Water Utilities (Wastewater Treatment & Collection)

10-Year Capital Infrastructure Needs Assessment

March 2026

1. Service Overview

Wastewater Treatment and Collection is a highly regulated and essential service that protects public health by safely collecting and treating wastewater from homes, businesses, and institutions before returning it to the Bow River. Operating continuously with treatment plants, lift stations, pipelines, and skilled personnel, the service ensures reliability and compliance with environmental standards while minimizing property risks and safeguarding downstream communities. Through strategic investments, proactive maintenance, and innovative practices, it meets the demands of a growing population, collaborates with regional and industrial partners, and consistently exceeds regulatory requirements. In alignment with industry trends across North America, the service prioritizes climate change adaptation, treatment plant optimization, water reuse integration, and renewal of aging infrastructure, while advancing nutrient recovery, biosolids management, and greenhouse gas reduction initiatives. Combined with education and outreach to help Calgarians protect the system, these efforts create a sustainable future where wastewater reuse strengthens water security, systems remain resilient, and river health is preserved for generations to come.

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 ensure public safety, improve operational efficiency and foster sustainable growth.

- **Municipal Development Plan:** Emphasizes maintaining and expanding wastewater collection and treatment systems to keep pace with city growth while ensuring safety, reliability, and resilience. Policies support providing service to new and redeveloping areas, managing risk under future climate conditions, and preserving environmental and cultural landscapes. In addition, water security and wastewater reuse are key priorities, promoting non-potable water use for irrigation, industrial cooling, and other applications where water quality aligns with its intended purpose. Both plans advocate for integrated water management, sustainable infrastructure investment, and climate adaptation to protect public health, the Bow River ecosystem, and long-term regional water security.
- **Wastewater Approval to Operate (2019-2029):** Outlines The City's regulatory responsibilities for wastewater management, requiring infrastructure upgrades, proactive maintenance, and adoption of new technologies to meet environmental standards.
- **Calgary Drought Resilience Plan (2023):** Integrates drought considerations into infrastructure design and updates treatment plant specifications to enhance climate resiliency and regulatory compliance.

- **2023-2026 Climate Strategy:** Embeds climate risk and adaptation into asset management, improves biogas utilization, and strengthens understanding of climate impacts on wastewater systems and regulatory conditions.
- **Water Efficiency Plan:** Improves resilience and efficiency by integrating reuse into infrastructure planning and investing in feasibility studies and rehabilitation of treated effluent distribution systems.
- **Water Security Plan:** Safeguards water resources by addressing long-term risks and collaborating on regional water reuse solutions, including developing reuse guidelines.
- **OneWater Strategic Plan:** Establishes a long-term integrated strategy for water, wastewater, and stormwater to optimize investments, improve environmental outcomes, and enhance service reliability.

3. Service Risks

The Wastewater Treatment and Collection Service faces significant challenges that could impact the level of service Calgarians expect. These risks require proactive management and strategic investment to ensure sufficient infrastructure capacity, enhanced reliability, regulatory compliance and improve environmental outcomes.

- **Growth:** Insufficient infrastructure could limit wastewater treatment capacity before planned plant expansions, reducing service levels. To mitigate this, investments focus on upgrading treatment plants, increasing pump capacity for catchment flexibility, accelerating maintenance, and implementing strategies to prevent regulatory non-compliance, sewer backups, and odour issues.
- **Reliability and Availability Risks:** Aging infrastructure, lack of redundancy, and single points of failure pose risks of service disruption and significant impacts. The plan prioritizes asset management improvements, reliability upgrades for critical infrastructure (sanitary trunks, lift stations, siphons, rail crossings), and proactive maintenance supported by enhanced monitoring.
- **Regulatory and Environmental:** Changing climate, stricter regulations, and evolving wastewater composition increase risks of environmental impact and non-compliance. Investments include system modeling, updated design specifications, climate resilience solutions, and modernization of lift stations for advanced monitoring and faster response.

4. Service Objectives

Wastewater Treatment and Collection Management'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 managing wastewater responsibly and safeguarding the health of the Bow River.

Wastewater Treatment and Collection Management's service objectives include:

- **Ensuring a reliable and sustainable wastewater system** by investing in the long-term stewardship and renewal of critical infrastructure. Wastewater Services assesses the condition and criticality of treatment plant assets and linear infrastructure to prioritize where investment is most needed. Critical trunks are regularly monitored or reassessed, while lower criticality assets are managed through a risk-based approach and repaired as required. Some assets, such as sanitary mains, are refurbished before full deterioration to extend service life and reduce costs. Ongoing development of the Strategic Asset Management Plan (SAMP) and Tactical Asset Management Plans (TAMPs) will refine condition targets, guide service levels and further support data driven investment decisions that maintain reliable system performance for a growing city.

RELIABILITY

- **Reduce service interruptions:** Minimize the number of properties impacted by wastewater service interruptions (per 1,000) by investing in condition assessments and targeted upgrades for critical infrastructure.
- **Maintain treatment capacity ahead of growth:** Increase remaining years of installed treatment plant capacity to support population growth and ensure regulatory compliance. Capital investments prioritize major upgrades at the Bonnybrook Wastewater Treatment Plant, Fish Creek Wastewater Treatment Plant, and throughout the wastewater collection system.

ENVIRONMENT

- **Achieve full regulatory compliance:** Maintain 100% compliance with provincial and federal regulations for treated wastewater returned to the river. Calgary's three wastewater treatment plants consistently meet or exceed all quality standards, supported by ongoing investments in facility and collection system upgrades.

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	250	140	133	117	180	254	546	162	206	118	-	-	2,106
Capital Infrastructure Needs	-	-	-	-	-	-	-	423	362	515	597	2,088	3,985

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

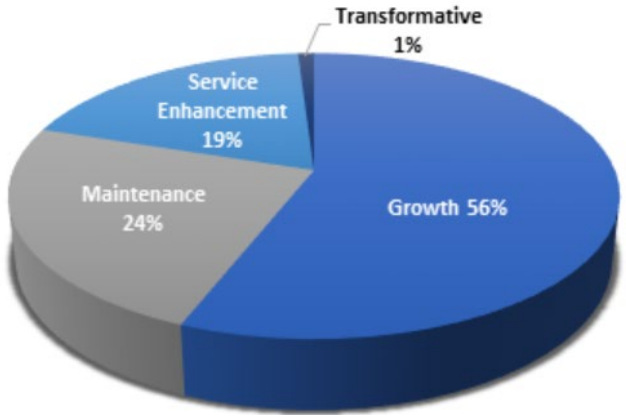


Table 2: Summary of Operating Cost of Capital for Capital Infrastructure Needs by Year

	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)	*Total* 2026-2035+	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035+
Maintenance - Primary Driver											
Control Systems & Electrical Upgrades	**14**										
Treatment Plant Distributed Control Systems Modernization	4										
Bonnybrook & Fish Creek Lighting Upgrades	11										
Lift Station Capital Maintenance	4										
Pine Creek Wastewater- New Storage	1										
Replacement Contracts	**12**										
Replacements Extension Extend Contracts	10										
Service Replacements City & Outside Contractors	2										
Wastewater Collection Network Condition Assessment	0										
Wastewater Critical Infrastructure Replacement/Repairs	2										
Wastewater Infrastructure Access Road Construction	1										
Wastewater Treatment Plants	**25**										
Wastewater Treatment Plant Condition Assessment	0										
Wastewater Treatment Plant Equipment	25										
Wastewater Trenchless Rehabilitation	6										

Service Enhancement - Primary Driver

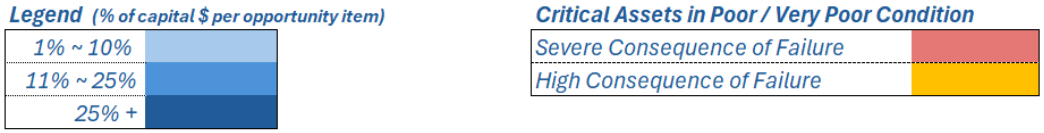
Bonnybrook Center & Control Building Upgrade	98
Control Systems & Electrical Upgrades	**4**
Pine Creek Power Management and Control Systems	0
Pine Creek Standby Power Upgrades	1
Pine Creek Wastewater Treatment Plant Lighting Upgrade	1
Wastewater Treatment Plant Control Systems	2
Lift Stations	**2**
Deer Run Sanitary Lift Station	0
East Calgary Sanitary Lift Station Improvements	2
Sanitary Trunk Upgrades	**9**
Sanitary Trunk Upgrade - Altadore	0
Sanitary Trunk Upgrade - Blackfoot Trail	0
Sanitary Trunk Upgrade - Fish Creek	0
Sanitary Trunk Upgrade - Heritage Drive	0
Sanitary Trunk Upgrade - Macleod Trail	7
Sanitary Trunk Upgrade - Rosscarrock	0
Sanitary Trunk Upgrade - Roxboro Erlton Mission	1
Shepard Energy Centre Reclaimed Water Pipeline Investigation	1
Shepard Odour Monitoring System	1
Siphon Upgrades	**51**
McKenzie Siphon Upgrade	21
Sanitary Siphon Replacement Upgrade	30
Wastewater Treatment Plants	**601**
Bonnybrook Wastewater Treatment Plant Fermenter/Thickener	0
Fish Creek Wastewater Treatment Plant Upgrade	571
New Wastewater Treatment Plant- Land Acquisition	30

Growth - Primary Driver	
Bonnybrook Integrated Resource Recovery	56
Bonnybrook New Head Works	0
Bonnybrook Plant D Expansion	38
Bonnybrook Plant E Expansion Study	1
Bonnybrook Solid Stream Upgrade/Expansion	0
Sanitary Redevelopment Program	2
Sanitary Trunk Upgrades	**140**
Belvedere Sanitary Trunk East Basin	12
Brentwood Transit Oriented Development – Sanitary Upgrade	5
East Keystone Sanitary Trunk & Extension	6
Nose Creek Trunk Extension North of 144 AV NE	2
Nose Creek Trunk Upgrade	0
Sanitary Trunk Upgrade - Bowness	0
Sanitary Trunk Upgrade - Penbrooke	61
Sanitary Trunk Upgrade - Ramsay	0
Trans Canada Sanitary Trunk	54
West Pine Creek Sanitary Trunk Phase 3 Design	1
Seton Tunnel Phase 2	1
Wastewater Treatment Plants - South Catchment Expansion Plan	9
Transformative - Primary Driver	
Total - Wastewater Treatment & Collection	**1,076**

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.



Appendix B: Capital Infrastructure Needs ($millions)	*Total* 2026-2035+	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035+
Maintenance - Primary Driver											
Advancing Canadian Water Assets Capital Maintenance (ACWA)	0										
Control Systems & Electrical Upgrades	**40**										
Fish Creek Wastewater Treatment Plant Upgrade	6										
Process Control Systems Wastewater Collection	6										
Wastewater Treatment Distributed Control Systems Modernization	27										
Wastewater Treatment Plant- Bonnybrook Electrical Upgrades	1										
Fish Creek to Bonnybrook Transfer Forcemain	13										
Lift Stations	**24**										
Lift Station Capital Maintenance	23										
Sanitary Lift Station Condition Assessment	1										
Replacement Contracts	**219**										
Replacements Extension Extend Contracts	185										
Service Replacements City & Outside Contractors	34										
Wastewater Cathodic Protection	0										
Wastewater Collection Network Condition Assessment	22										
Wastewater Critical Infrastructure Replacement/Repairs	16										
Wastewater Infrastructure Access Road Construction	1										
Wastewater Treatment Plants	**231**										
Fish Creek Wastewater Treatment Plant -Power Utility Plan	1										
Wastewater Treatment Plant Condition Assessment	2										
Wastewater Treatment Plant Equipment	225										
Wastewater Treatment Plant Forcemain Condition Assessment and Research	3										
Wastewater Trenchless Rehabilitation	130										

Service Enhancement - Primary Driver	
Bonnybrook Center & Control Building Upgrade	75
Bonnybrook Dewatering Facility	1
Bonnybrook Fermenter/Thickener	76
Control Systems & Electrical Upgrades	**49**
Pine Creek Power Management and Control Systems	0
Pine Creek Power Utility Plan - Standby Generators	5
Pine Creek Power Utility Plan - Upgrades	5
Pine Creek Standby Power Upgrades	0
Pine Creek Wastewater Treatment Plant Lighting Upgrade	0
Wastewater Treatment Plant Control Systems	23
Wastewater Treatment Plant- Pine Creek Electrical Upgrades	16
Wastewater Treatment Plants	**237**
Emission Reduction Projects	6
Emission Reduction Programs	2
Fish Creek Wastewater Treatment Plant Heating System Upgrade	5
Fish Creek Wastewater Treatment Plant Upgrade	168
Fish Creek Wastewater Treatment Plant- UV Replacement	24
New Wastewater Treatment Plant- Land Acquisition	30
Solar & Wind Energy Generation	3
Lift Stations	**122**
East Calgary Sanitary Lift Station Improvements	15
Sanitary Lift Station Fibre Roll Out	4
Sanitary Lift Station Replacement	102
Symons Valley Lift Station	1
Shepard Energy Centre Reclaimed Effluent Water	3
Sanitary Siphon Replacement/Upgrade	345
Sanitary Trunk Upgrades	**75**
5 ST SW/71-75 Ave Sanitary Upgrade	0
Bowness Sanitary Trunk Flow Diversion	0
Nose Creek Trunk Upgrade - Beddington	2
Sanitary Trunk Upgrade - 9 Ave SW	3
Sanitary Trunk Upgrade - Altadore	1
Sanitary Trunk Upgrade - Arbour Estates	0
Sanitary Trunk Upgrade - Blackfoot Trail	6
Sanitary Trunk Upgrade - Bow Bottom	6
Sanitary Trunk Upgrade - Colleen Crescent	0
Sanitary Trunk Upgrade - Elbow Drive	4
Sanitary Trunk Upgrade - Glamorgan	0
Sanitary Trunk Upgrade - Heritage Drive	1
Sanitary Trunk Upgrade - Killarney	1
Sanitary Trunk Upgrade - Lakeview	2
Sanitary Trunk Upgrade - Macleod Trail	4
Sanitary Trunk Upgrade - Richmond	12
Sanitary Trunk Upgrade - Rosscarrock	2
Sanitary Trunk Upgrade - Roxboro Erlton Mission	3
Sanitary Trunk Upgrade - Shouldice	26
Sanitary Trunk Upgrade - Varsity	0

Growth - Primary Driver												
Bonnybrook Heat Recovery	20											
Bonnybrook Integrated Resource Recovery	628											
Bonnybrook New Head Works	115											
Bonnybrook Plant D Expansion	159											
Bonnybrook Plant E Expansion Study	0											
Bonnybrook Solid Stream Upgrade/Expansion	278											
Control Systems & Electrical Upgrades - Pine Creek Second Feeder	3											
Lift Stations	**7**											
Belvedere Sanitary Lift Station and Forcemain	7											
Bowness Lift Station	0											
New Community Growth Sanitary Linear Extensions	23											
Sanitary Established Area Linear Program	14											
Sanitary Redevelopment Program	18											
Sanitary Trunk Upgrades	**190**											
East Keystone Sanitary Trunk	3											
Nose Creek Trunk Upgrade	0											
Nose Creek Trunk Upgrade - 128 Ave	4											
Nose Creek Trunk Upgrade - 144 Ave	51											
Providence Sanitary Trunk Design	30											
Sanitary Trunk Upgrade - 10 Ave SW	13											
Sanitary Trunk Upgrade - Bowness	2											
Sanitary Trunk Upgrade - Ramsay	1											
Sanitary Trunk Upgrade - Shepard	28											
Trans Canada Sanitary Trunk	2											
West Pine Creek Sanitary Trunk Phase 3 Design	55											
Wastewater Downtown Upgrades	3											
Wastewater Treatment-South Catchment Expansion Plan	817											
Transformative - Primary Driver												
Prairie Economic Gateway Sanitary Forcemain to Shepard Trunk	33											
Total Capital Infrastructure Needs - Wastewater Treatment & Collection	**3,985**	**-**	**423**	**362**	**516**	**597**	**454**	**395**	**412**	**468**	**360**	