Annual Report

March 31, 2023

2022/23

Halifax Water

Get in Touch

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Manage your Halifax Water account at
customerconnect.halifaxwater.ca

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Twitter @HalifaxWater
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About Us

Purpose Statement

Our purpose is to supply and safeguard sustainable, high-quality water services.

Vision

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

Values

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

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

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

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

Our Leaders

Board of Commissioners March 31, 2023

Colleen Rollings
P.Eng., PMP,
Board Chair

Councillor Cathy Deagle Gammon
Vice Chair

Councillor Becky Kent

Denise Schofield
Deputy CAO,
Halifax Regional Municipality

Councillor Pamela Lovelace

Councillor Patty Cuttell

Mimi Kolomyytsev

Kostia Zaharov
P.Eng., PMP, MBA

Executive Team March 31, 2023

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

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

Kenda MacKenzie
P.Eng.,
Director, Regulatory Compliance Services

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

Susheel Arora
M.A.Sc., P.Eng.,
Director, Operations

Heidi Schedler
King's Counsel,
Director, Governance & Human Resources

Message from the Chair

As Board Chair during 2022/23, I want to recognize the value Halifax Water provides for its customers and the community with a commitment to delivering overall value through its services, public health, and sustainability.

Halifax Water is committed to building a diverse organization that is increasingly representative of the customers we serve. The Halifax Water Board and Executive Team demonstrated gender balance and diversity throughout 2022/23.

In late 2022, HALIFAX announced changes to its representative on the Board, with Denise Schofield replacing Brad Anguish as a commissioner. On behalf of the Board, I want to thank Brad for his service.

Halifax Water also experienced a change in its leadership, as former General Manager Cathie O'Toole departed to become the Chief Administrative Officer at HALIFAX. The Board thanks Cathie for serving Halifax Water and wishes her even greater success in her new role.

The utility was fortunate to have Louis de Montbrun step in as Acting CEO and General Manager. Through his leadership, the organization continued to deliver high-quality services to customers. We want to thank Louis for stewardship of the utility as the new CEO and General Manager, Dr. Tareq Al-Zabet, transitions into his new role in July 2023.

Last year, Halifax Water focused on the safety of its people, services, and capital work. Halifax Water employs approximately 560 employees, and the $106.5 million capital budget and $164.4 million operating budget in 2022/23 provided a significant local economic benefit for HALIFAX.

The services provided by Halifax Water are vital to this region. By continuing to invest in critical water, wastewater, and stormwater infrastructure, residents and businesses will experience the benefits of this economic and environmental backbone for the region now and into the future.

On behalf of the Halifax Water Board, I wish to convey to customers our continued commitment to providing responsible governance and oversight in delivering water, wastewater and stormwater service by Halifax Water. I want to extend my sincere appreciation to the employees of Halifax Water, particularly the front-line workers, for your ongoing commitment and service to the community.

Colleen Rollings, P.Eng., PMP
Chair of the Halifax Water Board of Commissioners

Message from the Acting General Manager & CEO

Louis de Montbrun was appointed Acting General Manager and CEO from January 1, 2023, to the end of the fiscal year on March 31, 2023. He remained in the role until July 24, 2023, when Dr. Tareq Al-Zabet assumed the position.

The commitment that Halifax Water employees show to our customers continues to amaze me. Day in and day out, the team is dedicated to supplying high-quality services while we meet the challenges of a growing population, aging infrastructure, and increasing regulatory compliance.

Through these collective efforts, Halifax Water meets all its obligations under the Halifax Regional Water Commission Act and the Public Utilities Act. In addition to its obligations through legislation, the utility complies with all of its operating permits for its water and wastewater systems for the fiscal year ending March 31, 2023.

In fiscal 2022/23, Halifax Water introduced a more integrated approach to business planning to support the "One Team – One Water" vision. This approach places key business initiatives within the organization's four pillars (themes): Operational Excellence, Health, Safety & Environment, Financial & Regulatory Accountability, and People.

Last year was the second year of the Water Supply Enhancement Program, which requires more than $300 million over ten years to provide greater resilience and enable the utility to adapt to changing source water quality.

For wastewater systems, achieving compliance is an ongoing challenge, and requires balancing weather influences, equipment efficiency, and customer compliance with Halifax Water Regulations.

Halifax Water achieved 96% sample compliance with Nova Scotia Environment and Climate Change requirements at the wastewater treatment facilities, consistent with the prior year.

Our purpose is to supply and safeguard sustainable, high-quality water services. Everything we do at Halifax Water is tied to our purpose. With the excellent work of our team over the past year, we have continued to supply and safeguard sustainable, high-quality water services.

In October 2022, the Nova Scotia Utility and Review Board (NSUARB) approved Halifax Water's General Rate Application. As a result, on December 1, 2022, rates increased for water, wastewater, and stormwater services. This increase helps support the utility's overall financial health, improves the utility's ability to recover the annual cost of providing the services, and funds continuing investment in infrastructure to serve customers.

From an external perspective, Halifax Water continues to be challenged by issues beyond its control that place added cost pressures on the utility. An increasingly tight or heated labour market is affecting the ability to hire, not only for the utility but also for the major construction and engineering contractors that support Halifax Water.

We recognize that we are not the only organization experiencing increases in inflation. However, we are very mindful of the potential impacts this has on our customers. For this reason, Halifax Water is committed to containing costs and delivering cost-effective service.

Thank you to all Halifax Water employees for their commitment to serving customers and protecting the environment!

Louis de Montbrun
CPA, CA
Acting General Manager & CEO

Operational Excellence

We are committed to service, reliability, and quality for our customers. We ensure a more sustainable community by focusing on safely and efficiently building, operating, and maintaining our critical infrastructure.

Capital Project Planning

Capital Planning
The Capital Planning project has been created to provide managers with automated processes and tools to develop the annual capital budget and track project progress, improving Halifax Water's ability to deliver service improvements for our customers.

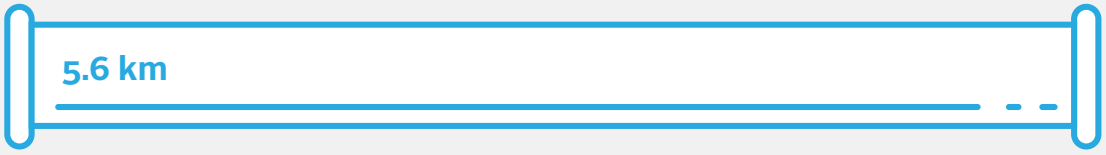
Halifax Water engineering staff perform detailed portfolio management and project management using spreadsheets and other manual data and information administration tools to develop and deliver the annual capital program. This project will replace many of these manual processes.

Capital Projects Supporting Asset Renewal

Enterprise Resource Planning
Halifax Water's current enterprise management solution, SAP, integrates business groups such as planning, purchasing, inventory, and finance. SAP is hosted and supported by the Province of Nova Scotia. The Province has decided to update to a new version of the SAP software. To ensure the best value for our customers, Halifax Water engaged an external consultant, KPMG, to lead an assessment of software options for a new enterprise management solution. A new solution, Cayenta, was identified as a cost-effective, suitable option and is being implemented at Halifax Water.

2022/23 Infrastructure Renewal Statistics

Water Mains Replaced



Wastewater/Stormwater Mains Reinforced

Wastewater/Stormwater Mains Replaced

Inside the Akerley Reservoir

Inside the Akerley Reservoir

Akerley Reservoir - Before

Akerley Reservoir

The Akerley Reservoir is located in the Burnside Industrial Park in Dartmouth. Built in 1986, the reservoir is a welded steel tank approximately 20 metres tall and 50 metres in diameter with a storage volume of 39 million litres.

Following a regular inspection of all water storage reservoirs, the Akerley Reservoir was identified as a priority for rehabilitation as the coating system showed signs of deterioration. The outside of the reservoir was experiencing surface corrosion, chalking and coating loss on the shell and roof plates.

This work began in the spring of 2022, including replacing the interior and exterior coating systems. Completion and commissioning are on track for September 2023.

Akerley Reservoir - After

Bissett Lake Wastewater Pump Station Upgrades

Gravity does most of the work getting wastewater from homes to our treatment plants, but it is sometimes necessary to pump wastewater over hills or to the treatment facility if it's a long distance away. The wastewater is treated at the treatment facility to remove harmful contaminants and bacteria. From there, the water is released into the environment.

The Bissett Lake wastewater pump station is located on Atwood Crescent in Cole Harbour and collects wastewater from a large area. The station then pumps wastewater up to a higher elevation, where it enters a pipe system that conveys the wastewater by gravity to the Eastern Passage Wastewater Treatment Facility (WWTF). The original station was constructed in the early 1970s and has a capacity of approximately 440 litres per second. The pump station is nearing the end of its useful life, so the time has come to replace and upgrade it to ensure that a reliable wastewater system continues serving Halifax Water customers in this area.

Design work for the Bissett Lake wastewater pump station is complete. The process of hiring a contractor to do the work will begin in 2023, with construction expected to take more than a year to complete.

Bissett Lake Wastewater Pump Station

Penhorn Stormwater System Replacement
Halifax Water manages an annual stormwater system replacement program as part of the utility's overall asset management plan for its stormwater infrastructure. With an inventory of approximately 900 km of stormwater gravity sewers, sections of the system needing replacement are identified and prioritized based on their condition.

The Penhorn Stormwater System Replacement project involves the replacement of various sections of the stormwater system serving Penhorn Lake and the Portland Street area of Dartmouth. Approximately 350 metres of the stormwater system will be replaced. This project will also include integration opportunities within Halifax Water and with HALIFAX concerning upgrades to Portland Street.

Design work is underway and expected to be completed in 2023, with construction expected in 2024.

Capital Projects Supporting Growth

Churchill Drive Water Transmission Main Replacement
Significant growth is anticipated on the Halifax Peninsula in the next thirty years. Some of the older transmission mains supporting downtown Halifax require additional capacity to meet future demands.

The transmission mains involved in this project were originally installed in 1856 and 1862. To ensure that our customers continue to have reliable access to high-quality drinking water for the next century, Halifax Water has begun a program to replace and upgrade the section of the aging transmission mains from Chebucto Road, along Churchill Drive, through Flynn Park to Quinn Street.

The project includes increasing the capacity of approximately 770 metres of transmission mains. The work also includes the replacement of the old transmission mains that pass through the Nova Scotia Power Chebucto Road Substation and an existing tunnel under the CN Railway.

The project is currently under construction and is scheduled for completion by the end of 2023.

Churchill Drive Water Transmission Main Replacement

Dublin Street Water Transmission Main Upgrade

Dublin Street Water Transmission Main Upgrade
The existing water main on Dublin Street was replaced with a larger capacity water transmission main as part of a phased approach to building a large capacity transmission main within the Halifax Peninsula. The need for this work was identified in the Halifax Water Infrastructure Master Plan, improving Halifax Water's ability to support continued growth and improve water system resiliency for customers throughout Peninsular Halifax. This new 400-metre-long section of transmission main connects two other previously upgraded sections on Berlin Street (2020) and Cork Street (2021).

Halifax Water partnered with HALIFAX on this project to carry out street recapitalization work along Dublin Street between Berlin Street and Young Street.

The project also included removing and replacing several lead service lines as part of Halifax Water's Get the Lead Out program.

Capital Projects Supporting Regulatory Compliance

The purpose of wastewater treatment facilities is to remove or reduce contaminants in wastewater before discharging treated water back into the environment. Both of the projects described below relate to wastewater treatment.

Halifax WWTF – New Fournier Presses
Part of the wastewater treatment process involves using chemical precipitation to capture solids (sewage sludge) from the wastewater, then pressing the sludge to remove excess water, creating sludge cake, which is further processed at our Aerotech Biosolids Processing Facility (BPF).

The original Fournier presses at the Halifax WWTF are no longer meeting the facility's needs and will be replaced and upgraded in early 2024 to protect the environment and meet our regulatory requirements. This upgrade will improve maintenance processes, increase sludge processing capacity, improve sludge quality, and reduce trucking and processing costs.

Halifax WWTF Fournier Presses

Herring Cove WWTF Fine Screens

Herring Cove WWTF – New Fine Screens
Screening is used to remove unwanted solids in wastewater, including gravel, dirt, and solid waste/ trash, that can reduce the overall treatment performance of the facility.

The Herring Cove WWTF was designed with two levels of screening: a coarse screen on the inlet of the plant, followed by fine screens. The existing fine screens no longer meet our treatment best practices and must be upgraded.

To efficiently provide wastewater services to our customers in this area, the original 10 mm bar screens are being replaced during the summer/fall of 2023 with 6 mm perforated plate screens. This change is expected to significantly improve the screening capture rate and the wastewater quality, with less debris, grit, and trash making its way to the downstream equipment and treatment processes.

Wastewater Treatment Facility Enhancements & Research

Halifax Water has made significant strides in strengthening and expanding its partnership with the Centre for Water Resources Studies at Dalhousie University, particularly in wastewater treatment. This collaboration has been supported by grants from the Natural Sciences and Engineering Council of Canada (NSERC).

We have undertaken a small-scale Biological Aerated Filter study, evaluating potential biological treatment upgrades at our chemically enhanced facilities. On a larger scale, we have established a state-of-the-art research pilot plant at the Dartmouth Wastewater Treatment Facility, allowing us to test and optimize existing processes under varying conditions to ensure reliable effluent production.

We have also started work on a Water Research Foundation project at the Eastern Passage WWTF to assess the feasibility of implementing UV-LED

Small-Scale Biological Aerated Filter Study

disinfection technology. Bringing this energy-efficient process to wastewater treatment would help reduce energy costs, providing more value to our customers and lowering our environmental impact.

We are using new data visualization programs to improve operational decision-making. This innovative approach enables us to make well-informed decisions efficiently and effectively.

The collaboration between Halifax Water staff and researchers is crucial in drawing meaningful conclusions from our research, enabling us to drive efficient, high-quality wastewater effluent production at a plant scale.

Large-Scale Pilot Plant

The journey ahead is promising, and we are excited to embark on the next phase of innovation and sustainable water resource management.

Biosolids Processing Facility

The Aerotech Biosolids Processing Facility (BPF) is in the Aerotech Industrial Park in Goffs, NS. The facility receives and processes dewatered sludge, or biosolids, from Halifax Water's WWTFs. Biosolids are currently processed using the N-Viro alkaline stabilization process to produce a Canadian Food Inspection Agency-registered fertilizer sold for use on non-food-bearing crops.

The Infrastructure Master Plan, completed in 2019 and subsequent analyses by Halifax Water staff predict that by 2046, Halifax Water will need to process more than double the current quantity of biosolids. This is due to population growth and the installation of secondary treatment processes at the Halifax, Dartmouth, and Herring Cove wastewater treatment facilities. This forecast exceeds the production capacity of the current BPF.

This significant project requires detailed planning and consideration to ensure that the new BPF is cost-effective for our customers and environmentally friendly. To date, an expert study has been completed to validate the work completed by Halifax Water. The procurement process is underway to execute a Design, Build, Operate and Maintain (DBOM) Agreement. The request for proposal portion of this process is expected to be completed early in 2024, and a new long-term DBOM contract will be in place by the end of 2024.

The new facility is expected to include capabilities for enhanced resource recovery. Biosolids will be used to produce fertilizer and recover renewable natural gas (RNG) that will be sold. The facility is anticipated to produce more than 35,000 tonnes/year of fertilizer and over 200,000 GJ/year of RNG at full capacity.

Driveway & Cross Culvert Program

Halifax Water is responsible for maintaining the stormwater system within the service boundary set by HALIFAX; this includes an extensive stormwater network in more rural areas of the municipality. These areas primarily receive stormwater services via open ditches and culverts. Staff continue to collect data on stormwater infrastructure to ensure we have an accurate inventory of assets to maintain. Halifax Water is responsible for over 20,000 culverts and hundreds of kilometres of ditches.

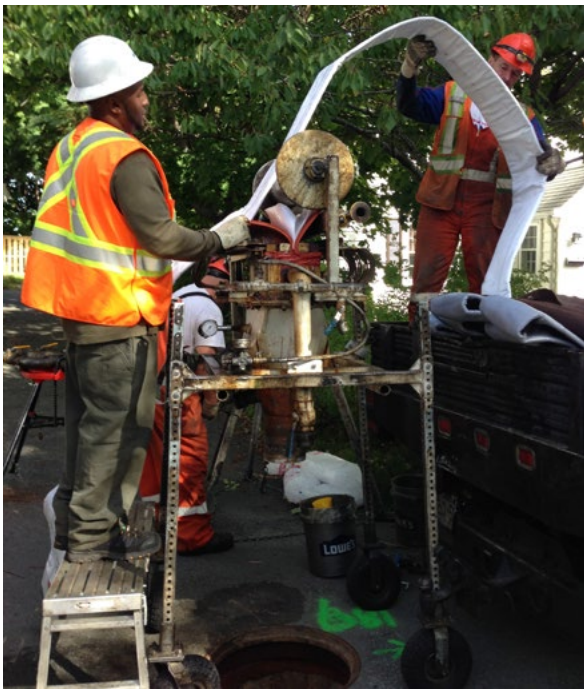
Halifax Water replaces approximately 1.5% of the inventory of driveway culverts annually. Operations staff also respond to emergencies where a failing or damaged driveway culvert could impact access to a property. To ensure we provide value to our stormwater customers, groups of driveway culverts in similarly poor condition within an area are replaced at the same time.

In 2022/23, Halifax Water replaced 221 driveway culverts. These culverts were replaced primarily by Halifax Water staff through the established capital driveway culvert program. This program is funded by Stormwater Site-Related Flow charges and is led by the Halifax Water Operations Department at a cost of $1.4M. The average cost of replacing a single driveway culvert was approximately $6,300. .

Wet Weather Management Program

Treating wastewater is a costly and technically challenging task. To maintain regulatory compliance and provide value to our customers, Halifax Water works to reduce this cost by preventing stormwater from entering the wastewater system. When stormwater flows into the wastewater system, also known as wet weather flows, it mixes in with the wastewater and eventually makes its way to a wastewater treatment facility where it is all treated. During heavy precipitation events, wet weather flows can overwhelm the system, causing damage to public and private property. Reducing wet weather flows reduces treatment costs and reserves capacity in the system for the wastewater it was built for. Our Wet Weather Management Program (WWMP) staff complete this work.

Halifax Water continues to explore new wet weather flow reduction strategies and investigation tools. These new tools have led to the creation of 20 Decision Matrix Reports, which have been key in helping identify the appropriate wet weather flow reduction approach in each WWMP study area.



Cured-In-Place Pipe Lining Work Reducing Wet Weather Flows

Manhole smoke test

Private downspout smoke test

The WWMP continues to follow the 2019 Infrastructure Master Plan, focusing most activities in priority sewersheds. These sewersheds will continue to be the priority over the next several years. Currently, 50 WWMP contractor water flow meters are in place to understand the wet weather influence on flows in these areas and help prioritize and support future projects.

Sanitary Sewer Evaluation Survey activities are used to find trouble spots within the system and sources of stormwater entering the wastewater system. These activities include flow monitoring, CCTV inspections of pipes, smoke testing and private property inspections. In 2022/23, Halifax Water used CCTV cameras to inspect over 32,000 metres of pipe and conducted smoke test investigations to look for cross-connections and leaks in over 11,000 metres of pipe.

This data is used to determine the best methods to use in each area to reduce wet weather flows. Halifax Water completes repairs on public property, while any issues found on private property are communicated to the owner.

CCTV Infrastructure Inspections

Halifax Water uses both internal resources and external contractors to complete remote CCTV inspections of our wastewater and stormwater infrastructure. The focus of both groups is to obtain high-quality data on the condition of Halifax Water infrastructure to support decisions related to asset renewal, wet weather management and capital improvements. Throughout 2022/23, Halifax Water staff worked to integrate the two CCTV programs.

Halifax Water has ramped up its internal ability to complete CCTV inspections using industry standards. This included upgrading equipment, working within the same software and completing an internal review process. Halifax Water has Pipeline Assessment & Certification Program (PACP) trained staff working on the CCTV program. Those staff conduct planned inspections and respond to operational emergencies and investigations.

CCTV Image of Stormwater Entering the Wastewater System

Water Supply Enhancement Program

The J.D. Kline and Lake Major Water Supply Plants (WSPs) have provided high-quality water to Halifax Water customers for many years. However, a combination of aging infrastructure, changes in source (lake) water conditions, and climate impacts have made the treatment processes at both WSPs more challenging.

This is especially pronounced at the J.D. Kline WSP, a direct filtration plant. In addition to challenging the plant performance, harmless natural taste and odour-causing compounds have appeared in the water source periodically, which can impact consumer confidence in the quality of the water.

Based on plant age and source water challenges, Halifax Water has determined that now is the time to modernize both plants.

To ensure the continued reliable supply of safe, high-quality drinking water and to remain compliant with current and future regulatory requirements, the J.D. Kline and Lake Major WSPs are entering a period of capital renewal, upgrade, and enhancement, which is planned to occur over the next ten years. The Water Supply Enhancement Program (WSEP) combines nine J.D. Kline WSP projects and four Lake Major WSP projects.

This integrated approach minimizes potential impacts on our services and customers.

The high-level goals of the WSEP are highlighted below:

- Upgrade, expand, replace, and enhance the existing J.D. Kline and Lake Major WSPs for the following operating horizon. This includes consideration of design life spans in the order of 20-50 years.
- Add treatment process resiliency at both WSPs to adapt to evolving source water quality changes induced by climate change, including increased levels of organic matter, biological activity, metals, minerals, algae, and algal by-products.
- Improve the reliability of both plants to meet future water quantity or water quality objectives.
- Execute the program efficiently and coordinatedly with shared design principles and strategic compatibilities such that long-term operation is streamlined between the facilities.

Pretreatment and clarification projects at both facilities are two of the initial projects that will be executed through the WSEP. Design continues progressing for both facilities, and Halifax Water plans to begin construction through some early works at the J.D. Kline WSP during the 2023/24 fiscal year. The overall program currently is slated to continue until 2032.

Lake Major Water Supply Plant Clarifier Project

The Lake Major WSP was equipped with a clarification system constructed in 1999 that, after various challenges over the years, optimization and capital upgrade strategy studies, has been deemed unsuitable for the current or future source water quality.

The existing clarification system was beginning to reach the end of its useful life and showed signs of structural weakness. This system needed to be replaced to ensure that Halifax Water could continue providing high-quality water services to our customers. With the replacement clarification system in place, Halifax Water can work on the development of a more advanced Dissolved Air Flotation (DAF) clarifier system and other plant upgrades that will meet the future needs of the utility and continue to provide our customers with the reliable services they expect.

The project was broken into two phases, one for each clarifier in November 2021 and May 2022. The project had various challenges, including a complex demolition and the need for additional resources to ensure work was completed on schedule. Additionally, during the first phase of this work, water was piped from the Halifax water supply system over the Macdonald Bridge into Dartmouth to supplement the water supply. This required several changes to the Halifax water supply system to reduce any impacts on water service for customers on either side of the harbour. During the second phase, the newly built clarifier could satisfy the average daily demand on its own.

Halifax Water learned significant lessons from the project's first phase and implemented them in phase two, improving the efficiency of the second clarifier replacement.

Both phases of work were executed under the Incident Command System. Multiple business units of Halifax Water collaborated to ensure the project was a success.

Charlie Parent and Lauren Flight, Water Quality Inspectors, conducting watershed sampling in the Pockwock watershed.

Source Water Quality Monitoring

The water quality of many lakes in Nova Scotia is changing due to lake recovery and climate change. Changing temperature and precipitation patterns, both timing and frequency, can also change source water quality.

Lake Recovery is the process by which improved air emissions standards have reduced acid rain levels. As a result, water quality in lakes around Nova Scotia and Atlantic Canada is recovering from historical acidification. Changes are both chemical and biological in nature and include an increase in pH, increase in natural organic matter, changes in concentration of metals and changes to the types of plants and animals our lakes can support.

At Halifax Water, lake recovery and climate change have resulted in changes in natural organic matter, pH, taste and odour (geosmin), colour, and algal activity. Ensuring we have industry-leading source water monitoring approaches for both long-term and seasonal monitoring for harmful algal blooms caused by cyanobacteria (blue-green algae) continues to be a priority at Halifax Water to ensure the safety of our drinking water. Halifax Water has been collecting data for many years, enabling us to plan appropriately to ensure robust treatment to manage future water quality.

Halifax Water continues to enhance and develop this important program through research partnerships with the Water Research Foundation and the Dalhousie/ Halifax Water NSERC Industrial Research Chair.

The evolution of Halifax Water's source water protection and seasonal algal monitoring programs ensures Halifax Water has industry-leading tools in place to assess risk, respond quickly to water quality changes and ensure continued delivery of high-quality drinking water for our customers.

Get the Lead Out

Removing lead service lines from the water system is a top priority for Halifax Water. The Halifax Water Get the Lead Out program will replace all lead service lines (LSLs) by 2038.

Get the Lead Out Water Service Line Inventory as of April 1, 2023

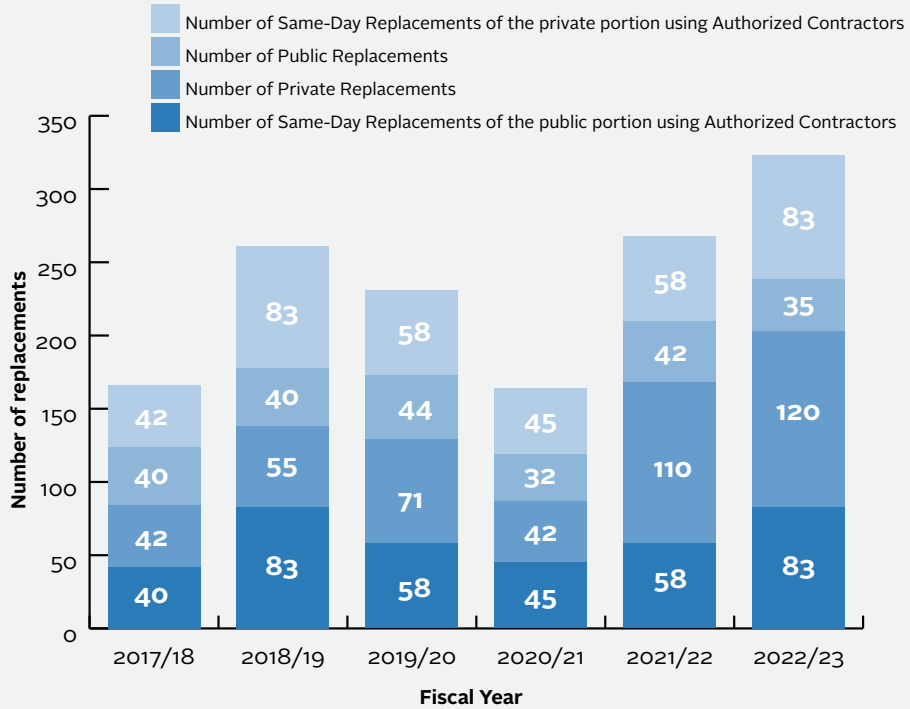
Service Line Material	Public Portion (Owned by Halifax Water)	Private Portion (Owned by the property owner)
Lead	1,193	2,776
Unknown Material	2,711	6,545

There are several projects underway to improve inventory accuracy. These include a records review process, a machine learning model to predict service line material, and service box hydro-excavation (a very gentle form of excavation using high-pressure water and an industrial vacuum system) to determine the water service line type visually.

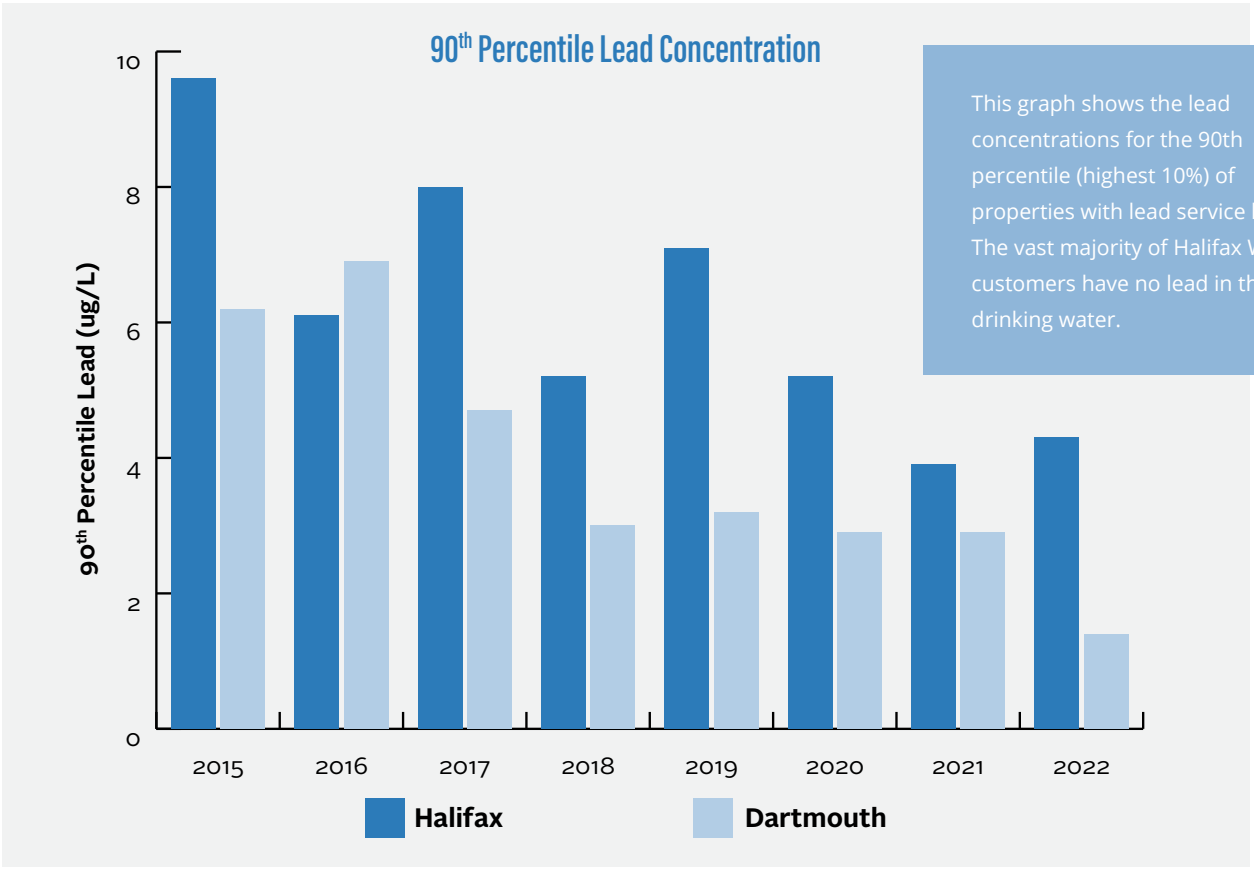
Get the Lead Out Statistics as of April 1, 2023

Year	Public LSL Goal	Public LSLs (Actual)	Private LSL Goal	Private LSLs Replaced (Actual)
2022/23	150	118	200	203

Lead Service Line Replacements as of April 1, 2023



When an authorized contractor is used for the private portion of a lead service line replacement, Halifax Water will use the same contractor to replace the public portion at the same time. These are called same-day replacements.



Lead service line replacements were coordinated with HALIFAX's street paving and renewal schedule to minimize disruption to the community and be cost-effective for ratepayers. A limited number of individual replacements were also completed based on customer application to the program, 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, taxes included).

Halifax Water is on track to meet the program goal of removing all lead service lines by 2038. The average cost of public replacement in 2022/23 was $7,637, while the average cost of private lead service line replacement was $6,015.

Halifax Water adds a corrosion control product to treated water to minimize exposure to lead until all lead service lines are removed from the system. Through research with Dalhousie University and monitoring within the distribution system, the product and dose are continually adjusted. This has reduced lead exposure over time, as shown in the figure below, which displays the 90th percentile lead concentrations for the first litre 6-hour stagnation annual regulatory sampling.

Water Loss Control

Halifax Water owns, maintains and operates 1580 KM of water mains throughout our service area. Finding and fixing leaks reduces water waste and the related costs of treating and distributing that water. All of this work is done to ensure our customers continue to receive good value for water services.

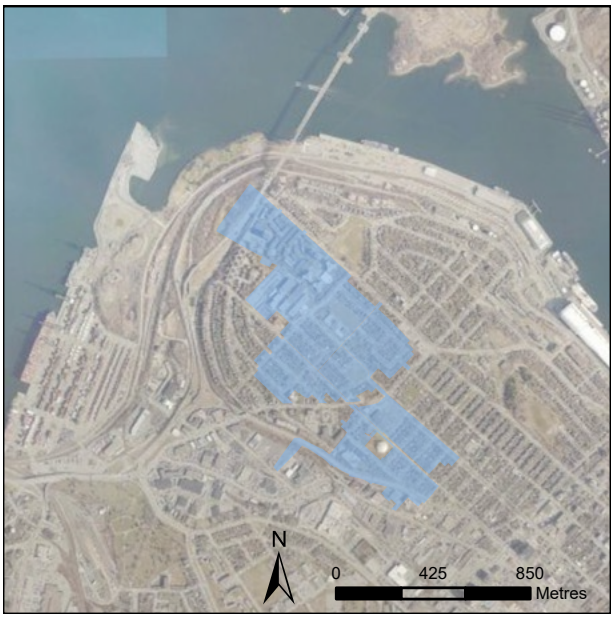
AWWA Manual 36, the industry standard in effective water loss control programs, identifies four key focus areas of a successful program:

- Speed and Quality of Repair
- Pressure Management
- Active Leakage Control
- Pipeline and Asset Management Selection, Installation, Maintenance, Renewal, Replacement

Halifax Water actively engages strategies and programs in all these areas; however, two new and exciting projects have been completed in the past year, broadening our program.

Peninsula High Pressure Zone Management
A new control valve and meter were installed to better regulate pressures in the higher grounds of the Halifax Peninsula. Previously, water pressure was managed by a reservoir in Fairview. This added level of control allows pressures in the zone to be fine-tuned through basic pressure management, balancing customer needs and system management best practices. A further step to engage Advanced Pressure Management will allow the system to react based on demand, lowering pressures during low demand, therefore lessening pressure-related stresses on infrastructure in the zone.

Takadu - Active Leakage Control
Knowing a water main leak has occurred is the critical first step toward a timely repair and minimizing water loss through an extended leak run time. Halifax Water has an extensive network of sensors monitoring flow, pressure and other details in the system. However, timely analysis and decision-making from the high volume of data can be challenging. Halifax Water is piloting Takadu, a software that applies advanced analytics to the data and can provide smart alerts to system anomalies within hours of their first occurrence. This software has identified and tracked numerous events since implementation, resulting in more efficient use of resources.



Peninsula High Pressure Zone in North End Halifax

Burnside Operations Centre

With continued cost and schedule risks following the COVID-19 pandemic for the Burnside Operations Centre, Halifax Water began reviewing alternative project delivery methods to provide more certainty around costs and scheduling.

The Integrated Project Delivery (IPD) methodology was selected as the preferred model, and in 2022, the procurement process began to find a multi-party team of qualified professionals and contractors. The IPD process enables collaborative construction by creating the right conditions for project teams to identify and deliver the best value for Halifax Water and our customers.

Beginning in September 2022, Halifax Water implemented a rigorous, fair, and transparent procurement process to find the best value for the utility's customers. This included evaluating critical factors, including assessing each proponent's approach to designing a new facility, their health, safety, and environmental record, and an assessment of earlier work.

A preferred proponent team was selected at the end of 2022/23, and a contract was finalized. Staff look forward to collaborating with our partners to deliver this important project for Halifax Water, which, once complete, will provide employees with modern facilities and enhance services for our customers.

IT Strategic Plan

Halifax Water has developed a new Five-Year Information and Technology Plan for 2023-2028. It was built by aligning with the Halifax Water Business Plan, goals, industry best practices, innovation scans, alignment with many partners, and an extensive review of internal requirements.

There are five themes in the Five-Year Roadmap:

Data Everywhere
The right data is securely available from any corporate device to all Halifax Water staff to help make decisions on resources and priorities.

Collaboration Anytime
Ensure Halifax Water is operating securely as One Team, One Water.

Employer of Choice
Recognized by our peers and community as a premier employer.

Total Xperience

- Connects customers and employees via multiple secure technology platforms to create a seemless experience.
- Educates customers and staff about technology and trends.
- Leads digital transformation for the organization and its customers.

Effortless Auditing
Be an auditor's "dream" client by meeting auditing demands.

The IT Strategic Plan aims to ensure Halifax Water can continue improving how we serve our customers by refining and updating our internal operations and ensuring that the external customer experience is exceptional.

Customer Care Centre Performance

Year	Calls offered	Calls answered	Calls abandoned	Abandon rate	Calls answered within 20 seconds	Average speed of answer (seconds)
2022/23	63,264	60,194	3,070	5%	71%	67
2021/22	73,336	67,871	5,465	7%	60%	106
2020/21	63,336	60,880	2,456	4%	71%	56

As one of the most direct customer interactions with Halifax Water, providing an exceptional customer experience through our Customer Care Centre is crucial.

This year, call volume decreased by 14%. This decrease was not unexpected, given the increase in volume last year related to the fast adoption rate of the Customer Connect online portal.

Performance improvements continue through the use of insights from our state-of-the-art telephony system. The Customer Care Centre is enhancing staffing and resource plans to ensure that staff are available as required to achieve all service levels in the coming year.

Customer Connect

As part of our ongoing commitment to meet the needs of our customers, Halifax Water continues to develop and improve Customer Connect, our online customer portal.

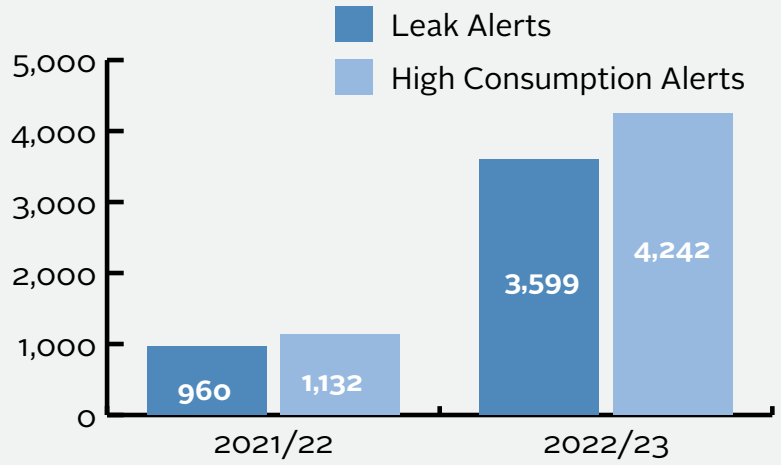
At the end of fiscal 2022/23:

41,729
Number of customers registered to date (39%).

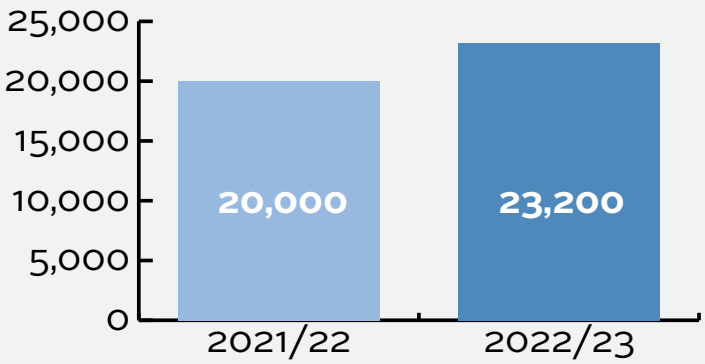
7,464
Number of customers registered during the fiscal year.

A leak and high consumption alert system was introduced in the portal in December 2021.

There were 3,599 leak alerts and 4,242 high consumption alerts sent to customers in the last fiscal year compared to 960 leak alerts and 1,132 high consumption alerts in the prior year.



23,200 customer logins per month compared to 20,000 in the prior year.



Health, Safety & Environment

The health and safety of our employees, contractors and the public is our top priority. We are focused on a safety-first culture, working to provide healthy, safe, sustainable, and reliable services for our community.

Climate Action Plan

Climate change and its potential impacts on Halifax Water's infrastructure and resources is an increasing focus for the utility. Climate considerations must be planned for and incorporated into existing programs. To reflect this, Halifax Water is developing a Climate Action Plan (CAP) with a more comprehensive approach focusing on climate change and its potential impacts on the utility.

The CAP will consolidate existing climate change activities, incorporate new initiatives, and help ensure the organization will be responsive to climate change throughout all aspects of service delivery. Modelling existing and proposed emissions scenarios will guide investment decisions around reducing greenhouse gas emissions. Local climate change projections will be reviewed to develop objectives and outline adaptation recommendations. Targets, key metrics, and timelines will be established to enable progress tracking and ensure accountability of our climate change initiatives.

Upon completion of the CAP, Halifax Water will be better prepared for long-term climate resiliency while exercising fiscal responsibility and continuing to provide customers with high-quality water, wastewater, and stormwater services.

Solar Energy Projects

In July 2020, Halifax Water was awarded funding through the Investing in Canada Infrastructure Program (ICIP). Specific to the climate change mitigation sub-stream, it focused on four multi-facility Community Solar Photovoltaic (PV) projects at Halifax Water facilities, including:

Solar Energy Project Estimated Capital Costs

Location	Size Kilowatt Alternating Current (kW_{AC})	Total Cost	Fed/Prov Portion (73.33%)	Halifax Water Portion (26.67%)	Year 1 Estimated Revenues	Simple Payback
Aerotech Wastewater Treatment Facility	125 kW_{AC}	$710,000	$385,997	$302,893	$28,650	9.1 years
450 Cowie Hill Road Administration Building	100 kW_{AC}	$475,000	$280,847	$181,115	$22,240	7.9 years
New Burnside Operations Centre	200 kW_{AC}	$950,000	$561,694	$357,486	$58,800	6.1 years
Totals	**425 kW_{AC}**	**$2,135,000**	**$1,228538**	**$841,494**	**$109,690**	**7.7 years**

**Figures are rounded.*

The first project, located at the Aerotech WWTF, is expected to be complete in September 2023. The two Cowie Hill Road projects are anticipated to be awarded in fall 2023, with construction expected by winter 2024. The new East Operations Building (Burnside Operations Depot) solar project will be included in the scope of work for the design, construction, and commissioning of this new facility, with an anticipated completion in 2025/26.

The Halifax Water Community Solar PV projects will see the installation of approximately. 425 kW_{AC} of solar capacity. This will offset Halifax Water's current electrical use with a renewable energy source, will reduce greenhouse gas (GHG) emissions by over 6,975 tonnes of carbon dioxide equivalent (tCO2e), and will reduce the utility's operating costs by over $1.6 million over the expected life of the project, directly benefiting Halifax Water's customers.

Halifax Water began operating a 75 kW system at the Halifax WWTF in January 2021. To date, that system has produced approximately 260 MWh of renewable energy.

Aerotech WWTF Solar PV Panels

Aerotech WWTF Solar PV Panels

Halifax WWTF Solar PV Panels

Environmental Management System Update

An Environmental Management System (EMS) is a comprehensive framework for consistently tracking procedures, records, and processes that effectively manage environmental issues. While the EMS helps ensure regulatory compliance, it also supports more sustainable day-to-day operations and engages employees in these activities. This program is audited against ISO 14001 standards, and when it passes, it receives certification through ISO.

In May 2022, the Environmental Management System was successfully implemented at the Timberlea WWTF, the corporate office at 450 Cowie Hill Road and the West Operations Depot at 455 Cowie Hill Road.

In 2023/24, the EMS will expand further to encompass the Halifax Water depots, specifically Mann Street, Park Avenue, Neptune Crescent, and Bissett Road, and the distribution and collections systems. This strategic expansion will allow Halifax Water to streamline and integrate the EMS practices throughout the entire organization.

ISO 14001 Certification EMS – Certification for Timberlea WWTF and 450 & 455 Cowie Hill Road

Cogswell District Energy System

The redevelopment of the Cogswell District has provided Halifax Water with an opportunity to install the distribution piping system required for the Cogswell District Energy System (DES).

With approval by the Nova Scotia Utility and Review Board (NSUARB) in 2023, Halifax Water can move forward with using thermal energy from effluent at the Halifax WWTF to provide heating and cooling services to new buildings proposed for the Cogswell redevelopment area.

Cogswell District Energy System Lines Prepared for Installation

Cogswell District Energy System Lines Being Installed

This project aligns with Halifax Water's purpose, vision, and environmental objectives. It will significantly contribute to the goals of HALIFAX's "HalifACT 2050" initiative, providing long-term energy and GHG emission reductions within the downtown core.

To date, Halifax Water has made the following progress on the project:

- Completed an initial feasibility study for the DES.
- Assisted HALIFAX make charter changes to allow district energy within the municipality.
- Assisted HALIFAX with the enactment of By-Law D-500, Respecting District Energy.
- Completed the detailed design of the linear infrastructure.
- Developed a draft financial model and business case analysis for the new utility.
- Evaluated the business case based on several operating and ownership scenarios.
- Completed a by-law review of other Canadian jurisdictions implementing similar district energy utilities.
- Completed a detailed DES information package to provide more specific details for stakeholders and developers.
- Received approval from the NSUARB for related capital expenditures and establishing a regulated district energy service within Halifax Water.
- Finalized a cost-sharing agreement for the DES distribution piping system with HALIFAX.

The key utility development activities yet to be undertaken include:

- Completion of a DES cost of service study and rate structure model.
- Development of operating procedures and business processes.
- Establishment of the DES utility regulations.
- Ongoing enhancement of the business case analysis to align with the cost-of-service model and rate structure.
- Complete detailed designs and construct the remaining DES infrastructure, including the DES Energy Center (located at the Halifax WWTF) and the Energy Transfer Stations (located in each new building).

Environmental Engineering

The Inflow & Infiltration (I&I) and Pollution Prevention (P2) Programs regulate the quantity and quality of discharge from customer connections into Halifax Water's wastewater and stormwater systems.

Through the I&I Program, Halifax Water staff identify and work to resolve private property connections where stormwater enters the wastewater system. The goal is to reduce I&I in target areas from public and private sources in support of the Wet Weather Management Program (WWMP).

Inflow & Infiltration Reduction Program
In 2022/23, the I&I team worked closely with the WWMP team to complete smoke testing work on approximately 12 KM of pipes. The I&I team also began work on a Downspout Disconnection Program to disconnect roof downspout flows from the Halifax Water's systems. A pilot project was completed for campus properties, resulting in a more precise definition of these as having ten or more buildings serviced by a private system. The results of this pilot will be used to develop a program manual. Work also continued developing a New Service Account Compliance Program (NSAC), linking private property I&I compliance to creating a new service account with Halifax Water.

Pollution Prevention Program
The P2 Program identifies and addresses non-compliant discharges to the wastewater system. Staff inspected, investigated, and engaged 251 industrial/commercial/institutional (ICI) customers in 2022/23. The P2 team responded to numerous spills and non-compliant discharges, including silt discharge into wastewater and stormwater systems, and wastewater-to-stormwater cross-connections. In the past year, the team successfully resolved five of these cross-connections.

Safety Update

Continuous improvement is at the core of Halifax Water's Safety Program. In 2022/23, updates and modifications were made to the Joint Occupational Health and Safety Committee (JOHSC) structure and the Safety Excellence Committee (SEC) was introduced. To support this, work began transitioning from the existing safety system to a structured Safety Management System (SMS – ISO 45001).

With increasing demands caused by organizational restructuring and growth, it places even greater emphasis on enhancing Halifax Water's safety culture and those that manage it. The tracking and reporting of near-miss incidents has increased, and the learnings from these reports are being applied to mitigate risks before the potential for actual injuries. In 2022/23, there were 97 near misses reported. The Lost Time Injury Frequency (LTIFR) rate was 0.91, below the target of 3.5 established in Halifax Water's Corporate Balance Scorecard for that year.

Financial & Regulatory Accountability

We are ensuring that Halifax Water has the capacity to fund existing and future infrastructure. We prudently manage assets and operate our business by balancing value and customer service.

Financial Overview

Halifax Water received a clean audit opinion from Grant Thornton LLP on the financial statements for the fiscal year ended March 31, 2023. The financial statements are presented in accordance with International Financial Reporting Standards (IFRS). Halifax Water also produces financial information in the format required by the NSUARB in accordance with the NSUARB Water Utility Accounting and Reporting Handbook (Handbook).

The financial statements prepared under IFRS are used primarily for consolidation with the Halifax Regional Municipality's financial statements. In contrast, the financial information prepared under the Handbook is used for setting water, wastewater and stormwater rates.

Summary financial information is presented under "Abbreviated Financial Overview (IFRS)" on page 38 and under "Abbreviated Financial Overview (Handbook)" on page 40.

The audited financial statements can be located at **halifaxwater.ca/publications-reports**.

Summarized Statement of Earnings Comparison to Budget NSUARB Handbook

	Budget 2022/23 '000	Actual 2022/23 '000	Actual 2021/22 '000	2022/23 Budget/Actual $ Variance	2022/23 Budget/Actual % Variance
Operating revenues	$152,765	$155,089	$150,502	$2,324	1.5%
Operating expenditures	$128,787	$128,038	$122,521	$(749)	(0.6%)
Earnings from operations	$23,978	$27,051	$27,981	$3,073	12.8%
Financial and other revenues	$733	$1,299	$796	$566	77.2%
Financial and other expenditures	$35,596	$36,110	$35,159	$514	1.4%
Loss for the year	**$(10,885)**	**$(7,760)**	**$(6,382)**	**$3,125**	**(28.7%)**

The key differences between the IFRS and Handbook financial statements are related to reporting requirements for the recognition of various expenditures as follows:

- The full actuarial liability of employee future benefits is not considered an expense for the Handbook and could result in either positive or negative impacts on IFRS income;
- Principal payments on long-term debt are an expense for the Handbook but not under IFRS;
- Depreciation expense on contributed assets is not an expense for the Handbook for water and wastewater assets. For stormwater assets, 25% of depreciation on contributed assets is included as an expense for the Handbook results.

- Amortization of contributed capital is not considered revenue under the Handbook; and,
- Various depreciation adjustments, including the add-back of losses on the disposal of utility plant in service, componentization of assets and shorter useful lives, result in higher depreciation under IFRS than under the Handbook.

Reconciliation IFRS to Handbook Results

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

Under IFRS, the comprehensive earnings are $47.0M. After the adjustments described above, the loss for the year under the Handbook is $7.8M. From a budget perspective, the loss was less than budget due to an increase in rates and expenditures being less than expected.

Water services loss of $3.1M was $0.4M less than the prior year and $1.1M less than budget. The primary difference from the budget in water services was an increase in operating revenues relating to an increase in rates.

Wastewater services loss was $1.7M as compared to prior year earnings of $0.6M and was better than budget. The primary difference from the budget relates to higher operating and other revenues related to an increase in rates offset by higher expenditures.

Stormwater services loss of $3.0M decreased from the prior year's loss by $0.3M and was $1.4M better than budget. The difference from budget relates to an increase in operating revenues due to increased rates and reduced expenditures.

Operating Results by Service

	Budget 2022/23 '000	Actual 2022/23 '000	Actual 2021/22 '000	2022/23 Budget/Actual $ Variance	2022/23 Budget/Actual % Variance	Actual/Actual $ Variance
Water	$(4,173)	$(3,069)	$(3,428)	$1,104	(26.5%)	$359
Wastewater	$(2,270)	$(1,676)	$389	$594	(26.2%)	$(2,065)
Stormwater	$(4,442)	$(3,015)	$(3,343)	$1,427	(32.1%)	$328
Loss	$(10,885)	$(7,760)	$(6,382)	$3,125	(28.7%)	$(1,378)

Revenue

Operating revenues increased from the prior year by $4.6M. Consumption increased by 1.7% on a volumetric basis, resulting in an increase in consumption revenue. Base charge revenue increased slightly due to new customers. Overall, the main contributing factor to the increase in operating revenues was the approval of rate increases for water consumption and wastewater discharge effective December 1, 2022. Water rates increased from $0.976 per cubic metre to $1.017 per cubic meter, and wastewater rates increased from $2.073 per cubic metre to $2.189 per cubic metre. Stormwater rates also increased effective December 1, 2022, contributing to the overall increase in operating revenues. The stormwater site generated charge revenue is $0.6M more than the prior year due to the rate increases and the stormwater boundary expansion effective June 1, 2022. Stormwater right of way revenue also increased as a result of the increase in customers.

The wastewater rebate, which is available to certain large customers whose wastewater is a lower proportion of their consumed water, increased $0.2M from the prior year due to new customers in the current year and existing customers increasing their discharge into our system.

Operating Revenues Handbook	Actual 2022/23 '000	Actual 2021/22 '000	$ Variance	% Variance
Consumption revenues	$99,346	$96,497	$2,849	3.0%
Base charge revenue	$33,967	$33,635	$332	1.0%
Wastewater rebate	$(1,531)	$(1,297)	$(234)	18.0%
Metered sales total	**$131,782**	**$128,835**	**$2,947**	**2.3%**
Stormwater site generated charge	$6,931	$6,294	$637	10.1%
Stormwater right of way	$4,475	$3,835	$640	16.7%
Public fire protection	$7,744	$7,628	$116	1.5%
Private fire protection	$1,377	$1,270	$107	8.4%
Other operating revenue	$2,780	$2,640	$140	5.3%
Operating revenue total	**$155,089**	**$150,502**	**$4,587**	**3.0%**

Operating Expenditures

Operating expenditures for 2022/23 are $128.0M, an increase of $5.5M or 4.5% compared to the prior year. The drivers of the increase include depreciation and amortization expense, lead service line replacement costs, and higher chemical and fuel costs due to price increases.

Operating Expenditures Handbook	2022/23 '000	2021/22 '000	$ Variance	% Variance
Water supply and treatment	$11,646	$10,760	$886	8.2%
Water transmission and distribution	$11,757	$11,316	$441	3.9%
Wastewater collection	$13,691	$12,988	$703	5.4%
Stormwater collection	$4,719	$4,566	$153	3.4%
Wastewater treatment	$23,420	$21,774	$1,646	7.6%
Engineering and technology services	$13,677	$13,719	$(42)	(0.3%)
Regulatory services	$4,434	$4,392	$42	1.0%
Customer services	$4,447	$4,811	$(364)	(7.6%)
Corporate services	$3,075	$3,062	$13	0.4%
Administration services	$5,578	$5,359	$219	4.1%
Depreciation and amortization	$31,594	$29,774	$1,820	6.1%
	$128,038	**$122,521**	**$5,517**	**4.5%**

Financial & Other Expenditures

Reported financial and other expenditures totalled $36.1M in 2022/23, an increase of $1.0M or 2.7% compared to the prior year. The increase was long-term debt repayments.

Financial and Other Expenditures Handbook	Budget 2022/23 '000	Actual 2022/23 '000	Actual 2021/22 '000	2022/23 Budget/Actual $ Variance	2022/23 Budget/Actual % Variance	Actual/Actual $ Variance
Interest on long term debt	$6,668	$6,851	$6,859	$183	2.7%	$(8)
Repayment on long term debt	$21,846	$22,379	$21,477	$533	2.4%	$902
Amortization of debt discount	$233	$227	$228	$(6)	(2.6%)	$(1)
Dividend/grant in lieu of taxes	$6,803	$6,524	$6,466	$(279)	(4.1%)	$58
Other	$46	$129	$129	$83	180.4%	$0
	$35,596	**$36,110**	**$35,159**	**$514**	**1.4%**	**$951**

Regulated & Unregulated Activities

Regulated Activities

Activities regulated by the NSUARB show a loss of $8.6M, representing an increase of $1.7M compared to the prior year.

Unregulated Activities

Earnings from unregulated activities increased by $0.3M from the prior year due to a one-time waste disposal for a marine vessel.

Results by Activity Handbook	Budget 2022/23 '000	Actual 2022/23 '000	Actual 2021/22 '000	2022/23 Budget/Actual $ Variance	2022/23 Budget/Actual % Variance	Actual/Actual $ Variance	Actual/Actual % Variance
Regulated activities	$(11,449)	$(8,554)	$(6,889)	$2,895	(25.3%)	$(1,665)	24.2%
Unregulated activities	$564	$794	$507	$230	40.8%	$287	56.6%
Loss	$(10,885)	$(7,760)	$(6,382)	$3,125	(28.7%)	$(1,378)	21.6%

Statement of Financial Position

Assets
Utility plant in services assets, net of accumulated depreciation, are $1,302.5M, which is $25.2M or 2.0% higher than last year. Total of new assets capitalized in the fiscal year were $79.6M. At the end of the fiscal year, there was $79.4M in capital work in progress, compared to $51.0M last year.

Cash and cash equivalents
Cash and cash equivalents balance of $44.6M is lower than the prior year by $21.0M due to increases in payments related to an increased capital expenditures.

The liquidity on the balance sheet (ratio of current assets divided by current liabilities) is 1.09 (per NSUARB Handbook reporting).

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

Capital Work in Progress IFRS	
	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
Total	**$34,480**
All other projects:	
Water	$19,903
Wastewater	$23,214
Stormwater	$1,850
Total	**$44,967**
Capital work in progress	**$79,447**

Debt

Debt remains an important funding source for Halifax Water's capital program. Total long-term debt is $218.5M. New debt of $15.7M was received in May 2022, and repayments during the year were $21.4M.

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

Abbreviated Financial Overview (IFRS)				
	March 31, 2023 '000	March 31, 2022 '000	$ Variance	% Variance
Assets				
Current				
Cash and cash equivalents	$44,596	$65,586	($20,990)	(32.0%)
Receivables	$48,376	$35,589	$12,787	35.9%
Inventory and prepaids	$4,799	$4,450	$349	7.8%
Total current assets	**$97,771**	**$105,625**	**($7,854)**	**(7.4%)**
Utility plant in services				
Cost	$1,682,380	$1,607,243	$75,137	4.7%
Accumulated depreciation	($379,866)	($329,883)	($49,983)	15.2%
Net utility plant in service	$1,302,514	$1,277,360	$25,154	2.0%
Intangible assets	$22,807	$20,805	$2,002	9.6%
Capital work in progress	$79,447	$51,013	$28,434	55.7%
Total non-current assets	**$1,404,768**	**$1,349,178**	**$55,590**	**4.1%**
Regulatory deferral account	$2,236	$2,428	($192)	(7.9%)
Total assets and regulatory deferral account	**$1,504,775**	**$1,457,231**	**$47,544**	**3.3%**
LIABILITIES AND EQUITY				
Payables, deposits and unearned revenue	$43,665	$33,138	$10,527	31.8%
Long term debt	$218,451	$224,182	($5,731)	(2.6%)
Deferred contributed capital	$938,258	$908,589	$29,669	3.3%
Employee benefit obligations	$8,078	$41,950	($33,872)	(80.7%)
Total liabilities	$1,208,452	$1,207,859	$593	0.0%
Total equity	$296,323	$249,372	$46,951	18.8%
Total liabilities and equity	**$1,504,775**	**$1,457,231**	**$47,544**	**3.3%**

Abbreviated Financial Overview (IFRS)				
	March 31, 2023 '000	March 31, 2022 '000	$ Variance	% Variance
Earnings And Comprehensive Earnings				
Operating revenues	$155,089	$150,502	$4,587	3.0%
Operating expenditures (excluding depreciation and amortization)	($103,295)	($101,976)	($1,319)	1.3%
Depreciation and amortization	($51,438)	($49,572)	($1,866)	3.8%
Loss from operations	$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	$6,717	$4,879	$1,838	37.7%
Regulatory deferral account depreciation	($192)	($192)	$0	0.0%
Re-measurement on defined benefits plans	$40,426	$40,907	($481)	(1.2%)
Total comprehensive earnings for the year	**$46,951**	**$45,594**	**$1,357**	**3.0%**

Abbreviated Financial Overview (Handbook)				
	March 31, 2023 '000	March 31, 2022 '000	$ Variance	% Variance
Assets				
Current				
Cash and cash equivalents	$44,596	$65,586	($20,990)	(32.0%)
Receivables	$48,376	$35,589	$12,787	35.9%
Inventory and prepaids	$4,799	$4,450	$349	7.8%
Total current assets	**$97,771**	**$105,625**	**($7,854)**	**(7.4%)**
Utility plant in services				
Cost	$2,004,775	$1,924,866	$79,909	4.2%
Accumulated depreciation	($640,962)	($590,704)	($50,258)	8.5%
Net utility plant in service	$1,363,813	$1,334,162	$29,651	2.2%
Capital work in progress	$79,447	$51,013	$28,434	55.7%
Total non-current assets	**$1,443,260**	**$1,385,175**	**$58,085**	**4.2%**
Regulatory deferral account	$2,236	$2,428	($192)	(7.9%)
Total assets and regulatory deferral account	**$1,543,267**	**$1,493,228**	**$50,039**	**3.4%**
LIABILITIES AND EQUITY				
Payables, deposits and unearned revenue	$43,665	$33,138	$10,527	31.8%
Long term debt	$218,451	$224,182	($5,731)	(2.6%)
Deferred contributions	$94,210	$69,140	$25,070	36.3%
Total liabilities	$356,326	$326,460	$29,866	9.1%
Total equity	$1,186,941	$1,166,768	$20,173	1.7%
Total liabilities and equity	**$1,543,267**	**$1,493,228**	**$50,039**	**3.4%**

Abbreviated Financial Overview (Handbook)				
	March 31, 2023 '000	March 31, 2022 '000	$ Variance	% Variance
Earnings And Comprehensive Earnings				
Operating revenues	$155,089	$150,502	$4,587	3.0%
Operating expenditures (excluding depreciation and amortization)	($96,444)	($92,747)	($3,697)	4.0%
Dividend/grant in lieu of taxes	($6,524)	($6,466)	($58)	0.9%
Depreciation and amortization	($31,594)	($29,774)	($1,820)	6.1%
Earnings from operations	$20,527	$21,515	($988)	(4.6%)
Financial and other revenues	$1,299	$796	$503	63.2%
Financial and other expenditures	($29,586)	($28,693)	($893)	3.1%
Loss for the year	**($7,760)**	**($6,382)**	**($1,378)**	**21.6%**

2022 General Rate Application Update

In February 2022, Halifax Water filed a general rate application to increase water, wastewater, and stormwater rates. The NSUARB approved the rate increase on October 31, 2022, with an effective date of December 1, 2022. Base charges for water and wastewater have not increased since April 1, 2016, and will remain the same for metered customers. The volumetric rate for water had also not increased since April 1, 2016. The volumetric rate for wastewater rose to $2.073 per cubic metre effective April 1, 2021. Stormwater rates had not been increased since July 1, 2017.

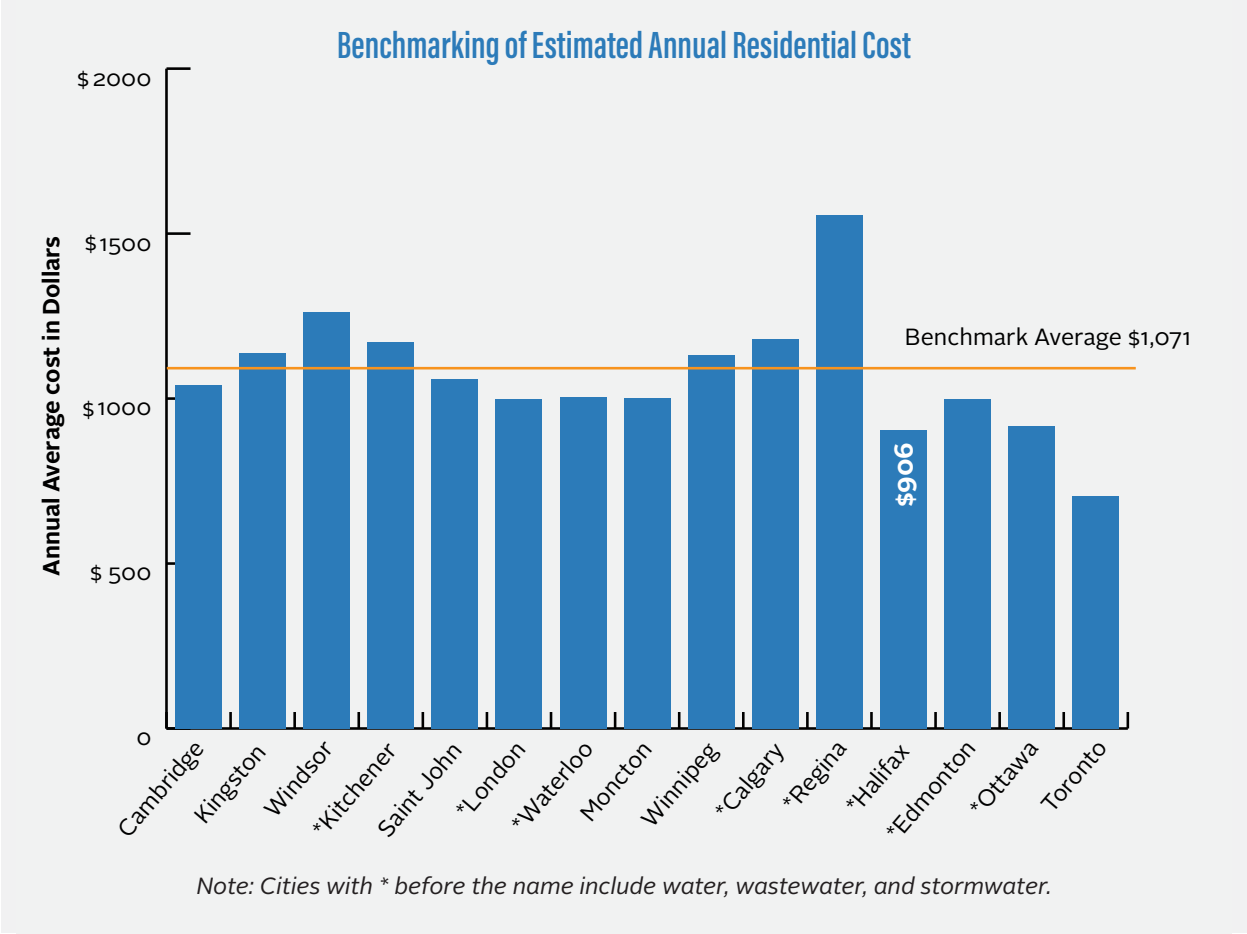
Even with these increases, the median residential customer in Halifax would pay 1.13% of their income for water, wastewater and stormwater services. A cost that continues to be below the average benchmark communities across Canada.

The approved rates are as follows:

Summary of Rates - Water & Wastewater		
	Effective December 1, 2022	Effective April 1, 2023
Water	$1.017/1000 L	$1.128/1000 L
Wastewater	$2.189/1000 L	$2.259/1000 L
Combined	$3.206/1000 L	$3.387/1000 L
Base Charges (per month, based on 5/8" residential water meter)		
Water	$13.00	$13.00
Wastewater	$14.00	$14.00

The approved rates are as follows:

Summary of Rates - Stormwater		
Residential - Impervious Area	Effective September 1, 2022	Effective April 1, 2023
Less than 50 m^2	$0.00	$0.00
50 m^2 to 200 m^2	$16.00	$19.00
210 m^2 to 400 m^2	$32.00	$38.00
410 m^2 to 800 m^2	$64.00	$76.00
Greater than 810 m^2	$96.00	$115.00
Culvert only service	$16.00	$19.00
ICI rate per m^2	$0.145	$0.173



*Note: Cities with * before the name include water, wastewater, and stormwater.*

Cost Containment

Cost containment continues to be a focus for Halifax Water and contributes to our ability to maintain affordable rates. A formal cost containment program has been in place since 2013, and initiatives from fiscal 2013/14 to 2022/23 resulted in average annual savings of $5.5M.

Cost containment initiatives have had the most significant impact in the areas of Human Resources and Facilities/Process Strategies. The pension plan re-design initiated in 2015/16 is one of the main contributors to cost containment savings. Annual savings related to pension plan re-design are approximately $1.7M. 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 initiatives vary; however, Halifax Water's Energy Efficiency Program is a significant contributor. Projects under this program represent approximately $1.6 million for 2022/23 and include energy savings programs such as:

- The renewable natural gas utilized at the Mill Cove and Timberlea WWTFs ($0.4M).
- The annual shutdown of the ultraviolet disinfection systems at the Harbour Solutions and Eastern Passage WWFTs ($0.2M).
- Heat recovery processes at the Harbour Solutions WWTFs ($0.2M).
- Lighting upgrades at various other facilities.

The Halifax Water cost containment program in 2022/23 resulted in one-time and ongoing cost savings of $0.7M in the following categories:

- Human Resource Strategies $0.4M
- Facilities/Process Strategies $0.2M
- Other Strategies $0.1M

Pension Plan

All Halifax Water employees are members of one or two defined-benefit pension plans.

Employees who transferred from HALIFAX, of which 47 remain, are members of the HRM Pension Plan. Halifax Water is obligated to make contributions for these employees' service to the HRM Pension Plan.

For all other employees, Halifax Water maintains the Halifax Regional Water Commission Employees' Pension Plan (HRWC Employees' Pension Plan). An actuarial valuation of the HRWC Employees' Pension Plan was conducted at January 1, 2022, and an extrapolation of those results was performed at January 1, 2023. Abbreviated results of this extrapolation are shown below:

Going Concern Financial Position

	Jan 1, 2023 '000 (Extrapolation)	Jan 1, 2022 '000 (Actuarial Valuation)
Value of Assets	$173,018	$172,968
Liabilities	$(144,029)	($135,207)
Provision for Adverse Deviation (PFAD)	$(10,019)	($9,405)
Going Concern Excess	$18,970	$28,356
Funded Ratio	112.3%	119.6%

The HRWC Employees' Pension Plan's funded ratio has decreased from 119.6% to 112.3% since the actuarial valuation at January 1, 2022. The decrease is primarily related to volatile market conditions throughout 2022 resulting in lower than expected gains on investments throughout the year.

In 2022, the net assets available for benefits increased to $175.2 M from $174.6 M in 2021. The increase was mainly due to contributions into the plan amounting to more than the benefit payments and expenses coming out of the plan throughout the year. Abbreviated statement of changes in net assets available for benefits is shown below:

Net Assets Available for Benefits at the Year Ended December 31

	2022 '000	2021 '000
Revenue	$155	$18,771
Contributions	$6,653	$6,693
Expenses	$6,204	$5,784
Increase in net assets available for benefits	$604	$19,680

Grant Thornton LLP audits the financial statements for the HRWC Employees' Pension Plan which are available at **halifaxwater.ca/publications-reports**. The financial statements contain the independent auditor's report issued by Grant Thornton.

Cogswell Redevelopment Update

The Cogswell District Project (CDP) is a municipal-led initiative to transform the Cogswell interchange into a more vibrant urban neighbourhood in the heart of downtown Halifax.

The project is entering its third year of construction. Temporary roads were installed and opened in the fall of 2022 to allow work to proceed on Upper Water Street, Lower Water Street and Hollis Street. New water, wastewater and district energy (DES) mains are being installed, and work in the Cogswell Street and Albemarle Street areas will commence in the summer of 2023.

The NSUARB approved $19,500,000 for the CDP water, wastewater and stormwater infrastructure. The CDP has an overall estimated cost of approximately $122.6M; the CDP is expected to span fiscal years 2021-22 to 2024-25. Halifax Water is working with HALIFAX to finalize a prudent cost-sharing arrangement for our customers.

Regional Development Charge Update

Halifax Water oversees the development and collection of water and wastewater Regional Development Charges (RDCs) - these fund upgrades to regional water and wastewater systems to facilitate projected population growth. The 2019 application to update the RDC was approved in April 2021. The new approval allows annual adjustments for the Consumer Price Index (CPI), with five-year updates submitted to the NSUARB.

The table below shows the cumulative accounting of all RDCs received and invested in infrastructure at the end of the fiscal year on March 31, 2023. The RDC provides cost-neutral funding for services for the projected growth of HALIFAX. Halifax Water is coordinating with HALIFAX on updating the infrastructure requirements to support projected growth as they update their Regional Plan.

Regional Development Charge Collections and Expenditures

Regional Development Charge	Regional Development Charges Collected	Interest	RDC Funds Invested in Infrastructure	Remaining RDC Funds available for Future Investment in Infrastructure
Water	$11,885,282	$206,194	$6,256,585	$5,834,891
Wastewater	$105,819,397	$2,375,645	$23,031,126	$85,163,916
Grand Total	**$117,704,679**	**$2,581,839**	**$29,287,711**	**$90,998,807**

Engineering Approval Statistics

The Engineering Approvals group is focused on adherence to the Halifax Water Design Specifications, the Supplementary Standard Specification and the Halifax Water Regulations with respect to connections to and expansions of Halifax Water systems. The administration of new service connections includes the RDC.

In 2022/23, the Engineering Approvals group processed:

Application Type	2022/23	2021/22	2020/21
Water Permit Reviews	4,402	3,538	Not Previously Tracked
Water Permit Approvals	900	1,223	1,226
Subdivision Approvals	191	166	199
Metres of New Water Main	4,861	3,185	2,175
Metres of New Wastewater Main	4,694	4,037	1,861
Metres of New Wastewater Main	6,562	3,247	1,582
Demolition Permits	155	154	167
Clearance Letters	28	30	18
Tender Reviews	88	85	80
New Backflow Prevention Applications	107	115	122
Backflow Prevention Devices Active	5,993	5,812	7,204

Drinking Water Regulatory Compliance

Providing our customers with safe, reliable, affordable, high-quality drinking water requires investment in infrastructure, research, and robust quality assurance/ quality control programs. Halifax Water has made considerable investments in all these areas.

To ensure quality control is optimized, we maintain ISO 14001 Environmental Management System Registration at the J. D. Kline (Halifax), Lake Major (Dartmouth), and Bennery Lake (Halifax Airport) and smaller community water supply plants.

Halifax Water undertakes a comprehensive water testing program with bacteriological testing done weekly at 63 locations within the urban core and at each of the small systems.

Over 3,250 tests are conducted each year for total coliform bacteria and E. coli. Halifax Water consistently achieves results where 99.9% of samples are absent of bacteria, as shown to the right:

	% Absent	# of Samples
Pockwock	100.0%	1399
Lake Major	99.9%	1209
Bennery	100.0%	156
Five Islands	100.0%	106
Silver Sands	100.0%	104
Middle Musquodoboit	100.0%	104
Collins Park	100.0%	108
Bomont	100.0%	104
Totals		**3290**
Absent		3289
Present		1
All Sites - % Absent		**99.97%**

Wastewater Treatment Regulatory Compliance

As a provider of wastewater services, part of Halifax Water's role is protecting the environment; with this in mind, the EMS, ISO 14001 Certification was expanded to include all of the wastewater treatment facilities. The EMS program provides additional operational consistency, ensuring that the treated effluent released into the environment meets the regulatory requirements outlined in our operating permits.

Wastewater treatment facilities in Nova Scotia are regulated by Nova Scotia Environment and Climate Change (NSECC). They set effluent discharge limits for all wastewater facilities. The limits define maximum concentrations of parameters such as Carbonaceous Biochemical Oxygen Demand (CBOD is a measure of the amount of material in water which will consume oxygen as it decomposes), Total Suspended Solids (TSS is a measure of the amount of particulate matter in the water), and E. coli (bacteria associated with wastewater). For some facilities, parameters such as nutrients (nitrogen and phosphorus, which cause excess growth of algae and plants) or pH (a measure of acidity) are also regulated.

Halifax Water oversees five large harbour WWTFs and nine smaller, community-based WWTFs.

Compliance for the harbour WWTFs is measured on monthly averages. There has been a significant improvement in compliance at the five harbour WWTFs, with Herring Cove, Eastern Passage, and Mill Cove achieving full compliance for the year. Operational improvements have been underway at Halifax and Dartmouth and have been the reason for some of the non-compliance results throughout the year. Of the nine community-based facilities, six were fully compliant all year.

Wastewater Treatment Facility Compliance Summary
Q1 - April to June 2022

WWTF	$CBOD_5$	TSS	E. coli	Phosphorus	Ammonia	pH	Dissolved Oxygen	Chlorine	Toxicity Pass
Aerotech	2	1	10	0.1	0.1	6.9	7.7	n/a	YES
Frame	4	1	10	n/a	n/a	6.7	n/a	n/a	n/a
Lakeside-Timberlea	5	19	12	1	2	7.0	n/a	0.10	YES
Lockview-MacPherson	6	12	10	0.4	6.3	6.8	n/a	n/a	n/a
Middle Musquodoboit	7	15	67	n/a	n/a	7.2	n/a	n/a	n/a
North Preston	7	3	10	0.5	0.3	6.6	n/a	n/a	n/a
Springfield	5	6	19	n/a	n/a	7.0	n/a	n/a	n/a
Steeves (Wellington)	3	2	10	0.1	0.05	7.2	n/a	n/a	n/a
Uplands Park	6	12	10	n/a	n/a	7.1	n/a	n/a	n/a

Wastewater Treatment Facility Compliance Summary
Q2 - July to September 2022

WWTF	$CBOD_5$	TSS	E. coli	Phosphorus	Ammonia	pH	Dissolved Oxygen	Chlorine	Toxicity Pass
Aerotech	6	1	10	0.06	0.1	7.4	7.5	n/a	YES
Frame	4	1	10	n/a	n/a	7.3	n/a	n/a	n/a
Lakeside-Timberlea	6	17	11	1	3	7.5	n/a	0.10	YES
Lockview-MacPherson	8	5	19	0.4	3	6.6	n/a	n/a	n/a
Middle Musquodoboit	4	7	10	n/a	n/a	7.5	n/a	n/a	n/a
North Preston	5	2	10	1.3	0.1	6.6	n/a	n/a	n/a
Springfield	4	6	31	n/a	n/a	7.1	n/a	n/a	n/a
Steeves (Wellington)	5	1	10	0.1	0.05	7.6	n/a	n/a	n/a
Uplands Park	11	21	16	n/a	n/a	6.9	n/a	n/a	n/a

Specific parameter limit achieved
Specific parameter limit not achieved

NOTES & ACRONYMS:
$CBOD_5$ - Carbonaceous 5-Day Biochemical Oxygen Demand
TSS - Total Suspended Solids
TRC - Total Residual Chlorine
S / W - Summer / Winter compliance limits
Toxic may indicate only a single sample
NSECC requires monthly averages be less than the NSECC Compliance Limit for each parameter at Dartmouth, Eastern Passage, Halifax, Herring Cove, Mill Cove
NSECC requires quarterly averages be less than the NSECC Compliance Limit for each parameter at Aerotech, Lockview, Middle Musquodoboit, Belmont, Frame, BLT, Uplands, Springfield
NSECC requires an annual averages be less than the NSECC Compliance Limit for each parameter at North Preston, Steeves

Wastewater Treatment Facility Compliance Summary
Q3 - October to December 2022

WWTF	$CBOD_5$	TSS	E. coli	Phosphorus	Ammonia	pH	Dissolved Oxygen	Chlorine	Toxicity Pass
Aerotech	3	1	10	0.05	0.1	7.1	8.1	n/a	YES
Frame	4	1	10	n/a	n/a	7.3	n/a	n/a	n/a
Lakeside-Timberlea	5	16	34	1	1	7.1	n/a	0.10	YES
Lockview-MacPherson	5	6	34	0.3	3	6.5	n/a	n/a	n/a
Middle Musquodoboit	7	5	31	n/a	n/a	7.1	n/a	n/a	n/a
North Preston	4	20	10	1.2	0.3	6.6	n/a	n/a	n/a
Springfield	4	5	44	n/a	n/a	6.6	n/a	n/a	n/a
Steeves (Wellington)	2	14	10	0.5	0.1	7.0	n/a	n/a	n/a
Uplands Park	7	9	10	n/a	n/a	7.0	n/a	n/a	n/a

Wastewater Treatment Facility Compliance Summary
Q4 - January to March 2023

WWTF	$CBOD_5$	TSS	E. coli	Phosphorus	Ammonia	pH	Dissolved Oxygen	Chlorine	Toxicity Pass
Aerotech	3	1	10	0.1	0.1	7.0	8.1	n/a	YES
Frame	2	1	10	n/a	n/a	7.2	n/a	n/a	n/a
Lakeside-Timberlea	4	16	10	1	3	7.1	n/a	0.10	YES
Lockview-MacPherson	8	14	79	0.6	12	6.6	n/a	n/a	n/a
Middle Musquodoboit	16	13	108	n/a	n/a	7.1	n/a	n/a	n/a
North Preston	2	3	10	0.3	0.1	6.3	n/a	n/a	n/a
Springfield	5	8	10	n/a	n/a	7.2	n/a	n/a	n/a
Steeves (Wellington)	2	1	10	0.1	0.1	7.0	n/a	n/a	n/a
Uplands Park	9	9	22	n/a	n/a	6.8	n/a	n/a	n/a

Specific parameter limit achieved
Specific parameter limit not achieved

NOTES & ACRONYMS:
$CBOD_5$ - Carbonaceous 5-Day Biochemical Oxygen Demand
TSS - Total Suspended Solids
TRC - Total Residual Chlorine
S / W - Summer / Winter compliance limits
Toxic may indicate only a single sample
NSECC requires monthly averages be less than the NSECC Compliance Limit for each parameter at Dartmouth, Eastern Passage, Halifax, Herring Cove, Mill Cove
NSECC requires quarterly averages be less than the NSECC Compliance Limit for each parameter at Aerotech, Lockview, Middle Musquodoboit, Belmont, Frame, BLT, Uplands, Springfield
NSECC requires an annual averages be less than the NSECC Compliance Limit for each parameter at North Preston, Steeves

Wastewater Treatment Facility Compliance Summary

Monthly Performance - April 2022 to March 2023

Wastewater Treatment Facility	April 2022					May 2022					June 2022				
	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass
Halifax	32	18	n/a	7	YES	42	19	1,426	7	YES	37	17	2,205	7	YES
Herring Cove	19	9	n/a	7	n/a	31	24	24	7	YES	21	14	31	7	n/a
Dartmouth	41	27	n/a	7	YES	49	16	38	7	YES	45	22	21	7	YES
Eastern Passage	7	7	n/a	7	n/a	7	11	61	7	YES	5	8	16	7	n/a
Mill Cove	18	19	15	7	n/a	15	14	23	7	YES	11	17	10	7	n/a

Wastewater Treatment Facility	July 2022					August 2022					September 2022				
	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass
Halifax	37	18	3,206	7	YES	43	36	14,216	7	YES	47	22	24,664	7	NO
Herring Cove	28	11	45	7	n/a	48	13	50	7	YES	30	6	1,100	7	n/a
Dartmouth	54	20	131	7	YES	64	33	2,337	7	YES	68	21	2,345	7	NO
Eastern Passage	6	10	10	7	n/a	7	11	15	7	YES	11	13	31	7	n/a
Mill Cove	8	8	13	7	n/a	11	15	38	7	YES	11	12	29	7	n/a

Wastewater Treatment Facility	October 2022					November 2022					December 2022				
	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass
Halifax	41	21	7,068	7	YES	39	22	n/a	7	YES	38	28	0	7	YES
Herring Cove	34	27	242	7	n/a	19	18	n/a	7	YES	13	19	18	6	n/a
Dartmouth	49	43	264	7	YES	42	29	n/a	7	YES	44	48	0	7	YES
Eastern Passage	8	6	20	7	n/a	7	11	n/a	7	YES	6	9	0	7	n/a
Mill Cove	11	11	14	6	n/a	13	15	19	7	YES	6	6	23	7	n/a

Wastewater Treatment Facility	January 2023					February 2023					March 2023				
	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass	$CBOD_5$	TSS	E. coli	pH	Toxicity Pass
Halifax	29	21	n/a	7	YES	27	20	n/a	7	YES	43	34	n/a	7	YES
Herring Cove	16	21	n/a	7	n/a	19	18	n/a	7	YES	19	15	n/a	7	n/a
Dartmouth	38	39	n/a	7	YES	43	42	n/a	7	YES	40	22	n/a	7	YES
Eastern Passage	8	10	n/a	7	n/a	8	20	n/a	7	YES	9	11	n/a	7	n/a
Mill Cove	10	16	11	7	n/a	12	17	10	7	YES	11	16	12	7	n/a

Compliance Achieved (< NSECC Limit)

Compliance not Achieved (> NSECC Limit)

n/a Due to seasonal disinfection & toxicity requirements

People

We attract and retain high-quality team members in an inclusive and respectful work environment. We are committed to our customers and the communities where we live and work, determined to provide a high level of service and a sustainable future through ongoing engagement

Diversity, Equity & Inclusion

Halifax Water's Diversity, Equity, and Inclusion (DEI) focus for the 2022/23 fiscal year was DEI-based training and establishing related policies. In addition, accessibility is at the forefront as the new Burnside location is being developed.

In June 2022, through the assistance of Ashanti Leadership & Professional Development Services, 98% of our employees were trained in Unconscious Bias. In February 2023, CUPE conducted Respect in the Workplace training for 87% of our employees. Training will continue to be a focus as we expand our DEI training suite and catch up on training new employees in Unconscious Bias. In addition, we continue our Diversity Learning Moments.

We had remarkable success training ten future leaders from the union and non-union employee groups in our first Aspiring Leaders Performance Matters Supervisory Training; a second session will be held soon.

The DEI Policy was developed, and the Fair Hiring Policy was updated, which will be rolled out to employees during the fall of 2023.

The DEI Committee was refocused and expanded to represent all equity-seeking groups within Halifax Water better, and through collaboration with this committee, the DEI-related employee survey questions were created. The Women in Non-Traditional Trades came together to assist in the creation of survey questions for our Women of Water (WoW), which will help develop an education and awareness campaign to further attract and retain members of equity-seeking groups to Halifax Water.

Employees gathered for in-person and virtual coffee breaks to celebrate International Women's Day, and for the first time, Halifax Water participated in the PRIDE parade.

It was a busy year moving the DEI Framework Goals forward, and many more initiatives are in place for the upcoming fiscal year.

Talent Management

Ensuring that Halifax Water's institutional capacity to deliver existing programs and services and the increased capital investment under the Integrated Resource Plan continues to be an area of focus. Maintaining appropriate staff and resource levels is critical to providing our customers with high-quality and sustainable water services.

The current average turnover rate at Halifax Water is 7.74%, which is an overall increase of 6.74% from previous years.

Several experienced managers and employees retired in the last fiscal year. Currently, 6.1% of the workforce is eligible to retire. The percentage eligible to retire over the next five years has increased to 17.1%.

Halifax Water has a Talent Management program to help employees develop and progress their careers. Some initiatives planned for the upcoming year to help ensure there are internal candidates ready to take on new roles include:

- Promote the employee development guide frequently and introduce it during the onboarding of all new hires.
- Introducing the Diversity and Inclusion Fair Hiring Policy.
- Continue to provide supervisory training "Performance Matters" to include unionized employees who aspire and take the initiative to progress into supervisory roles in future.
- Continue to promote the training and development and Lifelong Learning initiatives available to all employees.
- Continue to develop a culture where feedback is welcomed and well received.

There has been an increase in attraction concerns in the last half of the 2022-23 fiscal year throughout the organization. Some concerning areas are Procurement,

Accounting, Finance, Water Treatment, Human Resources and Engineering Technologists.

Halifax Water maintains a competitive total compensation package. Some initiatives this year to help with attraction and retention issues:

- Introducing the Diversity and Inclusion Fair Hiring Policy.
- Introducing optional life and critical illness insurance offerings.
- Increasing resources in the Human Resources department.
- Re-alignment of the Engineering and Technology Services department.
- Completion of a unionized job evaluation review process.
- Continue to update and re-evaluate job descriptions as required and benchmark compensation against the market.
- Promote the awards recognition program
- Collective Bargaining.

One Water Excellence Awards

This year was the first year of the Halifax Water One Water Excellence Awards. In addition to our highly regarded Carolyn Bruce Excellence in Customer Service Award, we have added three additional award categories to recognize employees who have made significant contributions to Safety & Environment, True Value and Team Spirit.

2022 Holiday Awards Banquet

One Water Excellence Awards

Carolyn Bruce Customer Service Excellence Award

In 2012, Halifax Water introduced a new Customer Service Excellence Award in honour and memory of Carolyn Bruce. This award was created to recognize the path that Carolyn forged for exemplary Customer Service. Carolyn was a dedicated employee of 22 years, starting as a Customer Service Representative and moving her way up to Customer Service Supervisor. Carolyn passed away in 2011, leaving a legacy of passionate, dedicated service to Halifax Water.

We continue to recognize employees demonstrating this passion and dedication to Customer Service. Each year, Halifax Water takes nominations from employees who wish to recognize their coworkers for this award. Considerations for this award include the number of times an employee is recognized for providing excellent customer service to our external customers, the breadth and depth of customer service (impact to the utility), customer service over and above the call of duty (beyond their job requirement and a pattern of exemplary customer service over an extended period-of-time.)

Barry Geddes Receiving the Carolyn Bruce Customer Service Excellence Award

Continuing Carolyn's legacy, in 2022, Halifax Water recognized Barry Geddes for his excellent customer service and presented him with the Carolyn Bruce Customer Service Excellence Award. Barry is Halifax Water's Watershed Manager and has been a dedicated employee since 2006. His name was added to the perpetual plaque at 450 Cowie Hill Road, along with the others before him, as a reminder of Halifax Water employees' passion and dedication.

Halifax Water Service Awards

Employee commitment and dedication of service mean a great deal to Halifax Water, and to show that appreciation, Halifax Water has a long-standing tradition of recognizing employees for their length of service with the organization. Awards categories to recognize this service are five, 10, 15, 20, 25, 30 and 35 years. As per Halifax Water's Service Award Policy, eligible employees will have their years of continuous service completed by the end of the calendar year the award was received.

In 2022, we recognized the following employees for reaching their service milestone! Awards categories from 10-35 were presented to employees at the 2022 Service Awards Banquet & Holiday Party held at the Westin Nova Scotian Hotel on Friday, December 16.

35 Years of Service

Operations
Graham Downey

30 Years of Service

Engineering & Technology Services
Harold MacNeil

Operations
Stephen Murphy

Regulatory Compliance Services
Shawn MacDonald

25 Years of Service

Corporate Services
Denise MacDonald

General Manager
Rochelle Bellemare
Maria MacKinnon

Operations
George Bent
Paul Sutherland
Reid Kaiser
Shawn Taylor
Sheldon Parsons

20 Years of Service

Operations
Adam Greer
Rachel Dauphinee
Robert Piercey
Stewart Martin

15 Years of Service

Corporate Services
Christine Westhaver
Kimberley Kavanaugh

Engineering & Technology Services
Alan Ghothani
Chantel Parkin
Daniel Kennie
Jaclyn Chezenko
Roger Levesque

Operations
Colette Clark
John Eisnor
John Russell
Laurena MacDonald
Mark Feener
Neil Grady
Troy Blackmore

10 Years of Service

Corporate Services
Anne Oickle
Brent Hickman
Leslie Mills
Rocio Barreiro

Engineering & Technology Services
Arsanious Awadalla
Chris White
Danielle Semel
David Blades
Dylan Roache
Michael Duggan
Sonya LeVangie

Operations
Charles Thomas
Cliff Goodhew
Craig Young
Daniel Hooper
Graham Heggelin
Jacob Mackereth
Kelly Sangster
Mason Willis
Michael Murphy
Robert Graham
Scott Lovatt

Regulatory Compliance Services
Caitlin Daly

5 Years of Service

Corporate Services
Renee Strickland

Engineering & Technology Services
Carly Wrathall
Franklyn King
Sean Ryan
Mila Cox
Michael Frenette

General Manager
David Jones

Operations
Andrew Pulsifer
Benjamin Wallace
Bruce Day
Cory Carlton
Cory Millett
Cory Venedam
David Snow
Dylan Litle
Joel O'Neil
Jonathan Cann
Justine Corey
Peter Lord
Ryan Boyd
Scott Low
Shane Young
Wendy Krkosek

Regulatory Compliance Services
Alanna Wood
Johannah Convey
Kelly MacKinnon
Sanjoli Tagra

Fundraising & Volunteering

Halifax Water employees take great pride in the communities we live in and serve. Employees can get involved in several different fundraising events, volunteer groups, and community causes throughout the year.

United Way Halifax
Halifax Water employees have been helping support United Way Halifax for over 24 years. Halifax Water employees proudly pitched in and raised a total of $4,126!

Water for People
Halifax Water employees donated $10,566 to Water for People. These funds support the digging of wells to provide clean drinking water for approximately 4 million people in nine different countries.

Angel Toy Drive Present Pickup

Angel Tree Toy Drive
For more than ten years, it has been a tradition for Halifax Water employees to continue the Angel Tree Program to provide gifts for less fortunate children in our community.

Employees provided gifts for over 100 children, from newborns to 11 years old, and thanks to the giving spirit of Halifax Water employees, they will get something special on Christmas Morning!

Sponsorships & Donations

Halifax Pride
Halifax Water was proud to sponsor the 2022 Halifax Pride Festival and take part in the Pride Parade. Halifax Water is committed to diversity, equity, and inclusion in the workplace. Staff were thrilled to show our pride in the parade.

Halifax Water Halifax Pride Parade Participants

Special Olympics Nova Scotia
Halifax Water fleet operators showed pride in their trucks as they volunteered to participate in the Special Olympics Nova Scotia Truck Convoy. The Truck Convoy is a way to raise money for the Special Olympics NS; this year, Halifax Water was a Silver Level Sponsor of the event and was proud to have its fleet involved this year.

Purple Ribbon Campaign
In recognition and support of The Purple Ribbon Campaign, a movement to raise awareness of violence against women, Halifax Water employees came together and donated a total of over $400 worth of gift cards. These gift cards were given to the women at the Transition House Association of Nova Scotia, transitional homes empowering women to get the things they need to move forward.

H2O Fund
The H2O (Help to Others) Fund is a water, wastewater, and stormwater assistance fund that can be used by Halifax Water residential customers who are having difficulty making their bill payments.

Approved applicants will receive assistance once in 24 months to a maximum of $275.00. The Salvation Army administers this program on behalf of Halifax Water.

Halifax Water's H2O Fund is funded by donations from Halifax Water employees throughout the year. Halifax Water matches these donations to a maximum of $27,500 annually. This year, Halifax Water employees donated $5,788 through payroll deductions.

NSCC Scholarships

Halifax Water is an active supporter of the educational growth of our community through scholarships provided to the Nova Scotia Community College. Since 2008, Halifax Water has offered over $111,000 in scholarships for NSCC students, with accompanying work-terms. The scholarships not only benefit the community and recipients, but they have also provided Halifax Water with many highly skilled and motivated employees over the years:

Jipuktuk etli apatua'timk Award - $4,000 Awarded each fall & spring
Halifax Water established it to support First Nations, Métis and Inuit students entering the Civil Engineering Technology, Environmental Engineering Technology, Electronic Engineering Technology, or Mechanical Engineering Technology Programs at NSCC.

jipuktuk etli apatua'timk is the Mi'kmaq word for harbour or port and has been used to describe Halifax Harbour by the Mi'kmaq people in Nova Scotia.

Arnold D. Johnson Sr. Award for Water Resources - $3,600 Awarded each fall
Halifax Water established it to support Indigenous African Nova Scotian students entering Environmental Engineering Technology or Mechanical Engineering Technology Programs at NSCC.

Named in honour of Arnold D. Johnson Sr., who served the Preston area communities as a Halifax County Councillor and was instrumental in creating the Watershed Association Development Enterprise and the Lake Major Watershed Advisory Committee, the award recognizes the foresight and dedication of Mr. Johnson during his many years of public service and his many accomplishments.

Robert T. Peacock Achievement Award - $2,000 Awarded each fall
Established by Halifax Water to support students who self-identify as racially visible entering their second year of the Environmental Engineering Technology Program at NSCC.

This award includes an opportunity for the successful recipient to complete their required work term with Halifax Water.

Women in Non-Traditional Careers - $2,000 Awarded each fall
This award is open to women in non-traditional careers who are entering one of the eligible NSCC Programs listed. Included with this award is an opportunity for the successful recipient to complete their required work placement with Halifax Water, as well as an opportunity for summer employment with Halifax Water.

Halifax Water Achievement Award - $2,000 Awarded each fall
This award is open to any student enrolled full-time In the Civil Engineering Technology Program at NSCC. This award includes an opportunity for the successful recipient to complete their required work term with Halifax Water.

Community Engagement Activities

Halifax Water is committed to communicating with and engaging with our stakeholders. Below is a summary of stakeholder and community engagement activities that took place during the 2022/23 fiscal year:

Lake Major Watershed Protected Water Area Regulation Engagement Sessions
Halifax Water hosted 17 public engagement sessions with property owners in September and October 2022 at the East Preston Recreation Centre, Lake Echo Community Recreation Centre, North Preston Community Centre, Fairbanks Centre, Woodlawn United Church, and online. These informal walk-in sessions included a number of information boards, allowing community members to walk through and learn more about the designated Lake Major Watershed Protected Water Area and the current regulations and to speak with representatives from Halifax Water if they had any questions.

Lake Major Watershed Public Engagement Session

Stormwater Service Expansion
In winter 2022, Halifax Water offered two online community information sessions for property owners within the proposed stormwater expansion area.

RDC & Development
In May 2022, Halifax Water hosted an breakfast event with the development community to present on how RDC funds are used, why they are collected, and the collective benefit to the region that these funds bring.

Halifax Water also attended the 2022 Urban Development Institute of Nova Scotia Fall Conference to engage with the local development community.

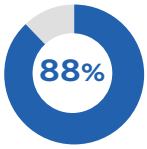
Port Wallace Utility Corridor
Halifax Water hosted a public information session at the Fairbanks Centre regarding the installation of a utility corridor that will support water and wastewater services for growth in the Port Wallace master plan area. This work includes the replacement of a bridge crossing the Shubenacadie Canal.

2023 Spring Ideal Home Show
Halifax Water had staff from various departments at the 2023 Spring Ideal Home Show to help property owners better understand related topics, such as development, permits, service connections, billing, and more.

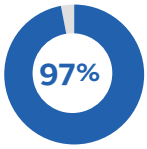
Halifax Water
2022 Quality of Service
Key Highlights

Methodology: 332 telephone surveys with Halifax residents (310 Water customers, 198 Stormwater Customers, and 227 Wastewater Customers)
Data Collection: November 8 - 20, 2020

Halifax Water Customers



88% rate quality of water received in household as excellent / good.
(vs. 89% in 2021)



97% rate their water as very/generally safe.
(vs. 98% in 2021)

Customer Service Index
80.5%
(vs. 79.5 in 2021)

Most preferred Method for Accessing information Related to Halifax Water's Programs and Services
(Key Mentions)

49% **Internet**
(vs. 55% in 2021)

22% **Halifax Water website**
(vs. 20% in 2021)

Among Water Customers

Very/generally satified with Halifax Water staff's...

Service Reliability 98%
(vs. 93% in 2021)

Politeness 94%
(vs. 92% in 2021)

Ability to answer questions 86%
(vs. 86% in 2021)

Accessibility 85%
(vs. 87% in 2021)

Promptness 84%
(vs. 86% in 2021)

97%
Very/generally satisfied with Halifax Water's overall service delivery
(vs. 96% in 2021)
(Amoung those who receive Water Services)

84%
Very/generally satisfied with Stormwater Services received from Halifax Water
(vs. 79% in 2021)
(Amoung those who receive Stormwater Services)

92%
Very/generally satisfied with Wastewater Services received from Halifax Water
(vs. 93% in 2021)
(Amoung those who receive Wastewater Services)

Program Awareness

16% Aware of Halifax Water's enhanced program to assist residential customers with replacing their lead water service lines.
(vs. 25% in 2021)

14% Aware that Halifax Water has an emergency assistance program to help low income customers.
(vs. 16% in 2021)

Currently Using Customer Connect Portal

Not using 79%

38% Very/somewhat interested in managing their Halifax Water account online
(vs. 42% in 2021)

68% Would definitely/ probably sign up for paperless billing
(vs. 70% in 2021)

Using 17%

Online Services Used on Customer Connect Portal

92% Managing your account information
(vs. 87% in 2021)

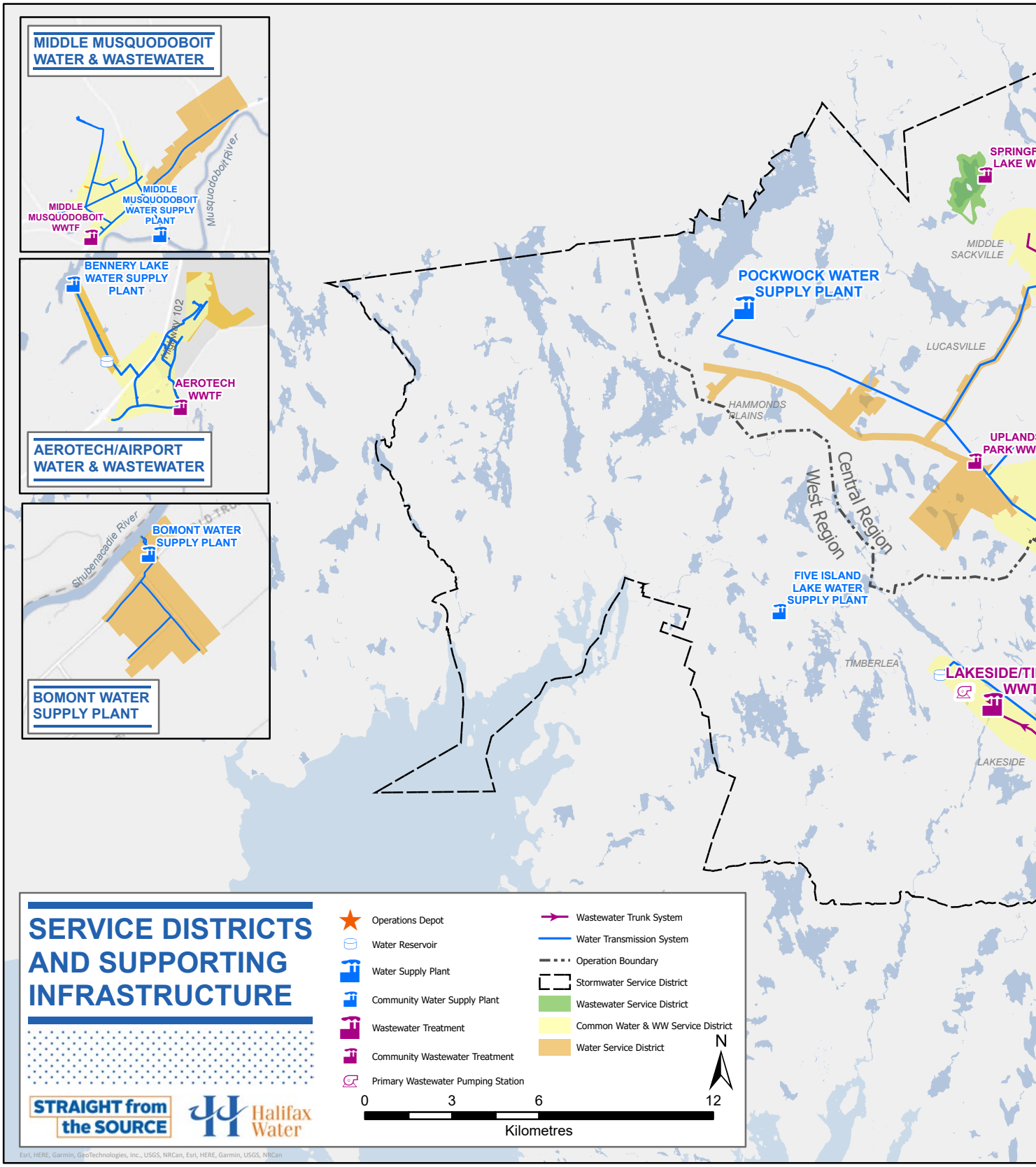
88% Tracking billing
(vs. 84% in 2021)

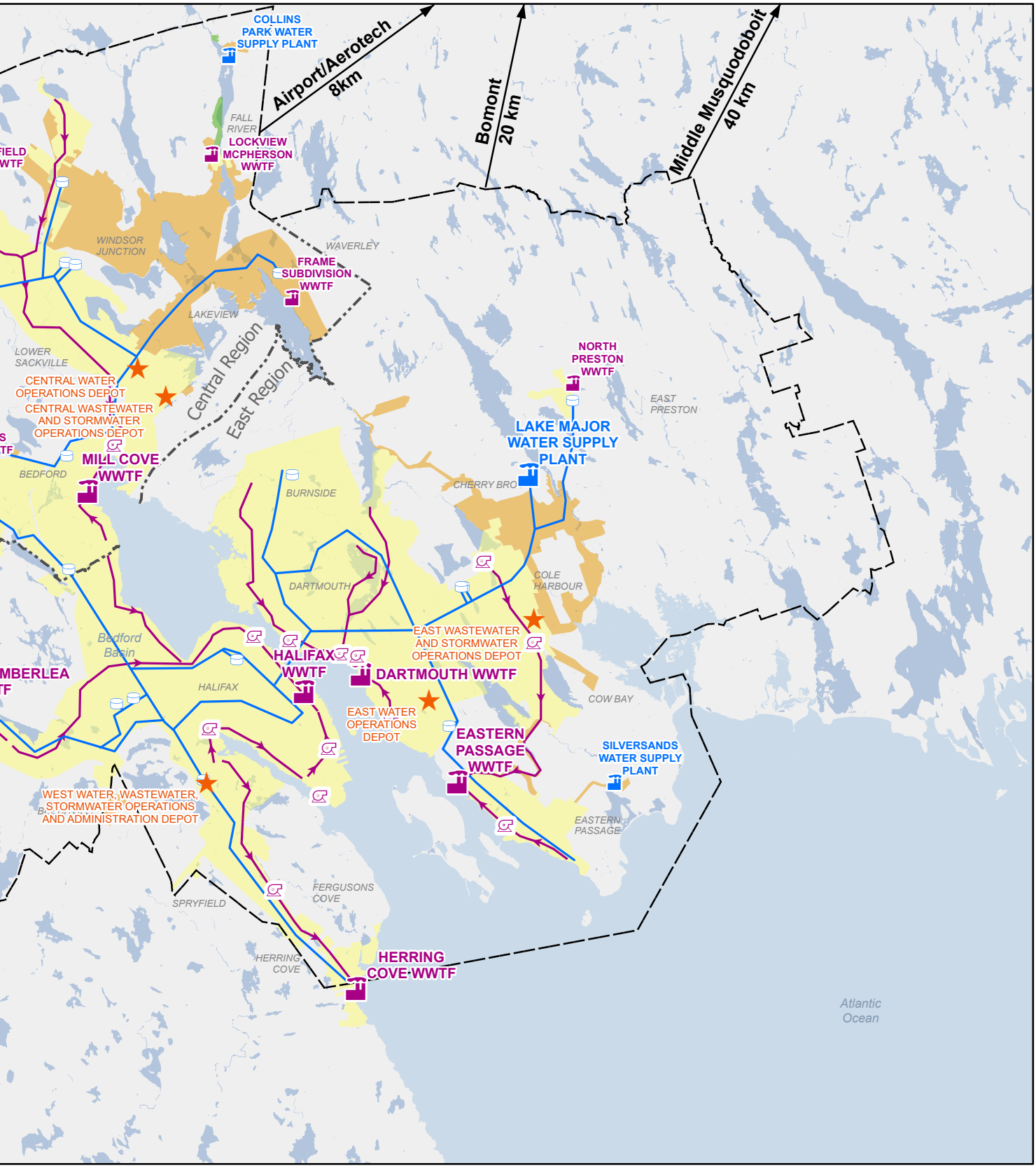
52% Monitoring your water consumption
(vs. 57% in 2021)

Unless otherwise noted percentages represent Halifax Water Customers. | *Asked of HRM residents (n=400)

Halifax Water

Service Area Map




COLLINS PARK WATER SUPPLY PLANT
Airport/Aerotech 8km
Bomont 20 km
Middle Musquodoboit 40 km
FALL RIVER
LOCKVIEW MCPHERSON WWTF
WINDSOR JUNCTION
WAVERLEY
FRAME SUBDIVISION WWTF
LAKEVIEW
LOWER SACKVILLE
CENTRAL WATER OPERATIONS DEPOT
CENTRAL WASTEWATER AND STORMWATER OPERATIONS DEPOT
Central Region
East Region
MILL COVE WWTF
BEDFORD
BURNSIDE
DARTMOUTH
Bedford Basin
HALIFAX
HALIFAX WWTF
DARTMOUTH WWTF
EAST WASTEWATER AND STORMWATER OPERATIONS DEPOT
EAST WATER OPERATIONS DEPOT
EASTERN PASSAGE WWTF
WEST WATER, WASTEWATER, STORMWATER OPERATIONS AND ADMINISTRATION DEPOT
SPRYFIELD
FERGUSONS COVE
HERRING COVE
HERRING COVE WWTF
NORTH PRESTON WWTF
EAST PRESTON
LAKE MAJOR WATER SUPPLY PLANT
CHERRY BRO
COLE HARBOUR
COW BAY
SILVERSANDS WATER SUPPLY PLANT
EASTERN PASSAGE
Atlantic Ocean

Halifax Water by the Numbers

General Utility Information - Water Infrastructure
as of March 31, 2023

Water Supply Plant	Water Source	Treatment Process	Average Flows/Day	Filter Quantity & Capacity/Day	Maximum Flow Rate	Design Capacity/Day
J. D. Kline	Pockwock Lake	Dual Media Direct Filtration & Manganese Removal	91,583 m^3	8 Filters 143 m^2/filter	0.137 m^3/m^2 per minute	227,000 m^3
Lake Major	Lake Major	Upflow Clarification, Iron & Manganese Removal	32,270 m^3	4 Filters 85 m^2/filter	0.192 m^3/m^2 per minute	94,000 m^3
Bennery Lake	Bennery Lake	Sedimentation, Dual Media Filtration & Manganese Removal	806 m^3	2 Filters 26.65 m^2/ filter	0.10 m^3/m^2 per minute	7,950 m^3
Middle Musquodoboit	Musquodoboit River	Raw Water Infiltration Gallery, Ultra/ Nano Filtration	53 m^3	2 Ultra Filters 1 Nano Filter	0.139 m^3/min 0.264 m^3/min	260 m^3
Collins Park	Lake Fletcher	Ultra/Nano Filtration	63 m^3	2 Ultra Filters 1 Nano Filter	0.111 m^3/min 0.145 m^3/min	160 m^3
Bomont	Shubenacadie River	Nano Filtration/ Ionic Exchange Resin	2 m^3	N/A	0.0132 m^3/ min	38 m^3
Silver Sands	2 Wells	Green Sand Pressure Filters, Iron & Manganese Removal	20 m^3	2 Filters	0.378 m^3/min	30 m^3
Five Island Lake	1 Well	UV Disinfection	11 m^3	N/A	0.016 m^3/min	N/A

Source Water	Rainfall in 2022/23	Snowfall in 2022/23
Pockwock Lake	1,695.58 mm	127.0 cm
Lake Major	1,483.7 mm	78.3 cm

Source Water	Watershed Area	Safe Yield/Day
Pockwock Lake	5,661 ha	145,500 m^3
Chain Lake	206 ha	4,500 m^3
Lake Major	6,944 ha	65,900 m^3
Lake Lemont/Topsail	346 ha	4,500 m^3
Bennery Lake	644 ha	2,300 m^3

Water Supply	Water Production in 2022/23 (m^3)
Pockwock Lake	33,427,807
Lake Major	11,778,710
Bennery Lake	294,341
Small Systems	53,893
Total	**45,554,751**

Reservoir	Elevation Above Sea Level	Capacity
Lake Major	60 m	9,092 m^3
Pockwock	170 m	13,600 m^3
Geizer 158	158 m	36,400 m^3
Geizer 123	123 m	31,800 m^3
Cowie	113 m	11,200 m^3
Robie	82 m	15,900 m^3
Lakeside	119 m	5,455 m^3
Mount Edward 1	119 m	22,728 m^3
Mount Edward 2	119 m	22,728 m^3
Akerley Blvd.	119 m	37,727 m^3
Akerley Blvd.	125 m	1,659 m^3
Meadowbrook	95 m	9,091 m^3
Sampson	123 m	12,273 m^3
Stokil	123 m	23,636 m^3
Waverley	86 m	1,364 m^3
Middle Musq.	81 m	275 m^3
Aerotech	174 m	4,085 m^3
Beaver Bank	156 m	6,937 m^3
Hemlock	123 m	21,500 m^3
Total		**287,450 m^3**

Transmission & Distribution System	
Size of Water Mains	19 mm - 1,500 mm
Total Water Mains	1,580 KM
Main Valves	15,827
Fire Hydrants	8,550
Distribution Pumping (Booster) Stations	20
Pressure Control & Flow Meter Chambers	143

Water Services & Meters	
Water Sprinkler Systems (25 mm - 300 mm)	2,361
Supply Services (10 mm - 400 mm)	87,281
Water Meters (15 mm - 250 mm)	87,335

Population Served	
Halifax Municipality Est. Population Served	412,000
Consumption per Capita	223.78 litres/day

General Utility Information - Wastewater & Stormwater Infrastructure

as of March 31, 2023

Wastewater Treatment Facility	Treatment Process	Design Average Flows/Day	Area(s) Served	Receiving Water	Volume Treated in 2022/23
Halifax	Enhanced Primary UV	139,900 m^3	Halifax	Halifax Harbour	33.397.803 m^3
Dartmouth	Enhanced Primary UV	83,800 m^3	Dartmouth	Halifax Harbour	18,895,112 m^3
Herring Cove	Enhanced Primary UV	28,500 m^3	Halifax & Herring Cove	Halifax Harbour	4,187,113 m^3
Mill Cove	Secondary UV/Pure Oxygen Activated Sludge	28,400 m^3	Bedford & Sackville	Bedford Basin	9,564,154 m^3
Eastern Passage	Secondary UV/ Conventional Activated Sludge	25,000 m^3	Cole Harbour & Eastern Passage	Halifax Harbour	5,238,467 m^3
Timberlea	Secondary Sodium Hypochlorite/RBC	4,540 m^3	Lakeside & Timberlea	Nine Mile River	898,472 m^3
Aerotech	Tertiary UV/Membrane Bioreactors	3,000 m^3	Aerotech Park & Airport	Johnson River	331,084 m^3
Springfield Lake	Secondary UV/Activated Sludge	543 m^3	Springfield Lake	Lisle Lake	150,966 m^3
Fall River	Tertiary UV/Activated Sludge & Post Filtration	454.5 m^3	Lockview Road & McPherson Road	Lake Fletcher	65,560 m^3
North Preston	Tertiary UV/SBR & Engineered Wetland	680 m^3	North Preston	Winder Lake	226,777 m^3
Middle Musquodoboit	UV/RBC	114 m^3	Middle Musquodoboit	Musquodoboit River	56,945 m^3
Uplands Park	Secondary UV/Trickling Filter & Wetland	91 m^3	Uplands Park	Sandy Lake	34,832 m^3
Wellington	Tertiary UV/Activated Sludge/Reed Bleed	68 m^3	Wellington	Grand Lake	5,923 m^3
Frame Subdivision	Tertiary UV/Membrane Reactor	80 m^3	Frame Subdivision	Lake William	8,343 m^3

Wastewater & Stormwater Collection System	
Size of Pipes	38 mm - 3,000 mm
Total Collection System Length	2,313 KM
Wastewater Services	82,901
Total Manholes	38,921
Total Pumping Stations	165
Total Ditch Length	602 KM
Holding Tanks & Retention Ponds	45
Cross Culverts	2,737
Driveway Culverts	17,556
Catchbasins	25,485

Corporate Balanced Scorecard Results

Since 2001, Halifax Water has been measuring organizational performance using a Corporate Balanced Scorecard (CBS). The CBS ensures that all employees are focused on strategic outcomes. The Organizational Indicators below are developed to support the Halifax Water purpose statement: to supply and safeguard sustainable, high-quality water services.

Organizational Indicators	Organization Award	2021/22 Results	2022/23 Target	2022/23 Results	2023/24 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				$93.5M	$135M
Capital Budget Expenditures – Percentage of budget spend by end of fiscal year		28.6%	70-80%	35.3%	70-80%

Organizational Indicators	Organization Award	2021/22 Results	2022/23 Target	2022/23 Results	2023/24 Target
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 NSECC 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

Organizational Indicators	Organization Award	2021/22 Results	2022/23 Target	2022/23 Results	2023/24 Target
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%	80%	64%	80%
Employee satisfaction survey result		B+	A	B+	A
Average number of days absenteeism		7.16	<7	9.81	<7

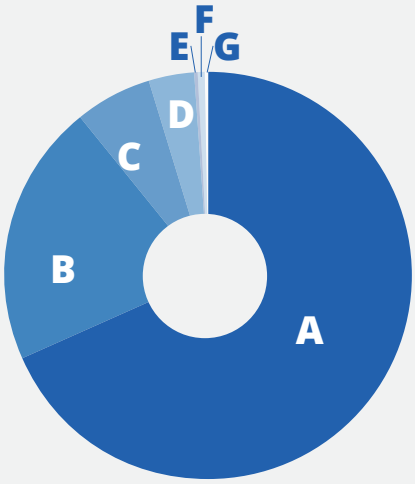
Organizational Indicators	Organization Award	2021/22 Results	2022/23 Target	2022/23 Results	2023/24 Target
Operational Excellence					
Adherence with 5 objectives of Water Safety Plan for all water systems – Percentage of sites achieving targets	Org. Award	70	80	93	80
Bacteriological tests – Percentage free from total coliform		99.94%	99.99%	99.97%	99.90%
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		1,502	1,200	1,387	1,200
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%	3.00%	14.10%	10%
Bio-solids residual handling - percentage of sludge meeting bio-solids concentration targets	Org. Award	98.5%	92-97%	99.5%	95%

Corporate Balanced Scorecard Notes

* 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.

Customers by Service Type

Halifax Water provides one or more of the following to our customers: water, wastewater and/or stormwater services. Those services support an estimated population of 381,000 people and numerous visitors to the region.



Customers by Type	Number	% of Total
A. Water, Wastewater & Stormwater	76,056	68.5%
B. Stormwater Only	23,142	20.8%
C. Water & Wastewater	6,731	6.0%
D. Water & Stormwater	3,968	3.6%
E. Wastewater & Stormwater	534	0.5%
F. Water Only	526	0.5%
G. Wastewater Only	153	0.1%
Total	**111,110**	**100.0%**

TYPICAL ANALYSIS OF POCKWOCK LAKE & LAKE MAJOR WATER
2022/23
(in milligrams per litre unless shown otherwise)
Note: All regulatory compliance analysis are processed by third-party laboratories.

PARAMETERS	(Halifax) POCKWOCK		(Dartmouth) LAKE MAJOR		GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	
	Raw Water	Treated Water	Raw Water	Treated Water	Maximum Acceptable Concentration	Aesthetic Objective Concentration
Alkalinity (as CaCO3)	<2.0	22.8	<2.0	23.6	-	-
Aluminum	0.106	0.024	0.213	0.015	2.9	[A]0.2/0.1
Ammonia (N)	<0.05	<0.05	<0.05	<0.05	-	-
Arsenic	<0.001	<0.001	<0.001	<0.001	0.010	-
Calcium	0.95	6.95	1.02	17	-	-
Chloride	7.2	8.05	6.1	8.246	-	≤250
Chlorate	<0.1	<0.1	<0.1	<0.1	1.0	-
Chlorite	<0.1	<0.1	<0.1	<0.1	1.0	-
Colour (True Colour Units)	15.8	<0.5	42	<0.5	-	≤15.0
Conductivity (µS/cm)	34	91	34	146	-	-
Copper (Total)	0.052	<0.0005	0.03	0.001	2.0	≤1.0
Fluoride	<0.1	0.488	<0.1	[B]<0.1	1.5	-
Hardness (as CaCO3)	4.1	18.8	4	43	-	-
HAA5 (avg.)	-	0.009	-	0.027	0.080	-
Iron (Total)	0.065	<0.05	0.136	<0.05	-	≤0.3
Lead (Total) (µg/l)	<0.5	<0.5	<0.5	<0.5	5.0	-
Magnesium	0.39	0.395	0.393	0.39	-	-
Manganese (Total)	0.03	0.008	0.035	<0.002	0.12	≤0.02
Mercury (µg/l)	<0.013	<0.013	<0.013	<0.013	1.0	-
Nitrate (as N)	<0.05	<0.05	<0.05	<0.05	10.0	-
Nitrite (as N)	<0.01	<0.01	<0.01	<0.01	1	-
pH (pH Units)	6	7.4	5.8	7.3	-	7.0 - 10.5
Potassium	0.23	0.27	0.21	0.22	-	-
Sodium	4.26	11	4.1	11.1	-	≤200
Solids (Total Dissolved)	17	50	22	90	-	≤500
Sulphate	2.18	11.39	2.57	33.47	-	≤500
Turbidity (NTU)	0.75	0.04	0.595	0.04	[C]0.15/0.2	-
Total Organic Carbon (TOC)	4.1	1.88	5.825	1.938	-	-
THMs (avg.)	-	0.0196	-	0.046	0.100	-
Uranium (µg/l)	<0.1	<0.1	0.116	<0.1	20.0	-
Zinc (Total)	<0.005	0.157	0.005	0.141	-	≤5.0
PCB (µg/l)	-	-	-	-	-	-
Gross Alpha / Gross Beta (Bq/L)	<0.1	<0.1	<0.1	<0.1	0.5 / 1.0	-

[A]Aluminum objective is related to type of plant filtration; the aluminum objective for direct filtration (Pockwock) is <0.20 mg/l and conventional filtration (Lake Major) is <0.10 mg/l.

[B]Fluoride was not being added to the finished water at the Lake Major WSP approximately 75% of the time due to system maintenance.

[C]The Pockwock and Lake Major plants analyze turbidity immediately post-filtration. Each filter must produce water with a turbidity of <0.15 NTU 95% of the time at the Pockwock Water Supply Plant and <0.2 NTU 95% of the time at the Lake Major Water Supply Plant. Both Water Supply Plants must produce water with a turbidity <1.0 NTU 100% of the time, as required by Provincial Permit.

TYPICAL ANALYSIS OF BENNERY LAKE & BOMONT WATER
2022/23
(in milligrams per litre unless shown otherwise)
Note: All regulatory compliance analysis are processed by third-party laboratories.

PARAMETERS	BENNERY LAKE		BOMONT LAKE		GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	
	Raw Water	Treated Water	[A]Raw Water	Treated Water	Maximum Acceptable Concentration	Aesthetic Objective Concentration
Alkalinity (as CaCO3)	4.6	24.1	-	24.3	-	-
Aluminum	0.121	0.013	-	0.022	2.9	0.1
Ammonia (N)	<0.05	<0.05	-	<0.05	-	-
Arsenic	<0.001	<0.001	-	<0.001	0.010	-
Calcium	2.6	19.0	-	7.3	-	-
Chloride	6.7	9.5	-	9.0	-	≤250
Chlorate	<0.1	0.3	-	0.2	1.0	-
Chlorite	<0.1	<0.1	-	<0.1	1.0	-
Colour (True Colour Units)	47.5	<5.0	-	<5.0	-	≤15.0
Conductivity (µS/cm)	39	156	-	104	-	-
Copper (Total)	0.2297	0.0517	-	0.0006	2.0	≤1.0
Fluoride	<0.1	<0.1	-	0.6	1.5	-
Hardness (as CaCO3)	7.6	47.0	-	20.0	-	-
HAA5 (avg.)	-	0.022	-	0.043	0.080	-
Iron (Total)	0.78	<0.05	-	<0.05	-	≤0.3
Lead (Total) (µg/l)	0.55	<0.5	-	<0.5	5.0	-
Magnesium	0.5	0.6	-	0.4	-	-
Manganese (Total)	0.437	0.050	-	0.0049	0.12	≤0.02
Mercury (µg/l)	<0.013	<0.013	-	<0.013	1.0	-
Nitrate (as N)	<0.05	<0.05	-	<0.05	10.0	-
Nitrite (as N)	<0.01	<0.01	-	<0.01	1	-
pH (pH Units)	6.5	7.3	-	7.6	-	7.0 - 10.5
Potassium	0.2	0.2	-	0.3	-	-
Sodium	4.4	10.8	-	12.5	-	≤200
Solids (Total Dissolved)	29	87	-	57	-	≤500
Sulphate	3.0	36.9	-	13.5	-	≤500
Turbidity (NTU)	2.59	0.04	-	0.21	[B]0.2/1.0; [C]5.0	-
Total Organic Carbon (TOC)	6.5	2.2	-	1.8	-	-
THMs (avg.)	-	0.038	-	0.028	0.100	-
Uranium (µg/l)	<0.1	<0.1	-	<0.1	20.0	-
Zinc (Total)	0.008	0.052	-	0.1425	-	≤5.0
PCB (µg/l)	-	-	-	-	-	-
Gross Alpha / Gross Beta (Bq/L)	<0.1	<0.1	-	<0.1	0.5 / 1.0	-

[A]Raw water samples were not collected from the Bomont raw water source this past year. Treated water was supplied from either the Lake Major or Pockwock water systems.

[B]The Bennery Lake plant analyzes turbidity immediately post-filtration and must produce water with a turbidity of <0.2 NTU 95% of the time and <1.0 NTU 100% of the time.

[C]Filtered turbidity values are not reported due to the fact that the Bomont Water Supply Plant was not treating raw water. Instead, treated water turbidity is reported and calculated from clearwell monitoring and must be less than 5.0 NTU as required by Provincial Permit.

TYPICAL ANALYSIS – SMALL SYSTEMS
2022/23
(in milligrams per litre unless shown otherwise)
Note: All regulatory compliance analysis are processed by third-party laboratories.

PARAMETERS	FIVE ISLAND LAKE		SILVER SANDS		GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	
	Raw Water	Treated Water	Raw Water	Treated Water	Maximum Acceptable Concentration	Aesthetic Objective Concentration
Alkalinity (as CaCO3)	32.0	32.5	57.7	60.0	-	-
Aluminum	0.008	<0.005	<0.005	<0.005	2.9	0.2
Ammonia (N)	<0.05	<0.05	0.053	<0.05	-	-
Arsenic	0.004	0.004	0.002	<0.001	0.010	-
Calcium	8.9	9.1	34.3	37	-	-
Chloride	5.9	7.8	59.5	65.7	-	≤250
Chlorate	<0.1	0.18	<0.5	0.4	1.0	-
Chlorite	<0.1	<0.1	<0.5	<0.1	1.0	-
Colour (True Colour Units)	<5.0	<0.5	<5.0	<5.0	-	≤15.0
Conductivity (µS/cm)	84	90	360	366	-	-
Copper (Total)	0.0016	0.0100	<0.0005	0.0152	2.0	≤1.0
Fluoride	0.4	0.4	0.3	0.5	1.5	-
Hardness (as CaCO3)	26.5	27.0	103.3	110.0	-	-
HAA5 (avg.)	-	<0.005	-	<0.005	0.080	-
Iron (Total)	0.08	<0.05	1.06	0.05	-	≤0.3
Lead (Total) (µg/l)	<0.5	<0.5	<0.5	<0.5	5.0	-
Magnesium	1.1	1.1	5.0	5.3	-	-
Manganese (Total)	<0.002	<0.002	1.10	0.017	0.12	≤0.02
Mercury (µg/l)	<0.013	<0.013	<0.013	<0.013	1.0	-
Nitrate (as N)	<0.05	<0.05	<0.05	<0.05	10.0	-
Nitrite (as N)	<0.01	<0.01	<0.01	<0.01	1	-
pH (pH Units)	7.4	7.7	7.8	7.2	-	7.0 - 10.5
Potassium	0.5	0.5	0.9	0.9	-	-
Sodium	6.0	7.6	24.3	29.0	-	≤200
Solids (Total Dissolved)	59	60	203	215	-	≤500
Sulphate	3.2	3.4	18.3	17.0	-	≤500
Turbidity (NTU)	1.12	0.15	18.67	0.15	[A]1.0	-
Total Organic Carbon (TOC)	<0.5	<0.5	<0.5	<0.5	-	-
THMs (avg.)	-	<0.001	-	<0.001	0.100	-
Uranium (µg/l)	10.6	11.0	<0.1	<0.1	20.0	-
Zinc (Total)	<0.005	<0.005	<0.005	<0.005	-	≤5.0
PCB (µg/l)	<0.05	<0.05	-	-	-	-
Gross Alpha / Gross Beta (Bq/L)	0.32/0.51	0.24/0.25	<0.1	<0.1	0.5 / 1.0	-

[A]The Five Island Lake and Silver Sands Water Supply Plants must produce water with turbidity of <1.0 NTU 95% of the time, as required by Provincial Permit. Treated water turbidity is calculated from clearwell monitoring.

TYPICAL ANALYSIS - SMALL SYSTEMS
2022/23
(in milligrams per litre unless shown otherwise)
Note: All regulatory compliance analysis are processed by third-party laboratories.

PARAMETERS	COLLINS PARK		MIDDLE MUSQUODOBOIT		GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	
	Raw Water	Treated Water	Raw Water	Treated Water	Maximum Acceptable Concentration	Aesthetic Objective Concentration
Alkalinity (as CaCO3)	15	4.9	34	104	-	-
Aluminum	0.039	<0.005	0.012	<0.005	2.9	0.1
Ammonia (N)	0.087	0.14	0.07	0.118	-	-
Arsenic	0.003	<0.001	<0.001	<0.001	0.010	-
Calcium	7.45	0.24	14.7	4.3	-	-
Chloride	41	8.75	10.3	7.26	-	≤250
Chlorate	<0.1	0.17	<0.1	0.16	1.0	-
Chlorite	<0.1	<0.1	<0.1	<0.1	1.0	-
Colour (True Colour Units)	21	<5.0	5.2	<5.0	-	≤15.0
Conductivity (µS/cm)	170	32	123	205	-	-
Copper (Total)	0.0009	<0.0005	0.0007	0.0009	2.0	≤1.0
Fluoride	<0.1	<0.1	<0.1	<0.1	1.5	-
Hardness (as CaCO3)	23	<1.0	47	17	-	-
HAA5 (avg.)	-	<0.005	-	<0.005	0.080	-
Iron (Total)	0.12	<0.05	<0.05	<0.05	-	≤0.3
Lead (Total) (µg/l)	<0.5	<0.5	<0.5	<0.5	5.0	-
Magnesium	1	<0.1	4.85	1.63	-	-
Manganese (Total)	0.065	<0.002	0.003	0.010	0.12	≤0.02
Mercury (µg/l)	<0.013	<0.013	<0.013	<0.013	1.0	-
Nitrate (as N)	0.103	0.062	0.235	0.223	10.0	-
Nitrite (as N)	<0.01	<0.01	<0.01	<0.01	1	-
pH (pH Units)	7.2	7.5	7.0	7.5	-	7.0 - 10.5
Potassium	1	0.21	0.83	0.527	-	-
Sodium	25.5	10.3	5.6	44.25	-	≤200
Solids (Total Dissolved)	95	28	81	120	-	≤500
Sulphate	7.35	1.5	23.93	1.46	-	≤500
Turbidity (NTU)	1.75	0.03	0.82	0.03	[A]0.1/0.3	-
Total Organic Carbon (TOC)	4.3	<0.5	1.017	<0.5	-	-
THMs (avg.)	-	0.002	-	0.002	0.100	-
Uranium (µg/l)	<0.1	<0.1	<0.1	<0.1	20.0	-
Zinc (Total)	<0.005	0.068	<0.005	0.058	-	≤5.0
PCB (µg/l)	-	-	-	-	-	-
Gross Alpha / Gross Beta (Bq/L)	<0.1	<0.1	<0.1	<0.1	0.5 / 1.0	-

[A]Ultra-filtration membrane plants must produce water with turbidity of <0.1 NTU 99% of the time and <0.3 NTU 100% of the time, as required by Provincial Permit. Treated water turbidity is calculated from clearwell monitoring.


Halifax
Water


Halifax
Water