Water Treatment & Supply

Led by: Director of Water Services

Service Description

This is a highly regulated, essential and health-focused service that ensures reliable access to safe, high-quality drinking water for Calgarians now and for generations to come. Water Treatment & Supply protects public health and ensures long-term sustainability of our most valuable natural water resources. Plants, pipes, pumps and people work 24/7, 365 days a year through evenings, weekends, and emergencies to protect public health by providing clean drinking water for over 1.4 million customers in Calgary and the region. Calgarians are able to turn on the tap and receive safe, clean, affordable drinking water thanks to dedicated teams of experts and forward-thinking investments.

Service Updates

Key service results

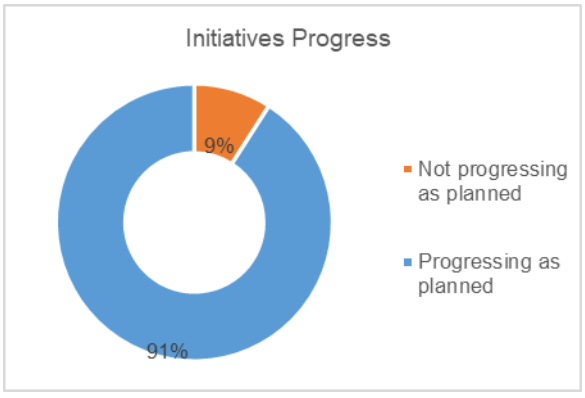
Providing clean, safe drinking water and maintaining public health is a top priority for the Water Utility.

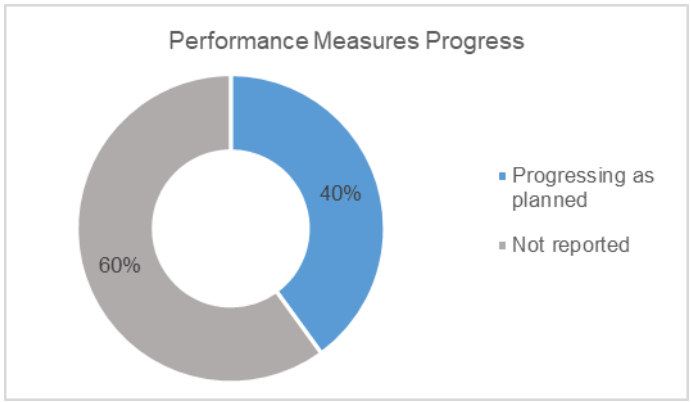
On June 5 a catastrophic break of a critical feeder main occurred. This break limited water movement from our largest treatment plant and impacted the ability to provide water to Calgary and regional customers. As a result, a boil water advisory was issued for the community of Bowness and city-wide Stage 4 Outdoor Watering Restrictions were immediately put in place. Calgarians, businesses and regional customers stepped up with voluntary indoor water reductions, doing their part to ensure sufficient water levels including water for firefighting. During the event, hundreds of staff worked collectively with partners to restore this essential service. Moving forward, our multi-disciplinary, cross-corporate team will concentrate on medium and long-term recovery of the feeder main and respond to the third-party review.

Prior to the feeder main emergency and in response to drought conditions in Alberta, The City collaborated with other municipalities, counties, and irrigation districts to establish water sharing agreements. Additional drought preparation work was undertaken on the Water Efficiency Plan and the Water Loss Strategy, enhancing our ability to respond to future drought events.

During the first part of 2024, a significant milestone was achieved to advanced water metering infrastructure (AMI), which will modernize customer communication and billing, and move Calgary towards more sustainable water management. A Request for Proposal was issued to secure technology which will remotely provide real-time readings of water consumption.

Progress summary



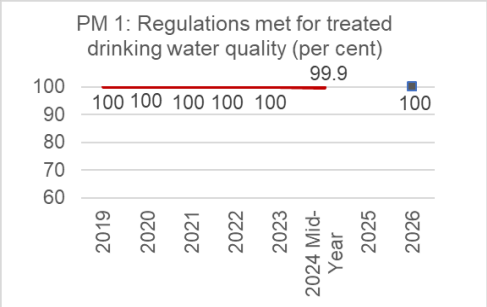
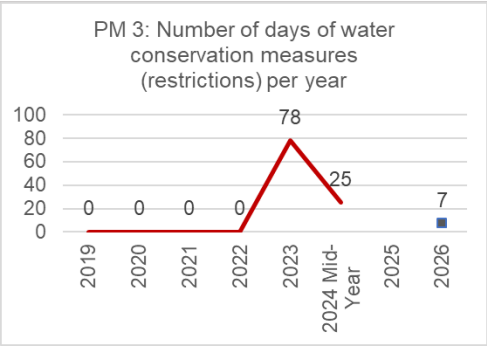


Risk(s) impacting the progress

Workforce capacity to meet Levels of Service
Infrastructure distribution/ treatment capacity and resiliency
Water Treatment Plants and Transmission System Critical Maintenance

Measuring Our Performance

Legend — Actuals; Expected Future Performance; Progressing as planned; Not progressing as planned

Performance Measures	Story behind the numbers	Status
	Provincial and federal regulations are in place to ensure that water is safe for our customers to drink. Based on year-to-date testing, including the recent 5-day Boil Water Advisory in Bowness, The City's compliance rate remains at 99.9 per cent. We continue to work with our regulators to navigate operational and reporting requirements.	Progressing as planned
	Calgary's drought forecast improved significantly with spring conditions and therefore no restrictions were put into place for drought purposes spring 2024. This metric does however reflect restrictions until end of June as a result of the Bearspaw feeder main break. A total of 25 days of conservation measures are reported here – demonstrating Calgarians collective commitment and action during the emergency response and repair. This number will reflect higher in year-end given restrictions are still in effect (at time of reporting).	Progressing as planned

Progress on Service Delivery

PROGRESS STATUS Completed | Progressing as planned | Not progressing as planned | Not started

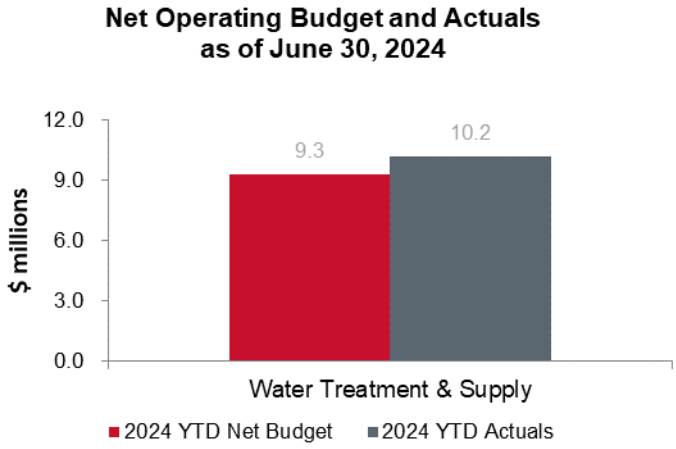
FUNDING TYPE Capital | Operating

Initiative 1	**Impact Area:** City-wide	**Funding Type:** Operating, Capital
Reduce potential risks (Emerging Substances of Concern, Distribution Monitoring Program, Lead Servicing Replacement, Dead End Mains) by continuing to deliver on water quality investments and programs and implementing best practices.		
UPDATE	Calgary has fewer lead service connections than other cities. We have confirmed 483 lead services. 57 lead services are being replaced this summer. To date 66 per cent have been replaced. We plan to have all lead services completed by the end of 2024. We continue to manage the annual Tap Water Sampling Program as part of the Lead Strategy. A partnership between The City and Queens University resulted in the completion of a study on water quality. These findings are being used to investigate the water quality of dead-end mains with an overall goal of improving water quality in the system.	
Initiative 2	**Impact Area:** City-wide	**Funding Type:**
Protect Calgary's source water by continuing to work within the region to establish a governance framework to have an aligned regional growth plan.		
UPDATE	An updated Regional Water, Wastewater and Stormwater Servicing Policy aligns to the new regional growth plan and includes source water protection considerations. Council also approved a regional servicing request from Cochrane to allow wastewater from Harmony to be treated by Calgary instead of requiring a new effluent outfall to the Bow River upstream of Calgary's drinking water intakes.	
Initiative 3	**Impact Area:** City-wide	**Funding Type:**
Reduce the risks associated with source water entering the water treatment plant on the Elbow River by implementing the Glenmore Reservoir source water protection plan.		
UPDATE	A collaborative research project with University of Alberta, with additional funds from Alberta Innovates, is focusing on water quality impacts from urbanization. A second research project led by University of Waterloo, in collaboration with a local forestry company is focusing on water quality impacts for different forest management practices in the Elbow River catchment.	
Initiative 4	**Impact Area:** City-wide	**Funding Type:**
Reduce long-term system reliability risks through continued exploration of water licensing and plant expansion, while implementing programs that influence timing of sizeable investments (e.g. water restrictions, water loss program, Water Efficiency Plan, graduated water rates).		
UPDATE	In light of the Bearspaw feeder main break, we are advancing initiatives that support system reliability. One example of this is the North Servicing line which will provide additional redundancy in a growing city. Advocacy continues for a new upstream Bow River Reservoir as an integrated water management tool to support drought and flood resilience. The province has accelerated its engagement process as a result of drought conditions that emerged this spring.	
Initiative 5	**Impact Area:** City-wide	**Funding Type:**

Maintain service resilience through ensuring appropriate resources including competent and certified operators to maintain regulatory compliance and operate a growing water treatment and distribution system network (two treatment facilities, two raw and 23 treated water reservoirs, Glenmore and Bearspaw dams, 41 pump stations, 17,000 hydrants and over 5000 km of underground pipes).		
UPDATE	We continue to review our staffing levels including certified operators to maintain and operate a growing system. New training tools including certified operator accelerator programs continue to ensure resilient, adequate, certified staff operate our plants and distribution system.	
Initiative 6	**Impact Area:** **City-wide**	**Funding Type:**
Continue to work with our regulators to ensure water quality safety and to navigate operational and reporting requirements that support improvements in priority areas for the service.		
UPDATE	During the Bearspaw feeder main incident we worked closely with our regulators, in this case Alberta Environment and Protected Areas and Alberta Health Services, to ensure safe, high quality drinking water for Calgarians and our regional partners. We continue to collaborate with our regulators in all aspects of this service.	
Initiative 7	**Impact Area:** **City-wide**	**Funding Type:**
Prepare to address major system failure and to operate significant new infrastructure through building effective workforce capacity plans.		
UPDATE	We are exploring different strategies to attract critical positions that support operations of critical infrastructure in light of future growth for this essential service. As a Water Utility, we regularly review, update and implement emergency response plans. In light of Bearspaw feeder main break we continue to monitor infrastructure performance while advancing a rehabilitation plan.	
Initiative 8	**Impact Area:** **City-wide**	**Funding Type:**
Prepare for climate resilient service delivery by becoming more energy efficient, investigating new technologies and using new practices to improve water treatment process reliability, factoring in changing water quantity (volume and/or timing) and quality while supporting, prioritizing and enabling mitigation actions.		
UPDATE	The Water Utility has advanced on the updated Water Efficiency Plan which is slate to go to Council in 2025. This Plan will explore a range of policy approaches to carefully manage our changing water resources to ensure we have enough water to meet the needs of customers, the environment and ensure a sustainable economy in the future.	
Initiative 9	**Impact Area:** **City-wide**	**Funding Type:**
Reduce water use and average per day demand while maintaining Water Utility financial sustainability including incorporating climate change, drought management and offsetting future infrastructure costs by updating the Water Efficiency Plan and exploring new initiatives.		
UPDATE	An updated Water Efficiency Plan is progressing with customer and partner engagement in Q3. In 2024 an accelerated water loss program was put in place and will inform a more aggressive water loss target beyond 2025. The City accelerated a drought preparedness program. This included the completion of Provincially-led water sharing Memorandum of Understanding, creating decision principles for drought, preparing the 'Every drop counts' water conservation campaign and updating our drought communications tools.	
Initiative 10	**Impact Area:** **City-wide**	**Funding Type:** **Operating, Capital**
Advance water meter strategy to reducing meter reading costs, enhancing customer experience with more timely resolution of billing issues, and improving customer communication and feedback on water usage.		
UPDATE	The Advanced Metering Infrastructure (AMI) Request For Proposals (RFP) to secure radio transmitters is currently released to public. The contract is expected to be signed in early 2025. The RFP for hiring a consultant is in its final stages for release. The work on last two procurements; hiring an installation vendor and procurement of a Meter Data Management (MDM) solution; is progressing as planned.	

Initiative 11		**Impact Area:** **City-wide**	**Funding Type:**
Continue to improve the customer experience and customer understanding of the service by establishing levels of service, innovating, optimizing value, and deliver service equity by leveraging innovation, data, technology, and customer insights.			
UPDATE	In 2024, the Water Utility continued to use its customer research program to gain a deeper understanding of the needs and experiences of residential, industrial, commercial, and institutional customers. Insights gathered from this research are being used to improve service delivery. To date, we received valuable insights which we have used to improve drought planning and water efficiency work.		

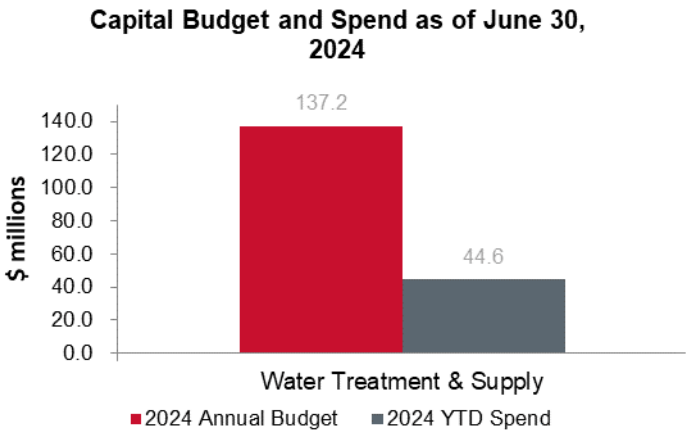
Service Updates on Financial Performance



Operating Budget Updates - 2024 YTD net operating budget vs actuals:

The Water Treatment & Supply service line is self-supported. The year-to-date variance for the service line is $(0.9) million unfavourable. Variances occur due to the process for reporting self-supported expenditure in different business units and departments that contribute to this service line. The operating surplus transferred to reserve was $36.5 million which is higher than the budgeted transfer to reserve of $32.6 million. This primarily resulted from expenditures that were lower than the budget for contract & general services, materials, equipment & supplies and utilities. Salary & wages contributed to this due to higher vacancies and higher favorable sickness & accident claims offset slightly by unfavorable overtime and premium pay.

The budgeted transfer to reserve is planned to fund capital expenditure including replacements, upgrades and investments that occur year after year. Large capital investments are planned to be financed with debt. When the actual transfer to reserve is higher than planned, the borrowing for large capital investments will be lower than anticipated.



Capital Budget Updates - 2024 total capital budget vs 2024 YTD spend:

The 2024 capital budget is $137.2 million with a year to date spend of $44.6 million (32.5 per cent). The projected year end spend is 100 per cent. Progress was made on capital investments to support growth and maintain existing assets within the water treatment plants and linear network. Inflationary cost increases and higher than anticipated population growth require adjustments to capital budgets and delivery timelines. Examples of major investments include:

-Fluoride Reintroduction ($6.2 million invested to date in 2024). The reintroduction of fluoride into Calgary's drinking water based on both City Council direction and the results of the public plebiscite in 2021. The new facilities will meet all current Canadian standards and guidelines regarding the provision of fluoride in drinking water.

-Providence Startlight East Pump Station ($6.4 million invested to date in 2024). A new pump station is to meet the projected water demands of Providence lands. The new pump station draws water from the Lower Sarcee Reservoir and pumps it into the Starlight Pressure Zone, with provisions to also feed the future Westview Pressure Zone.