 30mm to a private debt manager that seeks to provide income while preserving capital, by investing in a diverse portfolio of short term private fixed income investments.
- During Q3 we terminated an active EAFE manager who was insisting we choose a new account structure that would increase fees. We felt we could get adequate exposure to current EAFE markets through our existing passive manager, so we transferred assets to them and will decide how best to allocate to a replacement active manager in the future if desired.
- We began a search for an emerging market short-duration debt manager.
- During Q3, we evaluated and rejected 30 private managers due to lack of conviction in their investment strategy, unfavourable fee structures or other relatively better investment opportunities.

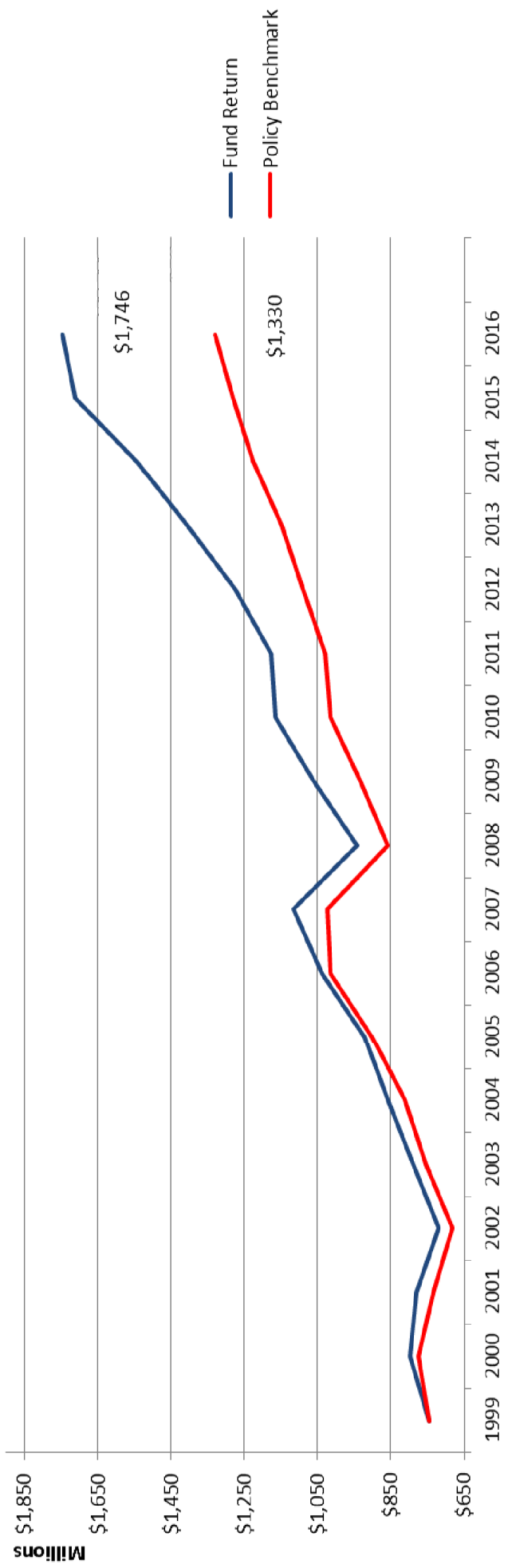
*\*Net returns for underlying investments in Funds are not available. Net returns for the overall Fund will be available once Fund terminates.*

# Total Fund Returns – Sept 30, 2016

	Current Quarter	YTD	1-Year	3-Year Annualized	4-Year Annualized	Inception (Oct 1999)
Fund Return	4.18%	3.47%	7.66%	9.66%	9.32%	6.98%
Policy Benchmark*	3.23%	4.38%	6.98%	6.93%	6.38%	5.56%
Excess Return	0.95%	-0.91%	0.68%	2.73%	2.94%	1.42%

\*Effective September 30, 2016, the Policy Benchmark is 5.9% S&P/TSX Index + 2.6% S&P/TSX 60 + 4.6% S&P 500 Index(\$USD) + 9.1% MSCI EAFE Index (\$CAN) + 4.2% MSCI Emerging Markets (CAN\$) + 11.6% MSCI World (CAN\$) +14.6% FTSE TMX Canada Universe + 13.8% 3 Month Bankers Acceptance + 33.6% Minimum Target Return.

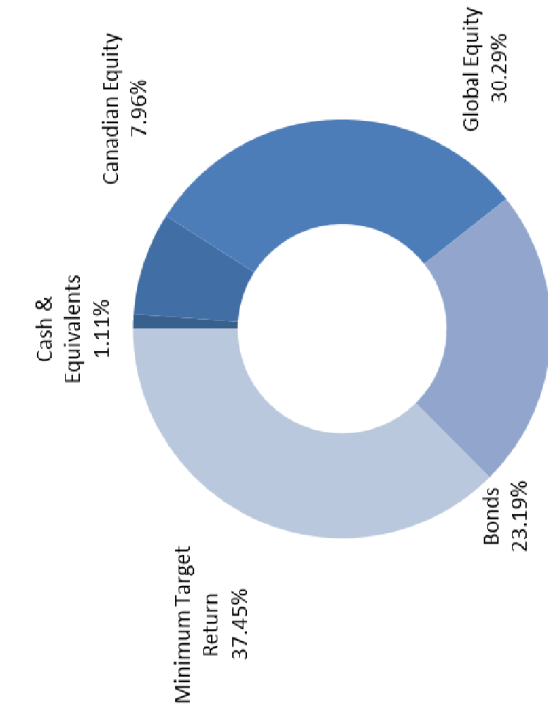
# Since Inception Performance



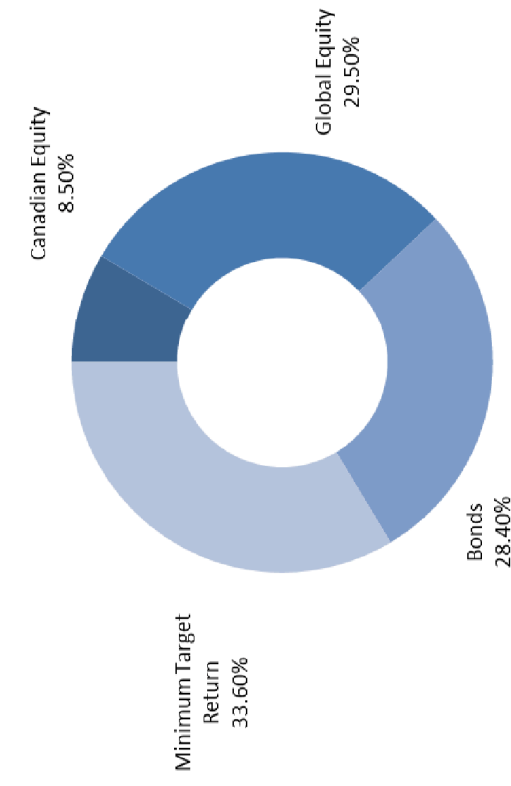
In dollar terms, the fund has grown \$416.0 million in excess of the policy benchmark since inception.

# Asset Mix – Sept 30, 2016

**Actual Asset Mix  
As of Sept 30, 2016**



**Asset Mix Policy  
As of Sept 30, 2016**



\*Effective September 30, 2016, the Policy Benchmark is 5.9% S&P/TSX Index + 2.6% S&P/TSX 60 + 4.6% S&P 500 Index(\$USD) + 9.1% MSCI EAFE Index (\$CAN) + 4.2% MSCI Emerging Markets (CAN\$) + 11.6% MSCI World (CAN\$) +14.6% FTSE TMX Canada Universe + 13.8% 3 Month Bankers Acceptance + 33.6% Minimum Target Return.

# Equity Market Index Returns

Indexes	Q3 2016	YTD	1-Year Ending Sept 30, 2016	4-Year Ending Sept 30, 2016
Canadian Equity (S&P/TSX Capped Index)	5.45%	15.83%	14.21%	7.78%
US Equity (S&P 500 C\$)	5.10%	2.02%	13.15%	21.64%
US Equity (S&P 500 U\$)	3.85%	7.84%	15.43%	13.15%
EAFE Equity (MSCI EAFE C\$)	7.71%	-3.76%	4.42%	13.80%
Emerging Markets (MSCI EM C\$)	10.33%	9.77%	14.48%	7.31%
World Equity (MSCI World C\$)	6.12%	-0.14%	9.16%	17.47%

\*Source: Mercer Insight and Northern Trust

All equity markets earned positive returns in Q3 2016, 1-year and 4 -year time periods. Year to date the S&P/TSX Capped Composite, S&P 500 CAD and USD, and Emerging Market earned positive returns.

# Bond Market Index Returns

Bond Indexes	Current Quarter	YTD	1-Year Ending Sept 30, 2016	4-Year Ending Sept 30, 2016
Canadian Long Duration Bonds (FTSE TMX Canada Long Term Government)	2.14%	10.45%	12.59%	6.03%
Canadian Universe Bonds (FTSE TMX Canada Universe)	1.19%	5.28%	6.31%	4.11%
Canadian Corporate Bonds (FTSE TMX Canada Universe Corporate)	1.59%	5.65%	6.31%	4.37%

\*Source: Mercer Insight and Northern Trust

Long government bonds have outperformed Corporate bonds and Universe bonds over the Q3, YTD, 1 and 4 year periods.

# Fixed Income – Q3 Summary

- The MT's Fixed Income portfolio returned 1.83%, which outperformed its benchmark return of 0.72% by +1.12%.

MT Fixed Income	Current Quarter	Benchmark	Relative Performance
Universe Bond	1.37%	1.18%	0.19%
Credit Bond	2.85%	1.59%	1.26%
Government Bond	0.73%	1.03%	-0.30%
<b>MT Fixed Income Total</b>	<b>1.83%</b>	<b>0.72%</b>	<b>1.12%</b>

\*Source: Mercer Insight and Northern Trust



# Fixed Income – YTD Summary

- The MT's Fixed Income portfolio returned 4.23%, which outperformed it's benchmark return of 3.03% by +1.19%.

MT Fixed Income	YTD	Benchmark	Relative Performance
Universe Bond	5.15%	5.27%	-0.12%
Credit Bond	6.97%	5.65%	1.32%
Government Bond	5.15%	5.14%	0.01%
<b>MT Fixed Income Total</b>	<b>4.23%</b>	<b>3.03%</b>	<b>1.19%</b>

\*Source: Mercer Insight and Northern Trust

# MTR – Q3 Summary

- The Minimum Target Return portfolio returned 4.42% versus a benchmark of 1.59%, outperforming by 3.23%. The outperformance was primarily driven by realized gains and income distributions from underlying private investments.
- For YTD, the Minimum Target Return portfolio returned 3.00%, which underperformed its benchmark return of 4.84% by -1.84%. The benchmark for the MTR is 6.5% annualized.

# Equity – Q3 Summary

- The MT’s Equity portfolio returned 5.70% during the quarter, underperforming the equity policy benchmark return of 6.56% by -0.86%.
- All equity managers, active and passive, had strong absolute returns.
- On a relative basis, however, all underperformed their benchmarks – most notably in MSCI World equities.

MT Equity	Current Quarter	Benchmark	Relative Performance
Canadian Equity**	5.16%	5.55%	-0.39%
US Equity	3.05%	3.85%	-0.80%
EAFE Equity	6.94%	7.71%	-0.77%
EME Equity	9.54%	10.33%	-0.79%
World Equity	4.58%	6.12%	-1.54%

\*Source: Northern Trust

\*\*Canadian Equity is a blended index of S&P TSX 60 and S&P/TSX Composite

# HRM Pension Plan Equity – YTD Summary

- The HRM MT Equity portfolio returned 4.05% year to date, underperforming its benchmark return of 4.57% by -0.52%.
- MSCI World equity active managers outperformed, as did EAFE managers.
- Passive US, and active Canadian and Emerging Market managers underperformed their benchmarks in spite of performing well on the year.

MT Equity	YTD	Benchmark	Relative Performance
Canadian Equity**	12.23%	15.56%	-3.33%
US Equity	6.78%	7.84%	-1.06%
EAFE Equity	-3.05%	-3.76%	0.71%
EME Equity	6.13%	9.77%	-3.64%
World Equity	2.35%	-0.14%	2.49%

\*Source: Northern Trust

\*\*Canadian Equity is a blended index of S&P TSX 60 and S&P/TSX Composite

**TO:** Ray Ritcey, Chair, and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
Cathie O'Toole, MBA, CPA, CGA, Director, Corporate Services/CFO

**APPROVED:** *Original Signed by:*  
Carl Yates, M.A.Sc., P.Eng, General Manager

**DATE:** January 25, 2017

**SUBJECT:** **2016/17 Cost Containment**

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### **INFORMATION REPORT**

#### **ORIGIN**

The Cost Containment Process (Item #6) as approved by the Halifax Regional Water Commission (HRWC) Board, October 3, 2013.

April 14, 2015 NSUARB Decision- HRWC General Rate Application (M06540)

#### **BACKGROUND**

The process for cost containment as approved by the HRWC Board on October 3, 2013 called for the implementation of a number of recommended actions that would assist HRWC in addressing the Nova Scotia Utility and Review Board's (NSUARB) request for a more rigorous approach to cost containment as an organization. One key recommendation was the establishment of a reporting structure whereby, "*on a quarterly basis, the monthly financial report of the HRWC Board will also include an update on Cost Containment Initiatives*".

In the Decision on the 2015 Rate Hearing, the NSUARB directed HRWC to file annual reports on its efforts to contain operating costs of the utility, with this report to be filed no later than June 30 of each year. Within the Decision, the NSUARB expressed its appreciation in receiving HRWC's first cost containment report, and HRWC's initiatives to contain its operating costs. HRWC filed this initial report with the NSUARB in September 2014, identifying \$2.8 million of savings for 2013/14. Initiatives in

subsequent years resulted in projected savings of \$1.7 million and \$3.0 million for 2014/15 and 2015/16 respectively.

## **DISCUSSION**

A Summary Report-of Cost Containment Initiatives for 2016/17 is attached, with updated information as at January 20, 2017. This report shows the cost containment initiatives effecting operations for 2016/17 as a result of new initiatives implemented thus far during the year, along with amounts of an ongoing nature from 2013/14 to 2015/16 inclusive. The inclusion of initiatives and amounts from prior years reflects an intentional focus on sustainable results over the long term. The projected cost savings for 2016/17 is \$5.1 million as outlined by category in Figure #1 below:

**Figure #1**

<b>General Budget Strategies</b>	<b>\$0</b>	<b>0%</b>
<b>Procurement Strategies</b>	<b>\$647,954</b>	<b>13%</b>
<b>Human Resource Strategies</b>	<b>\$2,214,344</b>	<b>44%</b>
<b>Information Technology (IT) Strategies</b>	<b>\$108,700</b>	<b>2%</b>
<b>Facilities/ Process Strategies</b>	<b>\$1,974,214</b>	<b>39%</b>
<b>Reduce Paper and Printing Costs</b>	<b>\$20,679</b>	<b>0%</b>
<b>Technology and Business Process Changes</b>	<b>\$112,138</b>	<b>2%</b>
	<b><u>\$5,078,028</u></b>	

As shown above, cost containment are impacted the most in the areas of Human Resource and Facilities/ Process Strategies. Under Human Resource Strategies the effects of pension plan re-design initiated in 2015/16 is one of the main forces with respect to cost containment savings in the current year. Annual savings related to pension plan re-design approximates \$1.7 million, which represents 77% of the savings within Human Resource Strategies and 34% of the total projected cost savings for 2016/17. Employer contributions on pensionable earnings decreased in 2016 from 12.95% to 9.85%, with employees experiencing a similar decrease from 12.95% to 10.65%. In addition, special payments made by the HRWC to fund the unfunded liability of the pension plan were reduced from \$3.0 million to \$0.8 million on an annual basis. Savings of \$20.2 million for the employer was projected over a 14 year period, with a 50% likelihood the plan would be fully funded within 10 years.

## ITEM # 5-I

HRWC Board

February 2, 2017

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Facilities/ Process Strategies contain initiatives of varying nature, however one of the main contributors in this category is Halifax Water's Energy Efficiency Program. Projects under this program account for approximately \$0.7 million of projected savings for the current year, representing 37% of savings within the category and 15% of the total projected savings for 2016/17.

Chemical costs are key to the operations of Halifax Water, in both water and wastewater services. Through its Procurement Strategies, staff continues to negotiate the best product and pricing to enable the facilities to operate in an efficient manner. This is evident in 2016/17 where savings related to chemical purchasing amounted to an estimated \$0.4 million.

New cost containment initiatives implemented during the 2016/17 fiscal year resulted in cost savings amounting to \$0.6 million. These initiatives are highlighted for ease of reference on the Summary Report-Cost Containment Initiatives attached. Cost savings resulting from these new initiatives fall within the following categories, ranked in order of cost savings: Facilities/ Process Strategies (\$0.4 million); Human Resource Strategies (\$86 thousand), Procurement Strategies (\$63 thousand), and Paper and Printing Reduction (\$2 thousand).

### **BUDGET IMPLICATIONS**

Available information on cost containment initiatives were taken into consideration when the 2016/17 budgets were developed. Initiatives that impact future fiscal periods (not annual or one-time occurrences only) will be incorporated into budget cycles and processes of these future periods.

### **ATTACHMENTS**

Summary Report – Cost Containment Initiatives

Report Prepared by:

*Original Signed by:*

\_\_\_\_\_  
Allan Campbell, B. Comm., CPA, CMA  
Manager, Finance

24-Jan-17

#	Initiative	Annual Cost Savings	Comments	Year Initiated	2016/17 Cost Savings
<b>1 General Budget Strategies</b>					
					Sub-total
					<u>\$0</u>
<b>2 Procurement Strategies</b>					
	Insurance adjustment services - sole source relationship over a 10 year period	\$5,460	HW participated in a joint tender with HRM. Costs will be approximately 20% lower.	2013/14	\$5,460
	Standardized uniforms and clothing	\$20,000	Issuance of a bulk tender; centralization of purchasing and distribution function; possible policy change to "as required" rather than a quota system	2013/14	\$20,000
	Standardized boots	\$5,000	Issuance of a bulk tender; centralization of purchasing and distribution function; possible policy change to "as required" rather than a quota system	2013/14	\$5,000
	Mobile devices - switched supplier and carrier	\$51,624	HW participated in a joint tender with HRM	2013/14	\$51,624
	Customer account collections	\$10,000	Coordination of collection services related to closed customer accounts in conjunction with the Provincial Public Procurement Act, rather than outsourcing to private organizations	2014/15	\$10,000
	Lab Testing	\$60,000	Savings as a result of contract tendering	2013/14	\$60,000
	NSPI rate reclassification	\$16,000	Eastern Passage WWTF	2014/15	\$16,000
	NSPI rate reclassification	\$15,000	Duffus Street Pumping Station	2015/16	\$15,000
	Chemical purchasing	\$400,000	Able to purchase a corrosion inhibitor with a higher concentration of active ingredient, thus foregoing additional costs that would have resulted under current dosage requirements	2015/16	\$400,000
	Replacement of wireless headsets for CCC staff	\$1,500	Wireless headsets were not performing as expected, therefore a switch was made to wired headsets which resulted in savings on a per unit cost basis, and also savings regarding the frequency and cost of replacement associated with the wired headsets.	2015/16	\$1,500
	Mobile devices - switched supplier and carrier	\$48,000	HW leveraged the mobility contract of the Province of Nova Scotia	2016/17	\$12,000
	Garbage collection - JD Kline Plant	\$1,370	An RFP was put out to consolidate the garbage collection, which resulted in a cost savings with respect to internal man-hours and use of HW vehicles.	2016/17	\$1,370
	Utilizing HW staff to setup excavations sites	\$50,000	Using trained HW staff as TWS for job sites, unless outside traffic control personal are required	2016/17	\$50,000
					Sub-total
					<u>\$647,954</u>
<b>3 Human Resource Strategies</b>					
	Corporate ID Badges	\$3,200	updating the corporate ID badges to be deferred from the 2013/14 fiscal year to 2014/15 for existing employees	2013/14	\$3,200
	Heavy Truck and Equipment Service	\$100,000	the addition of a new Heavy Equipment Technician provides in-house maintenance service capabilities for the HW fleet.	2013/14	\$100,000
	Beeper Pay	\$75,000	Elimination of an inconsistency between Water and Wastewater Services, as Water Services staff do not receive beeper pay. This involves 10 non-union staff in total.	2013/14	\$75,000
	Annual service awards banquet	\$15,000	Changed the venue and the cost of the meal	2014/15	\$15,000
	Accessing on-line training opportunities	\$2,241	More use of on-line training versus the traditional methods, including WHMIS and TDG renewals	2014/15	\$2,241
	Background Checks	\$654	Out-sourced background checks to a new contractor.	2015/16	\$654
	Workload, labour force assessment	\$140,000	A reduction in number of staff in Development Approvals. The volume of work did not warrant 6 planning technologists, and as a result this number has been reduced to 4.	2015/16	\$140,000
	Pension plan re-design	\$1,700,000	Through the collective bargaining process, HW was able to negotiate pension plan re-design to make the plan more sustainable. It is estimated the employer's share contributions will decrease from the current 12.95% to 9.85% effective January 1, 2015.	2015/16	\$1,700,000
	Re-structuring within the organization to create a new "Corporate Services" sector	\$35,000	January 1, 2016 saw the elimination of two (2) full time positions and a re-design of several other jobs.	2015/16	\$35,000
	Workload, labour force assessment	\$57,000	January 1, 2016 saw the elimination the administrative assistant within Regulatory Services.	2015/16	\$57,000
	Reduction in the number of summer students	\$42,296	Net reduction in the number of summer students, including Federal funding in the amount of \$2,996	2016/17	\$42,296
	Workload, labour force assessment	\$81,966	November, 2016 saw the elimination of a Compliance Sampling position as a result of a reduction in sampling requirements.	2016/17	\$34,153
	Hiring at Lake Major plant	\$9,800	Summer student not hired	2016/17	\$9,800
					Sub-total
					<u>\$2,214,344</u>



**Halifax Water  
Summary Report - Cost Containment Initiatives  
2016/2017 Fiscal Year**

**Attachment  
Item 5-I**

**4 Information Technology (IT) Strategies**

Xerox managed print solutions	\$20,000	Rationalization and replacement of photocopiers and printers	2013/14	\$20,000
Network	\$80,000	Change in cost model by Eastlink, giving HW the new pricing	2013/14	\$80,000
Telephone land lines	\$8,700	Rationalization of services and eliminate duplication of resources as required	2013/14	\$8,700

Sub-total

\$108,700

**5 Facilities/ Process Strategies**

Chlorine Utilization - Pockwock	\$40,000	Discontinuation of the pre-chlorination process	2013/14	\$40,000
Lab Testing	\$105,000	Price benefits from purchasing product from a different source mainly affecting the Harbour Solution Plants	2013/14	\$105,000
Pumper Truck Utilization	\$130,000	pilot project to be scheduled initially for stormwater customers only as a test	2013/14	\$130,000
Waste oil boiler system - Herring Cove WWTF	\$13,250	new system to allow the use of waste oil from Metro Transit as an alternative heating source	2014/15	\$13,250
System sampling for HPC's	\$8,025	sampling was reduced from weekly to monthly	2014/15	\$8,025
NSE system assessments	\$25,000	Assessment reports are being completed in-house rather than being outsourced	2014/15	\$25,000
Decommissioning of the Bedford South pumping station	\$15,000	The developer driven system expansion will permit the use of gravity and pressure reduction rather than the pumping station	2014/15	\$15,000
Lighting upgrades - Bennery Lake WSP	\$4,793		2014/15	\$4,793
Insulation upgrades - Bennery Lake WSP	\$36,000		2014/15	\$36,000
Lighting upgrades - Eastern Passage WWTF	\$7,880		2014/15	\$7,880
Lighting upgrades - Dartmouth WWTF	\$22,542		2014/15	\$22,542
Lighting upgrades - Herring Cove WWTF	\$13,744		2014/15	\$13,744
Lighting upgrades - Halifax WWTF	\$29,845		2014/15	\$29,845
Lighting upgrades - Aerotech BPF	\$19,109		2014/15	\$19,109
HVAC upgrades - Eastern Passage WWTF	\$20,711		2014/15	\$20,711
HVAC upgrades - Roach's Pond pumping station	\$13,500		2014/15	\$13,500
MCC 190 cooling and heat recovery - Halifax WWTF	\$13,164		2014/15	\$13,164
Aeration system upgrades - Eastern Passage WWTF	\$76,382		2014/15	\$76,382
Orchard Park in-line turbine project	\$31,494		2014/15	\$31,494
Wind farm - Pockwock WSP	\$130,399		2014/15	\$130,399
Biogas CHP system - Mill Cove	\$86,000		2014/15	\$86,000
Disposal of water treatment plant solid residual material	\$36,000	A new location for the disposal of the residual material was found	2014/15	\$36,000
Advanced investigative tool for leaks and structural condition of pipes	\$150,000	The current program has been halted as a cost containment initiative and as a result of the information received.	2014/15	\$150,000
Seasonal disinfection of wastewater effluents	\$250,000	In coordination with NSE, UV disinfection of effluents will not be required during certain periods of the year	2014/15	\$250,000
E-delivery	\$20,000	Transitioning from traditional billing methods to e-delivery	2014/15	\$20,000
Change in Recycling Pickups	\$2,700	By changing the schedule for recycling pickups from bi-weekly to every three (3) weeks, the anticipated annual savings will range from \$2,500 to \$2,700.	2015/16	\$2,700
Highway #7 Booster Station Upgrade	\$14,300	Expected energy savings	2015/16	\$14,300
Dartmouth WWTF - UV Channel Isolation	\$59,460	Expected energy savings	2015/16	\$59,460
Halifax WWTF - Fixed Compressed Air Leaks	\$2,293	Expected energy savings	2015/16	\$2,293
Halifax WWTF - UV Channel Isolation	\$62,115	Expected energy savings	2015/16	\$62,115
Herring Cove WWTF - MCC 190 Cooling/Heat Recovery	\$8,496	Expected energy savings	2015/16	\$8,496
Herring Cove WWTF - Ventilation Air Heat Recovery	\$28,300	Expected energy savings	2015/16	\$28,300
Sampling	\$4,160	Using internal staff at the Mill Cove facility to perform the required daily sampling at the facility, rather than the compliance staff, limiting their site visits to once a week.	2015/16	\$4,160
Staff utilization	\$50,000	Using trained HW staff for traffic control on HW job sites unless contractors are required.	2015/16	\$50,000
Process alternative	\$40,000	A centrifuge was rented for the Mill Cove WWTF (with the option to purchase) on a trial basis to dewater liquid sludge that typically would be transported to the Aerotech WWTF. The transport of the liquid sludge resulted overtime costs, as well as reducing the time available for HW truck to service other facilities. This process assisted the Aerotech in reaching its compliance goals and reduced overtime costs by an estimated 50%. This equipment will enable HW proceed with a digester clean out project, which would otherwise be sub-contracted at a cost of \$200,000.	2015/16	\$40,000
Process change	\$4,854	It was decided that flanges for meter sizes greater than 2" would be the responsibility of the customer, since when meters are replaced, the flanges are not replaced.	2015/16	\$4,854
Process change relating to NSPI billing meter relocations	\$160,000	Cost savings created as a result of more accurate billing: ability to receive timely readings, and monitor and report energy usage; reduction in the materials and time used to escort meter readers to secure, un-staffed locations.	2016/17	\$160,000
UV disinfection shutdown - HHSP and Eastern Passage WWTFs	\$150,270	Annual shutdown of UV disinfection system resulted in cost savings associated with electrical energy savings, peak demand reduction,	2016/17	\$150,270

**5 Facilities/ Process Strategies (continued)**

Halifax WWTF - Ventilation Air Heat Recovery System	\$32,300	Implemented October, 2016	2016/17	\$13,458
Halifax WWTF - Carbon Scrubber By-Pass	\$40,800	Implemented April, 2016	2016/17	\$40,800
Tools developed internally	\$20,000	Tools developed internally to install new operating nuts on buried valves. Previously nuts were lost on buried valves resulting in a need to excavate the valve and install new nuts. Cost savings are achieved regarding excavation and reinstatement.	2016/17	\$20,000
Boiler Replacement - JD Kline Plant	\$3,000	Anticipated savings related to oil usage and pricing resulting from the replacement of the old boiler.	2016/17	\$3,000
Process change	\$3,170	It was decided to dig away from the main which was located 7' under the sidewalk to repair a low pressure issue. The main stop was cleared using a cable and fish tap. Savings included the cost of concrete reinstatement, sods and the overall inconvenience to the public.	2016/17	\$3,170
Spruce Hill transmission main	\$3,000	Two long term leaks were discovered in the transmission main resulting in cost savings from the perspective of water loss control.	2016/17	\$3,000
Installation of a new rotating assembly	\$6,000	Using in house experience and knowledge to install a new rotating assembly for the centrifuge at the Lake Major plant	2016/17	\$6,000

Sub-total \$1,974,214

**6 Reduce Paper and Printing Costs**

Electronic HRWC Board Packages	\$7,500	Send Board packages out electronically rather than issuing hard copies	2013/14	\$7,500
Paperless Office within the HR Department	\$4,804	Creating electronic workflow	2013/14	\$4,804
Stewardship Report	\$3,000	The Stewardship Report will be published electronically only, with no hard copies	2013/14	\$3,000
Changes to document archiving	\$3,175	Transitioning file storage from outside contractor to public resources	2013/14	\$3,175
Changes to document archiving	\$9,000	Transitioning file storage from outside contractor to public resources	2016/17	\$2,200

Sub-total \$20,679

**7 Technology and Business Process Changes**

Workload, labour force assessment	\$47,605	Through the utilization of technology, such as a Customer Relationship Management (CRM) system, a budgeted addition (customer service representative) has been removed.	2015/16	\$47,605
Workload, labour force assessment	\$64,533	Re-structuring by management within the AMI project as a result of technological efficiencies anticipated.	2015/16	\$64,533

Sub-total \$112,138

**\$5,078,028**

**TO:** Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
Reid Campbell, M.Eng., P.Eng., Director, Water Services

*Original Signed by:*  
Cathie O'Toole, MBA, CPA, CGA, Director, Corporate Services

**APPROVED:** *Original Signed by:*  
Carl Yates, M.A.Sc., P.Eng., General Manager

**DATE:** January 20, 2017

**SUBJECT:** **AMI Project**

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### **INFORMATION REPORT**

#### **ORIGIN**

Halifax Water Board approval of the Advanced Meter Infrastructure (AMI) project. on April 28, 2016.

#### **BACKGROUND**

On May 12<sup>th</sup>, 2016, Halifax Water submitted an Application (M07473) to Nova Scotia Utility and Review Board (NSUARB) for approval of a capital project to install Advanced Metering Infrastructure (AMI) and approval of amendments to the Regulations Respecting Rates and Charges for the provision of water, public and private fire protection, and wastewater services to support the AMI project. After going through a process of a paper hearing with the NUSARB, the application was approved on October 6, 2016, for the \$25.4 M capital expenditure on the AMI Project.

**DISCUSSION**

After NSUARB approval was received, the Halifax Water team worked to finalize Statements of Work and contracts. Contracts with vendors, for each of the three project contracts were signed in mid-November. A formal project kickoff was held between November 28 to December 1, 2016. The following are the vendors for the three contracts for the project:

1. AMI Technology – Itron Canada Inc.
2. Water Meters and Register Supply – Neptune Technology Group (Canada)
3. Water Meter and Endpoints Installation – Neptune Technology Group (Canada).

Since the project kick-off, most of the effort has been directed to planning and coordination via meetings, on-site and off-site workshops and site visits with vendors to generate requirements for IT infrastructure, Stakeholder Engagement, Organizational Change Management, Business Process documentation, and Nova Scotia Power and Bell utility pole utilization. . The key activities and dates for the next few months of the project are listed below:

1. IBM has been engaged to work on developing the interfaces required to move data between Halifax Water's SAP, Neptune's SAP and Itron's ChoiceConnect software (headend software). This task will be completed by March 31, 2017.
2. Itron will be onsite during February to install the AMI software (ChoiceConnect). Halifax Water's IT team is currently preparing the system environments required for that installation. The testing of this software will be done during March, 2017, along with SAP interfaces. Testing will continue into summer to cover all scenarios such as regular bill reads, move-in & move out processes, etc.
3. Halifax Water staff have begun executing the Stakeholder Engagement Plan. Halifax Water will have a direct link to an AMI Project website on the Halifax Water website. The AMI Project website will have project information, progress updates and FAQs including specific anticipated questions related to Health, Safety, Privacy and Security. A letter will also be mailed out to all 83,000 customer accounts introducing them to the AMI Project. Both the website and letter mail out will be done during the week of March 26, 2017.
4. Itron will install the first collector and repeater near the Beaverbank Reservoir to enable the Tucker Lake meter reading route for Initial Deployment, as indicated on the attached sketch. The collector and repeater in this area will be installed in the second half of April with meter upgrades beginning in the first week of May, 2017. The meter upgrade for the Initial Deployment in the Tucker Lake meter reading route will be done by Halifax Water staff.

5. Once the Initial Deployment has been completed and successfully tested as to business process requirements, Neptune Technology Group will be authorized to do their Initial Deployment in the first week of July. The Neptune Initial Deployment is intended to test the customer outreach, appointment setting and installation processes.
6. Neptune starts mass deployment during the third week of July once both Halifax Water and Neptune are satisfied with the Initial Deployment.

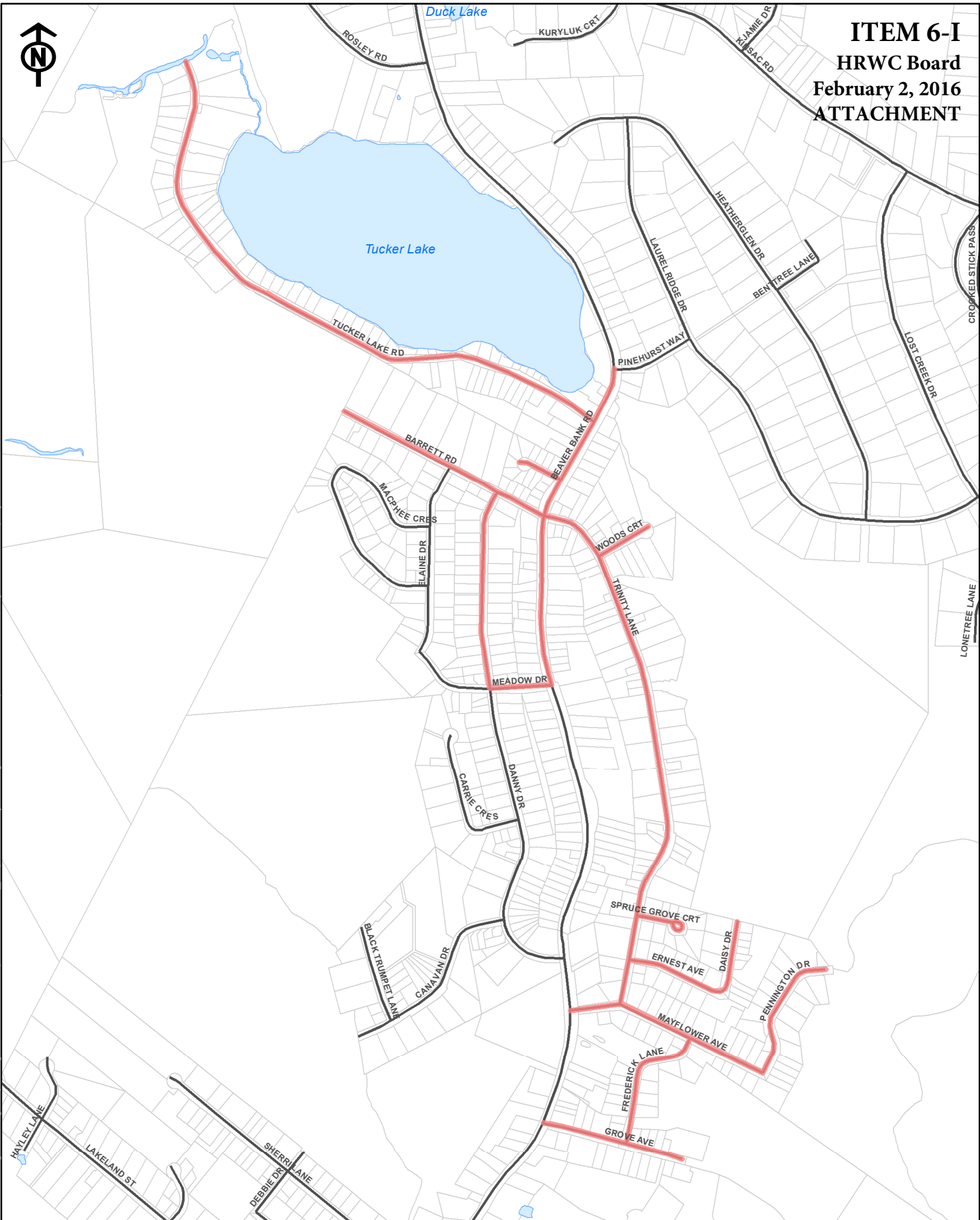
**ATTACHMENT**

Sketch – AMI Initial Deployment Area

Report Prepared by: *Original Signed by:*

Sanjeev Tagra, EIT, Project Engineer, 902-293-6461

**ITEM 6-I**  
**HRWC Board**  
**February 2, 2016**  
**ATTACHMENT**



Path: K:\Engineering\Dept\Eng\Information\Requests\Internal\_requests\Sanjeew\_Tagra\Board Report 2017\AMI Project Initial Deployment Area - Tucker Lake.mxd

*"To provide world class services for our customers and our environment"*

Data Source: Halifax Water / HRM  
Date: Friday, January 27, 2017

The information contained on this map may not be complete and/or accurate in all areas. Should accurate information or confirmation of completeness be required, please contact the Engineering Department of Halifax Water. Halifax Water will not be held liable for misuse of this information.

**AMI Project**  
**Initial Deployment Area -**  
**Tucker Lake**



**TO:** Ray Ritcey, Chair and Members of the Halifax Regional Water Commission Board

**SUBMITTED BY:** *Original Signed by:*  
James Campbell, Communications and PR Coordinator

**APPROVED:** *Original Signed by:*  
Carl Yates, M.A.Sc., P.Eng., General Manager

**DATE:** **January 24, 2017**

**SUBJECT:** **2016 Annual Customer Survey**

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## **INFORMATION REPORT**

### **ORIGIN**

Operational Requirement, Corporate Balanced Scorecard (CBS) Performance Measurement

### **BACKGROUND**

Since 2000, Halifax Water has been engaging Corporate Research Associates (CRA), a highly respected local research firm, to compile information on a number of topics critical to the operation of the utility as it relates to public confidence and perception. The questions generally focus on customer satisfaction with services and products provided for water, wastewater and stormwater services.

For 2016, Halifax Water commissioned questions in the Fourth Quarter 2016 Halifax Urban Report and the Fourth Quarter 2016 CRA Atlantic Quarterly. Information from the Halifax Urban Report is based on telephone interviews conducted from October 25 to November 12, 2016. Information from the CRA Atlantic Quarterly is based on telephone interviews conducted from November 3 to November 28, 2016.

The overall results are based on 777 interviews with individuals from the Halifax Municipality population. A sample of 777 respondents would be expected to provide results accurate to within plus or minus 3.5 percentage points in 95 out of 100 samples.

## **DISCUSSION**

The results this year across survey categories continue to remain stable and positive particularly when factors such as the water and wastewater rate increase on April 1, 2016, and the Stormwater Rate Application filed with the NSUARB on October 31, 2016 are taken into consideration.

Two of our Critical Success Factors as outlined in the Corporate Balanced Scorecard are: **High Quality Drinking Water** and **Service Excellence**. In these 2 categories, the target for organizational indicators is set high. Our target is 85% of customers rating drinking water as either good or excellent, and 90% of customers satisfied or very satisfied with overall service from Halifax Water.

This year's results indicate 88% of customers perceive water quality as good or excellent, consistent with the 2015 rating of 89%. A sub-category surveyed under drinking water quality was Water Safety. In this category Halifax Water came in at a very high 97% of customers rating our water as safe or very safe, up from 95% in 2015. This year's Water Safety result matches our highest ever rating in this category and has not been seen since the 2011 survey. These consistently high numbers speak to the overall quality, safety, and value customers place on our water across the region.

For Service Excellence, 2 categories address this broader topic, Satisfaction with Halifax Water's Products & Services, and Satisfaction with Halifax Water's Overall Service Delivery. In these categories, the results were 92% and 95%, respectively. These figures represent a 3% increase in Satisfaction with Halifax Water's Products & Services, and 2% increase in Halifax Water's Overall Service Delivery compared to 2015 results.

We continue to monitor how well our public messaging related to the Pollution Prevention (P2) "*Don't Dump This*" program is recognized, and if the message is getting through.

Messaging around pollution prevention has been underway for over a decade. Though there was no targeted radio or TV ad campaign in 2016, the overall program continues to focus on the issue of floatables/flushables and the proper disposal of a variety of products as they relate mainly to Halifax harbour, though other receiving waters are part of the messaging.

The numbers for program recognition were down slightly from those in 2015. The results for intent of message, "Don't Dump Certain Products" decreased from 73% in 2015 to 70%. Public recognition and message awareness related to the phrase, "Only Rain in the Storm Drain" increased significantly from 68% in 2015 to 74%. With at least seven out of ten respondents indicating recognition of the two programs, it is clear the messaging continues to resonate in the community.

Respondents also recognized related secondary campaign messaging in the categories of Pollution Prevention, Help Protect Halifax Harbour, Saving the Environment, and Increase Awareness/Educate People. These results remain consistent with 2015 results and reflect significant primary and secondary message recognition and public awareness of harbour water quality related issues, flushables and proper disposal practices.



New for this year on the issue of flushables was the production of a video, “*Toilet Paper, The One and Only Flushable Wipe*”. This video was posted to Halifax Water’s You Tube channel in mid-November 2016. Following an official launch via media release in December, the video took off gaining widespread recognition. At the time of writing this report the video had almost 15,500 views.

There was a slight decline in customer support for Halifax Water’s management of the wastewater and stormwater assets. The 2015 figure stood at 76% completely or mostly supporting. For 2016, the figure stands at 72%. Halifax Water’s overall public reputation as stewards of the water, wastewater & stormwater system continues to be strong. This support is again particularly gratifying in light of the April 1, 2016 water and wastewater rate increase, and the Stormwater Rate Application filed with the NSUARB on October 31, 2016.

Regarding ePost electronic billing questions, 46% of survey respondents were aware of the service, down marginally from 48% in 2015; 30% of those opted to use the service, matching 2015 results. Of the 30% using the service, 2016 numbers match 2015 with 96% completely or mostly agreeing that the service is convenient and easy to use. These numbers indicate the service is well received when used, and that there is room to further promote and expand uptake of the ePost electronic billing service.

With the significant challenges posed by the water/wastewater rate increase, geosmin and the stormwater rate application filed during this survey period, continued customer support reflects well as we continue to roll out long term programs related to the Integrated Resource Plan, Regional Development Charge, and large capital projects such as the Northwest Arm Sewer Rehabilitation, Sullivan’s Pond Stormwater Project, Qunipool Road Watermain Renewal, AMI and Aerotech WWTF Expansion and Upgrade, to name a few. Continued targeted public messaging around the infrastructure deficit, regulatory compliance, asset renewal, system growth, and protection of the environment will help our customers understand the value in the water, wastewater and stormwater services we provide.

For the benefit of all staff, the survey has been placed on the Halifax Water Intranet, and hard copies distributed to all work locations.

Staff will be encouraged to take the time to read the survey results and provide any comments or suggestions they might have.

**ATTACHMENT**

2016 Quality of Service Report

Report Prepared by: <u>Original Signed by:</u> James Campbell, Communications and PR Coordinator, 902-490-4604
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# 2016 Quality of Service Study

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## Final Report

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**Halifax Water**

*Prepared for:*

**Halifax Water**

**Fourth Quarter 2016**



[www.cra.ca](http://www.cra.ca)

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## Introduction

Corporate Research Associates, Inc. (CRA) is pleased to present Halifax Water with the results of the **2016 Quality of Service Study**. Halifax Water commissioned questions on the Fourth Quarter 2016 *Halifax Urban Report* and the Fourth Quarter 2016 *CRA Atlantic Quarterly*<sup>®</sup>. These syndicated products provide information on consumer trends and public opinion on pivotal economic, political, social, and other issues across the region on a quarterly basis.

The total sample size for questions asked on both the *Halifax Urban Report* and the *Atlantic Quarterly*<sup>®</sup> is 777. A sample of 777 residents can be expected to yield an overall margin of sampling error of  $\pm 3.5$  percentage points in 95 out of 100 samples. Of these 777 residents, 548 receive their household water from Halifax Water. A sample of 548 Halifax Water customers can be expected to yield an overall margin of sampling error of  $\pm 4.2$  percentage points in 95 out of 100 samples.

A copy of the questionnaire is appended (Appendix A), as well as comprehensive banner tables (Appendix B) that present the results for each question by key demographic subgroups. The tables are noted by number throughout the report for easy reference. Unless otherwise stated, all results in this report are expressed as a percentage.



## Executive Summary

Overall, results for the **2016 Quality of Service Study** indicate that Halifax Water continues to perform admirably across a multitude of categories, with a high proportion of the public offering positive ratings of the service provided. Most Halifax Water customers believe their water is safe, and continue to offer positive ratings of the quality of water they are provided, as quality ratings are consistent with results from 2015.

In terms of specific aspects of the service Halifax Water provides, ratings for *overall delivery of service* remain high and consistent compared with last year, as are ratings for most key service indicators. Specifically, ratings for *staff accessibility, staff promptness, ability to answer questions, and politeness* are similar to one year ago.

In addition, perceptions catalogued via Halifax Water's Customer Satisfaction Index, which provides an overall assessment of service performance among Halifax Water customers and is calculated based on customers' ratings on six service-focused questions, remain high. After a slight decline last year, the Customer Satisfaction Index has rebounded to a level consistent with results in 2014.

There continues to be a lack of confidence among a majority of the Halifax population in terms of the safety of water in the Halifax Harbour. Specifically, six in ten are not confident that the water quality in the Halifax harbor is safe for recreational use. In addition, a strong majority of Halifax residents continue to support Halifax Water managing the wastewater and stormwater systems.

Once again, Halifax Water customers were asked their opinion on a potential increase in water rates to treat odour and taste issues that are not a health concern, and results indicate that only one-third of customers support this measure. That said, on average, customers who support such an initiative are willing to spend almost \$51 extra every year for this service. The level of support for a rate increase to treat odour or taste issues is unchanged from one year ago, however, supportive customers would be willing to pay more for this service, compared with last year.

Customers were again asked about ePost, Halifax Water's electronic billing service, and results reveal that an opportunity exists to increase awareness of this service. Consistent with last year, one-half of customers are aware of ePost, while a minority currently use it to receive their bills electronically. Of note, those who use ePost find it convenient and easy to use. Among those who are aware of the service but are not currently using it, one-third are interested in receiving their water bills through an email notification.

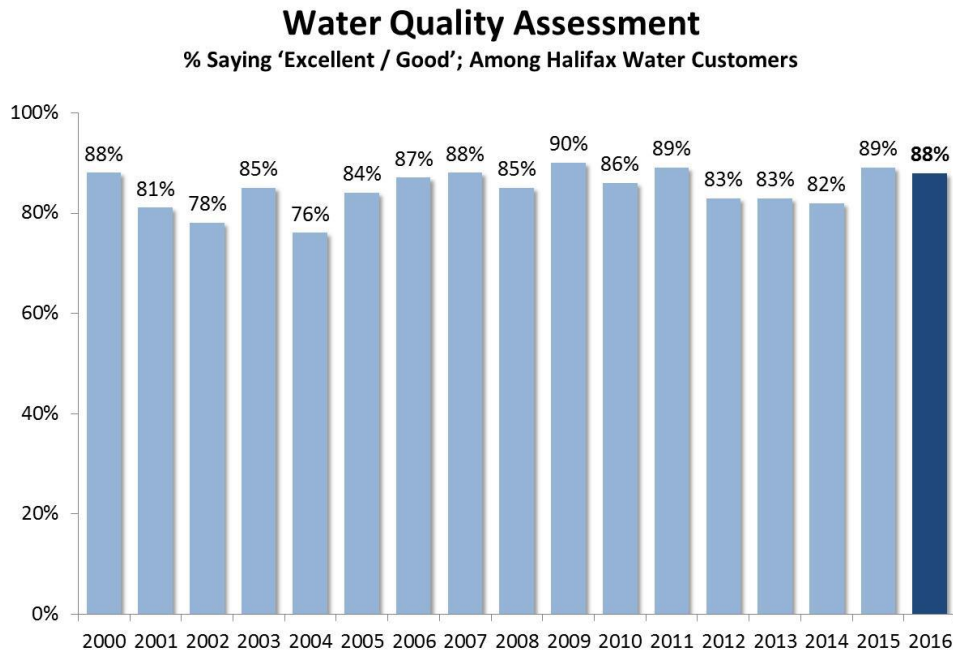
Overall, awareness level of the 'Don't Dump This' information campaign continues to exhibit a downward trend and is now, for the second consecutive year, at its lowest level since tracking began. Meanwhile, recall of the phrase 'Only Rain in the Storm Drain' is stable compared with last year, although a declining trend in recall is apparent from 2011 when recall levels were at their highest for this campaign. The Internet continues to be the preferred method to access information related to Halifax Water's pollution prevention, water, wastewater, and stormwater programs.



## Detailed Analysis

### Water Issues

The number of Halifax Water customers who rate their water quality as *excellent* or *good* is consistent with 2015 findings. Specifically, nine in ten (88%, compared with 89%) residents offer a favourable assessment of their water quality. (Table W1)

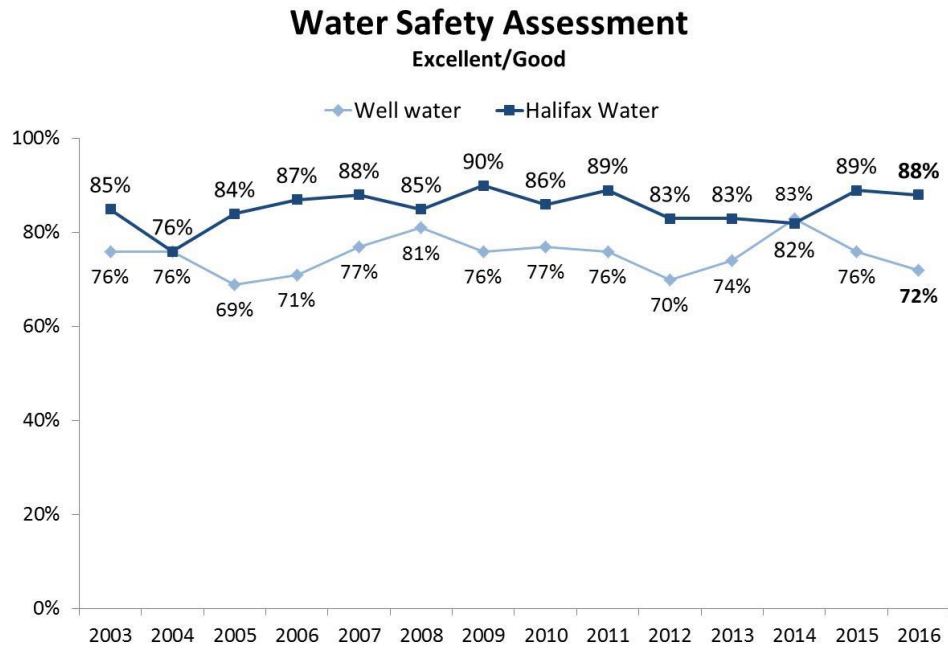


Q.W1: Overall, how would you rate the quality of water you receive in your household? Would you say it is excellent, good, only fair, or poor? (n=548)

Across the region, residents in Dartmouth and its surrounding area are more likely than those in the County of Halifax to have a favourable rating of their household water. In addition, the likelihood of assigning favourable rating increases with age.



Halifax Water customers are currently more likely than those with a well to rate the quality of their water as *excellent* or *good*.

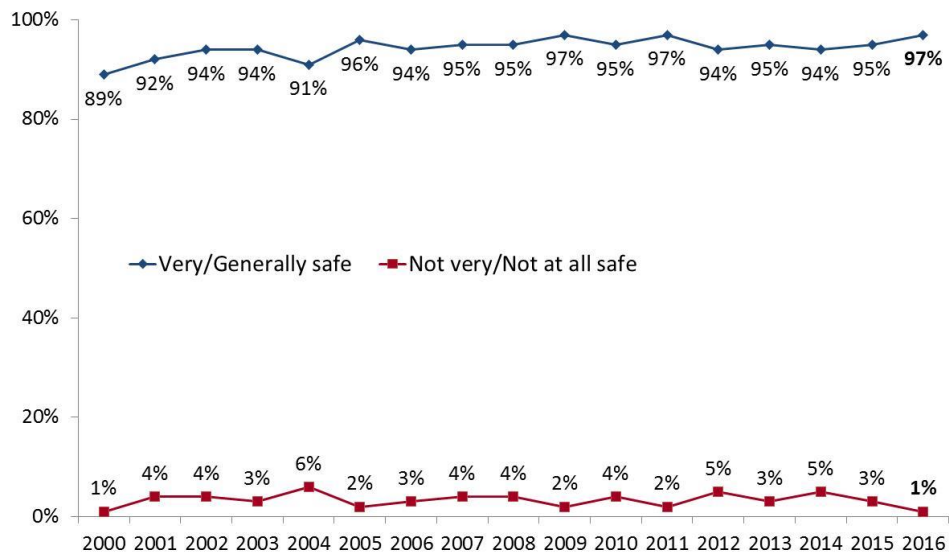


Q.W1: Overall, how would you rate the quality of water you receive in your household? Would you say it is excellent, good, only fair, or poor? (Halifax Water n=548, Well n=205) *Note: In 2008, HRWC became Halifax Water.*



The vast majority of Halifax Water customers perceive their water as very or generally safe, while very few rate their water as unsafe, similar to previous years. Regionally there is little difference in opinion, however across the population, males customers are slightly more likely to perceive their water as safe compared with females. (Table W2)

### Water Safety Assessment Among Halifax Water Customers



Q.W2: Overall, how safe would you say your water is? Would you say it is very safe, generally safe, not very safe, or not at all safe? (n=548)

Among the small number of residents who believe their water is unsafe (n=29), concern with **chemicals, drinkability, odour, taste, and discolouration** are top mentions. (Table W3)

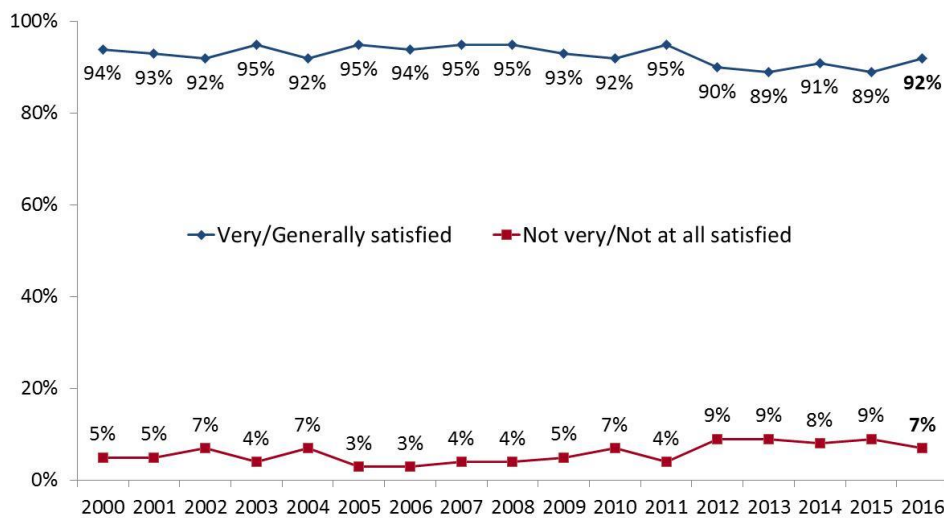




## Customer Satisfaction

The vast majority of customers are satisfied with the products and services they receive from Halifax Water, similar to previous findings. Specifically, nine in ten (92%, compared with 89% last year) customers report being *very* or *generally satisfied* with the products and services received from Halifax Water. Across the region, customers in the City of Halifax and Dartmouth and surrounding areas are more likely to report satisfaction with Halifax Water products and services than customers in the County of Halifax. (Table W5)

**Satisfaction with Halifax Water’s Products and Services**  
Among Halifax Water Customers



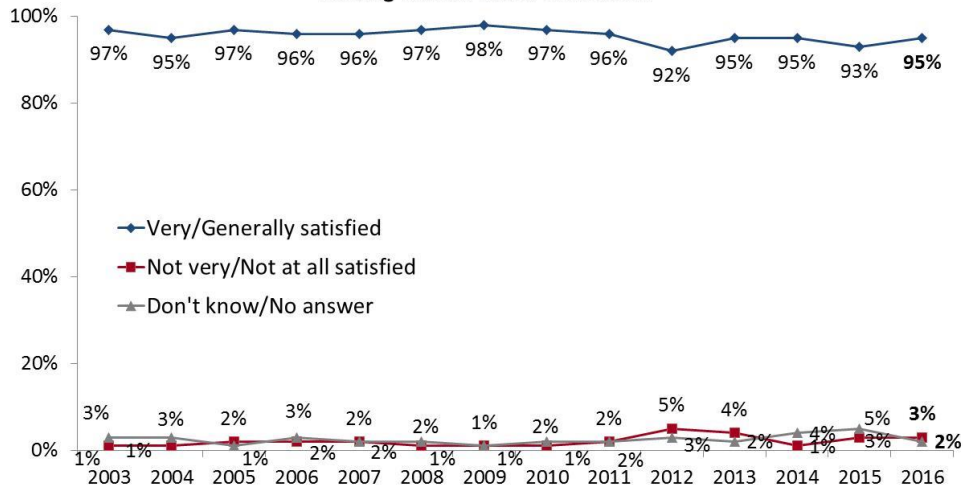
Q.W5: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] All things considered, would you say you are very satisfied, generally satisfied, not very satisfied, or not at all satisfied with the products and services you receive from Halifax Water? (n=548)



The number of customers satisfied with Halifax Water’s **overall delivery of service** is stable compared with previous findings. Specifically, 95 percent of residents offer a rating of *very* or *generally satisfied*, compared with 93% one year ago. Across the region, residents in Dartmouth and its surrounding area are somewhat more likely than those elsewhere in the region to be satisfied with the overall delivery of service from Halifax Water. Across the population, satisfaction in this regard is somewhat more likely among males than females. (Table W6a)

### Satisfaction with Halifax Water’s Overall Service Delivery

Among Halifax Water Customers



Q.W6a: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] For each of the following, please tell me whether you are very satisfied, generally satisfied, not very satisfied, or not at all satisfied with the service you have received from Halifax Water: Overall service delivery – How well Halifax Water delivers its services to you? (n=540)

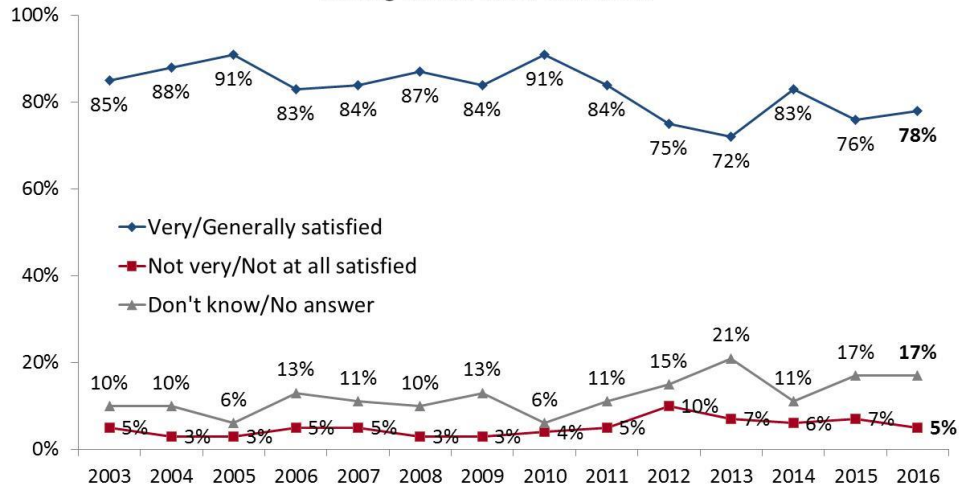
*Note: Responses for 'Have not used this Halifax Water service' have been removed from this table.*



Consistent with results from last year, a large majority of customers are satisfied with Halifax Water’s staff **accessibility**. Specifically, eight in ten (78%, compared with 76%) customers report being *very or generally satisfied* with the accessibility of Halifax Water staff. Across the region, customers in Halifax City and its surrounding area are less likely to be satisfied in this regard. However, across the population, there is little difference in opinion regarding staff accessibility. (Table W6b)

### Satisfaction with Halifax Water’s Staff Accessibility

Among Halifax Water Customers



Q.W6b: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] For each of the following, please tell me whether you are very satisfied, generally satisfied, not very satisfied, or not at all satisfied with the service you have received from Halifax Water: Accessibility – How easy it was to reach Halifax Water staff when you needed to? (n=385)

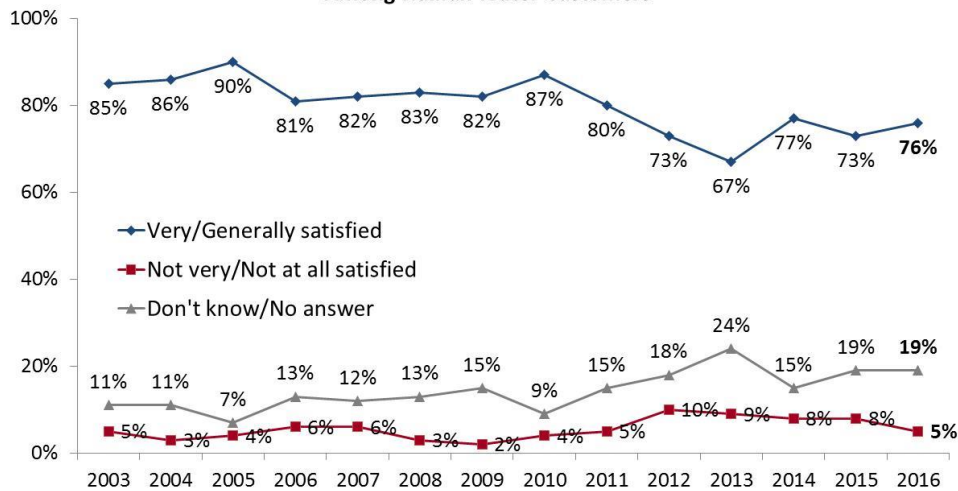
*Note: Responses for 'Have not used this Halifax Water service' have been removed from this table.*



Similar to findings from 2015, a large majority of customers remain satisfied with the **promptness** of Halifax Water staff (i.e., how quickly staff were able to respond to questions). Specifically, three-quarters (76%, compared with 73%) of customers are *very or generally satisfied* with the promptness of staff at the organization. Ratings in this regard are lower in Halifax City and its surrounding area, while younger residents are more likely than others to be satisfied with the promptness of Halifax Water staff. (Table W6c)

### Satisfaction with Halifax Water's Staff Promptness

Among Halifax Water Customers



Q.W6c: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] For each of the following, please tell me whether you are very satisfied, generally satisfied, not very satisfied, or not at all satisfied with the service you have received from Halifax Water: Promptness – How quickly Halifax Water staff were able to respond to your questions? (n=381)

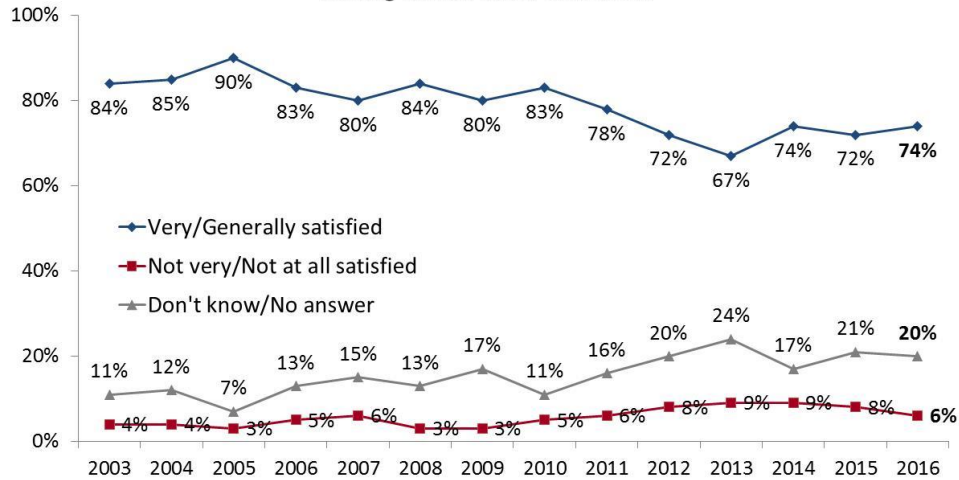
*Note: Responses for 'Have not used this Halifax Water service' have been removed from this table.*



Consistent with results from one year ago, a majority of customers continue to be satisfied with Halifax Water’s **ability to answer questions**. Specifically, three-quarters (74%, compared with 72%) of customers offer a rating of *very* or *generally satisfied* in this regard. Ratings are lower in Halifax City and its surrounding area, while across the population, younger customers are more likely than others to be satisfied with Halifax Water staff’s ability to answer questions. (Table W6d)

### Satisfaction with Halifax Water’s Ability to Answer Questions

Among Halifax Water Customers



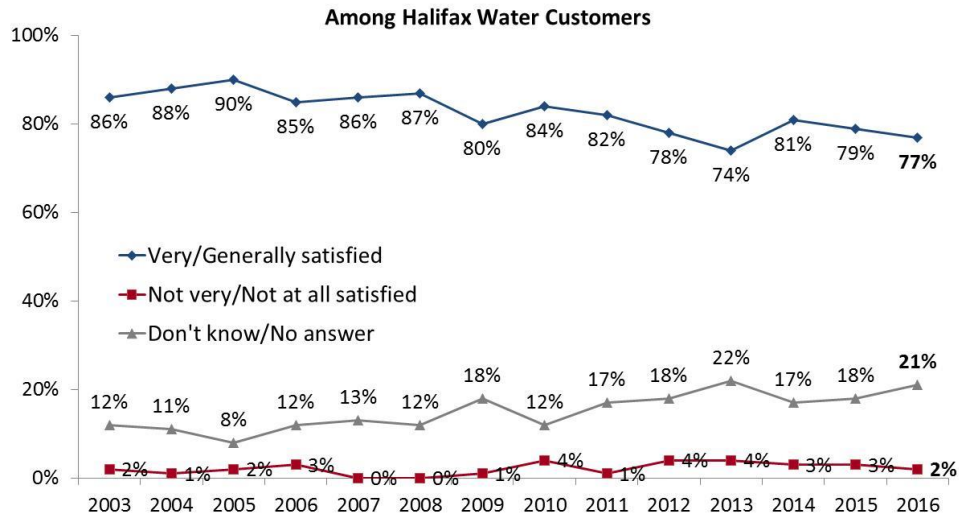
Q.W6d: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] For each of the following, please tell me whether you are very satisfied, generally satisfied, not very satisfied, or not at all satisfied with the service you have received from Halifax Water: Ability to answer questions – How well Halifax Water answers your questions? (n=381)

*Note: Responses for 'Have not used this Halifax Water service' have been removed from this table.*



Similar to findings obtained last year, a majority of Halifax Water customers remain satisfied with the **politeness** of Halifax Water staff, with three-quarters (77%, compared with 79%) of customers offering a rating of *very* or *generally satisfied*. Satisfaction with politeness of staff is lower among those in the City of Halifax and its surrounding area, while across the population, younger customers are more likely than others to be satisfied with Halifax Water staff’s politeness. (Table W6e)

### Satisfaction with Halifax Water’s Politeness



Q.W6e: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] For each of the following, please tell me whether you are very satisfied, generally satisfied, not very satisfied, or not at all satisfied with the service you have received from Halifax Water: Politeness – The politeness of Halifax Water staff? (n=402)

*Note: Responses for 'Have not used this Halifax Water service' have been removed from this table.*



## Customer Service Index

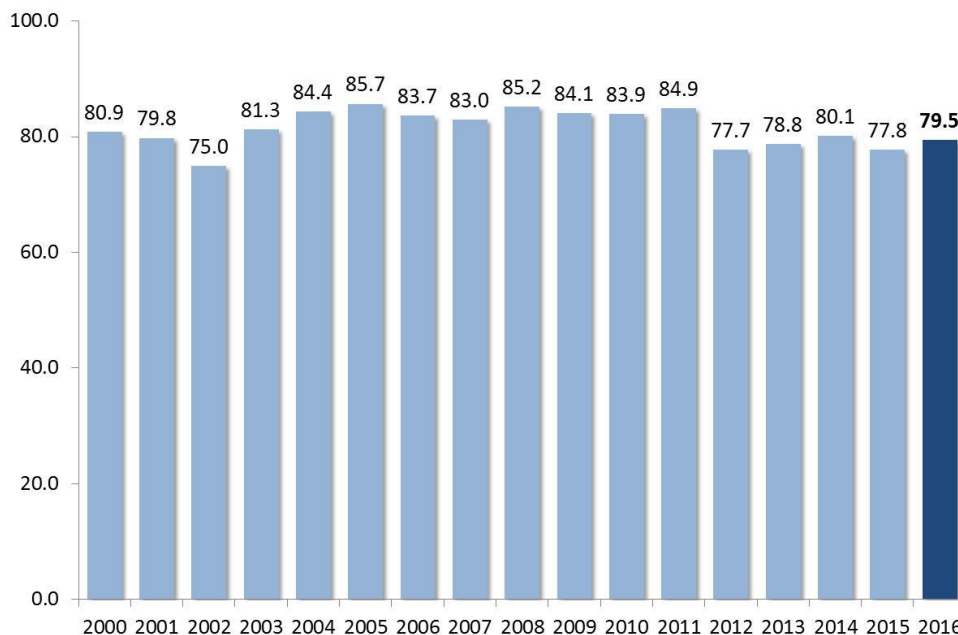
Once again, CRA is pleased to present the Halifax Water Customer Service Index (CSI). To provide an overall assessment of service performance, the CSI was calculated based on customers’ ratings on six service-focused questions, namely:

- Overall satisfaction with the Halifax Water (QW5);
- Satisfaction with overall service delivery (QW6a);
- Satisfaction with accessibility of Halifax Water staff (QW6b);
- Satisfaction with promptness of Halifax Water in responding to questions (QW6c);
- Satisfaction with Halifax Water’s ability to answer questions (QW6d); and
- Satisfaction with the politeness of Halifax Water staff (QW6e).

The Index contains only those Halifax residents who receive Halifax Water products and services. In calculating Index scores for each year, ratings on these six questions were averaged and transformed into a scale ranging from a low of 0 to a high of 100. Thus, the maximum possible score on the CSI is 100, while the minimum is 0. Any question for which a customer did not provide a response was eliminated from the calculation, with the Index score for that customer being calculated on the remaining questions.

The Customer Service Index is 79.5 this year, a slight increase from one year ago. County of Halifax customers have a slightly lower index score compared with others across the region. Meanwhile, in terms of the Customer Service Index, there is little difference across the population.

### Customer Service Index



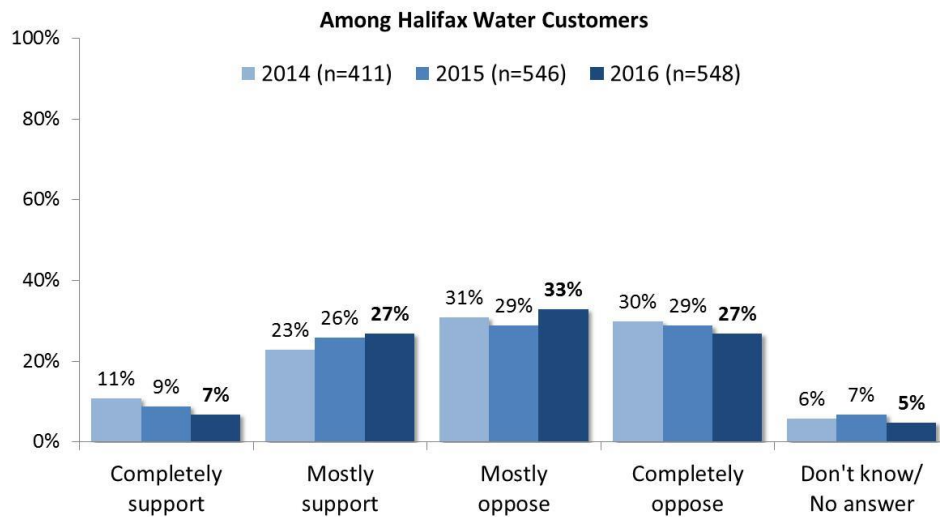
*Please note: Results prior to 2011 only include residents who own their home.  
In 2011, the index calculation includes all Halifax Water residents.*



## Odour and Taste Concerns

Once again this year, Halifax Water customers were asked whether they would support or oppose an increase in water rates to treat odour or taste issues that are not a health concern. Consistent with last year, results indicate a majority continue to oppose the idea of increasing water rates for this purpose, with six in ten (60%, compared with 58%) opposing the rate increase, and one-third (unchanged) in support. (Table W29)

### Opinion of Increasing Water Rates to Treat Odour or Taste Issues



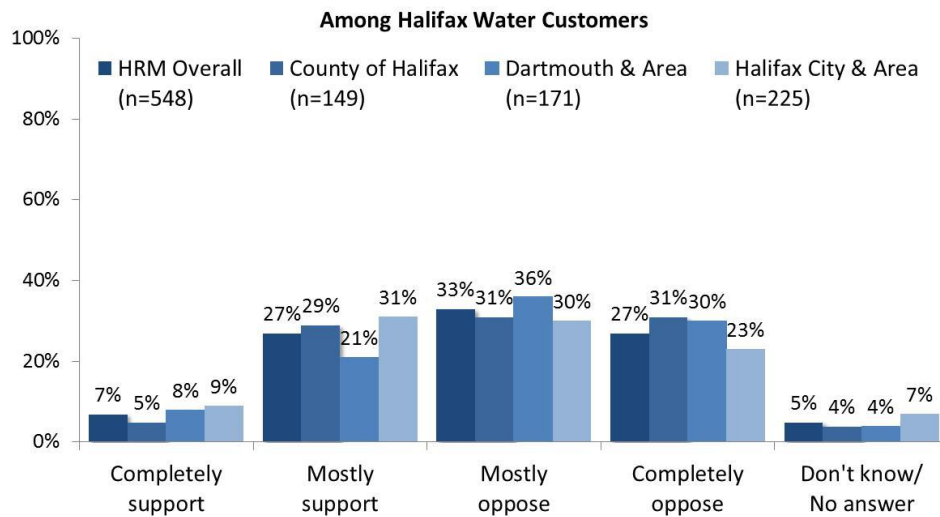
Q.W29: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] The water supplied by Halifax Water meets or exceeds Canadian Drinking Water Quality Guidelines. A small number of customers have noted odour or taste issues that are not health concerns. All things considered, would you completely support, mostly support, mostly oppose, or completely oppose an increase in your water rates to treat odour or taste issues that are not health concerns?





Regionally, customers in the City of Halifax and its surrounding area are more likely to support this increase in water rates while customers in the Dartmouth and surrounding area are less likely to support an increase. Meanwhile, across the population, support is higher among younger customers, and opposition is higher among higher household income earners. (Table W29)

### Opinion of Increasing Water Rates to Treat Odour or Taste Issues



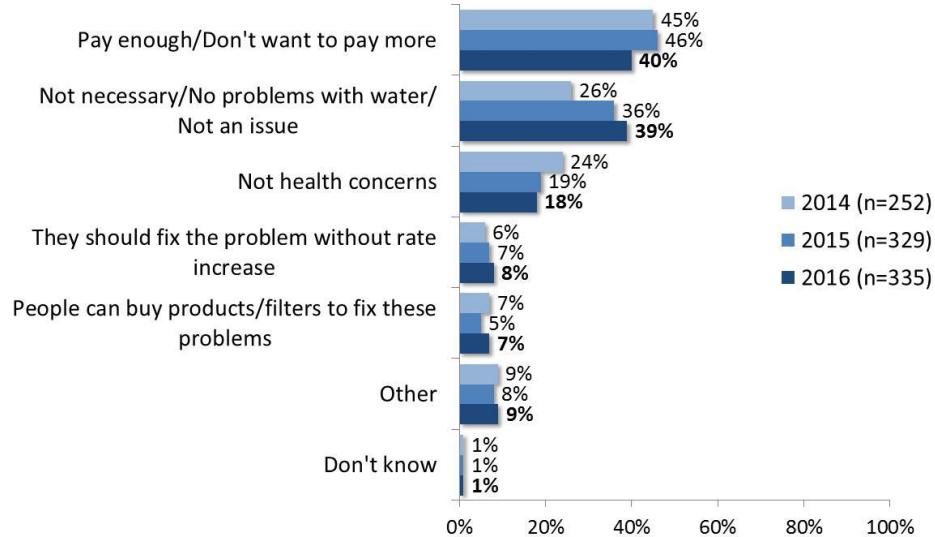
Q.W29: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] The water supplied by Halifax Water meets or exceeds Canadian Drinking Water Quality Guidelines. A small number of customers have noted odour or taste issues that are not health concerns. All things considered, would you completely support, mostly support, mostly oppose, or completely oppose an increase in your water rates to treat odour or taste issues that are not health concerns?



Among those who oppose an increase in water rates to treat odour or taste issues, four in ten customers mention that they **do not want to pay more** and that **it is not necessary** as reasons to oppose a rate increase. Meanwhile, two in ten oppose a rate increase because it is **not a health concern**, while fewer mention that **Halifax Water should fix the problem without a rate increase** or that **people can buy filters to fix this problem**. (Table W30b)

### Oppose an Increase in Water Rates to Treat Odour or Taste Issues

Total Unaided Mentions, Among Halifax Water Customers Who Oppose an Increase



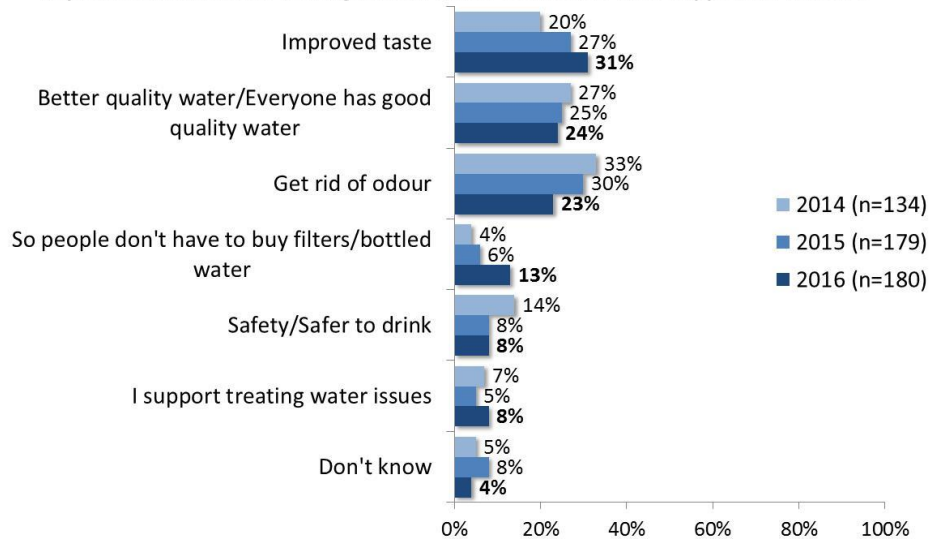
Q.W30b: [ASK IF 'OPPOSE' IN Q.W29] Why do you mostly oppose or completely oppose an increase in your water rates to treat odour or taste issues that are not health concerns? Probe: Any other reasons?



Customers offer a variety of reasons why they support an increase in their water rates to treat odour or taste issues that are not a health concern. Three in ten customers mention **improved taste**, while one-quarter indicate **getting rid of odour** or **better quality water** as reasons to support a rate increase. Other mentions by fewer customers include **reduction of filters or bottled water, safety, general support of water treatment issues**, and it **depends on rate increase**. (Table W30a)

### Support an Increase in Water Rates to Treat Odour or Taste Issues

Key Unaided Mentions, Among Halifax Water Customers Who Support an Increase



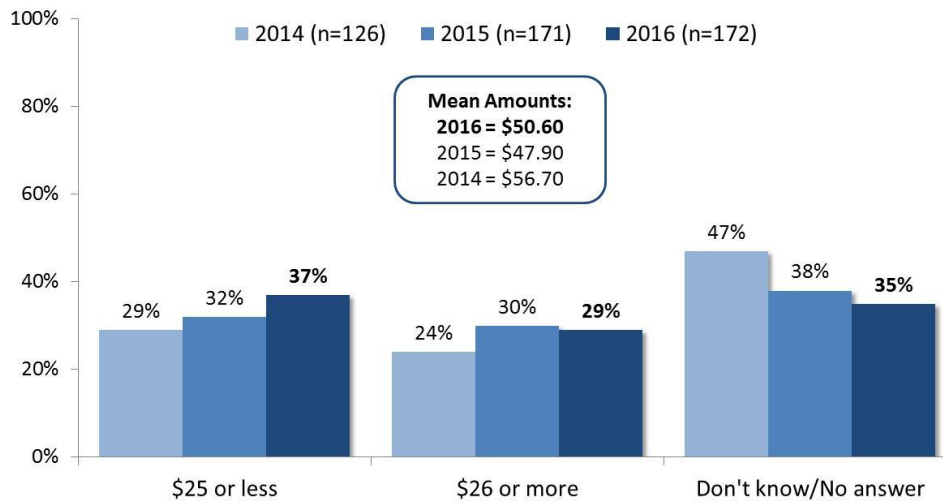
Q.W30a: [ASK IF 'SUPPORT' IN Q.W29] Why do you completely support or mostly support an increase in your water rates to treat odour or taste issues that are not health concerns? Probe: Any other reasons?



Among those who support an increase in rates to improve water odour and taste, the amount they are willing to pay has increased this year. On average, customers are willing to spend \$50.60 (up from \$47.90) extra every year for this service, while nearly four in ten customers indicate that they would pay \$25 or less annually, and three in ten report that they would pay more. Furthermore, one-third of customers do not know how much they would be willing to pay or do not have an answer. (Table W31)

### Amount Willing to Pay Annually to Improve the Odour and Taste of Your Water

Among Halifax Water Customers Who Support an Increase in Water Rates



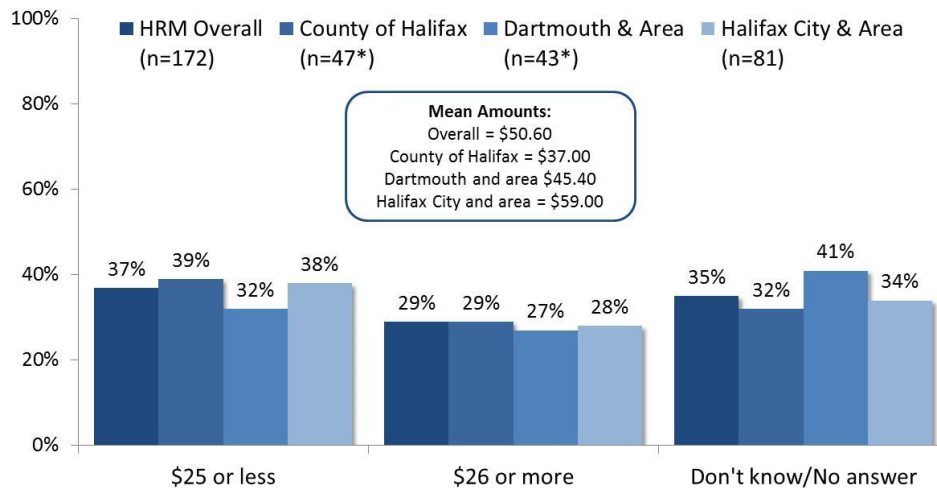
Q.W31: [ASK IF 'COMPLETELY/MOSTLY SUPPORT' IN Q.W29] How much extra would you be willing to pay annually on your bill to improve the odour and taste of your water? Please be as specific as possible and answer to the nearest dollar amount. *Note: Responses of 'Don't know/No answer' are excluded from calculation of the mean.*



Regionally, customers living in the City of Halifax and its surrounding area are willing to pay more for this service (mean amount of \$59.00), while customers from the County of Halifax are willing to pay the least (\$37.00). Meanwhile, across the population, females, younger customers, and higher household income earners are willing to pay more to improve the odour and taste of their water. (Table W31)

### Amount Willing to Pay Annually to Improve the Odour and Taste of Your Water

Among Halifax Water Customers Who Support an Increase in Water Rates



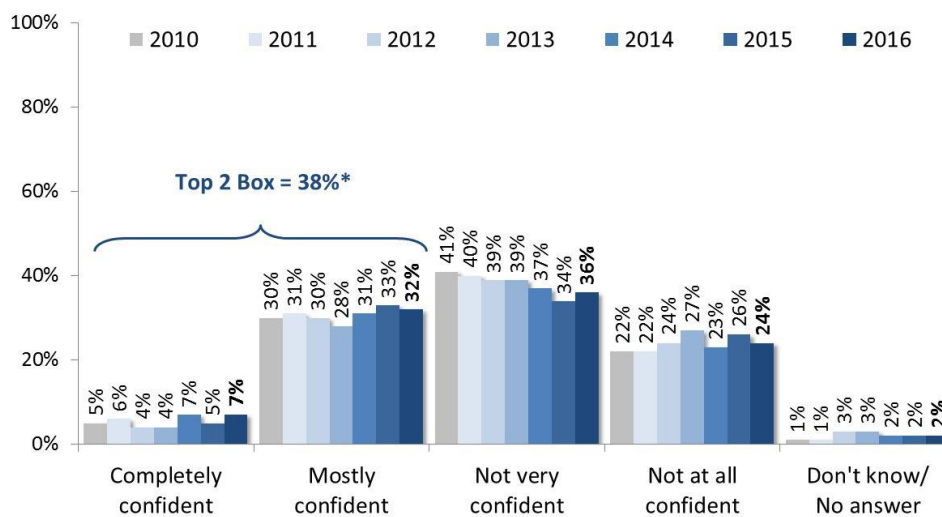
Q.W31: [ASK IF 'COMPLETELY/MOSTLY SUPPORT' IN Q.W29] How much extra would you be willing to pay annually on your bill to improve the odour and taste of your water? Please be as specific as possible and answer to the nearest dollar amount.  
*Note: Responses of 'Don't know/No answer' are excluded from calculation of the mean. \*Caution: Small sample size.*



## Safety of Halifax Harbour for Recreation

There continues to be a lack of confidence among a majority of the population in terms of the safety of water in Halifax Harbour. Specifically, six in ten residents indicate that they are *not very* or *not at all confident* in the safety of water in the harbor for recreational activities, while four in ten residents indicate that they are *completely* or *mostly confident*. Opinions of the safety of water in Halifax Harbour are more favourable among those in the City of Halifax and surrounding areas and less favourable in the County of Halifax. Meanwhile, across the population, males, older residents, and Halifax Water customers have more confidence in this regard. (Table W28)

### Confidence that Water Quality of Halifax Harbour is Safe for Recreational Use



Q.W28: Harbour water samples indicate that the water is safe for recreational activities such as swimming and boating. How confident are you that the water quality of Halifax Harbour is safe for recreational activities? Are you completely confident, mostly confident, not very confident, or not at all confident? (n=777) *\*Due to rounding.*

*Note: Question wording differs slightly year-over-year.*

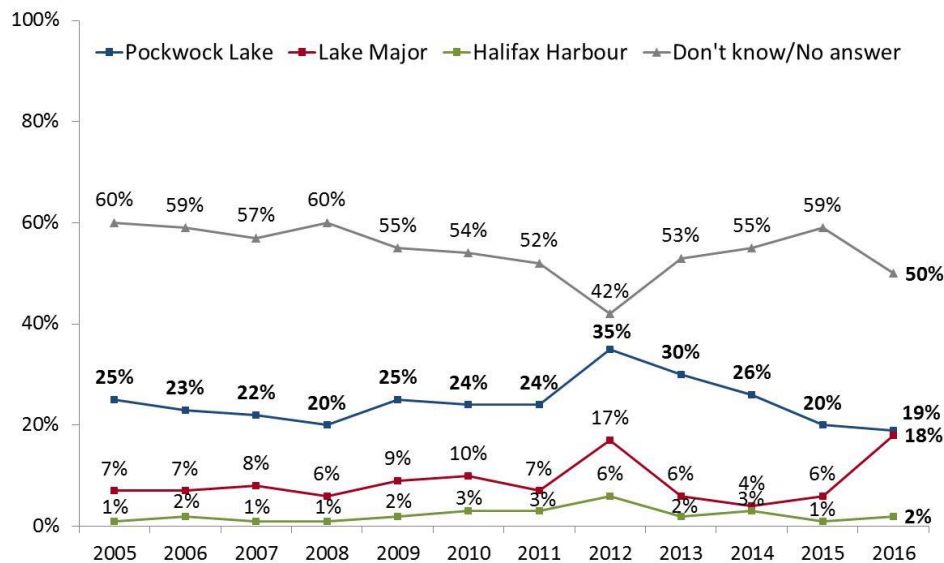


## Water Source

There continues to be uncertainty with regards to Halifax residents' source of tap water, although the uncertainty has decreased this year. Specifically, one-half (50%, down from 59% last year) of Halifax Water customers cannot name the source of their tap water, representing a reversal of the increasing trend that has occurred in recent years. Two in ten customers identify Pockwock Lake as the primary source, and a similar number identify Lake Major, while a small number mention other sources. Across the population, women, younger customers, and those with lower levels of education are more likely than others to be unsure of the source of their tap water. (Table W9)

### Primary Source of Municipal Tap Water

Total Top Mentions, Among Halifax Water Customers



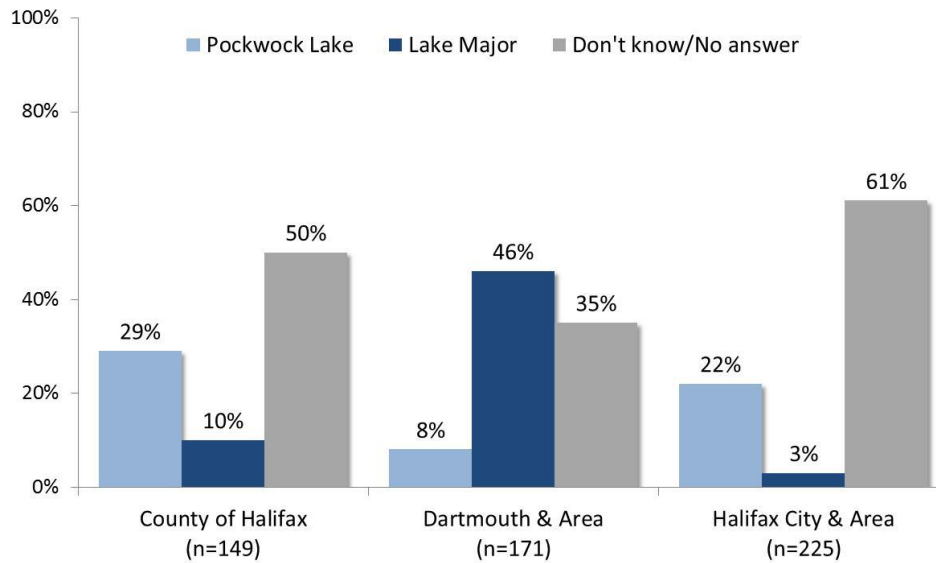
Q.W9: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] To the best of your knowledge, which body of water is the primary source of your tap water supplied by Halifax Water? Probe once: Any other sources? (n=548)



Regionally, customers outside of Dartmouth are more likely to be unsure of their primary tap water source, and these customers are less likely to mention Pockwock Lake than those elsewhere in the region. Meanwhile, those in Dartmouth and its surrounding area are more likely than others in the region to name Lake Major as the primary source of their tap water. (Table W9)

### Primary Source of Municipal Tap Water

Key Mentions by Area, Among Halifax Water Customers



Q.W9: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] To the best of your knowledge, which body of water is the primary source of your tap water supplied by Halifax Water? Probe once: Any other sources?

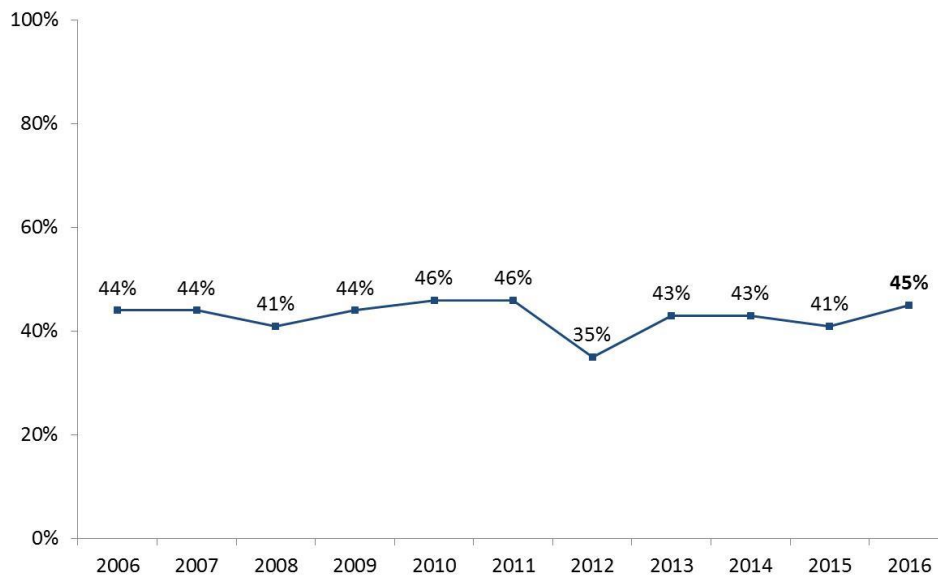




## Water Filter Use

Consistent with results from last year, just over four in ten Halifax residents use a water filter or home water treatment device. Across the region, residents living in the County of Halifax are more likely to use a water filter or home water treatment device, while across the population, younger residents are more likely to use such devices. Finally, residents on a well (70%) are much more likely than Halifax Water customers (38%), to use a water filtration device. (Table W17a)

### Use a Water Filter or Other Home Water Treatment Device? % Saying "Yes"



Q.W17a: Do you use a water filter or other home water treatment device? (n=401)

In terms of the type of water filter or home treatment device, one quarter of Halifax residents who use a water filter report using a **pitcher with a water filter**, while two in ten use a **water softener system**. Each of a **fridge filter**, a **water filter on their tap**, and **water filter system on incoming pipes** are mentioned by one in ten. Meanwhile, slightly fewer residents use an **ultra-violet purification system**, **osmosis**, a **Brita filter**, or a **water cooler**. Other mentions are noted by one percent of Halifax residents. Results are similar to previous findings with the exception of mentions of a pitcher with water filter, which notably decreased this year. (Table W17b)



Type of Water Filter or Other Home Treatment Device Used											
Key Mentions; n=175											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Pitcher with water filter	54%	42%	43%	33%	33%	37%	21%	44%	31%	44%	<b>25%</b>
Water softener system	5%	1%	7%	12%	11%	9%	9%	10%	18%	12%	<b>18%</b>
Fridge filter/ Part of refrigerator	--	2%	3%	6%	10%	10%	15%	10%	14%	13%	<b>12%</b>
Water filter on tap	21%	19%	19%	18%	16%	10%	33%	14%	16%	9%	<b>11%</b>
Ultra-violet purification system	3%	2%	4%	0%	3%	5%	2%	4%	9%	8%	<b>7%</b>
Osmosis	--	--	2%	5%	5%	2%	4%	2%	7%	8%	<b>6%</b>

W17b: Total Mentions

Halifax residents offer a number of reasons why they use a water filter or home treatment device. One-third do so to **improve taste**, while one-quarter of residents use such devices to **remove chemicals**, and one in ten report having **concerns about water quality**. All other reasons are mentioned by fewer than one in ten residents. (Table W17c)

Why Use a Water Filter or Other Home Treatment Device									
Key Mentions; n=175									
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Improved taste	33%	32%	33%	31%	36%	36%	25%	24%	<b>33%</b>
To remove chemicals	23%	24%	32%	21%	27%	27%	33%	26%	<b>25%</b>
Concerns about water quality	18%	29%	20%	25%	23%	19%	20%	26%	<b>12%</b>
Was given to me/Received as a gift/ Came with the fridge/house	4%	4%	9%	6%	3%	4%	6%	10%	<b>7%</b>
To remove other articles/impurities	8%	2%	5%	9%	6%	4%	3%	4%	<b>6%</b>
To remove bacteria	8%	7%	8%	8%	23%	9%	8%	6%	<b>5%</b>
To soften the water	3%	--	3%	5%	2%	6%	4%	7%	<b>4%</b>

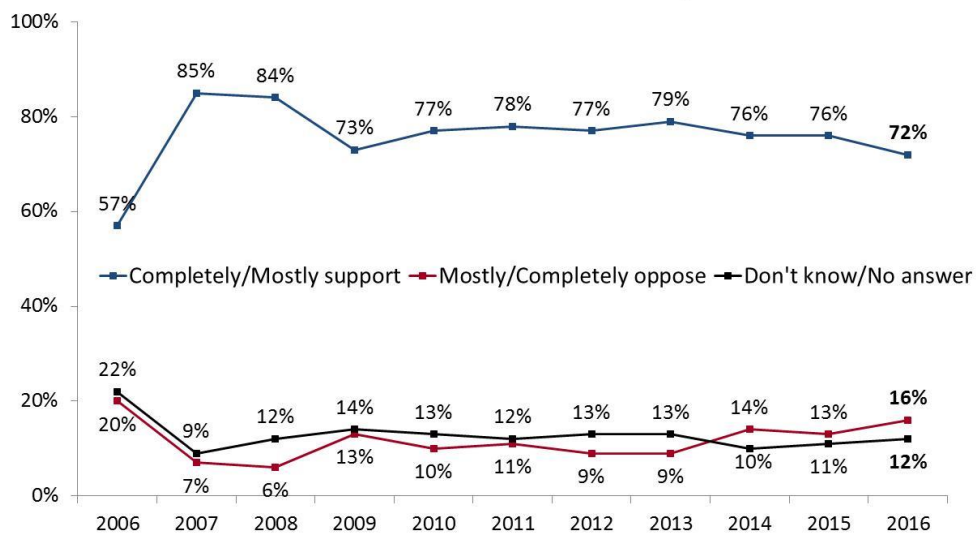
W17c: Total Mentions



## Stormwater and Wastewater Systems

Consistent with findings from last year, there continues to be support for Halifax Water managing the wastewater and stormwater systems, with seven in ten (72%, compared with 76%) Halifax residents expressing support toward Halifax Water keeping these responsibilities. Regionally, residents in Halifax County are less supportive of this measure, while, across the population, younger residents more likely to be in support. In addition, Halifax Water customers are much more likely than those on a well to support this measure. (Table W19)

### Support for Halifax Water Management of Wastewater and Stormwater Systems

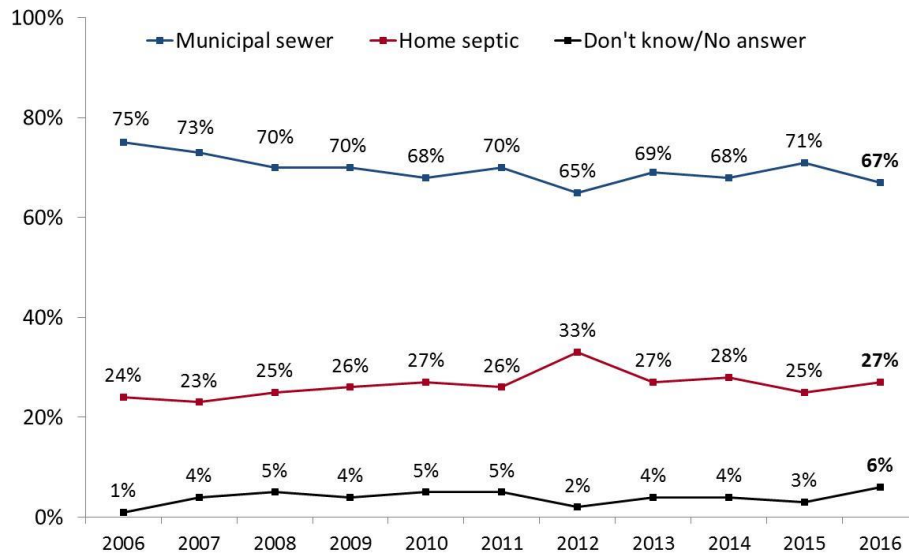


Q.W19: As previously mentioned, Halifax Water is responsible for the operation of municipal wastewater and stormwater systems, in addition to management of water. Do you completely support, mostly support, mostly oppose, or completely oppose Halifax Water managing the wastewater and stormwater systems? (n=401)



Two-thirds of Halifax residents are on municipal sewer, while one-quarter are on a home septic system. Results are consistent with previous findings. (Table 20)

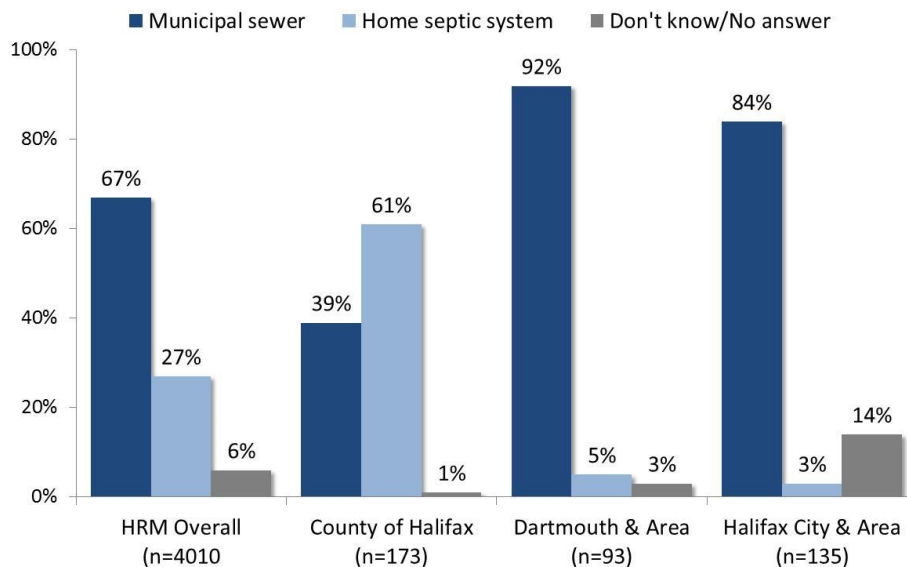
### Home Septic or Municipal Sewer



Q.W20: Do you have a home septic system or are you on municipal sewer? (n=401)

Across the region, residents of Halifax County (outside of Halifax and Dartmouth) are much more likely to be on a home septic system, while those in Halifax City and Dartmouth are more likely to be on municipal sewer. Results are consistent with previous findings.

### Home Septic or Municipal Sewer



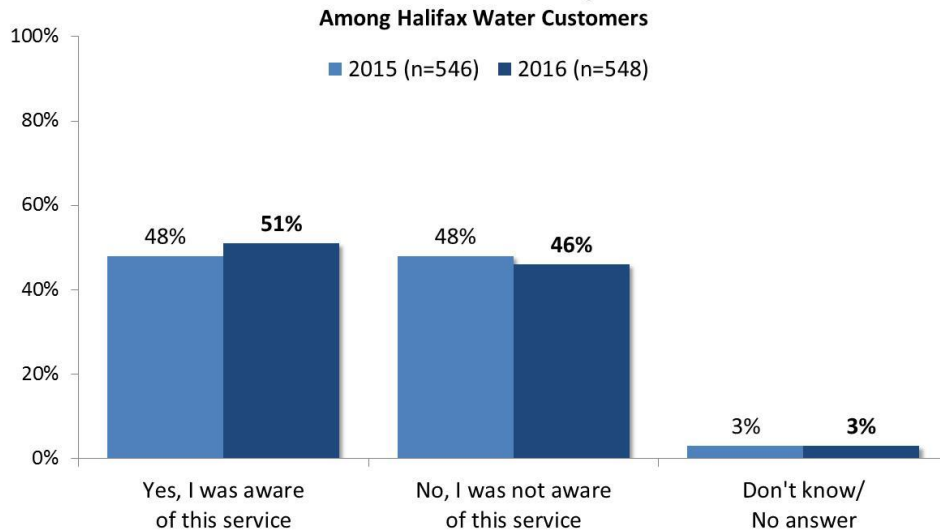
Q.W20: [HALIFAX URBAN ONLY] Do you have a home septic system or are you on municipal sewer?



## Electronic Billing

Consistent with findings from last year, one-half of Halifax Water customers are aware that Halifax Water has been providing customers with the option of receiving their bills electronically through an email notification by ePost. Regionally, there is little difference in awareness, but across the population, awareness of this service is higher among those with higher household incomes. (Table W25)

### Aware of Receiving Water Bills Electronically Through email Notification by ePost

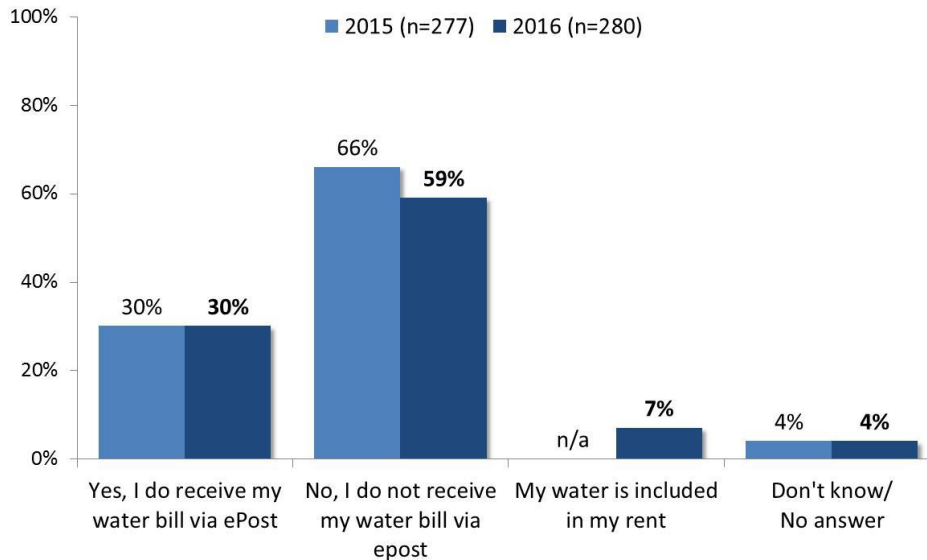


Q.W25: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER IN Q.4] Since September 2014, Halifax Water has been providing customers with the option of receiving their bills electronically through email notification by ePost. Prior to today were you aware of this service?

Similar to results in 2015, three in ten (30%, unchanged) Halifax Water customers aware of the service receive their water bills electronically via ePost. Meanwhile, six in ten customers do not receive their water bill via ePost and seven percent indicate that their water bill is included in their rent. Residents in Dartmouth and its surrounding area are less likely to be using ePost, while across the population, uptake on this service is higher among younger customers, and those with a higher household incomes. (Table W32)



### Household Receives Water Bills Electronically via ePost Among Halifax Water Customers Who Are Aware of Water Bills Sent by ePost Service

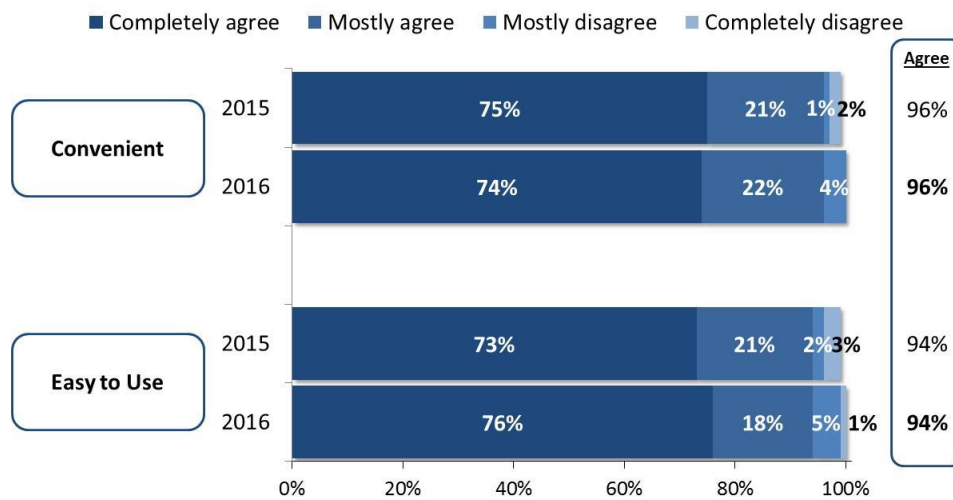


Q.W32: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER IN Q.4 AND THOSE WHO SAID 'YES, I WAS AWARE OF THIS SERVICE' IN Q.W25] And does your household receive its water bills electronically via ePost?

Those who use e-Post continue to offer favourable ratings of the service. Consistent with results from last year, a strong majority of Halifax Water customers *completely agree* that the service is convenient (74%, compared with 75%) or easy to use (76%, compared with 73%). (Tables W27a-b)

### Opinion of Attributes About Receiving and Managing Water Bill Electronically Through ePost

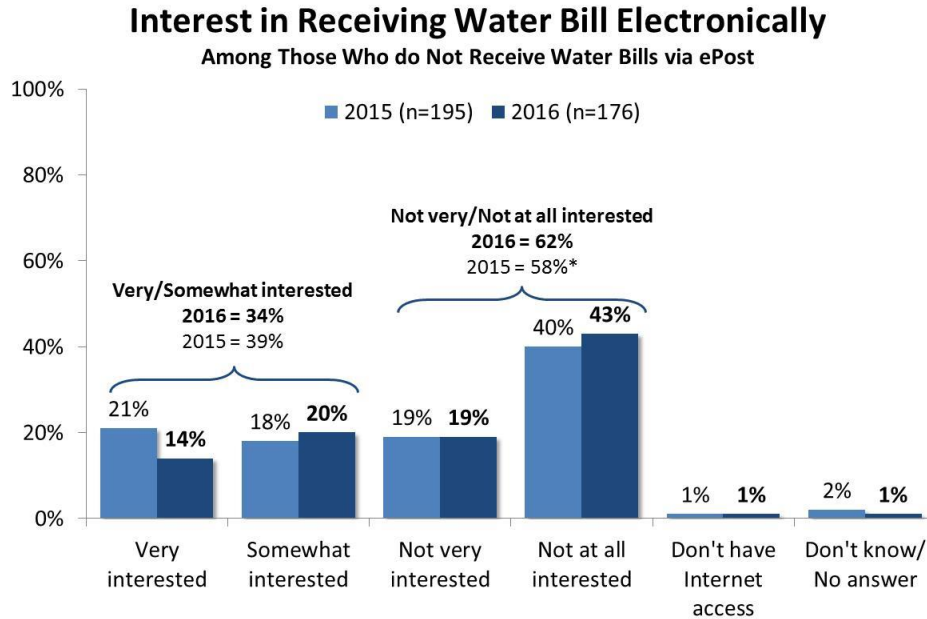
Among Halifax Water Customers Who Receive Their Water Bill via ePost



Q.W27a-b: [ASK IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4 AND THOSE WHO SAID 'YES' IN Q.W32] And in your opinion, would you completely agree, mostly agree, mostly disagree, or completely disagree that receiving and managing your water bill electronically through ePost is: (2015 n=74, 2016 n=76)



There continues to be an opportunity to expand the current electronic billing services. Among the Halifax Water customers aware of email billing notification but not currently using it, one-third express some level of interest. (Table W18)



Q.W18: [ASK IF 'NO' IN Q.W32] How interested would you be in receiving your water, wastewater, and stormwater bill electronically through an email notification? Would you be very interested, somewhat interested, not very interested, or not at all interested? *\*Due to rounding.*



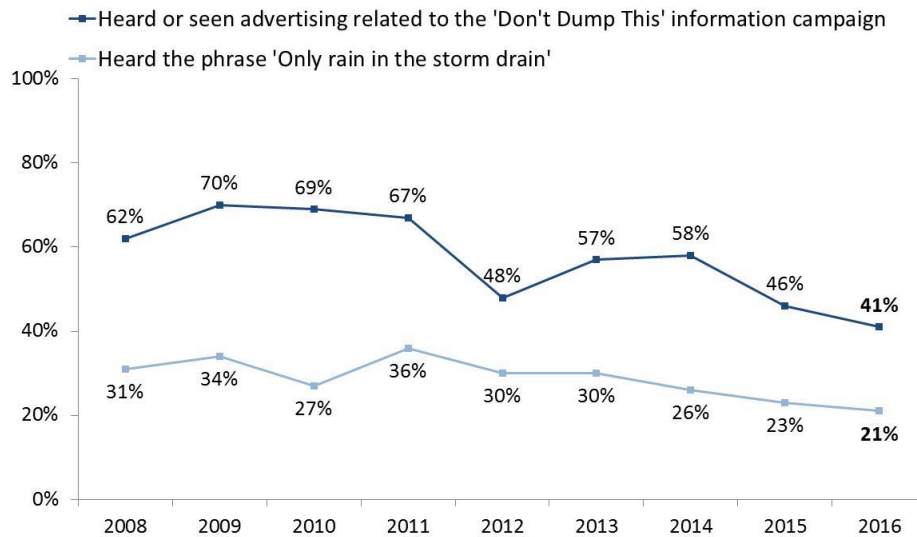
## Information Campaigns

Awareness level of the ‘Don’t Dump This’ information campaign has continued the downward trend that has occurred over the past two years and, for the second consecutive year, is now at its lowest level since tracking began. Currently, just four in ten residents of Halifax report awareness of this campaign. Meanwhile, awareness of the ‘Only Rain in the Storm Drain’ campaign is stable this year relative to last year, although a declining trend in recall continues to be apparent from 2011 when recall levels were at their highest for this campaign.

Those most likely to be aware of the ‘Don’t Dump This’ campaign include residents between the ages 35 and 54, and those with higher household incomes. Meanwhile, likelihood to recall the phrase ‘Only Rain in the Storm Drain’ is consistent across the region and population. (Tables W21 and W23)

### Awareness of Information Campaigns

% Saying “Yes”



Q.W21: Prior to today, have you heard or seen any advertising related to the ‘Don’t Dump This’ information campaign? (n=401)

Q.W23: Prior to today, have you heard the phrase ‘Only rain in the storm drain’? (n=401)

Recall of the main message of the ‘Don’t Dump This’ campaign is relatively consistent with results from one year ago. Seven in ten residents who recall the campaign mention that the main message of the campaign is to **not dump certain products**, while one in ten state the main message is **pollution prevention**, and a similar proportion of residents state **the environment** as the main message of the campaign. All other mentions are reported by less than one in ten residents. (Table W22)





Main Message of the 'Don't Dump This' Information Campaign									
Among those who recall advertising – Key Mentions; n=166									
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Don't dump certain products	79%	73%	81%	76%	67%	78%	79%	73%	<b>70%</b>
Pollution prevention	13%	16%	15%	16%	30%	19%	15%	13%	<b>12%</b>
The environment	7%	8%	5%	5%	17%	12%	11%	9%	<b>10%</b>
Help protect Halifax Harbour	--	25%	17%	11%	12%	14%	9%	6%	<b>6%</b>
Help keep the water clean	--	1%	3%	3%	1%	1%	1%	6%	<b>6%</b>

W22: Total Mentions

Among those who are aware of the 'Only Rain in the Storm Drain' campaign, three-quarters of residents believe the main message is to **not dump certain products**, while one in six indicate **pollution prevention**. In addition, one in ten report **keeping storm drains clean/clear** as the main message of the campaign, and a similar proportion of residents mention **only rain should go in there**. A small number of residents also mention **saving the environment**. (Table W24)

Main Message of the Phrase 'Only Rain in the Storm Drain'									
Among those who have heard the phrase – Key Mentions; n=87									
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Don't dump certain products	77%	71%	72%	73%	64%	80%	76%	68%	<b>74%</b>
Pollution prevention	12%	12%	15%	17%	21%	19%	17%	13%	<b>15%</b>
Only rain should go in there	14%	15%	7%	8%	5%	6%	11%	9%	<b>9%</b>
Keep storm drains clean/clear	--	--	--	2%	2%	5%	--	5%	<b>9%</b>
The environment	1%	5%	4%	3%	11%	10%	6%	3%	<b>5%</b>

W24: Total Mentions

Once again, the Internet is the preferred method to access information related to Halifax Water's pollution prevention and water, wastewater, and stormwater programs. Specifically, six in ten Halifax residents prefer to access this information via the **Internet**, while one in ten residents or fewer prefer any other method for accessing information. This year, fewer residents prefer **phoning/calling them** as their primary method for accessing information. (Table W26)

Most Preferred Method for Accessing Pollution and Water Programs Information in Halifax									
Key Mentions; n=401									
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Internet (general)	48%	53%	52%	51%	50%	54%	63%	58%	<b>59%</b>
Newspaper	20%	23%	20%	15%	21%	15%	11%	13%	<b>10%</b>
TV	15%	23%	19%	14%	23%	12%	11%	11%	<b>8%</b>
Halifax Water website	1%	1%	4%	3%	3%	3%	3%	6%	<b>7%</b>
Phone/Would call them	3%	2%	2%	4%	13%	3%	8%	1%	<b>7%</b>
Radio	6%	10%	7%	7%	12%	9%	5%	8%	<b>6%</b>

W26: Total Mentions



## Study Methodology

### Questionnaire Design

The questions commissioned by Halifax Water and used in this study were designed by Corporate Research Associates Inc., in consultation with Halifax Water staff.

### Sample Design and Selection

Halifax Water questions were fielded on CRA's *Halifax Urban Report* survey, in addition to some questions being fielded on the Halifax portion of CRA's *Atlantic Quarterly*® survey.

#### Urban Report

The sample for this study was drawn using systematic sampling procedures from a list of randomly-selected households compiled from listed telephone numbers in Halifax, drawn from a database that is updated quarterly. The sample was selected to match the geographical distribution of the population within the region and was designed to complete interviews with a representative sample of 400 adult residents (with 401 actually being completed this quarter), 18 years of age and older, of Halifax.

#### *Atlantic Quarterly*®

The sample for this study was drawn using systematic sampling procedures from a list of randomly-selected households compiled from listed telephone numbers in Nova Scotia, drawn from a database that is updated quarterly. The sample was selected to match the geographical distribution of the population within the province and was designed to complete interviews with a representative sample of 800 (with 801 being actually completed this quarter) adult residents, 18 years of age and older of Nova Scotia. Of these, 376 were conducted with residents of Halifax.

### Survey Administration

#### Urban Report

The survey was conducted by telephone from October 25 to November 12, 2016. All interviewing was conducted by fully-trained and supervised interviewers and a minimum of 10 percent of all completed interviews were monitored or subsequently verified.

#### *Atlantic Quarterly*®

The survey was conducted by telephone from November 3 to November 28, 2016. All interviewing was conducted by fully-trained and supervised interviewers and a minimum of 10 percent of all completed interviews were monitored or subsequently verified.



## Completion Results

### Urban Report

Among all eligible respondents contacted, the rate of interview completion was 11 percent. Completion rate is calculated as the number of cooperative contacts (969) divided by the total of eligible numbers attempted (8,810).

The final disposition of all telephone numbers called is shown below in the *Marketing Research and Intelligence Association's (MRIA) Standard Record of Contact Format*.

COMPLETION RESULTS	
<b>A. Total Numbers Attempted</b>	<b>13,587</b>
Disconnect / Not in service/Blocked	4,280
Fax / Modem	64
Cell Phone / Pager	9
Non Residential Number / Incorrect Number	424
Duplicate	0
<b>B. Eligible Numbers</b>	<b>8,810</b>
Busy	139
Answering Machine	824
No Answer	3,998
Scheduled Call Back / Mid Call Back / Qualified Not Available	95
Illness / Incapable	12
Language Problem	78
<b>C. Total Asked</b>	<b>3,664</b>
Respondent / Gatekeeper Refusal	1,424
Mid Terminate / Hang up	1,225
Never Call List	46
<b>D. Co-operative Contacts</b>	<b>969</b>
Did Not Qualify / Quota Full	568
<b>Complete</b>	<b>401</b>



**Atlantic Quarterly®**

Among all eligible Nova Scotia residents contacted, the response rate was 13 percent. Response rate is calculated as the number of cooperative contacts (1,907) divided by the total number of eligible telephone numbers called (15,112).

The final disposition of all telephone numbers called is shown below in the *Marketing Research and Intelligence Association's (MRIA) Standard Record of Contact Format*.

COMPLETION RESULTS	
<b>A. Total Numbers Attempted</b>	<b>27,872</b>
Disconnect / Not in service/Blocked Number	11,877
Fax / Modem	119
Cell Phone / Pager	13
Non Residential Number / Incorrect Number	751
Duplicate	0
<b>B. Eligible Numbers</b>	<b>15,112</b>
Busy	176
Answering Machine	1,042
No Answer	6,778
Scheduled Call Back / Mid Call Back / Qualified Not Available	152
Illness / Incapable	32
Language Problem	199
<b>C. Total Asked</b>	<b>6,733</b>
Respondent / Gatekeeper Refusal	2,659
Mid Terminate / Hang up	2,081
Never Call List	86
<b>D. Co-operative Contacts</b>	<b>1,907</b>
Did Not Qualify / Quota Full	1,106
<b>Complete</b>	<b>801</b>



### Sample Distribution

The overall results are based on 777 interviews with individuals from the Halifax population. A sample of 777 respondents would be expected to provide overall results accurate to within plus or minus 3.5 percentage points in 95 out of 100 samples.

Region	Sample Distribution	
	Sample	Margin of Error
County of Halifax	349	± 5.2%
Dartmouth and Area	179	± 7.3%
Halifax City and Area	239	± 6.3%
<b>Halifax Water Customers</b>		
Halifax Water Customers	548	± 4.2%
Halifax	777	± 3.5%

<sup>1</sup>95% confidence interval

