

January 22, 2021

Craig MacMullin, MBA, CPA, CGA, Chair
Halifax Water
Halifax, NS

The regular meeting of the Halifax Water Board will be held on Thursday, January 28, 2020 at 9:00 am. In an effort to stem the spread of COVID-19, this meeting will take place via web conferencing and will be available on Halifax Water's website for public viewing following the meeting.

AGENDA

In Camera Reports

1C Approval of Minutes of the In-Camera Meeting held on Thursday, November 26, 2020

Motion: That the Halifax Water Board approve the In-Camera minutes of November 26, 2020.

2C Business Arising from Minutes
a)

3C Legal Matter - Verbal (10 minutes)

Motion: None

4C Land Matter (10 minutes)

Motion: That the Halifax Water Board convene to In Camera (private) to discuss the matter

5C Governance Matter - Verbal (10 minutes)

Motion: That the Halifax Water Board convene to In Camera (private) to discuss the matter

6C Land Matter (20 minutes)

Motion: That the Halifax Water Board convene to In Camera (private) to discuss the matter

7C-I Contractual Matter (40 minutes)

Information Item & Presentation

8C-I Legal Matter – Verbal (20 minutes)

Information Item



Regular Reports

1. a) Ratification of In-Camera Motions (2 minutes)

Motion: That the Halifax Water Board ratify the In-Camera Motions.

- b) Approval of the Order of Business and Approval of Additions and Deletions (2 minutes)

Motion: That the Halifax Water Board approve the order of business and approve additions and deletions.

2. Approval of Minutes of the Regular Meeting held on Thursday, November 26, 2020 (2 minutes)

Motion: That the Halifax Water Board approve the minutes of the November 26, 2020 regular meeting.

3. Business Arising from Minutes

- a) Nomination of Committee Representative – Verbal (5 minutes)

Motion: That the Halifax Water Board appoint a representative to the Board Environment, Safety & Capital Project Planning Committee.

Financial

- 4.1 Operating Results for the Nine Months Ended December 31, 2020 (10 minutes)

- 4.2 Proposed 2021/22 Business Plan (30 minutes)

Motion: That the Halifax Water Board approve 2021/22 Business Plan in the substantive form attached and direct the General Manager to submit the annual Business Plan to Halifax Council for approval.

- 4.3 Proposed 2021/22 Capital Budget (30 minutes)

Motion: That the Halifax Water Board the proposed 2021/2022 Capital Budget at a total value of \$126,209,000 as detailed in the attached Schedule 1.

- 4.4 Proposed 2021/22 Operating Budget (30 minutes)

Motion: That the Halifax Water Board approve the proposed 2021/22 Operating Budget, inclusive of the proposed 2021/22 budget for unregulated activities.

It is recommended the Board approve the list of 2021/22 sponsorships totaling \$33,100.

Capital Approvals

- 5.1 Capital Expenditures and Forecast for the Nine Months ended December 31, 2020 (10 minutes)

Motion: None

- 5.2 Water – Structures – Cowie Hill Reservoir Replacement (10 minutes)

Motion: That the Halifax Water Board approve funding for the Cowie Hill Reservoir Replacement project at an estimated cost of \$7,610,000.00.

Information Reports

- 1-I Financial and Operations Information Report
- 2-I Bank Balance
- 3-I Halifax Water Compliance Statement – Quarterly Certification
- 4-I Halifax Regional Municipality Master Trust Investment Performance, Third Quarter, 2020
- 5-I 2020/21 Cost Containment Initiatives
- 6-I 2020 Annual Customer Survey
- 7-I 2020 Employee Survey
- 8-I Meter Accuracy and Customer Complaints

Heidi
Schedler

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Schedler
Date: 2021.01.22
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Heidi Schedler
Secretary

TO: Craig MacMullin, MBA, CPA, CGA, Chair, and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: Louis de Montbrun
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Date: 2021.01.22 11:03:32 -04'00'

Louis de Montbrun, CPA, CA
Director, Corporate Services/CFO

APPROVED: Cathie O'Toole
Digitally signed by Cathie O'Toole
Date: 2021.01.22 11:09:22 -04'00'

Cathie O'Toole, MBA, FCPA, FCGA, ICD.D
General Manager

DATE: January 22, 2021

SUBJECT: Operating Results for the nine months ended December 31, 2020

ORIGIN

Financial Information Reporting.

BACKGROUND

The Halifax Regional Water Commission (Halifax Water) Board is required to review periodic financial information throughout the year.

DISCUSSION

Attached are the operating results for the nine (9) months ending December 31, 2020, with comparative figures for December 31, 2019.

Halifax Water is a fully regulated government business enterprise, falling under the jurisdiction of the NSUARB. The NSUARB requires that Halifax Water file financial statements and rate applications with the NSUARB based on the NSUARB Accounting and Reporting Handbook for Water Utilities (NSUARB Handbook). The Accounting Standards Board (AcSB) requires rate regulated entities to conform to International Financial Reporting Standards (IFRS). Halifax Water maintains the financial records in IFRS for the purposes of the annual audit and consolidation of the financial statements with those of Halifax Regional Municipality (HRM).

The following discussion of the operating results reflect direct operating costs by department and allocations among water, wastewater and stormwater for common costs shared across all the services provided by Halifax Water.

Statement of Financial Position (NSUARB) - Page 3 of attachment

Key indicators and balances from the Statement of Financial Position are provided in the following tables. An analysis of assets is as follows:

	December 31 2020	December 31 2019	March 31 2020	From Prior Year	
				\$ Change	% Change
Assets					
Current					
Cash and cash equivalents	\$ 56,953	\$ 53,835	\$ 49,953	\$ 3,118	5.8%
Receivables					
Customers charges and contractual	15,053	14,625	18,405	428	2.9%
Unbilled service revenues	19,420	19,780	17,367	(360)	(1.8%)
Halifax Regional Municipality	0	0	3,668	0	0.0%
Inventory	2,182	1,659	1,736	523	31.5%
Prepays	829	175	1,002	654	373.7%
	94,437	90,074	92,131	4,363	4.8%
Capital work in progress	55,339	77,804	18,104	(22,465)	(28.9%)
Utility plant in service	1,295,440	1,243,344	1,330,147	52,096	4.2%
Total assets	1,445,216	1,411,222	1,440,382	33,994	2.4%
Regulatory deferral account	2,669	2,861	2,812	(192)	(6.7%)
Total assets and regulatory deferral account	\$ 1,447,885	\$ 1,414,083	\$ 1,443,194	\$ 33,802	2.4%

- Cash and cash equivalents consist of cash on hand and balances held within financial institutions reduced by outstanding cheques. They have increased \$3.1 million from the prior year due to lower capital expenditures in the current year.
- Customer charges and contractual receivables have increased \$0.4 million from the prior year. The change in receivables is driven by the timing of billing cycles and receipt of funding for capital projects.
- Unbilled service revenues have decreased \$0.4 million from the prior year due to the timing of billing cycles. Invoices were issued on December 28, 2020, thus lowering the balance.
- Inventory has increased \$0.5 million due to a large purchase of meters in the current year as the vendor indicated their prices were increasing.
- The increase in prepays of \$0.7 million is a result of reallocating amounts within balance sheet accounts and new annual licensing for payroll software.
- The \$22.5 million decrease in capital work in progress relates to expenditures during the current year of \$37.7 million offset by projects that were capitalized at March 31, 2020. The top five projects in capital work in progress at month end are detailed below:

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Capital Work in Progress	
	Cumulative '000
Port Wallace Transmission Main	\$ 4,467
Romans & Federal Avenues Sewer Separation	3,302
Bedford South Reservoir	2,182
Payroll Replacement Project	2,017
Fairview/Clayton Park/Bridgeview Inflow/Infiltration Reduction	1,918
<u>All other projects:</u>	
Water	22,438
Wastewater	15,946
Stormwater	3,069
	41,453
Net capital work in progress	\$ 55,339

- Utility plant in service assets total \$1.3 billion, an increase of \$52.1 million from the prior year. The increase is a result of additions at year end offset by disposals, less current year depreciation expense.

The changes in liabilities are presented below:

	December 31 2020	December 31 2019	March 31 2020	From Prior Year \$ Change	% Change
Liabilities					
Current					
Payables and accruals					
Trade	15,775	12,459	28,756	3,316	26.6%
Interest on long term debt	1,508	1,475	2,139	33	2.2%
Halifax Regional Municipality	645	1,449	0	(804)	(55.5%)
Contractor and customer deposits	196	206	197	(10)	(4.9%)
Current portion of long term debt	20,559	19,484	21,184	1,075	5.5%
Unearned revenue	3,244	3,184	760	60	1.9%
	41,927	38,257	53,036	3,670	9.6%
Long term debt	204,054	199,614	197,962	4,440	2.2%
Deferred contributions	52,543	51,833	42,604	710	1.4%
Total liabilities	298,524	289,704	293,602	8,820	3.0%
Equity					
Accumulated capital surplus	1,097,336	1,064,187	1,094,580	33,149	3.1%
Accumulated operating surplus	42,576	44,123	52,573	(1,547)	(3.5%)
Operating surplus used to fund capital	12,380	12,380	12,380	0	0.0%
Deficiency of revenues over expenditures	(2,931)	3,689	(9,941)	(6,620)	(179.5%)
Total equity	1,149,361	1,124,379	1,149,592	24,982	2.2%
Total liabilities and equity	\$ 1,447,885	\$ 1,414,083	\$ 1,443,194	\$ 33,802	2.4%

- Trade payables and accruals have increased \$3.3 million as a result of prior year end accruals for work completed on several large capital projects awaiting final inspections and invoices in addition to the reallocation of amounts within balance sheet accounts and

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several large trade payables for payroll remittances and capital projects paid in January 2021.

- HRM net receivables and payables were a payable in December, a decrease of \$0.8 million from the prior year due the timing of payment to HRM for stormwater right of way billings and trade payables.
- Current portion of long term debt has increased \$1.1 million primarily as a result of acquiring new debt.
- Long term debt increased \$4.4 million. Since January 1, 2020, new debt of \$25.0 million was issued in July 2020 and long term debt repayments have been \$19.5 million.

Debt servicing ratio is a function of total interest and principal payments (including accrued amounts) plus the amortization of debt issue costs divided by total operating revenue per service. Debt servicing ratio by service as at December 31, 2020 is as follows:

Debt Servicing Ratio by Service		
	2020/21	2019/20
Water	13.02%	11.36%
Wastewater	24.82%	23.63%
Stormwater	24.76%	20.25%
Combined	19.96%	18.37%

Total Debt by Service (including current portion)			
	2020/21		2019/20
Water	\$ 74,227	\$	67,175
Wastewater	129,087		135,188
Stormwater	21,299		16,735
Combined	\$ 224,613	\$	219,098

- The debt servicing ratio for each service has increased from the prior year as a result of the issuance of new debt.
- The debt servicing ratio of 19.96% is below the maximum 35.0% ratio allowed under the blanket guarantee agreement with HRM.

Statement of Earnings (NSUARB) - Page 4 of attachment

Key indicators and balances from the Statement of Earnings are provided in the following tables:

Summarized Statement of Earnings					
	2020/21		2019/20		
	'000		'000	\$ Change	% Change
Operating revenues	\$ 104,521	\$	105,344	\$ (823)	(0.8%)
Operating expenditures	82,790		79,327	3,463	4.4%
Earnings (loss) from operations before financial and other revenues	21,731		26,017	(4,286)	(16.5%)
Financial and other revenues	593		872	(279)	(32.0%)
Financial and other expenditures	25,255		23,200	2,055	8.9%
Earnings (loss) for the year	\$ (2,931)	\$	3,689	\$ (6,620)	(179.5%)

- Operating revenues of \$104.5 million are \$0.8 million lower than the prior year. Details to be discussed further in the next section.
- Operating expenditures of \$82.8 million are \$3.5 million higher than the prior year. Details to be discussed on page 6.
- Financial and other revenues of \$0.6 million are \$0.3 million lower than the prior year.
- Financial and other expenditures of \$25.3 million are \$2.1 million higher than the prior year as a result of higher debt servicing costs and an increase in the dividend/grant in lieu of taxes.

Operating revenues are presented below, broken down by type:

Operating Revenues					
	2020/21		2019/20		
	'000		'000	\$ Change	% Change
Consumption revenue	\$ 65,020	\$	65,759	\$ (739)	(1.1%)
Base charge revenue	25,266		25,118	148	0.6%
Wastewater rebate	(822)		(774)	(48)	6.2%
Metered sales total	89,464		90,103	(639)	(0.7%)
Stormwater site generated charge	4,607		4,616	(9)	(0.2%)
Stormwater right of way	2,876		2,876	-	0.0%
Public fire protection	5,410		5,306	104	2.0%
Private fire protection	670		660	10	1.5%
Other operating revenue	1,494		1,783	(289)	(16.2%)
Operating revenue total	\$ 104,521	\$	105,344	\$ (823)	(0.8%)

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Operating revenues have decreased \$0.8 million as compared to the previous year. Key items of note include:

- Water and wastewater consumption are down 1.1% on a volumetric basis as compared to the previous year. This is mainly due to commercial customers who have had to close offices due to COVID-19. Consumption has been budgeted to remain consistent with the prior year.
- Other operating revenue categories are down \$0.3 million. This is a result of not charging interest on overdue accounts from March 13, 2020 through August 31, 2020 as a COVID-19 relief measure and a slight decrease in other contract revenue including septage tipping and airline effluent. Some haulers continue to take their septage outside of HRM for disposal and there is less airline traffic at the airport.

Operating expenditures are presented below:

Operating Expenditures					
	2020/21		2019/20		
	'000		'000	\$ Change	% Change
Water supply and treatment	\$ 7,377	\$	6,789	\$ 588	8.66%
Water transmission and distribution	8,491		8,076	415	5.14%
Wastewater collection	10,266		9,905	361	3.64%
Stormwater collection	3,774		3,680	94	2.55%
Wastewater treatment	15,036		14,847	189	1.27%
Engineering and information services	6,905		7,317	(412)	(5.63%)
Regulatory services	2,918		2,793	125	4.48%
Customer services	3,644		3,887	(243)	(6.25%)
Administration services	4,709		4,459	250	5.61%
Depreciation and amortization	19,670		17,574	2,096	11.93%
	\$ 82,790	\$	79,327	\$ 3,463	4.37%

Key items to note:

- Operating expenditures of \$82.8 million are \$3.5 million higher than the prior year. This is a result of the following:
 - Depreciation has increased as a result of additions to utility plant in service at year end.
 - Engineering and information services has decreased due to higher consulting costs in the prior year.
 - Water supply and treatment has increased due to higher chemical costs for polymer and major repair work to raw water pump at the Pockwock facility.
 - Water transmission and distribution has increased mainly due to higher salaries and benefits including the creation of a new superintendent position.

- Wastewater collection has increased mainly due to higher salaries and benefits including the creation of two new full time positions and an increase in materials and supplies purchases.
- Wastewater treatment has increased mainly due to purchase of UV lamps, higher processing costs, and electricity costs.

Pages 5 through 7 of the attachment present the Statement of Earnings by service and the table below is a summary:

Operating Results by Service					
	2020/21	2019/20			
	'000	'000	\$ Change	% Change	
Water	\$ 1,991	\$ 5,246	\$ (3,255)	(62.0%)	
Wastewater	(3,740)	(975)	(2,765)	283.6%	
Stormwater	(1,182)	(582)	(600)	103.1%	
Earnings (loss)	\$ (2,931)	\$ 3,689	\$ (6,620)	(179.5%)	

Key items to note:

- Water services earnings of \$2.0 million have decreased from the prior year by \$3.3 million due to the following factors:
 - Decrease in consumption as a result of lower usage by commercial customers.
 - Decrease in late payment fees as a result of COVID-19 relief measures.
 - Increase in operating expenditures mainly due to depreciation of new assets, higher chemical costs, major repair work, and higher salaries and benefits.
 - Increase in financial and other expenditures due to higher debt servicing costs and an increase in the dividend/grant in lieu of taxes paid to HRM.
- Wastewater services loss of \$3.7 million has increased from the prior year by \$2.8 million due to the following factors:
 - Decrease in consumption as a result of lower discharge by commercial customers.
 - Decrease in late payment fees as a result of COVID-19 relief measures.
 - Increase in operating expenditures mainly due to depreciation of new assets, an increase in salaries and benefits, and an increase in materials and equipment purchases offset by a decrease in engineering and information services due to lower consulting costs.
 - Increase in financial and other expenditures due to higher debt servicing costs.
- Stormwater services loss of \$1.2 million has increased from the prior year by \$0.6 million due to the following factors:
 - Increase in operating expenditures mainly due to depreciation of new assets.

- Increase in financial and other expenditures due to higher debt servicing costs.

Pages 8 through 9 of the attachment present the Statement of Earnings by activity and the table below is a summary:

Results by Activity					
	2020/21		2019/20		
	'000		'000	\$ Change	% Change
Regulated activities	\$ (3,550)	\$	3,189	\$ (6,739)	(211.3%)
Unregulated activities	619		500	119	23.8%
Earnings (loss)	\$ (2,931)	\$	3,689	\$ (6,620)	(179.5%)

Key items to note:

- Regulated activities loss of \$3.6 million has increased from the prior year by \$6.7 million due to the following factors:
 - Decrease in consumption as a result of lower usage by commercial customers.
 - Decrease in interest and late payment fees as a result of COVID-19 relief measures.
 - Increase in operating expenditures mainly due to depreciation of new assets and higher salaries and benefits including the creation of new positions offset by a decrease in engineering and information services expenditures due to higher consulting costs in the prior year.
 - Increase in financial and other expenditures due to higher debt servicing costs and an increase in the dividend/grant in lieu of taxes.
- Unregulated activities earnings of \$0.6 million have increased \$0.1 million from the prior year due to a decrease in operating costs for the leachate and dewatering facilities.

Results under International Financial Reporting Standards as compared to NSUARB Handbook

As noted previously, the AcSB requires Halifax Water, as a rate regulated utility, to report financial results using IFRS. The NSUARB requires Halifax Water to report in accordance with the NSUARB Handbook. The table below reconciles the results between IFRS and the NSUARB Handbook:

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Reconcile IFRS to NSUARB		
	2020/21	2019/20
	'000	'000
IFRS comprehensive earnings	\$ 3,159	\$ 10,127
Add non-cash pension expense	7,653	5,619
Subtract debt principal payments	(15,309)	(13,861)
Add depreciation expense on contributed assets	14,096	13,621
Subtract amortization of contributed capital	(14,096)	(13,621)
Add various depreciation adjustments	1,566	1,804
Subtract OCI gain	-	-
NSUARB earnings (loss)	\$ (2,931)	\$ 3,689

Operating revenues are the same as operating revenues using IFRS and the NSUARB Handbook.

The main differences relate to reporting requirements surrounding the recognition of various expenditures as follows:

- Non-cash pension expense represents the accrued portion of contributions to the pension plan and is not considered an expense for NSUARB Handbook reporting purposes.
- The principle payments on long term debt are recognized as an expense for NSUARB Handbook reporting purposes but are not an expense in IFRS statements.
- Depreciation expense on contributed assets is not an expense for NSUARB Handbook purposes, however, it is offset by the removal of the amortization of contributed capital. IFRS requires contributed capital to be treated as a long term liability and amortized, resulting in higher long term liabilities and lower equity on the statement of financial position.
- The various depreciation adjustments include the add back of losses on the disposal of utility plant in service and IFRS requires componentization of assets and shorter useful lives resulting in higher depreciation than under NSUARB Handbook reporting.

Statement of Earnings and Comprehensive Earnings (IFRS) - Page 2 of attachment

Key indicators and balances from the Statement of Earnings and Comprehensive Earnings are provided in the table below:

Summarized Comprehensive Earnings				
	2020/21	2019/20		
	'000	'000	\$ Change	% Change
Operating revenues	\$ 104,521	\$ 105,344	\$ (823)	(0.8%)
Operating expenditures	106,410	100,435	5,975	5.9%
Earnings (loss) from operations before financial and other revenues and expenditures	(1,889)	4,909	(6,798)	(138.5%)
Financial and other revenues	14,688	14,493	195	1.3%
Financial and other expenditures	9,640	9,275	365	3.9%
Total comprehensive earnings for the year	\$ 3,159	\$ 10,127	\$ (6,968)	(68.8%)

- Operating revenues of \$104.5 million are \$0.8 million lower than the prior year. Details have been discussed in preceding pages.
- Operating expenditures of \$106.4 million are \$6.0 million higher than the prior year. This is a result of the following factors:
 - Increase in depreciation and amortization expense of \$2.6 million as a result of additions to utility plant in service.
 - Increase in accrued pension expense of \$2.0 million as a result of the actuarial extrapolation at year end, resulting in a higher estimate for this current fiscal year.
- Financial and other revenues and expenditures have not changed drastically from the prior year. The increase is mainly due to the \$0.5 million increase of the dividend/grant in lieu of taxes, which is based on the value of assets at the end of the previous fiscal year. In previous years, the dividend/grant in lieu of taxes was only based on the value of water assets. In the current fiscal year, a new agreement was signed with HRM and in addition to the water dividend/grant in lieu of taxes there is now one for each wastewater and stormwater based on the value of those assets.

ATTACHMENTS

Unaudited Operating Results for the nine (9) months ended December 31, 2020

Report prepared by:

**Alicia
Scallion**

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Date: 2021.01.22
09:47:53 -04'00'

Alicia Scallion, CPA, CA, Manager, Accounting, (902)-490-4814

HALIFAX WATER
UNAUDITED STATEMENT OF FINANCIAL POSITION - IFRS
DECEMBER 31, 2020 (in thousands)

	December 31 2020	December 31 2019	March 31 2020	From Prior Year	
				\$ Change	% Change
Assets					
Current					
Cash and cash equivalents	\$ 56,953	\$ 53,835	\$ 49,953	\$ 3,118	5.8%
Receivables					
Customers charges and contractual	15,053	14,625	18,405	428	2.9%
Unbilled service revenues	19,420	19,780	17,367	(360)	(1.8%)
Halifax Regional Municipality	0	0	3,668	0	0.0%
Inventory	2,182	1,659	1,736	523	31.5%
Prepays	829	175	1,002	654	373.7%
	94,437	90,074	92,131	4,363	4.8%
Intangible assets	17,633	14,380	18,951	3,253	22.6%
Capital work in progress	55,339	77,804	18,104	(22,465)	(28.9%)
Utility plant in service	1,245,028	1,200,374	1,281,010	44,654	3.7%
Total assets	1,412,437	1,382,632	1,410,196	29,805	2.2%
Regulatory deferral account	2,669	2,861	2,812	(192)	(6.7%)
Total assets and regulatory deferral account	\$ 1,415,106	\$ 1,385,493	\$ 1,413,008	\$ 29,613	2.1%
Liabilities					
Current					
Payables and accruals					
Trade	15,775	12,459	28,756	3,316	26.6%
Interest on long term debt	1,508	1,475	2,139	33	2.2%
Halifax Regional Municipality	645	1,449	0	(804)	(55.5%)
Contractor and customer deposits	196	206	197	(10)	(4.9%)
Current portion of deferred contributed capital	14,488	13,846	14,488	642	4.6%
Current portion of long term debt	20,559	19,484	21,184	1,075	5.5%
Unearned revenue	3,244	3,184	760	60	1.9%
	56,415	52,103	67,524	4,312	8.3%
Deferred contributed capital	875,969	864,628	879,460	11,341	1.3%
Long term debt	204,054	199,614	197,962	4,440	2.2%
Employee benefit obligation	70,962	75,289	63,365	(4,327)	(5.7%)
Total liabilities	1,207,400	1,191,634	1,208,311	15,766	1.3%
Equity					
Accumulated other comprehensive loss	(26,453)	(41,209)	(26,453)	14,756	(35.8%)
Accumulated surplus	234,159	235,068	231,150	(909)	(0.4%)
Total equity	207,706	193,859	204,697	13,847	7.1%
Total liabilities and equity	\$ 1,415,106	\$ 1,385,493	\$ 1,413,008	\$ 29,613	2.1%

HALIFAX WATER
UNAUDITED STATEMENT OF EARNINGS AND COMPREHENSIVE EARNINGS - ALL SERVICES - IFRS
APRIL 1, 2020 - DECEMBER 31, 2020 (9 MONTHS)
ACTUAL YEAR TO DATE COMPLETE: 75.00%

	ACTUAL YEAR TO DATE		APR 1/20 MAR 31/21	ACTUAL YEAR TO DATE	From Prior Year	
	THIS YEAR	LAST YEAR	BUDGET	as % of	\$ Change	% Change
	'000	'000	'000	BUDGET		
Operating revenues						
Water	\$ 36,378	\$ 36,545	\$ 48,083	75.66%	\$ (167)	(0.46%)
Wastewater	53,086	53,558	70,365	75.44%	(472)	(0.88%)
Stormwater	7,483	7,492	9,882	75.72%	(9)	(0.12%)
Public fire protection	5,410	5,306	7,074	76.48%	104	1.96%
Private fire protection	670	660	884	75.79%	10	1.52%
Other operating revenue	1,494	1,783	2,327	64.20%	(289)	(16.21%)
	104,521	105,344	138,615	75.40%	(823)	(0.78%)
Operating expenditures						
Water supply and treatment	7,377	6,789	10,590	69.66%	588	8.66%
Water transmission and distribution	8,491	8,076	12,311	68.97%	415	5.14%
Wastewater collection	10,266	9,905	13,499	76.05%	361	3.64%
Stormwater collection	3,774	3,680	5,821	64.83%	94	2.55%
Wastewater treatment	15,036	14,847	21,413	70.22%	189	1.27%
Engineering and information services	6,905	7,317	9,204	75.02%	(412)	(5.63%)
Regulatory services	2,918	2,793	4,359	66.94%	125	4.48%
Customer services	3,644	3,887	5,413	67.32%	(243)	(6.25%)
Administration services	4,709	4,459	8,071	58.34%	250	5.61%
Pension services	7,653	5,619	10,204	75.00%	2,034	36.20%
Depreciation and amortization	35,637	33,063	41,357	86.17%	2,574	7.79%
	106,410	100,435	142,242	74.81%	5,975	5.95%
Earnings from operations before financial and other revenues and expenditures	(1,889)	4,909	(3,627)	52.08%	(6,798)	(138.48%)
Financial and other revenues						
Interest	178	383	87	204.60%	(205)	(53.52%)
Amortization of contributed capital	14,096	13,621	13,927	101.21%	475	3.49%
Other	414	489	533	77.67%	(75)	(15.34%)
	14,688	14,493	14,547	100.97%	195	1.35%
Financial and other expenditures						
Interest on long term debt	5,400	5,349	8,823	61.20%	51	0.95%
Amortization of debt discount	158	138	228	69.30%	20	14.49%
Dividend/grant in lieu of taxes	4,350	3,809	6,114	71.15%	541	14.20%
Other	(268)	(21)	32	(837.50%)	(247)	1176.19%
	9,640	9,275	15,197	63.43%	365	3.94%
Total comprehensive earnings for the year	\$ 3,159	\$ 10,127	\$ (4,277)	(73.86%)	\$ (6,968)	(68.81%)

HALIFAX WATER
UNAUDITED STATEMENT OF FINANCIAL POSITION - NSUARB
DECEMBER 31, 2020 (in thousands)

	December 31 2020	December 31 2019	March 31 2020	From Prior Year	
				\$ Change	% Change
Assets					
Current					
Cash and cash equivalents	\$ 56,953	\$ 53,835	\$ 49,953	\$ 3,118	5.8%
Receivables					
Customers charges and contractual	15,053	14,625	18,405	428	2.9%
Unbilled service revenues	19,420	19,780	17,367	(360)	(1.8%)
Halifax Regional Municipality	0	0	3,668	0	0.0%
Inventory	2,182	1,659	1,736	523	31.5%
Prepays	829	175	1,002	654	373.7%
	94,437	90,074	92,131	4,363	4.8%
Capital work in progress	55,339	77,804	18,104	(22,465)	(28.9%)
Utility plant in service	1,295,440	1,243,344	1,330,147	52,096	4.2%
Total assets	1,445,216	1,411,222	1,440,382	33,994	2.4%
Regulatory deferral account	2,669	2,861	2,812	(192)	(6.7%)
Total assets and regulatory deferral account	\$ 1,447,885	\$ 1,414,083	\$ 1,443,194	\$ 33,802	2.4%
Liabilities					
Current					
Payables and accruals					
Trade	15,775	12,459	28,756	3,316	26.6%
Interest on long term debt	1,508	1,475	2,139	33	2.2%
Halifax Regional Municipality	645	1,449	0	(804)	(55.5%)
Contractor and customer deposits	196	206	197	(10)	(4.9%)
Current portion of long term debt	20,559	19,484	21,184	1,075	5.5%
Unearned revenue	3,244	3,184	760	60	1.9%
	41,927	38,257	53,036	3,670	9.6%
Long term debt	204,054	199,614	197,962	4,440	2.2%
Deferred contributions	52,543	51,833	42,604	710	1.4%
Total liabilities	298,524	289,704	293,602	8,820	3.0%
Equity					
Accumulated capital surplus	1,097,336	1,064,187	1,094,580	33,149	3.1%
Accumulated operating surplus	42,576	44,123	52,573	(1,547)	(3.5%)
Operating surplus used to fund capital	12,380	12,380	12,380	0	0.0%
Deficiency of revenues over expenditures	(2,931)	3,689	(9,941)	(6,620)	(179.5%)
Total equity	1,149,361	1,124,379	1,149,592	24,982	2.2%
Total liabilities and equity	\$ 1,447,885	\$ 1,414,083	\$ 1,443,194	\$ 33,802	2.4%

HALIFAX WATER
UNAUDITED STATEMENT OF EARNINGS - ALL SERVICES - NSUARB
APRIL 1, 2020 - DECEMBER 31, 2020 (9 MONTHS)
ACTUAL YEAR TO DATE COMPLETE: 75.00%

	ACTUAL YEAR TO DATE		APR 1/20 MAR 31/21 BUDGET	APR 1/20 MAR 31/21 FORECAST	ACTUAL YEAR TO DATE as % of BUDGET	ACTUAL YEAR TO DATE as % of FORECAST	From Prior Year		Budget to Forecast	
	THIS YEAR '000	LAST YEAR '000	'000	'000			\$ Change	% Change	\$ Change	% Change
Operating revenues										
Water	\$ 36,378	\$ 36,545	\$ 48,083	\$ 48,010	75.66%	75.77%	\$ (167)	(0.46%)	\$ (73)	(0.15%)
Wastewater	53,086	53,558	70,365	70,166	75.44%	75.66%	(472)	(0.88%)	(199)	(0.28%)
Stormwater site generated service	4,607	4,616	6,047	6,004	76.19%	76.73%	(9)	(0.19%)	(43)	(0.71%)
Stormwater right of way service	2,876	2,876	3,835	3,835	74.99%	74.99%	0	0.00%	0	0.00%
Fire protection (public and private)	6,080	5,966	7,958	8,410	76.40%	72.29%	114	1.91%	452	5.68%
Other services and fees	1,009	1,134	1,416	1,326	71.26%	76.09%	(125)	(11.02%)	(90)	(6.36%)
Late payment and other connection fees	162	349	520	342	31.15%	47.37%	(187)	(53.58%)	(178)	(34.23%)
Miscellaneous	323	300	391	411	82.61%	78.59%	23	7.67%	20	5.12%
	104,521	105,344	138,615	138,504	75.40%	75.46%	(823)	(0.78%)	(111)	(0.08%)
Operating expenditures										
Water supply and treatment	7,377	6,789	10,590	10,425	69.66%	70.76%	588	8.66%	(165)	(1.56%)
Water transmission and distribution	8,491	8,076	12,311	11,867	68.97%	71.55%	415	5.14%	(444)	(3.61%)
Wastewater collection	10,266	9,905	13,499	13,264	76.05%	77.40%	361	3.64%	(235)	(1.74%)
Stormwater collection	3,774	3,680	5,821	5,279	64.83%	71.49%	94	2.55%	(542)	(9.31%)
Wastewater treatment	15,036	14,847	21,413	20,223	70.22%	74.35%	189	1.27%	(1,190)	(5.56%)
Engineering and information services	6,905	7,317	9,204	9,083	75.02%	76.02%	(412)	(5.63%)	(121)	(1.31%)
Regulatory services	2,918	2,793	4,359	4,144	66.94%	70.42%	125	4.48%	(215)	(4.93%)
Customer services	3,644	3,887	5,413	5,201	67.32%	70.06%	(243)	(6.25%)	(212)	(3.92%)
Administration services	4,709	4,459	8,071	8,047	58.34%	58.52%	250	5.61%	(24)	(0.30%)
Depreciation and amortization	19,670	17,574	27,430	28,742	71.71%	68.44%	2,096	11.93%	1,312	4.78%
	82,790	79,327	118,111	116,275	70.10%	71.20%	3,463	4.37%	(1,836)	(1.55%)
Earnings from operations before financial and other revenues and expenditures	21,731	26,017	20,504	22,229	105.98%	97.76%	(4,286)	(16.47%)	1,725	8.41%
Financial and other revenues										
Interest	178	383	87	226	204.60%	78.76%	(205)	(53.52%)	139	159.77%
Other	415	489	533	533	77.86%	77.86%	(74)	(15.13%)	0	0.00%
	593	872	620	759	95.65%	78.13%	(279)	(32.00%)	139	22.42%
Financial and other expenditures										
Interest on long term debt	5,400	5,349	8,823	7,261	61.20%	74.37%	51	0.95%	(1,562)	(17.70%)
Repayment on long term debt	15,309	13,861	21,880	20,663	69.97%	74.09%	1,448	10.45%	(1,217)	(5.56%)
Amortization of debt discount	158	138	228	220	69.30%	71.82%	20	14.49%	(8)	(3.51%)
Dividend/grant in lieu of taxes	4,350	3,809	6,114	5,953	71.15%	73.07%	541	14.20%	(161)	(2.63%)
Other	38	43	32	47	118.75%	80.85%	(5)	(11.63%)	15	46.88%
	25,255	23,200	37,077	34,144	68.12%	73.97%	2,055	8.86%	(2,933)	(7.91%)
Earnings (loss) for the year	\$ (2,931)	\$ 3,689	\$ (15,953)	\$ (11,156)	18.37%	26.27%	\$ (6,620)	(179.45%)	\$ 4,797	(30.07%)

HALIFAX WATER
UNAUDITED STATEMENT OF EARNINGS - WATER - NSUARB
APRIL 1, 2020 - DECEMBER 31, 2020 (9 MONTHS)
ACTUAL YEAR TO DATE COMPLETE: 75.00%

	ACTUAL YEAR TO DATE		APR 1/20 MAR 31/21	APR 1/20 MAR 31/21	ACTUAL YEAR TO DATE	ACTUAL YEAR TO DATE	From Prior Year		Budget to Forecast	
	THIS YEAR	LAST YEAR	BUDGET	FORECAST	as % of	as % of	\$ Change	% Change	\$ Change	% Change
	'000	'000	'000	'000	BUDGET	FORECAST				
Operating revenues										
Water	\$ 36,378	\$ 36,545	\$ 48,083	\$ 48,010	75.66%	75.77%	\$ (167)	(0.46%)	\$ (73)	(0.15%)
Public fire protection	5,410	5,306	7,074	7,336	76.48%	73.75%	104	1.96%	262	3.70%
Private fire protection	670	660	884	1,074	75.79%	62.38%	10	1.52%	190	21.49%
Bulk water stations	285	271	303	330	94.06%	86.36%	14	5.17%	27	8.91%
Late payment and other connection fees	90	186	238	163	37.82%	55.21%	(96)	(51.61%)	(75)	(31.51%)
Miscellaneous	127	125	163	177	77.91%	71.75%	2	1.60%	14	8.59%
	42,960	43,093	56,745	57,090	75.71%	75.25%	(133)	(0.31%)	345	0.61%
Operating expenditures										
Water supply and treatment	7,377	6,789	10,590	10,425	69.66%	70.76%	588	8.66%	(165)	(1.56%)
Water transmission and distribution	8,491	8,076	12,311	11,867	68.97%	71.55%	415	5.14%	(444)	(3.61%)
Engineering and information services	3,110	3,119	4,162	4,112	74.72%	75.63%	(9)	(0.29%)	(50)	(1.20%)
Regulatory services	789	633	1,195	1,154	66.03%	68.37%	156	24.64%	(41)	(3.43%)
Customer services	1,887	1,983	2,758	2,650	68.42%	71.21%	(96)	(4.84%)	(108)	(3.92%)
Administration services	2,211	2,296	4,112	4,100	53.77%	53.93%	(85)	(3.70%)	(12)	(0.29%)
Depreciation and amortization	7,786	6,800	10,993	11,219	70.83%	69.40%	986	14.50%	226	2.06%
	31,651	29,696	46,121	45,527	68.63%	69.52%	1,955	6.58%	(594)	(1.29%)
Earnings from operations before financial and other revenues and expenditures	11,309	13,397	10,624	11,563	106.45%	97.80%	(2,088)	(15.59%)	939	8.84%
Financial and other revenues										
Interest	105	166	39	134	269.23%	78.36%	(61)	(36.75%)	95	243.59%
Other	309	404	394	394	78.43%	78.43%	(95)	(23.51%)	0	0.00%
	414	570	433	528	95.61%	78.41%	(156)	(27.37%)	95	21.94%
Financial and other expenditures										
Interest on long term debt	1,525	1,353	3,127	2,116	48.77%	72.07%	172	12.71%	(1,011)	(32.33%)
Repayment on long term debt	4,012	3,494	6,465	5,542	62.06%	72.39%	518	14.83%	(923)	(14.28%)
Amortization of debt discount	55	47	84	77	65.48%	71.43%	8	17.02%	(7)	(8.33%)
Dividend/grant in lieu of taxes	4,123	3,809	5,654	5,497	72.92%	75.00%	314	8.24%	(157)	(2.78%)
Other	17	18	2	17	850.00%	100.00%	(1)	(5.56%)	15	750.00%
	9,732	8,721	15,332	13,249	63.48%	73.45%	1,011	11.59%	(2,083)	(13.59%)
Earnings (loss) for the year	\$ 1,991	\$ 5,246	\$ (4,275)	\$ (1,158)	(46.57%)	(171.93%)	\$ (3,255)	(62.05%)	\$ 3,117	(72.91%)

HALIFAX WATER
UNAUDITED STATEMENT OF EARNINGS - WASTEWATER - NSUARB
APRIL 1, 2020 - DECEMBER 31, 2020 (9 MONTHS)
ACTUAL YEAR TO DATE COMPLETE: 75.00%

	ACTUAL YEAR TO DATE		APR 1/20 MAR 31/21		ACTUAL YEAR TO DATE		ACTUAL YEAR TO DATE		From Prior Year		Budget to Forecast	
	THIS YEAR	LAST YEAR	BUDGET	FORECAST	as % of	as % of			\$ Change	% Change	\$ Change	% Change
	'000	'000	'000	'000	BUDGET	FORECAST						
Operating revenues												
Wastewater	\$ 53,086	\$ 53,558	\$ 70,365	\$ 70,166	75.44%	75.66%	\$ (472)	(0.88%)	\$ (199)	(0.28%)		
Leachate and other contract revenue	303	332	473	436	64.06%	69.50%	(29)	(8.73%)	(37)	(7.82%)		
Septage tipping fees	393	440	505	505	77.82%	77.82%	(47)	(10.68%)	0	0.00%		
Overstrength surcharge	0	14	30	15	0.00%	0.00%	(14)	(100.00%)	(15)	(50.00%)		
Airplane effluent	28	77	105	40	26.67%	70.00%	(49)	(63.64%)	(65)	(61.90%)		
Late payment and other connection fees	69	145	176	116	39.20%	59.48%	(76)	(52.41%)	(60)	(34.09%)		
Miscellaneous	120	106	136	142	88.24%	84.51%	14	13.21%	6	4.41%		
	53,999	54,672	71,790	71,420	75.22%	75.61%	(673)	(1.23%)	(370)	(0.52%)		
Operating expenditures												
Wastewater collection	10,266	9,905	13,499	13,264	76.05%	77.40%	361	3.64%	(235)	(1.74%)		
Wastewater treatment	15,036	14,847	21,413	20,223	70.22%	74.35%	189	1.27%	(1,190)	(5.56%)		
Engineering and information services	3,414	3,611	3,769	3,701	90.58%	92.25%	(197)	(5.46%)	(68)	(1.80%)		
Regulatory services	1,018	1,064	1,537	1,446	66.23%	70.40%	(46)	(4.32%)	(91)	(5.92%)		
Customer services	1,561	1,638	2,352	2,253	66.37%	69.29%	(77)	(4.70%)	(99)	(4.21%)		
Administration services	2,149	1,865	3,405	3,395	63.11%	63.30%	284	15.23%	(10)	(0.29%)		
Depreciation and amortization	10,829	10,001	15,072	15,770	71.85%	68.67%	828	8.28%	698	4.63%		
	44,273	42,931	61,047	60,052	72.52%	73.72%	1,342	3.13%	(995)	(1.63%)		
Earnings from operations before financial and other revenues and expenditures	9,726	11,741	10,743	11,368	90.53%	85.56%	(2,015)	(17.16%)	625	5.82%		
Financial and other revenues												
Interest	45	143	39	58	115.38%	77.59%	(98)	(68.53%)	19	48.72%		
Other	106	85	139	139	76.26%	76.26%	21	24.71%	0	0.00%		
	151	228	178	197	84.83%	76.65%	(77)	(33.77%)	19	10.67%		
Financial and other expenditures												
Interest on long term debt	3,359	3,548	4,772	4,443	70.39%	75.60%	(189)	(5.33%)	(329)	(6.89%)		
Repayment on long term debt	9,954	9,290	13,442	13,287	74.05%	74.92%	664	7.15%	(155)	(1.15%)		
Amortization of debt discount	90	81	124	123	72.58%	73.17%	9	11.11%	(1)	(0.81%)		
Dividend/grant in lieu of taxes	193	0	398	388	48.49%	49.74%	193	0.00%	(10)	(2.51%)		
Other	21	25	30	30	70.00%	70.00%	(4)	(16.00%)	0	0.00%		
	13,617	12,944	18,766	18,271	72.56%	74.53%	673	5.20%	(495)	(2.64%)		
Loss for the year	\$ (3,740)	\$ (975)	\$ (7,845)	\$ (6,706)	47.67%	55.77%	\$ (2,765)	283.59%	\$ 1,139	(14.52%)		

HALIFAX WATER
 UNAUDITED STATEMENT OF EARNINGS - STORMWATER - NSUARB
 APRIL 1, 2020 - DECEMBER 31, 2020 (9 MONTHS)
 ACTUAL YEAR TO DATE COMPLETE: 75.00%

	ACTUAL YEAR TO DATE		APR 1/20 MAR 31/21 BUDGET	APR 1/20 MAR 31/21 FORECAST	ACTUAL YEAR TO DATE as % of BUDGET	ACTUAL YEAR TO DATE as % of FORECAST	From Prior Year		Budget to Forecast	
	THIS YEAR '000	LAST YEAR '000	'000	'000			\$ Change	% Change	\$ Change	% Change
Operating revenues										
Stormwater site generated service	\$ 4,607	\$ 4,616	\$ 6,047	\$ 6,004	76.19%	76.73%	\$ (9)	(0.19%)	\$ (43)	(0.71%)
Stormwater right of way service	2,876	2,876	3,835	3,835	74.99%	74.99%	0	0.00%	0	0.00%
Late payment and other connection fees	3	18	106	63	2.83%	4.76%	(15)	(83.33%)	(43)	(40.57%)
Miscellaneous	76	69	92	92	82.61%	82.61%	7	10.14%	0	0.00%
	7,562	7,579	10,080	9,994	75.02%	75.67%	(17)	(0.22%)	(86)	(0.85%)
Operating expenditures										
Stormwater collection	3,774	3,680	5,821	5,279	64.83%	71.49%	94	2.55%	(542)	(9.31%)
Engineering and information services	381	587	1,273	1,270	29.93%	30.00%	(206)	(35.09%)	(3)	(0.24%)
Regulatory services	1,111	1,096	1,627	1,544	68.29%	71.96%	15	1.37%	(83)	(5.10%)
Customer services	196	266	303	298	64.69%	65.77%	(70)	(26.32%)	(5)	(1.65%)
Administration services	349	298	554	552	63.00%	63.22%	51	17.11%	(2)	(0.36%)
Depreciation and amortization	1,055	773	1,365	1,753	77.29%	60.18%	282	36.48%	388	28.42%
	6,866	6,700	10,943	10,696	62.74%	64.19%	166	2.48%	(247)	(2.26%)
Earnings from operations before financial and other revenues and expenditures	696	879	(863)	(702)	(80.65%)	(99.15%)	(183)	(20.82%)	161	(18.66%)
Financial and other revenues										
Interest	28	74	9	34	311.11%	82.35%	(46)	(62.16%)	25	277.78%
	28	74	9	34	311.11%	82.35%	(46)	(62.16%)	25	277.78%
Financial and other expenditures										
Interest on long term debt	516	448	924	702	55.84%	73.50%	68	15.18%	(222)	(24.03%)
Repayment on long term debt	1,343	1,077	1,973	1,834	68.07%	73.23%	266	24.70%	(139)	(7.05%)
Amortization of debt discount	13	10	20	20	65.00%	65.00%	3	30.00%	0	0.00%
Dividend/grant in lieu of taxes	34	0	62	68	54.84%	50.00%	34	0.00%	6	9.68%
	1,906	1,535	2,979	2,624	63.98%	72.64%	371	24.17%	(355)	(11.92%)
Loss for the year	\$ (1,182)	\$ (582)	\$ (3,833)	\$ (3,292)	30.84%	35.91%	\$ (600)	103.09%	\$ 541	(14.11%)

HALIFAX WATER
UNAUDITED STATEMENT OF EARNINGS - REGULATED AND UNREGULATED ACTIVITIES - NSUARB
APRIL 1, 2020 - DECEMBER 31, 2020 (9 MONTHS)
ACTUAL YEAR TO DATE COMPLETE: 75.00%

	ACTUAL YEAR TO DATE		APR 1/20 MAR 31/21 BUDGET	APR 1/20 MAR 31/21 FORECAST	ACTUAL YEAR TO DATE as % of BUDGET	ACTUAL YEAR TO DATE as % of FORECAST	From Prior Year		Budget to Forecast	
	THIS YEAR '000	LAST YEAR '000	'000	'000			\$ Change	% Change	\$ Change	% Change
REGULATED ACTIVITIES										
Operating revenues										
Water	\$ 36,378	\$ 36,545	\$ 48,083	\$ 48,010	75.66%	75.77%	\$ (167)	(0.46%)	\$ (73)	(0.15%)
Wastewater	53,086	53,558	70,365	70,166	75.44%	75.66%	(472)	(0.88%)	(199)	(0.28%)
Stormwater	7,483	7,492	9,882	9,839	75.72%	76.05%	(9)	(0.12%)	(43)	(0.44%)
Public fire protection	5,410	5,306	7,074	7,336	76.48%	73.75%	104	1.96%	262	3.70%
Private fire protection	670	660	884	1,074	75.79%	62.38%	10	1.52%	190	21.49%
Other operating revenue	745	909	1,206	1,060	61.77%	70.28%	(164)	(18.04%)	(146)	(12.11%)
	103,772	104,470	137,494	137,485	75.47%	75.48%	(698)	(0.67%)	(9)	(0.01%)
Operating expenditures										
Water supply and treatment	7,367	6,779	10,562	10,397	69.75%	70.86%	588	8.67%	(165)	(1.56%)
Water transmission and distribution	8,491	8,076	12,311	11,867	68.97%	71.55%	415	5.14%	(444)	(3.61%)
Wastewater collection	10,231	9,884	13,388	13,153	76.42%	77.78%	347	3.51%	(235)	(1.76%)
Stormwater collection	3,774	3,680	5,821	5,279	64.83%	71.49%	94	2.55%	(542)	(9.31%)
Wastewater treatment	14,659	14,268	20,571	19,635	71.26%	74.66%	391	2.74%	(936)	(4.55%)
Engineering and information services	6,905	7,317	9,204	9,083	75.02%	76.02%	(412)	(5.63%)	(121)	(1.31%)
Regulatory services	2,918	2,793	4,359	4,144	66.94%	70.42%	125	4.48%	(215)	(4.93%)
Customer services	3,601	3,858	5,373	5,161	67.02%	69.77%	(257)	(6.66%)	(212)	(3.95%)
Administration services	4,696	4,433	7,933	7,909	59.20%	59.38%	263	5.93%	(24)	(0.30%)
Depreciation and amortization	19,657	17,561	27,349	28,724	71.87%	68.43%	2,096	11.94%	1,375	5.03%
	82,299	78,649	116,871	115,352	70.42%	71.35%	3,650	4.64%	(1,519)	(1.30%)
Earnings from operations before financial and other revenues and expenditures	21,473	25,821	20,623	22,133	104.12%	97.02%	(4,348)	(16.84%)	1,510	7.32%
Financial and other revenues										
Interest	178	383	87	226	204.60%	78.76%	(205)	(53.52%)	139	159.77%
Other	16	142	40	40	40.00%	40.00%	(126)	(88.73%)	0	0.00%
	194	525	127	266	152.76%	72.93%	(331)	(63.05%)	139	109.45%
Financial and other expenditures										
Interest on long term debt	5,400	5,349	8,807	7,261	61.31%	74.37%	51	0.95%	(1,546)	(17.55%)
Repayment on long term debt	15,309	13,861	21,860	20,663	70.03%	74.09%	1,448	10.45%	(1,197)	(5.48%)
Amortization of debt discount	158	138	228	220	69.30%	71.82%	20	14.49%	(8)	(3.51%)
Dividend/grant in lieu of taxes	4,350	3,809	6,114	5,953	71.15%	73.07%	541	14.20%	(161)	(2.63%)
	25,217	23,157	37,009	34,097	68.14%	73.96%	2,060	8.90%	(2,912)	(7.87%)
Earnings (loss) for the year - Regulated	\$ (3,550)	\$ 3,189	\$ (16,259)	\$ (11,698)	21.83%	30.35%	\$ (6,739)	(211.32%)	\$ 4,561	(28.05%)

HALIFAX WATER
 UNAUDITED STATEMENT OF EARNINGS - REGULATED AND UNREGULATED ACTIVITIES - NSUARB
 APRIL 1, 2020 - DECEMBER 31, 2020 (9 MONTHS)
 ACTUAL YEAR TO DATE COMPLETE: 75.00%

	ACTUAL YEAR TO DATE		APR 1/20 MAR 31/21 BUDGET	APR 1/20 MAR 31/21 FORECAST	ACTUAL YEAR TO DATE as % of BUDGET	ACTUAL YEAR TO DATE as % of FORECAST	From Prior Year		Budget to Forecast	
	THIS YEAR '000	LAST YEAR '000	'000	'000			\$ Change	% Change	\$ Change	% Change
UNREGULATED ACTIVITIES										
Operating revenues										
Septage tipping fees	393	440	505	505	77.82%	77.82%	(47)	(10.68%)	0	0.00%
Leachate and other contract revenue	303	332	473	436	64.06%	69.50%	(29)	(8.73%)	(37)	(7.82%)
Airplane effluent	28	77	105	40	26.67%	70.00%	(49)	(63.64%)	(65)	(61.90%)
Miscellaneous	25	25	38	38	65.79%	65.79%	0	0.00%	0	0.00%
	749	874	1,121	1,019	66.82%	73.50%	(125)	(14.30%)	(102)	(9.10%)
Operating expenditures										
Water supply and treatment	10	10	28	28	35.71%	35.71%	0	0.00%	0	0.00%
Wastewater treatment	377	579	842	588	44.77%	64.12%	(202)	(34.89%)	(254)	(30.17%)
Wastewater collection	35	21	111	111	31.53%	31.53%	14	66.67%	0	0.00%
Sponsorships and donations	56	55	68	68	82.35%	82.35%	1	1.82%	0	0.00%
Administration services	0	0	110	110	0.00%	0.00%	0	0.00%	0	0.00%
Depreciation and amortization	13	13	81	18	16.05%	72.22%	0	0.00%	(63)	(77.78%)
	491	678	1,240	923	39.60%	53.20%	(187)	(27.58%)	(317)	(25.56%)
Earnings from operations before financial and other revenues and expenditures	258	196	(119)	96	(216.81%)	268.75%	62	31.63%	215	(180.67%)
Financial and other revenues										
Other - leases and rentals	236	227	308	308	76.62%	76.62%	9	3.96%	0	0.00%
Other - energy projects	163	120	185	185	88.11%	88.11%	43	35.83%	0	0.00%
	399	347	493	493	80.93%	80.93%	52	14.99%	0	0.00%
Financial and other expenditures										
Other	38	43	68	47	55.88%	80.85%	(5)	(11.63%)	(21)	(30.88%)
	38	43	68	47	55.88%	80.85%	(5)	(11.63%)	(21)	(30.88%)
Earnings for the year - Unregulated	\$ 619	\$ 500	\$ 306	\$ 542	202.29%	114.21%	\$ 119	23.80%	\$ 236	77.12%
Total earnings (loss) for the year (Regulated and Unregulated)	\$ (2,931)	\$ 3,689	\$ (15,953)	\$ (11,156)	18.37%	26.27%	\$ (6,620)	(179.45%)	\$ 4,797	(30.07%)

TO: Craig MacMullin MBA, CPA, CGA, Chair and Members of the
Halifax Regional Water Commission Board

SUBMITTED BY: Cathie O'Toole
Cathie O'Toole, MBA, FCPA, FCGA, ICD.D
General Manager

Digitally signed by Cathie
O'Toole
Date: 2021.01.21
14:42:27 -04'00'

DATE: January 21, 2021

SUBJECT: **Proposed 2021/22 Business Plan**

ORIGIN

Annual operational requirement in accordance with HRWC Act, and Halifax Regional Municipality Administrative Order 2018-001-ADM

RECOMMENDATION

The Board approve the 2021/22 Business Plan in the substantive form attached and direct the General Manager to submit the annual Business Plan to Halifax Council for approval.

BACKGROUND/DISCUSSION

Halifax Water develops both long-term and short-term business plans for the approval of the Commission Board. The 2021/22 Annual Business Plan reflects the strategic direction in the 5-Year Business Plan (2020/21 – 2024/25) which was approved by the Board on January 30, 2020; and the 2021/22 strategic objectives discussed with the Halifax Water Board at a workshop on January 5, 2021. The annual and 5-Year business plans are consistent with the updated Integrated Resource Plan [IRP] approved by the Board in November 2019.

This annual business plan recognizes the need for further capital investment as contemplated in the updated IRP. Halifax Water's proposed capital budget is \$126.2 million with 69% of the projects arising due to the need to renew existing assets. One such example, is the replacement of the Cowie Hill Reservoir which is planned for 2021/22. Halifax Water has major multi-year water supply enhancement program planned for the J.D. Kline (Pockwock Lake) and Lake Major water supply plants (WSPs), due to a

combination of factors such as changes in source water due to lake recovery and age of some treatment plant components. The business plan and resulting capital budget reflects a balanced investment in asset renewal, compliance and growth-related projects to support utility operations; but the predominant driver in each service (water, wastewater, stormwater) is asset renewal.

Halifax Water's wastewater treatment facilities are compliant with current environmental regulations, but the utility faces significant future expenditures both to maintain current and meet future compliance requirements. Halifax Water is working to develop a more detailed plan to upgrade the Halifax Harbour Solutions plants (HHSP) to meet the objectives stipulated in the federal Wastewater System Effluent Regulations by 2040, and this will be a significant area of focus in 2021/22.

Halifax Water's approach to water and wastewater treatment plant upgrades is to develop strategies that are based on thorough research and investigation of new technologies. To that end, in 2020/21, Halifax Water expanded the current NSERC Industrial Research Chair with Dalhousie to include a wastewater stream, and 2021/22 will mark the second year of the three-year wastewater research program focused on plant optimization and contaminants of emerging concern. Through the wastewater research program, in 2021/22 Halifax Water will also be supporting wastewater research regarding COVID-19.

From the water perspective, research will continue on the effects of lake recovery, lead, geosmin and corrosion control; and water operations will be investigating artificial intelligence for leak detection, pressure management and optimizing distribution operations to prevent breaks

Technology continues to transform our business and change how employees and customers can interact with the organization. In 2021/22 a second phase of enhancements will be launched on Halifax Water's customer portal – Customer Connect. Other projects such as an Employee Benefits and Training module and a new corporate Enterprise Resource Management (ERM) system will continue to drive significant organizational change. The value of technology is being proven throughout the response to COVID-19 as Halifax Water's services have continued with no impact on the quality of the service being provided.

Halifax Water has upgraded most customer meters to advanced metering infrastructure (AMI) and Halifax Water is now able to put water consumption data in the hands of customers through a web portal. Detailed information on water consumption will allow customers to monitor their accounts for possible high consumption or leaks and will allow Halifax Water to refine its approach to water loss control to ensure it remains a world leader.

Focusing on the environmental component of the mission, in 2021/22 Halifax Water start corporate wide expansion of the Environmental Management System (EMS), and will centralize the planning and coordination of climate change adaptation and mitigation activities, developing specific targets and actions for Halifax Water that support HalifACT 2050. Halifax Water is taking positive actions towards climate adaptation and mitigation and the 2019 IRP considers climate vulnerabilities to reduce risk to infrastructure and service delivery.

Climate change mitigation is a core driver for implementation of the Cogswell District Energy System as part of the Cogswell redevelopment. This exciting initiative will lead to significant reductions in GHG emissions compared to the business as usual case for new development.

Another area of opportunity is anaerobic digestion for treating residual biosolids, to generate renewable gas and continuing to process the residual biosolids into Class A fertilizer for beneficial reuse. This could result in a reduction in conventional fossil fuel use and therefore GHG emissions further mitigating climate change.

The 2021/22 fiscal year will see continued evolution of existing programs and services with the launch of the enhanced lead service line (LSL) rebate program to enable Halifax Water to meet its goals for LSL replacement by 2039 by integrating with HRM street renewal projects and by replacing the portion of LSLs on private property at the utility's expense. A program to promote compliance of new service connections will also be introduced in 2021/22. This program will promote disclosure and resolution of issues at the point of sale.

Customer satisfaction and employee engagement are both fundamental to success of the utility. Halifax Water is committed to continually innovate, improve, and remain cost-effective with the understanding of the importance of keeping the cost of services affordable.

ALTERNATIVES

None

ATTACHMENT

1. 2021/22 Annual Business Plan on a Page
2. 2021/22 Annual Business Plan (electronic copy only)

Report Prepared by:

**Cathie
O'Toole**

Digitally signed by Cathie
O'Toole
Date: 2021.01.21
14:43:37 -04'00'

Cathie O'Toole, MBA, FCPA,FCGA, ICD.D
General Manager, 902-490-4840

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2021/22 Business Plan

ITEM # 4.2
Halifax Water Board
January 28, 2021
ATTACHMENT 1

Our Vision

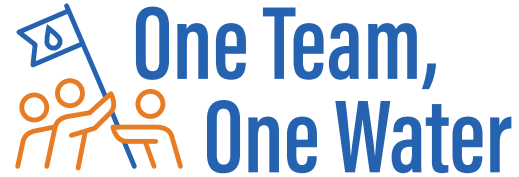
We will provide our customers with high quality water, wastewater, and stormwater services.

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 Mission

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



Our Values

Relationships: we nurture relationships with our customers, our team members and the environment. We are engaged in the neighbourhoods we serve and we support continual learning across our team.

Innovation: we are among the top utilities across the continent and we are known on the global stage. We always ask, "how can we improve efficiency, sustainability, creativity and the customer experience?"

Accountability: we refuse to cut corners. We check in with our excellence standards regularly and look to one another for support. Safety steers our decision-making. We are driven to make our policies, decisions and projects as clear as our drinking water.

Protection: Halifax Water protects the health and well-being of our population. We exist to guard natural resources, finding ways to sustain our communities and environment.

Operations

Wastewater & Stormwater Services

- Complete Biosolids Facility upgrade plan and progress procurement for Capital and Operations contracts
- Continue to implement Wastewater research program as per plan submitted to NSERC
- Stakeholder consultation on plan for HHSP upgrades to meet 2040 environmental compliance
- Complete Wet Weather Management projects and initiate any changes required to enable an effective private side I&I reduction program
- Communicate and implement actions from odour strategy

Water Services

- Complete Water Quality Master Plan V4
- Secure approval for water treatment plant upgrade program (strategy)
- Fully implement enhanced algal monitoring program as a permanent program
- Launch and successfully implement year 1 of the new LSL replacement program
- Implement findings from dam safety review
- Develop a roadmap for data utilization and intelligent water
- Recommend next steps for Water Loss Control program

Administration

- Obtain approval for regulations governing Cogswell District Energy System
- Update Service Level Agreement with HRM
- Roll out updated Code of Conduct to all employees
- Roll out training Risk Management Policy & update Corporate Risk Register
- Engage next Dispute Resolution Officer for NSUARB approval
- Enhance and roll out Stormwater customer communication and education
- Complete unconscious bias training for managers/supervisors and align Halifax Water with HRM culture & diversity initiatives

Regulatory Services

- Implement Regional Development Charge annual stakeholder consultation process
- Phased corporate implementation of EMS
- Maintain regulatory compliance and enhance reporting
- Launch new service account compliance program
- Evaluate ISO45001 (safety) certification and complete physical security audit
- Enhance stormwater credit program and continue support of stormwater billing
- Coordinate HalifACT 2050 Halifax Water climate change adaptation and mitigation projects



Corporate Services

- Analyze impervious area data, and apply to adjust rates for stormwater service
- Integrate customer connect portal and continue to increase utilization
- Commence ERP design subject to NSUARB approval
- Update procurement policy and processes
- Improve financial forecast and reporting
- Update Cost of Service Manual and apply for NSUARB approval
- Implement new bill design and monthly billing, and improve the collection process

Engineering & Technology Services

- Optimize capital project delivery and % of annual capital budget spent
- Complete design and tender process for Burnside Depot construction
- HRM Cogswell Redevelopment infrastructure relocation
- Promote the multi-year Water Supply Enhancement Program (WSEP) and implement year 1 Clarifier design phase
- Deliver key IT projects (Cyber Security and ERP)
- Finalize levels of service for asset management, and evaluation of Asset Management Program
- Monitor and report on progress of the Integrated Resource Plan

STRAIGHT from
the SOURCE





One Team,
One Water



2021/22 Annual Business Plan

Presented to:
Halifax Water Board
January 28, 2021

**STRAIGHT from
the SOURCE**



HALIFAX WATER
2021/22 Annual Business Plan

Glossary

AMI	Advanced Meter Infrastructure
AM	Asset Management
AMP	Asset Management Plan
BPF	Biosolids Processing Facility
CBS	Corporate Balanced Scorecard
CCC	Capital Cost Contribution
DES	District Energy System
DOE	Department of Energy
ETS	Engineering and Technology Services
EMAP	Energy Management Action Plan
EMP	Emergency Management Plan
EMS	Environmental Management System
ERM	Enterprise Risk Management
ERP	Enterprise Resource Planning
GIS	Geographic Information System
H2O	Help to Others (Program)
HHSP	Halifax Harbour Solutions Plant
HRM	Halifax Regional Municipality
HRWC	Halifax Regional Water Commission
I&I	Inflow and Infiltration
IFRS	International Financial Reporting Standards
IMP	Integrated Master Plan
IRP	Integrated Resource Plan
IS	Information Services
IT	Information Technology
NOM	Natural Organic Matter
NSE	Nova Scotia Environment
NSERC	Natural Sciences and Engineering Research Council
NSPI	Nova Scotia Power Incorporated
NSUARB	Nova Scotia Utility and Review Board
OI	Organizational Indicator
RDC	Regional Development Charge
RDII	Rain Derived Inflow and Infiltration
RF	Radio Frequency
SCADA	Supervisory Control and Data Acquisition
SSSES	Sanitary Sewer Evaluation Survey
UV	Ultraviolet
WRWIP	West Region Wastewater Infrastructure Plan
WSER	Wastewater System Effluent Regulations
WSP	Water Supply Plant
WWTF	Wastewater Treatment Facility

HALIFAX WATER
2021/22 Annual Business Plan

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2021/22 Annual Business Plan

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- A. Organizational Structure
- B. 2021/22 Capital Budget
- C. 2021/22 Operating Budget

HALIFAX WATER
2021/22 Annual Business Plan

1. INTRODUCTION

Halifax Water is an integrated water, wastewater and stormwater utility in its 76th year of operation, serving 105,000 customers and an estimated population of 370,000.

Halifax Water's business plan for 2021/22 is developed with recognition that some of the challenges of the preceding fiscal year will continue to impact Halifax Water's customers, employees and business partners. The COVID-19 global pandemic prompted some changes to how Halifax Water is delivering services, but Halifax Water has been able to deliver water, wastewater and stormwater services while maintaining the quality of the service and high levels of employee and customer satisfaction.

Halifax Water has ambitious plans for investment in critical infrastructure and continued innovation and improvement in 2021/22.

HALIFAX WATER
2021/22 Annual Business Plan



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.

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



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Protection: Halifax Water protects the health and well-being of our population. We exist to guard natural resources, finding ways to sustain our communities and environment.



STRAIGHT from
the SOURCE



HALIFAX WATER
2021/22 Annual Business Plan

The Halifax Water business plans, capital and operating budgets and rates are developed based on established strategies that align with industry best practice: the 2019 Integrated Resource Plan (IRP), the Debt Strategy, and Cost of Service Manual (COSM).

Halifax Water is working to increase the level of capital expenditures to the level recommended by the IRP to address the strategic drivers of asset renewal, growth, and regulatory compliance. Of the three strategic drivers included in the IRP, asset renewal will present the greatest challenge recognizing the backlog of investments in relation to the replacement of aging infrastructure.

With fourteen years of experience operating as a “one water” utility delivering integrated water, wastewater and stormwater service, Halifax Water is making some adjustments to the organization structure effective April 1, 2021 to take the next step toward provision of integrated services. The organization structure changes will help Halifax Water standardize some business processes, promote a consistent high quality of service, effective resource utilization, and development of employees.

We are committed to creating opportunities to help develop employees and future leaders, and promoting a culture of respect and diversity where employees are engaged, motivated and committed to the mission of serving our customers and our environment. An engaged and motivated workforce is key to foster innovation, adaptation and resilience in the face of an on-going pandemic, climate change, rapid technological change, in addition to the traditional challenges of aging infrastructure, environmental compliance and financial constraints.

Effective 2021/22, Halifax Water’s organization structure will reflect the following changes:

The Water Services and Wastewater/Stormwater Services departments will be combined and renamed the Operations department. Operations will be organized into groups responsible for the Water Distribution System, Water Supply Plants, Water Quality, the Wastewater/Stormwater Collection System, Wastewater Treatment Facilities, and Wastewater Quality plus Fleet, Facilities and Logistics. Some key challenges for this department in coming years will be consolidation of four operating depots to a new Burnside Operations Depot, and ensuring we have consistent operation approaches in all regions.

The Engineering and Information Services department will be renamed Engineering and Technology Services, and Technical Services will move to this department from Water Services. This will enhance the focus on cyber security, ensure all aspects of operational and information technology are working seamlessly together, and will help Halifax Water develop a roadmap for continued development as a digital utility considering data utilization and new technology. Some of other strategic priorities for this department include the Water Supply Enhancement Program, which will be the largest capital investment in water infrastructure in Halifax Water’s history, the Harbour Solutions Plants Upgrade Program, and continuing to increase the capacity to prioritize and effectively deliver capital projects fulfilling the vision of the Integrated Resource Plan using sound asset management.

HALIFAX WATER
2021/22 Annual Business Plan

With the planned expansion of the Environmental Management System (EMS) corporate wide starting April 1, the capacity to support EMS is being increased with the Regulatory Services department. Regulatory Services will also be increasing capacity to more effectively support the Pollution Prevention and Inflow and Infiltration (I&I) programs, as well as introduce new programs that protect the environment and Halifax Water infrastructure – a Backflow Prevention Device retrofit program and a New Account Connection Compliance program. In recognition that climate change adaptation and mitigation activities cross many projects, programs and services at Halifax Water, Regulatory Services will take the lead in development and coordination of climate adaptation and mitigation activities, promoting alignment with HaliFACT2050.

Halifax Water delivers service through four departments; Operations; Engineering and Technology Services, Corporate Services, Regulatory Services, with Administration led by the General Manager, who is responsible for overall administration of the utility. The organization structure is detailed within Section 3 and illustrated in Appendix B.

The 2021/22 fiscal year is the second year of the Five-Year Business Plan approved by the Halifax Water Board in January 2020.

2. EXECUTIVE SUMMARY

Halifax Water develops both long-term and short-term business plans for the approval of the Commission Board. The 2021/22 Annual Business Plan reflects the strategic direction in the Five-Year Business Plan (2020/21 – 2024/25) and is consistent with the updated IRP approved by the Board in November 2019.

This annual business plan reflects increased capital investment as contemplated in the updated IRP. The capital budget is \$126.2 M and with 69% of the projects arising due to the need to renew existing assets. One such example is the replacement of the Cowie Hill Reservoir, which is planned for 2021/22. Halifax Water has a major multi-year water supply enhancement program planned for the J.D. Kline (Pockwock Lake) and Lake Major water supply plants (WSPs), due to a combination of factors such as changes in source water due to lake recovery and age of some treatment plant components.

The budget provides a balanced investment in asset renewal, compliance and growth-related projects to support utility operations; but the predominant driver in each service (water, wastewater, stormwater) is asset renewal.

Halifax Water's wastewater treatment facilities are compliant with current environmental regulations, but the utility faces significant future expenditures both to maintain current and meet future compliance requirements. Halifax Water is working to develop a more detailed plan to upgrade the Halifax Harbour Solutions plants (HHSP) to meet the objectives stipulated in the federal Wastewater System Effluent Regulations by 2040, and this will be a significant area of focus in 2021/22.

HALIFAX WATER
2021/22 Annual Business Plan

Halifax Water's approach to water and wastewater treatment plant upgrades is to develop strategies that are based on thorough research and investigation of new technologies. To that end, in 2020/21, Halifax Water expanded the current NSERC Industrial Research Chair with Dalhousie to include a wastewater stream, and 2021/22 will mark the second year of the three-year wastewater research program focused on plant optimization and contaminants of emerging concern. Through the wastewater research program, in 2021/22, Halifax Water will also be supporting wastewater research regarding COVID-19. From the water perspective, research will continue on the effects of lake recovery, lead, geosmin and corrosion control; and water operations will be investigating artificial intelligence for leak detection, pressure management and optimizing distribution operations to prevent breaks.

Technology continues to transform our business and change how employees and customers can interact with the organization. Halifax Water has upgraded most customer meters to advanced metering infrastructure (AMI) and Halifax Water is now able to put water consumption data in the hands of the customer through Halifax Water's customer portal – Customer Connect. Detailed information on water consumption will allow customers to monitor their accounts for possible high consumption or leaks and will allow Halifax Water to refine its approach to water loss control to ensure it remains a world leader. In 2021/22, a second phase of enhancements will be launched to Customer Connect. Other projects such as an Employee Benefits and Training module and a new corporate Enterprise Resource Management (ERM) system will continue to drive significant organizational change. The value of technology is being proven throughout the response to COVID-19 as Halifax Water's services have continued with no impact on the quality of the service being provided.

Focusing on the environmental component of the mission, in 2021/22 Halifax Water start corporate wide expansion of the EMS, and will centralize the planning and coordination of climate change adaptation and mitigation activities, developing specific targets and actions for Halifax Water that support HalifACT 2050. Halifax Water is taking positive actions towards climate adaptation and the 2019 IRP considers climate vulnerabilities to reduce risk to infrastructure and service delivery.

Climate change mitigation is the core driver for implementation of the Cogswell District Energy System as part of the Cogswell redevelopment. This exciting initiative will lead to significant reductions in GHG emissions compared to the business as usual case for new development.

One area of opportunity is anaerobic digestion for treating residual biosolids, to generate renewable gas and continuing to process the residual biosolids into soil amendment for beneficial reuse. This could result in a reduction in conventional fossil fuel use and therefore GHG emissions further mitigating climate change.

The 2021/22 fiscal year will see continued evolution of existing programs and services with the launch of the enhanced lead service line (LSL) rebate program to enable Halifax Water to meet its goals for LSL replacement by 2039 by integrating with HRM street renewal projects and by replacing the portion of LSLs on private property at the utility's expense. A program

HALIFAX WATER
2021/22 Annual Business Plan

to promote compliance of new service connections will also be introduced in 2021/22. This program will promote disclosure and resolution of issues at the point of sale.

Customer satisfaction and employee engagement are both fundamental to success of the utility. Halifax Water is committed to continually innovate, improve, and remain cost-effective with the understanding of the importance of keeping the cost of services affordable.

From a corporate perspective, continuing to adjust and adapt in response to COVID-19 will be an on-going challenge in 2021/22. Some other significant challenges and opportunities that impact multiple departments include:

- 1. Optimizing delivery and funding of the IRP:** The current water, wastewater and stormwater rates are insufficient to meet the funding requirement identified in the IRP. The IRP acknowledges that wastewater and stormwater assets have been grossly underfunded historically. Halifax Water will have to work with other levels of government to secure infrastructure funding. Institutional capacity will have to be optimized over the term of this Business Plan in order to deliver the expected capital projects; and the processes used to plan, procure and deliver capital projects will be reviewed to achieve a target of spending 80 – 90% of the annual capital budget within the year it is approved. This is an aggressive target, given the multi-year nature and complexity of some of Halifax Water’s capital projects and the relationship to the HRM capital program.
- 2. Stakeholder consultation:** In 2021/22, Halifax Water will be consulting stakeholders on some key issues, including levels of service, to help inform asset management, the Regional Development Charge, and stormwater service delivery and rates.
- 3. Customer communication and education:** In 2021/22, customer communication and education includes the launch of Phase 2 of Customer Connect, re-design of the Halifax Water bill, refreshed stormwater customer communication, and stakeholder consultation as noted above. The review and standardization of some operations business processes, combined with continued focus on enhancing integration and functionality of existing systems, will allow Halifax Water to improve measurement of utility performance relative to customer centric service levels and will enable more proactive communication with customers.
- 4. Evidence based decision making:** The Water Loss Control program, Wet Weather Management Program, Asset Management Program, Enterprise Risk Management Program, and Water and Wastewater Research Programs are at different levels of maturity. As the maturity increases in each of these programs, integrating the information from these programs will help inform significant strategic decisions such around the Water Supply Plant upgrades, Harbour Solutions Plants upgrades, and future utility needs from an operational and information services technology perspective.

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- 5. Employee Satisfaction:** In the next five years many of Halifax Water's workforce will be eligible to retire. To compete, attract and retain top talent, in addition to providing competitive wages and benefits, Halifax Water is striving to maintain a respectful work environment where employees are fully engaged through teamwork, innovation and professional development. Continued investment in improving internal communications, talent management, training, civility and respect in the workplace, and diversity will help create the kind of work environment where our employees are engaged and provide service safely, and in a way that protects the environment, our assets, and always keeps the customer in mind.
- 6. Environmental Stewardship:** Halifax Water's IRP contains projects that will help the utility with climate change adaptation and mitigation. Recent research indicates that climate change is accelerating, as evidenced by projections of sea level rise, more intense storm events, and changing precipitation patterns. Our environmental stewardship will also be enhanced through extension of the EMS (ISO 14001) on a corporate wide basis beginning in 2021/22. The EMS will help minimize the impact our operations have on the environment, and promote compliance with applicable laws, regulations, and other environmentally oriented requirements.
- 7. Technological Investment and Strategy:** In 2021/22, Halifax Water's IT Strategic Plan will be refreshed with additional consideration of new smart technology and more sophisticated utilization of data "intelligent water". Fast paced advances in smart metering, valves and sensors are creating new opportunities for Halifax Water. Investments in core systems in 2020/21 include additional enhancements to Customer Connect, an employee benefits and training module, a new Enterprise Resource Planning system (ERP) and continued investments in foundational security projects that support cyber-security, continuity of service and protection of data.
- 8. Enterprise Risk Management:** In 2021/22, Halifax Water will be updating the corporate risk register and rolling out training to employees on the Risk Management Policy.

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The departmental strategic objectives for 2021/22 are shown below.

Operations

Wastewater & Stormwater Services

- Complete Biosolids Facility upgrade plan and progress procurement for Capital and Operations contracts
- Continue to implement Wastewater research program as per plan submitted to NSERC
- Stakeholder consultation on plan for HHSP upgrades to meet 2040 environmental compliance
- Complete Wet Weather Management projects and initiate any changes required to enable an effective private side I&I reduction program
- Communicate and implement actions from odour strategy

Water Services

- Complete Water Quality Master Plan V4
- Secure approval for water treatment plant upgrade program (strategy)
- Fully implement enhanced algal monitoring program as a permanent program
- Launch and successfully implement year 1 of the new LSL replacement program
- Implement findings from dam safety review
- Develop a roadmap for data utilization and intelligent water
- Recommend next steps for Water Loss Control program

Administration

- Obtain approval for regulations governing Cogswell District Energy System
- Update Service Level Agreement with HRM
- Roll out updated Code of Conduct to all employees
- Roll out training Risk Management Policy & update Corporate Risk Register
- Engage next Dispute Resolution Officer for NSUARB approval
- Enhance and roll out Stormwater customer communication and education
- Complete unconscious bias training for managers/supervisors and align Halifax Water with HRM culture & diversity initiatives

Engineering & Technology Services

- Optimize capital project delivery and % of annual capital budget spent
- Complete design and tender process for Burnside Depot construction
- HRM Cogswell Redevelopment infrastructure relocation
- Promote the multi-year Water Supply Enhancement Program (WSEP) and implement year 1 Clarifier design phase
- Deliver key IT projects (Cyber Security and ERP)
- Finalize levels of service for asset management, and evaluation of Asset Management Program
- Monitor and report on progress of the Integrated Resource Plan

Regulatory Services

- Implement Regional Development Charge annual stakeholder consultation process
- Phased corporate implementation of EMS
- Maintain regulatory compliance and enhance reporting
- Launch new service account compliance program
- Evaluate ISO45001 (safety) certification and complete physical security audit
- Enhance stormwater credit program and continue support of stormwater billing
- Coordinate HalifACT 2050 Halifax Water climate change adaptation and mitigation projects

Corporate Services

- Analyze impervious area data, and apply to adjust rates for stormwater service
- Integrate customer connect portal and continue to increase utilization
- Commence ERP design subject to NSUARB approval
- Update procurement policy and processes
- Improve financial forecast and reporting
- Update Cost of Service Manual and apply for NSUARB approval
- Implement new bill design and monthly billing, and improve the collection process

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In order to maintain operations and achieve the strategic objectives next year, Halifax Water will carefully manage expenditures and increase some rates. Annual revenues will need to increase with the primary focus on the capital needs driven by asset renewal. There will be no changes to water rates in 2021/22. This will be the sixth year of stable water rates – an unprecedented accomplishment, but also a reason for concern as water rate increases cannot be deferred indefinitely. Wastewater rates will increase effective April 1, 2021. This will be the first increase in wastewater rates since April 1, 2016; as Halifax Water has been able to provide stable rates for over five years. An application to adjust stormwater rates is planned sometime in 2021/22, for new rates that would probably not be in effect until sometime in 2022/23. The current stormwater rates came into effect on July 1, 2017.

Halifax Water is not alone in its quest for increasing, and more sustainable funding. Unfortunately, water, wastewater and stormwater assets have been historically underfunded throughout North America. Requirements for future rate increases are always considered in the context of customer affordability. The utility will continue with the H2O (Help to Others) Program to support low income customers; and hopes to increase the funding, awareness, and utilization of this program.

Inherent in the business activities for Halifax Water is an obligation to provide value for customers as stewards of essential services. To that end, the Business Plan highlights very formal programs to deliver efficient and effective service through Enterprise Risk Management, Asset Management, Energy Management, Wet Weather Management, and the Cost Containment Program. The Wet Weather Management program, in particular, presents an opportunity to improve service delivery at a lower cost and has already shown positive results. A structured approach is in place, which is similar to the process used by the utility for water loss control. Halifax Water is recognized as a world leader in water loss control and the corporate goal is to put wet weather management in the same category.

The 2021/22 Business Plan provides an overview of the services provided by Halifax Water and an overview of the operating and capital budgets to support the delivery of these services. The Business Plan projects an operating deficit of \$11.7 M as indicated in the operating budget summary in Table 1, and reflects the rates most recently approved by the NSUARB.

Although a loss is indicated for 2021/22, the utility has accumulated operating surplus which will be used to support continued operations until additional adjustments to rates are made.

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Table 1 - Operating Budget Summary

Operating Budget Summary (in thousands)				
	Actual 2019/20	Approved Budget 2020/21	Proposed Budget 2021/22	Increase
Operating revenues	\$ 137,750	\$ 138,618	\$ 150,466	\$ 11,849
Operating expenditures	109,326	118,110	125,379	7,269
Earnings from operations	28,424	20,508	25,087	4,579
Financial and other revenues	1,211	619	722	103
Financial and other expenditures	31,195	37,076	37,461	385
Earnings (loss)	\$ (1,560)	\$ (15,949)	\$ (11,651)	\$ 4,297

The utility faces financial pressure associated with the renewal of assets, increases in assets and customers due to growth in the municipality, and compliance with regulatory requirements, as described in the 2019 IRP and discussed in Section 5.13 of this document. Halifax Water continues to increase its investment in growth-related infrastructure and with funding from the RDC, will continue to focus on I&I reduction in the Halifax area to increase wastewater trunk sewer capacity. The capital budget provides a comprehensive investment across all asset classes of \$126.2 M as outlined in Section 4.1.

3. SERVICE OVERVIEW

3.1 Operations

The Operations Department provides water, wastewater and stormwater service and activities are organized functionally in a way that ensures that respective services are managed as systems.

3.1.1 Water Services

Water Services division activities include operating and maintaining the municipal water system “from source to tap”. The sections are organized to maintain and operate the water system as a holistic system, with managers assigned accountability for clearly defined aspects of the water system. The following water services are provided:

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- **Source Water Protection:** Is responsible for 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:** Is responsible for 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:** Is responsible for 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 35 chlorine monitoring devices and rechlorination stations.
- **Distribution System Operations:** Is responsible for operation and maintenance of the water distribution and transmission systems. The system is managed according to three geographic regions with responsibility for over 1563 km of transmission and distribution mains, 8450 fire hydrants, 85,500 service connections, 141 pressure control/flow metering facilities, 21 pumping stations, 16,000 valves and 16 water storage facilities. This also includes responding to third party requests for buried infrastructure locates.

Water Services sections are also 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 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 more than 120 peer reviewed research papers in world recognized scientific journals over the last thirteen years and has allowed Halifax Water to become industry recognized leaders in areas such as LSL replacement and biofilm control in distribution systems. Several Halifax Water employees were trained as students under the Research Chair. Halifax Water and Dalhousie were awarded a third five-year term for the Research Chair, effective April 1, 2017.

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- **Lead Service Line Replacement Program:** In 2017, Halifax Water initiated a program intended to remove all LSLs by 2050. In 2020 the NSUARB approved an enhanced LSL replacement program that will see private side service lines replaced at utility expense with a goal of completion by 2039. This year will see a focus on implementing this program.

3.1.2 Wastewater Services

The Wastewater and Stormwater Services division activities include operating and maintaining municipal systems from “drains back to the source again”. In this regard, the Wastewater and Stormwater Services division has a mandate to protect the environment while providing essential collection and treatment services to its customers. These essential services are delivered in sections that are responsible for both stormwater and wastewater activities in three regions and fourteen treatment facilities. The supervisors and the field crews carry out both wastewater and stormwater related duties.

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

- **Wastewater Treatment Facility Operations:** Is responsible for operation and maintenance of 14 wastewater treatment facilities (WWTFs) and associated infrastructure, regulatory reporting, and implementing and coordinating capital upgrades with other Halifax Water departments. As per the Wastewater System Effluent Regulations; 2 plants are classified as very large, 3 are large, 2 are medium and 9 are small capacity. The department also operates 4 additional small treatment facilities under contract from Halifax Regional Municipality (HRM) and the province.
- **Biosolids Processing:** Is responsible for liquid transport, dewatering and processing of sludge, operation and maintenance of various dewatering equipment at WWTFs, administering trucking contracts for dewatered biosolids and biosolids processing facility (BPF) operations contract, and processing of biosolids from on-site septic systems. The BPF, located at the Aerotech Industrial Park, produces a soil amendment for beneficial use in agriculture. Staff from WWTF operations carry out these related activities.
- **Collection System Operations:** Is responsible for 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 1,425 km of collection pipes, 165 pump stations, 21 combined sewer overflow facilities, and 81,803 service connections.
- **Septage Treatment Services:** This is an unregulated activity for Halifax Water, but it provides an essential service to residents who do not have a centralized wastewater service. The septage from septic hauling companies who service these users was accepted at strategic locations within the core sewer service area and at the Aerotech WWTF. With the completion of the upgrade of Aerotech WWTF in 2019,

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most of the septage has been diverted to the Aerotech WWTF from the core service area.

- **Facilities, Fleet & Logistics Services:** Is responsible to supply, maintain and repair approximately 270 pieces of mobile equipment and vehicles ranging from trailers and small utility service vehicles to large excavation, construction and transportation equipment. Replacement of vehicles and equipment on a life cycle costing basis and vehicles records management and regulatory compliance. This section also operates and maintains corporate facilities at the Cowie Hill Campus and provides logistical and services support to operations and treatment facilities to facilitate efficient operations. Targeted business process improvements for 2021-22 include implementation of vehicle fleet utilization targets and fleet rationalization to reduce operating costs, improve efficiencies and meet the recommendations from a 2019 Municipal Auditor General report on fleet usage.

3.1.3 Stormwater Services

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

- **Collection System Operations:** This section provides 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 approximately 900 km of stormwater collection pipes, 45 stormwater retention facilities and over 600 km of ditches, 2,369 cross culverts and 16,000 driveway culverts. This section provides proactive maintenance of the pipes, ditches and other systems with a goal to ensure uninterrupted flow within HW owned infrastructure. Staff also replace a driveway and cross culverts on a priority basis to manage the infrastructure with sound asset management practices.
- **Service Review:** Operations provide support to the Stormwater Engineer within the Regulatory Services department, and allocates resources 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 Halifax Water owned infrastructure. The Stormwater Engineer reviews the drainage issues and renders a position which may involve an operational fix or a capital improvement. Complaints stemming from stormwater billing are vetted through the Stormwater Engineer and a decision is provided to the Customer.

3.2 Engineering and Technology Services

The Engineering & Technology Services (ETS) 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. It is also responsible all of Halifax Water's digital infrastructure services including information management, geographic information systems and operational technology.

The ETS Department has six core areas of responsibility with eight specific operational sections delivering programs. The six core areas of responsibility are Asset Management, Infrastructure Engineering, Energy Efficiency, Engineering Information, Information Management, and Technical Services.

Asset Management: Is responsible for 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 master planning (including implementation of the IRP, and the development of the 5-Year and 1-Year Capital Budget.

Infrastructure Engineering: The Infrastructure Engineering section contains four groups that are responsible for the design, construction and project management for water, wastewater and stormwater capital projects, respectively. These four sections also provide support for capital project prioritization, master planning and asset management relating to the core infrastructure.

Energy Efficiency: Is responsible for the provision of engineering services related to energy management and energy efficiency of water, wastewater and stormwater infrastructure. At Highlighting 2021/22, this section is responsible for the development and implementation of two exciting new corporate initiatives. The first, the Cogswell District Energy System, is planned as a new regulated business unit to provide energy to proposed new buildings within the Municipalities Cogswell Redevelopment Area based on energy extracted from the warm wastewater effluent that discharges from Halifax Water's Halifax Wastewater Treatment Facility. The second, the new Biosolids Processing facility, is being strategically developed to efficiently manage the conversion of the utility's wastewater sludge into commercially viable soil amendment product and recoverable energy.

Engineering Information: Is responsible for the corporate 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.

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Information Services: Is responsible for 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 information technology (IT) related problems or requirements. The corporate desktop software is administered by the IS section. The IS section is responsible for the updating and delivery of the IT Strategic Plan including all IT project delivery services.

Technical Services: Is responsible for 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.

3.3 Regulatory Services

The Regulatory Services Department continues to support the corporation through the delivery of programs such as Environmental Engineering, Engineering Approvals, Regulatory Compliance, Safety and Security, Stormwater Engineering and EMS.

Environmental Engineering: Is responsible for two key programs, Pollution Prevention (P2) and the private side I&I reduction. The group also provides support for updating Nova Scotia Environment (NSE) permits to operate, water withdrawals and oversees projects related to contaminated sites and impacts to Halifax Water's infrastructure.

Pollution Prevention: Is responsible for promoting compliance of waste discharges with the Rules and Regulations, through education and inspections. The P2 group coordinated the repairs of three cross connections (customer connections where the stormwater and wastewater discharges are crossed) this past year and are investigating and finalizing three more. Of note, customer premise inspections were impacted by COVID-19 restrictions and some follow ups with customers were delayed.

Inflow and Infiltration: The I&I group assists the Wet Weather Management Program (WWMP) in locating and addressing private side sources of I&I of stormwater into the wastewater systems.

This past year two key areas targeted for private side stormwater disconnection were associated with the capital projects on Wanda Lane and Tobin Drive where the existing sanitary system was converted to a dedicated stormwater system and a new wastewater system was installed. As well as the coordination of the disconnection of the downspouts associated with the sewer separation project on Bayers Road/Federal Avenue/Romans Avenue, it is anticipated these disconnections will be completed in Q1/Q2 of 2021/22.

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This coming year, the group will be undertaking private site investigations and coordinating customer connection repairs and adjustments in support of the following target areas for the WWMP:

- Hornes Road,
- Fish Hatchery area,
- Eastern Passage and
- Loon Lake

The P2 and I&I groups are getting established with CityWorks to better manage and track work orders and enhance their ability to use data from operations to locate sources of system issues.

Regulatory Compliance: Is responsible for 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 NSE. Similar sampling is completed for wastewater effluent parameters for compliance with permits issued by NSE, consistent with federal regulations. The group is also tasked with compiling and submitting reports associated with the sampling results to NSE.

Regulatory Compliance is working with the Water Quality group to implement new permit tracking and data management and reporting software to replace WaterTrax as part of the IT Strategic Program. A vendor has been selected and implementation of the new software is anticipated in Q3 of 2021-2022.

Nova Scotia Environment (NSE) Permits: As noted, Environmental Engineering coordinates the renewals or amendments, the following were requested this past year and received approval this past year:

- Water Course Alteration for maintenance at the Lake Major Dam,
- Minor amendments were obtained for the permits to operate Lake Major, Bennery Lake, Collins Park, and Middle Musquodobit,
- Renewal of the Silver Sands water withdrawal permit,
- Renewal of the Lake Lamont water withdrawal permit,
- Amendments to Halifax, Dartmouth and Eastern Passage Wastewater Treatment Facilities to allow for Seasonal Disinfection full time annually between November 1 and April 30,
- Variance approval for Herring Cove to allow for Seasonal Disinfection for 2020/21 between November 1 and April 30,
- With the decommissioning of the Miller Lake WSP, the permit to operate was extinguished and the distribution system merged with the Pockwock system.
- Bomont WSP is currently being upgraded and is anticipated to be completed Q1 of 2021/22. Staff will consult with NSE upon completion of the project as

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to whether amendments are required to the permit to operate and proceed accordingly.

The following were submitted and pending review:

- Bennery Lake water withdrawal permit;
- Chain Lake water storage and withdrawal renewal.

Staff are currently completing the following for submission in 2021-2022:

- Pockwock Lake water withdrawal renewal;
- Tomahawk Lake water withdrawal expires June 2022. The Tomahawk and Pockwock permits are 50 years old and through conversations with NSE, staff are confirming format and scope of the withdrawal application. A major consideration in this assessment will be whether withdrawal from Tomahawk is anticipated with the next ten years to supplement withdrawals from Pockwock. Staff will review the outcome of the hydrological assessment for Pockwock Lake within Q1 of 2021/22 and confirm any withdrawal requirements from Tomahawk are anticipated and follow up with NSE on the permit renewal requirements.
- Steeves and Eastern Passage WWTFs renew permit to operate;
- Amendment to the carrion control requirement within the Five Island Lake WSP permit to operate;
- Ongoing management of the storage tank registration and certification process.

Engineering Approvals: Is responsible for reviewing extensions of existing infrastructure, requests for new service connections, and enforcement of Halifax Water's design standards and specifications. The Engineering Approvals group continues to be engaged with HRM as the municipality implements its Regional Plan. In particular the group provides technical support and review on the servicing requirements to facilitate its Centre Plan, Master Plan communities such as Port Wallace and overall new serviced development within the municipality's serviced boundary.

The Engineering Approvals group recently submitted an application for the update to the Regional Development Charge (RDC) based on the 2019 Infrastructure Master Plan. A public hearing was held in June 2020. It is anticipated the charge will be in effect by Q1 of 2021/22 and the group will be tasked with implementation and communications with the development community.

With the RDC decision that was issued in October 2020, several annual reports were identified to be submitted starting September 2021. The reports will require coordination with other internal business units and are to incorporate outputs from stakeholder engagement and include the following topics:

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- Wet weather management program,
- Asset management program,
- Stormwater management efforts,
- Benefit to Existing methodology,
- Annual review of the RDC, in the context of whether a +/- 15% change in the charge, occurred based on the core inputs.

The decision also outlined the requirements for analysis and reports being completed before the next five-year update to the RDC and the framework for some of the requirements will commence this year as part of the Infrastructure Master Plan update and others will commence this year independent of that project:

- Develop a new Industrial/Commercial/Institutional (ICI) cost allocation methodology,
- Identify potential water Demand Side Management (DSM) initiatives,
- Update the Compliance Plan to identify details and timing of the upgrades to secondary treatment for the Harbour Solutions WWTFs. Inclusive of a planning analysis of the growth impacts on the wastewater strength and removal efficiencies required to achieve both transitional and WSER standards. (A terms of reference document is to be submitted to the NSUARB by June 1, 2021, with status updates on the broader requirements be submitted annually, starting September 2021).
- Monitor the ratio of building type between single unit and multiple unit dwellings.
- Develop the framework and work plan to evaluate the ICI RDC rate using the Residential Equivalent Unit (REU) methodology as outlined in the AWWA Manual M1.
- Determine and collect the data required from HRM Development Services and development Community to develop a new ICI RDC methodology. (Status updates are required, starting September 2021).
- Complete a comprehensive study of the biosolids challenges and most cost-effective solutions. (Status updates are required, starting September 2021).
- Evaluate the most cost-effective solution for sewer separation projects, including the results in the capital budget submission to the NSUARB. This work will be completed by Engineering.
- Complete a comprehensive study of the Mill Cove WWTF. This work will be completed by Engineering.

A recent requirement of the permits to operate water supply systems, NSE is requiring a cross connection control program be developed to protect the potable water supply system from possible back flow events with industrial, commercial, institutional, and agricultural

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customers. Halifax Water currently has a cross connection control program, and, commencing in Q1 of 2021/22, will expand the current program requiring all ICI customers to install a back-flow prevention device in their buildings. It is anticipated the retrofit program will span two years.

In keeping with the IT Strategic Plan to replace the Service Approvals Module, Halifax Water has been coordinating with HRM to replace their permitting software, HANSEN with POSSE and use this software as the Service Approval Module replacement. The roll-out of POSSE occurred in Q3 of 2020/21, and it is anticipated the full implementation will take place by Q1 of 2021/22.

Safety and Security: The Safety and Security section is responsible to provide 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 conduct their daily activities and manage risk to the utility.

The Safety and Security section is also responsible for the development and update of the corporate Emergency Management Plan (EMP) including emergency response training. The group commenced broadening the current EMP to consolidate the response plans for each facility and establish a framework for the EMP to be accessible electronically. This work will continue into the coming year, with completion anticipated in Q3 2021/22.

As well, Halifax Water continues to participate in Public Safety Canada's Regional Resilience Assessment 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. Over the coming year, capital improvements will continue to enhance the physical security and staff will issue a request for proposal to develop an overall plan to document and make recommendations on the physical security profile at various facilities.

With the planned corporate expansion of EMS, the group will commence, in Q4 2021/22, the process to align the safety program with the ISO 45001 standard and seek certification in 2022/23.

Stormwater Engineering: Is responsible for reviewing drainage complaints, supporting Wastewater and Stormwater Operations, review of stormwater billing appeals, liaising with HRM on the joint Stormwater Policy and implementation of the National Disaster Mitigation Plan (NDMP).

With the approval of the stormwater credit program in 2017, there have only been six applications processed to date. The group is developing a plan to proactively engage with new customers when they complete their development and initiate their stormwater accounts. It is anticipated this program will be in place by Q3 of 2021/22.

The group is also providing technical support to the updating project for the Impervious Area. This project will be completed Q4 of 2020/21.

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Environmental Management System: ISO 14001 is an international standard for Environmental Management Systems (EMS) essentially it is a system of procedures, records and process to manage environmental issues and assist with regulatory compliance. It also makes day to day operations more sustainable and engages employees in these operational activities. The EMS program can be audited against ISO 14001 standards, and if found to comply, receives a Certification through ISO. The ISO standard has a focus on organizational leadership and identification of risks and the associated influences, both internal and external to an organization.

The benefit of implementing an EMS is that it drives a process of continual improvement towards meeting defined environmental goals and objectives. Minimizing environmental impacts becomes one of the defined primary goals, and standard processes are put in place to identify issues and direct improvements through documented standard operating procedures. The standard pertaining to EMS is 14001- 2015 and requires an organization to:

1. Establish an environmental policy.
2. Identify environmental aspects that can impact the environment.
3. Identify our applicable Compliance obligations legal and regulatory requirements.
4. Set appropriate environmental objectives and targets.
5. Establish programs to implement our policy, achieve objectives and meet targets.
6. Periodically audit and review activities to ensure that the policy is complied with and the environmental management system remains appropriate.
7. Be stewards of the environment and local community.
8. Be capable of adapting to changing circumstances.

The group responsible for the implementation and maintenance of the EMS and oversees the adherence to the ISO 14001 – 2015 standard for our certified facilities at Pockwock, Lake Major, Bennery Lake, and Herring Cove, and Dartmouth WWTFs. Halifax, Eastern Passage and Mill Cove WWTFs recently underwent audits and the results of their certifications are pending.

Halifax Water has commenced the expansion of the corporate EMS program. Internal audits are scheduled for February 2021 for Regulatory Compliance, Aerotech WWTF and Small Systems for both Water and Wastewater. External audits will be scheduled in Q1 of 2021-2022 and other business units will be engaged for further expansion of the program. It is anticipated to span into 2024-2025.

3.4 Corporate Services

Corporate Services: Consists of 5 sections, with service to internal and external customers through Finance, Accounting, Procurement, Customer Care, and Metering and Billing.

Finance: Is responsible for development of operating budgets, funding plans for the capital budget, rate applications and financial modeling for business plans. This group assists E&IS in preparing the capital budgets and confirms the availability of funding sources. The group is responsible for forecasting revenues and expenditures, including associated trend analysis, administering the pension plan, internal control testing, and quality assurance activities around financial transactions including payroll.

Accounting: Is responsible for timely and accurate financial reporting, financial accounting, fixed asset accounting, financial analyses, and preparing the financial statements. This group is also responsible for revenue budgeting and developing cash flows, developing, and implementing accounting procedures and internal controls, and coordinating and supporting the annual audit. Accounting also assists Finance and ETS in preparing the capital budgets.

Procurement: Is responsible for planning and delivering procurement services to the organization ensuring compliance with corporate policies, legislation, and trade agreements. This section develops and implements reporting and monitoring systems, programs and procedures for inventory and procurement. Procurement also supports and guides internal departments in the acquisition of goods, services, and construction to meet Halifax Water's objectives and capital programs.

Customer Care: Is responsible for managing customer contacts, establishing corporate customer service standards, goals, and objectives, and coordinating the improvement of business processes in Customer Care and other departments.

Metering and Billing: Is responsible for installing, maintaining, reading, sampling, and testing meters, establishing standards, and billing customers in a timely and accurate manner.

The most significant objectives for Corporate Services in the 2021/22 fiscal year are:

- Improve financial forecasting and reporting to better enable internal and external users of financial information to make decisions.
- Enterprise Resource Planning (ERP) system replacement – In late 2019/20 Halifax Water established a project team to begin planning an upgrade to the ERP system. A preferred system has now been selected. The project is undergoing the approval process and is expected to begin implementation early in 2021/22 with completion in the following year. This project will impact almost all business processes and employee groups.

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- Update the impervious area used for stormwater billing, and business processes to ensure impervious area is captured and billed accurately.
- Complete the Customer Connect - Advanced Meter Infrastructure (AMI) Project. The project was approved by the NSUARB on October 6, 2016 and is substantially completed. There are approximately 2,000 meter installs remaining for the 2020/21 fiscal year. All remaining non-AMI meters will be billed a meter read fee.
- A new telephony system was implemented in February 2020. In 2020/21, the Customer Care business process review will continue to identify opportunities to further improve the current Customer Relationship Management System (Cayenta), performance reporting, knowledge base and scripts for customer care representatives, and workflow and integration with the Computerized Maintenance Management System (CMMS). These will be underpinned by the introduction of a customer care quality program starting with call contact and eventually spanning all means of customer contact (email, face to face etc.) Customer Connect was implemented in 2020. In 2020/21, Customer Connect will continue to be enhanced and customers will be able to access information about their water consumption, water saving tips, account information and billing characteristics, and conduct some business on-line with on-line service requests, bill presentment and bill payment.
- The business case and process to implement monthly billing for customers that are currently billed on a quarterly basis will be finalized in 2020/21, with a view to implement monthly billing by the end of the first quarter of 2021/22.
- Halifax Water will update the Cost of Service Manual and submit to the Nova Scotia Utility and Review Board for approval.

3.5 Administration

General Managers' Office: Is responsible for overall administration of the utility. Some initiatives led by the General Manager's Office include governance, business planning, public and stakeholder relationships, and employee relations. Communications, Legal Services and Human Resources fall directly under the General Manager's Office.

Communications: Is responsible for external and internal communications, maintaining the internet and intranet sites, media relations, social media, and providing support to operations and capital delivery to ensure the public is kept informed of significant projects, service disruptions, and initiatives.

Legal Services: Includes the legal function, corporate records management, FOIPOP administration as well as land administration. The General Counsel acts as the Corporate Secretary to the Halifax Water Board and helps ensure that board governance processes function smoothly.

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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.

3.6 Unregulated Business

Halifax Water conducts some lines of business that are ancillary to the core water, wastewater and stormwater services. These activities include leasing of land for telecommunications, cell phone and radio towers, and some energy related initiatives such as leasing land for wind turbines at Pockwock and generating electricity through in-line turbines in the water system. The most material lines of un-regulated business are treatment of septage from waste haulers dealing with private septic systems, treatment of airline effluent. Halifax Water also can provide some services such as contract operations, consulting or leak detecting on a fee for service bases. Unregulated business is conducted for the benefit of the regulated rate base.

4. BUDGET SUMMARY

4.1 Capital Budget

Halifax Water's 2019 Integrated Resource Plan (IRP) identifies a 30-year capital investment plan valued at \$4.05 billion (\$2.69 billion net present value). The Capital Budget is developed based on the 2019 IRP. This 30-year plan provides a strong vision for the infrastructure required to ensure the long-term integrity of the utility's assets. The 2021/22 Capital Budget includes many projects from the IRP that will begin to shape the overall direction of the capital plan for years to come.

The capital budget program focuses on providing required infrastructure for asset renewal, regulatory compliance, and growth, and helps ensure that Halifax Water continues to provide services in a cost effective and efficient manner with a focus on long-term sustainability. Mitigation of operational risks as well as climate change adaptation and mitigation are also taken into consideration when the Capital Budget is developed.

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

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Appendix C contains the proposed Capital Budget for Halifax Water for the fiscal year April 1, 2021 to March 31, 2022. It includes projects for Water, Wastewater, and Stormwater service delivery with a total value of \$126.2 M, as demonstrated in Figure 1 below.

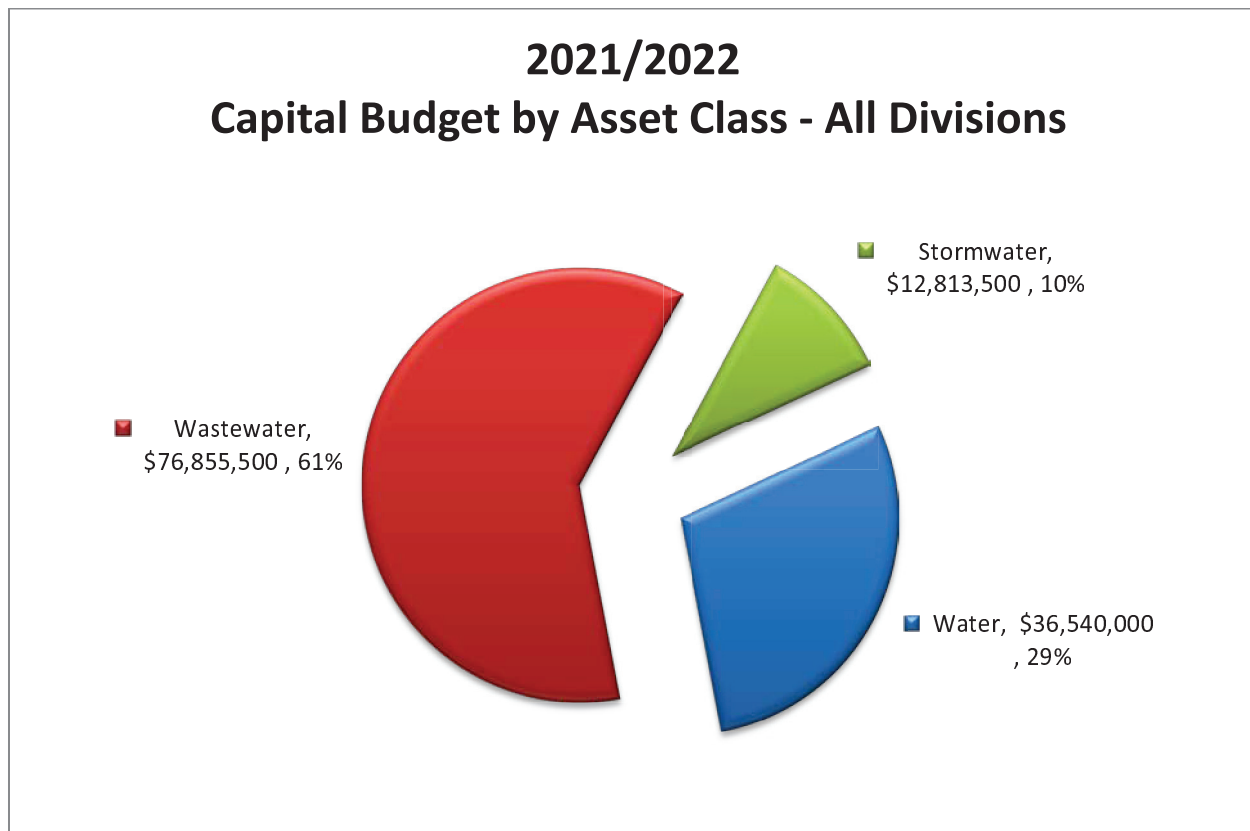


Figure 1 - Capital Budget by Asset Class

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Water

The 2021/22 capital budget for WATER assets identifies the start of a significant reinvestment in Water Supply Plants (WSP) with the introduction of the Water Supply Enhancement Program (WSEP).

The JD Kline and Lake Major Water WSPs are entering a period of wholesale capital renewal, upgrade, and enhancement, which is planned to occur over the next 10 years. These changes are being driven by operational risks due to climate change, lake recovery, obsolescence, end of asset life, and ongoing treatment plant performance issues that have converged into the present-day operating conditions. In terms of recent water quality events, the presence of taste and odour compounds (e.g. geosmin), coupled with algal matter and algal toxin risk is at the forefront of the evolving treatment process needs for the utility.

The development of the capital plans for each WSP has been progressing over the last two years. These capital plans have developed the needs, scope, concept level cost estimate, and priority of major projects to be completed at each facility. Such projects are primarily beyond the scale of small and medium projects which have been ongoing at these facilities in recent years.

The Lake Major and JD Kline facilities have many common elements including technical challenges, management expectations, project team staffing, and overall project approaches. Therefore, the two WSP capital programs are being integrated into an overall WSP capital program in order to prioritize, sequence, gain synergies, and reduce overall costs by considering the modifications as one complete program. Together, these projects represent the largest value capital investment programs for water treatment infrastructure in the history of the utility. The overall Water Supply Enhancement Program includes 15 projects: 10 at the JD Kline WSP and 5 at the Lake Major WSP. The estimated total capital cost of the ten-year WSEP program is currently estimated at \$230 M.

The need for this program is directly connected to the continued provision of water from the utility's two largest treatment facilities meeting quantity and quality objectives.

The value of the overall WATER capital budget for 2021/22 is \$26.3 M. The major capital projects within this asset class for 2021/22 implementation includes:

- WSEP – JD Kline and Lake Major Clarifier Design
- Cobequid Road Transmission Main Looping – Windgate Drive Extension
- Water Distribution – Main Renewal Program
- Lead Service Line Replacement Program
- Cowie Hill Reservoir - Replacement
- HRM Cogswell Redevelopment – Water Transmission Main Relocation

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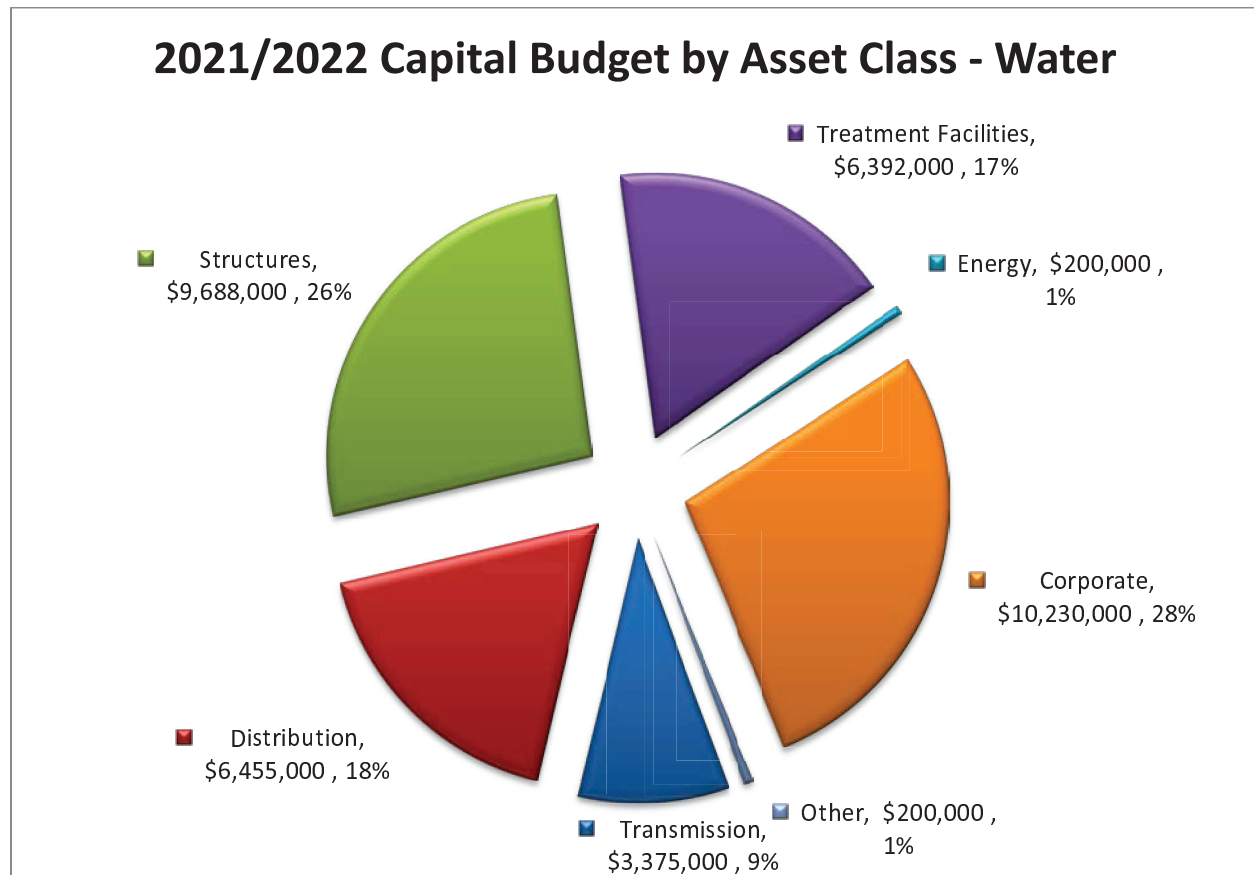


Figure 2 - Water Capital Budget

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Wastewater:

The value of the WASTEWATER capital budget for 2021/22 is \$64.78 M. The major capital projects within this asset class for 2021/22 implementation includes:

- Fairview Cove Trunk Sewer – Tunnel Construction
- Wastewater System – Trenchless Rehabilitation Program
- Integrated Wastewater Collection Projects
- Albro Lake Watershed Separation
- Morris Lake and Russell Lake Force mains – Rehabilitation
- Pumping Station Rehabilitations
- Punch Bowl Pumping Station Elimination
- Halifax WWTF – Fine Screen Replacements and Clarifier Upgrades
- HRM Cogswell Redevelopment – Wastewater Sewer Relocation
- Biosolids Processing Facility – Preliminary Design

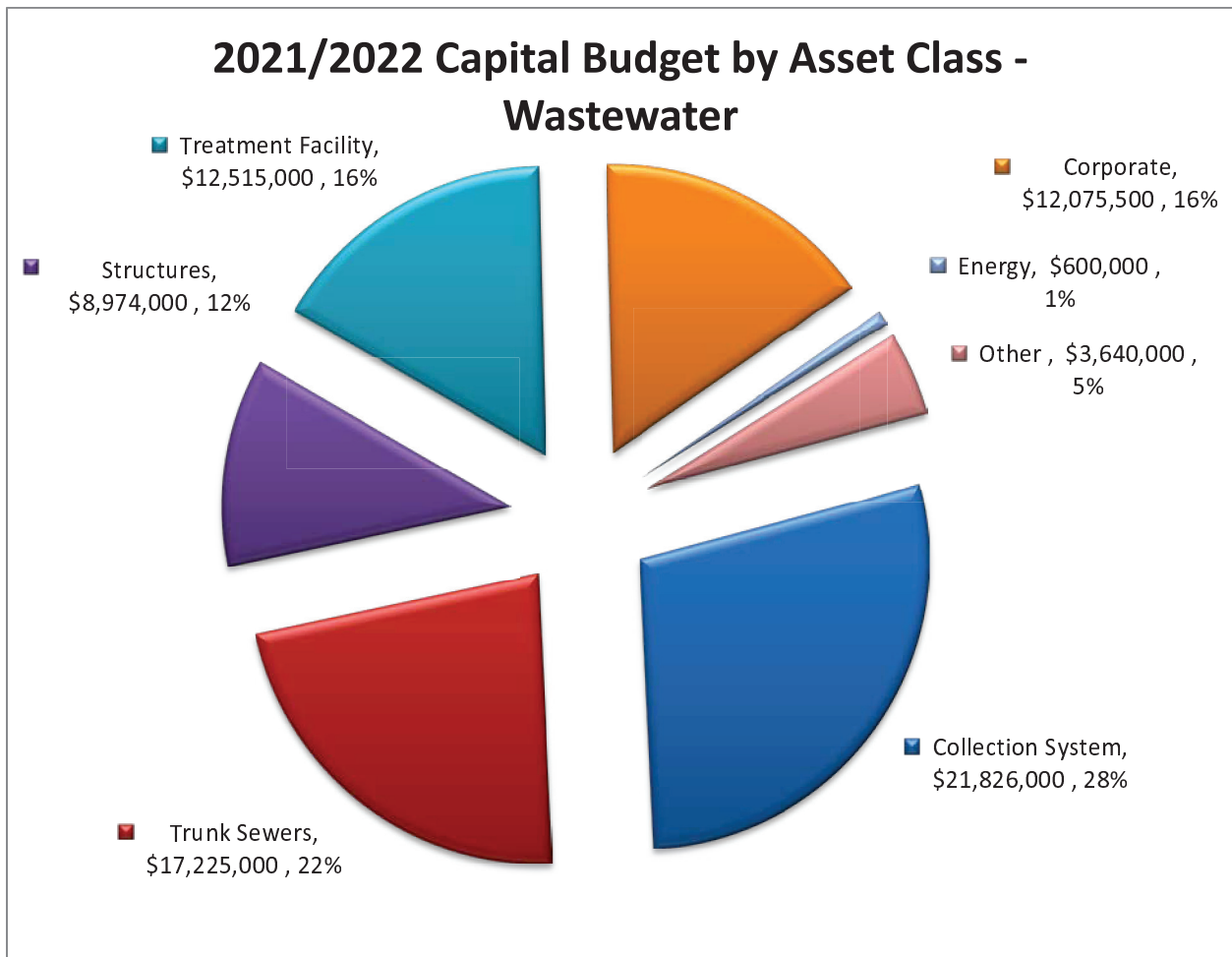


Figure 3 - Wastewater Capital Budget

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Stormwater:

The value of the STORMWATER capital budget for 2021/22 is \$10,764 M. The major capital projects within this asset class for 2021/22 implementation includes:

- Integrated Stormwater Collection Projects
- Driveway and Cross Culvert Renewal Program
- Ellenvale Run Retaining Wall System Replacement – Phase 5
- HRM Cogswell Redevelopment – Storm Sewer Relocation

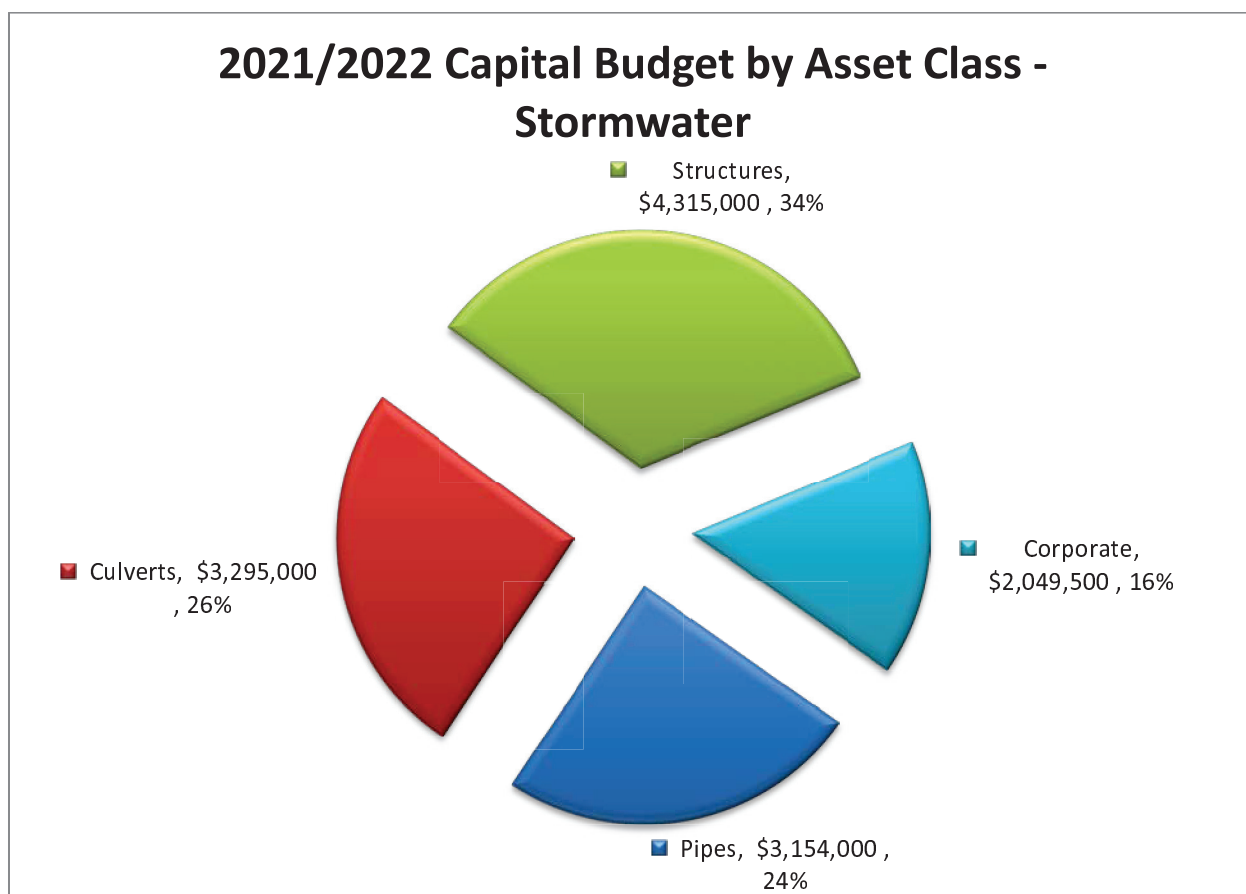


Figure 4 - Stormwater Capital Budgets

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Corporate Projects:

The value of the CORPORATE capital budget for 2021/22 is \$24,355 M. The major capital projects within this asset class includes:

Major Corporate Projects for 2021/22 implementation include:

- IT Strategic Plan Implementation Year 4
 - Enterprise Resource Planning Solution
 - Cybersecurity Program
- Corporate Flow Monitoring Program
- Detailed Design of Burnside Operations Facility
- Fleet Upgrade Program

The 2021/22 capital budget does not include the Cogswell District Energy project. If that project proceeds, it will have a separate capital budget which would be brought forward to the Halifax Water Board in conjunction with the business case and recommendation to proceed as a separate regulated utility. This discussion is targeted for March 2021.

BUDGET IMPLICATIONS

The funding plan for the proposed Capital Budget is shown in Table 2 below:

Table 2 - 2021/22 Proposed Capital Budget

2021/2022 Capital Budget Funding Sources		
Water:	Depreciation	\$12,275,000
	Debt	\$21,005,000
	RDC	\$1,238,000
	External Funding Building Canada & CWWF	\$2,022,000
	Capital Cost Contributions	\$0
	TOTAL	\$36,540,000
Wastewater:	Depreciation	\$16,673,500
	Debt	\$36,192,000
	RDC	\$22,472,000
	External Funding HRM	\$1,326,000
	Capital Cost Contributions	\$192,000
	TOTAL	\$76,855,500
Stormwater:	Depreciation	\$1,953,500
	External Funding HRM	\$256,000
	Debt	\$10,604,000
	TOTAL	\$12,813,500
TOTAL CAPITAL FUNDING:		\$126,209,000

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4.2 Operating Budget

The operating budget prepared for 2021/22 is based on year two of the Five-Year Business Plan submitted to the Halifax Water Board in January 2020. The operating budget is built based on rates currently approved by the Nova Scotia Utility and Review Board. Table 3 below outlines the operating budget for 2021/22 which shows a projected deficit of \$11.7 M. The budget reflects requirements to maintain current levels of service, deliver projects already in progress or approved, and address any changing environmental or regulatory requirements. The detailed 2020/21 Operations Budget is contained in Appendix C. A summary version of the Operations Budget is shown in Table 3 – Operating Budget Summary.

Table 3 - Operating Budget Summary

Operating Budget Summary (in thousands)				
	Actual 2019/20	Approved Budget 2020/21	Proposed Budget 2021/22	Increase
Operating revenues	\$ 137,750	\$ 138,618	\$ 150,466	\$ 11,849
Operating expenditures	109,326	118,110	125,379	7,269
Earnings from operations	28,424	20,508	25,087	4,579
Financial and other revenues	1,211	619	722	103
Financial and other expenditures	31,195	37,076	37,461	385
Earnings (loss)	\$ (1,560)	\$ (15,949)	\$ (11,651)	\$ 4,297

Halifax Water's operating budget is sensitive to many factors including the rate of capital project delivery, interest rates, weather, water consumption, and customer growth. Some of the primary operating budget drivers and assumptions are:

REVENUES:

As shown in Table 3 - Operating Budget Summary, operating revenues are budgeted to increase by \$11.8 M to \$150.5 M in 2021/22 compared to the 2020/21, representing an increase of 8.5%. Financial and other revenues are budgeted to increase by \$0.1 M or 16.7% to \$0.7 M compared to 2020/21.

The current rates for water and wastewater service have been unchanged since April 1, 2016. The volumetric rate for wastewater discharge is set to increase on April 1, 2021 to \$2.073/m³ from \$1.753/m³ which is the main driver for the increase in revenue for the 2021/22 budget. The current rates for stormwater service came into effect July 1, 2017

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(revenue requirements for stormwater service did not increase, but the rate design changed).

Most of Halifax Water's revenues come from rate-regulated activities, with approximately 68% of water, wastewater and stormwater revenues coming from volumetric rates and 32% from base charges.

Operating revenues are budgeted to be \$11.8 M more than the 2020/21 budget, based on the following assumptions:

- Volumetric water and wastewater revenues are based on projected actual consumption for 2020/21 with no decrease projected. For the first eight-months of 2020/21, consumption was down 1.70% from the prior year and up 0.06% from budget. This is attributable to many factors including changing consumption patterns due to COVID-19, growth in customers, improved meter accuracy, and weather conditions.
- Fire protection rates have increased as of October 1, 2020 leading to an increase of \$0.1 M as compared to the 2020/21 budget.
- Stormwater revenues are budgeted based on 2020/21 stormwater water revenues. Updating of impervious area is on-going. As the project is completed there is an expected increase in the impervious area, however, the impact on revenue cannot be determined.
- Other wastewater service revenue, including septage tipping and dewatering are comparable to the 2020/21 budget.
- The projected increase in new customers is 638 which are allocated to various meter sizes based on a review of connection history.

Operating revenues are very sensitive to changes in consumption. Halifax Water has experienced net metered consumption decreases of 24.9% since 2001/02. On average, the annual reduction is 1.56% which has been managed through changing rate structures, diversifying revenues (stormwater with a different billing determinant), controlling costs, and increasing rates.

Timing of development, form of development and new customer growth is difficult to predict. Water consumption is sensitive to a combination of factors including development activity, customer growth, weather, and economic pricing signals. Halifax Water manages the risk of decreasing consumption by making prudent assumptions when preparing budgets and financial models.

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Alternative Revenue: Revenues from unregulated business activities are expected to remain stable in 2021/22. Unregulated revenues help to pay for some expenses which would otherwise be funded by rate-regulated activities and are also used to fund unregulated expenditures.

Unregulated revenues are projected to be \$1.1 M in 2021/22, which is comparable to the 2020/21 budget.

EXPENDITURES:

Halifax Water's 2021/22 Operating Budget is reported on a modified accrual basis, except for the liability for future employee benefits (pension) which is excluded from revenue requirements for rate making purposes, which is consistent with prior years.

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

As shown in Table 3 - Operating Budget Summary, operating expenditures are budgeted to increase by \$7.3 M to \$125.4 M in 2021/22 compared to the 2020/21, representing an increase of 6.2%. Financial and other expenditures are budgeted to increase by \$0.3 M or 1.0% to \$37.5 M compared to 2020/21.

The largest components of Halifax Water's operating expenditures are salaries and benefits, energy, debt servicing, depreciation, and chemical costs. Key assumptions in each of these areas are outlined below:

Salaries and Benefits: The budget for 2021/22 includes an increase of 20.75 full-time equivalents positions. The net impact of the new positions on the 2021/22 operating budget is \$1.7 M, with a portion of the total cost being recovered from capital projects.

The annual increase included in the operating budget for existing employees is based on the non-union salary policy, and unionized wages are based on collective agreements signed in June 2019. Salary and wage assumptions also include an allowance for band adjustments, step increases, and re-classifications of positions.

For the first time, Halifax Water has incorporated a vacancy factor in developing the 2021/22 operating budget. The purpose of the vacancy factor is to reduce operating expenditures to reflect situations where delays are experienced in filling vacant positions. Vacancies result when employees move to other positions within the organization or are terminated or retire. The estimated impact of the vacancy factor related to the 2021/22 operating budget is a cost reduction of \$0.4 M (including benefits).

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Energy: Assumptions respecting electricity, fuel, oil, and natural gas rate increases are outlined below. The change reflects the change in consumption and an estimate of potential price increases, if appropriate.

- Electricity – 3.0% (2020/21 increase of 3.0%)
- Furnace Oil – 0.0% (2020/21 increase of 3.0%)
- Natural Gas – 10.0% (2020/21 increase of 10.0%)

Debt Servicing: New debt principal and interest payments are budgeted to support the 2021/22 additions to utility plant in service. The amount and timing of the increases will be determined by the completion of the projects, financing rates and options available. It is estimated total debt servicing will decrease to \$30.6 M in 2021/22 compared to \$30.9 M in 2020/21, representing a \$0.3 M or 1.1% reduction. This is reflective of the timing considerations respecting the incurrence of new debt and lower financing rates currently available through the Municipal Finance Corporation. Halifax Water's capital financing strategy is designed to maintain a debt service ratio of 35% or less. The debt service ratio based on the 2021/22 operating budget is 20.3%

Depreciation: As Halifax Water's assets and future capital budgets increase so does depreciation. Depreciation is an integral funding source to support renewal of existing infrastructure, new infrastructure and upgrades to meet future requirements related to servicing demands and changing environmental regulations. Depreciation is projected to increase from \$27.4 M in 2021/22 budget to \$30.8 M in the 2021/22 budget, an increase of \$3.4 M or 12.6%. For the purposes of the 2021/22 operating budget, depreciation is calculated on rate-funded water, wastewater and stormwater assets. Depreciation expenses related to assets funded from other contributions such as Capital Cost Contributions, Regional Development Charges, and external and other is not considered an expense for rate calculation. The NSUARB has approved the phase in of depreciation on contributed stormwater assets, and currently 25% of the depreciation expense related to contributed stormwater assets is include in the stormwater rates. In a future rate application, Halifax Water may request permission to phase in depreciation on contributed water and wastewater assets.

Chemical Costs: Chemicals are tendered annually in January for optimal pricing. Chemical consumption changes and price increases result in a 5.0% increase in chemical costs for 2021/22 (2020/21 increase 5.0%).

ACCUMULATED SURPLUS (DEFICIT):

The accumulated operating surplus (deficit) [based on the NSUARB Accounting and Reporting Handbook for Water Utilities] as at March 31, 2022 is projected to be \$15.3 M, which consists of the accumulated operating surplus for the 2019/20 fiscal year, projected results for 2020/21 based on forecasting to December 31, 2020, and a budget deficit of \$11.7 M based on the 2021/22 operating budget. Table 4 below summaries the continuity of the accumulated surplus (deficit) year-over-year, by service area.

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Table 4 - Continuity Schedule - Accumulated Surplus (Deficit) - NSUARB

	Total	Water	Waste water	Stormwater
2019/20 Fiscal Year				
Balance, beginning of year	\$ 39,616,338	\$ 17,230,564	\$ 14,717,365	\$ 7,668,409
Earnings (loss) for the year	(1,562,011)	5,204,828	(5,037,296)	(1,729,543)
Surplus, end of year	38,054,327	22,435,392	9,680,069	5,938,866
2020/21 Fiscal Year				
Balance, beginning of year	38,054,327	22,435,392	9,680,069	5,938,866
Projected (loss) for the year	(11,113,000)	(1,158,000)	(6,706,000)	(3,249,000)
Projected surplus, end of year	26,941,327	21,277,392	2,974,069	2,689,866
2021/22 Fiscal Year				
Balance, beginning of year	26,941,327	21,277,392	2,974,069	2,689,866
Projected (loss) for the year	(11,651,000)	(5,221,000)	(1,518,000)	(4,912,000)
Projected surplus (deficit), end of year	\$ 15,290,327	\$ 16,056,392	\$ 1,456,069	\$ (2,222,134)

Halifax Water targets to maintain an accumulated operating surplus of 3% of total expenditures (operating and financial) to mitigate risk and to help smooth the timing and impact of rate increases. Accumulated operating surplus can be used to offset operating losses, or to fund future additions to utility plant in service, subject to NSUARB approval. Based on the projected financial position as at March 31, 2022, the projected accumulated surplus of \$15.3 M represents 9.4% of total expenses.

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 currently estimated at 1.1% of median household income in 2021/22.

5. STRATEGIC INITIATIVES AND PROGRAMS

5.1 Asset Management and Levels of Service

With the well-established Asset Management Plan (AMP), Halifax Water is focusing asset management (AM) efforts on implementing recommendations, ongoing efforts to enhance supporting data and practices, and expanding the asset classes covered by the Asset Management Implementation Teams (AMITs). 2021/22 will see all designated asset classes participating in the AMIT efforts.

The AMITs are regular meetings with participants from multiple departments and work groups (Operations, Engineering and Regulatory Services) facilitated by AM staff. These meetings are a forum for reviewing the AMP, AMP recommendations, and determining actions needed to inform operational and capital interventions for the asset class. To

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support the work of the AMITs, AM staff will continue to improve AMP data, expand efforts for condition assessments, and resolve data discrepancies and gaps in GIS.

Early in 2020/21, the Executive Team began a review of the utility's levels of service (LOS) statements and metrics. The work to date enabled updates to customer values / service criteria (Quality Water, System Performance, Service Value, and Customer Service), development of the Customer/Corporate LOS statements (What the customer/corporation gets) and Technical LOS statements (What we do / How we do it). Future work into 2021/22 will allow staff to further update the Operational Indicators (How we know we perform the service well/how do we know we achieve stated LOS), confirm or define the Service Standards (How we measure our performance), define targets (what must be measured) and data availability (is the data available today). Following this work, the AM team will develop a program for filling the defined any data gaps.

Halifax Water is commencing a reassessment of the overall AM Program. The project will use the Federation of Canadian Municipalities (FCM) Asset Management Readiness Scale (AMRS) assessment tool. This will involve individual assessments of the program by members of the Executive Team followed by group assessments in facilitated workshops. The outcome of the assessment will be benchmarked against assessments completed in 2020 by staff from the PEMAC Certified Asset Management Professional (CAMP) program. The outcome of the project will be an updated AM Roadmap to move us into the next five-year horizon.

2021/22 is mid-cycle for the long-term planning process. Coming out of the 2019 Infrastructure Master Plan (IMP) and the 2019 Integrated Resource Plan (IRP), there were recommended supporting studies identified for completion prior to the next round of master planning. Several of these supporting studies are earmarked for completion in 2021/22.

Key data collection programs will be updated this fiscal year. These include the sewer inspection program and the corporate flow monitoring program. Both of these are in progress for updated contracts that allow for summer 2021 start.

5.2 Climate Resiliency

In recent years, the impacts of climate change have exposed vulnerabilities for Halifax Water assets. Halifax Water has adapted a Climate Change Management Framework to identify vulnerabilities to existing and planned assets, evaluate the risks, plan and implement an adaptation strategy.

Halifax Water is currently undertaking the Vulnerability to Climate Change Risk Assessment pilot project to identify vulnerabilities and risks to the Water Supply Plant and Water Supply Dams asset classes. This project addresses the Assessment Stage of the three-stage Climate Change Management Framework. The pilot will:

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- Identify the ISO 31000 compliant risk assessment methodology that Halifax Water will use. This will standardize the language of climate risk that Halifax Water will use across the utility.
- Identify and assess climate risks to existing water supply assets.
- Identify and assess climate risks to future assets (beginning with water supply plants) so they can be incorporated at the earliest possible design stage.

Following successful completion of the pilot, Halifax Water will apply the approach across the remaining water, wastewater and stormwater asset classes.

Halifax Water is also undertaking a Climate Lens project for three capital projects that may be eligible for funding through the Investing in Canada Infrastructure Program (ICIP). Climate Lens requires that applicants consider climate risks to projects as early in the design process as possible. Using the same ISO 31000 methodology identified in the Vulnerability to Climate Change Risk Assessment pilot, Halifax Water will assess climate risks to these proposed projects.

By creating the standardization between asset class level and project level risk assessment methodologies, Halifax Water is promoting vertical integration of climate adaptation throughout the capital planning process. Halifax Water is also promoting horizontal integration of climate adaptation across operating area by promoting the standard language of climate risk assessment.

Halifax Water has a mature Energy Management Program and is committed to creating and ensuring an ongoing focus on sustainability and energy efficiency throughout all operating areas. This program has historically been carried out in relation to Halifax Water's Energy Management Policy through the Energy Management Steering Committee. The Committee is being rebranded to the Climate Resiliency Committee (CRC) with its focus being broadened further to include more emphasis on GHG emission reduction, stormwater management and flood resiliency, vulnerabilities, and risk assessments and development of a Climate Change Action Plan for Halifax Water that will support HalifACT 2050. A report will be presented to the Environment and Safety Committee of the Halifax Water Board in Q1 of 2021-2022 outlining the goals and objectives of the CRC committee. Expansion of the EMS program presents a significant opportunity to reduce Halifax Water's environmental footprint, the two initiatives will compliment and benefit from each other.

The committee structure will span multiple business units and draw success from embedding resilience in the daily activities across the organization with the implementation of key policies, and both capital and operational projects.

For 2021/22 and beyond, initiatives have been identified in the following areas:

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Infrastructure / Operational Improvements

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

Table 5

<i>Various WSP/WWTF Process Improvements</i>	<i>UV Disinfection Upgrades</i>
<i>HVAC System Re-Commissioning</i>	<i>Pumping System Upgrades</i>
<i>HVAC & Building Envelope Upgrades</i>	<i>Pump/Meter Chamber Upgrades</i>
<i>Mill Cove WWTF Upgrades</i>	<i>East/Central Operations Facility</i>
<i>Biosolids – Enhanced Resource Recovery</i>	<i>Various Solar PV Projects</i>

New construction capital projects (e.g. new admin/operations depots, 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.

GHG Emissions Inventory

GHG emissions from all of Halifax Water's operations are being closely monitored and accounted for within Halifax Water's Energy Management Information System (EMIS). In addition to primary fossil fuel (i.e. heating oil and natural gas) emissions from our facility operations, secondary or indirect emissions from electricity use (i.e. NSPI emissions) are also being tracked and reported on an annual basis. Furthermore, a methodology has been implemented to track emissions from our fleet vehicles. GHG emission reductions are now an important operational metric within Halifax Water's annual Corporate Balanced Scorecard/Continuous Improvement system.

Renewable Energy Generation

Halifax Water has identified renewable energy as an important way of offsetting energy costs and increasing revenue that will help the utility to significantly reduce energy use and greenhouse gas emissions in the region. Two key project areas have been identified: renewable energy and energy recovery from both water and wastewater systems.

To date, three renewable energy projects have been completed: the Pockwock Community Wind Farm, located near our JD Kline WSP and operational since 2014; the Orchard In-Line Energy Recovery Turbine, located in Bedford and operational since 2014; and the recently completed Halifax WWTF 75 kW Solar PV system completed under the Solar Energy for Community Buildings Pilot Program. These projects are expected to continue to operate above expectations and generate clean renewable energy, GHG reductions, and revenue for the utility for decades to come.

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Energy recovery from process or waste streams are recognized as one of the biggest opportunities available to society. Recoverable energy is everywhere – in solid municipal/residential waste streams, industrial by-products, and water and wastewater effluent streams. Halifax Water has significant recoverable energy resources available in both its water and wastewater streams. Halifax Water is currently focusing efforts on three specific energy recovery projects.

Enhanced Resource Recovery from Biosolids

Halifax Water currently supplies over 35,000 tonnes per year of partially de-watered sewage sludge to its Aerotech Bio-Solids Processing Facility (BPF). Currently, this sludge is turned into a soil amendment that can be used as fertilizer for topsoil manufacturing, sod growing, horticulture, and land reclamation. Energy recovery from biosolids is one of the most developed opportunities for treatment plants. This is commonly achieved through anaerobic digestion of wastewater sludge.

Halifax Water's Mill Cove WWTF and Lakeside Timberlea WWTF are equipped with anaerobic digesters and the gas generated is utilized for digester operation and excess gas is used for space heating in the plants. The HHSP and other small facilities have sludge dewatering equipment on site as the prime resource for biosolids that are utilized as soil amendment for beneficial reuse. Halifax Water expects to continue this practice in the near term considering that the agricultural soil amendment program continues to be very successful. There are several emerging technologies in the industry that show promise for alternative uses of biosolids for energy production; Halifax Water have been reviewing these technologies to determine the best opportunity; however, it must be developed cognizant of the risks that are associated with the complex issue of biosolids management. Halifax Water is currently developing a plan to upgrade the existing Aerotech BPF to enhance resource recovery (energy, water, nutrients) from our biosolids stream.

Halifax Water continues to explore opportunities and options for the alternative re-use of biosolids as an available energy source that can contribute to overall GHG reductions and offset annual energy costs.

Cogswell District Energy System

The HalifACT 2050 program initiated by the municipality identifies the Cogswell District Energy System as a significant climate change mitigation opportunity. A study was completed in 2016 to determine the feasibility and preliminary business case for an Ambient Temperature District Energy System (ATDES) within the Cogswell Redevelopment Area of downtown Halifax. The feasibility of the DES is predicated on the assumption that connection to the DES will be mandatory within the redevelopment area. To that end, HRM has completed amendments to its Charter through the Legislature to facilitate this authorization and has developed and enacted a by-law considering a DES within the Cogswell Redevelopment Area. Halifax Water has also confirmed that the service will be regulated by the NSUARB. Work on the Cogswell ATDES continues with stakeholder consultation, and the completion of preliminary and detailed design work in parallel with the Municipality's effort

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to advance the Cogswell Redevelopment project. Halifax Water strategic objectives related to DEC in 2021/22 include finalizing the business case and securing the necessary Halifax Water Board and NSUARB approvals and financing needed to proceed.

Solar Photovoltaic (Solar PV) Systems

An application was submitted to the federal/provincial *Investing in Canada Infrastructure Program (ICIP)* for the deployment of Solar PV systems at several suitable Halifax Water facilities. Conceptual/preliminary engineering work has completed by staff, with detailed design and construction of the systems to be completed pending the outcome of the ICIP application. These projects are expected to generate significant levels of clean renewable energy, and significantly reduce/offset Halifax Water's annual GHG emissions.

5.3 Compliance Plan

The Regulatory Compliance division of Regulatory Services has established a tracking system to monitor trends of non-compliance and associated sources for all of the wastewater treatment facilities (WWTF). A working group has been established between Asset Management, Operations and Design Services staff to track and plan for the upgrades to maintain compliance with Provincial and Federal regulations.

Building on the framework of the basic Compliance Plan from 2012, the plan was updated in 2019 utilizing information Halifax Water has available to create a path forward to maintain or achieve compliance for our wastewater, water and stormwater infrastructure systems over the next 30 years. The Compliance Plan highlights the current state of compliance at our wastewater treatment facilities and water supply plants as well as future compliance requirements. It also includes overall guidance on our wastewater collection system, sanitary and combined sewer overflows and our water distribution system including water reservoirs.

The key objectives of the Compliance Plan included:

- Review of previous work completed that relates to compliance, including the 2012 IRP, 2019 Infrastructure Master Plan and Five-Year Capital Program;
- Understanding current and future compliance requirements as they relate to wastewater, water and stormwater infrastructure;
- Understanding previous compliance trends and exploring potential compliance requirements taken from regional and global examples;
- Reviewing, documenting and analyzing the current performance of infrastructure against compliance requirements;
- Generation of infrastructure needs and costs to meet current and future compliance requirements;
- Incorporating the three drivers behind infrastructure planning (growth, asset management and compliance) through incorporating the impact of future growth

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trends and outlining projects that contain compliance components and asset renewal / growth components;

- Developing an action plan that outlines current, medium and long-term projects; and
- Identification of action plan risks and potential mitigation methods.

Halifax Water has been consistently working toward achieving the provincial level of wastewater treatment as stipulated by Nova Scotia Environment (NSE) permits and Federal Wastewater System Effluent Regulations (WSER). Historically, NSE has set compliance standards for each WWTF issuing Approval for Operation which sets the effluent limits, and the Canada-wide Strategy for the Management of Municipal Wastewater Effluent (CSMMW) provided national standards for combined sewer overflows (CSO) and sanitary sewer overflows (SSO). Then in June 2012, the WSER was enacted which set national standards for WWTF effluent discharge and CSO and SSO standards.

Since the introduction of the federal WSER standards, NSE has been reviewing and renewing Halifax Water's operating permits with steady increases in compliance and reporting requirements.

The Compliance Plan is a key input to the Infrastructure Resource Plan (IRP). The IRP provides holistic guidance to understand the current level of compliance and actions required for maintaining compliance. Several initiatives have recently been completed and others underway shall continue. Current compliance initiatives are as follows:

- Compliance Monitoring and Reporting through the Regulatory Services Department;
- Engaging Dalhousie University in compliance research;
- Adopting the Environmental Management System (EMS);
- Environmental Risk Assessments (ERA); and
- WSER Transitional Authorization.

The Compliance Plan was included in the IRP submissions to NSUARB as a part of the Regional Development Charge and Rate Application hearings. The NSUARB has been complimentary of this plan, however suggested to progress this work in more details concerning Halifax and Dartmouth wastewater treatment facilities. The NSUARB directed activities shall get underway in 2021/22 with an ultimate goal of an update Compliance Plan inclusion in next IRP update. Halifax Water entered into a 3-year research agreement with Dalhousie University to conduct specific research and optimization of Halifax Water facilities to stay "ahead of the curve" to meet its compliance requirements. The research program is funded under NSERC's Collaborative Research and Development Grant. The NSERC is in the midst of redesigning its funding programs, Halifax Water and Dalhousie University intend to make a future application for a long-term funding when the new programs are in place. The current 3-year plan has a primary objective to improve effluent quality from chemically enhanced primary systems through bench, pilot and full-scale testing and optimization of coagulation/flocculation processes; the other elements being the application of innovative UV technologies and assessment of contaminants of emerging concern.

5.4 Customer Service Enhancement

The most recent Customer Service (Quality of Service) Survey indicates satisfaction with Halifax Water's overall service delivery remains high at 96%, consistent with the last three years.

A sample of 400 respondents were surveyed, with results expected to be accurate to within plus or minus 4.9 percentage points in 95 out of 100 samples.

New for this year were questions related to satisfaction with wastewater service, Halifax Water's services during the COVID-19 pandemic, and interest in using the new Customer Connect portal. With respect to wastewater service, 91% were very or generally satisfied; and 70% were very or somewhat interested in using a customer portal to manage accounts, monitor water consumption, and pay bills online. For services during COVID-19, 85% rated services as about the same, with 6% rating services as better.

Key highlights:

- The ratings for staff promptness improved to 83% up from 78% in 2019.
- Most customers believe their water is safe and the quality is high.
- Satisfaction with Halifax Water's reliability ranks very high with 97% very or generally satisfied.
- Four in ten customers (42%) report using some form of water treatment device, most commonly for concerns about water quality, removing chemicals, and perceived improved taste.
- Confidence in the safety of water in the Halifax Harbour increased slightly over last year to 48%.
- Residents continue to lack awareness of the source of their municipal tap water.
- Awareness of the lead service line subsidy is low, though 69% of customers with a home built prior to 1960 were very or somewhat interested in using the new LSL program, up from 47% in 2019.
- Awareness of the emergency assistance program (H2O Fund) is low.
- Awareness of which water body receives treated wastewater from their property is moderate.
- One half of respondents reported receiving stormwater service and the vast majority (84%) of those were very or generally satisfied with the service.
- Most customers (7 in 10) believe it is not very or not at all important to be able to visit Halifax Water's offices and speak to representatives in-person.

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Strategic objectives for 2021/22 that will help address some of areas of potential improvement are implementation of phase 2 of Customer Connect, enhanced customer communications particularly around stormwater service, a move to monthly billing for residential customers and a redesign of the water bill.

5.5 Employee Development and Satisfaction

Employee satisfaction can have substantial impact on organizational performance. It can influence employee retention, absenteeism and psychological health and wellness. Because of this, each year Halifax Water engages an external consultant to conduct an employee survey and an action plan is developed and implemented to respond to the results of the survey.

The overall rating for 2020 increased slightly to a 3.9 (B+). The corporate balance scorecard target is 4.0 (A-).

There were thirteen areas where there was improvement over the previous year. They are:

- Employees are kept informed of important changes
- Employees look forward to coming to work – up 5%
- Employees feel a sense of pride in the accomplishments of the organization – up 7%
- Employees are satisfied with their job – up 5%
- Employees are recognized for their achievements – up 5%
- There is good cooperation among work teams – up 5%
- Employees are given feedback on their performance – up 8%
- The organization follows up on commitments to staff – up 8%
- Employees are given opportunities for career development – up 6%
- Employees have a sense of accomplishment from their work – up 5%
- Employees feel the organization values their contributions – up 5%
- Employees have a high level of commitment to HW – up 5%
- Halifax Water has a high level of commitment to employees – up 5%

There were two areas that declined slightly. They were:

- Employees are held accountable for their performance – down 2%
- Halifax Water reflects diverse cultural communities – down 1% from last year

Employees believe that the accessibility of the Senior Management team has remained the same as the previous year.

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In 2021/22, an action plan will be developed and implemented to respond to the 2020 employee survey results. The next survey will be conducted in November 2021.

We will continue to build a culture that is both Diverse and Inclusive and will be providing Unconscious Bias training to all Managers and Supervisors in 2021-22.

5.6 Enterprise Risk Management Program

In 2019 Halifax Water completed an Enterprise Risk Management (ERM) Framework and approved an ERM Policy, and a risk appetite and tolerance matrix. There are seven broad risk categories outlined in the policy, which align very closely to the Corporate Balanced Scorecard critical success factors. The risk categories and critical success factors may both change over time. In future, there will be consideration of the alignment. The more closely the risk categories and critical success factors align the less opportunity there will be for confusion or goal misalignment.

The ERM Policy rollout planned in 2020 was delayed due to lack of resources and the impact of COVID-19. The ERM Policy will be rolled out in 2021, and Halifax Water will begin risk-based reporting to the Halifax Water Board. It will take 2 to 3 years to fully embed ERM at Halifax Water; and an additional resource will be in place to support enterprise risk management, as well as internal audits in 2021. Compliance with policies and standard operating procedures is important to help manage risk.

Some of the most significant risks facing Halifax Water relate to infrastructure; therefore, there are financial risks also - insufficient revenues to meet the projected operating requirements, and insufficient capital funding to meet the IRP recommended level of spend.

5.7 Environmental Management System Program

ISO 14001 is an international standard for environmental management systems (EMS) essentially it is a system of procedures, records and process to manage environmental issues and assist with regulatory compliance. It also makes day to day operations more sustainable and engages employees in these operational activities. The EMS program can be audited against ISO 14001 standards, and if found to comply, receives a Certification through ISO.

The benefit of implementing an EMS is that it drives a process of continual improvement towards meeting defined environmental goals and objectives. Minimizing environmental impacts becomes one of the defined primary goals, and standard processes are put in place to identify issues and direct improvements through documented standard operating procedures. The standard pertaining to EMS is 14001- 2015 and requires an organization to:

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1. Establish an environmental policy.
2. Identify environmental aspects that can impact the environment.
3. Identify our applicable Compliance obligations legal and regulatory requirements.
4. Set appropriate environmental objectives and targets.
5. Establish programs to implement our policy, achieve objectives and meet targets.
6. Periodically audit and review activities to ensure that the policy is complied with and the environmental management system remains appropriate.
7. Be stewards of the environment and local community.
8. Be capable of adapting to changing circumstances.

Certification has been successfully obtained for the major Water and Wastewater Treatment Facilities and the current focus is a corporate wide expansion phased over three years. Expansion of the EMS program presents a significant opportunity to reduce Halifax Water's environmental footprint.

5.8 Information Strategic Plan

Halifax Water has an IT Strategic Plan which drives the IT Program for 2021/22. The objective of the IT Strategic Plan is to improve organizational efficiency, effectiveness and customer service through technology and organization change.

The Strategic Business Drivers shaping the information technology environment have not changed:

- Provide world class services to our customers and our environment
- Retain leadership position as an integrated water, wastewater and stormwater utility
- Retain position as a top utility in all Lines of Business focused on Public and Employee Safety, Water Quality, Sustainable Infrastructure and Asset Renewal, Regulatory Compliance and Growth, and Environmental Stewardship.
- Follow an Integrated Resource Plan (IRP) Framework

Six Strategic Themes characterize the plan:

- **Customer Experience** – Providing customers with the ability to access most services using online services.
- **Information Integration with Location** - Having all necessary data linked together and tracked through a geographic lens.

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- **Analytics Driven Decision Making** – Being able to model customer usage, financial, environmental, and infrastructure data across the Water, Wastewater and Stormwater systems and having the capability to tie data together into business intelligence.
- **Managed Knowledge and Workflow** – Capturing and storing key content in a logical and easy to access place for those who need it.
- **Enable Employees Anywhere** – Providing functionality for employees to access, capture and update the information they need to effectively do their job and support others, wherever they may be working.
- **Secure IT Foundation** – Effectively managing the IT function and providing infrastructure that is resilient, cost effective, well supported, and recoverable within clearly defined requirements.

The IT Strategy Five-Year Roadmap 2021/22 is a high-level snapshot of the sequence of programs to deliver on the approved technology vision and recommended architecture. The plan has an estimated total cost of \$28 M.

Table 6

<u>Projects Completed</u>	<u>Projects Underway</u>
1. Advanced Metering Infrastructure	18. Analytics Decision Support System Phase One and Phase Two
2. Asset Register	19. Capital Planning
3. Customer-facing website	20. Computerized Maintenance Management System Enhancements
4. Desktop Replacement Program	21. Customer Portal
5. Document management guidelines	22. Disaster Recovery Planning
6. GIS and Cityworks Upgrade	23. Document management pilot
7. GIS Dashboard Replacement	24. Enterprise Resource Planning Solution
8. Internal website (Intranet)	25. Full Enterprise Data Warehouse
9. Telephony	26. Impervious Surface Updates
10. WI-FI Infrastructure in Pockwock	27. IT Help Desk software replacement
<u>Projects Coming Up in 2021/22</u>	28. IT Security assessment and roadmap
11. Analytics and Dashboard Linkage	29. IT Server Hosting
12. Approval Forms Framework	30. Mobile Device Management software installation
13. Asset Condition	

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14. Enterprise SharePoint rollout for Document Management	31. New Payroll System
15. General Analytic Tools	32. Office 365 migration
16. Electronic Content Management Linkage	33. Permit Approvals
17. Team Collaboration	34. Quality Data Management and Reporting

5.9 Cyber Security Program

Water systems are a vital part of public infrastructure and it is imperative that these systems be kept safe and secure. Besides the necessary physical security, a utility should also have effective security with regards to its computer systems – i.e. cyber security. Cyber security is a combination of technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorized access. The proliferation of “ransom ware” has proven that even major organizations can be quickly “brought down” by a virus.

Information systems are critical to the operations of Halifax Water. Halifax Water has a Cyber Security Program in place to protect these systems and the data they manage; however, it is necessary to make the Cyber Security Program more robust and improve the cyber security posture of Halifax Water. Halifax Water has a cyber-security roadmap which includes seventeen projects being delivered over a three-year time period. Halifax Water’s cyber security maturity score and risks will be periodically re-evaluated; and due to the on-going changing nature of cyber security risks and technology, there is a requirement for continual and on-going investment in cyber security.

5.10 Lead Service Line Replacement Program

In 2020, the NSUARB approved a new enhanced service line renewal program. The new enhanced program builds on the successes of the previous program, launched in 2017, while addressing the remaining major barrier preventing customers from renewing the private portion of the lateral; cost.

The new program has two significant features compared to the previous program as follows:

- Halifax Water will be responsible for the cost of renewing the private portion of the lead service line, thus renewing the most significant barrier to customer participation.
- The objective for removal of all Halifax Water lead service lines is moved forward from 2050 to 2039.

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The new program became effective on October 1, 2020, which will provide for the first replacements under the new program early in the 2021 construction season. Lead Service lines will be renewed based on one of four programs:

- Most renewals each year will be done in conjunction with the municipal street recapitalization program. Each year, subject to funding availability, Halifax Water will seek to renew every lead service line within the bounds of these municipal projects. Integrating with these projects allows Halifax Water to share in the street restoration costs with the city. This reduces the cost of renewal allowing Halifax Water to maximize the use of available funds, thus maximizing the number of renewals each year. This approach also limits community disruption by largely limiting construction to already planned construction projects and preserves municipal pavement quality by minimizing the needs to go back after paving to renew a lead service line.
- Halifax Water will replace a number of lead service lines each year, at utility cost for residents who apply to this program. Priority will be given to at risk populations, namely homes with pregnant mothers or young children.
- In future years, Halifax Water will develop further programs to target other priority groups or communities for LSL replacement.
- Customers who do not qualify for one of the above programs will still be eligible to renew their lead service lines and receive the 25% rebate which has been in place since 2017.

Efforts in 2021/22 will be directed at launching this new program, including the application process, and developing communications tools to educate customers on this new program.

5.11 Water Quality Master Plan

Halifax Water has been operating with a Water Quality Master Plan since 2007, and this is the overarching plan that guides the Water Quality Program. We are currently under WQMPv3 for the period 2017-2022. The WQMP is used to guide our research efforts to support water quality improvements and to identify appropriate capital projects related to water quality.

The current WQMP has the following themes:

- Understanding Lake Recovery
- Adapting to Lake Recovery
- Maintaining Distribution System Water Quality
- Utilizing Data to Ensure Water Quality.

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The WQMP has allowed for the following accomplishments in recent years related to drinking water quality:

- Identified the need for improvements at both the J. Douglas Kline and Lake Major water supply plants and informed the development of the enhancement program.
- Developed interim treatment strategies to make the existing plants more resilient to deal with changing source water until the plant enhancements are commissioned.
- Identified the need for an algal toxin monitoring program due to the increasing prevalence of algal activity and taste and odour causing compounds drive by lake recovery and climate change.
- Guided the development of improved protocols and training for utility staff to ensure water quality is preserved while repairing water main breaks.
- Guided the development of tools to monitor water quality changes during events to enable the provision of better information to affected customers.

In 2021/22, efforts will be focused on developing WQMP v4 with a goal of launching it in April of 2022, coincident with the desired renewal of our Industrial Research Chair in Water Quality and Treatment, held by Dr. Graham Gagnon at Dalhousie University.

5.12 Water Loss Control Program

Halifax Water was the first utility in North America to adopt the International Water Association (IWA) methodology for managing leakage in 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.

In 2021/22, Halifax Water will be developing recommendations on next steps for the Water Loss Control Program for presentation to the Halifax Water Board.

5.13 Wet Weather Management Program

Halifax Water maintains approximately 1,425 km of collection pipes, 14 wastewater treatment facilities, and 165 wastewater pumping stations. Like many municipalities and utilities across North America, sections of Halifax Water's sanitary sewer system are subject to dramatic flow increases in response to precipitation events. Wet weather flows in the form of I&I can lead to sanitary sewer overflows, capacity reduction, sewer backups/basement flooding, treatment process upsets and increased operation and maintenance costs.

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The negative impacts of wet weather can generally be managed by the following:

1. Peak flow reduction - Reduce the quantity of wet weather generated flows that are collected, pumped and treated by the wastewater collection and treatment systems.
2. Peak flow attenuation - Store wet weather generated flows during wet weather periods and release & treat the flows when the system has capacity.
3. System capacity increase

Since its inception in 2013, Halifax Water has been implementing a proactive approach to address the negative impacts of wet weather events on the sanitary sewer system. The goal of Halifax Water's Wet Weather Management Program (WWMP) has been to develop and refine a long-term framework for cost effectively addressing wet weather generated flows. Through the WWMP, Halifax Water has been systematically identifying opportunities to employ the most cost-effective wet weather management strategies. Where possible, all three methods above are considered based on a cost benefit analysis and the sewershed specific driver for flow reduction, with regulatory compliance being the highest priority. By reducing wet weather flows, the wastewater system will see a reduction in untreated discharges to the environment, effluent noncompliance at WWTFs, operational and maintenance costs, and an increase in available system capacity.

I&I is grouped into two sources, 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, illegal and cross connections). The program employs a variety of strategies to reduce wet weather impacts. The development of the Decision Matrix provided a consistent process flow beginning with system flow monitoring and moving into Sanitary System Evaluation Surveys (SSES) such as CCTV inspection reports, smoke testing, private side property inspections and public education tools, etc. With the compiled results of these evaluation efforts, effective and financially responsible rehabilitation methods can be recommended by the WWMP.

To effectively address all issues that contribute to the impacts of wet weather, multiple business units within Halifax Water are engaged to work together to achieve the goals of the WWMP. Figure 5 indicates the working relationships and activities between business units.

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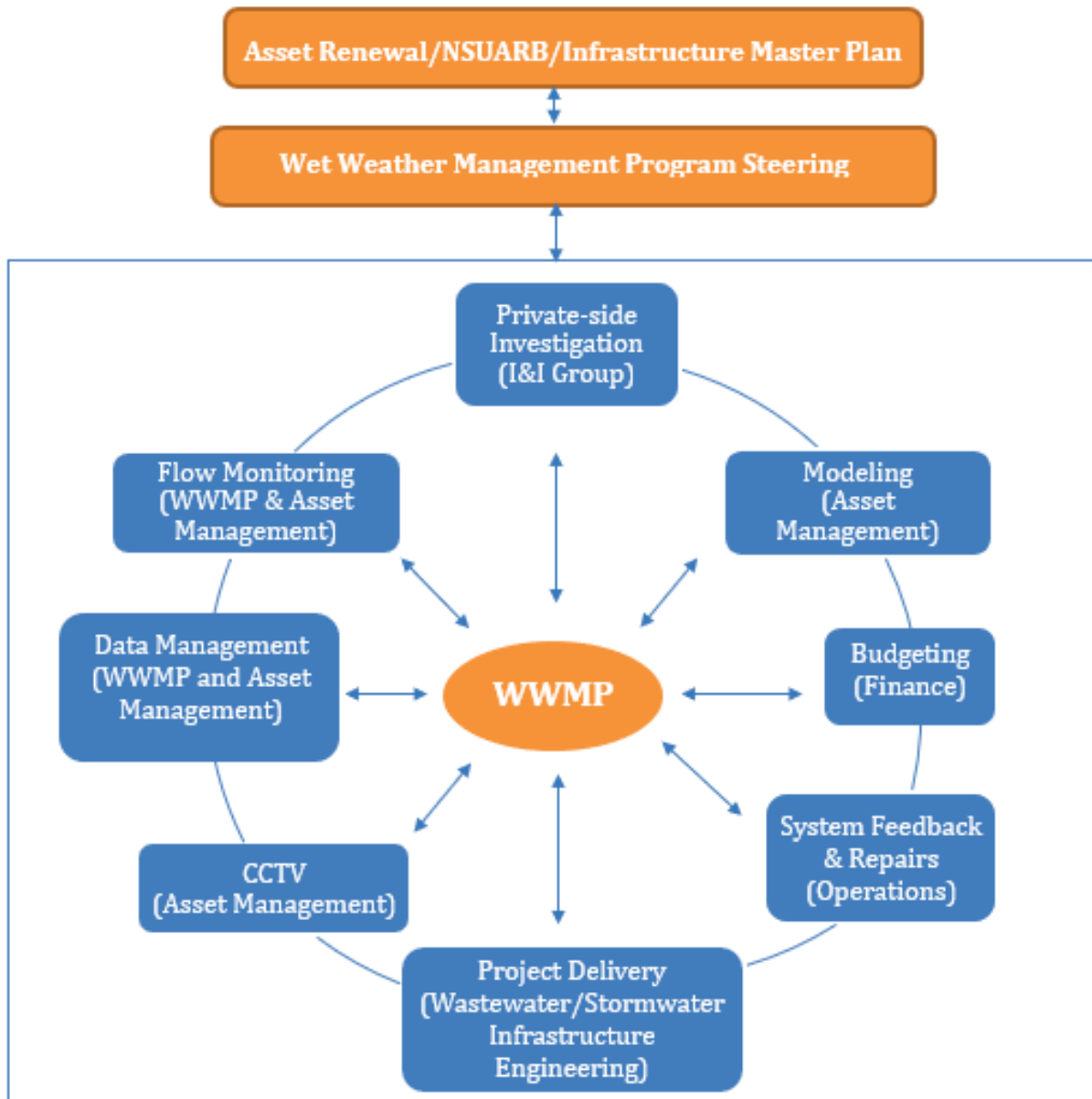


Figure 5 - Contributing Business Activities of the WWMP

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The initial phases of the program were to comprehensively pilot the effectiveness and cost of various rehabilitation activities. There were several sewersheds that have undergone pilot activities with an additional pilot currently underway to study the long-term effectiveness of “private side-only” interventions. From the results and reductions observed in the various pilot projects, Halifax Water then delivered its first full scale I/I rehabilitation project (Fairview/Old Clayton Park/Bridgeview Sewersheds – Phase 1, 2018), with overall completion in 2020 (Phase 2). It is expected that a complete post-rehabilitation reduction analysis, of all phases of the project, will be available in next year’s WWMP Annual Report.

As a result of varied sewershed characteristics throughout Halifax Water’s wastewater systems and the importance of considering this variability when evaluating a rehabilitation methodology, a common approach to implementing wet weather-related investigation tools was needed. This tool, the WWMP Decision Matrix applies a consistent framework to the priority areas of the program when determining flow monitoring and condition assessment requirements, necessary sewershed investigations and rehabilitation techniques.

Recognizing the importance of flow monitoring and infrastructure condition assessments as the basis of prioritization data for the WWMP, Halifax Water enhanced the service delivery of the flow monitoring and CCTV programs. Both programs have performance-based contracts to ensure accurate and dependable data delivery to the industry standard.

Building on experience from WWMP projects, an enhanced prioritization methodology has been developed with the addition of the Decision Matrix to assist in identifying priority areas for the WWMP. Figure 6 below shows the updated sewershed prioritization map by incorporating recommended criteria from the IMP documents.

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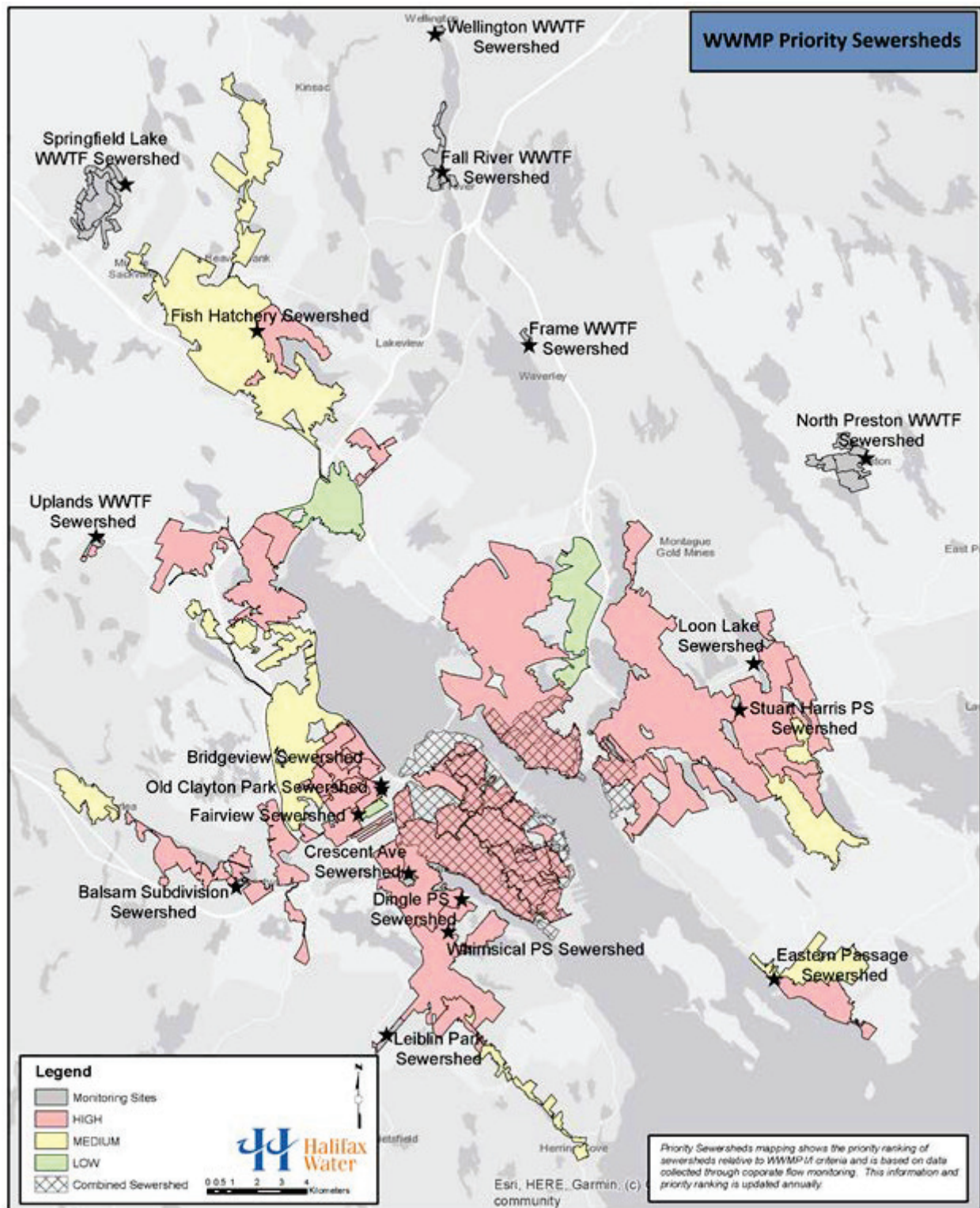


Figure 6 - Wet Weather Management Program Priority Map

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The near term (2021/2022) goals for Halifax Water's Wet Weather Management Program include:

1. Rehabilitation Pilot Projects: The WWMP has completed 7 pilot projects. These pilot areas were chosen to enable Halifax Water to assess the effectiveness of the various wet weather management strategies and collect rehabilitation cost information. Wet weather management strategies for these sewersheds included mainline, manhole, and lateral CIPP, new stormwater mains, and public-side repairs. 2021/22 will see continued flow monitoring and data analysis on pre and post activity for some of the pilot areas to confirm measured results. Table 7 below illustrates the reduction in rainfall derived I&I (RDII) peak flows for the various pilot projects.

Table 7 - WWMP Pilot Project Summary

WWMP Pilot Project Summary								
Sewershed	Rehabilitation Activity					Private-side Inspections	Peak Flow Reduction (L/sec)	Peak Flow RDII Reduction (%)
	Mainline Lining	Lateral Lining	Manhole Lining	Deep Storm	Public-side Repairs			
Stuart Harris PS	✓	✓				✓	13	37%
Leiblin Park	✓	✓					40	33%
Balsam Subdivision					✓		1	8%
Uplands Park					✓	✓	0	0%
Wanda Lane				✓		✓	TBD	TBD
Crescent Ave (MH182)	✓	✓	✓			✓	43	74%
Crescent Ave (MH174)	✓	✓	✓			✓	41	92%

**shows overall reductions for each project*

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As an example, Figure 7 below illustrates the reduction in RDII peak flow for the Crescent Ave – MH182 pilot project. This pilot underwent a three-phase rehabilitation including mainline, manhole, and lateral renewal activities.

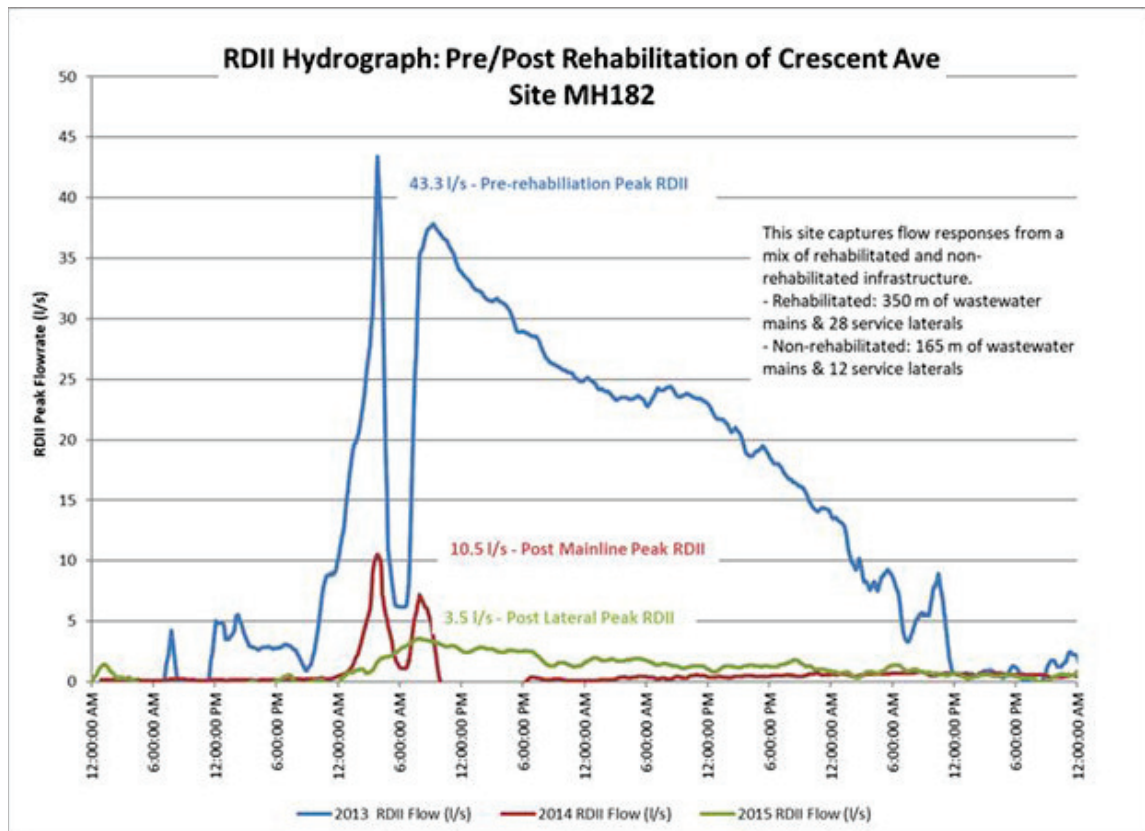


Figure 7 - Quantifying Rehabilitation Effectiveness

An area identified for wet weather management opportunities typically follows a systematic project lifecycle as shown in Figure 8 below. The overall timeline can vary depending on sewershed size, service connection density and rehabilitation method employed but typically spans multiple years from start to finish.

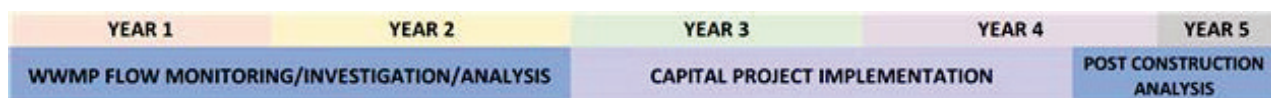


Figure 8 - Project Lifecycle

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2. Refinement of Cost Benefit Analysis: Applying a cost benefit analysis of the various strategies to manage wet weather flows will be crucial to the long-term fiscal responsibility of the program. As expected, the pilot and full scale sewersheds demonstrated a significant reduction in RDII as the various wet weather management strategies were implemented. The financial cost of the RDII reduction was normalized so that the information can be applied to other sewersheds and compared to more traditional approaches to wet weather management such as flow attenuation (storage) and capacity increases. Additional data from various sewersheds is continually analyzed as it becomes available. In addition to flow data, cost information is available for application to larger scale rehabilitation projects.

The cost and reductions in RDII have been compiled since the inception of the formalized WWMP. The program is structured to evaluate all wet weather management activities using the same methodology to ensure consistent application across identified areas. This enables Halifax Water to employ the most cost-effective strategy to future areas. It has become evident that the RDII reduction cost has significant dependence on the sewershed characteristics; however, it provides essential guidance for the future projects. The Program continues to augment this information and its application to future projects.

3. Fairview / Old Clayton Park / Bridgeview: The analysis of flow monitoring data was undertaken as part of the direction from Halifax Water's West Region Wastewater Infrastructure Plan. The plan identified the potential for significant reductions in RDII in the Fairview, Old Clayton Park and Bridgeview areas. With the sewershed target of reducing peak flows by approximately 200 L/s, a phased I&I reduction program was initiated in 2017. In 2018/19, approximately 11 km of CIPP lining was completed as part of Phase 1 and 2019/20 & 2020/21, Phase 2 had 15 km completed. 2019/20 included smoke testing within areas of Phase 1 and 2, the results of which are being used to identify public side repair opportunities for Halifax Water Operations. Flow monitoring and data analysis will continue to quantify RDII reductions for the project area and assess the effectiveness of the asset renewal after completion of all phases of the project.

4. Program Expansion (Central and East Region Infrastructure Master Plan): Wet weather flow management is a part of the overall wastewater strategy for the Infrastructure Master Plan (IMP). Work on the IMP for the East and Central regions was completed in 2019, and respective priority areas for the WWMP have been incorporated into the long-term planning strategy. In 2020/21, the WWMP will continue with SSES activities in the Fish Hatchery Park Pump Station and Eastern Passage sewersheds by collecting flow data and installing additional flow monitors to isolate flows within these priority areas.

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The planned WWMP activities for the next year are listed in Table 8 below:

Table 8 – WWMP Activities

SSes Activity (Flow Monitoring, CCTV, Smoke Testing, Private Side Education & Inspection)
Fish Hatchery PS Sewershed (FMZ07 & FMZ10)
Hornes Rd Sewershed - Private-side Pilot Project (WWMP24 within FMZ37)
Eastern Passage Sewershed (FMZ37)
Loon Lake Sewershed (FMZ24)
Rehabilitation: Capital Projects
Crescent Ave PS Sewershed - Crescent Ave East CIPP Main Lining
Old Clayton Park Lateral Connection Repairs (WWMP16 within FMZ04)

5.14 New Service Account Compliance Program

It is estimated that 50% of I&I is from private property sources. Halifax Water has over 85,000 customers and is achieving approximately 100 inspections/year. To further enhance the management of private side I&I reduction the Environmental Engineering group is introducing the New Service Account Compliance (NSAC) Program. The program will require a person becoming a new customer to produce a certificate of compliance for their connection(s) to the Halifax Water system(s). Initially in determining compliance, the property will be inspected for sources of stormwater connection(s) to the wastewater system, presence of a lead water lateral if located in the area of lead boundary and consider expansion of the certification to identifying encroachments of utility service easements. This coming year will involve formalizing the framework, communications with the Real Estate Association and other stakeholders and planning of the implementation of the program.

5.15 Resource Recovery

The Biosolids Processing Facility (BPF) processes the sludge from all HW's wastewater treatment facilities. The BPF is operated by Walker Environment Group with overall responsibility for operating the facility to produce a soil amendment in conformance with Canadian Food Inspection Agency (CFIA) regulations and marketing the product for beneficial reuse. This product has been beneficially serving the local agricultural farms with essential nutrients, lime and carbon. The current IMP identifies the need to upgrade the BPF. With population growth and the improvement in performance of treatment plants, the WWTfs are producing an increased quantity of sludge. The operating contract agreement with Walker Environmental expires at the end of March 2021. Staff are currently reviewing the overall operation, while simultaneously working on the capacity upgrade requirements and a new operating contract. The future BPF could utilize different technology to further reduce HW's greenhouse gas footprint through energy/gas production. In light of the recent industry trends with focus on resource recovery from Biosolids, Halifax Water is exploring

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all aspects of resource recovery when considering alternatives for biosolids processing. Since this will potentially be a long-term contract, there is a medium level of risk with potential changes, considering the complexities associated with the management of biosolids.

5.16 Safety and Security Program

Safety: Halifax Water's Occupational Health and Safety Program is based on the Internal Responsibility System (IRS), which is the foundation of the Nova Scotia Occupational Health and Safety Act. The IRS is an internal system that provides for direct responsibility for health and safety for all staff in an organization.

The Safety and Security group of Regulatory Services has principal duties and responsibilities as part of the IRS as follows:

- Assist in formulating and supervising the execution of the utility's Occupational Health and Safety Program, and assist management to fulfill, to the greatest degree possible, its responsibilities for safety.
- Co-ordinate and/or provide safety training to staff in an effort to prevent accidents, minimize losses, increase productivity and efficiency, and ensure compliance with safety legislation and policies.
- Conduct safety audits in the workplace to identify safety hazards and recommend control measures.
- Assist in the development and maintenance of a system of accident investigation, reporting, and follow-up.
- Provide program education for job safety.
- Act as a resource to the Joint Occupational Health and Safety Committee (JOHSC).
- Maintain liaison with federal, provincial, and local safety organizations by taking part in the activities and services of these groups.

Halifax Water has established and maintains an Occupational Health and Safety Program in consultation with the Joint Occupational Health and Safety Committees.

Halifax Water is a signatory of the Nova Scotia Health and Safety Leadership Charter which represents a commitment from industry leaders across Nova Scotia to the continuous growth of a positive workplace safety culture. Mental health and psychological health and safety are increasingly being recognized as an important component of occupational health and safety.

To enhance the safety culture, Safety Audits are being conducted both on Halifax Water Operation projects and the Capital Infrastructure Program, where Halifax Water engages

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third party contractors. The outcomes are being used as guidance on improvements to safety policies and training initiatives. Halifax Water continues to advance our Contractor Safety Program which will include improved contract language, orientation and monitoring pertaining to job site safety.

As part of the commitment to the Incident Command System (ICS), Halifax Water continued to provide enhanced training to managers for roles related to General and Command staff under the ICS structure.

Halifax Water tracks safety indicators as part of the Corporate Balance Scorecard, which is described in Section 6.

Security: Halifax Water's Security Program is based on enterprise asset protection and is designed to protect three types of assets: people, property, and information. It also considers intangible assets such as the organization's reputation, relationships, and creditworthiness. The program has been developed to take an all-hazards approach, be it from natural, intentional, or accidental hazards, when reviewing risks to the organization.

Halifax Water uses the three basic elements of a physical security system to protect its assets to ensure it accomplishes its mission.

Protection: The protection element is the physical barrier that delays the determined adversary and the opportunist in accomplishing their goals. Halifax Water uses barriers such as building fabric, fences, doors, door hardware, and containers to protect its assets.

Detection: The detection element indicates and may also verify an actual or attempted overt or covert penetration. Halifax Water uses intrusion alarms, access control systems, CCTV, guards, and patrols to protect its assets.

Response: This element is the reaction to an attempted or actual penetration. Halifax Water uses internal staff and police forces as required, to protect its assets.

Vulnerability: Facility assessments are conducted in partnership with Public Safety Canada through the Regional Resilience Assessment Program (RRAP) utilizing the Critical Infrastructure Resilience Tool (CIRT). All major water and wastewater treatment facilities have now been evaluated. The CIRT is a voluntary and non-regulatory vulnerability assessment tool that estimates the resilience and protective posture of critical infrastructure facilities in support of the National Strategy and Action Plan for Critical Infrastructure.

Emergency Management Planning: Safe and reliable drinking water, sanitation and environmental protection are vital to the sustainability of communities within Halifax Regional Municipality. In recognition of this, Halifax Water maintains an EMP, as required by the provincial Emergency Management Act.

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2021/22 Annual Business Plan

The purpose of the EMP is to establish an organizational structure and procedures for response to water wastewater, and stormwater incidents. It assigns roles and responsibilities for the activation and implementation of the plan during an emergency, using the Incident Command System (ICS). The preparation and exercising of an EMP can save lives, reduce risk to public health, enhance system security, minimize property damage, and lessen liability.

6. PERFORMANCE MEASUREMENT

At the end of the 2021/22 fiscal year, Halifax Water's overall performance will be assessed against the Corporate Balanced Scorecard (CBS). Halifax Water has been utilizing a corporate balanced scorecard (CBS) to measure utility performance since 2001, so this year marks twenty years of formal performance measurement at Halifax Water. Each year the Halifax Water Board sets organizational indicators and reviews performance results. The CBS targets for 2021/22 will be presented for approval at the March 2021 meeting of the Halifax Water board, prior to the start of the new fiscal year on April 1, 2021.

There are eight Critical Success Factors (CSFs) derived from Halifax Water's vision statement (shown in Appendix A) and under each of the CSFs, there are organizational indicators to track performance and allow for the establishment of targets. The following lists the current CSFs and corresponding results for the organizational indicators under each category.

1. High Quality Drinking Water

- Adherence with Water Quality Master Plan - Percentage of sites achieving targets
- Bacteriological tests - Percentage free from Total Coliform
- Customer satisfaction about water quality - Percentage from customer survey

2. Service Excellence

- Customer satisfaction with service - Percentage from customer survey
- Water service outages - Number of connection hours/1000 customers
- Wastewater service outages – Number of connection hours/1000 customers
- Average speed of answer – Percentage of calls answered within 20 seconds

3. Responsible Financial Management

- Operating expense/revenue ratio percentage
- Annual cost per customer connection – Water
- Annual cost per customer connection – Wastewater

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4. Effective Asset Management

- Water leakage control – target leakage allowance of 160 litres per service connection per day
- I&I reduction - Number of inspections on private property for discharge of stormwater into the wastewater system
- Peak flow reduction from wet weather management capital projects
- Hours of unplanned outages in GIS and Cityworks
- Capital budget expenditures - Percentage of budget spend by end of fiscal year

5. Workplace Safety and Security

- Average score on internal safety audits
- NS Labour and Advanced Education compliance - Number of incidents with written compliance orders
- Lost time accidents -Number of accidents resulting in lost time per 100 employees
- Safe driving - Number of traffic accidents per 1,000,000 km driven
- Training - Number of employees trained or re-certified before due date
- Percentage of completed safety talks

6. Regulatory Compliance

- Percentage of public health and environmental regulatory infractions resulting in an environmental warning report, summary offense ticket, ministerial order, or prosecution
- Percentage of WWTFs complying with NSE approval permits

7. Environmental Stewardship

- Number of ICI properties inspected by Pollution Prevention each year
- Energy management kwh/m³ reduction associated with capital projects
- Bio-solids residual handling - Percentage of sludge meeting bio-solids concentration targets

8. Motivated and Satisfied Employees

- Percentage of grievances resulting in arbitration
- Percentage of jobs filled with internal candidates
- Employee satisfaction survey result
- Average number of days absenteeism



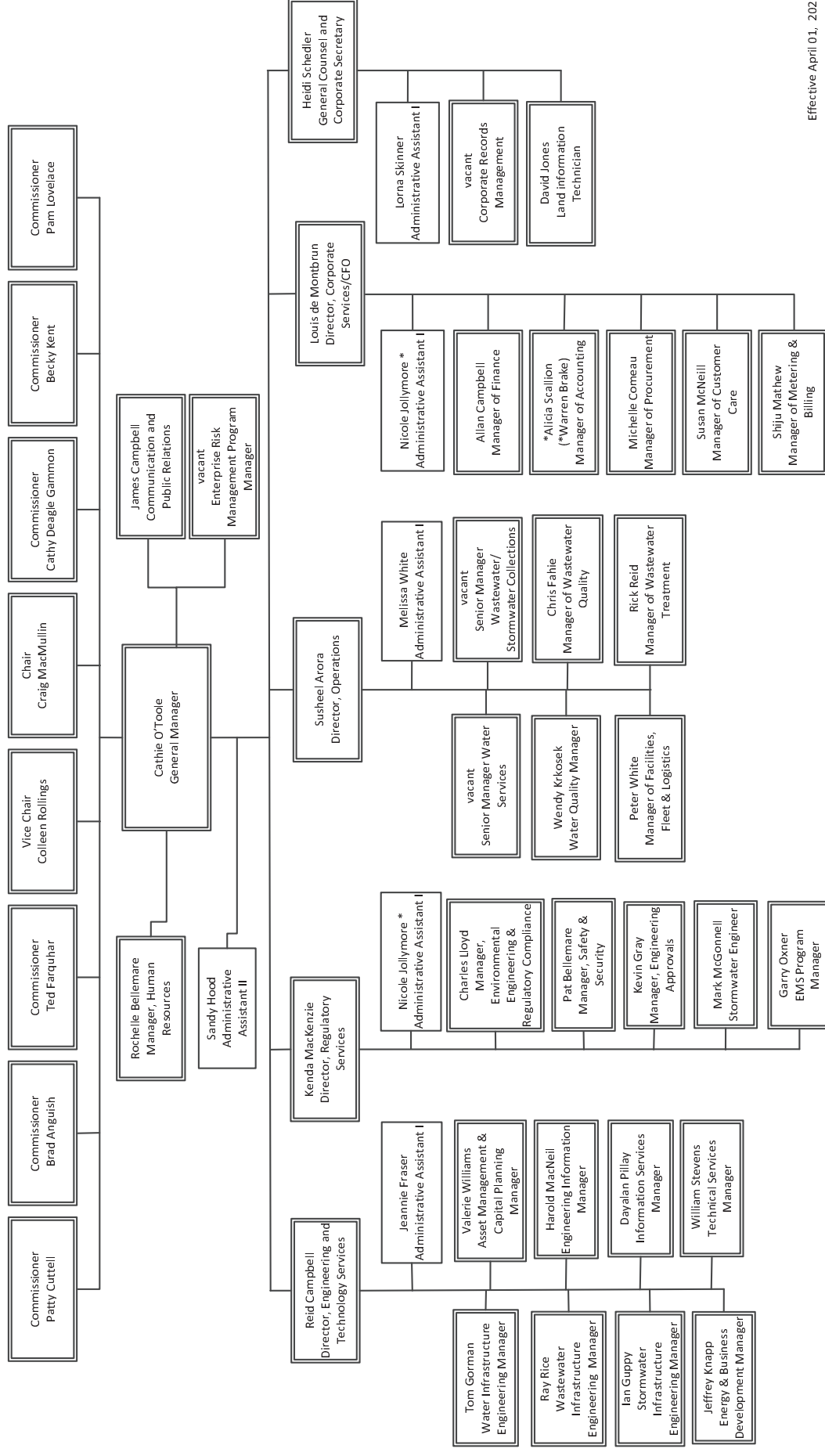
Appendix A

Organizational Structure



**STRAIGHT from
the SOURCE**

HALIFAX WATER ORGANIZATIONAL STRUCTURE





Appendix B

2021/22 Capital Budget



**STRAIGHT from
the SOURCE**

HALIFAX WATER

Capital Budget 2021/22

Summary

Asset Category	Project Costs
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<i>Water - Land -- T O T A L</i>	\$100,000
<i>Water - Transmission -- T O T A L</i>	\$3,375,000
<i>Water - Distribution -- T O T A L</i>	\$6,455,000
<i>Water - Structures -- T O T A L</i>	\$9,688,000
<i>Water - Treatment Facilities -- T O T A L</i>	\$6,392,000
<i>Water - Energy -- T O T A L</i>	\$200,000
<i>Water - Security -- T O T A L</i>	\$50,000
<i>Water - Equipment -- T O T A L</i>	\$50,000
<i>Water - Corporate Projects - T O T A L</i>	\$10,230,000
TOTAL - Water	\$36,540,000

<i>Wastewater - Trunk Sewers -- T O T A L</i>	\$17,225,000
<i>Wastewater - Collection System -- T O T A L</i>	\$21,826,000
<i>Wastewater - Forcemains -- T O T A L</i>	\$3,295,000
<i>Wastewater Structures -- T O T A L</i>	\$8,974,000
<i>Wastewater - Treatment Facility -- T O T A L</i>	\$12,515,000
<i>Wastewater - Energy -- T O T A L</i>	\$600,000
<i>Wastewater - Security -- T O T A L</i>	\$200,000
<i>Wastewater - Equipment -- T O T A L</i>	\$145,000
<i>Wastewater - Corporate Projects -- T O T A L</i>	\$12,075,500
TOTAL - Wastewater	\$76,855,500

HALIFAX WATER

Capital Budget 2021/22

Summary

Asset Category	Project Costs
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<i>Stormwater - Pipes -- T O T A L</i>	\$3,154,000
<i>Stormwater - Culverts -- T O T A L</i>	\$3,295,000
<i>Stormwater - Structures -- T O T A L</i>	\$4,315,000
<i>Stormwater - Corporate Projects -- T O T A L</i>	\$2,049,500
TOTAL - Stormwater	\$12,813,500

<i>G R A N D T O T A L</i>	\$126,209,000
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HALIFAX WATER

Capital Budget 2021/22

Water

Project Number	Project Name	Project Cost
<u>Water - Land</u>		
3.033	Watershed Land Acquisition	\$100,000
<i>Water - Land -- T O T A L</i>		\$100,000
<u>Water - Transmission</u>		
3.042	Critical Valve Replacement Program	\$200,000
3.587	Prince Albert Road Transmission Main Replacement	\$45,000
3.554	North End Feeder Replacement - Design	\$500,000
3.571	Highway 118 Crossing - Shubie Park to Dartmouth Crossing	\$80,000
3.631	Transmission Main Upgrades - Churchill Drive Corridor	\$50,000
3.632	Condition Assessment - Cobequid Road Transmission Main	\$250,000
3.293	Peninsula Transmission Main Replacement-Windsor Street to Superstore Property	\$475,000
3.503	Chain Control Valve Upgrade Program	\$45,000
3.574	Cobequid Looping - Windgate Drive Extension	\$1,500,000
3.504	Bedford to Burnside Transmission Main Phase 1 Pipe	\$200,000
3.045	Bedford West CCC - Various Phases	\$5,000
3.260	Morris (Russell) Lake Estates CCC	\$15,000
3.261	Lakeside Timberlea CCC	\$10,000
<i>Water - Transmission -- T O T A L</i>		\$3,375,000
<u>Water - Distribution</u>		
3.022	Water Distribution - Main Renewal Program	\$3,800,000
3.648	Spring Garden Road Watermain Renewal	\$1,300,000
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	\$1,000,000
3.285	Versa Valve Removal	\$25,000
3.294	Automated Flushing Program	\$20,000
3.296	Water Sampling Station Relocation Program	\$10,000
<i>Water - Distribution -- T O T A L</i>		\$6,455,000
<u>Water - Structures</u>		
3.601	PRV Valve Replacement Program	\$50,000
3.602	PRV Chamber - Electrical Panel Replacement Program	\$40,000
3.603	DMA - Meter Replacement Program	\$50,000
3.455	Reservoir Mixing and Residuals Management Upgrade Program	\$225,000

HALIFAX WATER

Capital Budget 2021/22

Water

Project Number	Project Name	Project Cost
3.623	Booster Station Building Envelope	\$30,000
3.607	Condition Assessment - Miscellaneous Structures	\$75,000
3.634	Lake Major Dam - Shoreline Improvements for Old German Road Properties	\$250,000
3.595	New Orchard Control Chamber Study	\$100,000
3.624	Robie Control Reservoir Meter Replacement	\$16,000
3.597	Aerotech Booster Station - Pump Repairs	\$17,000
3.528	Beaver Bank Booster Station - Pump Upgrades	\$180,000
3.605	Silverside Pumping Station Upgrades Construction	\$240,000
3.626	Eastern Passage Rechlorination Station	\$30,000
3.309	Cowie Hill Reservoir Replacement	\$7,610,000
3.288	Akerley Reservoir Rehabilitation	\$200,000
3.561	Prince Albert PRV Chamber Replacement	\$25,000
3.379	New Aerotech Reservoir - Preliminary Design	\$100,000
3.641	Dam Safety Review - Chain Lake Dam - Capital Work	\$200,000
3.642	Dam Safety Review - Pockwock Lake Dam - Capital Work	\$50,000
3.640	Dam Safety Review - Capital Implementation Program	\$200,000
Water - Structures -- T O T A L		\$9,688,000

Water - Treatment Facilities

J D Kline Water Supply Plant:

3.604	JD Kline WSP - Pretreatment and Clarification - WSEP JDK-800.10	\$2,273,000
3.608	JD Kline WSP - Clearwell, reservoir and storage - WSEP JDK-800.25	\$342,000
3.611	JD Kline WSP - Service Water System Upgrade - WSEP JDK-800.50	\$885,000
3.617	JD Kline WSP - Advanced Treatment for Taste, Odour and Algae-WSEP JDK-800.8	\$369,000
3.633	Program Management Fess and Expenses - WSEP JDK-MAJ	\$153,000
3.338	JD Kline WSP - Upgrades to the Process Wastewater Lagoons	\$30,000
3.341	JD Kline WSP - Roof Replacement - Vent House	\$50,000
3.628	JD Kline WSP - Purchase Spectrophotometer	\$16,000
3.629	J D Kline WSP - Replace Diesel Generator Day Tank at the Low Lift Station	\$9,000
3.627	JD Kline WSP - Purchase New Scales for Lime and Polymer	\$15,000
3.639	J D Kline WSP - Fluoride Storage Room Ventilation System Upgrades	\$150,000
3.351	J D Kline WSP - Replace Westinghouse Electrical Panels	\$32,000
3.463	J D Kline WSP - New Fluoride Supply Line	\$15,000
3.431	J D Kline WSP - Fluoride Tank Liner Replacement	\$19,000

HALIFAX WATER

Capital Budget 2021/22

Water

Project Number	Project Name	Project Cost
Lake Major Water Supply Plant:		
3.618	Lake Major WSP - Clarification/Pretreatment - WSEP MAJ 800.15	\$826,000
3.619	Lake Major WSP - Intake/low lift Pump Station - WSEP MAJ-800.20	\$483,000
3.526	Lake Major WSP - Roof Replacement	\$125,000
Bennery Lake Water Supply Plant:		
3.589	Aerotech Booster Station Replacement - Design	\$50,000
3.636	Bennery Lake WSP - MCC Splash Protection	\$50,000
3.637	Bennery Lake WSP - MCC Electrical Upgrades	\$150,000
Non-Urban Core WSP		
3.212	Rechlorination System Upgrades	\$25,000
3.638	Middle Musquodoboit WSP - Pumping System Upgrades	\$250,000
3.643	Silver Sands - New water storage tank	\$35,000
3.630	Purchase Algal Analytical Equipment for Raw Water Quality Assessment	\$40,000
Water - Treatment Facilities -- T O T A L		\$6,392,000
<u>Water - Energy</u>		
3.635	Energy Management Capital Program (Water)	\$100,000
3.107	Chamber HVAC Retro-Commissioning Program	\$100,000
Water - Energy -- T O T A L		\$200,000
<u>Water - Security</u>		
4.009	Security Upgrade Program	\$50,000
Water - Security -- T O T A L		\$50,000
<u>Water - Equipment</u>		
3.101	Miscellaneous Equipment Replacement	\$50,000
Water - Equipment -- T O T A L		\$50,000
Water - Corporate Projects - T O T A L		\$10,230,000
GRAND TOTAL - WATER		\$36,540,000

HALIFAX WATER

Capital Budget 2021/22

Wastewater

Project Number	Project Name	Project Cost
<u>Wastewater - Trunk Sewers</u>		
2.881	Combined Sewer Replacement - Chisholm Avenue	\$100,000
2.584	Fairview Cove Trunk Sewer	\$17,125,000
<i>Wastewater - Trunk Sewers - -- T O T A L</i>		\$17,225,000
<u>Wastewater - Collection System</u>		
2.168	Wastewater System - Trenchless Rehabilitation Program	\$2,000,000
2.883	Vernon Street Sewer Replacement	\$96,000
2.882	Lady Hammond Road Sewer Replacement	\$50,000
2.884	Foundry Lane Manhole Replacement	\$62,000
2.357	Manhole Renewals WW	\$31,000
2.358	Lateral Replacements WW (non tree roots)	\$1,750,000
2.563	Lateral Replacements WW (tree roots)	\$555,000
2.223	Wet Weather Management Program	\$350,000
2.052	Integrated Wastewater Projects - Program	\$1,200,000
2.905	Windsor Street Exchange	\$100,000
3.885	Harbourview Drive Sewer Main Renewal - Integrated	\$350,000
2.937	Coles Road Sewer Replacement	\$315,000
2.935	Renfrew Street Sewer Replacement	\$650,000
2.938	Howland Drive/Howland Court Sewer Replacement	\$175,000
3.692	Cogswell Redevelopment - Sewer Relocation	\$302,000
2.949	Allison Drive PS Elimination	\$75,000
2.557	Punch Bowl PS Elimination	\$2,820,000
2.946	SSP - Bayers Road Pocket - Engineering Analysis	\$250,000
2.950	Joseph Howe/Dutch Village Road Catchbasin Disconnections	\$190,000
2.852	Maynard Lake and Clement Street Wetland Separation	\$642,000
2.836	Wyse Road Separation Phase 1	\$3,214,000
2.838	Albro Lakes Watershed Separation	\$5,589,000
2.742	Windsor - Almon - Sewer Separation	\$250,000
2.944	Whimsical/Dingle/Crescent Mainline Lining	\$500,000
2.943	Old Clayton Park Lateral Lining - Top Hat Pilot	\$310,000
<i>Wastewater - Collection System -- T O T A L</i>		\$21,826,000
<u>Wastewater - Force mains</u>		
2.823	Akerley Blvd Force main Replacement	\$735,000
2.819	Pumping Station Oil Tank Replacements	\$60,000

HALIFAX WATER

Capital Budget 2021/22

Wastewater

Project Number	Project Name	Project Cost
2.820	Morris Lake Forcemain Investigation and Rehabilitation	\$2,500,000
Wastewater - Force mains -- T O T A L		\$3,295,000
<u>Wastewater - Structures</u>		
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	\$250,000
2.877	Pier A Pump Station - Drop Chamber HVAC Interconnection	\$125,000
2.920	Herring Cove Pumping Station - Pump Replacements	\$50,000
2.818	Jamieson Pumping Station - Automatic Bar Screen	\$840,000
2.824	Bruce Street Pumping Station Relocation	\$1,380,000
2.825	First Lake Pumping Station Upgrades	\$640,000
2.660	Bissett PS Component Upgrade	\$1,000,000
2.088	Russell Lake PS Upgrade	\$1,920,000
2.891	Beaverbank Pumping Stations - Mechanical and Electrical Rehabilitation	\$200,000
2.665	CSO Upgrade Program	\$300,000
2.846	Quigley Corner Pumping Station Upgrade	\$1,301,000
2.847	Quigley Corner Pumping Station Optimize	\$318,000
Wastewater Structures -- T O T A L		\$8,974,000
<u>Wastewater - Treatment Facility</u>		
2.056	Plant Optimization Audit Program	\$125,000
2.522	Emergency Wastewater Treatment Facility equipment replacements	\$450,000
Halifax Wastewater Treatment Facility:		
2.532	Duct Work Replacement	\$100,000
2.765	Raw Water Pump Refurbishment	\$50,000
2.863	SS Pipe Replacement Program	\$200,000
2.778	Densadegs - Mixer Gearbox Rebuilds	\$70,000
2.762	Fine Screens - Replace with Perforated Plate Screens	\$1,750,000
2.773	Industrial Water System - Replacement	\$175,000
2.777	Densadegs - Sludge Scraper Rebuilds (x2)	\$100,000
2.866	New Truck Bay Door	\$30,000
2.867	New Densadeg Drain Lines	\$75,000
2.868	New Wet Scrubber Internal Components	\$55,000
2.870	Densadeg Inlet Gate Actuators	\$75,000

HALIFAX WATER

Capital Budget 2021/22

Wastewater

Project Number	Project Name	Project Cost
2.775	UV Disinfection System - New Automatic Level Controls	\$550,000
2.779	Densadegs - Lamella Tube Settler Upgrades	\$1,100,000
Dartmouth Wastewater Treatment Facility:		
2.502	Duct Work Replacement	\$100,000
2.858	Roof Replacement	\$580,000
2.859	Replace Generator	\$290,000
2.871	SS Pipe Work Replacement Program	\$200,000
2.873	New Inlet Isolation Gate	\$180,000
2.874	Sludge Extraction Solids Analyzers	\$150,000
2.875	New Densadeg Drain Lines	\$85,000
2.855	Industrial Water System Replacement	\$175,000
Herring Cove Wastewater Treatment Facility:		
2.639	Duct Work Replacement Program	\$50,000
2.800	Densadegs - Lamella Tube Settler Upgrades	\$575,000
2.801	Fine Screens - New Perforated Plate Screens	\$150,000
2.802	UV Disinfection System - New Automatic Level Controls	\$400,000
2.879	Building Sealing	\$100,000
2.880	Densadeg Launder Weir Levelling	\$50,000
2.893	Alum Storage Containment Upgrades	\$100,000
2.894	Epoxy Seal Truck & Poly Bay Floors	\$50,000
2.896	New Hoist Over Sludge Tank Mixers	\$15,000
2.897	UV Hoist Upgrades	\$25,000
2.899	Densadeg Inlet Gate Actuators	\$75,000
2.900	Densadeg Gate Cover Modifications	\$10,000
Mill Cove Wastewater Treatment Facility:		
2.864	Admin Building Roof Replacement	\$75,000
2.901	Carbon Scrubbers - New Carbon Media	\$125,000
2.902	Headworks - Compactor Conveyor Spares	\$50,000
2.903	Dewatering - Centrifuge Rebuild Program	\$30,000
2.904	South RAS Pump Relocation	\$100,000
2.640	Process Upgrades - Preliminary & Detailed Design	\$1,000,000
Eastern Passage Wastewater Treatment Facility:		
2.906	Paving Behind Secondary Clarifiers	\$30,000
Aerotech Wastewater Treatment Facility:		

HALIFAX WATER

Capital Budget 2021/22

Wastewater

Project Number	Project Name	Project Cost
2.909	Road Repairs	\$20,000
	Timberlea Wastewater Treatment Facility:	
2.509	Asset Renewal Program	\$100,000
	Community Wastewater Treatment Facilities:	
2.916	Middle Musquodoboit WWTF - Primary Treatment RBC Upgrades	\$450,000
2.917	Springfield Lake WWTF - New Overflow System	\$25,000
	Biosolids Processing Facility:	
2.919	Gas Sensor Upgrade Program	\$30,000
2.921	Biofilter Media Replacement	\$60,000
2.922	Serpentix Conveyor Refurbishment	\$30,000
2.923	Old Loader Electrical Upgrades	\$25,000
2.568	Biosolids Management Plan	\$200,000
2.929	Facility Upgrade & Enhanced Resource Recovery-Preliminary Engineering	\$400,000
2.930	Facility Upgrade - Preliminary and Detailed Design	\$1,500,000
Wastewater - Treatment Facility -- T O T A L		\$12,515,000
	<u>Wastewater - Energy</u>	
2.362	Energy Management Capital Program (Wastewater)	\$500,000
2.491	Pump Station HVAC Retro-Commissioning Program	\$100,000
Wastewater - Energy -- T O T A L		\$600,000
	<u>Wastewater - Security</u>	
4.008	Security Upgrade Program	\$200,000
Wastewater - Security -- T O T A L		\$200,000
	<u>Wastewater - Equipment</u>	
2.161	I&I Reduction (SIR) Program Flow Meters and Related Equipment	\$25,000
2.451	Miscellaneous Equipment Replacement	\$120,000
Wastewater - Equipment -- T O T A L		\$145,000
Wastewater - Corporate Projects -- T O T A L		\$12,075,500
GRAND TOTAL - WASTEWATER		\$76,855,500

HALIFAX WATER

Capital Budget 2021/22

Stormwater

Project Number	Project Name	Project Cost
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Stormwater - Pipes

1.038	Integrated Stormwater Projects - Program	\$1,200,000
1.248	Prince Albert Road Integrated - Stormwater System Renewal (CSP)	\$375,000
1.102	Manhole Renewals SW	\$16,000
1.103	Catchbasin Renewals SW	\$63,000
1.135	Lateral Replacements SW	\$25,000
1.259	Lady Hammond Road Storm Replacement	\$40,000
1.204	National Disaster Mitigation Program	\$50,000
1.145	Sullivan's Pond Storm Sewer System Replacement - Plase 2 Irishtown Rd to Harbour	\$350,000
1.247	Penhorn Lake Stormwater System Renewal	\$25,000
1.245	Tobin Drive Stormwater System Renewal - Preliminary Engineering	\$50,000
1.243	Bayne St Stormwater System Upgrade - Preliminary Engineering	\$75,000
1.710	Kempt Road Stormwater System Upgrade - Preliminary Engineering	\$75,000
1.249	Miller Lake Rd and Hwy 2 Stormwater System Renewal	\$50,000
1.250	Dartmouth Rd and Elgin Lane Stormwater System Renewal	\$25,000
1.252	Sackville Drive and Beaverbank Cross Road Stormwater System Renewal	\$25,000
1.201	Stormwater Pipe Condition Inspections (CSP)	\$50,000
1.224	Thistle Street Storm Drainage System Upgrade - Preliminary Engineering	\$660,000

Stormwater - Pipes -- T O T A L

\$3,154,000

Stormwater - Culverts/Ditches

1.104	Driveway Culvert Replacements	\$1,000,000
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Street Specific Culvert Replacements:

1.147	Cole Harbour Rd (near #1560) - Culvert Replacement	\$350,000
1.183	St Margaret's Bay Rd, near Civic 2797 - Culvert Replacement	\$80,000
1.238	Betty Drive, near civic 1	\$350,000
1.239	Robert Lane, near civic 10	\$350,000
1.208	Yankeetown Road, near civic 16	\$350,000
1.234	18 Melville Ave, Halifax	\$28,000
1.234	3 Melville Ave, Halifax	\$28,000
1.236	32 Melville Ave, Halifax	\$28,000

HALIFAX WATER

Capital Budget 2021/22

Stormwater

Project Number	Project Name	Project Cost
1.237	Lockview Road, near civic 450	\$75,000
1.255	Kinclaven Street	\$75,000
1.256	Culvert Replacement - Glendale, at Raymond	\$96,000
1.257	Culvert Replacement - Glendale, at Metropolitan	\$135,000
1.258	Culvert Replacement - Lucasville Road, near Yankeetown Road	\$350,000
Stormwater - Culverts/Ditches -- T O T A L		\$3,295,000
<u>Stormwater - Structures</u>		
1.226	Ellenvale Run Retaining Wall - Phase 5 (Section 5 & 6)	\$4,025,000
1.240	Ellenvale Run Retaining Wall - Phase 6 (Section 4)	\$100,000
1.251	Larry Uteck Stormwater Management Pond Slope Stabilization	\$25,000
1.130	Glen Forrest Retention Pond Rehab	\$165,000
Stormwater - Structures -- T O T A L		\$4,315,000
Stormwater - Corporate Projects -- T O T A L		\$2,049,500
GRAND TOTAL - STORMWATER		\$12,813,500

HALIFAX WATER

Capital Budget 2021/22

Corporate Projects

Project Number	Project Name	Project Cost
<u>Corporate - Information Technology</u>		
4.097	Analytics Decision Support System	\$350,000
4.157	Asset Condition	\$190,000
4.151	Capital Planning	\$500,000
4.105	Cityworks Upgrade	\$200,000
1.011	Computer Replacement Program	\$400,000
4.147	Document Management Sharepoint Rollout	\$300,000
4.126	Full Enterprise Data Warehouse	\$600,000
4.153	General Analytic Tool	\$400,000
4.131	HR Training and Benefits	\$500,000
4.012	Network Upgrades	\$280,000
4.095	New CRM with Integration	\$100,000
4.15	Enterprise Resource Planning Solution	\$8,300,000
4.107	Customer Portal	\$100,000
4.091	Permit Approvals	\$500,000
	Security Awareness	\$340,000
	Encryption	\$60,000
	Network Protection	\$320,000
	Endpoint Protection	\$70,000
	Monitoring	\$1,150,000
	Governance	\$220,000
	Identity and Access Management	\$445,000
<i>Corporate - Information Technology -- T O T A L</i>		\$15,325,000
<u>Corporate - GIS</u>		
4.04	GIS Data Program	\$250,000
4.115	GIS Data Build - Services (ICI)	\$150,000
4.01	Sewer Service Entry	\$150,000
4.116	GIS Data Project (CAD schematic retirement)	\$50,000
4.038	GIS Hardware/Software Program	\$50,000
4.039	GIS Application Support Program	\$150,000
4.059	GIS Data Modelling	\$250,000
4.118	Engineering Drawing Database	\$50,000
<i>Corporate - GIS -- T O T A L</i>		\$1,100,000

HALIFAX WATER

Capital Budget 2021/22

Corporate Projects

Project Number	Project Name	Project Cost
<u>Corporate - Asset Management</u>		
4.156	Asset Management Program Roadmap Update - Implementation	\$250,000
2.872	Wastewater Sewer Condition Assessment	\$250,000
1.254	Storm Sewer Condition Assessment	\$110,000
2.043	Corporate Flow Monitoring Program	\$2,220,000
4.158	Condition Assessment Program	\$300,000
4.159	Performance Assessment Program	\$25,000
4.16	Asset Renewal Strategies Optimiation	\$30,000
4.161	Asset Renewal Management Program Reporting	\$15,000
4.162	Level of Service Implementation Program	\$100,000
4.163	Annual Asset Management Plan Update	\$10,000
4.165	Asset Management Awareness Program	\$20,000
4.166	Asset Management and Infrastructure Planning Communications	\$15,000
2.862	CSO Reporting Enhancement	\$40,000
1.253	Asset Management Implementation Team - Stormwater Management Structures	\$50,000
4.168	Model Enhancements	\$50,000
4.113	Climate Change Management Program	\$200,000
4.173	Population / Planning Projections and Analysis	\$100,000
4.175	Establish Design Cost Factors - Vertical Assets	\$50,000
4.179	Long-term Planning Framework Review	\$20,000
4.181	Future Regulatory Scenarios Study	\$75,000
4.183	Annual Unit Rates Review	\$10,000
4.185	Regional Development Charge Program Implementation	\$300,000
4.177	Annual Model Calibration Report	\$10,000
4.18	Springfield Lake Servicing Study	\$150,000
4.182	LIDS/SUDS Study	\$50,000
2.878	Wastewater Treatment Facilities Compliance Plan	\$150,000
2.562	Outfall Assessment Project	\$100,000
4.14	SSO Management Program	\$1,220,000
4.167	Real-time Control Project	\$60,000
3.644	Water Efficiency Study	\$100,000
3.625	Lake Major Water Levels Forecasting	\$70,000
3.645	Backup Supply Feasibilty Study	\$50,000
3.646	Mt Edward Booster Fire Pump Assessment	\$25,000
3.647	Robie Emergency Booster Assessment	\$25,000
4.144	New Hydraulic Water Model (InfoWater)	\$200,000
Corporate - Asset Management -- T O T A L		\$6,450,000

HALIFAX WATER

Capital Budget 2021/22

Corporate Projects

Project Number	Project Name	Project Cost
<u>Corporate - Facility</u>		
4.077	Building Capital Improvements	\$110,000
3.221	Energy Management Capital Program	\$100,000
<i>Corporate - Facility -- T O T A L</i>		\$210,000
<u>Corporate - SCADA & Other Equipment</u>		
4.093	GPS Units - Replacement	\$40,000
4.174	SCADA System Security Assessment Update	\$80,000
4.186	AMI Communications Upgrade	\$30,000
4.154	Customer Meters - New and Replacement	\$415,000
<i>Corporate - SCADA & Other Equipment -- T O T A L</i>		\$565,000
<u>Corporate - Fleet</u>		
4.006	Fleet Upgrade Program Stormwater	\$82,000
4.006	Fleet Upgrade Program Wastewater	\$328,000
4.007	Fleet Upgrade Program Water	\$295,000
<i>Corporate - Fleet -- T O T A L</i>		\$705,000
<i>GRAND TOTAL - Corporate Projects</i>		\$24,355,000

<i>ALLOCATION BREAKDOWN:</i>		
Water - Corporate Projects - T O T A L		\$10,230,000
Wastewater - Corporate Projects -- T O T A L		\$12,075,500
Stormwater - Corporate Projects -- T O T A L		\$2,049,500
<i>GRAND TOTAL - Corporate Projects</i>		\$24,355,000

HALIFAX WATER

Capital Budget 2021/22

Summary of Routine Capital Expenditures included within Capital Budget

Project Number	Project Name	Project Cost	Asset Class
3.067	Valves Renewals	\$125,000	Water
3.068	Hydrants Renewals	\$75,000	Water
3.069	Service Lines Renewals	\$100,000	Water
3.390	Lead Service Line Replacement Program	\$1,000,000	Water
3.101	Miscellaneous Equipment Replacement (W)	\$50,000	Water
4.007	Fleet Upgrade Program Water	\$610,000	Water
2.357	Manhole Renewals WW	\$25,000	Wastewater
2.358	Lateral Replacements WW (non-tree roots)	\$1,720,000	Wastewater
2.563	Lateral Replacements WW (tree roots)	\$541,000	Wastewater
2.161	I&I Reduction (SIR) Program Flow Meters and Related Equipment	\$25,000	Wastewater
2.451	Miscellaneous Equipment Replacement (WW)	\$120,000	Wastewater
4.006	Fleet Upgrade Program Wastewater	\$1,076,000	Wastewater
1.102	Manhole Renewals SW	\$15,000	Stormwater
1.103	Catchbasin Renewals SW	\$60,000	Stormwater
1.135	Lateral Replacements SW	\$12,000	Stormwater
4.006	Fleet Upgrade Program Stormwater	\$269,000	Stormwater
4.011	Desktop Computer Replacement Program	\$350,000	Corporate
4.093	GPS Units - Replacement	\$70,000	Corporate
4.154	Customer Meters - New and Replacement	\$500,000	Corporate
4.012	Network Upgrades	\$280,000	Water & Wastewater
GRAND TOTAL - Routine Capital Projects		\$7,023,000	



Appendix C

2021/22 Operating Budget



**STRAIGHT from
the SOURCE**

HALIFAX WATER
STATEMENT OF EARNINGS - ALL SERVICES - NSUARB
PROPOSED OPERATING BUDGET
APRIL 1, 2021 to MARCH 31, 2022
(in thousands)

	ACTUAL APR 1/19 MAR 31/20	APPROVED BUDGET (1) APR 1/20 MAR 31/21	PROPOSED BUDGET APR 1/21 MAR 31/22	Variances Year-over-Year		
				\$		%
				2020/21	2021/22	2020/21
Operating revenues	\$ 137,750	\$ 138,618	\$ 150,466	\$ 868	\$ 11,849	1%
Operating expenditures	109,326	118,110	125,379	8,784	7,269	8%
Earnings from operations before financial and other revenues and expenditures	28,424	20,508	25,087	(7,916)	4,579	(28%)
Financial and other revenues						
Interest	512	86	173	(426)	86	(83%)
Other	699	532	549	(167)	17	(24%)
	1,211	619	722	(592)	103	(49%)
Financial and other expenditures						
Interest on long term debt	7,144	8,823	7,603	1,679	(1,221)	24%
Repayment on long term debt	18,719	21,880	22,717	3,161	838	17%
Amortization of debt discount	187	228	258	41	31	22%
Dividend/grant in lieu of taxes	5,078	6,113	6,836	1,035	723	20%
Other	67	32	46	(35)	14	(52%)
	31,195	37,076	37,461	5,881	385	19%
Loss for the year	\$ (1,560)	\$ (15,949)	\$ (11,651)	\$ 14,389	\$ (4,297)	922%
						(27%)

1. 2020/21 Operating Budget approved by the Halifax Water Board of Commissioners, January 30, 2020.

1. 2020/21 Operating Budget approved by the Halifax Water Board of Commissioners, January 30, 2020.

HALIFAX WATER
STATEMENT OF EARNINGS - WASTEWATER - NSUARB
PROPOSED OPERATING BUDGET
APRIL 1, 2021 TO MARCH 31, 2022
(in thousands)

[illegible]

HALIFAX WATER
STATEMENT OF EARNINGS - STORMWATER - NSUARB
PROPOSED OPERATING BUDGET
APRIL 1, 2021 to MARCH 31, 2022
(in thousands)

	ACTUAL APR 1/19 MAR 31/20	APPROVED BUDGET (1) APR 1/20 MAR 31/21	PROPOSED BUDGET APR 1/21 MAR 31/22	Variances Year-over-Year			
				\$		%	
				2020/21	2021/22	2020/21	2021/22
Operating revenues							
Stormwater site generated service	\$ 5,361	\$ 6,047	\$ 6,051	\$ 686	\$ 3	13%	0%
Stormwater right of way service	3,835	3,835	3,835	0	0	0%	0%
Late payment and other connection fees	81	106	104	25	(2)	31%	(2%)
Miscellaneous	94	92	97	(2)	5	(2%)	5%
	<u>9,371</u>	<u>10,081</u>	<u>10,087</u>	<u>710</u>	<u>6</u>	<u>8%</u>	<u>0%</u>
Operating expenditures							
Stormwater collection	4,808	5,821	5,885	1,013	64	21%	1%
Engineering and technology services	728	1,273	1,396	545	123	75%	10%
Regulatory services	1,490	1,627	1,684	137	56	9%	3%
Corporate services	854	857	555	3	36	0%	4%
Administration	0	0	338				
Depreciation and amortization	1,222	1,365	2,046	143	681	12%	50%
	<u>9,102</u>	<u>10,943</u>	<u>11,905</u>	<u>1,841</u>	<u>961</u>	<u>20%</u>	<u>9%</u>
	<u>269</u>	<u>(862)</u>	<u>(1,817)</u>	<u>(1,131)</u>	<u>(955)</u>	<u>(421%)</u>	<u>111%</u>
Earnings from operations before financial and other revenues and expenditures							
Financial and other revenues							
Interest	99	9	31	(90)	22	(91%)	256%
Other	0	0	0	0	0	#DIV/0!	#DIV/0!
	<u>99</u>	<u>9</u>	<u>31</u>	<u>(90)</u>	<u>22</u>	<u>(91%)</u>	<u>256%</u>
Financial and other expenditures							
Interest on long term debt	610	924	791	314	(133)	51%	(14%)
Repayment on long term debt	1,475	1,973	2,156	498	184	34%	9%
Amortization of debt discount	13	20	25	7	5	51%	26%
Dividend/grant in lieu of taxes	0	62	154	62	92	#DIV/0!	149%
Other	0	0	0	0	0	#DIV/0!	#DIV/0!
	<u>2,098</u>	<u>2,978</u>	<u>3,126</u>	<u>880</u>	<u>148</u>	<u>42%</u>	<u>5%</u>
Loss for the year	<u>\$ (1,730)</u>	<u>\$ (3,832)</u>	<u>\$ (4,912)</u>	<u>\$ 2,102</u>	<u>\$ 1,081</u>	<u>121%</u>	<u>28%</u>

1. 2020/21 Operating Budget approved by the Halifax Water Board of Commissioners, January 30, 2020.

HALIFAX WATER
STATEMENT OF EARNINGS - REGULATED AND UNREGULATED ACTIVITIES - NSUARB
PROPOSED OPERATING BUDGET
APRIL 1, 2021 to MARCH 31, 2022
(in thousands)

	ACTUAL APR 1/19 MAR 31/20	APPROVED BUDGET (1) APR 1/20 MAR 31/21	PROPOSED BUDGET APR 1/21 MAR 31/22
REGULATED ACTIVITIES			
Operating revenues			
Water	\$ 47,918	\$ 48,083	\$ 48,424
Wastewater	70,494	70,365	80,619
Stormwater	9,196	9,882	9,886
Public fire protection	7,074	7,074	7,628
Private fire protection	881	884	1,312
Other	1,084	1,207	1,495
	<u>136,647</u>	<u>137,496</u>	<u>149,363</u>
Operating expenditures			
Water supply and treatment	9,541	10,556	10,740
Water transmission and distribution	10,843	12,310	11,876
Wastewater collection	13,939	13,374	12,503
Stormwater collection	4,808	5,821	5,885
Wastewater treatment	19,892	20,571	21,274
Engineering and technology services	8,436	9,184	12,910
Regulatory services	3,781	4,359	4,471
Corporate services	12,135	13,346	8,887
Administration			4,859
Depreciation and amortization	25,060	27,349	30,872
	<u>108,435</u>	<u>116,869</u>	<u>124,278</u>
Earnings from operations before financial and other revenues and expenditures	<u>28,211</u>	<u>20,627</u>	<u>25,086</u>
Financial and other revenues			
Interest	512	86	173
Other	144	39	31
	<u>656</u>	<u>126</u>	<u>204</u>
Financial and other expenditures			
Interest on long term debt	7,144	8,807	7,592
Repayment on long term debt	18,719	21,860	22,693
Amortization of debt discount	187	227	258
Dividend/grant in lieu of taxes	5,078	6,113	6,836
Other		1	1
	<u>31,128</u>	<u>37,009</u>	<u>37,381</u>
Loss for the year	<u>\$ (2,261)</u>	<u>\$ (16,256)</u>	<u>\$ (12,091)</u>
UNREGULATED ACTIVITIES			
Operating revenues			
Septage tipping fees	\$ 514	\$ 505	\$ 505
Leachate and other contract revenue	453	473	484
Airplane effluent	98	105	76
Miscellaneous	38	38	38
	<u>1,103</u>	<u>1,121</u>	<u>1,103</u>
Operating expenditures			
Water supply and treatment	32	28	32
Wastewater collection	24	111	88
Wastewater treatment	741	842	798
Sponsorships and donations	76	68	73
Depreciation and amortization	18	81	0
Administration		110	110
	<u>891</u>	<u>1,240</u>	<u>1,101</u>
Earnings from operations before financial and other revenues and expenditures	<u>213</u>	<u>(119)</u>	<u>2</u>
Financial and other revenues			
Other	555	493	518
	<u>555</u>	<u>493</u>	<u>518</u>
Financial and other expenditures			
Other	67	67	80
	<u>67</u>	<u>67</u>	<u>80</u>
Earnings for the year	<u>\$ 701</u>	<u>\$ 307</u>	<u>\$ 440</u>
Total earnings (loss) for the year (Regulated and Unregulated)	<u>\$ (1,560)</u>	<u>\$ (15,949)</u>	<u>\$ (11,651)</u>

TO: Craig MacMullin, MBA, CPA, CGA, Chair, and Members of the
Halifax Regional Water Commission Board

SUBMITTED BY: **Jamie Hannam** Digitally signed by Jamie
Hannam
Date: 2021.01.22
09:01:00 -04'00'

Jamie Hannam, P.Eng., Director, Engineering & IS

APPROVED: **Cathie O'Toole** Digitally signed by Cathie
O'Toole
Date: 2021.01.22
10:29:31 -04'00'

Cathie O'Toole, MBA, FCPA, FCGA, ICD.D, General Manager

DATE: January 12, 2021

SUBJECT: **2021/2022 Capital Budget**

ORIGIN

Staff compilation of the annual Capital Budget.

RECOMMENDATION

It is recommended the Halifax Regional Water Commission Board approve the proposed 2021/2022 Capital Budget at a total value of \$126,209,000 as detailed in the attached Schedule 1.

BACKGROUND

Halifax Water's 2019 *Integrated Resource Plan* (IRP) identifies a 30-year capital investment plan valued at \$4.05 billion (\$2.69 billion net present value). The Capital Budget is developed based on the 2019 IRP. This 30-year plan provides a strong vision for the infrastructure required to ensure the long-term integrity of the utility's assets. The 2021/22 Capital Budget includes many projects from the IRP that will begin to shape the overall direction of the capital plan for years to come.

The capital budget program focuses on providing required infrastructure for asset renewal, regulatory compliance, and growth., and helps ensure that Halifax Water continues to provide services in a cost effective and efficient manner with a focus on long-term

sustainability. Mitigation of operational risks as well as climate change adaptation and mitigation are also taken into consideration when the Capital Budget is developed.

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

DISCUSSION

Attached, in Schedule 1, is the proposed Capital Budget for Halifax Water for the fiscal year April 1, 2021 to March 31, 2022. It includes projects for Water, Wastewater, and Stormwater service delivery with a total value of \$126,209,000.

Water

The 2021/22 capital budget for WATER assets identifies the start of a significant reinvestment in Water Supply Plants (WSP) with the introduction of the Water Supply Enhancement Program (WSEP).

The JD Kline and Lake Major Water WSPs are entering a period of wholesale capital renewal, upgrade, and enhancement, which is planned to occur over the next 10 years. These changes are being driven by operational risks due to climate change, lake recovery, obsolescence, end of asset life, and ongoing treatment plant performance issues that have converged into the present-day operating conditions. In terms of recent water quality events, the presence of taste and odour compounds (e.g. geosmin), coupled with algal matter and algal toxin risk is at the forefront of the evolving treatment process needs for the utility.

The development of the capital plans for each WSP has been progressing over the last two years. These capital plans have developed the needs, scope, concept level cost estimate, and priority of major projects to be completed at each facility. Such projects are primarily beyond the scale of small and medium projects which have been ongoing at these facilities in recent years.

The Lake Major and JD Kline facilities have many common elements including technical challenges, management expectations, project team staffing, and overall project approaches. Therefore, the two WSP capital programs are being integrated into an overall WSP capital program in order to prioritize, sequence, gain synergies, and reduce overall costs by considering the modifications as one complete program. Together, these projects represent the largest value capital investment programs for water treatment infrastructure in the history of the utility. The overall Water Supply Enhancement Program includes 15 projects: 10 at the JD Kline WSP and 5 at the Lake Major WSP. The estimated total capital cost of the ten-year WSEP program is currently estimated at \$230,000,000.

The need for this program is directly connected to the continued provision of water from the utility's two largest treatment facilities meeting quantity and quality objectives.

The value of the overall WATER capital budget for 2021/22 is \$26,310,000. The major capital projects within this asset class for 2021/22 implementation includes:

- WSEP – JD Kline and Lake Major Clarifier Design
- Cobequid Road Transmission Main Looping – Windgate Drive Extension
- Water Distribution – Main Renewal Program
- Lead Service Line Replacement Program
- Cowie Hill Reservoir - Replacement
- HRM Cogswell Redevelopment – Water Transmission Main Relocation

Wastewater:

The value of the WASTEWATER capital budget for 2021/22 is \$64,780,000. The major capital projects within this asset class for 2021/22 implementation includes:

- Fairview Cove Trunk Sewer – Tunnel Construction
- Wastewater System – Trenchless Rehabilitation Program
- Integrated Wastewater Collection Projects
- Albro Lake Watershed Separation
- Morris Lake and Russell Lake Forcemains – Rehabilitation
- Pumping Station Rehabilitations
- Punch Bowl Pumping Station Elimination
- Halifax WWTF – Fine Screen Replacements and Clarifier Upgrades
- HRM Cogswell Redevelopment – Wastewater Sewer Relocation
- Biosolids Processing Facility – Preliminary Design

Stormwater:

The value of the STORMWATER capital budget for 2021/22 is \$10,764,000. The major capital projects within this asset class for 2021/22 implementation includes:

- Integrated Stormwater Collection Projects
- Driveway and Cross Culvert Renewal Program
- Ellenvale Run Retaining Wall System Replacement – Phase 5
- HRM Cogswell Redevelopment – Storm Sewer Relocation

Corporate Projects:

The value of the CORPORATE capital budget for 2021/22 is \$24,355,000. The major capital projects within this asset class includes:

Major Corporate Projects for 2021/22 implementation include:

- IT Strategic Plan Implementation Year 4
 - Enterprise Resource Planning Solution
 - Cybersecurity Program
- Corporate Flow Monitoring Program
- Detailed Design of Burnside Operations Facility
- Fleet Upgrade Program

The 2021/22 capital budget does not include the Cogswell District Energy project. If that project proceeds, it will have a separate capital budget which would be brought forward to the Halifax Water Board in conjunction with the business case and recommendation to proceed as a separate regulated utility. This discussion is targeted for March 2021.

BUDGET IMPLICATIONS

The funding plan for the proposed Capital Budget is shown below:

2020/2021 Capital Budget Funding Sources		
Water:	Depreciation	\$12,275,000
	Debt	\$21,005,000
	RDC	\$1,238,000
	External Funding Building Canada & CWWF	\$2,022,000
	Capital Cost Contributions	<u>\$0.00</u>
	TOTAL	\$36,540,000
Wastewater:	Depreciation	\$16,673,500
	Debt	\$36,192,000
	RDC	\$22,472,000
	External Funding HRM	\$1,326,000
	Capital Cost Contributions	<u>\$192,000</u>
	TOTAL	\$76,855,500
Stormwater:	Depreciation	\$1,953,500
	External Funding HRM	\$256,000
	Debt	<u>\$10,604,000</u>
	TOTAL	\$12,813,500
TOTAL CAPITAL FUNDING:		\$126,209,000

ITEM #4.3
Halifax Water Board
January 28, 2021

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

The projected annual impact of the 2021/22 Capital Budget on future years' Operating Budgets is estimated to be \$8,084,000 in depreciation, \$3,390,000 in debt principal payments and \$1,085,000 in interest payments assuming an interest rate of 2% and 20-year term. There will be other incremental impacts to operating expenses as a result of these capital projects, however the most material impacts are debt servicing and depreciation.

ATTACHMENT

1. Schedule 1 – Halifax Water 2021/22 Capital Budget

Report Prepared by:

**Jamie
Hannam**

Digitally signed by Jamie
Hannam
Date: 2021.01.22
09:01:21 -04'00'

Jamie Hannam, P.Eng., Director, Engineering and IS

Financial Reviewed by:

**Louis de
Montbrun**

Digitally signed by Louis
de Montbrun
Date: 2021.01.22
10:24:09 -04'00'

Louis de Montbrun, CPA, CA
Director, Corporate Services/CFO, 902-490-3685

HALIFAX WATER

Capital Budget 2021/22

Summary

Asset Category	Project Costs
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<i>Water - Land -- T O T A L</i>	\$100,000
<i>Water - Transmission -- T O T A L</i>	\$3,375,000
<i>Water - Distribution -- T O T A L</i>	\$6,455,000
<i>Water - Structures -- T O T A L</i>	\$9,688,000
<i>Water - Treatment Facilities -- T O T A L</i>	\$6,392,000
<i>Water - Energy -- T O T A L</i>	\$200,000
<i>Water - Security -- T O T A L</i>	\$50,000
<i>Water - Equipment -- T O T A L</i>	\$50,000
<i>Water - Corporate Projects - T O T A L</i>	\$10,230,000
TOTAL - Water	\$36,540,000

<i>Wastewater - Trunk Sewers -- T O T A L</i>	\$17,225,000
<i>Wastewater - Collection System -- T O T A L</i>	\$21,826,000
<i>Wastewater - Forcemains -- T O T A L</i>	\$3,295,000
<i>Wastewater Structures -- T O T A L</i>	\$8,974,000
<i>Wastewater - Treatment Facility -- T O T A L</i>	\$12,515,000
<i>Wastewater - Energy -- T O T A L</i>	\$600,000
<i>Wastewater - Security -- T O T A L</i>	\$200,000
<i>Wastewater - Equipment -- T O T A L</i>	\$145,000
<i>Wastewater - Corporate Projects -- T O T A L</i>	\$12,075,500
TOTAL - Wastewater	\$76,855,500

HALIFAX WATER

Capital Budget 2021/22

Summary

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

<i>Stormwater - Pipes -- T O T A L</i>	\$3,154,000
<i>Stormwater - Culverts -- T O T A L</i>	\$3,295,000
<i>Stormwater - Structures -- T O T A L</i>	\$4,315,000
<i>Stormwater - Corporate Projects -- T O T A L</i>	\$2,049,500
TOTAL - Stormwater	\$12,813,500

<i>G R A N D T O T A L</i>	\$126,209,000
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HALIFAX WATER

Capital Budget 2021/22

Water

Project Number	Project Name	Project Cost
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Water - Land

3.033	Watershed Land Acquisition	\$100,000
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Water - Land -- T O T A L

\$100,000

Water - Transmission

3.042	Critical Valve Replacement Program	\$200,000
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3.587	Prince Albert Road Transmission Main Replacement	\$45,000
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3.554	North End Feeder Replacement - Design	\$500,000
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3.571	Highway 118 Crossing - Shubie Park to Dartmouth Crossing	\$80,000
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3.631	Transmission Main Upgrades - Churchill Drive Corridor	\$50,000
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3.632	Condition Assessment - Cobequid Road Transmission Main	\$250,000
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3.293	Peninsula Transmission Main Replacement-Windsor Street to Superstore Property	\$475,000
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3.503	Chain Control Valve Upgrade Program	\$45,000
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3.574	Cobequid Looping - Windgate Drive Extension	\$1,500,000
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3.504	Bedford to Burnside Transmission Main Phase 1 Pipe	\$200,000
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3.045	Bedford West CCC - Various Phases	\$5,000
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3.260	Morris (Russell) Lake Estates CCC	\$15,000
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3.261	Lakeside Timberlea CCC	\$10,000
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Water - Transmission -- T O T A L

\$3,375,000

Water - Distribution

3.022	Water Distribution - Main Renewal Program	\$3,800,000
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3.648	Spring Garden Road Watermain Renewal	\$1,300,000
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3.067	~ Valves Renewals	\$125,000
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3.068	~ Hydrants Renewals	\$75,000
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3.069	~ Service Lines Renewals	\$100,000
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3.390	Lead Service Line Replacement Program	\$1,000,000
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3.285	Versa Valve Removal	\$25,000
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3.294	Automated Flushing Program	\$20,000
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3.296	Water Sampling Station Relocation Program	\$10,000
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Water - Distribution -- T O T A L

\$6,455,000

HALIFAX WATER

Capital Budget 2021/22

Water

Project Number	Project Name	Project Cost
----------------	--------------	--------------

Water - Structures

3.601	PRV Valve Replacement Program	\$50,000
3.602	PRV Chamber - Electrical Panel Replacement Program	\$40,000
3.603	DMA - Meter Replacement Program	\$50,000
3.455	Reservoir Mixing and Residuals Management Upgrade Program	\$225,000
3.623	Booster Station Building Envelope	\$30,000
3.607	Condition Assessment - Miscellaneous Structures	\$75,000
3.634	Lake Major Dam - Shoreline Improvements for Old German Road Properties	\$250,000
3.595	New Orchard Control Chamber Study	\$100,000
3.624	Robie Control Reservoir Meter Replacement	\$16,000
3.597	Aerotech Booster Station - Pump Repairs	\$17,000
3.528	Beaver Bank Booster Station - Pump Upgrades	\$180,000
3.605	Silverside Pumping Station Upgrades Construction	\$240,000
3.626	Eastern Passage Rechlorination Station	\$30,000
3.309	Cowie Hill Reservoir Replacement	\$7,610,000
3.288	Akerley Reservoir Rehabilitation	\$200,000
3.561	Prince Albert PRV Chamber Replacement	\$25,000
3.379	New Aerotech Reservoir - Preliminary Design	\$100,000
3.641	Dam Safety Review - Chain Lake Dam - Capital Work	\$200,000
3.642	Dam Safety Review - Pockwock Lake Dam - Capital Work	\$50,000
3.640	Dam Safety Review - Capital Implementation Program	\$200,000
<i>Water - Structures -- T O T A L</i>		\$9,688,000

Water - Treatment Facilities

J D Kline Water Supply Plant:

3.604	JD Kline WSP - Pretreatment and Clarification - WSEP JDK-800.10	\$2,273,000
3.608	JD Kline WSP - Clearwell, reservoir and storage - WSEP JDK-800.25	\$342,000
3.611	JD Kline WSP - Service Water System Upgrade - WSEP JDK-800.50	\$885,000
3.617	JD Kline WSP - Advanced Treatment for Taste, Odour and Algae-WSEP JDK-800.8	\$369,000
3.633	Program Management Fess and Expenses - WSEP JDK-MAJ	\$153,000
3.338	JD Kline WSP - Upgrades to the Process Wastewater Lagoons	\$30,000
3.341	JD Kline WSP - Roof Replacement - Vent House	\$50,000

HALIFAX WATER

Capital Budget 2021/22

Water

Project Number	Project Name	Project Cost
3.628	JD Kline WSP - Purchase Spectrophotometer	\$16,000
3.629	J D Kline WSP - Replace Diesel Generator Day Tank at the Low Lift Station	\$9,000
3.627	JD Kline WSP - Purchase New Scales for Lime and Polymer	\$15,000
3.639	J D Kline WSP - Fluoride Storage Room Ventilation System Upgrades	\$150,000
3.351	J D Kline WSP - Replace Westinghouse Electrical Panels	\$32,000
3.463	J D Kline WSP - New Fluoride Supply Line	\$15,000
3.431	J D Kline WSP - Fluoride Tank Liner Replacement	\$19,000
Lake Major Water Supply Plant:		
3.618	Lake Major WSP - Clarification/Pretreatment - WSEP MAJ 800.15	\$826,000
3.619	Lake Major WSP - Intake/low lift Pump Station - WSEP MAJ-800.20	\$483,000
3.526	Lake Major WSP - Roof Replacement	\$125,000
Bennery Lake Water Supply Plant:		
3.589	Aerotech Booster Station Replacement - Design	\$50,000
3.636	Bennery Lake WSP - MCC Splash Protection	\$50,000
3.637	Bennery Lake WSP - MCC Electrical Upgrades	\$150,000
Non-Urban Core WSP		
3.212	Rechlorination System Upgrades	\$25,000
3.638	Middle Musquodoboit WSP - Pumping System Upgrades	\$250,000
3.643	Silver Sands - New water storage tank	\$35,000
3.630	Purchase Algal Analytical Equipment for Raw Water Quality Assessment	\$40,000
Water - Treatment Facilities -- T O T A L		\$6,392,000
<u>Water - Energy</u>		
3.635	Energy Management Capital Program (Water)	\$100,000
3.107	Chamber HVAC Retro-Commissioning Program	\$100,000
Water - Energy -- T O T A L		\$200,000
<u>Water - Security</u>		
4.009	Security Upgrade Program	\$50,000
Water - Security -- T O T A L		\$50,000
<u>Water - Equipment</u>		
3.101	Miscellaneous Equipment Replacement	\$50,000
Water - Equipment -- T O T A L		\$50,000

HALIFAX WATER

Capital Budget 2021/22

Water

Project Number	Project Name	Project Cost
<i>Water - Corporate Projects - T O T A L</i>		\$10,230,000
GRAND TOTAL - WATER		\$36,540,000

HALIFAX WATER

Capital Budget 2021/22

Wastewater

Project Number	Project Name	Project Cost
<u>Wastewater - Trunk Sewers</u>		
2.881	Combined Sewer Replacement - Chisholm Avenue	\$100,000
2.584	Fairview Cove Trunk Sewer	\$17,125,000
<i>Wastewater - Trunk Sewers - -- T O T A L</i>		\$17,225,000
<u>Wastewater - Collection System</u>		
2.168	Wastewater System - Trenchless Rehabilitation Program	\$2,000,000
2.883	Vernon Street Sewer Replacement	\$96,000
2.882	Lady Hammond Road Sewer Replacement	\$50,000
2.884	Foundry Lane Manhole Replacement	\$62,000
2.357	Manhole Renewals WW	\$31,000
2.358	Lateral Replacements WW (non tree roots)	\$1,750,000
2.563	Lateral Replacements WW (tree roots)	\$555,000
2.223	Wet Weather Management Program	\$350,000
2.052	Integrated Wastewater Projects - Program	\$1,200,000
2.905	Windsor Street Exchange	\$100,000
3.885	Harbourview Drive Sewer Main Renewal - Integrated	\$350,000
2.937	Coles Road Sewer Replacement	\$315,000
2.935	Renfrew Street Sewer Replacement	\$650,000
2.938	Howland Drive/Howland Court Sewer Replacement	\$175,000
3.692	Cogswell Redevelopment - Sewer Relocation	\$302,000
2.949	Allison Drive PS Elimination	\$75,000
2.557	Punch Bowl PS Elimination	\$2,820,000
2.946	SSP - Bayers Road Pocket - Engineering Analysis	\$250,000
2.950	Joseph Howe/Dutch Village Road Catchbasin Disconnections	\$190,000
2.852	Maynard Lake and Clement Street Wetland Separation	\$642,000
2.836	Wyse Road Separation Phase 1	\$3,214,000
2.838	Albro Lakes Watershed Separation	\$5,589,000
2.742	Windsor - Almon - Sewer Separation	\$250,000
2.944	Whimsical/Dingle/Crescent Mainline Lining	\$500,000
2.943	Old Clayton Park Lateral Lining - Top Hat Pilot	\$310,000
<i>Wastewater - Collection System -- T O T A L</i>		\$21,826,000

HALIFAX WATER

Capital Budget 2021/22

Wastewater

Project Number	Project Name	Project Cost
<u>Wastewater - Force mains</u>		
2.823	Akerley Blvd Force main Replacement	\$735,000
2.819	Pumping Station Oil Tank Replacements	\$60,000
2.820	Morris Lake Force main Investigation and Rehabilitation	\$2,500,000
<i>Wastewater - Force mains -- T O T A L</i>		\$3,295,000

HALIFAX WATER

Capital Budget 2021/22

Wastewater

Project Number	Project Name	Project Cost
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Wastewater - Structures

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	\$250,000
2.877	Pier A Pump Station - Drop Chamber HVAC Interconnection	\$125,000
2.920	Herring Cove Pumping Station - Pump Replacements	\$50,000
2.818	Jamieson Pumping Station - Automatic Bar Screen	\$840,000
2.824	Bruce Street Pumping Station Relocation	\$1,380,000
2.825	First Lake Pumping Station Upgrades	\$640,000
2.660	Bissett PS Component Upgrade	\$1,000,000
2.088	Russell Lake PS Upgrade	\$1,920,000
2.891	Beaverbank Pumping Stations - Mechanical and Electrical Rehabilitation	\$200,000
2.665	CSO Upgrade Program	\$300,000
2.846	Quigley Corner Pumping Station Upgrade	\$1,301,000
2.847	Quigley Corner Pumping Station Optimize	\$318,000

Wastewater Structures -- T O T A L

\$8,974,000

Wastewater - Treatment Facility

2.056	Plant Optimization Audit Program	\$125,000
2.522	Emergency Wastewater Treatment Facility equipment replacements	\$450,000

HALIFAX WATER

Capital Budget 2021/22

Wastewater

Project Number	Project Name	Project Cost
Halifax Wastewater Treatment Facility:		
2.532	Duct Work Replacement	\$100,000
2.765	Raw Water Pump Refurbishment	\$50,000
2.863	SS Pipe Replacement Program	\$200,000
2.778	Densadegs - Mixer Gearbox Rebuilds	\$70,000
2.762	Fine Screens - Replace with Perforated Plate Screens	\$1,750,000
2.773	Industrial Water System - Replacement	\$175,000
2.777	Densadegs - Sludge Scraper Rebuilds (x2)	\$100,000
2.866	New Truck Bay Door	\$30,000
2.867	New Densadeg Drain Lines	\$75,000
2.868	New Wet Scrubber Internal Components	\$55,000
2.870	Densadeg Inlet Gate Actuators	\$75,000
2.775	UV Disinfection System - New Automatic Level Controls	\$550,000
2.779	Densadegs - Lamella Tube Settler Upgrades	\$1,100,000
Dartmouth Wastewater Treatment Facility:		
2.502	Duct Work Replacement	\$100,000
2.858	Roof Replacement	\$580,000
2.859	Replace Generator	\$290,000
2.871	SS Pipe Work Replacement Program	\$200,000
2.873	New Inlet Isolation Gate	\$180,000
2.874	Sludge Extraction Solids Analyzers	\$150,000
2.875	New Densadeg Drain Lines	\$85,000
2.855	Industrial Water System Replacement	\$175,000
Herring Cove Wastewater Treatment Facility:		
2.639	Duct Work Replacement Program	\$50,000
2.800	Densadegs - Lamella Tube Settler Upgrades	\$575,000
2.801	Fine Screens - New Perforated Plate Screens	\$150,000
2.802	UV Disinfection System - New Automatic Level Controls	\$400,000
2.879	Building Sealing	\$100,000
2.880	Densadeg Launder Weir Levelling	\$50,000
2.893	Alum Storage Containment Upgrades	\$100,000

HALIFAX WATER

Capital Budget 2021/22

Wastewater

Project Number	Project Name	Project Cost
2.894	Epoxy Seal Truck & Poly Bay Floors	\$50,000
2.896	New Hoist Over Sludge Tank Mixers	\$15,000
2.897	UV Hoist Upgrades	\$25,000
2.899	Densadeg Inlet Gate Actuators	\$75,000
2.900	Densadeg Gate Cover Modifications	\$10,000
Mill Cove Wastewater Treatment Facility:		
2.864	Admin Building Roof Replacement	\$75,000
2.901	Carbon Scrubbers - New Carbon Media	\$125,000
2.902	Headworks - Compactor Conveyor Spares	\$50,000
2.903	Dewatering - Centrifuge Rebuild Program	\$30,000
2.904	South RAS Pump Relocation	\$100,000
2.640	Process Upgrades - Preliminary & Detailed Design	\$1,000,000
Eastern Passage Wastewater Treatment Facility:		
2.906	Paving Behind Secondary Clarifiers	\$30,000
Aerotech Wastewater Treatment Facility:		
2.909	Road Repairs	\$20,000
Timberlea Wastewater Treatment Facility:		
2.509	Asset Renewal Program	\$100,000
Community Wastewater Treatment Facilities:		
2.916	Middle Musquodoboit WWTF - Primary Treatment RBC Upgrades	\$450,000
2.917	Springfield Lake WWTF - New Overflow System	\$25,000
Biosolids Processing Facility:		
2.919	Gas Sensor Upgrade Program	\$30,000
2.921	Biofilter Media Replacement	\$60,000
2.922	Serpentix Conveyor Refurbishment	\$30,000
2.923	Old Loader Electrical Upgrades	\$25,000
2.568	Biosolids Management Plan	\$200,000
2.929	Facility Upgrade & Enhanced Resource Recovery-Preliminary Engineering	\$400,000
2.930	Facility Upgrade - Preliminary and Detailed Design	\$1,500,000
Wastewater - Treatment Facility -- T O T A L		\$12,515,000

Wastewater - Energy

HALIFAX WATER

Capital Budget 2021/22

Wastewater

Project Number	Project Name	Project Cost
2.362	Energy Management Capital Program (Wastewater)	\$500,000
2.491	Pump Station HVAC Retro-Commissioning Program	\$100,000
<i>Wastewater - Energy -- T O T A L</i>		\$600,000
<u>Wastewater - Security</u>		
4.008	Security Upgrade Program	\$200,000
<i>Wastewater - Security -- T O T A L</i>		\$200,000
<u>Wastewater - Equipment</u>		
2.161	I&I Reduction (SIR) Program Flow Meters and Related Equipment	\$25,000
2.451	Miscellaneous Equipment Replacement	\$120,000
<i>Wastewater - Equipment -- T O T A L</i>		\$145,000
<i>Wastewater - Corporate Projects -- T O T A L</i>		\$12,075,500
<i>GRAND TOTAL - WASTEWATER</i>		\$76,855,500

HALIFAX WATER

Capital Budget 2021/22

Stormwater

Project Number	Project Name	Project Cost
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Stormwater - Pipes

1.038	Integrated Stormwater Projects - Program	\$1,200,000
1.248	Prince Albert Road Integrated - Stormwater System Renewal (CSP)	\$375,000
1.102	Manhole Renewals SW	\$16,000
1.103	Catchbasin Renewals SW	\$63,000
1.135	Lateral Replacements SW	\$25,000
1.259	Lady Hammond Road Storm Replacement	\$40,000
1.204	National Disaster Mitigation Program	\$50,000
1.145	Sullivan's Pond Storm Sewer System Replacement - Plase 2 Irishtown Rd to Harbour	\$350,000
1.247	Penhorn Lake Stormwater System Renewal	\$25,000
1.245	Tobin Drive Stormwater System Renewal - Preliminary Engineering	\$50,000
1.243	Bayne St Stormwater System Upgrade - Preliminary Engineering	\$75,000
1.710	Kempton Road Stormwater System Upgrade - Preliminary Engineering	\$75,000
1.249	Miller Lake Rd and Hwy 2 Stormwater System Renewal	\$50,000
1.250	Dartmouth Rd and Elgin Lane Stormwater System Renewal	\$25,000
1.252	Sackville Drive and Beaverbank Cross Road Stormwater System Renewal	\$25,000
1.201	Stormwater Pipe Condition Inspections (CSP)	\$50,000
1.224	Thistle Street Storm Drainage System Upgrade - Preliminary Engineering	\$660,000

Stormwater - Pipes -- T O T A L

\$3,154,000

Stormwater - Culverts/Ditches

1.104	Driveway Culvert Replacements	\$1,000,000
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Street Specific Culvert Replacements:

1.147	Cole Harbour Rd (near #1560) - Culvert Replacement	\$350,000
1.183	St Margaret's Bay Rd, near Civic 2797 - Culvert Replacement	\$80,000
1.238	Betty Drive, near civic 1	\$350,000
1.239	Robert Lane, near civic 10	\$350,000
1.208	Yankeetown Road, near civic 16	\$350,000
1.234	18 Melville Ave, Halifax	\$28,000
1.234	3 Melville Ave, Halifax	\$28,000
1.236	32 Melville Ave, Halifax	\$28,000
1.237	Lockview Road, near civic 450	\$75,000
1.255	Kinclaven Street	\$75,000

HALIFAX WATER

Capital Budget 2021/22

Stormwater

Project Number	Project Name	Project Cost
1.256	Culvert Replacement - Glendale, at Raymond	\$96,000
1.257	Culvert Replacement - Glendale, at Metropolitan	\$135,000
1.258	Culvert Replacement - Lucasville Road, near Yankeetown Road	\$350,000
<i>Stormwater - Culverts/Ditches -- T O T A L</i>		\$3,295,000
<u>Stormwater - Structures</u>		
1.226	Ellenvale Run Retaining Wall - Phase 5 (Section 5 & 6)	\$4,025,000
1.240	Ellenvale Run Retaining Wall - Phase 6 (Section 4)	\$100,000
1.251	Larry Uteck Stormwater Management Pond Slope Stabilization	\$25,000
1.130	Glen Forrest Retention Pond Rehab	\$165,000
<i>Stormwater - Structures -- T O T A L</i>		\$4,315,000
<i>Stormwater - Corporate Projects -- T O T A L</i>		\$2,049,500
<i>GRAND TOTAL - STORMWATER</i>		\$12,813,500

HALIFAX WATER

Capital Budget 2021/22

Corporate Projects

Project Number	Project Name	Project Cost
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Corporate - Information Technology

4.097	Analytics Decision Support System	\$350,000
4.157	Asset Condition	\$190,000
4.151	Capital Planning	\$500,000
4.105	Cityworks Upgrade	\$200,000
1.011	Computer Replacement Program	\$400,000
4.147	Document Management Sharepoint Rollout	\$300,000
4.126	Full Enterprise Data Warehouse	\$600,000
4.153	General Analytic Tool	\$400,000
4.131	HR Training and Benefits	\$500,000
4.012	Network Upgrades	\$280,000
4.095	New CRM with Integration	\$100,000
4.15	Enterprise Resource Planning Solution	\$8,300,000
4.107	Customer Portal	\$100,000
4.091	Permit Approvals	\$500,000
	Security Awareness	\$340,000
	Encryption	\$60,000
	Network Protection	\$320,000
	Endpoint Protection	\$70,000
	Monitoring	\$1,150,000
	Governance	\$220,000
	Identity and Access Management	\$445,000

Corporate - Information Technology -- T O T A L

\$15,325,000

Corporate - GIS

4.04	GIS Data Program	\$250,000
4.115	GIS Data Build - Services (ICI)	\$150,000
4.01	Sewer Service Entry	\$150,000
4.116	GIS Data Project (CAD schematic retirement)	\$50,000
4.038	GIS Hardware/Software Program	\$50,000
4.039	GIS Application Support Program	\$150,000
4.059	GIS Data Modelling	\$250,000
4.118	Engineering Drawing Database	\$50,000

Corporate - GIS -- T O T A L

\$1,100,000

Corporate - Asset Management

HALIFAX WATER

Capital Budget 2021/22

Corporate Projects

Project Number	Project Name	Project Cost
4.156	Asset Management Program Roadmap Update - Implementation	\$250,000
2.872	Wastewater Sewer Condition Assessment	\$250,000
1.254	Storm Sewer Condition Assessment	\$110,000

HALIFAX WATER

Capital Budget 2021/22

Corporate Projects

Project Number	Project Name	Project Cost
2.043	Corporate Flow Monitoring Program	\$2,220,000
4.158	Condition Assessment Program	\$300,000
4.159	Performance Assessment Program	\$25,000
4.16	Asset Renewal Strategies Optimiation	\$30,000
4.161	Asset Renewal Management Program Reporting	\$15,000
4.162	Level of Service Implementation Program	\$100,000
4.163	Annual Asset Management Plan Update	\$10,000
4.165	Asset Management Awareness Program	\$20,000
4.166	Asset Management and Infrastructure Planning Communications	\$15,000
2.862	CSO Reporting Enhancement	\$40,000
1.253	Asset Management Implementation Team - Stormwater Management Structures	\$50,000
4.168	Model Enhancements	\$50,000
4.113	Climate Change Management Program	\$200,000
4.173	Population / Planning Projections and Analysis	\$100,000
4.175	Establish Design Cost Factors - Vertical Assets	\$50,000
4.179	Long-term Planning Framework Review	\$20,000
4.181	Future Regulatory Scenarios Study	\$75,000
4.183	Annual Unit Rates Review	\$10,000
4.185	Regional Development Charge Program Implementation	\$300,000
4.177	Annual Model Calibration Report	\$10,000
4.18	Springfield Lake Servicing Study	\$150,000
4.182	LIDS/SUDS Study	\$50,000
2.878	Wastewater Treatment Facilities Compliance Plan	\$150,000
2.562	Outfall Assessment Project	\$100,000
4.14	SSO Management Program	\$1,220,000
4.167	Real-time Control Project	\$60,000
3.644	Water Efficiency Study	\$100,000
3.625	Lake Major Water Levels Forecasting	\$70,000
3.645	Backup Supply Feasibilty Study	\$50,000
3.646	Mt Edward Booster Fire Pump Assessment	\$25,000
3.647	Robie Emergency Booster Assessment	\$25,000
4.144	New Hydraulic Water Model (InfoWater)	\$200,000
Corporate - Asset Management -- T O T A L		\$6,450,000

Corporate - Facility

HALIFAX WATER

Capital Budget 2021/22

Corporate Projects

Project Number	Project Name	Project Cost
4.077	Building Capital Improvements	\$110,000
3.221	Energy Management Capital Program	\$100,000
Corporate - Facility -- T O T A L		\$210,000
<u>Corporate - SCADA & Other Equipment</u>		
4.093	GPS Units - Replacement	\$40,000
4.174	SCADA System Security Assessment Update	\$80,000
4.186	AMI Communications Upgrade	\$30,000
4.154	Customer Meters - New and Replacement	\$415,000
Corporate - SCADA & Other Equipment -- T O T A L		\$565,000
<u>Corporate - Fleet</u>		
4.006	Fleet Upgrade Program Stormwater	\$82,000
4.006	Fleet Upgrade Program Wastewater	\$328,000
4.007	Fleet Upgrade Program Water	\$295,000
Corporate - Fleet -- T O T A L		\$705,000
GRAND TOTAL - Corporate Projects		\$24,355,000

ALLOCATION BREAKDOWN:

Water - Corporate Projects - T O T A L	\$10,230,000
Wastewater - Corporate Projects -- T O T A L	\$12,075,500
Stormwater - Corporate Projects -- T O T A L	\$2,049,500
GRAND TOTAL - Corporate Projects	\$24,355,000

HALIFAX WATER

Capital Budget 2021/22

Summary of Routine Capital Expenditures included within Capital Budget

Project Number	Project Name	Project Cost	Asset Class
3.067	Valves Renewals	\$125,000	Water
3.068	Hydrants Renewals	\$75,000	Water
3.069	Service Lines Renewals	\$100,000	Water
3.390	Lead Service Line Replacement Program	\$1,000,000	Water
3.101	Miscellaneous Equipment Replacement (W)	\$50,000	Water
4.007	Fleet Upgrade Program Water	\$610,000	Water
2.357	Manhole Renewals WW	\$25,000	Wastewater
2.358	Lateral Replacements WW (non-tree roots)	\$1,720,000	Wastewater
2.563	Lateral Replacements WW (tree roots)	\$541,000	Wastewater
2.161	I&I Reduction (SIR) Program Flow Meters and Related Equipment	\$25,000	Wastewater
2.451	Miscellaneous Equipment Replacement (WW)	\$120,000	Wastewater
4.006	Fleet Upgrade Program Wastewater	\$1,076,000	Wastewater
1.102	Manhole Renewals SW	\$15,000	Stormwater
1.103	Catchbasin Renewals SW	\$60,000	Stormwater
1.135	Lateral Replacements SW	\$12,000	Stormwater
4.006	Fleet Upgrade Program Stormwater	\$269,000	Stormwater
4.011	Desktop Computer Replacement Program	\$350,000	Corporate
4.093	GPS Units - Replacement	\$70,000	Corporate
4.154	Customer Meters - New and Replacement	\$500,000	Corporate
4.012	Network Upgrades	\$280,000	Water & Wastewater
GRAND TOTAL - Routine Capital Projects		\$7,023,000	

TO: Craig MacMullin, MBA, CPA, CGA
Chair, and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: Louis de Montbrun
Digitally signed by Louis de Montbrun
Date: 2021.01.21 18:49:10 -04'00'

Louis de Montbrun, CPA, CA
Director, Corporate Services/CFO

APPROVED BY: Cathie O'Toole
Digitally signed by Cathie O'Toole
Date: 2021.01.22 09:22:52 -04'00'

Cathie O'Toole, MBA, FCPA, FCGA, ICD.D,
General Manager

DATE: January 20, 2021

SUBJECT: **Proposed 2021/22 Operating Budget**

ORIGIN

The Halifax Regional Water Commission Board (the “Board”) approves Halifax Water’s annual 2021/22 Operating Budget.

RECOMMENDATION

It is recommended the Board approve the attached proposed 2021/22 Operating Budget, inclusive of the proposed 2021/22 budget for unregulated activities.

It is recommended the Board approve the list of 2021/22 sponsorships totaling \$33,100.

BACKGROUND

The operating budget prepared for 2021/22 is based on year two of the Five-year Business Plan before the Board for approval January 30, 2020. As a result of a rate application in 2020, the Nova Scotia Utility and Review Board (the “NSUARB”) approved an increase in the consumption rate for wastewater, effective April 1, 2021, holding wastewater base

ITEM # 4.4

HRWC Board
January 28, 2021

charges unchanged from April 1, 2016. Water and stormwater rates are those currently approved by the NSUARB effective April 1, 2016 and July 1, 2017 for water and stormwater respectively.

The purpose of the 2021/22 operating budget is to outline the revenue and expenditures required to provide the services as highlighted in Halifax Water's Five-Year Business Plan, and the 2021/22 Annual Business Plan.

DISCUSSION

Table 1 below outlines the operating budget for 2021/22 which shows a projected deficit of \$11.7 million. The budget reflects requirements to maintain current levels of service, deliver projects already in progress or approved, and address any changing environmental or regulatory requirements. The 2021/22 operating budget is prepared on a modified accrual basis to provide broader information for decision making and be reflective of reporting under the NSUARB Accounting and Reporting Handbook for Water Utilities, which is used in determining revenue requirements for rate making purposes.

Table 1:

Operating Budget Summary (in thousands)				
	Actual 2019/20	Approved Budget 2020/21	Proposed Budget 2021/22	Increase
Operating revenues	\$ 137,750	\$ 138,618	\$ 150,466	\$ 11,849
Operating expenditures	109,326	118,110	125,379	7,269
Earnings from operations	28,424	20,508	25,087	4,579
Financial and other revenues	1,211	619	722	103
Financial and other expenditures	31,195	37,076	37,461	385
Earnings (loss)	\$ (1,560)	\$ (15,949)	\$ (11,651)	\$ 4,297

The utility faces financial pressure associated with the renewal of assets, increases in assets and customers due to growth in the municipality, and compliance with regulatory requirements. These issues are described in the Five-Year Business Plan and the Integrated Resource Plan. The additions to utility plant in service result in increased costs for depreciation, debt servicing, the dividend/grant in lieu of taxes payable to Halifax Regional Municipality (HRM), and incremental costs to operate and maintain the assets.

Continuing to build organizational capacity to deliver programs and capital projects envisioned in the Integrated Resource Plan requires new employees in some departments within the organization.

Operating Revenues

Rates: Halifax Water's revenues are derived mainly from rate-regulated activities, with approximately 68% of water, wastewater and stormwater revenues coming from variable charges and 32% from base charges. Operating revenues are based upon currently approved rates. The 2021/22 operating budget is based on rates currently approved by the NSUARB, effective April 1, 2016 and July 1, 2017 for water and stormwater respectively. Base charges for wastewater remain unchanged from April 1, 2016, while consumption rates approved by the NSUARB increase effective April 1, 2021 to \$2.073 from \$1.753 per cubic meter.

Consumption: There is no projected change in total consumption in 2021/22 compared to the prior year, based on recent analysis of consumption data. There are however expected to be on-going variances in the traditional consumption patterns of some customer groups due to the impact of COVID-19. New customer connections are estimated at 638 based on historic trending.

Other: The remainder of Halifax Water's revenues are from miscellaneous fees, financial and other revenues, and unregulated activities.

Operating Expenditures

The main cost drivers in Halifax Water's operating budget are salaries and benefits, energy, chemicals, depreciation, and debt servicing. Key assumptions in each of these areas are outlined below:

Salaries and benefits

Salary rate increases: Salary and wage escalations for active employees ranges between 1.25% and 2.75%. Increases for unionized staff are based on rate increases provided for in the approved collective agreements. For non-union staff the increase is based on an estimate of the Consumer Price Index (CPI) for 2020, approximating 0.75%. In addition, there is an allowance of 0.5% which represents the impact of step increases for employees moving within salary bands or reclassification of positions.

Changes to FTE's: The budget for 2021/22 includes an increase of 20.75 new FTE positions. The net impact of the new FTEs on the 2021/22 operating budget is estimated at \$1.7 million, where a portion of the total cost has been assigned to capital projects. It is important to note that for some of the FTEs there will be off-setting savings in contract services. The impact by department is illustrated below:

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<u>Impact by Department:</u>	<u>FTE's</u>	
Administration	1.00	\$ 82,017
Corporate Services	3.75	278,764
Engineering and Technology Service	10.00	652,832
Regulatory Services	1.00	91,859
Operations - Wastewater/ Stormwater Service	4.00	383,226
Operations - Water Service	1.00	173,922
	<u>20.75</u>	<u>\$ 1,662,620</u>

Vacancy factor: For the first time, Halifax Water has incorporated a vacancy factor in developing the 2021/22 operating budget. The purpose of the vacancy factor is to reduce operating expenditures to reflect situations where delays are experienced in filling vacant positions. Vacancies typically result when employees move to other positions within the utility, or are terminated or retire. The impact of the reduction on the 2021/22 operating budget is estimated at \$0.4 million (including benefits).

Restructuring: Effective April 1, 2021, Halifax Water will be eliminating a Director's position within the corporate structure. The new structure will see the creation of two (2) new Senior Manager positions, which is reflected as a net increase of one in Administration.

Energy

Assumptions respecting electricity, furnace oil and natural gas rate increases are outlined below. The change reflects the change in consumption and an estimate of potential price increases, if appropriate.

- Electricity 3.0% (2020/21 increase of 3.0%)
- Furnace Oil 0.0% (2020/21 and increase of 3.0%)
- Natural Gas 10.0% (2020/21 an increase of 10.0%)

Chemical Costs:

Chemicals are tendered annually in January for optimal pricing. Chemical consumption changes and price increases result in a 5.0% increase in chemical costs for 2021/22 (2020/21 increase 5.0%).

Depreciation

Depreciation expenses increase as a result in the growth in assets. Depreciation is an integral funding source to support renewal of existing infrastructure, and new infrastructure and upgrades to meet future servicing demands and changing environmental regulations. Depreciation is projected to increase from \$27.4 million in the 2020/21 budget to \$30.8 million in the 2021/22 budget, an increase of \$3.4 million or 12.6%. For the purposes of

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the 2021/22 operating budget depreciation is calculated on rate funded water, wastewater and stormwater assets. The depreciation expenses related to assets funded from other contributions such as Capital Costs Contribution, Regional Development Charges and external and other funding is not considered an expense for rate calculations. The NSUARB has approved the phase in of depreciation expense related to contributed stormwater assets. Currently, 25% of the depreciation expense related to contributed stormwater assets is included in the stormwater rates. In a future rate application, Halifax Water may request permission to phase in depreciation on contributed water and wastewater assets.

Debt Servicing

New debt principal and interest payments are budgeted to support the 2020/21 additions to utility plant in service. The amount and timing of any increases in debt servicing are contingent upon the completion of projects, financing rates and options available. It is estimated debt servicing will decrease to \$30.6 million in 2021/22 compared to \$30.9 million in 2020/21, representing a \$0.3 million or 1.1% reduction. This is reflective of the timing considerations respecting the incurrence of new debt, and lower financing rates currently available through the Municipal Finance Corporation (MFC). Halifax Water's capital financing strategy is designed to maintain a debt service ratio of 35% or less. The debt service ratio based on the 2021/22 operating budget is 20.3%.

Other Expenses

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 for water, wastewater and stormwater services.

Water Service

Water operations are detailed on page 2 of the proposed 2020/21 operating budget attached, reporting a budget deficit for of \$5.2 million.

Operating revenues for 2021/22 total \$58.2 million, representing an increase of \$1.5 million or 3% compared to 2020/21. As mentioned previously, water rates remain unchanged from the prior year. Although there is no projected increase in consumption in 2021/22, there is an increase in metered sales due to the estimated 638 new customer

connections. Also contributing to the increase in revenues for 2021/22 are approved increases by the NSUARB related to public and private fire protection, which become effective April 1, 2021.

Operating expenditures for 2021/22 total \$48.6 million, representing an increase of \$2.5 million or 5% compared to 2020/21. Depreciation is the main cost driver, accounting for \$1.1 million of the increase. Excluding depreciation, the increase in operating expenditure is \$1.4 million or 1.4%. Increases in other areas are reflective of certain initiatives within water services in 2021/22, such as the lead line replacement program, and necessary maintenance projects. In addition, costs allocated to water services from other business units within the organization contribute to the increase, especially considering the proposed increase in FTEs in 2021/22, and the expected increase in activity within those business units.

The restructuring will result in a new Senior Manager position being allocated to water services. Also, effective April 1, 2021, Technical Services (SCADA) is moved to the newly created Engineering and Technology Services (formerly Engineering and Information Services). As a result, operating expenditures previously included under Water Transmission and Distribution are now reported within Engineering and Technology Services. Technical Services (SCADA) costs allocated to water service in 2021/22 totaled \$1.0 million, which is comparable to the prior year.

Financial revenues are comparable to the prior year's budget, as are the financial expenditures. There is a \$0.2 million increase in financial expenditures associated with the dividend/grant in lieu of taxes payable to the Halifax Regional Municipality (HRM) which is offset by a reduction in debt servicing costs.

Wastewater Service

Wastewater operations are detailed on page 3 of the proposed 2020/21 operating budget attached, reporting a budget deficit of \$1.5 million.

Operating revenues for 2021/22 total \$82.2 million, representing an increase of \$10.4 million or 14% compared to 2020/21. Of this increase, \$10.3 million relates to metered sales, and is reflective of the new consumption rates for wastewater which become effective April 1, 2021. The rates have increased from \$1.753 to \$2.073 per cubic meter.

Operating expenditures in 2021/22 total \$64.8 million, representing an increase of \$3.8 million or 6% compared to 2020/21. Depreciation is the main cost driver, accounting for \$1.7 million of the increase. Increases in other areas are reflective of certain initiatives within wastewater services in 2021/22 such as research funding to Dalhousie University respecting wastewater treatment, through the Natural Sciences and Engineering Research Council of Canada (NSERC). From a staffing perspective, wastewater service will include a newly created position for a Senior Manager and three (3) other FTEs to meet operational needs. Costs allocated to wastewater service from other business units within the

organization factor into the increase, especially considering the proposed increase in FTEs in 2021/22, and the expected increase in activity within those business units.

The corporate reorganization respecting Technical Services (SCADA), as noted previously, affects Wastewater Service. Operating expenditures previously included under Wastewater Collection are now reported within Engineering and Technology Services. Technical Services (SCADA) costs allocated to Wastewater Service in 2021/22 totaled \$1.7 million, which is comparable to the prior year.

Financial revenues are comparable to the prior year's budget, as are the financial expenditures. Financial expenditures include a \$0.4 million increase associated with the dividend/grant in lieu of taxes payable to the Halifax Regional Municipality (HRM). The dividend/grant in lieu became effective October 1, 2020 and represents 0.25% of wastewater rate-based assets. The increase is offset by reductions in debt servicing costs.

Stormwater Service

Stormwater operations are detailed on page 4 of the proposed 2021/22 operating budget attached, reporting a budget deficit of \$4.9 million.

Operating revenues for 2021/22 total \$10.1 million, which is comparable to the prior year's budget, and reflective of the rate structure for stormwater which became effective July 1, 2017.

Operating expenditures in 2021/22 total \$11.9 million, representing an increase of \$1.0 million or 9% compared to 2020/21. Depreciation is the main cost driver, accounting for \$0.7 million of the increase.

The impact of the corporate reorganization respecting Technical Services (SCADA) as noted previously does not affect Stormwater Service materially as costs allocated in 2021/22 and 2020/21 were well under \$0.1 million.

Financial revenues are comparable to the prior year's budget, as are the financial expenditures. Financial expenditures includes a \$0.1 million increase associated with the dividend/grant in lieu of taxes payable to the HRM. The dividend/grant in lieu became effective October 1, 2020 and represents 0.25% of wastewater rate-based assets. The increase is offset by a reduction in debt servicing costs.

Unregulated Activities

Unregulated activities are detailed on page 5 of the proposed 2021/22 operating budget attached, reporting a budget surplus of \$0.4 million.

Unregulated revenues can be used to fund rate-regulated activities and applied against unregulated expenditures. Revenues from unregulated activities for 2021/22 are budgeted at \$1.1 million, which is comparable to the prior year. Revenues are derived primary from

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septage tipping fees and external contracts. These contracts include the operation and maintenance of the Leachate Treatment Facility at Otter Lake, plus several other smaller HRM facilities including Twin Oaks-The Birches, the Upper Sackville Recreation Center and the Harrietsfield Recreation Center.

Operating expenditures for 2021/22 are comparable to 2020/21, decreasing \$0.1 million from \$1.2 million to \$1.1 million. Included in unregulated operating expenditures are sponsorships and donations, which are treated as unregulated in nature as a result of a 2012 NSUARB Rate Decision. For 2021/22, these expenditures are budgeted at \$73,100 and consist of:

- Help to Others (H2O) Program \$ 40,000
- Sponsorships and Donations \$ 33,100

The H2O (Help to Others) Program is a partnership between Halifax Water and the Salvation Army established to provide financial assistance to residents who require financial assistance with their water bill. Halifax Water employees are also able to participate in the program through tax deductible contributions, which are matched by Halifax Water.

A full description of the costs associated with Sponsorships is provided below:

Sponsorships:

Discovery Centre	\$5,000.00
Conference Sponsorship	\$1,000.00
NSCC Scholarships First Nations	\$4,000.00
NSCC Scholarships RT Peacock	\$2,000.00
NSCC Scholarships HRWC Achievement	\$2,000.00
NSCC Scholarships Arnold Johnston	\$3,600.00
NSCC Scholarship Women in Trades	\$2,000.00
Special Olympics	\$2,000.00
Chamber Conference Sponsorship	\$1,500.00
Greater Halifax Partnership	\$10,000.00
	<u>\$33,100.00</u>

The proposed sponsorship for the Discovery Centre is part of a multi-year proposal to develop an educational display about the water cycle and water stewardship. This initiative will also result in the development of some virtual displays and education materials that can be used to educate children and their families.

The contribution to the Greater Halifax Partnership is part of a partnership agreement that allows Halifax Water to gain access to economic information that will support development

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of Halifax Water's long-range plans; provide access to assistance to calculate and communicate the impact that Halifax Water has on the local economy; and enables Halifax Water to engage directly with stakeholders through initiatives like the Green Economy CEOs' Council, and the CEO Council on Affordable Housing.

Sponsorships and Donations are relatively small in value, however the Board is requested to approve the amounts noted above as part of the overall budget.

Accumulated Surplus (Deficit)

The accumulated operating surplus (based on the NSUARB Accounting and Reporting Handbook for Water Utilities) at March 31, 2022 is projected to be \$15.3 million, which consists of the accumulated operating surplus for the 2019/20 fiscal year, projected results for 2020/21 based on forecasting to December 31, 2020, and a budgeted deficit of \$11.7 million for 2021/22. Table 3 below summarizes the continuity of the accumulated surplus (deficit) by service area.

Table 3:

Continuity Schedule - Accumulated Surplus (De fit) - NSUARB				
	Total	Water	Waste water	Stormwater
2019/20 Fiscal Year				
Balance, beginning of year	\$ 39,616,338	\$ 17,230,564	\$ 14,717,365	\$ 7,668,409
Earnings (loss) for the year	(1,562,011)	5,204,828	(5,037,296)	(1,729,543)
Surplus, end of year	38,054,327	22,435,392	9,680,069	5,938,866
2020/21 Fiscal Year				
Balance, beginning of year	38,054,327	22,435,392	9,680,069	5,938,866
Projected (loss) for the year	(11,113,000)	(1,158,000)	(6,706,000)	(3,249,000)
Projected surplus, end of year	26,941,327	21,277,392	2,974,069	2,689,866
2021/22 Fiscal Year				
Balance, beginning of year	26,941,327	21,277,392	2,974,069	2,689,866
Projected (loss) for the year	(11,651,000)	(5,221,000)	(1,518,000)	(4,912,000)
Projected surplus (deficit), end of year	\$ 15,290,327	\$ 16,056,392	\$ 1,456,069	\$ (2,222,134)

Halifax Water targets to maintain an accumulated operating surplus of 3% of total expenses to mitigate risk. Accumulated operating surplus can be used to offset operating losses, or to fund future additions to utility plant in service, subject to NSUARB approval. Based on the projected financial position as at March 31, 2022, a projected accumulated surplus of \$15.3 million represents 9.4% of total expenses.

BUDGET IMPLICATIONS

The combined operations of Water, Wastewater and Stormwater report a budgeted deficit of \$11.7 million for 2021/22.


ALTERNATIVES

The Board could direct staff to revise the proposed 2021/22 Operating Budget.

ATTACHMENT

Proposed 2021/22 Operating Budget

Report Prepared by:

 Digitally signed by Allan
Campbell
Date: 2021.01.21
17:54:26 -04'00'

Allan Campbell, B.Comm, CPA, CMA
Manager, Finance (902) 266-8655

HALIFAX WATER
STATEMENT OF EARNINGS - ALL SERVICES - NSUARB
PROPOSED OPERATING BUDGET
APRIL 1, 2021 to MARCH 31, 2022
(in thousands)

	ACTUAL APR 1/19 MAR 31/20	APPROVED BUDGET (1) APR 1/20 MAR 31/21	PROPOSED BUDGET APR 1/21 MAR 31/22	Variances Year-over-Year		
				\$		%
				2020/21	2021/22	2020/21
Operating revenues	\$ 137,750	\$ 138,618	\$ 150,466	\$ 868	\$ 11,849	1% 9%
Operating expenditures	109,326	118,110	125,379	8,784	7,269	8% 6%
Earnings from operations before financial and other revenues and expenditures	28,424	20,508	25,087	(7,916)	4,579	(28%) 22%
Financial and other revenues						
Interest	512	86	173	(426)	86	(83%) 100%
Other	699	532	549	(167)	17	(24%) 3%
	1,211	619	722	(592)	103	(49%) 17%
Financial and other expenditures						
Interest on long term debt	7,144	8,823	7,603	1,679	(1,221)	24% (14%)
Repayment on long term debt	18,719	21,880	22,717	3,161	838	17% 4%
Amortization of debt discount	187	228	258	41	31	22% 14%
Dividend/grant in lieu of taxes	5,078	6,113	6,836	1,035	723	20% 12%
Other	67	32	46	(35)	14	(52%) 45%
	31,195	37,076	37,461	5,881	385	19% 1%
Loss for the year	\$ (1,560)	\$ (15,949)	\$ (11,651)	\$ 14,389	\$ (4,297)	922% (27%)

1. 2020/21 Operating Budget approved by the Halifax Water Board of Commissioners, January 30, 2020.

HALIFAX WATER
STATEMENT OF EARNINGS - WATER - NSUARB
PROPOSED OPERATING BUDGET
APRIL 1, 2021 to MARCH 31, 2022
 (in thousands)

	ACTUAL APR 1/19 MAR 31/20	APPROVED BUDGET (1) APR 1/20 MAR 31/21	PROPOSED BUDGET APR 1/21 MAR 31/22	Variances Year-over-Year		
				\$	2021/22	%
	2020/21	2021/22	2020/21	2020/21	2020/21	2021/22
Operating revenues						
Water	\$ 47,918	\$ 48,083	\$ 48,424	\$ 165	\$ 341	0%
Public fire protection	7,074	7,074	7,628	0	553	0%
Private fire protection	881	884	1,312	3	428	0%
Bulk water stations	300	303	337	3	34	1%
Late payment and other connection fees	207	238	236	31	(2)	15%
Miscellaneous	162	163	276	1	113	1%
	56,542	56,746	58,212	204	1,466	0%
Operating expenditures						
Water supply and treatment	9,573	10,590	10,778	1,017	188	11%
Water transmission and distribution	10,843	12,311	11,876	1,468	(435)	14%
Engineering and technology services	3,230	4,162	5,654	932	1,491	29%
Regulatory services	859	1,195	1,201	336	6	39%
Corporate services	6,056	6,870	4,565	814	207	13%
Administration			2,511			
Depreciation and amortization	9,818	10,993	12,052	1,175	1,059	12%
	40,379	46,121	48,637	5,742	2,516	14%
	16,163	10,625	9,576	(5,538)	(1,050)	(34%)
Earnings from operations before financial and other revenues and expenditures						(10%)
Financial and other revenues						
Interest	222	39	96	(183)	57	(82%)
Other	544	394	399	(150)	5	(28%)
	766	432	495	(334)	63	(44%)
						14%
Financial and other expenditures						
Interest on long term debt	1,828	3,127	2,616	1,299	(512)	71%
Repayment on long term debt	4,722	6,465	6,696	1,743	232	37%
Amortization of debt discount	64	84	100	20	16	31%
Dividend/grant in lieu of taxes	5,078	5,654	5,863	576	209	11%
Other	32	2	16	(30)	14	(94%)
	11,724	15,332	15,292	3,608	(40)	31%
						(0%)
Earnings (loss) for the year	\$ 5,205	\$ (4,275)	\$ (5,221)	\$ 9,480	\$ 946	182%
						22%

HALIFAX WATER

STATEMENT OF EARNINGS - WASTEWATER - NSUARB

PROPOSED OPERATING BUDGET

APRIL 1, 2021 to MARCH 31, 2022

(in thousands)

	ACTUAL APR 1/19 MAR 31/20	APPROVED BUDGET (1) APR 1/20 MAR 31/21	PROPOSED BUDGET APR 1/21 MAR 31/22	Variances Year-over-Year		
				\$		%
				2020/21	2021/22	2020/21
Operating revenues						
Wastewater	\$ 70,494	\$ 70,365	\$ 80,619	\$ (129)	\$ 10,254	(0%)
Leachate and other contract revenue	453	473	484	20	11	4%
Septage tipping fees	514	505	505	(9)	0	(2%)
Overstrength surcharge	14	30	15	16	(15)	114%
Airplane effluent	98	105	76	7	(29)	7%
Late payment and other connection fees	123	176	221	53	45	43%
Miscellaneous	141	136	247	(5)	111	(4%)
	<u>71,837</u>	<u>71,790</u>	<u>82,166</u>	<u>(47)</u>	<u>10,376</u>	<u>(0%)</u>
Operating expenditures						
Wastewater collection	13,963	13,499	12,604	(464)	(894)	(3%)
Wastewater treatment	20,633	21,413	22,071	780	658	4%
Engineering and technology services	4,478	3,769	5,881	(709)	2,113	(16%)
Regulatory services	1,432	1,537	1,587	105	50	7%
Corporate services	5,301	5,757	3,840	456	163	9%
Administration			2,079			
Depreciation and amortization	14,038	15,072	16,775	1,034	1,703	7%
	<u>59,845</u>	<u>61,045</u>	<u>64,838</u>	<u>1,200</u>	<u>3,793</u>	<u>2%</u>
				<u>(1,247)</u>	<u>6,584</u>	<u>(10%)</u>
Earnings from operations before financial and other revenues and expenditures	<u>11,992</u>	<u>10,745</u>	<u>17,329</u>			
Financial and other revenues						
Interest	191	39	46	(152)	7	(80%)
Other	155	139	150	(16)	12	(10%)
	<u>346</u>	<u>178</u>	<u>197</u>	<u>(168)</u>	<u>19</u>	<u>(49%)</u>
						<u>11%</u>
Financial and other expenditures						
Interest on long term debt	4,706	4,772	4,196	66	(576)	1%
Repayment on long term debt	12,522	13,442	13,864	920	422	7%
Amortization of debt discount	110	124	133	14	9	13%
Dividend/grant in lieu of taxes	0	398	820	398	422	#DIV/0!
Other	35	30	30	(5)	0	(14%)
	<u>17,373</u>	<u>18,766</u>	<u>19,043</u>	<u>1,393</u>	<u>278</u>	<u>8%</u>
						<u>1%</u>
Loss for the year	<u>\$ (5,035)</u>	<u>\$ (7,843)</u>	<u>\$ (1,518)</u>	<u>\$ 2,808</u>	<u>\$ (6,325)</u>	<u>56%</u>
						<u>(81%)</u>

HALIFAX WATER
STATEMENT OF EARNINGS - STORMWATER - NSUARB
PROPOSED OPERATING BUDGET
APRIL 1, 2021 to MARCH 31, 2022
(in thousands)

	ACTUAL APR 1/19 MAR 31/20	APPROVED BUDGET (1) APR 1/20 MAR 31/21	PROPOSED BUDGET APR 1/21 MAR 31/22	Variances Year-over-Year			
				\$		%	
				2020/21	2021/22	2020/21	2021/22
Operating revenues							
Stormwater site generated service	\$ 5,361	\$ 6,047	\$ 6,051	\$ 686	\$ 3	13%	0%
Stormwater right of way service	3,835	3,835	3,835	0	0	0%	0%
Late payment and other connection fees	81	106	104	25	(2)	31%	(2%)
Miscellaneous	94	92	97	(2)	5	(2%)	5%
	<u>9,371</u>	<u>10,081</u>	<u>10,087</u>	<u>710</u>	<u>6</u>	<u>8%</u>	<u>0%</u>
Operating expenditures							
Stormwater collection	4,808	5,821	5,885	1,013	64	21%	1%
Engineering and technology services	728	1,273	1,396	545	123	75%	10%
Regulatory services	1,490	1,627	1,684	137	56	9%	3%
Corporate services	854	857	555	3	36	0%	4%
Administration	0	0	338				
Depreciation and amortization	1,222	1,365	2,046	143	681	12%	50%
	<u>9,102</u>	<u>10,943</u>	<u>11,905</u>	<u>1,841</u>	<u>961</u>	<u>20%</u>	<u>9%</u>
	<u>269</u>	<u>(862)</u>	<u>(1,817)</u>	<u>(1,131)</u>	<u>(955)</u>	<u>(421%)</u>	<u>111%</u>
Earnings from operations before financial and other revenues and expenditures							
Financial and other revenues							
Interest	99	9	31	(90)	22	(91%)	256%
Other	0	0	0	0	0	#DIV/0!	#DIV/0!
	<u>99</u>	<u>9</u>	<u>31</u>	<u>(90)</u>	<u>22</u>	<u>(91%)</u>	<u>256%</u>
Financial and other expenditures							
Interest on long term debt	610	924	791	314	(133)	51%	(14%)
Repayment on long term debt	1,475	1,973	2,156	498	184	34%	9%
Amortization of debt discount	13	20	25	7	5	51%	26%
Dividend/grant in lieu of taxes	0	62	154	62	92	#DIV/0!	149%
Other	0	0	0	0	0	#DIV/0!	#DIV/0!
	<u>2,098</u>	<u>2,978</u>	<u>3,126</u>	<u>880</u>	<u>148</u>	<u>42%</u>	<u>5%</u>
Loss for the year	<u>\$ (1,730)</u>	<u>\$ (3,832)</u>	<u>\$ (4,912)</u>	<u>\$ 2,102</u>	<u>\$ 1,081</u>	<u>121%</u>	<u>28%</u>

1. 2020/21 Operating Budget approved by the Halifax Water Board of Commissioners, January 30, 2020.

HALIFAX WATER
STATEMENT OF EARNINGS - REGULATED AND UNREGULATED ACTIVITIES - NSUARB
PROPOSED OPERATING BUDGET
APRIL 1, 2021 to MARCH 31, 2022
(in thousands)

	ACTUAL APR 1/19 MAR 31/20	APPROVED BUDGET (1) APR 1/20 MAR 31/21	PROPOSED BUDGET APR 1/21 MAR 31/22
REGULATED ACTIVITIES			
Operating revenues			
Water	\$ 47,918	\$ 48,083	\$ 48,424
Wastewater	70,494	70,365	80,619
Stormwater	9,196	9,882	9,886
Public fire protection	7,074	7,074	7,628
Private fire protection	881	884	1,312
Other	1,084	1,207	1,495
	<u>136,647</u>	<u>137,496</u>	<u>149,363</u>
Operating expenditures			
Water supply and treatment	9,541	10,556	10,740
Water transmission and distribution	10,843	12,310	11,876
Wastewater collection	13,939	13,374	12,503
Stormwater collection	4,808	5,821	5,885
Wastewater treatment	19,892	20,571	21,274
Engineering and technology services	8,436	9,184	12,910
Regulatory services	3,781	4,359	4,471
Corporate services	12,135	13,346	8,887
Administration			4,859
Depreciation and amortization	25,060	27,349	30,872
	<u>108,435</u>	<u>116,869</u>	<u>124,278</u>
Earnings from operations before financial and other revenues and expenditures	<u>28,211</u>	<u>20,627</u>	<u>25,086</u>
Financial and other revenues			
Interest	512	86	173
Other	144	39	31
	<u>656</u>	<u>126</u>	<u>204</u>
Financial and other expenditures			
Interest on long term debt	7,144	8,807	7,592
Repayment on long term debt	18,719	21,860	22,693
Amortization of debt discount	187	227	258
Dividend/grant in lieu of taxes	5,078	6,113	6,836
Other		1	1
	<u>31,128</u>	<u>37,009</u>	<u>37,381</u>
Loss for the year	<u>\$ (2,261)</u>	<u>\$ (16,256)</u>	<u>\$ (12,091)</u>
UNREGULATED ACTIVITIES			
Operating revenues			
Septage tipping fees	\$ 514	\$ 505	\$ 505
Leachate and other contract revenue	453	473	484
Airplane effluent	98	105	76
Miscellaneous	38	38	38
	<u>1,103</u>	<u>1,121</u>	<u>1,103</u>
Operating expenditures			
Water supply and treatment	32	28	32
Wastewater collection	24	111	88
Wastewater treatment	741	842	798
Sponsorships and donations	76	68	73
Depreciation and amortization	18	81	0
Administration		110	110
	<u>891</u>	<u>1,240</u>	<u>1,101</u>
Earnings from operations before financial and other revenues and expenditures	<u>213</u>	<u>(119)</u>	<u>2</u>
Financial and other revenues			
Other	555	493	518
	<u>555</u>	<u>493</u>	<u>518</u>
Financial and other expenditures			
Other	67	67	80
	<u>67</u>	<u>67</u>	<u>80</u>
Earnings for the year	<u>\$ 701</u>	<u>\$ 307</u>	<u>\$ 440</u>
Total earnings (loss) for the year (Regulated and Unregulated)	<u>\$ (1,560)</u>	<u>\$ (15,949)</u>	<u>\$ (11,651)</u>

TO: Craig MacMullin, MBA, CPA, CGA, Chair, and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: **Jamie Hannam** Digitally signed by Jamie Hannam
Date: 2021.01.22 08:58:19 -04'00'

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

Louis de Montbrun Digitally signed by Louis de Montbrun
Date: 2021.01.21 18:48:03 -04'00'

Louis de Montbrun, CPA, CA
Director, Corporate Services/CFO

APPROVED: **Cathie O'Toole** Digitally signed by Cathie O'Toole
Date: 2021.01.22 09:45:42 -04'00'

Cathie O'Toole, MBA, FCPA, FCGA, ICD.D
General Manager

DATE: January 22, 2021

SUBJECT: Capital Expenditures and Forecast for the nine months ended December 31, 2020

INFORMATION REPORT

ORIGIN

Capital expenditure and forecast reporting.

BACKGROUND

The Halifax Regional Water Commission (Halifax Water) Board is required to review periodic financial information throughout the year.

DISCUSSION

The Engineering and Information Services department has been actively updating forecasted capital expenditures to the end of the 2020/21 fiscal year based on actual expenditures year to date and knowledge of project timelines and contract pricing. Below is the breakdown by asset class and project status for the nine (9) months ending December 31, 2020.

Capital Expenditure and Forecast Report

Budget Category	Total Budget Available	Expenditures to March 31, 2020	Expenditures to December 31, 2020-21	Total Expenditures to December 31, 2020	Actual Budget Available	Total Forecast End of Fiscal	Total Project Forecast	Remaining Budget Available
Active								
Water	\$ 66,896,300	\$ 11,407,855	\$ 20,188,668	\$ 31,596,523	\$ 35,299,777	\$ 50,039,445	\$ 59,075,655	\$ 7,820,645
Wastewater	49,155,092	7,100,956	15,037,086	22,138,042	27,017,050	30,420,344	39,345,168	9,809,924
Stormwater	9,182,400	499,878	2,567,118	3,066,996	6,115,404	5,505,846	8,249,793	932,607
	125,233,792	19,008,689	37,792,872	56,801,561	68,432,231	85,965,635	106,670,616	18,563,176
Pending								
Water	27,192,240	27,888	-	27,888	27,164,352	-	4,236,000	22,956,240
Wastewater	28,788,000	-	-	-	28,788,000	1,260,000	4,260,000	24,528,000
Stormwater	1,009,238	-	-	-	1,009,238	-	-	1,009,238
	56,989,478	27,888	-	27,888	56,961,590	1,260,000	8,496,000	48,493,478
Closed								
Water	-	-	-	-	-	-	-	-
Wastewater	-	-	-	-	-	-	-	-
Stormwater	-	-	-	-	-	-	-	-
	\$ 182,223,270	\$ 19,036,577	\$ 37,792,872	\$ 56,829,449	\$ 125,393,821	\$ 87,225,635	\$115,166,616	\$ 67,056,654

The Total Budget Available of \$182.2 million represents total approved budgets for pending and active projects as at the end of March 31, 2021.

Total expenditures to December 31, 2020 of \$56.8 million include expenditures in the current fiscal year of \$37.8 million. Project Managers have forecasted that total expenditures to the end of the 2020/21 fiscal year will be \$87.2 million.

The Total Forecast End of Fiscal of \$87.2 million represents the total expenditures on capital projects expected by March 31, 2021. The Total Project Forecast represents the total expenditures on capital projects expected by the time of project completion. For multi-year projects, expenditures relating to future year budgets are excluded.

Remaining Budget Available is the Total Budget Available less the Total Project Forecast. Halifax Water is forecasting to be underspent on capital projects relative to the approved budgets. This funding may be available to reallocate to existing projects or used to fund future capital budgets.


The Pending category relates to projects that are awaiting approval or have been deferred or cancelled. There are 11 projects with budgets over \$1 million from the 2020/2021 capital budget within the pending category amounting to \$23.6 million. For projects that are deferred or cancelled, there will be funding available that could be reallocated to existing projects, if required, or used to fund future capital budgets. A strategy is currently being developed to reallocate this funding.

As projects are completed, they will be moved to the closed category. This will occur throughout the year, however, most projects are closed in the last quarter of the fiscal year.

The report and associated analysis are continuing to develop and improve. The next version of the report will include status updates and additional details on individual projects.

Report prepared by:

**Alicia
Scallion**

 Digitally signed by Alicia
Scallion
Date: 2021.01.22
08:21:23 -04'00'

Alicia Scallion, CPA, CA, Manager, Accounting, (902)-490-4814

TO: Craig MacMullin, MBA, CPA, CGA, Chair, and Members of the
Halifax Regional Water Commission Board

SUBMITTED BY: **Jamie Hannam** Digitally signed by Jamie Hannam
Date: 2021.01.22
08:59:43 -04'00'

Jamie Hannam, P.Eng., Director, Engineering & IS

APPROVED: **Cathie O'Toole** Digitally signed by Cathie O'Toole
Date: 2021.01.22
09:51:51 -04'00'

Cathie O'Toole, MBA, FCPA, FCGA, ICD.D, General Manager

DATE: January 11, 2021

SUBJECT: **Water – Structures – Cowie Hill Reservoir Replacement**

ORIGIN

Evaluation of Aboveground Concrete (Gunitite) Reservoirs – AECOM April 19, 2021
and the Halifax Water 2021/22 Capital Budget.

RECOMMENDATION

It is recommended that the Halifax Water Board approve funding for the Cowie Hill Reservoir Replacement project at an estimated cost of \$7,610,000.00

BACKGROUND & DISCUSSION

The Cowie Reservoir is a 2.4 Million Gallon (MG) gunitite water storage reservoir that was constructed in 1972. The reservoir underwent a significant rehabilitation project in 1996.

The recent *Evaluation of Aboveground Concrete (Gunitite) Reservoirs – AECOM April 19, 2020*, identified the Cowie Reservoir as a priority for rehabilitation work in order to stabilize the condition of the reservoir and in order to extend its expected life. The internal and external inspection found numerous locations where the gunitite covering has spalled off leaving the underlying steel reinforcing wires exposed and rusting. Many of these spall locations corresponded with the location of previous 1996 repair work. There are numerous

locations on the wall that show evidence of cracks and water migration out through the wall of the reservoir.

Upon completion of the reservoir evaluation, staff completed an analysis to assess the best path forward relative to the options to rehabilitate or replace the Cowie Hill Reservoir. After review and discussion, based on the risk of achieving the targeted effectiveness and longevity of the rehabilitation relative to the certainty of replacement, it was determined by staff that replacement of the Cowie Hill Reservoir was the better option.

CBCL Consulting was engaged to complete the reservoir design. Based on a technical and life cycle analysis of various reservoir construction material (*CBCL Tank Selection Technical Memo – February 11, 2019*), it was recommended that the new reservoir be a 2.4 MG precast concrete reservoir that is designed and constructed to the *AWWA D110 Type III Standard*. Design for the new Cowie Hill Reservoir is nearing completion and the tender package is anticipated to be finished by the end of January 2021. The project design is summarized within the *Cowie Hill Reservoir Replacement Detailed Design Report – CBCL October 2020*.

The estimated total cost for the new reservoir is \$7,910,000 as per the attached detailed project cost estimate.

Upon receiving approval from the Halifax Water Board, the project will be issued for public tender in February 2021, conditional on NSUARB approval. The project will be awarded upon review and approval by the NSUARB.

The Cowie Reservoir Replacement project also includes the replacement of the motor control center (MCC) in the reservoir control chamber. The electrical equipment is past its service life and provides power to a backup domestic booster pump system. As well, two 250mm diameter pressure reducing control valves are being replaced in the Cowie Control Chamber as part of the work in order to maintain an adequate level of service to Halifax Water customers while the Cowie Reservoir is out of service.

BUDGET IMPLICATIONS

Funding in the amount of \$300,000 has been approved in previous capital budgets.


Funding in the amount of \$7,610,000.00 including net HST is available within the 2021/2022 Capital Budget under *Water – Structures – Cowie Hill Reservoir Replacement*.

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.

ATTACHMENT

1) Cowie Reservoir – Issued for Tender Project Cost Estimate (January 12, 2021)


Report Prepared by:



Tom Gorman, P.Eng – Manager, Water Infrastructure Engineering
902-490-4176

Financial Reviewed by:

Louis de
Montbrun

 Digitally signed by Louis
de Montbrun
Date: 2021.01.21
15:29:54 -04'00'

Louis de Montbrun, CPA, CA
Director, Corporate Services/CFO, 902-490-3685

Cowie Reservoir - Issued for Tender Project Cost Estimate
(January 12, 2021)

Description	IFR Amount
Construction Cost - CBCL Estimate	\$ 6,365,550.00
Design Development Contingency (see note below)*	\$ (303,000.00)
CBCL Concept, Detailed Design & Tender Phase Services	\$ 156,745.00
CBCL Construction Phase Services (52 weeks)	\$ 276,090.00
3rd Party Consultant - QA/QC	\$ 50,000.00
Materials Testing - QA/QC (Audit)	\$ 50,000.00
Air Quality & Noise Monitoring (Audit)	\$ 50,000.00
Halifax Water - Internal Costs	\$ 35,000.00
Replace MCC @ Cowie Reservoir Building	\$ 75,000.00
New Control Valves & Flow Meter @ Cowie Control	\$ 67,000.00
Sub-Total	\$ 6,822,385.00
10% Project Contingency	\$ 682,238.50
Sub-total	\$ 7,504,623.50
Net HST (4.286%)	\$ 321,648.16
Overhead/Interest (1%)	\$ 75,046.24
Total Estimated Project Cost	\$ 7,901,317.90

Total Estimated Project Cost (Rounded) \$ 7,910,000.00

Subtract Approved Funding to Date \$ 300,000.00

Requested Funding (2021/2022) \$ 7,610,000.00

* Design development contingency was deducted from the total construction cost so it is not added twice in the 10% overall project contingency of \$682,238.50



OPINION of PROBABLE CONSTRUCTION COSTS

Halifax Water
Cowie Hill Water Reservoir

Based on CBCL "Issued for Approval Dwg's dated October 29, 2020

DATE:	November 9, 2020
CBCL FILE No.:	181038.00
PREPARED BY:	JC/AT
EST. DESCRIPTION:	Class B

		Cowie Hill			
No.	DESCRIPTION	UNIT	EST. QUANTITY	UNIT COST	TOTAL
1.	Reservoir Demolition	LS	1	\$ 322,600	\$ 322,600
2.	Water Reservoir				
	.1 Prestressed Concrete Reservoir	LS	1	\$ 4,339,700	\$ 4,339,700
	.2 Logo	LS	1	\$ 20,400	\$ 20,400
3.	Reservoir Mixing System	LS	1	\$ 139,700	\$ 139,700
4.	Yard Piping and Chambers				
	.1 Yard Piping	LS	1	\$ 222,900	\$ 222,900
	.2 Flow Meter Chambers	ea	2	\$ 82,000	\$ 164,000
	.3 Modification of Existing Flow Meter Chamber	LS	1	\$ 44,200	\$ 44,200
	.4 Drain/Overflow Manhole	LS	1	\$ 45,700	\$ 45,700
	.5 Drain and Overflow Piping	LS	1	\$ 24,700	\$ 24,700
5.	Storm Sewer				
	.1 450mm Dia. Pipe	m	94	\$ 1,091	\$ 102,600
	.2 1200mm Dia. Manholes	ea	2	\$ 8,500	\$ 17,000
	.3 Connections to Existing Main	LS	1	\$ 29,800	\$ 29,800
6.	Pump Station / Valve Chamber Upgrades	LS	1	\$ 237,000	\$ 237,000
7.	Rock Excavation (Provisional)	m ³	750	\$ 175.00	\$ 131,250
8.	Mass Excavation - Unsuitable	m ³	1,250	\$ 20.00	\$ 25,000
9.	Structural Fill	m ³	1,250	\$ 60.00	\$ 75,000
10.	Noise Monitoring	Days	130	\$ 700.00	\$ 91,000
11.	Dust Monitoring	Days	30	\$ 1,000	\$ 30,000
	Design Development Contingency - Note 1	-	5%		\$ 303,000
TOTAL CONSTRUCTION COST (Excluding Contingencies and Allowances)					\$ 6,365,550
	CONTINGENCIES and ALLOWANCES				
	Construction Contingency - Note 2			5%	\$ 318,000
	Escalation / Inflation - Note 3				Not Included
	Location Factor - Note 4				Included
	Engineering				Separate Contract
TOTAL OPINION of CONSTRUCTION COST c/w Post Award Contingency w/o HST					\$ 6,683,550

THIS OPINION OF PROBABLE COSTS IS PRESENTED ON THE BASIS OF EXPERIENCE, QUALIFICATIONS, AND BEST JUDGEMENT. IT HAS BEEN PREPARED IN ACCORDANCE WITH ACCEPTABLE PRINCIPLES AND PRACTICES. MARKET TRENDS, NON-COMPETITIVE BIDDING SITUATIONS, UNFORESEEN LABOUR AND MATERIAL ADJUSTMENTS AND THE LIKE ARE BEYOND THE CONTROL OF CBCL LIMITED. AS SUCH WE CANNOT WARRANT OR

- Note 1** A Design Development Contingency is to allow for necessary increases of qty's; construction costs; as the work is better defined
Note 2 A Construction Contingency is to allow for cost of additional work over and above the contract Awarded price.
Note 3 The Escalation/Inflation allowance is for increases in construction costs from time the budget to Tender Call
Note 4 The Location Factor is for variances between constr. costs at the location of the project & historical costs data

Form CBCL 035.Rev 2

TO: Craig MacMullin, MBA, CPA, CGA, Chair, and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: Louis de Montbrun
Digitally signed by Louis de Montbrun
Date: 2021.01.21 14:08:33 -04'00'

Louis de Montbrun, CPA, CA, Director, Corporate Services/CFO

Reid Campbell
Digitally signed by Reid Campbell
Date: 2021.01.21 13:52:03 -04'00'

Reid Campbell, P.Eng. Director, Water Services

Susheel Arora
Digitally signed by Susheel Arora
Date: 2021.01.21 14:20:10 -04'00'

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

Kenda MacKenzie
Digitally signed by Kenda MacKenzie
Date: 2021.01.21 14:03:45 -04'00'

Kenda MacKenzie, P.Eng. Director, Regulatory Services

Cathie O'Toole
Digitally signed by Cathie O'Toole
Date: 2021.01.21 16:06:41 -04'00'

APPROVED: Cathie O'Toole

Cathie O'Toole, MBA, CPA, CGA, ICD.D, General Manager

SUBJECT: **Financial and Operations Information Report**

INFORMATION REPORT

ORIGIN:

Regular update.

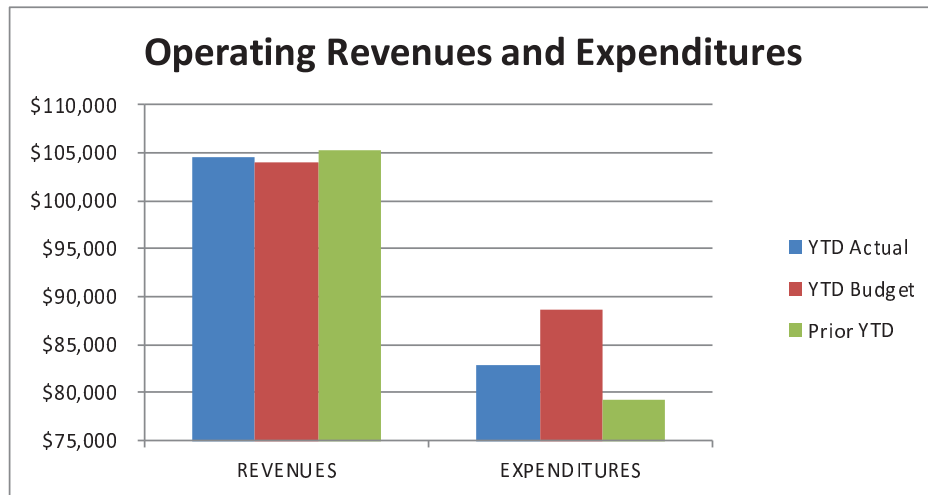
This report provides a high level overview of financial and operational performance for the utility. Financial results are presented first, followed by indicators and statistics for water and wastewater.

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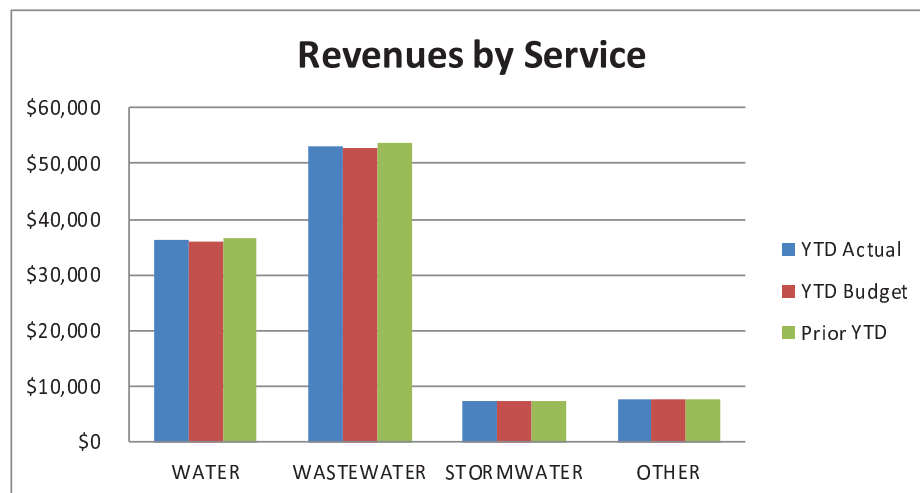
FINANCIAL

HALIFAX WATER
UNAUDITED FINANCIAL INFORMATION
APRIL 1, 2020 - DECEMBER 31, 2020 (9 MONTHS)
'000



OPERATING REVENUES AND EXPENDITURES

	YTD Actual	YTD Budget	Prior YTD	% of Budget
REVENUES	\$104,521	\$103,961	\$105,344	75.40%
EXPENDITURES	\$82,790	\$88,585	\$79,327	70.09%
	\$21,731	\$15,376	\$26,017	105.99%



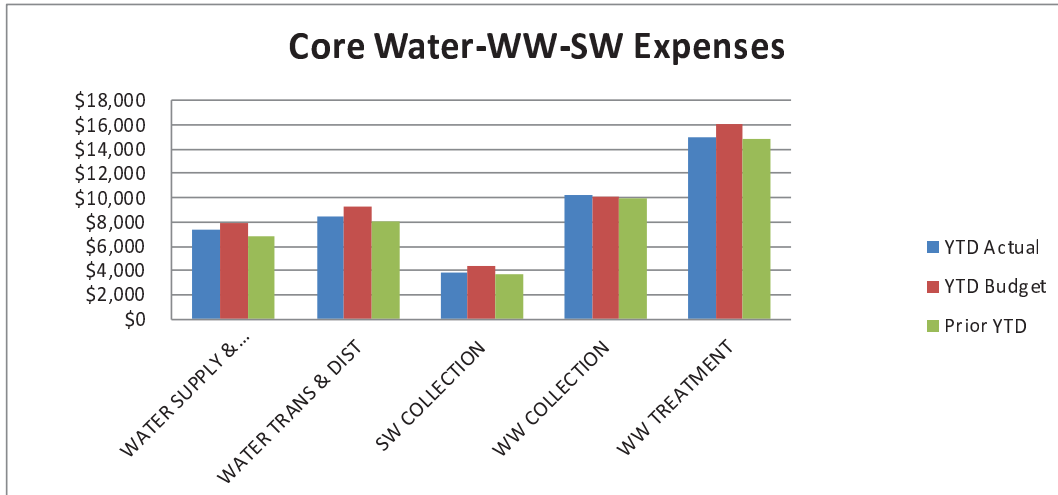
REVENUES BY SERVICE (METERED SALES AND SITE GENERATED CHARGE)

	YTD Actual	YTD Budget	Prior YTD	% of Budget
WATER	\$36,378	\$36,062	\$36,545	75.66%
WASTEWATER	\$53,086	\$52,773	\$53,558	75.44%
STORMWATER	\$7,483	\$7,412	\$7,492	75.72%
OTHER	\$7,574	\$7,714	\$7,749	73.64%
	\$104,521	\$103,961	\$105,344	75.40%

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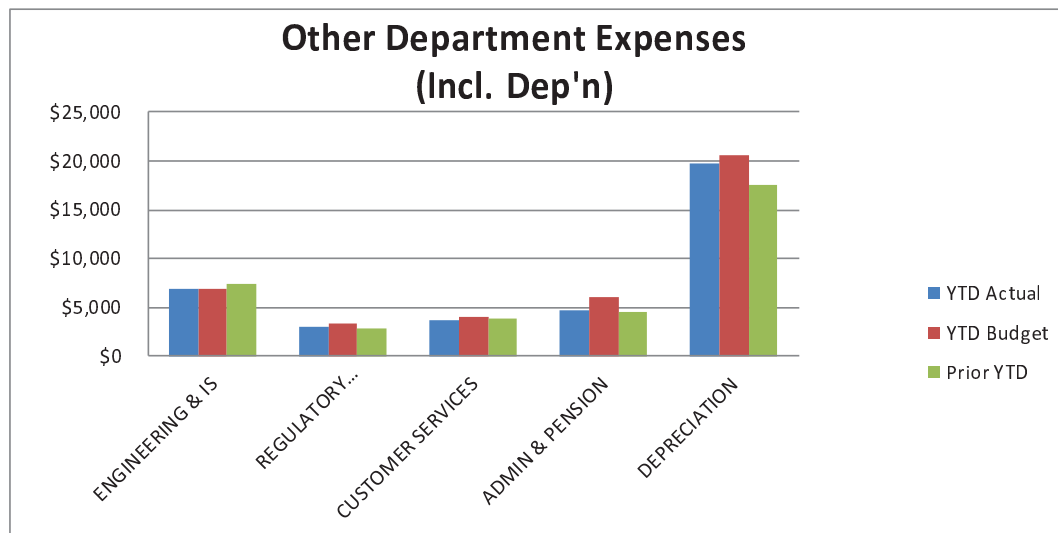
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HALIFAX WATER
UNAUDITED FINANCIAL INFORMATION
APRIL 1, 2020 - DECEMBER 31, 2020 (9 MONTHS)
'000



CORE WATER-WW-SW EXPENDITURES

	YTD Actual	YTD Budget	Prior YTD	% of Budget
WATER SUPPLY & TRTMNT	\$7,377	\$7,943	\$6,789	69.66%
WATER TRANS & DIST	\$8,491	\$9,233	\$8,076	68.97%
SW COLLECTION	\$3,774	\$4,366	\$3,680	64.83%
WW COLLECTION	\$10,266	\$10,124	\$9,905	76.05%
WW TREATMENT	\$15,036	\$16,060	\$14,847	70.22%
	\$44,944	\$47,726	\$43,297	70.63%

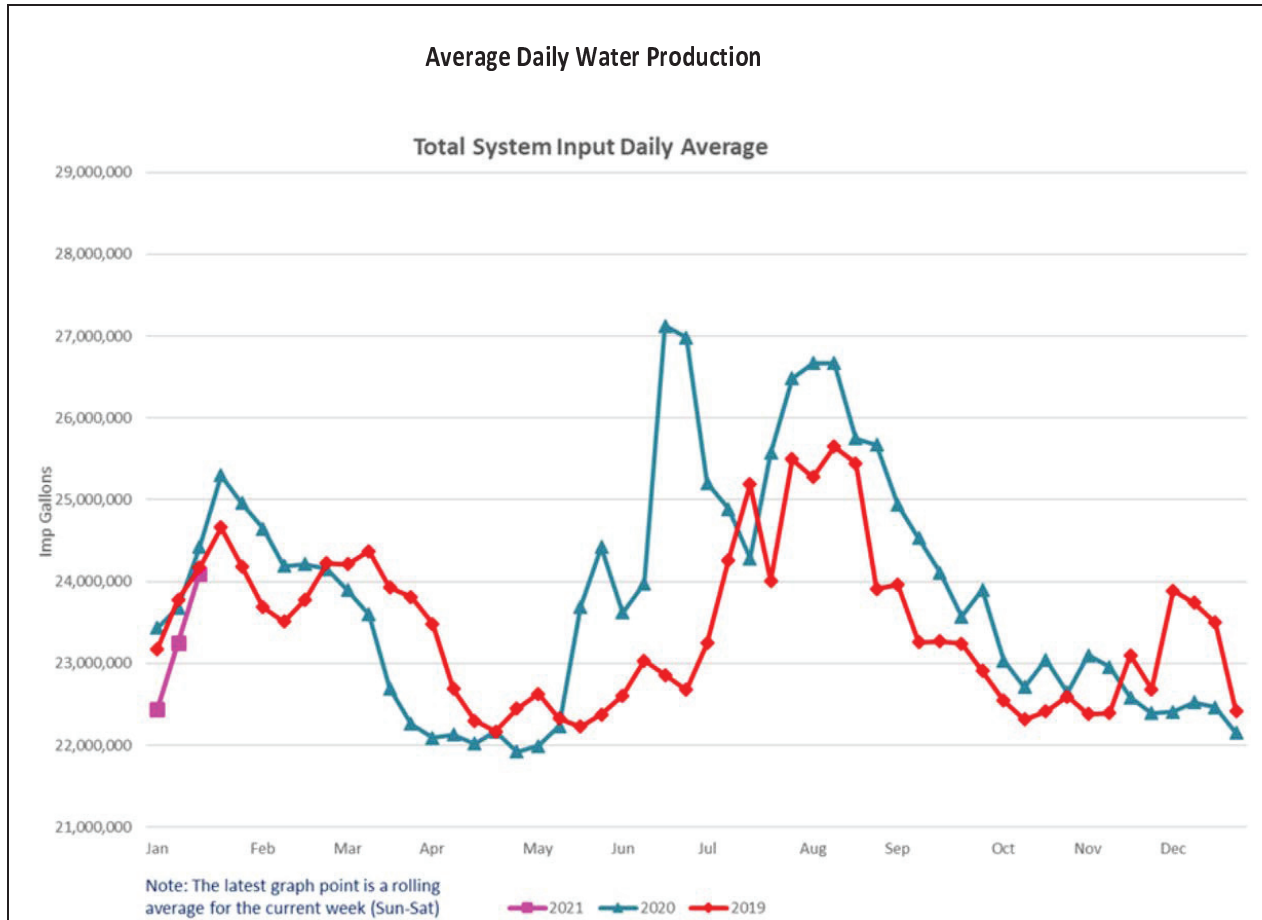


OTHER DEPARTMENT EXPENSES (INCL DEP'N)

	YTD Actual	YTD Budget	Prior YTD	% of Budget
ENGINEERING & IS	\$6,905	\$6,903	\$7,317	75.02%
REGULATORY SERVICES	\$2,918	\$3,269	\$2,793	66.94%
CUSTOMER SERVICES	\$3,644	\$4,061	\$3,887	67.31%
ADMIN & PENSION	\$4,709	\$6,053	\$4,459	58.34%
DEPRECIATION	\$19,670	\$20,573	\$17,574	71.71%
	\$37,846	\$40,859	\$36,030	69.47%

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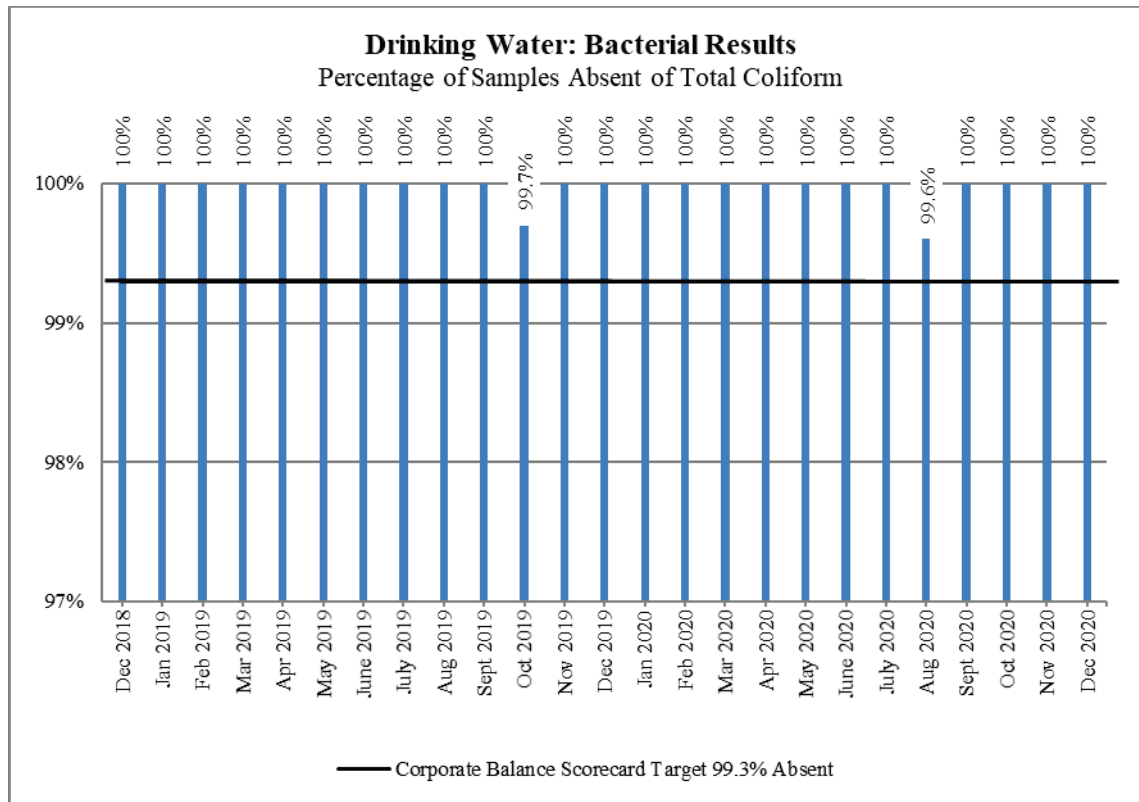


Regional Water Main Break/Leak Data		
Year	Total Breaks/Leaks	Current 12 Month Rolling Total (up to December 31, 2020)
2019/20	191	164
2018/19	226	
2017/18	206	
2016/17	216	
2015/16	226	
Total	1071	
Yr. Avg.	214.2	

Water Accountability
Losses per Service Connection/Day (International Water Association Standard)
<i>Period Ending December 31, 2020</i>
Real Losses: 196 litres
CBS Target: 160

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Water Quality Master Plan Objectives`				
2020-2021 Q3				
Objective	Total Sites	% Sites Achieving Target	All Sites: 90th Percentile < 15 µg/L	CBSC Awarded Points
Disinfection	63	97%	---	17
Total Trihalomethanes	25	72%	---	0
Haloacetic Acids	21	100%	---	20
Particle Removal	5	98%	---	18
Corrosion Control	105	---	4.28	20
Summary Total				75

Score: 75/100

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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																	
	Rolling Averages - October, November and December 2020																	
	CBOD ₅ (mg/L)		TSS (mg/L)		E. coli (counts/ 100mL)		pH		Ammonia (mg/L)		Phosphorous (mg/L)		TRC (mg/L)		Dissolved Oxygen (mg/L)		Toxicity	Trend
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	34	40	17	5000	787	6-9	6.8	-	-	-	-	-	-	-	Not acutely lethal	Continued	
Dartmouth	50	68	40	93	5000	855	6-9	6.7	-	-	-	-	-	-	-	Not acutely lethal	Continued	
Herring Cove	50	25	40	14	5000	24	6-9	6.9	-	-	-	-	-	-	-	Not acutely lethal	Continued	
Eastern Passage	25	9	25	9	200	16	6-9	6.9	-	-	-	-	-	-	-	Not acutely lethal	Continued	
Mill Cove	25	19	25	18	200	43	6-9	6.5	-	-	-	-	-	-	-	Not acutely lethal	Continued	
Springfield	20	5	20	4	200	10	6-9	6.9	-	-	-	-	-	-	-	-	Improved	
Frame	20	4	20	1	200	22	6-9	7.0	-	-	-	-	-	-	-	-	Continued	
Middle Musq.	20	6	20	9	200	10	6-9	7.3	-	-	-	-	-	-	-	-	Continued	
Uplands	20	5	20	7	200	41	6-9	6.7	-	-	-	-	-	-	-	-	Continued	
Aerotech	5	2	5	1	200	10	6-9	7.3	5.7 W 1.2 S	0.4	0.13	0.06	-	-	6.5	10.0	Not acutely lethal	Continued
North Preston	10	5	10	6	200	10	6-9	6.7	3	0.4	1.5	0.4	-	-	-	-	Continued	
Lockview	20	19	20	71	200	10	6.5-9	6.6	8.0 S	4.1	1.2 S	1.6	-	-	-	-	Continued	
Steeves (Wellington)	20	5	20	1	200	10	6.5-9	6.8	14.4 S	5.6	1.0 S	0.1	-	-	-	-	Continued	
BLT	15	6	20	20	200	11	6-9	6.9	5 W 3 S	2	3 W 1 S	1	0.02 *	0.02	-	-	Not acutely lethal	Continued
Avg. of all Facilities	15		19		133		6.9		2.4		0.7		0.02		10.0			

NOTES & ACRONYMS:

CBOD₅ - Carbonaceous 5-Day Biochemical Oxygen Demand

TSS - Total Suspended Solids

* TRC - Total Residual Chlorine - Maxxam can only measure 0.10 mg/L residual; results of 0.1 mg/L are compliant

BDL - Below Detection Limit

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., 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

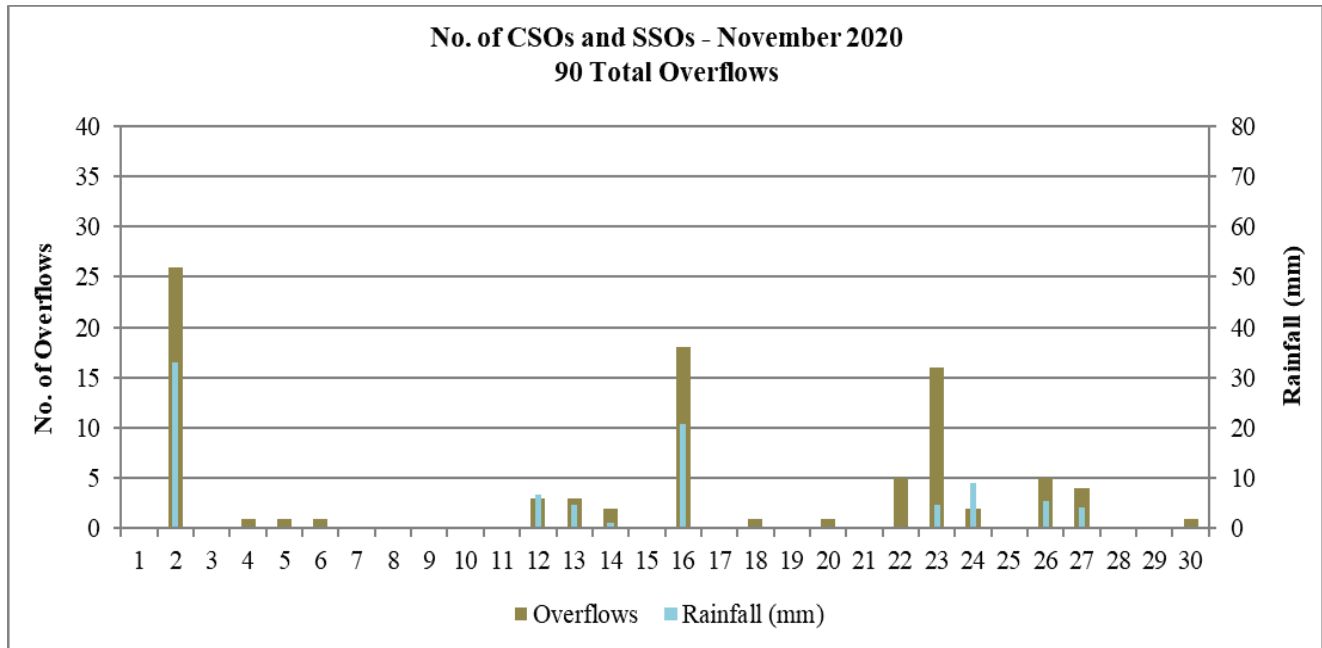
Declined - One or more parameters(s) became non-compliant since the last report

LEGEND	
 	NSE Compliant
 	NSE Non-Compliant

Staff note that the Dartmouth WWTF is operating at 50% process capacity due to capital upgrades within the facility.

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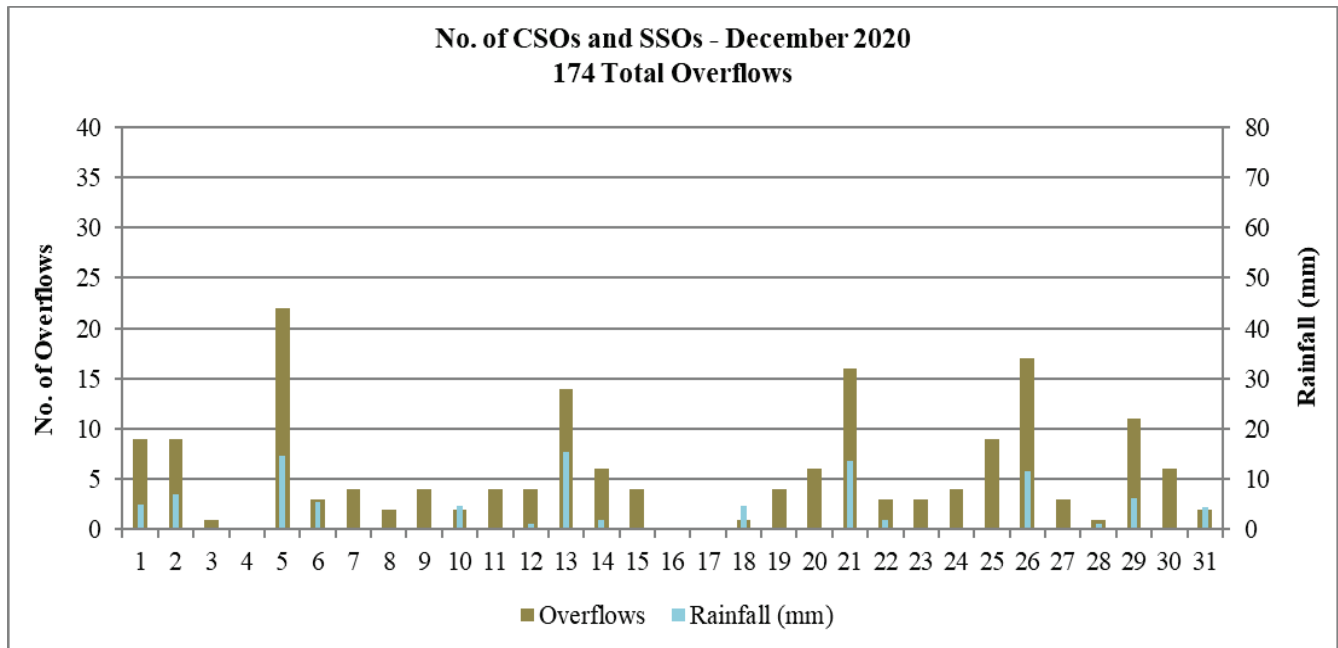
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NOTES & ACRONYMS: CSO - Combined Sewer Overflow SSO - Sanitary Sewer Overflow

- Rainfall data is from Halifax Water's rain gauge at the Halifax WWTF.
- There were eleven overflows on days when there was no recorded rainfall, as follows:
 1. November 4, 5 and 6: The CSOs at Duffus St PS was due to a pump restriction from the Halifax WWTF.
 2. November 18: The CSO at Duffus St PS was due to a pump restriction from the Halifax WWTF.
 3. November 20 and 22: The CSOs at Sackville St CSO was due to a blockage caused by debris.
 4. November 30: The CSO at Chain Rock PS & CSO was due to a blockage caused by debris.

ITEM# 1-I

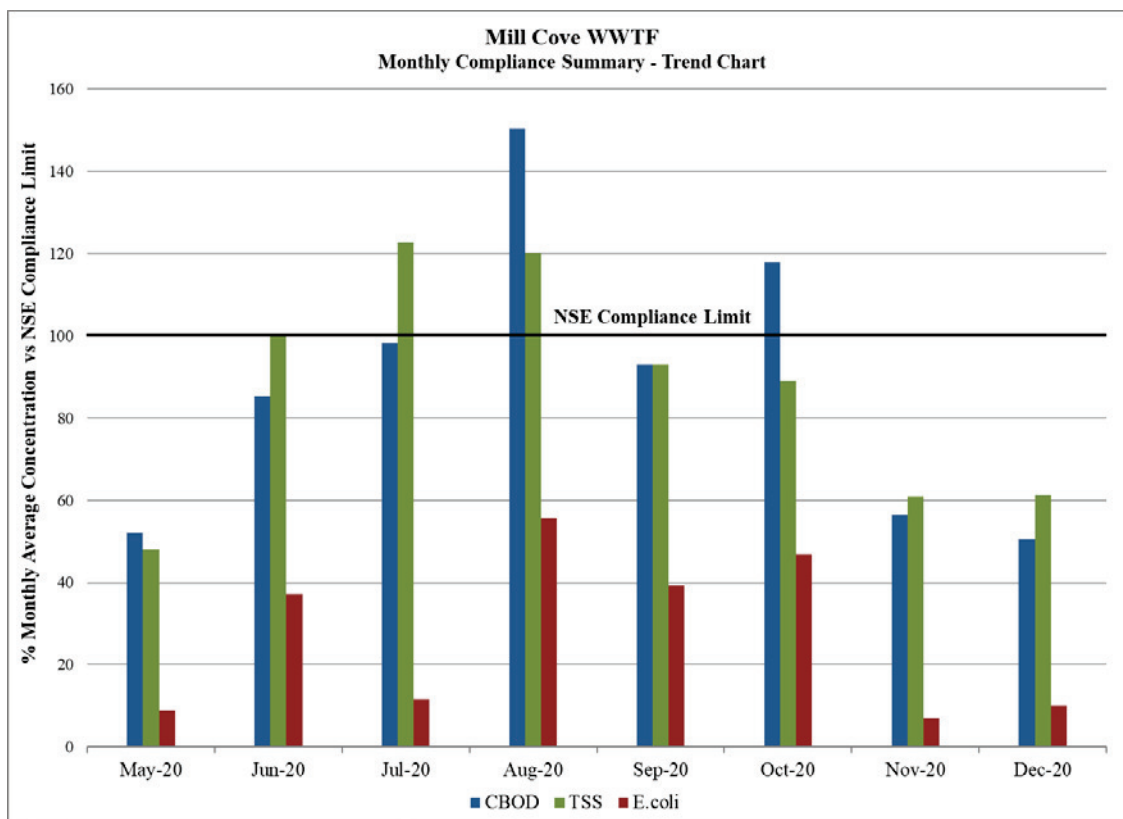
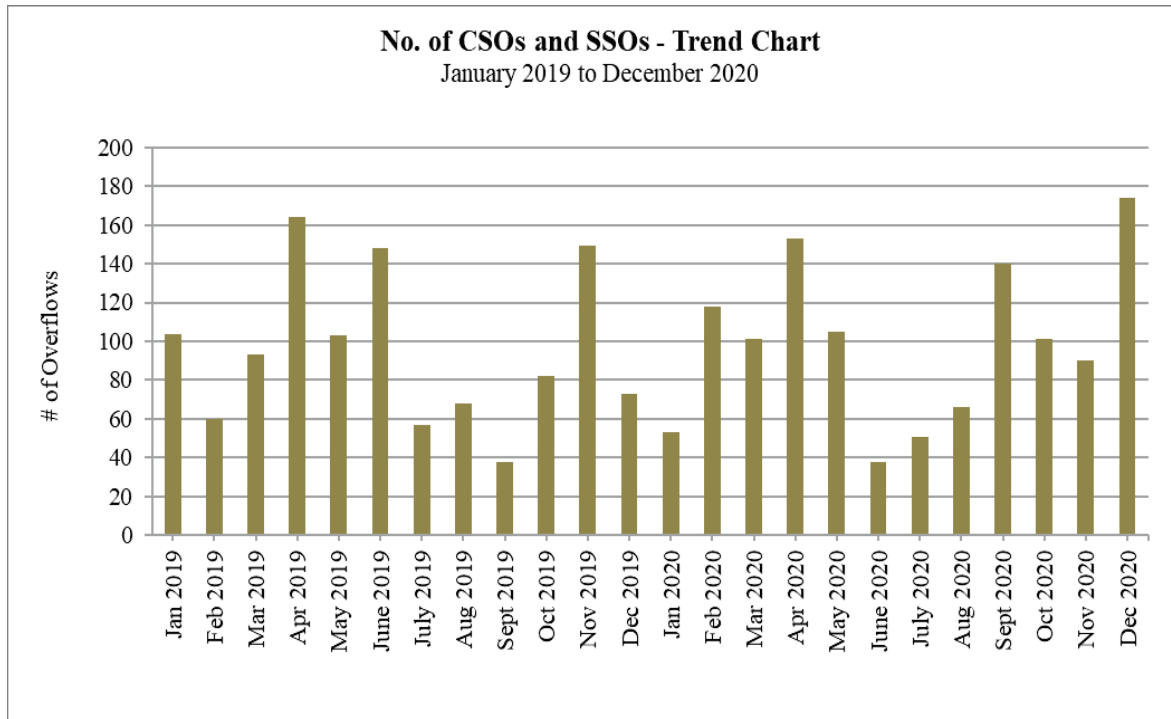


NOTES & ACRONYMS: CSO - Combined Sewer Overflow SSO - Sanitary Sewer Overflow

- Rainfall data is from Halifax Water's rain gauge at the Halifax WWTF.
- There were fifty overflows on days when there was no recorded rainfall, as follows:
 1. December 3: The CSO at Duffus St PS was due to a pump restriction from the Halifax WWTF.
 2. December 8: The CSOs at Sackville St CSO were due to blockages caused by debris.
 3. December 9: The CSO at Duffus St PS was due to a pump restriction from the Halifax WWTF. The CSOs at Sackville St CSO were due to blockages caused by debris.
 4. December 11: The CSOs at Sackville St CSO were due to blockages caused by debris.
 5. December 15: The CSO at Duffus St PS was due to a pump restriction from the Halifax WWTF. The CSOs at Sackville St CSO were due to blockages caused by debris.
 6. December 19 and 20: The CSOs at Sackville St CSO were due to blockages caused by debris.
 7. December 23: The CSOs at Sackville St CSO were due to blockages caused by debris. The SSO at the Mill Cove Surge Tank was due to rain on the previous day.
 8. December 24: The CSO at Duffus St PS was due to a pump restriction from the Halifax WWTF. The CSOs at Sackville St CSO were due to blockages caused by debris.
 9. December 25 and 30: The CSOs at Sackville St CSO were due to blockages caused by debris.
 10. December 27: The CSO at Duffus St PS was due to a pump restriction from the Halifax WWTF. The CSO at Sackville St CSO was due to a blockage caused by debris. The SSO at the Mill Cove Surge Tank was due to rain on the previous day.

ITEM# 1-I

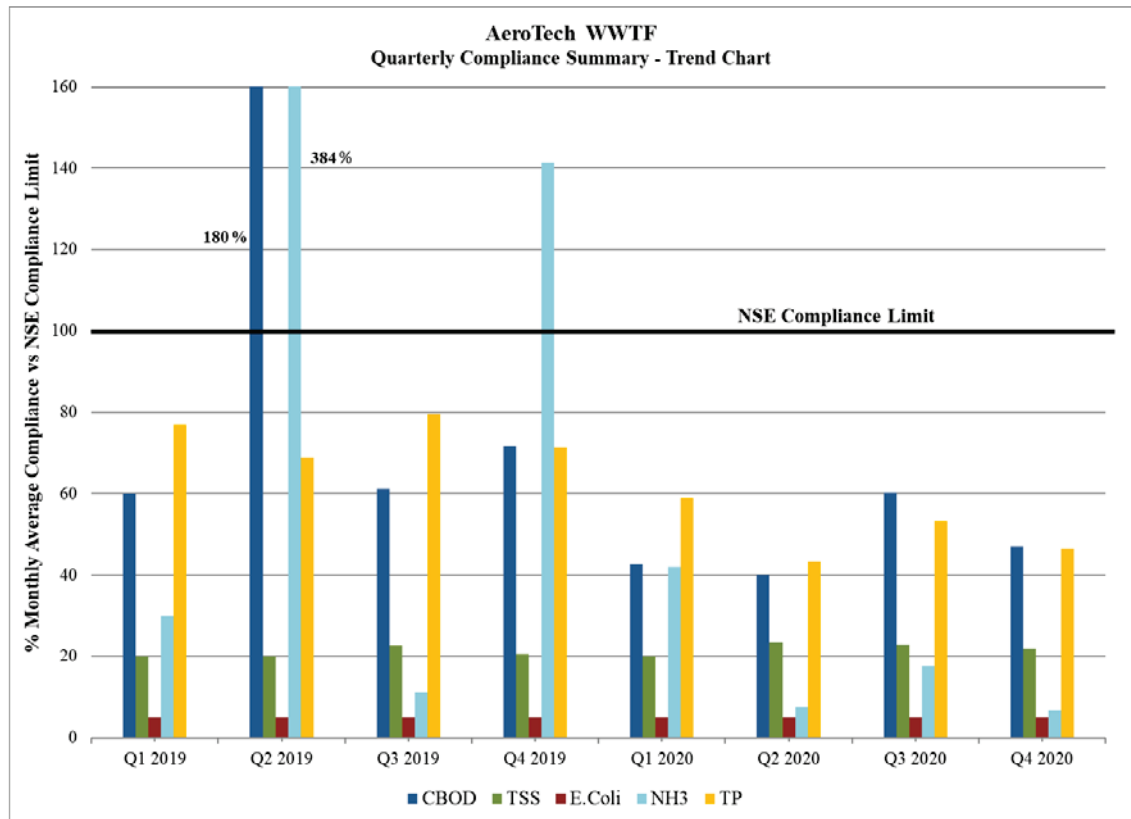
Page 9 of 16
HRWC Board
January 28, 2021



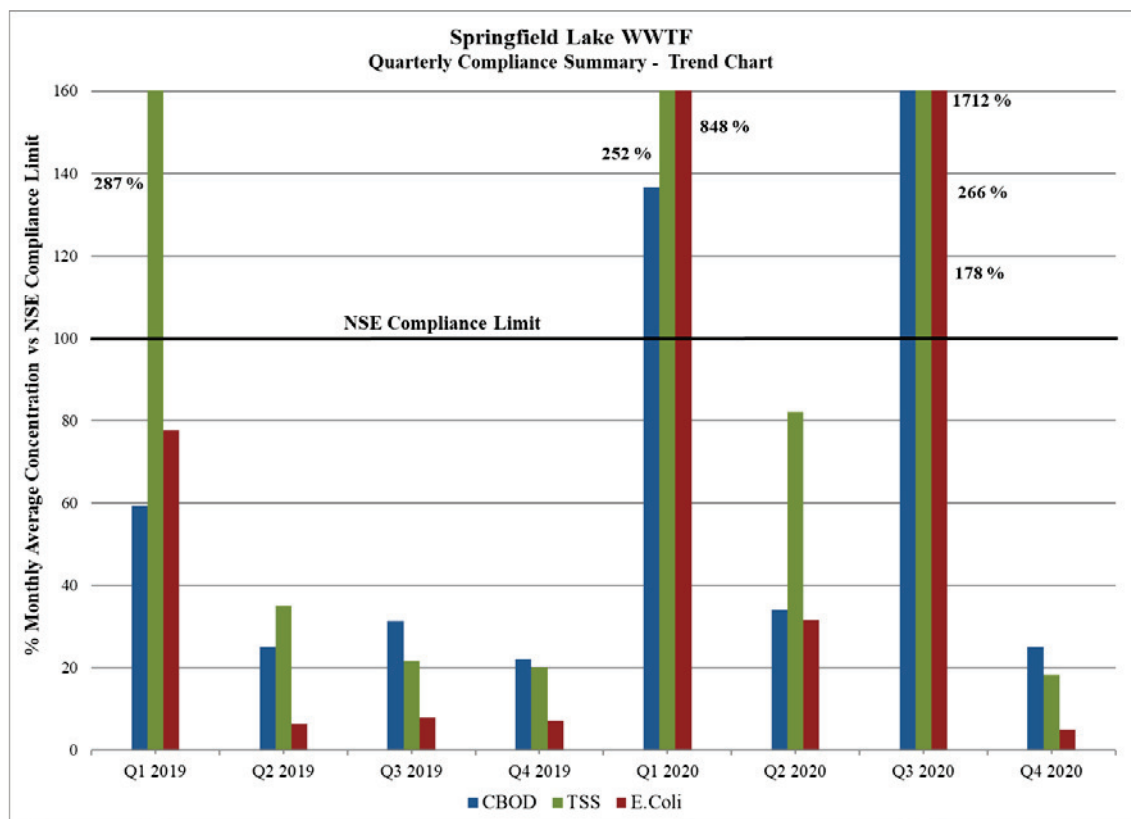
Lower numbers represent better performance.

ITEM# 1-I

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January 28, 2021



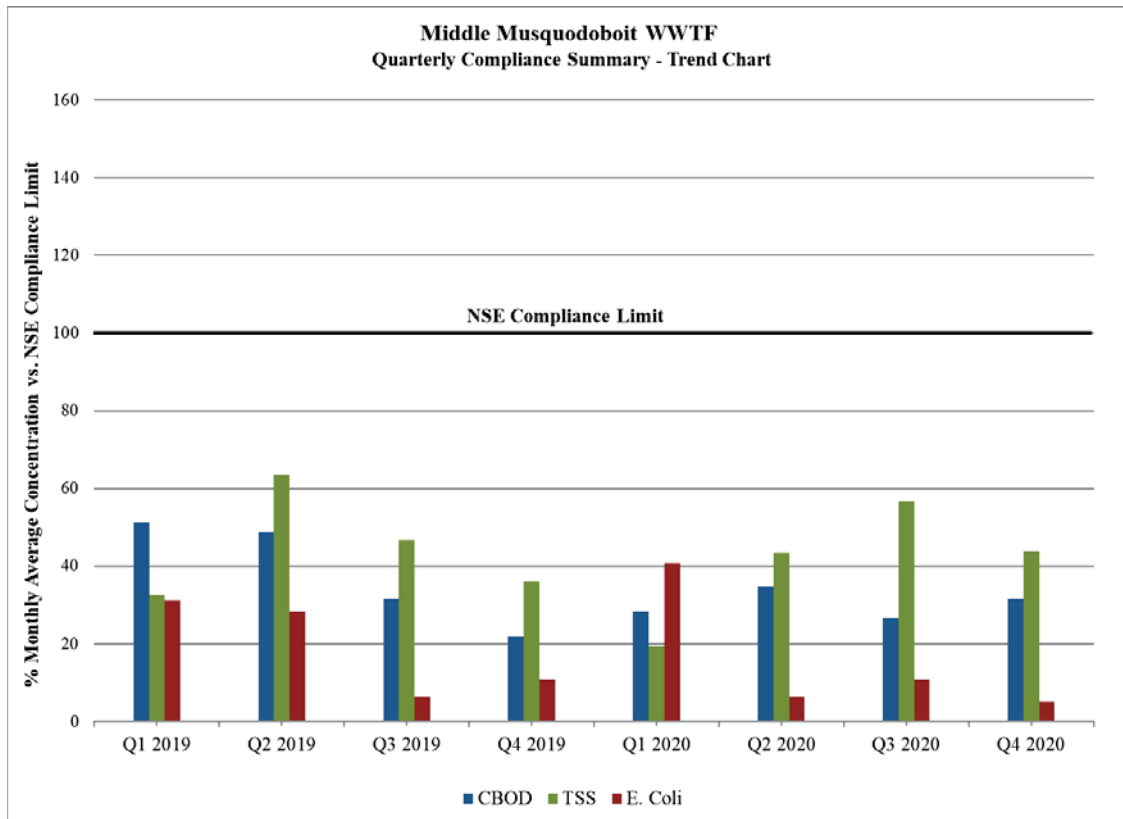
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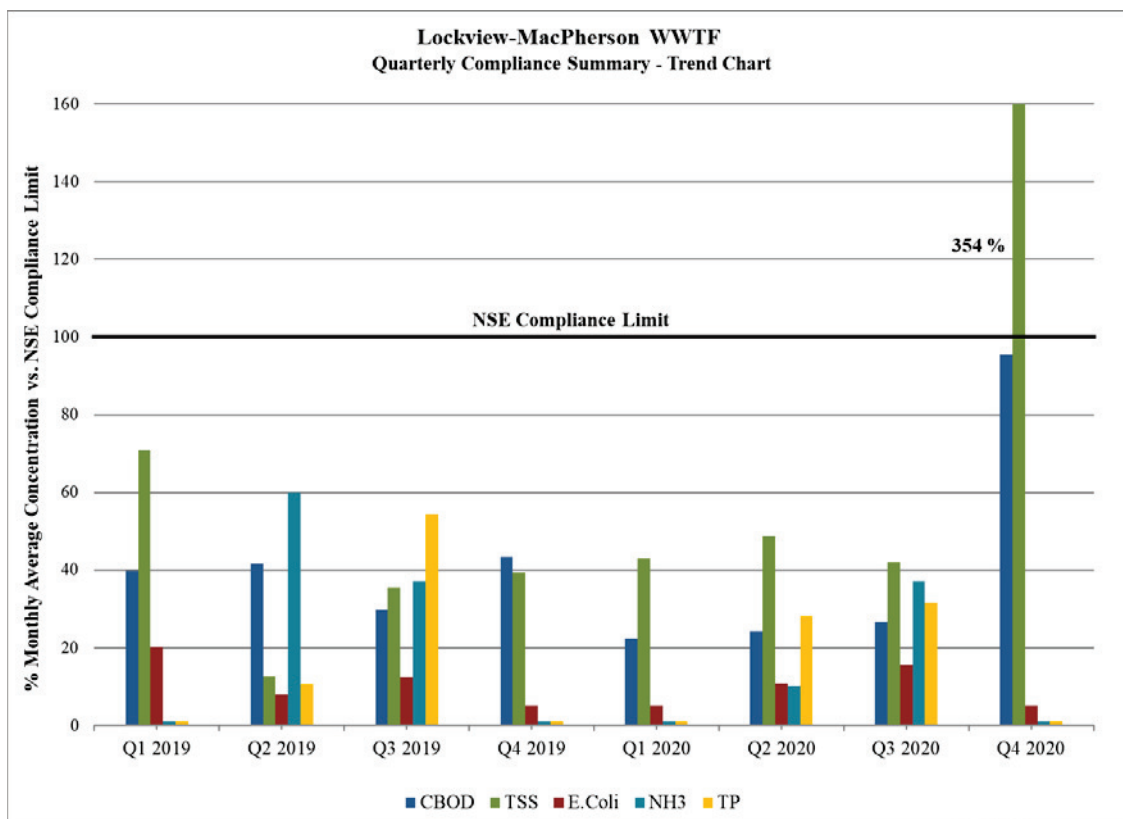
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HRWC Board
January 28, 2021



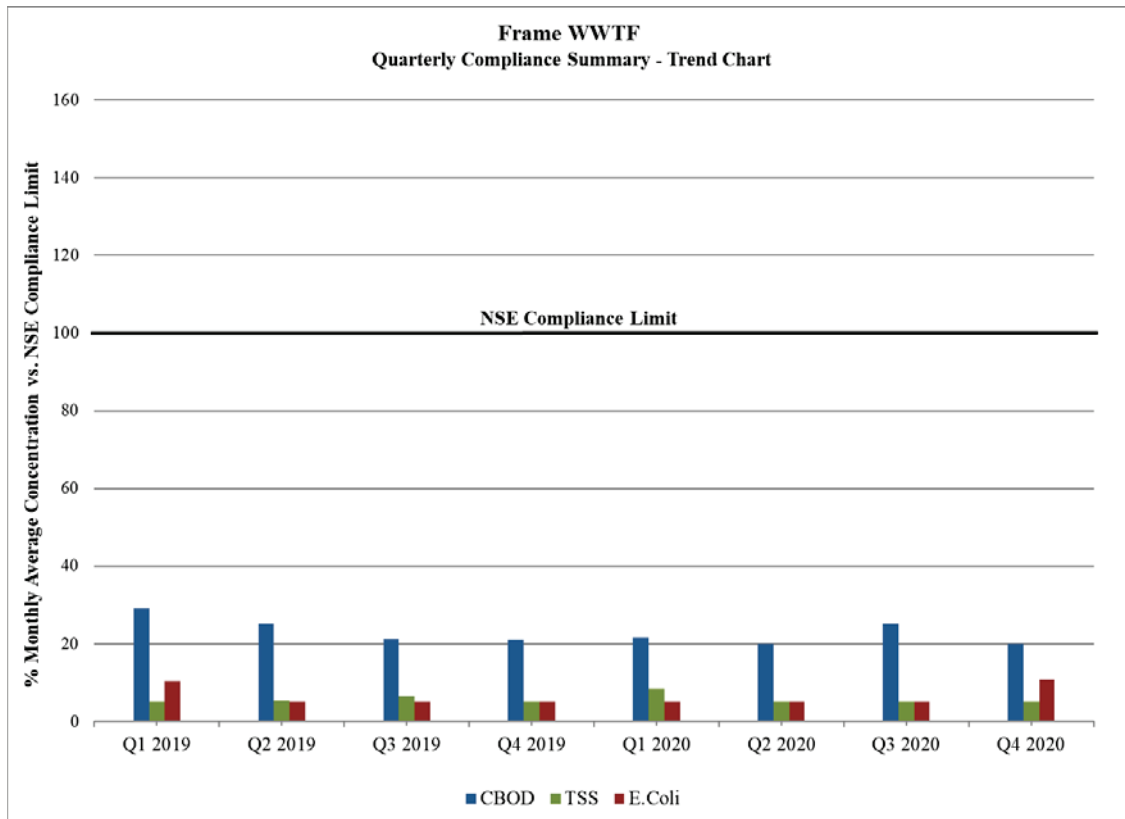
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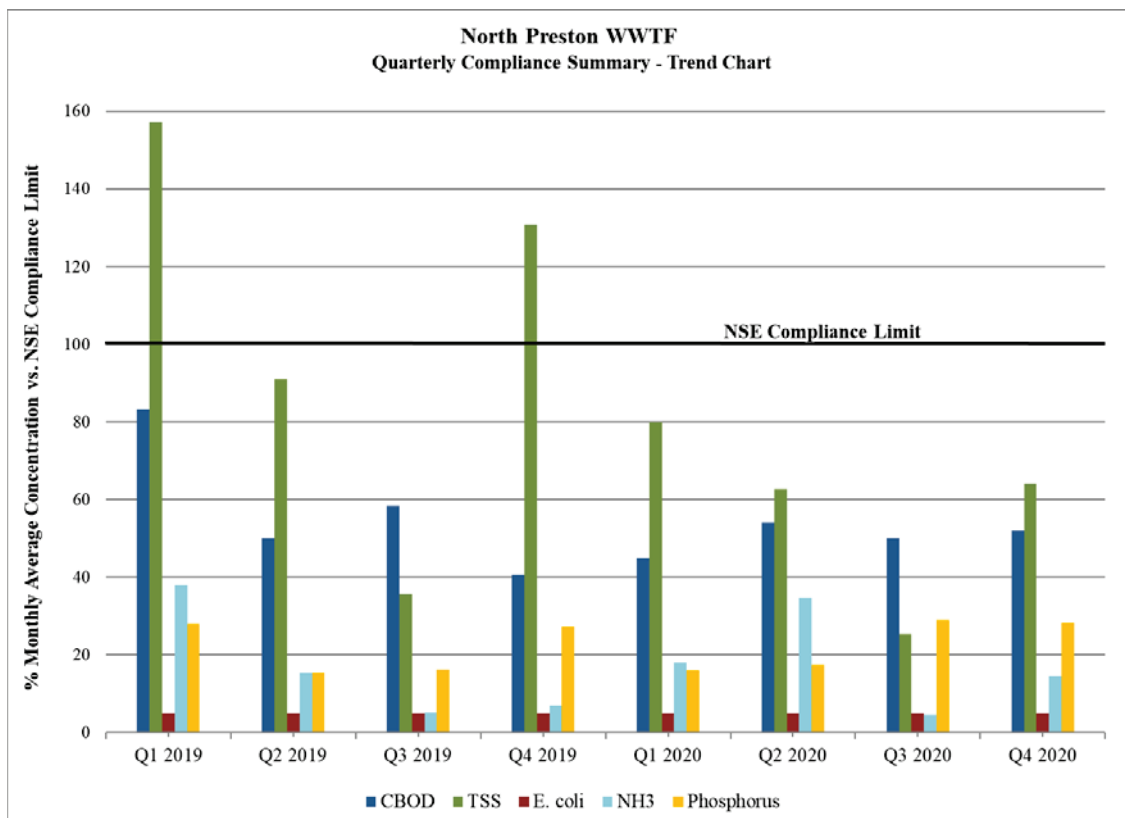
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January 28, 2021



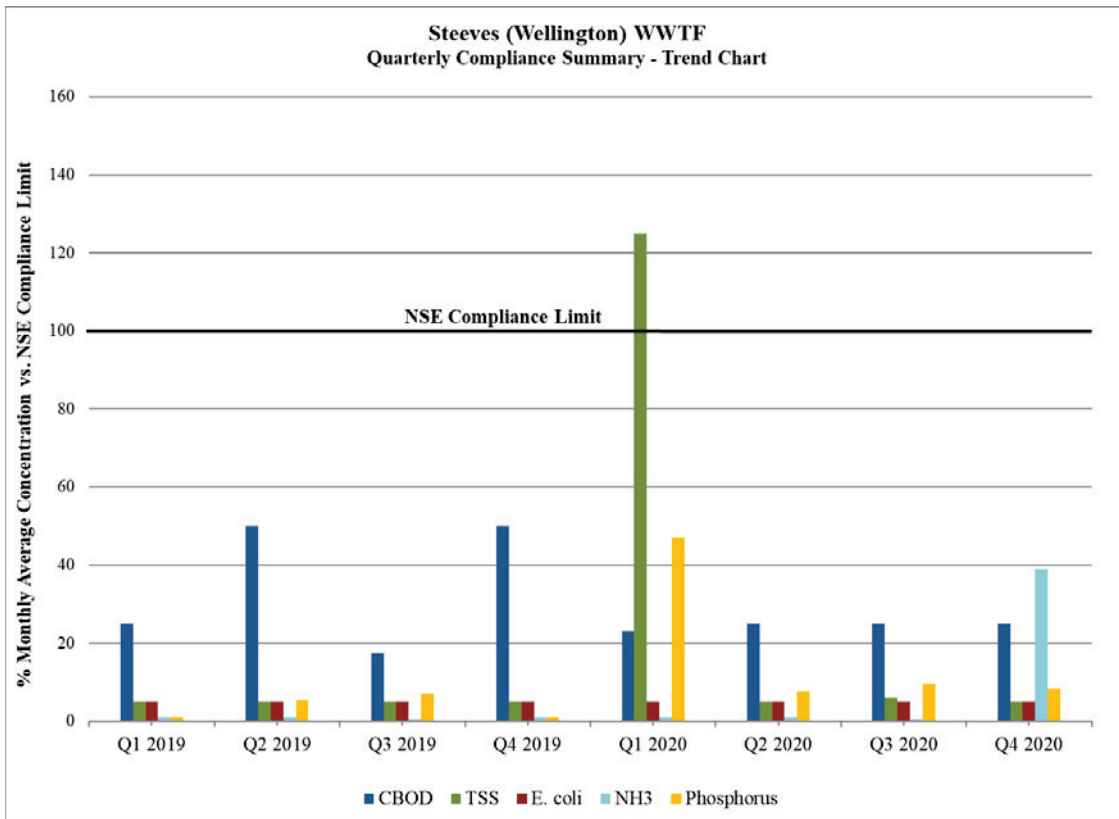
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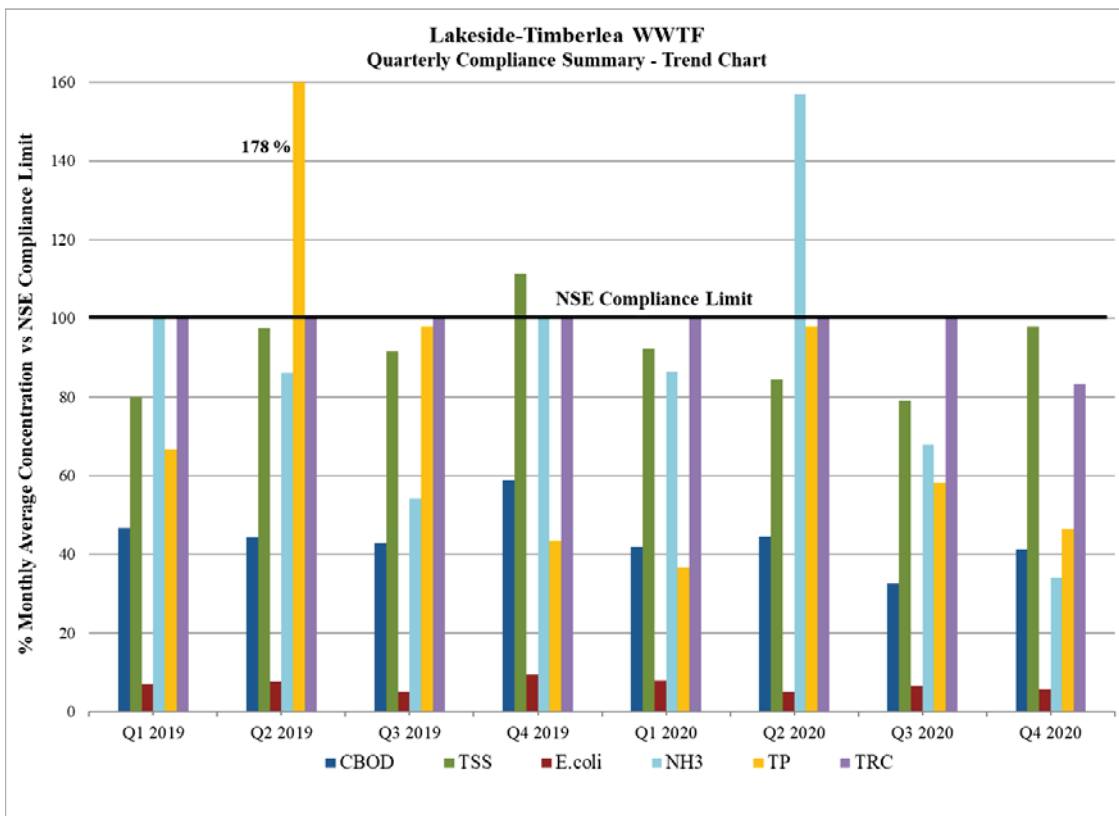
Lower numbers represent better performance.

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HRWC Board
January 28, 2021



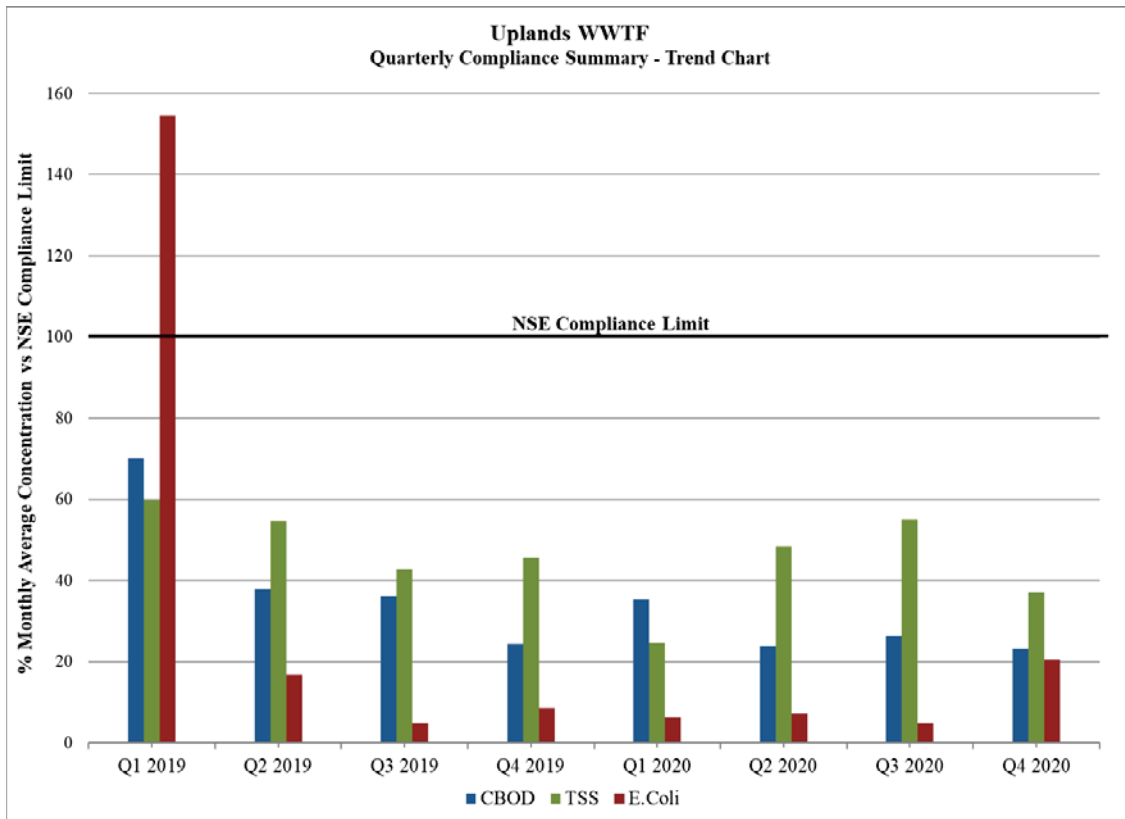
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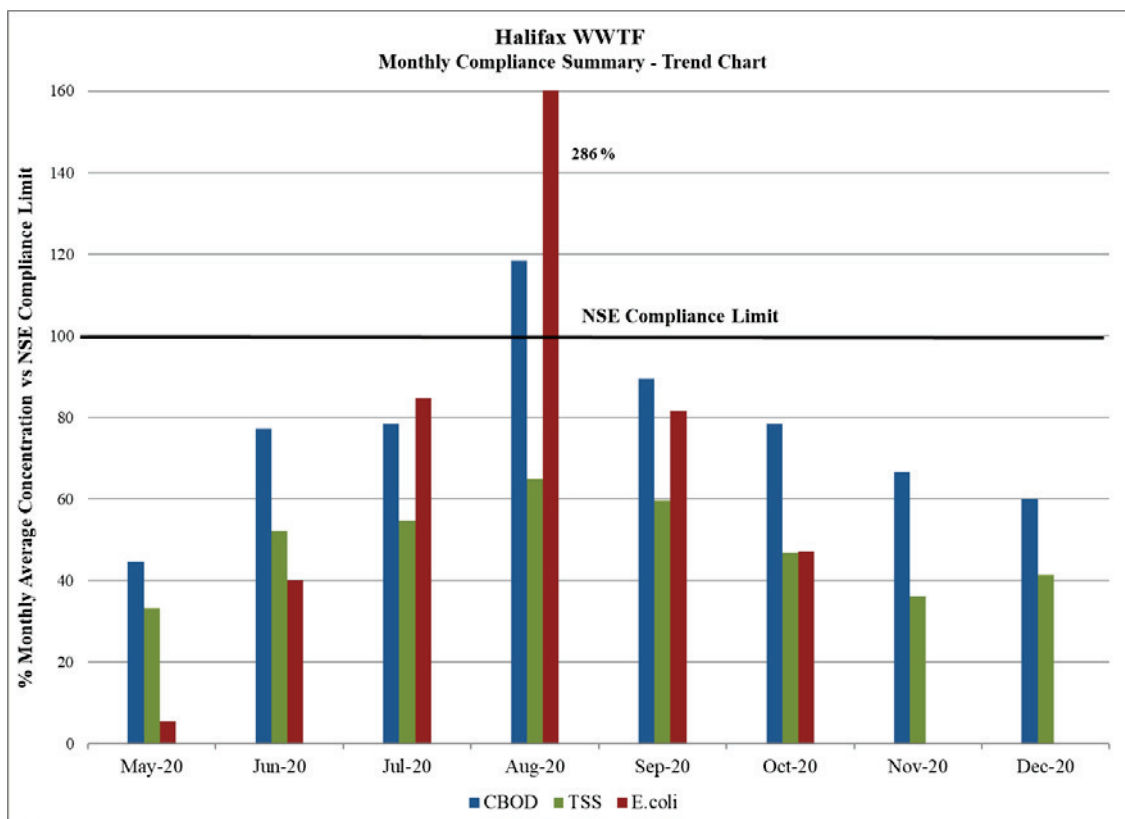
Lower numbers represent better performance.

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HRWC Board
January 28, 2021



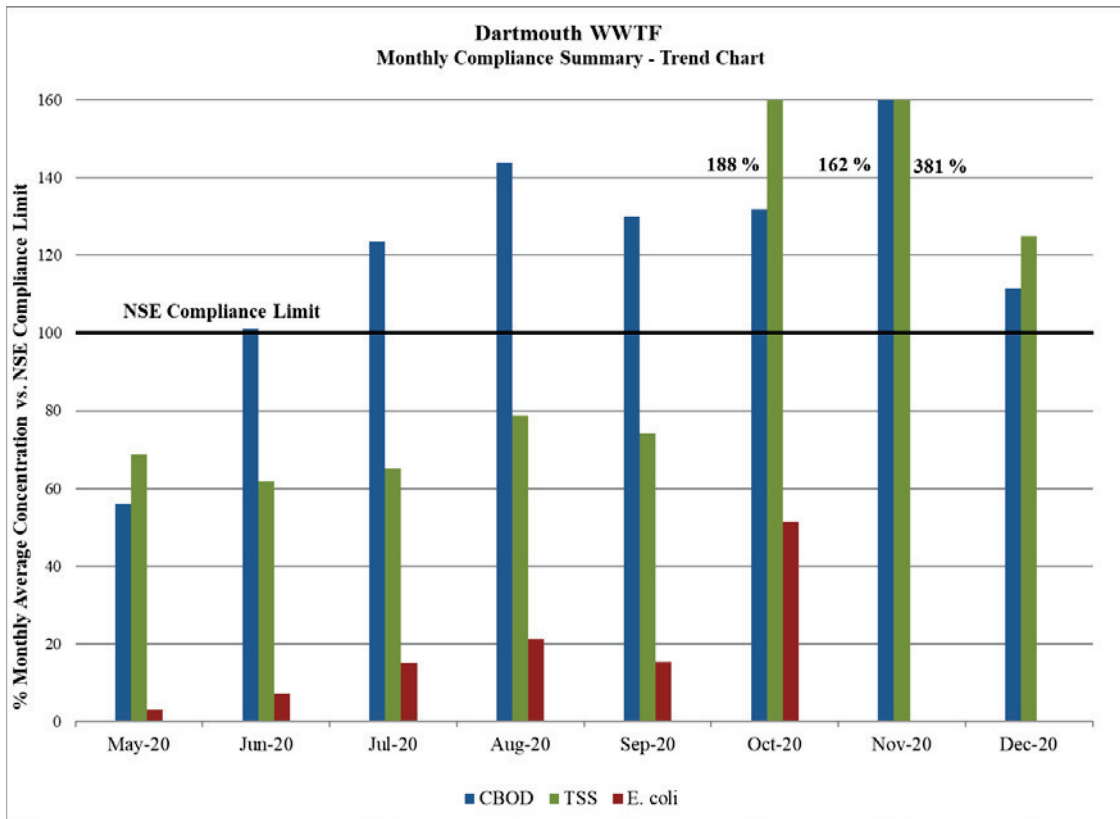
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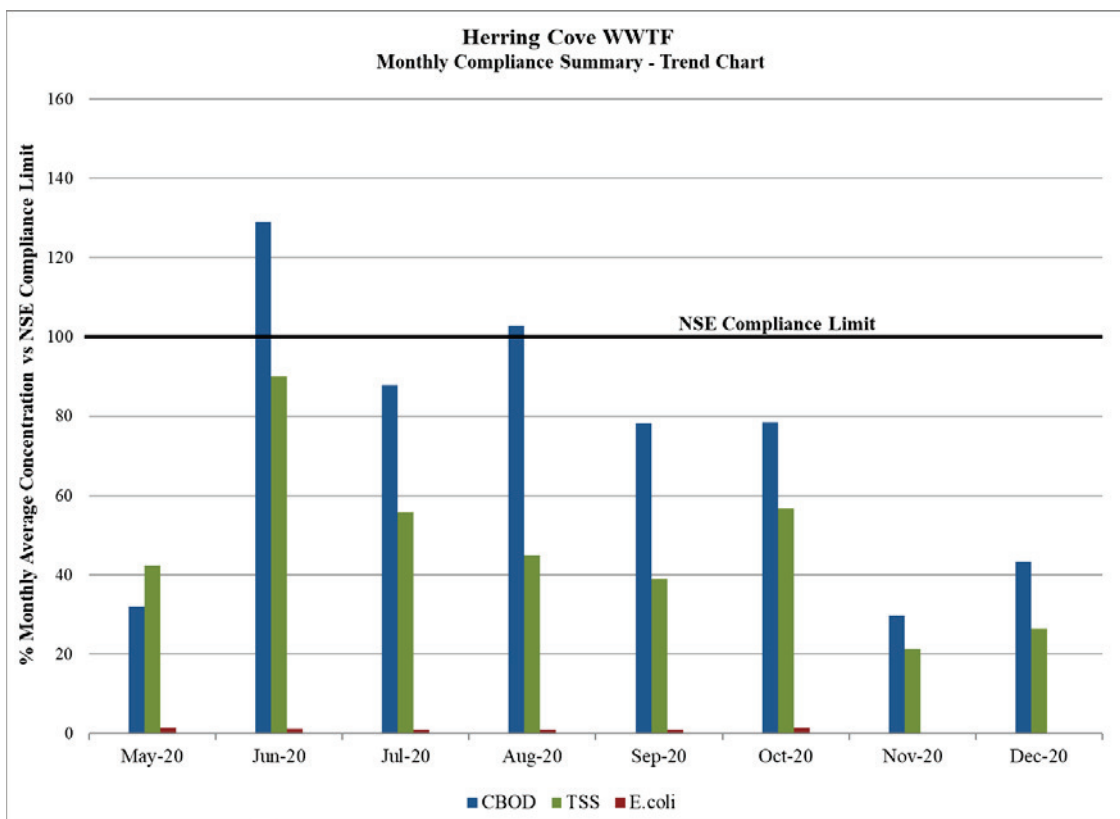
Lower numbers represent better performance.

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January 28, 2021



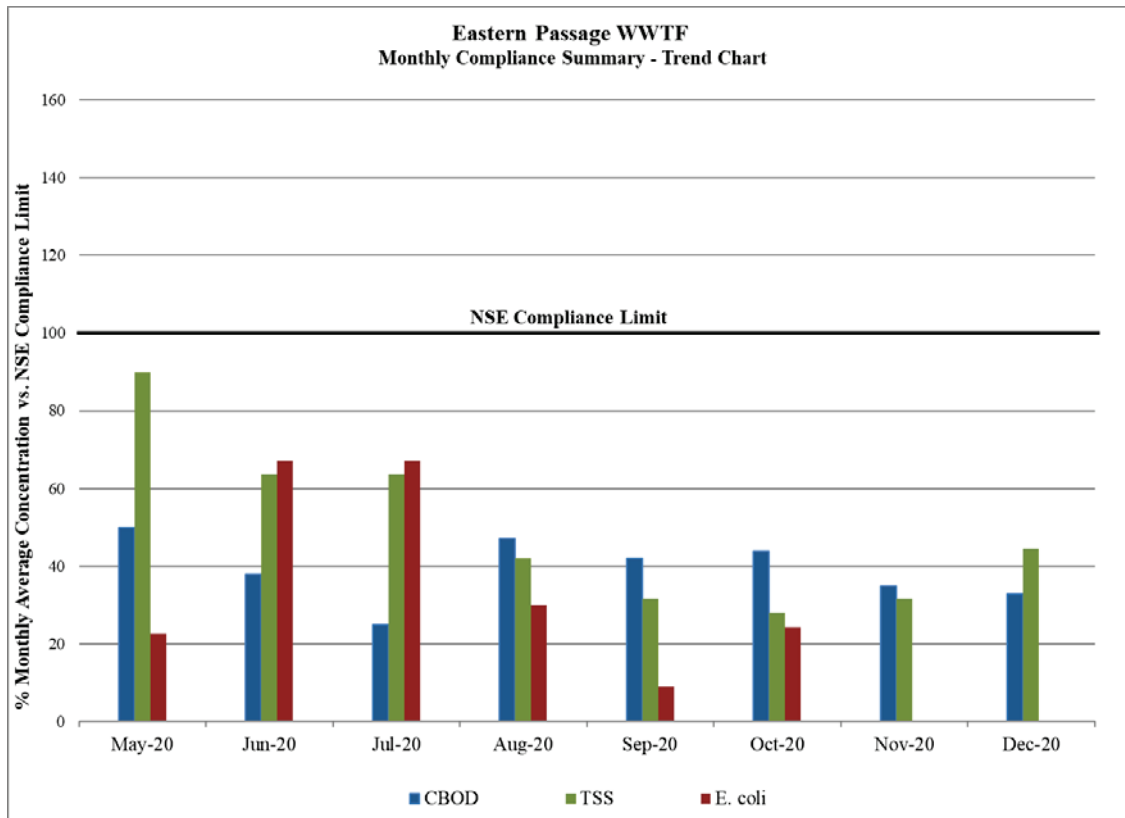
Lower numbers represent better performance.



Lower numbers represent better performance.

ITEM# 1-I

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HRWC Board
January 28, 2021



Lower numbers represent better performance.

ITEM # 2-I
Halifax Water Board
28-Jan-21

FINANCIAL REPORT - Bank Balance

Consolidated Bank Balance

As of: January 13, 2021 \$57,064,629

Investment Rate of Return:

For month of: December 2020 0.055%

Annual: 0.654%

Halifax Water Compliance Statement
Quarterly Certification

For the period of October 1, 2020 to December 31, 2020

We hereby certify that the Halifax Regional Water Commission is current in making all statutory remittances for payroll taxes, Harmonized Sales Tax and other remittances as required under the laws of the Government of Canada and its Provinces (the significant remittances are noted in the appendix) and that all legal claims have been disclosed.

**Cathie
O'Toole**

Digitally signed by Cathie
O'Toole
Date: 2021.01.22
09:39:53 -04'00'

Cathie O'Toole, MBA, FCPA, FCGA, ICD.D
General Manager

**Louis de
Montbrun**

Digitally signed by Louis
de Montbrun
Date: 2021.01.21
14:01:25 -04'00'

Louis de Montbrun, CPA, CA
Director, Corporate Services/CFO

Dated:

January 21, 2021

Halifax Water Compliance Statement
Quarterly Certification
Appendix I

Significant statutory remittances for payroll taxes, Harmonized Sales Tax and other remittances as required under the laws of the Government of Canada and its Provinces for the Halifax Regional Water Commission.

Statutory Payroll Remittances

- **Canada Revenue Agency (CRA)** - Statutory employee payroll deductions and employer related contributions for:
 - Income Tax
 - Canada Pension Plan (CPP)
 - Employment Insurance (EI)
- **Workers' Compensation Board of Nova Scotia (WCB)** – Employer remittance based on employee payroll

Other Payroll Remittances

- **Northern Trust** - Employee payroll deductions and employer contributions to Halifax Water and HRM defined benefit pension plans
- **Industrial Alliance** – employer and employee contributions to defined contribution pension plan
- **Medavie Blue Cross & SSQ** – employee payroll deductions and employer related contributions for Health & dental, LTD, and Life benefit coverage, and payroll deductions for AD&D
- **Canadian Union of Public Employees** – Employee payroll deductions of union dues
 - CUPE Local 227
 - CUPE Local 1431

HST and Other Remittances

- **Canada Revenue Agency (CRA)** - Harmonized Sales Tax (HST) is filed online and a refund issued as HST paid is greater than HST collected
- **Workers' Compensation Board of Nova Scotia (WCB)** – Remittance for sub-contractors

Exceptions, errors and/or late remittances

TO: Craig MacMullin, MBA, CPA, CGA, Chair, and Members of the
Halifax Regional Water Commission Board as Trustees of the
Halifax Water Employees' Pension Plan

SUBMITTED BY: Louis de Montbrun Digitally signed by Louis de Montbrun
Date: 2021.01.21
16:45:43 -04'00'

Louis de Montbrun, CPA, CA
Director, Corporate Services/CFO

APPROVED: Cathie O'Toole Digitally signed by Cathie O'Toole
Date: 2021.01.21
17:05:29 -04'00'

Cathie O'Toole, MBA, FCPA, FCGA, ICD.D
General Manager

DATE: January 19, 2021

SUBJECT: Halifax Regional Municipality Master Trust Investment
Performance for the Third Quarter ended September 30, 2020

INFORMATION REPORT

ORIGIN

The Halifax Regional Municipality Master Trust (the "Master Trust") investment performance is reported to the Trustees periodically throughout the year.

BACKGROUND

None

DISCUSSION

The tables below and the attached Investment Report provide a performance update for the Third Quarter ended September 30, 2020 for the Master Trust, of which Halifax Regional

Water Commission Employees' Pension Plan (the "Plan") is a part. The fair value of the investment in the Master Trust is determined and updated at year-end, and the Plan's share in the Master Trust at December 31, 2019 was 6.3%, totaling \$141.2 million.

The Master Trust returned 2.50% in the Third Quarter, which underperformed the policy benchmark of 2.52% by (0.02%). The return for the 1-year period ended September 30, 2020 is 6.11%, underperforming the policy benchmark of 6.35% by (0.24%). Other historical returns are provided in Table 1 below.

Table 1 – Returns

	Current Quarter (Jul to Sep)	1-Year	3 - Year Annualized	4 - Year Annualized	Since Inception (Oct 1999)
Fund Return	2.50%	6.11%	6.94%	7.19%	7.02%
Policy Benchmark	2.52%	6.35%	5.96%	6.20%	5.68%
Excess Return	(0.02%)	(0.24%)	0.98%	0.99%	1.34%

The total fund returns are subject to investment management fees and plan expenses.

As at September 30th, 2020 the Master Trust was in compliance with the Statement of Investment Policies and Procedures (SIP&P), and a summary of the asset mix is provided in Table 2 below:

Table 2– Asset Mix, as at September 30, 2020

Asset:	Actual	Policy Benchmark
Cash & Equivalents	0.6%	0.0%
Canadian Equity	4.6%	5.4%
Global Equity	31.1%	29.1%
Fixed Income	32.4%	36.4%
Minimum Target Return	31.3%	29.1%

ATTACHMENT

Halifax Regional Municipality Master Trust Investment Report Q3, 2020

Report Prepared by:	Heather Britten  Heather S. Britten, B. Comm. Quality Assurance Officer (902) 490-1895
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Investment Report

Q3 2020

Consent Agenda Item No. 1

Executive Summary

Compliance

- As at September 30, 2020, the Master Trust (MT) was in compliance with the SIP&P.

Funded Status

- As at December 31, 2019, the going concern funded ratio and transfer ratio were 91.8% and 63.4% respectively.*

Master Trust Performance (net of fees)

- In Q3, the MT earned 2.50%, underperforming the policy benchmark return by 0.02%.
- For the one-year period ending September 30, 2020, the MT earned 6.11% underperforming the policy benchmark by 0.24%.
- The MT earned an annualized return of 7.19% over the 4-year period ending September 30, 2020, outperforming the policy benchmark by 0.99% annualized.
- Since inception (October 1999), the MT earned 7.02% annualized, outperforming the Plan's long-term discount rate of 6.25%. The table on the next slide summarizes the calendar year returns for the MT.

* Per Eckler Valuation Report as at December 31, 2019. Assumes a going concern discount rate of 6.25%.

Executive Summary – Cont.

Calendar Returns
(net of fees)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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%	5.13%	10.85%	3.81%	10.69%
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%	5.55%	8.91%	0.96%	10.28%
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%	-0.42%	1.94%	2.85%	0.41%

Executive Summary – Cont.

Added Value

- In Q3 of 2020, the MT underperformed its policy benchmark by 0.02%.

Attribution: Universe Bonds +0.32%, Global Credit +0.15%, EAFE Equity -0.01%, Emerging Equity -0.01%, US Equity -0.03%, Canadian Equity -0.02%, Minimum Target Return -0.18% and World Equity -0.24%.

Q3 Updates

- Committed an additional EUR 5mn to a global secondary fund focused on offering preferred equity solutions to private equity portfolios. We had made an initial EUR 15mn investment into the Fund in Q4 2019.
- Committed CAD 25mn to a Canadian residential real estate fund focused on condominium development.
- Rebalanced CAD 10mn from global equity factor portfolio to cash.

Total Fund Net Returns

As of September 30, 2020

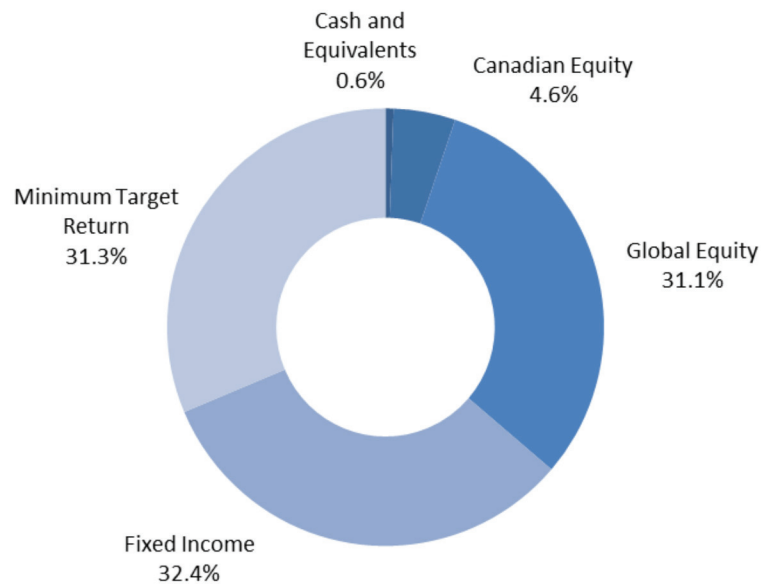
	Q3	1-Year	3-Year Annualized	4-Year Annualized	Since Inception (Oct 1999)
Fund Return	2.50%	6.11%	6.94%	7.19%	7.02%
Policy Benchmark*	2.52%	6.35%	5.96%	6.20%	5.68%
Excess Return	-0.02%	-0.24%	0.98%	0.99%	1.34%

* Effective September 30, 2020, the Policy Benchmark is 3.5% S&P/TSX Index + 1.9% S&P/TSX 60 + 6.1% S&P 500 Index (\$USD) + 8.0% MSCI EAFE Index (\$CAN) + 3.8% MSCI Emerging Markets (\$CAN) + 11.2% MSCI World (\$CAN) + 17.1% FTSE TMX Canada Universe Bond + 19.3% 3 Month Bankers Acceptance + 29.1% Minimum Target Return.

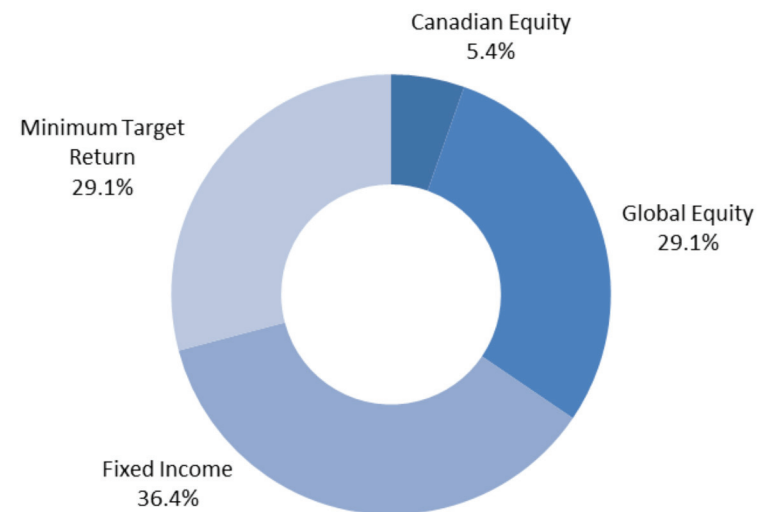
Fund returns are shown net of fees and expenses

Asset Mix

Asset Mix
As of September 30, 2020



Asset Mix Policy
As of September 30, 2020



* Effective September 30, 2020, the Policy Benchmark is 3.5% S&P/TSX Index + 1.9% S&P/TSX 60 + 6.1% S&P 500 Index (\$USD) + 8.0% MSCI EAFE Index (\$CAN) + 3.8% MSCI Emerging Markets (\$CAN) + 11.2% MSCI World (\$CAN) + 17.1% FTSE TMX Canada Universe Bond + 19.3% 3 Month Bankers Acceptance + 29.1% Minimum Target Return.

Equity Market Returns

As of September 30, 2020

Index	Q3	1-Year	3-Year Annualized	4-Year Annualized
Canadian Equity (S&P/TSX Composite Index)	4.73%	-0.03%	4.26%	5.47%
US Equity (S&P 500 C\$)	6.83%	16.17%	14.77%	14.29%
US Equity (S&P 500 U\$)	8.93%	15.15%	12.28%	13.83%
EAFE Equity (MSCI EAFE C\$)	2.78%	1.39%	2.85%	5.38%
Emerging Markets (MSCI EM C\$)	7.45%	11.52%	4.69%	7.53%
World Equity (MSCI World C\$)	5.85%	11.39%	10.13%	10.70%

- Emerging market equities advanced in Q3, despite a further acceleration in new cases of COVID-19 and an escalation in US-China tensions.
- US equities gained in Q3 supported by signs of economic recovery.

*Source: Northern Trust

Public Equity – Q3 Summary

- The MT's Equity portfolio returned 4.78% during the quarter, underperforming the equity policy benchmark return of 5.69% by 0.91%, primarily due to underperformance of Emerging and World equities.

As of September 30, 2020 (C\$ returns)

	Q3			One year		
	Plan	Benchmark	Relative Performance	Plan	Benchmark	Relative Performance
Canadian Equity	4.61%	4.62%	-0.01%	-2.41%	0.08%	-2.49%
US Equity	8.72%	8.93%	-0.21%	13.85%	15.15%	-1.30%
EAFE Equity	2.82%	2.78%	0.04%	1.72%	1.39%	0.33%
Emerging Equity	6.56%	7.45%	-0.89%	10.89%	11.52%	-0.63%
World Equity	3.75%	5.85%	-2.10%	4.17%	11.39%	-7.22%
Total	4.78%	5.69%	-0.91%	5.01%	8.11%	-3.10%

*Source: Northern Trust

Bond Market Returns

As of September 30, 2020

Index	Q3	1-Year	3-Year Annualized	4-Year Annualized
Canadian Universe Bonds (FTSE TMX Canada Universe Bond)	0.44%	7.08%	6.09%	3.75%
Canadian Government Bonds (FTSE TMX Canada Universe Government)	0.11%	7.16%	6.16%	3.54%
Canadian Corporate Bonds (FTSE TMX Canada Universe Corporate)	1.34%	6.89%	5.93%	4.32%

- Corporate bonds have outperformed Government bonds and the broader Universe over the Q3 and 4-year periods.
- Government bond yields were little changed this quarter.

*Source: Northern Trust

Public Fixed Income – Q3 Summary

- The MT's diversified Fixed Income portfolio earned 1.55%, which outperformed its benchmark return of 0.29% by 1.26%, primarily due to outperformance of Canadian Corporate Bond.

As of September 30, 2020 (C\$ returns)

	Q3			One year		
	Plan	Benchmark	Relative Performance	Plan	Benchmark	Relative Performance
Canadian Corporate Bond	3.91%	1.34%	2.57%	10.63%	6.89%	3.74%
Government Bond	0.35%	0.11%	0.24%	7.68%	7.16%	0.52%
Global Credit Absolute Return	0.68%	0.13%	0.55%	1.05%	1.21%	-0.16%
Total	1.55%	0.29%	1.26%	5.46%	4.00%	1.46%

*Source: Northern Trust

Private Market – Q3 Summary

- The Minimum Target Return portfolio (private investment portfolio) returned 1.20% in Q3, versus a benchmark of 1.56%, underperforming by 0.36%.

As of September 30, 2020 (C\$ returns)

	Q3	1-Year	3-Year Annualized	4-Year Annualized	Since Inception (Oct 1999)
MTR Return	1.20%	8.44%	10.57%	10.36%	12.18%
Policy Benchmark	1.56%	6.25%	6.19%	6.25%	6.48%
Excess Return	-0.36%	2.19%	4.38%	4.11%	5.70%

The policy benchmark for the private investment portfolio is the Going Concern Discount rate. The 2020 rate is 6.25%, 2019 is 6.1%, 2018 is 6.2%, 2017 is 6.4%, 2016 is 6.5%, 2015 is 6.55%, 2014 is 6.5%, 2013 is 6.25%, 2007-2012 is 6.75% and prior to 2007 is 7.4% respectively.

Liquidity

	Estimated 2020 Amounts (\$ mln)
Contributions**	\$ 105.2
Dividend & Distribution Income**	\$ 16.0
Interest Income**	\$ 14.4
Other Income**	\$ 0.4
Benefit Payments**	-\$ 114.6
Expenses**	-\$ 6.7
Total Annual Net CF	\$ 14.7
Liquid Investments*	\$ 1,526.7
Actual Net Distributions	\$ 57.9
Projected Net Distributions***	\$ 20.0
Actual Net Capital Calls	-\$ 72.6
Projected Net Capital Calls***	-\$ 32.5
Total CF + Liquid Investments + Private Sales – Capital Calls	\$ 1,514.2

* Liquid investments as at November 17, 2020. Includes all publicly traded equity and fixed income investments

** Contributions, Benefit Payments, Income, and expense estimates based on actual amounts from January to September 2020, annualized for full year

*** Since the dynamics we modeled out in March where capital calls speed up and distributions dry up have not materialized, we have reverted to our old methodology to project distributions and capital calls on a straight line basis

TO: Craig MacMullin, MBA, CPA, CGA, Chair, and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: Louis de Montbrun
Digitally signed by Louis de Montbrun
Date: 2021.01.22 11:28:58 -04'00'

Louis de Montbrun, CPA, CA
Director, Corporate Services/CFO

APPROVED: Cathie O'Toole
Digitally signed by Cathie O'Toole
Date: 2021.01.22 11:37:17 -04'00'

Cathie O'Toole, MBA, FCPA, FCGA, ICD.D
General Manager

DATE: January 22, 2021

SUBJECT: 2020/21 Cost Containment Initiatives

INFORMATION REPORT

ORIGIN

- The Cost Containment Process as approved by the Halifax Regional Water Commission (HRWC) Board, October 3, 2013.
- April 14, 2015, Nova Scotia Utility and Review Board (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. 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.

DISCUSSION

A Summary Report - Cost Containment Initiatives for 2020/21 is attached, with updated information as at January 21, 2021. This report shows the cost containment initiatives effecting

operations for 2020/21 as a result of new initiatives implemented during the year and ongoing initiatives from fiscal years 2013/14 to 2019/20 inclusive. The inclusion of initiatives and amounts from prior years reflects an intentional focus on sustainable results over the long term. Estimated cost savings for 2020/21 are \$7.5 million as outlined by category in Figure #1 below:

Figure #1

Procurement Strategies	\$1,137,891	15.2%
Human Resource Strategies	\$3,926,969	52.4%
Information Technology Strategies	\$108,700	1.5%
Facilities/Process Strategies	\$2,168,130	28.9%
Reduce Paper and Printing Costs	\$38,415	0.5%
Technology and Business Process Changes	<u>\$112,138</u>	<u>1.5%</u>
	<u><u>\$7,492,243</u></u>	<u><u>100.0%</u></u>

As shown above, cost containment initiatives are impacted most in the areas of Human Resource, and Facilities/Process and Procurement Strategies. Under Human Resource Strategies, the effects of pension plan re-design initiated in 2015/16 is one of the main contributors to cost containment savings in the current year. Annual savings related to pension plan re-design approximates \$1.7 million, which represents 43% of the savings within Human Resource Strategies and 23% of the total projected cost savings for 2020/21. In addition, effective January 1, 2019, special payments made by the HRWC to fund the unfunded liability of the pension plan were eliminated resulting in cost savings of \$0.8 million annually. Prior to January 1, 2016, special payments to fund the unfunded liability of the pension plan were approximately \$3.0 million. The next actuarial valuation is required on or before January 1, 2022.

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 \$1.0 million of projected savings for the current year, representing 48% of savings within the category and 14% of the total projected savings for 2020/21. Some of the prominent initiatives under the program related to energy savings include the annual shutdown of the ultraviolet disinfection systems (\$0.2 million), heat recovery processes (\$0.1 million) and lighting upgrades at various facilities.

Through Procurement Strategies, staff continue to negotiate the best pricing for products and services enabling the utility to operate in an efficient manner.

New cost containment initiatives implemented thus far during the 2020/21 fiscal year result in projected cost savings of approximating \$1.0 million and are highlighted for ease of reference on the Summary Report - Cost Containment Initiatives attached.

As part of the recent 2020 Rate Application to the NSUARB, Halifax Water committed to generating savings of approximately \$1.7 million associated with operating expenses during

ITEM # 5-I
Halifax Water Board
January 28, 2021

2020/21. Figure #2 below reports projected savings for the expenditures targeted in the Rate Application, based on most recent forecasts to January 14, 2021.

Figure #2


	2020/21		Variance	
	Budget	Forecast	\$	%
Targeted expenditures:				
Operating expenditures				
Salaries/wages	\$ 32,333,000	\$ 31,942,000	\$ (391,000)	(1.2%)
Training and development	1,318,000	794,000	(524,000)	(66.0%)
Contract services	6,002,000	5,224,000	(778,000)	(14.9%)
Materials and supplies	2,281,000	2,368,000	87,000	3.7%
Fleet	3,902,000	3,672,000	(230,000)	(6.3%)
	45,836,000	44,000,000	(1,836,000)	(4.2%)
Financial expenditures				
Debt servicing	30,930,000	28,144,000	(2,786,000)	(9.9%)
Total	\$ 76,766,000	\$ 72,144,000	\$ (4,622,000)	(6.4%)

BUDGET IMPLICATIONS

Available information on cost containment initiatives were taken into consideration in developing the 2020/21. Initiatives that impact future fiscal periods will be incorporated into budget cycles and processes of these future periods.

ATTACHMENT

Summary Report – Cost Containment Initiatives

Report Prepared by:		Digitally signed by Allan Campbell Date: 2021.01.22 10:40:28 -04'00'
Allan Campbell, B. Comm, CPA, CMA Manager, Finance, (902) 266-8655		

22-Jan-21

#	Initiative	Comments	Year Initiated	2020/21 Cost Savings
1 General Budget Strategies				
Sub-total				\$0
2 Procurement Strategies				
	Insurance adjustment services - sole source relationship over a 10 year period	Halifax Water (HW) participated in a joint tender with Halifax Regional Municipality(HRM). Costs will be approximately 20% lower.	2013/14	\$5,460
	Standardized uniforms and clothing	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	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
	Customer account collections	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	Savings as a result of contract tendering	2013/14	\$60,000
	NSPI rate reclassification	Eastern Passage Wastewater Treatment Facility (WWTF)	2014/15	\$16,000
	NSPI rate reclassification	Duffus Street Pumping Station	2015/16	\$15,000
	Chemical purchasing	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 Customer Care staff	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	HW leveraged the mobility contract of the Province of Nova Scotia	2016/17	\$48,000
	Garbage collection - JD Kline Plant	A request for proposal (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	2016/17	\$1,370
	Utilizing HW staff to setup excavations sites	Using trained HW staff as TWS for job sites, unless outside traffic control personal are required	2016/17	\$50,000
	RFP for biosolids transport	As a result of a recent RFP, the is expected to be an approximate 33% cost reduction related to transporting biosolids from the Halifax, Dartmouth, Herring Cove and Eastern Passage WWTF	2017/18	\$220,000
	Traffic control	Using trained HW staff for the purposes of traffic control while working on HW excavations sites will result in cost savings of \$750/day. This is based on an 8 hour day, including setup costs typically paid to the contractor.	2017/18	\$50,000
	Insourcing (Halifax Water's Annual Report)	The ability to perform in-house graphic design work versus contracting this work outside created savings with respect to the 2018 report of approximately \$100/page. Recurring annual savings will fluxuate depending on the size of the report in subsequent years.	2018/19	\$9,200
	Equipment calibration	Internal staff are now able to calibrate fixed gas detectors instead of outsourcing this to a MSA technician service provider.	2019/20	\$3,000
	Reduction in sampling	Reduced the amount of lab testing over the year as greater reliance and confidence was placed on the new, in-line analyzers.	2019/20	\$5,000
	Implementation of the new telephony platform	With the implementation of the new telephony platform, Customer Care was able to transition from the use of landlines.	2020/21	\$45,000
	Discounted parts offerings from a vendor	As a result of supply/demand, a vendor was offering significant savings (40%) toward the purchase of Rotork actuators. This was a limited time offer, good until November 30, 2020. As a result, the Mill Cove WWTF was in need of an actuator and was able to take advantage of the offering.	2020/21	\$2,043
	Elimination of a customer satisfaction survey	HW performs 2 customer surveys annually, the Forth Quarter Urban Report and the Atlantic Quarterly Survey. Upon review it was determined there was a redundancy in question asked between the 2 surveys therefore, it was decided to consolidate the questioning into the Forth Quarter Urban Report.	2020/21	\$5,319
	Equipment rental	West Water Operations rented a single axle hydro-excavation unit for 5 months rather than hire an hydro-excavation contractor during 2020. The unit had several uses including service box replacements, lead service investigations, and water main repairs. Rental for the unit was \$45,000; the cost to hire a hydro-excavation contractor would have been \$75,000 for comparable work.	2020/21	\$30,000

Contract service deferral	Due to restrictions resulting from COVID-19, promotional initiatives related to the SHED were postponed in 2020/21.	2020/21	\$51,000
Board meeting logistics	Open, in person Board meetings were suspended/ deferred during the year and delivered on a virtual platform.	2020/21	\$20,000
Professional services	Engaging professional services in several areas were deferred in 2020/21 including: 1) procurement audit (~\$20,000), 2) audit of the DRO process (~\$20,000), and 3) consultation related to corporate culture and customer service strategy (~\$25,000).	2020/21	\$65,000

Sub-total			\$1,137,892
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3 Human Resource Strategies

Heavy Truck and Equipment Service	the addition of a new Heavy Equipment Technician provides in-house maintenance service capabilities for the HW fleet.	2013/14	\$100,000
Beeper Pay	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
Accessing on-line training opportunities	More use of on-line training versus the traditional methods, including WHMIS and TDG renewals	2014/15	\$2,241
Background Checks	Out-sourced background checks to a new contractor.	2015/16	\$654
Workload, labor force assessment	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	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	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, labor force assessment	January 1, 2016 saw the elimination the administrative assistant within Regulatory Services.	2015/16	\$57,000
Workload, labor force assessment	November, 2016 saw the elimination of a Compliance Sampling position as a result of a reduction in sampling requirements.	2016/17	\$81,966
Overtime reductions	Overtime has been reduced at the Harbor Solutions Plants with respect to sick leaves, vacation, etc. when weather conditions allow and operational needs are met. Also, Halifax WWTF staff are responding to after hours calls at the Dartmouth and Herring Cove facilities in an effort to minimize the need for overtime call-outs.	2016/17	\$40,000
Change in benefit provider	The selection of a new benefit provider for life and long term disability (LTD) resulted in significant cost savings over the next three (3) years...2018-2021	2017/18	\$125,000
Actuarial Valuation - January 1, 2019	The actuarial valuation performed January 1, 2019 reported a surplus for the pension plan. As a result, special payments by Halifax Water to fund the unfunded liability are no longer required for at least 3 years when the next valuation is to be performed..	2018/19	\$825,200
Modifications to the Pre-Retirement Leave Program	In June 2019, employees were given the opportunity to withdraw their accrued benefit under the Pre-Retirement Leave Program in the form of a lump-sum payment, rather than continuing to accrue a benefit under a modified program. The Pre-Retirement Leave Program had been closed to new, non-union employees hired after March 31, 2018, and is now effectively closed for all other employees hired after June 7, 2018.	2019/20	\$260,000
Elimination of "Option 1" mileage reimbursement	Halifax Water previously offered two options to employees for the reimbursement mileage travelled while conducting business on behalf of the utility. Upon manager approval, "Option 1" reimbursed employees traveling in excess of 1,200 kilometers per year at a rate of \$0.24/kilometer, plus a monthly allowance of \$215, "Option 2" reimbursed employees at a rate of \$0.52/kilometer up to 5,000 kilometers, and at \$0.46/kilometer thereafter. Option 1 was eliminated May 15, 2020.	2020/21	\$33,469
Shortened employment terms	The employment terms of 2 employees were shortened by 6 months in the Metering/Billing department as a result of modified work during the pandemic. Updated as of January 22, 2021, the period was extended another 4 months to the end of the fiscal year.	2020/21	\$148,333
Hiring deferral	The hiring of the Enterprise Risk Management Program Manager was delayed, with the expectation of filling the position February 1, 2021. Potential savings of \$58,500 plus benefits.	2020/21	\$73,125
Hiring deferral	The hiring of a Records Analyst delayed, with no expectation to hire before the end of the current fiscal year. Savings of approximately \$52,500 plus benefits.	2020/21	\$65,625
Hiring deferral	The hiring of an Administrative Assistant in legal services delayed in the current fiscal year, after the position was vacated in May 2020. This position will not be funded in the upcoming 2021/22 budget year. Annual savings approximate \$60,581 plus benefits	2020/21	\$63,105

Event cancellations	Several HR related events were cancelled in 2020/21 including the annual awards banquet, NAOSH week, the children's Christmas party and the Take-Your-Kid to work Day. Also the Lunch and Learn Program was suspended during the year.	2020/21	\$41,250
Reduction in external recruitment costs	A deliberate decision was made to forego external recruitment costs related to Executive recruitment.	2020/21	\$60,000
Sub-total			\$3,926,969

4 Information Technology Strategies

Xerox managed print solutions	Rationalization and replacement of photocopiers and printers	2013/14	\$20,000
Network	Change in cost model by Eastlink, giving HW the new pricing	2013/14	\$80,000
Telephone land lines	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	Discontinuation of the pre-chlorination process	2013/14	\$40,000
Lab Testing	Price benefits from purchasing product from a different source mainly affecting the Harbor Solution Plants	2013/14	\$105,000
Pumper Truck Utilization	pilot project to be scheduled initially for stormwater customers only as a test	2013/14	\$130,000
Waste oil boiler system - Herring Cove WWTF	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	sampling was reduced from weekly to monthly	2014/15	\$8,025
NSE system assessments	Assessment reports are being completed in-house rather than being outsourced	2014/15	\$25,000
Decommissioning of the Bedford South pumping station	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		2014/15	\$4,793
Insulation upgrades - Bennery Lake WSP		2014/15	\$36,000
Lighting upgrades - Eastern Passage WWTF		2014/15	\$7,880
Lighting upgrades - Dartmouth WWTF		2014/15	\$22,542
Lighting upgrades - Herring Cove WWTF		2014/15	\$13,744
Lighting upgrades - Halifax WWTF		2014/15	\$29,845
Lighting upgrades - Aerotech BPF		2014/15	\$19,109
HVAC upgrades - Eastern Passage WWTF		2014/15	\$20,711
HVAC upgrades - Roach's Pond pumping station		2014/15	\$13,500
MCC 190 cooling and heat recovery - Halifax WWTF		2014/15	\$13,164
Aeration system upgrades - Eastern Passage WWTF		2014/15	\$76,382
Orchard Park in-line turbine project		2014/15	\$31,494
Wind farm - Pockwock WSP		2014/15	\$130,399
Biogas CHP system - Mill Cove		2014/15	\$86,000
Disposal of water treatment plant solid residual material	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	The current program has been halted as a cost containment initiative and as a result of the information received.	2014/15	\$150,000
E-delivery	Transitioning from traditional billing methods to e-delivery	2014/15	\$20,000
Change in Recycling Pickups	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	Expected energy savings	2015/16	\$14,300
Dartmouth WWTF - UV Channel Isolation	Expected energy savings	2015/16	\$59,460
Halifax WWTF - Fixed Compressed Air Leaks	Expected energy savings	2015/16	\$2,293
Halifax WWTF - UV Channel Isolation	Expected energy savings	2015/16	\$62,115
Herring Cove WWTF - MCC 190 Cooling/Heat Recovery	Expected energy savings	2015/16	\$8,496
Herring Cove WWTF - Ventilation Air Heat Recovery	Expected energy savings	2015/16	\$18,755
Sampling	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	Using trained HW staff for traffic control on HW job sites unless contractors are required.	2015/16	\$50,000

Process alternative	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	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
UV disinfection shutdown - HHSP and Eastern Passage WWTFs	Annual shutdown of UV disinfection system resulted in cost savings associated with electrical energy savings, peak demand reduction,	2016/17	\$193,540
Halifax WWTF - Ventilation Air Heat Recovery System	Implemented October, 2016	2016/17	\$42,069
Halifax WWTF - Carbon Scrubber By-Pass	Implemented April, 2016	2016/17	\$38,405
Tools developed internally	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
Spruce Hill transmission main	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
Utilization of industrial water	A new filter system was installed at the Eastern Passage WWTF that provides the capability to use the current industrial water system rather than potable water to deliver water to the polymer feed systems.	2016/17	\$26,000
Cost reductions (material transport)	Modifications to the screening/grit skip eliminated the need to purchase 2 new screening compactors, which also resulted in the amount of material transported of approximately 28 metric tonnes.	2017/18	\$2,000
Herring Cove WWTF - Carbon Scrubber By-Pass	Implemented April, 2017	2017/18	\$9,378
Dartmouth WWTF - Ventilation Air Heat recovery	Expected energy savings - Implemented March, 2018	2017/18	\$56,092
Servicing oxygen monitors in-house	Technical Service staff have been trained by the manufacturer to service the fleet of personal gas monitors in-house, specifically the replacement of the oxygen sensor. These monitors, 165 in total, are used by all operation and treatment departments throughout the organization.	2018/19	\$30,000
Pumping Station Starters (4160V)	The pumping station starters were upgraded to vacuum starters, thus eliminating the need for annual servicing of the starters to be outsourced. Any maintenance can now be handled by in-house industrial electricians.	2018/19	\$1,500
Automated Flushing Stations	Automated flushing stations are now used to ensure the proper chorine residuals are achieved in all areas of the transmission and distribution system. Previously this operation was performed manually on a daily basis from approximately June to September. As a result labor and vehicle costs have been reduced accordingly.	2018/19	\$8,000
Corrosion Sampling	Corrosion sampling in the distribution system was reduced from bi-weekly to monthly in June, 2018, since enough baseline data has been collected and there are no immediate plans to change corrosion control in the near future.	2018/19	\$12,600
Alternative product	An alternative timing belt was introduced to replace the normal v-belt/sheave configuration, which reduced slippage between the v-belts and sheaves resulting in a reduction in power demand. The product has been installed at both the Halifax and Herring Cove WWTF, with the expectation of implementation at other wastewater and water facilities.	2018/19	\$40,000
Dosage Optimization	Desiccant filters were fitted to the polymer totes to prevent warm, moist air from contaminating the polymer dosed to thicken centrifuge and drum thickener solids. The polymer no longer reacts early with water before being dosed, thus allowing the optimization of the dose and preventing polymer waste, leading to reduced consumption.	2019/20	\$20,000
Alternative product	The HP biofilter exhaust fan motor belts will be replaced with syncrodrive timing belts, saving energy (electricity) through the prevention of slippage. Belts and sheaves have been purchased and will be installed in October, 2019.	2019/20	\$4,500
Building maintenance	Installed new weather stripping in the overhead door in the truck bay at the AeroTech plant to reduce heating costs	2019/20	\$1,500
Polymer optimization	Began polymer optimization in an effort to ensure good quality biosolids as well as a good quality centrate without having excess amounts of polymer. Were able to reduce the feed rate from 60% to 21%.	2019/20	\$15,000
Improvements to aeration train	Installed a curtain in the aeration train to enable better mixing of the microorganisms with the chemical, thereby reducing chemical costs and providing better quality treatment.	2019/20	\$15,000

Optimization of polymer dosing (Mill Cove)	By implementing daily jar testing to determine the startup dose setpoint, polymer dosing was optimized.	2019/20	\$14,000
Belt drive change-out (Mill Cove)	Replacing the belt drive with a synchronous chain drive on a 30 horsepower blower resulted in a cost savings associated with energy consumption.	2019/20	\$1,275
Upgrading equipment (Mill Cove)	Upgrading the water flow meter used in the dilution of polymer resulted in lowering water usage in the process by approximately 20,000 litres per day.	2019/20	\$12,000
Fan belt/ pulley replacements - Mill Cove WWTF	Expected energy savings - based on 12,750 kWh	2019/20	\$1,300
Fan belt/ pulley replacements - Dartmouth WWTF	Expected energy savings - based on 177,980 kWh	2019/20	\$20,000
Sludge removal	The off-site removal of sludge for the Lake Major water supply plant has been deferred until 2021/22, allowing the sludge to be drier and have less weight, thus reducing the financial impact on the 2020/21 fiscal year.	2020/21	\$80,000
Reduction in landscaping initiatives	Landscaping initiatives were reduced at the Lake Major water supply plant in an effort to reduce the financial impact on the 2020/21 fiscal year.	2020/21	\$1,000
Preventative maintenance program established	A preventative maintenance program was created in conjunction with HW operations staff to clean centrifuge centrate lines weekly at a cost of \$235. Clogging of centrate in the centrate lines were being experienced resulting in a backup in the centrifuge drum and bio-solids bin. Every 2-3 weeks it was costing approximately \$1,000 to remove obstructions by an outside contractor, in addition to internal staff time and equipment.	2020/21	\$10,000
Sludge disposal	Disposal of sludge from the lagoon at the J. D. Kline water supply plant has been deferred to for the 2020/21 fiscal year.	2020/21	\$75,000
Centrifuge adjustments	Adjustments to the weir plate on both centrifuges at the dewatering facility allows more water to escape during the dewatering process, resulting in a product that is 6% dryer on average. Having a more compacted product results in fewer trucks going to the N-Viro facility saving on tipping fees. In addition, solids in the resulting product is over now over 28% which is subject to a reduced rate, a savings of approximately \$12/ tonne.	2020/21	\$15,000
Chemical substitution	Carbon source (Micro C) is a proprietary compound used as a food supply for micro-organisms in the denitrification process at the Aerotech WWTF, which is effective but quite expensive. HW has been able to source beer wort from a local brewery as a substitute for Micro C. Beer wort is a waste product in brewing beer which is high in carbon.	2020/21	\$85,000

Sub-total			\$2,168,130
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6 Reduce Paper and Printing Costs

Electronic HRWC Board Packages	Send Board packages out electronically rather than issuing hard copies	2013/14	\$7,500
Paperless Office within the HR Department	Creating electronic workflow	2013/14	\$4,804
Stewardship Report	The Stewardship Report will be published electronically only, with no hard copies	2013/14	\$3,000
Changes to document archiving	Transitioning file storage from outside contractor to public resources	2013/14	\$3,175
Changes to document archiving	Transitioning file storage from outside contractor to public resources	2016/17	\$9,000
Cost reduction associated with off-site storage	There has been an effort to reduce the number of boxes (documents) stored in facilities such as Iron Mountain, by sorting and purging documents in accordance with the document retention policy of the Commission.	2018/19	\$10,000
Cost reduction associated with the 23rd Annual Report (General Manager's office)	The annual report for the year ended March 31, 2019 saw the number of copies produced drop from 275 copies in the previous year to 150 copies. This represents not only a cost savings but also an environmental benefit associated with paper reduction.	2019/20	\$936

Sub-total			\$38,415
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7 Technology and Business Process Changes

Workload, labor force assessment	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, labor force assessment	Re-structuring by management within the advanced metering infrastructure (AMI) project as a result of technological efficiencies anticipated.	2015/16	\$64,533

Sub-total			\$112,138
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\$7,492,243

TO: Craig MacMullin, MBA, CPA, CGA, Chair and Members of the
Halifax Regional Water Commission Board

SUBMITTED BY: James Campbell
James Campbell, Communications and PR Manager

Digitally signed by James Campbell
Date: 2021.01.22 05:59:03 -04'00'

APPROVED: Cathie O'Toole
Cathie O'Toole, MBA, FCPA, FCGA, ICD.D
General Manager

Digitally signed by Cathie O'Toole
Date: 2021.01.22 09:23:52 -04'00'

DATE: January 19, 2021

SUBJECT: 2020 Annual Customer Survey

INFORMATION REPORT

ORIGIN

Operational Requirement, Corporate Balanced Scorecard (CBS) Performance Measurement

BACKGROUND

Since 2000, Halifax Water has engaged Corporate Research Associates (rebranded as Narrative Research Inc.), 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 service delivery.

For 2020, Halifax Water reviewed past survey practices to determine if there were cost savings measures that could be implemented, while still providing high quality, accurate survey information. This review found that there was duplication of questions in the Halifax Urban Report and the Atlantic Quarterly Surveys. Working in conjunction with Narrative Research, staff were able to add additional questions to the Halifax Urban Report related to service levels during COVID-19, satisfaction with wastewater services, and the new Customer Connect online service portal, drop the Atlantic Quarterly Survey, and save in excess of \$5,300.00.

Information from the Halifax Urban Report is based on telephone interviews conducted from October 30 to November 9, 2020. The overall results are based on 400 interviews with individuals from the Halifax Municipality population. A sample of 400 respondents would be expected to provide results accurate to within plus or minus 4.9 percentage points in 95 out of 100 samples.

DISCUSSION

Results this year across key survey categories indicates that residents continue to rate Halifax Water's performance highly across a multitude of categories, with a high proportion of customers surveyed providing very positive ratings for the indicators related to Water Quality and Service Excellence. This continued strong customer support is particularly noteworthy in light of the challenges faced maintaining critical services during an on-going pandemic, and the filing of water/wastewater and RDC rate applications with the NSUARB in 2020.

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 84% of customers perceive water quality as good or excellent, a slight decrease from 87% in 2019. A sub-category surveyed under drinking water quality is Water Safety. In this category, Halifax Water came in at 96% of customers rating our water as safe or very safe, compared to 95% in 2019. These consistently excellent numbers show our customers continue to place a high value on the overall quality and safety of our water across the region.

For Service Excellence, two 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 96% respectively. These figures remain steady with 2019 results and again represent a consistent high rating in satisfaction with Halifax Water's Products & Services, and our Overall Service Delivery.

In August 2020 the NSUARB approved the utility's enhanced LSL program. The program became effective October 1, 2020. The new program has not been actively promoted as staff are focused on working out details of the program; and replacement of LSLs during winter is more costly and complex. This lack of promotion can be seen in the low program recognition at 18%.

When customers who have a home built prior to 1960 were asked if they would be interested in using the new LSL program, 69% were very or somewhat interested, up from 47% in 2019. This spike in interest bodes well for the success of the program. Staff have engaged a communications firm to help launch the new program later this spring.

Regarding stormwater, 84% were very/generally satisfied with the service they receive from Halifax Water, up from 83% in 2019.

New for this year were questions related to satisfaction with wastewater service, Halifax Water's services during the COVID-19 pandemic, and interest in using the new Customer Connect online Portal. With respect to wastewater service, 91% were very or generally satisfied. Interest in a customer portal is high with 70% of respondents being very or somewhat interested in using a customer portal to manage accounts, monitor water consumption, and pay bills online. It should be noted that overall awareness of the customer portal is low, however this is not unexpected given the portal was not launched until November 2020. For services during COVID-19, 85% rated services as about the same with 6% rating services as better.

Halifax Water's services continue to play a major role in helping to ensure public health and environmental protection during the COVID-19 pandemic. Customers depend on the essential water, wastewater and stormwater services we provide. Strong customer support is critical as the utility makes short and long term investments in critical infrastructure, adapts to and mitigates climate change impacts, maintains compliance in an ever evolving regulatory environment, and fulfills its core mandate of protection of public health and the environment.

Survey results this year continue to show Halifax Water is on the right path in many key categories, but staff across the organization must continue to engage customers in a courteous, efficient, timely manner and work to promote the value of the water, wastewater and stormwater services we provide.

For the benefit of all staff, the survey has been placed on the Halifax Water Intranet.

Staff will be encouraged to take the time to read the survey results and provide any comments or suggestions they might have.

ATTACHMENT

Narrative Research 2020 Quality of Service Study – Final Report

Report Prepared by:

**James
Campbell**

Digitally signed by James
Campbell
Date: 2021.01.22
05:59:44 -04'00'

James Campbell, Communications and PR Manager, 902-490-4604



NARRATIVE
RESEARCH

2020 Quality of Service Study

Final Report Prepared for:

Halifax Water



**STRAIGHT from
the SOURCE**

December 2020

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URQ420-0000

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Introduction

Narrative Research is pleased to present Halifax Water with the results of the **2020 Quality of Service Study**. Halifax Water commissioned questions on the Fourth Quarter 2020 *Halifax Urban Report*. The purpose of this research was to examine customers' perceptions of the services provided by Halifax Water, as well as to examine broader issues around water quality and service delivery. However, questions were not posed this year, like previous years, on the Halifax component of the *Atlantic Quarterly*® vehicle offered by Narrative Research. This transition was undertaken as there was an opportunity to reduce the research fees of Halifax Water, while still providing high quality research.

The total sample size for questions asked on the *Halifax Urban Report* is 400. A sample of 400 residents can be expected to yield an overall margin of sampling error of ± 4.9 percentage points in 95 out of 100 samples. Of these 400 residents, 303 receive their household water from Halifax Water. A sample of 303 Halifax Water customers can be expected to yield an overall margin of sampling error of ± 5.7 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 **2020 Quality of Service Study** indicate that satisfaction with Halifax Water's *overall service delivery* remains strong with almost all (96%) customers satisfied, consistent with previous years. Likewise, satisfaction with Halifax Water's *products and services* also remains high, with most (92%) customers satisfied.

As well, residents continue to rate Halifax Water's performance highly across a multitude of categories. For example, most Halifax Water customers believe that their water is safe and of high quality, a finding that is consistent with the 2019 survey results.

In terms of specific aspects of the service that Halifax Water provides, ratings for *overall delivery of service* remain high and consistent compared with last year's results. Ratings for key service indicators such as *staff accessibility*, *staff promptness*, *ability to answer questions*, and *politeness* also remain high. In calculating selected results this year, only respondents who *have had a service interaction with Halifax Water* were included. An increase in the satisfaction level of most of these measures is evident, along with a decline in the number of "don't know" responses. However, it is worth mentioning that while satisfaction with various service metrics is more widespread than in 2019, this satisfaction is 'less intense' in certain instances in 2020 in that the proportion of very satisfied customers has diminished in this year's survey.



In addition, Halifax Water's Customer Service Index was updated this year as a new service-focused question was added, and a new volunteered response code was included in the Index questions to enhance the targeting of customers who have had a service interaction with the organization. Thus, the new Customer Service index is less comparable to previous indices and has not been compared with previous indices in this report. The 2020 CSI provides an overall assessment of performance based on customers' ratings across seven service areas.

Confidence in the safety of water for recreation in the Halifax Harbour is moderate, consistent with results observed over the past two years. Specifically, 48 percent of residents are confident that the water quality in Halifax Harbour is safe for recreational use, while a similar proportion of residents are not.

Residents continue to lack awareness of the primary source of their municipal tap water. One in six customers identified Pockwock Lake as the primary source of their tap water, and one in ten residents mentioned Lake Major, consistent with the previous year's results. Consistent with the last year's results, four in ten residents report using a water filter or other home water treatment device. *Concerns about water quality, removal of chemicals from tap water and improved taste* are the top three reasons why residents use a water filter or other home treatment devices.

One-half of residents reported receiving stormwater service from Halifax Water. Meanwhile, one in five residents were not sure in this regard. Among those who receive stormwater service from Halifax Water, the vast majority are satisfied with the service. New this year, residents were asked if they receive wastewater service from Halifax Water. Just over one-half of residents confirmed they receive wastewater service from Halifax Water, while one in six residents were not sure in this regard. Among those who receive this service, nine in ten are satisfied. Such residents were also asked if they knew which water body receives the treated wastewater from their property. Awareness in this regard is modest, with one-half of residents being unable to provide a definite response. One-third of residents mentioned Halifax Harbour, while eight percent of residents mentioned Bedford Basin.

For the fourth year in a row, a large majority of customers remain unaware of Halifax Water's subsidy program to assist residential customers with replacing their lead water service lines that connect the water main in the street to a customer's home. Awareness of the program is consistent with last year's results with two in ten residents being aware of the program. Among residents with homes constructed prior to the 1960s, seven in ten residents indicate interest in using the subsidy program within the next few years (compared to one-half of residents in 2019). Interest in this regard has increased notably.

The Internet continues to be the preferred method by a large margin across regions and demographic subgroups, in terms of accessing information related to Halifax Water's stormwater, wastewater and water programs.



Awareness of Halifax Water's emergency financial assistance program to help low income customers remains low. One in seven residents are aware of this program, consistent with last year's results.

New this year, Halifax area residents were asked if they had seen or heard any information related to Halifax Water's Customer Portal. Nine in ten residents are unaware of the customer portal, while a modest proportion of six percent of residents are aware. Residents were also asked what according to them would be the main benefit of using the customer portal for their household. No single benefit was identified by more than one in six residents. Benefits such as convenience, managing account information, checking water consumption, and staying updated were identified. Halifax Water customers with Internet access were asked if they would be interested in managing their account online through the customer portal. Seven in ten such customers said they were either *very* or *somewhat* interested. Among these customers, there is a high level of interest in using the customer portal for all three services – managing account online, monitoring water consumption, and paying bills online.

A series of new questions were asked this year regarding service interaction of Halifax area residents with Halifax Water in light of the current pandemic. Residents have had very limited service interaction with Halifax Water since the beginning of the pandemic period in mid March this year. One in ten or fewer residents have interacted via mail or fax, telephone, online, or in-person. The vast majority of Halifax area residents who had a service interaction with Halifax Water during the pandemic, rate the overall service provided by Halifax Water as *about the same* as the service provided by Halifax Water prior to the pandemic. Six percent of such residents said the service provided during the pandemic was *better* than that provided prior to the pandemic, while two percent mentioned it was *worse*.

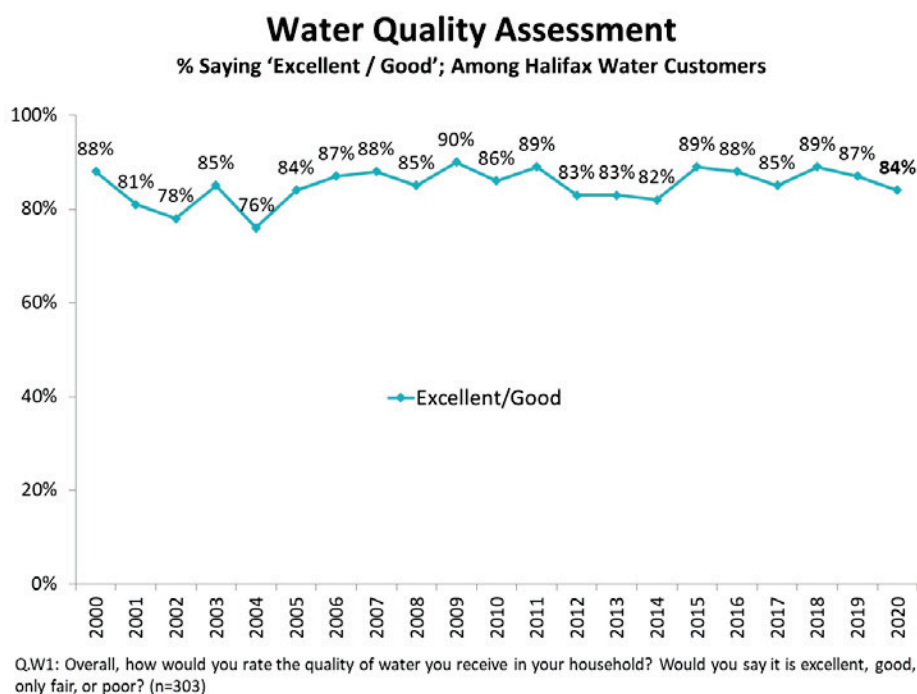
Seven in ten Halifax area residents think it is not very or not at all important to be able to visit Halifax Water's office and speak with a representative in-person. Two in ten residents think visiting the office to speak to a representative in-person is important to them, but not critical. Meanwhile, five percent of residents feel it is critically important for them to be able to visit Halifax Water's office.

In conclusion, it is important to underscore Halifax Water's very strong performance on two key quality of service indicators mentioned above, as these metrics serve to distil an important overall customer disposition towards the organization. Specifically, satisfaction with Halifax Water's *overall service delivery* and satisfaction with Halifax Water's *products and services* both remain high, with over nine in ten customers expressing satisfaction with both measures.

Detailed Analysis

Water Issues

The proportion of Halifax Water customers who rate the quality of water they receive as *excellent* or *good* is fairly consistent with the results observed last year, and indeed this finding is consistent with the survey result obtained regularly over the years by Halifax Water. Over eight in ten residents (84% compared to 87% in 2019) offer a favourable assessment of the quality of water received from Halifax Water. (Table W1)

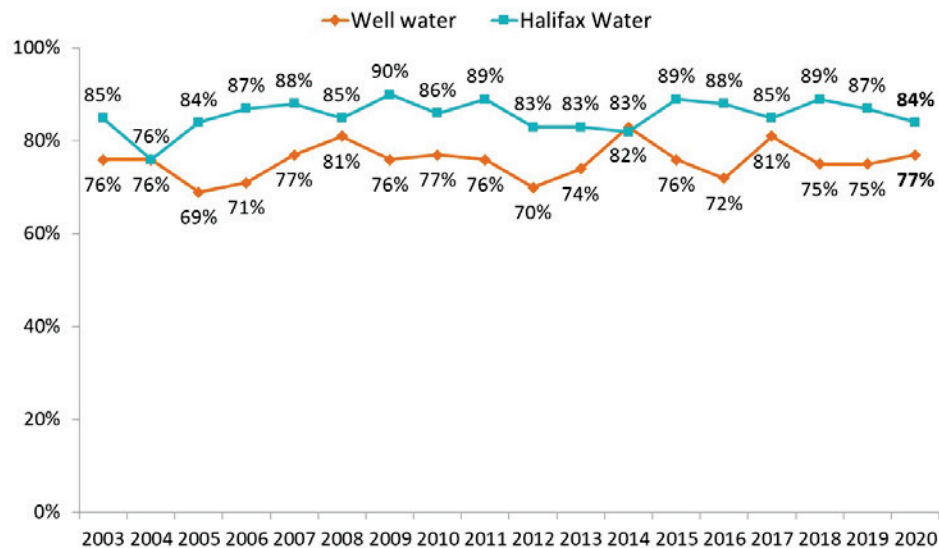


Among HRM residents, ratings of water quality are consistent regionally. Perceptions of the water quality as only fair or poor are more likely among residents aged 35 to 54 years, as well as among those with a household income less than \$100,000.

Halifax Water customers (84%) are modestly more likely than those with a well (77%) to rate the quality of their water as *excellent* or *good*. The proportion of residents with a well who rate their water as excellent or good is consistent with last year's results.

Water Quality Assessment

Excellent/Good

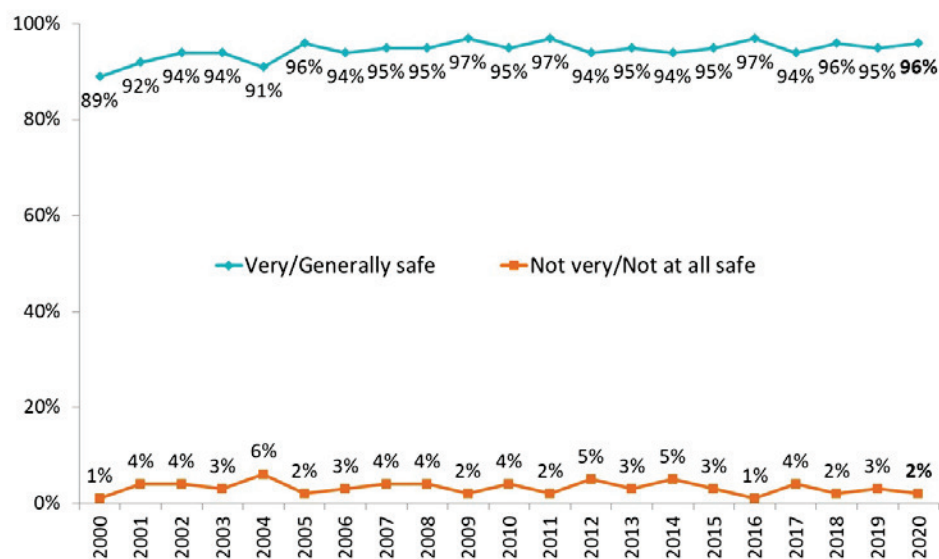


Q.W1: Overall, how would you rate the quality of water you receive in your household? Would you say it is excellent, good, only fair, or poor? (Halifax Water n=303, Well n=88) *Note: In 2008, HRWC became Halifax Water.*

Nearly all Halifax Water customers perceive their water as *very* or *generally safe*, while very few rate their water as *not very* or *not at all safe*, similar to previous years. Among HRM residents, there is little difference in perceptions of water safety regionally or across most demographic subgroups, as nine in ten or more provide ratings of *very* or *generally safe* across each audience. (Table W2)

Water Safety Assessment

Among Halifax Water Customers

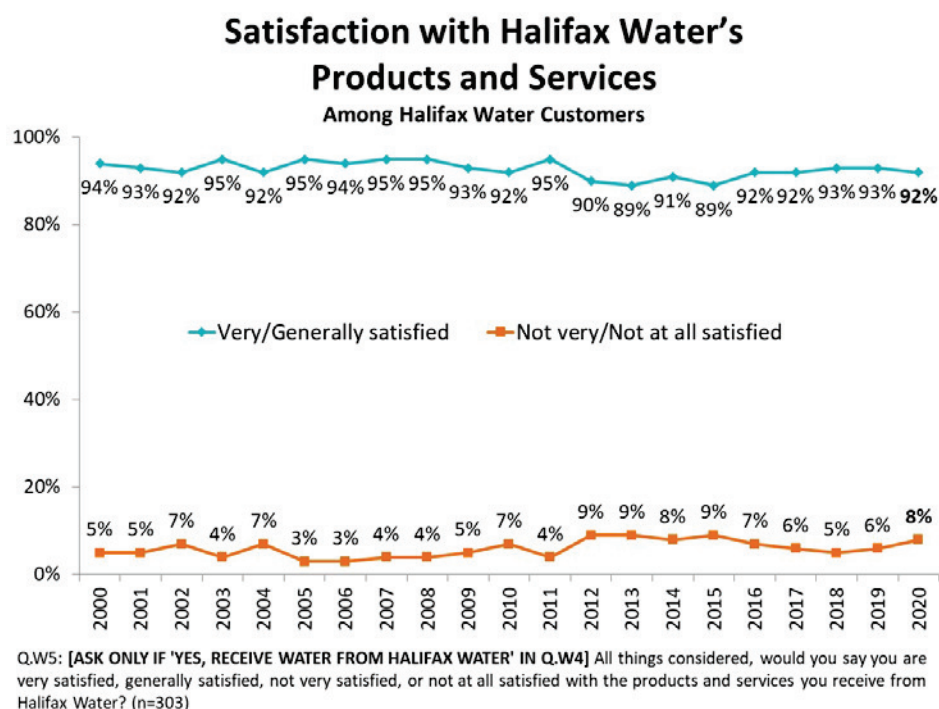


Q.W2: Overall, how safe would you say your water is? Would you say it is very safe, generally safe, not very safe, or not at all safe? (n=303)

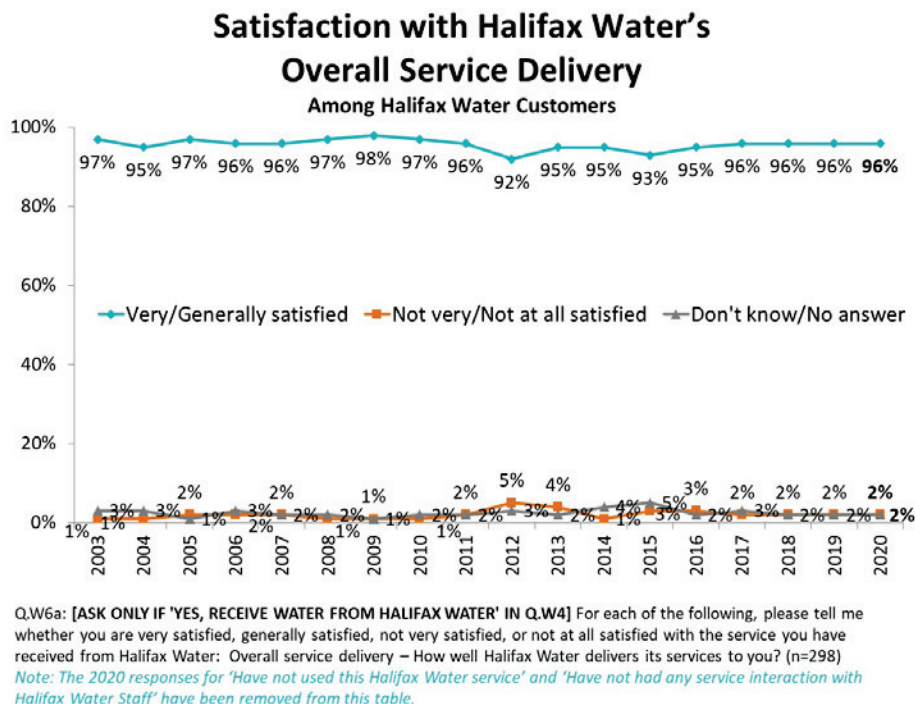
Among the tiny number of Halifax Water customers who believe their water is unsafe (n=7), concerns regarding *addition of unhealthy chemicals, bad taste, odour, and old pipes* were mentioned. (Table W3)

Customer Satisfaction

The vast majority of customers are satisfied with the products and services they receive from Halifax Water. Just over nine in ten (92%) customers report being *very or generally satisfied* with the products and services received from Halifax Water, stable with last year's results. Ratings of satisfaction are high across the regions and demographic subgroups. (Table W5)



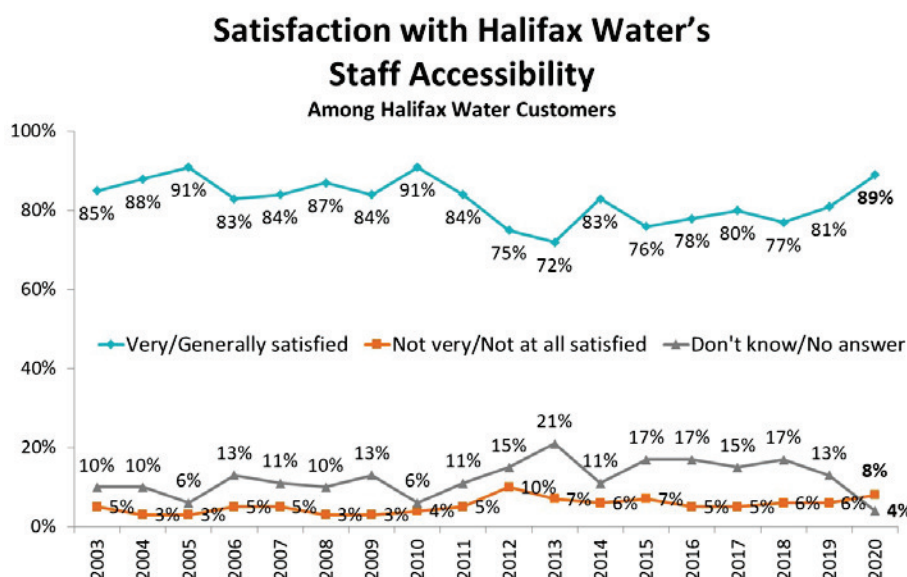
Satisfaction with Halifax Water's **overall delivery of service** remains widespread and is stable compared with previous findings. Specifically, 96 percent of residents offer a rating of *very or generally satisfied*, consistent with previous years. Satisfaction in this regard is widespread regionally and across the population. (Table W6a)



There is a high level of satisfaction among customers who have had a service interaction with Halifax Water staff, in terms of **accessibility** of staff. Nine in ten such customers (89%) are *very* or *generally satisfied* with the accessibility of Halifax Water staff, while one in twelve such customers (8%) are *dissatisfied*. Male customers express a higher level of dissatisfaction with staff accessibility compared to female customers (13% males versus 2% females). (Table W6b)

Satisfaction with accessibility of Halifax Water has increased by eight percentage points, while the proportion of *don't know* or *no answer* responses has declined by nine percentage points.

Of note, a new code was added this year to capture volunteered responses of customers who had not had a service interaction with Halifax Water Staff. Responses for this code have been removed from the table graphed below. Thus, caution is advised while comparing the year-over-year results with respect to 2020 results, as this tabulation revision no doubt has played a role in the upswing in satisfaction with staff accessibility recorded for 2020 in the graphic below.

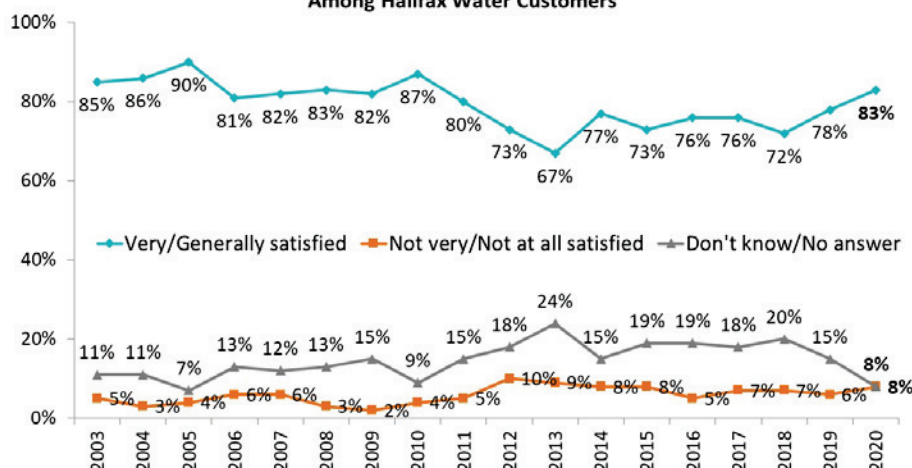


Q.W6b: [ASK ONLY IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] For each of the following, please tell me whether you are very satisfied, generally satisfied, not very satisfied, or not at all satisfied with the service you have received from Halifax Water: Accessibility – How easy it was to reach Halifax Water staff when you needed to? (n=202)
 Note: The 2020 responses for 'Have not used this Halifax Water service' and 'Have not had any service interaction with Halifax Water Staff' have been removed from this table.

Over eight in ten (83%) customers who have had a service interaction with Halifax Water staff are *very or generally satisfied* with the **promptness** of staff (i.e., how quickly staff responded to questions) One in twelve customers do not know or were unable to provide an answer, and the same proportion are *dissatisfied* with the promptness of Halifax Water staff. Across regions, customers in Dartmouth are most satisfied (93%), followed by those in Halifax county (84%), with those in Halifax City least satisfied with the promptness of staff (77%). Satisfaction with promptness of staff decreases with age (18-34: 93%, 35-54: 82%, 55 plus: 75%). Also, graduates and customers with household income of \$100,000 or more are less likely to be satisfied with promptness, as compared to their counterparts. (Table W6c)

Satisfaction with Halifax Water's Staff Promptness

Among Halifax Water Customers

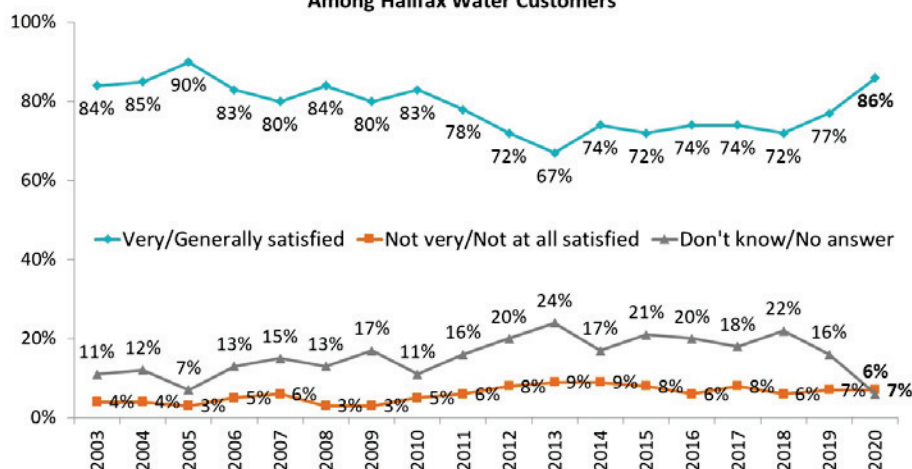


Q.W6c: [ASK ONLY IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] For each of the following, please tell me whether you are very satisfied, generally satisfied, not very satisfied, or not at all satisfied with the service you have received from Halifax Water: Promptness – How quickly Halifax Water staff were able to respond to your questions? (n=184)
 Note: The 2020 responses for 'Have not used this Halifax Water service' and 'have not had any service interaction with Halifax Water Staff' have been removed from this table.

Close to nine in ten (86%) customers who have had a service interaction with Halifax Water are *very or generally satisfied* with Halifax Water's **ability to answer questions**. Satisfaction is elevated among younger customers aged 18 to 34 years (96%). High income customers with \$100,000 or more in annual household income are less likely to be satisfied with Halifax Water's ability to answer questions (72%). (Table W6d)

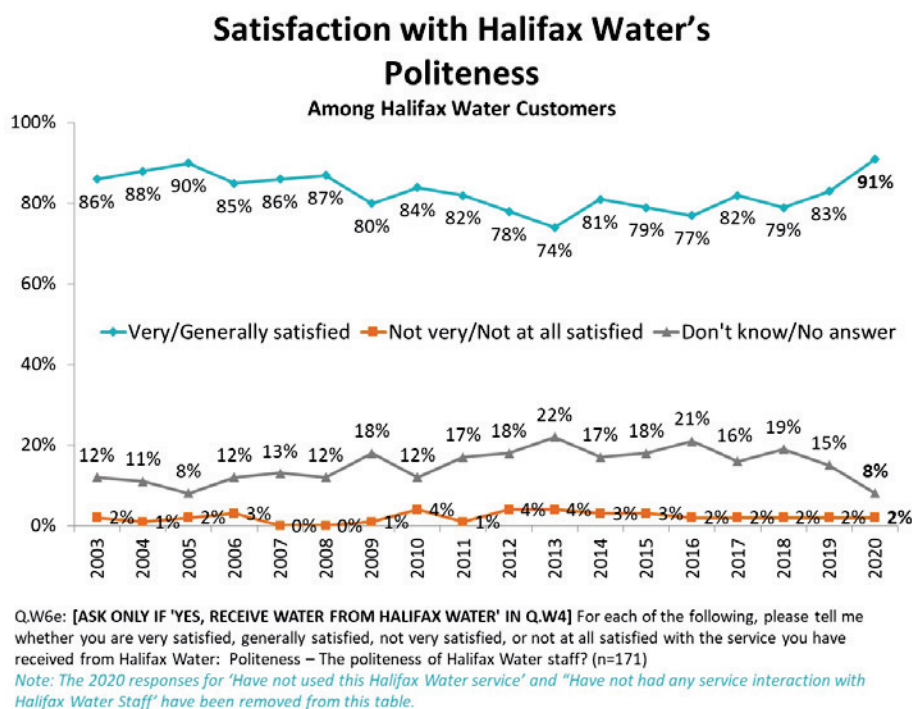
Satisfaction with Halifax Water's Ability to Answer Questions

Among Halifax Water Customers

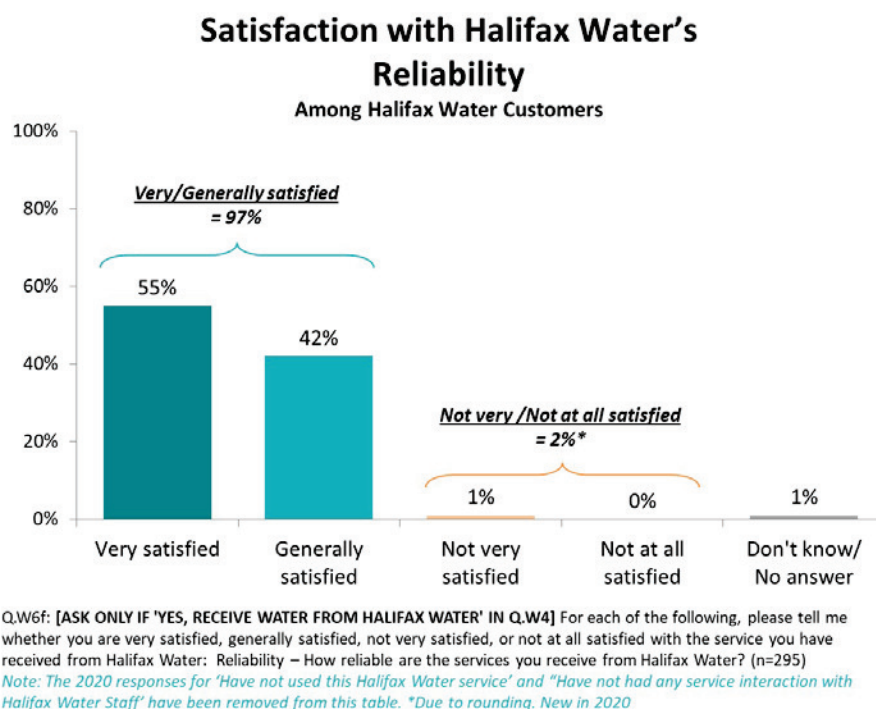


Q.W6d: [ASK ONLY IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] For each of the following, please tell me whether you are very satisfied, generally satisfied, not very satisfied, or not at all satisfied with the service you have received from Halifax Water: Ability to answer questions – How well Halifax Water answers your questions? (n=174)
 Note: The 2020 responses for 'Have not used this Halifax Water service' and 'Have not had any service interaction with Halifax Water Staff' have been removed from this table.

Nine in ten Halifax Water customers who have had a service interaction are *very or generally satisfied* with the **politeness** of Halifax Water staff. Satisfaction with politeness of staff is largely consistent across the region and population; among subgroups where satisfaction scores are lower, this is largely due to a greater proportion of *don't know/no answer* responses than reports of dissatisfaction. (Table W6e)



New this year, customers were asked to rate their level of satisfaction with the **reliability of services** they receive from Halifax Water. There is near universal satisfaction with Halifax Water's reliability (97%) overall, and across regions and demographic groups. (Table W6f)



Customer Service Index

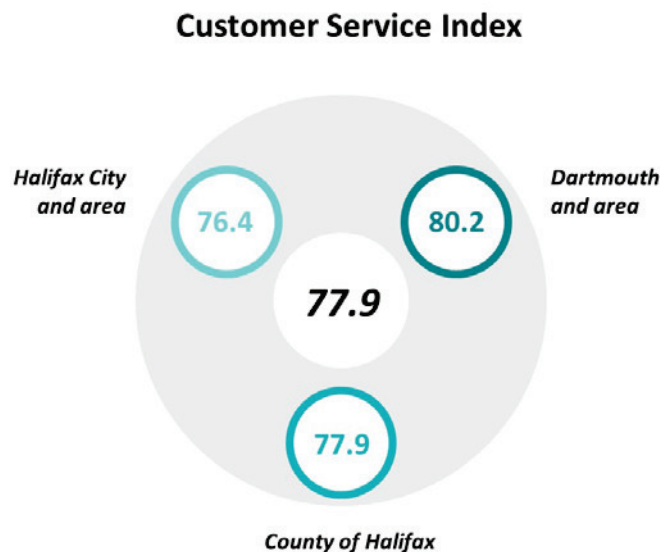
Once again, this year, Narrative Research is pleased to present Halifax Water with a Customer Service Index (CSI). To provide an overall assessment of Halifax Water's service performance, the CSI this year was calculated based on customers' ratings on seven service-focused questions, namely:

- 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);
- Satisfaction with the politeness of Halifax Water staff (QW6e); and
- Satisfaction with the reliability of Halifax Water (QW6f).

The 2020 survey included a new question concerning satisfaction with the reliability of Halifax Water, and this question has been included in the calculation of the Customer Service Index. Also, a new code was introduced at the beginning of the Question W6 series whereby volunteered responses were captured identifying customers that did not have an interaction with Halifax Water on the service dimensions explored. Respondents who voluntarily offered this response skipped the subsequent questions in the series.

Thus, this year the Index included only those Halifax Water customers who have had a service interaction with the utility. In calculating Index scores, ratings on these seven 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 to which a customer who has had a service interaction with Halifax Water did not respond was eliminated from the calculation, with the Index score for that customer being calculated on the remaining questions.

The Customer Service Index stands at 77.9 this year. Customers in Dartmouth and surrounding areas have a slightly higher Index score compared with others. The 2020 CSI should be treated as an updated Index as it is less statistically comparable to previous indices calculated, given the enhanced targeting this year of customers who have expressly had a service interaction with the organization. A Customer Satisfaction Index of 77.9 represents a favourable performance in Narrative Research's experience.



It is important to note that while satisfaction with various service metrics happily is more widespread than in 2019 (catalogued elsewhere in this report via overall satisfaction on many measures being higher this year as compared to last year), this satisfaction is 'less intense' in certain instances in 2020. Otherwise stated, the proportion of very satisfied customers has diminished this year.

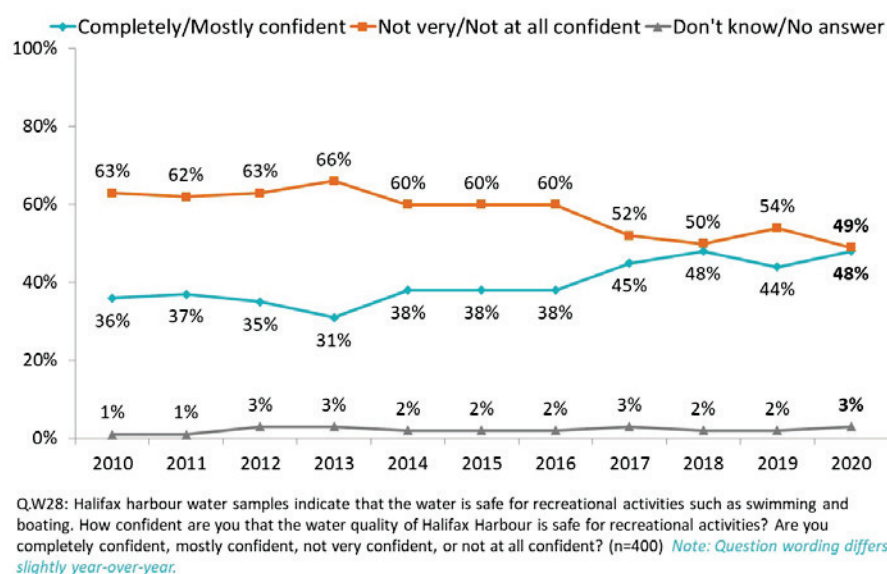
Safety of Halifax Harbour for Recreation

Confidence among the population in terms of the safety of the water in Halifax Harbour for recreation is modest. Nonetheless, confidence has marginally increased this year (48%, compared with 44% in 2019), to mimic the results observed in 2018. HRM residents are modestly less likely to be *not confident* regarding the safety of water in Halifax Harbour (49% compared with 54% in 2019) indicating that they are either *not very* or *not at all confident*.

Residents aged 18 to 34 years (58%), post-secondary graduates (61%), and residents with household incomes of \$100,000 or more (56%), have higher confidence that the water quality of Halifax Harbour is safe for recreation. (Table W28)

2020	
Completely confident	8%
Mostly confident	41%
Not very confident	31%
Not at all confident	19%
Don't know/No answer	3%

Confidence That Water Quality of Halifax Harbour Is Safe for Recreational Use



Water Source

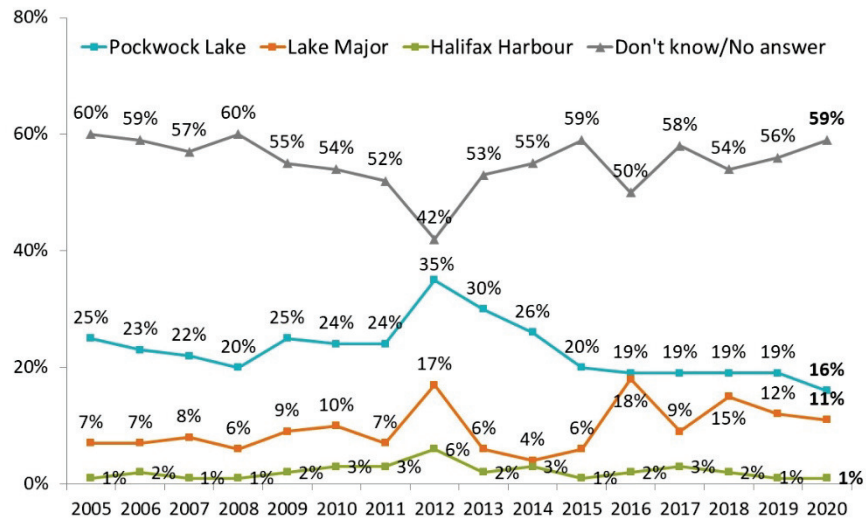
There continues to be uncertainty regarding Halifax area residents' knowledge of the source of their municipal tap water. Specifically, six ten Halifax Water customers (59% compared with 56% last year) cannot name the source of their tap water.

One in six customers identified Pockwock Lake as the primary source and one in ten residents mentioned Lake Major, consistent with the previous year's results. Two percent of customers cited Chain Lake, while one percent of Halifax Water customers each mentioned Lake Loon, Long Lake, Bedford Basin, Atlantic Ocean, and Halifax Harbour.

Across the population, women, younger customers aged 18 to 34 years, and those with annual household income of \$50,000 or less 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

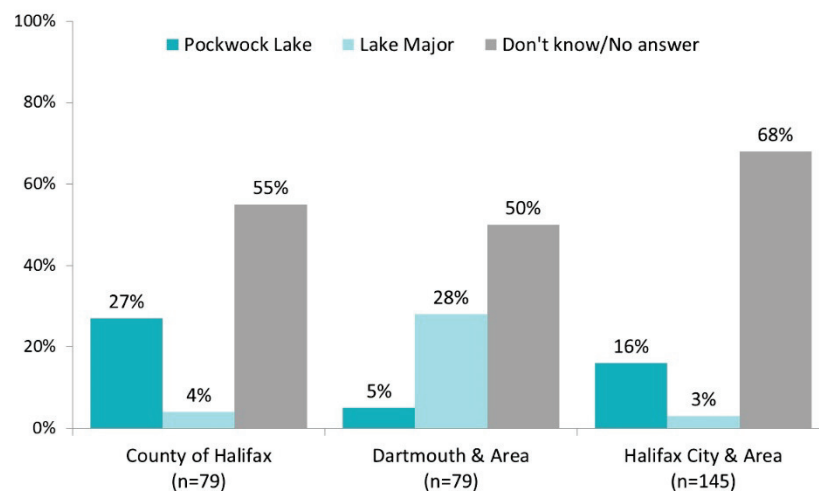


Q.W9: [ASK ONLY IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] To the best of your knowledge, which body of water is the primary source of your tap water supplied by Halifax Water? Probe once: Any other sources? (n=303)

The number of customers who are unsure of their primary tap water source is highest in Halifax City. 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, and least likely to name Pockwock Lake, consistent with previous findings. (Table W9)

Primary Source of Municipal Tap Water

Key Mentions by Area, Among Halifax Water Customers



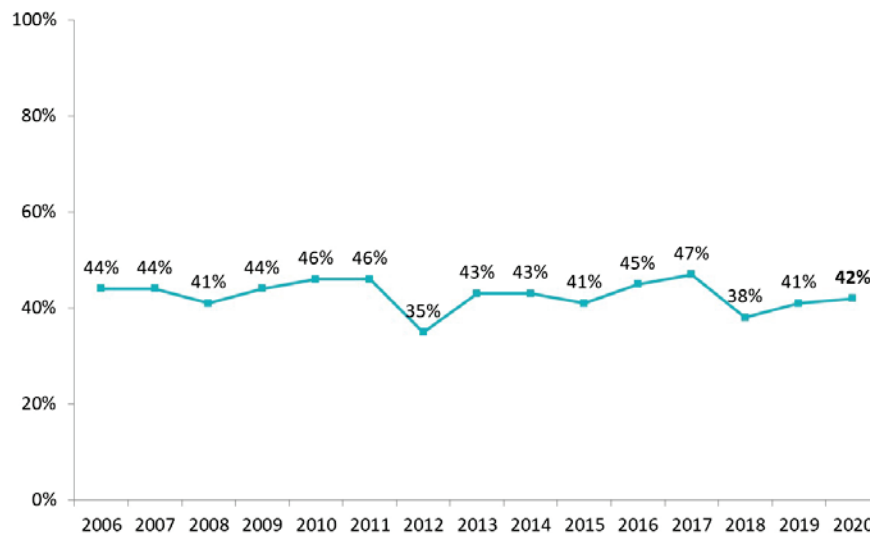
Q.W9: [ASK ONLY IF 'YES, RECEIVE WATER FROM HALIFAX WATER' IN Q.W4] To the best of your knowledge, which body of water is the primary source of your tap water supplied by Halifax Water? Probe once: Any other sources?

Water Filter Use

Consistent with last year, four in ten residents (42%) report using some form of water treatment device. Across the region, residents living in the previous County of Halifax are most likely to use a water filter or home water treatment device (County of Halifax: 53%, Dartmouth: 30%, and Halifax City: 36%). Meanwhile, residents using a well (73%) are much more likely than Halifax Water customers (31%) 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=400)

In terms of the type of water filter or home treatment device, three in ten residents who use a water filter reported using a **pitcher with a water filter** (20% compared with 29% last year). A similar proportion mentioned using a **water softener system** (18% compared with 11% last year), while one in six residents mentioned using a **water filter on tap**. One in eight (13%) residents cited using a **fridge filter** and one in ten residents reported using a **Brita filter**. Other methods are used by eight percent or fewer. (Table W17b)

Type of Water Filter or Other Home Treatment Device Used															
Key Mentions															
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Pitcher with water filter	54%	42%	43%	33%	33%	37%	21%	44%	31%	44%	25%	34%	35%	29%	20%
Water softener system	5%	1%	7%	12%	11%	9%	9%	10%	18%	12%	18%	11%	16%	11%	18%
Water filter on tap	21%	19%	19%	18%	16%	10%	33%	14%	16%	9%	11%	14%	7%	13%	15%
Fridge filter/Part of refrigerator	--	2%	3%	6%	10%	10%	15%	10%	14%	13%	12%	12%	12%	16%	13%
Brita filter/Brita	--	--	5%	9%	9%	15%	13%	2%	1%	4%	6%	4%	6%	11%	10%

Q.W17b: [IF 'YES' IN Q.17A] What type of water filter or other home water treatment device to you use in your household? (n=162)

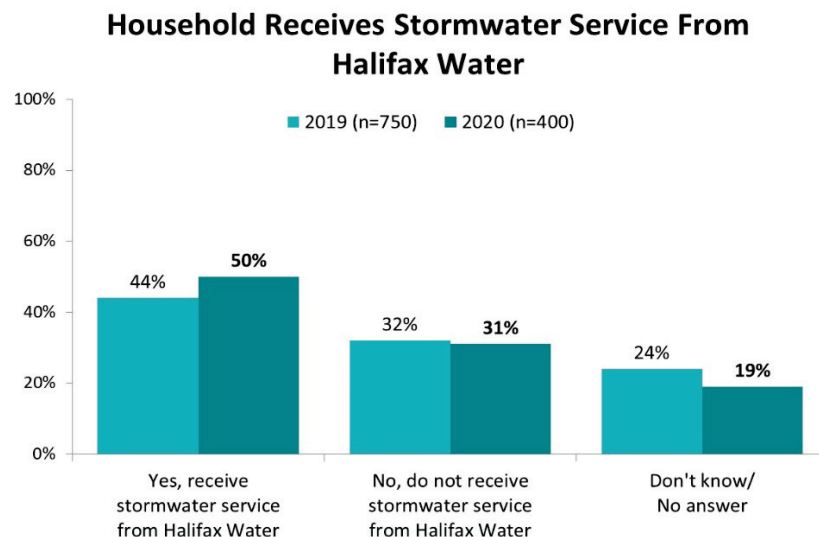
Halifax area residents offer several reasons why they use a water filter or home treatment device. One-quarter of residents (26%) offered as rationale **their concerns about water quality**. One-quarter cited using such devices **to remove chemicals** (24%), while a similar proportion of residents (23%) mentioned getting **an improved taste** after the treatment. All other reasons are mentioned by less than one in ten residents. (Table W17c)

Why Use a Water Filter or Other Home Treatment Device													
	Key Mentions												
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Concerns about water quality	18%	29%	20%	25%	23%	19%	20%	26%	12%	19%	26%	29%	26%
To remove chemicals	23%	24%	32%	21%	27%	27%	33%	26%	25%	28%	20%	22%	24%
Improved taste	33%	32%	33%	31%	36%	36%	25%	24%	33%	32%	30%	33%	23%
To remove bacteria	8%	7%	8%	8%	23%	9%	8%	6%	5%	6%	6%	9%	7%
Concerns about well water	2%	1%	0%	1%	--	--	--	--	1%	1%	2%	3%	7%
Was given to me/Received as a gift/Came with the fridge/house	4%	4%	9%	6%	3%	4%	6%	10%	7%	7%	8%	7%	6%

Q.W17c: [IF 'YES' IN Q.17A] Why do you use a water filter or other home treatment device? Probe: Anything else? (n=162)

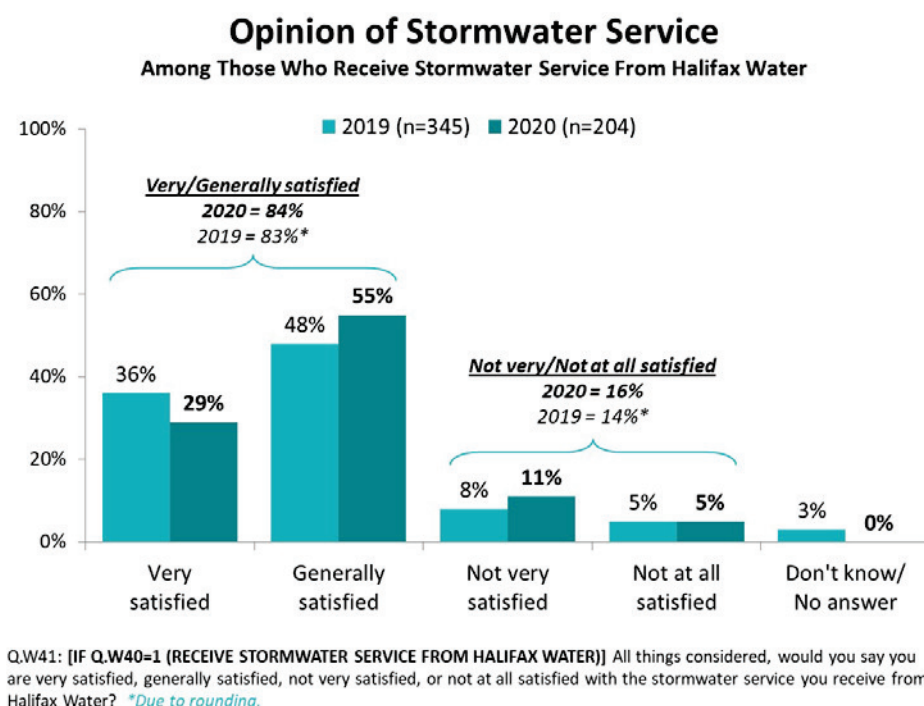
Stormwater and Wastewater Systems

Again, this year, residents were asked if their household receives stormwater service from Halifax Water. One-half of residents reported receiving this service from Halifax Water (50% compared 44% last year), while three in ten residents indicated they did not. Notably, two in ten residents were unsure in this regard (19% compared to 24% last year). Across regions, residents of Halifax County are less inclined (44%) than those living in Dartmouth and surrounding areas (59%) or Halifax City (52%) to report they receive stormwater service. Six in ten Halifax Water customers report receiving this service, while one-quarter of residents with a well indicated they receive stormwater service from Halifax Water. (Table W40)



Q.W40: Stormwater service includes the maintenance of ditches and culverts in rural and suburban areas, and underground pipes and pumping systems in urban areas. Does your household receive stormwater service from Halifax Water?

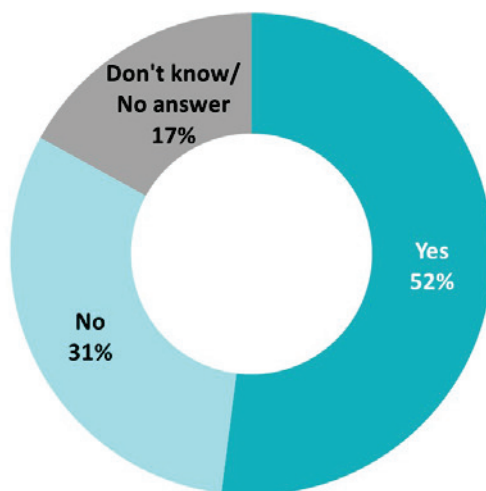
Among those who receive stormwater service from Halifax Water, a solid majority of residents (84%) are either *very* or *generally satisfied* with the service. One in six residents (16%) are not satisfied with the service. Regionally, residents of Halifax City are most satisfied (92%), followed by those in Dartmouth and surrounding areas (88%), while those in Halifax County are least satisfied with stormwater services (72%). Across demographics, male residents, those aged 35 to 54 years, and post-secondary graduates are more likely to be *dissatisfied* than their respective counterparts. Meanwhile residents with annual household income of less than \$50,000 are more likely to be *satisfied* than those with higher household incomes. Of note, nine in ten Halifax Water customers who receive wastewater services are satisfied with the service. (Table W41)



New this year, residents were asked if their household receives wastewater service from Halifax Water. Over one-half of residents (52%) reported receiving this service from Halifax Water, while three in ten residents indicated they did not receive this service. One in six residents are unsure in this regard. Residents in the County of Halifax are less inclined than those in Dartmouth or Halifax City to report they receive wastewater service from Halifax Water (County of Halifax: 36%, Dartmouth: 61%, and Halifax City: 63%).

Across demographics, residents with annual household income of \$100,000 or more are less likely to indicate they receive this service as compared to those with lower household incomes. Of note, two-thirds of Halifax Water customers reported receiving this service, while one in ten residents with a well indicated they receive wastewater service from Halifax Water. (Table W49)

Household Receives Wastewater Service From Halifax Water

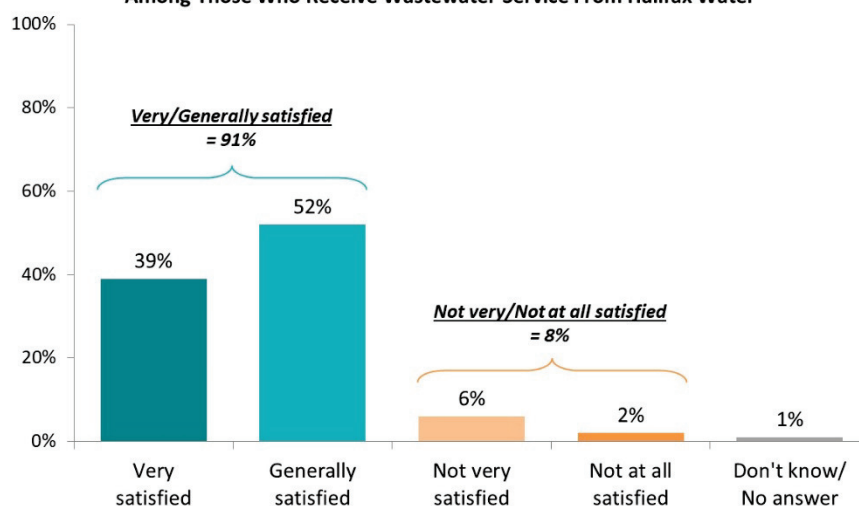


Q.W49: Wastewater service includes the maintenance and operation of wastewater/sewer collection pipes, pumping stations and treatment plants. Does your household receive wastewater service from Halifax Water? (n=400) *New in 2020.*

New this year, residents who receive wastewater service from Halifax Water were asked how satisfied they were with the service. Among these residents, nine in ten are either *very* or *generally satisfied* with the service. Regionally, residents of Halifax City are more likely to be satisfied (98%) than those in Dartmouth (87%) or County of Halifax (84%). Across demographics, residents aged 18 to 34 years are more likely to be satisfied with wastewater services than older residents. Of note, over nine in ten Halifax Water customers who receive wastewater service are satisfied with the service. (Table W50)

Opinion of Wastewater Service

Among Those Who Receive Wastewater Service From Halifax Water

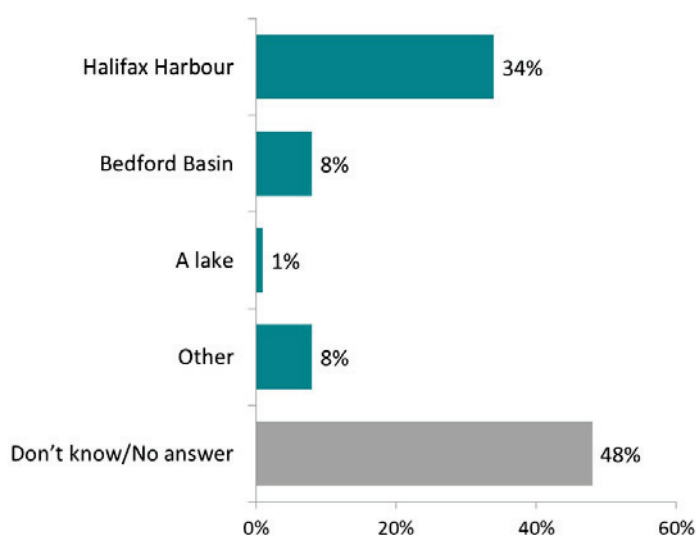


Q.W50: [IF Q.W49=1 (RECEIVE WASTEWATER SERVICE FROM HALIFAX WATER)] All things considered, would you say you are very satisfied, generally satisfied, not very satisfied, or not at all satisfied with the wastewater service you receive from Halifax Water? (n=216) *New in 2020.*

Also new this year, residents who receive wastewater services from Halifax Water were asked which water body eventually receives the treated wastewater from their property. One-half of such residents did not know or could not provide a definite response. One-third of such residents mentioned Halifax Harbour as the water body that receives the treated wastewater from their property. Eight percent of residents cited the Bedford Basin. (Table W51)

Water Body Which Receives Treated Wastewater

Among Those Who Receive Wastewater Service From Halifax Water
Total Unaided Mentions



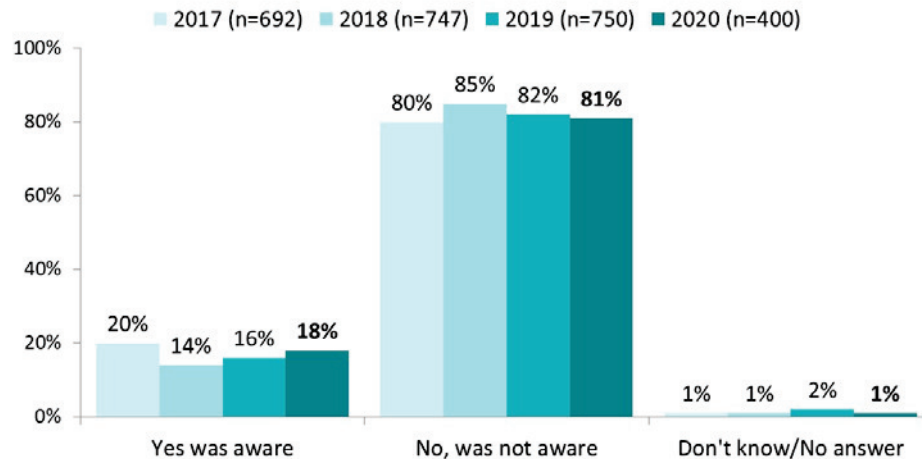
Q.W51: [IF Q.W49=1 (RECEIVE WASTEWATER SERVICE FROM HALIFAX WATER)] To the best of your knowledge, which water body eventually receives the treated wastewater from your property? (n=216) *New in 2020.*

Lead Water Lines

The large majority of customers (81%) remain unaware of Halifax Water's enhanced lead service line replacement program for residential customers to replace the lead service water lines that connect the water main in the street to a customer's home. Specifically, two in ten residents (18%) are aware of this program.

The proportion of residents who are aware of this program is generally consistent across regions. Awareness is elevated among post-secondary graduates and residents with household income of \$50,000 to less than \$100,000. (Table W33)

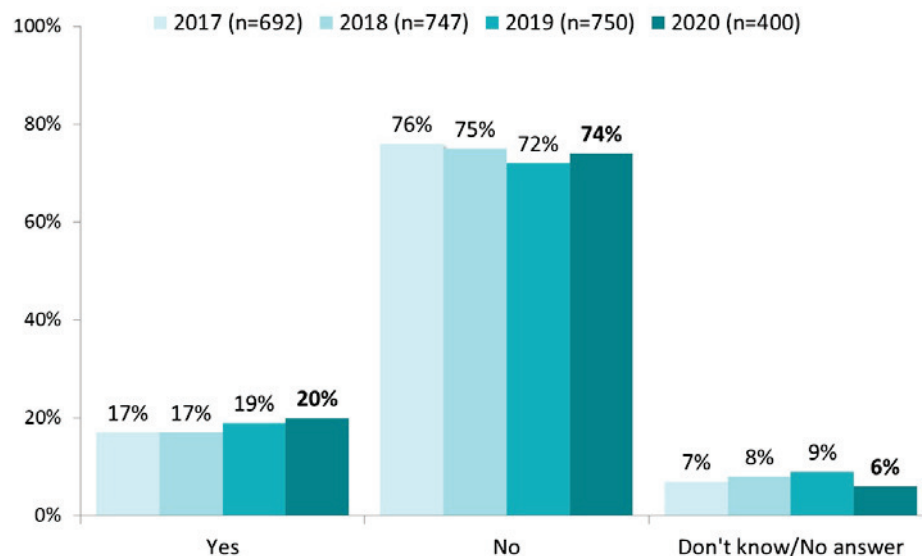
Aware of Halifax Water's Enhanced Program to Replace Lead Water Service Lines



Q.W33: On October 1st 2020 Halifax Water launched an enhanced lead service line replacement program for residential customers wanting to replace their lead water service lines that connect the water main in the street to a customer's home. The enhanced program will see Halifax Water replace the full lead service line, which includes both the public and the private section of the service line, at Halifax Water's expense. Prior to today, were you aware of this enhanced program?
Note: Slight change of question wording from 2019.

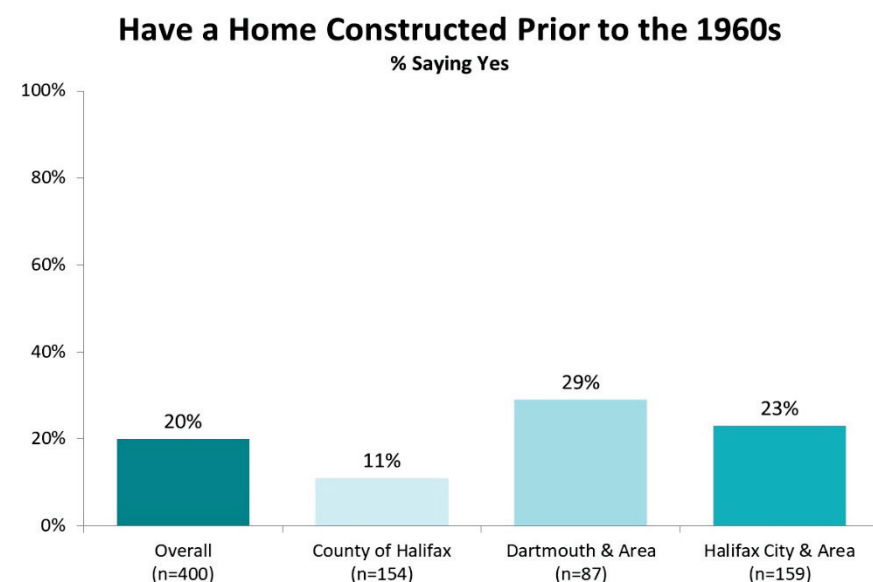
As lead service lines are found primarily in homes constructed prior to the 1960s, participants were asked if they have a home constructed prior to the 1960s. Consistent with previous results, two in ten residents confirmed having such a home. Six percent residents were not sure if their home was constructed prior to the 1960s. (Table W34)

Have a Home Constructed Prior to the 1960s



Q.W34: Lead water service lines are found primarily in homes constructed prior to the 1960s. Do you have a home that was constructed prior to the 1960s?

Those in Dartmouth and area are most likely to have a pre-1960s home, followed by residents of Halifax City and then Halifax County. (Table W34)

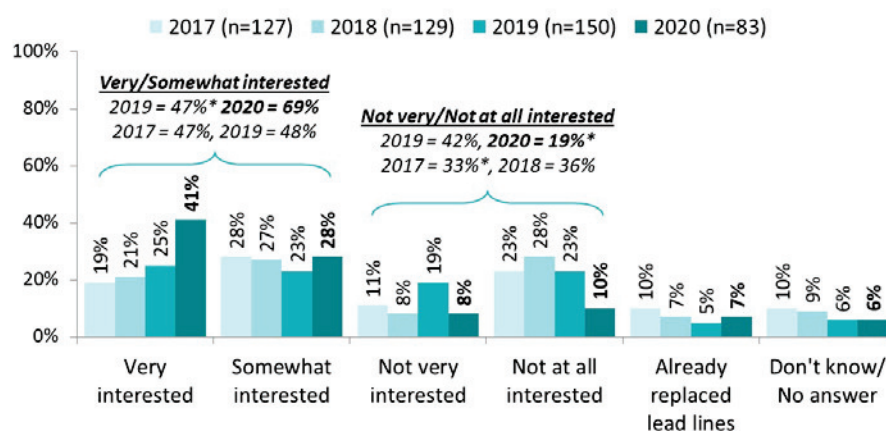


Q.W34: Lead service lines are found primarily in homes constructed prior to the 1960s. Do you have a home that was constructed prior to the 1960s?

This year again, residents with a home constructed prior to the 1960s were asked if they would be interested in using the lead service line replacement program. This year the question wording was slightly changed to convey that the program is funded by Halifax Water. A large majority (69%) of such residents mentioned they are interested, including 41 percent of residents who are *very interested* (compared to 25% in 2019). (Table W35)

Interest in Using Halifax Water Funded Lead Service Line Replacement Program within Next Few Years

Among Those Who Have a Home Constructed Prior to the 1960s



Q.W35: [ASK IF 'YES' IN Q.W34] Lead can enter water through contact with lead water service lines and possibly internal plumbing fixtures such as taps, brass fittings, and lead or tin solder. High levels of lead can lead to serious health issues. Knowing this, are you very interested, somewhat interested, not very interested, or not at all interested in using this Halifax Water funded lead service line replacement program within the next few years? *Due to rounding. Note slight change of question wording in 2019 and 2020.

Information Campaigns

Once again, the Internet is the most preferred method to access information related to Halifax Water's water, wastewater, and stormwater programs. Approximately one-half of residents (48%, down from 56% in 2019) mentioned the **Internet (in general)**, outranking any other method of accessing information by a large margin. One in six residents mentioned the **Halifax Water website**, while one in ten residents mentioned contacting Halifax Water via phone.

Other methods are mentioned by six percent of residents or fewer. Internet is the most preferred information source among residents across regions and demographic subgroups. In addition, younger residents are more likely than older residents aged 55 plus years to cite the Internet as their preferred source of information. (Table W26)

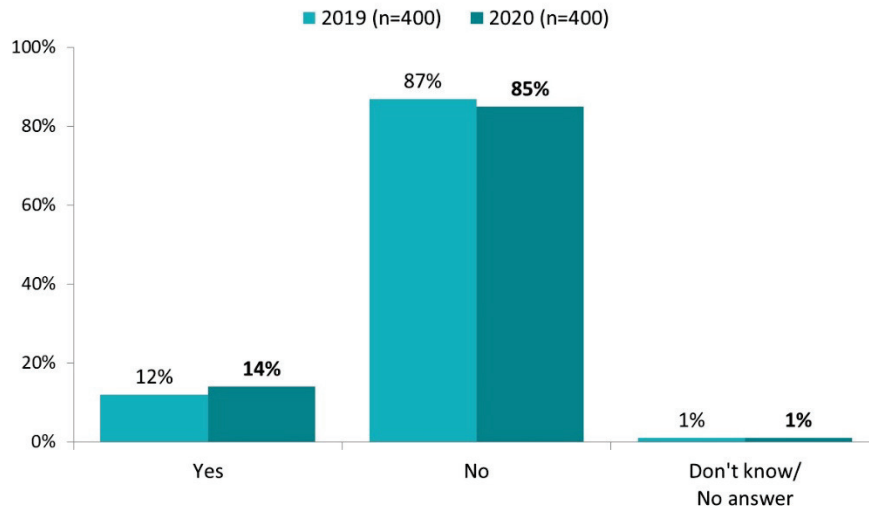
Most Preferred Method for Accessing Information About Halifax Water's Water, Wastewater, and Stormwater Programs and Services													
	Key Mentions												
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Internet (general)	48%	53%	52%	51%	50%	54%	63%	58%	59%	52%	41%	56%	48%
Halifax Water website	1%	1%	4%	3%	3%	3%	3%	6%	7%	6%	15%	10%	16%
Phone/Would call them	3%	2%	2%	4%	13%	3%	8%	1%	7%	7%	5%	6%	11%
Email	--	--	--	--	--	--	--	--	--	--	--	--	6%
On the bill	--	--	--	--	--	--	--	--	--	--	--	--	5%

Q.W26: What is your most preferred method for accessing information related to Halifax Water's programs and services? Probe: Any others? (n=400) *Note: Slight change of question wording in 2019 and 2020.*

Program Awareness and Interest

Residents were asked if they were aware that Halifax Water has an emergency financial assistance program to help low income customers. The vast majority of residents are unaware that Halifax Water has such a program. One in seven residents (14%) confirmed being aware of the emergency financial assistance program. (Table W38)

Aware Halifax Water Has Emergency Financial Assistance Program to Help Low Income Customers

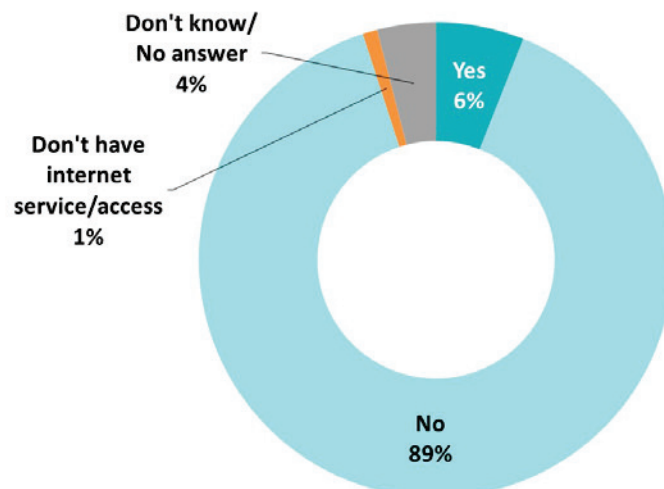


Q.W38: Are you aware that Halifax Water has an emergency financial assistance program to help low income customers?

Customer Portal

New this year, HRM residents were asked if they had seen or heard any information related to Halifax Water's Customer Portal. Most residents (89%) are unaware of the customer portal, while a modest proportion of six percent of residents are aware. (Table W47) Awareness levels are consistent regionally. Across demographics, postgraduates are more likely to have seen or heard information related to the customer portal than other education subgroups.

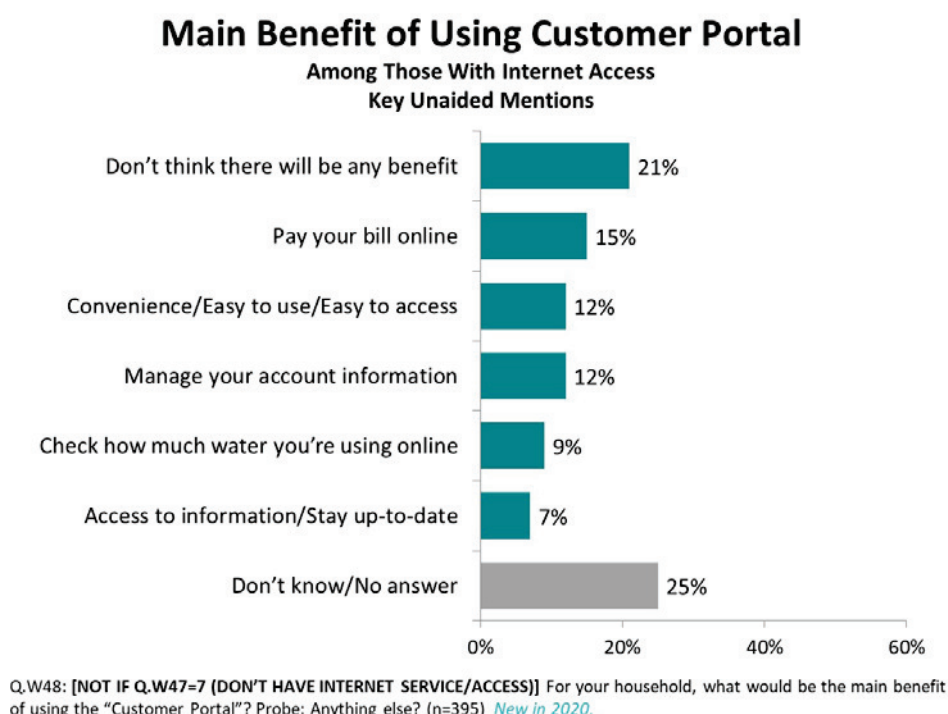
Seen or Heard Information About Halifax Water's Customer Portal



Q.W47: This autumn Halifax Water is launching an online Customer Portal that will allow customers to manage their account over the Internet. Prior to today, have you heard or seen any information related to the Customer Portal? (n=400)
New in 2020.

New this year, residents were also asked what according to them would be the main benefit of using the Halifax Water customer portal for their household. Among residents with access to the Internet, one-quarter did not know or could not provide a definite response, while two in ten residents mentioned they do not think there will be any benefit. Fifteen percent of residents cited paying their bill online as the main benefit. Twelve percent mentioned convenience of use, while the same percentage mentioned managing their account information. One in ten residents mentioned checking how much water they are using online, and seven percent mentioned accessing information or staying up to date.

Across regions, those in the County of Halifax are more likely to think there will not be any benefit in using the customer portal, as compared to those in Halifax City or Dartmouth and area. (Table W48)

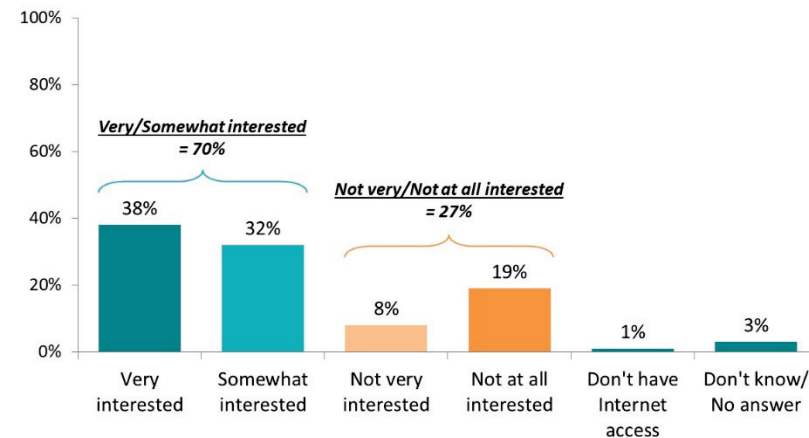


Halifax Water customers with Internet access were asked this year if they would be interested in managing their account online through the customer portal. Seven in ten such customers said they were either *very* or *somewhat* interested, while three in ten said they were *not very* or *not at all interested* in managing their account online.

Regionally, interest does not vary much. Across demographics, level of interest declines with increase in age (18-34: 84%, 35-54: 77%, 55 plus: 50%). (Table W18)

Interest in Managing Account Online

Among Halifax Water Customers Who Have Internet Service/Access

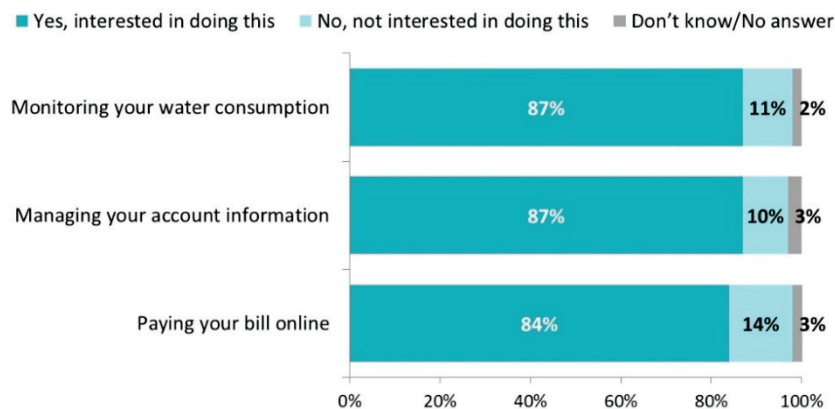


Q.W18: [POSE ONLY IF W4=1 [RECEIVE WATER FROM HALIFAX WATER] [DO NOT POSE IF CODE 7 'DON'T HAVE INTERNET SERVICE/ACCESS' IN W47 OR IF CODE 97 'DON'T HAVE INTERNET SERVICE/ACCESS' IN W48] Through the Customer Portal, you would be able to monitor your water consumption, manage your account information, and pay your bills online. Would you be very interested, somewhat interested, not very interested, or not at all interested in managing your account online? (n=297) *New in 2020.*

Also new this year, Halifax Water customers interested in managing their account online were asked if they would be interested in monitoring their water consumption, managing their account information, or paying their bills online. Close to nine in ten (87%) such customers mentioned they are interested in using the former two services, while a similar proportion (84%) mentioned they were interested in the latter. Of note, older residents aged 55 plus years are less likely to be interested in managing their account online, monitoring their water consumption, or paying their bills online, as compared to their younger counterparts. Female customers are more likely to be interested in paying their bills online than male customers. (Tables W46a-c)

Interest in Using Customer Portal Services

Among Those Very or Somewhat Interested in Managing Their Account Online and Who Have Internet Access



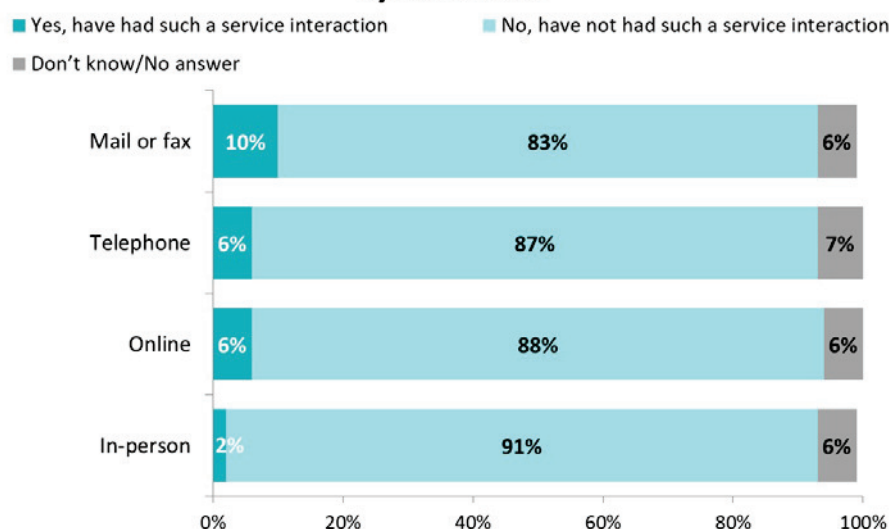
Q.W46a-c: [POSE ONLY IF Q.W4=1 (RECEIVE WATER FROM HALIFAX WATER)] [DO NOT POSE IF CODE 3 'NOT VERY INTERESTED' OR 4 'NOT AT ALL INTERESTED' OR 97 'DON'T HAVE INTERNET SERVICE/ACCESS' IN Q.W18 OR CODE 7 'DON'T HAVE INTERNET SERVICE/ACCESS' IN Q.W47 OR CODE 97 'DON'T HAVE INTERNET SERVICE/ACCESS' IN W48] And while managing your account online, would you be interested in using the following Customer Portal online services: (n=208) *New in 2020.*

Service Interaction

The following series of new questions were asked this year regarding service interactions of Halifax area residents with Halifax Water, in light of the current pandemic.

Halifax area residents have had very limited service interaction with Halifax Water since the beginning of the pandemic period in mid-March of this year. One in ten residents have had a service interaction via mail or fax. Six percent of residents have had a service interaction by telephone, and the same percent have interacted online. Of note, two percent of residents have had a service interaction in-person. (Table W42a-d)

Service Interaction with Halifax Water Since Mid-March by Methods



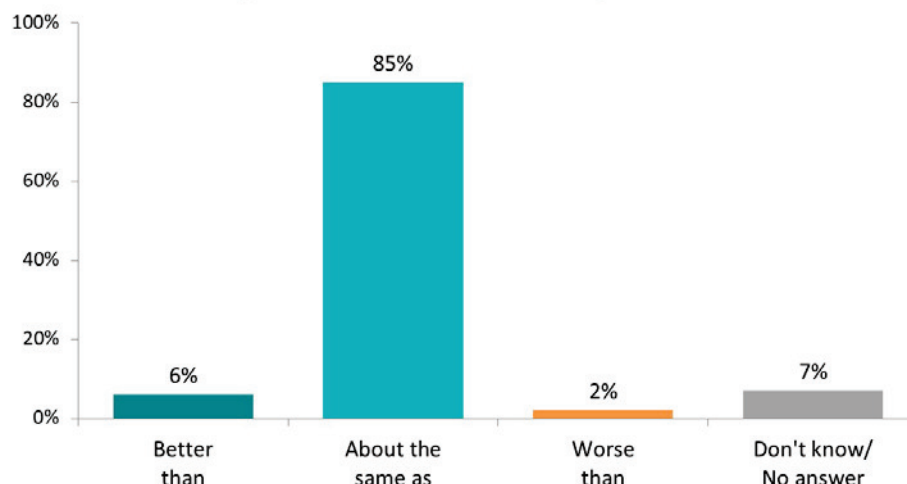
Q.W42a-d: Have you had a service interaction with Halifax Water since the beginning of the pandemic period in mid-March this year, by any of the following methods? (n=400) *New in 2020.*

The vast majority of Halifax area residents who have had a service interaction with Halifax Water during the pandemic, rate the overall service provided by Halifax Water as *about the same* as the service provided by Halifax Water prior to the pandemic.

Six percent of such residents said the service provided during the pandemic was *better* than that provided prior to the pandemic, while two percent mentioned it was *worse*. Seven percent of such residents did not provide a definite response to this question. (Table W43)

Service Provided by Halifax Water During the Pandemic Period vs. Prior to the Pandemic

Among Those Who Received Service During the Pandemic

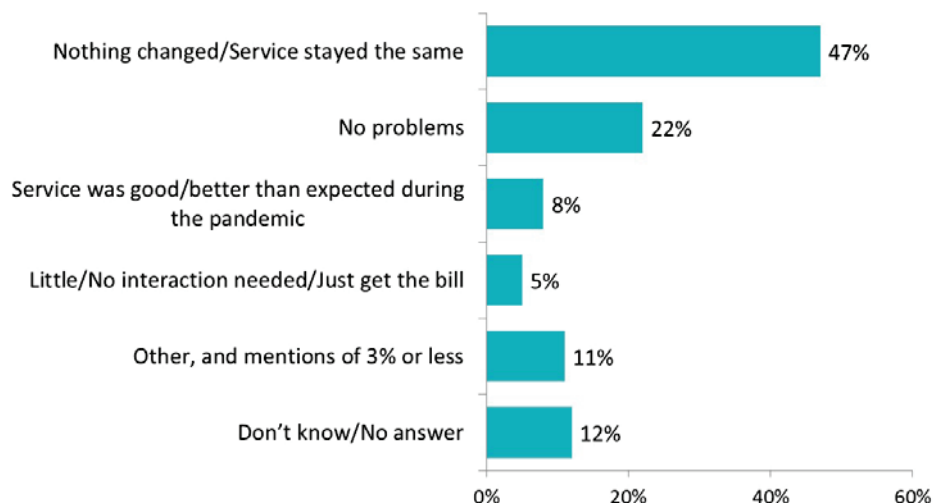


Q.W43: [POSE IF RECENTLY HAS RECEIVED SERVICE AS INDICATED IN Q.W42a-d] Overall, would you say the overall service provided by Halifax Water specifically during the pandemic period was better than, about the same as, or worse than the service provided by Halifax Water prior to the pandemic? (n=72) *New in 2020.*

Among those who mentioned that the service was about the same during the pandemic as before, six in ten residents did not provide a rationale for their opinion. One-half of these residents mentioned nothing changed or the service stayed same, while two in ten provided a response of “don’t know/no answer.” Two in ten residents mentioned they experienced no problems, while eight percent said the service during the pandemic was good or better than what they had expected. The few who mentioned the service was better than usual did not provide any adequate information as rationale for this opinion, while those who said the service was worse mentioned the staff was harder to reach or slower than usual. (Table W44 Same)

Reason Service Provided by Halifax Water Was About the Same As That Provided During the Pandemic

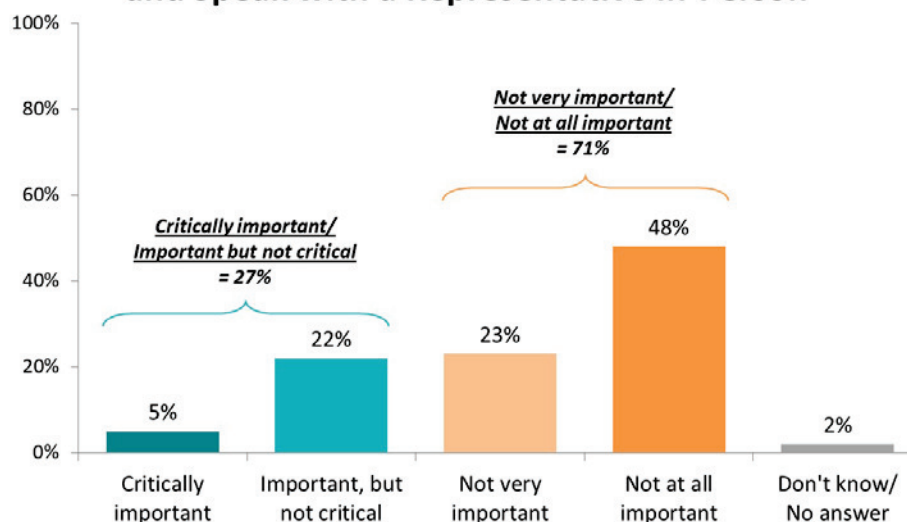
Total Unaided Mentions, Among Those Who Said About the Same As in Q.43



Q.W44: [IF 'ABOUT THE SAME' IN Q.W43] What is the single most important reason why you felt the overall service provided by Halifax Water during the pandemic was [about the same as] the service provided by Halifax Water prior to the pandemic? Probe: Any other reasons? (n=61) *New in 2020.*

Seven in ten Halifax area residents think it is not very or not at all important to be able to visit Halifax Water's office and speak with a representative in-person. Two in ten residents think visiting the office to speak to a representative in-person is important to them, but not critical. Meanwhile, five percent of residents feel it is critically important for them to be able to visit Halifax Water's office. (Table W45)

Importance of Being Able to Visit Halifax Water's Office and Speak with a Representative In-Person



Q.W45: And all things considered, how important is it to you personally to be able to visit Halifax Water's office in Halifax and speak with a Halifax Water representative in-person? Is it critically important, important, but not critical, not very important, or not at all important? (n=400) *New in 2020.*



Study Methodology

Questionnaire Design

The questions commissioned by Halifax Water and used in this study were designed by Narrative Research, in consultation with Halifax Water staff.

Sample Design and Selection

Halifax Water questions were fielded exclusively on Narrative Research's *Halifax Urban Report* survey alone, unlike previous years in which some questions were also fielded on the Halifax portion of Narrative Research's *Atlantic Quarterly*® survey as well. This survey is a probability telephone survey of adults 18 or older in the Halifax area. Sample records are drawn from both landline and cellular telephone numbers. Data are weighted to ensure results reflect the true population distribution.

Survey Administration

The *Urban Report*® survey was conducted by telephone from October 30 to November 9, 2020. 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 3 percent. Completion rate is calculated as the number of cooperative contacts (506), divided by the total number of eligible numbers attempted (17,670).

The final disposition of all telephone numbers called is displayed below.

	Urban Report
A. Total Numbers Attempted	22,864
Disconnect / Not in service / Not primary residence	5,022
Fax / Modem	75
Non-Residential Number / Incorrect Number	97
Duplicate	0
B. Eligible Numbers	17,670
Busy	671
Answering Machine	4,825
No Answer	7,880
Scheduled Call Back / Mid Call Back / Qualified Not Available	931
Illness / Incapable	0
Language Problem	41
C. Total Asked	3,322
Respondent / Gatekeeper Refusal	2,465
Mid Terminate / Hang up	26
Never Call List	325
D. Co-operative Contacts	506
Did Not Qualify / Quota Full	106
Completed Interviews	400

Sample Distribution

The overall results are based on 400 interviews with individuals from the Halifax population. A sample of 400 respondents would be expected to provide overall results accurate to within plus or minus 4.9 percentage points in 95 out of 100 samples.

Sample Distribution		
Region	Sample	Margin of Error (19 times out of 20)
County of Halifax	154	± 7.9 percentage points
Dartmouth and Area	87	± 10.5 percentage points
Halifax City and Area	159	± 7.8 percentage points
Halifax Water Customers	303	± 5.7 percentage points
Halifax	400	± 4.9 percentage points

TO: Craig MacMullin, MBA, CPA, CGA, Chair and Members of the
Halifax Regional Water Commission Board

SUBMITTED BY: James
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James Campbell, Communications and PR Manager

APPROVED: Cathie
O'Toole
Digitally signed by Cathie
O'Toole
Date: 2021.01.19
11:05:09 -04'00'
Cathie O'Toole, MBA, FCPA, FCGA, ICD.D
General Manager

DATE: January 18, 2021

SUBJECT: 2020 Employee Survey

INFORMATION REPORT

ORIGIN

Operational Requirement, Corporate Balanced Scorecard (CBS) Performance
Measurement

BACKGROUND

Since 2001, Halifax Water has engaged Corporate Research Associates (rebranded as Narrative Research Inc.), a highly respected local research firm, to undertake the survey and compile the data. The overall purpose of the survey is to obtain an understanding of current employee attitudes, perceptions, and opinions, including employees' satisfaction with their current employment.

The 2020 survey was conducted online from November 16th to 30th with all full time employees (approximately 537) invited to take part in the online survey. In total, 380 useable surveys were returned to Narrative Research, resulting in an overall response rate of 71 percent. This response rate is second only to the 74% record set for the 2019 Employee Survey. The overall results and response rate are all the more positive particularly when the added stress, uncertainty, and changing work practices of operating through the ongoing COVID-19 pandemic are taken into consideration.

DISCUSSION

The CBS Organizational Indicator target for the employee survey is an overall satisfaction rating of A-. The benchmark set in 2009 was a score of B. The 2020 survey result was B+ matching our previous high letter and number scores of B+ (3.9) in 2017. It should be noted that to reach the CBS target of A-(4.0 - 4.1) would require a 0.1 increase in the Organizational Number Score (OPS) result.

Building on improvements seen in the 2019 survey, 2020 results saw a number of metrics reaching their highest levels yet, as well as higher levels of job satisfaction, willingness to recommend the organization, and agreement on receiving regular performance feedback. Halifax Water scores are above other Atlantic Canadian organizations on 30 metrics (versus 22 out of 44 metrics in 2019), behind on 2 metrics (versus 5 in 2019), and essentially equal with other organizations on 7 metrics (versus 17 in 2019). There are thirteen areas where the gain over last year is 5% or more:

- I am kept informed of important changes + 6%
- I look forward to coming to work + 5%
- I feel a sense of pride in the accomplishments of the organization +7%
- Overall I am satisfied with my job + 5%
- I am recognized for my achievements + 5%
- There is good cooperation among work teams + 5%
- I am given feedback on my performance +8%
- The organization follows up on commitments to staff + 8%
- I am given opportunities for career development + 6%
- I get a sense of accomplishment from my work + 5%
- I think the organization values my contributions + 5%
- Employee has a high level of commitment to Halifax Water + 5%
- Halifax Water has a high level of commitment to employees + 5%

While the 2020 Employee Survey results note significant improvements across many key categories, three areas saw no change, or a decline:

- I am held accountable for my performance – 2%
- Senior management at Halifax Water are accessible to all staff members – same as last year
- My workplace reflects diverse cultural communities – 1% from last year

New for 2020, a series of COVID-19 related questions were added to gauge employee perceptions while working through a pandemic. The questions covered working remotely, organizational support and response, health and safety, balancing work and family life during the pandemic, and job security. Scores in the 80% range were seen across all key indicators.

The 2020 results are very positive with a number of metrics reaching their highest levels yet and Halifax Water benchmarking well compared to other Atlantic Canadian organizations. While these results are excellent, particularly in light of the on-going COVID-19 pandemic, it is important to build on the gains and focus on areas that saw stagnant or declining results.

Halifax Water's employees have worked to keep customers in the critical water, wastewater and stormwater services they depend on throughout 2020, while also dealing with an on-going pandemic. Having a highly trained, dedicated and informed work force is key to our mission to provide world-class services for our customers and our environment.

For the benefit of all staff, the survey will be placed on the Halifax Water Intranet, and hard copies distributed to all work locations. Additionally, the General Manager will be visiting work locations, as Public Health regulations allow, or holding virtual sessions to speak with staff about the survey results and discuss potential areas of improvement.

Staff will be encouraged to take the time to read the survey results and provide any comments or suggestions they might have.

ATTACHMENTS

Narrative Research 2020 Halifax Water Employee Study – Final Report and Key Highlights Info Graphic

Report Prepared by:

**James
Campbell**

Digitally signed by James
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Date: 2021.01.19
10:40:47 -04'00'

James Campbell, Communications and PR Manager, 902-490-4604



NARRATIVE
RESEARCH

2020 Halifax Water Employee Study

Final Report Prepared for:
Halifax Water



December 2020

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HRW001-1014

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Introduction

This report presents the results of the *2020 Halifax Water Employee Study* undertaken by Narrative Research on behalf of Halifax Water. This study is a continuation of similar research for Halifax Water which has been tracking for more than a decade. The overall purpose of the study was to obtain an understanding of current employee attitudes, perceptions, and opinions, including employees' satisfaction with their current employment. The survey this year also gauged perceptions around the COVID-19 pandemic on various metrics such as working remotely, health and safety, organization's response to the pandemic, and so on.

The survey was conducted from November 16 to 30, 2020. All full-time employees (n=537) were invited to participate in an online survey. A generic survey link was distributed via email to all full-time employees.

In total, 380 useable surveys were collected by Narrative Research, resulting in an overall response rate of 71 percent. This response rate is on par with that of the preceding year and it falls in line with the response rates recorded since 2010 (between 48% and 74%).

Where applicable, the results of the current study are compared with tracking data from previous research conducted on behalf of Halifax Water, as well as with Narrative Research's Employee Opinion Database of Atlantic Canadian organizations. As a result of Narrative Research's extensive experience in the field of employee opinion research, our company has developed a comprehensive database of Atlantic Canadian employee opinions. This database draws from organizations ranging from small to large in size, representing public, private, and industrial sectors in addition to union and non-union environments.

As displayed and discussed in many sections below, mean scores have been calculated for various survey questions. Consistent with previous years, ratings of *completely agree* correspond with a score of 1, while *completely disagree* corresponds with a score of 5. Thus, lower mean scores translate to greater agreement.

It should be noted that percentages reported may not always total to 100 percent due to rounding, and where multiple responses were permitted, the totals will likely exceed 100 percent. A complete set of data tables with the cross-tabulations by department and type of employee is appended to the report. This report includes the **Detailed Analysis** of the data and a **Methodology** section.



Executive Summary

Commendably, the results of the *2020 Halifax Water Employee Study* indicate improvements for many employee opinion measures, with selected metrics reaching the highest levels yet recorded. Importantly, there are now higher levels of job satisfaction, willingness to recommend the organization, and agreement on receiving regular performance feedback. More employees are now engaged relative to last year.

In terms of the organization's performance as an employer, relative to other organizations in Atlantic Canada, Halifax Water's position has improved and now for the most part either sits above the Narrative Research norms for most measures, or is on par with these comparative measures. This year, employee engagement at Halifax Water reaches its highest level ever recorded, and is slightly above the Narrative Research norm for employee engagement in Atlantic Canada.

In terms of the key drivers of job satisfaction, the most important factors for employees are *believing that Halifax Water satisfies the public's needs; believing that career aspirations can be achieved at Halifax Water; having the daily opportunity to do what one does best; being treated fairly within their department and having the opportunity to influence decisions that affect their job*. Performance on each of these five drivers of satisfaction are either stable with 2019 results, or have slightly edge upwards. The value of identifying such key drivers is that such measures often can serve as the easiest path to further improvements in overall workplace perceptions. That is, achieving further gains on such specific aspects, could potentially serve to drive general workplace perceptions overall.

The most important key driver for the willingness to recommend Halifax Water as a good place to work is *thinking that Halifax Water is headed in the right strategic direction*, followed by *believing that one's career aspirations can be achieved at Halifax Water; being given fair opportunity to pursue training associated with job; having good co-operation among co-workers and being treated fairly by one's supervisor*. It is noteworthy that survey performance on each of these drivers of willingness to recommend Halifax Water has experienced some degree of improvement over 2019 results.

There are five key drivers that correlate strongly with employee engagement at Halifax Water. These include *believing that Halifax Water is interested in the overall well-being of its employees; thinking that one's contributions are valued by co-workers; understanding how one could contribute to Halifax Water meeting its goals; believing that career aspirations can be achieved at Halifax Water and being given fair opportunity to pursue training associated with job*.

Interestingly, there is some overlap in the drivers of satisfaction, engagement, and willingness to recommend. Two such item are in terms of *believing that career aspirations can be achieved at Halifax Water*, and *being given a fair opportunity for training associated with job*. It is noteworthy that the results for *believing that career aspirations can be achieved at Halifax Water* are less robust in certain regards. Given that it is one of the important key drivers of job satisfaction, willingness to recommend Halifax Water, and employee engagement, this underscores the opportunity for managerial attention and possibly messaging in this regard.



Another line of investigation for explaining corporate improvement is to identify the survey metrics that have exhibited recent substantial increases. In this regard, measures with at least an eight-percentage point increase include *agreeing that job classification system is fairly administered* (up 11 percentage points), *departments being properly staffed to ensure that the public interest is served* (up 9 percentage points), receiving regular feedback (up 8 percentage points), and agreeing that *Halifax Water follows up on commitments made to staff* (up 8 percentage points)

The results of this study continue to indicate that there are differences in workplace perceptions by department and type of position within the organization, with, for example, the Wastewater/Stormwater Collection as well as the Customer Care departments tending to have lower ratings relative to others. Efforts to better understand and address such differences are warranted and may require further investigation to better understand the context for such differences.



Conclusions

The following conclusions are drawn from the detailed analysis of the study's findings:

Overall job satisfaction at Halifax Water is at the highest level since the beginning of tracking in 2009.

Over eight in ten employees are currently satisfied with their job, a five-point increase from 2019. The primary drivers of job satisfaction include the belief that *Halifax water satisfies the public's needs*, that *career aspirations can be achieved at Halifax Water*, that *employees have the daily opportunity to do what one does best*, that *they are treated fairly within their department*, and that *they can influence decisions that affect their job*. Agreement across many measures has improved this year, illustrating the contributors to the current improved level of job satisfaction within the organization.

Two in three employees agree they receive regular feedback on their job performance, marking the highest level recorded since the beginning of tracking in 2009.

While there has been a considerable gain over the past four years in the percentage of employees who receive regular feedback on their performance, there continues to be room for improvement in this regard. Informal feedback continues to be the predominant suggestion for improving job performance feedback. It is evident that multiple methods need to be used to ensure employees receive regular feedback to maintain or improve their job performance.

Perceptions of both the employees' commitment to Halifax Water and Halifax Water's commitment to employees have trended upwards over the last two years.

While three in four employees report a high level of commitment to Halifax Water, four in ten employees indicate that Halifax Water has a high level of commitment to its employees (this gap is always evident in research of this type). In addition, the perception that Halifax Water follow-up on staff commitments also has notably improved this year and last, making it the highest level recorded since 2009.

Rising to a new record high on agreement level, almost nine in ten employees would recommend Halifax Water as a good place to work.

An increasing majority of employees would recommend Halifax Water as a good place to work. There are five key drivers of recommending Halifax Water as a good place to work for employees. These drivers include believing that *Halifax Water is headed in the right strategic direction*, *career aspirations can be achieved at Halifax Water*, *employees are given a fair opportunity to pursue training associated with one's job*, *there is good co-operation among co-workers*, and that *my supervisor treats me fairly*.

As was the case over the last few years, the two most *critically important* factors employees use in evaluating Halifax Water as a place to work are *being treated in a respectful manner* and *satisfying customer needs*.



Although perceptions regarding personal and career development have strengthened, there exist opportunities to further improve ratings on these measures.

Two in three Halifax Water employees agree they are given a fair opportunity to compete for positions that become available. Modest gains are evident in the perceptions of employees across measures of personal development pertaining to training, encouragement from supervisor and career development opportunities, though the latter is less robust. Increased notably from last year, approximately six in ten employees believe that Halifax Water's job classification system is administered fairly.

Perceptions regarding performance and productivity metrics are quite positive.

Steady with last year, a majority of employees believe that they have the necessary training to perform their job, are held accountable for their work, are able to complete their work during regular working hours and have the ability to influence decisions that affect their job. Stable since last year, over eight in ten employees are more inclined to feel trusted to make the right decisions and a similar proportion are finding it easier to strike a work/life balance.

A solid majority of employees express satisfaction with the compensation and benefits package provided by Halifax Water, although perceptions suggest more could be done to recognize employee achievement.

Three-quarters of Halifax Water employees feel they are fairly compensated in terms of both their benefits package and their pay, consistent with last year. Meanwhile, six in ten indicate being rewarded and/or recognized for their achievements. These improvements vis-à-vis compensation underscore perceived improvement to the recognition systems made by management.

Employees feel respected and recognized for their work by their peers, however they continue to perceive less recognition from Halifax Water as an organization.

Most employees continue to agree that they are treated in a respectful manner and are fairly treated within their department. There is also a general sense of co-operation among co-workers. A majority of employees also feel their work contributions are valued by their co-workers at Halifax Water, although only a small majority of employees continue to feel their contributions are valued by the organization. Despite improvement, there continues to be an opportunity to demonstrate that the organization recognizes the value of employees' workplace contributions.

Perceptions vis-à-vis various workplace conditions are generally on par with the previous year's findings. In fact, agreement on both looking forward to coming to work and employee policies being applied fairly have improved over the past two years.

A growing majority of Halifax Water employees look forward to coming to work, think that workplace safety is a high priority at Halifax Water, and believe that their employment is secure. Most employees confirm they have supplies and equipment to do their job well. A less robust majority of six in ten employees feel that policies are applied fairly, or that Halifax Water reflects diverse cultural communities.



Internal communications, particularly regarding being kept informed about important changes, exhibit improvement this year.

A large majority of employees have the necessary information to do their job, are kept informed of important changes, and of what is expected of them by their supervisor or manager. These important performance management metrics are indicative of a high performing organization. Consistent with the previous two years, ***more open communications*** and ***regular or more frequent staff meetings*** are the two most frequent suggestions offered by Halifax Water employees.

Despite an increase in the support of Halifax Water's strategic direction among the employee base, there is further opportunity for improvement.

While two-thirds of employees indicate either being completely or mostly well-informed of future plans of Halifax Water, one-third are either indifferent, or feel insufficiently informed. In conjunction with this improvement, greater agreement was observed this year in the number of employees who believe that Halifax Water is headed in the right strategic direction. This is important given that support of the strategic direction of the organization is a key driver of the willingness to recommend Halifax Water as a place to work. A notable majority, at seven in ten, also indicate being aware of Halifax Water's goals for the year, consistent with last year.

Although modest gains have been made, customer service metrics regarding the promptness of customer service and being properly staffed to ensure public interests are served remain moderate and represent an area for improvement.

Confidence among employees in their ability to provide prompt customer service has increased modestly. Notably improved since last year, approximately six in ten employees now feel that departments are properly staffed to ensure the public interest is served.

Employees positively assess their supervisor in terms of trust and fair treatment. However, perceptions regarding accessibility of senior management remain less robust.

A strong and consistent majority of employees trust their supervisor/manager and think their supervisor treats them fairly. Unfortunately, this sentiment is not reflected in the percentage of employees who believe that senior management at Halifax Water is accessible to all staff members, with under six in ten employees agreeing in this regard. This level of agreement has been consistent for many years.

More employees are now engaged and agree they get a sense of accomplishment from their work and that department workload is shared fairly among all staff members than was the case a year ago.

Most employees feel motivated to do a good job at work, get a sense of accomplishment from their work and think that they have the daily opportunity to do what one does best. Three in four employees understand how they can contribute to Halifax Water meeting its goals. Seven in ten believe the organization is interested in their overall well-being and feel passionate about working for Halifax Water.



A less robust majority of two in three employees thinks that their career aspirations can be achieved at Halifax Water and that department workload is shared fairly amongst employees.

Halifax Water's *Employment Engagement Index* is at the highest level ever recorded and is comparatively on par with the Narrative Research norm for Atlantic Canada. This score indicates an improvement in engagement over previous years. It is indeed positive to note that Halifax Water employees appear more likely to be *highly engaged*, and less likely to be *highly disengaged* or *moderately disengaged*. There are five factors that drive employee engagement at Halifax Water. These include the belief that ***Halifax Water is interested in the overall well-being of its employees***, that ***individual contributions are valued by co-workers***, that ***understanding how I can contribute to the organization meeting its goals***, the belief that ***career aspirations can be achieved at Halifax Water***, and that ***I am given a fair opportunity to pursue training associated with my job***.

Relative to the Narrative Research normative database, Halifax Water's position has improved further and now for the most part either sits above the norm for most measures, or is on par with them.

In keeping with the general upward trend in employee opinion across a variety of issues, Halifax Water has greatly improved its standing as an employer relative to other organizations in Atlantic Canada, as indicated via Narrative Research's normative employee opinion database. Increased scores on many of the metrics measured indicate that Halifax Water's position as an employer has strengthened further and is frequently stronger in many regards when compared to other organizations in Atlantic Canada. In fact, Halifax Water scores above the norm on three-quarters of measures, and scores below the norm on only two metrics. Compared with one year ago, Halifax Water was above the norm for 22 measures and below the norm on 5 measures. This shift indicates that a variety of areas have seen improvement.

Employees offer positive assessments on various metrics related to the COVID-19 pandemic.

A large majority of employees offer positive ratings on various metrics related to the pandemic such as working remotely, organizational support and response, health and safety, balancing work and family life during the pandemic, and job security.

In general, Halifax Water departments score well throughout the survey, although Wastewater/Stormwater Collection Services and Corporate Customer Care often lag.

The Wastewater/Stormwater Collection Services department and (to a modestly less degree) the Corporate Customer Care department in many instances lag behind other departments on the survey metrics. It should also be noted that the results continue to reveal other general trends. As in previous iterations of this study, those in unionized and non-supervisory roles are less positive in their assessments than are their counterparts.



Recommendations

The following recommendations are based on the conclusions of this study and are offered for the consideration of Halifax Water:

1. *Halifax Water should maintain the momentum of its efforts over the past two years, as clear improvements are evident.*

Halifax Water has made commendable improvements on many employee opinion measures and these efforts in addressing workplace issues are worth celebrating. Thus, as an overall global recommendation, Halifax Water should continue with the initiatives and activities that have helped achieve these improvements, as it is reasonable to expect that the momentum can be sustained and the organization can chart a course of further improvement. The survey findings indicate, for example, that there has been a considerable gain in the percentage of employees who now confirm that they receive regular job performance feedback, who agree that Halifax Water follows up on the commitments made to staff, and those who say that Halifax Water is headed in the right strategic direction. The latter is the most important driver of the willingness to recommend Halifax Water as an employer, underscoring the importance of ensuring a strong performance in this regard.

Enhancement in this regard can likely be achieved in part through performance feedback, communications, and investment in personal and career development, as discussed below.

2. *Halifax Water should take required steps to promote the continued growth of the incidence of career aspirations being achieved at the organization.*

There is an opportunity for improvement in terms of the proportion of employees who believe their career aspirations can be achieved at Halifax Water. Although the organization's performance on this measure is above the norm vis-à-vis other Atlantic Canadian organizations, efforts for further improvement on this measure are recommended as it is one of the key drivers of job satisfaction, the willingness to recommend Halifax Water, as well as employee engagement. This also presents the opportunity to explore or ascertain via qualitative research why it is that employees believe or do not believe their career aspirations can be achieved at Halifax Water, or what kinds of support to employees need to achieve their career aspirations.

3. *Halifax Water should strengthen its efforts to enhance internal organizational communications.*

It is observed that survey agreement in terms of being kept well-informed of future Halifax Water plans is less robust than various other measures. It is also noteworthy that support for the strategic direction of the organization is a key driver of willingness to recommend Halifax Water as a place to work. Thus, improvements in being kept informed about future plans is a recommended step for enhancing organizational communications.



Exploiting other opportunities for dialogue between employees and senior management would bode well for the culture of communication within the organization. Currently, there is only a modest sense that senior management at Halifax Water is accessible to all employees, and the performance of Halifax Water in this regard is below that of other organizations in Atlantic Canada.

As has been noted in the past, the importance of communications cannot be overstated. Narrative Research has found via employee research studies that enhancing communications often improves not only intra-organizational dialogue, but also serves to prompt perceived improvements along other, perhaps outwardly unrelated workplace dimensions. For example, by taking deliberate steps to enhance employee participation in dialogue and information exchanges with the executive, staff members may feel more valued and consulted in terms of various workplace matters, an implication of which may heighten or strengthen employee perceptions across other workplace facets.

4. Further steps should be taken to enhance perceptions of fairness and transparency in terms of workload and career development across the organization.

Agreement is modest among employees in terms of having fair opportunities to compete for positions, the job classification system (although agreement has risen commendably in 2020), employee policies being administered/applied fairly, sharing the workload fairly among all employees, and departments being properly staffed. Although some improvement is evident in certain instances, undertaking efforts to better understand what underlies these relatively modest levels of agreement on these metrics would be of value. Altogether, these results reflect the importance of a sustained focus on meeting employees' career development needs and/or expectations.

A key component of this is ensuring that career development paths and opportunities be communicated clearly to all employees, and growth plans for individual employees be part of the performance feedback system. Doing so will help promote prospects for engaged and satisfied employees as well as a sense of having a fair and transparent process for career development within Halifax Water.

Detailed Analysis

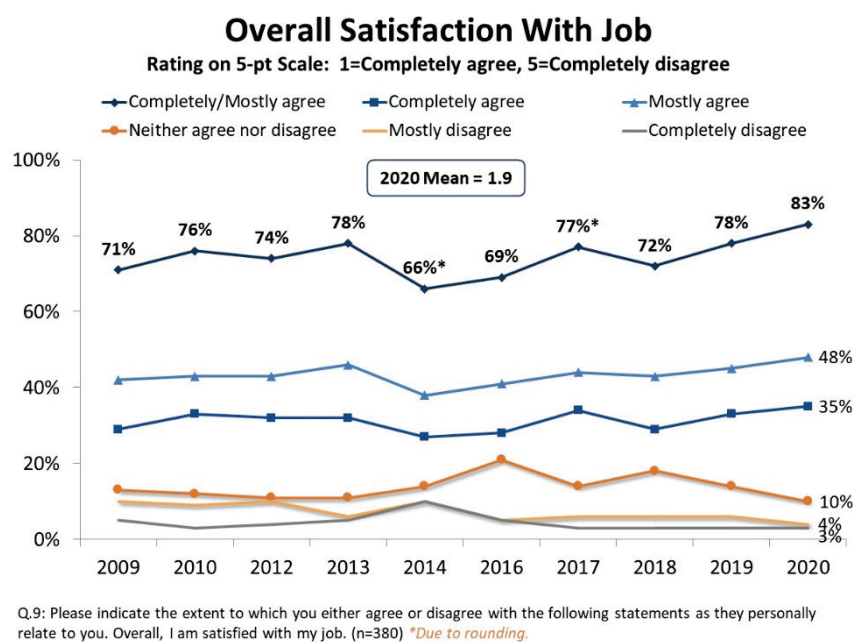
The following section of the report provides the detailed analysis of the results.

Prior to the analysis of individual questions, it should be noted that the results continue to reveal certain general trends. As in previous iterations of this study, those in unionized and non-supervisory roles are less positive in their assessments than are their counterparts. Given the consistency of these findings, they are not noted throughout, unless there are exceptions to the pattern.

Overall Job Satisfaction

Overall job satisfaction at Halifax Water has trended upwards since 2018 and is at the highest level since the beginning of tracking in 2009.

Overall job satisfaction at Halifax Water has increased over the last two years, reaching a new record high in 2020. Job satisfaction is currently highest among those in Water Services, and lowest among those in Wastewater/ Stormwater Collection Services and Corporate Customer Care. (Table 9)

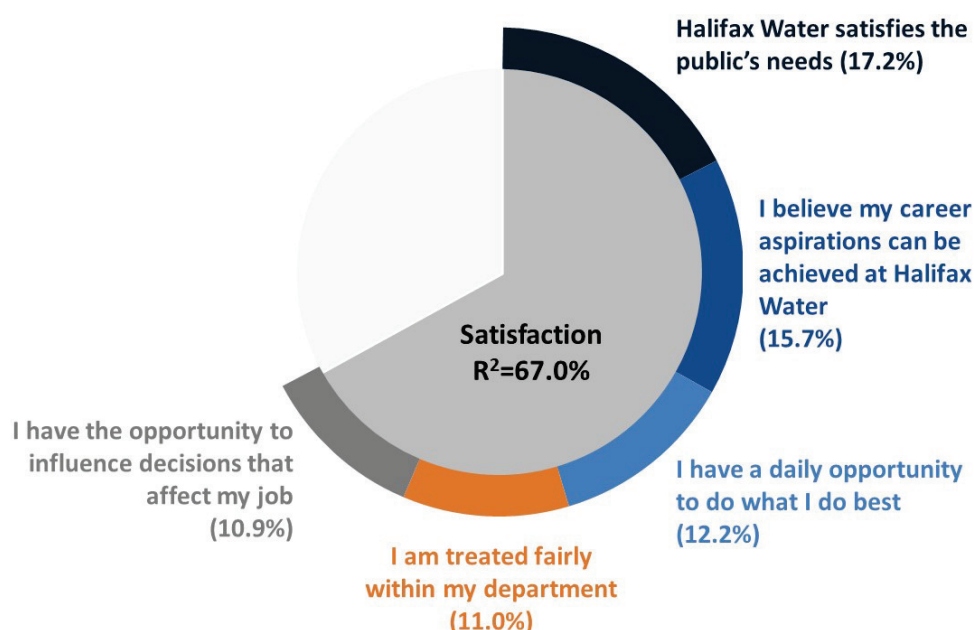


Drivers of Overall Satisfaction

Results of a multiple regression analysis indicate five key drivers of overall job satisfaction among Halifax Water employees. Together, these five factors account for 67 percent ($R^2 = 67.0\%$) of the variability in ratings of overall job satisfaction, which indicates a very strong regression model. The beta weights in the following graph indicate the strength of the relationship between each individual driver and overall satisfaction.

The top driver of employees' overall job satisfaction is the *belief that Halifax Water satisfies the public's needs*, followed by the belief that *career aspirations can be achieved at Halifax Water*, consistent with 2019 results. These are followed by the belief that *employees have the daily opportunity to do what one does best*, that *they are treated fairly within their department*, and that *they can influence decisions that affect their job*.

Drivers of Satisfaction



What is Halifax Water Doing Well?

Halifax Water employees did not identify any *single* measure on which they think the organization is doing well, instead, a bevy of items were cited. Specifically, mentions of *keeping employees informed* have notably increased in 2020 (16% vs. 2% in 2019). A total of 13 percent of employees mentioned *safety/safety in the workplace*, or a *good response to the pandemic/COVID-19*.

Approximately one in ten employees cited *customer service/quality of service* as one thing the organization is doing well. All other items were cited by 5 percent of employees or fewer. Of note, three in ten employees did not provide a definite response to this question (down 9 percentage points from 2019 results). (Table 57)

What is Something That Halifax Water is Doing Really Well?

Key Unaided Mentions

	2009	2010	2012	2013	2014	2016	2017	2018	2019	2020
Keeping employees informed	3%	4%	4%	0%	1%	1%	3%	3%	2%	16%
Safety/Safety in the workplace	2%	6%	1%	4%	8%	11%	11%	8%	9%	13%
Good response to the pandemic/COVID-19	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13%
Customer service/ Quality service	11%	9%	9%	8%	4%	6%	8%	8%	9%	9%
Don't know/No answer	32%	30%	36%	56%	33%	44%	41%	36%	40%	31%

Q.57: In your opinion, what is something that Halifax Water is doing really well? (n=380)

When asked for their comments regarding how to improve Halifax Water as a place to work, *improve communication* was the top recommendation from employees in this regard, closely followed by increase *wages/look at pay scale*, *improving teamwork/cooperation*, and *respect/treat employees better*. These results are generally consistent with those of the preceding years and it is also consistent that Don't know/No answer responses are high. (Table 58)

What is Something You Could Suggest That Would Improve Halifax Water as a Place to Work?

Key Unaided Mentions

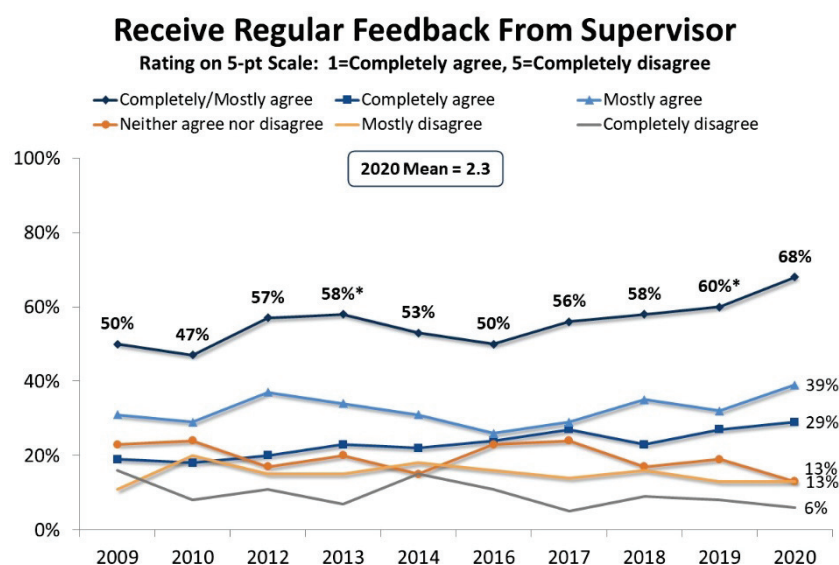
	2009	2010	2012	2013	2014	2016	2017	2018	2019	2020
Improve communication	4%	9%	5%	5%	8%	12%	11%	6%	7%	8%
Increase wages/Look at pay scale	5%	11%	9%	5%	8%	1%	2%	6%	4%	6%
Improve teamwork/ cooperation	4%	6%	7%	3%	4%	5%	4%	5%	5%	5%
Respect/treat employees better	7%	6%	7%	3%	10%	5%	7%	6%	3%	5%
Don't know/No answer	28%	28%	36%	54%	36%	41%	38%	34%	37%	39%

Q.58: In your opinion, what is something you could suggest that would improve Halifax Water as a place to work? (n=380)

Feedback

Two in three employees agree they receive regular feedback on their job performance, marking the highest level recorded since beginning of tracking in 2009.

While there has been a considerable increase in agreement over the past four years in the percentage of employees who receive regular feedback on their performance, there continues to be room for improvement in this regard. This is the case across many departments, especially Wastewater/Stormwater Collection Services and Customer Care. Of note, agreement ratings are elevated among those in Engineering and Information Services (81%) and in Administration (100%). (Table 29)



When asked ways performance feedback could be improved, providing *informal feedback* (both positive and negative) continues to be the most frequent suggestion by a considerable margin. This is followed by *regular job evaluations/appraisals*, *employee evaluations of supervisors*, *staff meetings*, and *formal recognition of a job well done*. Results are consistent with those of 2019. (Table 53)

Ways Job Performance Feedback Could be Improved at Halifax Water

Key Aided Mentions

	2009	2010	2012	2013	2014	2016	2017	2018	2019	2020
Informal feedback, both good and bad	63%	60%	59%	71%	64%	74%	72%	70%	71%	68%
Regular job evaluations/appraisals	42%	51%	50%	61%	53%	53%	59%	47%	51%	54%
Employee evaluations of supervisors	40%	47%	42%	58%	43%	55%	53%	49%	52%	53%
Staff meetings	47%	47%	42%	47%	40%	49%	52%	46%	49%	46%
Formal recognition of a job well done	40%	44%	36%	47%	41%	50%	50%	47%	47%	44%

Q.52: In what ways could job performance feedback be improved at Halifax Water? (n=380)

Workplace Commitment

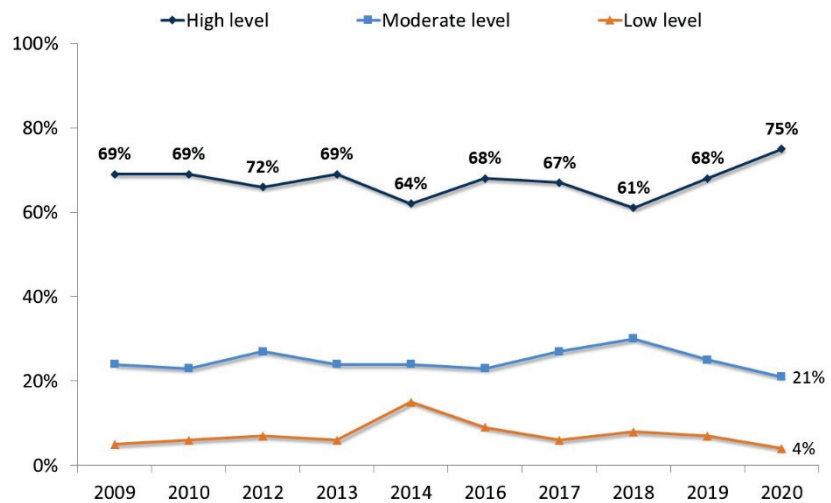
Perceptions of both the employees' commitment to Halifax Water, and Halifax Water's commitment to employees, have trended upwards since 2018.

Three in four employees express a **high level of commitment** to Halifax Water, up since last year. Only four percent of employees currently have a low self-reported level of commitment to the organization. (Table 54)

As has been the case in the past, employees are less likely to rate Halifax Water's level of commitment to its employees as high. This is typical of other organizations where Narrative Research conducts employee engagement research. There have been increases in the proportion of a high level of commitment since 2018. Those in Wastewater/Stormwater Collection Services and Corporate Services are more likely to rate employer commitment as moderate or low. Those in Administration indicate a high level of commitment. (Table 56)

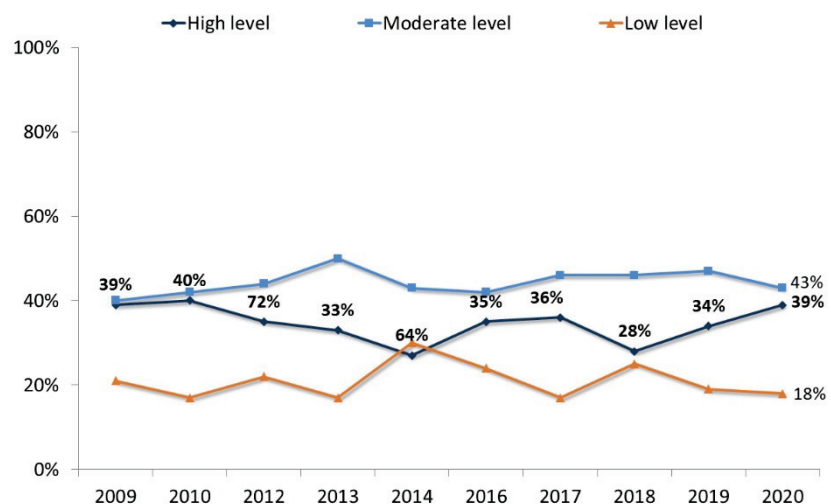
Agreement that Halifax Water follows up on commitments made to staff has improved notably this year, making it the highest level recorded since 2009. A modest majority of six in ten employees now agree that the organization follows up on commitments made to employees. Those in Wastewater/Stormwater Collection Services are the least likely to agree in this regard (43%). Customer Care also has low levels of agreement (48%) and Administration has very high levels. (Table 34)

Level of Commitment to Employer



Q.54: All things considered, would you say you have a high level, a moderate level, or a low level of commitment to Halifax Water? (n=380)

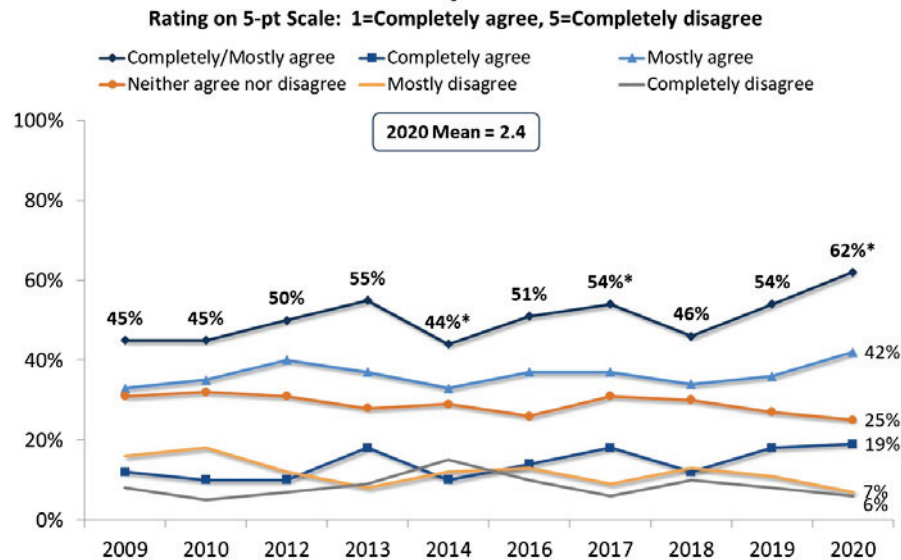
Level of Commitment to Employee



Q.55: All things considered, would you say that Halifax Water has a high level, a moderate level, or a low level of commitment to you as an employee? (n=380)



Halifax Water Follows up on Staff Commitments



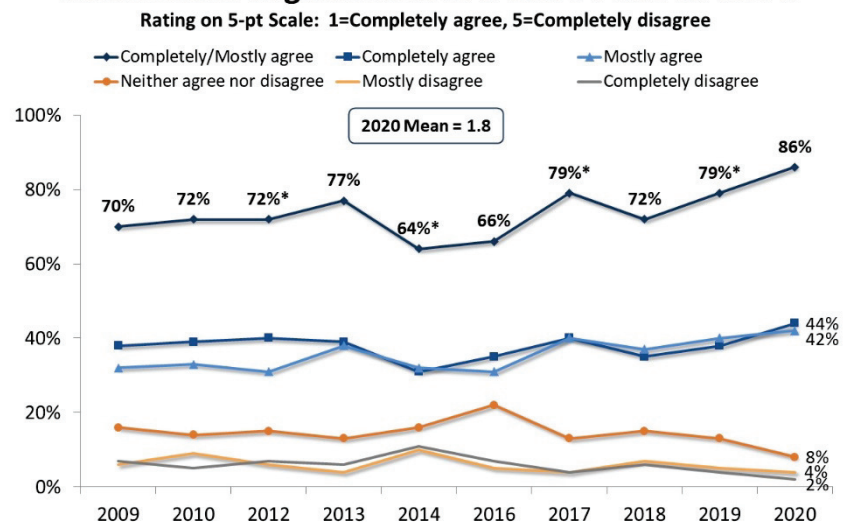
Q.34: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. The organization follows up on commitments made to staff. (n=380) *Due to rounding.

Commitment Metrics

Rising to a new record high, just under nine in ten employees would recommend Halifax Water as a good place to work.

The percentage of employees willing to recommend Halifax Water as a good place to work has increased this year to a new record high. Those in Wastewater/Stormwater Collection Services are the least willing to recommend Halifax Water as a good place to work, but even here, 77 percent agree. Those in Administration, Engineering and Information, Corporate, and Water Services and are the most willing to recommend. (Table 6)

Recommend Organization as a Good Place to Work



Q.6: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I would recommend my organization as a good place to work. (n=380) *Due to rounding.

Drivers of Willingness to Recommend HW



To better understand what drives opinion of recommending Halifax Water as a good place to work, a multiple regression analysis was undertaken. There are five drivers that account for 63 percent ($R^2=63.3\%$) of the variability in the ratings of Halifax Water as a good place to work.

The current strongest driver of recommending Halifax Water as a good place to work is believing that *Halifax*

Water is headed in the right strategic direction. The other four important drivers are *believing one's career aspirations can be achieved at Halifax Water*, *being given a fair opportunity to pursue training associated with one's job*, *believing there is good co-operation among co-workers*, and *believing that the supervisor treats employees fairly*.

As was the case over the last few years, the two most *critically important* factors employees use in evaluating Halifax Water as a place to work are *being treated in a respectful manner* and *satisfying customer needs*. The critical importance of each factor evaluated varies, in some cases by a sizable degree, from department to department. (Tables 51a-h)

Importance of Factors in Evaluating Halifax Water as a Place to Work

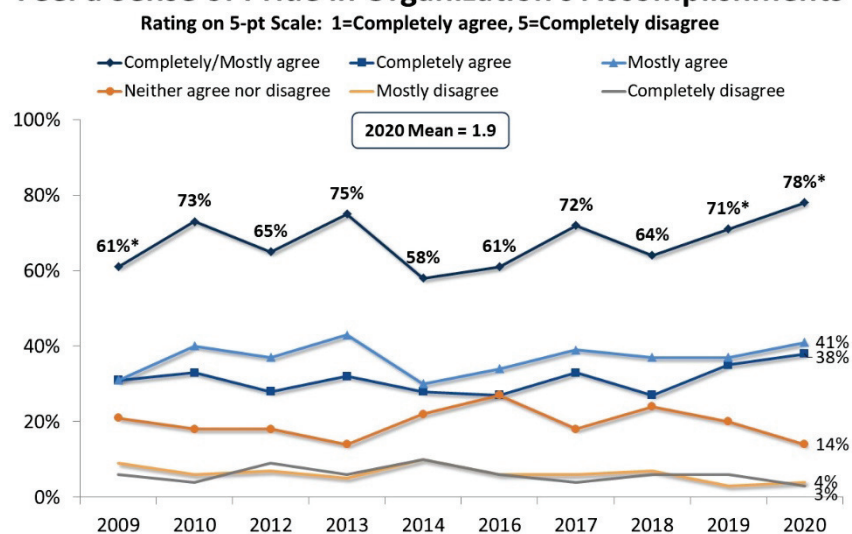
% Important (1/2) on a 4-pt Scale
Where 1=Critically important and 4=Not at all important

	2016		2017		2018		2019		2020	
	Critically important	Important but not critical	Critically important	Important but not critical	Critically important	Important but not critical	Critically important	Important but not critical	Critically important	Important but not critical
Being treated in a respectful manner	83%	15%	84%	14%	79%	19%	81%	16%	82%	16%
Satisfying customer needs	74%	24%	75%	23%	69%	26%	71%	24%	72%	24%
Having good co-operation among co-workers	62%	36%	65%	32%	66%	30%	69%	28%	66%	31%
Being trusted to make the right decisions	69%	29%	69%	27%	65%	33%	60%	36%	61%	37%
Valuing my contributions	41%	53%	42%	52%	35%	55%	42%	51%	37%	57%
Being given regular feedback on my job performance by my supervisor/manager	34%	58%	38%	54%	34%	56%	37%	51%	35%	57%
Being kept well-informed of future Halifax Water plans	35%	55%	40%	51%	36%	52%	33%	55%	32%	59%
Being recognized and rewarded for achievements	28%	58%	27%	59%	25%	60%	29%	56%	27%	60%

Q.51a-h: How important is each of the following to you in terms of evaluating Halifax Water as a place to work? 2016: (n=257); 2017: (n=285); 2018: (n=319); 2019: (n=368); 2020: (n=380)

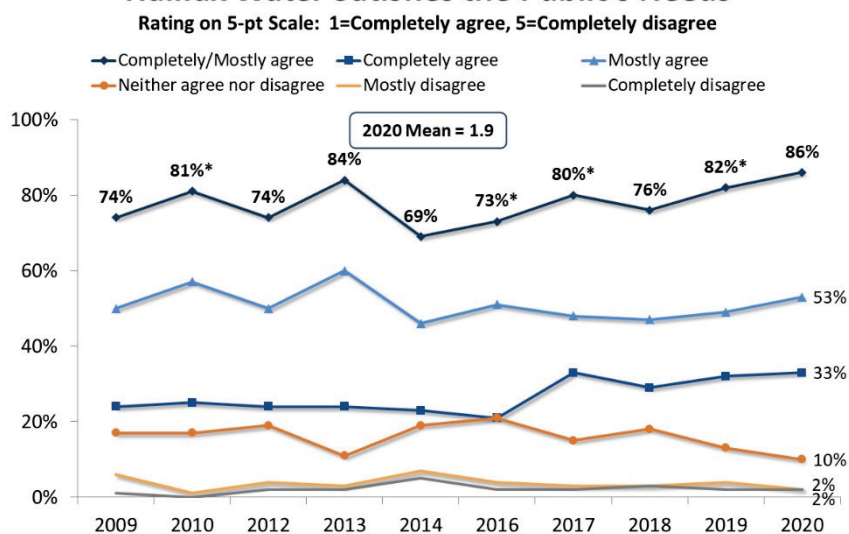
The proportion of employees who feel a sense of pride in the accomplishments of Halifax Water increased in 2020, reaching the highest level on record since 2009. Across departments, those in Wastewater/Stormwater Collection Services are the least likely to feel a sense of pride in the accomplishments of the organization, followed by Customer Care. Agreement levels are high in other departments. (Table 7)

Feel a Sense of Pride in Organization's Accomplishments



Q.7: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I feel a sense of pride in the accomplishments of the organization. (n=380) *Due to rounding.

Halifax Water Satisfies the Public's Needs



Q.10: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. Halifax Water satisfies the public's needs. (n=380) *Due to rounding.

Most employees believe that Halifax Water satisfies the public's needs. Agreement ratings are at the highest level recorded since 2009. Across departments, agreement is lowest among employees in Wastewater/Stormwater Collection Services, although at 78 percent, the agreement level is still respectable. (Table 10)

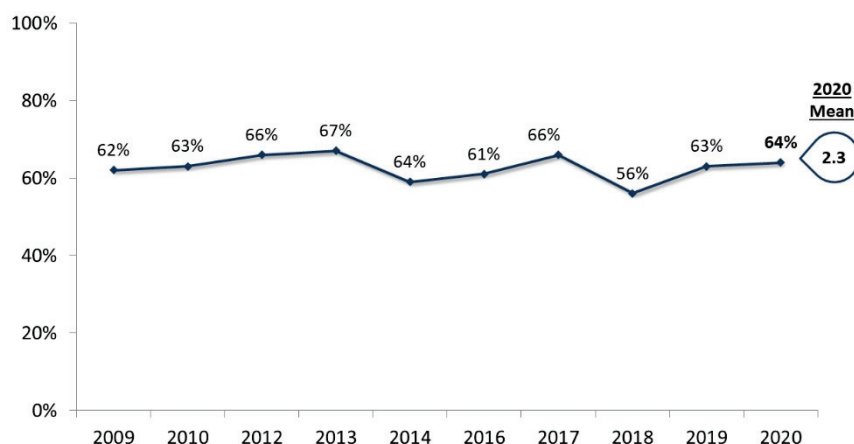
Personal and Career Development

Although perceptions regarding personal and career development have strengthened, there exist opportunities to further improve ratings on these measures.

Sentiment related to Halifax Water's hiring practices is stable after the uptick in 2019. Two in three Halifax Water employees agree they are given a fair opportunity to compete for new positions that become available. Employees in Customer Care and Wastewater/Stormwater Collection Services are least likely to agree. (Table 3)

Fair Opportunity to Compete for New Positions

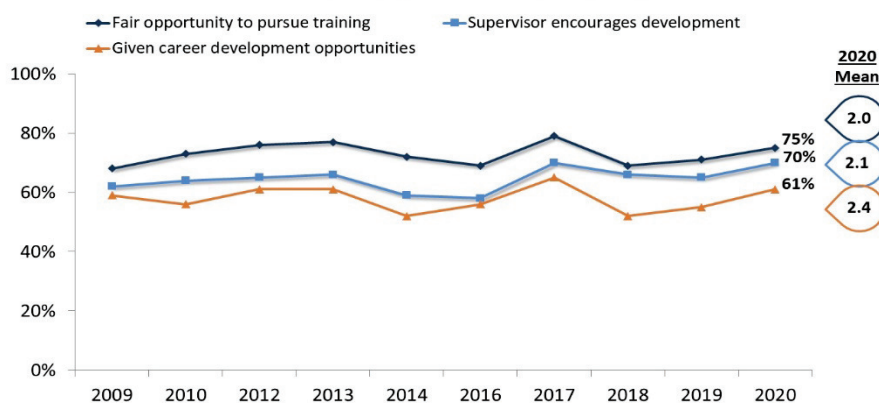
% Completely/Mostly Agree (1/2) on a 5-pt Scale
Where 1=Completely agree and 5=Completely disagree



Q.3: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I am given a fair opportunity to compete for new positions that become available. (n=380)

Personal Development

% Completely/Mostly Agree (1/2) on a 5-pt Scale
Where 1=Completely agree and 5=Completely disagree



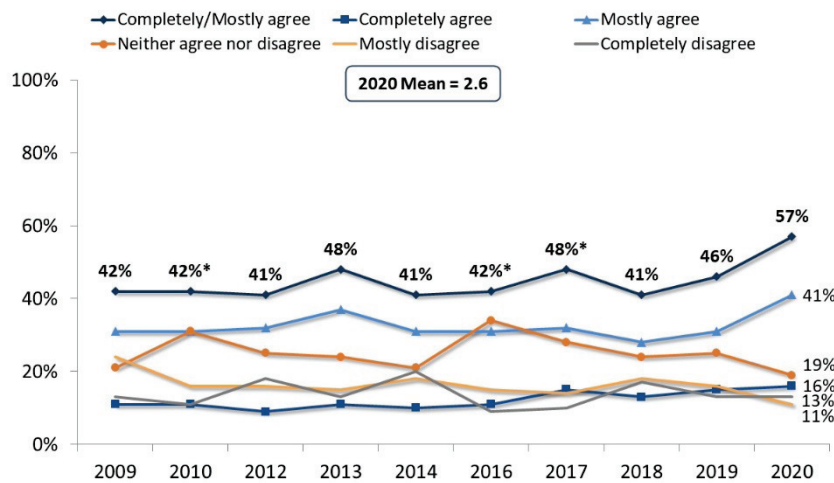
Q.8: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I am given a fair opportunity to pursue training associated with my job. / Q.33: My supervisor encourages my professional development. / Q.35: I am given opportunities for career development at Halifax Water. (n=380)

Modest gains are evident in the perceptions across all three measures of personal development. Three in four indicate they are given fair *opportunity to pursue training related to their job*, while seven in ten agree their *supervisor encourages their development*. Agreement on being *given career development opportunities* is less robust, with six in ten agreeing in this regard.

Across departments, those in Wastewater/Stormwater, and Customer Care have the least favourable opinions across all three measures. (Tables 8, 33, and 35)

Job Classification System is Fairly Administered

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree



Q.39: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. The job classification system at Halifax Water is fairly administered. (n=380)

Perceptions of the fairness of the administration of the job classification system have improved noticeably. Approximately six in ten employees believe that Halifax Water's job classification system is administered fairly, while one in four disagree. There continues to be room for improvement by better understanding the reasons behind current negative perceptions.

Employees in Wastewater/Stormwater Collection Services and Water Services are least likely to agree that the job classification system is fairly administered. (Table 39)

Performance and Productivity Environment

Perceptions regarding performance and productivity metrics are variable, although all results are quite positive.

Steady with last year, nine in ten employees believe that they have the **necessary training to perform their job**, while eight in ten believe they are **held accountable for their performance**. Improved modestly from last year, three in four employees can **complete their work during regular working hours**, and seven in ten confirm they can **influence decisions that affect their job**. There is widespread agreement across all departments on having the necessary training or skills to do one's job. In terms of the ability to influence decisions affecting the job and accountability for performance, those in Regulatory Services and Administration are most likely to

Performance and Productivity

% Completely/Mostly Agree (1/2) on a 5-pt Scale
Where 1=Completely agree and 5=Completely disagree



Q.2: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I have the opportunity to influence decisions that affect my job. / Q.11: I am held accountable for my performance. / Q.13: I am able to complete the work assigned to me during regular work hours. / Q.22: I have the training/skills necessary to do my job. (n=380)

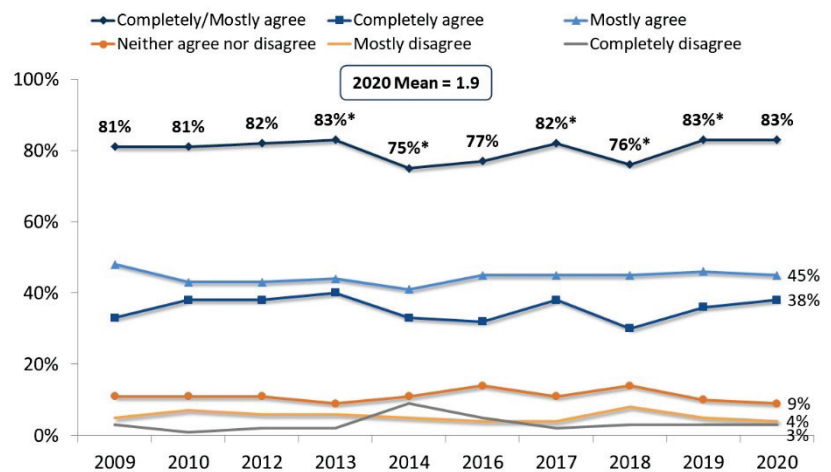
agree, while those in Wastewater and Stormwater Services and Customer Care are least likely to agree. Employees in Finance, Accounting and Procurement are least likely to agree that they can complete the work assigned to them during regular work hours. This is an area where opinions among unionized employees and those in non-supervisory roles exceed their respective counterparts. (Tables 2, 11, 13, and 22)

Approximately eight in ten Halifax Water employees believe they are trusted to make the right decisions, stable with the last year's results. Agreement is relatively consistent across departments, although is highest among employees in Administration and lowest in Wastewater/Stormwater Collection Services. (Table 28)

Up modestly from last year, just over eight in ten agree they can balance work and family life. Meanwhile, one in seven indicate they are unable to balance these two aspects of their lives. Employees in Administration are least likely to agree they can balance their work and personal life. In this instance, non-union employees and supervisory staff are less likely to provide a positive assessment of this measure as compared to their respective counterparts. (Table 45)

Trusted to Make Right Decisions

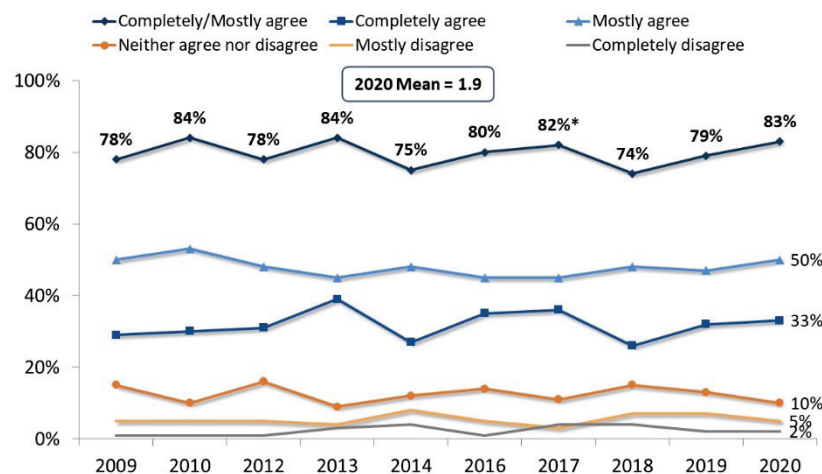
Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree



Q.28: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I am trusted to make the right decisions. (n=380) *Due to rounding.

I Can Balance Work Demands With the Demands of My Personal/Family Life

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree

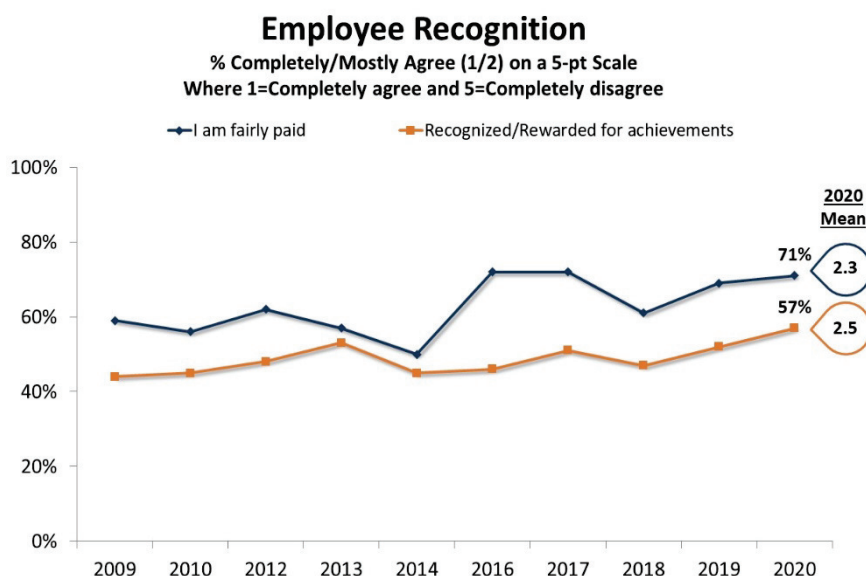


Q.45: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I can balance work demands with the demands of my personal/family life. (n=380) *Due to rounding.

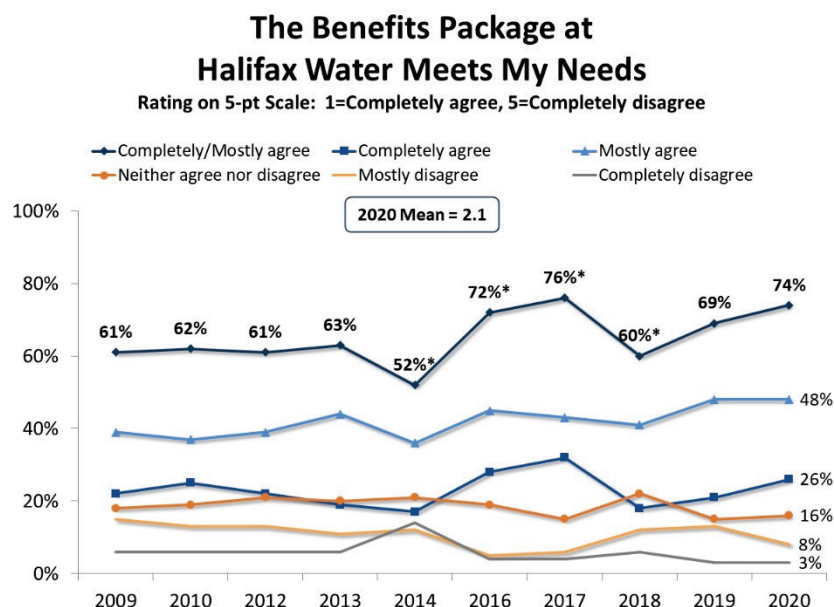
Compensation and Benefits

A solid majority of employees express satisfaction with the compensation and benefits package provided by Halifax Water, although perceptions suggest more could be done to recognize employee achievement.

Seven in ten employees believe they are **fairly paid** for the work performed, consistent with last year. Those in Regulatory Services and Customer Care are most likely to believe they are fairly compensated for their work. At the same time, approximately six in ten employees indicate they are **rewarded and/or recognized for their achievements**. Notably, those in Administration are more likely to feel recognized and rewarded. Those in Wastewater/Stormwater Collection and Customer Care are at the lower end. (Tables 12 and 18)



Q.12: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I am fairly paid for the work I do. / Q.18: I am recognized and rewarded for my achievements. (n=380)



Q.50: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. The benefits package at Halifax Water meets my needs. (n=380) *Due to rounding.

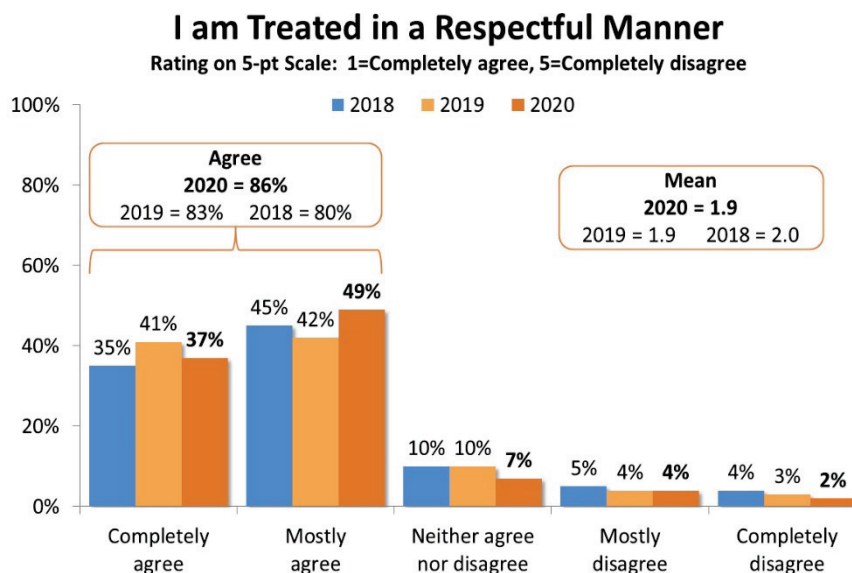
Three in four employees express satisfaction with the benefits package at Halifax Water, mimicking the high levels observed in 2017.

Those in Administration are most likely agree the benefits package meets their needs, while those in Wastewater/Stormwater Collection Services are least likely. (Table 50)

Employee Respect and Recognition

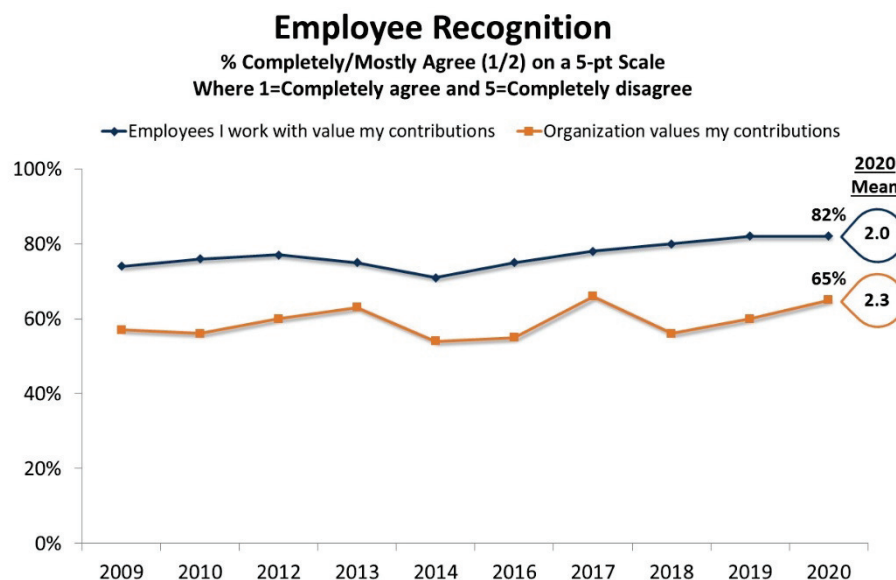
Employees feel respected and recognized for their work by their peers, however they continue to perceive less recognition from Halifax Water as an organization.

A large majority of employees indicate they are **treated in a respectful manner** in the workplace, and it is positive to note that this strong result remains consistent with last year. Employees in Administration, and Engineering and Information Services are most likely to agree on being treated in a respectful manner, while those in Wastewater/ Stormwater Collection Services are least likely, although a solid majority still agree. (Table 27)



Q.27: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I am treated in a respectful manner. (n=380) *Due to rounding. Note: Prior to 2018, this question was two questions: "I am treated in a respectful manner by my supervisor." / "I am treated in a respectful manner by my fellow employees."

Eight in ten employees believe their **work contributions** are valued by their coworkers, same as last year. Meanwhile, two in three employees agree that Halifax Water itself values their work contributions (up 5 percentage points from 2019). Those in Wastewater/ Stormwater Collection Services and Customer Care are least likely to believe their work contributions are valued by their co-workers, or the organization. (Tables 42-43)

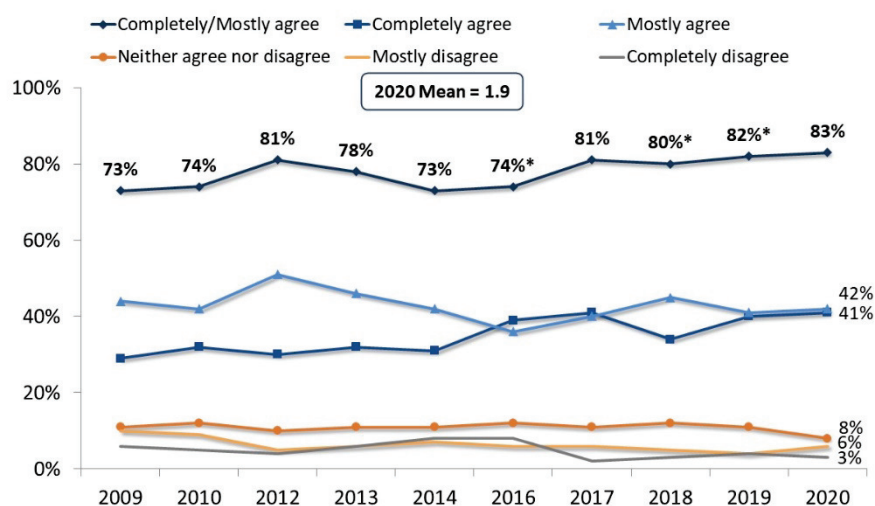


Q.42: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. The employees I work with value my contributions. / Q.43: I think the organization values my contributions. (n=380)



Treated Fairly Within Department

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree

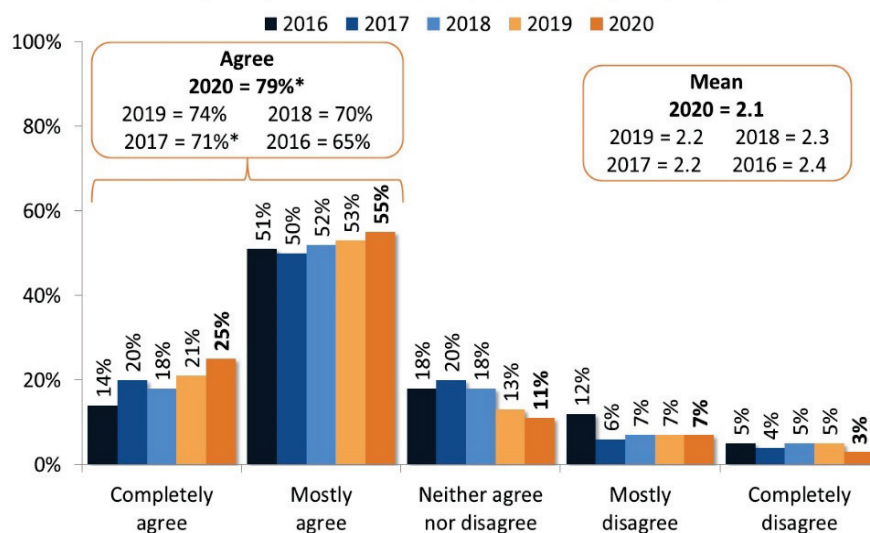


Q.21: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I am treated fairly within my department. (n=380) *Due to rounding.

A strong majority of employees continue to believe they are fairly treated within their departments. Levels are generally high across departments, but those in Wastewater/Stormwater Collection Services and Customer Care are least likely to feel they are fairly treated in their department. (Table 21)

Good Co-Operation Among Co-Workers

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree



Q.20: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. There is good co-operation among co-workers. (n=380) *Due to rounding.

The level of co-operation among co-workers is another measure of respect. In that regard, there is a consistent perception among most employees that there is good co-operation among co-workers. In fact, agreement in this regard has increased gradually over the past two years. Those in Wastewater/Stormwater Collection Services and Customer Care are least likely there is good co-operation among co-workers within their department. Opinions are similar regardless of union or supervisory status. (Table 20)



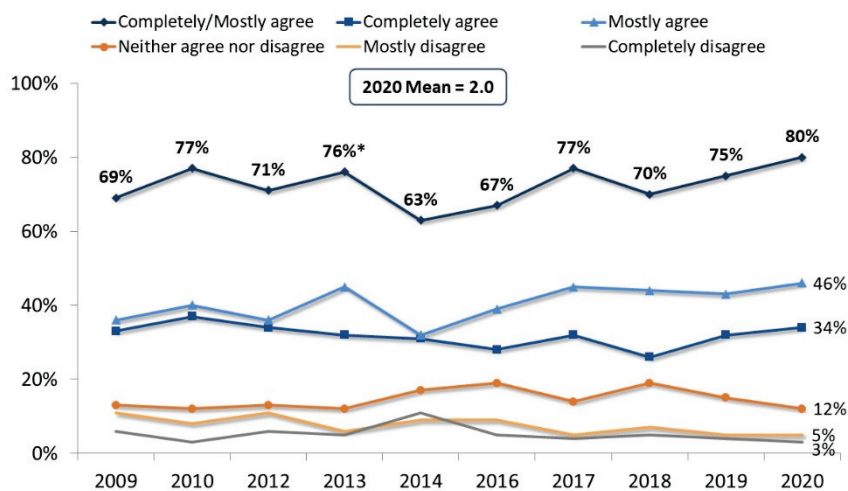
Working Conditions

Perceptions vis-à-vis various workplace conditions are generally on par with the previous year's findings, although agreement on both looking forward to coming to work and employee policies being applied fairly have improved modestly.

A growing majority of Halifax Water employees look forward to coming to work. Indeed, the percentage of employees who look forward to coming to work this year is at the highest level recorded since 2009. Those in Wastewater/Stormwater Collection Services are least likely to agree with the sentiment that they look forward to coming to work. (Table 5)

In General, I Look Forward to Coming to Work

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree

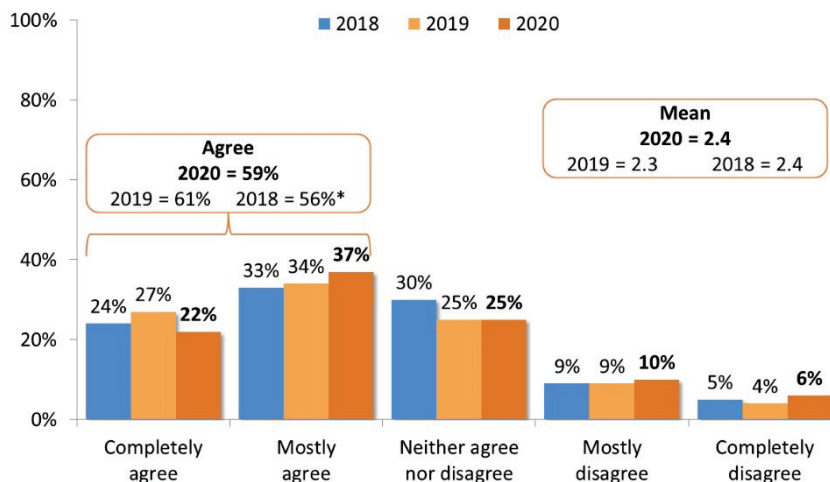


Q.5: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. In general, I look forward to coming to work. (n=380) *Due to rounding.

Employees were asked if the workplace reflects diverse cultural communities. Six in ten employees agree that diverse cultural communities are reflected at Halifax Water, stable since last year. Results show consistent levels of agreement across departments except for those in Wastewater/Stormwater Collection Services who are least likely to agree with this sentiment. (Table 49)

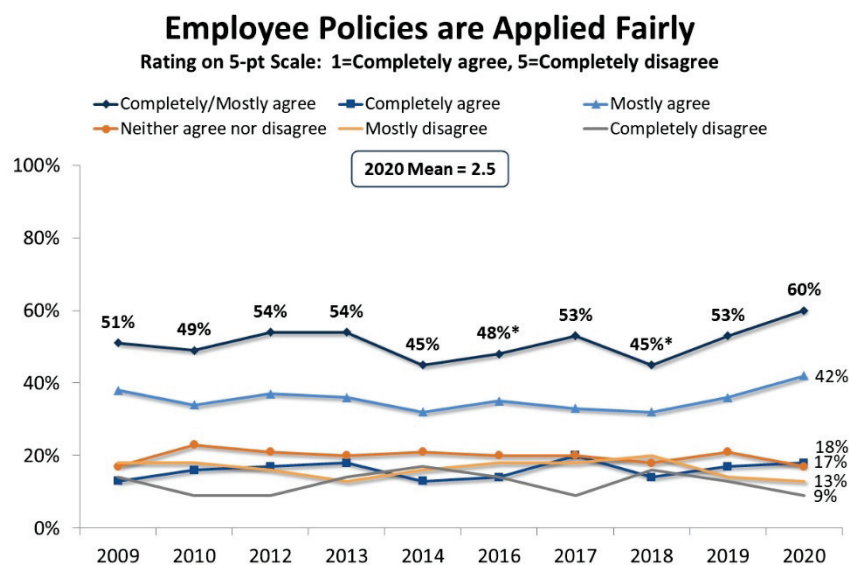
My Workplace Reflects Diverse Cultural Communities

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree



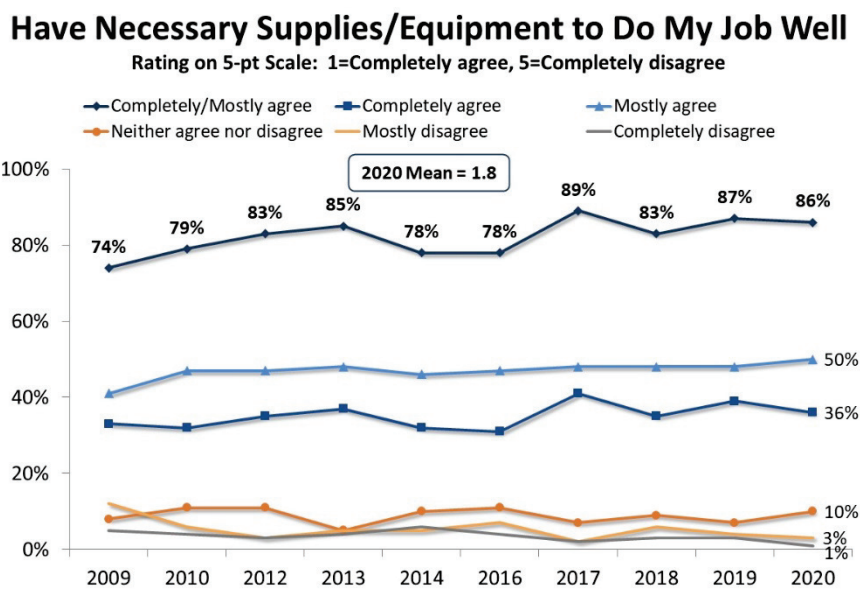
Q.48: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. My workplace reflects diverse cultural communities. (n=380) *Due to rounding.

When employees were asked if they believe Halifax Water employee policies are applied fairly across the organization, six in ten agree. This proportion has gradually trended upwards since 2018, however it has remained less robust and poses a potential opportunity. Those most likely to disagree hail from Wastewater/Stormwater Collection, Water Services and Regulatory Services. (Table 26)



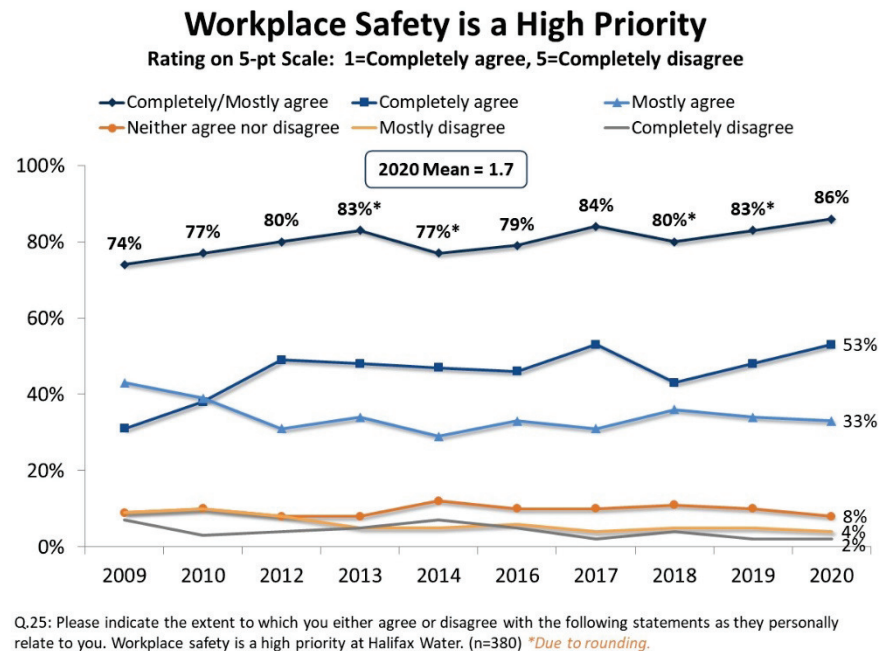
Q.26: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I feel that Halifax Water's employee policies are applied fairly across the organization. (n=380) *Due to rounding.

Approximately nine in ten employees have the necessary supplies and equipment to do their job well, consistent with results from last year. This sentiment is virtually unanimous for those in Administration, where no employees expressed disagreement and it is high across other departments. (Table 17)



Q.17: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I have the necessary supplies and equipment to do my job well. (n=380)

Similar to recent years, a large majority of employees continue to believe workplace safety is a high priority at Halifax Water. Only six percent disagree. Those in the Wastewater/Stormwater Collection Services are least likely to agree in this regard. (Table 25)



When asked the question of what should be done to improve workplace safety, over one-half of employees could not provide a specific answer. That said, top mentions include *everything is fine, more awareness/ information on safe work practices*, and *proper training/seminars/meetings*. (Table 54)

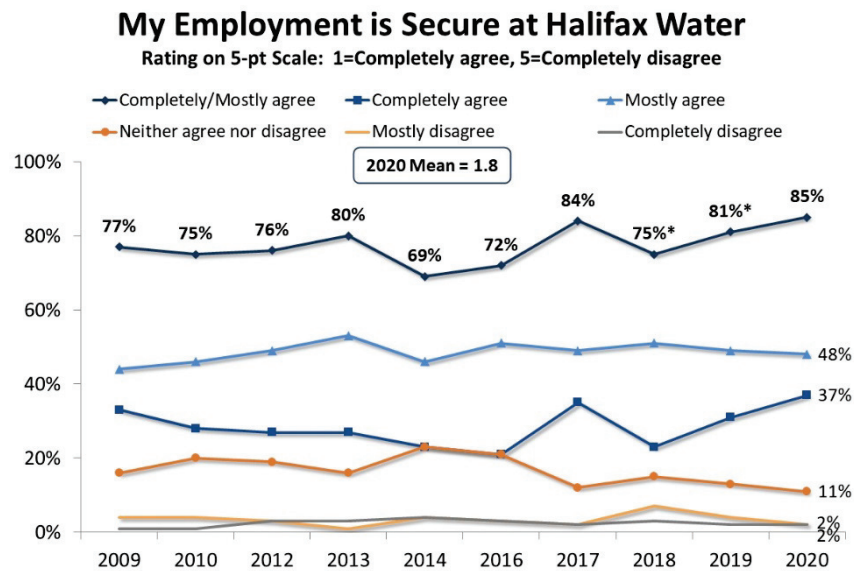
What Do You Think Should be Done to Improve Workplace Safety?

Key Unaided Mentions

	2009	2010	2012	2013	2014	2016	2017	2018	2019	2020
Everything is fine	9%	11%	9%	6%	4%	4%	8%	6%	5%	9%
More awareness/ information on safe work practices	0%	0%	0%	5%	4%	6%	6%	3%	6%	7%
Proper training/ seminars/meetings	13%	12%	12%	6%	8%	5%	8%	5%	8%	6%
Don't know/No answer	51%	43%	51%	62%	56%	52%	53%	64%	60%	53%

Q.53: What, if anything, do you think should be done to improve workplace safety at Halifax Water? (n=380)

Over eight in ten employees perceive their employment at Halifax Water to be secure, similar to the high levels observed in 2017 for this measure. This sense of job security is notably lower among employees in Corporate Services. (Table 16)

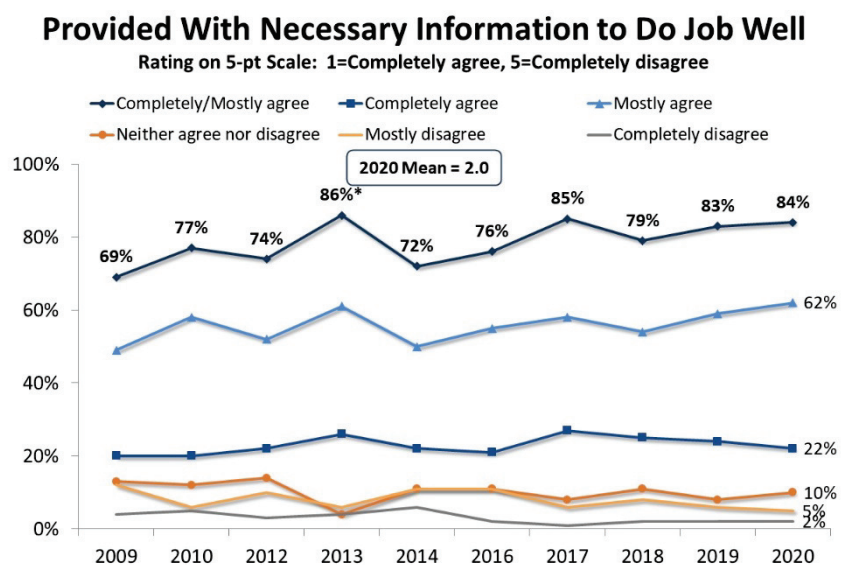


Q.16: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. My employment is secure at Halifax Water. (n=380) *Due to rounding.

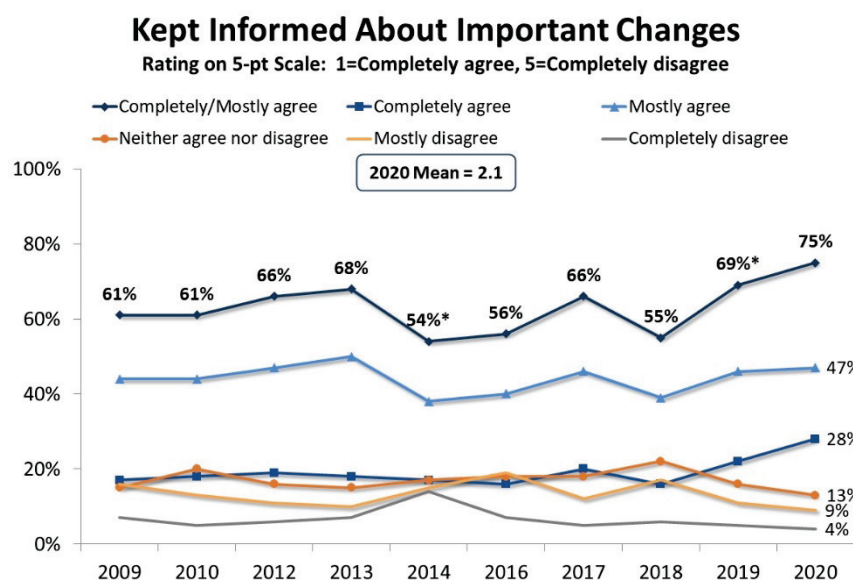
Internal Communications

Internal communications, particularly regarding being kept informed about important changes, exhibit improvement this year.

Similar to recent years, employees continue to feel that they are provided with the necessary information to do their job well. Those in Administration, and Engineering and Information Services are most likely to feel they are provided with the necessary information to do their job well. Those in Customer Care have lower levels of agreement. (Table 1)



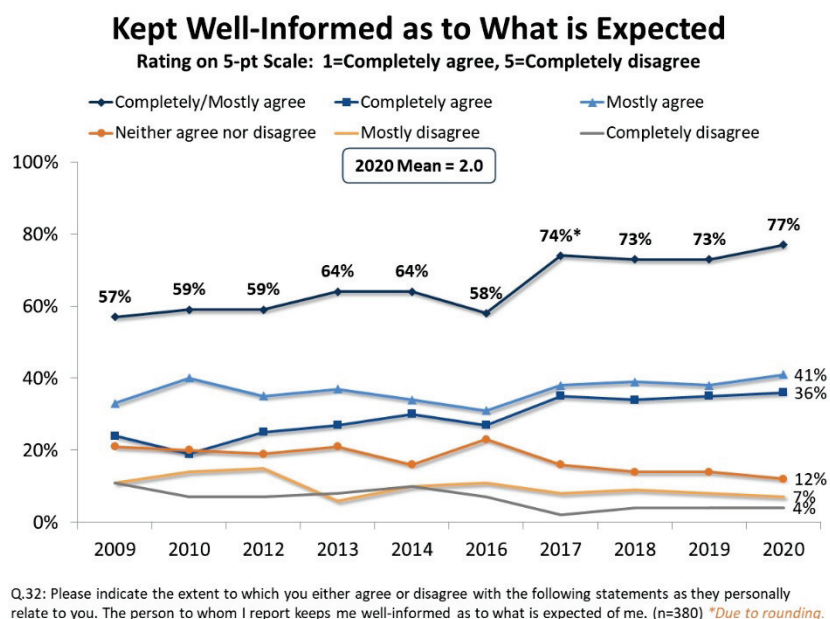
Q.1: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I am provided with the necessary information I need to do my job well. (n=380) *Due to rounding.



Q.4: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. Halifax Water does a good job of keeping me informed about important changes. (n=380) *Due to rounding.

Three in four employees believe the organization does a good job of keeping them informed about important changes, an increase of 20 percentage points since 2018 and the highest level ever recorded. Across areas, those in Wastewater/Stormwater Collection Services are least likely to indicate being kept informed of changes, while those in Administration, and Engineering and Information services are most likely. (Table 4)

Over three-quarters of employees agree that their supervisor keeps them well-informed as to what is expected of them. Indeed, this measure has gradually reached the highest level recorded. The level of agreement varies across departments, being the lowest among employees in Wastewater/Stormwater Collection Services and Customer Care. (Table 32)



Q.32: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. The person to whom I report keeps me well-informed as to what is expected of me. (n=380) *Due to rounding.

When asked what would improve communication between management and non-management staff, one-half did not provide an answer. Consistent with the previous two years, *more open communications* and *regular or more frequent staff meetings* are the two most frequent suggestions offered by Halifax Water employees. Of note, overall mentions of *regular or more frequent staff meetings* has decreased by six percentage points. However, employees in a supervisory role are more likely to mention *regular or more frequent staff meetings* (22%). (Table 59)

What Could be Done to Improve Communications From Management to Non-Management Staff Members?

Key Unaided Mentions

	2009	2010	2012	2013	2014	2016	2017	2018	2019	2020
More open communication/Information/Updates	15%	14%	12%	11%	13%	15%	13%	11%	13%	12%
Regular meetings/More staff meetings	14%	23%	10%	8%	9%	9%	14%	13%	16%	10%
Talk more with staff/More personal contact	7%	7%	1%	7%	5%	6%	5%	7%	7%	5%
Improve management (more visibility, honesty, etc.)	10%	4%	5%	0%	4%	4%	8%	6%	4%	4%
Don't know/No answer	48%	41%	54%	62%	53%	54%	49%	48%	52%	50%

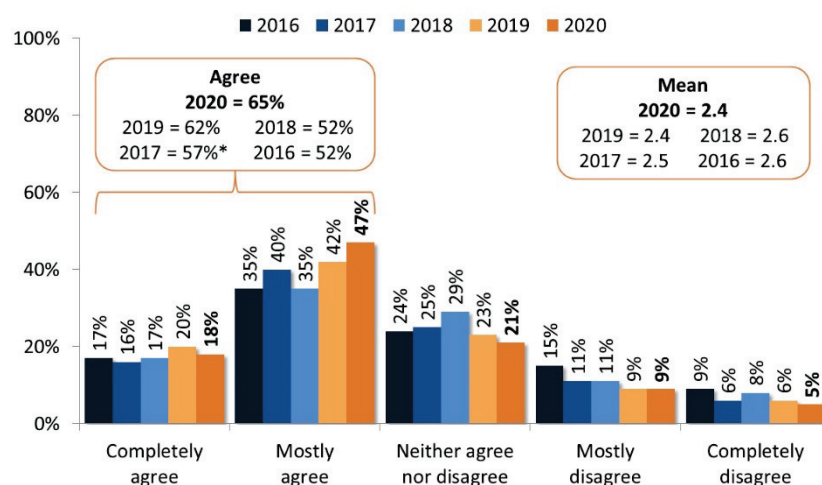
Q.59 What, if anything, do you think could be done to improve communications from Halifax Water's management to non-management staff members? (n=380)

Strategic Direction

Despite an increase in the support of Halifax Water's strategic direction among the employee base, there is further opportunity for improvement.

Kept Well-Informed of Future Halifax Water Plans

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree



Q.49: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I am kept well-informed of future Halifax Water plans. (n=380) *Due to rounding.

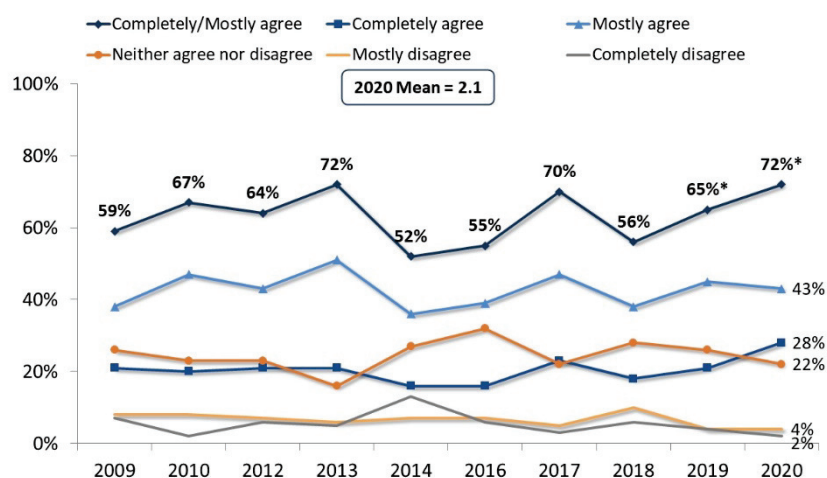
While approximately two-thirds of employees agree they are kept well-informed of future Halifax Water plans, an opportunity remains for a still greater number to feel informed. Agreement in this regard is notably lower among those in Wastewater/Stormwater Collection Services, and notably higher among those in Administration. (Table 49)



Results this year have rebounded to approximate the levels observed in 2017. Now seven in ten employees believe that Halifax Water is headed in the right strategic direction (up 7 points from 2019). Those in Wastewater/Stormwater Collection Services are notably less likely to believe Halifax Water is headed in the right strategic direction. (Table 19)

Halifax Water is Headed in the Right Strategic Direction

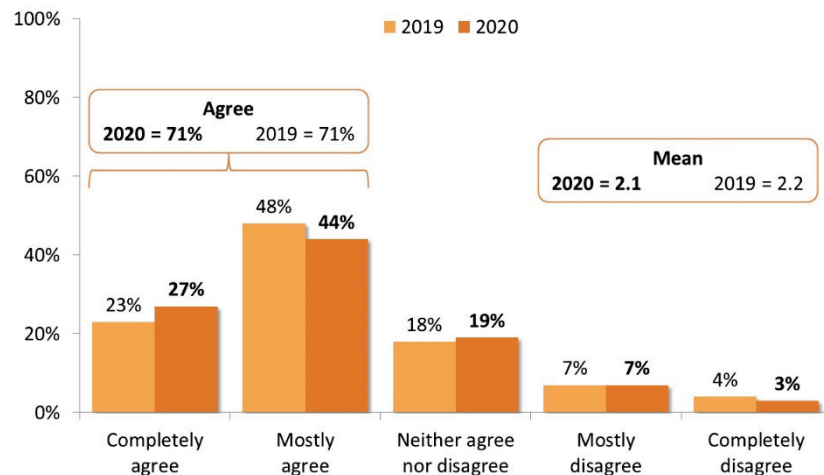
Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree



Q.19: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. Overall, I think Halifax Water is headed in the right strategic direction. (n=380) *Due to rounding.

Aware of Halifax Water's Goals for the Year

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree

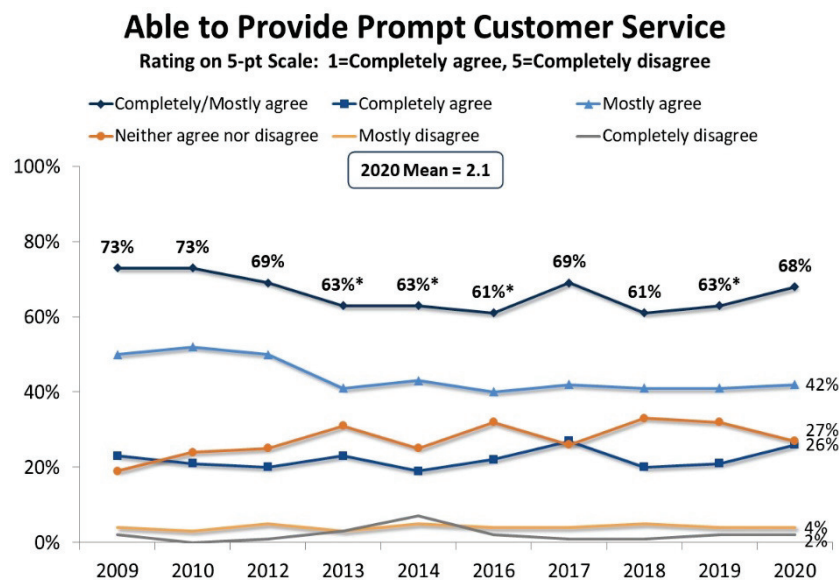


Q.36: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I am aware of Halifax Water's goals for the year (from the business plan, state of the utility presentations, Plan on a Page). (n=380) New question in 2019.

Once again, seven in ten Halifax Water employees indicate their awareness of the organization's goals for the year, while one in ten feel they are unaware. Perceived awareness is greatest among employees in Administration, and lowest among those in Wastewater/Stormwater Collection Services. (Table 36)

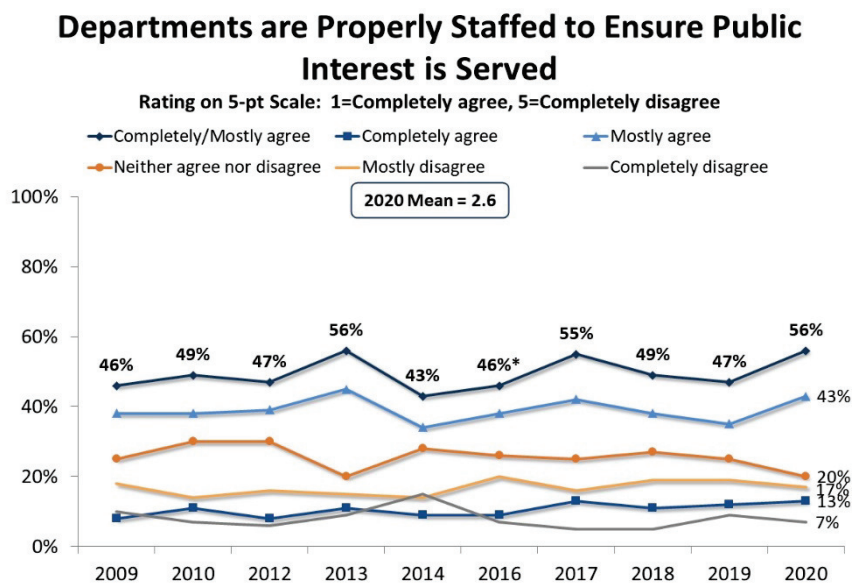
Customer Service

Although modest gains are made, customer service metrics regarding the promptness of customer service and being properly staffed to ensure public interests are served remain moderate and represent an area for improvement.



Q.14: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I am able to provide prompt customer service. (n=380) *Due to rounding.

Approximately two in three indicate being able to provide prompt customer service, similar to the 2017 levels. The relatively high neutral opinion, at over one-quarter of employees, may reflect the lack of relevancy of this issue for a portion of the employee base. Those in Wastewater/Stormwater Collection Services are once again least confident in being able to provide prompt service. The same is true for those in Technical Services, Water Quality and Source Water. (Table 14)



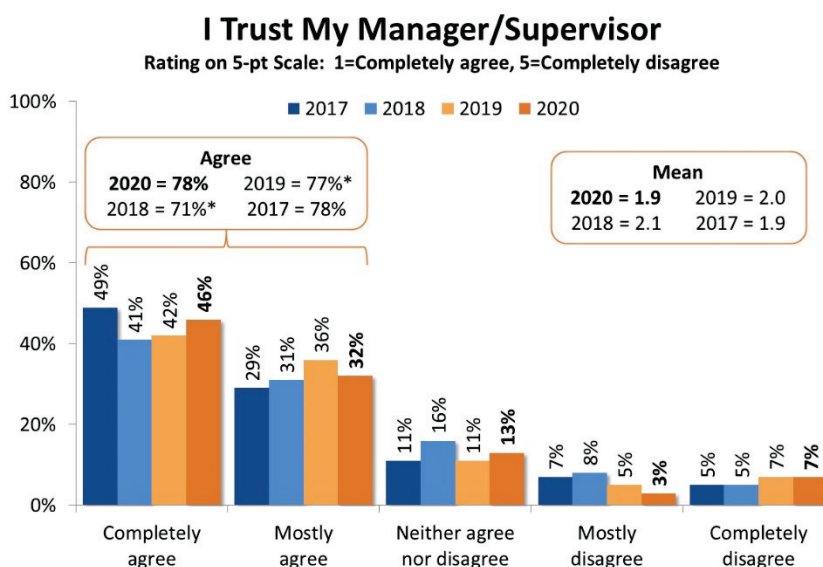
Q.15: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. Halifax Water departments are properly staffed to ensure the best interests of the public are served. (n=380) *Due to rounding.

This year, under six in ten employees believe that departments are properly staffed to ensure the best interests of the public are served, up nine percentage points from 2019 results. One-quarter disagree. Results have rebounded this year to the levels noted in 2017. Those in Wastewater/Stormwater Collection Services, Water Supply and Technical Services, Water Quality and Source Water are notably less likely to agree that departments are properly staffed. (Table 15)

Quality of Supervision

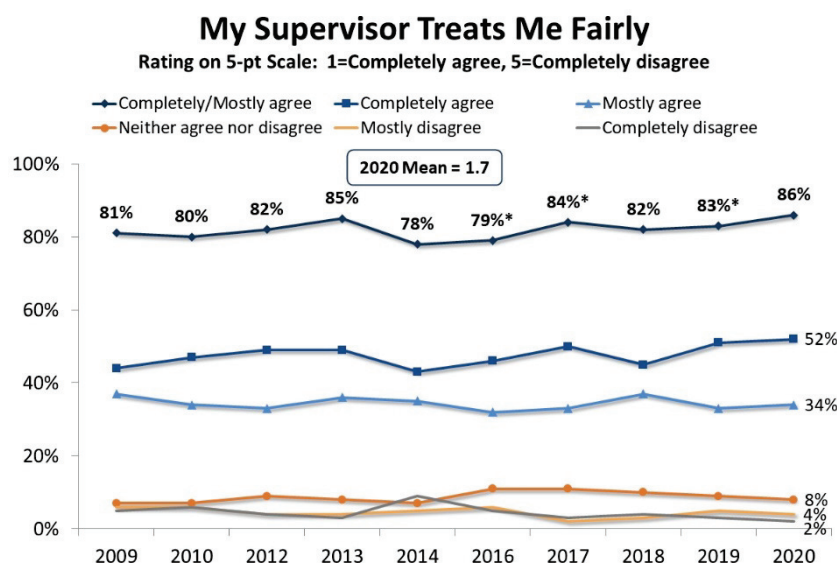
Employees positively assess their supervisor in terms of trust and fair treatment. However, perceptions regarding accessibility of senior management remain less robust.

A large majority of employees continue to trust their immediate manager or supervisor, consistent with the preceding year. Employees in Wastewater/Stormwater Collection Services are least likely to trust their immediate manager or supervisor. (Table 30)



Q.30: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I trust my manager/supervisor. (n=380) *Due to rounding.

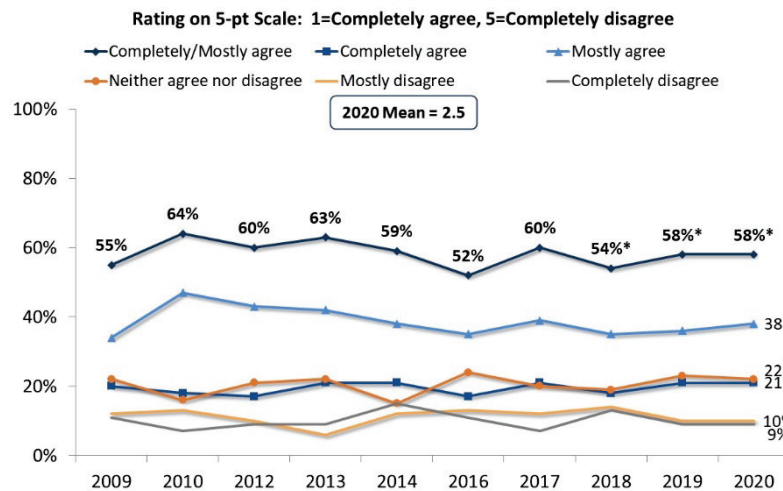
The vast majority of employees continue to feel their supervisor treats them fairly. Agreement with this measure has remained relatively consistent for the past decade. Agreement across departments displays slight variation, with employees in Wastewater/Stormwater Collection Services being least likely to agree their supervisor treats them fairly. Note that while they are at the lower end for agreement, their agreement is still quite high. (Table 40)



Q.40: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. My supervisor treats me fairly. (n=380) *Due to rounding.

A small majority believes that senior management members are accessible to all staff, relatively consistent with results over the past ten years. There continues to be a high neutral opinion on this issue which may reflect a lower level of importance for some employees in this regard or a lack of direct experience. Across departments, those in Wastewater/Stormwater Collection continue to be the least likely to believe that senior management members are accessible to all staff members. Employees in Administration and Finance, Accounting and Procurement and Information Services are notably more likely to think that senior management is accessible to staff members. (Table 44)

Senior Management at Halifax Water are Accessible to All Staff Members



Q.44: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. Senior management at Halifax Water are accessible to all staff members. (n=380) *Due to rounding.

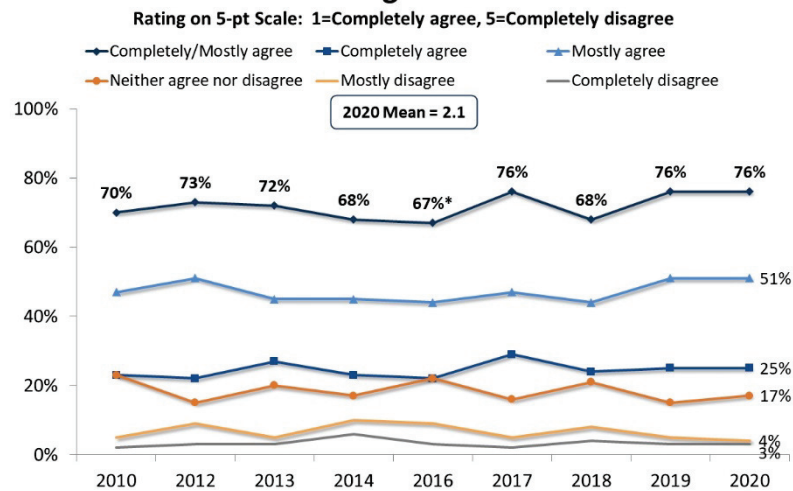
Employee Engagement

More employees now agree they get a sense of accomplishment from their work, and that department workload is shared fairly among all staff members than was the case a year ago.

Three-quarters of employees understand how they can contribute to Halifax Water meeting its goals, consistent with last year's result.

Those in Wastewater/Stormwater Collection Services are notably less likely to understand how to contribute to the goals of Halifax Water, while those in Administration are most likely to understand. (Table 46)

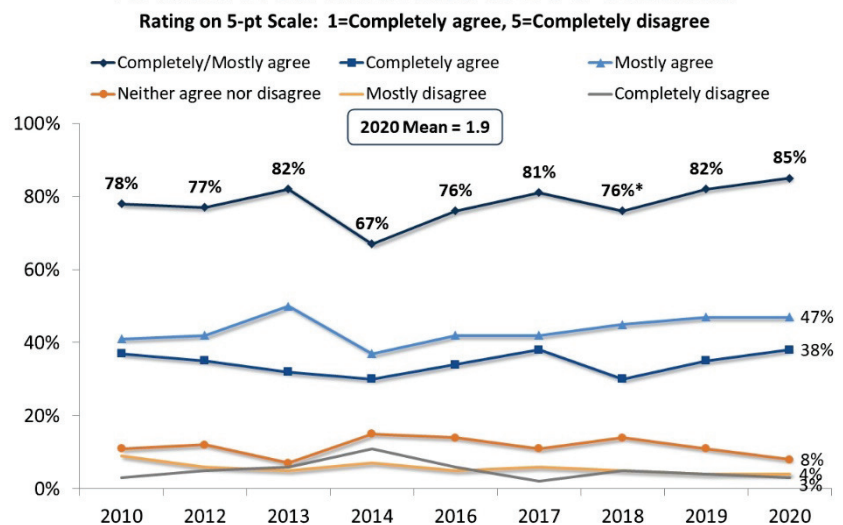
Understand How to Contribute to Halifax Water Meeting Its Goals



Q.46: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I understand how I can contribute to Halifax Water meeting its goals. (n=380) *Due to rounding.

Most employees at Halifax Water are motivated to do a good job, and agreement stands at the highest level seen. In contrast, fewer than one in ten do not consider themselves to be motivated to do a good job. Motivation is weakest among those in Wastewater/Stormwater Collection Services although a solid majority still agree in this regard. (Table 47)

At Work I Feel Motivated to Do a Good Job

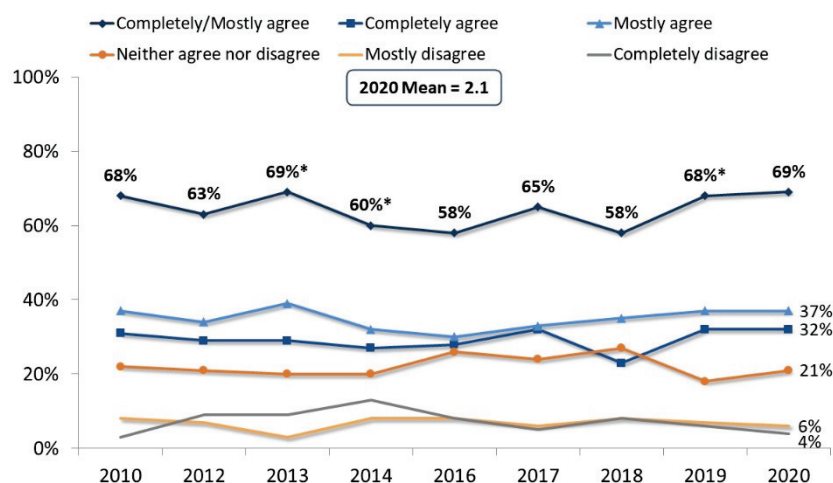


Q.47: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. In general, at work I feel motivated to do a good job. (n=380)

Seven in ten employees currently feel passionate about working at Halifax Water, stable over the past year. Of note, two in ten have a neutral opinion on this measure. Across departments, those in Administration appear to be the most passionate about working at Halifax Water. Employees in Wastewater/Stormwater Collection Services are notably less likely to feel passionate about working at Halifax Water. (Table 37)

I Feel Passionate About Working at Halifax Water

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree



Q.37: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I feel passionate about working at Halifax Water. (n=380) *Due to rounding.

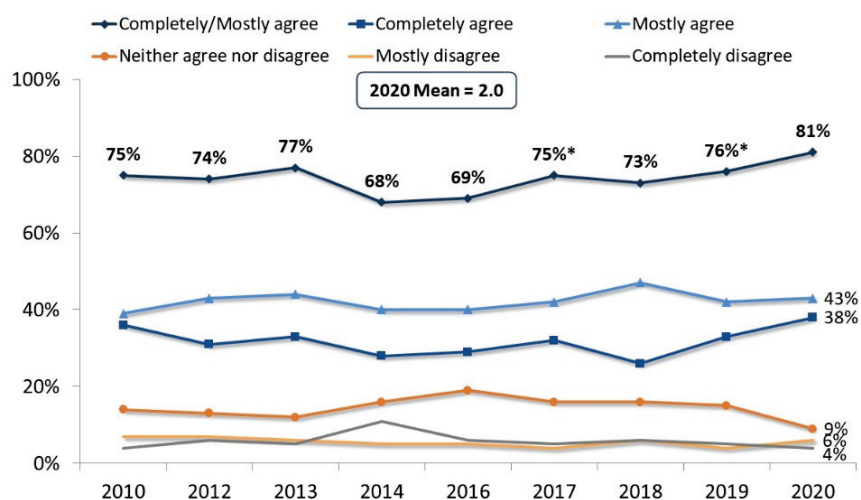
An increasing and strong majority of employees continue to indicate getting a sense of accomplishment from their work, reaching a new record high this year. One in ten do not have such a sense of accomplishment. Employees in Wastewater/Stormwater Collection are the least likely to enjoy a sense of accomplishment in their work. (Table 38)

Just over six in ten employees believe their career aspirations can be achieved at Halifax Water, similar to results seen in 2017 and up notably from 2018. About one in

six employees do not think their career goals can be met at Halifax Water. Those in Regulatory Services, Wastewater/Stormwater Collection Services (East and Central) and Finance, Accounting, and Procurement, as well as Customer Care are the least likely to believe their career aspirations can be achieved at Halifax Water, while those in Administration are most likely. (Table 24)

I Get a Sense of Accomplishment From My Work

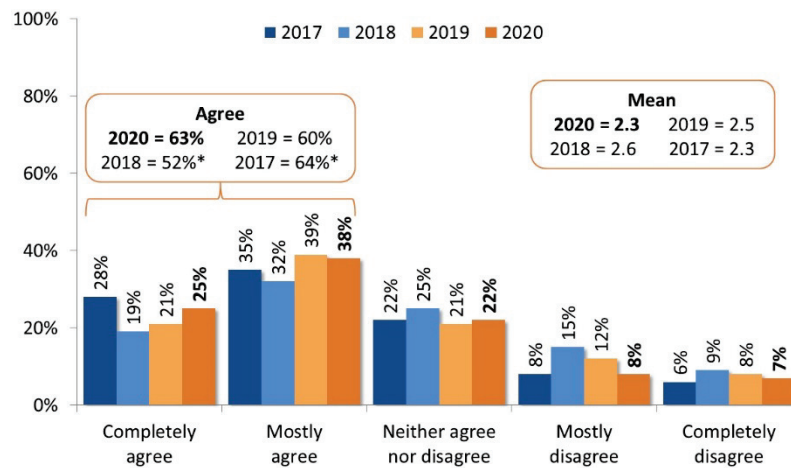
Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree



Q.38: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I get a sense of accomplishment from my work. (n=380) *Due to rounding.

Career Aspirations Can Be Achieved at Halifax Water

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree

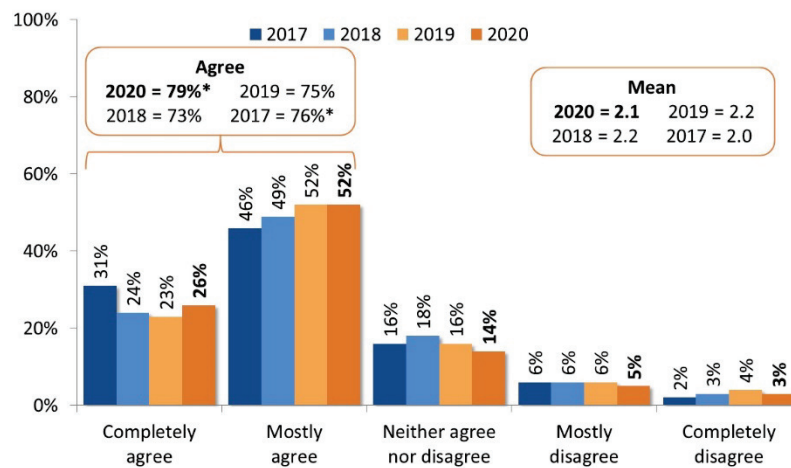


Q.24: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I believe my career aspirations can be achieved at Halifax Water. (n=380) *Due to rounding.

Almost eight in ten employees agree that they have the daily opportunity to do what they do best, while one in twelve employees do not. Those in Wastewater/Stormwater Collection Services and Finance, Accounting, and Procurement are the least likely to indicate they have the daily opportunity to do what one does best. (Table 41)

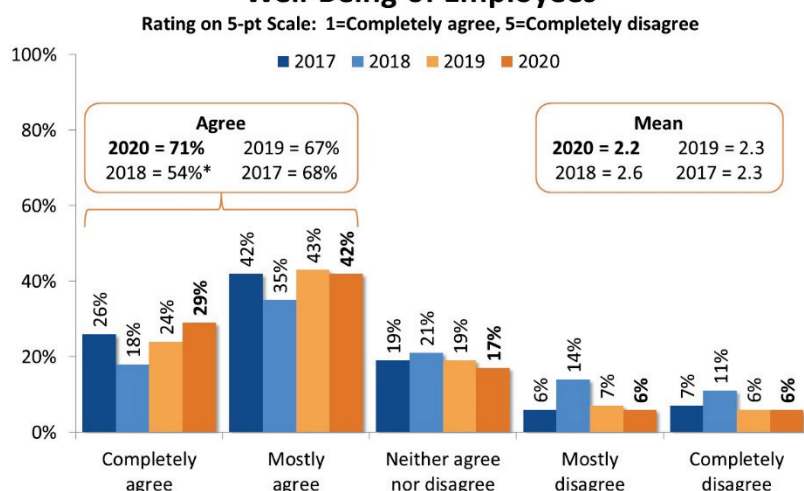
I Have Daily Opportunity to Do What I Do Best

Rating on 5-pt Scale: 1=Completely agree, 5=Completely disagree



Q.41: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. I have daily opportunity to do what I do best. (n=380) *Due to rounding.

Halifax Water is Interested in Overall Well-Being of Employees

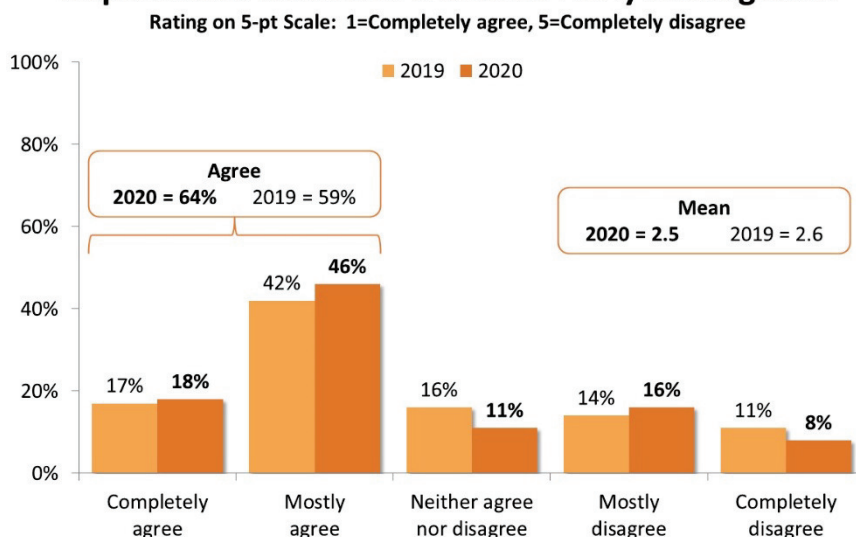


Q.23: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. Halifax Water is interested in the overall well-being of its employees. (n=380) *Due to rounding.

Consistent with results from last year, seven in ten employees believe Halifax Water is interested in the overall well-being of its employees. At the same time, one in eight employees disagree that Halifax Water is concerned with the well-being of its employees. Those in Wastewater/Stormwater Collection and Finance, Accounting, and Procurement are least likely to agree that Halifax Water is interested in their well-being. (Table 23)

Two in three employees feel that their department's workload is fairly shared among staff, although one-quarter disagree with this sentiment. Agreement varies across departments and is lowest among employees in Wastewater/Stormwater Collection Services and Finance, Accounting, and Procurement. (Table 31)

Department Workload is Shared Fairly Among Staff



Q.31: Please indicate the extent to which you either agree or disagree with the following statements as they personally relate to you. The workload in my department is shared fairly among staff members. (n=380) New question in 2019.



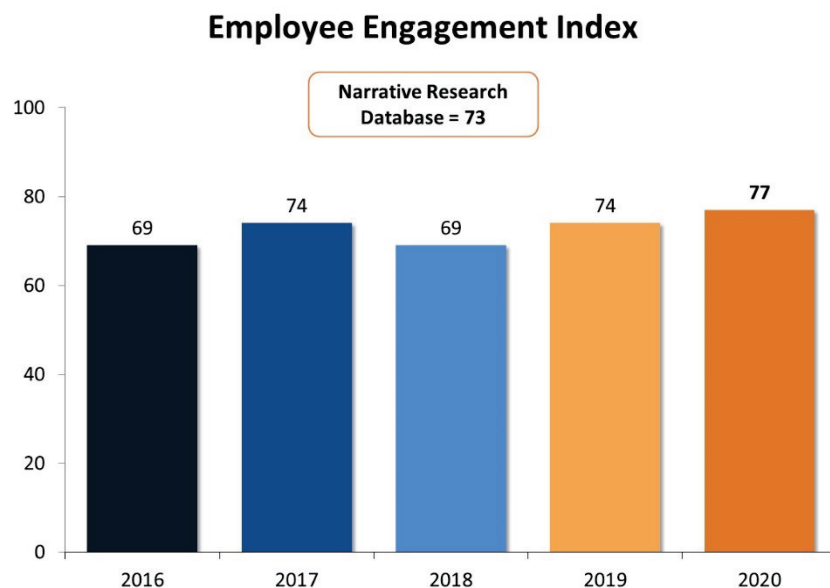
Employee Engagement Index

The model reported below, the **Employee Engagement Index**, was first calculated by Narrative Research for Halifax Water in 2016. The Employee Engagement Index examines key aspects that, once combined, measure overall employee engagement. Specifically, the Index includes employee ratings on the following questions:

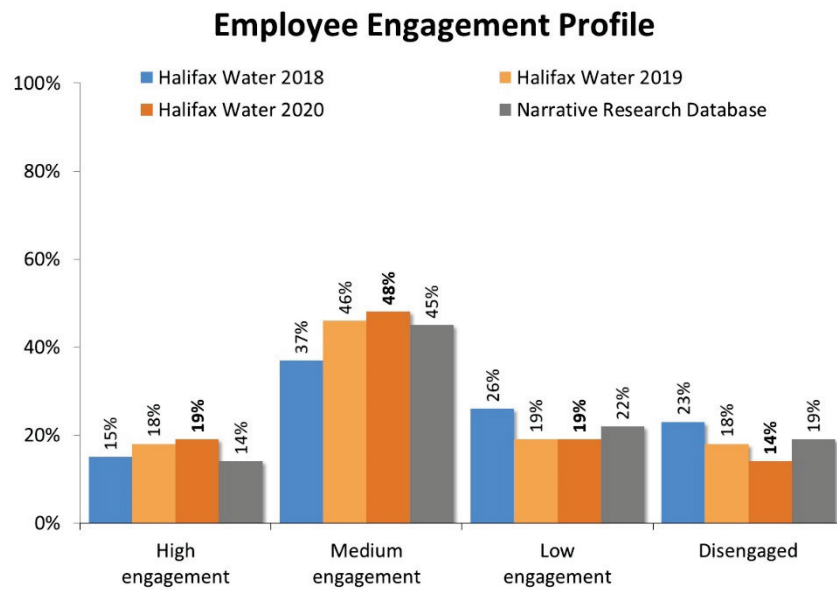
- *In general, I look forward to coming to work (Q5);*
- *I would recommend my organization as a good place to work (Q6);*
- *I feel a sense of pride in the accomplishments of the organization (Q7);*
- *I feel passionate about working at Halifax Water (Q37); and*
- *In general, at work I feel motivated to do a good job (Q47).*

In calculating engagement scores for each employee, ratings on each of these five 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 index is 100, while the minimum is 0. Any question for which an employee did not provide a response was eliminated from the calculation, with the Index score for that employee being calculated on the remaining questions.

The current overall measurement for the Halifax Water Employee Engagement Index is 77, a figure that is the highest ever recorded and is slightly above the Narrative Research norm for Atlantic Canada. This score indicates an improvement in engagement over previous years.

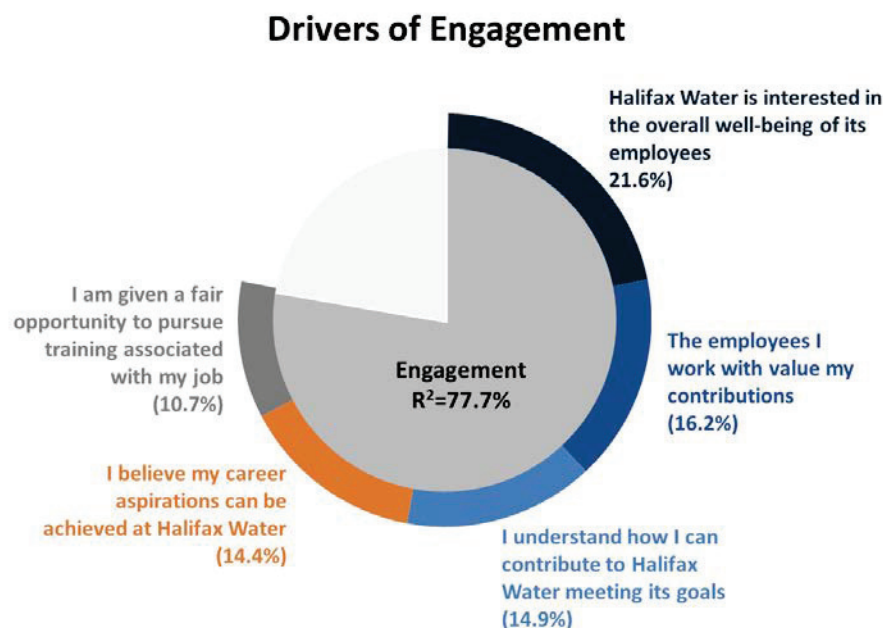


Halifax Water's present level of employee engagement is relatively on par with the Narrative Research database's current norm for other organizations in the region. That said, it is positive to note that Halifax Water employees appear more likely to display *high engagement*, and less likely to be *disengaged*.



Note: Only respondents with answers to all engagement index question were included in this table.

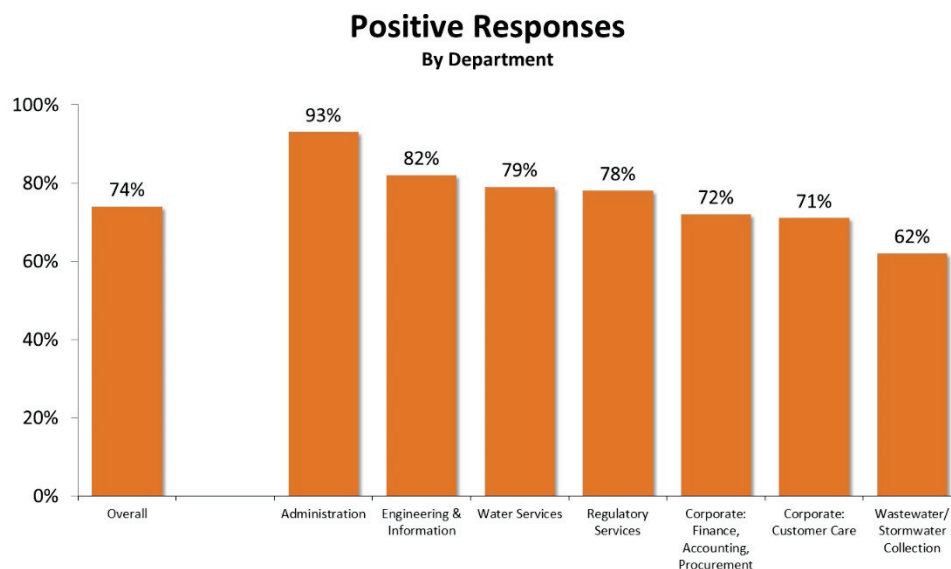
There are five factors that drive employee engagement at Halifax Water. These include the belief that *Halifax Water is interested in the overall well-being of its employees*, that *individual contributions are valued by co-workers*, that *employees understand how they can contribute to the organization meeting its goals*, the belief that *career aspirations can be achieved at Halifax Water*, and that *employees are given a fair opportunity to pursue training associated with their job*. With a coefficient of $R^2 = 77.7\%$, this is a very strong model, indicating 78 percent of variability in the ratings can be accounted for via the model.





Departmental Analysis

Three Halifax Water departments, namely Wastewater/Stormwater Collection Services, Customer Care and Finance, Accounting, and Procurement scored lower on many of the 50 agree/disagree survey statements included in this year's questionnaire. Wastewater/Stormwater Collection and Corporate Services scored lower in the previous year as well, along with Regulatory Services, which this year is essentially on par with the overall results.



Average proportion of positive responses (mostly or completely agree) by department, as percentage. This table includes questions 1-50.

Greatest Concerns

Consistent with 2019 results, *employee salaries*, *job security*, and *quality of leadership* continue to be the key concerns identified by employees in aided recall. One-quarter of employees express their concern this year around *having safe working conditions with little risk of COVID-19*.

Across departments, some variation is observed. Notably, those in Administration place the greatest concern on *staff workloads*, while those in Corporate Services place the greatest concern on *job security*. Concern around *employee salaries* is elevated among employees in the Wastewater/Stormwater Collection Services and Water Services.

Like 2019 results, *employee salaries* and to a lesser extent, *job security*, were more important concerns among unionized employees, whereas non-unionized employees were more likely to select *quality of leadership* as their greatest concern. (Table 56)

Work-Related Topics of Personal Concern										
	2009	2010	2012	2013	2014	2016	2017	2018	2019	2020
Employee salaries	43%	48%	42%	51%	57%	30%	34%	44%	39%	39%
Job security	25%	28%	21%	31%	31%	29%	31%	33%	31%	31%
Quality of leadership	27%	28%	21%	25%	22%	30%	25%	28%	31%	30%
Having safe work conditions with little risk of COVID-19	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	25%
Employee job satisfaction	29%	27%	23%	26%	28%	25%	24%	25%	24%	21%
Training and skill development	30%	28%	26%	22%	27%	22%	22%	21%	26%	20%
Cooperation between departments	n/a	n/a	n/a	14%	15%	19%	20%	19%	20%	19%
Internal communication	27%	24%	19%	23%	14%	23%	18%	18%	15%	18%
Staff workloads	18%	12%	17%	18%	15%	12%	15%	16%	15%	18%
Workplace changes affecting employees	22%	13%	14%	18%	11%	19%	16%	24%	19%	17%
Personal safety in the workplace	22%	21%	21%	21%	21%	28%	24%	20%	21%	14%
Management/staff relations	n/a	28%	28%	17%	22%	28%	27%	20%	20%	14%
Quality of customer service	n/a	7%	10%	8%	12%	9%	9%	8%	8%	10%
Physical working conditions	9%	7%	9%	7%	3%	7%	8%	7%	13%	8%
Productivity measures	6%	6%	8%	8%	6%	10%	9%	5%	7%	8%
Communication regarding Halifax Water's vision, mission and beliefs	3%	2%	1%	3%	2%	4%	3%	2%	2%	1%
Benefits/Pension	n/a	n/a	n/a	n/a	4%	n/a	n/a	n/a	n/a	n/a
Other	10%	4%	6%	6%	4%	2%	4%	5%	4%	1%

Q.56: Of the following work-related topics, in your opinion which three are of the greatest concern to you personally? (n=380)

Gap Analysis

Gap scores are calculated as the percentage of employees who rate a factor as critically important and who do not agree that Halifax Water performs optimally on that factor. Higher gap scores indicate a greater discrepancy between expectation and performance and represent areas in which attention could be focused as a possible priority for workplace improvement.

Gap Analysis Calculation: Example

<i>Have Good Cooperation among Co-workers</i>	<i>Critically Important</i>	<i>Not Critical</i>	<i>Total</i>
Agree	212	90	302
Do not agree	40	38	78
Total	252	128	380

A gap analysis was conducted for Halifax Water employees. As illustrated in the preceding example table, 252 employees express that it is critically important for Halifax Water to *have good cooperation among co-workers*. Of those 252, a total of 40 do not agree that Halifax Water currently has good cooperation among co-workers. Thus, of the total number of employees who returned a survey and answered this question (380), 40 regard that good cooperation is critically important but do not currently experience it, producing a gap score of 11 percent (40/380).

In other words, approximately one in ten employees are of the opinion that having good cooperation among co-workers is critically important as a factor to judge Halifax Water as a place to work, but the organization is currently not meeting their expectations in this regard. This gap has gradually decreased since the last two years, however, remains one of the three largest gap scores in 2020, with the other two being *recognition and reward for achievements* and *respectful treatment*. Happily, gap scores on various metrics have either declined modestly or have remained stable.

Gap Scores

	2009	2010	2012	2013	2014	2016	2017	2018	2019	2020
I am recognized and rewarded for my achievements	17%	18%	16%	16%	17%	13%	12%	13%	15%	11%
Good co-operation among co-workers	n/a	n/a	n/a	n/a	n/a	22%	18%	17%	14%	11%
I am treated in a respectful manner	n/a	n/a	n/a	n/a	n/a	n/a	n/a	15%	12%	11%
<i>I am treated in a respectful manner by my supervisor</i>	13%	14%	12%	11%	13%	14%	11%	n/a	n/a	n/a
<i>I am treated in a respectful manner by my fellow employees</i>	11%	8%	9%	8%	11%	11%	10%	n/a	n/a	n/a
I think the organization values my contributions	14%	16%	14%	13%	15%	15%	11%	11%	14%	9%
I am given regular feedback on my job performance by my supervisor	16%	21%	17%	17%	13%	14%	13%	11%	13%	9%
I am kept well-informed of future Halifax Water plans	n/a	n/a	n/a	n/a	n/a	18%	15%	15%	11%	9%
I am trusted to make the right decisions	9%	12%	11%	10%	12%	14%	11%	15%	10%	9%
Halifax Water satisfies the public's needs	16%	10%	17%	8%	16%	16%	12%	13%	9%	9%
The employees I work with value my contributions	6%	7%	8%	10%	9%	9%	6%	6%	7%	6%

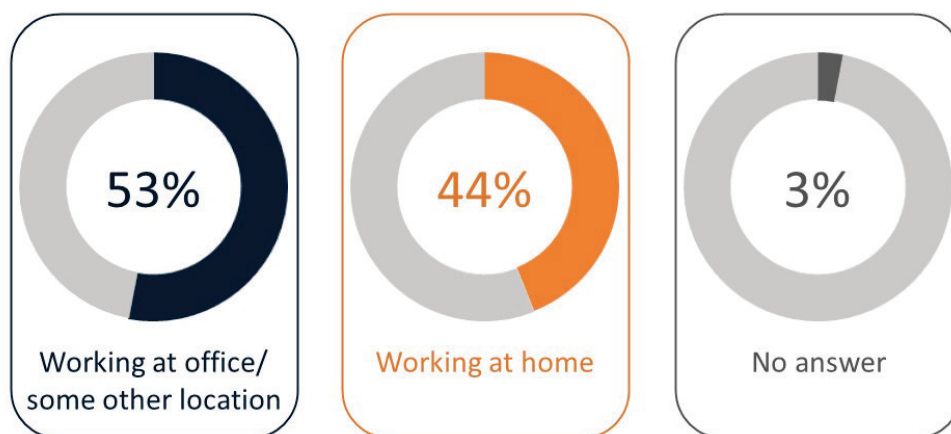
Gaps represent the proportion of respondents who describe a characteristic as 'critically important', but do not 'mostly agree' or 'completely agree'.

COVID-19

A series of new questions were added to the survey questionnaire this year to capture perceptions of employees related to the COVID-19 pandemic on various metrics such as working remotely, organizational support and response, health and safety, balancing work and family life during the pandemic, and job security. Results of these pandemic-related questions are discussed below.

Over one-half of Halifax Water employees worked at the office or some other location during the pandemic, while over four in ten employees worked from home. An employee's primary workplace during the pandemic varied across departments depending on the nature of their work. Employees in Wastewater/Stormwater Collection and Water Services primarily worked at an office or some other location, while employees in other departments primarily worked from home. (Table 60)

Primary Workplace During COVID-19 Pandemic Period



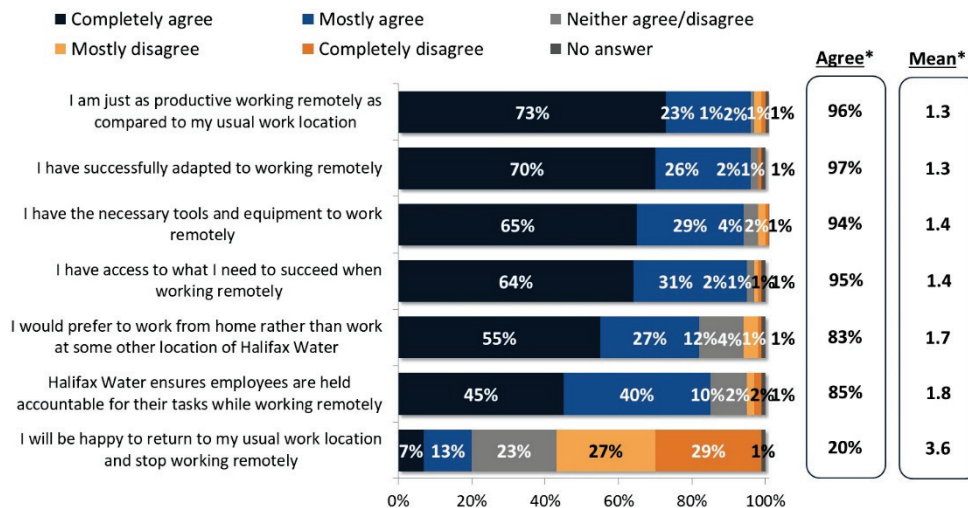
Q.60: **During** the COVID-19 pandemic period, what has been your primary workplace? (n=380)

There is near universal agreement among employees who worked from home during the pandemic on four of the seven statements about working remotely. The survey questions probed in regards to concern adapting to working remotely, productivity, tools and equipment, and accessibility.

Over eight in ten employees assert that they are held accountable while working remotely, and a similar proportion would prefer to work from home rather than some other Halifax Water location. Only two in ten employees would be happy to return to their usual work location and cease working remotely.

Agreement with Statements about Working Remotely During the COVID-19 Pandemic

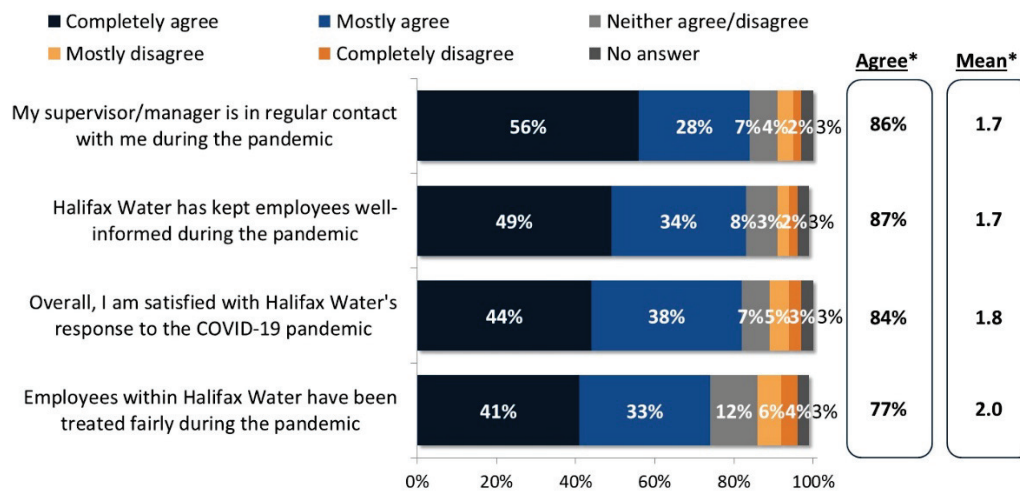
Among Those Who Worked From Home During the Pandemic



Q.62, 64, 67, 73, 74, 77, and 79: [IF 'WORKING FROM HOME' IN Q.60] Please indicate the extent to which you either agree or disagree with the following statements. (n=168) *Responses of 'No answer' are excluded from the calculation of the mean and box scores.

Approximately nine in ten Halifax Water employees agree that the organization has kept them well-informed during the pandemic, and that their supervisor or manager was in regular contact with them during the pandemic. Over eight in ten employees agree that overall, they are satisfied with Halifax Water's response to the COVID-19 pandemic. Also, three in four employees agree that they have been treated fairly during the pandemic, while one in eight employees do not agree in this regard. Employees not working from home are notably less likely to agree with the last three statements about working remotely during the pandemic, than are those working from home.

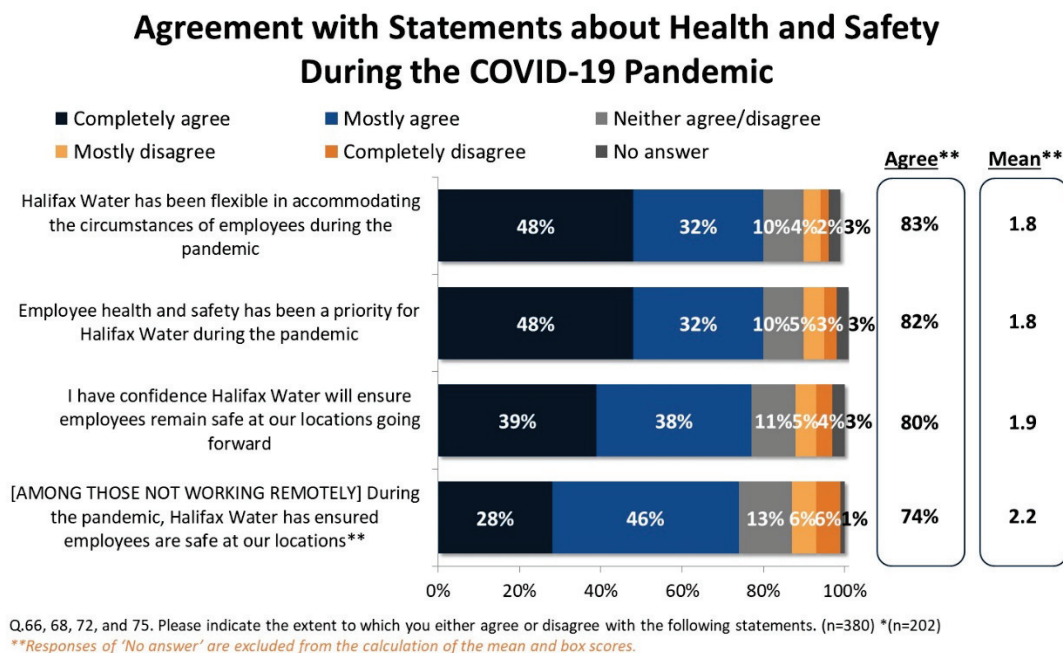
Agreement with Statements about Organization Support and Response During the COVID-19 Pandemic



Q.61, 63, 69, and 76. Please indicate the extent to which you either agree or disagree with the following statements. (n=370) *Responses of 'No answer' are excluded from the calculation of the mean and box scores.

Just over eight in ten employees agree that Halifax Water has been flexible in accommodating the circumstances of employees during the pandemic, and that employee health and safety has been a priority for Halifax Water during this period. As well, eight in ten employees are confident that Halifax Water will ensure employees remain safe at various locations going forward. Among employees who did not work remotely during the pandemic, three in four agree that Halifax Water has ensured their safety at its locations. About one in ten employees neither agreed nor disagreed on any of the four statements about health and safety during the pandemic.

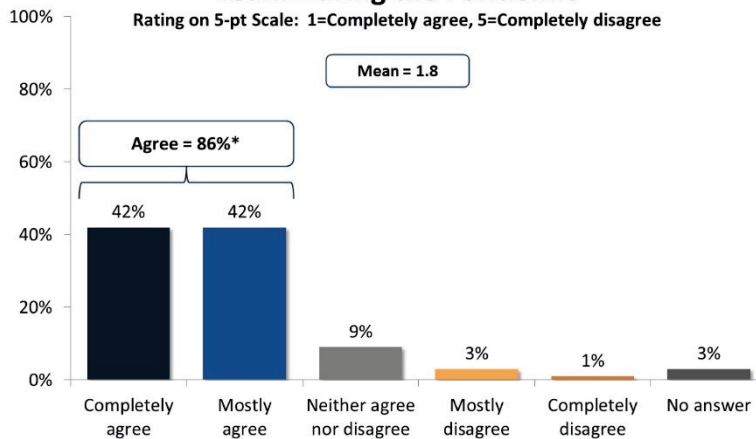
Employees who did not work from home during the pandemic are notably less likely to agree with the first three statements about health and safety during the pandemic, as compared to those who worked from home. (Tables 66, 68, 72 and 75)



There is widespread agreement among Halifax Water employees that they have worked well as a team during the pandemic. One in ten employees neither agree nor disagree in this regard. Agreement levels are highest among employees in Administration and Engineering & Information Services, and lowest among those in Wastewater/Stormwater Collection Services.

As well, employees who worked from home are more likely to agree that Halifax Water employees have worked well as a team during the pandemic, than are those who did not work from home, although agreement levels for both groups are over 80 percent. (Table 70)

Employees of My Organization Have Worked Well as a Team During the Pandemic

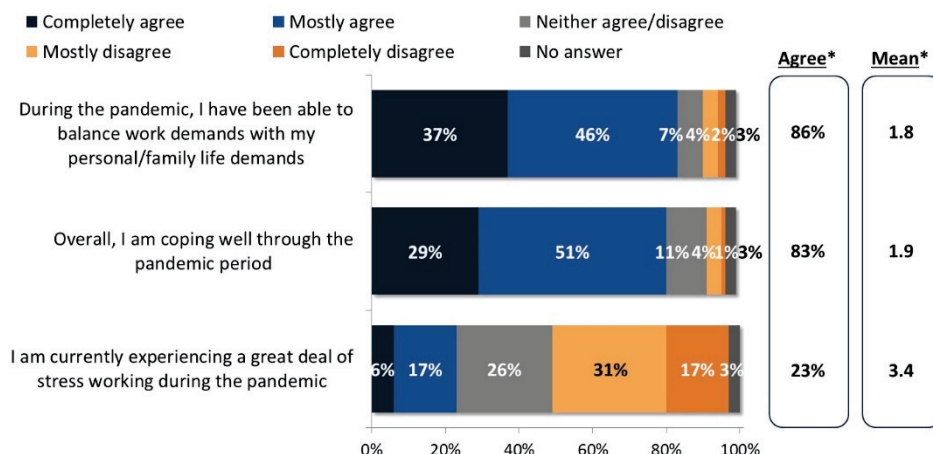


Q.70. Please indicate the extent to which you either agree or disagree with the following statements. (n=380)
 *Responses of 'No answer' are excluded from the calculation of the mean and box scores.

Halifax Water employees positively assess all statements vis-à-vis handling personal matters during the pandemic. Over eight in ten employees agree that they have been able to balance work demands with personal life demands during the pandemic, and that overall they are coping well through the pandemic period. One-quarter of employees agree with experiencing a great deal of stress during the pandemic, while one-half of employees disagree in this regard. The remaining one-quarter neither agree nor disagree with the statement about experiencing a great deal of stress during the pandemic.

Employees working at the office or some other location are twice as likely as those working from home to experience a great deal of work stress during the pandemic. These employees are also less likely than those working from home to have been able to balance work and personal life demands, and are less likely to be coping well through the pandemic period. (Tables 65, 71 and 78)

Agreement with Statements about Personal Matters During the COVID-19 Pandemic



Q.65, 71, and 78. Please indicate the extent to which you either agree or disagree with the following statements. (n=380)
 *Responses of 'No answer' are excluded from the calculation of the mean and box scores.



Comparison with Other Organizations

Relative to the Narrative Research normative database, Halifax Water's position sits at or above the norm for most measures.

To better compare Halifax Water's survey findings with other organizations, the collected data was compared with Narrative Research's database. The following table summarizes the similarities or differences between the two data sets.¹ Differences of greater than three points are noted by the appropriate symbol (e.g., green upward pointing arrows indicate that the Halifax Water result is *higher* than the Narrative Research database result). The information contained in the Narrative Research database derives from a variety of Atlantic Canadian organizations of various sizes operating in the public or the private sector, unionized or non-unionized.

Increasing scores on many of the metrics measured indicate that Halifax Water's position as an employer has strengthened further relative to 2019 results. Of 39 metrics compared, Halifax Water scores are above other Atlantic Canadian organizations on 30 metrics (versus 22 out of 44 metrics in 2019), behind on 2 metrics (versus 5 in 2019), and essentially equal with other organizations on 7 metrics (versus 17 in 2019).

<i>Halifax Water Factor Evaluated</i>	<i>Narrative Research Database Factor</i>	<i>2019 Halifax Water Results (% agree)</i>	<i>2020 Halifax Water Results (% agree)</i>	<i>2020 Narrative Research Database (% agree)</i>	<i>Comparison (Halifax Water vs. Narrative Research Database)</i>
I am provided with the necessary information I need to do my job well (Q1)	I am given the information necessary to do my job well	83	84	75	↑
I have the opportunity to influence decisions that affect my job (Q2)	I have the opportunity to provide input into decisions that affect my job	67	71	49	↑
I am given a fair opportunity to compete for new positions that become available (Q3)	I am given a fair opportunity to compete for new positions that become available	63	64	54	↑
I am kept informed about important changes (Q4)	Kept well-informed about (organization) plans	69	75	49	↑
In general, I look forward to coming to work (Q5)	In general, I look forward to coming to work	75	80	75	↑

¹ Please note for some of the questions the wording of Halifax Water's questions and those found in Narrative Research's database are not identical. However, the essence of the issue evaluated is similar and, therefore, warrants a comparison.



<i>Halifax Water Factor Evaluated</i>	<i>Narrative Research Database Factor</i>	<i>2019 Halifax Water Results (% agree)</i>	<i>2020 Halifax Water Results (% agree)</i>	<i>2020 Narrative Research Database (% agree)</i>	<i>Comparison (Halifax Water vs. Narrative Research Database)</i>
I feel a sense of pride in the accomplishments of the organization (Q7)	I feel a sense of pride in the accomplishments of the organization	71	78	71	↑
I am given a fair opportunity to pursue training associated with my job (Q8)	I am given a fair opportunity to pursue training associated with my job	71	75	58	↑
Overall, I am satisfied with my job (Q9)	Overall, I am satisfied with my job	78	83	78	↑
Halifax Water satisfies the public's needs (Q10)	The company satisfied our consumers' needs	82	86	79	↑
I am held accountable for my performance (Q11)	I am held accountable for my performance	83	81	84	-
I am fairly paid for the work I do (Q12)	I am fairly compensated in terms of wages	69	71	60	↑
My employment is secure at Halifax Water (Q16)	My employment is secure at my organization	81	85	68	↑
I have the necessary supplies and equipment to do my job well (Q17)	I have the necessary supplies and equipment to do my job well	87	86	75	↑
I am recognized and rewarded for my achievements (Q18)	I am recognized for my achievements	52	57	49	↑
There is good co-operation among co-workers (Q20)	Good cooperation among working teams	74	79	71	↑
Have necessary training/skills to do job (Q22)	Have necessary training to do job	87	90	87	-
Halifax Water is interested in the overall well-being of its employees (Q23)	The organization is interested in the overall well-being of its employees	67	71	60	↑
I believe my career aspirations can be achieved at Halifax Water (Q24)	I believe my career aspirations can be achieved at the organization	60	63	56	↑
Workplace safety is a high priority (Q25)	Health and safety is a priority at the company	83	86	78	↑



<i>Halifax Water Factor Evaluated</i>	<i>Narrative Research Database Factor</i>	<i>2019 Halifax Water Results (% agree)</i>	<i>2020 Halifax Water Results (% agree)</i>	<i>2020 Narrative Research Database (% agree)</i>	<i>Comparison (Halifax Water vs. Narrative Research Database)</i>
I am treated in a respectful manner (Q27)	I am treated in a respectful manner	83	86	79	↑
I am trusted to make the right decisions (Q28)	I am trusted to make the right decisions	83	83	83	-
I am given regular feedback on my job performance by my supervisor (Q29)	I am given feedback on my job performance by my director/manager	60	68	57	↑
I trust my manager/supervisor (Q30)	I trust my manager/supervisor	77	78	70	↑
The person to whom I report keeps me well-informed as to what is expected of me (Q32)	Kept well-informed as to what is expected of me	73	77	71	↑
My supervisor encourages my professional development (Q33)	My manager encourages my development	65	70	62	↑
Organization follows up on commitments to staff (Q34)	Organization follows up on commitments to staff	54	62	50	↑
I am given opportunities for career development at Halifax Water (Q35)	Good career opportunities are available	55	61	52	↑
I feel passionate about working at Halifax Water (Q37)	I feel passionate about working for my organization	68	69	67	-
I get a sense of accomplishment from my work (Q38)	I feel a sense of accomplishment from my work	76	81	81	-
I have a daily opportunity to do what I do best (Q41)	I have a daily opportunity to do what I do best	75	79	75	↑
The employees I work with value my contributions (Q42)	I think my work group/department values my contribution	82	82	78	↑
I think the organization values my contributions (Q43)	I think the organization values my contributions	60	65	54	↑
Senior management at Halifax Water are accessible to all staff members (Q44)	Senior leadership is approachable	58	58	63	↓



<i>Halifax Water Factor Evaluated</i>	<i>Narrative Research Database Factor</i>	<i>2019 Halifax Water Results (% agree)</i>	<i>2020 Halifax Water Results (% agree)</i>	<i>2020 Narrative Research Database (% agree)</i>	<i>Comparison (Halifax Water vs. Narrative Research Database)</i>
I can balance work demands with the demands of my personal/family life (Q45)	I can balance my work and home life needs	79	83	75	↑
I understand how I can contribute to Halifax Water meeting its goals (Q46)	I understand how I can contribute to the organization meeting its goals	76	76	77	-
My workplace reflects diverse cultural communities (Q48)	My workplace reflects diverse cultural communities	61	59	67	↓
I am kept well-informed of future Halifax Water plans (Q49)	Kept well-informed about important changes	62	65	54	↑
Employee has a high level of commitment to Halifax Water (Q54)	Employee has a high level of commitment to employer	68	75	72	-
Halifax Water has a high level of commitment to employee (Q55)	Employer has a high level of commitment to employee	34	39	24	↑

Employee Report Card

Organizational Performance Scale

To provide a “single metric” of how well an organization is performing in the eyes of its employees, Narrative Research developed its own proprietary **Organizational Performance Scale** (OPS). For simplicity, organizations are graded in a “report card” format, based on their performance on each of several key *subscales*. As displayed on the next page, each subscale consists of 3-5 questions related to a particular topic or theme. Subscales are subsequently combined to obtain an overall score on the Organizational Performance Scale.

The OPS was developed from a basket of survey questions using a five-point agreement scale (completely agree, mostly agree, neither agree/disagree, mostly disagree, completely disagree), where “1” represents a negative opinion (i.e., completely disagree) and “5” represents a positive opinion (i.e., completely agree). It should be noted that the five-point agreement scales used in this survey are such that “1” represents a positive opinion (i.e., completely agree) and “5” represents a negative opinion (i.e., completely disagree). In calculating the OPS scores, the scales were reversed so that the highest number score (5) corresponded to the most positive opinion (completely agree) and vice-versa. Questions in the OPS were included for a variety of reasons, most notably because they represent actionable, “drill-down” dimensions that consistently appear on the majority of employee opinion surveys conducted by Narrative Research. Subscales were derived thematically, utilizing input from various statistical techniques. Finally, a statistical reliability analysis was conducted to assess the relationship between items included in the subscales.

Each survey question included in the OPS, as well as the subscales and the overall OPS score, are reported as averages, with 5.0 being the maximum score possible (that is, if all employees completely agree). Letter grades are then assigned to the averages based on the following grading scheme:

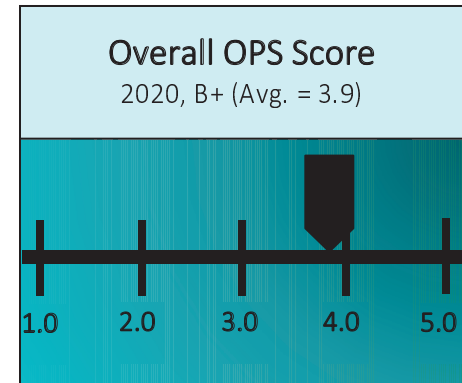
Grade	Average Scale Score
A+	4.4 – 5.0
A	4.2 – 4.3
A-	4.0 – 4.1
B+	3.8 – 3.9
B	3.6 – 3.7
B-	3.4 – 3.5
C+	3.2 – 3.3
C	3.0 – 3.1
C-	2.8 – 2.9
D+	2.6 – 2.7
D	2.4 – 2.5
D-	2.2 – 2.3
F	1.0 – 2.1

Some notes regarding the report card format:

- A scale score of 3.0 (the midpoint of the scale) results in a letter grade of “C.”
- In order to obtain an “A,” employees must *completely* agree with at least some questions; a response of mostly agree to all questions would result in an “A-.”
- If all employees mostly or completely disagree, an “F” would result (a failing grade).

OPS Scores – Halifax Water 2020

The following is a list of OPS scores obtained from the *2020 Halifax Water Employee Opinion Survey*. Letter grades are shown for the overall OPS as well as for the subscales and individual survey questions (average scores are shown in parentheses). The overall OPS score for Halifax Water is **B+**.



Subscale Scores

Employee Commitment: A- (Avg. = 4.1)

- Have a sense of pride in the organization (A-, 4.1)
- Look forward to coming to work (A-, 4.0)
- Would recommend the organization as a good place to work (A, 4.2)
- Overall, I am satisfied with my job (A-, 4.1)
- The organization is headed in the right direction (B+, 3.9)

Personal Development: B+ (Avg. = 3.8)

- Opportunities for career development (B, 3.6)
- Opportunities for training associated with job (A-, 4.0)
- Opportunities to compete for new positions (B, 3.7)

Communication: B+ (Avg. = 3.9)

- Provided with the necessary information to do job well (A-, 4.0)
- Know what is expected in terms of job performance (A-, 4.0)
- Kept informed of important changes (B+, 3.9)

Work Environment: A- (Avg. = 4.0)

- Able to complete the work assigned during regular work hours (B+, 3.8)
- Able to provide prompt customer service (B+, 3.9)
- Job security (A, 4.2)
- Have necessary supplies and equipment to do job (A, 4.2)

Employee Value: B+ (Avg. = 3.8)

- Recognized and rewarded for achievements (B-, 3.5)
- Valued by the organization (B, 3.7)
- Treated in a respectful manner (A, 4.2)
- Trusted to make the right decisions (A-, 4.1)
- Fairly compensated for the work done (B, 3.7)



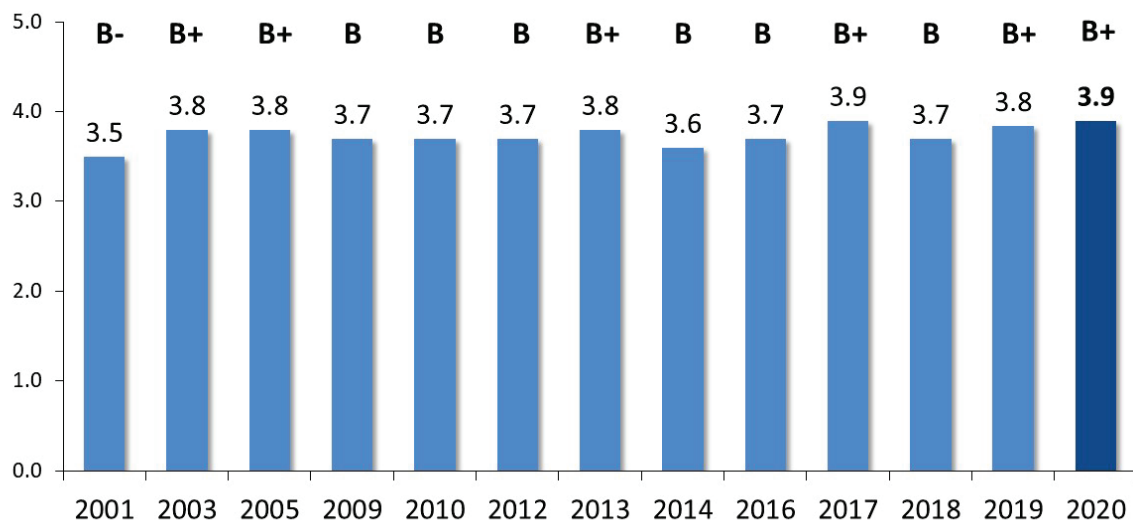
Teamwork and Cooperation: A- (Avg. = 4.0)

- Given regular feedback by supervisor (B, 3.7)
- Good cooperation among co-workers (B+, 3.9)
- Treated fairly within my department (A-, 4.1)
- Valued by my work group (A-, 4.0)

OPS – Detailed Analysis

Halifax Water's Organizational Performance Scale (OPS) score is stable since last year, overall. However, subscale scores for employee commitment, work environment, and teamwork and co-operation have improved from **B+** to **A-**, while that for personal development has improved from **B** to **B+**.

Improvement across several variables have attributed to advancing the overall OPS score from 3.8 in 2018 to 3.9 in 2020. Indeed, the organization continues to be on track towards an A- rating, which has been an organizational target as measured through its Corporate Balanced Scorecard. The 3.9 score matches the highest yet recorded by Halifax Water.



OPS Scores, By Department

All employees positively evaluate the organizational performance of their respective departments at Halifax Water, with no department receiving an OPS score below the letter grade B. Administration has the highest overall score of A+ (4.5), while Wastewater/Stormwater Collection and Customer Care each share the lowest score of B (3.7).



<i>Departments</i>	<i>OPS Score</i>
Administration	A+, 4.5
Regulatory Services	A-, 4.0
Engineering and Information	A-, 4.1
Wastewater/Stormwater Collection	B, 3.7
Water Services	A-, 4.0
Corporate: Customer Care	B, 3.7
Corporate: Finance, Accounting, Procurement	B+, 3.8

Study Methodology

Survey Administration

The data for this study were collected exclusively through online questionnaires. Prior to the distribution of the generic online survey link, employees were informed about the study and its objectives, and were asked for their cooperation. All full-time staff received an email survey invitation with a generic link to complete the survey online from November 16-30, 2020. Survey invitation emails were distributed to 537 employees, and the actual number of surveys returned to Narrative Research was 380, resulting in an overall response rate of 71 percent.

Based on Narrative Research's experience in employee opinion research, this participation rate is average for the region and is on par with the high response rate obtained in 2019 (74% in 2019, 67% in 2018, 62% in 2017, 55% in 2016, 56% in 2014, 61% in 2013, 55% in 2012, and well above the 48% of 2010).

Questionnaire Design

The questionnaire utilized in this study was designed by Narrative Research, in consultation with representation from Halifax Water staff members. The questionnaire is similar to previous years, with a small number of minor adjustments to meet current information needs, as well as a series of new questions related to the current COVID-19 pandemic.

Much of the questionnaire was based on questions where norms were available, allowing data collected at Halifax Water to be compared with survey responses collected by Narrative Research at other workplaces in Atlantic Canada.

2020 Halifax Water Employee Survey

Key Highlights

ATTACHMENT

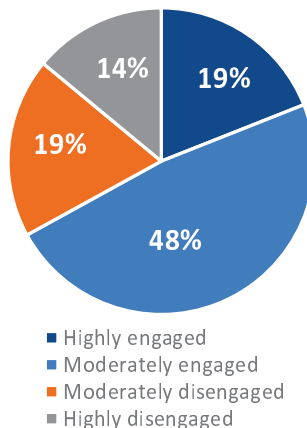
Methodology: 380 online surveys
Data Collection: November 16-30, 2020

Report Card



Employee Commitment	4.1	A-
Personal Development	3.8	B+
Communication	3.9	B+
Work Environment	4.0	A-
Employee Value	3.8	B+
Teamwork & Cooperation	4.0	A-
Overall	3.9	B+

Employee Profile



Employee Engagement

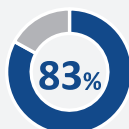
	2020	2019	DB
Would recommend organization as good place to work	80	76	71
Motivated to do a good job	78	77	78
Look forward to coming to work	76	74	73
Sense of pride in accomplishments of Halifax Water	76	73	72
Passionate about working for Halifax Water	72	70	71
Overall Employee Engagement	77	74	73

Commitment & Overall Satisfaction

75%
High level of commitment to Halifax Water
(vs. 68% in 2019 and 72% DB)

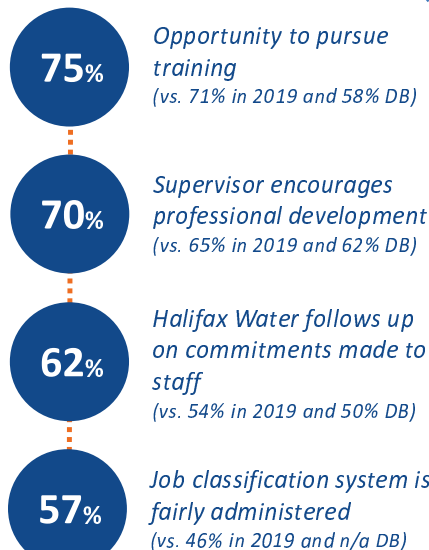


39%
Halifax Water has high level of commitment to employees
(vs. 34% in 2019 and 24% DB)



Satisfied with their job
(vs. 78% in 2019 and 78% DB)

Personal Development



85%
Employment is secure
(vs. 81% in 2019 and 68% DB)

Held accountable for performance
(vs. 83% in 2019 and 84% DB)



Employee Value

DB	2019	2020	
79%	83%	86%	Treated in a respectful manner
n/a	69%	74%	Satisfied with benefits
60%	69%	71%	Fairly paid for work
49%	52%	57%	Recognized for achievements



Teamwork & Cooperation

68%
Given **regular feedback** on job performance
(vs. 60% in 2019 and 57% DB)

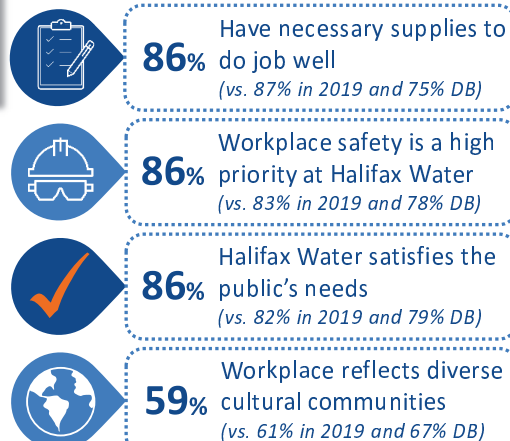


Communication

75%
Kept informed about important changes
(vs. 69% in 2019 and 49% DB)



Work Environment



72%

Think **Halifax Water is headed in the right strategic direction**
(vs. 65% in 2019 and n/a DB)

58%

Senior management at Halifax Water are accessible to all staff members
(vs. 58% in 2019 and 63% DB)



TO: Craig MacMullin, MBA, CPA, CGA, Chair, and Members of the
Halifax Regional Water Commission Board

SUBMITTED BY: Louis de Montbrun Digitally signed by Louis de Montbrun
Date: 2021.01.22
10:26:54 -04'00'
Louis de Montbrun, CPA, CA, Director, Corporate Services/CFO

APPROVED: Cathie O'Toole Digitally signed by Cathie O'Toole
Date: 2021.01.22
10:31:43 -04'00'
Cathie O'Toole, MBA, FCPA, FCGA, ICD.D, General Manager

DATE: January 21, 2021

SUBJECT: Meter Accuracy and Customer Complaints

INFORMATION REPORT

ORIGIN

Inquiries regarding meter accuracy and customer complaints

BACKGROUND

- Halifax Water has been using positive displacement meters since the late 1940's.
- Positive displacement meters are standard in the water industry, throughout the world.
- Halifax Water has been using radio frequency (RF) technology to collect meter readings since 2006.
- Halifax Water has 86,025 metered customers. The number of complaints that escalate is very low, approximately one to five customers per year.
- The number of consumption-related complaints should be further reduced by AMI technology and the ability of customers to monitor their consumption.

DISCUSSION**Does Halifax Water have “smart” meters?**

Halifax Water does not have smart meters but does employ RF technology rather than manual meter reading. Halifax Water uses traditional mechanical positive displacement meters. Rather than a staff person manually reading the water meter once every three months, there is a radio network to transmit the readings up to 24 times per day from each meter. The increased frequency of readings provides an opportunity for our customers to monitor their consumption in “real time,” giving them the information necessary to identify and mitigate high consumption. AMI meters have improved our customer service.

Positive displacement meters measure the water as it flows through them. These meters operate more like a turnstile than for example a weigh scale that needs to be calibrated; a turnstile will not and cannot count or measure anything if there is nothing going through it.

Halifax Water meters are totalizing meters, which means there is a cumulative record of what they did – like a car odometer. The benefit of this is two-fold. First, if a reading is not reported as scheduled, consumption data is included and recorded at the next reading, and secondly the total amount of water flowing through the meter can be verified by manually reading the physical meter. Halifax Water has a quality assurance process to review meter readings, and staff can be dispatched to do a manual check read at the meter.

Customer complaints regarding meter accuracy

If a meter needs to be tested, Halifax Water has setup a test bench that allows us to measure how accurately a specific meter measures a pre-defined quantity of water. Once the test is completed, section 50 of the Halifax Water Regulations (attached) sets out the regulatory provisions that govern Halifax Water’s meter testing and provides a mechanism to help resolve customer complaints related to meter accuracy.

If a meter has been removed from service/replaced before it can be tested, any dispute between Halifax Water and the customer will be resolved based on the best information available in the absence of the meter, including historic metered consumption and occupancy and use of the premises.

Positive displacement meters are highly accurate. This is confirmed by Halifax Water’s experience with these meters. There are numerous scientific, industry and academic studies readily available that demonstrate and confirm the accuracy of positive displacement meters. Investigation of customer complaints regarding meter accuracy of positive displacement meters generally find that the meters are accurate. Meter accuracy can erode over time as seals and mechanical parts weaken. However, inaccuracies usually result in under-registration and under-billing of the customer.

Halifax Water has experienced only two occasions over the last ten years where a meter related error resulted in a customer being over-billed. Neither occasion related to the mechanical accuracy of the meter. One related to the calibration of the register, and the other involved a duplex where the water meter inside the house was connected to the register from the other duplex. When it is determined a customer has been over-billed as a result of a meter inaccuracy, they are refunded.

The current customer complaint resolution processes results in very few customers filing a formal complaint regarding meter accuracy or high consumption with the NSUARB or appealing a Dispute Resolution Officer decision on these topics to the NSUARB. It is believed there have only been four such formal complaints in the past twenty years¹ resulting in the NSUARB opening a matter and releasing a decision. In any year, there would also be a few telephone or email complaints to the NSUARB which would be re-directed to Halifax Water for resolution, which do not result in a formal complaint investigation process.

How does Halifax Water ensure meter accuracy?

Halifax Water follows industry best practices from the American Water Works Association (AWWA) Manual M6 Water Meters – Selection, Installation, Testing, and Maintenance. Neptune Technology Group manufactures the majority of meters being used by Halifax Water, their meters meet or exceed the AWWA standard. Halifax Water additionally publishes specifications of what is permitted to be installed in Halifax Water's Water Meter and Backflow Prevention Device Design & Installation Manual.

<https://www.halifaxwater.ca/sites/default/files/2019-01/2018-Water-Meter-%26amp%3B-BFP-Manual.pdf>

Meter installations completed by third parties are inspected by Halifax Water prior to beginning water service. Most new residential meter installations are done by Halifax Water staff. Water service is not connected until a satisfactory meter is installed. The type of meter, correct sizing of the meter, and correct installation are all necessary to ensure accuracy of the meter reading.

What role do Industry Canada and Measurement Canada play?

Measurement Canada sets the standards for water meters, and for registers that connect to water meters. Halifax Water's meter suppliers must have a testing program in place to certify the meters are tested and are accurate before they are shipped to the utility and put into service.

Pursuant to section 3 of the Weights and Measures Regulations however, water meters are exempt from what are the examination/inspection sections of the Weights and Measures

¹ M00008, M00193, M04559, M09748

Act. The commodity cost of water is much lower than other substances measured using meters (the current charge for 100 litres of water is less than \$0.10 as compared to \$1.10 for only one litre of gasoline). The additional cost and regulatory burden of a periodic testing or re-certification program for water meters would exceed the benefit, given the high accuracy of the meters, low volume of complaints, and additional expense it would add to customer's bills.

Industry Canada sets the standards for the RF technology that is used to collect and transmit water meter readings. Halifax Water's equipment is fully compliant with Industry Canada standards.

If the meters are accurate, what can cause high consumption?

The most common causes of high consumption are:

- A leaking toilet or a toilet that continues to run after being flushed.
- A dripping faucet, which can waste 90 liters of water a day or more.
- Filling or topping off a swimming pool or hot tub.
- Watering the lawn, new grass, or trees; also check for an open hose bib.
- Kids home for summer vacations or school holidays; guests.
- Water-cooled air conditioners.
- A broken water pipe or obvious leak. Water softener problems that cause the water softener to cycle continuously.
- Reverse osmosis or other water filtration system- continuous running or small drips.
- P traps that have a periodic flushing feature to prevent odour that run continuously or have small drips.
- Running the water to avoid freezing water pipes during cold weather.
- Theft of water where someone accesses an external fixture to steal water.

What more can Halifax Water do to work with customers to prevent high consumption?

Halifax Water has just completed a project to install AMI meters and has implemented a new Customer Portal. The \$25 million Customer Connect (AMI) project enables the utility to more proactively monitor consumption to identify high consumption, leaks, tampering and theft, and it gives customers the ability to monitor and manage their consumption independently.

ITEM # 8-I

HRWC Board
January 28, 2021

The on-line Customer Portal was launched in November 2020, and customers who choose to enroll can now monitor their consumption, bills, and receive notifications and alerts. Halifax Water is promoting the customer portal and informing customers about the benefits, including receiving customized water saving tips to help manage their consumption. Halifax Water is also in the process of implementing a business process for leaks and high consumptions for non-portal customers.

Customers can register for Customer Connect with ease by going to the Halifax Water website: www.halifaxwater.ca, with a copy of their most recent bill.

Report Prepared by:



Digitally signed by Shiju
Mathew
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Shiju Mathew, GISP, BSc., MBA, Dip. Cartography
Manager, Metering and Billing

Attachments

Excerpt from Halifax Water Regulations – Section 50

Meter Testing

- 50.(1) Subject to subsection (2), and in respect of meter sizes 15mm to 50mm, upon receiving a request from a Customer to have such Customer's meter tested the Commission may charge the sum of \$100.00 to defray in part the cost of conducting the test.
- (2) If the test referred to in subsection (1) indicates that:
- (a) for positive disc type displacement meters the meter is over-registering by more than 1.5 %, or
 - (b) for turbine or compound meters the meter is over-registering by more than 3%,
- the sum charged to a Customer under subsection (1) shall be refunded to such Customer and the bill for Service rendered to that Customer shall be adjusted accordingly, provided that no volumetric adjustment shall be made for a period beyond two years prior to such test and one refund shall be made only to the Customer who, based on such test results, overpaid for Service.
- (3) For meters of 75 mm and larger which require on-site testing, the Commission shall levy a fee to cover the expenses in contracting a third party to conduct testing.
- (4) The amount referred to in subsection (3) shall be billed to the Customer if the testing conducted confirms to the satisfaction of the Commission that the meter was providing accurate readings prior to the Customer's request that the meter be tested.
- (5) If a meter has been removed from service due to its replacement any dispute between the Commission and the Customer will be resolved based on the best information available in the absence of the meter, including historic metered consumption and occupancy and use of the premises in respect of which such Service is provided.
-