



Water Utilities (Stormwater Management) 10-Year Capital Infrastructure Needs Assessment

March 2026

1. Service Overview

Stormwater Management is a highly regulated, essential public health service that protects property from flooding and supports healthy watersheds by collecting, storing and conveying rain and snowmelt through storm drains, pipes, ponds and outfalls. The service monitors river water quality and quantity, assesses riverbank health, and works on land use and development issues to reduce water quality impacts and flood risk in Calgary and the region. Stormwater Management provides programs that improve the city's resilience, including flood readiness, pollution prevention and riverbank repair. It also designs and integrates stormwater infrastructure into communities through green infrastructure, rain gardens and stormwater components in City-led public space projects.

The service delivers important customer benefits by mitigating property damage, reducing localized and river flooding, supporting safe and healthy rivers, and maintaining resilient riparian areas valued for recreation and aesthetics. Stormwater Management also supports emergency flood preparedness through collaboration with partners and all levels of government on regional and community-based solutions. Key trends shaping stormwater infrastructure needs include the growing emphasis on green infrastructure, improved modelling and technology, adaptation to more frequent heavy rain events, management of emerging contaminants and the integration of stormwater management into broader water resource planning. These trends influence the capital investments required to ensure stormwater is managed effectively for a growing city.

2. Strategic Alignment

Stormwater Management's capital infrastructure needs are directly influenced by several Council-approved and corporate strategies that guide community resilience, environmental protection and infrastructure planning across Calgary. These strategies ensure that investments support reliable, safe and efficient service delivery, enhance quality of life for Calgarians, and foster sustainable growth:

- **Municipal Development Plan** provides direction for healthy and resilient communities and waterbodies. Policies require stormwater infrastructure that manages flood risks, promotes green stormwater infrastructure, integrates stormwater projects with ecological networks and City projects and enhances community livability. Policies also include providing reliable service citywide, planning and maintaining infrastructure to manage risk under future climate conditions, confirming stormwater capacity and alignment through servicing studies, limiting changes to natural water bodies, upgrading infrastructure where feasible, incentivizing on-site stormwater management, integrating green stormwater infrastructure, and designing projects that enhance vibrancy in communities.
- **Stormwater Management Strategy (2023)** supports growth, reduces flood risk, protects watersheds and source water and

maintains infrastructure in good operating condition. It identifies priority areas such as reducing risks to vulnerable communities, investing in enhanced infrastructure and improving accountability through shared responsibility. The Strategy's goals include creating safe and vibrant neighbourhoods, promoting healthy and resilient watersheds and maximizing value for Calgarians. Four cornerstones guide implementation: making established communities more resilient, proactively managing and maintaining assets, utilizing low-impact development and setting stormwater performance measures.

Additional strategic direction is provided through specialized plans:

- **Calgary's Flood Resiliency Plan** aims to achieve a 1:200 flood protection standard through upstream, property-level and community-level measures, infrastructure improvements and updates to hazard maps, land use policies and emergency response capabilities.
- **Riparian Action Program (2017)** emphasizes riparian landscapes as vital green infrastructure supporting watershed health, climate resilience and public safety.
- **2023–2026 Climate Strategy**: Embeds climate adaptation into stormwater planning and infrastructure design to manage increased rainfall intensity, reduce flood risk, and improve long-term system resilience.
- **Calgary Drought Resilience Plan (2023)**: Addresses drought-related risks to stormwater quality and green stormwater infrastructure by integrating drought resilience into stormwater planning, design, and natural infrastructure management.
- **OneWater Strategic Plan (in development)** will provide an integrated, long-term strategy for water, wastewater and stormwater to guide future direction, optimize infrastructure investments, improve environmental outcomes and enhance service reliability. OneWater will consider various other plans such as the Dam Safety Plan, Source Water Protection Plan, Total Loading Management Plan etc. as it is developed.

3. Service Risks

Stormwater Management's capital infrastructure needs are targeted to address key risks that the service remains exposed to, such as:

- **Infrastructure complexity and asset variability**: The stormwater system includes a wide range of asset types; from regulated dams to natural and constructed assets like bioswales and wetlands, as well as an extensive underground network. Each requires specific skills and competencies, and investments are needed in higher-consequence assets such as dams, in advancing green stormwater infrastructure and in replacing aging infrastructure, such as lift stations, based on criticality and performance.
- **Localized flooding and customer safety**: Many established communities rely on storm infrastructure designed to older standards that did not anticipate the increasing severity and frequency of major rainfall events. As a result, these areas are more susceptible

to localized flooding during extreme precipitation, posing elevated risks to public safety and public and private property. Addressing this infrastructure deficit requires sustained capital investment, supported by enhanced hydrologic and hydraulic modelling, to better target upgrades and inform future investment decisions in high-risk locations.

- **River flooding risk:** Major investments since the 2013 flood have reduced river flood risk; however, some risk remains, particularly for Bow River communities upstream of the Elbow River confluence. Continued refinement of flood hazard area land-use regulations and support for provincial work on upstream reservoir storage are required. Some community-scale flood projects are under construction, but future investment needs remain lower than in previous years.
- **Growth-related pressures:** Developers must make stormwater investments in new and established areas to minimize or offset development impacts. Site limitations and stringent stormwater requirements can create cost challenges, and addressing them will require new, collaborative approaches with partners and additional capital and operational commitments.
- **Environmental impacts:** Growth and development contribute cumulative environmental impacts to watersheds. Capital investments in ponds, wetlands and green stormwater infrastructure are essential to meeting environmental sustainability thresholds and ensuring The City's footprint does not exceed ecosystem and regulatory limits.

In addition to service risks, high-risk assets which are addressed through targeted capital investments include:

- **Stormwater ponds:** An increasing number of ponds and continuous sediment accumulation require higher levels of funding to maintain reliability and reduce localized flooding and sediment entering rivers. Stormwater ponds also present drowning hazards due to proximity to homes, playgrounds and schools, requiring continued safety assessments and mitigation measures.
- **Dam safety:** More than 200 earthen dams require significant effort to ensure safe operation and compliance with the provincial dam safety directive. The City's Dam Safety Program continues to develop but maintains positive relationships with regulators and prioritizes high-consequence structures to keep physical safety risk low.
- **Lift stations:** Lift stations are single points of failure and considered high-criticality assets. Five stations are near end of life and require replacement to eliminate failure risk and ensure system reliability through lifecycle planning.

4. Service Objectives

Stormwater 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 delivering safe, reliable and environmentally responsible stormwater management that protects public safety, supports watershed health and enables sustainable growth. Stormwater Management's service objectives include:

- Ensuring a dependable, resilient and well-maintained stormwater system** by investing in the renewal and stewardship of critical infrastructure. Stormwater Management evaluates dams, ponds and wetlands, lift stations and storm mains to identify priority investments needed to maintain safe, reliable performance. This work supports regulatory compliance, protects people and property, safeguards watershed health and ensures resilience to extreme rainfall and future climate conditions. Capital investments focus on modernizing aging assets, replacing end-of-life lift stations, upgrading dams to meet provincial requirements and improving pond and wetland infrastructure to support consistent service for a growing city.
- Reducing flood risk and enhancing community resilience** by investing in infrastructure that protects Calgarians from localized and river flooding. Capital investments include community drainage improvements, stormwater system upgrades in established areas with aging or undersized infrastructure and targeted mitigation projects informed by improved modelling and risk assessments.
- Protecting watershed health and improving stormwater quality** by delivering infrastructure that minimizes environmental impacts and supports healthy rivers and riparian areas. Capital investments include ponds and wetlands, sediment and pollutant reduction systems and green stormwater infrastructure that enhances infiltration and reduces sediment entering the Bow River. These investments maintain Total Suspended Solids levels, protect riparian areas and support a citywide network of natural infrastructure. Performance is monitored through measures such as sediment loading to the Bow River and the Riverbank Areas Health Score.
- Supporting sustainable growth and enabling new and established community development** through infrastructure that meets servicing requirements and maintains regulatory and environmental standards. Capital investments include new trunk extensions, stormwater infrastructure in approved growth areas, upgrades in established communities and green stormwater infrastructure integrated with community design. These investments ensure stormwater servicing aligns with City standards, accommodates projected growth and supports housing supply objectives. Performance is informed by growth forecasts, servicing studies and the availability of serviced land in both new and established areas.

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	54	66	121	66	73	77	95	19	24	4	-	-	599
Capital Infrastructure Needs	-	-	-	-	-	-	-	113	84	129	133	488	947

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

Figure 1: Summary of Capital Infrastructure Needs by Investment Driver

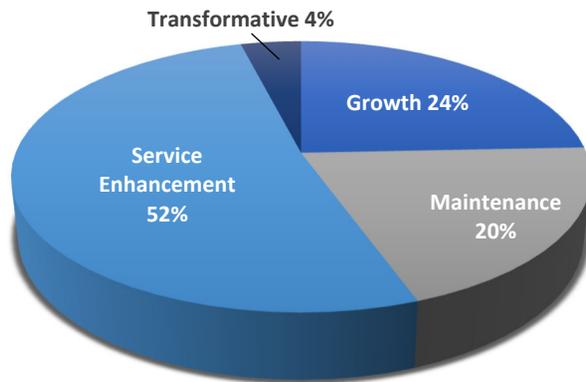


Table 2: Summary of Operating Cost of Capital for Capital Infrastructure Needs by Year

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

Note: 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.

Legend (% of capital \$ per opportunity item)

1% ~ 10%	Critical Assets in Poor / Very Poor Condition
11% ~ 25%	Severe Consequence of Failure
25% +	High Consequence of Failure

Appendix A: Previously Approved Capital

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.

Appendix A: Previously Approved Capital (\$millions)	Total											
	2026-2035+	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035+	
Maintenance - Primary Driver												
Dam Safety Management	1											
Discovery Ridge Dam Safety	0											
New Pond Dam Safety Project	0											
Flow & Quality Monitoring	0											
Local Drainage Improvements	2											
South West Collection Road Upgrade	0											
Storm Pond Repairs and Upgrades	8											
Annual Investment Program	1											
Duck Pond Restoration	7											
Stormwater Lift Stations (Annual Investment Program)	2											
Stormwater Main Rehabilitation Program	1											
Stormwater System Capital Maintenance	1											
Western Headworks Canal Outfall Assessment	0											
Service Enhancement - Primary Driver												
Bank Protection and Stream Health Program	1											
Centre Street Gravel Bar Modification	0											
Community Drainage Improvement Program	16											
Northwest Inner City Capital Hill D Pond	0											
Northwest Inner City 14 St NorthWest	1											
Northwest Inner City Hillhurst Storm Lift Station	1											
Palliser Oakridge	1											
R T Alderman Dry Pond	0											
Ramsay Dr Improvement (New Drainage Improvement)	0											
Rehabilitation/Upgrade of South West Outfall G19	0											
Sunnyside Flood Barrier	10											
Sunnyside Lift Station No.1	2											
Upper Plateau Separation	0											
Hanson Ranch Wetland	8											
Home Road Bank Repair	0											

Inglewood Bird Sanctuary Erosion Mitigation	0	
Riparian Restore Plant Program	1	
Storm Main Extension Replacements	1	

Growth - Primary Driver

Cooperative Stormwater Management Initiative	54	
Corporate Stormwater Management Initiative Contribution (Stage 1)	15	
East Belvedere Stormwater Management Initiative	36	
Master Drainage Plan	1	
Stormwater Redevelopment Program	2	
Stormwater Trunks	8	
144 Ave North Storm Trunk (East Keystone Area Structure Plan)	0	
Priddis Slough Trunk & Outfall	7	
Providence Storm Trunk Phase 2	1	
Seton Storm Trunk Phase 1	1	

Transformative - Primary Driver

Total Previously Approved Capital - Stormwater Management	104	
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Legend (% of capital \$ per opportunity item)

1% ~ 10%	Critical Assets in Poor / Very Poor Condition
11% ~ 25%	Severe Consequence of Failure
25% +	High Consequence of Failure

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)	Priority (H / M / L)	Total 2027-2035+	2027	2028	2029	2030	2031	2032	2033	2034	2035+
Maintenance - Primary Driver											
Community Drainage Improvement Program		17	[Bar chart showing funding distribution for Community Drainage Improvement Program]								
Local Drainage Improvements		16	[Bar chart showing funding distribution for Local Drainage Improvements]								
Low Impact Development Rehabilitation		1	[Bar chart showing funding distribution for Low Impact Development Rehabilitation]								
Dam Safety Management		34	[Bar chart showing funding distribution for Dam Safety Management]								
Discovery Ridge Dam Safety (Dam Removal and Landscape Design)		6	[Bar chart showing funding distribution for Discovery Ridge Dam Safety]								
New Pond Dam Safety Project		28	[Bar chart showing funding distribution for New Pond Dam Safety Project]								
Green Stormwater Infrastructure Program		30	[Bar chart showing funding distribution for Green Stormwater Infrastructure Program]								
Outfall Upgrades		2	[Bar chart showing funding distribution for Outfall Upgrades]								
Pipe Condition Assessments for Community Drainage Improvement Phase 4		1	[Bar chart showing funding distribution for Pipe Condition Assessments]								
Process Control System Stormwater Collection		5	[Bar chart showing funding distribution for Process Control System]								
Stormwater Collection Road Upgrade		4	[Bar chart showing funding distribution for Stormwater Collection Road Upgrade]								
Stormwater Lift Stations		17	[Bar chart showing funding distribution for Stormwater Lift Stations]								
Drainage Lift Station Control System		5	[Bar chart showing funding distribution for Drainage Lift Station Control System]								
Lift Station Annual Investment Program		12	[Bar chart showing funding distribution for Lift Station Annual Investment Program]								
Storm Lift Station Condition Assessments		0	[Bar chart showing funding distribution for Storm Lift Station Condition Assessments]								
Storm Main Rehabilitation Program		11	[Bar chart showing funding distribution for Storm Main Rehabilitation Program]								
Storm Pipe Assessments		1	[Bar chart showing funding distribution for Storm Pipe Assessments]								
Storm Pond Repairs and Upgrades		21	[Bar chart showing funding distribution for Storm Pond Repairs and Upgrades]								
Duck Pond Restoration		2	[Bar chart showing funding distribution for Duck Pond Restoration]								
Pond Sediment Management		10	[Bar chart showing funding distribution for Pond Sediment Management]								
Storm Pond Repairs (Annual Investment Program)		9	[Bar chart showing funding distribution for Storm Pond Repairs]								
Stormwater Monitoring/Systems		4	[Bar chart showing funding distribution for Stormwater Monitoring/Systems]								
Flow Monitoring		1	[Bar chart showing funding distribution for Flow Monitoring]								
Quality Monitoring		3	[Bar chart showing funding distribution for Quality Monitoring]								
Rain Gauges		0	[Bar chart showing funding distribution for Rain Gauges]								
Stormwater System Capital Maintenance		7	[Bar chart showing funding distribution for Stormwater System Capital Maintenance]								
Western Headworks Canal Outfall Assessment		5	[Bar chart showing funding distribution for Western Headworks Canal Outfall Assessment]								
Service Enhancement - Primary Driver											
Bank Protection and Stream Health Program		19	[Bar chart showing funding distribution for Bank Protection and Stream Health Program]								
Community Drainage Improvement Program		374	[Bar chart showing funding distribution for Community Drainage Improvement Program]								
Albert Park Drainage Improvement (New Major Local Drainage Improvement)		5	[Bar chart showing funding distribution for Albert Park Drainage Improvement]								
Bow Bottom Trail Storage		6	[Bar chart showing funding distribution for Bow Bottom Trail Storage]								

Community Drainage Improvement Phase 4	177	
Confederation Park (New Drainage Improvement Project)	48	
Deerfoot 32 Avenue Drainage Improvement (New Major Local Drainage Improvement)	15	
Deer Ridge Storm Trunk Diversion	6	
Drainage Sunnyside Pumpstation 1	1	
Macleod Trail Meadowview Park	5	
New Drainage Improvement Project	23	
Northwest Inner City Capital Hill D Pond	6	
Northwest Inner City Kensington	0	
Northwest Inner City 14 St NorthWest	14	
Northwest Inner City Hillhurst Storm Lift Station	25	
Palliser Oakridge	17	
Pineridge	18	
R T Alderman Dry Pond	8	
Dam Safety Management	10	
Dam Safety Management (Annual Investment Program)	2	
Facility Dam Safety Program	8	
Flood Mitigation Program	0	
Hanson Ranch Wetland	9	
Pond Renewal Program (Annual Investment Program)	26	
Remove/Rehabilitation South West Outfall G19	0	
Riparian Restore Plant Program	13	
River Infrastructure Management (Annual Investment Program)	2	
Storm Main Extension Replacements	9	
Storm Outfall B5 Oil and Grit Separator	0	
Stormwater Lift Stations	121	
9th Ave Downtown Underpass Stormwater Lift Station + Drainage Study	50	
Stormwater Lift Station Fibre Roll-Out	1	
Stormwater Lift Stations (Annual Investment Program)	70	
Growth - Primary Driver		
Belvedere Cell C East-West Storm Trunk	35	
Cooperative Stormwater Management Initiative (Stage 1)	10	
Master Drainage Plans Program	1	
New Community Growth Storm Linear Extensions	50	
Providence Storm Trunk Stages 3 & 4	20	
Stormwater Main Extensions(Stormwater & Housing Impacts Program)	18	
Stormwater Onsite Storage (Stormwater & Housing Impacts Program)	9	
Stormwater Redevelopment Program	27	
Transformative - Primary Driver		
Praire Economic Gateway Storm Trunk to Shepard Ditch	35	
Total Capital Infrastructure Needs - Stormwater Management	947	