



Water Utilities (Water Treatment & Distribution) 10-Year Capital Infrastructure Needs Assessment

March 2026

1. Service Overview

The Water Treatment and Supply service is a highly regulated and essential function that ensures the provision of safe, high-quality drinking water to over 1.4 million residents in Calgary and the surrounding region. This service operates continuously, supported by an integrated system of treatment plants, pipelines, pumping stations, and skilled personnel who work around the clock to safeguard public health. Through strategic investments, proactive maintenance, and innovative practices, the service delivers reliable and aesthetically pleasing water while protecting source water and planning for future demand in the context of population growth and finite resources. In alignment with industry trends across North America, the service prioritizes climate change adaptation, source water quality protection, renewal of aging infrastructure, and the adoption of advanced digital technologies to ensure long-term sustainability and resilience.

2. Strategic Alignment

The proposed capital investments are directly influenced by several Council-approved and corporate strategies, priorities and objectives, that directly influence and support the overarching goals of The City of Calgary. These investments are designed to enhance the quality of life for Calgarians, improve operational efficiency and foster sustainable growth.

- **Municipal Development Plan:** Ensures water infrastructure keeps pace with city growth by expanding services to new areas, upgrading existing systems, and promoting reliability, safety, and resilience. Key policies focus on integrated water management, conservation, and sustainable servicing to support redevelopment and future development across Calgary.
- **Calgary Drought Resilience Plan (2023):** Focuses on reducing water demand and improving resilience through investments in water loss reduction and advanced metering infrastructure.
- **Water Efficiency Plan:** Aims to enhance efficiency and resilience by reducing demand, upgrading infrastructure, and improving leak detection, with updates underway to set new priorities.
- **Water Security Plan:** Safeguards water resources by managing long-term risks, installing advanced meters, and implementing measures to reduce water loss and demand.
- **Source Water Protection Plan:** Proactively protects public health and source watersheds while addressing environmental stewardship and impacts of land use changes.
- **2023-2026 Climate Strategy:** Integrates climate adaptation into water management by improving efficiency, conservation, and infrastructure resilience.
- **The Water Long-Range Plan (WLRP):** Establishes design criteria and a roadmap for future water supply, treatment, and transmission infrastructure to meet demand and guide capital investments.

- **OneWater Strategic Plan:** Develops a long-term integrated strategy for water, wastewater, and stormwater to optimize investments, improve environmental outcomes, and enhance reliability.

3. Service Risks

The Water Treatment and Supply Service faces significant challenges that could impact reliability, availability, and quality of service as Calgary continues to grow. These risks require proactive management and strategic investment to ensure safe, reliable, and sustainable water delivery for customers.

Reliability and Availability Risks

- **Infrastructure nearing capacity:** Rapid population growth is placing pressure on existing infrastructure, creating a high risk of insufficient capacity and/or system redundancy, which could lead to water restrictions and reduced service levels. To mitigate this, major investments are planned in expansions to the water transmission system to support both growth and redundancy, a new water treatment plant, and water loss reduction measures to maintain service reliability for a growing city and region.
- **Aging infrastructure:** As infrastructure ages, the likelihood of failures and service disruptions increases. This risk is being addressed through significant upgrades to mains, pumping stations, and treatment facilities, alongside enhanced asset management and preventative maintenance programs.

Quality Risks

- **Drinking water quality:** Contamination or degradation of drinking water due to infrastructure issues, environmental factors, or operational failures poses a serious risk to public health, regulatory compliance, and customer trust. Investments in the drinking water system will strengthen safeguards and ensure safe, high-quality water delivery.
- **Source water variability:** Changes in source water quality or contamination can lead to water scarcity, health risks, and higher treatment costs, ultimately reducing service quality. To address this moderate risk, measures are being implemented to protect source waters and maintain long-term sustainability.

4. Service Objectives

Water Treatment and Supply's service objectives and in turn capital investments respond to the strategic direction outlined in Section 2 and the service risks identified in Section 3. The service is committed to delivering high-quality drinking water that is reliable and sustainable now and for future generations.

Water Treatment and Supply's service objectives include:

- **Ensuring a dependable, resilient and well-maintained water system** by investing in the renewal and long-term stewardship of critical infrastructure. Water Services assesses the condition and criticality of transmission mains, distribution mains and service lines to guide investments that maintain safe and consistent performance. Critical mains receive regular reassessments and continuous monitoring, while mid-tier assets are maintained to "fair" or better. Lower criticality assets, such as individual service lines, are managed through a risk-based approach and repaired as needed. Ongoing development of the Strategic Asset Management Plan (SAMP) and Tactical Asset Management Plans (TAMPs) will refine asset condition targets and guide future service levels. By aligning investments with asset criticality and condition, the utility supports a dependable water system for a growing city.

RELIABILITY / AVAILABILITY

- **Maintain reliable service:** Maintain dependable service by investing in treatment and distribution systems, strengthening asset management practices and advancing distribution main replacement and water loss reduction programs.
- **Increase treatment and transmission capacity:** Expand treatment and transmission capacity to keep pace with regional growth through optimization upgrades at existing plants, major transmission system investments, planning for a new water treatment plant and measures to reduce water loss.

QUALITY

- **Achieve full regulatory compliance:** Maintain 100% compliance with provincial and federal drinking water regulations through resilient infrastructure, rigorous maintenance standards and ongoing improvements to ensure safe, high quality water for customers.

5. Previously Approved and Capital Infrastructure Needs

Table 1: Previously Approved and Capital Infrastructure Needs (\$ millions)

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-2035	Total
Previously Approved	102	74	87	118	127	201	472	125	111	1	-	-	1,418
Capital Infrastructure Needs	-	-	-	-	-	-	365	452	367	502	872	2,993	5,551

A listing of previously approved investments has been provided in **Appendix A** for 2026+. A listing of capital investment needs has been provided as **Appendix B**. Note that programs have been broken down into projects where possible

Figure 1: Summary of Proposed Capital Infrastructure Needs by Investment Driver

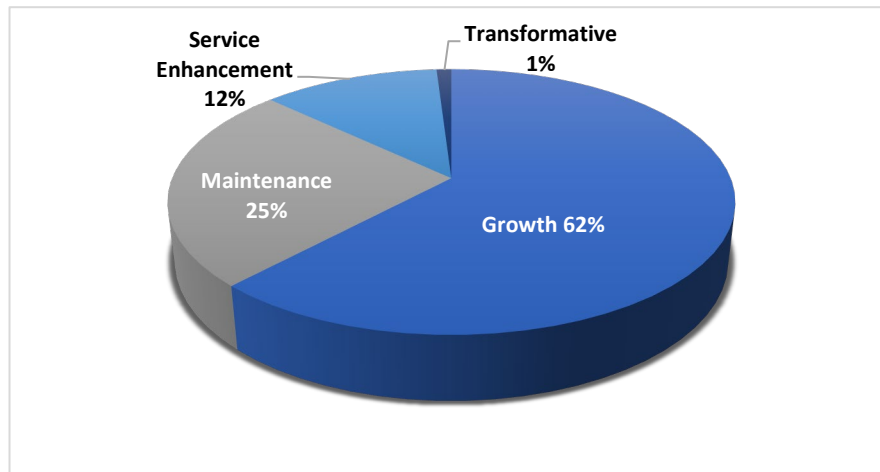


Table 2: Summary of Operating Cost of Capital for Capital Infrastructure Needs by Year




	2027 (\$)	2028 (\$)	2029 (\$)	2030 (\$)	2031-2035 (\$)	Total 2026-2035 (\$)
Total	To be determined					

Operating impacts of capital investments will be assessed as a part of the phase where finalized prioritization, financial affordability and delivery strategies are considered to further refine the proposed capital investment list. It is anticipated that increases in investment levels for existing Annual Investment Programs as well as new projects will result in one-time and/or base operating budget needs.



Appendix A: Previously Approved

The values presented reflect planned investments in the last year of the approved 4-year business cycle, as well as pre-approved budget for the 2027-2030 business cycle. These values have been rounded to the nearest million for presentation purposes. Variations between the planned investments and approved budget in a given year will be reconciled as part of the annual budget adjustment process to align budget needs and updated cash flows and timing.

Legend (% of capital \$ per opportunity item)

1% ~ 10%	
11% ~ 25%	
25% +	

Critical Assets in Poor / Very Poor Condition

Severe Consequence of Failure	
High Consequence of Failure	

Appendix A: Previously Approved (\$millions)	<i>Total</i>											
	2026-2035+	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035+	
Maintenance - Primary Driver												
Advanced Meter Infrastructure - Program	2											
Bears paw Power Utility Planning	0											
Cathodic Protection	4											
Cathodic Protection	3											
Feedermain Cathodic Protection	0											
Copper-Lead Service Replacement	5											
Feeder mains	86											
Bears paw South Feedermain Short and Long Repair	70											
Water Main Replacement and Upgrades	13											
Watermain Research	3											
Field Operations	2											
Leak Detection	3											
Leak Detection	1											
Leak Repair by Contractor	2											
Mechanical Equipment & Electrical Upgrades	3											
Reservoir Condition Assessment	0											
Tools, Equipment & Technology	2											
Software Tools & Equipment	0											
Water Quality and Regulatory Assurance Labs Capital Equipment	1											
Tools and Equipment Operational Services	1											
Technology Equipment Lifecycle and Upgrades	1											
Water Centre Building Upgrades	4											
Water Treatment Plant - Capital Maintenance	15											
Bears paw Water Treatment Plant	4											
Glenmore Water Treatment Plant	3											
Glenmore Plant Improvements	4											
Bears paw Plant Improvements	4											

Service Enhancement - Primary Driver

Advanced Meter Infrastructure - Project	32	
Bearspaw Water Treatment Plant	8	
Bearspaw RAW 2 Pump Station Upgrades	4	
Bearspaw Generators Replacement	4	
Control Systems & Electrical	10	
Electrical Upgrade for Glenmore Water Treatment Plant	7	
Glenmore & Bearspaw Control Systems Improvement	3	
Dead End Mains	1	
District Metering and System Monitoring	0	
Field Operations - Utility Network Migration	1	
Glenmore Dam Safety Regulatory	0	
Glenmore Water Treatment Plant - Clearwell and High Lift Pump Station	2	
Pump Stations - Eagle Ridge	2	
RAW II Frazil Ice Boom	1	
Tools, Equipment & Technology	2	
Capital Technology Project Analysis	0	
Software Lifecycle and Upgrade	2	
Valve Replacement and Installation	14	
Water Distribution Network Monitoring	2	
Water Centre Building Upgrades	0	
Water Infrastructure Access Road Construction	4	
Water Meter Chambers - Tsuutuna Anderson	0	

Growth - Primary Driver

Feeder mains	39	
Belvedere Feedermain Phases 1 & 2	6	
Country Hills Boulevard Crosstie Feedermain	21	
Main Extensions	2	
Northridge Feedermain Phase Two	1	
Northridge Feedermain West Leg Design	2	
Prairie Economic Gateway Feedermain A	6	
Providence 146th Ave Feedermain Westview Reservoir	0	
South Water Servicing Feedermain	2	
Glenmore Water Treatment Plant	20	
Raw Capacity Upgrade	7	
Chemical Boiler Upgrade	0	
Filter Recommissioning	13	
New Water Treatment Plant Expansion	65	
North Calgary Water Servicing	311	
Mountain View Pump Station	9	
North Calgary Water Servicing - Linear	239	
North Calgary Water Servicing - Facilities	63	
Raw Water Intake	26	
Reservoirs - Providence Westview Cell 1	1	
Tools, Equipment & Technology - Utility Safety Partners Data Management	0	
Water Meter Chambers	4	
Airdrie 600mm Water Meter Chamber Relocate	4	
Chestermere 17th Ave Water Meter Chamber	0	
Water Redevelopment Program	2	
Water Treatment Optimization & Capacity Upgrades	9	

Transformative - Primary Driver




Total - Water Treatment & Supply **680**

Appendix B: Capital Infrastructure Needs



The values presented reflect identified capital needs and have been rounded to the nearest million for presentation purposes. These capital needs have not received approved budget and will be considered for future business cycles.

The majority of the 10-year capital investments are foundational in nature reflecting the essential funding required to sustain current service levels, meet regulatory and safety obligations, and manage core operational risks. These investments establish the baseline level of service and define the essential capital required to maintain system reliability over time. All values are presented in 2025 dollars, with estimates prepared as of January 2026. Further refinements and adjustments are expected through the development of the 2027-2030 Budget and the 10-Year Capital Infrastructure Plan.

Legend (% of capital \$ per opportunity item)

1% ~ 10%	
11% ~ 25%	
25% +	

Critical Assets in Poor / Very Poor Condition

Severe Consequence of Failure	
High Consequence of Failure	

Appendix B: Capital Infrastructure Needs
(\$millions)

	<i>Total</i>	2027	2028	2029	2030	2031	2032	2033	2034	2035+
Maintenance - Primary Driver										
Advanced Meter Infrastructure	241									
Bears paw Power Utility Planning	56									
Cathodic Protection	33									
Control Systems & Electrical - Bears paw Arc Flash Studies	1									
Copper-Lead Service Replacement	90									
Feeder mains	680									
Bears paw South Feeder main Short and Long Repair	369									
Water Main Replacement and Upgrades	279									
Watermain Research	32									
Glenmore Water Treatment Plant - Chemical Boiler Upgrade	3									
Hydrants - McAvity Replacement	5									
Leak Detection - Proactive	9									
Mechanical Equipment & Electrical Upgrades	24									
Pump Stations - Lifecycle Replacement	60									
Reservoir Condition Assessment	2									
Tools, Equipment & Technology	25									
Software Tools & Equipment	1									
Tools and Equipment Operational Services	12									
Water Quality and Regulatory Assurance Labs & Capital Equipment	5									
Technology Equipment Lifecycle and Upgrades	8									
Transmission Capital Maintenance	36									
Valve Replacement/ Installation	9									
Water Centre Building Upgrades	9									
Water Treatment Plant - Capital Maintenance - Bears paw	249									

Service Enhancement - Primary Driver

Bears paw Water Treatment Plant - Standby Generators Replacement	7	
Control Systems & Electrical	66	
Electrical Upgrade for Glenmore Water Treatment Plant	25	
Glenmore & Bears paw Control Systems Improvement	30	
Glenmore & Bears paw DeltaV Control Systems Modernization	12	
Dead End Mains	11	
District Metering and System Monitoring	3	
Energy Recover Stations	6	
North Calgary Energy Recovery Station	3	
South Calgary Energy Recovery Station	3	
Glenmore Dam Safety Regulatory	1	
Glenmore Water Treatment Plant	158	
Clearwell and High Lift Pump Station	155	
Steam Boilers Replacement	3	
Hydrants - Installations	5	
Process Control Systems	2	
Pump Stations - Pump & Motor Efficiency	1	
RAW II Frazil Ice Boom	0	
Tools, Equipment & Technology	48	
AI Initiatives and New Emerging Tech	16	
Billing Improvements	6	
Software Lifecycle and Upgrade	26	
Transmission SCADA Comms Modernization	5	
Valve Replacement and Installation	78	
Water Infrastructure Access Road Construction	5	
Water Distribution Network Monitoring	23	

Growth - Primary Driver

Downtown Upgrades	3									
Feeder mains	559									
Belvedere Feedermain Phase 3	30									
Country Hills Boulevard Crosstie Feedermain	42									
Main Extensions	18									
Northridge Feedermain Phase 2	20									
Ogden Feedermain Phase 2	14									
Providence Westview Feedermain Ph 1 & 2	36									
South Water Servicing Feedermain	280									
Starlight Feedermain Phase 2 & 3	25									
Top Hill Feedermain Design	23									
West View Crestmont Feedermain Phases 1 - 3	8									
Glenmore Water Treatment Plant	16									
Filter Recommissioning	11									
Raw Water Pump Station Capacity Upgrade	5									
Land Acquisitions	4									
Starlight Reservoir Land Acquisition	2									
Westview Reservoir Land Acquisition	2									
New Water Treatment Plant Expansion	2,270									
North Calgary Water Servicing	222									
North Calgary Water Servicing - Linear	41									
North Calgary Water Servicing - Facilities	181									
Pump Stations	43									
Starlight Pump Station Station 049 located at Westview Reservoir	34									
Providence Westview Pump Station Station 056	3									
Valley Ridge Pump Station Upgrades	6									
Raw Water Intake	415									
Reservoirs	14									
Northridge Reservoir	2									
Providence Westview Reservoir Storage Cell 1	12									
Water Redevelopment Program	54									
Water Treatment Optimization & Capacity Upgrades	5									
Transformative - Primary Driver										
Prairie Economic Gateway Feedermain A	63									
Total Capital Infrastructure Needs - Water Treatment & Supply	5,551	817	367	502	872	756	564	570	582	523