

June 6, 2022

Colleen Rollings, P.Eng., PMP., Chair
Halifax Water
Halifax, NS

The regular meeting of the Halifax Water Board will be held virtually on Thursday, June 22, 2023, beginning at 9:00 a.m. Visit www.halifaxwater.ca to register to attend the public portion of the meeting.

AGENDA

In Camera Reports

- 1C Approval of Minutes of the In-Camera Meeting held on Thursday, March 23, 2023, and the special meeting of May 23, 2023

***Motion:** That the Halifax Water Board approve the In-Camera minutes of March 23, 2023, and the special meeting of May 23, 2023..*

- 2C Business Arising from Minutes
a)
3C Legal Matter
4C Security Matter
5C Governance Matter

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, March 23, 2023 (2 minutes)

Motion: That the Halifax Water Board approve the minutes of the March 23, 2023, Regular meeting.

3. Business arising from minutes (2 minutes)

a) Appointment of General Manager

Motion: That the Halifax Water Board ratify the appointment of Tareq Al-Zabet as General Manager of Halifax Water effective July 24, 2023.

Financial

4.1 Audited Financial Statements for the year ended March 31, 2023 (20 minutes)

Motion: That the Halifax Water Board approve the audited financial statements for the Plan for the year ended March 30, 2023.

4.2 Audited Pension Statements for the year ended December 31, 2022 (20 minutes)

Motion: That the Halifax Water Board approve the audited financial statements of the HRWC Employees' Pension Plan (the Plan) for the year ended December 31, 2022.

4.3 Capital Results for the year ended March 31, 2023 (10 minutes)

Capital approvals

5.1 Autoport Wastewater Pumping Station Funding Approval (10 minutes)

Motion: That the Halifax Water Board approve the Autoport Pump Station Replacement project for a total project cost of \$8.9 million.

5.2 Dartmouth Wastewater Treatment Facility Coarse Screenshot Replacement Funding Approval (10)

Motion: That the Halifax Water Board approve the additional funding request of \$795,000 for the Dartmouth Wastewater Treatment Facility Coarse Screen Replacement Project for a total estimated cost of \$1,295,000.

5.3 Port Wallace Transmission Main Funding Approval (10 minutes)

Motion: That the Halifax Water Board approve approve funding for the Port Wallace Transmission Main Highway 118 Crossing – Shubie Park to Dartmouth Crossing project at an estimated cost of \$10,390,000.

Other Business

6. Corporate Balanced Scorecard – 2023/24 Program and Year-End Results (25 minutes)

Motion: That the Halifax Water Board approve approve the Corporate Balanced Scorecard targets for the 2023/24 fiscal year, including the organizational award program which is tied to the outcomes of the Corporate Balanced Scorecard organizational indicators as detailed in this report.

7. Diversity, Equity and Inclusion Policy (10 min)

Motion: That the Halifax Water Board approve approve the Diversity, Equity and Inclusion Policy attached to the Board report dated June 16, 2023.

8. CEO Climate Action Charter (5 minutes)

Motion: That the Halifax Water Board approve Halifax Water being a signatory to the Halifax Partnership – CEO Climate Action Charter.

Nova Scotia Utility and Review Board– Information Reports

The items in this section are the reports ordered to be filed by Halifax Water with the Nova Scotia Utility and Review Board by June 30, 2023. These reports are being provided for information purposes.

9. Cost Containment Report
10. Lead Service Line Renewal Program
11. Stormwater Credit Program
12. RDC Stakeholder Engagement
13. RDC Financial Status Report
14. Capital Cost Contribution Financial Status Report for the Year Ended March 31, 2023

Information Reports

- 1-I Operational Performance Information Report
- 2-I Halifax Regional Water Commission Employees' Pension Plan Financial Report, First Quarter, 2023
- 3-I HRM Master Trust Investment Performance, Fourth Quarter 2023
- 4-I HRM Master Trust Investment Performance, First Quarter 2023
- 5-I 2023/2024 Communications Plan and Approach
- 6-I Quarterly Remittance Certification
- 7-I Institutional Capacity Report

Original Signed By:

Heidi Schedler, K.C.
Secretary

Halifax Water Board Meeting Minutes

Date: March 23, 2023

Meeting Time: 10:34 a.m.

Attendees:

Commissioner Colleen Rollings, Chair

Commissioner Cathy Deagle-Gammon, Vice Chair

Commissioner Denise Schofield

Commissioner Kostia Zaharov

Commissioner Mimi Kolomytsev

Commissioner Patty Cuttell

Commissioner Becky Kent

Commissioner Pamela Lovelace

Regrets:

Staff:

Louis de Montbrun, Acting General Manager/CEO

Alicia Scallion, Acting Director, Corporate Services/CFO

Heidi Schedler, KC, Director of Governance & HR, Corporate Secretary

Reid Campbell, Director, Engineering & Technology Services

Kenda MacKenzie, Director, Regulatory Services

Jeff Myrick, Manager of Communications & Public Affairs

Jake Fulton

Amanda Jodrey – Administrative Assistant, Governance & HR

Lorna Skinner, Administrative Coordinator, General Manager's Office

Sanjeev Tagra

Kevin Gray

Agenda Items

1.a) RATIFICATION OF IN CAMERA MOTIONS

Discussion Notes	MOVED BY Commissioner Kolomytsev, seconded by Commissioner Zaharov that the Halifax Regional Water Commission Board ratify the In-Camera motions.
Decision	MOTION PUT AND PASSED.

1.b) APPROVAL OF THE ORDER OF BUSINESS AND APPROVAL OF ADDITIONS AND DELETIONS

Discussion Notes	MOVED BY Commissioner Cathy Deagle-Gammon, seconded by Commissioner Kent, that the Halifax Regional Water Commission Board approve the order of business and approve additions and deletions.
Decision	MOTION PUT AND PASSED.

2. APPROVAL OF MINUTES – January 26, 2023

Discussion Notes	MOVED BY Commissioner Zaharov, seconded by Commissioner Kent that the Halifax Regional Water Commission Board approve the minutes of January 26, 2023.
Decision	MOTION PUT AND PASSED.

3. BUSINESS ARISING FROM THE MINUTES

Discussion Notes	3.a) None
Decision	N/A

4. SAFETY MOMENT

Discussion Notes	Kenda MacKenzie gave an overview of Halifax Water's Safety Policy and Program.
Decision	N/A

4.1 OPERATING RESULTS FOR THE ELEVEN MONTHS ENDED FEBRUARY 28, 2023

Discussion Notes	An information report dated March 14, 2023, was submitted. Alicia Scallion gave an update to the operating results for the eleven months ended February 28, 2023.
Decision	N/A

4.2 2023 SPRING DEBENTURE	
Discussion Notes	<p>A report dated March 10, 2023, was submitted. Alicia Scallion gave an overview of the 2023 Spring Debenture.</p> <p>MOVED BY Commissioner Kolomytsev, seconded by Commissioner Cathy Deagle-Gammon, that the Halifax Regional Water Commission Board approve the refinancing of \$13,756,130 with a ten-year amortization term and financing over ten years, with an all-inclusive rate not to exceed 5.5%.</p>
Decision	MOTION PUT AND PASSED.

5.1 CAPITAL EXPENDITURES FOR THE ELEVEN MONTHS ENDED FEBRUARY 28, 2023	
Discussion Notes	<p>An information report dated January 18, 2023, was submitted. Alicia Scallion reviewed the Capital Expenditures for the eleven months ended February 28, 2023.</p>
Decision	N/A

5.2. JD KLINE WSP PRETREATMENT/CLARIFICATION PROJECT	
Discussion Notes	<p>A report dated March 10, 2023, was submitted. Reid Campbell and Sanjeev Tagra gave an overview of the JD Kline WSP Project.</p> <p>MOVED BY Commissioner Lovelace, seconded by Commissioner Kent that the Halifax Regional Water Commission Board approve funding for the Water Supply Enhancement Program – JDK800.10 – Pretreatment and Clarification – Detailed Design & Early Works project at an estimated cost of \$7,300,000.</p>
Decision	MOTION PUT AND PASSED.

Action Items	Person Responsible	Deadline
Add Stormwater Management and Watershed Management to the Agenda of the Environment, Health and Safety Subcommittee as a standing item.	Lorna Skinner	Immediately
For multi-phase, multi-year capital projects, submit to the Board a schedule of key milestones with associated dollar figures.	Reid Campbell	Going Forward

6.1 CORPORATE BALANCED SCORECARD – 2023/24 PROGRAM	
Discussion Notes	<p>A report dated March 17, 2023, was submitted.</p> <p>Louis de Montbrun gave a presentation on the Corporate Balanced Scorecard – 2023/24 program.</p> <p>MOVED by Commissioner Zaharov, seconded by Commissioner Deagle-Gammon that the Motion to approve the Corporate Balanced Scorecard targets for the 2023/24 fiscal year be deferred to the June 22, 2023, meeting of the HRWC Board.</p>
Decision	MOTION PUT AND PASSED.

Action Items	Person Responsible	Deadline
Investigate adding a CBS measure for cyber security training for employees, possibly incorporating phishing campaign results.	Louis de Montbrun	June 22, 2023

6.2 REGIONAL DEVELOPMENT CHARGE - TIMING OF COLLECTION

Discussion Notes	A report dated March 17, 2023, was submitted. MOVED BY Commissioner Kent, seconded by Commissioner Cuttell that Item 6.2 – Regional Development Charge – Timing of Collection be deferred from the current meeting to an electronic vote to be administered by Halifax Water staff.
Decision	MOTION PUT AND PASSED.

6.3 REGIONAL DEVELOPMENT CHARGE – MERCHANT FEES

Discussion Notes	A report dated March 17, 2023, was submitted. MOVED BY Commissioner Kent, seconded by Commissioner Cuttell that Item 6.3 – Regional Development Charge – Merchant Fees be deferred from the current meeting to an electronic vote to be administered by Halifax Water staff.
Decision	MOTION PUT AND PASSED.

6.4 STORMWATER ACCOUNT SET-UP CHARGE

Discussion Notes	A report dated March 15, 2023, was submitted. MOVED BY Commissioner Deagle-Gammon, seconded by Commissioner Lovelace that the Halifax Regional Water Commission Board: <ol style="list-style-type: none"> 1. Approve waiver of the \$25.00 fee for the creation of new stormwater accounts, as required by section 9 of the Halifax Water Regulations, applicable to new accounts created in areas 1 and 4, as per Board report Item #4C-I dated March 25, 2021, and 2. Direct Halifax Water staff to make an application to the Nova Scotia Utility and Review Board requesting the necessary approval.
Decision	MOTION PUT AND PASSED.

Carry-forward action items:


Action Items	Responsible	Original Deadline	Current status
Staff to create a plan for further community engagement/education regarding stormwater billing.	Jeff Myrick	ASAP	Ongoing

Next Meeting Date: June 22, 2023

Minutes taken by:
Lorna Skinner, Administrative Coordinator
General Manager's Office

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: 
Alicia Scallion, CPA, CA, Acting Director, Corporate Services/CFO

APPROVED: 
Louis de Montbrun (Jun 16, 2023 15:35 ADT)
Louis de Montbrun, CPA, CA, Acting General Manager/CEO

DATE: June 16, 2023

SUBJECT: Financial Statements for the year ended March 31, 2023

ORIGIN

Operational and Regulatory requirement.

RECOMMENDATION

It is recommended the Halifax Regional Water Commission Board approve the financial statements of the Halifax Regional Water Commission for the year ended March 31, 2023.

BACKGROUND

At the June 8, 2023 meeting of the Halifax Water Audit and Finance Committee, the attached report was reviewed and the Committee approved a motion to recommend the Halifax Water Board approve the financial statements of the Halifax Regional Water Commission for the year ended March 31, 2023.

DISCUSSION

At the time of the meeting of the Audit and Finance Committee there were several outstanding items the auditors were awaiting and an update on them is below:

1. Halifax Regional Municipality due to/from confirmation.
 - a. The receipt of this resulted in an additional accrual for two cost sharing invoices related to work done within the Cogswell redevelopment area of approximately \$0.7 million. The accrual increased both capital work in process and accrued

liabilities. There has been no change to comprehensive earnings for the year as a result of this adjustment.

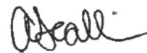
2. Receipt of actuary letter responses and final procedures over employee retirement benefits.
 - a. This has been received and there are no issues to note.
3. Receipt of inventory price testing support.
 - a. This has been received and there are no issues to note.
4. Receipt of legal inquiry responses.
 - a. These have been received and there are no issues to note.
5. Receipt of final updated financial statements.
 - a. These have been sent and reflect the adjustment as noted under item 1.

Attached are the revised draft financial statements of the Halifax Regional Water Commission for the year ended March 31, 2023.

ATTACHMENTS

1. Report to the Halifax Water Audit and Finance Committee re. financial statements of the Halifax Regional Water Commission for the year ended March 31, 2023
2. Draft financial statements of the Halifax Regional Water Commission for the year ended March 31, 2023
3. Grant Thornton LLP Audit Findings Report to Audit and Finance Committee

Report prepared by:



Alicia Scallion, CPA, CA
Acting Director, Corporate Services/CFO

TO: Chair and Members of the Halifax Regional Water Commission Audit and Finance Committee

SUBMITTED BY:

Alicia Scallion, CPA, CA
Acting Director, Corporate Services/CFO

APPROVED:

Louis de Montbrun, CPA, CA
Acting General Manager/CEO

DATE: June 3, 2023

SUBJECT: Financial Statements for the year ended March 31, 2023

ORIGIN

Operational and Regulatory requirement.

RECOMMENDATION

It is recommended the Audit and Finance Committee recommend the Halifax Regional Water Commission Board approve the financial statements of the Halifax Regional Water Commission for the year ended March 31, 2023.

BACKGROUND

Halifax Regional Water Commission (Halifax Water) is required to submit audited financial statements, approved by the Halifax Water Board, to the Halifax Regional Municipality (HALIFAX) by June 30, 2023, and the Nova Scotia Utility and Review Board (NSUARB) within 180 days of the fiscal year end.

DISCUSSION

Attached are the financial statements for Halifax Water for the year ended March 31, 2023, with comparative figures for March 31, 2022. The auditor has indicated that they are prepared to issue an unqualified Auditor's Report.

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

them based on the NSUARB Water Utility Accounting and Reporting Handbook (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.

The Schedules to the financial statements are prepared in accordance with the NSUARB Handbook.

Statement of Financial Position – Page 3 of financial statements (IFRS)

Key indicators and balances from the Statement of Financial Position are provided in the following tables.

Table 1: Assets

March 31 (in thousands)	Notes	2023	2022	From Prior Year	
				\$ Change	% Change
Assets					
Current					
Cash and cash equivalents	A	\$ 44,596	\$ 65,586	\$ (20,990)	(32.0%)
Receivables					
Customer charges and contractual	B	17,824	15,900	1,924	12.1%
Unbilled service revenues	C	19,265	18,838	427	2.3%
Halifax Regional Municipality	D	11,287	851	10,436	1226.3%
Inventory	E	3,517	2,042	1,475	72.2%
Prepays	F	1,282	2,408	(1,126)	(46.8%)
		97,771	105,625	(7,854)	(7.4%)
Intangible assets	H	22,807	20,805	2,002	9.6%
Capital work in progress	G	78,763	51,013	27,750	54.4%
Utility plant in service	H	1,302,514	1,277,393	25,121	2.0%
Total assets		1,501,855	1,454,836	47,019	3.2%
Regulatory deferral account		2,236	2,428	(192)	(7.9%)
Total assets and regulatory deferral account		\$ 1,504,091	\$ 1,457,264	\$ 46,827	3.2%

Notes related to Table 1:

- A) *Cash and cash equivalents* have decreased \$21.0 million from the prior year due to increases in the payments related to an increased capital budget as seen in the statement of cash flows on page 6 of the financial statements. The total balance of the Regional Development Charge (RDC) reserves are \$93.3 million.
- B) *Customer charges and contractual receivables* have increased \$1.9 million from the prior year. The change in receivables is driven by the timing of billing cycles, higher service rates due to rate increases effective December 1, 2022, and a receivable for stormwater right of way charges for customers in expanded service area.

Customer charges and contractual				
	2022/23	2021/22		
	'000	'000	\$ Change	% Change
Trade receivables	\$ 18,246	\$ 15,954	\$ 2,292	14.4%
Other receivables	2,630	3,177	(547)	(17.2%)
Allowance for doubtful accounts	(3,052)	(3,231)	179	5.5%
	\$ 17,824	\$ 15,900	\$ 1,924	12.1%

Aging of Trade Receivables (in thousands)					
	Current	31 to 60	61 to 120	120+	Grand Total
2022/23	\$ 9,921	\$ 2,696	\$ 667	\$ 4,962	\$ 18,246
2021/22	\$ 7,972	\$ 2,489	\$ 679	\$ 4,814	\$ 15,954
\$ Change	\$ 1,949	\$ 207	\$ (12)	\$ 148	\$ 2,292
% Change	24.4%	8.3%	(1.8%)	3.1%	14.4%

- C) *Unbilled service revenues* have increased \$0.4 million due to the timing of billing cycles and the increases in rates for services.
- D) *Halifax Regional Municipality receivable* has increased from the prior year by \$10.4 million. The increase is primarily related to cost sharing and fire protection invoices for capital projects of \$4.2 million. The increase in RDC is related to development activity within HALIFAX. With RDC rates scheduled to increase on April 1 by CPI, some developers chose to submit applications and pay the RDC charges before the increase. These payments were collected on behalf of Halifax Water and the cash received in April from HALIFAX.

HRM Receivables and Payables				
	2022/23	2021/22		
	'000	'000	\$ Change	% Change
Receivables	\$ 5,097	\$ 402	\$ 4,695	1167.9%
RDC	9,772	4,261	5,511	129.3%
Payables	(3,582)	(3,812)	230	(6.0%)
	\$ 11,287	\$ 851	\$ 10,436	1226.3%

- E) The increase in *inventory* of \$1.5 million is primarily due to ordering pipe in advance for projects due to long lead time for delivery. Over \$1.0 million was received prior to year-end.
- F) The decrease in *prepaids* of \$1.1 million is due in part to a partial year payment for the current ERP software instead of a full year. The prior year balance was also higher due to several licensing invoices paid prior to March 31, 2022, but paid subsequent to March 31 in the current year.
- G) The \$27.8 million increase in *capital work in progress* relates to expenditures during the year of \$92.1 million compared to \$61.7 million in prior year. The top five projects remaining in capital work in progress at March 31, 2023 are detailed below:

Capital Work in Progress	
	Cumulative '000
ERP Replacement Project	\$ 10,842
Cowie Hill Reservoir	7,622
Gravity Sewer Albro Lake to Jamieson Street	7,359
South Park/Cathedral Lane Sewer Separation	5,021
Akerley Reservoir	3,636
	34,480
<u>All other projects:</u>	
Water	19,903
Wastewater	22,530
Stormwater	1,850
	44,283
Capital work in progress	\$ 78,763

H) *Utility plant in service* assets total \$1.3 billion and intangible assets \$22.8 million, a combined increase of \$27.2 million from the prior year. The increase is a result of additions at year-end of \$79.6 million less depreciation expense of \$52.4 million. The top five projects capitalized during the year are outlined in the following table:

Additions to Utility Plant in Service and Intangibles	
	Cumulative '000
Bedford South Hemlock Reservoir	\$ 8,162
Morris Lake Pump Station	2,902
Lake Major Clarifier	2,265
Dublin Street Watermain	2,228
Windgate Drive Transmission Main	1,969
	17,526
<u>All other projects:</u>	
Water	25,323
Wastewater	21,547
Stormwater	15,164
	62,034
Total additions	\$ 79,560

Table 2: Liabilities and Equity

March 31 (in thousands)	Notes	2023	2022	From Prior Year	
				\$ Change	% Change
Liabilities					
Current					
Payables and accruals					
Trade	A	33,142	23,288	9,854	42.3%
Non-trade	B	4,717	5,060	(343)	(6.8%)
Interest on long term debt		2,205	2,038	167	8.2%
Contractor and customer deposits		2,841	2,705	136	5.0%
Current portion of deferred contributed capital	C	18,836	14,614	4,222	28.9%
Current portion of long term debt	D	45,962	46,272	(310)	(0.7%)
Unearned revenue		76	80	(4)	(5.0%)
		107,779	94,057	13,722	14.6%
Deferred contributed capital	C	919,422	893,975	25,447	2.8%
Long term debt	D	172,489	177,910	(5,421)	(3.0%)
Employee benefit obligation	E	8,078	41,950	(33,872)	(80.7%)
Total liabilities		1,207,768	1,207,892	(124)	0.0%
Equity					
Accumulated other comprehensive loss		51,651	11,225	40,426	360.1%
Accumulated surplus		244,672	238,147	6,525	2.7%
Total equity		296,323	249,372	46,951	18.8%
Total liabilities and equity		\$ 1,504,091	\$ 1,457,264	\$ 46,827	3.2%

Notes related to Table 2:

- A) *Trade payables and accruals* have increased \$9.9 million from the prior year. Trade payables have increased \$2.3 million due partially to holdbacks for capital projects of \$4.6 million (\$1.0 million in prior year) and invoicing for capital projects. Trade accrued payables increased \$7.5 million relating to accruals for capital projects for which invoices were not received as of year-end.

Payables and Accruals				
	2022/23	2021/22		
	'000	'000	\$ Change	% Change
Trade payables	\$ 12,858	\$ 10,535	\$ 2,323	22.1%
Trade accrued payables	18,828	11,309	7,519	66.5%
Accrued wastewater rebate	1,456	1,444	12	0.8%
	\$ 33,142	\$ 23,288	\$ 9,854	42.3%

Aging of Accounts Payable (in thousands)					
	Current	31 to 60	61 to 120	120+	Grand Total
2022/23	7,256	1,409	482	3,711	\$ 12,858
2021/22	\$ 7,502	\$ 464	\$ 1,173	\$ 1,396	\$ 10,535
\$ Change	\$ (246)	\$ 945	\$ (691)	\$ 2,315	\$ 2,323
% Change	(3.3%)	203.7%	(58.9%)	165.8%	22.1%

- B) *Non-trade payables and accruals* have decreased \$0.3 million due to timing of remittances for payroll and a decrease in accrued salaries and wages payable due to the timing of pay cycles.
- C) *Deferred contributed capital and current portion of deferred contributed capital* increased \$29.7 million due to contributed asset additions of \$18.5 million, collection of capital cost contributions (CCCs), RDCs and interest earned on RDC balances of \$30.0 million, offset by amortization of \$18.8 million.
- D) *Long term debt and the current portion of long term debt* have decreased \$5.7 million due to less new debt acquired during the fiscal year of \$15.7 million compared to the prior year of \$20.0 million.

Long Term Debt					
	Water	Wastewater	Stormwater	Total 2022/23	Total 2021/22
Opening debt	\$ 79,286	\$ 121,615	\$ 24,132	\$ 225,033	\$ 225,591
New long term debt	13,138	-	2,611	15,749	20,000
Long term debt repayments	(5,712)	(14,206)	(1,491)	(21,409)	(20,558)
Less debt issue costs	(411)	(390)	(121)	(922)	(851)
Total long term debt	86,301	107,019	25,131	218,451	224,182
Less current portion	(14,712)	(28,083)	(3,167)	(45,962)	(46,272)
Closing long term debt	\$ 71,589	\$ 78,936	\$ 21,964	\$ 172,489	\$ 177,910

- E) The *employee benefit obligation* decreased \$33.8 million due to the following:
 - a. Improvement of the fair market value of the pension plan assets; and
 - b. Increase in the discount rate used to measure the employee benefit obligation.

Additional information, including the actuarial assumptions adopted in measuring the employee benefit obligation, is described in Note 4 of the financial statements.

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 of March 31, 2023, is as follows:

Debt Servicing Ratio by Service		
	2022/23	2021/22
Water	14.67%	13.79%
Wastewater	21.15%	21.63%
Stormwater	25.32%	26.94%
Combined	18.99%	18.98%

The debt servicing ratio for each service, except water, has decreased from the prior year. Water has increased as a result of higher debt appropriation costs relative to the increase in revenue. The wastewater and stormwater debt servicing ratios have decreased from the prior year due to higher revenues than the prior year as a result of increases to rates.

The combined debt servicing ratio of 18.99% is below the maximum 35.00% ratio allowed under the blanket guarantee agreement with HALIFAX.

Statement of Earnings and Comprehensive Earnings – Page 4 of financial statements (IFRS)

Table 3: Summarized Statement of Comprehensive Earnings (IFRS)

Summarized Comprehensive Earnings					
	Notes	2022/23 '000	2021/22 '000	\$ Change	% Change
Operating revenues		\$ 155,089	\$ 150,502	\$ 4,587	3.0%
Operating expenditures		154,733	151,548	3,185	2.1%
Earnings (loss) from operations before financial and other revenues and expenditures		356	(1,046)	1,402	(134.0%)
Financial and other revenues		20,092	19,607	485	2.5%
Financial and other expenditures		13,731	13,682	49	0.4%
Earnings for the year before regulatory deferral account depreciation		6,717	4,879	1,838	37.7%
Regulatory deferral account depreciation		(192)	(192)	-	0.0%
Earnings for the year		6,525	4,687	1,838	39.2%
Other comprehensive earnings		40,426	40,907	(481)	(1.2%)
Total comprehensive earnings for the year	A	\$ 46,951	\$ 45,594	\$ 1,357	3.0%

Notes related to Table 3:

A) The *total comprehensive earnings* for the year are \$47.0 million, an increase of \$1.4 million over the prior year loss. The following is a discussion of factors influencing the change.

Table 4: Operating Revenues:

Operating Revenues					
	Notes	Actual 2022/23 '000	Actual 2021/22 '000	From Prior Year \$ Change	% Change
Consumption revenue	B	\$ 99,346	\$ 96,498	\$ 2,848	2.95%
Base charge revenue	C	33,967	33,635	332	0.99%
Wastewater rebate		(1,531)	(1,298)	(233)	17.95%
Metered sales total		131,782	128,835	2,947	2.29%
Stormwater site generated charge	D	6,931	6,294	637	10.12%
Stormwater right of way	E	4,475	3,835	640	16.69%
Public fire protection		7,744	7,628	116	1.52%
Private fire protection		1,377	1,270	107	8.43%
Other operating revenue		2,780	2,640	140	5.30%
Operating revenue total	A	\$ 155,089	\$ 150,502	\$ 4,587	3.05%

Notes related to Table 4:

Operating revenues are presented above, broken down by type:

- A) *Operating revenues* have increased \$4.6 million as compared to the previous year.
- B) Consumption has increased 1.7% on a volumetric basis compared to the prior year. The other factor influencing the increase in *consumption revenue* of \$2.8 million over the prior year are the rate increases for water consumption and wastewater discharge effective December 1, 2022. Water rates increased from \$0.976 per cubic meter to \$1.017 per cubic meter and wastewater rates increased from \$2.073 per cubic meter to \$2.189 per cubic meter.

Consumption by Customer Class (m³)				
	2022/23	2021/22	m ³ Change	% Change
Commercial	6,714,743	5,995,586	719,157	12.0%
Industrial	1,763,985	1,962,919	(198,934)	(10.1%)
Institutional	3,928,711	3,813,783	114,928	3.0%
Multi-residential	7,787,904	7,697,436	90,468	1.2%
Residential	12,875,240	13,054,490	(179,250)	(1.4%)
	33,070,583	32,524,214	546,369	1.7%

- C) *Base charges* have increased \$0.3 million from the prior year due to new customers.
- D) *Stormwater site generated charge revenue* is \$0.6 million more than the prior year due to a rate increase effective December 1, 2022 and the expansion of the stormwater boundary.
- E) *Stormwater right of way revenue* has increased \$0.6 million from the prior year due to addition of Province of Nova Scotia and Bridge Commission with an effective date of December 1, 2022.

Table 5: Operating expenditures:

Operating Expenditures					
	Notes	Actual 2022/23 '000	Actual 2021/22 '000	From Prior Year \$ Change	% Change
Water supply and treatment	B	\$ 11,646	\$ 10,760	\$ 886	8.23%
Water transmission and distribution	C	11,757	11,316	441	3.90%
Wastewater collection	D	13,691	12,988	703	5.41%
Stormwater collection	E	4,719	4,566	153	3.35%
Wastewater treatment	F	23,420	21,774	1,646	7.56%
Engineering and technology service:	G	13,677	13,719	(42)	(0.31%)
Regulatory services	H	4,434	4,392	42	0.96%
Customer services	I	4,447	4,811	(364)	(7.57%)
Corporate services	J	3,075	3,062	13	0.42%
Administration services	J	5,578	5,359	219	4.09%
Pension services	K	6,851	9,229	(2,378)	(25.77%)
Depreciation and amortization	L	51,630	49,764	1,866	3.75%
	A	\$ 154,925	\$ 151,740	\$ 3,185	2.10%

Notes related to Table 5:

- A) *Operating expenditures* of \$154.9 million are \$3.2 million higher than the prior year.
- B) *Water supply and treatment* expenditures have increased \$0.9 million from prior year due to:
 - o Increase in treatment chemicals of \$1.2 million, mostly due to an increase in chemical prices.
 - o Increase is offset by a decrease in salaries and benefits of \$0.3M due to allocation of time to capital projects and professional services of \$0.2M due mostly to a decrease in the use of consulting services.
- C) *Water transmission and distribution* has increased \$0.4 million from the prior year due to:
 - o Lead service line (LSL) replacement costs increased \$0.5M due to increased use of the program by the public to pay for the private portion of service line replacements.
 - o Traffic control costs increased \$0.2M due to an increase in activity for the LSL program over the prior year.
 - o Vehicle costs have increased \$0.2M due to increased usage and resulting increase in fuel costs.
 - o Increases are offset by a decrease in salaries and benefits of \$0.2M and a decrease in hired equipment of \$0.2M due to more watermain breaks in prior year.
- D) *Wastewater collection* has increased \$0.7 million from prior year due to:
 - o Increase in vehicle cost allocations of \$0.4M which is dependent upon usage and higher this year, an increase in contract services for a major pump repair during the

year of \$0.3M, an increase in traffic control costs of \$0.1M, and higher materials and supplies purchases for collections and pump stations of \$0.2M.

- The increases have been offset by a decrease in salaries and benefits of \$0.2M based on the allocation of time between wastewater and stormwater services
- E) *Stormwater collection* has increased \$0.2 million from prior year mainly due to salaries and benefits increase of \$0.1M due to resource allocations between stormwater collection and wastewater collection.
- F) *Wastewater treatment* has increased \$1.6 million from prior year due to:
- Increase in chemicals of \$0.5M, mostly due to price increases.
 - Increase in biosolids trucking and treatment costs \$0.9M due to fuel price increases and cost of treatment as more biosolids received.
- G) *Engineering and technology services* are comparable to prior year.
- H) *Regulatory Services* are comparable to prior year.
- I) *Customer services* have decreased \$0.4 million from the prior year due to a decrease in the bad debt expense of 0.2M due to improved collection activities and a decrease in phone costs of \$0.1M due to cancellation of land lines.
- J) *Corporate services and administration services* expenditures are comparable to prior year but \$0.4 million less than forecast due to lower training, contract services, and insurance premiums.
- K) *Pension services* have decreased \$2.4 million from the prior year as a result of lower accrued pension expense based on actuarial extrapolation.
- L) *Depreciation and amortization* have increased \$1.9 million as a result of additions to utility plant in service and intangibles. Depreciation and amortization are budgeted and forecast for NSUARB reporting purposes, not IFRS, therefore a comparison between budget and forecast to actual under IFRS is not realistic as the two reporting frameworks account for depreciation differently. For NSUARB reporting purposes, actuals were \$0.5 million more than forecast because of higher additions to utility plant in service.

Table 6: Operating Expenditures by Nature:

Operating Expenditures by Nature						
	Notes	Actual 2022/23 '000	Actual 2021/22 '000	From Prior Year		
				\$ Change	% Change	
Salaries and benefits	A	\$ 42,473	\$ 43,817	\$ (1,344)	(3.07%)	
Pension	B	6,851	9,229	(2,378)	(25.77%)	
Training		681	432	249	57.79%	
Contract services	C	15,791	13,938	1,853	13.30%	
Electricity		7,090	7,160	(70)	(0.98%)	
Operating supplies	D	15,351	13,081	2,270	17.35%	
Professional services	E	5,351	5,953	(602)	(10.11%)	
Chemicals	F	8,708	7,046	1,662	23.58%	
Depreciation on assets allocated		999	1,320	(321)	(24.32%)	
Depreciation and amortization		51,438	49,572	1,866	3.76%	
		\$ 154,733	\$ 151,548	\$ 3,185	2.10%	

Notes related to Table 6:

Operating expenditures of \$154.7 million are \$3.2 million higher than the prior year.

Compared to the prior year expenditure types with the largest changes in costs are:

- A) Salaries and benefits decrease of \$1.3 million is mainly driven by higher allocation of salaries to capital projects than the prior year.
- B) Pension expense was discussed previously.
- C) Contract services increase of \$1.9 million from prior year is due to an increase in contract services for the LSL replacement program, traffic control services relating to an increase in activity along with an increase in biosolids treatment due to higher volume being sent for processing at third-party facility. This increase was offset by a decrease in hired equipment and snow and ice control.
- D) Operating supplies increase of \$2.3 million is due primarily to software licensing costs, equipment repair and maintenance, diesel and gasoline fuel and other vehicle costs.
- E) Professional services decrease of \$0.6 million is due primarily to the need for consulting work within engineering and technology services.
- F) Chemicals increase of \$1.7 million is due mainly to price increases and greater usage of certain chemicals.

Table 7: Financial and other revenues:

Financial and other revenues					
	Actual	Actual	From Prior Year		
Notes	2022/23	2021/22	\$ Change	% Change	
	'000	'000			
Interest	\$ 429	\$ 178	\$ 251	141.01%	
Amortization of contributed capital	18,793	18,592	201	1.08%	
Other	870	837	33	3.94%	
Total financial and other revenues	A \$ 20,092	\$ 19,607	\$ 485	2.47%	

Notes related to Table 7:

- A) *Financial and other revenues* overall are \$0.5 million higher than prior year. With increasing interest rates, the *interest revenue* is higher and with more contributed capital, the *amortization of contributed capital* is higher. Compared to forecast, the *amortization of contributed capital* is higher due to higher contributed assets than expected.

Table 8: Financial and other expenditures:

Financial and other expenditures					
	Notes	Actual 2022/23 '000	Actual 2021/22 '000	From Prior Year \$ Change	% Change
Interest on long term debt		\$ 6,851	\$ 6,859	\$ (8)	(0.12%)
Amortization of debt discount		227	228	(1)	(0.44%)
Dividend/grant in lieu of taxes		6,524	6,466	58	0.90%
Other		129	129	0	0.00%
Total financial and other expenditures	A	\$ 13,731	\$ 13,682	\$ 49	0.36%

Notes related to Table 8:

- A) *Financial and other expenditures* have remained similar to prior year. The difference of \$0.3 million between budget and forecast for the *dividend/grant in lieu of taxes* is due to fewer additions to utility plant in service in the prior year on which the calculation is based.

Results under NSUARB Handbook as compared to International Financial Reporting Standards

As a rate regulated utility, the Accounting Standards Board (AcSB) requires Halifax Water, to report financial results using IFRS. The NSUARB requires Halifax Water to report in accordance with the NSUARB Handbook. Table 9 below reconciles the results between IFRS and the NSUARB Handbook.

Table 9: Reconciliation IFRS to NSUARB:

Reconcile IFRS to NSUARB			
	Notes	2022/23 '000	2021/22 '000
IFRS comprehensive earnings		\$ 46,951	\$ 45,594
Add non-cash pension expense	A	6,851	9,229
Subtract debt principal payments	B	(22,379)	(21,477)
Add depreciation expense on contributed assets	C	18,793	18,592
Subtract amortization of contributed capital	C	(18,793)	(18,592)
Add various depreciation adjustments	D	1,243	1,179
Subtract other comprehensive income gain		(40,426)	(40,907)
NSUARB Loss		\$ (7,760)	\$ (6,382)

Notes related to Table 9:

Operating revenues are the same under both IFRS and the NSUARB Handbook.

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

- A) *Non-cash pension expense* represents the accrual of unpaid contributions to the pension plan and is not considered an expense for NSUARB Handbook reporting purposes.

- B) The *principal payments* on long term debt are recognized as an expense for NSUARB Handbook reporting purposes but are not an expense under IFRS.
- C) *Depreciation expense on contributed assets* is not an expense for NSUARB Handbook purposes for water and wastewater assets, however, it is offset by the removal of the amortization of contributed capital. For stormwater assets, 25% of depreciation on contributed assets is included for NSUARB reporting purposes. 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.
- D) The *various depreciation adjustments* include the add back of gains 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.

Schedule C (pages 25 to 27) of the audited statements presents the Statement of Earnings under the NSUARB Handbook and contain the adjustments referenced above.

Table 10: Operating Results by Service:

Operating Results by Service											
	Budget 2022/23 '000	Forecast 2022/23 '000	Actual 2022/23 '000	Actual 2021/22 '000	From Prior Year		Actual to Forecast		Budget to Forecast		
					\$ Change	% Change	\$ Remaining	% Remaining	\$ Change	% Change	
Water	\$ (4,174)	\$ (2,788)	\$ (3,069)	\$ (3,428)	\$ 359	(10.47%)	\$ (281)	10.08%	\$ 1,386	(33.21%)	
Wastewater	(2,271)	(821)	(1,676)	389	(2,065)	(530.85%)	(855)	104.14%	1,450	(63.85%)	
Stormwater	(4,440)	(3,580)	(3,015)	(3,343)	328	(9.81%)	565	(15.78%)	860	(19.37%)	
Loss	\$ (10,885)	\$ (7,189)	\$ (7,760)	\$ (6,382)	\$ (1,378)	21.59%	(571)	7.94%	\$ 3,696	(33.95%)	

The results in Table 10 are explained in more detail in Tables 11 to 13.

Table 11: Operating Results by Service – Water:

Operating Results by Service - Water											
	Budget 2022/23 '000	Forecast 2022/23 '000	Actual 2022/23 '000	Actual 2021/22 '000	From Prior Year		Actual to Forecast		Budget to Forecast		
Notes					\$ Change	% Change	\$ Remaining	% Remaining	\$ Change	% Change	
Operating revenues	A \$ 58,628	\$ 59,355	\$ 59,111	\$ 58,012	\$ 1,099	1.89%	\$ (244)	(0.41%)	\$ 727	1.24%	
Operating expenditures	B 48,960	48,560	48,573	48,361	212	0.44%	13	0.03%	(400)	(0.82%)	
Earnings from operations	9,668	10,795	10,538	9,651	887	9.19%	(257)	(2.38%)	1,127	11.66%	
Financial and other revenues	545	751	789	590	199	33.73%	38	5.06%	206	37.80%	
Financial and other expenditures	C 14,387	14,334	14,396	13,669	727	5.32%	62	0.43%	(53)	(0.37%)	
Loss for the year	\$ (4,174)	\$ (2,788)	\$ (3,069)	\$ (3,428)	\$ 359	(10.47%)	\$ (281)	10.08%	\$ 1,386	(33.21%)	

Water services loss has improved from the prior year loss by \$0.3 million due to the following factors:

- A) *Operating revenues* increase of \$1.1 million attributable to the following:
- i. Increase in base charges and consumption by new and existing customers.
 - ii. Water rates increased from \$0.976 per cubic meter to \$1.017 per cubic meter effective December 1, 2022.
- B) Increase in *operating expenditures* of \$0.2 million. The increases in Water supply and treatment, Water transmission and distribution, and depreciation (all discussed previously) are offset by a decrease in Engineering and technology services and Administration services (shared services). The decreases in shared services are due to a change in the allocation of costs between services

resulting from the 2022 Cost of Service redesign resulting in a higher allocation of costs to wastewater and stormwater services.

- C) Increase in *financial and other expenditures* of \$0.7 million due to higher debt servicing costs from new and refinanced debt.

Water services loss is \$0.3 million more than forecast due to *operating revenues* being lower resulting from fewer new customers and lower consumption than forecast.

With the 2022 General Rate Application, Halifax Water projected a \$3.0 million loss and designed rates with the projected deficit in mind. The current year deficit will draw down the accumulated operating surplus for water.

Table 12: Operating Results by Service – Wastewater:

Operating Results by Service - Wastewater											
Notes		Budget	Forecast	Actual	Actual	From Prior Year		Actual to Forecast		Budget to Forecast	
		2022/23	2022/23	2022/23	2021/22	\$ Change	% Change	\$ Remaining	% Remaining	\$ Change	% Change
		'000	'000	'000	'000						
	Operating revenues	A \$ 83,150	\$ 84,772	\$ 84,196	\$ 82,065	\$ 2,131	2.60%	\$ (576)	(0.68%)	\$ 1,622	1.95%
	Operating expenditures	B 67,430	68,014	67,842	63,317	4,525	7.15%	(172)	(0.25%)	584	0.87%
	Earnings (loss) from operations	15,720	16,758	16,354	18,748	(2,394)	(12.77%)	(404)	(2.41%)	1,038	6.60%
	Financial and other revenues	176	539	563	187	376	201.07%	24	4.45%	363	206.25%
	Financial and other expenditures	C 18,167	18,118	18,593	18,546	47	0.25%	475	2.62%	(49)	(0.27%)
	Earnings (loss) for the year	\$ (2,271)	\$ (821)	\$ (1,676)	\$ 389	\$ (2,065)	(530.85%)	\$ (855)	104.14%	\$ 1,450	(63.85%)

Wastewater services loss of \$1.7 million is lower than the prior year earnings by \$2.1 million due to the following factors:

- A) *Operating revenues* increase of \$2.1 million is attributable primarily to the increase in the wastewater discharge rate from \$2.073 per cubic meter to \$2.189 per cubic meter effective December 1, 2022.
- B) Increase in *operating expenditures* of \$4.5 million. Increases in Wastewater collection and treatment and depreciation contribute to \$3.2 million of the increase as discussed previously. Other increases include those in Engineering and technology services and Administration services (shared services). The increases in shared services result from a higher allocation of costs in the current year to wastewater. The allocation was adjusted during the 2022 Cost of Service redesign.

Wastewater services loss is \$0.9 million more than forecast due to the following factors:

- A) *Operating revenues* are \$0.6 million lower due to fewer new customers and lesser discharge than forecast.
- B) *Operating expenditures* are in line with forecast.
- C) *Financial and other expenditures* are \$0.5 million more due to higher debt servicing costs from refinanced debt.

Table 13: Operating Results by Service – Stormwater:

Operating Results by Service - Stormwater											
Notes		Budget	Forecast	Actual	Actual	From Prior Year		Actual to Forecast		Budget to Forecast	
		2022/23	2022/23	2022/23	2021/22	\$ Change	% Change	\$ Remaining	% Remaining	\$ Change	% Change
		'000	'000	'000	'000						
	Operating revenues	A \$ 10,987	\$ 11,595	\$ 11,782	\$ 10,425	\$ 1,357	13.02%	\$ 187	1.61%	\$ 608	5.53%
	Operating expenditures	B 12,397	12,069	11,623	10,843	780	7.19%	(446)	(3.70%)	(328)	(2.65%)
	Loss from operations	(1,410)	(474)	159	(418)	577	(138.04%)	633	(133.54%)	936	(66.38%)
	Financial and other revenues	12	(45)	(53)	19	(72)	(378.95%)	(8)	17.78%	(57)	(475.00%)
	Financial and other expenditures	3,042	3,061	3,121	2,944	177	6.01%	60	1.96%	19	0.62%
	Loss for the year	\$ (4,440)	\$ (3,580)	\$ (3,015)	\$ (3,343)	\$ 328	(9.81%)	\$ 565	(15.78%)	\$ 860	(19.37%)

Stormwater services loss of \$3.0 million is \$0.3 million less than the prior year. The following factors influenced the results:

- A) Increase of \$0.6 million in site generated revenue due to the stormwater boundary expansion generating new customers, along with a rate increase effective December 1, 2022. Right of way service revenue also increased \$0.6 million due to the rate increase effective December 1, 2022, which now includes a charge for the Province of Nova Scotia and the Bridge Commission and an increase to the charge for HALIFAX.
- B) Increase in *operating expenditures* of \$0.8 million including an increase in Engineering and technology services as the allocation between services was adjusted during the 2022 Cost of Service redesign resulting in a higher allocation of costs to stormwater services Depreciation also increased as a result of additions to utility plant in service.

Stormwater services loss is \$0.6 million less than forecast mainly due to allocations of resources between Wastewater and Stormwater collections.

Table 14: Operating Results by Activity:

Operating Results by Activity											
Notes		Budget	Forecast	Actual	Actual	From Prior Year		Actual to Forecast		Budget to Forecast	
		2022/23	2022/23	2022/23	2021/22	\$ Change	% Change	\$ Remaining	% Remaining	\$ Change	% Change
		'000	'000	'000	'000						
	Regulated activities	A \$ (11,513)	\$ (8,125)	\$ (8,554)	\$ (6,889)	\$ (1,665)	24.17%	\$ (429)	5.28%		
	Unregulated activities	B 628	936	794	507	287	56.61%	(142)	(15.17%)		
	Loss	\$ (10,885)	\$ (7,189)	\$ (7,760)	\$ (6,382)	\$ (1,378)	21.59%	\$ (571)	7.94%		

Notes related to Table 14:

- A) *Regulated activities* loss has increased from the prior year loss by \$1.7 million due to the factors as previously explained including net of increases in revenues and expenditures.
- B) *Unregulated activities* earnings of \$0.8 million have increased \$0.3 million from the prior year due to a one-time waste disposal for a marine vessel.

Table 15: Corporate Balance Scorecard - Responsible Financial Management:

Corporate Balance Scorecard - Responsible Financial Management							
	Notes	Budget 2022/23 '000	Forecast 2022/23 '000	Actual 2022/23 '000	Actual 2021/22 '000	From Prior Year % Change	Budget to Actual % Change
Expense to Revenue Ratio	A	82.83%	82.20%	82.38%	81.20%	1.18%	(0.45%)
*(budget expenses reduced by \$1.8 million)							
Annual Cost per Connection - Water	B	\$ 543.00	\$ 555.00	\$ 539.00	\$ 540.00	(0.19%)	(0.74%)
*(target reduced by 3%)							
Annual Cost per Connection - Wastewater	C	\$ 782.00	\$ 814.00	\$ 786.00	\$ 741.00	6.07%	0.51%
*(target reduced by 3%)							
1 - Targets calculated based on the 2022/23 Operating Budget.							
2 - Operating expenses reduced by \$1,800,000 to incorporate stretch goals for cost containment incentives.							
3 - Targets reported above exclude pension plan accrual amounts.							
4 - Connection costs are based on the budgeted customer base for March 31, 2022, with an estimated increase for the 2022/23 fiscal year.							
5 - Forecast results to February 28, 2023.							
6 - Customer connections as at March 31, 2023.							

Notes related to Table 15:

Halifax Water measures and reports annually specific indicators related to the performance of the utility. Three of the indicators are related to the financial results of the utility, these are the expense to revenue ratio, annual cost per connection for water services, and annual cost per connection for wastewater services. The expense to revenue ratio is one of several gateway indicators which is required to be met in order to qualify for the organizational award.

- A) The budgeted *expense to revenue ratio* for the year was 82.83%. The actual as of March 31, 2023 is lower than budget therefore the indicator has been met.
- B) The budgeted *annual cost per connection for water services* for the year was \$543.00. The actual as of March 31, 2023 is less than budget.
- C) The budgeted *annual cost per connection for wastewater services* for the year was \$782.00. The actual as of March 31, 2023 is more than budget.

Attachments

Attachment 1: Financial statements for the fiscal year ended March 31, 2023.

Attachment 2: Report to the Audit and Finance Committee by Grant Thornton LLP.

Report prepared by:

 Alicia Scallion, CPA, CA
 Acting Director of Corporate Services/CFO, (902) 497-9785



Financial Statements

Halifax Regional Water Commission

March 31, 2023



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Independent auditor's report

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

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Halifax Regional Water Commission

Statement of financial position

March 31 (in thousands)

2023

2022

Assets

Current

Cash and cash equivalents	\$	44,596	\$	65,586
Receivables (Note 8)				
Customer charges and contractual		17,824		15,900
Unbilled service revenues		19,265		18,838
Halifax Regional Municipality		11,287		851
Inventory		3,517		2,042
Prepays		1,282		2,408
		<u>97,771</u>		<u>105,625</u>

Intangible assets (Note 10)		22,807		20,805
Capital work in progress		79,447		51,013
Utility plant in service (Note 11)		1,302,514		1,277,393
Total assets		<u>1,502,539</u>		<u>1,454,836</u>

Regulatory deferral account (Note 5)		2,236		2,428
Total assets and regulatory deferral account	\$	<u>1,504,775</u>	\$	<u>1,457,264</u>

Liabilities

Current

Payables and accruals				
Trade	\$	33,826	\$	23,288
Non-trade		4,717		5,060
Interest on long term debt		2,205		2,038
Contractor and customer deposits		2,841		2,705
Current portion of deferred contributed capital (Note 12)		18,836		14,614
Current portion of long term debt (Note 13)		45,962		46,272
Unearned revenue		76		80
		<u>108,463</u>		<u>94,057</u>

Deferred contributed capital (Note 12)		919,422		893,975
Long term debt (Note 13)		172,489		177,910
Employee benefit obligations (Note 4)		8,078		41,950
Total liabilities		<u>1,208,452</u>		<u>1,207,892</u>

Equity

Accumulated other comprehensive income		51,651		11,225
Accumulated surplus		244,672		238,147
Total equity		<u>296,323</u>		<u>249,372</u>

Total liabilities and equity	\$	<u>1,504,775</u>	\$	<u>1,457,264</u>
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Contingent liabilities (Note 3)
Commitments (Note 6)

Approved by the Halifax Regional Water Commission Board

Chair

Vice Chair

See accompanying notes to the financial statements.

Halifax Regional Water Commission

Statement of earnings and comprehensive earnings

Year ended March 31 (in thousands)

	2023	2022
Operating revenues		
Water	\$ 49,160	\$ 48,189
Wastewater	82,622	80,646
Stormwater	11,406	10,129
Public fire protection	7,744	7,628
Private fire protection	1,377	1,270
Other operating revenue	2,780	2,640
	<u>155,089</u>	<u>150,502</u>
Operating expenditures (Note 14)		
Water supply and treatment	11,646	10,760
Water transmission and distribution	11,757	11,316
Wastewater collection	13,691	12,988
Stormwater collection	4,719	4,566
Wastewater treatment	23,420	21,774
Engineering and technology services	13,677	13,719
Regulatory services	4,434	4,392
Customer services	4,447	4,811
Corporate services	3,075	3,062
Administration services	5,578	5,359
Pension services	6,851	9,229
Depreciation and amortization	51,438	49,572
	<u>154,733</u>	<u>151,548</u>
Income (loss) from operations before financial and other revenues and expenditures	<u>356</u>	<u>(1,046)</u>
Financial and other revenues		
Interest	429	178
Amortization of deferred contributed capital	18,793	18,592
Other	870	837
	<u>20,092</u>	<u>19,607</u>
Financial and other expenditures		
Interest on long term debt	6,851	6,859
Amortization of debt issue costs	227	228
Dividend/grant in lieu of taxes (Note 6)	6,524	6,466
Other	129	129
	<u>13,731</u>	<u>13,682</u>
Earnings for the year before regulatory deferral account depreciation	6,717	4,879
Regulatory deferral account depreciation	<u>(192)</u>	<u>(192)</u>
Earnings for the year	<u>6,525</u>	<u>4,687</u>
Other comprehensive earnings		
Items that will not be reclassified subsequently to earnings:		
Re-measurement on defined benefit plans	40,426	40,907
Total comprehensive earnings for the year	<u>\$ 46,951</u>	<u>\$ 45,594</u>

See accompanying notes to the financial statements.

Halifax Regional Water Commission

Statement of changes in equity

Year ended March 31 (in thousands)

	Accumulated other comprehensive income (loss)	Accumulated surplus	Total
Balance, April 1, 2021	\$ (29,682)	\$ 233,460	\$ 203,778
Earnings for the year	-	4,687	4,687
Other comprehensive earnings	40,907	-	40,907
Comprehensive earnings for the year	<u>40,907</u>	<u>4,687</u>	<u>45,594</u>
Balance, March 31, 2022	\$ 11,225	\$ 238,147	\$ 249,372
Earnings for the year	-	6,525	6,525
Other comprehensive earnings	40,426	-	40,426
Comprehensive earnings for the year	<u>40,426</u>	<u>6,525</u>	<u>46,951</u>
Balance, March 31, 2023	\$ 51,651	\$ 244,672	\$ 296,323

See accompanying notes to the financial statements.

Halifax Regional Water Commission

Statement of cash flows

Year ended March 31 (in thousands)

2023

2022

Increase (decrease) in cash and cash equivalents

	2023	2022
Operating		
Comprehensive earnings for the year	\$ 46,951	\$ 45,594
Depreciation and amortization	33,836	32,492
Employee benefit obligation	(33,872)	(31,846)
Gain on disposal of utility plant in service	-	(219)
	<u>46,915</u>	<u>46,021</u>
Change in non-cash operating working capital items		
Receivables, customer charges and contractual	(1,924)	1,255
Receivables, unbilled service revenues	(427)	(592)
Receivable from Halifax Regional Municipality	(10,436)	1,860
Inventory	(1,475)	(39)
Prepays	1,126	(838)
Payables and accruals, trade	10,538	10,611
Payables and accruals, non-trade	(343)	(1,132)
Payables and accruals, accrued interest on long term debt	167	(27)
Contractor and customer deposits	136	590
Unearned revenue	(4)	(25)
	<u>(2,642)</u>	<u>11,663</u>
	<u>44,273</u>	<u>57,684</u>
Financing		
Proceeds from issuance of long term debt	15,749	20,000
Contributed capital and interest	29,962	20,958
Debt issue costs	(71)	75
Principal repayment on Halifax Regional Municipality long term debt	(6,500)	(6,500)
Principal repayments on long term debt	(14,909)	(14,058)
	<u>24,231</u>	<u>20,475</u>
Investing		
Proceeds from sale of utility plant in service	-	940
Purchase of capital work in progress	(53,832)	(34,203)
Purchase of utility plant in service and intangible assets	(35,662)	(27,538)
	<u>(89,494)</u>	<u>(60,801)</u>
Net (decrease) increase in cash and cash equivalents	(20,990)	17,358
Cash and cash equivalents, beginning of year	<u>65,586</u>	<u>48,228</u>
Cash and cash equivalents, end of year	<u>\$ 44,596</u>	<u>\$ 65,586</u>

See accompanying notes to the financial statements.

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

1. Nature of operations

The Halifax Regional Water Commission (Halifax Water) is a public utility owned and controlled by the Halifax Regional Municipality (HRM). Halifax Water is responsible for the supply of municipal Water, Wastewater and Stormwater Services to the residents of HRM. Halifax Water's principal place of business is 450 Cowie Hill Road, Halifax, Nova Scotia. Halifax Water is exempt from income tax.

2. Summary of significant accounting policies

(a) Statement of compliance

The financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB). The principal accounting policies applied in the preparation of these financial statements are set out below. These policies have been consistently applied to all years presented, unless otherwise stated.

The financial statements were authorized for issue by the Board of Commissioners on June 22, 2023.

(b) Basis of measurement

Halifax Water's financial statements are prepared on the historical cost basis, except for certain financial instruments measured at fair value. The financial statements are presented in Canadian dollars and all values are rounded to the nearest thousand. The financial statements are presented in accordance with International Accounting Standards (IAS) 1: Presentation of Financial Statements.

(c) Regulation

In matters of administrative policy relating to customers, rates and other charges, capital expenditures, depreciation rates and accounting matters, Halifax Water is subject to the jurisdiction of the Nova Scotia Utility and Review Board (NSUARB). Rates and other charges charged to and collected from customers are designed to recover the cost of providing the regulated services. Halifax Water is required to prepare submissions in accordance with the Water Utility Accounting and Reporting Handbook (the NSUARB Handbook) issued by the NSUARB. There are differences in the accounting treatment of certain transactions from IFRS including the accounting of principal debt payments, employee future benefits, depreciation and amortization, gains and losses on the disposal of utility plant in service, and accumulated surplus.

Regulatory assets represent costs incurred that have been deferred as approved by the NSUARB and will be recovered through future rates collected from customers. These assets are described as the "regulatory deferral account" and are disclosed in Note 5.

(d) Utility plant in service

Utility plant in service (Note 11) is recorded at cost, being the purchase price and directly attributable cost of acquisition or construction. Losses or gains related to assets retired, demolished or sold are charged or credited to the statement of earnings.

(e) Leased assets

Halifax Water makes use of lease arrangements for office space and equipment, and assesses whether a contract is, or contains a lease at the inception of the contract. A lease conveys the right to direct the use and obtain substantially all of the economic benefits of an identified asset for a period of time in exchange for consideration.

At lease commencement date, Halifax Water assess whether the recognition of a right-of-use asset and lease liability would have a material impact on the financial statements.

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

2. Summary of significant accounting policies (continued)

(e) Leased assets (continued)

A right-of-use asset is initially measured at cost, which is comprised of the initial measurement of the lease liability, any initial direct costs incurred, an estimate of any costs to dismantle and remove the asset at the end of the lease, and any lease payments made in advance of the lease commencement date (net of any incentives received). A right-of-use asset is subsequently measured at cost less any accumulated depreciation or impairment losses and adjusted for certain re-measurements of the lease liability. A lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, Halifax Water's incremental borrowing rate.

Halifax Water has elected to apply the practical expedients available under IFRS 16 for short-term leases and leases for which the underlying asset is of low value. Short-term leases and low value leases are expensed in the period incurred.

Halifax Water maintains very few lease arrangements and management will assess future leases as they arise to determine whether the impact of the recognition of a right-of-use asset and lease liability on the statements of financial position, where Halifax Water is acting as a lessee, is material to the financial statements. All existing leases have been assessed and recognition in the financial statements has been deemed immaterial.

(f) Deferred contributed capital

Contributions towards capital projects are treated as deferred contributed capital on the statement of financial position and amortized over the estimated useful lives of the assets (Note 12). Deferred contributed capital is initially measured at cost, being the value of contributions received by Halifax Water for the acquisition of utility plant in service. Contributions for capital expenditures are amortized over the estimated useful lives of the assets and show as a reduction in the amortization of utility plant in service.

(g) Cash and cash equivalents

Cash and cash equivalents consist of cash on hand and cash balances managed by HRM that are held within financial institutions.

(h) Depreciation of utility plant in service

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

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

Office equipment and furniture and transportation equipment	3 to 10 years
Supervisory control and data acquisition (SCADA) equipment	5 to 25 years
Meters	20 to 25 years
Pumping equipment	5 to 30 years
Tools and work equipment	5 to 30 years
Culverts	25 to 50 years
Purification and treatment equipment	20 to 50 years
Services and laterals	50 to 60 years
Hydrants	50 to 80 years
Structures and improvements	50 to 100 years
Water, Wastewater and Stormwater mains	50 to 100 years

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

2. Summary of significant accounting policies (continued)

(h) Depreciation of utility plant in service (continued)

Depreciation commences in the year an asset is placed into service and ready for its intended use. In the year of acquisition, depreciation is calculated at 50% of the above rates unless a project is significant, in which case depreciation is prorated for the number of months the asset was in use. Halifax Water does not maintain a depreciation fund per regulatory reporting requirements. Halifax Water has received NSUARB approval for exemption from establishing a depreciation fund as long as net depreciable additions to utility plant in service exceed the depreciation expense included within the rates.

(i) Inventory

Inventory is comprised of direct materials and supplies. Inventory is valued at the lower of cost and net realizable value with cost being determined on the weighted average cost method.

(j) Revenues and expenditures

Halifax Water recognizes revenue in a manner that depicts the transfer of goods or services to customers at an amount that reflects the consideration Halifax Water is entitled to in exchange for those goods or services rendered.

All revenues and expenditures are recorded on an accrual basis. Revenues relating to supplying Water, Wastewater and Stormwater Services are recorded based on cyclical billings and include an accrual for estimated amounts not yet billed. Fire protection revenue is recorded based on approved rates. Other revenues are recorded at the time services are performed, the amount can be measured reliably, and collection is reasonably assured.

(k) Long term debt

Debt issue costs are deferred and amortized over the term of the debt to which they relate.

(l) Use of estimates and critical accounting judgments

In preparing Halifax Water's financial statements, management is required to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and reported amounts of revenue and expenditures during the period. Significant estimates and assumptions include the following:

- At year end, unbilled service revenues from Water, Wastewater and Stormwater Services have been earned, but not yet billed due to the timing of the billing cycles. Management estimates the unbilled service revenues accrual based on historic billing trends.
- Management assumptions are used in the actuarial determination of employee benefit obligations, such as standard rates of inflation, mortality, discount rates, and anticipation of future salary increases.
- Useful lives of utility plant in service are reviewed based on expected patterns of usage and historical information.
- Recognition and measurement of provisions and contingencies.

Actual results could differ from these estimates.

(m) Financial instruments

Recognition and derecognition

Financial assets and financial liabilities are recognized when Halifax Water becomes a party to the contractual provisions of the financial instrument. Financial assets are derecognized when the contractual rights to the cash flows from the financial asset expire, or when the financial asset and substantially all the risks and rewards are transferred. A financial liability is derecognized when it is extinguished, discharged, cancelled or expired.

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

2. Summary of significant accounting policies (continued)

(m) Financial instruments (continued)

Classification and initial measurement of financial instruments

All financial instruments are initially measured at fair value and adjusted for transaction costs, where applicable. Financial instruments are classified as: those measured at amortized cost, fair value through other comprehensive income (assets only), or fair value through profit and loss (FVTPL).

Halifax Water has classified its financial instruments as follows:

<u>Asset/Liability</u>	<u>Classification</u>
Cash and cash equivalents	Amortized cost
Receivables	Amortized cost
Payables and accruals	Amortized cost
Long term debt	Amortized cost
Contractor and customer deposits	Amortized cost

The classification is determined by both the Halifax Water business model for managing the financial instrument and the contractual cash flow characteristics of the financial instrument.

Subsequent measurement of financial assets

Financial assets are measured subsequently at amortized cost if the assets meet the following conditions, and are not designated as FVTPL:

- they are held within a business model whose objective is to hold the financial assets and collect its contractual cash flows; and
- the contractual terms of the financial assets give rise to cash flows that are solely payments of principal and interest on the principal amount outstanding.

After initial recognition, financial instruments are measured at amortized cost using the effective interest method. Discounting is omitted where the effect of discounting is immaterial.

Impairment of financial assets

Impairment requirements use more forward-looking information to recognize expected credit losses, the expected credit loss (ECL) model. Financial assets that are subject to the ECL model include cash and cash equivalents and receivables.

Subsequent measurement of financial liabilities

Financial liabilities are subsequently measured at amortized cost using the effective interest method. All interest charges are included in interest costs or revenues within the statement of earnings and comprehensive earnings.

(n) Provisions

A provision is recognized in the statement of financial position when Halifax Water has a legal or constructive obligation as a result of a past event, and it is probable that an outflow of economic benefits will be required to settle the obligation. If the effect is material, provisions are determined by discounting the expected future cash flows at a rate that reflects current market assessment of the time value of money and, where appropriate, the risks specific to the obligation.

(o) Impairments

At the end of each reporting period, Halifax Water reviews the carrying amounts of its tangible and intangible assets to determine whether there is an indication of an impairment loss. If any such indication exists, the recoverable amount of the assets is estimated in order to determine the extent of impairment loss, if any. The recoverable amount of any asset is the higher of its fair value less costs to sell and its value in use.

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

2. Summary of significant accounting policies (continued)

(o) Impairments (continued)

Where it is not possible to estimate the recoverable amount of an individual asset, the impairment test is carried out on the asset's cash-generating unit (CGU), which is the lowest group of assets to which the asset belongs for which there are separately identifiable cash inflows that are largely independent of the cash inflows from other assets. Halifax Water has three CGU's (Water, Wastewater and Stormwater) for which impairment testing is performed.

If the recoverable amount of the asset is estimated to be less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. An impairment loss is recognized immediately in earnings. When an impairment loss is subsequently reversed, the carrying amount of the assets is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset in prior years.

(p) Intangible assets

Intangible assets include land rights, water removal rights, studies, and capital master plans. These are recorded at cost less accumulated amortization. Land rights include payment for easements and right of use over land and have an indefinite useful life. Intangibles with finite useful lives are amortized annually over the estimated useful lives. The expected useful lives are as follows:

Intangible assets	10 to 30 years
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(q) Employee benefit obligations

Halifax Water accrues annually, the estimated liabilities for pension and other employee benefits.

Pension benefits

Halifax Water provides employment, post-retirement and pre-retirement benefits through defined benefit plans and supplemental retirement plans.

The cost of pension benefits for the supplemental retirement plans are expensed at the time active employees are compensated.

The defined benefit plan sponsored by Halifax Water determines the amount of pension benefits employees will receive on retirement by reference to length of service and salary levels. Obligations associated with the defined benefit plan reside with Halifax Water, even if plan assets for funding the plan are set aside.

The liability recognized in the statement of financial position for the defined benefit plan sponsored by Halifax Water is the present value of the defined benefit obligation at the end of the reporting date less the fair value of plan assets.

Management estimates the defined benefit obligation annually with assistance from an independent actuary using the projected unit credit method. The defined benefit obligation uses estimates for inflation, medical cost trends, mortality, and anticipated salary levels. The discount factor used to present value estimated future cash flows is determined with reference to high quality corporate bonds that have terms to maturity approximating the terms of the related pension liability.

Gains and losses resulting from re-measurements of the net defined benefit liability are charged to other comprehensive income in the period in which they arise. Service costs are recognized immediately into earnings.

Net interest cost related to pension obligations and returns on plan assets are included in salary and benefits on the statement of earnings.

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

2. Summary of significant accounting policies (continued)

(q) Employee benefit obligations (continued)

Halifax Water is responsible for funding the employer share of contributions to the HRM pension plan for certain employees that transferred from HRM as of August 1, 2007. HRM administers this defined benefit pension plan and Halifax Water reimburses HRM for the pension costs related to Halifax Water's proportionate share of the employees covered under the plan. Due to the nature of the plan, Halifax Water does not have sufficient information to account for the plan as a defined benefit pension plan; therefore, the multi-employer defined benefit plan is accounted for in the same manner as the supplemental retirement plans. An expense is recorded in the period when Halifax Water is obligated to make contributions for services rendered by the employee.

Short-term employee benefits

Short-term employee benefit obligations that are due to be settled wholly within twelve months after the end of the annual reporting period in which the employees rendered the related service are measured on an undiscounted basis and are expensed as the related service is provided.

(r) Regulatory deferral account

The regulatory deferral account is recognized and measured at historical cost less depreciation. Management continually assesses the likelihood of recovery of regulatory assets. If recovery through future rates is no longer considered probable, the amounts would be charged to the results of operations in the period that the assessment is made.

3. Contingent liabilities

As a condition of sale in 2004 of a property, Halifax Water indemnified the purchaser from claims or actions resulting from migration of halocarbons. The environmental risk is assessed to be low and the likelihood of any related liability is not determinable.

Halifax Water has reviewed environmental risk factors at other owned properties to determine whether there is an obligation for reclamation. As of the date of issue of the financial statements the likelihood of any related liability is not determinable.

There are active claims against Halifax Water; however, the likelihood of actual liability is not determinable at this time. If Halifax Water's defence of active claims is unsuccessful, the potential exposure would be \$1,000 - \$2,000.

4. Employee benefit obligations

Retirement benefit plan – employees transferred from HRM

For employees that transferred from HRM, Halifax Water records an expense for the employer's share of the contributions to the Halifax Regional Municipality Pension Plan (HRM Pension Plan) in the period when Halifax Water is obligated to make contributions for services rendered by the employee. During 2023, Halifax Water funded \$458 (2022 - \$532) in contributions to the HRM Pension Plan. The number of employees included in this plan is 48 (2022 - 53) and this number is reducing over time. As former HRM employees retire, they are replaced with employees in the Halifax Regional Water Commission Employee Pension Plan (the Plan).

Supplemental retirement plans sponsored by Halifax Water

For employees who participate in the supplemental retirement plans, the cost of pension benefits are expensed at the time active employees are compensated. During 2023, Halifax Water funded \$28 (2022 - \$23) in contributions to these plans. The number of employees included in these plans is 6 (2022 - 6).

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

4. Employee benefit obligations (continued)

Defined benefit plan sponsored by Halifax Water and other long term employment benefits

For all other employees, Halifax Water maintains a defined benefit pension plan and offers post-retirement health and insurance benefits. The defined benefit pension plan provides pensions based upon length of service and best seven consecutive years' earnings. The defined benefit pension plan is funded by employer and employee contributions with employees contributing 9.60% (10.34% to December 31, 2021) of pensionable employee earnings and Halifax Water matching employee contributions. The defined benefit pension plan assets are managed by the HRM Pension Committee.

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

Halifax Water has a non-funded pre-retirement benefit that is accrued annually, and is payable on retirement, termination or death of the employee. For individuals who elected to defer receipt of their benefit until the time which they leave employment, their individual benefit equates to approximately three days' pay for each year of completed service. Completed service for unionized employees was frozen as at June 7, 2019, and June 20, 2019 for non-union employees, for the purposes of determining their pre-retirement benefit. Pre-retirement benefits accrue to a maximum of six months' salary and can be taken as a lump sum payment at the time of retirement in lieu of pre-retirement leave.

Information about Halifax Water's plans, based on an actuarial extrapolation of the defined benefit pension plan, and an actuarial valuation of the pre-retirement benefits and the post-retirement benefits as at March 31, 2023, is as follows:

	Defined benefit pension plan		Post-retirement benefits		Pre-retirement benefits		Total	
	2023	2022	2023	2022	2023	2022	2023	2022
Change in accrued benefit obligation								
Balance, April 1	\$ 208,627	\$ 227,572	\$ 310	\$ 395	\$ 1,637	\$ 1,718	\$ 210,574	\$ 229,685
Current service cost	11,628	13,648	-	-	89	100	11,717	13,748
Interest cost	8,450	7,877	10	10	62	52	8,522	7,939
Benefit payments	(6,407)	(5,433)	(45)	(53)	(273)	(92)	(6,725)	(5,578)
Re-measurements – actuarial (gains)/ losses from changes in financial/experience assumptions	(35,551)	(35,037)	15	(42)	(158)	(141)	(35,694)	(35,220)
Balance, March 31	<u>186,747</u>	<u>208,627</u>	<u>290</u>	<u>310</u>	<u>1,357</u>	<u>1,637</u>	<u>188,394</u>	<u>210,574</u>
Change in fair value of plan assets								
Balance, April 1	168,624	155,889	-	-	-	-	168,624	155,889
Investment income	6,746	5,326	-	-	-	-	6,746	5,326
Administrative expenses	(149)	(80)	-	-	-	-	(149)	(80)
Actual return on plan assets	4,872	5,869	-	-	-	-	4,872	5,869
Benefit payments	(6,407)	(5,433)	(45)	(53)	(273)	(92)	(6,725)	(5,578)
Contributions: Employee	3,377	3,581	-	-	-	-	3,377	3,581
Employer	3,253	3,472	45	53	273	92	3,571	3,617
Balance, March 31	<u>180,316</u>	<u>168,624</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>180,316</u>	<u>168,624</u>
Accrued benefit liability, March 31	\$ 6,431	\$ 40,003	\$ 290	\$ 310	\$ 1,357	\$ 1,637	\$ 8,078	\$ 41,950

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

4. Employee benefit obligations (continued)

Included in the statement of earnings and comprehensive earnings is pension expense of \$10,628 (2022 - \$13,066).

The significant actuarial assumptions adopted in measuring Halifax Water's accrued benefit obligations are as follows:

	2023	2022	2023	2022	2023	2022
	Defined benefit pension plan	Defined benefit Pension plan	Post- retirement benefits	Post- retirement benefits	Pre- retirement benefit	Pre- retirement benefit
Discount rate	4.90%	4.00%	4.75%	3.7%	4.90%	3.90%
Expected return on plan assets	4.90%	4.00%	N/A	N/A	N/A	N/A
Rate of compensation increase	3.75%	3.75%	N/A	N/A	3.75%	3.75%
Expenses for life benefits as a % of claims	N/A	N/A	9.36%	9.36%	N/A	N/A
Health benefit trending per year	N/A	N/A	6.06%	6.18%	N/A	N/A
Dental benefit trending per year	N/A	N/A	4.00%	4.00%	N/A	N/A

The measurement date used to determine the plan assets and the accrued benefit obligation was March 31, 2023. The most recent actuarial valuation for the defined benefit pension plan was January 1, 2022, with the next actuarial valuation scheduled for January 1, 2025. Going concern extrapolations of the defined benefit pension plan occur annually between the actuarial valuation dates.

The estimated employer contributions expected to be paid to the pension plans for the next fiscal year are \$3,916.

5. Regulatory deferral account

In 2011, the NSUARB granted Halifax Water approval to defer depreciation charges on certain assets transferred in 2010 from HRM relating to the Halifax Harbour Solutions Project (HHSP). Depreciation of \$2,078 was deferred in each of fiscal 2011 and 2012. As a result, Halifax Water recognized a \$4,156 regulatory deferral account. In absence of rate regulation, this regulatory deferral account would have been expensed as depreciation in fiscal 2011 and 2012. In 2012, the NSUARB granted approval of the depreciation of this deferral account over the remaining useful lives of the underlying assets, beginning in 2014. The expense recognized in 2023 is \$192 (2022 - \$192).

	2023	2022
Balance, April 1	\$ 2,428	\$ 2,620
Depreciation	<u>(192)</u>	<u>(192)</u>
Balance, March 31	\$ 2,236	\$ 2,428

6. Commitments

The three-year agreement with HRM for the dividend/grant in lieu of taxes (dividend) expired on March 31, 2023 and a new agreement for a five-year period from April 1, 2023 through March 31, 2028 has been approved by the NSUARB. Dividend payments are approved as part of revenue requirements by the NSUARB. The total amount payable will be calculated based on Property Valuation Services Corporation's (PVSC) assessed value of Halifax Water properties and the property tax rates set by HRM each fiscal year. To phase in this new approach to calculating the payment, the assessed value of Halifax Water properties will be reduced by a declining percentage over the five-year period. In addition, the agreement states that the amount payable by Halifax Water to HRM in the fiscal year ending March 31, 2024 shall not exceed \$6,589. The payment will be allocated to each service based on no more than 1.56% times the water rate base, at least 0.25% times the wastewater rate base, and at least 0.25% times the stormwater rate base. In the event these allocations are not sufficient to fund the payment in any given fiscal year, the allocations for wastewater and stormwater will be increased to an amount sufficient to fund the payment.

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

7. Capital management

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

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

	<u>2023</u>	<u>2022</u>
Long term debt	\$ 218,451	\$ 224,182
Equity	<u>296,323</u>	<u>249,372</u>
Capital under management	<u>\$ 514,774</u>	<u>\$ 473,554</u>

Halifax Water has obtained regulatory approval for all borrowings during the fiscal year. Halifax Water is not subject to financial borrowing covenants other than as outlined in Note 9.

8. Financial instruments and risk management

Halifax Water applies a three-tier hierarchy framework for disclosing fair value of financial instruments, based on whether the inputs into the various valuation techniques are observable or unobservable. Observable techniques reflect market data obtained from independent sources, while unobservable inputs reflect management assumptions. Changes in valuation techniques of financial instruments may result in transfers of assigned levels. The hierarchy of input is as follows:

- Level I Quoted prices in active markets for identical assets or liabilities;
- Level II Inputs other than quoted prices included in Level I that are observable, either directly or indirectly; and
- Level III Inputs that are not based on observable market data.

The carrying values of current assets and current liabilities approximate their fair value due to the relatively short period to maturity of these financial instruments. The fair value of fixed rate long-term debt is assumed to approximate its carrying value given the limitations where Halifax Water can obtain long-term debt.

There were no transfers between classes of the fair value hierarchy during the year.

Halifax Water is exposed to risks as a result of holding financial instruments. Management considers and evaluates those risks on an on-going basis to ensure that the risks are appropriately managed. These potential risks include credit risk, interest risk, market risk and liquidity risk.

Credit risk

Credit risk arises from the possibility that Halifax Water's customers may experience financial difficulty and be unable to fulfill their obligations. Halifax Water's maximum exposure to credit risk corresponds to customer charges and contractual receivables. However, Halifax Water's customers are numerous and diverse, which reduces the concentration of credit risk.

Halifax Water makes use of a simplified approach in accounting for receivables and records the loss allowance as lifetime ECL. These are the expected shortfalls in contractual cash flows, considering the potential for default at any point during the life of the financial instrument. In calculating, Halifax Water uses its historical experience, external indicators and forward-looking information to calculate the ECL using a provision matrix. Halifax Water includes 75% of the balance of closed accounts in the allowance and 1% of active accounts. Halifax Water assesses impairment of receivables on a collective basis. As receivables possess shared credit risk characteristics, receivables have been grouped based on the days past due.

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

8. Financial instruments and risk management (continued)

An analysis of Halifax Water's receivables and continuity of Halifax Water's provision for impairment losses on receivables is as follows:

	<u>2023</u>	<u>2022</u>
Receivables		
Customer charges, contractual, and unbilled service revenues	\$ 40,141	\$ 37,969
Less: allowance for doubtful accounts	<u>(3,052)</u>	<u>(3,231)</u>
	<u>\$ 37,089</u>	<u>\$ 34,738</u>

The credit quality of financial assets that are neither past due nor impaired are assessed with reference to historical information and includes the following considerations; new customers, existing customers and payment pattern history.

Interest risk

Interest risk arises from the possibility that changes in interest rates will cause fluctuations in expenses and/or cash flows associated with Halifax Water's long term debt. Halifax Water's long term debt has been acquired with a variety of fixed rates and has staggered maturity dates which mitigates the interest rate risk.

Market risk

Market risk arises from the possibility that the value of an investment will fluctuate as a result of changes in market prices. These changes could affect the market value of the investments in Halifax Water's Plan and consequently the Plan's surplus. The risk is mitigated by the Plan diversifying the types of investments in its portfolio.

Liquidity risk

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

9. Related party transactions

The immediate parent and ultimate controlling party of Halifax Water is HRM.

Halifax Water is obligated to make payments on debt, held in the name of HRM, associated with Wastewater and Stormwater assets which were transferred to Halifax Water in 2007 and subsequent years.

Amounts receivable from HRM have normal credit terms.

Halifax Water had the following related party transactions with HRM:

	<u>2023</u>	<u>2022</u>
Revenue for provision of Water, Wastewater and Stormwater Services	\$ 6,029	\$ 4,987
Public fire protection revenue	7,744	7,628
Dividend	(6,524)	(6,466)
Operating expenditures	<u>(1,015)</u>	<u>(1,537)</u>
Net revenue and expenditures	<u>\$ 6,234</u>	<u>\$ 4,612</u>

The debt issued by Halifax Water was covered by a blanket guarantee from HRM subject to Halifax Water maintaining a debt service ratio of less than 35%. The debt service ratio at March 31, 2023 is 18.94% (2022 - 18.98%).

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

9. Related party transactions (continued)

Compensation of key management personnel

Members of the Board of Commissioners and Executive Management team are deemed to be key management personnel. It is the Board of Commissioners and Executive Management team who have the responsibility for planning, directing and controlling the activities of Halifax Water.

The following is compensation expense for key management personnel:

	<u>2023</u>	<u>2022</u>
Regular compensation and benefits	\$ 1,364	\$ 1,370
Post-employment benefits	<u>123</u>	<u>132</u>
Total compensation	<u>\$ 1,487</u>	<u>\$ 1,502</u>

10. Intangible assets

	<u>2023</u>	<u>2022</u>
Cost		
Balance, April 1	\$ 31,967	\$ 29,498
Additions	<u>4,456</u>	<u>2,469</u>
Balance, March 31	<u>36,423</u>	<u>31,967</u>
Accumulated amortization		
Balance, April 1	11,162	8,910
Amortization	<u>2,454</u>	<u>2,252</u>
Balance, March 31	<u>13,616</u>	<u>11,162</u>
Net book value, March 31	<u>\$ 22,807</u>	<u>\$ 20,805</u>

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

11. Utility plant in service

	Land	Structures and improvements	Treatment and network equipment	Distribution and collection network	Tools and work equipment	Total
Cost						
Balance, April 1, 2022	\$ 25,771	\$ 272,587	\$ 282,749	\$ 990,615	\$ 35,554	\$ 1,607,276
Additions	-	12,243	10,120	46,434	6,307	75,104
Disposals	-	-	-	-	-	-
Balance, March 31, 2023	<u>25,771</u>	<u>284,830</u>	<u>292,869</u>	<u>1,037,049</u>	<u>41,861</u>	<u>1,682,380</u>
Accumulated depreciation						
Balance, April 1, 2022	\$ -	\$ 81,781	\$ 102,153	\$ 130,694	\$ 15,255	\$ 329,883
Depreciation	-	9,084	16,031	18,763	6,105	49,983
Depreciation retired	-	-	-	-	-	-
Balance, March 31, 2023	<u>-</u>	<u>90,865</u>	<u>118,184</u>	<u>149,457</u>	<u>21,360</u>	<u>379,866</u>
Net book value, March 31, 2023	<u>\$ 25,771</u>	<u>\$ 193,965</u>	<u>\$ 174,685</u>	<u>\$ 887,592</u>	<u>\$ 20,501</u>	<u>\$ 1,302,514</u>

	Land	Structures and improvements	Treatment and network equipment	Distribution and collection network	Tools and work equipment	Total
Cost						
Balance, April 1, 2021	\$ 25,989	\$ 268,188	\$ 276,444	\$ 958,640	\$ 33,492	\$ 1,562,753
Additions	-	4,731	6,523	32,137	3,047	46,438
Disposals	(218)	(332)	(218)	(162)	(985)	(1,915)
Balance, March 31, 2022	<u>25,771</u>	<u>272,587</u>	<u>282,749</u>	<u>990,615</u>	<u>35,554</u>	<u>1,607,276</u>
Accumulated depreciation						
Balance, April 1, 2021	\$ -	\$ 72,724	\$ 86,766	\$ 112,483	\$ 10,464	\$ 282,437
Depreciation	-	9,111	15,536	18,222	5,771	48,640
Depreciation retired	-	(54)	(149)	(11)	(980)	(1,194)
Balance, March 31, 2022	<u>-</u>	<u>81,781</u>	<u>102,153</u>	<u>130,694</u>	<u>15,255</u>	<u>329,883</u>
Net book value, March 31, 2022	<u>\$ 25,771</u>	<u>\$ 190,806</u>	<u>\$ 180,596</u>	<u>\$ 859,921</u>	<u>\$ 20,299</u>	<u>\$ 1,277,393</u>

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

12. Deferred contributed capital

	<u>2023</u>	<u>2022</u>
Balance, April 1	\$ 908,589	\$ 898,952
Assets contributed during the year	18,500	7,271
Contributions and interest	29,962	20,958
Amortization	<u>(18,793)</u>	<u>(18,592)</u>
Balance, March 31	938,258	908,589
Less: current portion	<u>(18,836)</u>	<u>(14,614)</u>
	<u>\$ 919,422</u>	<u>\$ 893,975</u>

Deferred contributed capital is comprised of contributions received by Halifax Water for the acquisition of utility plant in service. Contributions for capital expenditures are amortized over the estimated useful lives of the assets.

13. Long-term debt

	<u>Interest rates</u>	<u>2023</u>	<u>2022</u>
Payable to Municipal Finance Corporation (MFC)			
Water	0.400% to 4.221%	\$ 86,712	\$ 79,286
HHSP	2.015% to 2.561%	4,550	5,200
Wastewater	0.400% to 4.116%	89,859	96,915
Stormwater	0.400% to 3.782%	<u>25,252</u>	<u>24,132</u>
		206,373	205,533
Payable to Halifax Regional Municipality			
Wastewater/Stormwater	1.200% to 5.940%	<u>13,000</u>	<u>19,500</u>
		219,373	225,033
Less: debt issue costs		<u>(922)</u>	<u>(851)</u>
		218,451	224,182
Less: amount payable within one year		<u>(45,962)</u>	<u>(46,272)</u>
		<u>\$ 172,489</u>	<u>\$ 177,910</u>

During the year Halifax Water acquired \$15,749 in new debt with a ten year term and thirty year amortization period.

The debentures are repayable in fixed annual principal instalments plus interest payable semi-annually. Interest paid during the year was \$6,851 (2022 - \$6,859). Principal instalments for the next five years are as follows:

2023/24	\$ 45,962
2024/25	\$ 36,076
2025/26	\$ 26,428
2026/27	\$ 13,010
2027/28	\$ 13,931
Thereafter	\$ 83,966

Halifax Regional Water Commission

Notes to the financial statements

March 31, 2023 (in thousands)

14. Operating expenditures by nature

	<u>2023</u>	<u>2022</u>
Salaries and benefits	\$ 42,473	\$ 43,817
Pension	6,851	9,229
Training	681	432
Contract services	15,791	13,938
Electricity	7,090	7,160
Operating supplies	15,351	13,081
Professional services	5,351	5,953
Chemicals	8,708	7,046
Depreciation on assets allocated to departments	999	1,320
Depreciation and amortization	<u>51,438</u>	<u>49,572</u>
	<u>\$ 154,733</u>	<u>\$ 151,548</u>

15. Comparative figures

Certain of the comparative figures have been reclassified to conform to the financial statement presentation adopted for the current fiscal year.

Halifax Regional Water Commission

Schedule of utility plant in service

Year ended March 31, 2023 (in thousands)

Schedule A

Water

Cost	Land	Structures and improvements	Pumping equipment	Purification equipment	SCADA equipment	Transmission and distribution mains	Services	Meters	Hydrants	Aerotech and small systems	Tools and work equipment	Total
Balance, April 1, 2022	\$ 18,215	\$ 122,825	\$ 10,778	\$ 29,411	\$ 11,293	\$ 418,465	\$ 45,052	\$ 19,234	\$ 22,447	\$ 10,048	\$ 35,131	\$ 742,899
Cost	-	9,012	-	2,695	892	15,831	3,967	138	853	-	4,739	38,127
Additions	-	-	-	-	-	-	-	-	-	-	-	-
Disposals	-	-	-	-	-	-	-	-	-	-	-	-
Balance, March 31, 2023	18,215	131,837	10,778	32,106	12,185	434,296	49,019	19,372	23,300	10,048	39,870	781,026
Accumulated depreciation	-	35,665	8,468	21,069	5,375	105,279	9,850	6,717	5,581	4,296	19,490	221,790
Balance, April 1, 2022	-	2,235	303	1,379	544	5,398	828	904	377	330	3,713	16,011
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation retired	-	-	-	-	-	-	-	-	-	-	-	-
Total accumulated depreciation, March 31, 2023	-	37,900	8,771	22,448	5,919	110,677	10,678	7,621	5,958	4,626	23,203	237,801
Net book value, March 31, 2023	\$ 18,215	\$ 93,937	\$ 2,007	\$ 9,658	\$ 6,266	\$ 323,619	\$ 38,341	\$ 11,751	\$ 17,342	\$ 5,422	\$ 16,667	\$ 543,225

Cost	Land	Structures and improvements	Pumping equipment	Purification equipment	SCADA equipment	Transmission and distribution mains	Services	Meters	Hydrants	Aerotech and small systems	Tools and work equipment	Total
Balance, April 1, 2021	\$ 18,433	\$ 121,564	\$ 10,745	\$ 28,232	\$ 11,371	\$ 411,533	\$ 43,158	\$ 19,147	\$ 21,990	\$ 10,048	\$ 32,162	\$ 728,383
Cost	-	1,593	33	1,179	19	7,086	1,894	208	457	-	3,514	15,983
Additions	-	(332)	-	-	(97)	(154)	-	(121)	-	-	(545)	(1,467)
Disposals	(218)	-	-	-	-	-	-	-	-	-	-	-
Balance, March 31, 2022	18,215	122,825	10,778	29,411	11,293	418,465	45,052	19,234	22,447	10,048	35,131	742,899
Accumulated depreciation	-	33,572	8,167	19,863	4,931	100,002	9,081	5,874	5,216	3,963	16,695	207,364
Balance, April 1, 2021	-	2,125	301	1,206	536	5,287	769	900	365	333	3,340	15,162
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation retired	-	(32)	-	-	(92)	(10)	-	(57)	-	-	(545)	(736)
Total accumulated depreciation, March 31, 2022	-	35,665	8,468	21,069	5,375	105,279	9,850	6,717	5,581	4,296	19,490	221,790
Net book value, March 31, 2022	\$ 18,215	\$ 87,160	\$ 2,310	\$ 8,342	\$ 5,918	\$ 313,186	\$ 35,202	\$ 12,517	\$ 16,866	\$ 5,752	\$ 15,641	\$ 521,109

Schedule A is presented in accordance with the NSUARB Water Utility Accounting and Reporting Handbook (NSUARB Handbook).

Utility plant in service under IFRS differs from the NSUARB Handbook due to exclusion of intangible assets, componentization of certain assets and differences in useful lives for depreciation.

Schedule A

Halifax Regional Water Commission Schedule of utility plant in service

Year ended March 31, 2023 (in thousands)

Wastewater

	Land	Structures and improvements	Pumping equipment	Treatment equipment	SCADA equipment	Collection system	Laterals	Meters	Aerotech and small systems	Tools and work equipment	Total
Cost											
Balance, April 1, 2022	\$ 7,083	\$ 199,497	\$ 26,142	\$ 178,188	\$ 15,954	\$ 349,151	\$ 32,279	\$ 8,971	\$ 12,784	\$ 46,900	\$ 876,949
Cost	-	3,445	3,009	2,311	86	6,511	4,928	138	-	5,423	25,851
Additions	-	-	-	-	-	-	-	-	-	-	-
Disposals	-	-	-	-	-	-	-	-	-	-	-
Balance, March 31, 2023	7,083	202,942	29,151	180,499	16,040	355,662	37,207	9,109	12,784	52,323	902,800
Accumulated depreciation											
Balance, April 1, 2022	-	73,004	10,834	90,122	5,146	80,026	4,227	1,407	5,209	24,127	294,102
Depreciation	-	4,341	1,159	9,247	903	4,901	705	450	391	4,106	26,203
Depreciation retired	-	-	-	-	-	-	-	-	-	-	-
Total accumulated depreciation, March 31, 2023	-	77,345	11,993	99,369	6,049	84,927	4,932	1,857	5,600	28,233	320,305
Net book value, March 31, 2023	7,083	125,597	17,158	81,130	9,991	270,735	32,275	7,252	7,184	24,090	582,495

	Land	Structures and improvements	Pumping equipment	Treatment equipment	SCADA equipment	Collection system	Laterals	Meters	Aerotech and small systems	Tools and work equipment	Total
Cost											
Balance, April 1, 2021	\$ 7,083	\$ 196,408	\$ 23,273	\$ 176,639	\$ 15,954	\$ 336,514	\$ 31,433	\$ 8,763	\$ 12,784	\$ 45,649	\$ 854,500
Cost	-	3,089	2,869	1,549	-	12,637	846	208	-	1,691	22,889
Additions	-	-	-	-	-	-	-	-	-	-	-
Disposals	-	-	-	-	-	-	-	-	-	(440)	(440)
Balance, March 31, 2022	7,083	199,497	26,142	178,188	15,954	349,151	32,279	8,971	12,784	46,900	876,949
Accumulated depreciation											
Balance, April 1, 2021	-	68,574	9,814	81,043	4,222	75,282	3,581	963	4,815	20,604	268,898
Depreciation	-	4,430	1,020	9,079	924	4,744	646	444	394	3,958	25,639
Depreciation retired	-	-	-	-	-	-	-	-	-	(435)	(435)
Total accumulated depreciation, March 31, 2022	-	73,004	10,834	90,122	5,146	80,026	4,227	1,407	5,209	24,127	294,102
Net book value, March 31, 2022	7,083	126,493	15,308	88,066	10,808	269,125	28,052	7,564	7,575	22,773	582,847

Schedule A is presented in accordance with the NSUARB Handbook.

Utility plant in service under IFRS differs from the NSUARB Handbook due to exclusion of intangible assets, componentization of certain assets and differences in useful lives for depreciation.

Halifax Regional Water Commission

Schedule of utility plant in service

Year ended March 31, 2023 (in thousands)

Schedule A

Stormwater

	Structures and improvements					Total
	Land	improvements	Collection system	Laterals	Aerotech and small systems	
Cost						
Balance, April 1, 2022	\$ 473	\$ 12,732	\$ 279,900	\$ 5,525	\$ 6,388	\$ 305,018
Cost						
Additions	-	-	15,141	259	531	15,931
Disposals	-	-	-	-	-	-
Balance, March 31, 2023	<u>473</u>	<u>12,732</u>	<u>295,041</u>	<u>5,784</u>	<u>6,919</u>	<u>320,949</u>
Accumulated depreciation						
Balance, April 1, 2022	-	2,444	67,865	812	3,691	74,812
Depreciation	-	237	6,954	113	740	8,044
Depreciation retired	-	-	-	-	-	-
Total accumulated depreciation, March 31, 2022	-	2,681	74,819	925	4,431	82,856
Net book value, March 31, 2023	<u>\$ 473</u>	<u>\$ 10,051</u>	<u>\$ 220,222</u>	<u>\$ 4,859</u>	<u>\$ 2,488</u>	<u>\$ 238,093</u>
Cost						
Balance, April 1, 2021	\$ 473	\$ 12,683	\$ 270,385	\$ 5,374	\$ 6,076	\$ 294,991
Cost						
Additions	-	49	9,523	151	312	10,035
Disposals	-	-	(8)	-	-	(8)
Balance, March 31, 2022	<u>473</u>	<u>12,732</u>	<u>279,900</u>	<u>5,525</u>	<u>6,388</u>	<u>305,018</u>
Accumulated depreciation						
Balance, April 1, 2021	-	2,208	61,212	703	2,970	67,093
Depreciation	-	236	6,655	109	721	7,721
Depreciation retired	-	-	(2)	-	-	(2)
Total accumulated depreciation, March 31, 2021	-	2,444	67,865	812	3,691	74,812
Net book value, March 31, 2022	<u>\$ 473</u>	<u>\$ 10,288</u>	<u>\$ 212,035</u>	<u>\$ 4,713</u>	<u>\$ 2,697</u>	<u>\$ 230,206</u>

	Water	Wastewater	Stormwater	Total
Cumulative utility plant in service				
Net book value, March 31, 2023	\$ 543,225	\$ 582,495	\$ 238,093	\$ 1,363,813
Net book value, March 31, 2022	\$ 521,109	\$ 582,847	\$ 230,206	\$ 1,334,162

Schedule A is presented in accordance with the NSUARB Handbook. Utility plant in service under IFRS differs from the NSUARB Handbook due to exclusion of intangible assets, componentization of certain assets and differences in useful lives for depreciation.

Halifax Regional Water Commission

Schedule of long term debt

Schedule B

Year ended March 31, 2023 (in thousands)

	Interest rate	Maturity	Balance Remaining	
			2023	2022
Payable to Municipal Finance Corporation				
Water				
Debenture 32 A 1	1.636% to 3.480%	2022	\$ -	\$ 200
Debenture 32 C 1	1.510% to 3.160%	2022	-	5,904
Debenture 33 A 1	1.330% to 2.979%	2023	5,562	6,067
Debenture 33 B 1	1.285% to 3.614%	2023	4,077	4,447
Debenture 34 B 1	1.200% to 3.190%	2024	8,203	8,887
Debenture 35 A 1	1.040% to 2.894%	2025	8,754	9,427
Debenture 36 A 1	1.150% to 2.925%	2026	800	1,000
Debenture 36 B 1	1.150% to 2.506%	2026	3,036	3,254
Debenture 37 A 1	1.734% to 3.073%	2027	2,625	2,800
Debenture 38 A 1	2.060% to 3.295%	2028	700	900
Debenture 38 B 1	2.490% to 3.389%	2028	4,800	5,100
Debenture 39 A 1	2.015% to 2.561%	2029	9,350	9,900
Debenture 40 A 1	0.678% to 1.879%	2030	10,800	11,400
Debenture 40 B 1	0.400% to 2.376%	2031	9,500	10,000
Debenture 42 A 1	2.575% to 3.782%	2032	13,138	-
Debenture 42 B 1	4.177% to 4.116%	2032	5,367	-
Wastewater				
Debenture 32 A 1	1.636% to 3.480%	2022	-	1,318
Debenture 32 B 1	1.380% to 3.156%	2022	-	17,600
Debenture 32 C 1	1.510% to 3.160%	2022	-	2,527
Debenture 33 A 1	1.330% to 2.979%	2023	9,275	10,116
Debenture 33 B 1	1.285% to 3.614%	2023	5,991	6,536
Debenture 34 A 1	1.245% to 3.347%	2024	3,342	3,620
Debenture 34 B 1	1.200% to 3.190%	2024	5,151	5,581
Debenture 35 A 1	1.040% to 2.894%	2025	9,172	9,877
Debenture 36 B 1	1.150% to 2.506%	2026	1,268	1,360
Debenture 37 A 1	1.734% to 3.073%	2027	4,575	4,880
Debenture 38 B 1	2.490% to 3.389%	2028	5,120	5,440
Debenture 39 A 1	2.015% to 2.561%	2029	12,750	13,500
Debenture 40 A 1	0.678% to 1.879%	2030	8,020	8,560
Debenture 40 B 1	0.400% to 2.376%	2031	5,700	6,000
Debenture 42 A 1	2.575% to 3.782%	2032	17,198	-
Debenture 42 B 1	4.177% to 4.116%	2032	2,297	-
HHSP				
Debenture 39 A 1	2.015% to 2.561%	2029	4,550	5,200
Stormwater				
Debenture 33 A 1	1.330% to 2.979%	2023	297	324
Debenture 33 B 1	1.285% to 3.614%	2023	1,452	1,584
Debenture 34 B 1	1.200% to 3.190%	2024	3,542	3,837
Debenture 35 A 1	1.040% to 2.894%	2025	2,100	2,261
Debenture 36 B 1	1.150% to 2.506%	2026	630	676
Debenture 37 A 1	1.734% to 3.073%	2027	300	320
Debenture 38 B 1	2.490% to 3.389%	2028	2,080	2,210
Debenture 39 A 1	2.015% to 2.561%	2029	3,400	3,600
Debenture 40 A 1	0.678% to 1.879%	2030	5,040	5,320
Debenture 40 B 1	0.400% to 2.376%	2031	3,800	4,000
Debenture 42 A 1	2.575% to 3.782%	2032	2,611	-
			206,373	205,533
Payable to Halifax Regional Municipality				
Wastewater/Stormwater				
Debenture 24 B 1	2.840% to 5.940%	2024	11,000	16,500
Debenture 34 B 1	1.200% to 3.190%	2024	2,000	3,000
			13,000	19,500
			219,373	225,033
Less: debt issue costs			(922)	(851)
			218,451	224,182
Less: amount payable within one year			(45,962)	(46,272)
			\$ 172,489	\$ 177,910

Halifax Regional Water Commission

Schedule of earnings

Schedule C

Year ended March 31, 2023 (in thousands)

Water

	<u>2023</u>	<u>2022</u>
Operating revenues		
Water	\$ 49,160	\$ 48,189
Public fire protection	7,744	7,628
Private fire protection	1,377	1,270
Other operating revenue		
Bulk water stations	352	317
Late payment and connection fees	214	275
Miscellaneous	264	333
	<u>59,111</u>	<u>58,012</u>
Operating expenditures		
Water supply and treatment	11,646	10,760
Water transmission and distribution	11,757	11,316
Engineering and technology services	4,724	6,188
Regulatory services	1,446	1,220
Customer services	2,218	2,505
Corporate services	1,622	1,454
Administration services	2,974	3,429
Depreciation and amortization	12,186	11,489
	<u>48,573</u>	<u>48,361</u>
Earnings from operations before financial and other revenues and expenditures	<u>10,538</u>	<u>9,651</u>
Financial and other revenues		
Interest	343	123
Other	446	467
	<u>789</u>	<u>590</u>
Financial and other expenditures		
Interest on long term debt	2,434	2,113
Repayment of long term debt	6,148	5,808
Amortization of debt issue costs	87	81
Dividend/grant in lieu of taxes	5,608	5,553
Other	119	114
	<u>14,396</u>	<u>13,669</u>
Loss for the year	<u>\$ (3,069)</u>	<u>\$ (3,428)</u>

Schedule C is presented in accordance with the NSUARB Handbook.

Halifax Regional Water Commission

Schedule C

Schedule of earnings

Year ended March 31, 2023 (in thousands)

Wastewater

	<u>2023</u>	<u>2022</u>
Operating revenues		
Wastewater	\$ 82,622	\$ 80,646
Other operating revenue		
Leachate and other contract revenue	454	483
Septage tipping fees	598	490
Over strength surcharge	8	-
Airplane effluent	79	3
Late payment and connection fees	202	209
Miscellaneous	233	234
	<u>84,196</u>	<u>82,065</u>
Operating expenditures		
Wastewater collection	13,691	12,988
Wastewater treatment	23,420	21,774
Engineering and technology services	6,846	6,014
Regulatory services	1,491	1,584
Customer services	2,044	2,032
Corporate services	1,308	1,383
Administration services	2,344	1,660
Depreciation and amortization	16,698	15,882
	<u>67,842</u>	<u>63,317</u>
Earnings from operations before financial and other revenues and expenditures	<u>16,354</u>	<u>18,748</u>
Financial and other revenues		
Interest	139	36
Other	424	151
	<u>563</u>	<u>187</u>
Financial and other expenditures		
Interest on long term debt	3,668	4,019
Repayment of long term debt	14,021	13,610
Amortization of debt issue costs	116	125
Dividend/grant in lieu of taxes	778	777
Other	10	15
	<u>18,593</u>	<u>18,546</u>
Earnings (loss) for the year	<u>\$ (1,676)</u>	<u>\$ 389</u>

Schedule C is presented in accordance with the NSUARB Handbook.

Halifax Regional Water Commission

Schedule of earnings

Schedule C

Year ended March 31, 2023 (in thousands)

Stormwater

	<u>2023</u>	<u>2022</u>
Operating revenues		
Stormwater site generated service	\$ 6,931	\$ 6,294
Stormwater right-of-way service	4,475	3,835
Other operating revenue		
Late payment and connection fees	258	170
Miscellaneous	118	126
	<u>11,782</u>	<u>10,425</u>
Operating expenditures		
Stormwater collection	4,719	4,566
Engineering and technology services	2,107	1,517
Regulatory services	1,497	1,588
Customer services	185	274
Corporate services	145	225
Administration services	260	270
Depreciation and amortization	2,710	2,403
	<u>11,623</u>	<u>10,843</u>
Earnings (loss) from operations before financial and other revenue and expenditures	<u>159</u>	<u>(418)</u>
Financial and other revenues		
Interest	<u>(53)</u>	<u>19</u>
Financial and other expenditures		
Interest on long term debt	749	727
Repayment of long term debt	2,210	2,059
Amortization of debt issue costs	24	22
Dividend/grant in lieu of taxes	138	136
	<u>3,121</u>	<u>2,944</u>
Loss for the year	<u>\$ (3,015)</u>	<u>\$ (3,343)</u>

Schedule C is presented in accordance with the NSUARB Handbook.

Halifax Regional Water Commission

Schedule of earnings

Schedule D

Year ended March 31, 2023 (in thousands)

Regulated activities

	<u>2023</u>	<u>2022</u>
Operating revenues		
Water	\$ 49,160	\$ 48,189
Wastewater	82,622	80,646
Stormwater	11,406	10,129
Public fire protection	7,744	7,628
Private fire protection services	1,377	1,270
Other operating revenue	1,620	1,625
	<u>153,929</u>	<u>149,487</u>
Operating expenditures		
Water supply and treatment	11,619	10,720
Water transmission and distribution	11,757	11,316
Wastewater collection	13,631	12,965
Stormwater collection	4,719	4,566
Wastewater treatment	22,670	21,053
Engineering and technology services	13,677	13,719
Regulatory services	4,434	4,392
Customer services	4,402	4,777
Corporate services	3,057	3,044
Administration services	5,422	5,244
Depreciation and amortization	31,575	29,756
	<u>126,963</u>	<u>121,552</u>
Earnings from operations before financial and other revenues and expenditures	<u>26,966</u>	<u>27,935</u>
Financial and other revenues		
Interest	429	178
Other	32	28
	<u>461</u>	<u>206</u>
Financial and other expenditures		
Interest on long term debt	6,851	6,859
Repayment of long term debt	22,379	21,477
Amortization of debt issue costs	227	228
Dividend/grant in lieu of taxes	6,524	6,466
	<u>35,981</u>	<u>35,030</u>
Loss for the year	<u>\$ (8,554)</u>	<u>\$ (6,889)</u>

Halifax Regional Water Commission
Schedule of earnings

Schedule D

Year ended March 31, 2023 (in thousands)

Unregulated activities

	<u>2023</u>	<u>2022</u>
Operating revenues		
Septage tipping fees	\$ 598	\$ 490
Leachate treatment and contract revenue	454	483
Airplane effluent	79	3
Other operating revenue	<u>29</u>	<u>39</u>
	<u>1,160</u>	<u>1,015</u>
Operating expenditures		
Water supply and treatment	27	40
Wastewater treatment	750	721
Wastewater collection	60	23
Customer services	45	34
Corporate services	18	18
Administration services	156	115
Depreciation and amortization	<u>19</u>	<u>18</u>
	<u>1,075</u>	<u>969</u>
Earnings from operations before financial and other revenues and expenditures	<u>85</u>	<u>46</u>
Financial and other revenues		
Other	<u>838</u>	<u>590</u>
Financial and other expenditures		
Other	<u>129</u>	<u>129</u>
Earnings for the year	<u>\$ 794</u>	<u>\$ 507</u>

Halifax Regional Water Commission Nova Scotia Utility and Review Board information

Schedule E

Year ended March 31, 2023 (in thousands)

Return on rate base	<u>2023</u>	<u>2022</u>
Rate of return on rate base for Water Service	1.32%	1.13%
Rate of return on rate base for Wastewater Service	4.90%	5.77%
Rate of return on rate base for Stormwater Service	0.03%	(0.87)%

Return on rate base is calculated based on earnings from operations before financial and other revenues and expenditures divided by the net book value of funded utility plant in service.

Special purpose reserves

	Wastewater and Stormwater Reserves	Regional Development Charge Water Reserve	Regional Development Charge Wastewater Reserve	Other Capital Reserves	<u>2023 Total</u>	<u>2022 Total</u>
Reserve, April 1	\$ 1,964	\$ 3,005	\$ 64,113	\$ 879	\$ 69,961	\$ 54,056
Contributions and interest	-	6,834	21,052	33	27,919	22,612
Expenditures	-	(4,003)	-	-	(4,003)	(6,707)
Reserve, March 31	\$ 1,964	\$ 5,836	\$ 85,165	\$ 912	\$ 93,877	\$ 69,961

Summarized consolidated operating results

	<u>2023</u>	<u>2022</u>
Operating revenues	\$ 155,089	\$ 150,502
Operating expenditures	128,038	122,521
Earnings from operations before financial and other revenues and expenditures	27,051	27,981
Financial and other revenues	1,299	796
Financial and other expenditures	36,110	35,159
Loss for the year	\$ (7,760)	\$ (6,382)

Schedule E is presented in accordance with the NSUARB Handbook.



Halifax Regional Water Commission

For the year ended March 31, 2023

Report to the Audit and Finance Committee
Audit results

June 8, 2023

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Executive summary

Purpose of report and scope

The purpose of this report is to engage in an open dialogue with you regarding our audit of the financial statements of Halifax Regional Water Commission ("Halifax Water") for the year ended March 31, 2023. This communication will assist the Audit and Finance Committee in understanding the results of audit procedures and includes comments on misstatements, significant accounting policies, sensitive estimates and other matters.

The information in this document is intended solely for the information and use of the Audit and Finance Committee. It is not intended to be distributed or used by anyone other than these specified parties.

We were engaged to provide the following deliverables:

Deliverable	Timing
Discussions and communications regarding planning	January 10, 2023
Communication of audit results	June 8, 2023
Report on the March 31, 2023 financial statements	June 22, 2023

Status of our audit

We have substantially completed our audit of the financial statements of Halifax Water and the results of that audit are included in this report.

We will finalize our report upon resolution of the following items that were outstanding as at June 8, 2023:

- Receipt of final updated financial statements (for any final changes after June 1, 2023), if any
- Receipt of actuary letter responses and completion of final procedures over employee retirement benefits (Eckler and Mercer Canada)
- Receipt of outstanding audit support including the HRM confirmation, and inventory price testing
- Receipt of legal inquiry responses
- Receipt of signed management representation letter (a draft has been attached in the appendices)
- Approval of the financial statements by the Board of Commissioners
- Final inquiries regarding subsequent events

We have successfully executed our audit strategy in accordance with the plan presented to the Audit and Finance Committee on January 10, 2023.

Additionally, we will complete our final communications to KPMG regarding our role as component auditor for their audit of Halifax Regional Municipality, when required.

Independence

We confirm that there have been no changes to our status with respect to independence since we confirmed our independence to you on January 10, 2023.

Audit risks and results

Significant transactions

Area of focus	Matter	Our response and findings
Issuance of new debt	In May and October 2022, Halifax Water participated in the Nova Scotia Department of Finance and Treasury Board Corporation debenture issues in the amount of \$33.0 million and \$7.7 million respectively to fund a portion of the 2021/2022 additions to utility plant in service (additions funded after they are complete), and financing balloon payments on expiring debt.	<p>We performed the following:</p> <ul style="list-style-type: none">Examined the new debenture agreement;Confirmed the balances along with all other outstanding debt with Halifax Regional Municipality and the Nova Scotia Department of Finance and Treasury Board <p>We have no findings to report.</p>
Capital projects	During the year, Halifax Water had significant capital projects ongoing and approximately \$88.8 million in capital additions to ongoing and completed capital projects.	<p>We performed the following:</p> <ul style="list-style-type: none">Tested the operating effectiveness of controls over additions to capital assets;On a test basis, examined invoices or other support for additions incurred during the year. <p>We have no findings to report.</p>

Areas of focus

The following is a summary of areas of focus, and the related matters and findings we would like to communicate to the Audit and Finance Committee.

Area of focus	Matter	Our response and findings
Revenue	<p>There are a significant number of transactions in the billing process which leads to a significant risk from a financial reporting perspective. Unbilled services revenue require management to make estimates to determine the accrual required at year end.</p>	<p>We performed the following:</p> <ul style="list-style-type: none">• Tested the operating effectiveness of controls over the accuracy and occurrence of revenue recognized, including customer set up and meter data collection and processing.• Performed substantive analytical procedures over revenue recognized to identify fluctuations that may be indicative of error or fraud for further investigation.• Analyzed management's estimate of unbilled services revenue for reasonability including testing of inputs used in forming the estimate. <p>We have no findings to report.</p>
Utility plant in service	<p>Halifax Water has a significant balance in utility plant in service and many ongoing capital projects throughout the year. There is a risk involved from a financial reporting perspective as accounting for utility plant in service involves judgments around classification of assets, estimation of useful lives, etc.</p>	<p>We performed the following:</p> <ul style="list-style-type: none">• Tested the operating effectiveness of controls over additions to capital assets, including Work in Progress and Utility Plant in Service.• On a test basis, examined invoices or other support for additions incurred during the year. <p>We have no findings to report.</p>
Employee benefit obligations	<p>Halifax Water maintains a defined benefit pension plan and offers post-retirement health and insurance benefits. The pension plan provides pensions based upon length of service and best seven years' earnings. Halifax Water contributes 9.6% of payroll (effective January 1, 2022). An extrapolation was performed at January 1, 2023.</p>	<p>We performed the following:</p> <ul style="list-style-type: none">• Examined the extrapolation report prepared by Halifax Water's independent actuary;• Verified amounts reported and disclosed in Halifax Water's financial statements are accurate;• Assessed reasonability of assumptions used in the extrapolation as compared to expectations and market information;• Performed testing of the data used by the actuary in the performance of their work; and• Confirmed the independence of Halifax Water's actuary and their materiality threshold. <p>We have no findings to report.</p>

Area of focus	Matter	Our response and findings
SCADA system audit	<p>In March 2023, the Office of the Auditor General (OAG) released their public report on Halifax Water's SCADA system and their associated findings. This report identified a number of key findings such as:</p> <ul style="list-style-type: none"> - Lack of a formal cyber risk plan and timely updates as it pertains to the SCADA environment - Lack of formal process and protocols as it relates to IT, IT/physical access controls & system back ups - Lack of inventory (spare parts) tracking - Lack of cyber security training, frequent cyber communications to staff and cyber protocols <p>While the scope of the audit completed by the OAG focuses on non-financial metrics and recommendations, the engagement team reviewed to assess if there would potentially be an impact on our planned approach for test of controls.</p>	<p>We performed the following:</p> <ul style="list-style-type: none"> • Reviewed the OAG findings and recommendations regarding Halifax Water's SCADA system, assessing findings for impact on selected internal controls and planned control reliance; and • Analysed the results of internal control testing for indications that controls may not be operating effectively. <p>We have no findings to report</p>

Adjustments and uncorrected misstatements

Adjustments

Misstatements identified and adjusted in the financial statements by the Halifax Water as a result of our audit procedures are as follows:

Description	Increase (decrease), in thousands			Balance sheet		Income effect
	Assets	Liabilities	Equity	Assets	Equity	Earnings
To update accrual for time banked in lieu resulting from formula error	\$ -	\$ 43	\$ -	\$ 43	\$ -	\$ (43)
To accrue for capital invoice missed during financial statement close process	743			743		-
Total adjusted misstatements	\$ 743	\$ 886	\$ -	\$ 886	\$ -	\$ (43)

Uncorrected misstatements

There were no unadjusted non-trivial misstatements as a result of our audit procedures.

Summary of disclosure matters

Our audit did not identify any unadjusted non-trivial misstatements of disclosure matters.

Other reportable matters

Internal control

The audit is designed to express an opinion on the financial statements. We obtain an understanding of internal control over financial reporting to the extent necessary to plan the audit and to determine the nature, timing and extent of our work. Accordingly, we do not express an opinion on the effectiveness of internal control.

If we become aware of a deficiency in your internal control over financial reporting, the auditing standards require us to communicate to the Audit and Finance Committee those deficiencies we consider significant. However, a financial statement audit is not designed to provide assurance on internal control.

Based on the results of our audit, we did not identify any reportable observations.

Technical updates – highlights

Accounting

There have not been any changes in accounting standards that would have a significant impact on Halifax Water in the current year, except those presented to the Committee as part of the communication on audit planning on January 10, 2023.

Further details of the changes to accounting standards, including management's preliminary comments on their applicability to the Halifax Water, are included in the Appendices. If you have any questions about these changes, we invite you to raise them during our next meeting. We will be pleased to address your concerns.

Exposure Draft – Regulatory Assets and Regulatory Liabilities

The International Accounting Standards Board (IASB) met on May 24, 2023 to discuss the status of the exposure draft project including the expected timing for completing, redeliberating, and issuing the prospective standard. Additionally, the IASB redeliberated proposals from its exposure draft relating to the timing of initial recognition of regulatory assets and regulatory liabilities. The IASB tentatively concluded and agreed that the prospective standard would contain:

- 1) A proposal to require recognition of all regulatory assets and regulatory liabilities existing at the end of the reporting period; and
- 2) The proposal to treat any regulatory assets and regulatory liabilities arising from regulated rates denominated in a foreign currency as monetary items when applying IAS 21 *The Effects of Changes in Foreign Exchange Rates*.

The revised standard is not expected to come in to effect until two years from the date of the release of the final standard; however, is likely to require retroactive application upon adoption. The extent to which the new standard will impact Halifax Water can start to be assessed by management upon the release of the final standard, incorporating the changes from the comment letters.

Assurance

There have not been any changes in auditing standards that would have a significant impact on Halifax Water in the current year, except those presented to the Committee as part of the communication on audit planning on January 10, 2023.

Canadian Standard on Quality Management (CSQM) 2 *Engagement quality reviews* is a new quality management standard that is effective for our audit of the Halifax Water's financial statements for the year ending March 31, 2024. This standard deals specifically with the topic of engagement quality reviews (EQRs), which we perform to obtain an objective evaluation of the significant judgments made by the engagement team and the conclusions reached. CSQM 2 covers the appointment and eligibility considerations related to the person performing the EQR and the performance and documentation requirements. It requires that we establish robust policies and procedures regarding the performance of EQRs, including:

- That the EQR be performed at appropriate times during the engagement, rather than only before completion
- Precluding the engagement partner from dating the engagement report until notification has been received from the engagement quality reviewer that the review is complete
- Recognising that the engagement quality reviewer may use assistants such as an individual or team of individuals with relevant expertise or an individual external to the firm to perform the EQR and that the engagement quality reviewer will be responsible for the overall performance of the review

The EQR is an important aspect of audit quality management and therefore we will need to coordinate with management to ensure that the timetable for the audit facilitates the appropriate execution of this process, taking into consideration the requirements of the new standard.

Further details of the changes to assurance standards, including management's preliminary comments on their applicability to the Halifax Water, are included in the Appendices. If you have any questions about these changes, we invite you to raise them during our next meeting. We will be pleased to address your concerns.

Appendix A

Draft independent auditor's report

Independent auditor's report

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

Opinion

We have audited the financial statements of the Halifax Regional Water Commission ("Halifax Water"), which comprise the statement of financial position as at March 31, 2023, and the statements of earnings and comprehensive earnings, changes in equity and cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly in all material respects, the financial position of Halifax Water as at March 31, 2023, and its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS).

Basis for opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of Halifax Water in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other matter – supplemental schedules

Our audit was conducted for the purposes of forming an opinion on the financial statements taken as a whole as prepared in accordance with IFRS. Schedules A through E are presented in accordance with the Nova Scotia Utility and Review Board Water Utility Accounting and Reporting Handbook. Such information has been subjected to the auditing procedures applied for the purpose of the audit of the financial statements as a whole as at and for the period ended March 31, 2023.

Responsibilities of management and those charged with governance for the financial statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with IFRS, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing Halifax Water's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate Halifax Water or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing Halifax Water's financial reporting process.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of Halifax Water's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on Halifax Water's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause Halifax Water to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Halifax, Canada
TBD

Chartered Professional Accountants

Appendix B

Draft management representation letter

Management Representation Letter

June 22, 2023

Grant Thornton LLP
Nova Centre, North Tower, Suite 1000
1675 Grafton Street
Halifax, NS B3J 0E9

Dear Mr. Brockway:

We are providing this letter in connection with your audit of the financial statements of **Halifax Regional Water Commission ("Halifax Water")** as of March 31, 2023, and for the year then ended, for the purpose of expressing an opinion as to whether the financial statements present fairly, in all material respects, the financial position, results of operations, and cash flows of Halifax Regional Water Commission in accordance with International Financial Reporting Standards.

We acknowledge that we have fulfilled our responsibilities for the preparation of the financial statements in accordance with International Financial Reporting Standards and for the design and implementation of internal controls to prevent and detect fraud and error. We have assessed the risk that the financial statements may be materially misstated as a result of fraud, and have determined such risk to be low. Further, we acknowledge that your examination was planned and conducted in accordance with Canadian generally accepted auditing standards (GAAS) so as to enable you to express an opinion on the financial statements. We understand that while your work includes an examination of the accounting system, internal controls and related data to the extent you considered necessary in the circumstances, it is not designed to identify, nor can it necessarily be expected to disclose, fraud, shortages, errors and other irregularities, should any exist.

Certain representations in this letter are described as being limited to matters that are material. An item is considered material, regardless of its monetary value, if it is probable that its omission from or misstatement in the financial statements would influence the decision of a reasonable person relying on the financial statements.

We confirm, to the best of our knowledge and belief, as of June 22, 2023, the following representations made to you during your audit.

Financial statements

- 1 The financial statements referred to above present fairly, in all material respects, the financial position of Halifax Water as at March 31, 2023 and the results of its operations and its cash flows for the year then ended in accordance with International Financial Reporting Standards, as agreed to in the terms of the audit engagement.
- 2 The financial statements have been prepared for the following users: Nova Scotia Utility and Review Board, Members of the Board of Commissioners, Halifax Regional Municipality (HRM) and management. These users will use the financial statements for meeting their financial reporting requirements.

Completeness of information

- 3 We have made available to you all financial records and related data and all minutes of the meetings of shareholders, directors, and committees of directors, as agreed in the terms of the audit engagement. Summaries of actions of recent meetings for which minutes have not yet been prepared have been provided to you. All significant board and committee actions are included in the summaries.
- 4 We have provided you with unrestricted access to persons within Halifax Water from whom you determined it necessary to obtain audit evidence.
- 5 There are no material transactions that have not been properly recorded in the accounting records underlying the financial statements. The adjusting journal entries which have been proposed by you are approved by us and have been recorded on the books of the Halifax Water.
- 6 There were no restatements made to correct a material misstatement in the prior period financial statements that affect the comparative information.
- 7 We are unaware of any known or probable instances of non-compliance with the requirements of regulatory or governmental authorities, including their financial reporting requirements.
- 8 We are unaware of any violations or possible violations of laws or regulations the effects of which should be considered for disclosure in the financial statements or as the basis of recording a contingent loss.
- 9 We have disclosed to you all known deficiencies in the design or operation of internal control over financial reporting of which we are aware.
- 10 We have identified to you all known related parties and related party transactions, including sales, purchases, loans, transfers of assets, liabilities and services, leasing arrangements guarantees, non-monetary transactions and transactions for no consideration, as disclosed in Note 9 of the financial statements

Fraud and error

- 11 We have no knowledge of fraud or suspected fraud affecting Halifax Water involving management; employees who have significant roles in internal control; or others, where the fraud could have a non-trivial effect on the financial statements.
- 12 We have no knowledge of any allegations of fraud or suspected fraud affecting Halifax Water's financial statements communicated by employees, former employees, analysts, regulators or others.
- 13 We acknowledge our responsibility for the design, implementation and maintenance of internal control to prevent and detect fraud.

Recognition, measurement and disclosure

- 14 We believe that the methods, significant assumptions and data used by us in making accounting estimates and related disclosures are appropriate to achieve recognition, measurement and disclosure that are in accordance with International Financial Reporting Standards.
- 15 We believe that the significant judgements made in making accounting estimates have taken into account relevant information of which management is aware and that appropriate specialized skills and experience (including third party experts where applicable), has been applied in making the accounting estimates.
- 16 We have no plans or intentions that may materially affect the carrying value or classification of assets and liabilities, both financial and non-financial, reflected in the financial statements.
- 17 There are no tangible capital assets belonging to Halifax Water that have not already been capitalized or would need to be capitalized in the future.
- 18 All related party transactions have been appropriately measured and disclosed in the financial statements.
- 19 The nature of all material measurement uncertainties has been appropriately disclosed in the financial statements, including all estimates where it is reasonably possible that the estimate will change in the near term and the effect of the change could be material to the financial statements.
- 20 There were no business combinations that occurred during the year.
- 21 Any intangibles on the books of Halifax Water are evaluated whenever events or changes in circumstances indicate the carrying amount may not be recoverable to determine whether or not they have been impaired, and an appropriate loss provision is provided in the accounts where there has been a permanent impairment.
- 22 Depreciation and amortization rates have been assessed to ensure they properly reflect the assets' useful lives.
- 23 Rate regulated assets and liabilities have been approved by the NSUARB and have been appropriately reflected in the financial statements. Refer to Note 5 of the financial statements.
- 24 All outstanding and possible claims, whether or not they have been discussed with legal counsel, have been disclosed to you and are appropriately reflected in the financial statements. Refer to Note 3 in the financial statements.
- 25 All liabilities and contingencies, including those associated with guarantees, whether written or oral, have been disclosed to you and are appropriately reflected in the financial statements.
- 26 Long lived assets and finite lived intangibles are reviewed for impairment, when events or changes in circumstances indicate that the carrying amount of the long-lived assets may not be recoverable. Halifax Water assesses if any indicators of impairment are present at each financial reporting year end. No impairments have been recognized for the March 31, 2023 year-end.

- 4
- 27 With respect to environmental matters:
- a) at year end, there were no liabilities or contingencies that have not already been disclosed to you;
 - b) liabilities or contingencies have been recognized, measured and disclosed, as appropriate, in the financial statements; and
 - c) commitments have been measured and disclosed, as appropriate, in the financial statements.
- 28 Halifax Water has satisfactory title to (or lease interest in) all assets, and there are no liens or encumbrances on Halifax Water's assets nor has any been pledged as collateral.
- 29 We have disclosed to you, and Halifax Water has complied with, all aspects of contractual agreements that could have a material effect on the financial statements in the event of non-compliance, including all covenants, conditions or other requirements of all outstanding debt. Refer to Schedule B in the financial statements.
- 30 The Goods and Services Tax (GST) and Harmonized Sales Tax (HST) transactions recorded by Halifax Water are in accordance with the federal and provincial regulations. The GST and HST liability/receivable amounts recorded by the Halifax Water are considered complete.
- 31 Employee future benefit costs, assets, and obligations have been determined, accounted for and disclosed in accordance with the requirements of IAS 19 Employee Benefits of the Chartered Professional Accountants of Canada (CPA Canada) Handbook Part I – Accounting.
- 32 There have been no events subsequent to the balance sheet date up to the date hereof that would require recognition or disclosure in the financial statements. Further, there have been no events subsequent to the date of the comparative financial statements that would require adjustment of those financial statements and related notes.

Other

- 33 We have considered whether or not events have occurred or conditions exist which may cast significant doubt on Halifax Water's ability to continue as a going concern and have concluded that no such events or conditions are evident.

Yours very truly,

Louis de Montbrun, CPA, CA
Acting General Manager & CEO

Alicia Scallion, CPA, CA
Acting Director of Corporate Services/CFO

Appendix C – IFRS Accounting developments

Accounting – Standards issued by the IASB

Effective date

Non-current Liabilities with Covenants (Amendments to IAS 1) and Classification of Liabilities as Current or Non-Current (Amendments to IAS 1)

IAS 1 *Presentation of Financial Statements* has been amended to clarify the guidance on whether a liability should be classified as either current or non-current. The amendments clarify the following:

- only covenants that an entity is required to comply with on or before the reporting date will affect the classification of a liability as current or non-current (for example, a covenant based on the entity's financial position at the end of the reporting period, even if it only assessed for compliance after the reporting period)
- covenants that an entity is required to comply with only after the reporting period do not affect the classification of a liability (for example, a covenant based on the entity's financial position six months after the end of the reporting period)
- settlement includes transfers of cash, equity instruments, other assets or services to the counterparty that result in extinguishment of the liability
- entities are required to disclose information that enables users of financial statements to understand the risk that a non-current liability with covenants could become repayable within twelve months after the reporting period (such as information about the covenant, the facts and circumstances that indicate the entity may have difficulty complying with it, and whether the entity would have complied had the covenant been assessed at the end of the reporting period)

Annual periods beginning on or after January 1, 2024.
Earlier adoption is permitted.

Definition of Accounting Estimates (Amendments to IAS 8)

The IASB has issued amendments to IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors* which introduce a definition of accounting estimates and provide other clarifications to help entities distinguish accounting policies from accounting estimates.

Under the amendments, accounting estimates are defined as "monetary amounts in financial statements that are subject to measurement uncertainty".

The amendments also emphasize that a change in an accounting estimate that results from new information or new developments is not an error correction, and that changes in an input or a measurement technique used to develop an accounting estimate are considered changes in accounting estimates if those changes in an input or measurement technique are not the result of an error correction.

Annual periods beginning on or after January 1, 2023.
Earlier application is permitted.

Accounting – Standards issued by the IASB

Effective date

Disclosure of Accounting Policies (Amendments to IAS 1)

The IASB has issued amendments to IAS 1 *Presentation of Financial Statements* which require entities to disclose their "material" accounting policy information rather than their "significant" accounting policies. The amendments are intended to help preparers determine which accounting policies to disclose in their financial statements.

The amendments explain that accounting policy information is material if omitting, misstating or obscuring that information could reasonably be expected to influence decisions that the primary users of the financial statements make on the basis of those financial statements. The amendments also clarify that accounting policy information may be material because of its nature, even if the related amounts are immaterial.

The following are examples of when accounting policy information is likely to be material:

- the entity changed its accounting policy and this change resulted in a material change in the financial statements
- the entity chose the accounting policy from one or more options permitted under IFRS
- the accounting policy was developed in accordance with IAS 8 in the absence of an IFRS that specifically applies
- the entity needed to make significant judgements or assumptions in applying an accounting policy
- the accounting required for material transactions, other events or conditions is complex and users of the financial statements would otherwise not understand those material transactions, other events or conditions

Annual periods beginning on or after January 1, 2023.
Earlier application is permitted.

Appendix D – Auditing developments

Canadian Auditing Standards (CASs) and other Canadian Standards issued by the AASB	Effective date
<p>Issuance of CSQM 1 Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements, CSQM 2 Engagement Quality Reviews and revised CAS 220 Quality Management for an Audit of Financial Statements</p> <p>Auditors must effectively manage audit quality, both at the firm level and the engagement level. The IAASB recognised a need to strengthen standards addressing quality control and the AASB implemented similar changes to those made at the international level. In January 2021, the AASB unanimously approved the suite of quality management standards.</p> <p>CSQM 1 introduces a new approach to "managing quality". Quality management is intended to be proactive in nature and to be a continuous process. Implementing the new standard requires firms to analyse and enhance many of their internal processes to achieve effective quality management. This standard replaces the extant standard, CSQC 1 Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance Engagements</p> <p>CSQM 2 deals specifically with the topic of engagement quality reviews (EQRs), which are performed by firms to obtain an objective evaluation of the significant judgments made by the engagement team and the conclusions reached. The standards setters recognized the importance of EQRs and noted that many stakeholders (including oversight bodies) were concerned that the requirements of CSQM 1 with respect to EQRs were not sufficiently robust. As a result, CSQM 2 was issued. CSQM 1 deals with the topic of when an EQR should be performed, while CSQM 2 covers the appointment and eligibility considerations related to the person performing the EQR and the performance and documentation requirements.</p> <p>CAS 220 was revised to clarify and strengthen the key elements of quality management at the engagement level by:</p> <ul style="list-style-type: none">• emphasizing that the engagement partner is responsible for managing and achieving quality at the engagement level• clarifying the engagement partner's responsibilities, and acknowledging the engagement partner can assign certain tasks/procedures to members of the engagement team who are appropriately skilled or suitably experienced in managing and achieving quality• modernizing the standard for the evolving environment	<p>CSQM 1 is effective for audits or reviews of financial statements or other assurance engagements as of December 15, 2022 and related services engagements as of December 15, 2023.</p> <p>CSQM 2 is effective for audits or reviews of financial statements with periods beginning on or after December 15, 2022, other assurance engagements beginning on or after December 15, 2022 and related services engagements beginning on or after December 15, 2023.</p> <p>CAS 220 is effective for audits of financial statements for periods beginning on or after December 15, 2022.</p>

Canadian Exposure Drafts issued by the AASB

Effective date

Potential revisions to CAS 500 *Audit Evidence*

The current audit evidence standard was issued many years ago. Since then, developments in technology have affected how entities operate and process information and how audits are performed. In December 2020, the IAASB initiated a project to revise the current standard to respond to changes in the business environment. The Exposure Draft proposes several key changes:

- To respond to changes in the information auditors use, including the nature and source of the information, a set of attributes has been developed to enhance the auditor's principle-based judgments related to audit evidence in a wide variety of circumstances. Enhancements and clarifications have also been made regarding the auditor's role when using information prepared by management's expert
- To modernise the standard and support a principles-based approach that recognises the evolution in technology, new application material has been added, including explanations of how automated tools may affect auditor bias and examples that recognise the use of technology by the entity or the auditor
- To foster professional skepticism when making judgments about information to be used as audit evidence and sufficient appropriate audit evidence, language has been added to emphasise the importance of maintaining professional skepticism at various stages, such as when attempting to ensure that audit procedures are being designed and performed in an unbiased manner.

The comment period for the Exposure Draft ended on March 15, 2023. It is expected that the effective date for the revised standard will be for periods beginning in 2025, but the exact effective date has not yet been established.

Appendix E - Environment, Social, and Governance

The ESG Imperative

Despite the complex ESG landscape, there are clear business and organizational imperatives to incorporating ESG into operations.



SUPPLIERS, CONSUMERS AND EMPLOYEES CARE ABOUT ESG

- 86% of Millennials are interested in sustainable investing
- 2/3rd of Millennials will not work for company that is not focused on social responsibility
- Effective ESG execution can help offset rising operating costs such as raw materials, affecting operating profits by as much as 60%



AUTHENTICITY IS A REAL CONCERN

- Studies show the public views an organization's citizenship efforts as authentic when the company's skills and expertise are used to address a social issue
- Companies are quick to release proxies and investor relations material without plans in place to tackle these challenges
- We continue to see a gap between rating agencies and organizational management and board expectations, creating a risk of "green-washing"



INVESTORS ARE INCORPORATING ESG INTO THEIR INVESTMENT & OPERATIONAL APPROACH

- Global sustainable investments now surpass \$30 trillion, 68%+ since 2014
- Private Equity continues to lead the charge of setting diversity and environmental goals for its portfolio companies
- Canadian investors are demanding more information on value and risk. The "Maple 8" pension plan investment managers (managing over \$1T in assets) have called on companies to report under Sustainability Accounting Standards Board ("SASB") and the Task Force on Client-Related Financial Disclosures ("TCFD").



GOVERNMENT AND REGULATORY PRESSURE WILL ONLY GROW

- Federal government has mandated TCFD-aligned disclosure for Crown corporations with assets over \$1B, beginning in 2022
- Canadian Securities Administrators (CSA) has proposed mandatory climate-related disclosures for reporting issuers in Canada - including disclosure of greenhouse gas emissions not only from a company's owned or controlled assets, but potentially also emissions associated with other points in its value chain
- Bill C-15 was passed in June 2021 and is expected to further Indigenous relations, including increasing potential for partnerships in economic development



ESG IS SHIFTING THE WAY WE WORK

- Diversity, Equity, Inclusion, & Belonging has become a core component of workforce strategy
- Health and Wellness is now a top priority for executives with remote workforces
- Studies have found that an organization's ESG commitment and performance are significant components in attracting top talent amongst younger generations.

Who cares about ESG and sustainability

Sustainability is a developing process; today's best practice will become tomorrow's business as usual.



Investors

In the last 20 years, socially responsible investing has accelerated. Investors are now concerned with companies behaving in an ethical and socially responsible manner and operating with sustainable initiatives in mind and want to invest in these corporations.



Society

The general public have started to hold companies accountable for social and environmental issues which cannot go unheard.



Employees

Employees want to be part of this change. The integration of sustainability into daily operations can assist with risk management and enhances innovation.



Senior Management

A strategy that focuses on sustainability adds brand value, increases efficiency, creates new opportunities and meets consumer demand.

Introduction to ESG topics

ESG considerations are both all-encompassing and a permanent part of financial activities, transformation, and risk management.



Environmental

- Climate change strategy
- Biodiversity
- Resource depletion
- Air and water pollution
 - Deforestation
 - Water efficiency
 - Energy efficiency
 - Carbon intensity
- Environmental management system



Social

- Diversity and equal opportunities
- Human rights
- Employee training / upskilling
- Freedom of association
- Health and safety
- Customer & products responsibility
 - Child labour
- Local and indigenous communities



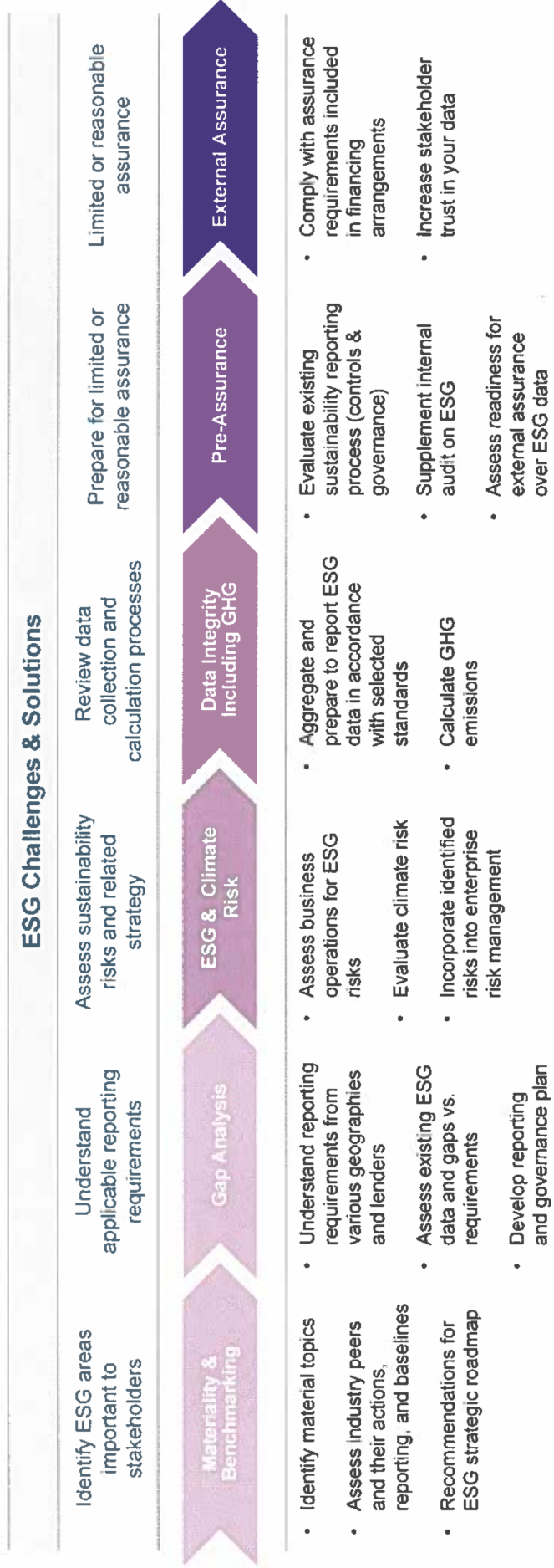
Governance

- Business ethics
- Compliance
- Board independence, diversity and structure
- Executive compensation
- Shareholder democracy
- Bribery and corruption
- Tax strategy
- Transparency
- Shareholder rights




Ways we can help

Grant Thornton provides a variety of ESG offerings to address your needs, no matter where you are in the ESG journey.



TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board, as Trustees of the Halifax Regional Water Commission Employees' Pension Plan

SUBMITTED BY: 
Alicia Scallion, CPA, CA, Acting Director, Corporate Services/CFO

APPROVED: 
Louis de Montbrun (Jun 16, 2023 14:42 ADT)
Louis de Montbrun, CPA, CA, Acting General Manager/CEO

DATE: June 16, 2023

SUBJECT: Halifax Regional Water Commission Employees' Pension Plan Financial Statements for the Year Ended December 31, 2022

ORIGIN

The Halifax Regional Water Commission Board approves the audited financial statements for the Halifax Regional Water Commission Employees' Pension Plan annually.

RECOMMENDATION

It is recommended the Halifax Regional Water Commission Board approve the financial statements of the Halifax Regional Water Commission Employees' Pension Plan for the year ended December 31, 2022.

BACKGROUND

At the June 8, 2023, meeting of the Halifax Water Audit and Finance Committee, the attached report was reviewed and the Committee approved a motion to recommend the Halifax Water Board approve the financial statements of the Halifax Regional Water Commission Employees' Pension Plan for the year ended December 31, 2022.

ATTACHMENTS

1. Report to the Halifax Water Audit and Finance Committee re. financial statements of the Halifax Regional Water Commission Employees' Pension Plan for the year ended December 31, 2022
2. Draft financial statements of the Halifax Regional Water Commission Employees' Pension Plan for the year ended December 31, 2022
3. Grant Thornton LLP Audit Findings Report to Audit and Finance Committee


Report prepared by:

H Britten


H Britten (Jun 16, 2023 13:58 ADT)

Heather Britten, B.Comm., PCP
Quality Assurance Officer

TO: Chair, and Members of the Halifax Regional Water Commission Audit and Finance Committee

SUBMITTED BY:  Digitally signed by Alicia Scallion
Date: 2023.06.02 14:49:20 -03'00'

Alicia Scallion, CPA, CA
Acting Director, Corporate Services/CFO

APPROVED BY:  Digitally signed by Louis de Montbrun
Date: 2023.06.02 15:02:14 -03'00'

Louis de Montbrun, CPA, CA
Acting General Manager/CEO

DATE: June 2, 2023

SUBJECT: **Halifax Regional Water Commission Employees' Pension Plan Financial Statements for the Year Ended December 31, 2022**

ORIGIN

The Halifax Regional Water Commission Employees' Pension Plan (the "Plan") financial statements are audited annually.

RECOMMENDATION

It is recommended that the Audit and Finance Committee recommend that the Halifax Regional Water Commission Board approve the financial statements for the Halifax Regional Water Commission Employees' Pension Plan for the year ended December 31, 2022.

BACKGROUND & DISCUSSION

Annually, the Plan's financial statements are prepared by staff and audited by the Plan's auditors, currently Grant Thornton LLP.

DISCUSSION

Attached are the audited financial statements of the Plan for the year ended December 31, 2022, with comparative figures for 2021.

The auditor has indicated that they are prepared to issue an unqualified auditor's report. The auditor's report, on page 1 of the attachment, indicates that the financial statements present fairly, in all material respects, the financial position of the Plan as at December 31, 2022, the changes in net assets available for benefits, and changes in pension obligations in accordance with Canadian accounting standards for pension plans.

The statement of financial position for the Plan is reported on page 3 of the financial statements, and the highlights are summarized in Table 1 below. The surplus as at December 31, 2022 is \$21.2 million and the surplus reported at December 31, 2021 was \$30.0 million, representing a decrease of \$8.8 million. This is the result of decreases in the fair value of investment assets due to uncertainty and volatility in the global equity markets throughout 2022. Net assets available for benefits as at December 31, 2022 amounted to \$175.2 million compared to \$174.6 million the prior year, an increase of \$0.6 million or 0.3%. Pension obligations increased \$9.4 million or 6.5% to \$154.0 million as at December 31, 2022, up from \$144.6 million in 2021.

Table 1:

Statement of financial position				
December 31				
	2022	2021	Change	
			\$	%
Net assets available for benefits	\$ 175,240,003	\$ 174,636,363	\$ 603,640	0.3%
Pension obligations	154,048,139	144,611,949	9,436,190	6.5%
Surplus	<u>\$ 21,191,864</u>	<u>\$ 30,024,414</u>	<u>\$ (8,832,550)</u>	<u>(29.4%)</u>

The statement of changes in net assets available for benefits are reported on page 4 of the financial statements, with highlights summarized in Table 2 below.

Table 2:

Statement of changes in net assets available for benefits				
December 31				
	2022	2021	Change	
			\$	%
Revenue	\$ 155,170	\$ 18,771,313	\$ (18,616,143)	(99.2%)
Expenses	6,204,550	5,783,777	420,773	7.3%
Net revenue (expenses)	(6,049,380)	12,987,536	(19,036,916)	(146.6%)
Contributions	\$ 6,653,020	\$ 6,692,670	\$ (39,650)	(0.6%)
Increase in net assets available for benefits	<u>\$ 603,640</u>	<u>\$ 19,680,206</u>	<u>\$ (19,076,566)</u>	<u>(96.9%)</u>

Of the \$0.6 million increase in net assets available for benefits, contributions of \$6.7 million, offset by net revenue of (\$6.0) million, account for the increase. Revenue consists of net investment income

of \$2.9 million offset by a decrease in the fair value of investment assets of \$2.8 million. Compared to 2021, the change in the fair value of investment assets is lower by \$18.2 million, and net investment income decreased \$0.4 million. Assets of the Plan are invested as part of the Halifax Regional Municipality Master Trust and represent 6.56% (2021 - 6.50%) of the Master Trust's assets.

Combined contributions from employees and Halifax Water are reported at \$6.7 million in 2022, representing a decrease of \$40 thousand or (0.6%) compared to 2021. The decrease is reflective of the changed contribution rate from 10.34% to 9.6%, due to the Actuarial Valuation effective January 1, 2022, offset by new hires and pay increases. Further details with respect to contributions can be found in Note 7 of the financial statements.

Expenses reduce net assets available for benefits, with retirement benefit payments being the main expense driver, representing \$5.1 million of the \$6.2 million in expenses reported for 2022. Retirement benefit payments increased \$0.4 million compared to 2021, and is attributed to 8 retirements in 2022 (2021 - 8), a full year of pension payments to the 2021 retirees and annual indexing of pensions. Termination benefit payments are also included in expenses and represent \$0.9 million of reported expenses in 2022, representing an increase of \$0.1 million compared to 2021. Termination benefits were paid in 2022 to 16 former employees (2021 - 13).

The statement of changes in pension obligations is reported on page 5 of the financial statements and summarized in Table 3 below. The valuation of pension obligations as at December 31, 2022 was an extrapolation from the actuarial valuation performed January 1, 2022.

Table 3:

Statement of changes in pension obligations				
December 31				
	2022	2021	Change	
			\$	%
Pension obligations, beginning of year	\$ 144,611,949	\$ 141,762,849	\$ 2,849,100	2.0%
Changes in pension obligations				
Changes in actuarial assumptions	\$613,700	(6,142,473)	6,756,173	-
Miscellaneous sources of decrease	-	(320,600)	320,600	-
Interest accrued on benefits	8,592,800	8,252,800	340,000	4.1%
Benefits accrued	6,228,900	6,646,900	(418,000)	(6.3%)
Benefits paid	(5,999,200)	(5,587,527)	(411,673)	7.4%
	<u>9,436,200</u>	<u>2,849,100</u>	<u>6,587,100</u>	<u>231.2%</u>
Pension obligations, end of year	<u>\$ 154,048,149</u>	<u>\$ 144,611,949</u>	<u>\$ 9,436,200</u>	<u>6.5%</u>

Pension obligations increased to \$154.0 million in 2022 compared to \$144.6 million in the prior year, an increase of \$9.4 million or 6.5%. Increases to pension obligations came from two sources, benefits accrued of \$6.2 million and interest on accrued benefits of \$8.6 million. Reductions to pension obligations totaled \$5.4 million, with \$6.0 million related to retirement and termination benefit payments in 2022, and \$0.6 million resulting from changes in actuarial assumptions.


In 2022 global equity markets saw significant fluctuations resulting in the fair value of investment assets reported at values materially less than those reported at December 31, 2021. The markets started to recover later in the year and continue to recover into 2023. As at March 31, 2023, the fair value of the Plan's investments increased by approximately \$6.7 million since December 31, 2022.

BUDGET IMPLICATIONS

There are no budget implications associated with the audited financial statements of the Plan for 2022. Budget implications arise from actuarial valuations.

ATTACHMENTS

1. Halifax Regional Water Commission Employees' Pension Plan Financial Statements as at December 31, 2022.
2. Report to the Audit and Finance Committee – Audit Results, submitted by Grant Thornton

Report Prepared By:	Heather Britten Heather Britten, B.Comm, PCP Quality Assurance Officer	Digitally signed by Heather Britten Date: 2023.06.02 14:56:31 -03'00'
Financial Approved By:	 Alicia Scallion, CPA, CA Acting Director, Corporate Services/CFO	Digitally signed by Alicia Scallion Date: 2023.06.02 14:49:02 -03'00'



Financial Statements

Halifax Regional Water Commission

Employees' Pension Plan

December 31, 2022

DRAFT

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**Halifax Regional Water Commission
Employees' Pension Plan
Statement of financial position**

December 31	2022	2021
Assets		
Investment assets	\$ 175,005,842	\$ 174,426,797
Contributions receivable	<u>264,544</u>	<u>269,675</u>
	175,270,386	174,696,472
Liabilities		
Payables and accruals		
Trade	<u>30,383</u>	<u>60,109</u>
Net assets available for benefits (Note 4)	175,240,003	174,636,363
Pension obligations	<u>154,048,139</u>	<u>144,611,949</u>
Surplus	\$ 21,191,864	\$ 30,024,414

On behalf of the Board of Trustees

_____ Trustee

_____ Trustee

See accompanying notes to the financial statements.

**Halifax Regional Water Commission
Employees' Pension Plan**

Statement of changes in net assets available for benefits

Year Ended December 31	2022	2021
Revenue		
Net investment income (Note 6)	\$ 2,918,862	\$ 3,356,629
Changes in the fair value of investment assets	<u>(2,763,692)</u>	<u>15,414,684</u>
	<u>155,170</u>	<u>18,771,313</u>
Contributions (Note 7)		
Participants	3,375,425	3,391,324
Sponsor	<u>3,277,595</u>	<u>3,301,346</u>
	<u>6,653,020</u>	<u>6,692,670</u>
Expenses		
Benefit payments (Note 8)	5,999,210	5,587,527
Administrative (Note 9)	<u>205,340</u>	<u>196,250</u>
	<u>6,204,550</u>	<u>5,783,777</u>
Increase in net assets available for benefits	<u>\$ 603,640</u>	<u>\$ 19,680,206</u>
<hr/>		
Net assets available for benefits, beginning of year	\$ 174,636,363	\$ 154,956,157
Increase in net assets available for benefits	<u>603,640</u>	<u>19,680,206</u>
Net assets available for benefits, end of year	<u>\$ 175,240,003</u>	<u>\$ 174,636,363</u>

See accompanying notes to the financial statements.

**Halifax Regional Water Commission
Employees' Pension Plan
Statement of changes in pension obligations**

Year Ended December 31	2022	2021
Pension obligations, beginning of year	<u>\$ 144,611,949</u>	<u>\$ 141,762,849</u>
Change in pension obligations		
Changes in actuarial assumptions (Note 5)	613,700	(4,242,900)
Miscellaneous sources of decrease	-	(2,220,173)
Interest accrued on benefits	8,592,800	8,252,800
Benefits accrued	6,228,900	6,646,900
Benefits paid (Note 8)	<u>(5,999,210)</u>	<u>(5,587,527)</u>
	<u>9,436,190</u>	<u>2,849,100</u>
Pension obligations, end of year	<u>\$ 154,048,139</u>	<u>\$ 144,611,949</u>

See accompanying notes to the financial statements.

Halifax Regional Water Commission Employees' Pension Plan Notes to the financial statements

December 31, 2022

1. Description of the Plan

The Halifax Regional Water Commission Employees' Pension Plan (the "Plan") is registered under the Pension Benefits Act of Nova Scotia (Registration Number 0344614). The following description of the Plan is a summary only. For more complete information, reference should be made to the Plan agreement restated as at January 1, 2021 as amended and consolidated.

(a) General

The Halifax Regional Water Commission maintains a contributory defined benefit pension plan for all employees, and participation in the Plan is compulsory for full-time and part-time employees. The pension plan provides pensions based upon length of service and best seven consecutive years' earnings.

The employees who transferred to the Halifax Regional Water Commission on August 1, 2007 with the transfer of the wastewater/stormwater operations have remained members of the Halifax Regional Municipality Pension Plan. The Halifax Regional Water Commission is responsible for funding the employer share of the contributions for these employees. All new employees hired after August 1, 2007 join the Halifax Regional Water Commission Employees' Pension Plan.

(b) Funding policy

Employees' required contributions in 2022 were 9.60% (2021 - 10.34%) of pensionable earnings with the Halifax Regional Water Commission matching employee contributions. Basic contributions from employers and members due to the Plan at the end of the year are recorded on an accrual basis. Pensionable earnings are capped temporarily to a maximum of \$140,945 to December 31, 2023 and will be indexed at a rate of 1% per annum thereafter.

In addition, the Plan and the Pension Benefits Act of Nova Scotia require that the Halifax Regional Water Commission, from time to time, make contributions to the Plan of such amounts which are required as special payments in accordance with the provisions of the Plan as determined by the actuary (see Note 5).

Nova Scotia funding regulations require a "Provision for Adverse Deviation" (PfAD), which is an explicit level of conservatism added to the going concern liabilities of the Plan. The PfAD is based on the riskiness of the asset mix of the Plan, and for the actuarial valuation of January 1, 2022, the PfAD is reported at 7%. As a result, total liabilities are required to be increased 7% in the determination of the Plan's surplus (funded liability/deficit) position. (Note 5).

Halifax Regional Water Commission

Employees' Pension Plan

Notes to the financial statements

December 31, 2022

1. Description of the Plan (continued)

(c) Retirement benefits

Employees are entitled to annual pension benefits of an amount equal to 2.0% of their best earnings averaged over the highest seven consecutive years of earnings for each year of credited service up to the maximum permitted by the Canada Revenue Agency. For credited service prior to January 1, 2016, the best average earnings cannot be less than the best average five consecutive years of earnings paid to an employee prior to 2016.

Benefits are adjusted each year. Adjustments are based on the increase in the Consumer Price Index over the previous calendar year to a maximum of 2% for benefits earned prior to January 1, 2016, and to a maximum of 1% for benefits earned after December 31, 2015.

(d) Disability pensions

Disabled employees continue to accrue credited service without having to continue their contributions. The employer and employees fund the actuarial cost of the pensions for disabled employees annually. Disabled employees are eligible for a pension if they meet the following criteria:

- a) they have completed 10 years of continuous participation in the Plan;
- b) they are not in receipt of a salary continuance benefit under an insured plan to which the Halifax Regional Water Commission contributes; and
- c) they are totally and permanently disabled as certified by a medical practitioner.

(e) Death benefits

In the event a pensioner dies after the commencement of their pension payments, the death benefit will be in accordance with the normal or optional form of pension elected at the time of retirement.

In the event a member dies before their retirement date, a survivor pension is payable to the member's surviving spouse at the rate of 60% of the member's pension credits accrued prior to June 1, 1998. The beneficiary of a single employee who dies before retirement will be entitled to the member's contributions and interest up to the month preceding death during that same period. In respect of pension credits accrued after June 1, 1998, the commuted value of the normal retirement benefits shall be paid to the member's surviving spouse, beneficiary or estate. For pension credits accrued between January 1, 1988 and May 31, 1998 whereby a survivor pension payable to the member's surviving spouse is calculated as the greater of: 1) 60% of the survivor pension, or 2) the commuted value of the normal retirement benefits. The beneficiary or estate of a single employee who dies during this same period, January 1, 1988 and May 31, 1998, would be entitled to the commuted value of the normal retirement benefits.

Halifax Regional Water Commission

Employees' Pension Plan

Notes to the financial statements

December 31, 2022

1. Description of the Plan (continued)

(f) Termination of employment

Subject to any statutory limitations, Plan members become vested immediately upon joining the Plan. Vesting previously occurred after two years of Plan membership. Members may elect to receive one of the following options upon termination:

- a) a paid-up deferred pension commencing on the member's normal retirement date in an amount equal to the pension accrued to date of termination; or
- b) transfer the value of benefit to the member's new employer's pension plan, a Retirement Savings Plan, or purchase a deferred annuity.

(g) Voluntary contributions

Members of the Plan may make additional voluntary contributions up to the deductible limit provided under the Income Tax Act. The non locked-in additional voluntary contributions may be withdrawn from the Plan by a member prior to termination or retirement, either in the form of a lump sum cash payment or transferred directly to the member's Retirement Savings Plan.

Members of the Plan may transfer non locked-in or locked-in benefits from a previous employer. Non locked-in benefits are administered as outlined in the previous paragraph. Locked-in benefits can be withdrawn within ten years of the normal retirement date. Upon retirement, the locked-in and non locked-in contributions may be used to purchase an annuity.

(h) Income taxes

The Plan is not subject to income taxes since it is a Registered Pension Trust as defined by the Income Tax Act.

(i) Surplus

Where the Plan is continuing and there is a surplus resulting from an actuarial review, the Halifax Regional Water Commission may decide how the surplus is to be treated. However, no amounts can be paid out of the fund to the employer without prior approval of the Superintendent of Pensions. This was reinforced with Memorandums of Understanding between the Halifax Regional Water Commission and each of the union groups, November 14, 2007, whereby the Halifax Regional Water Commission had to assume responsibility to fund any unfunded liability and/or solvency deficiency arising under the Plan, as required by the Pension Benefits Act of Nova Scotia. Subsequently, special payments required to fund any unfunded liability resulting from an actuarial review, were deposited into a separate fund, to track the unique nature of these contributions into the Plan. As at December 31, 2022, the balance of this fund totals \$30,952,000, consisting of contributions in the amount of \$15,289,000 and investment income/gains (net of expenses) totalling \$15,663,000.

Halifax Regional Water Commission

Employees' Pension Plan

Notes to the financial statements

December 31, 2022

1. Description of the Plan (continued)

(i) Surplus (continued)

Pursuant to the Memorandums of Understanding (Pensions) between the Halifax Regional Water Commission and each of the two union groups dated June 7, 2019, indexing of pensions to a maximum of 2% would be reinstated once the going concern special payments made by the Halifax Regional Water Commission, and subject to the Plan:

- Having a going concern funded ratio of 108% (or above);
- No solvency deficit; and
- So long as the implementation can be affected while maintaining a going concern funded ratio of 108%.

A surplus resulting from the wind-up of the Plan will be used to increase the benefits to the living Members of the Plan (including pensioners) and their beneficiaries to the extent permitted by the Income Tax Act and Regulations. Any balance remaining will be returned to the Halifax Regional Water Commission, however no amounts can be paid out of the fund to the employer without prior approval of the Superintendent of Pensions.

2. Statement of compliance with Canadian accounting standards for pension plans and summary of significant accounting policies

The financial statements are presented in accordance with Canadian accounting standards for pension plans in Part IV of the Chartered Professional Accountants of Canada (CPA) Handbook, Section 4600 – Pension Plans. Section 4600 provides specific accounting guidance on pension obligations and investments, with investments complying with international financial reporting standards ("IFRS") in Part I of the CPA Canada Handbook. For accounting policies that do not relate to either investments or pension obligations, the plan must consistently comply with either IFRS or Canadian accounting standards for private enterprises ("ASPE") in Part II of the CPA Canada Handbook. The Plan has elected to comply on a consistent basis with ASPE. To the extent that ASPE is inconsistent with Section 4600, Section 4600 takes precedence.

(a) Financial Instruments

Financial assets and financial liabilities are recognized when the Plan becomes a party to the contractual provisions of the financial instrument.

Financial assets are derecognized when the contractual rights to the cash flows from the financial assets expire, or when the financial asset and all substantial risks and rewards are transferred.

A financial liability is derecognized when it is extinguished, discharged, cancelled or expires.

All financial assets and financial liabilities are initially measured at fair value. Fair value is an estimate of the amount of consideration that would be agreed upon in an arm's length transaction between knowledgeable, willing parties who are under no compulsion to act. Financial assets and liabilities are subsequently measured as described below:

Halifax Regional Water Commission Employees' Pension Plan Notes to the financial statements

December 31, 2022

2. Statement of compliance with Canadian accounting standards for pension plans and summary of significant accounting policies (continued)

(a) Financial Instruments (continued)

Investment assets

All investment assets are measured at fair value at the date of the statement of financial position in accordance with IFRS 13: Fair Value Measurement Part I of the CPA Canada Handbook. Fair values of investment assets are determined as follows:

- Pooled funds are valued at the unit value supplied by the Master Trust administrator and which represent the Plan's proportionate share of underlying net assets at fair value determined using closing bid prices.

Transaction costs are not included in the fair value of investment assets either on initial recognition or on subsequent re-measurement. Transaction costs are included in the statement of changes in net assets available for benefits as part of expenses incurred in the period.

Investment income, excluding changes in the fair value of investment assets, is presented in the statement of changes in net assets available for benefits.

Financial liabilities

Financial liabilities are measured subsequently at amortized cost using the effective interest method.

(b) Pension obligations

The Plan is a defined benefit plan established for members. The pension obligations recognized in the statements of financial position are the actuarial present value of accrued pension benefits determined by applying best estimate assumptions and the projected benefit method prorated on services.

(c) Net investment income

Income from investments is recognized on an accrual basis and includes dividend income (recognized on ex-dividend date), interest income, and is net of investment manager fees.

(d) Changes in the fair value of investment assets and liabilities

This includes both realized gains or losses on sale of investments and unrealized gains or losses on investments.

Realized gains or losses on sale of investments are the difference between the proceeds received and the average cost of investments sold.

Unrealized gains or losses on investments represent the difference between the carrying value at the year end and the carrying value at the previous year end or purchase value during the year, less the reversal of previously recognized unrealized gains and losses in respect of disposals during the year.

Halifax Regional Water Commission

Employees' Pension Plan

Notes to the financial statements

December 31, 2022

2. Statement of compliance with Canadian accounting standards for pension plans and summary of significant accounting policies (continued)

(e) Contributions

Required employee and employer contributions are recorded the month following when the payroll deductions are made. Employee and employer contributions and special payments due to the Plan at the end of the year are recorded on an accrual basis. Cash received from pension plan transfers or members for service purchases are recorded when received.

(f) Benefits

Benefit payments to retired members, commuted value payments and refunds to former members are recorded in the period paid. Accrued benefits are recorded as part of the accrued pension benefit obligation.

(g) Estimation uncertainty

When preparing the financial statements, management undertakes a number of judgements, estimates and assumptions about recognition and measurement of assets, liabilities, revenue, and expenses. The actual results are likely to differ from the judgments, estimates and assumptions made by management and will seldom equal the estimated results. Information about the significant judgments, estimates and assumptions that have the most significant effect on the recognition and measurement of assets, liabilities, revenue, and expenses are discussed below:

Fair value of financial instruments

Management uses valuation techniques in measuring the fair value of financial instruments, where active market quotes are not available. Details of the assumptions used are given in the notes regarding financial assets and liabilities. In applying the valuation techniques, management makes maximum use of market inputs, and uses estimates and assumptions that are, as far as possible, consistent with observable data that market participants would use in pricing the instrument. Where applicable data is not observable, management uses its best estimate about the assumptions that market participants would make. These estimates may vary from the actual prices that would be achieved in an arm's length transaction at the reporting date.

Pension obligations

Management estimates the pension obligations annually with the assistance of an independent actuary; however, the actual outcome may vary due to estimation uncertainties. The estimate of the pension obligation of \$154,048,139 (2021 - \$144,611,949) is based on assumed rates of retirement, mortality, breaks in service and contributory hours. Discount factors are determined at or near year-end to reflect the long-term expectation of investment returns that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating the terms of the related pension obligation.

Halifax Regional Water Commission Employees' Pension Plan Notes to the financial statements

December 31, 2022

3. Investment assets

The investment in the Halifax Regional Municipality Master Trust (the "HRM Master Trust") is recorded at its fair value. The Plan's interest in the HRM Master Trust represents 6.56% (December 31, 2021 - 6.50%) of the HRM Master Trust units. The remaining units are held by the Halifax Regional Municipality Pension Plan. The co-mingling of investments does not affect the actuarial liabilities or the net assets available for benefits of the Plan.

The fair value of the investment in the HRM Master Trust is determined as at the date of the statements of financial position as described in note 2(a). The fair value of the investment in the HRM Master Trust is categorized as a Level 2 investment under fair value hierarchy measurement (Note 11).

Section 67 (3) of the *Pension Benefits Act Regulations* requires disclosure of each investment asset that has a fair value greater than two percent (2%) of the fair value of all the investment assets of the Plan. The following schedule reports all investments having a fair value greater than 2% of the fair value of all investment assets of the Plan.

Investment	Asset Class	Market Value
Wellington Management Global Total Return Fund	Foregin Bonds	\$ 8,105,611
BlackRock Canadian World Index Fund	Global Equities	\$ 7,860,021
BlackRock Alpha Advantage Global Fund	Global Equities	\$ 7,243,410
BlackRock Active Canadian Equity Fund	Canadian Equities	\$ 6,310,557
UBS (UK) Real Estate Funds Selection Global Ex Canada, L.P.	Real Estage - Limited Partnership	\$ 4,835,982
Mawer International Equity Pooled Fund	International Equities	\$ 4,785,884
Marathon International Equity Fund	International Equities	\$ 4,106,884
Minto Multi-Residential Income Partners I, L.P.	Real Estage - Limited Partnership	\$ 4,092,479
		\$ 47,340,829

4. Net assets available for benefits 2022 2021

Allocation of net assets available for benefits

To pension plan	\$ 174,333,194	\$ 173,777,663
To extra voluntary contribution benefits	638,584	589,577
To individual locked in amounts	<u>268,225</u>	<u>269,123</u>
	<u>\$ 175,240,003</u>	<u>\$ 174,636,363</u>

Halifax Regional Water Commission

Employees' Pension Plan

Notes to the financial statements

December 31, 2022

5. Pension obligations

An actuarial valuation of The Plan was performed as at January 1, 2022 by Eckler Ltd.

The actuarial value of accrued benefits, determined periodically by the Plan's actuary, is the amount that results from applying actuarial assumptions to adjust the Plan benefits to reflect the time value of money between the valuation date and the expected date of payment. The significant actuarial assumptions used include:

- a) 40% of members will retire at the age of 65, and 60% will retire at the earliest date of eligibility for an unreduced pension;
- b) interest rate assumption of 6.35% per annum (2019 - 5.80%);
- c) salary scale assumption of 3.90% per annum (2019 - 3.90%); and
- d) life expectancy of participants based upon the CPM-2014 Combined mortality table, with Scale CPM-B (post retirement), no mortality in pre-retirement.

The 2019 interest rate assumption of 5.80% referenced above included an implicit margin for conservatism of 0.60% as determined by the Plan. As a result of the new funding Regulations effective April 1, 2020, the Plan's implicit margin for conservatism has been removed for the actuarial valuation of January 1, 2022, as an explicit level of conservatism has been added through legislation (Note 1).

As a result of the January 1, 2022 actuarial valuation, special payments in respect of going concern liabilities are not required. The next actuarial valuation for the Plan is required to be performed no later than January 1, 2025.

6. Net investment income

	<u>2022</u>	<u>2021</u>
Income from investment funds	\$ 3,307,029	\$ 3,657,805
Investment manager fees	<u>(388,167)</u>	<u>(301,176)</u>
	<u>\$ 2,918,862</u>	<u>\$ 3,356,629</u>

Halifax Regional Water Commission Employees' Pension Plan

Notes to the financial statements

December 31, 2022

7. Contributions	<u>2022</u>	<u>2021</u>
Participants' contributions		
Required	\$ 3,276,762	\$ 3,301,346
Voluntary	<u>98,663</u>	<u>89,978</u>
	<u>3,375,425</u>	<u>\$ 3,391,324</u>
Sponsor's contributions		
Required	<u>\$ 3,277,595</u>	<u>\$ 3,301,346</u>

8. Benefit payments	<u>2022</u>	<u>2021</u>
Retirement benefit payments	\$ 5,089,704	\$ 4,739,794
Termination benefit payments	909,506	783,885
Death benefit payment	<u>-</u>	<u>63,848</u>
	<u>\$ 5,999,210</u>	<u>\$ 5,587,527</u>

During 2022, there were 16 termination benefit payments (2021 - 13) and 0 death benefit payments (2021 - 1). Termination benefits are paid out as described in Note 1(f).

9. Administrative expenses	<u>2022</u>	<u>2021</u>
Actuarial and consulting fees	\$ 99,522	\$ 83,773
Audit and accounting fees	9,446	10,027
Bank custodian fees	20,941	27,576
Insurance	10,600	10,600
Miscellaneous	21,449	18,083
Professional fees	40,534	43,529
Registration fees	<u>2,848</u>	<u>2,662</u>
	<u>\$ 205,340</u>	<u>\$ 196,250</u>

10. Related party transactions

The Halifax Regional Water Commission, the Plan's sponsor, collects the Plan's contributions and pays certain expenses on behalf of the Plan. These items are then credited or charged back to the Plan.

Halifax Regional Water Commission

Employees' Pension Plan

Notes to the financial statements

December 31, 2022

11. Financial instruments

Financial instruments risk exposure and management

The Plan is exposed to various risks in relation to its investment in the HRM Master Trust, consisting of investment assets. The Plan's financial assets are categorized in Level 2. The main types of risks are market risk, credit risk and liquidity risk.

The Plan's risk management policy is derived from the HRM Master Trust in which the Plan holds units. The HRM Master Trust has set formal policies and operating procedures that establish an asset mix among equity, fixed income investments, public market alternatives, private debt, private equity, real estate and infrastructure that require diversification of investments within categories, a set limit on the size of exposure to individual investments, and a requirement to use A-rated counterparties.

The Plan does not actively engage in the trading of financial assets for speculative purposes nor does it write options. The most significant financial risks to which the Plan is exposed are described below:

(a) Market risks

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. For purposes of this disclosure, the Plan segregates market risk into three categories: interest rate risk, currency risk and other price risk.

i. Interest rate risk

Interest rate risk refers to the fact that the value of the Plan's assets is affected by changes in nominal interest rates and equity markets.

ii. Currency risk

The Plan's functional currency is Canadian dollars and all the Plan's transactions are carried out in Canadian dollars.

iii. Other price risk

Other price risk is the risk that the fair value or future cash flows of financial instruments will fluctuate because of changes in market prices, other than those arising from interest rate risk or currency risk, whether those changes are caused by factors specific to the individual investment or factors affecting all securities traded in the market.

All investments have a risk of loss of capital. The maximum risk resulting from the investments is determined by the fair value of the instruments, which total \$175,005,842 at December 31, 2022 (2021 - \$174,426,797). A one percent change (1%) in market risk (holding all variables constant) will impact the fair value of these instruments by approximately \$1,750,000 (2021 - \$1,744,000).

Halifax Regional Water Commission Employees' Pension Plan Notes to the financial statements

December 31, 2022

11. Financial instruments (continued)

(b) Credit risk

Credit risk on financial instruments is the risk of financial loss occurring as a result of default or insolvency of a counterparty on its obligations to the Plan. The Plan's credit risk is primarily attributable to the underlying assets of the HRM Master Trust. Credit risk is mitigated through the management of the HRM Master Trust assets with generally accepted parameters of safety and prudence, using a diversified investment program. Investments in the HRM Master Trust must adhere to specific limitations as outlined in the Halifax Regional Municipality's Statement of Investment Policies and Procedures for the Defined Benefit Pension Plan ("the Statement of Investment Policies and Procedures").

(c) Liquidity risk

Liquidity risk is the risk of not being able to meet the Plan's cash requirements in a timely and cost-effective manner. Liquidity requirements are managed through income generated from investments and monthly contributions made by members and participating employers. The sources of funds are used to pay pension benefits, make additional investments, and fund operating expenses. The Plan's primary future liabilities include the accrued benefit obligation of the Plan. The Plan's main asset, the investment in the HRM Master Trust, is liquid as cash is available to make required payments.

The following are the contractual maturities of financial liabilities:

Payments due year ending December 31, 2022:

	<u>Total</u>	<u>Less than 1 year</u>	<u>1 - 3 years</u>	<u>4 - 5 years</u>	<u>After 5 years</u>
Payables and accruals	\$ 30,383	\$ 30,383	\$ -	\$ -	\$ -

Payments due year ending December 31, 2021

	<u>Total</u>	<u>Less than 1 year</u>	<u>1 - 3 years</u>	<u>4 - 5 years</u>	<u>After 5 years</u>
Payables and accruals	\$ 60,109	\$ 60,109	\$ -	\$ -	\$ -

Halifax Regional Water Commission

Employees' Pension Plan

Notes to the financial statements

December 31, 2022

11. Financial instruments (continued)

Fair value disclosure

The financial instruments recognized at fair value on the statement of financial position must be classified as one of three fair value hierarchy levels. This hierarchy groups financial assets and liabilities into three levels based on the significance of inputs used in measuring the fair value of the financial assets and liabilities. The fair value hierarchy has the following levels:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The level within which the financial asset or liability is classified is determined based on the lowest level of significant input to the fair value measurement. The financial assets and liabilities measured at fair value in the statement of financial position are grouped into the fair value hierarchy as follows:

Financial assets at fair value as at December 31, 2022

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
Assets				
Pooled fund	\$ -	\$ 175,005,842	\$ -	\$ 175,005,842

Financial assets at fair value as at December 31, 2021

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
Assets				
Pooled fund	\$ -	\$ 174,426,797	\$ -	\$ 174,426,797

There were no transfers between the three levels between December 31, 2021 and December 31, 2022.

The methods and valuation techniques used for the purpose of measuring fair value are unchanged compared to the previous reporting period.

Halifax Regional Water Commission

Employees' Pension Plan

Notes to the financial statements

December 31, 2022

12. Capital management

The Plan defines its capital as the deficiency of the Plan, as determined annually based on the fair value of net assets and actuarial liabilities, provided by the actuarial valuation prepared by the Plan's independent actuary (Note 5).

The overall objectives in investing the assets of the Plan are to ensure sufficient liquidity to support its financial obligations, to continue to provide benefits in the best interest of its members, to remain financially self-sufficient and to preserve and enhance the value of capital through adequate diversification in high quality investments and achieve the highest investment return that can be obtained with the assumption of an acceptable degree of risk. The Plan holds units in the HRM Master Trust which has formal policies and procedures that establish asset mix, require diversification within different categories, set a limit on the exposure to individual investments and provides a requirement to use A-rated counterparties.



Halifax Regional Water Commission Employees' Pension Plan

For the year ended December 31, 2022

Report to Audit and Finance Committee
Audit results

June 8, 2023

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Appendices

Appendix A – Independent auditor’s report
Appendix B – Management representation letter

Executive summary

Purpose of report and scope

The purpose of this report is to engage in an open dialogue with you regarding our audit of the financial statements of Halifax Regional Water Commission Employees' Pension Plan (the "Plan") for the year ended December 31, 2022. This communication will assist Audit and Finance Committee in understanding the results of audit procedures and includes comments on misstatements, significant accounting policies, sensitive estimates and other matters.

The information in this document is intended solely for the information and use of the Audit & Finance Committee and management. It is not intended to be distributed or used by anyone other than these specified parties.

We were engaged to provide the following deliverables:

Deliverable	Timing/Status
Discussions and communications regarding planning	January 10, 2023
Communication of audit results	June 8, 2023
Report on the December 31, 2022 financial statements	TBD

Status of our audit

We have substantially completed our audit of the financial statements of the Plan and the results of that audit are included in this report.

We will finalize our report upon resolution of the following items that were outstanding as at June 8, 2023:

- Receipt of the final updated financial statements (for any final changes)
- Receipt of signed management representation letter (a draft has been attached in the appendices)
- Approval of the financial statements by the Board of Trustees
- Final inquiries regarding subsequent events

We have successfully executed our audit strategy in accordance with the plan presented to Audit and Finance Committee on January 10, 2023.

Independence

We confirm that there have been no changes to our status with respect to independence since we confirmed our independence to you on January 10, 2023.

Audit risks and results

Areas of focus

The following is a summary of areas of focus, and the related matters and findings we would like to communicate to Audit and Finance Committee.

Area of focus	Matter	Our response and findings
Pension obligation	<p>A full valuation of the Plan was performed at January 1, 2022. The next actuarial valuation for the Plan is required to be performed no later than January 1, 2025.</p> <p>An extrapolation of the January 1, 2022 actuarial valuation results was performed to January 1, 2023 under going concern assumptions and methodology. This resulted in a pension obligation of \$154,048,139. As of December 31, 2022, the extrapolation of the actuarial valuation results reported a going concern excess of \$18,970,400 per the actuary's report. Certain adjustments were made, such as the fair value adjustment for investment assets, to arrive at the surplus of \$21,191,864 as reported in the 2022 financial statements.</p> <p>There were no required special payments in respect of going concern liabilities during the year as a result of the most recent valuation completed.</p>	<p>We performed the following:</p> <ul style="list-style-type: none"> Examined the valuation report and extrapolation report prepared by the independent actuary; Assessed the reasonability of assumptions used in the valuation as compared to expectations and market information; Performed testing of the data used by the actuary in the performance of their work; and Confirmed the independence and qualifications of the Plan's actuary and materiality threshold. <p>We have no findings to report.</p>
Investments	<p>As at December 31, 2022 the Plan holds an investment balance of \$175,005,842.</p>	<p>We performed the following:</p> <ul style="list-style-type: none"> Agreed amounts to investment statements; Performed valuation testing of investments; Verified historical accuracy of balances based on audited HRM financial statements; and Obtained investment statements subsequent to year end and ensured appropriateness of related disclosures. <p>We have no findings to report.</p>

Adjustments and uncorrected misstatements

Adjustments

We have no adjusted misstatements to report.

Summary of disclosure matters

Our audit did not identify any unadjusted non-trivial misstatements of disclosure matters.

Other reportable matters

Internal control

The audit is designed to express an opinion on the financial statements. We obtain an understanding of internal control over financial reporting to the extent necessary to Plan the audit and to determine the nature, timing and extent of our work. Accordingly, we do not express an opinion on the effectiveness of internal control.

If we become aware of a deficiency in your internal control over financial reporting, the auditing standards require us to communicate to Audit and Finance Committee those deficiencies we consider significant. However, a financial statement audit is not designed to provide assurance on internal control.

Based on the results of our audit, we did not identify any reportable observations.

Cybersecurity

Cybersecurity is the practice of protecting computers, data and other electronic systems from malicious attacks. As organizations become increasingly dependent on digital technology, the opportunities for cyber-criminals continue to grow. The explosion of data generated by digital technology, combined with a new degree of connectedness among organizations, means there is ripe opportunity for the technologically savvy and criminally minded to take advantage. A breach in cybersecurity could create a reputational risk to you, as well as resulting in financial liabilities.

Accounting & assurance updates

There have been no recent changes to Part IV of the CPA Canada Handbook – Accounting Standards for Pension Plans.

Further details of the changes to assurance standards are included in the Appendices to the Halifax Regional Water Commission's financial statement audit results communication.

Appendix A

Draft Independent Auditor's Report

Independent Auditor's report

To the Board of Trustees of the
Halifax Regional Water Commission
Employees' Pension Plan

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Opinion

We have audited the financial statements of Halifax Regional Water Commission Employees' Pension Plan, which comprise the statement of financial position as at December 31, 2022, and the statements of changes in net assets available for benefits and changes in pension obligations for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly in all material respects, the financial position of Halifax Regional Water Commission Employees' Pension Plan as at December 31, 2022, and its changes in net assets available for benefits and its changes in pension obligations for the year then ended in accordance with Canadian accounting standards for pension plans.

Basis for opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of Halifax Regional Water Commission Employees' Pension Plan in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of management and those charged with governance for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for pension plans, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing Halifax Regional Water Commission Employees' Pension Plan's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate Halifax Regional Water Commission Employees' Pension Plan or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing Halifax Regional Water Commission Employees' Pension Plan's financial reporting process.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of Halifax Regional Water Commission Employees' Pension Plan's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on Halifax Regional Water Commission Employees' Pension Plan's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause Halifax Regional Water Commission Employees' Pension Plan to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Halifax, Canada
TBD

Chartered Professional Accountants

Appendix B

Draft Management Representation Letter

Management Representation Letter

TBD

Mr. Tom Brockway, CPA, CA
Grant Thornton LLP
Suite 1000, Nova Centre, North Tower
1675 Grafton Street
Halifax, NS B3J 0E9

Dear Mr. Brockway:

We are providing this letter in connection with your audit of the financial statements of **Halifax Regional Water Commission Employees' Pension Plan** (the "Plan") as of December 31, 2022 and for the year then ended, for the purpose of expressing an opinion as to whether the financial statements present fairly, in all material respects, the financial position, changes in net assets available for benefits and changes in pension obligations in accordance with Canadian accounting standards for pension plans ("ASPP").

We acknowledge that we have fulfilled our responsibilities for the preparation of the financial statements in accordance with Canadian accounting standards for pension plans and for the design and implementation of internal controls to prevent and detect fraud and error. We have assessed the risk that the financial statements may be materially misstated as a result of fraud, and have determined such risk to be low. Further, we acknowledge that your examination was planned and conducted in accordance with Canadian generally accepted auditing standards (GAAS) so as to enable you to express an opinion on the financial statements. We understand that while your work includes an examination of the accounting system, internal controls and related data to the extent you considered necessary in the circumstances, it is not designed to identify, nor can it necessarily be expected to disclose, fraud, shortages, errors and other irregularities, should any exist.

Certain representations in this letter are described as being limited to matters that are material. An item is considered material, regardless of its monetary value, if it is probable that its omission from or misstatement in the financial statements would influence the decision of a reasonable person relying on the financial statements.

We confirm, to the best of our knowledge and belief, as of TBD, the following representations made to you during your audit.

Financial statements

- 1 The financial statements referred to above present fairly, in all material respects, the financial position as at December 31, 2022, and the changes in net assets available for benefits and changes in pension obligations for the year then ended in accordance with Canadian accounting standards for pension plans, as agreed to in the terms of the audit engagement.

Completeness of information

- 2 We have made available to you all financial records and related data and all minutes of the meetings of trustees and committees, as agreed in the terms of the audit engagement. Summaries of actions of recent meetings for which minutes have not yet been prepared have been provided to you. All significant trustee and committee actions are included in the summaries.
- 3 We have provided you with unrestricted access to persons within the entity from whom you determined it necessary to obtain audit evidence.

- 4 We have also made available the Plan instrument and any Plan amendments thereto, the trust agreement and any insurance contracts entered into during the year, including any amendments to comply with applicable laws. The last amendment to the Plan instrument was as of October 7, 2019 and the Plan Text was amended and consolidated effective January 1, 2021. As well we have made available and provided to you all actuarial reports and other reports prepared by the actuary for the Plan and the Plan Sponsor were provided to you.
- 5 There are no material transactions that have not been properly recorded in the accounting records underlying the financial statements.
- 6 There were no restatements made to correct a material misstatement in the prior period financial statements that affect the comparative information.
- 7 We are unaware of any known or probable instances of non-compliance with the requirements of regulatory or governmental authorities, including their financial reporting requirements.
- 8 We are unaware of any violations or possible violations of laws or regulations the effects of which should be considered for disclosure in the financial statements or as the basis of recording a contingent loss.
- 9 We have disclosed to you all known deficiencies in the design or operation of internal control over financial reporting of which we are aware.
- 10 We have identified to you all known related parties and related party transactions, including sales, purchases, loans, transfers of assets, liabilities and services, leasing arrangements guarantees, non-monetary transactions and transactions for no consideration.
- 11 You provided a non-audit service by assisting us with drafting the financial statements and related notes. In connection with this non-audit service, we confirm that we have made all management decisions and performed all management functions, have the knowledge to evaluate the accuracy and completeness of the financial statements, and accept responsibility for such financial statements.

Fraud and error

- 12 We have no knowledge of fraud or suspected fraud affecting the Plan involving management, employees who have significant roles in internal control; or others, where the fraud could have a non-trivial effect on the financial statements.
- 13 We have no knowledge of any allegations of fraud or suspected fraud affecting the Plan's financial statements communicated by employees, former employees, analysts, regulators or others.
- 14 We acknowledge our responsibility for the design, implementation and maintenance of internal control to prevent and detect fraud.

Recognition, measurement and disclosure

- 15 We believe that the methods, significant assumptions and data used by us in making accounting estimates and related disclosures are appropriate to achieve recognition, measurement and disclosure that are in accordance with Canadian accounting standards for pension plans.

- 16 We believe that the significant judgements made in making accounting estimates have taken into account relevant information of which management is aware and that appropriate specialized skills and experience (including third party experts where applicable), has been applied in making the accounting estimates.
- 17 For non-readily marketable securities, we are in agreement with the methods used to estimate fair value or the approach used by the appraiser.
- 18 We have no plans or intentions that may materially affect the carrying value or classification of assets and liabilities, both financial and non-financial, reflected in the financial statements.
- 19 All related party transactions have been appropriately measured and disclosed in the financial statements.
- 20 The nature of all material measurement uncertainties has been appropriately disclosed in the financial statements, including all estimates where it is reasonably possible that the estimate will change in the near term and the effect of the change could be material to the financial statements.
- 21 All outstanding and possible claims, whether or not they have been discussed with legal counsel, have been disclosed to you and are appropriately reflected in the financial statements.
- 22 All liabilities and contingencies, including those associated with guarantees, whether written or oral, have been disclosed to you and are appropriately reflected in the financial statements.
- 23 The Plan has satisfactory title to (or lease interest in) all assets, and there are no liens or encumbrances on the Plan's assets nor has any been pledged as collateral.
- 24 All "off-balance sheet" financial instruments have been properly recorded or disclosed in the financial statements
- 25 We have disclosed to you, and the Plan has complied with, all aspects of contractual agreements that could have a material effect on the financial statements in the event of non-compliance, including all covenants, conditions or other requirements of all outstanding debt.
- 26 The Plan has complied with the rules and regulations of the Nova Scotia Office of the Superintendent of Pensions and the Canada Revenue Agency to which the Plan is subject.
- 27 We are responsible for the preparation of Plan amendments necessitated by changes in laws or regulations, or required by changes in the operation of the Plan. All amendments required by such changes have been adopted by the Plan.
- 28 All required filing of the Plan (trust) documents with the appropriate agencies have been made.
- 29 There have been no events subsequent to the balance sheet date up to the date hereof that would require recognition or disclosure in the financial statements. Further, there have been no events subsequent to the date of the comparative financial statements that would require adjustment of those financial statements and related notes.

- 30 There were no omissions from the participants' data provided to the Plan's actuary for the purpose of determining the actuarial present value of accumulated Plan benefits and other actuarially determined amounts in the financial statements.
- 31 We agree with the actuarial methods and assumptions used by the actuary for funding purposes and for determining accumulated Plan benefits and have no knowledge or belief that such methods or assumptions are inappropriate in the circumstances. We did not give any instructions, nor cause any instructions to be given, to the Plan's actuary with respect to how the valuation should be calculated from the underlying data, and we are not aware of any matters that have impacted the independence or objectivity of the Plan's actuary.
- 32 The defined benefit obligation of the Plan is appropriately measured as the actuarial present value of accrued pension benefits determined by applying best estimate assumptions and the projected benefit method prorated on services in accordance with Section 3462 Employee Future Benefits.
- 33 There have been no changes in:
- (a) the actuarial methods or assumptions used in calculating amounts recorded or disclosed in the financial statements; and
 - (b) Plan provisions between the actuarial extrapolation date and the date of this letter.
- 34 We have no intentions to terminate the Plan.

Other


- 35 We have considered whether or not events have occurred or conditions exist which may cast significant doubt on the Plan's ability to continue as a going concern and have concluded that no such events or conditions are evident.

Yours very truly,


Louis de Montbrun, CPA, CA
Acting General Manager

Alicia Scallion, CPA, CA
Acting Director of Corporate Services / CFO

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: 

Alicia Scallion, CPA, CA
Acting Director, Corporate Services/CFO



Reid Campbell (Jun 16, 2023 15:37 ADT)
Reid Campbell, M.Eng., P.Eng.
Director, Engineering and Technology Services

APPROVED: 

Louis de Montbrun (Jun 16, 2023 15:39 ADT)
Louis de Montbrun, CPA, CA
Acting General Manager/CEO

DATE: June 16, 2023

SUBJECT: **Capital Expenditures for the twelve months ended March 31, 2023**

ORIGIN

The Corporate Balanced Scorecard identifies the percentage of capital budget spent by the end of the fiscal year as a critical success factor and sets a target of 70-80%.

BACKGROUND

The Halifax Regional Water Commission (Halifax Water) Board is required to review periodic financial information throughout the year. Halifax Water's 2019 *Integrated Resource Plan* (IRP) identifies a 30-year capital investment plan valued at \$2.7 Billion (net present value). In relation to the IRP, the capital budget program focuses on providing required infrastructure for asset renewal, regulatory compliance, and growth. The IRP calls for delivery of an average of \$135 million in capital projects per year. Halifax Water's annual capital budget, and capability to deliver capital projects, has not yet reached this level.

DISCUSSION

Below is the breakdown by asset class and project status of the expenditures for the twelve months ended March 31, 2023. Halifax Water has spent \$144.8 million to date on active projects, of which \$93.5 million was spent during the twelve months ended March 31, 2023. Approximately \$37.6 million of the \$93.5 million relates to the 2022/23 capital budget of \$106.5 million, resulting in a year-to-date delivery rate of 35.3% (2021/22 – 28.6%). There were several significant projects in last year’s capital budget for which construction had been delayed or extended into the next construction season for reasons including, construction market conditions, land acquisition, planning consideration or issues that arose during the planning phase which required a scope change.

Halifax Water is trying to improve on annual Integrated Resource Plan (IRP) execution and can measure progress through the number of projects completed annually (close-outs) and the dollar value of projects completed as a percentage of total available capital spend. For 2022/23, Halifax Water increased the percentage of capital projects completed by 3.0% to 33.8%. The total capital remaining to be spent at March 31, 2023 was \$169.9 million, an increase of \$3.3 million.

Going in to fiscal 2023/24 there are 380 active carry-forward projects, compared to 344 in the prior year. The average capital spend per month compared to prior year has increased from \$5.4 million to \$7.7 million. Achievement of targets for the next fiscal year will be dependent on the timing of several large projects. The Burnside Operations Centre is in the design validation phase, The Biosolids Processing Facility is about to be issued for procurement and the Fairview Cove Trunk Sewer is due to be tendered in August with some minor land issues remaining. The timing of each project achieving milestones, given their size, will have a large influence on capital spending this year.

Capital Expenditure Report

Budget Category	Total Budget Available	Expenditures to March 31, 2022	Expenditures April 1, 2022 to March 31, 2023	Total Expenditures to March 31, 2023	Remaining Budget Available as of March 31, 2023	Total Expenditures to March 31, 2023 as a Percentage of Total Budget Available
Active						
Water	\$ 111,229,771	\$ 15,294,574	\$ 26,066,352	\$ 41,360,926	\$ 69,868,845	37.2%
Wastewater	97,937,045	11,166,311	25,672,244	36,838,555	61,098,490	37.6%
Stormwater	8,163,949	764,145	1,062,983	1,827,128	6,336,821	22.4%
	217,330,765	27,225,030	52,801,579	80,026,609	137,304,156	36.8%
Pending						
Water	9,132,277	27,888	-	27,888	9,104,389	0.3%
Wastewater	21,982,000	-	-	-	21,982,000	0.0%
Stormwater	784,238	-	-	-	784,238	0.0%
	31,898,515	27,888	-	27,888	31,870,627	0.1%
Closed						
Water	36,928,231	12,535,626	24,392,605	36,928,231	-	100.0%
Wastewater	22,404,468	10,513,528	11,890,940	22,404,468	-	100.0%
Stormwater	6,103,719	1,690,598	4,413,121	6,103,719	-	100.0%
	65,436,418	24,739,752	40,696,666	65,436,418	-	100.0%
	\$ 314,665,698	\$ 51,992,670	\$ 93,498,245	\$ 145,490,915	\$ 169,174,783	46.2%

The Total Budget Available of \$314.7 million represents total approved budgets for pending, active, and closed projects as at the end of March 31, 2023.

Total Expenditures to March 31, 2023, of \$145.5 million include expenditures of \$52.0 million incurred prior to April 1, 2022, and expenditures of \$93.5 million in the current fiscal year. This results in a Remaining Budget Available as of March 31, 2023, of \$169.2 million.

In the Pending project category, there is \$28.4 million that has been deferred or cancelled. This funding is available to be reallocated to existing projects, if required, or used to fund future capital budgets.

ATTACHMENT

Capital Expenditure Report March 31, 2023

Report prepared by:

Corey Ellis

Corey Ellis, CPA, CGA, Accountant, (902)-490-2976

Capital Expenditure Report
For the Period Ending March 31/23

Status	Service	Asset Category	Total Budget Available	Expenditures to March 31, 2022	Expenditures	Total	Remaining		
					April 1, 2022 to March 31, 2023	Expenditures to March 31, 2023	Budget Available as of March 31, 2023		
Active	W	Water - Land	555,000	44,796	-	44,796	510,204		
		Water - Transmission	19,284,000	943,026	1,818,394	2,761,420	16,522,580		
		Water - Distribution	3,772,814	18,417	344,391	362,808	3,410,006		
		Water - Energy	400,000	-	4,898	4,898	395,102		
		Water - Structures	19,218,000	1,988,135	4,921,856	6,909,991	12,308,009		
		Water - Treatment Facilities	10,563,516	254,280	809,448	1,063,728	9,499,788		
		Water - Security	175,000	-	2,065	2,065	172,935		
		Water - Equipment	9,793,000	1,058,388	7,277,646	8,336,034	1,456,966		
		Water - Corporate Projects	47,468,441	10,987,532	10,887,654	21,875,186	25,593,255		
		W Total		111,229,771	15,294,574	26,066,352	41,360,926	69,868,845	
Active	WW	Wastewater - Trunk Sewers	251,963	602,786	(602,786)	-	251,963		
		Wastewater - Collection System	50,322,091	5,368,893	16,159,506	21,528,399	28,793,692		
		Wastewater - Forcemains	820,000	-	33,944	33,944	786,056		
		Wastewater - Structures	17,876,527	1,517,592	3,823,124	5,340,716	12,535,811		
		Wastewater - Treatment Facility	20,713,024	3,187,899	5,175,714	8,363,613	12,349,411		
		Wastewater - Energy	1,339,000	60,958	26,068	87,026	1,251,974		
		Wastewater - Security	275,000	-	79,251	79,251	195,749		
		Wastewater - Equipment	435,000	92,205	58,933	151,138	283,862		
		Wastewater - Corporate Projects	5,859,440	298,190	918,490	1,216,680	4,642,760		
		Wastewater - Unregulated	45,000	37,788	-	37,788	7,212		
WW Total		97,937,045	11,166,311	25,672,244	36,838,555	61,098,490			
Active	SW	Stormwater - Pipes	4,276,000	294,894	115,525	410,419	3,865,581		
		Stormwater - Culverts/Ditches	1,781,000	68,678	314,798	383,476	1,397,524		
		Stormwater - Structures	1,190,000	43,661	632,595	676,256	513,744		
		Stormwater - Corporate Projects	916,949	356,912	65	356,977	559,972		
SW Total		8,163,949	764,145	1,062,983	1,827,128	6,336,821			
Active Total		217,330,765	27,225,030	52,801,579	80,026,609	137,304,156			
Pending	W	Water - Land	580,000	-	-	-	580,000		
		Water - Transmission	1,237,400	-	-	-	1,237,400		
		Water - Distribution	34,000	-	-	-	34,000		
		Water - Energy	455,000	-	-	-	455,000		
		Water - Structures	300,000	-	-	-	300,000		
		Water - Treatment Facilities	2,184,000	-	-	-	2,184,000		
		Water - Corporate Projects	4,341,877	27,888	-	27,888	4,313,989		
		W Total		9,132,277	27,888	-	27,888	9,104,389	
		Pending	WW	Wastewater - Collection System	4,750,000	-	-	-	4,750,000
				Wastewater - Forcemains	60,000	-	-	-	60,000
Wastewater - Structures	7,674,000			-	-	-	7,674,000		
Wastewater - Treatment Facility	7,580,500			-	-	-	7,580,500		
Wastewater - Energy	1,662,500			-	-	-	1,662,500		
Wastewater - Security	150,000			-	-	-	150,000		
Wastewater - Equipment	5,000			-	-	-	5,000		
Wastewater - Corporate Projects	100,000			-	-	-	100,000		
WW Total				21,982,000	-	-	-	21,982,000	
Pending	SW			Stormwater - Pipes	381,238	-	-	-	381,238
		Stormwater - Culverts/Ditches	280,000	-	-	-	280,000		
		Stormwater - Structures	93,000	-	-	-	93,000		
		Stormwater - Corporate Projects	30,000	-	-	-	30,000		
SW Total		784,238	-	-	-	784,238			
Pending Total		31,898,515	27,888	-	27,888	31,870,627			
Closed 22/23	W	Water - Transmission	4,215,563	284,151	3,931,412	4,215,563	-		
		Water - Distribution	11,690,613	159,798	11,530,815	11,690,613	-		
		Water - Structures	9,051,840	6,168,095	2,883,745	9,051,840	-		
		Water - Treatment Facilities	1,578,604	282,991	1,295,613	1,578,604	-		
		Water - Security	52,298	-	52,298	52,298	-		
		Water - Equipment	3,337,575	1,980,803	1,356,772	3,337,575	-		
		Water - Corporate Projects	7,001,738	3,659,788	3,341,950	7,001,738	-		
		W Total		36,928,231	12,535,626	24,392,605	36,928,231	-	
		Closed 22/23	WW	Wastewater - Collection System	6,952,241	2,587,907	4,364,334	6,952,241	-
				Wastewater - Forcemains	2,919,526	1,532,774	1,386,752	2,919,526	-
Wastewater - Structures	5,732,510			4,655,336	1,077,174	5,732,510	-		
Wastewater - Treatment Facility	3,018,716			329,183	2,689,533	3,018,716	-		
Wastewater - Security	140,528			129,514	11,014	140,528	-		
Wastewater - Equipment	126,963			12,768	114,195	126,963	-		
Wastewater - Corporate Projects	3,443,669			1,195,731	2,247,938	3,443,669	-		
Wastewater - Unregulated	70,315			70,315	-	70,315	-		
WW Total				22,404,468	10,513,528	11,890,940	22,404,468	-	
Closed 22/23	SW			Stormwater - Pipes	608,066	140,447	467,619	608,066	-
		Stormwater - Culverts/Ditches	5,369,930	1,545,904	3,824,026	5,369,930	-		
		Stormwater - Corporate Projects	125,723	4,247	121,476	125,723	-		
SW Total		6,103,719	1,690,598	4,413,121	6,103,719	-			
Closed 22/23 Total		65,436,418	24,739,752	40,696,666	65,436,418	-			
Grand Total		314,665,698	51,992,670	93,498,245	145,490,915	169,174,783			

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY:



Digitally signed by Reid
Campbell
Date: 2023.06.16
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Reid Campbell, M.Eng., P.Eng.
Director, Engineering & Technology Services

APPROVED:



Digitally signed by Louis
de Montbrun
Date: 2023.06.16
14:52:46 -03'00'

Louis de Montbrun, CPA, CA, Acting General Manager

DATE: June 6, 2023

SUBJECT: Autoport Pump Station Replacement

ORIGIN

2016/17, 2020/21 & 2022/23 Capital Budgets.

RECOMMENDATION

It is recommended the Halifax Water Board approve the Autoport Pump Station Replacement project for a total project cost of \$8.9 million.

BACKGROUND

The existing Autoport wastewater pump station is located between Howard Avenue and Morris Avenue on Main Road in Eastern Passage. The station was constructed in 1974 and has reached the end of its useful life and requires replacement. Due to the station's location within the street right of way and its configuration under the sidewalk, maintenance activities are difficult, unsafe and require significant resources as compared to other similar pump stations. This is compounded by the busy and multi-modal nature of Main Road and municipal restrictions on traffic disturbances during peak hours.

For the foregoing reasons, and to facilitate construction of a station that meets current standards and capacity for current and future flow rates, Halifax Water has been seeking to acquire a suitable parcel for the new station for the past several years while the design work has continued in parallel.

DISCUSSION

Initial concept planning and data collection for replacement of the Autoport pump station began in 2016 and it became evident that the station could not be re-built in its existing location in the street right of way. Over the past several years numerous land options and station configurations were reviewed with CN, the adjacent landowner, and in April of this year an agreement was signed with CN for a suitable parcel of land at the intersection of Main Road and Morris Avenue.

In August of 2020, Engineering Services were awarded to WSP to further develop design concepts to assist in the land acquisition process and to ensure that the project design was well developed and generally ready for tender when the land purchase was concluded. The design report is attached for information. Based on the construction cost estimate in the design report, the estimated total project cost is \$8.9 million (see attached project cost estimate). Subject to approval of this funding request, this project will proceed to tender immediately.

BUDGET IMPLICATIONS

The following budget amounts were previously approved for the Autoport Pump Station Replacement project:

\$200,000 (2016/17 Capital Budget)
\$3,000,000 (2020/21 Capital Budget)
\$250,000(2022/23 Capital Budget)

Citing a lack of progress in acquiring land for the Autoport project, a report was submitted in 2021 requesting the diversion of \$2,750,000 from the Autoport project to the Williams Lake Road Wastewater Pumping Station Rehabilitation project. The request was approved by the Halifax Water Board on March 25, 2021 (Item #5.2) and subsequently the UARB on June 30, 2021 (M10130). This allowed the Williams Lake Road project to proceed to construction. Additional funding in the amount of \$2,550,000 was included in the 2023/24 Capital Budget resulting in \$3,250,000 currently available for the Autoport project.

Further funding in the amount of \$2,000,000 was projected for the 2024/25 Capital Budget however this will be revised to \$5,650,000 to support the total project cost of \$8.9 million. This funding implementation plan will support the cash flow requirements of this project as construction will extend into 2024.

The current estimate for this project is significantly more than what has been allocated in previous budget planning. This increase is attributed to the following:

1. During previous budget planning exercises, Halifax Water had not yet identified a suitable parcel of land which we would be able to acquire and therefore, there was no certainty on the location of the new station. Previous budgets were based on assumption that the new

station would be in close proximity to the existing station. The parcel that has been acquired is approximately 130 m southeast of the existing station requiring extension of the pump station forcemain and re-laying of the gravity sewer on Main Road over this same distance;

2. Until the land acquisition became more certain, only concept designs were developed to avoid wasting or duplicating design effort. As such, there was no reasonable estimate of cost at that time;
3. There has been significant inflation in the cost of construction since the initial budget estimates were completed.

The proposed expenditure meets the “NO REGRETS- UNAVOIDABLE NEEDS” approach of the 2012 Integrated Resource Plan. The proposed work meets the NR-UN criteria of “Required to ensure infrastructure system integrity and safety”. The project meets these criteria based on the following: The current equipment is failing due to age and end of life (Asset Management), causing treatment performance/operational issues (Infrastructure System Integrity).

ALTERNATIVES

The Board could direct staff not to proceed with the project at this time. This is not recommended as the station has reached the end of its useful life and may imminently fail resultin is possible wastewater flooding of basements and discharge of wastewater to the environment.

ATTACHMENT

1. Project Cost Estimate
2. Autoport Wastewater Pumping Station Upgrades, 100% Detail Design Report (WSP, May 2023) Confidential Document

Report Prepared by:



Greg Rice, P.Eng., 902-476-3520
Manager, Municipal Engineering

Financial Reviewed by:



Digitally signed by Alicia
Scallion
Date: 2023.06.16
12:57:52 -03'00'

Alicia Scallion, CPA, CA
Acting Director, Corporate Services

1-Jun-2023

Autoport Pump Station Replacement
Project Cost Estimate

Item	Total Cost
Construction (See Engineer's estimate in design report)	\$6,953,110
Consultant Costs (Tender/Construction Phase)	\$398,785
Construction Contingency (10% of above)	\$735,190
Consultant Costs (Design Phase)	\$145,200
Land Purchase	\$157,540
Sub-total	\$8,389,825
Net HST (4.286%)	\$359,588
Construction Easement Costs	\$75,600
Sub-total	\$8,749,412
Halifax Water Staff and Related Expenses	\$60,000
Sub-total	\$8,809,412
Overhead (1%)	\$88,094
Total Project Cost Estimate	\$8,900,000

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: *Reid Campbell*
[Reid Campbell \(Jun 16, 2023 15:53 ADT\)](#)
Reid Campbell, M.Eng., P.Eng., Director, Engineering & Technology Services

APPROVED: *Louis de Montbrun*
[Louis de Montbrun \(Jun 16, 2023 15:55 ADT\)](#)
Louis de Montbrun, CPA, CA, Acting General Manager/CEO

DATE: June 16, 2023

SUBJECT: Dartmouth Wastewater Treatment Facility Coarse Screen Replacement Project

ORIGIN

The 2022/2023 Capital Budget.

Halifax Water currently has \$500,000 funding approved for the Dartmouth Wastewater Treatment Facility (WWTF) Coarse Screen Replacement Project through the 2022/23 Capital Budget.

Halifax Water is requesting additional funding of \$795,000 for the project to replace the existing manual coarse bar screen with a second automatic coarse screen and include a new washer compactor and controls to service both screens.

RECOMMENDATION

It is recommended that the Halifax Water Board approve the additional funding request of \$795,000 for the Dartmouth Wastewater Treatment Facility Coarse Screen Replacement Project for a total estimated cost of \$1,295,000.

BACKGROUND

The original scope for this project was to only replace the existing automatic coarse bar screen. To replace and take the existing automatic coarse bar screen offline the effluent would need to be

directed to the parallel channel through existing manual coarse bar screen. The current arrangement of the existing manual coarse bar screen does not allow for it to be operated safely so it is not able to be utilized to replace the existing automatic coarse bar screen. To undertake this project and replace the existing automatic coarse bar screen a second automatic coarse bar screen, and new washer compactor, is required to be installed first to replace the manual bar screen. This would allow for the isolation of the existing equipment and its safe removal while still maintaining facility operations and protecting downstream equipment.

This expands the original scope of the project from one new automatic coarse bar screen to two new automatic coarse bar screens, new washer compactor and controls.

DISCUSSION

Effective coarse screening is the first line of defense against excessive solids and particulate loading and is required for the other downstream processes to work effectively. Coarse screens are important to keep the facility within regulatory compliance and protect downstream equipment from large solids.

The Dartmouth WWTF currently has one automatic coarse bar screen and one manual coarse bar screen as shown in Figure #1 below. The existing automatic coarse screen at the Dartmouth WWTF is original to the facility and has had components fail over the last number of years. The existing automatic coarse screen is no longer reliable, cost effective, and has reached the end of its useful life.

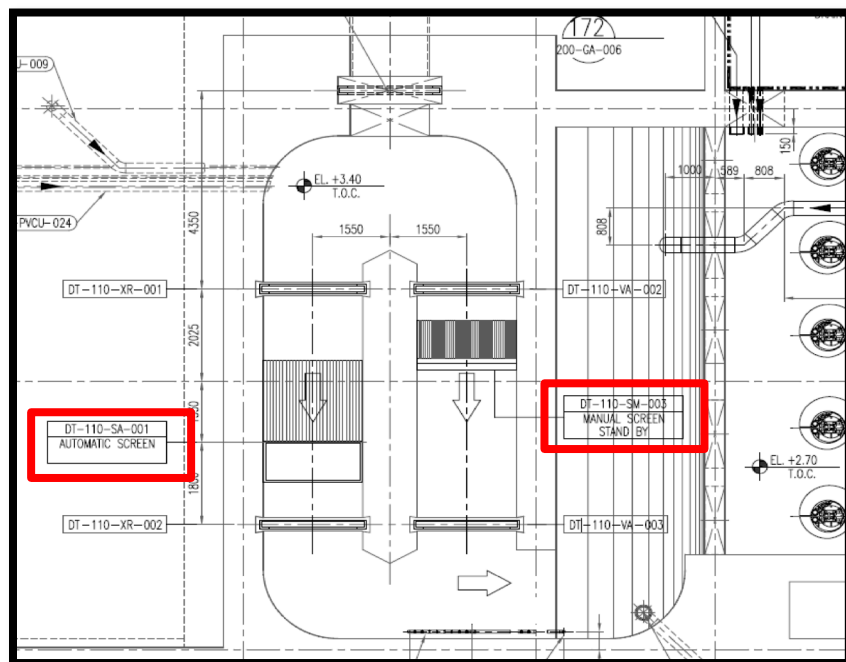


Figure #1 - Plan View – Coarse Screening Area

The existing manual coarse bar screen is a safety issue to facility Operations staff as it extends over 4.3m (14.1 ft.) deep into the channel. The manual screen is unable to be efficiently cleaned and poses significant risk to operators based on the access and ergonomics required to operate and maintain. The hand rake required to clean debris from the screen is over 6.0m (20ft.) in length and cannot be used safely or effectively by operations staff.

Based on the current arrangement, the channel with the manual coarse bar screen is not utilized and the channel with the automatic coarse screen receives effluent full time. This arrangement means that the existing automatic coarse screen is being operated year-round without system redundancy which leads to reduced equipment life expectancy, greater operational risk to the treatment facility, increased risk to the environment and a potential breach of regulatory permit in the event of an equipment failure.

As the manual coarse bar screen is not utilized it should be replaced with an automatic coarse screen for a safer more reliable system operation. This will also allow for better operation of the of the coarse screening operation as one automatic coarse screen can then be taken offline to provide required maintenance to the equipment. A second screen will allow one screen to be utilized with the second screen in standby.

Through this project a new washer compactor, to service both automatic coarse screens, will be required. The existing compactor is original to facility and is also operated full time along with the screen. It is at end of useful life and should be replaced through this project. New electrical and SCADA controls will be required for the new equipment through this project.

BUDGET IMPLICATIONS

Total cost to complete the project will be \$1,295,000 and is detailed in the table below:

BUDGET	
Category Description	Total Project Cost Estimate \$
Contractor	\$330,000
Consulting Services	\$52,500
HRWC Technical Support	\$32,000
Equipment	\$704,900
Contingency (10%)	\$111,940
SUB-TOTAL	\$1,231,340
Net HST (4.286%)	\$52,775
Overhead (1%)	\$12,313
TOTAL	\$1,296,429
ROUNDED TOTAL	\$1,295,000

Funding for the Dartmouth WWTF Coarse Screen Replacement project is available as follows:

- Funding in the amount of \$500,000 is available from the 2022/23 Capital Budget under “Course Screens Replacement – Dartmouth WWTF” (Project ID No. 2.965); and.
- Funding in the amount of \$795,000 is available from surpluses in previously closed projects or projects that have been deferred or cancelled.

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 “Firm regulatory requirement”, “Required to ensure infrastructure system integrity and safety”, and “Directly supports the implementation of the Asset Management program”. The project meets these criteria based on the following: The current automatic coarse screen and compactor are at the end of useful life (Asset Management) and the current arrangement does not allow for system redundancy or safe operation which will cause treatment performance/operational issues (Infrastructure System Integrity), and regulatory compliance failures (Firm Regulatory Requirement).

ALTERNATIVES

There is no alternative to address the current arrangement and treatment for Coarse Screening at the Dartmouth WWTF.

Report Prepared by:

George Michelin

George Michelin, Manager – Facilities Engineering, (782) 640-0177

Financial Reviewed by:

Alicia Scallion

Alicia Scallion, CPA, CA
Acting Director, Corporate Services/CFO

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY:



Digitally signed by Reid
Campbell
Date: 2023.06.16
16:02:17 -03'00'

Reid Campbell, M.Eng., P.Eng., Director, Engineering & Technology Services

APPROVED:



Digitally signed by Louis
de Montbrun
Date: 2023.06.16
16:06:47 -03'00'

Louis de Montbrun, CPA, CA, Acting General Manager and CEO

DATE: June 16, 2023

SUBJECT: **Port Wallace Transmission Main
Highway 118 Crossing – Shubie Park to Dartmouth Crossing**

ORIGIN

The Halifax Water 2022/23 Capital Budget.

RECOMMENDATION

It is recommended that the Halifax Water Board approve funding for the Port Wallace Transmission Main Highway 118 Crossing – Shubie Park to Dartmouth Crossing project at an estimated cost of \$10,390,000.

BACKGROUND & DISCUSSION

The Port Wallace Transmission Main – Highway 118 Crossing project is Phase 2 of Halifax Water’s Infrastructure Master Plan to twin the existing water transmission main from Main Street to the Burnside Industrial Park/Dartmouth Crossing.

Halifax Water’s Infrastructure Master Plan recommends the twinning of the Burnside Transmission Main. The new transmission main, which will be completed over two years, will provide additional capacity and redundancy to the Burnside Industrial Park. This phase of the transmission main design and construction is being aligned with Port Wallace Holdings Limited’s need for the Port Wallace plan area to connect to the wastewater collection system in Dartmouth Crossing.

This phase of the project involves approximately 1,500 metres of new 600 mm diameter water main starting at the intersection of Breeze Drive and Waverley Road, through Shubie Park, crossing highway 118, finally connecting to the existing 600 mm water main on Countryview Drive in Dartmouth Crossing.

The first phase of the Port Wallace Transmission main, from Main Street to Caledonia Road, was approved under M09721 and was completed at the end of 2020.

Funding in the amount of \$120,000 for detailed design work for this phase was previously approved in April 2022.

BUDGET IMPLICATIONS

This project has a 5% benefit to growth, as such 5% of the total project cost will be funded by the Water Regional Development Charge.

Funding in the amount of \$8,037,000 including net HST is available within the 2023/2024 Capital Budget under:

- Highway 118 Crossing – Shubie Park to Dartmouth Crossing

Additional funding in the amount of \$2,353,000 is to be included in the 2024/25 Capital Budget.



The proposed expenditure meets the “No Regrets – Unavoidable Needs” approach of the 2012 Integrated Resource Plan. The proposed work meets the NR-UN criteria, required to ensure infrastructure system integrity and growth-related infrastructure supported by pre-design level master plan.

ALTERNATIVES

N/A

ATTACHMENT

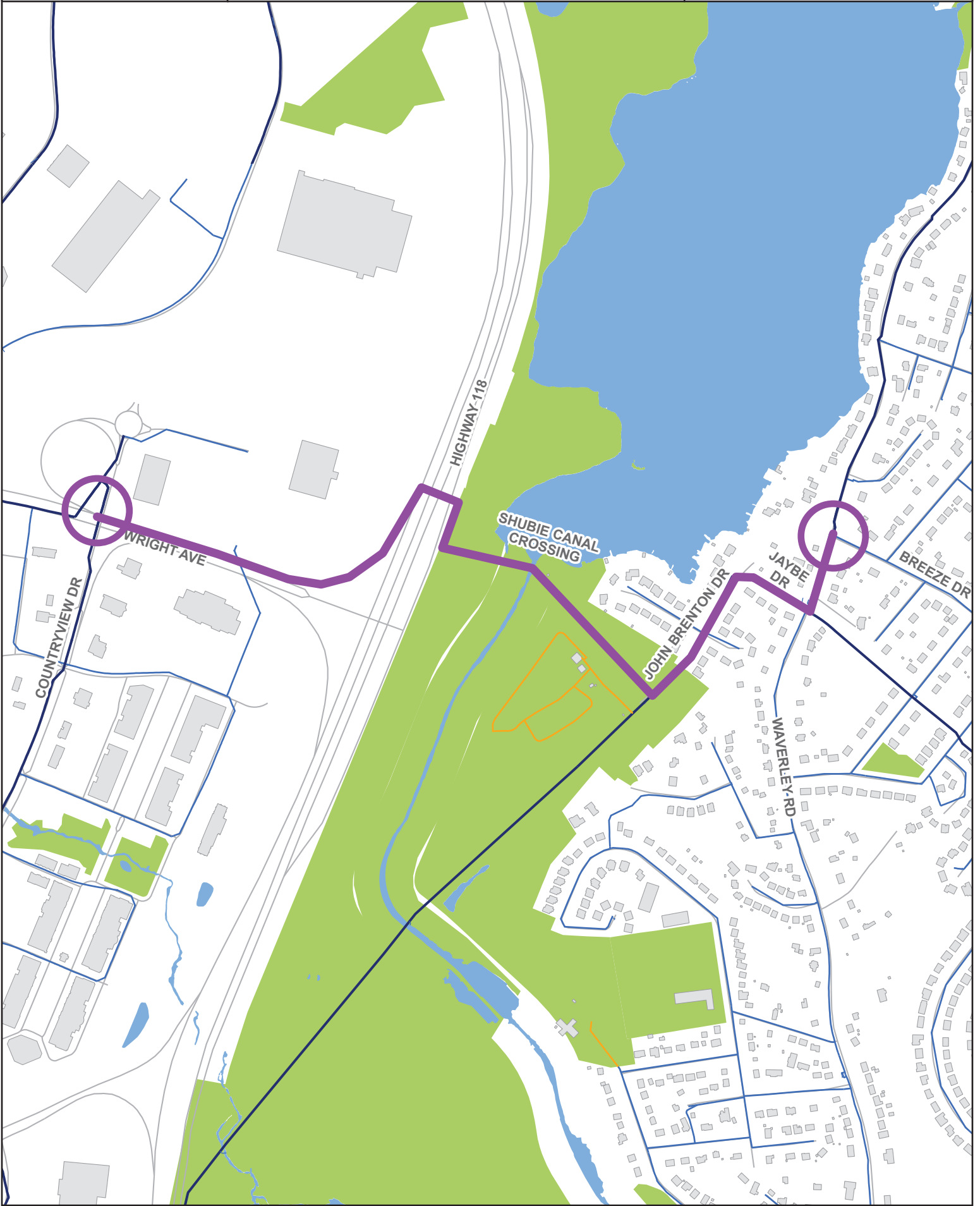
1. Port Wallace Transmission Main – Site Plan
2. Port Wallace Transmission Main – Cost Estimate
3. Port Wallace Transmission Main – Design Report & Engineer’s Estimate

Report Prepared by:	
	<p>Kevin Gray, MURP, P. Eng. Senior Manager, Regulatory Approvals</p>
Financial Reviewed by:	
	<p><small>Digitally signed by Alicia Scallion Date: 2023.06.16 16:03:59 -03'00'</small></p> <p>Alicia Scallion, CPA, CA Acting Director and CFO, Corporate Services/CFO</p>

Port Wallace Transmission Main Site Plan



Scale
1:7,000
0 100 200
Meters



Port Wallace Transmission Main - Project Cost Estimate - June 16, 2023

Description	Total Cost
Construction Cost - Based on Engineer's Estimate	\$7,059,450
Consulting Cost - Design & Tender Phase	\$120,000
10% Consulting Cost - Construction Phase	\$705,945
Sub-total	\$7,885,395
25% Project Contingency	\$1,971,349
25% Contingency was utilized due to project complexity. The 1,400 metres of transmission main is being installed in HRM right-of-way, HRM parkland, spanning the Shubie Canal, crossing the HWY 118 and connection to the existing system within Dartmouth Crossing.	
Halifax Water - Operations & Inspections	\$75,000
Sub-total	\$9,931,744
Net HST (4.286%)	\$479,305.95
Halifax Water Overhead (1%)	\$99,317.44
Total Project Cost Estimate	\$10,510,367

Total Estimated Project Cost (Rounded) \$10,510,000

Subtract Approved Funding to Date \$120,000

Requested Funding (2022/2023) \$10,390,000



Design Report

June 16th, 2023

Port Wallace Transmission Main

DP Project #22-236 - Engineering Services



SUBMITTED BY:
DesignPoint Engineering & Surveying Ltd.

90 Western Parkway, Suite 500
Bedford, NS B4B 2J3

SUBMITTED TO:
Halifax Water

450 Cowie Hill Road
Halifax, NS B3P 2V3
Attention: Kevin Gray, Manager, Engineering Approvals



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1.0 INTRODUCTION

Halifax Water has retained DesignPoint to complete the detailed design of a water main extension from Breeze Drive at Waverley Road to Dartmouth Crossing Retail Business Park (Dartmouth Crossing) at Countryview Drive. This project is intended to fill a gap in the existing system and to provide additional supply to Burnside and the proposed development in the Port Wallace area. DesignPoint was hired to complete a topographic survey, engineering design, and tender support services, as well as provisional construction inspection and administration services.

Clayton Developments Ltd. (Clayton) is planning a large land development commonly known as “Port Wallace” serving approximately 13,000 people. To service this new development with municipal services, a utility corridor has been identified from Breeze Drive that extends to Countryview Drive. This corridor will include sewer, water, and gas utility services.

Halifax Water has plans to improve the water system connection from the Lake Major Water Supply Plant to Burnside by installing a new transmission main. This work is to be completed in three phases. To date, HRWC has completed the first phase of this connection in 2020, extending a 600mm \emptyset transmission main from Main Street to Avenue du Portage. The second phase of this transmission main will include this proposed utility corridor, with the third and final phase to follow. Due to the synergies of constructing all utilities at the same time along the utility corridor, Halifax Water has coordinated with Clayton for the installation of this 600mm \emptyset water connection along with the other utility work within this corridor.

The 600mm \emptyset water transmission extension is to be installed along Waverley Road from Breeze Drive to Jaybe Drive, along Jaybe Drive to John Brenton Drive, along John Brenton Drive to Shubie Park, through Shubie Park, over the Shubie Canal, to Highway 118, and under Highway 118 to Dartmouth Crossing to make a connection to the existing 600mm \emptyset water transmission main on Countryview Drive. Refer to Appendix A for a sketch of the project area.

The design of the project has been carried out during 2022/2023 with construction intended for the 2024 construction season. This report outlines the design process.

2.0 WORK PROGRAM

The following is a detailed breakdown of the work completed during the design of this project.

2.1 TOPOGRAPHIC SURVEY

A topographic survey was completed along the project route. This survey identified relevant surface features that were incorporated into a base plan for the detailed design. The road cross-section, existing water, sewer and storm sewer infrastructure and culverts were identified along with other relevant features. The Shubie Canal was also surveyed along with Highway 118 at the area of the proposed crossing.

Property lines along the project route have been included in the design based on provincial mapping information. The proposed water transmission main will be located in the HRM street Right of Way, the HRM Park and the NSDPW Highway Right of Way.



2.2 HALIFAX WATER CONSULTATION

Halifax Water was consulted throughout the project during regular meetings. Record drawings and GIS information of the existing systems were provided to DesignPoint along with lateral card information at select locations.

It was determined early in the project that ductile iron piping is to be used to provide consistency with the surrounding infrastructure. Given that existing residents along the project route are currently serviced by water infrastructure, new service laterals were not included as part of the scope of this project. In locations where laterals connect to the existing transmission main, the laterals may be reconnected to the new mains. As the existing transmission main along John Brenton Drive and Jaybe Drive is Hyprescon and other services are being installed in close proximity, the existing main will be replaced as part of this project.

2.2.1 Implications

The overall implications are summarized below:

1. A ductile iron water main has been specified.
2. The water main location will avoid existing infrastructure where possible.
3. The new transmission main will be 600mm ϕ .
4. The existing Hyprescon along John Breton and Jaybe will be replaced.
5. Temporary water will be required with an equivalent hydraulic capacity.
6. The water transmission main will be installed on a bridge over the Shubie Canal.
7. The water transmission main will be installed under Highway 118 within a casing pipe using open-cut methodology.

2.3 HRM CONSULTATION

A meeting was held with HRM to review reinstatement requirements for the project. Several aspects of the work were discussed, including working hour restrictions, reinstatement requirements, and the potential for integrated HRM projects.

HRM indicated that there were no HRM projects taking place in the project area, and that work by Halifax Water would not be integrated with any HRM projects.

Waverley Road was noted as a Major Collector, which will require peak hour restrictions during construction, with no work between the hours of 7:00 am-9:00 am and 4:00 pm-6:00 pm. Provision for this requirement was made in the tender documents. In a previous project completed by HRM, peak-hour restrictions were enforced. The possibility of night work was discussed, and HRM was open to night work.

Wright Avenue is an arterial road. Two lanes of traffic must be maintained on the road at all times, and construction work is also subject to full peak hour restrictions. Jaybe Drive and John Brenton Drive are both local roads with no supplemental restrictions.

Highway 118 and its ramps are under provincial jurisdiction and all work will be subject to the Nova Scotia Temporary Traffic Control Manual and require a Work Within Highway Right-of-Way Permit. Coordination will be required with the province to develop the proposed work plan to mitigate traffic impacts during construction.



2.3.1 Implications

The project implications from this consultation are summarized below:

1. Reinstatement of Waverley Road must include superelevation. To facilitate this, a preconstruction survey will be required by the contractor. A survey of the road gravels will be completed at the same location as the preconstruction surveys completed by the contractor and DesignPoint to confirm superelevation before asphalt placement.
2. Peak-hour restrictions will be required while working on Waverley Road. Work may be completed between the hours of 9 am and 4 pm or overnight. This information will be included in the tender to allow the contractor to choose which option works best.
3. Peak-hour restrictions will be required while working on Wright Avenue. Work may be completed between the hours of 9 am and 4 pm or overnight and during these times are least two lanes of traffic must be maintained. This information will be included in the tender to allow the contractor to choose which option works best.
4. All work within the provincial ROW, including under Highway 118 and the off-ramp are subject to Nova Scotia Temporary Traffic Control Manual and will require a provincial Work Within Highway Right-of-Way Permit.

2.4 GEOTECHNICAL TESTING



A geotechnical program was completed on-site as detailed in Appendix B. This program included drilling sixteen (16) Auger Probes (AP01 and AP04 to AP18, inclusive), excavating three (3) test pits (TP01 to TP03, inclusive), and drilling nine (9) boreholes (BH02 to BH10, inclusive) between May 19 and August 10, 2022. The purpose of the investigation was to assess the subsurface conditions along the corridor alignment in addition to subsurface assessment and providing geotechnical foundation recommendations for a new pedestrian bridge over the Shubenacadie Canal in Shubie Park and a new pump station structure behind the existing pump station at 390 Waverley Road.

The auger probes were completed at regular intervals along the corridor. The test pits were dug along an isolated section on the corridor on Wright Avenue. The boreholes were completed at occasional intervals along the corridor, on each side of the Shubenacadie Canal within Shubie Park at the planned new pedestrian bridge, and in the yard area of the existing pump station at 390 Waverley Road.



In general, the geotechnical subsurface conditions encountered a comprised sequence of cobble and boulder rich overburden, varying from silty sand with gravel, sandy silt with gravel, silty gravel with sand, and sand with silt and gravel overlying quartzite bedrock. Surficial materials varied from exposed soils, asphalt pavement, concrete sidewalk, and sod/topsoil. Bedrock depth varied from 1.2 to greater than 9.4 metres. Refusal of some auger probe locations, inferred to be on a boulder or bedrock, varied from 2.1 to 5.5 metres.

2.5 OVERHEAD UTILITIES

Utility poles are situated on both sides of Waverley Road and the north side of Jaybe Drive. Various power poles along the route will need to be shored or moved during construction.

Nova Scotia Power recommended a 2-metre separation between the excavation site and the point where the guy anchor breaks the surface. Utility poles will be located in proximity to the proposed work, therefore certain poles will need to be moved and/or shored during construction.

2.6 COST ESTIMATION

A cost estimate was completed for the project based on the designed quantities and unit rates from previous tenders. It is noted that tender prices over the previous year have been highly volatile due to uncertainty surrounding supply shortages and increased construction demand. The construction cost for the project was estimated at \$7.06M exclusive of HST and contingency. A full breakdown of the cost estimate can be found in Appendix C.

2.7 DESIGN CONSIDERATIONS

Based on the work program described in this section, the following considerations have been made during the completion of the project design.

2.7.1 Water Main Location

To minimize reinstatement costs, the water main has been located to avoid existing infrastructure where possible.

2.7.2 Reinstatement

Reinstatement requirements were reviewed with HRM. It was concluded that Jaybe Drive will require full street reconstruction.

3.0 CONCLUSIONS AND RECOMMENDATIONS

During the completion of the design and through consultation with relevant stakeholders, the following conclusions are provided with recommendations to follow.

3.1 CONCLUSIONS

1. A ductile iron water main is the appropriate water main for the construction of this project. The use of this material will provide consistency with the existing water mains in the surrounding area.
2. Peak-hour restrictions will be in place during the construction of this project. Both travel lanes must be maintained between the hours of 7:00 am-9:00 am and 4:00 pm-6:00 pm. Night work may be permitted for portions of the project.
3. Shoring or relocating utility poles will be required.
4. The existing streets are congested with underground services in certain locations. Some of this infrastructure will need to be replaced to accommodate new services, requiring complete road resurfacing and replacement.

3.2 RECOMMENDATIONS

1. Install the 600mmØ water transmission main in the existing streets, through Shubie Park, over the Shubie Canal and under Highway 118.
2. Provide polyethylene encasement around the water transmission main to protect against corrosion.
3. A temporary water main will be required for the Jaybe Drive area, this will need to have equivalent hydraulic capacity to the existing system.

4.0 CLOSURE

We trust that the information contained in this report adequately outlines the design process of this project. If you have any questions about the contents of the report or if we can be of any other assistance, please contact us.

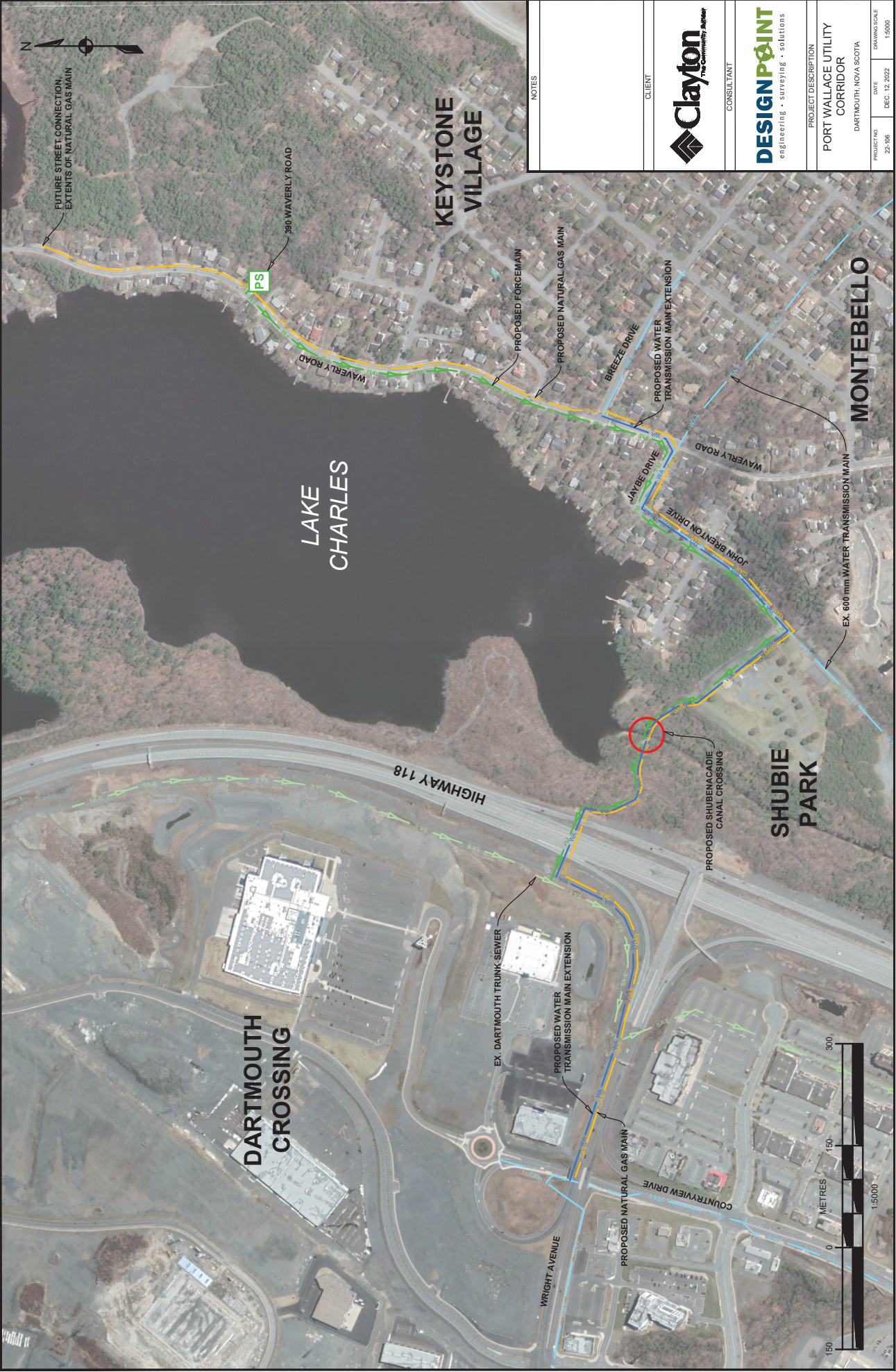
Thank you,

DesignPoint Engineering & Surveying Ltd.



Glenn Woodford, P.Eng.
Senior Civil Engineer & Principal

5.0 APPENDIX A – PROJECT AREA



FUTURE STREET CONNECTION,
EXTENTS OF NATURAL GAS MAIN

DARTMOUTH CROSSING

LAKE CHARLES

KEYSTONE VILLAGE

SHUBIE PARK

MONTEBELLO

HIGHWAY 118

WRIGHT AVENUE

COUNTRYVIEW DRIVE

PROPOSED NATURAL GAS MAIN

EX. DARTMOUTH TRUNK SEWER
PROPOSED WATER TRANSMISSION MAIN EXTENSION

PROPOSED SHUBENACADIE CANAL CROSSING

JOHN BRENTON DRIVE

JAY BEE DRIVE

PROPOSED WATER TRANSMISSION MAIN EXTENSION

BREEZE DRIVE

PROPOSED NATURAL GAS MAIN

PROPOSED FORCE MAIN

380 WAVERLY ROAD

PS

WAVERLY ROAD



NOTES	
CLIENT	Clayton THE COMMUNITY ADVANTAGE
CONSULTANT	DESIGNPOINT engineering • surveying • solutions
PROJECT DESCRIPTION	PORT WALLACE UTILITY CORRIDOR
DARTMOUTH, NOVA SCOTIA	
DATE	DEC. 12, 2022
PROJECT NO.	22-106
DRAWING SCALE	1:5000

6.0 APPENDIX B - GEOTECHNICAL REPORT

GEOTECHNICAL REPORT

September 12, 2022

Geotechnical Investigation – Port Wallace, Dartmouth, Nova Scotia

Project Number 22-106



SUBMITTED BY:

DesignPoint Engineering & Surveying Ltd.

222 Waterfront Drive, Suite 104
Bedford, NS B4A 0H3

SUBMITTED TO:

Clayton Developments Ltd.



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APPENDIX A

- Figure Showing General Utility Services Corridor Route
- Symbols and Terms used on Borehole and Test Pit Records
- Auger Probe, Test Pit, and Borehole Records
- Grain-Size Plots
- Test Locations Drawings

1.0 INTRODUCTION

DesignPoint Engineering & Surveying Ltd. (DesignPoint) was retained by Clayton Developments Limited to conduct a geotechnical investigation along a proposed utility services corridor extending between the intersection of Wright Ave. and Countryview Dr. in the Dartmouth Crossing Retail Business Park to an existing pump station located 390 Waverley Road in support of the planned Port Wallace land development project in Dartmouth, Nova Scotia. We understand that various buried utility services will be installed along the corridor including natural gas, water, sanitary pressure sewer, and storm sewer.

The purpose of the investigation was to assess the subsurface conditions along the corridor alignment in addition to subsurface assessment and providing geotechnical foundation recommendations for a new pedestrian bridge over the Shubenacadie Canal in Shubie Park and a new pump station structure behind the existing pump station at 390 Waverley Road.

The scope of the investigation comprised drilling sixteen (16) Auger Probes (AP01 and AP04 to AP18, inclusive), excavating three (3) test pits (TP01 to TP03, inclusive), and drilling nine (9) boreholes (BH02 to BH10, inclusive) along the planned corridor, and preparation of a geotechnical investigation report. This geotechnical investigation report presents the field work findings including laboratory testing and provides our geotechnical recommendations to assist with design.

2.0 SITE DESCRIPTION AND GEOLOGY

The utility services corridor is planned to extend from near the intersection of Country View Drive and Wright Ave, easterly along Wright Ave, across Highway No. 118, through Shubie Park including a pedestrian bridge crossing over the Shubenacadie Canal, along John Brenton and Jaybe Drives, and northerly along Waverley Road to the existing sewage pumping station at 390 Waverley Road. The route currently comprises a mixture of grass and gravel surfacing, treed parkland, and asphalt paved roads. A figure showing the proposed corridor route is appended.

Geologic mapping indicates the principal native overburden along the proposed corridor area comprises stony till plain overlying Goldenville Formation bedrock. Based on local experience, the till overburden typically varies from silty sand with gravel, silty gravel with sand, and sandy silt with gravel along with containing frequent cobbles and boulders. Bedrock characteristically comprises quartzite and greywacke.

3.0 PROCEDURES

The investigation comprised drilling sixteen (16) Auger Probes (AP01 and AP04 to AP18, inclusive), excavating three (3) test pits (TP01 to TP03, inclusive), and drilling nine (9) boreholes (BH02 to BH10, inclusive) between May 19 and August 10, 2022. The strata encountered at each test location are described on the appended Auger Probe, Test Pit and Borehole Records and summarized below in the Section 4.0.

The auger probes were completed at regular intervals along the corridor. The test pits were dug along an isolated section of the Wright Ave portion of the corridor. The boreholes were completed at occasional intervals along the corridor, on each side of the Shubenacadie Canal within Shubie Park at the planned new pedestrian bridge, and in the yard area of the existing pump station at 390 Waverley Road.

3.1 AUGER PROBES

The auger probes were completed with minimal to no sampling using a geotechnical drill-rig. Auger probe depths were initially targeted to be approximately 4 metres deep however, auger refusal was obtained at shallower depths at several locations inferred to be a boulder or bedrock. Therefore, at some auger probe locations where shallow refusal was obtained, coring was completed to further advance the probes to assess for bedrock depth. When taken, soil samples were stored in moisture-tight containers and bedrock core samples were organized in wooden core boxes. DesignPoint geotechnical representative was onsite to log the subsurface conditions encountered at the auger probes.

3.2 TEST PITS

A DesignPoint geotechnical representative was onsite to log the subsurface conditions encountered in each of the test pits. Bulk samples were taken of the various strata encountered in the test pits. The in-situ relative density of the soils was estimated based on observations of the excavator performance. The side walls of the test pits were observed for water seepage. Upon completion, the test pits were backfilled with the excavated material and lightly tamped with the excavator bucket. All soil samples were stored in moisture tight containers.

3.3 BOREHOLES

Overburden samples were taken at various depth intervals within the boreholes using a 50 mm diameter split-barrel sampler during performance of standard penetration tests (SPTs). N-values obtained from the SPTs were recorded. The N-value is the number of blows to hammer the split-barrel sampler 300 mm into the soil using a standard energy (hammer weight and fall height). N-values indicate soil compactness and can be used to estimate various other soil parameters. Bedrock was cored with an HQ-sized core barrel. The Rock Quality Designation (RQDs) and recovery of the core runs were measured and recorded. Soil samples were stored in moisture-tight containers and bedrock core samples were organized in wooden core boxes. A DesignPoint geotechnical representative was onsite to log the subsurface conditions encountered in each of the boreholes.

3.4 SURVEY

Locations and elevations of the boreholes were surveyed by DesignPoint; elevations are referenced to Geodetic Datum (CGVD28). The borehole locations are shown on the appended Test Locations drawing. Elevations are provided on the appended Borehole Records and incorporated within this report.

3.5 LABORATORY TESTING AND CLASSIFICATION

Laboratory testing consisting of moisture contents and sieve analyses was completed on selected soil samples from some boreholes to assist with soil classification. Symbols and Terms Used on Borehole and Test Pit Records provide a brief explanation of the terminology and graphics used in this report and are also appended. Soil classification was based on procedures described in ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System) and ASTM D 2488 (Standard Practice for Description and Identification of Soils, Visual-Manual Procedure).

4.0 SUBSURFACE CONDITIONS

The geotechnical subsurface conditions encountered at the test locations are detailed on the appended Auger Probe, Test Pit, and Borehole Records and summarized herein.

The following Tables 1 to 4 provide a general summary of the overburden thickness and depth to bedrock and/or refusal inferred to be a boulder or bedrock.

Table 1 – Summary of Auger Probes Findings

AP No.	Ground Surface El., m	Thickness, m		Refusal Inferred to be Boulder or Bedrock, m		Bedrock, m	
		Asphalt	Overburden	Depth	El.	Depth	El.
AP01	49.74	--	3.10	--	--	3.10	46.64
AP04	47.33	--	5.20 ⁽¹⁾	5.20	42.13	--	--
AP05	46.52	--	5.50 ⁽¹⁾	5.50	41.02	--	--
AP06	34.43	--	> 9.40	--	--	> 9.40	< 25.03
AP07	40.91	--	3.84	--	--	3.84	37.07
AP08	41.21	--	2.49 ⁽¹⁾	2.49	38.72	--	--
AP09	39.52	--	4.57 ⁽¹⁾	4.57	34.95	--	--
AP10	32.43	--	> 9.40	--	--	> 9.40	< 23.03
AP11	34.22	0.15	5.64	--	--	5.64	28.58
AP12	36.27	0.15	5.10	--	--	5.10	31.17
AP13	35.00	0.2	2.18 ⁽¹⁾	2.18	32.82	--	--
AP14	34.00	0.15	2.44 ⁽¹⁾	2.44	31.56	--	--
AP15	33.40	0.2	2.08 ⁽¹⁾	2.08	31.32	--	--
AP16	35.62	0.15	6.30	--	--	6.30	29.32
AP17	32.29	0.15	5.33	5.33	26.96	--	--
AP18	32.45	--	> 9.14	--	--	> 9.14	< 23.31

(1) Inferred, may vary.

Table 2 – Summary of Test Pit Findings

BH No.	Ground Surface El., m	Thickness, m		Bedrock, m	
		Overburden		Depth	El.
TP01	51.30	1.52		1.53	49.78
TP02	51.51	1.22		1.22	50.29
TP03	49.29	2.29		2.29 ⁽¹⁾	47.00

(1) Inferred, may vary.

Table 3 – Summary of Borehole Findings, Utility Service Corridor

BH No.	Ground Surface El., m	Thickness, m		Bedrock, m	
		Asphalt	Overburden	Depth	El.
BH06	40.32	0.3	7.16	7.16	33.16
BH07	31.24	0.08	3.99	3.99	27.25
BH08	35.16	0.18	6.58	6.58	28.58
BH09	34.37	--	5.23	5.23	29.14
BH10	32.47	--	4.65	4.65	27.82

Table 4 – Summary of Borehole Findings, Pedestrian Bridge

BH No.	Ground Surface El., m	Thickness, m		Native Till, m		Bedrock, m	
		Asphalt	Fill	Depth	El.	Depth	El.
BH02	31.48	--	1.68	1.68	29.80	4.11	27.37
BH03	31.29	--	0.61	0.61	30.68	4.44	26.85
BH04	32.24	--	1.37	1.37	30.87	4.27	27.97
BH05	32.46	--	0.91	0.91	31.55	3.48	28.98

In general, the geotechnical subsurface conditions encountered comprised a sequence of cobble and boulder rich overburden varying from silty sand with gravel, sandy silt with gravel, silty gravel with sand, and sand with silt and gravel overlying quartzite bedrock. Surficial materials varied from exposed soils, asphalt pavement, concrete sidewalk, and sod/topsoil. Bedrock depth varied from 1.2 to greater than 9.4 metres. Refusal of some auger probe locations, inferred to be on a boulder or bedrock, varied from 2.1 to 5.5 metres.

Quartzite bedrock was encountered at auger probes AP1, AP7, AP11, AP12, AP16, boreholes BH2 to BH10, and test pits TP1 and TP2. Refusal was observed at the bottom of auger probes AP4, AP5, AP8, AP9, AP13 to AP15, AP17, and test pit TP3. Refusal is inferred to be on a boulder or possibly bedrock. Where cored, the bedrock was slightly weathered and RQDs varied from 0 to 82 percent ranging from very poor to good rock mass quality.

Boreholes BH02 to BH05, completed at the planned pedestrian bridge crossing over the Shubenacadie Canal, encountered fill materials overlying native undisturbed glacial till comprising silty sand with gravel to silty gravel with sand and containing cobbles and boulders, over quartzite bedrock. The fill thickness varied from 0.6 to 1.7 metres, till thickness varied from 2.4 to 3.8 metres, and the depth to bedrock varied from 3.5 to 4.4 metres.

Borehole BH10, completed in the yard area of the existing pump station at 390 Waverley Road, encountered a thin surficial layer of sod/topsoil overlying native undisturbed glacial till over bedrock. Bedrock was encountered at a depth of 4.7 metres. Grain size analyses and moisture contents were conducted on selected samples from the boreholes put down at the pedestrian bridge and the results are summarized below in Table 5 and appended on Figure 1 and 2.

Table 5 – Summary of Soil Laboratory Test Results

BH No.	Sa. No.	Depth (m)	ASTM Soil Classification	Moisture Content (%)	Percent Material Composition by Particle Size (%)		
					Gravel	Sand	Silt/Clay
BH2	SS2	1.0	Sand with silt and gravel	6.8	42	45	12
BH2	SS4	3.4	Silty gravel with sand	6.6	55	34	23
BH3	SS2	1.0	Silty sand with gravel	3.0	39	43	18
BH5	SS2	1.0	Silty gravel with sand	4.7	52	28	20

(1) ASTM D2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System);

(2) The percent of silt and clay-sized particles are reported collectively as the percent fines.

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 GENERAL

As previously noted, it is understood that the utility services corridor is planned to extend from near the intersection of Country View Drive and Wright Ave, easterly along Wright Ave, across Highway No. 118, through Shubie Park including a pedestrian bridge crossing over the Shubenacadie Canal, along John Brenton and Jaybe Drives, and northerly along Waverley Road to the existing sewage pumping station at 390 Waverley Road. Trench excavation depths for the corridor are understood to be in the 2 to 4 metres range. It is also understood that a new single span pedestrian bridge will replace the existing bridge and a new pump station will be implemented adjacent to the existing station. A figure showing the proposed corridor route is appended.

Based on the conditions encountered at the borehole locations, the following provides general geotechnical comments and recommendations to support planning of earthworks for service trenches and foundation support for the new pedestrian bridge and pump station.

5.2 EXCAVATION AND FILLING

5.2.1 Excavation

It is expected that excavation will encounter a combination of fills, glacial till, and bedrock along most of the alignment. Trench excavations adjacent to curbs/sidewalks and within asphalt pavements may create some undermining. Undermining should be avoided where possible, therefore shoring for support should be anticipated. Trench support can be achieved through temporary slopes and/or trench cages. Temporary slopes in overburden of no steeper than 1.5H:1V are recommended to limit the movement of the trench sides. Steeper slopes may cause some noticeable movement and/or undermining. Excavation for service trenches may encounter bedrock. Bedrock removal may require ripping and the use of hydraulic breakers to facilitate removal. For preliminary planning, rock slopes should be cut no steeper than 1H:4V and scaled to remove all loose materials. In all cases, trench excavations should meet the Nova Scotia Department of Labour requirements.

5.2.2 Filling

Pipe bedding and protection granular materials and compaction requirements should be in accordance with the municipal requirements. Trench backfill may consist of select portions of excavated site material and/or imported material. Cobbles and boulders were encountered throughout the proposed development area and will not be suitable for reuse. Oversized material should be sorted, broken down in size, or disposed of offsite. Material with elevated moisture content, organics, or other deleterious material, should be discarded. Material to be used should be inorganic and at a moisture content suitable for compaction. Excavated site soils should be protected from increases in moisture content to avoid rendering otherwise suitable soils, unsuitable. In this regard, excavated site material approved for re-use as fill should be excavated and placed in one operation. Optimum moisture content for compaction of silty sand with gravel material is generally in the order of 10 to 12 %, or less.

Trench backfill should be compacted to 98% of the maximum standard Proctor dry density within 300 mm of

the roadway subgrade and to 95% below that grade.

Lift thicknesses for fill placement must be compatible with compaction equipment to ensure that the required density is achieved throughout each entire lift. The use of larger or smaller compaction equipment may require that the lift thickness, or number of passes, be adjusted at the discretion of qualified geotechnical personnel.

It is recommended that monitoring by experienced geotechnical personnel should be carried out during the placement of fill to confirm that the required compaction is achieved.

5.2.3 Water Control

Groundwater was not measured in the boreholes; however, it typically fluctuates near the bedrock surface unless there are controlling factors such as gravel filled trenches (underground services) or foundation drainage systems nearby that could channel water into the excavations. Groundwater levels will also fluctuate seasonally, during specific precipitation events, and as a results of site use and alteration.

Temporary dewatering measures may be required during excavation. Control of surface water run-off and groundwater seepage should be established at the onset of construction, and throughout the duration of the work.

The amount of surface water run-off and groundwater seepage will depend in part on the time of year in which construction takes place. Typically, higher quantities of seepage and runoff can be anticipated in the Fall to Spring seasons relative to the drier summer season.

Diversion ditches, drainage swales and/or “French drains”, and possibly sandbag dams, up- gradient of work areas, should be provided to cut off and divert surface water run-off away from excavations at the beginning of the earthworks. Dewatering within the excavations can also be accomplished by pumping from sump pits dug below the base of the excavations.

Discharge water quality should be reviewed and monitored prior to off-site disposal to ensure compliance with applicable regulations.

5.3 PEDESTRIAN BRIDGE FOUNDATION DESIGN

We understand that a new pedestrian bridge will replace the existing bridge over the Shubenacadie Canal to facilitate crossing with the new utilities. We anticipate that the new bridge will consist of a single span structure supported by two abutments. It is understood that the new abutments may be shifted back away from the channel, increasing the span of the replacement bridge relative to the existing bridge. It is assumed that the new approaches will be maintained close to the existing grades.

The glacial till was encountered underlying the fill material in boreholes drilled at the proposed new abutment locations (BH02, BH03, BH04 and BH05). Bedrock was encountered at depths averaging approximately 3.9 and 4.2 m at the proposed east and west abutment locations, respectively.

Based on the findings at the borehole locations and the anticipated design concept for the new bridge, we recommend abutments supported on spread footing foundations on undisturbed native till or structural fill over till/bedrock. The following subsections provide geotechnical recommendations for site preparation and

foundation design. If pile foundations are preferred, additional design and recommendations will be made available upon request.

5.3.1 Subgrade Preparation

Site preparation should include removal of all fill materials and any other deleterious materials encountered down to undisturbed native till within the zone of influence of the new abutment foundation. The zone of influence is defined as the area of the foundation plus a horizontal distance beyond the outside edges of the foundation footprint to include a structural splay of 1H:1V.

Temporary excavation side slopes should be no steeper than 1.5H:1V and should be closely monitored during construction. Numerous cobbles and boulders were encountered throughout the native soils at the site. It is recommended to over-excavate a minimum of 300 mm below the elevation of the proposed spread footings and remove any potential boulders, followed by the placement of structural fill. Structural fill used to achieve footing subgrade elevation should consist of well-graded rock fill with a maximum particle size of 150mm and a fines content less than 10%, Nova Scotia Public Works (NSPW) Fill Against Structure, or NSPW Type 1 and 2 Gravel. Material proposed for use as structural fill should be inspected and approved prior to use. Structural fill should extend over the entire footing zone of influence.

Structural fill should be compacted to 100% of the Standard Proctor Maximum Dry Density (SPMDD) determined for the material. For rock fill where SPMDD is not applicable, the material should be compacted to at least 80% relative density. Structural fill should be placed within a range of moisture contents that allow compaction to the specified density.

Lift thickness for structural fill should be compatible with the compaction equipment used, to ensure that the required density is achieved over the entire lift. It is recommended that monitoring by experienced geotechnical personnel be carried out during the placement of any structural fill to assure that the required compaction is achieved.

5.3.2 Water Control

It is anticipated that footing bases will not be below the channel water level and the construction of cofferdams will be not required. If cofferdams are required, a supplemental report can be provided with recommendations of SSP sections or other systems, upon request.

Groundwater control from excavations may be required. Surface water flow should be directed away from excavations using ditches/swales. Discharge water from the site should meet regulatory requirements, especially in relation to erosion and sedimentation.

5.3.3 Spread Footing Design

Spread footings placed on undisturbed native till and/or bedrock would be suitable for the foundations of the abutments. The factored bearing resistance at Ultimate Limit States (ULS) was estimated in accordance with the Canadian Highway Bridge Design Code (CHBDC) Clause 6.6.2. Spread footings can be designed using a factored ULS bearing resistance of 300 kPa and includes a bearing resistance factor of 0.5 for shallow foundations. The geotechnical bearing resistance for the serviceability limit state (SLS) was estimated based on a maximum settlement of 25 mm to be 200 kPa.

It is anticipated the footings will be placed near permanent sloping ground. The toe of the footing should be set back from the channel bed to allow for a minimum 4H:1V slope projection to the channel bed. Footings should be placed a minimum of 1.2 m below the finished grade to provide frost protection. Scour protection is recommended in front of the footings to aid in preventing undermining of the foundations.

It is recommended that bearing surfaces be inspected by qualified geotechnical personnel at the time of construction to ensure the condition of the bearing surface is acceptable.

5.4 PUMP STATION FOUNDATION DESIGN

We understand that a new pump station will be implemented near the existing pump station. The specific details are currently unknown. We anticipate that the new pump station will comprise chambers, a control building and trench excavations. One borehole (BH10) was completed in the yard area of the existing pump station to assist with preliminary planning. As detailed design of the new pump station progresses, supplemental test locations may be required.

At borehole BH10, glacial till was encountered below surficial sod/topsoil and extended to a depth of 4.7 metres where bedrock was encountered. Based on the findings at the borehole location and the anticipated design concept for the pump station, structural elements can be supported on spread footing foundations on undisturbed native till and/or bedrock, or structural fill over till/bedrock.

Site preparation and spread footing foundation recommendations previously provided in Section 5.3 can be used for preliminary planning of the pump station.

5.5 SOIL PARAMETERS

The parameter values provided in the following Table 7 may be used for design.

Table 7 – Soil Parameters

Parameter	Undisturbed Till	NSDPW Gravel Type 1 or 2	Sand and Gravel	Rockfill
Friction Angle, degree	34	38	34	38
Total Unit Weight k/Nm ³	21	22	21	22
Submerged Unit Weight kN/m ³	11	12	11	12
Active Earth Pressure Coefficient ²	0.28	0.24	0.28	0.24
Passive Earth Pressure Coefficient ²	3.57	4.17	3.57	4.17

(1) Material should be compacted to 95% SPMMD or greater.

(2) Earth pressure coefficients assume frictionless wall with a vertical back face and horizontal ground.

5.6 SEISMIC SITE CLASSIFICATION

Based on the findings at the borehole locations, the site classification for seismic site response, determined in accordance with Clause 4.1.8.4 of the National Building Code of Canada (NBCC, 2015), is Site Class C.

6.0 CLOSURE

This report was prepared by Brian T. Grace, P.Eng. and reviewed by Lee Fougere, P.Eng. This report is based on the subsurface geotechnical conditions encountered at the specific test locations at the time of the work and our current project understanding. The subsurface geotechnical conditions outside of the test locations may vary. If subsurface conditions are encountered that differ from those encountered at the test locations, we should be notified to reassess our recommendations.

We trust that the information contained in this report is adequate for your present purposes. If you have any questions about the contents of the report or if we can be of any other assistance, please contact us at your convenience.

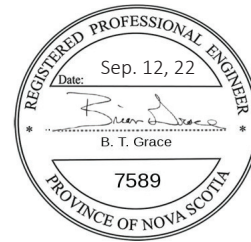
Thank you,

DesignPoint Engineering & Surveying Ltd.



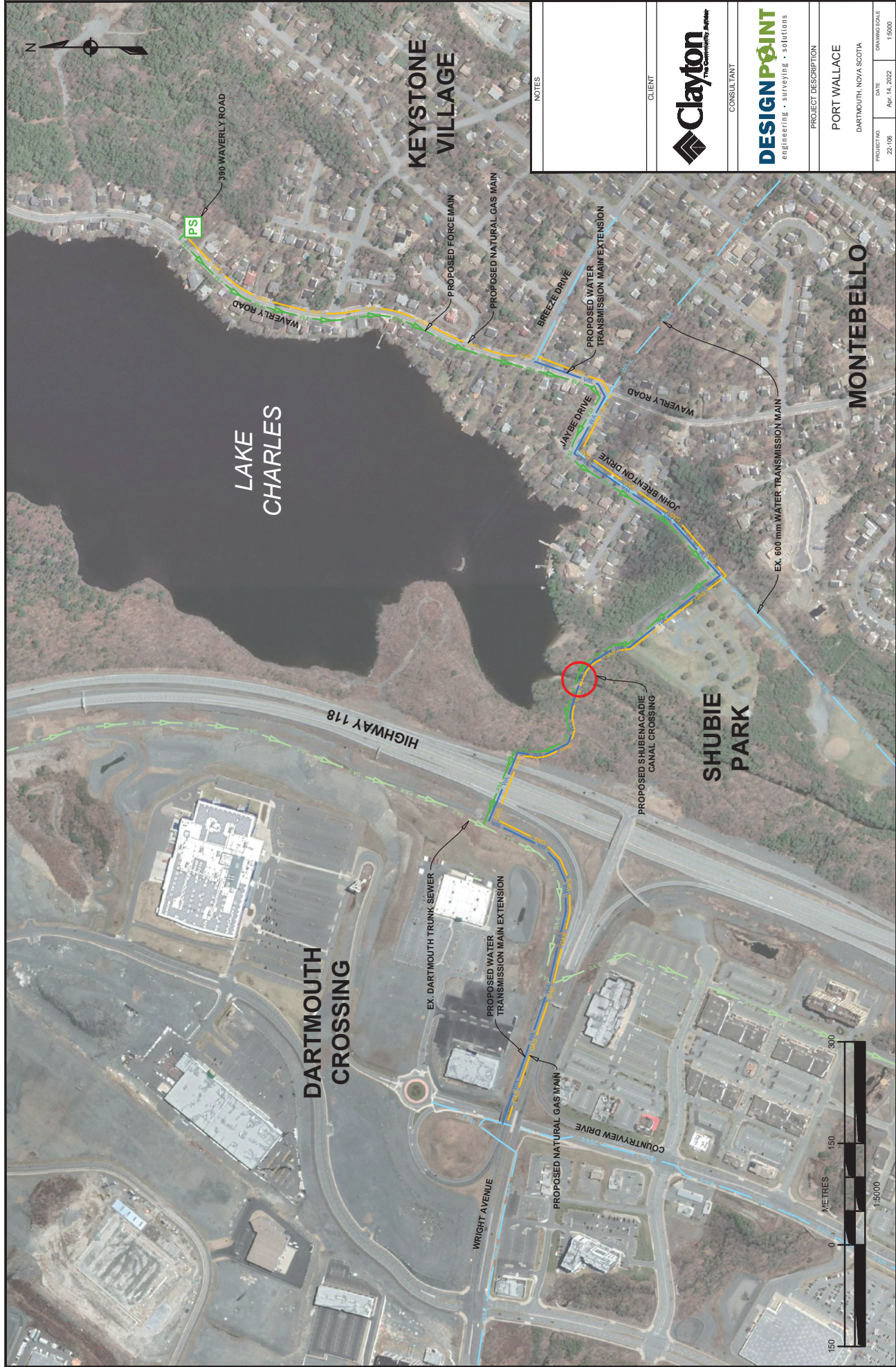
Brian T. Grace, P.Eng.

Project Engineer



APPENDIX A

- Figure Showing General Utility Services Corridor Route
- Symbols and Terms used on Borehole and Test Pit Records
- Auger Probe, Test Pit, and Borehole Records
- Grain-Size Plots
- Test Locations Drawings



PS

380 WAVERLY ROAD

LAKE CHARLES

WAVERLY ROAD

KEYSTONE VILLAGE

PROPOSED FORCE MAIN

PROPOSED NATURAL GAS MAIN

BREEZE DRIVE

PROPOSED WATER TRANSMISSION MAIN EXTENSION

JAYBE DRIVE

WAVERLY ROAD

SHUBIE PARK

EX. 600 mm WATER TRANSMISSION MAIN

MONTEBELLO

DARTMOUTH CROSSING

HIGHWAY 118

EX. DARTMOUTH TRUNK SEWER

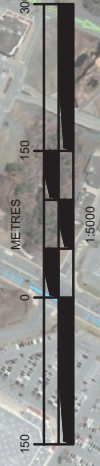
PROPOSED WATER TRANSMISSION MAIN EXTENSION

PROPOSED SHUBENACADIE CANAL CROSSING

WRIGHT AVENUE

PROPOSED NATURAL GAS MAIN

COUNTRYVIEW DRIVE



1:5000

NOTES

CLIENT



CONSULTANT



PROJECT DESCRIPTION

PORT WALLACE

DARTMOUTH, NOVA SCOTIA

PROJECT NO.	22-106
DATE	Apr 14, 2022
DRAWING SCALE	1:5000

SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

Terminology Describing Soil

The classification of soil types is made based on grain size and plasticity in accordance with the Unified Soil Classification System (USCS) (ASTM D 2487 or D 2488). The classification excludes particles larger than 76 mm (3 inches). The USCS provides a group symbol (e.g. SM) and group name (e.g. silty sand) for identification.

Particle Size

Soil Type	Millimeters
BOULDERS	> 300
COBBLES	75 to 300
GRAVEL (Coarse/Fine)	19 to 75/4.75 to 19
SAND (Coarse/Medium/Fine)	2 to 4.75/0.425 to 2/0.075 to 0.425
SILT/CLAY	< 0.075

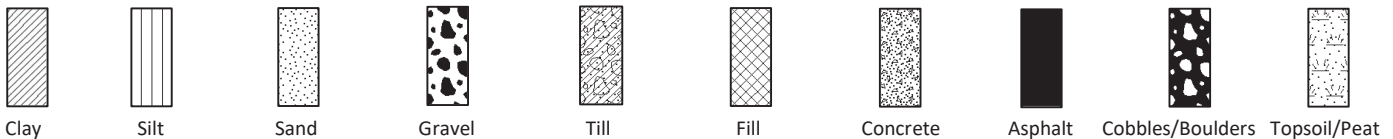
Terminology Describing Non-Matrix Materials (ie: boulders)

Trace, or occasional	< 10%
Some	10-20 %
Frequent	> 20%

Terminology Describing Soil Structure

Desiccated	Having visible signs of weathering by oxidation on clay minerals, shrinking cracks, etc.
Fissured	Having cracks and hence a blocky structure
Stratified	Composed of regular alternating successions of different soil types
Homogeneous	Consistent appearance and colour throughout
Varved	Comprised of regular alternating successions of silt and clay
Layer	>75 mm thick
Seam	2 mm to 75 mm thick
Parting	< 2 mm thick

Strata Plot



Recovery

For soil samples, the recovery is recorded as the length of sample recovered.

Standard Penetration Test (N-value)

The N-value is the number of blows from a 140 pound (64 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (50.8 mm) O.D. split spoon one foot (305 mm) into the soil. If refusal is encountered, the number of blows are reported over the sampler penetration in millimeters (ie: 50/125). No corrections have been applied to the N-values presented on the logs.

Dynamic Cone Penetration Test (DCPT)

The dynamic cone penetration test is performed using a 60-degree cone penetrated into the soil by the same hammer and fall height described for the Standard Penetration Test. The number of blows of the hammer are recorded and reported every foot (305 mm).

Compactness of Cohesionless Soils

Term	SPT N-value
Very Loose	0 to 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very Dense	> 50

Consistency of Cohesive Soils

Term	Undrained Shear Strength (kPa)	Approximate SPT N-value
Very Soft	<12	0 to 2
Soft	12 to 25	2 to 4
Firm	25 to 50	4 to 8
Stiff	50 to 100	8 to 15
Very Stiff	100 to 200	15 to 30
Hard	> 200	> 30

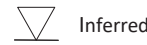
Sample Type

AS	Auger Sample
BS	Bulk sample
DP	Direct-Push sample (small diameter tube sampler hydraulically advanced)
PS	Piston sample
SS	Split spoon sample (obtained by performing the Standard Penetration Test)
ST	Shelby tube sample
WS	Wash sample

Other Tests

S	Sieve analysis
H	Hydrometer analysis
k	Laboratory permeability
γ	Unit weight
G _s	Specific gravity of soil particles
CD	Consolidated drained triaxial
CU	Consolidated undrained triaxial with pore pressure measurements
UU	Unconsolidated undrained triaxial
DS	Direct Shear
C	Consolidation

Groundwater Measurement



Inferred



Measured from a standpipe, piezometer or monitor well

SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

Terminology Describing Rock

Rock (also referred to as Bedrock) is described with respect to its geological classification or lithology, Rock Quality Designation (RQD), strength, weathering and discontinuity spacing.

Rock Quality Designation (RQD)

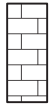
RQD is an indirect measurement of the number of fractures within a rock mass expressed as a percentage. The RQD is based on a modified core recovery percentage in which all pieces of sound core over 100 mm in length are summed and divided by the total length of core run.

RQD Classification	RQD (%)
Very Poor Quality	0 to 25
Poor Quality	25 to 50
Fair Quality	50 to 75
Good Quality	75 to 90
Excellent Quality	90 to 100

Terminology Describing Rock Weathering

Term	Description
<i>Fresh</i>	No visible sign of rock weathering. Minor discolouration on major discontinuity surfaces
<i>Slightly Weathered</i>	Discolouration indicates weathering of rock on discontinuity surfaces. All of the rock may have discolouration.
<i>Moderately Weathered</i>	Less than half of the rock is decomposed and/or disintegrated to a soil
<i>Highly Weathered</i>	More than half of the rock is decomposed and/or disintegrated to a soil
<i>Completely Weathered</i>	All of the rock is decomposed and/or disintegrated to a soil

Strata Plot



Sedimentary



Igneous



Metamorphic

Recovery

For rock core, the recovery is recorded as a percentage of the total length of core recovered over the length drilled on a per run basis.

Geological Classification of Rock

<i>Sedimentary</i>	Rocks formed by the accumulation and lithification of sediment (ie: sandstone, shale, mudstone)
<i>Igneous</i>	Rocks formed by the solidification of molten material (ie: granite, gabbro, basalt)
<i>Metamorphic</i>	Rocks formed by high heat and pressure (ie: slate, quartzite, gneiss)

Sample Type

<i>RC (HQ, NQ, BQ, etc.)</i>	Rock core samples obtained with the use of standard size diamond coring bits.
------------------------------	---

Other Tests

Q_u	Unconfined compression
I_p	Point Load Index (I_p on Borehole Record equals $I_p(50)$ in which the index is corrected to a reference diameter of 50 mm)

Terminology Describing Rock Mass

Spacing (mm)	Joint Classification	Bedding, Laminations, Bands
> 6000	Extremely Wide	-
2000 to 6000	Very Wide	Very Thick
600 to 2000	Wide	Thick
200 to 600	Moderate	Medium
60 to 200	Close	Thin
20 to 60	Very Close	Very Thin
< 20	Extremely Close	Laminated
< 6	-	Thinly Laminated

Terminology Describing Intact Rock Strength

Term	Unconfined Compressive Strength (MPa)
<i>Extremely Weak</i>	0.25 to 1
<i>Very Weak</i>	1 to 5
<i>Weak</i>	5 to 25
<i>Medium Strong</i>	25 to 50
<i>Strong</i>	50 to 100
<i>Very Strong</i>	100 to 250
<i>Extremely Strong</i>	> 250



AP01

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-03 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
49.74		Brown to grey silty SAND with gravel -frequent cobbles and boulders																	
46.64		Poor quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	1	100	26%											
45.12		End of Auger Probe																	
5																			
6																			
7																			
8																			
9																			

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP04

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-05-26 WATER LEVEL N/A BH SIZE: Auger

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	47.33									Water Content & Atterberg Limits W_p W W_L SPT N VALUE, Blows/0.3m ● Dynamic Penetration, Blows/0.3m ★									
	46.43	Grey to brown cobbles and boulders with sandy gravel matrix (ROCK FILL)																	
1		Brown to grey silty SAND with gravel																	
2		-some cobbles and boulders																	
	44.73	Brown to grey sandy SILT with gravel																	
3		-occasional cobbles and boulders																	
4																			
5	42.13	End of Auger Probe (practical auger refusal on boulder or inferred bedrock)																	
6																			
7																			
8																			
9																			

NOTES:

App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP05

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-05-26 WATER LEVEL N/A BH SIZE: Auger

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	46.52									Water Content & Atterberg Limits W_p W W_L SPT N VALUE, Blows/0.3m ● Dynamic Penetration, Blows/0.3m ★									
1	45.62	Grey to brown cobbles and boulders with sandy gravel matrix (ROCK FILL)																	
2		Brown to grey silty SAND with gravel																	
3		-some cobbles and boulders																	
4																			
5																			
6	41.02	End of Auger Probe (practical auger refusal on boulder or inferred bedrock)																	
7																			
8																			
9																			

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP06

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-09 WATER LEVEL N/A BH SIZE: Auger

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa								
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80					
	34.43	Brown silty SAND with gravel																
	31.53	Grey silty GRAVEL with sand -frequent cobbles																
	25.03	End of Auger Probe -no bedrock encountered																

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP07

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-05 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	40.91																		
	40.76	GRAVEL with sand Brown to grey silty SAND with gravel - some cobbles and boulders			SS	1	400	32											
1					SS	2	300	50 (75mm)											>>
2																			
3																			
4	37.07	Very poor to fair quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	3	100	52%											
5					RC	4	100	13%											
6	34.81	End of Auger Probe																	
7																			
8																			
9																			

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP09

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-05-20 WATER LEVEL N/A BH SIZE: Auger

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa											
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80								
	39.52																				
	39.01	Dark brown to light brown and grey silty SAND with gravel -trace rootlets and topsoil Brown and grey silty SAND with gravel -some cobbles and boulders			SS	1	250	50(50 mm)													>>●
1																					
2																					
3																					
4																					
	34.95	End of Auger Probe (practical auger refusal on boulder or inferred bedrock)																			
5																					
6																					
7																					
8																					
9																					

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP10

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-05-20 WATER LEVEL N/A BH SIZE: Auger

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	32.43	Brown silty SAND with gravel			SS	1	0	8											
1																			
2																			
	29.53	Grey silty GRAVEL with sand -frequent cobbles																	
3																			
4																			
5																			
6																			
7																			
8																			
9																			
	23.03	End of Auger Probe (no bedrock encountered)																	

NOTES:
 App'd: LF

BOREHOLE RECORD BHL005.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP11

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-03 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	34.22																		
	34.07	ASPHALT																	
1		Brown to grey silty SAND with gravel																	
		-frequent cobbles and boulders																	
2																			
3																			
4																			
5																			
	28.58																		
6		Very poor quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	1	100	0%											
7					RC	2	100	14%											
	26.57																		
8		End of Auger Probe																	
9																			

NOTES:

App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP12

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-05 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	36.27																		
	36.12	Asphalt																	
1		Brown and grey silty SAND with gravel			SS	1	475	54											
		-occasional cobbles and boulders			SS	2	0	50 (125 mm)											
2																			
3																			
4																			
5	31.17	Fair quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	3	100	71%											
6					RC	4	92	70%											
7	29.47	End of Auger Probe																	
8																			
9																			

NOTES:

App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP13

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-05-19 WATER LEVEL N/A BH SIZE: Auger

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	35.00																		
	34.80	Asphalt																	
	34.55	Grey silty GRAVEL with sand																	
1		Brown to light brown and grey silty SAND with gravel			SS	1	375	17											
		-occasional cobbles and boulders			SS	2	475	54											
2	32.82	End of Auger Probe (practical auger refusal on boulder or inferred bedrock)																	
3																			
4																			
5																			
6																			
7																			
8																			
9																			

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-05-19 WATER LEVEL N/A BH SIZE: Auger

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	34.00																		
	33.85	Asphalt																	
	33.70	Grey silty GRAVEL with sand																	
1		Brown and grey silty SAND with gravel - occasional cobbles			SS	1	275	20											
					SS	2	275	50 (100 mm)											
2																			
	31.56	End of Auger Probe (practical auger refusal on boulder or inferred bedrock)																	
3																			
4																			
5																			
6																			
7																			
8																			
9																			

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP15

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-05-19 WATER LEVEL N/A BH SIZE: Auger

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa								
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80					
	33.40																	
	33.22	Asphalt																
1	32.38	Grey silty SAND with gravel - occasional cobbles			SS	1	350	25										
2	31.32	Brown and grey silty SAND with gravel - occasional cobbles and boulders			SS	2	350	7										
3		End of Auger Probe (practical auger refusal on boulder or inferred bedrock)																
4																		
5																		
6																		
7																		
8																		
9																		

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP16

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-04 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa											
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		Water Content & Atterberg Limits		SPT N VALUE, Blows/0.3m ●		Dynamic Penetration, Blows/0.3m ★							
	35.62																				
	35.47	ASPHALT																			
1		Brown to grey silty SAND with gravel																			
		-frequent cobbles and boulders																			
2																					
3																					
4																					
5																					
6																					
7	29.32	Poor quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	1	100	38%													
8	27.92	End of Auger Probe																			
9																					

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22

NOTES:

App'd: LF



AP17

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-06-01 WATER LEVEL N/A BH SIZE: Auger

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	32.29									Water Content & Atterberg Limits W_p W W_L SPT N VALUE, Blows/0.3m ● Dynamic Penetration, Blows/0.3m ★									
	32.14	Asphalt																	
1		Brown and grey silty SAND with gravel - trace asphalt millings - occasional cobbles			SS	1	425	43											
	30.77				SS	2	450	28											
2		Brown sandy SILT with gravel - occasional cobbles			SS	3	250	8											
	30.16				SS	4	500	28											
3		Brown and grey silty SAND with gravel -occasional cobbles and boulders																	
4																			
5																			
6	26.96	End of Auger Probe (practical auger refusal on boulder or inferred bedrock)																	
7																			
8																			
9																			

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



AP18

AUGER PROBE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-09 WATER LEVEL N/A BH SIZE: Auger

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa								
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80					
	32.45	Brown silty SAND with gravel																
1																		
2																		
3																		
4																		
5	27.78	Grey silty GRAVEL with sand -frequent cobbles																
6																		
7																		
8																		
9	23.31	End of Auger Probe (no bedrock encountered)			BS	1												

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



TP01

TEST PIT RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: DUG 2022-08-08 WATER LEVEL 2022-08-08

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES		OTHER TESTS	Undrained Shear Strength - kPa □									
					TYPE	NUMBER		Water Content & Atterberg Limits									
								20 40 60 80 W _p W W _L									
								0	10	20	30	40	50	60	70	80	
	51.30	ROOTMAT/TOPSOIL															
1	51.00	Light brown to medium brown silty GRAVEL with sand - frequent cobbles and boulders															
2	49.78	Grey fractured QUARTZITE BEDROCK															
4	47.44	End of Test Pit on inferred bedrock - groundwater was encountered at approximately 3.35 meters below the ground surface															
5																	
6																	
7																	
8																	
9																	

NOTES:

App'd: LF

TEST PIT RECORD BHILOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



TP02

TEST PIT RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: DUG 2022-08-08 WATER LEVEL 2022-08-08

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES		OTHER TESTS	Undrained Shear Strength - kPa □							
					TYPE	NUMBER		0	10	20	30	40	50	60	70
	51.51							Water Content & Atterberg Limits W_p W W_L							
	51.36	ROOTMAT/TOPSOIL													
1	50.29	Light brown to medium brown silty GRAVEL with sand - frequent cobbles and boulders													
2		Grey fractured QUARTZITE BEDROCK													
3	48.61	End of Test Pit on inferred bedrock -no water seepage encountered													
4															
5															
6															
7															
8															
9															

NOTES:

App'd: LF

TEST PIT RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



TP03

TEST PIT RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: DUG 2022-08-08 WATER LEVEL 2022-08-08

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES		OTHER TESTS	Undrained Shear Strength - kPa □				Water Content & Atterberg Limits								
					TYPE	NUMBER		20	40	60	80	W _p	W	W _L						
	49.29							0	10	20	30	40	50	60	70	80				
1	49.24	ROOTMAT/TOPSOIL Light brown to medium brown silty GRAVEL with sand - frequent cobbles and boulders																		
2	47.00	End of Test Pit on inferred bedrock -no water seepage encountered																		
3																				
4																				
5																				
6																				
7																				
8																				
9																				

NOTES:

App'd: LF

TEST PIT RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



BOREHOLE RECORD

BH02

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-09 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	31.48																		
1		FILL: loose to compact brown sand with silt and gravel			SS	1	100	19	S										
					SS	2	200	9											
2	29.80	Compact to very dense grey silty gravel with sand to silty sand with gravel: TILL -frequent cobbles and boulders			SS	3	450	22	S										
3																			
4	27.37	Very poor to fair quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	5	100	0%	S										
5					RC	6	100	53%											
6	25.38	End of Borehole -no standpipe installed																	
7																			
8																			
9																			

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



BOREHOLE RECORD

BH03

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-09 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa								
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80					
	31.29																	
	30.68	FILL: Compact brown silty sand with gravel			SS	1	200	38										
1		Dense to very dense light greyish brown silty sand with gravel to silty gravel with sand: TILL			SS	2	375	35	S									
2		-frequent cobbles and boulders			SS	3	200	50/50mm										
4					SS	4	0	50/75mm										
5	26.85	Fair to good quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	5	100	70%										
6					RC	6	100	76%										
7	24.58	End of Borehole -no standpipe installed																
8																		
9																		

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



BOREHOLE RECORD

BH04

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-08 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa										
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80							
	32.24																			
1		FILL: Compact to very dense brown silty sand with gravel -occasional cobbles			SS	1	150	17												
					SS	2	50	10												
2	30.87	Very dense light grey silty sand with gravel to silty gravel with sand: TILL -frequent cobbles and boulders			SS	3	250	50/100mm												
4	27.97																			
5	27.67	Poor quality, slightly weathered, light grey QUARTZITE BEDROCK End of Borehole -no standpipe installed			RC	5	92	31%												
6																				
7																				
8																				
9																				

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22

BOREHOLE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-08 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	32.46																		
		FILL: Compact to dense grey silty gravel with sand			SS	1	100	15	S										
1	31.55	Dense to very dense grey silty gravel with to silty sand with gravel: TILL			SS	2	350	43											
2		-frequent cobbles and boulders			SS	3	300	50/75mm											
		Fair to good quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	4	100	57%											
4	28.98																		
5					RC	5	100	82%											
6	26.34																		
7		End of Borehole -groundwater depth greater than 2.5 m																	
8																			
9																			

NOTES:
App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22

BOREHOLE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-05-24 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa								
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80					
	40.32	ASPHALT																
	40.02	Compact grey silty GRAVEL with sand			SS	1	475	24										
1	39.72	FILL: Compact grey to brown silty sand with gravel - frequent cobbles and boulders - trace black asphalt millings			SS	2	225	14										
2					SS	3	100	10										
	37.88	Dense to very dense grey to brown silty sand with gravel: TILL - frequent cobbles and boulders			SS	4	325	15										
3					SS	5	300	50 (25 mm)										>>
4																		
5																		
6																		
7	33.16	Very poor to poor quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	6	100	25%										
8					RC	7	100	0%										
					RC	8	80	0%										
9					RC	9	78	44%										
	31.10	End of Borehole -no standpipe installed																

NOTES:
App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



BOREHOLE RECORD

BH07

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-05-20 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	31.24																		
	31.16	Asphalt																	
1		Compact to very dense grey to brown silty sand with gravel: TILL - some cobbles and boulders			SS	1	500	39											
					SS	2	425	26											
					SS	3	375	28											
2					SS	4	375	74											
					SS	5	550	64											
					SS	6	600	71											
3					SS	7	400	50 (25 mm)											
4	27.25	Very poor quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	8	73	0%											
					RC	9	76	0%											
5					RC	10	94	0%											
6	25.55	End of Borehole -no standpipe installed																	
7																			
8																			
9																			

NOTES:
 App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22

BOREHOLE RECORD

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-05-30 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	35.16																		
	34.98	Asphalt																	
1		FILL: Loose to compact brown to grey silty sand with gravel - frequent cobbles and boulders			SS	1	375	17											
2					SS	2	400	9											
3					SS	3	225	9											
4					SS	4	200	5											
	31.96	Compact to dense brown to grey silty sand with gravel: TILL - frequent cobbles and boulders			SS	5	100	24											
4					SS	6	200	50 (50 mm)											>>
7		Very poor to fair quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	7	76	-											
8					RC	8	100	21%											
9					RC	9	40	0%											
9					RC	10	92	53%											
	25.81	End of Borehole -no standpipe installed																	

NOTES:
App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22



BOREHOLE RECORD

BH09

CLIENT Clayton Developments Limited PROJECT No.: 22-106
 LOCATION Port Wallace Service Corridor, Dartmouth, NS DATUM: Geodetic (CGVD28)
 DATES: BORING 2022-08-04 WATER LEVEL N/A BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa										
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		Water Content & Atterberg Limits		SPT N VALUE, Blows/0.3m ●		Dynamic Penetration, Blows/0.3m ★						
										20 40 60 80				W _p W W _L						
										0 10 20 30 40 50 60 70 80										
	34.37																			
	34.22	CONCRETE (sidewalk) Brown to grey silty SAND with gravel -frequent cobbles and boulders																		
1																				
2																				
3																				
4																				
5	29.14	Poor quality, slightly weathered, light grey QUARTZITE BEDROCK			RC	1	100	34%												
6					RC	2	100	46%												
7	27.31	End of Borehole																		
8																				
9																				

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22

NOTES:
 App'd: LF



BOREHOLE RECORD

BH10

CLIENT Clayton Developments Limited

PROJECT No.: 22-106

LOCATION Port Wallace Service Corridor, Dartmouth, NS

DATUM: Geodetic (CGVD28)

DATES: BORING 2022-05-30 - 31

WATER LEVEL N/A

BH SIZE: HW

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				OTHER TESTS	Undrained Shear Strength - kPa									
					TYPE	NUMBER	REC. SOIL (mm) REC. ROCK (%)	N VALUE ROD %		20	40	60	80						
	32.47																		
	32.32	Sod/Topsoil																	
1		Compact to very dense brown to grey silty sand with gravel: TILL			SS	1	475	21											
		- frequent cobbles and boulders			SS	2	450	53											
					SS	3	100	50 (100 mm)											>>
2					SS	4	375	54											
3					SS	5	475	52											
					SS	6	250	50 (50 mm)											>>
4					RC	7	600	-											
	27.82																		
5		Very poor quality, slightly weathered, light grey QUARTZITE BEDROCK			SS	8	0	50 (25 mm)											>>
					RC	9	77	0%											
					RC	10	80	0%											
6					RC	11	64	18%											
7					RC	12	68	19%											
	24.62																		
8		End of Borehole																	
		-no standpipe installed																	
9																			

NOTES:

App'd: LF

BOREHOLE RECORD BHLOGS.GPJ DESIGN POINT ENGINEERING.GDT 9/8/22

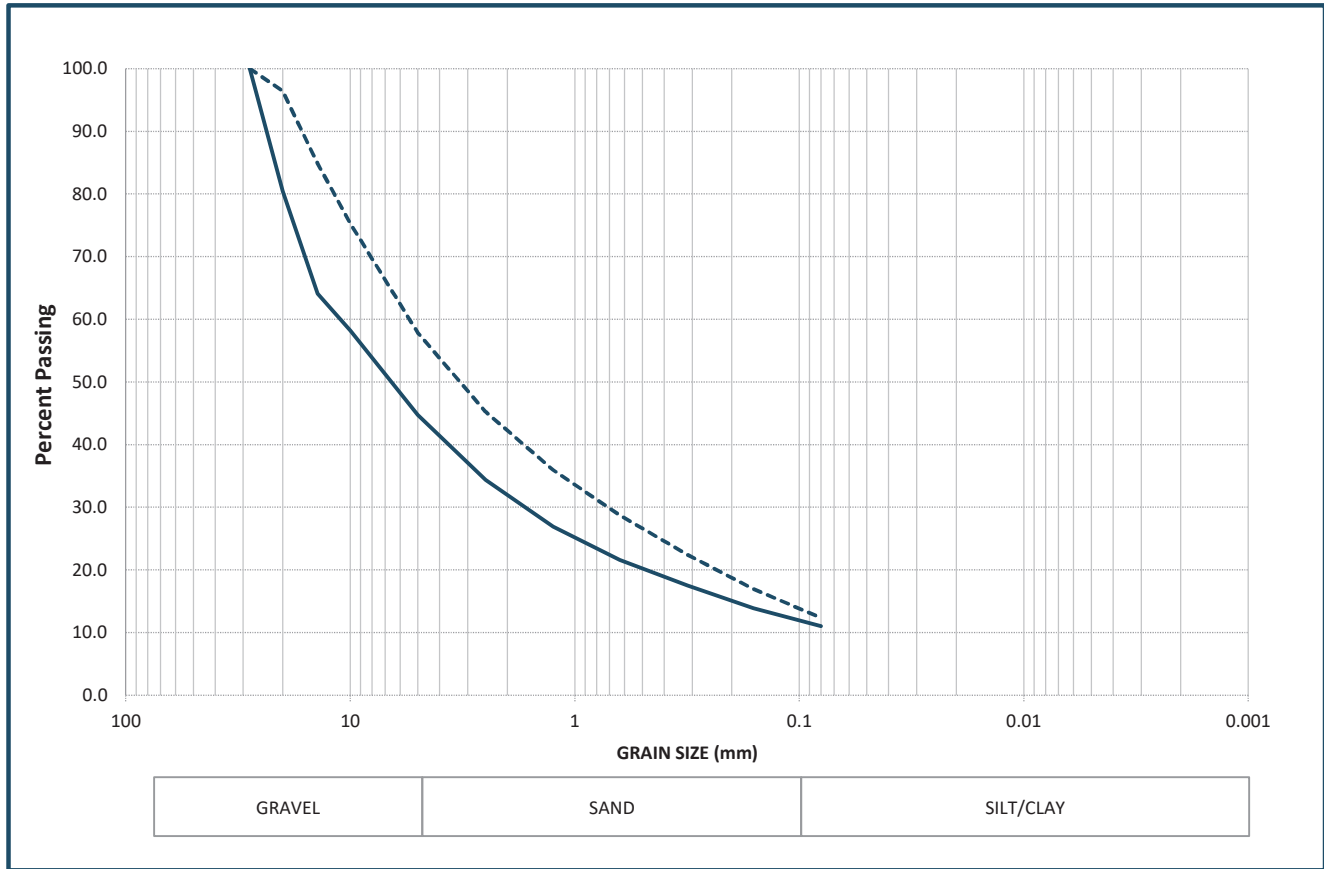
GRAIN SIZE

Project: Port Wallace, Dartmouth, NS

Client: Clayton Developments

Project #: 22-106

GRAIN SIZE DISTRIBUTION PLOT



SOIL CLASSIFICATION

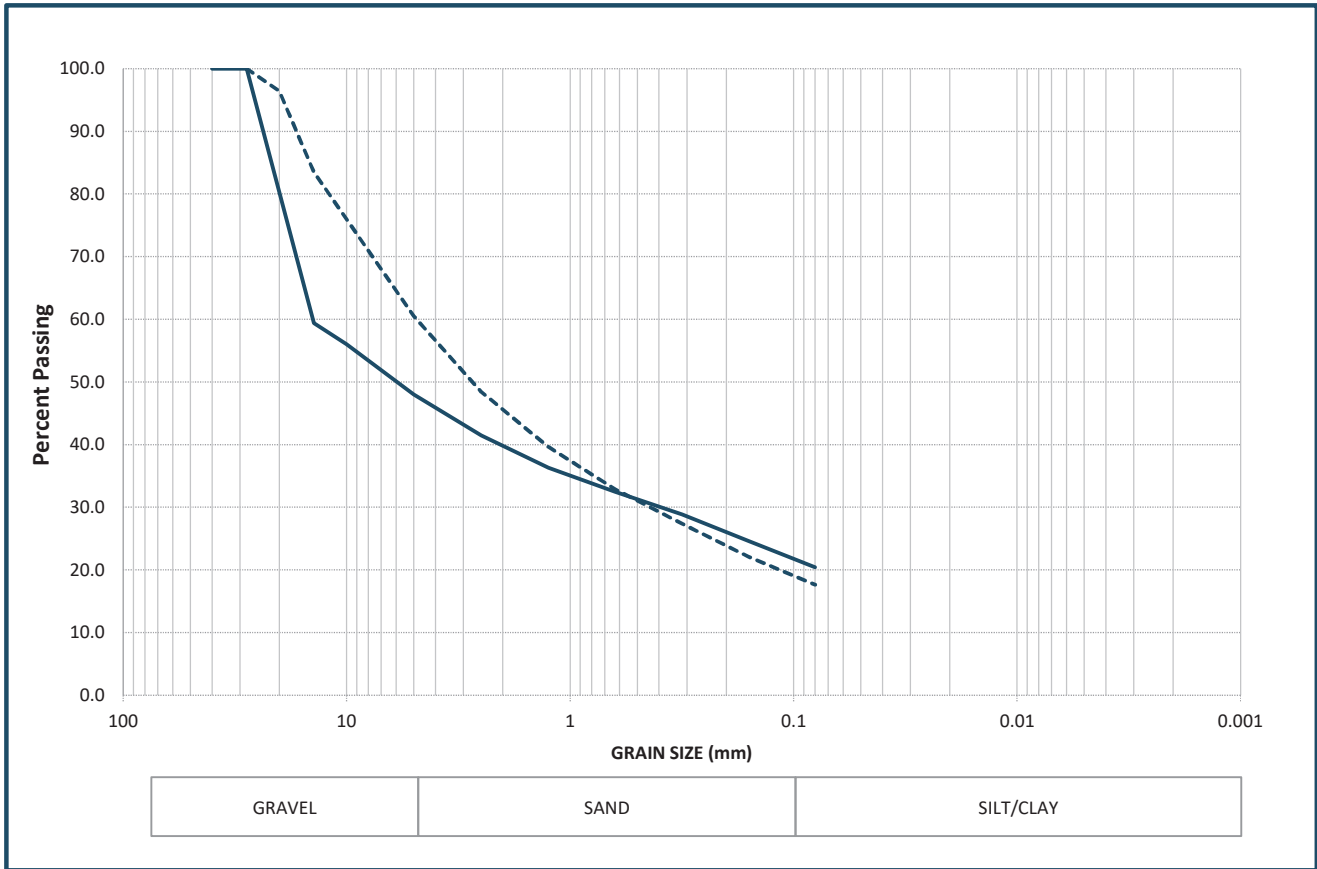
Plot	Sample No	Depth, m	Gravel (%)	Sand (%)	Silt / Clay (%)	Moisture (%)	Soil Classification
----	BH2 - Sa.2	1.0 m	42	45	12	6.8	Sand with silt and gravel
—	BH2 - Sa.4	3.4 m	55	34	23	6.6	Silty gravel with sand

Figure 1

GRAIN SIZE

Project: Port Wallace, Dartmouth, NS
Client: Clayton Developments
Project #: 22-106




GRAIN SIZE DISTRIBUTION PLOT



SOIL CLASSIFICATION

Plot	Sample No	Depth, m	Gravel (%)	Sand (%)	Silt / Clay (%)	Moisture (%)	Soil Classification
-----	BH3 - Sa.2	1.0 m	39	43	18	3.0	Silty sand with gravel
—————	BH5 - Sa.2	1.0 m	52	28	20	4.7	Silty gravel with sand

Figure 2

-  BOREHOLE
-  AUGER PROBE
-  TEST PIT

NO.	DATE	DESCRIPTION
1	15 SEP 2022	DRAFT

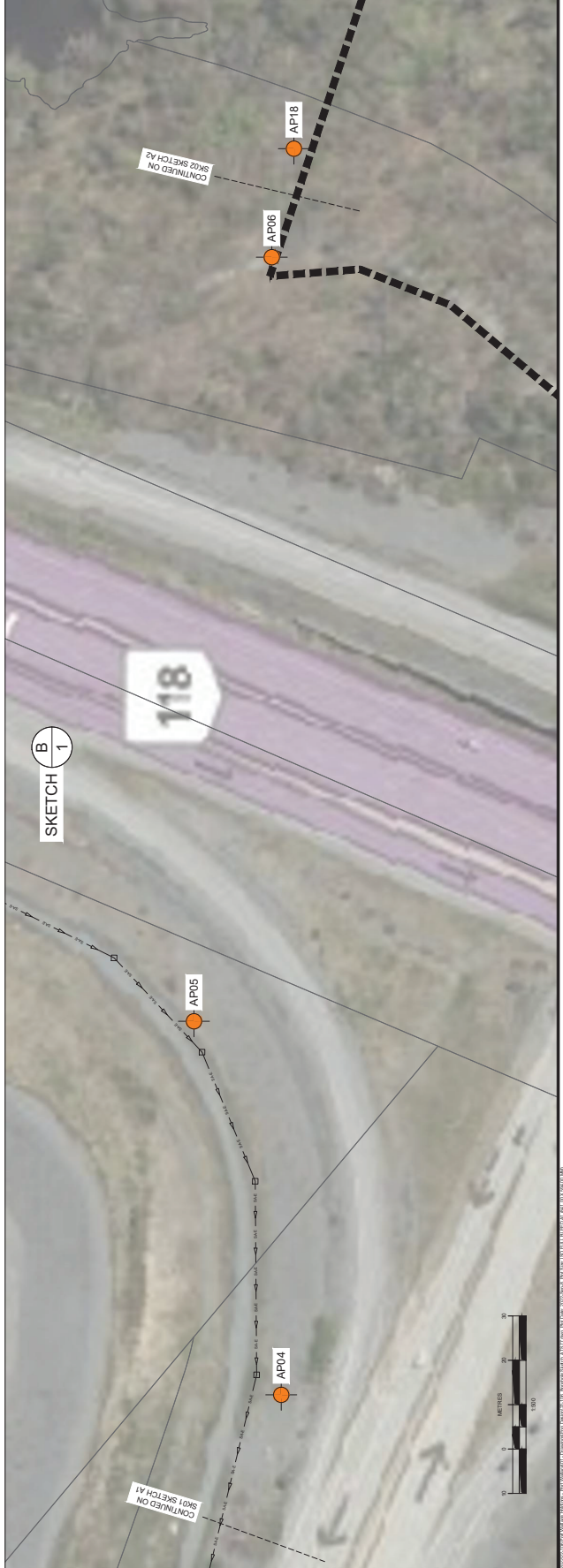
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PROJECT DESCRIPTION
PORT WALLACE
 DARTMOUTH, NOVA SCOTIA

SHEET DESCRIPTION
TEST LOCATIONS

Drawn By	Engineer	Project No.	Drawing No.
Scale	1:500	25118	SK01



-  BOREHOLE
-  AUGER PROBE
-  TEST PIT

NO.	DATE	DESCRIPTION
1	18 OCT 2022	DRAFT

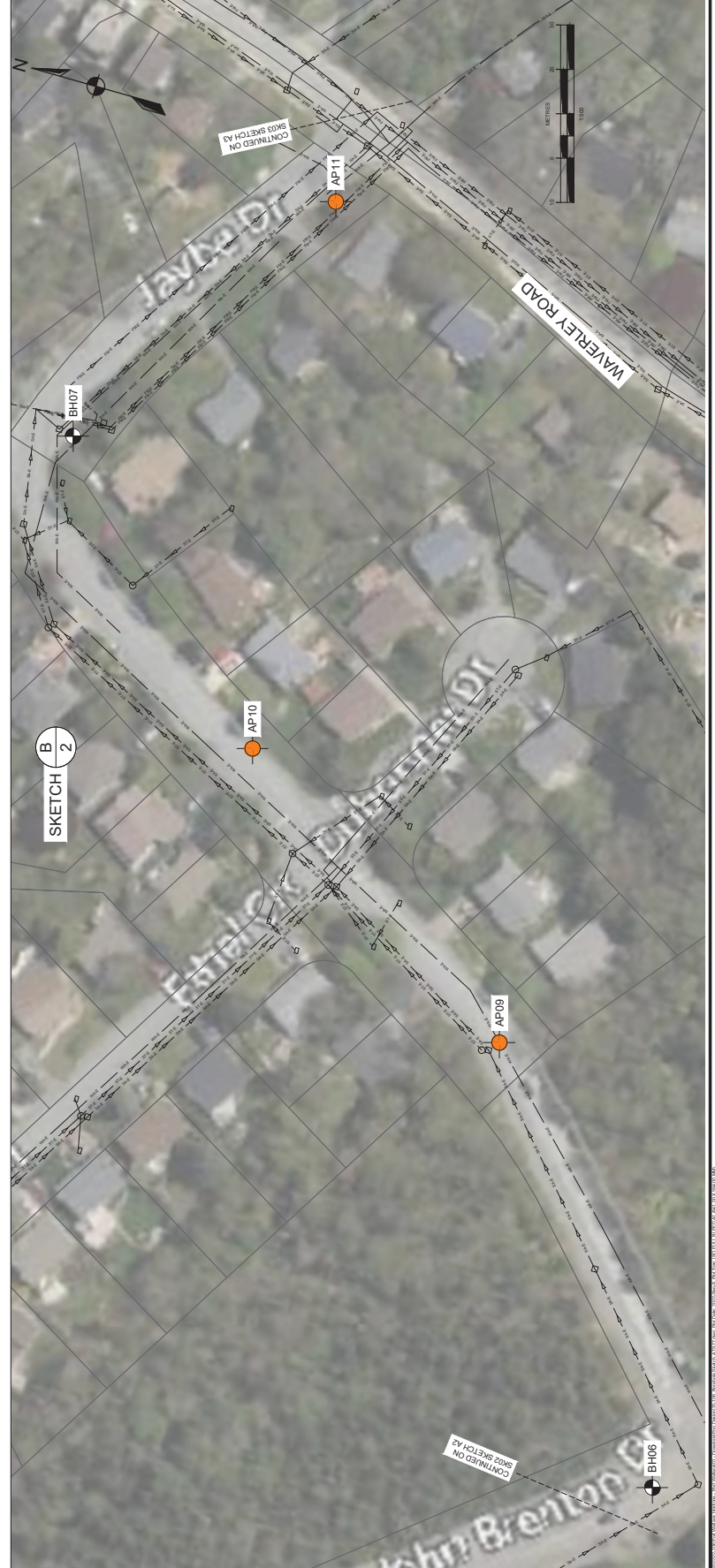
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PORT WALLACE
 DARTMOUTH, NOVA SCOTIA

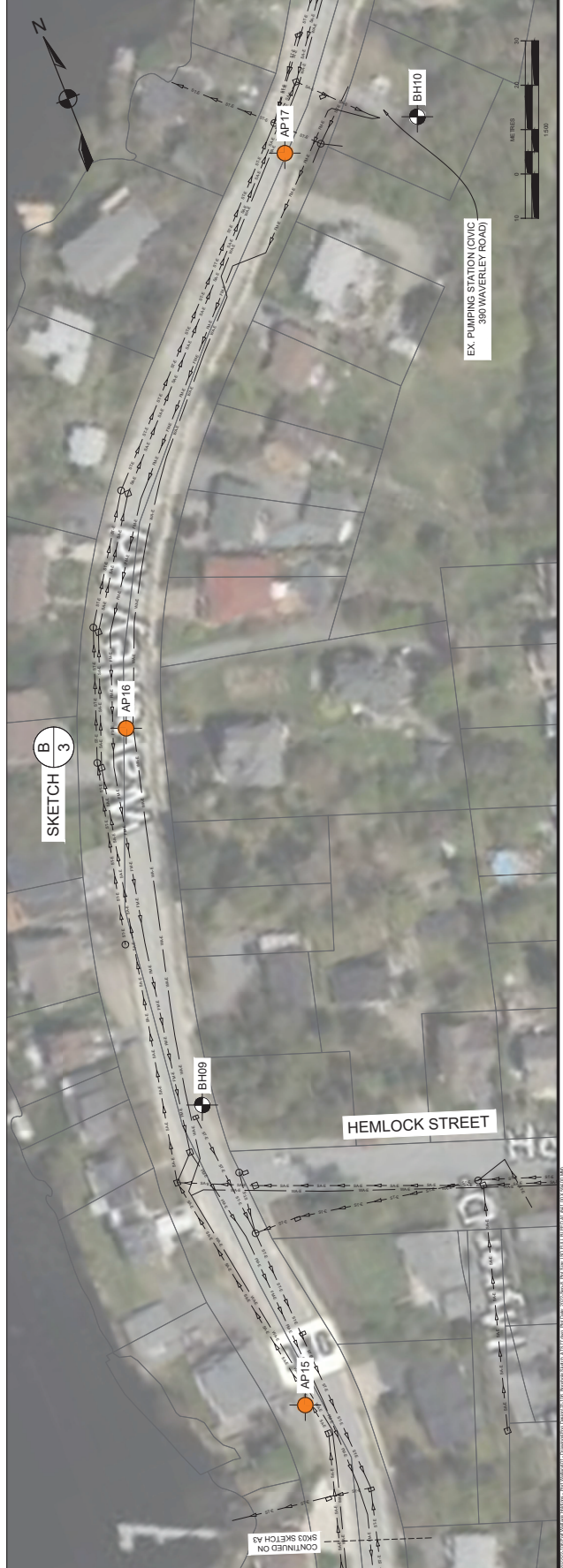
TEST LOCATIONS

Drawing No.	SK02
Engineer	
Scale	1:500



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-  BOREHOLE
-  AUGER PROBE
-  TEST PIT



NO.	DATE	DESCRIPTION
1	18 SEP 2022	DRAFT

CONSULTANT

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CLIENT



PROJECT DESCRIPTION

PORT WALLACE
 DARTMOUTH, NOVA SCOTIA
 SHEET DESCRIPTION

TEST LOCATIONS

Drawn By	Checked By	Project No.	Drawing No.
PLANT	PLANT	24-10	SK03
Scale	Electronic	File Name	24-106_PortWallace_Borehole_APERT.dwg
1:500			3 of 3



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222 Waterfront Drive, Suite 104
Bedford, Nova Scotia B4A 0H3

7.0 APPENDIX C – COST ESTIMATE

ESTIMATE OF PROBABLE COST



Port Wallace

Waverley, Nova Scotia

Project Number: 22-106

Date: June 16, 2023

Drawings: Port Wallace Utility Corridor Rev 2, Issued for 90% Review, Dated April 26, 2023 Sheets 1-26

Note: This estimate of probable cost is prepared for preliminary planning purposes only. The estimate is based on unit rates obtained from previous tenders of similar work and represents a budget only. The actual construction cost will be subject to various factors that are not known at the time of estimate preparation, including market conditions, industry workload, and changes to the design through the approval process. The actual cost cannot be known until the project is tendered and a contract is awarded. This estimate should be used with caution if using for business budgeting purposes.

No.	Unit Description	Unit	Quantity	Unit Rate	Estimated Cost
1.00	<u>Wright Avenue</u>				
1.01	600mm DI CL52 Connection & Reinstatement (Sta 0+00 to 0+20)	LS	1	\$ 100,000.00	\$ 100,000.00
1.02	600mm DI CL52 Extension (Sta 0+20 to 0+190)	m	170	\$ 2,150.00	\$ 365,500.00
1.03	600mm DI CL52 Extension with Re-grading (Sta 0+190 to 0+205)	m	15	\$ 3,300.00	\$ 49,500.00
1.04	600mm DI CL52 Extension (Sta 0+205 to 0+568)	m	363	\$ 2,400.00	\$ 871,200.00
1.05	300mm waterline removal and connection to new 600mm (Sta 0+244)	LS	1	\$ 47,500.00	\$ 47,500.00
1.06	600mm DI CL52 Waterline Crossing existing 300mm Storm	LS	1	\$ 5,000.00	\$ 5,000.00
				Subtotal	\$ 1,438,700.00
2.00	<u>Highway 118 Crossing to John Brenton</u>				
2.01	600mm DI CL52 with Sleeve (Sta 0+568 to 0+596)	m	28	\$ 3,100.00	\$ 86,800.00
2.02	600mm DI CL52 with Steel Sleeve (Sta 0+596 to 0+653)	m	57.4	\$ 7,250.00	\$ 416,150.00
2.03	600mm DI CL52 with Sleeve (Sta 0+596 to 0+758)	m	162	\$ 3,600.00	\$ 583,200.00
2.04	600mm DI CL52 with Insulation (Sta 0+758 to 0+771)	m	13	\$ 3,150.00	\$ 40,950.00
2.05	600mm DI CL52 Extension (Sta 0+771 to 0+797)	m	26	\$ 4,200.00	\$ 109,200.00
2.06	600mm DI CL52 with Steel Sleeve (Sta 0+797 to 0+818)	m	21	\$ 5,800.00	\$ 121,800.00
2.07	600mm DI CL52 with Insulation (Sta 0+818 to 0+930)	m	112	\$ 3,300.00	\$ 369,600.00
2.08	600mm DI CL52 with Insulation (Sta 0+930 to 0+983)	m	53	\$ 3,150.00	\$ 166,950.00
2.09	600mm DI CL52 Extension (Sta 0+983 to 1+130)	m	147	\$ 3,300.00	\$ 485,100.00
2.10	600mm DI CL52 Twin Extension (Sta 1+130 to 1+223)	m	93	\$ 5,600.00	\$ 520,800.00
2.11	Air Release Valve	each	1	\$ 60,000.00	\$ 60,000.00
				Subtotal	\$ 2,960,550.00
3.00	<u>John Brenton to Breeze Intersection</u>				
3.01	600mm DI CL52 Twin Extension (Sta 1+223 to 1+392)	m	269	\$ 5,600.00	\$ 1,506,400.00
3.02	600mm DI CL52 Extension (Sta 1+392 to 1+528)	m	136	\$ 3,300.00	\$ 448,800.00
3.03	Air Release Valve	each	1	\$ 85,000.00	\$ 85,000.00
3.04	600mm Trunk Water Connection (10 M)	LS	1	\$ 45,000.00	\$ 45,000.00
3.05	600mm Trunk Water Connection (6 M)	LS	1	\$ 22,500.00	\$ 22,500.00
3.06	600mm Trunk Water Connection (6 M)	LS	1	\$ 22,500.00	\$ 22,500.00
3.07	28 Water Service Laterals	LS	1	\$ 120,000.00	\$ 120,000.00
3.08	Waterline Decommission (Waverly Road 350mm & Jaybe 100mm)	LS	1	\$ 40,000.00	\$ 40,000.00
3.09	Existing 600mm Waterline Decommission (Jaybe & JB)	LS	1	\$ 85,000.00	\$ 85,000.00
3.10	400mm Temporary Water	m	300	\$ 850.00	\$ 255,000.00
3.11	Temporary Water Connection to Existing	each	3	\$ 10,000.00	\$ 30,000.00
				Subtotal	\$ 2,660,200.00
				Total	\$ 7,059,450.00
				20% Engineering & Contingency	\$ 1,411,890.00
				15% HST	\$ 1,270,701.00
				Total	\$ 9,742,041.00

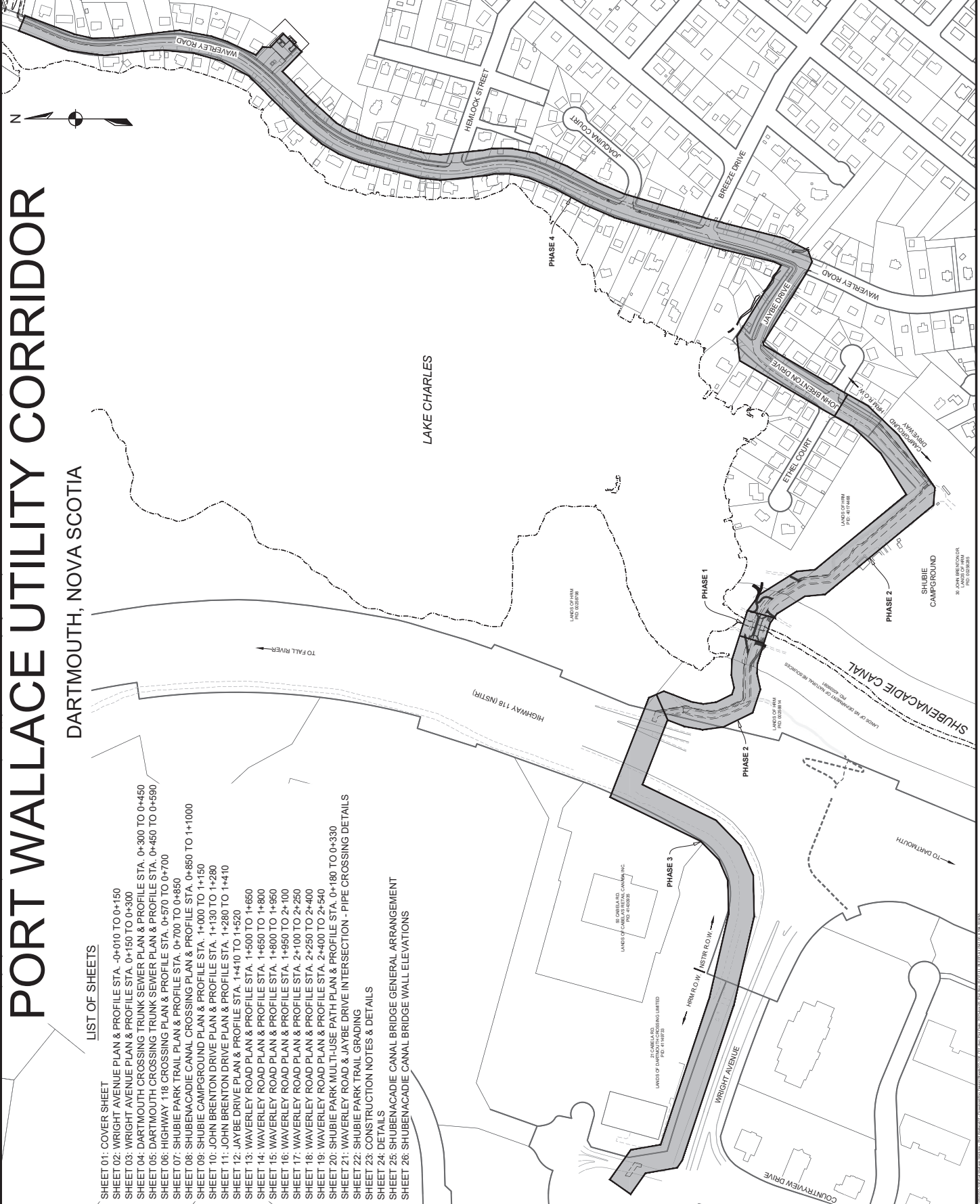
8.0 APPENDIX D – ENGINEERING DRAWINGS

PORT WALLACE UTILITY CORRIDOR

DARTMOUTH, NOVA SCOTIA

LIST OF SHEETS

- SHEET 01: COVER SHEET
- SHEET 02: WRIGHT AVENUE PLAN & PROFILE STA. 0+010 TO 0+150
- SHEET 03: WRIGHT AVENUE PLAN & PROFILE STA. 0+150 TO 0+300
- SHEET 04: DARTMOUTH CROSSING TRUNK SEWER PLAN & PROFILE STA. 0+300 TO 0+450
- SHEET 05: DARTMOUTH CROSSING TRUNK SEWER PLAN & PROFILE STA. 0+450 TO 0+590
- SHEET 06: HIGHWAY 118 CROSSING PLAN & PROFILE STA. 0+570 TO 0+700
- SHEET 07: SHUBIE PARK TRAIL PLAN & PROFILE STA. 0+700 TO 0+850
- SHEET 08: SHUBENACADIE CANAL CROSSING PLAN & PROFILE STA. 0+850 TO 1+1000
- SHEET 09: SHUBIE CAMPGROUND PLAN & PROFILE STA. 1+000 TO 1+150
- SHEET 10: JOHN BRENTON DRIVE PLAN & PROFILE STA. 1+130 TO 1+280
- SHEET 11: JOHN BRENTON DRIVE PLAN & PROFILE STA. 1+280 TO 1+410
- SHEET 12: JAYBE DRIVE PLAN & PROFILE STA. 1+410 TO 1+520
- SHEET 13: WAVERLEY ROAD PLAN & PROFILE STA. 1+500 TO 1+650
- SHEET 14: WAVERLEY ROAD PLAN & PROFILE STA. 1+650 TO 1+800
- SHEET 15: WAVERLEY ROAD PLAN & PROFILE STA. 1+800 TO 1+950
- SHEET 16: WAVERLEY ROAD PLAN & PROFILE STA. 1+950 TO 2+100
- SHEET 17: WAVERLEY ROAD PLAN & PROFILE STA. 2+100 TO 2+250
- SHEET 18: WAVERLEY ROAD PLAN & PROFILE STA. 2+250 TO 2+400
- SHEET 19: WAVERLEY ROAD PLAN & PROFILE STA. 2+400 TO 2+540
- SHEET 20: SHUBIE PARK MULTI-USE PATH PLAN & PROFILE STA. 0+180 TO 0+330
- SHEET 21: WAVERLEY ROAD & JAYBE DRIVE INTERSECTION - PIPE CROSSING DETAILS
- SHEET 22: SHUBIE PARK TRAIL GRADING
- SHEET 23: CONSTRUCTION NOTES & DETAILS
- SHEET 24: DETAILS
- SHEET 25: SHUBENACADIE CANAL BRIDGE GENERAL ARRANGEMENT
- SHEET 26: SHUBENACADIE CANAL BRIDGE WALL ELEVATIONS



ISSUED FOR
REVIEW, NOT FOR
CONSTRUCTION



NO.	DATE	DESCRIPTION	CONSULTANT
2	APRIL 26, 2023	ISSUED FOR OWN REVIEW	
1	DEC. 02, 2022	ISSUED FOR OWN REVIEW	


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PROJECT DESCRIPTION
PORT WALLACE UTILITY CORRIDOR
DARTMOUTH, NOVA SCOTIA
SHEET DESCRIPTION
COVER SHEET

Drawn By	Checked By	Scale	1:5000
Engineer	Project No.	File No.	
93186_C01 Rev	C-701	01 of 27	

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: 
[Jeff Myrick \(Jun 16, 2023 15:06 ADT\)](#)
Jeff Myrick, Manager of Communications and Public Affairs

APPROVED: 
[Louis de Montbrun \(Jun 16, 2023 15:25 ADT\)](#)
Louis de Montbrun, CPA, CA, Acting General Manager/CEO

DATE: June 16, 2023

SUBJECT: Corporate Balance Scorecard – Supplementary Report

ORIGIN:

Annual Corporate Performance Measurement.

RECOMMENDATION:

It is recommended that the Halifax Water Board approve the Corporate Balanced Scorecard targets for the 2023/24 fiscal year, including the organizational award program which is tied to the outcomes of the Corporate Balanced Scorecard organizational indicators as detailed in this report.

BACKGROUND

Halifax Water has been utilizing a Corporate Balanced Scorecard (CBS) to measure performance since 2001. The proposed 2023/24 CBS was presented to the Halifax Water Board on March 23, 2023 and deferred for further discussion at the Board's Workshop on May 12, 2023, with a vote for approval on June 22, 2023.

DISCUSSION

As a result of feedback from the Halifax Water Board on March 23 and on May 12, 2023,

proposed changes have been made to the CBS 20 3/24, which was previously submitted in March.

These changes included:

- The addition of new indicators for:
 - The total capital spend in the fiscal year
 - Response time for service connection permits – percentage of formal responses provided from Halifax Water within 3 days or less
 - Response time for subdivisions involving system extensions – percentage of formal responses from Halifax Water provided within 4 weeks or less review
- Adjustments to the following:
 - Operating expense/revenue ratio percentage (excluding depreciation)
 - Annual cost per customer connection – Water (excluding depreciation)
 - Annual cost per customer connection – Wastewater (excluding depreciation)
 - Capital budget expenditures – Percentage of budget spend by end of fiscal year be increased from the original proposed target to 70-80%.
 - Energy Management – Target for energy reduction from capital projects increased from 3% to 10%.

Based on these changes, we are requesting approval of the revised 2023/24 CBS.

In addition to the approval of the CBS, the executive will prepare a deeper analysis of the overall Corporate Balance Scorecard program for Halifax Water and submit it to the board prior to March 2024.

BUDGET IMPLICATIONS

Funds for the Organizational Award program are available if the operating expense to revenue ratio is at/or below the target amount. In many cases, meeting the organizational indicator targets will realize direct savings to the utility, improved operational effectiveness, and/or improved customer service.

ALTERNATIVES

None recommended.

ATTACHMENT

Summary Corporate Balanced Scorecard

Organizational Indicators	Organization Award	2021/22	2022/23		2023/24
		Results	Target	Results	Target
Financial and Regulatory Accountability					
Operating expense/revenue ratio percentage	Gateway	81.2%	83%	82.4%	80%
ADJUSTED Operating expense/revenue ratio percentage (excluding depreciation)	Gateway	61.4%	63%	62.0%	60%
Annual cost per customer connection – Water		\$540	\$543	\$539	\$579
ADJUSTED Annual cost per customer connection – Water (excluding depreciation)		\$412	\$407	\$403	\$438
Annual cost per customer connection – Wastewater		\$741	\$782	\$786	\$830
ADJUSTED Annual cost per customer connection – Wastewater (excluding depreciation)		\$554	\$595	\$592	\$627
New Total capital spend in the fiscal year (Reid needs to confirm)				\$93.5m	\$135m
Capital budget expenditures - Percentage of budget spend by end of fiscal year		28.6%	70-80%	35.3%	70-80%
Health Safety & Environment					
Average score on internal safety audits		96.7%	85-95%	98%	90%
NS Labour and Advanced Education compliance – Number of Incidents with written compliance orders		0	0-2	0	0-2
Lost time accidents -Number of accidents resulting in lost time per 100 employees	Gateway	2	3.5	0.91	3
Safe driving - Number of traffic Accidents per 1,000,000 km driven (maximum of 5)	Org. Award	3.36	4	4.31	4
Training - Number of employees trained or re-certified before due date		70%	80-90%	89%	85%
Percentage of completed safety talks		85%	80-90%	90%	85%
Percentage of public health and environmental regulatory infractions resulting in a summary offense tickets		0	0-2	0	0-2
Percentage of WWTFs complying with NSE approval permits	Org. Award	96.2%	95-100%	96.6%	95%
Number of ICI properties engagements by Pollution Prevention each year		361	250	251	250
Operational Excellence					
Adherence with 5 objectives of Water Safety Plan for all water systems - Percentage of sites achieving targets	Org. Award	70	80	93	80
Bacteriological tests - Percentage free from Total Coliform		99.94%	99.9%	99.97%	99.9%
Water service outages - Number of connection hours/1000 customers		192.42	200	125.74	200
Wastewater service outages – Number of connection hours/1000 customers		0.93	4	1.03	4
Average speed of answer – Percentage of calls answered within 20 seconds		60.4%	70%	71.1%	70%
NEW Response time for service connection permits – percentage of formal responses provided from Halifax Water within 3 days or less		N/A	N/A	N/A**	80%
NEW Response time for subdivisions involving system extensions – percentage of formal responses from Halifax Water provided within 4 weeks or less		N/A	N/A	N/A**	80%
Water leakage control – target leakage allowance of 160 litres/service connection/day	Org. Award	220	160-170	219	165
I&I reduction - Number of inspections to identify private property discharge of stormwater into the wastewater system		1502	1200	1387	1200
Peak flow reduction from wet weather management capital projects	Org. Award	n/a**	5-10 l/sec**	N/A**	5-10 l/sec**
Percentage of time GIS and Cityworks are available	Org. Award	99.99%	96-98%	99.95%	97%
Adjusted Energy management kwh/m ³ reduction associated with capital projects	Org. Award	7.76%	3%	14.10%	10%
Bio-solids residual handling - percentage of sludge meeting bio-solids concentration targets	Org. Award	98.5%	92-97%	99.5%	95%
People					
Customer satisfaction about water quality - Percentage from customer survey	Org. Award	89%	85%	88%	85%
Customer satisfaction with service - Percentage from customer survey	Org. Award	96%	95%	97%	95%
Number of arbitrations divided by total number of grievances		0	0	0	0
Percentage of jobs filled with internal candidates		68.00%	80%	64%	80%
Employee satisfaction survey result		B+	A	B+	A
Average number of days absenteeism		7.16	<7	9.81	<7


Notes:

* The final results are not available until year-end. However, we are currently not meeting this target for 2022/23.

** **Peak flow reduction** - The program has been completed, however the analysis of the flow data has not been completed by our external contractor. This measure will be updated when the data becomes available.

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: 
Heidi Schedler, KC, Director of Governance and Human Resources

APPROVED: 
[Louis de Montbrun \(Jun 16, 2023 14:43 ADT\)](#)
Louis de Montbrun, CPA, CA, Acting General Manager/CEO

DATE: June 16, 2023

SUBJECT: Diversity Equity and Inclusion Policy

ORIGIN:

March 24, 2022 Board report and motion item #7 endorsing Halifax Water's diversity, equity and inclusion framework goals for 2022/23 to 2024/25.

September 23, 2021 Board report item #7 regarding Halifax Water delegation of policy approvals

RECOMMENDATION:

It is recommended that the Halifax Water Board approve the Diversity, Equity and Inclusion Policy attached to the Board report dated June 16, 2023.

BACKGROUND

The Halifax Water Board approved a three-year framework for diversity, equity and inclusion activities.

DISCUSSION

The attached Diversity, Equity and Inclusion Policy is intended to illustrate Halifax Water's

commitment to diversity, equity and inclusivity organization wide. Given the proposed scope of this policy and the significance of it to fulfilling the DEI framework approved by the Board in March 2022, staff is recommending that the Board approve this policy.

The DEI policy is proposed to apply to all employees of Halifax Water and sets expectations for Halifax Water to foster a culture that promotes DEI, fairness and objectivity. If approved by the Board, Halifax Water will continue to advance the DEI framework.

BUDGET IMPLICATIONS

None.

ALTERNATIVES

None recommended.

ATTACHMENT

Diversity, Equity and Inclusion Policy

Purpose

Halifax Water is committed to an inclusive environment that reflects the communities for which it serves. As an employer, Halifax Water recognizes that inclusion occurs when employment opportunities, services and benefits are equitably accessible to all employees.

This policy conveys our commitment to providing a workplace that respects and promotes:

- diversity
- equity
- fairness
- human dignity
- inclusion
- workplace belonging

Definitions

Diversity: a workforce comprised of individuals of various races, ethnicities, gender, age, physical abilities, and other demographics.

Equity: providing fair opportunities to all employees based on their individual needs.

Fairness: treating all employees justly, respectfully, and impartially and without favoritism or discrimination.

Human dignity: right to be safe, valued, respected, and treated ethically.

Inclusion: a culture that values employees for their unique qualities by treating employees fairly, equitably and respectfully.

Workplace belonging: a feeling of security and support when employees are supported, respected, and valued for their identify and unique traits.

Scope

This policy applies to all employees of Halifax Water.

Employee Responsibilities

Employees are expected to:

- understand, uphold and, where possible, promote this policy,
- actively participate in creating a diverse, inclusive and equitable work environment, and
- exhibit positive, informed and inclusive attitudes towards all employees at all times.

Halifax Water Responsibilities

Halifax Water is expected to:

- foster a culture that embraces and promotes diversity, equity, fairness, human dignity, inclusion, and workplace belonging,
- provide a fair, objective and equitable staffing process,
- promote a workplace where employees exhibit positive, informed and inclusive attitudes towards each other, and
- regularly review organizational structures, systems, procedures, and processes to ensure compliance with this policy.

Violations

Any violation of this policy by an employee may result in discipline up to and including termination for cause.

Formal complaints will be investigated in accordance with Halifax Water policies, guidelines, and/or collective agreements.

Any employee who engages in retaliation against an employee who has or is believed to have reported potential or real violations of this policy or assisted with any investigation of a violation of this policy will be subject to discipline up to and including termination.

Related Policies

- Civility and Respect in the Workplace Policy #4.18
- Code of Conduct Policy #1.2
- Fair Hiring Policy #2.01

Related Documents

- Halifax Water Equity, Diversity and Inclusion Initiatives
- HALIFAX Diversity and Inclusion Terminology
- Gender Neutral Language

Effective: Month xx, 2022

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: *Reid Campbell*
[Reid Campbell \(Jun 16, 2023 15:33 ADT\)](#)
Reid Campbell, M.Eng., P.Eng. Director, Engineering and Technology Services

APPROVED: *Louis de Montbrun*
[Louis de Montbrun \(Jun 16, 2023 15:38 ADT\)](#)
Louis de Montbrun, CPA, CA, Acting General Manager/CEO

DATE: June 16, 2023

SUBJECT: CEO Climate Action Charter

ORIGIN

Environment, Health and Safety subcommittee of the Halifax Water Board.

RECOMMENDATION

It is recommended the Halifax Regional Water Commission Board approve Halifax Water being a signatory to the Halifax Partnership – CEO Climate Action Charter.

BACKGROUND

At the June 8, 2023 meeting of the Halifax Water Environment, Health and Safety Committee, the attached presentation was reviewed and the Committee approved a motion to recommend the Halifax Water Board approve Halifax Water being a signatory to the Chamber of Commerce – CEO Climate Action Charter.

DISCUSSION

The Chamber of Commerce requested Halifax Water join other organizations in signing the CEO Climate Charter. By signing the charter an organization commits to:

1. We do the right thing: We embed climate goals into our organization's culture and values.

2. We do what we say: We track and share our climate action goals and initiatives.
3. We learn and adapt: We actively share best practices and mentor to progress our climate goals in an ever-changing and highly complex world.
4. We support an equitable transition to a green economy: We work together to create solutions that are accessible for all.
5. We work together: We leverage our influence and networks to remove barriers and enable progress for collective success.
6. We are all part of the solution: We empower people to be climate leaders.
7. We communicate with government about the impacts of policy: We participate in two-way communication between government and industry to best enable our abilities to progress climate action.
8. We help climate action innovators: We find ways to support new ideas and solutions that accelerate climate action.
9. We embed climate action in business decisions: We acknowledge climate action as a business imperative and include climate thinking in business and organizational decisions.
10. We signal action: We commit to being vocal about our climate action initiatives to encourage all businesses, organizations and leaders to adopt meaningful, climate-focused change.

As a signatory to this Charter, I hereby agree to participate in the CEO Climate Action Charter Leadership Group to share information and best practices with the goal of continuously improving climate action strategies, programming, and performance, acting towards achieving the intent and principles of the CEO Climate Action Charter

Halifax Water has recently completed Phase 1 of their Climate Action Plan and is commencing Phase 2. In addition, Halifax Water continues to support HALIFAX's HalifACT 2050 initiatives. Participating in the CEO Charter will signal our on-going support to operating in an environmentally, sustainable manner.

ALTERNATIVES

Do not approve Halifax Water signing the Chamber of Commerce CEO-Climate Action Charter.

ATTACHMENTS

1. Presentation to Environment, Health and Safety Committee

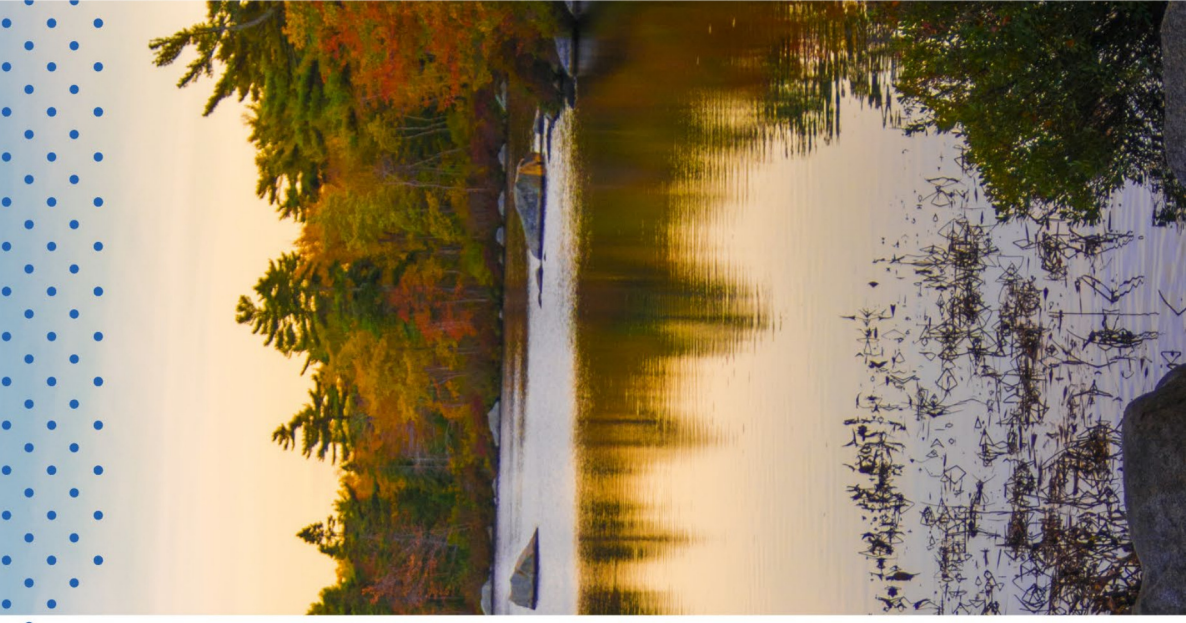
Report prepared by:

Kenda MacKenzie

[Kenda MacKenzie \(Jun 16, 2023 14:31 ADT\)](#)

Kenda MacKenzie, P.Eng.

Director, Regulatory Compliance Services



CEO Climate Action Charter

Signatory Assignments

Kenda MacKenzie
June 8, 2023

**STRAIGHT from
the SOURCE**

Item 8 – CEO Climate Action Charter



HALIFAX, NS – March 27, 2023 – Halifax Regional Municipality and Halifax Partnership are pleased to announce the launch of the CEO Climate Action Charter. Co-created in partnership with business leaders across Halifax, this Charter encourages signatories to take meaningful climate action using the unique operational levers of their respective organizations, while demonstrating leadership to our community.

"The fix for the worst impacts of climate change is not quick, but it is urgent. The only solution is deliberate, sustained, meaningful action," says Mayor Mike Savage. "We have an opportunity to confront the challenge in ways that will drive our economy more sustainably and help us be better prepared for the future."

"This Charter is the first of its kind and will position Halifax as an economic and climate change leader in North America," says Wendy Luther, President & CEO, Halifax Partnership. "The launch of the Charter is an important milestone in our collective efforts to combat climate change."

The CEO Climate Action Charter has been embedded in Halifax's five-year Inclusive Economic Strategy – **People. Planet. Prosperity.**, of which a key objective is to increase the city's environmental sustainability and resiliency. Aligning with the municipal, provincial, and federal climate action plans, the Charter will support the growth of the green economy and materially reduce carbon emissions. Through fostering collaboration between business and municipal leaders, it will play a significant role in achieving the goals set out in **HalifACT**, one of the most ambitious climate action plans in Canada, with a goal to achieve net-zero emissions by 2050.

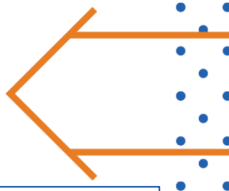


CEO Climate Action Charter signing, Wendy Luther, Cory Bell, Mayor Mike Savage

The CEO Climate Action Charter will further enable Halifax, and the institutional and corporate leaders who operate here, to work together to meet the urgent municipal and provincial climate action goals.

"The role of the private sector in advancing climate action is imperative to reaching our collective goals," says Cory Bell, President & CEO, Lindsay Construction. "As business and community leaders, we have a shared responsibility to make changes and take meaningful actions to increase Halifax's environmental sustainability and resiliency."

**HALIFAX
PARTNERSHIP**

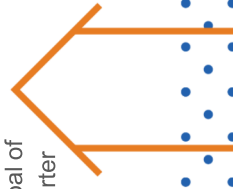


BY SIGNING THIS CHARTER, I COMMIT THAT IN MY ORGANIZATION:

- 1. We do the right thing: We embed climate goals into our organization's culture and values.
- 2. We do what we say: We track and share our climate action goals and initiatives.
- 3. We learn and adapt: We actively share best practices and mentor to progress our climate goals in an ever-changing and highly complex world.
- 4. We support an equitable transition to a green economy: We work together to create solutions that are accessible for all.
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[CEO-Climate-Action-Charter.pdf \(halifaxpartnership.com\)](#)



Current Signatories

Dalhousie University

Deloitte

Eastward Energy

Emera

EY

Halifax International Airport Authority

Halifax Regional Municipality

Lindsay Construction

Nova Scotia Power

Davis Pier

Eastern College

EfficiencyOne

Events East

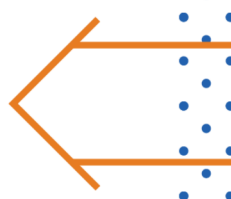
Halifax Partnership

Halifax Port Authority


LED Roadway

Nova Scotia Community College


St. Mary's University



TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: 

Alicia Scallion, CPA, CA
Acting Director, Corporate Services/CFO

APPROVED: 

[Louis de Montbrun \(Jun 16, 2023 14:41 ADT\)](#)
Louis de Montbrun, CPA, CA
Acting General Manager and CEO

DATE: June 16, 2023

SUBJECT: **2022/23 Cost Containment Initiatives**

INFORMATION REPORT

ORIGIN

- The Cost Containment Process as approved by the Halifax Water Board on October 3, 2013.
- April 14, 2015, Nova Scotia Utility and Review Board (NSUARB) Decision - Halifax Regional Water Commission General Rate Application (M06540).

BACKGROUND

The process for cost containment as approved by the Halifax Water Board on October 3, 2013, called for the implementation of a number of recommended actions that would assist Halifax Water in addressing the NSUARB's 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 Halifax Water 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 2022/23 is attached, with updated information as at March 31, 2023. This report shows the cost containment initiatives effecting operations for 2022/23 as a result of new initiatives implemented during the year and ongoing initiatives from fiscal years 2013/14 to 2021/22 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 2022/23 are \$5.5 million as outlined by category in Figure #1 below:

Figure #1

Procurement Strategies	\$490,368	8.9%
Human Resource Strategies	\$2,479,426	44.9%
Information Technology Strategies	\$108,700	2.0%
Facilities/Process Strategies	\$2,398,428	43.4%
Reduce Paper and Printing Costs	\$37,467	0.7%
Technology and Business Process Changes	<u>\$12,000</u>	<u>0.2%</u>
	<u><u>\$5,526,390</u></u>	<u><u>100.0%</u></u>

As shown above, cost containment initiatives are impacted mostly in the areas of Human Resources, 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 68.6% of the savings within Human Resource Strategies and 30.8% of the total projected cost savings for 2022/23. In addition, effective January 1, 2022, the contribution rate for the pension plan decreased from 10.34% to 9.60% resulting in annual cost savings of approximately \$0.3 million.

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 \$1.6 million of projected savings for the current year, representing 67.1% of savings within the category and 29.1% of the total projected savings for 2022/23.

During the fourth quarter of the 2022/23 fiscal year, a review of existing cost containment initiatives was completed to ensure they still accurately reflected ongoing initiatives. Due to this review, various initiatives were identified as having concluded and removed from the 2022/23 report.

New cost containment initiatives implemented thus far during the 2022/23 fiscal year result in projected cost savings of approximating \$0.7 million and are highlighted for ease of reference on

the Summary Report - Cost Containment Initiatives attached. Cost savings from these initiatives are of a one-time or on-going nature, and fall within the following categories:

- Procurement Strategies,
- Human Resource Strategies,
- Facilities/ Process Strategies, and
- Technology and Business Process Changes.

Procurement strategies from a capital perspective have led to other cost savings realized in the current year. For example, two valves were replaced using internal staff instead of a contractor resulting in savings of \$0.1 million, which is recognized through cost savings associated with depreciation expense of approximately \$0.01 million annually. In addition, the capital budget for 2021/22 included \$0.8 million for the supply and installation of a new mechanical bar screen for the Jamieson Street Pumping Station. Three bar screens were replaced at the Dartmouth Wastewater treatment facility (DWWTF) and two of these units were re-constructed to form one single screen suitable for Jamieson Street. Halifax Water staff engineered the modifications and hired a contractor to fabricate and install the repurposed screens and compactor from the DWWTF at a cost of \$0.2 million (budgeted at \$0.8 million) resulting in cost savings of \$0.6 million, which is recognized through cost savings associated with depreciation expense of approximately \$0.03 million annually.

BUDGET IMPLICATIONS

Available information on cost containment initiatives were taken into consideration in developing the 2022/23 budget along with incorporating them into the 2023/24 budget preparation. Initiatives that impact future fiscal periods will be incorporated into budget cycles and processes of these future periods as those implementing the cost containment measures will ensure they are captured when completing their budgets.

ATTACHMENTS

Summary Report – Cost Containment Initiatives

Report Prepared by:



Alicia Scallion, CPA, CA

Acting Director Corporate Services/CFO, (902) 497-9785

Halifax Water
 Summary Report - Cost Containment Initiatives
 2022/2023
 Fiscal Year

#	Initiative	Comments	Year Initiated	2022/23 Cost Savings
1 General Budget Strategies				
Sub-total				\$0
2 Procurement Strategies				
	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
	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 staff hours and use of HW vehicles.	2016/17	\$1,370
	Equipment calibration	Internal staff are now able to calibrate fixed gas detectors instead of outsourcing this to a MSA Safety Inc. technician service provider.	2019/20	\$3,000
	In-house training	Developed in-house method to purge primary sludge discharge line from primary gallery to the sludge holding tank. As a result, an external contractor is no longer required to perform this work. This is on a 3-year cycle.	2019/20	\$4,500
	Elimination of a customer satisfaction survey	HW performed two customer surveys annually. Upon review it was determined there was a redundancy in questions asked between the two surveys therefore, it was decided to consolidate the questioning into one.	2020/21	\$5,319
	Reduction in fleet repair costs	Savings associated with the removal of 16 units from the fleet as a direct result of the Municipal Auditor General's (MAG) audit of fleet in 2019, and subsequent action taken by Fleet Utilization Management for HW, for units that did not meet the minimum fleet utilization standards.	2020/21	\$41,500
	Reduction in depreciation costs related to Fleet	As recommended in the 2019 MAG Fleet Use Audit, the Fleet Upgrade Capital Program was reduced in 2021/22 by \$1.1 million resulting in savings associated with depreciation costs over the next 5-years estimated at \$0.2 million per year.	2021/22	\$218,000
	Reduction in depreciation costs related to discounted meter purchase	As the AMI metering project was concluding, an opportunity to purchase AMI meters in bulk became available to take advantage of significant price savings from a capital perspective.	2021/22	\$1,254
	Reduction in depreciation costs related to Fleet	An adjustment was made to the Sewer Jet Replacement Program whereby, rather than replace an existing unit, it was decided to replace the truck chassis along with a complete rebuild of the tank, pumps and body assembly. Cost of a new unit would approximate \$0.55 million compared to a budgeted cost of \$0.28 million for the alternative chosen.	2021/22	\$55,000
	Operational cost savings related to purchase of a single axle, hydro excavation unit	After an successful pilot with a single axle, hydro excavation unit, it was decided to purchase the rental unit. It is expected the savings as a result of purchasing the unit versus outsourcing the work will be in the range of \$28-\$42 thousand per year, over a 7-year period.	2021/22	\$28,000
	Procurement of annual audit fees	Reduction in the annual audit fees through a request for proposal (RFP) process. The contract term is for a 5-year period, and assuming an inflation factor of 2% over fees of the prior year, potential savings over the term could approximate \$41 thousand.	2021/22	\$6,426
	Reduction in license fees	Renewal of AutoCAD license contract for 3 years to avoid annual increases of 2.5% per year for a savings of \$12k over the three years. Also dropped two more expensive licenses for an immediate savings of \$21 thousand. These actions result in cost savings of \$25 thousand in 2022/23 and \$4 thousand in subsequent two years.	2022/23	\$25,000
Sub-total				\$490,369

Halifax Water
Summary Report - Cost Containment Initiatives
2022/2023
Fiscal Year

#	Initiative	Comments	Year Initiated	2022/23 Cost Savings
3	Human Resource Strategies			
	Pension plan re-design	Through the collective bargaining process, HW was able to negotiate pension plan re-design to make the plan more sustainable. Earnings were capped at the 2015 CRA maximum from 2016 through 2023 then indexed at 1%, the final year average adjusted from five to seven years, and conditional indexing changed from a maximum of 2% to 1% for post-2015 effective January 1, 2015.	2015/16	\$1,700,000
	Workload, labor force assessment	January 1, 2016 saw the elimination of the administrative assistant within Regulatory Services. In 2021 the administrative assistant for Corporate Services began to be shared between the two departments. Cost savings have been adjusted to reflect this.	2015/16	\$28,500
	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
	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
	Pension plan contribution rate	Through the 2022 actuarial valuation, the pension plan contribution rate decreased from 10.34% to 9.60% effective January 1, 2022.	2022/23	\$250,000
	Re-structuring within Wastewater Treatment	Due to the reorganization of the Wastewater Treatment section of the Operations department, one full time Supervisor position was eliminated. One supervisor is now responsible for the management of two plants (Herring Cove and Timberlea).	2022/23	\$95,000
	Hiring deferral	Hiring of the Office Assistant in Human Resources was delayed. Savings of salary and benefits were realized.	2022/23	\$13,000
	Reduction in staffing within Corporate Services	Reduction of a collection specialist.	2022/23	\$50,960
	Sub-total			\$2,479,426
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			
	Lab Testing	Price benefits from purchasing product from a different source mainly affecting the Harbour Solution Plants.	2013/14	\$105,000
	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	\$15,000
	System sampling for HPC's	Sampling was reduced from weekly to monthly.	2014/15	\$8,025
	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	\$19,159
	Wind farm - Pockwock WSP	Net annual royalty from Pockwock Wind Farm energy production. HST not included.	2014/15	\$152,765
	Biogas CHP system - Mill Cove		2014/15	\$86,000
	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

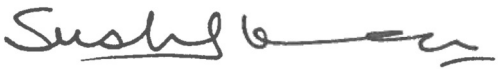
Halifax Water
Summary Report - Cost Containment Initiatives
2022/2023
Fiscal Year


#	Initiative	Comments	Year Initiated	2022/23 Cost Savings
	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 in lower overtime costs, as well as reducing the time available for HW truck to service other facilities. This process assisted the Aerotech WWTF in reaching its compliance goals and reduced overtime costs by an estimated 50%. This equipment will enable HW to proceed with a digester clean out project, which would otherwise be sub-contracted at a cost of \$0.2 million.	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	\$245,790
	Halifax WWTF - Carbon Scrubber By-Pass		2016/17	\$50,248
	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
	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
	Herring Cove WWTF - Carbon Scrubber By-Pass		2017/18	\$9,578
	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 chlorine 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
	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	\$22,450
	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	\$1,375
	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	\$12,775
	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
	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 was 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
	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 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

Halifax Water
Summary Report - Cost Containment Initiatives
2022/2023
Fiscal Year

#	Initiative	Comments	Year Initiated	2022/23 Cost Savings
	Reduction in heating fuel costs	The installation of a 18,000 BTU heat pump in the admin area of the Leachate Facility, coupled with repairs to an existing unit in the lab area, resulted in heating fuel savings.	2020/21	\$5,000
	Solar PV - COMFIT/ Renewable Energy Generation	Operational at the Halifax WWTF.	2020/21	\$30,133
	Fan belt/ pulley replacements - Eastern Passage WWTF	Expected energy savings - based on 118,348 kWh.	2020/21	\$13,366
	Harbour Solution Plants - Ventilation Air Heat Recovery	Expected energy savings for the Halifax, Dartmouth and Herring Cove WWTF.	2015/16	\$151,437
	Utilizing alternative assets to perform similar duties	Rather than using vacuum trucks to get loads of digested waste from Mill Cove on days when they are unable to centrifuge, the 2 new dump trucks from Aerotech are used. This will be done initially during long weekends and holidays when no dumping is available through the RE Group, at an estimated daily savings of \$750.	2021/22	\$8,250
	The production of biogas used to heat the digesters, and all facility buildings	Both the Mill Cove and Timberlea WWTF's have anaerobic digesters which produce biogas or renewable natural gas (RNG) which is used to heat the digesters as well as all the facility buildings.	2021/22	\$385,488
	Reduction in the usage of caustic	The pH set point was reduced from 7.1 to 6.8 in order to reduce the amount of caustic soda consumed, while still enduring nitrification in the bioreactors. Usage was monitored over a 6-week period, and the savings are estimated to be in the range of 30%.	2021/22	\$30,000
	Reduction in hydrant part costs	The estimate of \$278,000 for hydrant parts in the 2022/23 operational budget was based on previous year's expenditures to convert the internal components of old Number 2 hydrants to the modern M67 hydrant. Now that this conversion program is complete, the demand for expensive hydrant parts has dropped. Therefore the expected expenditure for hydrant parts was reduced to \$0.1 million.	2022/23	\$178,000
	Deferral of reservoir painting	In the 2022/23 West Water Operations operating budget, \$25 thousand was identified to paint the Charles Road Reservoir. Painting the reservoir would be for aesthetic purposes only. The intent to paint the reservoir was not based on any community driven complaints about the state of the reservoir.	2022/23	\$25,000
	450 Cowie - Lighting Control Upgrades	Expected energy savings - Based on 169,785 kWh.	2022/23	\$17,620
	455 Cowie - Lighting Control Upgrades	Expected energy savings - Based on 189,939 kWh.	2022/23	\$19,681
Sub-total				\$2,398,428
6	Reduce Paper and Printing Costs			
	Electronic HRWC Board Packages	Send Board packages out electronically rather than issuing hard copies.	2013/14	\$7,500
	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 Annual Report	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
	Paperless payroll	All payroll timesheets and approvals now completed electronically. Pay statements also available online saving on paper, envelopes, and mailing costs.	2020/21	\$4,804
	Cost reduction associated with off-site storage	Due to further reductions in the number of boxes (documents) stored in facilities such as Iron Mountain, additional savings have been realized.	2022/23	\$2,052
Sub-total				\$37,467
7	Technology and Business Process Changes			
	Cost Reduction for Dispute Resolution Officer	Reduction in costs resulting from efficiency gains from process enhancement and strong financial management relating to the Dispute Resolution Officer.	2022/23	\$12,000
Sub-total				\$12,000
				\$5,526,390

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: 
Susheel Arora, M.A.Sc., P.Eng., Director of Operations

APPROVED: 
[Louis de Montbrun \(Jun 16, 2023 14:40 ADT\)](#)
Louis de Montbrun, CPA, CA, Acting General Manager/CEO

DATE: May 31, 2023

SUBJECT: **Lead Service Line Replacement Program - Update for 2022-23**

ORIGIN

In October 2020, the Nova Scotia Utility and Review Board issued order M09589 granting Halifax Water authority for the approval to pay for private lead service replacements at utility cost (up to \$10,000). This report provides an annual update on the Get the Lead Out Program.

BACKGROUND

In October 2016, the Halifax Water Board approved a business plan for a new approach to Lead Service Lateral (LSL) replacement, consistent with the National Drinking Water Advisory Council (NDWAC) recommendations to the USEPA.

On August 22, 2017, the Nova Scotia Utility and Review Board issued an order granting Halifax Water authority to undertake emergency LSL renewals to the water meter at utility cost and to provide a 25% rebate (up to a maximum of \$2,500) to homeowners undertaking a LSL replacement.

The new Halifax Water Get the Lead Out program will replace all lead service lines by 2038 as opposed to the previous program goal of 2050.

DISCUSSION

The attached report reflects the second year of the approved Get the Lead Out Program. The internal replacement goals were 200 private and 150 public lead service lines. The private goal was exceeded with a total of 203 lead service line replacements, while there were 118 public lead service lines replaced out of the 150 goal. The public replacement target was not met due to delay in hydroexcavation, projects being delayed by HALIFAX and Halifax Water, and due to the fact there are not as many public LSL compared to private LSL. The average cost of a private replacement was \$6,015 and the average cost of a public replacement was \$7,637. For 2023/24 the target is 200 private lead service line replacements and 120 public lead service line replacements.

ATTACHMENT


Get The Lead Out: 2022/23 Program Summary

Report Prepared by:



Melissa Healey, M.A.Sc., C.E.T.
Water Quality Program Supervisor, Phone 902-209-8370

Financial Reviewed by:



Alicia Scallion, CPA, CA
Acting Director, Corporate Services/CFO

Get The Lead Out: 2022/23 Program Summary

June 22, 2023

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1 Introduction

In October 2020, the Nova Scotia Utility and Review Board issued order M09589 granting Halifax Water authority for the approval to pay for private lead service replacements at utility cost (up to \$10,000). This report provides an annual update on the Get the Lead Out Program.

2 Background

In October 2016, the Halifax Water Board approved a business plan for a new approach to Lead Service Lateral (LSL) replacement, consistent with the National Drinking Water Advisory Council (NDWAC) recommendations to the USEPA.

On August 22, 2017, the Nova Scotia Utility and Review Board issued an order granting Halifax Water authority to undertake emergency LSL renewals to the water meter at utility cost and to provide a 25% rebate (up to a maximum of \$2500) to homeowners undertaking a LSL replacement.

In October 2020, the Nova Scotia Utility and Review Board issued order M09589 granting Halifax Water authority for the approval to pay for private lead service replacements at utility cost (up to \$10,000). The new Halifax Waters Get the Lead Out program will replace all lead service lines by 2038.

Replacements are being coordinated with HRM's street paving and renewal schedule to minimize disruption to the community and be cost-efficient for ratepayers. A limited number of individual replacements are being completed with priority given to customers who are most at-risk from lead exposure. Replacements are completed at no cost to the property owner (up to a maximum of \$10,000).

Halifax Water schedules the replacements, which could take place at any time throughout the life of the program. In addition to integrating with HRM on street paving and a property owner requested program, Halifax Water can also set up targeted programs to replace lead service lines including targeting sensitive populations, geographical areas, point of sale or other criteria. Targeted programs will be built out as the program matures.

3 Get the Lead Out Program Overview

Halifax Water's approach to manage its customer's exposure to lead is designed to be consistent with the National Drinking Water Advisory Council's (NDWAC) recommendations to the USEPA on the Lead and Copper Rule, which have been endorsed by the American Water Works Association, to the degree they can be applied in Canada and do not conflict with local regulatory requirements.

The 5 pillars of the approach and progress made towards each pillar in the 2022/23 fiscal year are described below:

3.1 Lead Service Line Inventory

Understanding where lead service lines exist is critical to the success and ultimate completion of the LSL replacement program. Where service lines are buried infrastructure, the inventory is only as good as historical record keeping practices, and practices varied over time. Within the lead service line boundary, which is the part of the distribution system that would have been serviced by a centralized water system prior to 1960, There are 14,459 domestic services in Halifax, and 8,840 in Dartmouth that at one point could have been lead. To date, efforts have been focused on tasks to improve the accuracy of the existing inventory along with developing a machine learning model to help predict service line material as described in the following sections.

3.1.1 Improving Inventory Accuracy

Each year, the accuracy of the inventory is improved through consolidation and review of records, hydroexcavation of service boxes and gathering information from property owners. Changes are made where necessary to improve the accuracy of the inventory.

This year an estimated 5,100 service points within the Halifax and Dartmouth lead boundary have been reviewed and updated for accuracy. Remaining service cards continue to be scanned as required. The majority of the uncertainty in records and large number of unknown material service lines are in Dartmouth due to historical record keeping practices. Despite the high number of unknowns, there were large scale public lead service line replacement practices in Dartmouth in the 1970's and it is anticipated that many of these unknowns are copper.

Table 1 shows changes to the inventory from 2021 to this year as a result of lead service line replacements, work done through consolidating and reviewing records, hydroexcavation of service boxes, and gathering information from property owners. In some cases records are changed to unknown when there is information is non-conclusive which is reflected by some increases in the number of unknowns over time.

Table 1: Inventory of lead and unknown service lines each year

Date	Public Lead	Public Unknown	Private Lead	Private Unknown
<i>April 1, 2021</i>	1,395	2,566	2,968	7,547
<i>April 2, 2022</i>	1,314	2,608	2,896	6,234
<i>May 2, 2023</i>	1,193	2,711	2,776	6,545

3.1.2 Service Line Material Predictive Modeling via Machine Learning

Even with the efforts being made to digitize and authorize records, there are still gaps and many unknowns that require hydroexcavation to confirm material prior to replacement. To reduce long term costs of the program and the need to hydroexcavate every service, Halifax Water engaged Blue Conduit, a company born out of the Flint water crisis that uses machine learning algorithms to predict service material based on historical records, property records, past

construction practices and any other information that is available, to develop an inventory model to predict where lead services remain.

In the 2022/23 fiscal year, Halifax Water received service line predictions for services within the lead service line boundary in both Halifax and Dartmouth. The predictions were provided as a percent likelihood of a service line being composed of lead. Currently, Halifax Water is verifying the reliability of the predictions by conducting physical observations of service line material and comparing them to the corresponding likelihood of lead prediction. The goal is to determine a threshold percent likelihood of lead where a physical observation (hydroexcavation) of the service line is not required. Figure 1 shows the range of accuracy in the Blue Conduit model output when compared to hydroexcavations for private (upper plot) and public (lower plot) service lines in Halifax. A model prediction of 0 predicts non-lead material (copper) and a model prediction of 1 predicts lead. The size of the circle shows the relative number of records evaluated at that model prediction. It is clear from this figure that the most uncertain records lie in the mid-range of predictions as would be expected and the lower and upper ranges had good accuracy. With this information, the model output has been incorporated into determining hydroexcavation requirements with those falling in the mid-range of predictions requiring hydroexcavation while those being predicted close to 0 or 1 being assumed as accurate.

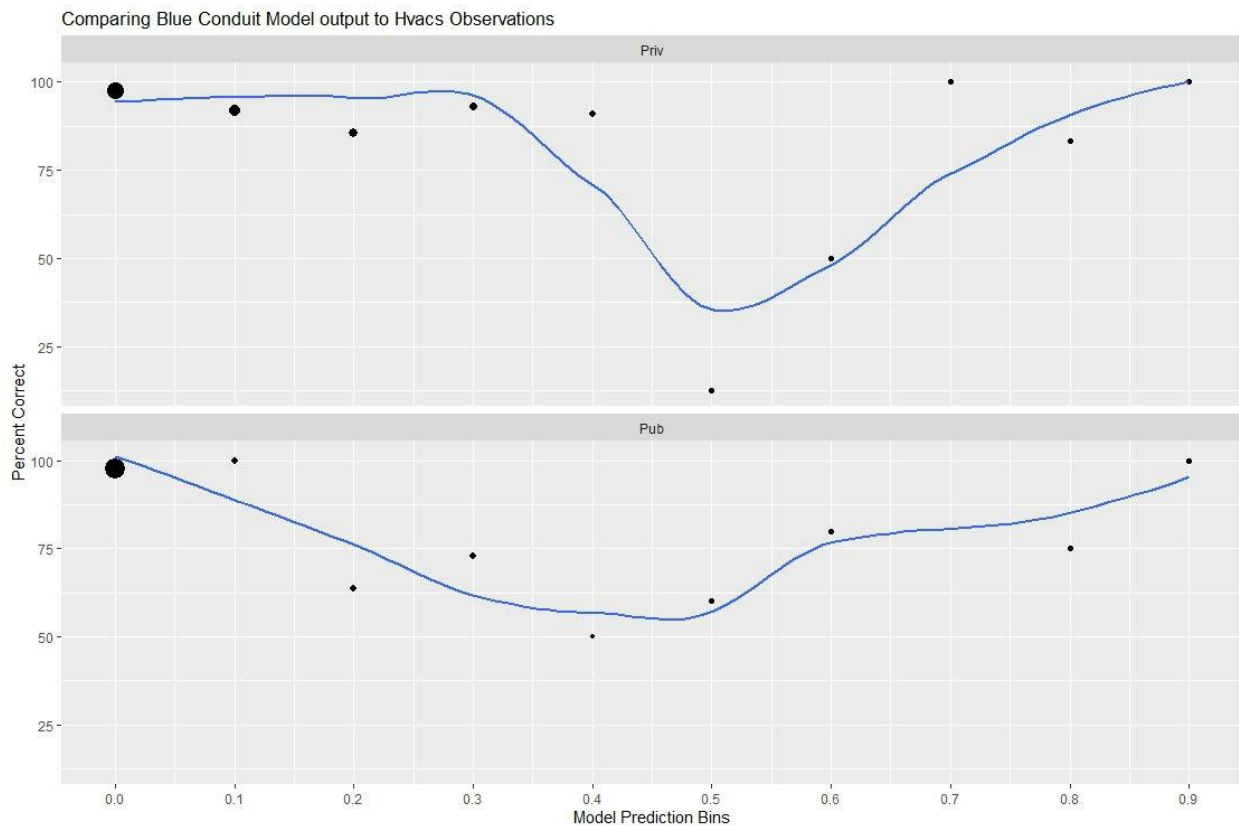


Figure 1: Percent accuracy of both private (upper plot) and public (lower plot) lead service line predictions from the Blue Conduit model versus hydroexcavation results.

3.2 Lead Service Line Replacement

For 2022/23 fiscal year, Halifax Water’s goal was to replace 200 private lead service lines and 150 public lead service lines. 118 public and 203 private lead services were completed in 2022/23. Resource constraints in both procurement and operations led to delays in planning, tendering and contracting replacements in 2022, however a warm winter allowed for renewals to continue through the winter.

As the program progresses, it is also becoming apparent that the ratio of public to private lead services remaining is closer to 1 public for every 2 private as opposed to 1.5 public for every 2 private services. This ratio will be adjusted in annual replacement goals moving forward.

Figure 2 summarizes the number of public and private renewals completed since 2017. The grey boxes represent approved contractors who can replace both the private and public portions at the same time in order to reduce the time span of having a partial replacement. The positive impact of the early adopters in the rebate program from 2017-2019 and the Get the Lead Out program are evident from this figure.

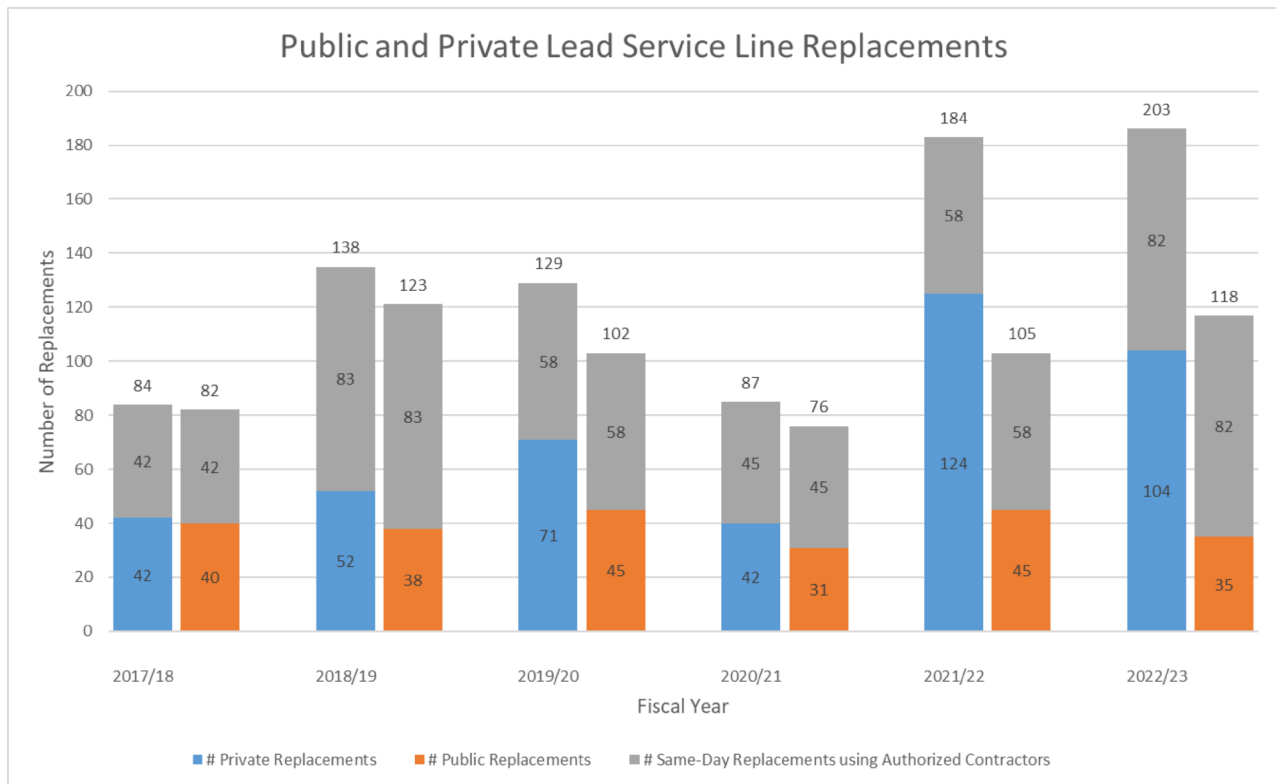


Figure 2: Number of public (orange) and private (blue) service lines replaced by fiscal year. Grey bars indicate residents who used the same day authorized contractor program to renew both public and private service lines in the same day

Table 2 below summarizes the number of replacements in the first and second year of the new Get the Lead Out program, broken down by program with reference to where the program sits within the Halifax Water Regulations.

There were 128 applications to the property owner requested lead service line replacement program in fiscal year 2021/22 and 137 applications to the property owner requested lead service line replacement program in fiscal year 2022/23.

Table 2: Summary of replacements broken down by program type

Program	HW Regulations subsection	# of private renewals 2021/22	# of private renewals 2022/23	# of public renewals 2021/22	# of public renewals 2022/23
<i>Unplanned disturbance</i>	51A.(3)	8	0	3	0
<i>Service Line Leaks</i>	51A.(4)	8	15	4	7
<i>HRM/Halifax Water Capital</i>	51A.(5)	69	35	45	44
<i>Property Owner Requested</i>	51A.(6)	51	127	21	58
<i>Customer initiated with 25% rebate</i>	51A.(7)	34	21	17	4
<i>Other (abandoned)</i>	N/A	15	5	15	5
Total		185	203	105	118

3.3 Public Outreach

Halifax Water responded to 167 customer inquiries related to lead, and 952 letters were issued directly to homeowners either through replacement programs or to engage homeowners in our regulatory requirement for lead and copper sampling.

When a customer applies to have their lead service line replaced, they are sent information about the Get the Lead Out Program. They are also provided with a pitcher filter and 6 replacement filters which are certified for the removal of lead, to be used for drinking and cooking during and after their lead service line replacement when they may experience elevated levels of lead due to the construction process. A historical summary of filter kits provided is shown in Table 3.

Halifax Water published an article in Journal AWWA in March 2022 on the Get the Lead Out Program and this paper was selected as the winner in the 2022 AWWA Water Science & Research Division Best Paper Award. Furthermore the Get the Lead Out Program was selected as the winning program/project in the Drinking Water Division of Water’s Next Awards in 2022. Halifax Water provided a presentation on the Get the Lead Out Program Evolution at the Engineer’s Nova Scotia Spotlight on Innovation in March 2023.

A post-construction survey was sent out to participants in December of 2022. The survey consisted of a series of questions about the contractor process, Halifax Water, and the overall Get the Lead Out Program. Homeowners were asked to rate questions ranging from very satisfied to very dissatisfied regarding communications from Halifax Water/Contractor, reinstatement

work, the application process, sampling process, and timelines of the replacement. Homeowners were also asked to rank the likeness of recommending the program out of 10. There were 36 responses as of May 3rd, 2023. Out of these responses, 28 customers ranked recommending the program a 10 (very likely), and 8 didn't respond. Some customer comments are below:

"I am pleased and relieved to have had the lead line replaced"

"All in all it was a great job and they left my place looking better than it was before"

"Very pleased with the pace and skills of the workers"

"Really appreciate it. Great news for my two young kids"

"I think this program is really beneficial and I'm overall very satisfied with the program itself, the customer support, and the work done. Great job!"

3.4 Corrosion Control and Water Quality Monitoring

Halifax Water and Dalhousie University continue to conduct research to optimize and monitor corrosion control treatment. Outcomes of research have led to greater effectiveness for corrosion control treatment at both JD Kline and Lake Major treatment plants. Research in 2022/23 focused on several areas:

- Full scale monitoring of the impact of changes in orthophosphate dose through sampling at customer homes and sampling sentinel lead racks and coupons within Halifax Water infrastructure. The outcomes of this work show the value in using sentinel lead racks for assessing efficacy of corrosion control treatment. A paper has been prepared and submitted to Environmental Science and Technology: Water on this work. DOI: [10.26434/chemrxiv-2023-h1459](https://doi.org/10.26434/chemrxiv-2023-h1459).
- Pipe loop and bench scale studies on the use of sequestrants in addition to orthophosphate to simultaneously control lead, iron, and manganese.

Halifax water continues to use the following routine corrosion control sampling programs:

- I. Distribution Coupon Monitoring
- II. Distribution Corrosion Control and Biostability Monitoring
- III. Sentinel Lead Rack Monitoring

3.5 Customer Sampling

3.5.1 Lead Service Line Replacement Monitoring program

Post lead service line replacement is offered to all customers in the program. Samples are provided at 3 and 6 months post replacement as past data show that lead levels are typically below detection by 6 months. Participation in this program varies from year to year and is dependent on customer desire to participate. This year there were 47 kits delivered and returned.

3.5.2 Customer Request Lead Sampling

Halifax Water provides complimentary lead testing for customers who have a known or suspected lead service line, and who live in a house built prior to 1960 within the lead service boundary, consistent with Nova Scotia Environment and Climate Change protocols. Results are sent to the customer once they are available. For the 2022/23 fiscal year, there were 122 kits delivered to customers and 81 of those sample kits were returned and analyzed.

3.5.3 Annual Regulatory Residential Monitoring Program

Halifax Water conducts an annual residential sampling program to monitor the effectiveness of the corrosion control program by analyzing lead and copper levels in customers' homes throughout the distribution system as per Health Canada's protocol for Guidance on Corrosion Control Monitoring. Once per year, 100 homes are tested on a volunteer basis, 50 in each of the Halifax and Dartmouth Systems. 6-hour stagnated profile samples are collected. There were 3 homes in Halifax that had an exceedance of the Maximum Acceptable Concentration of 5 ug/L in a first draw sample and one home exceeded 5 ug/L in Dartmouth in 2023. The three properties in Halifax had their service line material confirmed as lead and have been added to the Get the Lead Out program for replacement. The home that exceeded in Dartmouth was confirmed to have a copper service line and the homeowner was provided information on how to reduce exposure to lead. Figure 2 below shows the 90th percentile of this sampling program over the past few years. Health Canada's action level is a 90th percentile exceeding 15 ug/L.

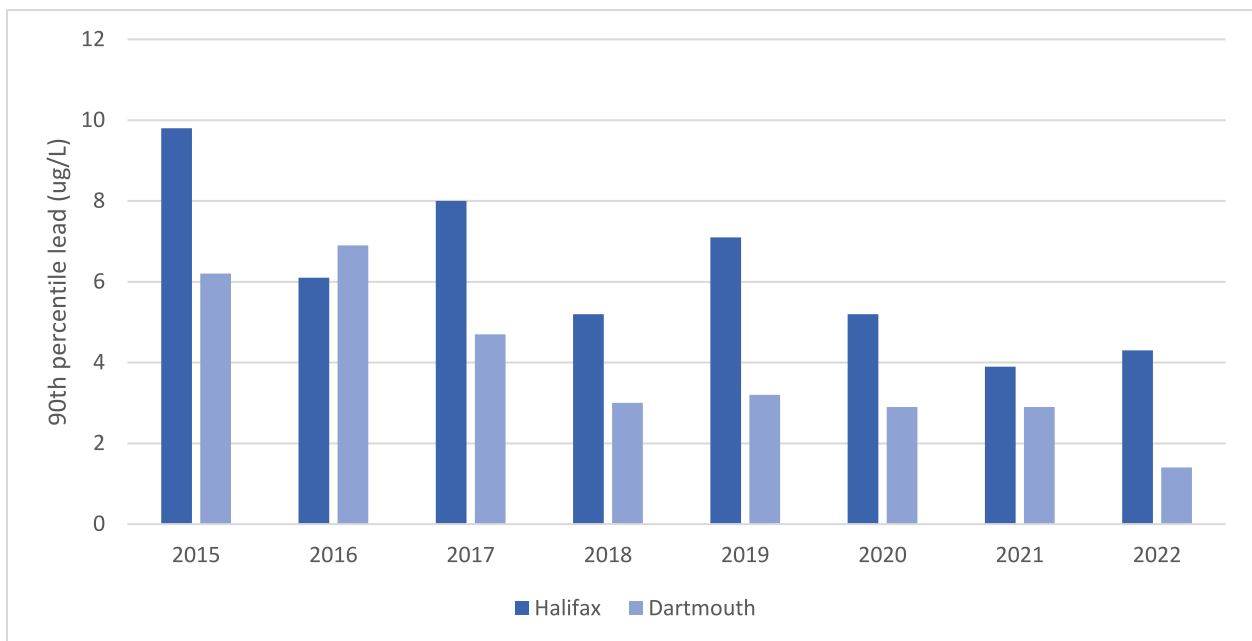


Figure 3: Historical results of 90th percentile lead concentrations for first-litre 6-hr stagnation regulatory sampling

4 Financial Summary

The financial summary of unit cost of lead service line replacements by program through the Get the Lead Out program for 2022/23 is provided in Table 3.

Table 3: Financial summary of lead service line replacement by program in 2022/2023

Program	Private Replacements			Public Replacements		
	# of private replacements	Total Cost \$	Unit Cost to Halifax Water	# of public replacements	Total Cost \$	Unit Cost to Halifax Water
<i>Unplanned disturbance</i>	0	\$0	\$0	0	\$0	\$0
<i>Service Line Leaks</i>	15	\$107,518	\$7,167	7	\$35,666	\$5,095
<i>HRM/Halifax Water Capital</i>	35	\$292,671	\$8,362	44	\$334,678	\$7,606
<i>Property Owner Requested</i>	127	\$799,174	\$6,292	58	\$511,669	\$8,821
<i>25% rebate</i>	21	\$21,774	\$1,036*	4	\$19,173	\$4,793
<i>Other (abandoned)</i>	5	\$0.00	\$0	5	\$0	\$0
Total	203	\$1,221,137	\$6,015	118	\$901,186	\$7,637

*The cost to Halifax Water which is only 25% of the total cost of the renewal due to the rebate

The historical financial summary of the Get the Lead Out Program since the rebate program was initiated in 2017 is show in Table 4. The replacement costs for 2022/23 were significantly higher than 2021/22 due to several factors.

- Internal resource constraints in both procurement and operations which resulted in delays in planning, tendering and contracting replacements in 2022. These delays led to increased unit replacement costs.
- External resource constraints and supply chain issues, combined with post-pandemic inflation and a very busy construction season led to increased per unit costs.

Table 4: Historical financial summary of lead program costs and historical summary of average LSL replacement costs

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Customer Request Lead Sampling	\$4,914	\$13,305	\$15,092	\$5,236	\$5,566	\$7,308
LSL Replacement Monitoring Program	\$12,285	\$14,636	\$6,863	\$1,925	\$2,080	\$4,089
Pitcher Filter Kits	\$10,271	\$11,759	\$10,878	\$18,270	\$16,880	\$16,950
Communications	\$11,900	\$2,607	\$23.00	\$6,778	\$860	\$0
Staff	\$148,758	\$228,016	\$246,988	\$211,935	\$302,624	\$177,000
Lead Service Line Rebate	\$14,107	\$102,333	\$81,111	\$52,600	\$28,217	\$21,775
Inventory Modelling	N/A	N/A	N/A	\$18,750	\$81,705	\$19,600
Hydro-excavations*	NC	NC	NC	\$45,500	\$142,500	\$201,500
Total non-replacement program costs	\$202,235	\$372,656	\$360,955	\$308,394	\$580,432	\$448,222
Average Public Replacement	\$8,067	\$11,468	\$11,648	\$10,147	\$6,733	\$7,637
Average Private Replacement	N/A	N/A	N/A	N/A	\$4,424	\$6,015

*Based on an estimated \$500 per service
 NC – Not captured for reporting purposes

5 Program Statistics

Table 5: Summary of statistics of the lead program since inception in 2017

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Public replacements	82	115	103	74	105	118
Private replacements	84	128	128	86	185	203
Rebates	18	105	89	50	26	21
Filter kits issued	140	158	161	119	224	226
Customer Requested Sampling	78	150	196	68	74	81
LSL Replacement Monitoring	39	14	18	25	50	47
Lead ticket inquiries	263	300	426	333	167	162
Hydro-excavations completed	N/A	N/A	N/A	91	285	403











Item 10 - Lead Service Line Replacement Program 2022-23

Final Audit Report

2023-06-16


Created:	2023-06-16
By:	Lorna Skinner (lornas@halifaxwater.ca)
Status:	Signed
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"Item 10 - Lead Service Line Replacement Program 2022-23" History

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2023-06-16 - 5:40:25 PM GMT

 Document e-signed by Louis de Montbrun (louisd@halifaxwater.ca)


Signature Date: 2023-06-16 - 5:40:27 PM GMT - Time Source: server

 Agreement completed.

2023-06-16 - 5:40:27 PM GMT

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: *Kenda MacKenzie*
[Kenda MacKenzie \(Jun 16, 2023 14:32 ADT\)](#)
Kenda MacKenzie, P.Eng., Director of Regulatory Services

APPROVED: 
[Louis de Montbrun \(Jun 16, 2023 14:41 ADT\)](#)
Louis de Montbrun, CPA, CA, A/General Manager

DATE: **June 16, 2023**

SUBJECT: **Stormwater Credit Update**

INFORMATION REPORT

ORIGIN

The Nova Scotia Utility and Review Board Decision M07731 dated April 12, 2017, at paragraph 102 directed “that HRWC provide a semi-annual update on March 31 and September 30 of each year on the status of the credit program participation. This should be filed with the Board and any interested parties and be made available on the HRWC website”. Halifax Water subsequently suggested that given the low volume and materiality of credits annual reporting would be preferable and the Board agreed indicated in a letter dated October 10, 2019 that the stormwater credit information should be filed by June 30th each year.

BACKGROUND

With the initial introduction of stormwater charges in 2013, there was a request by some non-residential customers to consider a credit program to acknowledge the reduced impact their private side stormwater management systems had on the public stormwater system. It was not until the subsequent application in 2017 that a credit program was adopted.

In order to qualify for the credit program, the private stormwater management system for the property must match the post-development peak flow rate with the pre-development peak flow rate for, at minimum, the 1:5 year storm event. This can be achieved utilizing a number of design components such as, but not limited to:

- Detention ponds
- Detention tanks
- In line pipe storage

- Roof storage
- Engineered wetlands and/or
- Green infrastructure

A Non-Residential Customer that demonstrates their Site Related Flows are detained on their property or an adjacent property, as part of an overall stormwater management plan, is eligible to receive a credit. The initial stormwater credit application must be submitted and accompanied by a record drawing for the site specific stormwater management plan or site grading plan prepared and stamped by a professional engineer. The record drawing must include the calculations confirming the stormwater management system for the property either matches the post-development peak flow rate with the pre-development peak flow rate the 1:5 year storm event, or betters the post-development peak flow rate to a larger storm event. Record drawings prepared in support of a building permit application process can be considered and should include the required information related to the recommended maintenance and cleaning activities and the respective frequency.

The stormwater credit must be re-applied for annually using the Stormwater Credit Renewal Form and the application shall provide confirmation that the private stormwater management system was maintained and cleaned as per the recommendations of the professional engineer or the manufacturer's recommendations. The certification can be provided by the person responsible for maintaining and managing the property or site.

In areas where combined stormwater and wastewater systems exist, a credit cannot be provided, as the detention achieved in these sewersheds may be used to create wastewater capacity for development.

Residential Customers that would like to apply for a credit and be billed as a Non-Residential Customer, must complete the application form and submit all of the same documentation for review. They are also required to reapply annually with the Stormwater Credit Renewal form.



By undertaking the above, the Customer is eligible for a credit between 30% and 50% on their Non-Residential, Site Related Flow Stormwater bill.

DISCUSSION


In 2022/23 stormwater credits were applied to two accounts, for a total value of \$13,102.89.


BUDGET IMPLICATIONS

Each year the number of credits applied for is dependent on the eligible customers. It is anticipated to be in the order of \$25,000 in 2023/24.

Report Prepared by:	 _____
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Financial Reviewed by:	 _____
	Alicia Scallion, CPA, CA A/Director, Corporate Services/CFO

TO: Colleen Rollings, P.Eng. Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: 
[Jeff Myrick \(Jun 16, 2023 13:41 ADT\)](#)
Jeff Myrick, Manager of Communications

APPROVED: 
[Louis de Montbrun \(Jun 16, 2023 14:44 ADT\)](#)
Louis de Montbrun, CPA, Acting General Manager

DATE: June 16, 2023

SUBJECT: Stakeholder Engagement Update

INFORMATION REPORT

ORIGIN

The Nova Scotia Utility and Review Board (NSUARB), in their Order, Matter No. M09494, dated April 7, 2021, Regional Development Charges (RDCs) updates, directed Halifax Water to enhance stakeholder engagement on several topics that impact infrastructure planning and future framework for the development of RDCs.

BACKGROUND

As directed, throughout 2021/22, Halifax Water increased its RDC stakeholder engagement activity and, at the same time, began developing a broader engagement strategy for all stakeholders.

Throughout 2022/23, a continued focus has been on RDC-related topics. Additionally, Halifax Water has expanded its proactive engagement with various other stakeholder groups on topics such as Stormwater management and service boundary extensions, Harbour water quality, and the Lake Major protected water area regulations.

This shift is designed to take a more holistic approach to our overall planning structure and to engage all Halifax Water stakeholders in positive and productive dialogue regarding our business. This approach also recognizes that the forms and level of engagement often determine who and when stakeholders can inform or be informed in our assumptions and planning for most of our business.

DISCUSSION

Engagement Activities:

Throughout 2022/23:

- April 14, 2022 - Halifax Water's senior management team met and completed a stakeholder mapping exercise to identify stakeholders based on interest and influence in RDCs. This allows further refinement of the stakeholder engagement plan focusing on issues of most significant interest to stakeholders.
- Kevin Gray, Senior Manager of Regulatory Approvals, regularly attended quarterly Development Liaison Group (DLG) meetings. The DLG is comprised of representatives from HRM Planning and Development (7), Nova Scotia Home Builders Association (4), Urban Development Institute (4), Halifax Water (1), Nova Scotia Power (1) and Heritage Gas (1). Halifax Water provides updates on milestones relating to the RDCs and other relevant policy and design updates.
- Reid Campbell, Director, Engineering & Technology Services; Valerie Williams, Senior Manager, Asset Management & Capital Planning and Susheel Arora, Director of Operations, along with other staff as appropriate actively engaged with NSUARB Consultants, Brown and Goldstein, on several projects such as Biosolids Processing Facility upgrade, Mill Cove WWTF upgrade, Wet Weather Management Program, and the asset management program.
- Kenda MacKenzie, Director of Regulatory Services, is on the Steering Committee for the Halifax Regional Municipality Regional Planning updates, whose plans ultimately influence the Infrastructure Management plan updates. Staff also participate in more targeted discussions on future growth areas.
- September 27, 2022 - Halifax Water scheduled and invited RDC-related stakeholders to a follow-up meeting at the Tower Hotel. Unfortunately, this meeting had to be cancelled due to the staff's need to manage and operate the utility during and after Tropical Storm Fiona. A key learning from this was to leverage existing meetings and touchpoints to engage the developer community.
- September-October 2022 - Halifax Water conducted Public Information Sessions to seek input on potential Lake Major Watershed Regulation changes. Led by Barry Geddes, Manager of Watershed Management and Colin Waddell, Senior Manager of Water Services, the goal was to gather feedback that would help inform the development of proposed changes to the regulations.
 - September 20, 2022 - 2:00 PM to 4:00 PM and 7:00 PM to 9:00 PM - East Preston Recreation Centre
 - September 21, 2022 -2:00 PM to 4:00 PM and 7:00 PM to 9:00 PM- North Preston Community Centre

ITEM #12

HRWC Board

June 22, 2023

- September 28, 2022 - 2:00 PM to 4:00 PM and 7:00 PM to 9:00 PM- Black Cultural Centre for NS
- October 5, 2022 - 2:00 PM to 4:00 PM and 7:00 PM to 9:00 PM - Fairbanks Centre
- October 11, 2022 - 2:00 PM to 4:00 PM and 7:00 PM to 9:00 PM - Woodlawn United Church
- October 19, 2022 - 7:00 PM to 9:00 PM - Online Webinar - ([Lake Major Watershed Protected Water Area Regulations Public Engagement Session - October 19, 2022 - YouTube](#))
- October 18, 2022 – Nova Scotia Road Builders Association (NSRBA) – Joint Environmental Meeting – Halifax Water attended with representatives from NS Environment & Climate Change (NSECC), Department of Fisheries and Oceans (DFO), NS Transportation and Active Transit (NSTAT), HRM, CBRM, and Nova Scotia Power (NSP). The group was provided with an overview of the province’s environmental and climate action plans from Premier Houston and Minister of the Environment Hulsman. Participating in a round table on environmental issues experienced by Halifax Water relevant to the attendees.
- November 15, 2022 – Halifax Water staff attended the UDI Fall Conference to engage their members and provide development-relevant information about Halifax Water (i.e. Wastewater Rebate Program, Stormwater Credit Program, and RDC updates).
- November 17, 2022 - Kevin Gray, Senior Manager of Regulatory Approvals and Jake Fulton, Communications Advisor, participated in a Public Information Session regarding the Shubie Canal Bridge-Port Wallace Utility Corridor. This session was designed for local community members to ask questions about the bridge and the utility coordinator, 1:00 PM to 2:30 PM – Fairbanks Centre.
- December 15, 2022 – Cathie O’Toole, then General Manager of Halifax Water, and Jeff Myrick, Manager of Communications and Public Affairs, attended a UDI Breakfast session where members heard from Premier Houston and his focus on development in Halifax and Nova Scotia.
- March 24-26, 2023 - Halifax Water attended the Ideal Homeshow, where staff engaged residents who had questions about Development, Permits, Service Connections, Billing & General customer information.
- March-May 2023 – Halifax Water conducted a follow-up engagement to inform stakeholders of proposed Lake Major Watershed Regulation Changes.
 - March 27, 2023 - 2:00 PM to 4:00 PM and 7:00 PM to 9:00 PM - Fairbanks Centre
 - May 1, 2023 -7:00 PM to 9:00 PM - Online Webinar - (LINK)
 - May 3, 2023 - 2:00 PM to 4:00 PM and 7:00 PM to 9:00 PM - North Preston Community Centre
- April 19, 2023, through an online forum, Kenda MacKenzie presented and answered questions from recently added stormwater customers from the service expansion areas. Residents had

ITEM #12

HRWC Board

June 22, 2023

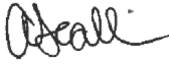
questions about costs and fees and had feedback about historic infrastructure investment in their communities. <https://youtu.be/OoODVq7Mjrs>


- April 27, 2023 – Louis de Montbrun, Acting General Manager of Halifax Water and Kenda MacKenzie, Director of Regulatory Services, participated in a presentation to the board of the Urban Development Institute. This provided updates on RDCs activities and potential changes Halifax Water was proposing, pending regulatory approval. Urban Development Institute members in attendance provided feedback and questions related to RDCs and payment timing.
- May 25, 2023 – Susheel Arora, Director of Operations, and Jeff Myrick, Manager of Communications and Public Affairs, met with the Port of Halifax’s Community Liaison Committee and did a presentation about Halifax Water’s infrastructure, the harbour solutions project, and its overall impact on an industrial harbour. Members of the committee and executives from the Port had the opportunity to ask questions about the wastewater treatment system.

Next Steps:

- Halifax Water will continue to conduct targeted outreach to stakeholders to update them and encourage their ongoing engagement. Key topics for engagement activity in 2023/24 will be RDC, IRP (Infrastructure Master Plan), Private I/I reduction strategies and rate affordability.

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: 
Alicia Scallion, CPA, Acting Director Corporate Services and CFO

APPROVED: 
[Louis de Montbrun \(Jun 16, 2023 16:18 ADT\)](#)
Louis de Montbrun, CPA, Acting General Manager and CEO

DATE: June 16, 2023

SUBJECT: **Regional Development Charge – Financial Status Report for the Fiscal Year ended March 31, 2023.**

INFORMATION REPORT

ORIGIN

Nova Scotia Utility and Review Board approval of Regional Development Charges for water and wastewater.

BACKGROUND/DISCUSSION

Halifax Water oversees the water and wastewater Regional Development Charges for the upgrading of regional water and wastewater systems to facilitate projected population growth. The Nova Scotia Utility and Review Board approved the most recent update of the charges in February 2021.

In accordance with the Halifax Water Regulations, Halifax Water is obligated to provide an accounting of all charges received and all costs incurred with respect to the infrastructure improvement.

Attached is an annual report showing the cumulative accounting of all Regional Development Charges received and disbursed as of the end of the fiscal year at March 31, 2023. The format provides an entry of debit and credit transactions with a cumulative total to date for each charge from inception to the applicable year-end.

Collections and Expenditures

Regional Development Charge	Receipts	Interest	Disbursements	Cumulative
Water	\$ 11,885,282	\$ 206,194	\$ 6,256,585	\$ 5,834,890
Wastewater	\$ 105,819,397	\$ 2,375,645	\$ 23,031,126	\$ 85,163,917
Grand Total	\$ 117,704,679	\$ 2,581,840	\$ 29,287,711	\$ 90,998,807

As of March 31, 2023, both water and wastewater Regional Development Charges are in positive cash positions. Combined, the net balance is \$91.0 million with the implementation of \$29.3 million in infrastructure projects. The Regional Development Charge program is anticipated to be cost neutral, fulfilling the desired need to provide central services for the projected growth of the Halifax Regional Municipality (HRM).

HRM Regional Planning team are targeting the completion of the draft Regional Plan by December of 2023, with a review of the future growth areas in 2023/24. HRM continues to advance the nine Special Planning Areas. Halifax Water continues to work with HRM staff on population projections. HRM has taken on an infrastructure master plan for Sandy Lake, Hwy 102 lands, Dartmouth East and the Akoma lands. That study is expected to take until the end of the 2023/24 fiscal year. Note, Halifax Water staff remain confident the plan has the ability to provide the appropriate system capacity as development continues.

Given the above, where the population projections have not been adjusted, nor has the infrastructure plan, the review of the of the other inputs to the RDC model were completed assuming the overall infrastructure lists within the 20-year charge period is unchanged.

Staff have inputted the actual collections and actual expenditures into the financial model and are projecting collections based on current population projections and the infrastructure list.

Annual Validation of the Charges

The Halifax Water Regulations state:

(14) Subject to subsections (15) and (16), the administration of the Regional Development Charge for water shall, every five years after May 31, 2021, be reviewed by the Commission, including with reference to any changes to the Infrastructure Master Plan.

(15) In the event changes to the inputs to the Infrastructure Master Plan, including growth projections, land use, consumption rates, inflow/infiltration assumptions, capital costs, financing costs, and benefit to existing Customers, result in changes to the infrastructure requirements identified in the Infrastructure Master Plan, including the timing of their implementation, the Regional Development Charge, will be reviewed by the

Commission and adjusted, subject to Board approval, prior to a five year review described in subsection (14).

(16) In the event the changes to infrastructure requirements described in subsection (15) result in an impact of 15%, either in the positive or the negative, to the Regional Development Charge, the Commission will change the Regional Development Charge, subject to Board approval, to reflect such impact in infrastructure requirements.

The Nova Scotia Review Board decision, M09494, dated October 29, 2020, states:

The requirement of the above noted five-year review and interim reviews of the RDC remain unchanged in the Halifax Water Rules and Regulations. The Board reiterates the importance of such reviews, and the need to seek an immediate change to the RDC rate if the review results in a change in excess of ±15%. This is important not only to avoid the potential for rate shock, but also to ensure such extra costs (or reduced costs) are allocated fairly between different generations of developers.

Annual Indexing of Charges

Regional Development Charges, Sections 29(4) and 30(4) of the Regulations state:

The wastewater Regional Development Charge shall be indexed each year on April 1st, in accordance with the indexing set out in the Consumer Price Index for Halifax, as published by Statistics Canada for the immediately preceding month, when compared to the same month for the immediately preceding year

The consumer price index for Halifax can be found on the Statistics Canada website here: [Consumer Price Index, annual average, not seasonally adjusted \(statcan.gc.ca\)](https://www150.statcan.gc.ca/n1/pub/2466827/2022001/article/00001-eng.htm). Using that data, the annual escalation can be calculated.

Year	Annual Average Index	Percentage change
2017	131.2	1.1%
2018	134.0	2.1%
2019	136.0	1.5%
2020	136.7	0.5%
2021	142.0	3.9%
2022	152.4	7.3%

$$2023 \text{ Annual Index} = \frac{152.4 - 142.0}{142.0} = 7.32\%$$

The 2023 Annual Index of an increase of 7.32%, which was applied to Regional Development Charges on April 1, 2023, has no impact to the overall calculation, projected collections, or project expenditures of the Regional Development Charges.

Escalation of Infrastructure Costs

The Regional Development Charges financial model utilizes a blended average of national and local non-residential construction indexes, similar to the method laid out in the Capital Cost Contribution policy within the regulations, to escalate the infrastructure cost estimates to the estimated year of construction.

The Non-Residential Construction indexes for Canada and Halifax can be found on the Statistics Canada website here: [Building construction price indexes, by type of building \(statcan.gc.ca\)](https://www150.statcan.gc.ca/n1/pub/2639014/2023001/article/00001-eng.htm)

Stats Can Non-Residential Construction				
Year	Canada Index value as at Q4	Halifax Index value as at Q4	Canada Percentage change	Halifax Percentage change
Q4 2003	64.4	67.4	2.9%	2.9%
Q4 2004	70.0	71.8	8.7%	6.5%
Q4 2005	73.5	74.8	5.0%	4.2%
Q4 2006	80.3	78.5	9.3%	4.9%
Q4 2007	86.8	82.8	8.1%	5.5%
Q4 2008	94.0	88.4	8.3%	6.8%
Q4 2009	86.8	88.0	-7.7%	-0.5%
Q4 2010	88.3	89.4	1.7%	1.6%
Q4 2011	92.0	91.9	4.2%	2.8%
Q4 2012	93.9	93.8	2.1%	2.1%
Q4 2013	94.6	94.5	0.7%	0.7%
Q4 2014	96.0	96.4	1.5%	2.0%
Q4 2015	96.6	98.0	0.6%	1.7%
Q4 2016	98.2	98.3	1.7%	0.3%
Q4 2017	100.9	101.1	2.7%	2.8%
Q4 2018	105.8	105.0	4.9%	3.9%
Q4 2019	108.1	106.2	2.2%	1.1%
Q4 2020	109.4	108.7	1.2%	2.4%
Q4 2021	121.9	120.4	11.4%	10.8%
Q4 2022	133.3	128.1	9.4%	6.4%

	Canada	Halifax	Combined
Twenty-year average	3.94%	3.44%	3.69%
Five-year average	5.80%	4.90%	5.35%
Average of 5 and 20	4.87%	4.17%	4.52%

Note:

- StatsCan publishes data quarterly
- Used averages of the 4th quarter indexes

The inflation experienced in 2022, although averaged and blended, alters the annual escalation assumption from 3.55% to 4.52%. This results in projected cost estimates escalating annually at a higher rate.

Interest During Construction

Interest during construction is charged on the individual phase cost for the year in which it is constructed. This is reimbursed to the constructor of the phase cost whether it be a developer or Halifax Water. It is applied to each phase cost within the financial models of the Regional Development Charges. Interest during construction is set by adding 0.75% to the 10-year average of the Canadian Overnight Repo Rate Average (CORRA) issued by the Bank of Canada.

Summary	Date	CORRA
Low	12/1/2021	0.10%
High	2/1/2023	4.51%
Average		1.05%
Average +0.75% Risk		1.80%

The updating of Interest During Construction within the financial models from 1.62% to 1.80% has minimal impacts the charges.

Balance Financing

Interest is charged on the projected Regional Development Charge cumulative balance when expenditures are higher than collections. The interest rate is set by adding 0.75% to the ten-year average of Canadian Yield Bonds.

Summary	Date	V122543
Low	7/1/2020	0.48%
High	2/1/2023	3.37%
Average		1.50%
Average +0.75% Risk		2.52%

The updating of interest rates within the financial models from 2.43% to 2.52% has minor impacts on the charges due to the rolling cumulative balance over the charge period. The charges experience both negative and positive cumulative balances over the twenty-year period.

Conclusion


Considering all variables including, collections, expenditures, inflations, and interest rates the water and wastewater Regional Development Charges are projected to be under collected by 7.49% (water) and 4.00% (wastewater).

The 2019 Regional Development Charge application to the NSUARB predicted 2022/23 water and wastewater collections to be \$4,025,910 and \$12,834,752 respectively. Actual 2022/23 water and wastewater collections were \$5,245,743 and \$19,755,957, respectively.

Halifax Water did escalate the Regional Development Charge on April 1, 2023 by the Halifax Consumer Price Index as approved by the NSUARB. Growth in Halifax remains higher than that predicted within the 2019 Regional Development Charge application. Higher collections strengthen the financial model and both charges are within the 15% threshold. For these reasons, Halifax Water recommends the water and wastewater charges remain unchanged.

ATTACHMENT

- 1. Halifax Water Regional Development Charge Report – Summary to March 31, 2023

Report prepared by:	
	_____ Kevin Gray, MURP, P.Eng. Senior Manager, Regulatory Approvals

HALIFAX WATER

Regional Development Charge Report

Summary to March 31, 2023

Regional Development Charge	Receipts	Interest	Disbursements	Cumulative
Water	\$11,885,282	\$206,194	(\$6,256,585)	\$5,834,890
Wastewater	\$105,819,397	\$2,375,645	(\$23,031,126)	\$85,163,917
Grand Total	\$117,704,679	\$2,581,840	(\$29,287,711)	\$90,998,807

HALIFAX WATER
REGIONAL DEVELOPMENT CHARGE - WATER
Summary to March 31, 2023

Transaction Description	Receipts	Interest	Disbursements	Cumulative
2014/15 Summary	\$135,518.26			\$135,518
2015/16 Summary	\$229,939.19			\$365,457
2016/17 Summary	\$444,849.65			\$810,307
2017/18 Summary	\$489,377.06			\$1,299,684
2018/19 Summary	\$607,340.12			\$1,907,024
2019/20 Summary	\$496,110.93	\$45,032.00		\$2,448,167
2020/21 Summary	\$654,208.16	\$22,907.95		\$3,125,283
2021/22 Summary	\$3,582,195.66	\$26,309.48	(\$3,729,740.08)	\$3,004,048
2022/23 Summary				
Collections	\$5,245,742.52	\$111,944.69		\$8,361,736
3-3239 Burnside to Bedford Connector			(\$855,561.26)	\$7,506,174
3-3467 Dublin Street Water Main Renewal			(\$1,671,284.13)	\$5,834,890
Summary to March 31, 2023	\$11,885,282	\$206,194	(\$6,256,585)	\$5,834,890

Project Information

Nova Scotia Utility & Review Board Approval Date: February 2021
Regional Development Charge - Water - Single Unit Dwelling \$1,723.84 / unit (2021)
Regional Development Charge - Water - Multi Unit Dwelling \$1,157.80 / unit (2021)
Regional Development Charge - Water - Commercial \$8.51 / m2 (2021)
Total Escalated Infrastructure Cost: \$ 347,086,773
Total Escalated Infrastructure Cost recovered through RDC: \$ 106,184,479
Percentage of Total Infrastructure Cost to be recovered through RDC Charge - 30.59%

HALIFAX WATER
REGIONAL DEVELOPMENT CHARGE - WASTEWATER
Summary to March 31, 2023

Transaction Description	Receipts	Interest	Disbursements	Cumulative
2014/15 Summary	\$5,725,274.66			\$5,725,275
2015/16 Summary	\$4,400,269.16		(\$6,037,557.03)	\$4,087,987
2016/17 Summary	\$8,785,828.63			\$12,873,815
2017/18 Summary	\$10,355,906.56			\$23,229,722
2018/19 Summary	\$12,773,573.12			\$36,003,295
2019/20 Summary	\$11,339,531.77	\$528,825.26	(\$11,643,615.64)	\$36,228,036
2020/21 Summary	\$14,277,403.90	\$228,984.48	(\$2,371,117.81)	\$48,363,307
2021/22 Summary	\$18,405,652.07	\$322,296.90	(\$2,978,835.34)	\$64,112,421
2022/23 Summary				
Collections	\$19,755,957.34	\$1,295,538.85		\$85,163,917
Summary to March 31, 2023	\$105,819,397	\$2,375,645	(\$23,031,126)	\$85,163,917

Project Information

Nova Scotia Utility & Review Board Approval Date: February 2021
Regional Development Charge - Wastewater - Single Unit Dwelling \$5,495.68 / unit (2021)
Regional Development Charge - Wastewater - Multi Unit Dwelling \$3,691.13 / unit (2021)
Regional Development Charge - Wastewater - Commercial \$27.12 / m2 (2021)
Total Escalated Infrastructure Cost: \$ 890,147,462
Total Escalated Infrastructure Cost recovered through RDC: \$ 369,676,747
Percentage of Total Infrastructure Cost to be recovered through RDC Charge - 41.52%

TO: Colleen Rollings, P.Eng., PMP., Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: *Kenda MacKenzie*
[Kenda MacKenzie \(Jun 16, 2023 16:34 ADT\)](#)
Kenda MacKenzie, P.Eng., Director, Regulatory Services

APPROVED: *Louis de Montbrun*
[Louis de Montbrun \(Jun 16, 2023 16:40 ADT\)](#)
Louis de Montbrun, CPA, Acting General Manager and CEO

DATE: June 16, 2023

SUBJECT: **Capital Cost Contribution Areas – Financial Status Report for the Fiscal Year ended March 31, 2023**

INFORMATION REPORT

ORIGIN

Halifax Water and NSUARB approval of various capital cost contribution charges.

BACKGROUND/DISCUSSION

Halifax Water oversees 12 Capital Cost Contribution (CCC) charge areas for oversized water and wastewater infrastructure. The Halifax Water Board and subsequently the NSUARB directly approved 11 area specific CCC charges consistent with our CCC policy, with one being inherited and endorsed at the time of the wastewater/stormwater merger in 2007. The overall CCC policy and the specific charge rates were developed for the equitable facilitation of master water and wastewater infrastructure within new development areas or new service extension areas.

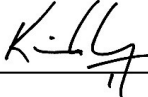
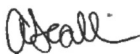
In accordance with the approved policy, Halifax Water is obligated to provide an accounting of all funds received and all costs incurred with respect to the infrastructure improvement. Attached is an annual report showing the cumulative accounting of all CCC funds received and disbursed as of the end of the fiscal year at March 31, 2023. The format provides a detailed entry of each individual debit and credit transaction with a cumulative total to date for each individual charge area from inception to the applicable year-end.

As of March 31, 2023, the results show that eight charge areas are in a negative cash position and four are in a positive cash position. Combined, the net current deficit is \$1.26 million with the implementation of \$44.5 million in infrastructure projects. The CCC program is anticipated to be cost neutral within each charge area and fulfilling the desired facilitation role within these development areas.

This report will be forwarded to the NSUARB for information in accordance with the policy requirements.

ATTACHMENT


- 1. Halifax Water Capital Cost Contribution Report – Summary to March 31, 2023

Report prepared by:	 _____ Kevin Gray, MURP, P.Eng. Senior Manager, Regulatory Approvals
Financial reviewed by:	 _____ Alicia Scallion, CPA, CA Acting Director and CFO, Corporate Services

HALIFAX WATER
Capital Cost Contribution Report
Summary to March 31, 2023

Capital Cost Contribution Area	Receipts	Disbursements	Cumulative
Beaverbank	\$1,342,481	(\$1,757,707)	(\$415,226)
Bedford South - Water	\$4,147,578	(\$3,847,393)	\$300,184
Bedford South - Wastewater	\$2,300,357	(\$1,022,796)	\$1,277,561
Bedford West - Water	\$8,195,273	(\$9,245,534)	(\$1,050,261)
Bedford West - Wastewater	\$18,254,774	(\$18,847,511)	(\$592,737)
Birch Cove North - Water	\$2,973,672	(\$4,210,827)	(\$1,237,155)
Herring Cove	\$1,423,973	(\$698,579)	\$754,839
Lakeside Timberlea	\$1,419,190	(\$1,486,024)	(\$66,835)
Morris Russell Lake	\$1,128,095	(\$363,291)	\$764,804
Northgate	\$585,772	(\$788,960)	(\$203,188)
Sackville Lively	\$430,254	(\$567,455)	(\$137,201)
Geizer Hill	\$967,154	(\$1,623,241)	(\$656,087)
Grand Total	\$43,168,572	(\$44,459,319)	(\$1,261,303)

TO: Colleen Rollings, P.Eng., PMP., Chair, and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: 
Susheel Arora, M.A.Sc., P.Eng. Director, Operations



[Kenda MacKenzie \(Jun 16, 2023 17:14 ADT\)](#)

Kenda MacKenzie, P.Eng. Director, Regulatory Services



Heidi Schedler, K.C., Director, Governance and Human Resources

APPROVED:



[Louis de Montbrun \(Jun 16, 2023 18:23 ADT\)](#)

Louis de Montbrun, CPA, CA, Acting General Manager/CEO

SUBJECT: Operational Performance Information Report

INFORMATION REPORT

ORIGIN:

Regular update.

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

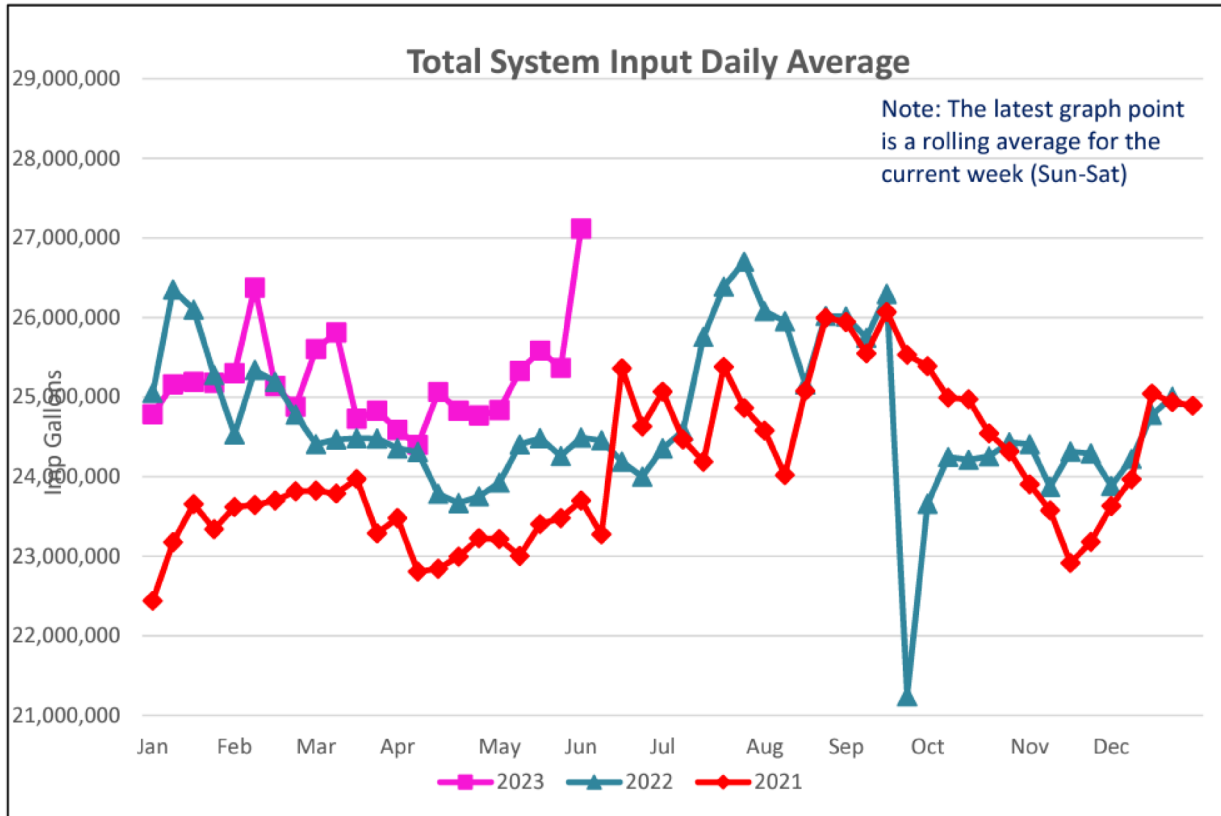
SAFETY STATISTICS – January 1, 2023 to March 31, 2023 and Fiscal Year End (2022-23)

The data in the table below is presented at the Environmental, Health, and Safety Board Sub-Committee.

Organizational Metrics	Q4 Jan 1 - Mar 31	Year End 2022-23	CBS Target 2022-23
Lost Time Incident Reporting (LTIR) (Lost Time Cases x 200,000 / Total Employee Hours Worked)	2	0.91	3.5
Safe Driving (Number of traffic accidents per 1,000,000 km driven)	3	4.31	4
Workplace inspections conducted	42	200	Score
Safety Talks conducted (reported at the end of each quarter)	90%	90%	80-90%
High Potential/Near Miss	28	97	N/A
Employees on accommodation or gradual return to work	14	48	N/A
WCB claims	5	17	N/A
Work refusals	5	5	N/A
Incidents with written compliance orders	0	0	0-2
Employees trained or recertified before due date *	485	89%	80-90%
<ul style="list-style-type: none"> • Courses Taken 	917		

* Percentage Data generated at year end due to variants in system data (ie. multiple certifications required for one employee)

AVERAGE DAILY WATER PRODUCTION



* The decrease from the end of September/beginning of October 2022 is due to the system being out for a significant amount of time during Fiona resulting in data gaps.

Regional Water Main Break/Leak Data		
Year	Total Breaks/Leaks	Current 12 Month Rolling Total (up to May 2023)
2022/23	176	172
2021/22	232	
2020/21	179	
2019/20	191	
2018/19	226	
Total	1004	
Yr. Avg.	200.8	

Water Accountability
Losses per Service Connection/Day (International Water Association Standard)
<i>Period Ending March 31, 2023</i>
Real Losses: 219 litres
CBS Target: 160 - 170

COMPLIANCE SUMMARY

Water Safety Plan Objectives				
2022-2023 Q4				
Objective	Total Sites	% Sites Achieving Target	All Sites: 90th Percentile < 15 µg/L	CBSC Awarded Points
Disinfection	65	100%	---	20
Total Trihalomethanes	25	88%	---	10
Haloacetic Acids	21	100%	---	20
Particle Removal	5	100%	---	20
Corrosion Control	101	---	2.8	20
Summary Total				90

Score: 90/100

Bacteriological Results (% Samples absent of Total Coliforms)

99.97%

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 Monthly Compliance Summary																						Toxicity		
	January-23								February-23								March-23								
	CBOD ₅ (mg/L)		TSS (mg/L)		E. coli (counts/100mL)		pH		CBOD ₅ (mg/L)		TSS (mg/L)		E. coli (counts/100mL)		pH		CBOD ₅ (mg/L)		TSS (mg/L)		E. coli (counts/100mL)			pH	
	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.		NSECC Limit	Avg.
Halifax	50	29	40	21	5000	0*	6-9	6.9	50	28	40	18	5000	0*	6-9	7.0	50	43	40	34	5000	0*	6-9	6.9	Not acutely lethal
Dartmouth	50	38	40	39	5000	0*	6-9	6.7	50	43	40	42	5000	0*	6-9	6.8	50	40	40	22	5000	0*	6-9	6.7	Not acutely lethal
Herring Cove	50	16	40	21	5000	0*	6-9	6.8	50	19	40	17	5000	0*	6-9	7.0	50	19	40	15	5000	0*	6-9	6.6	Not acutely lethal
Eastern Passage	25	8	25	10	200	0*	6-9	6.9	25	8	25	20	200	0*	6-9	7.0	25	9	25	11	200	0*	6-9	6.9	Not acutely lethal
Mill Cove	25	15	25	16	200	11	6-9	6.6	25	14	25	16	200	10	6-9	6.6	25	14	25	16	200	12	6-9	6.7	Not acutely lethal

* E.coli is not measured during Seasonal Disinfection November 1 to April 30 (except HCWWTF December 25 to January 2).

Wastewater Treatment Facility	Wastewater Treatment Facility Quarterly Compliance Summary																Toxicity
	Q4 - January, February, March 2023																
	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)		
NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.	NSECC Limit	Avg.
Springfield	20	5	20	8	200	10	6-9	7.2	-	-	-	-	-	-	-	-	-
Frame	20	2	20	1	200	10	6-9	7.2	-	-	-	-	-	-	-	-	-
Middle Musq.	20	16	20	13	200	108	6-9	7.1	-	-	-	-	-	-	-	-	-
Uplands	20	9	20	9	200	22	6-9	6.8	-	-	-	-	-	-	-	-	-
Aerotech	5	3	5	1	200	10	6-9	7.0	5.7 W 1.2 S	0.1	0.13	0.06	-	6.5	8.1	Not acutely lethal	
North Preston	10	2	10	3	200	10	6-9	6.3	3	0.1	1.5	0.3	-	-	-	-	
Lockview	20	8	20	14	200	79	6.5-9	6.6	8.0 S	12.1	1.2 S	0.6	-	-	-	-	
Steeves (Wellington)	20	2	20	1	200	10	6.5-9	7.0	14.4 S	0.1	1.0 S	0.1	-	-	-	-	
BLT	15	4	20	16	200	10	6-9	7.1	5 W 3 S	3	3 W 1 S	1	0.02 *	0.10	-	Not acutely lethal	

NOTES & ACRONYMS:

CBOD₅ - Carbonaceous 5-Day Biochemical Oxygen Demand

TSS - Total Suspended Solids

* TRC - Total Residual Chlorine - Bureau Veritas 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

NSECC requires monthly averages be less than the NSECC Compliance Limit for each parameter at Dartmouth, E'n Passage, Halifax, Herring Cove, Mill Co

NSECC requires quarterly averages be less than the NSECC Compliance Limit for each parameter at Aerotech, Lockview, Middle Musquodoboit, Frame, BL

Uplands and Springfield Lake

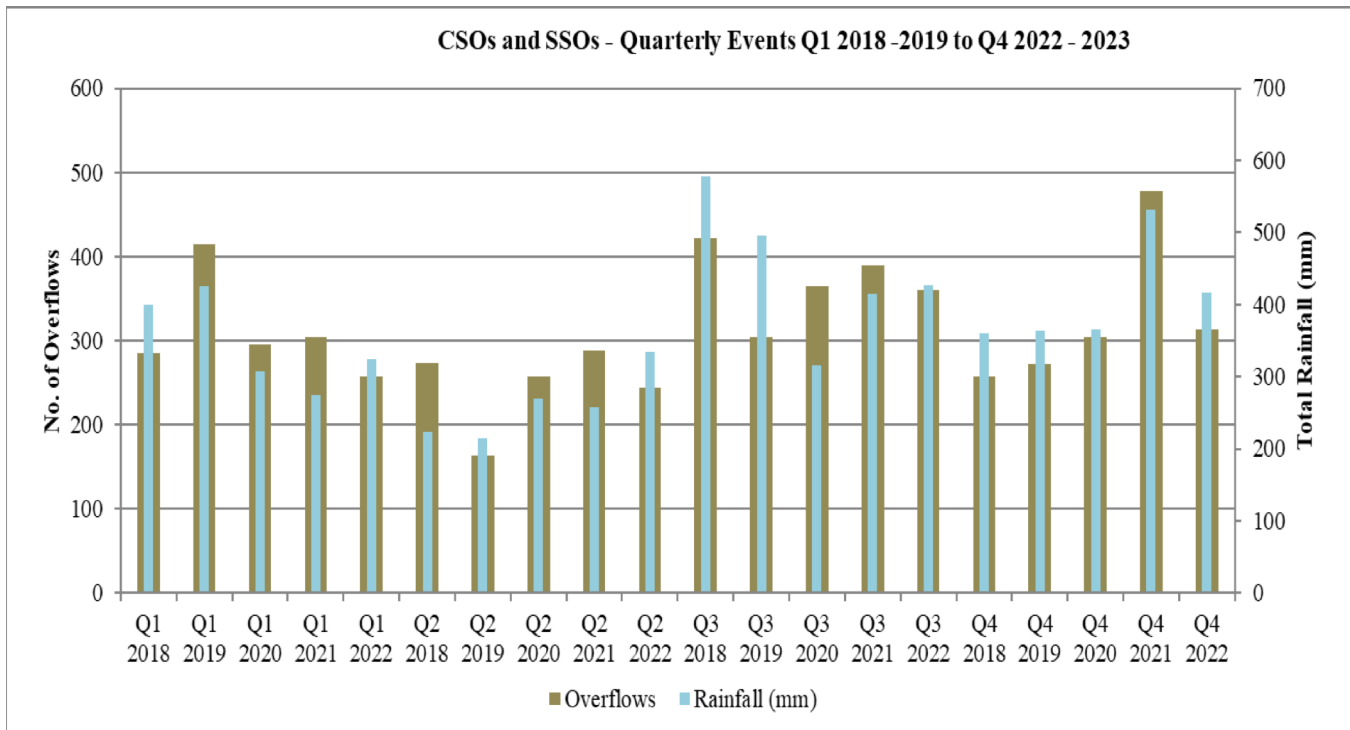
NSECC requires annual averages be less than the NSECC Compliance Limit for each parameter at North Preston and Steeves

NON-COMPLIANCE EXPLANATIONS:

Dartmouth WWTF: High influent flow events created operational difficulty.

LEGEND

	NSECC Compliant
	NSECC Non-Compliant



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

Rainfall data is from Halifax Water’s rain gauge at the Halifax WWTF.


There were sixteen overflows in Q4 beginning on days when there was no recorded rainfall, as follows:

1. January 11: The CSO at Sackville St CSO was due to a blockage caused by debris.
2. January 25: The CSO at Jamieson St PS & CSO was due to rain on the previous day.
3. February 1: The CSO at Lyle St CSO was due to a power outage.
4. February 4: The CSO at Lyle St CSO due to a power outage.
5. February 21: The CSOs at Cuisack St CSO, Maitland St PS & CSO and Upper Water St CSO were due to rain on the previous day.
6. February 27: The CSO at Cuisack St CSO was due to a blockage caused by debris.
7. February 28: The CSO at Cuisack St CSO was due to a blockage caused by debris.
8. March 17: The CSO at Duffus St PS & CSO was due to emergency work required at the Halifax WWTF.
9. March 21: The CSOs at Ferguson Rd CSO, Grove Street PS & CSO, Jamieson St PS & CSO and Wallace St CSO were due to a planned maintenance at Jamieson St PS & CSO.

TO: Colleen Rollings, P. Eng., PMP, Chair, and Members of the Halifax Regional Water Commission Board as Trustees of the Halifax Regional Water Commission Employees' Pension Plan.

SUBMITTED BY: 

Alicia Scallion, CPA, CA,
Director, Corporate Services / CFO (Acting)

APPROVED: 

[Louis de Montbrun \(Jun 19, 2023 13:33 ADT\)](#)
Louis de Montbrun, CPA, CA
General Manager (Acting)

DATE: June 16, 2023

SUBJECT: **Halifax Regional Water Commission Employees' Pension Plan
Financial Report First Quarter, 2023**

ORIGIN

Financial reporting for the Halifax Regional Water Commission Employees' Pension Plan (the "Plan").

BACKGROUND

The Board is required to review the periodic (quarterly) financial results of the Plan throughout the year.

DISCUSSION

The attached statement of changes in net assets available for benefits (Appendix A) outlines the annual budget for the Plan and actual financial performance for the First Quarter (January 1 to March 31, 2023). Favourable or unfavourable variances reported compare actual results to pro-rated budget amounts, for the three (3) month period ending March 31, 2023. Yearend audited results for 2021 and un-audited results for 2022 are shown for comparative purposes.

As shown on the statement of changes in net assets available for benefits, net assets available for benefits have increased by \$7.3 million for the three (3) month period ending March 31, 2023. The pro-rated budget for the period forecasted an increase in net assets available of \$1.9 million. Actual results for the period compared to the pro-rated budget result in a favourable variance of \$5.4 million.

The annual budget forecasted revenue of \$7.0 million. Revenue for the period is \$7.2 million, which when compared to the pro-rated revenue budget of \$1.7 million results in a favourable variance of \$5.4 million. Performance of the HRM Master Trust directly drives the revenue figures reported and change in the fair value of investment assets tends to be more volatile compared to contributions and expenses of the Plan. This variance is attributed directly to an increase in the fair value of investment assets of \$6.7 million. Investment income for the period was \$0.5 million compared to the pro-rated budget of \$0.7 million, resulting in an unfavourable variance of \$0.2 million or -24%.

Contributions of \$1.9 million are above the pro-rated budget of \$1.7 million by \$0.2 million. This results in a favourable variance of 9% and is due to the timing of new hires, higher pay for staff resulting from a recent re-organization and naming of Senior Managers but also the timing of the pay periods throughout the first quarter. (I.E., 7 of 26 pay periods, 27%, in the first quarter compared to 25% of the annual budget.)

Expenses of \$1.7 million for the period are higher than the pro-rated budget of \$1.6 million by \$0.1 million or 8%. The main contributor to this variance is a pre-retirement death benefit paid out in January 2023. Pre-retirement death benefits are not budgeted for as they are infrequent and unpredictable. This is partially offset by termination payments which are less than the pro-rated budget by \$0.1 million. Termination payments vary from year to year and are difficult to predict.

SERVICE STANDARDS

Tracking of Regulatory Filing Requirements, Administrative Reporting Requirements and Service Standards for actuarial calculation requests is ongoing. The reports for Regulatory Filing Requirements and Administrative Reporting Requirements are attached as Appendix B and Appendix C respectively, and document administrative compliance within the various levels of reporting for the period.

Service Standard results for the First Quarter (January 1st to March 31, 2023) have been attached as Appendix D. The primary purpose of the service standard report is to report on the administrative compliance with the Pension Benefits Act of Nova Scotia (the “Act”) respecting the timing of statements or notifications required under the Act, such as:

- Retirement statement to member;
- Notification of options to retiring member;
- Death benefits statement; and

- Statement on termination

A secondary purpose of the report is to provide performance reporting respecting the Plan's actuaries, for required deliverables based on pre-determined standards. These standards are internal in nature, and mutually agreed upon by the actuary and Halifax Water.

First Quarter results reported in Appendix D show, out of 3 requests submitted for retirement estimates (with options), the retirement package was provided to the member within the prescribed timelines under the Act, 60 days prior to the Member's intended retirement date. There were 7 terminations during the period, with the terminated employee provided a termination package (with options) within the prescribed timelines under the Act, within 60 days after their termination date.

Performance of the actuary, also reported in Appendix D, shows out of 10 requests in total, the actuary met the pre-determined standard in 9 instances, with average response times for retirement and termination calculation estimates of 13 days and 7 days respectively. The response time of the actuaries is continuously monitored to ensure required service standards are maintained.

ATTACHMENTS

APPENDIX A – Financial Report:

Statement of changes in net assets available for benefits, for the three (3) month period ended March 31, 2023

APPENDIX B – Regulatory Filing Requirements – Q1 2023

APPENDIX C – Administrative Reporting Requirements – Q1 2023

APPENDIX D – Service Standards Report – Q1 2023

Report Prepared by: <u>H Britten</u> <small>H Britten (Jun 17, 2023 20:39 ADT)</small> Heather Britten, Quality Assurance Officer (782) 641-1431
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Halifax Regional Water Commission Employees' Pension Plan
Statement of changes in net assets available for benefits
For the three (3) month period ended March 31, 2023

Benchmark 25%

	March 31, 2023						Actual (Un-Audited) 2022	Actual (Audited) 2021
	2023 Budget	Actual	Prorated Budget 25%	Actual versus Budget Change				
				\$	%			
Revenue								
Net investment income:								
Total investment income	\$2,900,000	\$552,205	\$725,000	(\$172,795)	(24%)	\$3,307,029	\$3,657,805	
Investment manager fees	(\$310,000)	(\$86,947)	(\$77,500)	\$9,447	12%	(\$388,167)	(\$301,176)	
Increase (decrease) in the fair value of investment assets	\$4,400,000	\$6,694,624	\$1,100,000	\$5,594,624	509%	(\$2,763,692)	\$15,414,684	
	<u>\$6,990,000</u>	<u>\$7,159,882</u>	<u>\$1,747,500</u>	<u>\$5,412,382</u>	<u>310%</u>	<u>\$155,170</u>	<u>\$18,771,312</u>	
Contributions								
Participants:								
Current service (including Additional Voluntary Contributions)	\$3,479,100	\$950,337	\$869,775	\$80,562	9%	\$3,375,425	\$3,391,324	
Reciprocal Transfer	\$0	\$0	\$0	\$0	0%	\$0	\$0	
Sponsors:								
Current service	\$3,379,000	\$922,326	\$844,750	\$77,576	9%	\$3,277,595	\$3,301,346	
	<u>\$6,858,100</u>	<u>\$1,872,663</u>	<u>\$1,714,525</u>	<u>\$158,138</u>	<u>9%</u>	<u>\$6,653,021</u>	<u>\$6,692,670</u>	
Expenses								
Benefit payments:								
Benefit payments	\$5,406,000	\$1,319,857	\$1,351,500	(\$31,643)	(2%)	\$5,089,704	\$4,739,794	
Termination payments	\$800,000	\$65,130	\$200,000	(\$134,870)	(67%)	\$909,506	\$783,885	
Death benefit payments	\$0	\$296,728	\$0	\$296,728	n/a	\$0	\$63,848	
Administrative:								
Actuarial & consulting fees	\$75,000	\$11,152	\$18,750	(\$7,598)	(41%)	\$99,522	\$83,773	
Audit & accounting fees	\$10,000	\$3,129	\$2,500	\$629	25%	\$9,446	\$10,027	
Bank custodian fees	\$28,000	\$6,108	\$7,000	(\$892)	(13%)	\$20,941	\$27,576	
Insurance	\$10,600	\$10,600	\$2,650	\$7,950	300%	\$10,600	\$10,600	
Miscellaneous	\$20,000	\$7,202	\$5,000	\$2,202	44%	\$21,448	\$18,083	
Professional fees	\$45,000	\$15,215	\$11,250	\$3,965	35%	\$40,534	\$43,529	
Registration fees	\$3,000	\$0	\$750	(\$750)	(100%)	\$2,848	\$2,662	
Training (Trustees/ Administration/ Participants)	\$5,000	\$0	\$1,250	(\$1,250)	(100%)	\$0	\$0	
	<u>\$6,402,600</u>	<u>\$1,735,121</u>	<u>\$1,600,650</u>	<u>\$134,471</u>	<u>8%</u>	<u>\$6,204,550</u>	<u>\$5,783,778</u>	
Increase in net assets available for benefits	<u>\$7,445,500</u>	<u>\$7,297,424</u>	<u>\$1,861,375</u>	<u>\$5,436,049</u>	<u>292%</u>	<u>\$603,641</u>	<u>\$19,680,205</u>	
Net assets available for benefits, beginning of period	\$175,240,002	\$175,240,002				\$174,636,362	\$154,956,157	
Increase (decrease) in net assets available for benefits	<u>\$7,445,500</u>	<u>\$7,297,424</u>				<u>\$603,641</u>	<u>\$19,680,205</u>	
Net assets available for benefits, end of period	<u>\$182,685,502</u>	<u>\$182,537,426</u>				<u>\$175,240,002</u>	<u>\$174,636,362</u>	

Expenses on this statement are reported on a cash basis.

Halifax Regional Water Commission Employees' Pension Plan
Regulatory Filing Requirements - 2023
as at March 31, 2023

Report	Regulatory Body	Filing Deadline	Date last filed	Comments
1 Annual Form 3 - Summary of Contributions	Superintendent of Pensions	60 days after the beginning of each fiscal year	February 16, 2023	Filed directly with the Trustee, Northern Trust, for the DB Plan.
2 Pension Plan Income Tax Return (T3)	Canada Revenue Agency	March 31st	February 16, 2023	Filed directly with the Trustee, Industrial Alliance, for the DC Plan.
3 Pension Plan Audited Financial Statements	Superintendent of Pensions	6 months after the Plan's fiscal year end	February 27, 2023	CRA requires Northern Trust as the custodian to prepare and file T3 Income Tax Returns each year. Information obtained from HRM Pension Plan quarterly report.
			July 11, 2022	2022 audited financial statements were completed and approved by the Halifax Water Audit and Finance Committee on June 8, 2023. Once approved by the Halifax Water Board, they will be submitted to the Superintendent of Pensions. (Superintendent is notified by letter each year that the financial statements may be later than June 30th due to timing of the Board meeting.)
			June 7, 2022	Audited financial statements are not prepared for this pension plan. However, Industrial Alliance provides a Financial Report detailing all pertinent details of the plan. This report is submitted to the regulatory body prior to June 30th each year. 2022 statements will be submitted to the Superintendent of Pensions prior to June 30th 2023.
4 Annual Information Returns (AIR)	Superintendent of Pensions	June 30th	June 7, 2022	2022 Annual Information Return has been prepared and will be submitted prior to June 30th, 2023.
			June 7, 2022	2022 Annual Information Return has been prepared and will be submitted prior to June 30th, 2023.
5 Actuarial Valuation*	Superintendent of Pensions Canada Revenue Agency	September 30th	September 16, 2022 September 16, 2022	Actuarial Valuation was conducted as of January 1, 2022 and has been filed with the Superintendent of Pensions and CRA in September 2022 by Eckler Partner's Ltd.
6 Plan Amendments	Superintendent of Pensions Canada Revenue Agency	60 days after the amendment approved by the Board	September 23, 2022 September 23, 2022	Plan Rules were Amended and Consolidated effective January 1, 2021 and approved by the Halifax Water Board on January 27, 2022. This included amendments 9 through 12, implemented since 2011. Contribution rate changes as dictated by the Actuarial Valuation of January 1st, 2022 were submitted to the Superintendent of Pensions and CRA on September 23, 2022.
	Superintendent of Pensions Canada Revenue Agency	60 days after the amendment approved by the Board	n/a	All documents relating to the registration of the DC Plan were received by the Superintendent October 6, 2017.

* Actuarial Valuations are required at a minimum every three (3) years.

** Notional Agreements were implemented during 2017 with an effective date for January 1, 2017. Notional Agreements are not registered therefore not subject to reporting requirements to a regulatory body.

**Halifax Regional Water Commission Employees' Pension Plan
Administrative Reporting Requirements - 2023
as at March 31, 2023**


Report	Filing Deadline/ Recurrence	Date last filed/ Performed	Comments
1 Pensioners' Payroll	Monthly	June 1, 2023	Pensioners are paid the 1st of each month; no exceptions to report for the First Quarter 2023
2 Contributions to the Trustee	Monthly	June 13, 2023	Remittances due to Northern Trust within 30 days of month end; no exceptions to report for First Quarter 2023.
		January 4, 2023	Remittances due to Industrial Alliance within 30 days of month end; no exceptions to report for First Quarter 2023.
	Notional Agreement*	n/a	Contributions are not made to an external trustee or custodian. Liability plus interest is reported by Halifax Water annually.
3 Pension Plan Financial Statements	Quarterly	June 22, 2023	2022 Audited Financial Statements (January - December 2022) approved by the Halifax Water Audit and Finance Committee on June 8, 2023. Provided to the Halifax Water Board for approval on June 22, 2023.
		n/a	Quarterly statements are not prepared for the Defined Contribution (DC) Plan. A financial report is prepared by Industrial Alliance and that report is filed with the Annual Information Return (AIR) to the regulator annually.
	Notional Agreement*	n/a	Financial statements not required.
4 Investment Performance Review & Compliance with SIP&P	Quarterly	June 22, 2023	Fourth Quarter 2022 (January - December) and First Quarter 2023 (January - March) Report prepared quarterly by administration staff for the Halifax Water Board of Directors, in conjunction with the quarterly HRM Pension Plan Committee meeting documentation. Statement of Investment Policies & Procedures (SIP&P) is reviewed annually and was last reviewed and approved on December 8, 2022.
5 Annual Pension Statements to Members	June 30th	June 23, 2022	Statements issued annually by June 30th. 2022 statements are in progress and will be distributed by June 30th, 2023.
		June 23, 2022	Statements issued annually in conjunction with the Defined Benefit (DB) Plan statements. Members also have access to online, real-time reporting. 2022 statements are in progress and will be distributed by June 30, 2023.
	Notional Agreement*	June 23, 2022	Statements issued annually in conjunction with the DB Plan statements.
6 Fiduciary Liability Insurance	Annually	October 13, 2022	Reviewed and renewed annually by administration staff. The policy period expires November 30 each year.

* Notional Agreements were implemented during 2017 with an effective date for January 1, 2017. Notional Agreements are not registered therefore not subject to reporting requirements to a regulatory body.

Quarter 1 (as at March 31, 2023)										
Transaction	Actuary					HW Staff		Total Average Service Days	Compliance with PBA	
	Standard	Total # Completed	# Past Standard	% within Standard	Average Service Days	Total # Completed	Average Service Days			
Retirement Estimates	11 Business Days	3	1	67%	13	3	8	21	Yes	
Marriage Breakdown Calculations	15 Business Days									
Post-Retirement Death Letter	15 Business Days									
Pre-Retirement Death Benefit	15 Business Days									
Termination Estimate Calculations - Standard	11 Business Days	7	0	100%	7	7	11	18	Yes	
- Non Standard (Incl RTAs)	15 Business Days									
Total for Actuary		10	1	90%		10				

TO: Colleen Rollings, P.Eng., PMP, Chair, and Members of the Halifax Regional Water Commission Board as Trustees of the Halifax Regional Water Commission Employees' Pension Plan

SUBMITTED BY: 
Alicia Scallion, CPA, CA, Director, Corporate Services / CFO

APPROVED: 
[Louis de Montbrun \(Jun 16, 2023 08:57 ADT\)](#)
Louis de Montbrun, CPA, CA, General Manager

DATE: June 14, 2023

SUBJECT: **Halifax Regional Municipality Master Trust
Investment Performance, Fourth Quarter, 2023**

INFORMATION REPORT

ORIGIN

The Halifax Regional Municipality Master Trust (the "Master Trust") investment performance is reported to the Halifax Regional Water Commission Board as Trustees of the Halifax Regional Water Commission Employees' Pension Plan periodically throughout the year.

BACKGROUND

None.

DISCUSSION

The table below and the attached Investment Report provide a performance update for the Fourth Quarter of 2022 (January to December) 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, 2022 was 6.56%, totaling \$173.0 million.

The Master Trust earned 5.1% in the Fourth Quarter, which outperformed the Fourth Quarter policy benchmark of 4.2% by 0.9%. The return for the 1-year period ended December 31, 2022, is

-0.4%, outperforming the 1-year policy benchmark of -4.2% by 3.8%. Other historical returns are provided in Table 1 below.

Table 1 – Returns

	Current				
	Quarter (Oct to Dec)	1-Year	3 - Year Annualized	4 - Year Annualized	Inception To Date
Fund Return	5.13%	-0.41%	6.26%	7.35%	7.06%
Policy Benchmark	4.23%	-4.22%	3.38%	5.05%	5.39%
Excess Return	0.90%	3.81%	2.88%	2.31%	1.67%

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

As at December 31, 2022, the Master Trust was in compliance with the Statement of Investment Policies and Procedures (SIP&P).

ATTACHMENT

Attachment 1 – HRM Master Trust Investment Performance Q4 2022

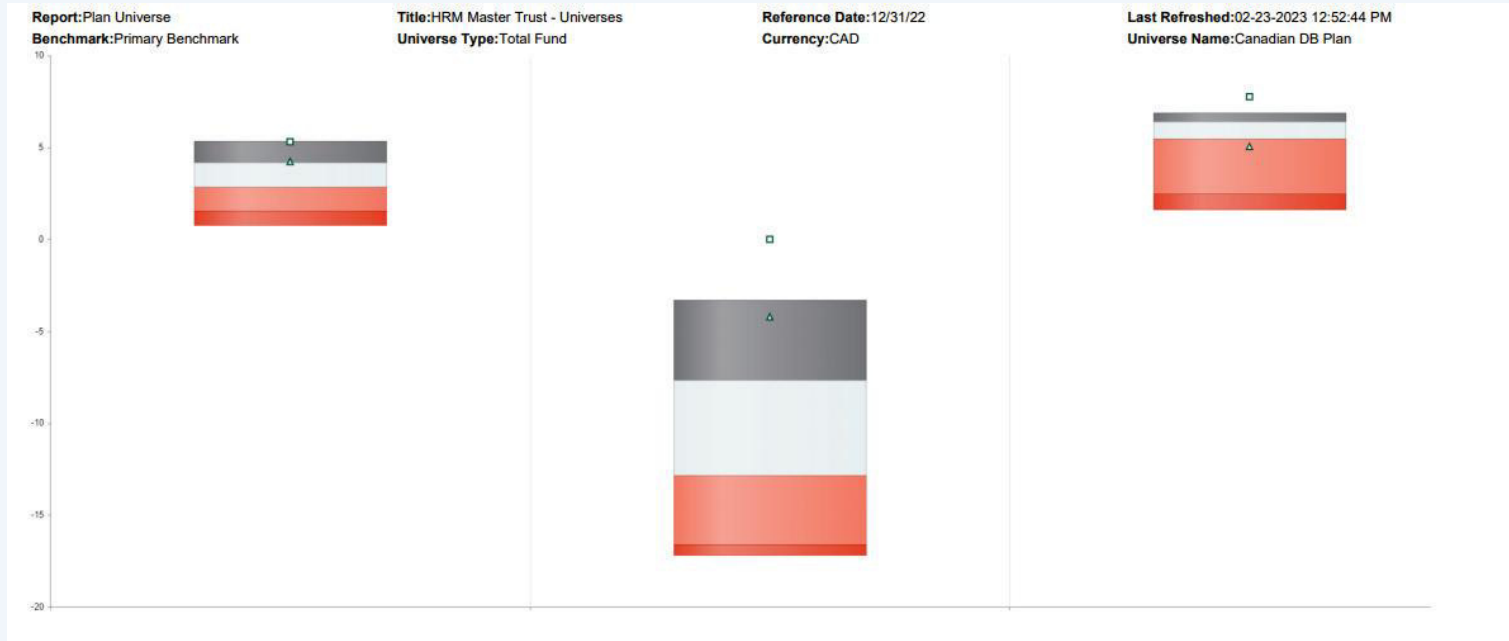
Attachment 2 – HRM Master Trust Investment Risk & Analytical Services Q4 2022

Report Prepared by: *H Britten*
H Britten (Jun 15, 2023 14:14 ADT)

Heather S. Britten, Quality Assurance Officer (782) 641- 1431

Plan Performance

Plan Performance Summary (Gross of Fees)



Report: Plan Universe Title: HRM Master Trust - Universes Reference Date: 12/31/22 Last Refreshed: 02-23-2023 12:21:56 PM
 Benchmark: Primary Benchmark Universe Type: Total Fund Currency: CAD Universe Name: Canadian DB Plan

Group/Account	3 Mos.		1 Yr.		4 Yrs.	
	ROR	Rank (Return)	ROR	Rank (Return)	ROR	Rank (Return)
HRM Master Trust	5.31	11	-0.00	2	7.76	4
HRM Policy Benchmark	4.23	19	-4.22	9	5.05	55
10th Percentile	5.34		-3.30		6.90	
25th Percentile	4.18		-7.67		6.40	
50th Percentile	2.83		-12.83		5.48	
75th Percentile	1.53		-16.62		2.47	
90th Percentile	0.77		-17.15		1.64	

Plan Performance Summary

	Q4	1 year	4 year
Total Plan	5.1%	-0.4%	7.4%
Benchmark	4.2%	-4.2%	5.1%
Value Add	0.9%	3.8%	2.3%

	Q4	1 year	4 year
Equities	9.1%	-10.2%	8.0%
Benchmark	8.8%	-11.3%	8.5%
Value Add	0.3%	1.1%	-0.5%

	Q4	1 year	4 year
Fixed Income	1.2%	-4.5%	2.3%
Benchmark	0.6%	-6.4%	0.3%
Value Add	0.6%	1.9%	2.0%

Plan Performance Summary

	Q4	1 year	4 year
Privates	4.2%	14.5%	12.1%
Benchmark	1.6%	6.4%	6.3%
Value Add	2.6%	8.1%	5.8%

	Q4	1 year	4 year
Public Market Alternatives	2.4%		
Benchmark	1.9%		
Value Add	0.5%		



HRM Master Trust

Investment Risk & Analytical Services

December 31, 2022

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SECTION 1

HRM Master Trust

Investment Risk & Analytical Services

December 31, 2022

FOURTH QUARTER 2022

Provided by Northern Trust Asset Management

A MESSI YEAR

Congratulations to Argentina for winning their third World Cup, putting them behind only Brazil (5), Germany (4) and Italy (4)* for most World Cup titles. Team captain – and global superstar – Lionel Messi’s only World Cup title certainly came during a messy year for financial markets. Despite healthy gains in the fourth quarter, financial markets were not completely able to fix the mess they had created for themselves throughout much of 2022. Global equities’ 9.9% fourth quarter gain still left investors down 18.0% for the full year. And despite investment grade fixed income finally posting a quarterly gain (+1.9%), the usually safer part of the investor portfolio lost 13.0% in 2022. In fact, the only asset class outpacing the return of “risk-free” cash last year was natural resources (+10.3%) – and that was thanks to an incredibly strong fourth quarter (+17.2%).

Goal of the Century: For some (notably England fans), seeing Messi win his World Cup may bring back memories of Diego Maradona winning Argentina’s second World Cup back in 1986. Maradona’s performance in the quarterfinal match against England that year inspired former Bank of England Governor Mervyn King’s “Maradona theory of interest rates.” Called the Goal of the Century, Maradona went over half the field – evading five defenders – to put the ball in the net. King observed Maradona’s path to the goal effectively took him in a straight line – and he was able to do so because the defenders expected him to go left or right. King theorized that central bankers could also “move in a straight line” (maintain steady monetary policy) so long as market participants expected more central bank activity. Bringing the analogy to present day, central banks – but especially the Federal Reserve – are greatly focused on regaining credibility such that they can “Maradona” the way through most of 2023. That is, the Fed is hopeful its strong message to the markets that they will extinguish inflation – along with a few more rate hikes – will allow them to finally take a straight line for the rest of 2023. Putting numbers and dates to the above, the Fed policy rate (currently at 4.5%) is expected to peak between 5% and 5.25% by either at or near the May Fed meeting.

Hand of God: In fact, Maradona had two noteworthy goals in that 1986 quarterfinal match. The other – called the Hand of God – was a goal thought to be off Maradona’s head but was actually off his hand (this was pre-VAR**). Sometimes you need a bit of luck. Certainly the Fed could use some luck in bringing inflation down toward its 2% target. The record pace of rate hikes in 2022 should assist – as should the invisible hand (not God’s – Adam Smith’s) as it continues to heal supply and demand mismatches. The supply/demand mismatch to watch at this point is in the labor markets, where Fed tightening has yet to notably slow hiring or overall labor demand. Should the Fed be able to quickly and effectively address the labor/wage issue, 2023 could be less Messi and more Maradona.

*Rounding out the list of previous World Cup winners:

Uruguay (2), France (2), England (1), Spain (1)

FOURTH QUARTER 2022 TOTAL RETURNS (%)

Financial markets rebounded in the fourth quarter, yet most major asset classes still ended with double-digit losses in 2022.



Source: Northern Trust Asset Management, Bloomberg. NR: Natural Resources; GRE: Global Real Estate; GLI: Global Listed Infrastructure. Indexes are gross of fees.

MARKET EVENTS

■ 4Q 2022 global equity total return: 9.9%



OCTOBER	NOVEMBER	DECEMBER
<p>3 Global Manufacturing Purchasing Managers' Index falls into contractionary territory for the first time since mid-2020.</p>	<p>2 Fed hikes 75 bps and Chair Powell indicates that the peak rate may end up being higher than previously thought.</p>	<p>13 Sam Bankman-Fried, former CEO of major cryptocurrency exchange FTX, is charged with fraud following FTX's collapse that shook the crypto industry.</p>
<p>13 U.S. Consumer Price Index (CPI) accelerates month-over-month with core services particularly strong.</p>	<p>9 U.S. midterm elections produce split government with Democrats retaining Senate control and Republicans later clinching a House majority.</p>	<p>14 Fed downshifts to a 50-bp rate hike but emphasizes commitment to price stability by raising its projected year-end 2023 policy rate to 5.1%.</p>
<p>14 Third quarter earnings season unofficially kicks off, proceeds to deliver results a touch above expectations, but 2023 estimates trend down.</p>	<p>10 U.S. CPI decelerates more than expected month-over-month, sparking a ~5% rally in U.S. equities on the day.</p>	<p>15 European Central Bank hikes 50 bps (with a third of members opting for 75 bps), guides ongoing rate hikes and start to quantitative tightening in March.</p>
<p>16 China National Congress begins; President Xi secures a third five-year term and later consolidates power within the Chinese Communist Party.</p>	<p>28 Protests against zero-Covid policies erupt across China, eventually leading to a pivot away from most of its restrictions.</p>	<p>20 Bank of Japan loosens yield curve control by allowing the 10-year yield to rise up to 50 bps (previously 25 bps).</p>
<p>17 Spillover risks from U.K. fiscal crisis decline after Chancellor Hunt reverses proposed tax cuts (Prime Minister Truss is later replaced by Rishi Sunak).</p>	<p>30 Equities rise following a speech from Fed Chair Powell that indicates that the central bank could soon begin slowing interest rate increases.</p>	<p>23 U.S. Congress enacts a \$1.7 trillion 2023 funding bill – a modest boost to the deficit that pales in comparison to Covid-era stimulus.</p>

KEY DEVELOPMENTS

China Changes Course

A negative investor reaction to the readout from China’s Party Congress involving a more state-led economic approach pushed China equity markets down more than 15% in October. However, China equities sharply reversed course and outperformed other regions for the quarter as policymakers announced a number of moves pivoting away from zero-Covid policies (less testing, quarantines, travel restrictions, etc.). Despite the reopening, the near-term growth outlook remains fairly uncertain given public health risk from the virus.

Inflation Still in the Spotlight

Inflation retained its spot as a key area of focus for investors in the fourth quarter. In the U.S., Consumer Price Index (CPI) inflation reports were generally the most market-moving data releases in 2022. Inflation data released in the quarter was more favorable with deceleration in headline and core figures from both year-over-year and month-over-month standpoints – with equity markets responding favorably to this (see chart). However, lingering strength on wage growth and the services side of the economy remains a concern.

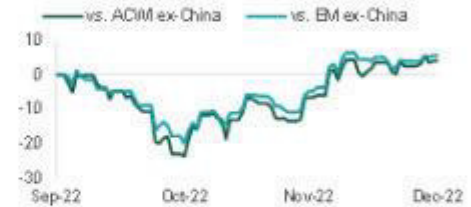
Approaching the Destination

2022 was a year of historic central bank tightening with many central banks raising rates by 3% or more. In the fourth quarter, central banks slowed the pace of tightening, with investor debate shifting to the peak level of policy rates and the duration of restrictive policy. The Fed and European Central Bank (ECB) both raised rates by 1.25% in the quarter while the Bank of Japan (BOJ) surprised investors by widening its target rate bands for yield curve control; implying an exit from its ultra-accommodative policy is more likely in 2023.

60/40 Struggles

Despite some gains in the fourth quarter, 2022 was a rough year for investors with double-digit losses in both equity and fixed income markets. Inflation, central bank tightening and rising interest rates played a key role in the losses for both equities and fixed income, while equities were further hit by growth concerns and geopolitical uncertainty. In a historically weak year for a 60/40 portfolio mix (second only to 2008), 2022 was the only year where bonds did not play a diversifying role to help offset material losses in equities.

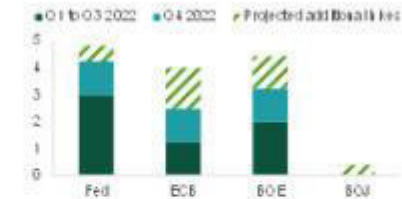
CHINA EQUITIES RELATIVE PERFORMANCE (%)



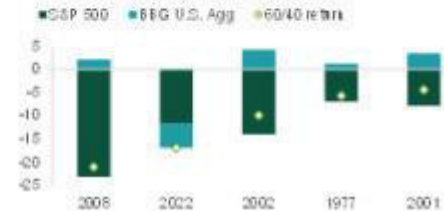
S&P 500 RETURNS ON DAY OF U.S. CPI RELEASE (%)



CENTRAL BANK TIGHTENING (%)



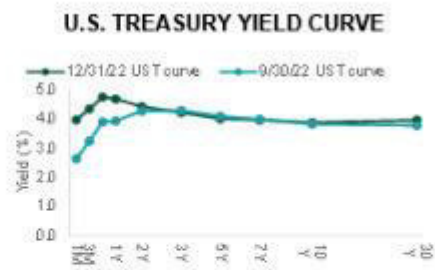
HISTORICAL ANNUAL RETURN BREAKDOWNS (%)



MARKET REVIEW

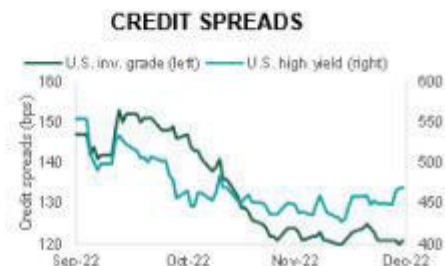
Interest Rates

After hiking 75 bps in November, the Fed executed a “hawkish deceleration” in December. It downshifted to a 50-bp pace, but simultaneously raised its projected year-end 2023 rate to 5.1%. While 75-bp hikes may no longer be the status quo, price stability is still the Fed’s top priority. Short-term Treasury yields rose on ongoing tightening, while the rise in longer yields lost steam as investors priced in an upcoming pause in the rate cycle as well as the economic impacts of the tightening. The Treasury curve is deeply inverted headed into 2023.



Credit Markets

Barring a swift move higher in early-to-mid October as investors tried to assess the Fed policy trajectory, credit spreads contracted for most of the quarter. Credit sentiment improved as central banks beginning to pivot toward less aggressive policy tightening raised hope that adverse-case default scenarios can be avoided. High yield (+4.2%) outperformed investment grade fixed income (+1.9%). High yield benefited from its higher starting point yield, less direct exposure to interest rate volatility and greater leverage to corporate resilience.



Equities

Global equities gained 9.9% as a relief rally took hold. Fundamentals held up relatively well, while valuations rose as sentiment turned more positive on signs of receding inflation risk and greater monetary policy certainty. While the rally was broad-based, stocks with resilient fundamentals did particularly well. Regionally, non-U.S. equities (dev. ex-U.S. equities up 16.1% and emerging market equities up 9.6%) bested U.S. equities (up 7.2%), helped by more market friendly central bank activity, a declining dollar and a reopening China.



Real Assets

Natural resources (NR) closed out its standout year with a strong quarter, gaining 17.2% versus 11.0% for global listed infrastructure (GLI) and 7.4% for global real estate (GRE). NR benefited from strong fundamentals, tight commodity supply and a better demand outlook due to China’s reopening as well as the potential for less central bank headwinds moving forward. GLI was also helped by energy-related exposure, albeit less than NR. GRE underperformed global equities, with office and residential sector weakness serving as a drag.



Market Overview

IMPORTANT INFORMATION

Indexes used: Bloomberg Barclays (BBC) 1-3 Month UST (Cash); BBC Municipal (Muni); BBC Aggregate (Inv. Grade); BBC TIPS (TIPS); BBC High Yield 2% Capped (High Yield); JP Morgan GBI-EM Global Diversified (Em. Markets Fixed Income); MSCI U.S. Equities IMI (U.S. Equities); MSCI World ex-U.S. IMI (Dev. ex-U.S. Equities); MSCI Emerging Market Equities IMI (Em. Markets Equities); S&P Global Natural Resources (Natural Resources); MSCI ACWI IMI Core Real Estate (Global Real Estate); S&P Global Infrastructure (Global Listed Infrastructure).

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Investment Hierarchy

Account/Group	Ending Market Value CAD	Ending Weight	% Rate of Return								
			One Month	Three Months	Year to Date	One Year	Three Years	Four Years	Ten Years	Inception to Date	Inception Date
HRM Master Trust	2,635,822,552	100.00	-0.03	5.13	-0.41	-0.41	6.26	7.35	7.98	7.06	09/30/1999
<i>HRM Policy Benchmark</i>			<i>-1.43</i>	<i>4.23</i>	<i>-4.22</i>	<i>-4.22</i>	<i>3.38</i>	<i>5.05</i>	<i>5.48</i>	<i>5.39</i>	<i>09/30/1999</i>
<i>Excess Return</i>			<i>1.40</i>	<i>0.90</i>	<i>3.81</i>	<i>3.81</i>	<i>2.88</i>	<i>2.31</i>	<i>2.49</i>	<i>1.67</i>	<i>09/30/1999</i>
HRM Total Equity	907,849,924	34.44	-3.03	9.14	-10.20	-10.20	4.25	7.95	-	6.74	12/31/2015
<i>HRM Total Equity Benchmark</i>			<i>-3.62</i>	<i>8.83</i>	<i>-11.25</i>	<i>-11.25</i>	<i>4.87</i>	<i>8.53</i>	<i>-</i>	<i>7.46</i>	<i>12/31/2015</i>
<i>Excess Return</i>			<i>0.59</i>	<i>0.31</i>	<i>1.05</i>	<i>1.05</i>	<i>-0.61</i>	<i>-0.58</i>	<i>-</i>	<i>-0.72</i>	<i>12/31/2015</i>
HRM Cdn Equity	99,007,221	3.76	-4.52	6.47	-5.63	-5.63	5.73	9.61	5.16	4.58	03/31/2006
<i>S&P/TSX Composite</i>			<i>-4.90</i>	<i>5.96</i>	<i>-5.84</i>	<i>-5.84</i>	<i>7.54</i>	<i>11.19</i>	<i>7.74</i>	<i>5.91</i>	<i>03/31/2006</i>
<i>Excess Return</i>			<i>0.38</i>	<i>0.51</i>	<i>0.22</i>	<i>0.22</i>	<i>-1.81</i>	<i>-1.57</i>	<i>-2.57</i>	<i>-1.33</i>	<i>03/31/2006</i>
Blackrock	96,137,172	3.65	-4.48	7.00	-5.54	-5.54	7.83	11.20	7.74	8.30	12/31/2003
<i>S&P/TSX Composite</i>			<i>-4.90</i>	<i>5.96</i>	<i>-5.84</i>	<i>-5.84</i>	<i>7.54</i>	<i>11.19</i>	<i>7.74</i>	<i>7.59</i>	<i>12/31/2003</i>
<i>Excess Return</i>			<i>0.41</i>	<i>1.03</i>	<i>0.30</i>	<i>0.30</i>	<i>0.29</i>	<i>0.02</i>	<i>0.00</i>	<i>0.71</i>	<i>12/31/2003</i>
P2P Holdings	2,870,049	0.11	-5.54	-8.37	-8.66	-8.66	-13.22	-5.32	-	-28.95	02/03/2017
<i>S&P/TSX Composite</i>			<i>-4.90</i>	<i>5.96</i>	<i>-5.84</i>	<i>-5.84</i>	<i>7.54</i>	<i>11.19</i>	<i>-</i>	<i>7.07</i>	<i>02/03/2017</i>
<i>Excess Return</i>			<i>-0.64</i>	<i>-14.34</i>	<i>-2.82</i>	<i>-2.82</i>	<i>-20.76</i>	<i>-16.51</i>	<i>-</i>	<i>-36.03</i>	<i>02/03/2017</i>
HRM US Equity	153,228,218	5.81	-5.21	6.69	-10.46	-10.46	10.92	15.77	13.78	13.79	04/30/2011
<i>HRM US Equity</i>			<i>-5.81</i>	<i>6.07</i>	<i>-12.78</i>	<i>-12.78</i>	<i>9.02</i>	<i>13.89</i>	<i>12.66</i>	<i>11.52</i>	<i>04/30/2011</i>
<i>Excess Return</i>			<i>0.61</i>	<i>0.62</i>	<i>2.32</i>	<i>2.32</i>	<i>1.90</i>	<i>1.87</i>	<i>1.12</i>	<i>2.27</i>	<i>04/30/2011</i>
Wellington US Equity	153,228,218	5.81	-5.21	6.69	-10.46	-10.46	10.92	15.77	13.58	13.00	04/30/2011
<i>HRM US Equity</i>			<i>-5.81</i>	<i>6.07</i>	<i>-12.78</i>	<i>-12.78</i>	<i>9.02</i>	<i>13.89</i>	<i>12.66</i>	<i>11.52</i>	<i>04/30/2011</i>
<i>Excess Return</i>			<i>0.61</i>	<i>0.62</i>	<i>2.32</i>	<i>2.32</i>	<i>1.90</i>	<i>1.87</i>	<i>0.92</i>	<i>1.48</i>	<i>04/30/2011</i>
HRM EAFE Equity	62,565,660	2.37	1.27	16.34	-7.42	-7.42	1.79	5.19	8.65	5.97	12/31/2003
<i>MSCI EAFE ND</i>			<i>0.02</i>	<i>15.71</i>	<i>-8.23</i>	<i>-8.23</i>	<i>2.35</i>	<i>5.57</i>	<i>7.95</i>	<i>5.24</i>	<i>12/31/2003</i>
<i>Excess Return</i>			<i>1.24</i>	<i>0.63</i>	<i>0.81</i>	<i>0.81</i>	<i>-0.57</i>	<i>-0.39</i>	<i>0.70</i>	<i>0.73</i>	<i>12/31/2003</i>
Marathon International Equity	62,565,660	2.37	1.27	16.34	-7.42	-7.42	-	-	-	-3.12	05/28/2021
<i>MSCI EAFE ND</i>			<i>0.02</i>	<i>15.71</i>	<i>-8.23</i>	<i>-8.23</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-2.09</i>	<i>05/28/2021</i>
<i>Excess Return</i>			<i>1.24</i>	<i>0.63</i>	<i>0.81</i>	<i>0.81</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-1.03</i>	<i>05/28/2021</i>
HRM World Equity	247,686,940	9.40	-3.73	9.36	-10.45	-10.45	4.87	8.38	-	10.10	10/31/2013
<i>MSCI World ND</i>			<i>-4.30</i>	<i>8.24</i>	<i>-12.19</i>	<i>-12.19</i>	<i>6.49</i>	<i>9.99</i>	<i>-</i>	<i>10.46</i>	<i>10/31/2013</i>
<i>Excess Return</i>			<i>0.57</i>	<i>1.12</i>	<i>1.74</i>	<i>1.74</i>	<i>-1.62</i>	<i>-1.61</i>	<i>-</i>	<i>-0.36</i>	<i>10/31/2013</i>
AB EDHEC	127,944,712	4.85	-3.22	10.39	-8.97	-8.97	4.95	8.32	-	7.19	12/31/2015
<i>MSCI World ND</i>			<i>-4.30</i>	<i>8.24</i>	<i>-12.19</i>	<i>-12.19</i>	<i>6.49</i>	<i>9.99</i>	<i>-</i>	<i>8.14</i>	<i>12/31/2015</i>
<i>Excess Return</i>			<i>1.08</i>	<i>2.15</i>	<i>3.23</i>	<i>3.23</i>	<i>-1.54</i>	<i>-1.67</i>	<i>-</i>	<i>-0.94</i>	<i>12/31/2015</i>

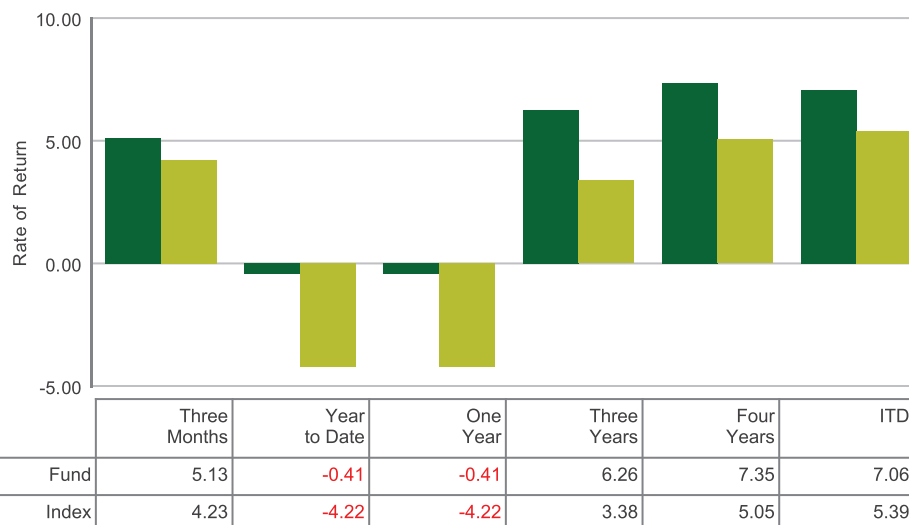
Account/Group	Ending Market Value CAD	Ending Weight	% Rate of Return									Inception Date
			One Month	Three Months	Year to Date	One Year	Three Years	Four Years	Ten Years	Inception to Date		
Blackrock MSCI World Passive	119,742,228	4.54	-4.27	8.36	-11.83	-11.83	-	-	-	2.70	05/12/2021	
<i>MSCI World ND</i>			<i>-4.30</i>	<i>8.24</i>	<i>-12.19</i>	<i>-12.19</i>	-	-	-	<i>2.33</i>	<i>05/12/2021</i>	
<i>Excess Return</i>			<i>0.03</i>	<i>0.12</i>	<i>0.37</i>	<i>0.37</i>	-	-	-	<i>0.37</i>	<i>05/12/2021</i>	
HRM Emerging Markets	91,784,094	3.48	0.51	7.90	-9.78	-9.78	-2.69	1.35	4.24	4.56	09/30/2010	
<i>MSCI Emerging Markets ND</i>			<i>-1.46</i>	<i>8.18</i>	<i>-14.28</i>	<i>-14.28</i>	<i>-1.26</i>	<i>2.00</i>	<i>4.61</i>	<i>3.79</i>	<i>09/30/2010</i>	
<i>Excess Return</i>			<i>1.97</i>	<i>-0.28</i>	<i>4.51</i>	<i>4.51</i>	<i>-1.43</i>	<i>-0.65</i>	<i>-0.37</i>	<i>0.77</i>	<i>09/30/2010</i>	
Trinetra Emerg Mrkts Grwth Fnd	52,130,361	1.98	0.51	8.70	-5.08	-5.08	-2.00	2.64	-	1.85	08/31/2017	
<i>MSCI Emerging Markets ND</i>			<i>-1.46</i>	<i>8.18</i>	<i>-14.28</i>	<i>-14.28</i>	<i>-1.26</i>	<i>2.00</i>	-	<i>1.42</i>	<i>08/31/2017</i>	
<i>Excess Return</i>			<i>1.97</i>	<i>0.52</i>	<i>9.20</i>	<i>9.20</i>	<i>-0.74</i>	<i>0.64</i>	-	<i>0.43</i>	<i>08/31/2017</i>	
Wellington EMLE	39,653,733	1.50	0.52	6.87	-14.33	-14.33	-3.33	0.31	5.15	5.29	07/31/2011	
<i>MSCI Emerging Markets ND</i>			<i>-1.46</i>	<i>8.18</i>	<i>-14.28</i>	<i>-14.28</i>	<i>-1.26</i>	<i>2.00</i>	<i>4.61</i>	<i>4.05</i>	<i>07/31/2011</i>	
<i>Excess Return</i>			<i>1.98</i>	<i>-1.31</i>	<i>-0.05</i>	<i>-0.05</i>	<i>-2.07</i>	<i>-1.68</i>	<i>0.54</i>	<i>1.24</i>	<i>07/31/2011</i>	
HRM International Equity	72,909,790	2.77	-0.17	12.57	-15.53	-15.53	-	-	-	-3.95	02/28/2021	
Mawer International Equity	72,909,790	2.77	-0.17	12.57	-15.53	-15.53	-	-	-	-3.95	02/28/2021	
<i>MSCI ACWI ex USA ND</i>			<i>-0.80</i>	<i>12.70</i>	<i>-9.90</i>	<i>-9.90</i>	-	-	-	<i>-2.85</i>	<i>02/28/2021</i>	
<i>Excess Return</i>			<i>0.63</i>	<i>-0.13</i>	<i>-5.63</i>	<i>-5.63</i>	-	-	-	<i>-1.10</i>	<i>02/28/2021</i>	
Global Small Cap Equities	70,319,427	2.67	-2.90	8.60	-12.58	-12.58	-	-	-	-3.22	05/19/2021	
<i>MS Wld Small Cap Net Index</i>			<i>-3.48</i>	<i>9.22</i>	<i>-12.85</i>	<i>-12.85</i>	-	-	-	<i>-3.68</i>	<i>05/19/2021</i>	
<i>Excess Return</i>			<i>0.58</i>	<i>-0.63</i>	<i>0.27</i>	<i>0.27</i>	-	-	-	<i>0.46</i>	<i>05/19/2021</i>	
Blackrock MSCI Small Cap	45,659,146	1.73	-3.46	9.37	-12.79	-12.79	-	-	-	-3.37	05/19/2021	
<i>MS Wld Small Cap Net Index</i>			<i>-3.48</i>	<i>9.22</i>	<i>-12.85</i>	<i>-12.85</i>	-	-	-	<i>-3.68</i>	<i>05/19/2021</i>	
<i>Excess Return</i>			<i>0.02</i>	<i>0.14</i>	<i>0.06</i>	<i>0.06</i>	-	-	-	<i>0.32</i>	<i>05/19/2021</i>	
Global Alpha	24,660,281	0.94	-1.86	7.20	-	-	-	-	-	-5.15	03/09/2022	
<i>MS Wld Small Cap Net Index</i>			<i>-3.48</i>	<i>9.22</i>	-	-	-	-	-	<i>-4.03</i>	<i>03/09/2022</i>	
<i>Excess Return</i>			<i>1.63</i>	<i>-2.02</i>	-	-	-	-	-	<i>-1.12</i>	<i>03/09/2022</i>	
HRM ACWI Equity	110,348,574	4.19	-4.09	10.32	-9.85	-9.85	-	-	-	0.99	05/25/2021	
Blackrock Global Alpha Advanta	110,348,574	4.19	-4.09	10.32	-9.85	-9.85	-	-	-	0.99	05/25/2021	
<i>MSCI ACWI ND</i>			<i>-3.99</i>	<i>8.24</i>	<i>-12.43</i>	<i>-12.43</i>	-	-	-	<i>-0.87</i>	<i>05/25/2021</i>	
<i>Excess Return</i>			<i>-0.10</i>	<i>2.09</i>	<i>2.58</i>	<i>2.58</i>	-	-	-	<i>1.86</i>	<i>05/25/2021</i>	
HRM Total Fixed Income	495,303,700	18.79	-0.32	1.24	-4.50	-4.50	1.50	2.27	-	2.57	12/31/2015	
<i>HRM FI Benchmark</i>			<i>-0.94</i>	<i>0.56</i>	<i>-6.38</i>	<i>-6.38</i>	<i>-1.02</i>	<i>0.28</i>	-	<i>0.88</i>	<i>12/31/2015</i>	
<i>Excess Return</i>			<i>0.62</i>	<i>0.68</i>	<i>1.89</i>	<i>1.89</i>	<i>2.52</i>	<i>1.99</i>	-	<i>1.69</i>	<i>12/31/2015</i>	
Government Bonds	162,942,625	6.18	-1.73	0.40	-10.65	-10.65	-1.53	0.27	-	0.88	12/31/2015	
<i>FTSE TMX Government Univers</i>			<i>-1.87</i>	<i>-0.21</i>	<i>-12.34</i>	<i>-12.34</i>	<i>-2.58</i>	<i>-0.41</i>	-	<i>0.42</i>	<i>12/31/2015</i>	
<i>Excess Return</i>			<i>0.14</i>	<i>0.62</i>	<i>1.69</i>	<i>1.69</i>	<i>1.06</i>	<i>0.68</i>	-	<i>0.46</i>	<i>12/31/2015</i>	

Account/Group	Ending Market Value CAD	Ending Weight	% Rate of Return									Inception to Date	Inception Date
			One Month	Three Months	Year to Date	One Year	Three Years	Four Years	Ten Years				
Lincluden Gov't	110,133,802	4.18	-1.75	0.13	-11.19	-11.19	-2.01	0.07	-	1.94	08/31/2013		
<i>FTSE TMX Government Univers</i>			<i>-1.87</i>	<i>-0.21</i>	<i>-12.34</i>	<i>-12.34</i>	<i>-2.58</i>	<i>-0.41</i>	-	<i>1.76</i>	<i>08/31/2013</i>		
<i>Excess Return</i>			<i>0.13</i>	<i>0.34</i>	<i>1.15</i>	<i>1.15</i>	<i>0.57</i>	<i>0.48</i>	-	<i>0.18</i>	<i>08/31/2013</i>		
Wellington Bond Overlay	52,808,823	2.00	-1.69	0.99	-9.56	-9.56	-0.77	0.53	1.95	2.03	08/31/2012		
<i>FTSE TMX Government Univers</i>			<i>-1.87</i>	<i>-0.21</i>	<i>-12.34</i>	<i>-12.34</i>	<i>-2.58</i>	<i>-0.41</i>	<i>1.37</i>	<i>1.39</i>	<i>08/31/2012</i>		
<i>Excess Return</i>			<i>0.18</i>	<i>1.20</i>	<i>2.78</i>	<i>2.78</i>	<i>1.82</i>	<i>0.93</i>	<i>0.58</i>	<i>0.64</i>	<i>08/31/2012</i>		
North American Credit	182,589,428	6.93	0.43	1.74	-2.60	-2.60	7.00	6.82	-	5.67	12/31/2015		
<i>FTSE TMX Corporate Bond IDX</i>			<i>-1.03</i>	<i>1.00</i>	<i>-9.87</i>	<i>-9.87</i>	<i>-1.12</i>	<i>1.10</i>	-	<i>1.79</i>	<i>12/31/2015</i>		
<i>Excess Return</i>			<i>1.46</i>	<i>0.74</i>	<i>7.27</i>	<i>7.27</i>	<i>8.11</i>	<i>5.72</i>	-	<i>3.88</i>	<i>12/31/2015</i>		
Canso	81,687,944	3.10	-0.04	2.36	-5.50	-5.50	9.33	8.68	7.26	7.86	02/28/2010		
<i>FTSE TMX Corporate Bond IDX</i>			<i>-1.03</i>	<i>1.00</i>	<i>-9.87</i>	<i>-9.87</i>	<i>-1.12</i>	<i>1.10</i>	<i>2.36</i>	<i>3.31</i>	<i>02/28/2010</i>		
<i>Excess Return</i>			<i>0.99</i>	<i>1.36</i>	<i>4.37</i>	<i>4.37</i>	<i>10.44</i>	<i>7.58</i>	<i>4.90</i>	<i>4.55</i>	<i>02/28/2010</i>		
HRM Corporate Debt	100,901,484	3.83	0.81	1.25	0.39	0.39	3.05	3.62	-	6.11	01/31/2014		
<i>FTSE TMX Corporate Bond IDX</i>			<i>-1.03</i>	<i>1.00</i>	<i>-9.87</i>	<i>-9.87</i>	<i>-1.12</i>	<i>1.10</i>	-	<i>2.28</i>	<i>01/31/2014</i>		
<i>Excess Return</i>			<i>1.84</i>	<i>0.25</i>	<i>10.26</i>	<i>10.26</i>	<i>4.17</i>	<i>2.52</i>	-	<i>3.83</i>	<i>01/31/2014</i>		
Cash and Cash Equivalents	63,680,210	2.42	0.31	0.49	1.19	1.19	0.81	1.43	2.44	4.33	03/31/2009		
<i>3M CAD Bankers Acceptance Rate</i>			<i>0.41</i>	<i>1.19</i>	<i>2.99</i>	<i>2.99</i>	<i>1.42</i>	<i>1.57</i>	<i>1.38</i>	<i>1.28</i>	<i>03/31/2009</i>		
<i>Excess Return</i>			<i>-0.10</i>	<i>-0.70</i>	<i>-1.80</i>	<i>-1.80</i>	<i>-0.61</i>	<i>-0.14</i>	<i>1.06</i>	<i>3.05</i>	<i>03/31/2009</i>		
Lincluden CDOR	63,680,210	2.42	0.31	0.49	3.05	3.05	1.41	1.04	-	1.47	12/31/2013		
<i>3M CAD Bankers Acceptance Rate</i>			<i>0.41</i>	<i>1.19</i>	<i>2.99</i>	<i>2.99</i>	<i>1.42</i>	<i>1.57</i>	-	<i>1.39</i>	<i>12/31/2013</i>		
<i>Excess Return</i>			<i>-0.10</i>	<i>-0.70</i>	<i>0.06</i>	<i>0.06</i>	<i>-0.01</i>	<i>-0.53</i>	-	<i>0.08</i>	<i>12/31/2013</i>		
Global Credit	86,091,438	3.27	0.30	2.19	-	-	-	-	-	-2.13	03/31/2022		
AB Global Credit	86,091,438	3.27	0.30	2.19	-5.27	-5.27	-0.41	1.12	2.78	4.76	03/31/2009		
<i>AB FI Blend</i>			<i>-0.07</i>	<i>1.74</i>	<i>-2.45</i>	<i>-2.45</i>	<i>-0.40</i>	<i>0.20</i>	<i>0.83</i>	<i>0.88</i>	<i>03/31/2009</i>		
<i>Excess Return</i>			<i>0.37</i>	<i>0.45</i>	<i>-2.82</i>	<i>-2.82</i>	<i>-0.01</i>	<i>0.92</i>	<i>1.95</i>	<i>3.88</i>	<i>03/31/2009</i>		
HRM Private Investments	1,088,959,480	41.31	2.67	4.22	14.53	14.53	13.39	12.13	12.88	12.99	03/31/2009		
<i>HRM Discount Rate</i>			<i>0.52</i>	<i>1.57</i>	<i>6.45</i>	<i>6.45</i>	<i>6.38</i>	<i>6.31</i>	<i>6.36</i>	<i>6.47</i>	<i>03/31/2009</i>		
<i>Excess Return</i>			<i>2.15</i>	<i>2.65</i>	<i>8.08</i>	<i>8.08</i>	<i>7.00</i>	<i>5.82</i>	<i>6.51</i>	<i>6.52</i>	<i>03/31/2009</i>		
Private Equity	267,253,492	10.14	2.43	-0.41	19.22	19.22	21.31	15.64	19.58	21.39	09/30/2011		
Private Equity	267,253,492	10.14	2.43	-0.41	19.22	19.22	21.31	15.64	19.58	21.39	09/30/2011		
Real Estate	405,365,394	15.38	5.01	8.09	13.03	13.03	11.83	12.93	11.36	12.26	09/30/2011		
Real Estate	405,365,394	15.38	5.01	8.09	13.03	13.03	11.83	12.93	11.36	12.26	09/30/2011		
Infrastructure	320,096,450	12.14	1.34	4.75	13.65	13.65	11.30	9.66	11.48	18.52	06/30/2011		
Infrastructure	320,096,450	12.14	1.34	4.75	13.65	13.65	11.30	9.66	11.48	18.52	06/30/2011		
Private Debt	96,244,144	3.65	-1.75	0.62	9.92	9.92	10.42	8.26	3.15	0.48	12/31/2011		
Private Debt	96,244,144	3.65	-1.75	0.62	9.92	9.92	10.42	8.26	3.15	0.48	12/31/2011		

Account/Group	Ending Market Value CAD	Ending Weight	% Rate of Return								Inception to Date	Inception Date
			One Month	Three Months	Year to Date	One Year	Three Years	Four Years	Ten Years			
Public Market Alternatives	126,134,215	4.79	2.64	2.42	-	-	-	-	-	2.88	02/28/2022	
<i>3M CAD Bankers Acceptance R+3%</i>			<i>0.66</i>	<i>1.94</i>	-	-	-	-	-	<i>5.41</i>	<i>02/28/2022</i>	
<i>Excess Return</i>			<i>1.99</i>	<i>0.48</i>	-	-	-	-	-	<i>-2.52</i>	<i>02/28/2022</i>	
Public Market Alternatives	126,134,215	4.79	2.64	2.42	-	-	-	-	-	2.88	02/28/2022	
<i>3M CAD Bankers Acceptance R+3%</i>			<i>0.66</i>	<i>1.94</i>	-	-	-	-	-	<i>5.41</i>	<i>02/28/2022</i>	
<i>Excess Return</i>			<i>1.99</i>	<i>0.48</i>	-	-	-	-	-	<i>-2.52</i>	<i>02/28/2022</i>	
HRM Operating	17,575,233	0.67	-	-	-	-	-	-	-	-	12/31/2015	
Operating Account	17,575,233	0.67	-	-	-	-	-	-	-	-	03/31/2004	

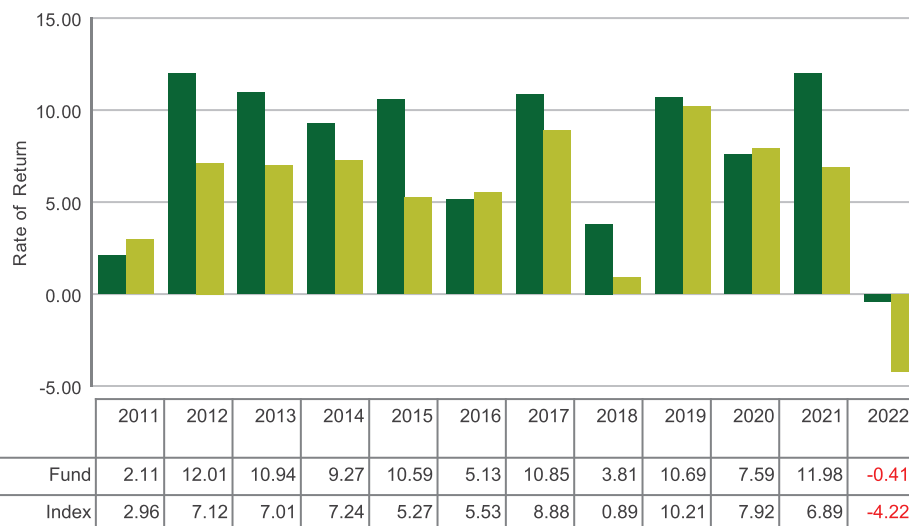
Executive Summary

HRM MASTER TRUST TOTAL FUND NET OF FEES



Index: HRM Policy Benchmark

HRM MASTER TRUST ROLLING YEARS TOTAL FUND NET OF FEES



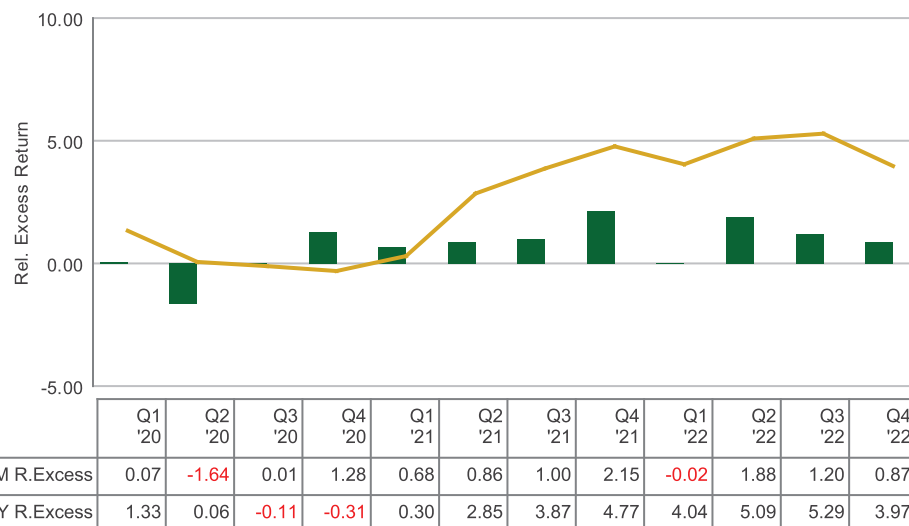
Index: HRM Policy Benchmark

RISK STATISTICS

	3 Mos	1 Yr	4 Yrs
Return	5.13	-0.41	7.35
Index Return	4.23	-4.22	5.05
Excess Return	0.90	3.81	2.31
Standard Deviation	-	5.85	5.18
Index Standard Deviation	-	7.32	5.72
Tracking Error	-	2.25	2.04
Information Ratio	-	1.69	1.13
Sharpe Ratio	-	-0.08	1.23
Index Sharpe Ratio	-	-0.59	0.71
Jensen's Alpha	-	2.88	2.81
Relative Volatility (Beta)	-	0.77	0.85
R Squared	-	0.93	0.87
Beginning MV (in 000s)	2,499,827	2,659,555	2,025,959
Net Contributions (in 000s)	7,962	-12,323	-47,504
Income (in 000s)	16,357	50,376	223,549
Appreciation (in 000s)	111,677	-61,785	433,818
Ending MV (in 000s)	2,635,823	2,635,823	2,635,823

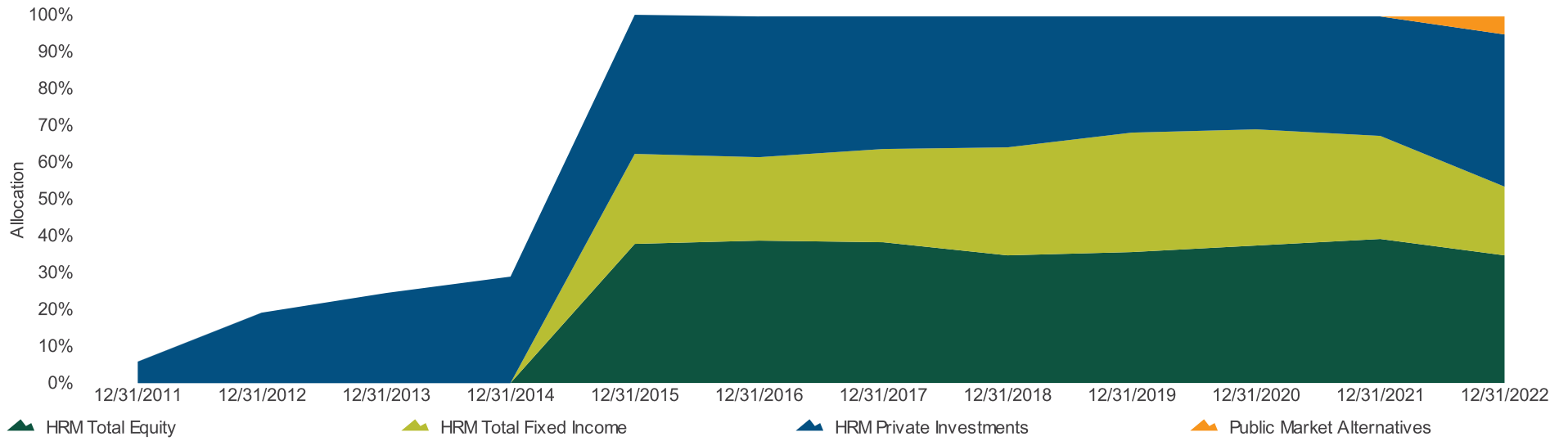
Index: HRM Policy Benchmark. Risk Free Index: JP Morgan 3 month Cash (CAD)
 Category: Total Fund Net of Fees. Calculation Frequency: Monthly

HRM MASTER TRUST ROLLING QUARTERS TOTAL FUND NET OF FEES

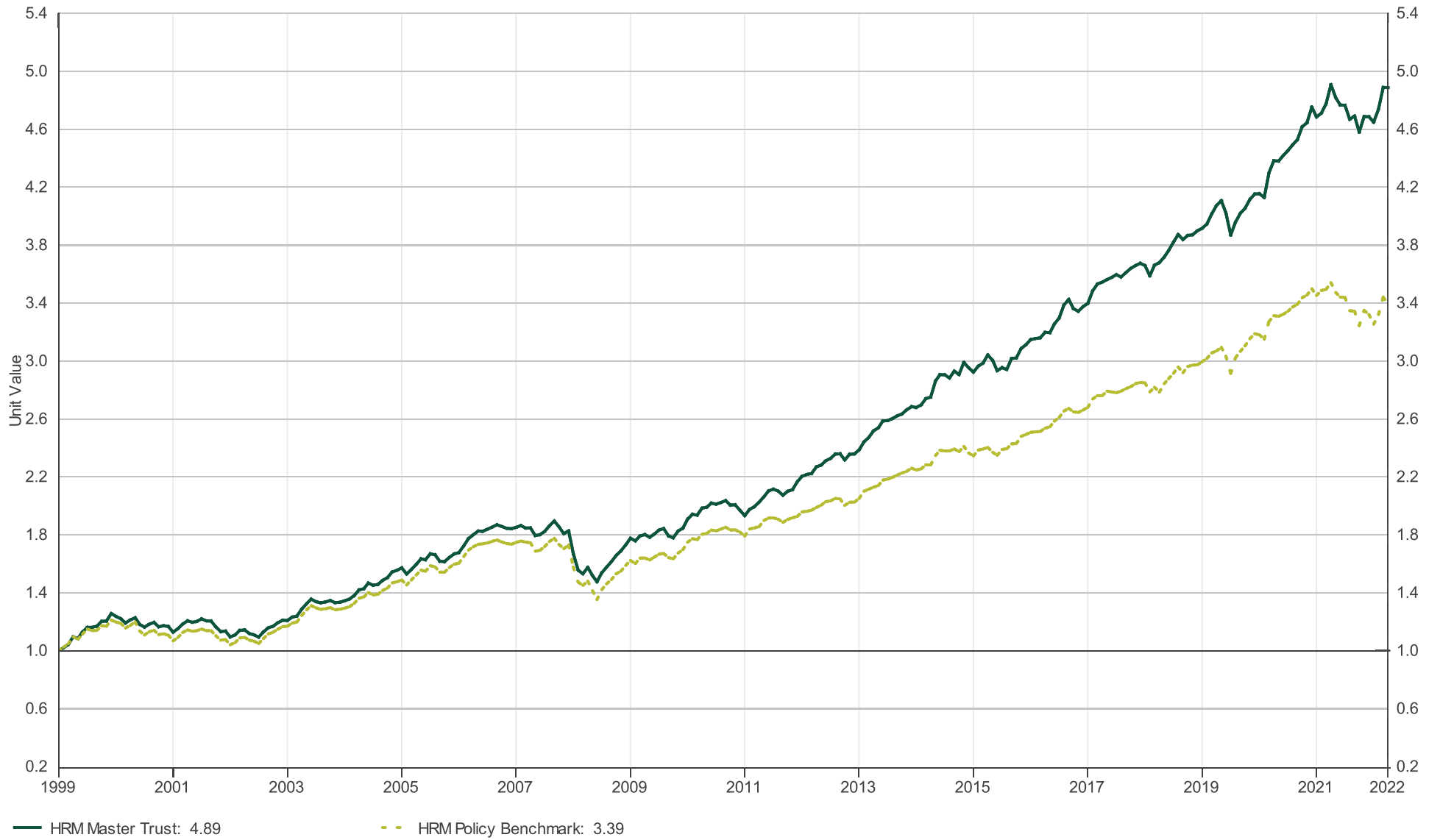


Index: HRM Policy Benchmark

Allocation over Time



Growth Over Time - Inception to Date



TO: Colleen Rollings, P.Eng., PMP, Chair, and Members of the Halifax Regional Water Commission Board as Trustees of the Halifax Regional Water Commission Employees' Pension Plan

SUBMITTED BY: *Alicia Scallion*
[Alicia Scallion \(Jun 15, 2023 16:34 ADT\)](#)
Alicia Scallion, CPA, CA, Director, Corporate Services / CFO

APPROVED: *Louis de Montbrun*
[Louis de Montbrun \(Jun 16, 2023 09:02 ADT\)](#)
Louis de Montbrun, CPA, CA, General Manager

DATE: June 14, 2023

SUBJECT: **Halifax Regional Municipality Master Trust
Investment Performance, First Quarter, 2023**

INFORMATION REPORT

ORIGIN

The Halifax Regional Municipality Master Trust (the "Master Trust") investment performance is reported to the Halifax Regional Water Commission Board as Trustees of the Halifax Regional Water Commission Employees' Pension Plan periodically throughout the year.

BACKGROUND

None.

DISCUSSION

The table below and the attached Investment Report provide a performance update for the First Quarter of 2023 (January to March) 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, 2022 was 6.56%, totaling \$173.0 million.

The Master Trust earned 4.1% in the First Quarter, which underperformed the First Quarter policy benchmark of 4.6% by -0.5%. The return for the 1-year period ended March 31, 2023, is 6.8%,

outperforming the 1-year policy benchmark of 3.1% by 3.7%. Other historical returns are provided in Table 1 below.

Table 1 – Returns

	Current				
	Quarter		3 - Year	4 - Year	Inception
	(Jan to Mar)	1-Year	Annualized	Annualized	To Date
Fund Return	4.12%	6.78%	9.55%	7.43%	7.17%
Policy Benchmark	4.59%	3.15%	6.77%	5.03%	5.54%
Excess Return	-0.47%	3.63%	2.78%	2.40%	1.63%

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

As at March 31, 2023, the Master Trust was in compliance with the Statement of Investment Policies and Procedures (SIP&P).

ATTACHMENT

Attachment 1 - HRM Master Trust Plan Performance Q1 2023

Attachment 2 - HRM Master Trust Investment Risk & Analytical Services Q1 2023

Report Prepared by:	<i>H Britten</i>	
	H Britten (Jun 15, 2023 14:57 ADT)	
	Heather Britten, Quality Assurance Officer (782) 641- 1431	

Plan Performance

Plan Performance Summary

	Q1	1 year	4 year
Total Plan	4.1%	6.8%	7.4%
Benchmark	4.6%	3.1%	5.0%
Value Add	-0.5%	3.7%	2.4%

	Q1	1 year	4 year
Equities	4.7%	0.2%	6.6%
Benchmark	6.4%	0.2%	7.6%
Value Add	-1.7%	0.0%	-1.0%

	Q1	1 year	4 year
Fixed Income	2.5%	0.8%	2.4%
Benchmark	2.7%	-0.3%	0.4%
Value Add	-0.2%	1.1%	2.0%

Plan Performance Summary

	Q1	1 year	4 year
Real Assets	4.8%		
Benchmark	2.7%		
Value Add	2.1%		

	Q1	1 year	4 year
Public Market Alternatives	3.1%	6.3%	
Benchmark	2.0%	7.2%	
Value Add	1.1%	-0.9%	



HRM Master Trust

Investment Risk & Analytical Services

March 31, 2023

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SECTION 1

HRM Master Trust

Investment Risk & Analytical Services

March 31, 2023

FIRST QUARTER 2023

Provided by Northern Trust Asset Management

OK, ON AVERAGE

On average, the global economy looks to be “OK” – regional and sectoral areas of weakness being offset by other areas of relative strength; meanwhile, inflation seems contained in some areas albeit still raging in others. *On average*, the financial system is “OK” – concerns in some regional banks and other “one-off” issues (driven mostly by poor risk management) absorbable by the broader, still-healthy banking industry. And, *on average*, the global financial market outlook looks “OK” – global equity valuations are near the median valuation level of the past 25 years (~19 times last-twelve-months earnings). But you are also “OK, on average” if you are six feet tall standing in a lake that averages five feet deep. That is, on average, you have no fear of drowning despite the fact that there are almost assuredly areas in that lake where you would be underwater. The key to successful investing is to appreciate potential financial and economic “deep spots” potentially masking what looks “OK” on the surface.

Growth and Inflation. *On average*, the global economy has displayed much resiliency in the face of geopolitical disruptions and higher interest rates. Global composite purchasing managers’ indices (PMIs) sit at ~52 – modestly higher than the ~48 mark coming into 2023 and above the 50 mark that separates expansion from contraction. But underneath that modest expansion, we find a notable gap between the fairly hot service industry and the mostly tepid manufacturing industry; most notably the case in the United States, where the manufacturing PMI sits near 46 while the services PMI sits closer to 55. Growth disparities have led to inflation disparities, with core goods inflation already back below the Federal Reserve’s 2% target but with core services inflation still stuck in the 6-7% range.

Central Banks and Credit Markets. Stubborn services inflation kept the Fed focused on rate hikes – until the failure of Silicon Valley Bank and resulting contagion forced one eye over to monitoring financial industry health. As such, *on average*, markets expect one more 0.25% rate hike before a Fed cutting cycle starts near year end. But that “average” is a combination of a higher rate trajectory should services inflation linger and a lower rate trajectory should bank stresses persist.

Financial Markets. When ostensibly benign average expected outcomes are masking a wide range of potential outcomes underneath, financial markets often respond with outsized volatility. One day, an inflation print below expectations can lead to “risk-on” markets as investors price in the end of the rate hike cycle; the next day, a headline suggesting another bank may be in trouble can mean “risk-off” markets as investors brace for impact. In these environments, it is especially important to keep adequate liquidity for spending needs so as to not be forced into selling “good assets on a bad day” while also maintaining proper diversification – not only among stocks and bonds but also real assets and other diversifiers.

MARKET EVENTS

■ 1Q 2023 global equity total return: 7.4%



JANUARY

FEBRUARY

MARCH

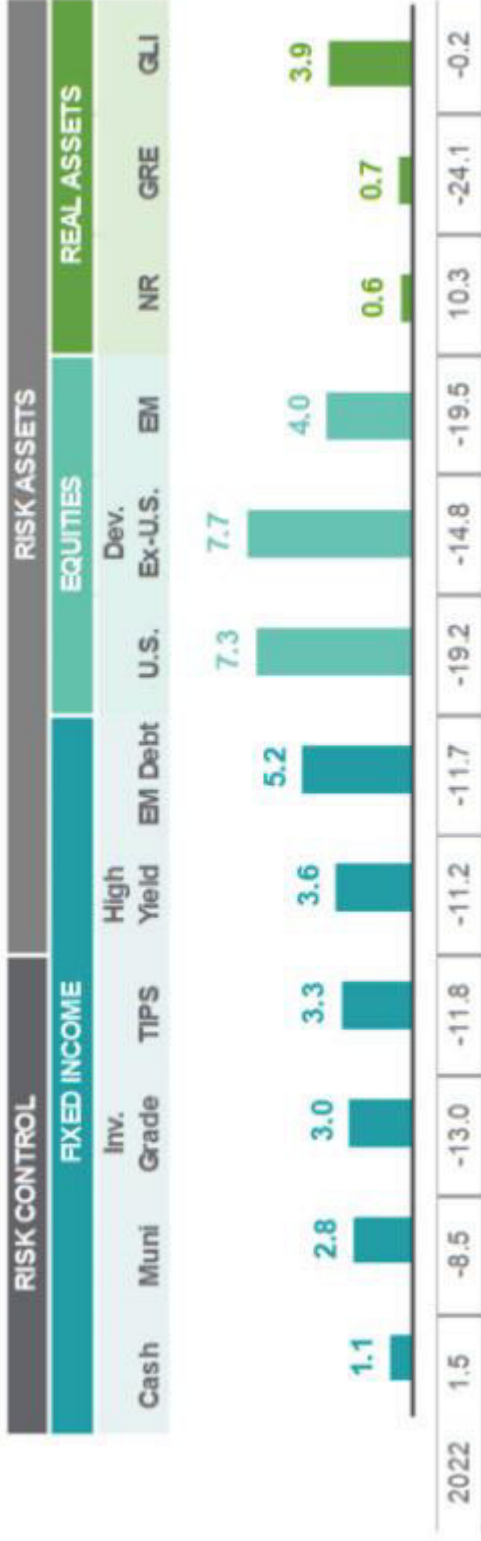
- 6** December U.S. jobs report shows continued strength but gradual cooling with slower job gains, increased participation and slower wage growth.
- 12** Investors price in less central bank tightening after U.S. Consumer Price Index (CPI) cools year-over-year (YoY).
- 15** Q422 earnings season unofficially begins; earnings proceed to contract with broad-based weakness (ex-energy) and disappointing forward guidance.
- 19** U.S. government reaches its \$31.4 trillion borrowing limit and invokes extraordinary funding measures estimated to last until ~June–September.
- 24** U.S. and Europe flash Purchasing Managers' Indexes (PMIs) come in better than expected while 4Q U.S. Gross Domestic Product is solid at 2.9%.

- 3** A much stronger than expected U.S. jobs report triggers upward revisions in investor policy expectations (later intensified by the 2/14 CPI data).
- 4** Geopolitical frictions deepen after the U.S. shoots down a China surveillance balloon in U.S. airspace, though the market impact is contained.
- 24** One-year anniversary of the Ukraine war; little progress has been made toward a peaceful resolve and escalation risks remain present.
- 24** Core Personal Consumption Expenditures – the Fed's preferred inflation measure – unexpectedly accelerates to 4.7% from 4.3%.
- 26** China PMIs top expectations and the expansionary threshold (50) as its reopening supports domestic growth.

- 10** The second-biggest U.S. bank failure (Silicon Valley Bank, aka SVB) triggers a run on regional bank deposits and elevates financial stability risks.
- 15** Bank turmoil continues after Credit Suisse (CS) shares plunge on perceived weakness and its ensuing deposit outflows force a rescue sale to UBS.
- 16** The European Central Bank moves ahead with a 50-bp rate hike, but aims to verbally assuage financial stability worries and removes forward guidance.
- 22** Amid bank turmoil but elevated inflation the Fed hikes its policy rate by 25 bps, softens language on future hikes and leaves its 2023 year-end Fed funds rate forecast unchanged at 5.1%.
- 27** First Citizens Bank purchases SVB at a \$16.5B discount, helping ease investor concern after a period of no new developments on further bank contagion.

FIRST QUARTER 2023 TOTAL RETURNS (%)

Strong returns across most financial market assets mask a quarter full of volatile swings -- especially within bond markets.



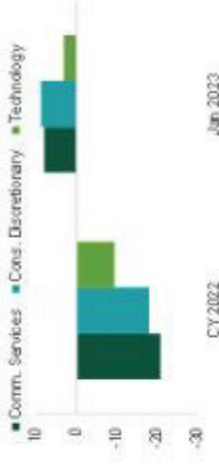
Source: Northern Trust Asset Management, Bloomberg. NR: Natural Resources; GRE: Global Real Estate; GLI: Global Listed Infrastructure. Indexes are gross of fees. Past performance is not indicative or a guarantee of future results. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index.

MARKET REVIEW

Initial Inflation Optimism

Equities firmly rebounded in January with key support from increased investor optimism on the path of inflation and less communication from central bankers on further rate hikes. This led to a strong month of returns in the U.S. and also outside the U.S. with mild weather alleviating energy concerns in Europe and China's rebound from Covid-19 reopening. Equity performance in January was in many ways a reversal of 2022, where many 2022 laggards notably outperformed (see chart) and riskier parts of the market performed well.

RELATIVE RETURNS OF VARIOUS SECTORS (%)



Not So Fast...

In February, economic data releases proved firmer than expected – more resilient on the growth front and stickier on the inflation side. A key tenet of the solid economic backdrop was strong labor markets where the unemployment rate fell to its lowest level since the late 1960s. In response, the equity market rally lost steam as investors reconsidered their inflation views and upwardly revised their expected trajectory for central banks. However, March's banking issues (see next section) unwound the increase in Fed expectations.

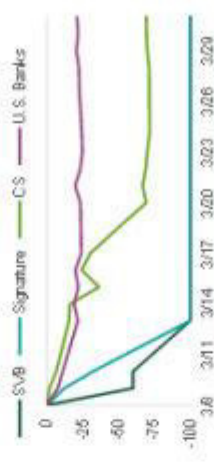
EXPECTED 2023 PEAK FED FUNDS RATE (%)



March Madness for Banks

In March, investor worries of more Fed rate hikes shifted to financial stability concerns. Initially, Silicon Valley Bank (SVB) suffered major deposit outflows before regulators took control of it (along with Signature Bank). U.S. policymakers quickly stepped in with emergency liquidity measures to help stabilize the banking sector. Credit Suisse (CS) was then under pressure the next week before being acquired by UBS with support from Swiss authorities. Overall, U.S. banks declined 25% in March (versus a 3.5% S&P 500 gain).

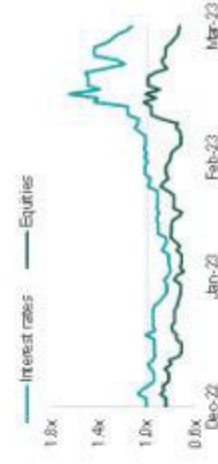
% RETURN SINCE ONSET OF SVB ISSUES (3/8/23)



Choppy Rates, Calmer Equities

The banking-related market reaction was more notable in interest rates versus equities. The S&P 500 initially lost only 3%, while interest rates saw historically high volatility. The 2-year Treasury yield dropped over 100 bps as investor Fed expectations reset lower (i.e., lower peak rate, more likely 2023 rate cuts). While systemic risks stabilized to some degree by late March, a number of implications are possible both near-term (tightening in credit conditions) and longer-term (bank regulation, profitability challenges for small-to-mid-sized banks).

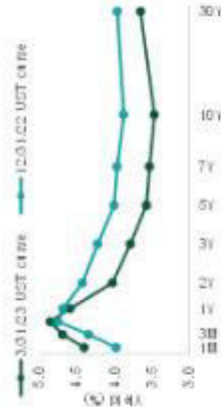
VOLATILITY RELATIVE TO 2022 AVERAGE LEVEL



Interest Rates

The Fed continued to tighten policy but is moving forward with more caution due to the potential for bank stresses to weigh on credit availability. That said, inflation remains a concern and the Fed's year-end policy rate forecast (5.1%) implies a hold-firm approach. Interest rates seasawed in a volatile manner during the quarter as investors struggled to ascertain the monetary policy outlook in the wake of hot inflation amid risks to financial stability. Interest rates across the curve ended lower with near-term yields declining the most.

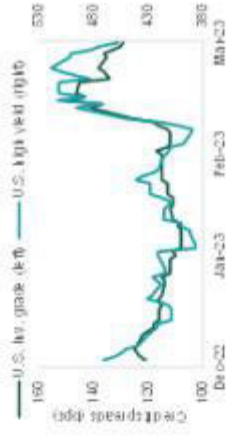
U.S. TREASURY YIELD CURVE



Credit Markets

Credit spreads floated up and down for most of the quarter before moving decidedly higher on banking sector strains. The bank shocks ramped up investor uncertainty on the health of corporate credit and drove wider risk premia across investment grade (IG) and high yield (HY). IG and HY credit spreads rose as much as 38 and 128 basis points (bps), respectively, before coming back in as perceived risks abated. IG spreads ended 8 bps wider, while HY finished 13 bps tighter. Current spreads for both are under recessionary levels.

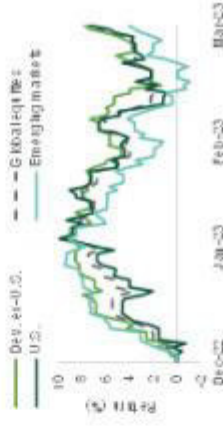
CREDIT SPREADS



Equities

Global equities brought solid gains (7.4%) as developed ex-U.S. equities (7.7%) and U.S. equities (7.3%) led the way while emerging market equities delivered a lower-but-strong return (4.0%). These gains may appear at odds given two of the largest U.S. bank failures ever, however, declining interest rates led to a reprieve in some of the most sizable areas of the markets (i.e., U.S. tech up 21.8%) which buoyed aggregate returns. Equity volatility paled in comparison to bond volatility, but there were still notable swings beneath the surface.

REGIONAL EQUITY INDICES



Real Assets

Real assets bore the brunt of weakness extending from both central bank tightening and banking strains as listed infrastructure (3.9%), global real estate (0.7%) and natural resources (0.6%) all lagged global equities. Listed infrastructure's interest rate sensitivity benefited from the decline in yields. Lower commodity prices hurt equity-based natural resources as demand concerns intensified on signs of global economic vulnerability. Real estate suffered from investor concerns on bank lending – mostly regarding commercial real estate.

REAL ASSET INDICES



Market Overview

IMPORTANT INFORMATION

Indexes used: Bloomberg Barclays (BBC) 1-3 Month US (Cash); BBC Municipal (Muni); BBC Aggregate (Inv. Grade); BBC TIPS (TIPS); BBC High Yield 2% Capped (High Yield); JP Morgan GBI-EM Global Diversified (Em. Markets Fixed Income); MSCI U.S. Equities IMI (U.S. Equities); MSCI World ex-U.S. IMI (Dev. ex-U.S. Equities); MSCI Emerging Market Equities IMI (Em. Markets Equities); S&P Global Natural Resources (Natural Resources); MSCI ACWI IMI Core Real Estate (Global Real Estate); S&P Global Infrastructure (Global Listed Infrastructure).

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Northern Trust Asset Management is composed of Northern Trust Investments, Inc. Northern Trust Global Investments Limited, Northern Trust Fund Managers (Ireland) Limited, Northern Trust Global Investments Japan, K.K, NT Global Advisors, Inc., 50 South Capital Advisors, LLC, Belvedere Advisors LLC, Northern Trust Asset Management Australia Pty Ltd, and investment personnel of The Northern Trust Company of Hong Kong Limited and The Northern Trust Company.

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KEY DEVELOPMENTS

Investment Hierarchy

Account/Group	Ending Market Value CAD	Ending Weight	% Rate of Return										Inception Date
			One Month	Three Months	Year to Date	One Year	Three Years	Four Years	Ten Years	Inception to Date			
HRM Master Trust	2,737,345,067	100.00	1.18	4.12	4.12	6.78	9.55	7.43	8.14	7.17	09/30/1999		
HRM Policy Benchmark			1.45	4.59	4.59	3.15	6.77	5.03	5.72	5.54	09/30/1999		
Excess Return			-0.27	-0.47	-0.47	3.63	2.78	2.40	2.42	1.63	09/30/1999		
HRM Total Equity	1,252,009,634	45.74	0.93	4.69	4.69	0.17	12.25	6.61	-	7.18	12/31/2015		
HRM Total Equity Benchmark			1.58	6.43	6.43	0.15	13.61	7.63	-	8.12	12/31/2015		
Excess Return			-0.65	-1.74	-1.74	0.02	-1.36	-1.02	-	-0.94	12/31/2015		
HRM Cdn Equity	102,348,518	3.74	-0.39	3.37	3.37	-4.63	15.77	6.81	5.14	4.71	03/31/2006		
S&P/TSX Composite			-0.22	4.55	4.55	-5.17	18.02	8.98	7.86	6.10	03/31/2006		
Excess Return			-0.17	-1.18	-1.18	0.54	-2.26	-2.17	-2.72	-1.39	03/31/2006		
Blackrock	99,808,228	3.65	-0.39	3.82	3.82	-4.08	17.81	8.80	7.81	8.40	12/31/2003		
S&P/TSX Composite			-0.22	4.55	4.55	-5.17	18.02	8.98	7.86	7.74	12/31/2003		
Excess Return			-0.17	-0.74	-0.74	1.09	-0.21	-0.18	-0.05	0.66	12/31/2003		
P2P Holdings	2,540,290	0.09	-0.48	-11.49	-11.49	-22.29	-7.62	-15.61	-	-29.39	02/03/2017		
S&P/TSX Composite			-0.22	4.55	4.55	-5.17	18.02	8.98	-	7.56	02/03/2017		
Excess Return			-0.26	-16.04	-16.04	-17.12	-25.65	-24.59	-	-36.94	02/03/2017		
HRM Global Equity	763,720,728	27.90	1.18	6.51	6.51	-	-	-	-	6.51	12/31/2022		
HRM Custom Global Equity Index			1.68	7.29	7.29	-	-	-	-	7.29	12/31/2022		
Excess Return			-0.50	-0.78	-0.78	-	-	-	-	-0.78	12/31/2022		
AB EDHEC	135,089,637	4.94	1.28	5.58	5.58	2.82	13.11	7.33	-	7.74	12/31/2015		
MSCI World ND			2.48	7.60	7.60	0.74	14.46	9.39	-	8.94	12/31/2015		
Excess Return			-1.20	-2.02	-2.02	2.08	-1.35	-2.06	-	-1.20	12/31/2015		
Blackrock Global Alpha Advanta	120,465,242	4.40	3.66	9.17	9.17	5.80	-	-	-	5.75	05/25/2021		
MSCI ACWI ND			2.47	7.18	7.18	0.29	-	-	-	3.03	05/25/2021		
Excess Return			1.19	1.99	1.99	5.51	-	-	-	2.72	05/25/2021		
Blackrock MSCI Small Cap	47,598,393	1.74	-3.28	4.25	4.25	-1.21	-	-	-	-0.74	05/19/2021		
MS Wid Small Cap Net Index			-3.15	4.17	4.17	-1.81	-	-	-	-1.06	05/19/2021		
Excess Return			-0.13	0.08	0.08	0.61	-	-	-	0.32	05/19/2021		
Blackrock MSCI World Passive	128,966,733	4.71	2.52	7.70	7.70	1.15	-	-	-	6.46	05/12/2021		
MSCI World ND			2.48	7.60	7.60	0.74	-	-	-	6.07	05/12/2021		
Excess Return			0.04	0.10	0.10	0.40	-	-	-	0.39	05/12/2021		
Global Alpha	50,340,354	1.84	-2.89	5.17	5.17	-0.00	-	-	-	-0.24	03/09/2022		
MS Wid Small Cap Net Index			-3.15	4.17	4.17	-1.81	-	-	-	-0.03	03/09/2022		
Excess Return			0.26	1.00	1.00	1.81	-	-	-	-0.21	03/09/2022		

% Rate of Return

Account/Group	Ending Market Value CAD	Ending Weight	One Month	Three Months	Year to Date	One Year	Three Years	Four Years	Ten Years	Inception to Date	Inception Date
Marathon International Equity	67,155,856	2.45	0.38	7.34	7.34	7.33	-	-	-	1.11	05/28/2021
MSCI EAFE ND			1.87	8.34	8.34	6.86	-	-	-	2.55	05/28/2021
Excess Return			-1.49	-1.00	-1.00	0.48	-	-	-	-1.44	05/28/2021
Mawer International Equity	78,475,852	2.87	2.07	7.63	7.63	4.13	-	-	-	-0.01	02/28/2021
MSCI ACWI ex USA ND			1.84	6.74	6.74	2.86	-	-	-	0.59	02/28/2021
Excess Return			0.23	0.89	0.89	1.27	-	-	-	-0.61	02/28/2021
Wellington US Equity	135,628,661	4.95	0.79	4.96	4.96	-1.56	21.54	13.37	13.45	13.17	04/30/2011
HRM US Equity			3.05	7.37	7.37	-0.02	20.50	12.42	12.31	11.93	04/30/2011
Excess Return			-2.26	-2.41	-2.41	-1.54	1.04	0.95	1.15	1.24	04/30/2011
HRM Emerging Markets	95,485,614	3.49	1.91	4.18	4.18	2.75	5.39	0.03	4.58	4.81	09/30/2010
MSCI Emerging Markets ND			2.42	3.83	3.83	-3.25	6.03	1.12	4.96	4.02	09/30/2010
Excess Return			-0.50	0.35	0.35	6.00	-0.64	-1.09	-0.38	0.78	09/30/2010
CC&L Emerging Markets	40,593,505	1.48	-1.00	-	-	-	-	-	-	-	12/31/2022
MSCI Emerging Markets ND			2.42	-	-	-	-	-	-	3.83	12/31/2022
Excess Return			-3.41	-	-	-	-	-	-	-	12/31/2022
Trinetra Emerg Mktks Grwth Fnd	54,890,685	2.01	4.18	5.30	5.30	3.11	5.65	1.36	-	2.71	08/31/2017
MSCI Emerging Markets ND			2.42	3.83	3.83	-3.25	6.03	1.12	-	2.04	08/31/2017
Excess Return			1.76	1.46	1.46	6.36	-0.38	0.24	-	0.67	08/31/2017
Wellington EMLE	1,424	0.00	-	-	-	-	-	-	-	-	07/31/2011
MSCI Emerging Markets ND			-	-	-	-	-	-	-	-	07/31/2011
Excess Return			-	-	-	-	-	-	-	-	07/31/2011
HRM Private Equity	290,454,775	10.61	0.40	0.67	0.67	15.14	19.26	17.97	19.53	20.95	09/30/2011
HRM PE Benchmark			2.64	8.12	8.12	13.33	8.66	8.02	7.05	7.00	09/30/2011
Excess Return			-2.24	-7.46	-7.46	1.80	10.61	9.95	12.49	13.95	09/30/2011
Private Equity	290,454,775	10.61	0.40	0.67	0.67	15.14	19.26	17.97	19.53	20.95	09/30/2011
HRM Total Fixed Income			0.94	2.46	2.46	0.80	2.69	2.37	-	2.82	12/31/2015
HRM FI Benchmark			1.78	2.68	2.68	-0.28	-0.45	0.43	-	1.22	12/31/2015
Excess Return			-0.84	-0.22	-0.22	1.08	3.14	1.94	-	1.61	12/31/2015
Cash and Cash Equivalents	88,329,631	3.23	0.37	1.09	1.09	4.09	2.18	1.40	2.23	4.34	03/31/2009
3M CAD Bankers Acceptance Rate			0.42	1.26	1.26	4.04	1.70	1.76	1.47	1.35	03/31/2009
Excess Return			-0.05	-0.17	-0.17	0.06	0.48	-0.35	0.76	2.98	03/31/2009
Lincluden CDOR	88,329,631	3.23	0.37	1.09	1.09	4.07	0.38	1.44	-	1.55	12/31/2013
3M CAD Bankers Acceptance Rate			0.42	1.26	1.26	4.04	1.70	1.76	-	1.49	12/31/2013
Excess Return			-0.05	-0.17	-0.17	0.04	-1.32	-0.32	-	0.06	12/31/2013
Global Credit	74,803,766	2.73	0.42	1.46	1.46	-0.70	-	-	-	-0.70	03/31/2022

% Rate of Return

Account/Group	Ending Market Value CAD	Ending Weight	One Month	Three Months	Year to Date	One Year	Three Years	Four Years	Ten Years	Inception to Date	Inception Date
AB Global Credit	74,803,766	2.73	0.42	1.46	1.46	-0.70	2.74	0.82	2.62	4.78	03/31/2009
AB FI Blend			1.07	1.71	1.71	-1.03	0.02	0.50	0.97	0.99	03/31/2009
Excess Return			-0.65	-0.25	-0.25	0.33	2.71	0.32	1.65	3.79	03/31/2009
North American Credit	185,876,544	6.79	0.44	2.49	2.49	1.63	8.84	6.84	-	5.83	12/31/2015
HRM Custom Corporate Benchmark			1.20	2.31	2.31	-1.43	0.48	0.68	-	2.05	12/31/2015
Excess Return			-0.75	0.19	0.19	3.06	8.36	6.16	-	3.78	12/31/2015
Canso	84,694,267	3.09	0.65	3.68	3.68	0.79	13.04	8.88	7.16	8.00	02/28/2010
FTSE TMX Corporate Bond IDX			1.33	2.79	2.79	-0.97	0.63	0.80	2.48	3.46	02/28/2010
Excess Return			-0.68	0.89	0.89	1.77	12.41	8.08	4.68	4.53	02/28/2010
HRM Corporate Debt	101,182,277	3.70	0.27	1.53	1.53	2.70	3.18	3.60	-	6.11	01/31/2014
FTSE TMX Short Corp BD IDX			0.87	1.95	1.95	0.87	1.23	1.33	-	1.96	01/31/2014
Excess Return			-0.60	-0.42	-0.42	1.83	1.95	2.27	-	4.16	01/31/2014
Government Bonds	181,814,236	6.64	3.05	3.72	3.72	-0.97	-1.73	0.31	-	1.36	12/31/2015
FTSE TMX Government Univers			2.45	3.37	3.37	-2.40	-2.50	-0.53	-	0.87	12/31/2015
Excess Return			0.59	0.35	0.35	1.43	0.78	0.84	-	0.49	12/31/2015
Lincluden Gov't	113,932,281	4.16	2.51	3.45	3.45	-1.62	-1.65	0.02	-	2.25	08/31/2013
FTSE TMX Government Univers			2.45	3.37	3.37	-2.40	-2.50	-0.53	-	2.07	08/31/2013
Excess Return			0.05	0.08	0.08	0.78	0.85	0.55	-	0.18	08/31/2013
Wellington Bond Overlay	67,881,955	2.48	3.97	3.85	3.85	-0.19	-2.17	0.64	2.27	2.35	08/31/2012
FTSE TMX Government Univers			2.45	3.37	3.37	-2.40	-2.50	-0.53	1.66	1.68	08/31/2012
Excess Return			1.51	0.48	0.48	2.21	0.33	1.17	0.60	0.67	08/31/2012
Private Debt	95,012,266	3.47	-1.20	1.84	1.84	10.43	8.23	9.47	3.29	0.63	12/31/2011
HRM PD Benchmark			1.15	3.88	3.88	8.89	7.22	6.95	6.62	6.62	12/31/2011
Excess Return			-2.34	-2.05	-2.05	1.54	1.02	2.52	-3.33	-5.99	12/31/2011
Private Debt	95,012,266	3.47	-1.20	1.84	1.84	10.43	8.23	9.47	3.29	0.63	12/31/2011
HRM Real Assets	713,178,590	26.05	1.63	4.84	4.84	-	-	-	-	4.84	12/31/2022
HRM Real Assets BM			0.93	2.68	2.68	-	-	-	-	2.68	12/31/2022
Excess Return			0.70	2.17	2.17	-	-	-	-	2.17	12/31/2022
Infrastructure	298,236,528	10.90	2.60	9.50	9.50	23.88	11.97	11.63	12.63	19.01	06/30/2011
HRM Infrastructure Index			0.93	2.68	2.68	9.49	9.57	8.65	7.48	7.34	06/30/2011
Excess Return			1.68	6.82	6.82	14.39	2.40	2.98	5.15	11.67	06/30/2011
Infrastructure	298,236,528	10.90	2.60	9.50	9.50	23.88	11.97	11.63	12.63	19.01	06/30/2011
Real Estate	414,942,062	15.16	0.85	1.23	1.23	15.53	11.81	13.30	13.19	12.10	09/30/2011
HRM Real Estate Index			0.93	2.68	2.68	9.49	9.57	8.65	7.48	7.32	09/30/2011
Excess Return			-0.08	-1.44	-1.44	6.04	2.25	4.65	5.71	4.77	09/30/2011
Real Estate	414,942,062	15.16	0.85	1.23	1.23	15.53	11.81	13.30	13.19	12.10	09/30/2011

% Rate of Return

Account/Group	Ending Market Value CAD	Ending Weight	One Month	Three Months	Year to Date	One Year	Three Years	Four Years	Ten Years	Inception to Date	Inception Date
Public Market Alternatives	129,256,275	4.72	2.36	3.11	3.11	6.29	-	-	-	5.60	02/28/2022
<i>3M CAD Bankers Acceptance R+3% Excess Return</i>			<i>0.67</i>	<i>2.01</i>	<i>2.01</i>	<i>7.15</i>	-	-	-	<i>6.92</i>	<i>02/28/2022</i>
			<i>1.70</i>	<i>1.10</i>	<i>1.10</i>	<i>-0.86</i>	-	-	-	<i>-1.33</i>	<i>02/28/2022</i>
Public Market Alternatives	129,256,275	4.72	2.36	3.11	3.11	6.29	-	-	-	5.60	02/28/2022
<i>3M CAD Bankers Acceptance R+3% Excess Return</i>			<i>0.67</i>	<i>2.01</i>	<i>2.01</i>	<i>7.15</i>	-	-	-	<i>6.92</i>	<i>02/28/2022</i>
			<i>1.70</i>	<i>1.10</i>	<i>1.10</i>	<i>-0.86</i>	-	-	-	<i>-1.33</i>	<i>02/28/2022</i>
HRM Operating	17,064,125	0.62	-	-	-	-	-	-	-	-	12/31/2015
Operating Account	17,064,125	0.62	-	-	-	-	-	-	-	-	03/31/2004

Executive Summary

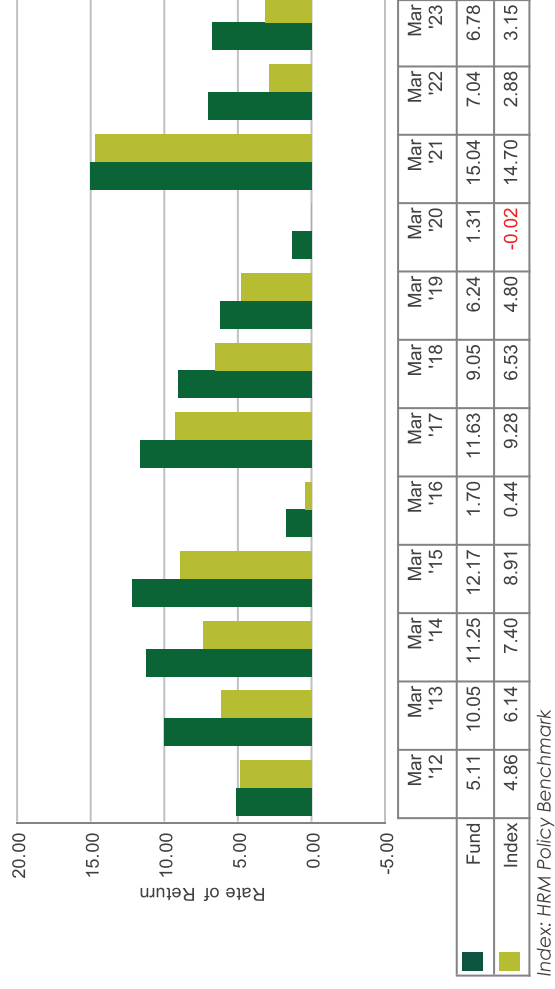
HRM MASTER TRUST TOTAL FUND NET OF FEES



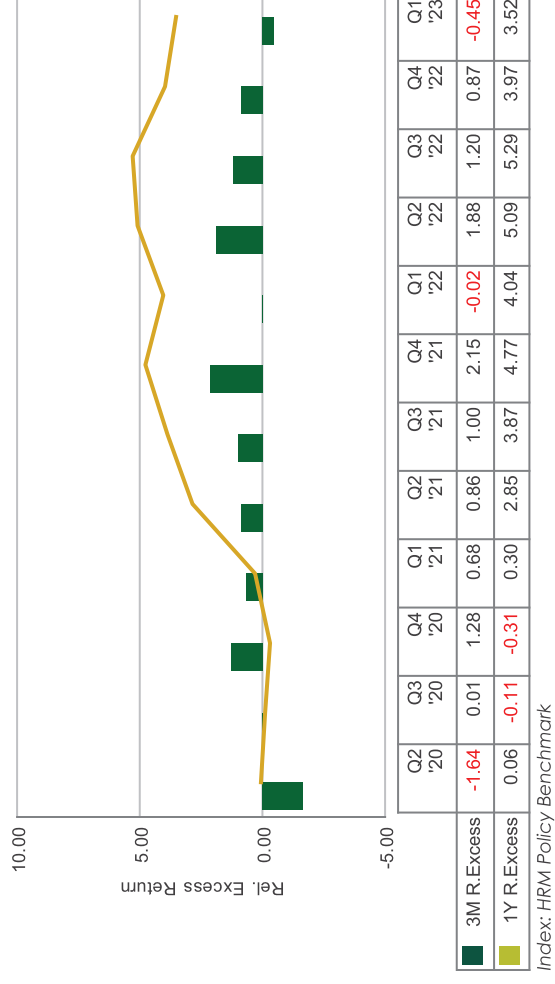
RISK STATISTICS

	3 Mos	1 Yr	4 Yrs
Return	4.12	6.78	7.43
Index Return	4.59	3.15	5.03
Excess Return	-0.47	3.63	2.40
Standard Deviation	-	5.69	5.20
Index Standard Deviation	-	8.06	5.89
Tracking Error	-	3.12	2.23
Information Ratio	-	1.16	1.08
Sharpe Ratio	-	1.04	1.23
Index Sharpe Ratio	-	0.29	0.68
Jensen's Alpha	-	4.26	3.00
Relative Volatility (Beta)	-	0.66	0.82
R Squared	-	0.91	0.86
Beginning MV (in 000s)	2,635,823	2,575,234	2,099,711
Net Contributions (in 000s)	-6,533	-11,309	-50,818
Income (in 000s)	8,658	50,881	220,575
Appreciation (in 000s)	99,398	122,539	467,877
Ending MV (in 000s)	2,737,345	2,737,345	2,737,345

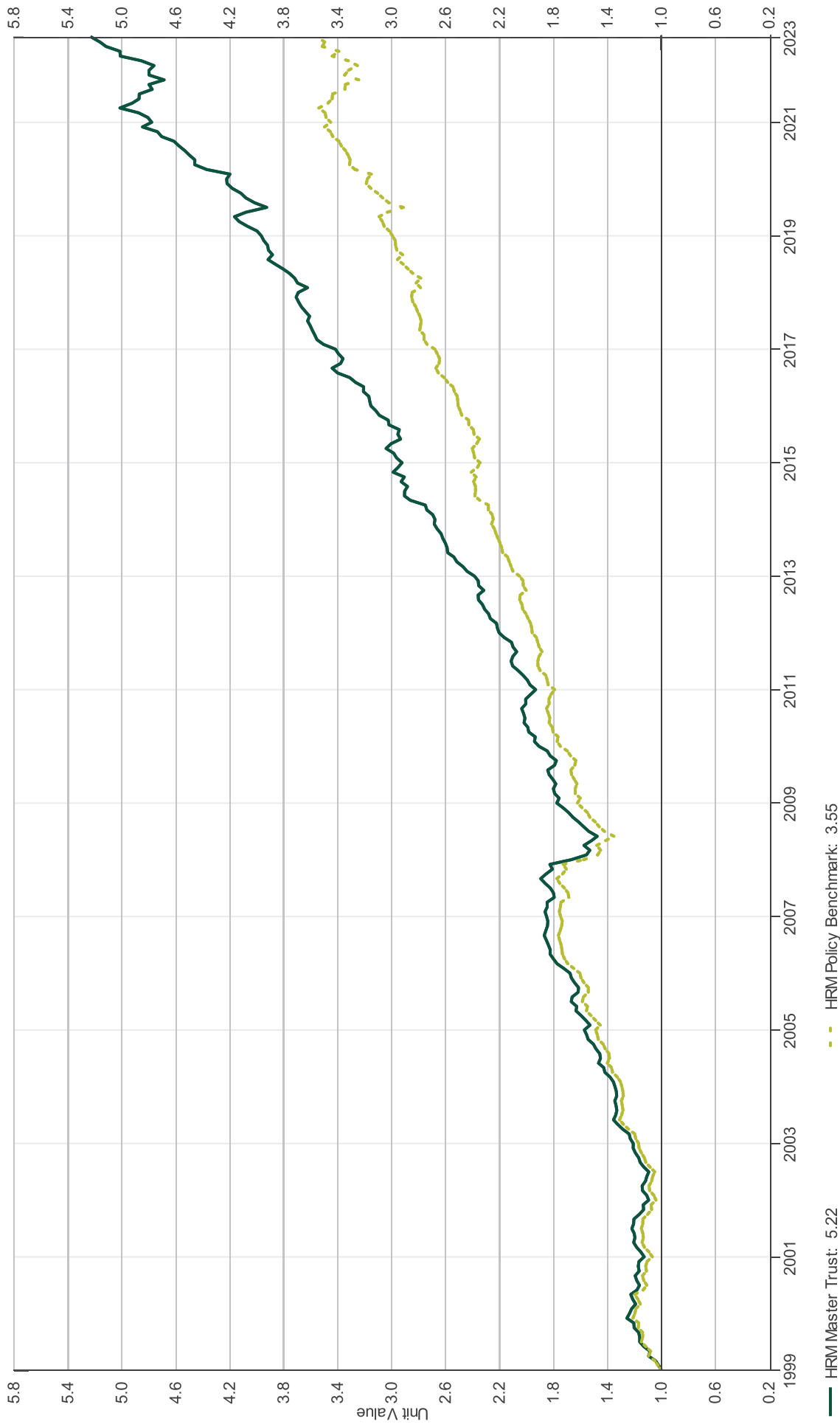
HRM MASTER TRUST ROLLING YEARS TOTAL FUND NET OF FEES



HRM MASTER TRUST ROLLING QUARTERS TOTAL FUND NET OF FEES



Growth Over Time - Inception to Date



TO: Colleen Rollings, P.Eng, Chair and Members of the Halifax
Regional Water Commission Board

SUBMITTED BY: 
[E. Jeff Myrick \(Jun 20, 2023 08:19 ADT\)](#)
Jeff Myrick, Communications and Public Affairs Manager

APPROVED: 
[Louis de Montbrun \(Jun 20, 2023 09:02 ADT\)](#)
Louis de Montbrun, CPA, Acting General Manager

DATE: June 16, 2023

SUBJECT: **2023/24 Communications & Stakeholder Engagement
Plan on a Page**

INFORMATION REPORT

ORIGIN

2023/24 Annual Business Plan

BACKGROUND

Halifax Water's Business Plan for 2023/24 addresses the challenges of growth, aging infrastructure, and the increasing demands of customers. In addition to addressing these challenges, this plan focuses on ensuring Halifax Water customers continue to receive quality service and that the utility's employees are supported and empowered with the resources needed to achieve this.


DISCUSSION

The 2023/24 Communications & Stakeholder Engagement Plan on a page reflects the challenges and opportunities outlined 2023/24 Annual Business Plan and provides a high-level overview of the main projects, programs and services that will be the focus of communications efforts for this fiscal year. Along with a number of significant capital projects, Halifax Water will be continuing the development and rollout of a comprehensive stakeholder engagement strategy; continuing communications with new stormwater

customers within the recently expanded stormwater service boundary; engaging with customers and stakeholders regarding affordability, watershed land use, consumer education and awareness, and much more. Separate, detailed communications plans have already been developed for a number of the strategic items listed in the Plan.

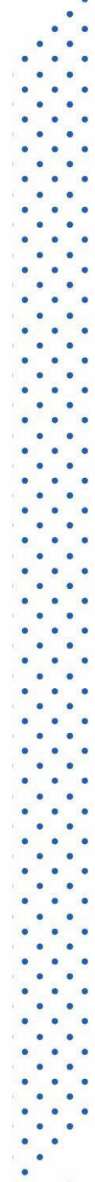
ATTACHMENTS

1. Communications and Stakeholder Engagement – Plan on a Page

Report Prepared by: 
[Jeff Myrick \(Jun 20, 2023 08:17 ADT\)](#)
Jeff Myrick, Communications and Public Affairs Manager

Halifax Water Communications and Stakeholder Engagement 2023/24


	Q1 (April – June)	Q2 (July – September)	Q3 (October – December)	Q4 (January – March)
Strategic Communication Focus	<ul style="list-style-type: none"> Source Water Protection Regulations Engagement Customer Portal Stormwater Customer Communications & Education 	<ul style="list-style-type: none"> Stormwater Customer Communications & Education Cogswell District Energy System Customer Bill Redesign & Longer-Term Billing Strategy 	<ul style="list-style-type: none"> New Service Account Compliance Program Stormwater Customer Communications & Education Customer Connect Discovery Centre & Water Cycle Education for Youth 2024/25 Communications Planning 	<ul style="list-style-type: none"> Stormwater Customer Communications & Education Annual Business Plan Annual Operating & Capital Budget Cost of Service Application Rate Design Activities
Regular External Communications Activities	<ul style="list-style-type: none"> Report on CSR, Diversity & Inclusion Initiatives Launching Communications for the 2023/24 Capital Project Season Water Distribution System Flushing Blue Nose Marathon Sponsorship Continue to support capital projects, day-to-day operations, planned and unplanned events, social media presence, etc. Promotion of Halifax Water programs: Financial Assistance (H2O Fund), Pollution Prevention, Inflow & Infiltration Reduction, Stormwater Credit, Wastewater Rebate, The Lateral Loan, and Lead Service Line Replacement Program (Get the Lead Out). Promotion of Public Board Meetings 	<ul style="list-style-type: none"> Annual General Meeting Annual Report Accountability Report North American Indigenous Games Sponsorship Halifax Pride Sponsorship & Parade 	<ul style="list-style-type: none"> Annual Customer Survey Storm preparedness & catch basin cleaning Halifax Water NSCC Fall Bursary Applications HRM Right-of-Way Charge Transition to Municipal Tax Bills 	<ul style="list-style-type: none"> Communicate Annual Customer Survey Results Halifax Water NSCC Spring Bursary Applications 2024/25 Capital Project Communication Planning
Regular Internal Communications Activities	<ul style="list-style-type: none"> GM Roadshow (Business Plan and Survey Results) Health and Safety Week Awareness CSR, Diversity & Inclusion Initiatives Cyber Security Awareness 	<ul style="list-style-type: none"> Employee Engagement GM Roadshow (Corporate Balanced Scorecard Results) Organizational Award Professional Development Communications 	<ul style="list-style-type: none"> GM Roadshow (Pension & Benefits) Launch the Annual Employee Survey Employee Engagement (Flu Shots, Hearing Tests, United Way, Angel Tree, Purple Ribbon Campaign) Long Service Awards & Banquet I&I Compliance Program 	<ul style="list-style-type: none"> Communicate Annual Employee Survey Results Employee Appreciation Day Any compensation or benefit changes for the coming fiscal year
Stakeholder Engagement Activities	<ul style="list-style-type: none"> Monthly Pipeline Post Newsletter Employee engagement regarding the Burnside Operations Centre, 450 Cowie Hill Road Workspaces Project, Document Management System, SMART Device Rollout, and more. Supporting projects, programs or policy changes with internal communications, updates to safety screens, and updates to the intranet. Promotion of employee services and benefits such as lifelong learning, fitness incentive, etc. 	<ul style="list-style-type: none"> Stakeholder Engagement Water Station Community Program 	<ul style="list-style-type: none"> Stakeholder Engagement Online Public Information Sessions (Stormwater, GRA, etc.) Water Station Community Program Review & Planning for 2024/25 	<ul style="list-style-type: none"> Present Annual & Five-Year Business Plans to Halifax Council Online Public Information Sessions (Stormwater, GRA, etc.)




Halifax Water Compliance Statement
Quarterly Certification

For the period of January 1, 2023 to March 31, 2023

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 significant legal claims have been disclosed.


Louis de Montbrun (Jun 16, 2023 09:01 ADT)

Louis de Montbrun, CPA, CA
Acting General Manager/CEO


Alicia Scallion (Jun 15, 2023 16:36 ADT)

Alicia Scallion, CPA, CA
Acting Director, Corporate
Services/CFO



Heidi Schedler
Director, Governance and Human Resources

Dated:

June 16, 2023

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

Quarterly Remittance Certification
Appendix II

Period: January to March 2022/2023

<u>Vendor</u>	<u>Vendor #</u>	<u>Items Remitted</u>	<u>Total remitted</u>	<u>Exceptions</u>
Statutory Payroll Remittances				
CRA	174	Tax, CPP, EI, WCB	\$5,200,374.48	
Other Payroll				
Northern Trust	1215	HW Pension Plan	\$ 2,085,892.80	
Northern Trust	1216	HRM Pension Plan	\$ 276,388.70	
Manulife Financial	1171	Bedford Pension Plan	\$ 1,875.12	
Industrial Alliance	2971	DCPP	\$ 5,660.18	
Medavie Blue Cross	340, 3101	Health, Dental, Life, LTD	\$ 931,929.39	
SSQ Insurance	429	AD&D	\$ 7,453.82	
CUPE	160	Union Dues 1431	\$ 32,620.52	
CUPE	3517	Union Dues 227	\$ 52,549.01	

Other payroll items remitted in accordance with stated requirements:

United Way, Credit Union, Garnishments (WCB, CRA, Family Court, Sherriff's Office),
Water for People, Salvation Army, Racially Visible Caucus


HST and Other

CRA	N/A	HST (refunds)	\$ 4,299,553.67	
Receiver General	210	WCB subcontractors	\$ 107.41	

Exceptions, errors and/or late remittances

TO: Colleen Rollings, P. Eng., PMP, Chair and Members of the Halifax
Regional Water Commission Board

SUBMITTED BY: 
Heidi Schedler, KC, Director of Governance and Human Resources

APPROVED: 
[Louis de Montbrun \(Jun 17, 2023 13:43 ADT\)](#)
Louis de Montbrun, CPA, Acting General Manager

DATE: **June 16, 2023**

SUBJECT: **Institutional Capacity**

ORIGIN

M10468 Halifax Water General Rate Application 2022

BACKGROUND

Halifax Water's institutional capacity to deliver existing programs and services as well as increased capital investment under the Integrated Resource Plan was an issue discussed during the 2022 rate application process. Halifax Water was directed by the NSUARB to report annually in September on its efforts to address institutional capacity. The first NSUARB report was filed in September 2022 and was provided to the Halifax Water Board in advance of being filed with the NSUARB. The Halifax Water Board directed staff to provide bi-annual updates to the Halifax Water Board on its efforts to address institutional capacity.

DISCUSSION

As of September 1, 2022, Halifax Water had 550 employees. For the 2022/2023 fiscal year we anticipated hiring 24 net new positions. An additional ten, long-standing term positions have subsequently been made permanent. Some positions planned for the 2023-24 operating budget were advanced to help address capacity issues.

As of March 31, 2023, Halifax Water has 555 employees.

Sept 1, 2022 – March 31, 2023 (From last reporting period)

	Sept 1, 2022	March 31, 2023	Change
Permanent employees	525	530	+5
Term employees	25	25	0
Total:	550	555	+5

Total change for the fiscal year April 1, 2022 – March 31, 2023

April 1, 2022 – FTE Employees	547
New FTE Hires (Externally)	+35
Departures (Sept 1 – March 31)	-43
New Positions filled internally	<u>+16</u>
TOTAL March 31, 2023	555

Turnover

The average turnover rate at Halifax Water is 7.74% which is an overall increase of 6.74% from the previous fiscal year. In summary, in 2022/23 there have been six terminations, 19 resignations, 16 retirements, and two deaths of active employees for a total of 43 departures.

Succession Planning and Retirements

There are currently 34 employees or 6.1% of the workforce eligible to retire. The percentage eligible to retire over the next five years (i.e., up to December 31, 2028) increases to 95 employees or 17.10%.

Halifax Water has a talent management program to help employees develop and progress their careers at Halifax Water. Some initiatives we have planned for this coming year to help promote and encourage the development of internal candidates to be ready to take on new roles include:

- Promote the employee development guide frequently and introduce during onboarding of all new hires.
- Roll out the Diversity and Inclusion Fair Hiring policy
- Continue to provide supervisory training “Performance Matters” to staff, including unionized employees that aspire and take initiative to progress into supervisory roles.
- Continue to promote the training and development and lifelong learning initiatives available to all employees.
- Continue to develop a culture where performance feedback is welcomed and well received.

Recruitment

Halifax Water posted 168 competitions between April 1, 2022, and March 31, 2023, and successfully concluded 134 as of March 31, 2023. The majority of these were to fill existing

positions that have become vacant due to lateral or ascending internal movements. There were 24 net new positions included in the 2022/2023 operating budget. Of those 24, 20 have been filled, one position was withdrawn, and two are currently in progress. The balance will be carried over to be filled in 2023/24.

Attraction of new employees

There has been an increase in attraction concerns in the last half of the 2022/23 fiscal year throughout the organization. Some areas that are concerning are in Procurement, Accounting, Finance, Water Treatment, Human Resources and Engineering Technologists. There are also retention concerns for new hires as some have left within six months of being hired. We have conducted exit interviews and believe the retention issues are primarily due to the challenging job market that exists currently.

Consideration has been given to adjusting hiring standards to allow for more flexibility in accepting applicants that do not meet all qualifications with longer probationary periods to allow for skills development.

Retention of existing employees

Halifax Water maintains a competitive total compensation package. Some initiatives this year to help with attraction and retention include:

- Introducing the Diversity and Inclusion Fair Hiring policy
- Introducing optional life and critical illness insurance offerings
- Increasing resources in the Human Resource department
- Re-alignment of Engineering and Technology Services department
- Conducting the CUPE Local 227 Job Evaluation review process
- Continue to update and re-evaluate job descriptions as required and benchmarking compensation against market
- Promote the Awards recognition program
- Collective bargaining

Financial Reviewed by:



Alicia Scallion, CPA, CA
Acting Director, Corporate Services/CFO, 902-490-3685