

Water Utility Lines of Service – 2023-2026 Rates

Services and Funding

Reliable high quality water services, including Water Treatment and Supply, Wastewater Collection and Treatment as well as Stormwater Management provide the foundation to a resilient, healthy and green city. Calgary is a big city on a small river and as Calgary's population continues to grow, so does the demand on the rivers.

With a finite supply of water, the Water line of service needs to operate wisely providing drinking water now and for generations to come. Due to water conservation measures embraced by Calgarians, the line of service has been able to delay investments in treatment capacity and defer costly plant upgrades. These actions have resulted in our ability to keep rates low for customers.

To maintain the health of the rivers, ongoing investment in wastewater treatment is required to protect the environment and meet regulatory requirements. The nature of the Wastewater line of service is capital intensive, and the majority of the planned investments are driven by population growth and regulatory requirements. This service ensures that customers can trust that their wastewater is taken care of and the health of the river is protected.

A healthy, resilient watershed provides clean, reliable water resources, and is vital to ensure that citizens and property are protected from flooding, while keeping the rivers healthy. The focus of the Stormwater Management line of service is to improve river flood resiliency and reduce local stormwater flooding through a variety of infrastructure and operational resilience programs.

The Water, Wastewater, and Stormwater lines of service (the Water Utility) are provided under a self-sustaining public utility model. All costs are recovered through user rates, levies, fees, and sources other than the municipal tax base. The Water Utility established a financial plan in 2011 to ensure financial capacity and sustainability (C2011-66). A review and update to the financial plan was completed in 2020 to retain resiliency under changing environmental and economic conditions, while also meeting Council and citizen expectations (PFC2020-1140). The financial plan articulates policies, measures, targets, and a timeline for compliance including debt management, sustainment reserve, and a payment to the corporation in the form of a return on equity.

Off-site levy revenues are intended to fund 100 per cent of the developers' share of utility capital costs attributable to new growth. Revenues vary based on hectares of land development as well as timing of capital investment to support growth. In periods where actual land development or the projected pace of future land development is lower than the growth assumption in the off-

site levy rates, a temporary financial shortfall occurs. In the absence of an alternate funding source, this lower revenue puts pressure on utility rates to meet obligations for growth related investments.

In addition to the work being done on the service line rate changes for 2023-2026, the Water Utility is currently undergoing a Cost of Service Study (COSS) to inform the 2023-2026 Service Plans and Budget. The COSS process results in a rate structure that balances the interests of fairness and equity, financial sustainability, and water resource management. The results of this study show what costs are to be recovered from each customer class and results in different customer classes paying unique utility rates, while carefully considering the fixed and variable components. The COSS results will be presented to Council in 2022 July.

Line of Service: Water Treatment and Distribution

Drivers and Priorities

Protecting public health by providing clean and safe drinking water continues to be the Water Utility's most important priority. Ensuring reliable, available, and safe drinking water is key to Calgary's economic prosperity, and social and climate future. As an essential service, the resilience and continuity of drinking water is an expectation of Calgarians.

The Water line of service is making investments to ensure adequate levels of service and reliability of existing infrastructure. This includes investments in treatment plant reliability, additional maintenance staff, and upgrades to aging infrastructure. The Water line of service maintains over 5,300 kilometres of water mains and pipes that deliver water to 1.3 million people. Investments in the maintenance and replacements provide assurance that customers do not experience an increased risk of main breaks and interruptions to service.

In addition to ensuring reliability of service, the Water line of service is also investing in programs that address both customer expectations and changing regulations. These include lead mitigation, reintroduction of fluoride, and advancing the water meter strategy. While Calgary is fortunate to have a small number of lead services compared to other municipalities, the Water Utility is accelerating the removal of the remaining lead service lines of verified public and private lead water services. Secondly, in 2021 November, Council directed Administration to reintroduce fluoridation of the drinking water system. Implementation will occur in the 2023-2026 business cycle following commissioning new infrastructure. Thirdly, the Water Utility is continuing work on the feasibility of implementing advanced water meter technology. This would involve using networks instead of "drive-by" meter reading systems. The goal is to improve operational efficiencies by reducing meter reading costs, enhance customer experience with more timely resolution of billing issues, and improve customer communication and feedback on water usage. This investment will likely have long term water efficiency benefits to help inform plant expansion decisions and advance Smart City initiatives.

The line of service continues to respond to a changing climate by implementing risk management measures and evaluating the resilience of our treatment and distribution systems.

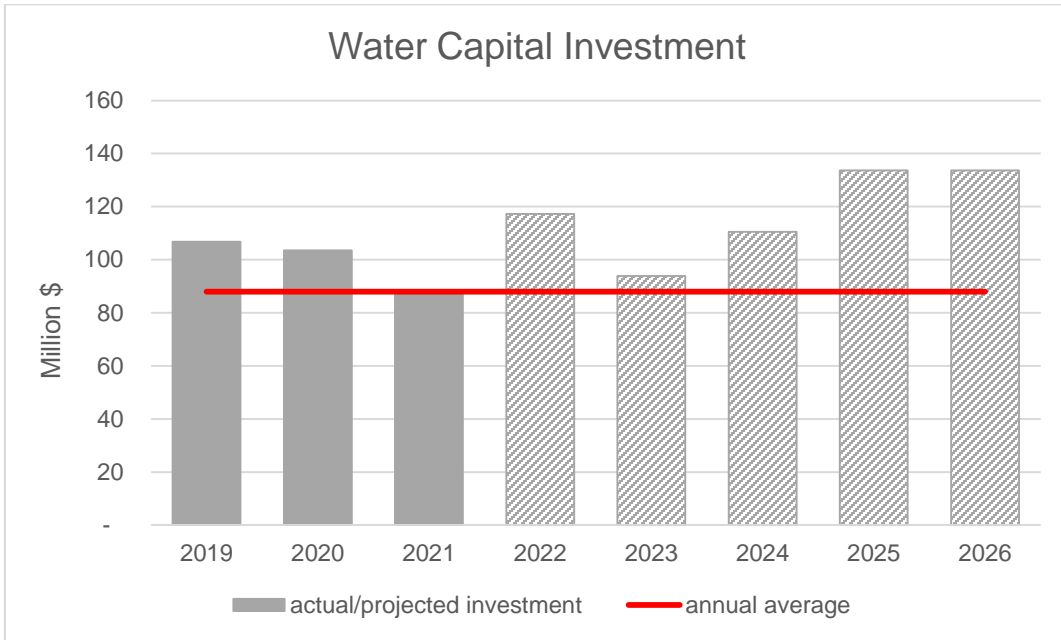
Resources will be added to focus on pilot programs investigating new technologies to improve the reliability of potable water treatment processes in the face of changing water quality and quantity. These resources are required to accelerate climate change actions and work towards 2050 climate mitigation and adaptation outcomes.

Water conservation efforts aim to reduce water consumption and are important to ensure long term water supply reliability. However, the Water line of service must continue to look for ways to mitigate the upward pressures that lower per capita consumption places on revenues and financial sustainability. In response, the line of service has identified effective cost reducing methods through corporate SAVE initiatives and proactively relinquishing capital investments. These actions have resulted in the ability to keep rates low despite increasing inflation pressures in fuel, energy, and chemicals, additional costs to build service resilience, and operational resources to address service risks and continue to keep water safe and reliable for customers.

Capital Investment

The proposed 2023-2026 capital spending plan is higher than the average investment of \$88 million annually as the line of service continues to focus on capital investments required to address risks and build service resiliency (see Figure 1). These investments include upgrades in the electrical distribution systems to mitigate electrical safety risks at both Glenmore and Bearspaw Water Treatment Plants, and replacement of aging infrastructure to address current and future needs. In addition, the line of service has added investments for the advanced metering strategy project, as well as the North Calgary water servicing strategy project that will ensure the continued delivery of clean, safe, and reliable water to existing and future communities in North Calgary. Largely due to the timing of servicing required for currently approved new growth communities, the line of service has identified \$65.0 million in capital budget relinquishments for 2022 to match the pace of growth and the infrastructure need. The proposed 2023-2026 capital spending plan can accommodate servicing the additional new growth communities recommended by Administration in IP2022-0545.

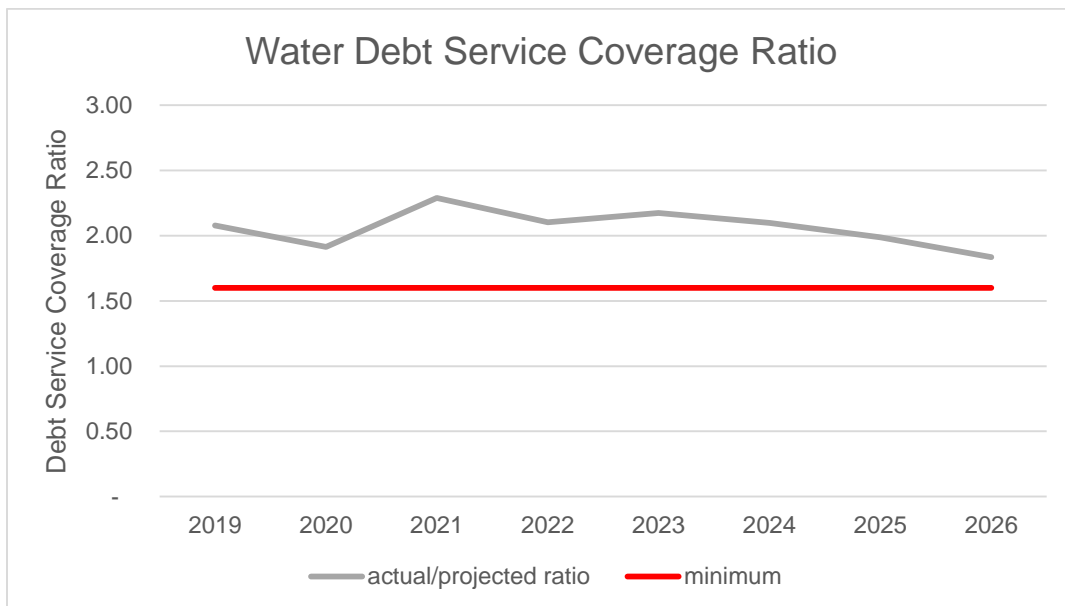
Figure 1: Capital Spending Plan



Debt Financing and Servicing

The debt service coverage ratio minimum for each line of service is 1.60 times. Based on the recommended rate adjustment below, the Water line of service continues to maintain a ratio above the minimum as shown in Figure 2.

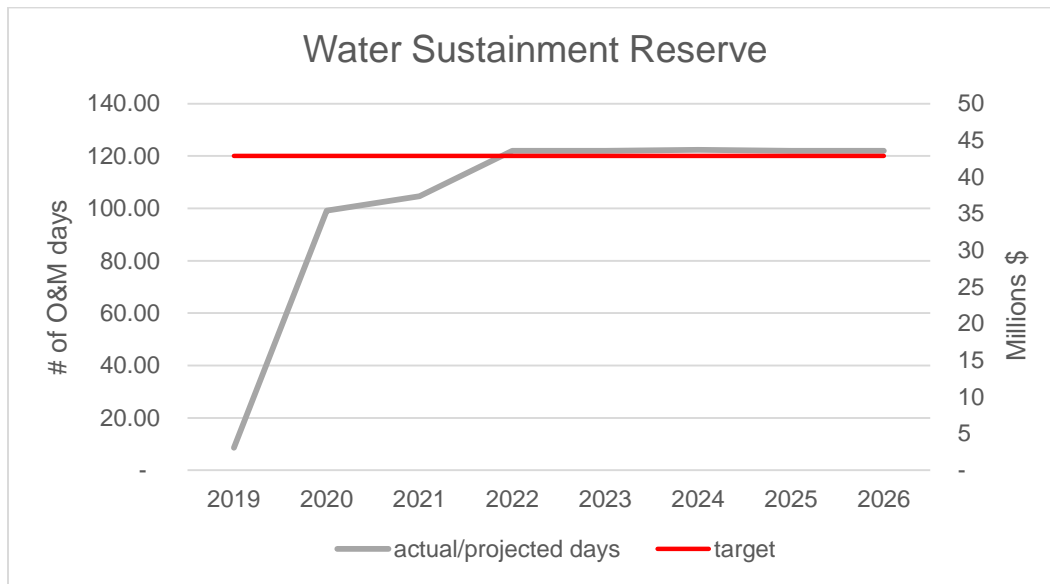
Figure 2: Debt Service Coverage Ratio



Sustainment Reserve

The Water line of service remains on track to achieve its sustainment reserve target of 120 days of annual operating expenditures by the end of 2022 as shown in Figure 3. The reserve, once fully funded, will strengthen the financial position of the Water line of service and ensure service levels are maintained, and not immediately impacted by a potential financial shortfall. The reserve provides a safety buffer to mitigate adverse financial impacts that would otherwise be absorbed by customers through larger rate increases.

Figure 3: Sustainment Reserve Balance



Water Rates

Based on the above considerations, the Water line of service can accommodate the recommended rate adjustment of 0.0 per cent annually. The proposed rate adjustment also considers servicing the additional new growth communities recommended by Administration in IP2022-0545.

Based on the revised 2021 October land forecast, the off-site levy shortfall will persist into the 2023-2026 business cycle. Current levies are collected based on the revised Off-Site Levy Bylaw. Significant risks and uncertainty exist within the current model, creating temporary financial shortfalls that must be buffered by utility rates. The Water line of service is experiencing an off-site levy shortfall for the seventh consecutive year, totalling \$25.4 million at the end of 2021. Work is underway to revise the off-site levy bylaw methodology, which could assist in mitigating this financial challenge. Any changes to the methodology could also impact the recommended rate adjustment for 2023-2026.

The tables that follow summarize current proposed water rates and drivers for 2023-2026.

Table 1: Water rate change

	2023-2026
Water rate change	0.0% per year

Table 2: Estimated Water Treatment and Supply drivers / impacts

WATER	Total	Change in operating costs	Change in capital related costs	Temporary off-site levy shortfall	Annual increase in ROE	Sustainment reserve
Percent change resulting from diver/impact	0.0%	+2.6%	-3.2%	+1.0%	+1.6%	-2.0%

Line of Service: Wastewater Collection and Treatment

Drivers and Priorities

With rising capital investments required to maintain highly reliable wastewater systems, meet regulatory requirements, and protect the rivers and the environment, an increased emphasis on service resiliency is vital to the line of service. In response, the Wastewater line of service is focused on continually finding process improvements within the plants and collection system. This includes exploring practices to improve service reliability and reduce sewer back-ups for customers, mitigate safety risks, and delay costly infrastructure upgrades to keep wastewater bills lower for customers.

The line of service is committed to climate change mitigation by improving energy management measures and reducing greenhouse gas emissions. Significant work is already underway or completed on both energy and resource recovery aspects. Continuing to implement innovative actions to advance climate change mitigation will ensure the line of service reaches the 2050 climate mitigation and adaptation outcomes. Part of the expansion to the Bonnybrook Wastewater Treatment Plant includes generators designed for a full utilization of existing biogas production capacity at the plant. The expanded power generating and heating facility at Bonnybrook Wastewater Treatment Plant will reach a capacity for an annual avoidance of 28,000 tonnes greenhouse gas emissions and more than \$2.2 million of annual cost savings. Additional resources are needed to ensure adequate staffing to meet service levels and address risks.

As the city grows, pressure on treatment processes will continue to increase. Water conservation efforts do not reduce this need. To maintain wastewater rates at affordable levels, the Wastewater line of service identified effective cost reducing methods through corporate SAVE initiatives and proactively relinquishing capital investments. These actions help offset

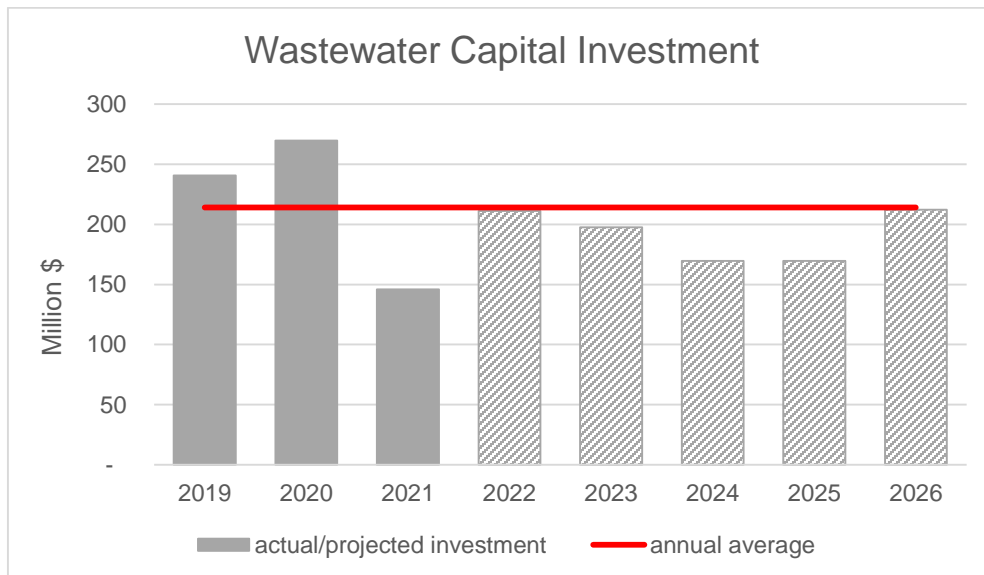
additional resources to build service resiliency and operate new infrastructure, increasing debt, and inflationary pressures in chemicals, energy, and fuel.

Capital Investment

The proposed 2023-2026 capital spending plan is slightly lower than the average investment of \$213 million annually (see Figure 4). Over the next few years, a continued priority for this service is the significant upgrades at Bonnybrook Wastewater Treatment Plant, as well as necessary investments at Fish Creek Wastewater Treatment Plant to ensure regulatory compliance and protect public health and the environment. These investments will provide the overall wastewater treatment system with additional resiliency and ensure that we are able to continue to meet changing regulatory requirements. Upgrades and maintenance at the Wastewater Treatment Plants address wastewater demands and regulations that will serve future generations of Calgarians and make up approximately 70 per cent of the Wastewater line of service capital spending plan.

The wastewater collection network consists of over 4,700 kilometres of wastewater pipe with an average age of almost 35 years. To continue to meet current and future system capacity needs, significant investments and upgrades to the wastewater collection network are also required. This includes condition assessments to inform targeted investments and upgrades and replacements to critical infrastructure such as sanitary trunks and lift stations. Largely based on the timing of servicing required for currently approved new growth communities, the line of service identified \$17.0 million in capital budget relinquishments for 2022 to match the pace of growth and the infrastructure need. The proposed 2023-2026 capital spending plan can accommodate servicing the new growth communities recommended by Administration in IP2022-0545.

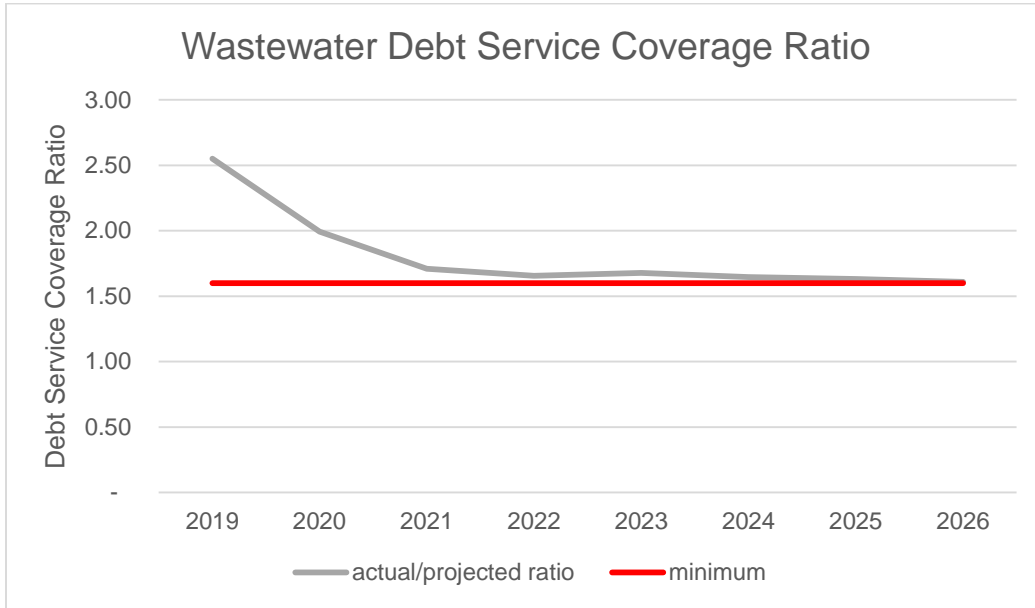
Figure 4: Capital Spending Plan



Debt Financing and Servicing

The debt service coverage ratio minimum for each line of service is 1.60 times. Based on the recommended rate adjustment below, the Wastewater line of service continues to maintain a ratio above the minimum as seen in Figure 5.

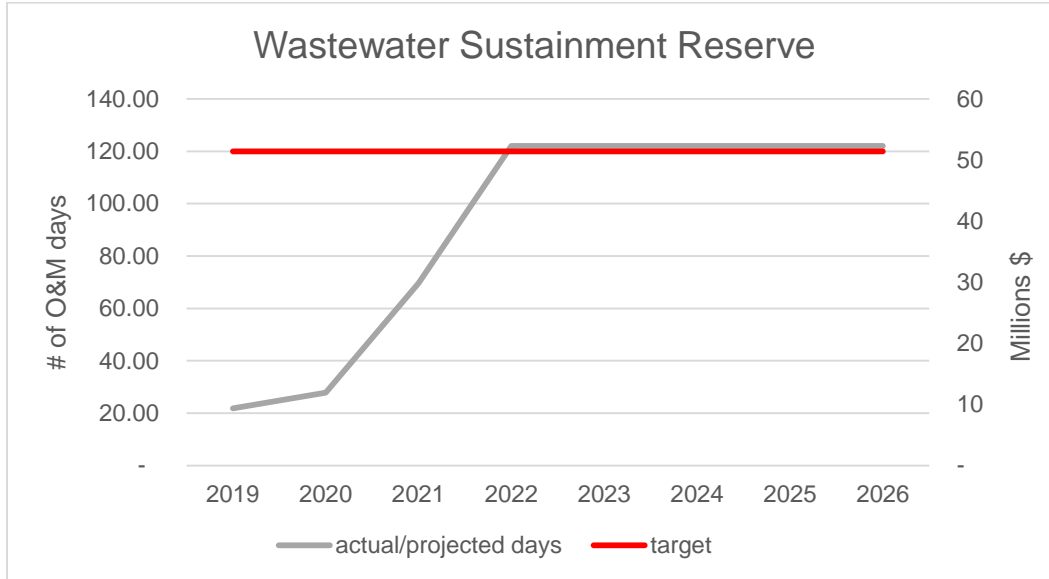
Figure 5: Debt Service Coverage Ratio



Sustainment Reserve

The Wastewater line of service remains on track to achieve its sustainment reserve target of 120 days of annual operating expenditures by the end of 2022 as shown in Figure 6. The reserve, once fully funded, will strengthen the financial position of the Wastewater line of service and ensure service levels are maintained, and not immediately impacted by a potential financial shortfall. The reserve provides a safety buffer to mitigate adverse financial impacts that would otherwise be absorbed by customers through larger rate increases.

Figure 6: Sustainment Reserve Balance



Wastewater Rates

The effect of population growth has a substantial and compounding impact on the Wastewater line of service due to the capital required to build new infrastructure. The above-mentioned capital relinquishments enable the Wastewater line of service to partially absorb rising inflation and continued shortfalls in off-site levies for growth related costs with a 2.5 per cent rate increase annually. The proposed rate adjustment can accommodate servicing the additional new growth communities recommended by Administration in IP2022-0545.

The Wastewater line of service is experiencing an off-site levy shortfall for the seventh consecutive year, totalling \$15.5 million at the end of 2021. Based on the revised 2021 October land forecast, the off-site levy shortfall will persist into the 2023-2026 business cycle. Current levies are collected based on the Off-Site Levy Bylaw. Significant risks and uncertainty exist within the current model, creating temporary financial shortfalls that must be buffered by utility rates. Work is underway to revise the methodology for the off-site levy rates in the bylaw, which could assist in mitigating this financial challenge. Any changes to the methodology could impact the recommended rate adjustment.

The tables below summarize current proposed water rates and drivers for 2023-2026.

Table 3: Wastewater rate change

	2023-2026
Wastewater rate change	+2.5% per year

Table 4: Estimated Wastewater Collection and Treatment drivers / impacts

WASTEWATER	Total	Change in operating costs	Change in capital related costs	Temporary off-site levy shortfall	Annual increase in ROE	Sustainment reserve
Percent change resulting from diver/impact	+2.5%	+1.5%	+2.0%	+2.5%	+1.1%	-4.6%

Line of Service: Stormwater Management

Drivers and Priorities

Climate change will alter how and when Calgary’s watershed receives precipitation, affecting both water quantity and quality. It is predicted that short duration and high intensity storms will become more frequent, leading to increased flooding and property damage. With these increased risks, the line of service works with communities and partners to implement infrastructure and programs to ensure public safety, reduce property damage, and protect the quality of our rivers.

The Stormwater line of service is updating the 2005 Stormwater Management Strategy to define a unified vision for stormwater management and transform how the Water Utility collaborates with partners and stakeholders. An ongoing evolution of stormwater management practices is needed to meet regulations, customer expectations, a changing climate, and operational demands to achieve a collaborative and efficient service. This strategy will outline the short, medium, and long-term actions for the line of service, guiding the management of stormwater runoff in communities to keep the rivers healthy and build resiliency to flooding.

With advances in structural flood resilience changing the balance of risks in many Calgary communities, the Water Utility is also updating the Calgary River Valleys Plan. The plan contains a range of policies to establish a coordinated approach to flood resilience, healthy greenspaces, and NextGen planning for more resilient and sustainable communities, and placemaking. There will be significant activity from now until 2024.

The Stormwater line of service has long recognized the importance of building resilience to climate change by implementing risk management measures to reduce the impact of extreme weather events and climatic changes on infrastructure. This includes ensuring operational staff and systems to respond to rain events and maintaining and operating over 5,400 kilometres of pipes and other storm infrastructure. Investments to advance the climate strategy and mitigation are being added to accelerate projects and programs, and will include assessing Green Stormwater Initiatives, refined asset management approaches, and other water quality improving measures.

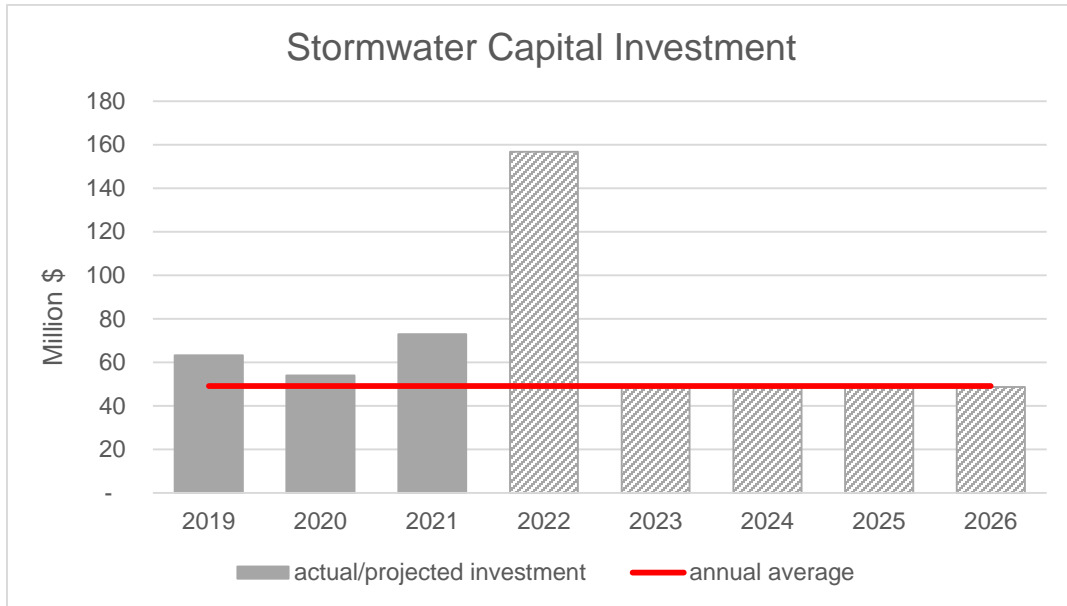
Stormwater management ponds (Calgary has over 340) are essential to managing the quantity and quality of runoff returning to the natural environment and add quality public space to the citizens and communities of Calgary. A comprehensive program assessing capital improvements, landscaping modifications, and public engagement is being undertaken to improve ponds, inform citizens, and ultimately increase public safety and benefits of these critical stormwater assets.

The Community Drainage Improvement (CDI) program uses a triple bottom line approach to prioritize and invest in stormwater infrastructure improvements with a focus on established communities with the highest risk of local stormwater flooding caused by rainfall. This program continues to be a high priority and the line of service is focused on evolving the CDI program to more fully incorporate climate resilience into drainage upgrades.

Capital Investment

The proposed 2023-2026 capital spending plan is in line with the average annual investment of \$49 million shown in Figure 7. The Stormwater line of service continues to focus on improving community drainage and flood protection in existing neighbourhoods, as well as the installation of storm infrastructure in new communities. Based on additional external funding, investments in new communities, and carry forwards from previous years, the line of service has advanced CDI projects resulting in a larger than average annual investment in 2022. The proposed 2023-2026 capital spending plan can accommodate the servicing of the new growth communities recommended by Administration in IP2022-0545.

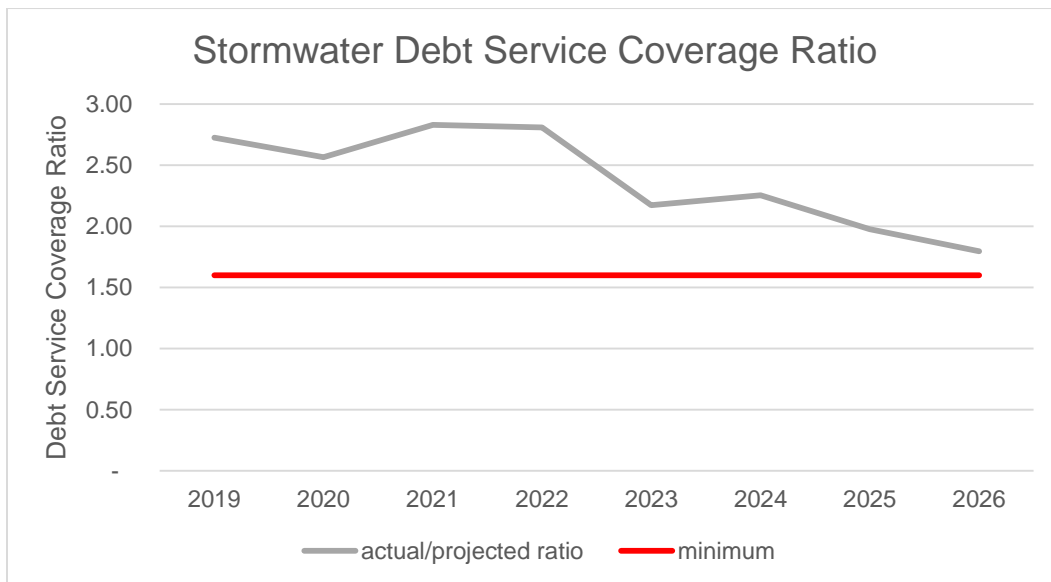
Figure 7: Capital Spending Plan



Debt Financing and Servicing

The debt service coverage ratio minimum for each line of service is 1.60 times. Based on the below recommended rate adjustment for 2023-2026, the Stormwater line of service continues to maintain a ratio above the minimum as shown in Figure 8.

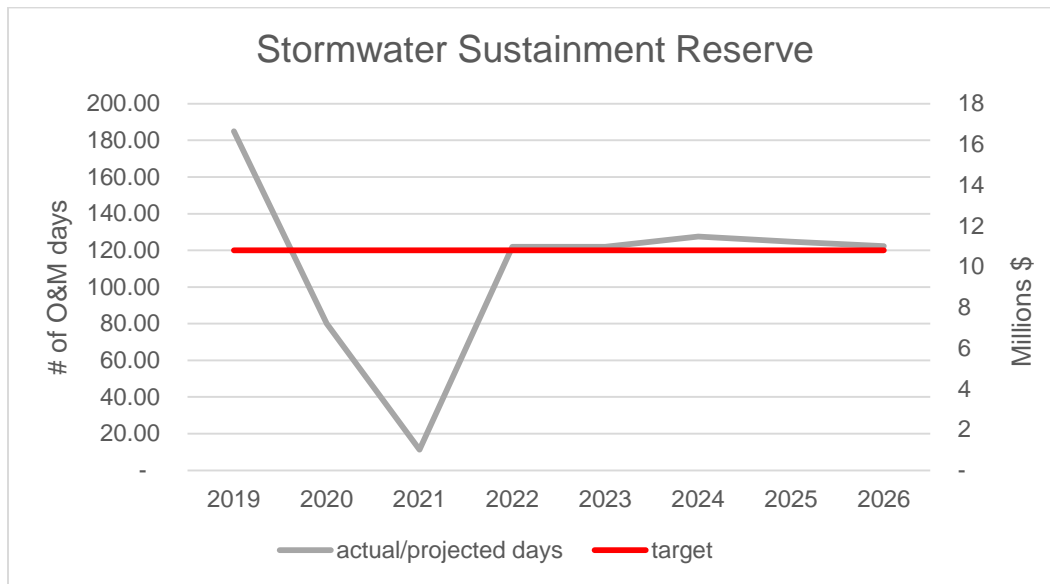
Figure 8: Debt Service Coverage Ratio



Sustainment Reserve

The Stormwater line of service remains on track to achieve its sustainment reserve target of 120 days of annual operating expenditures by the end of 2022 shown in Figure 9. The reserve, once fully funded, will strengthen the financial position of the Stormwater line of service and ensure service levels are maintained, and not immediately impacted by a potential financial shortfall. The reserve provides a safety buffer to mitigate adverse financial impacts that would otherwise be absorbed by customers through larger rate increases.

Figure 9: Sustainment Reserve Balance



Stormwater Rates

The lower capital investment planned for 2023-2026 enables the Stormwater line of service to absorb rising inflation and still address a maturing service and accelerate climate change mitigation. As a result, a 0.0 per cent annual rate adjustment is recommended for the Stormwater rate for 2023-2026 and can accommodate servicing the additional new growth communities recommended by Administration in IP2022-0545.

Based on the revised 2021 October land forecast, the off-site levy shortfall will persist into the 2023-2026 business cycle. Current levies are collected based on the revised Off-Site Levy Bylaw. Significant risks and uncertainty exist within the current model, creating temporary financial shortfalls that must be buffered by utility rates. The Stormwater line of service is experiencing an off-site levy shortfall for the seventh consecutive year, totalling \$28.5 million at the end of 2021. Work is underway to revise the methodology for the off-site levy rates in the bylaw, which could assist in mitigating this financial challenge. Any changes to the methodology could impact the recommended rate adjustment.

The tables below summarize the proposed stormwater rates and drivers for 2023-2026.

Table 5: Stormwater rate change

	2023-2026
Stormwater rate change	0.0%

Table 6: Estimated Stormwater Management drivers / impacts

STORMWATER	Total	Change in operating costs	Change in capital related costs	Temporary off-site levy shortfall
Percent change resulting from driver/impact	0.0%	+3.5%	-3.0%	-0.5%

Water Utility Customer Impacts

What the Water Utility calls a typical residential metered bill is the monthly charge for these services based on 2.7 people per household at 7m³ water consumption per person. There is no impact to a typical residential metered monthly customer bill based on these changes for Water and Stormwater lines of service. This is based on the recommended rate adjustments of 0.0 per cent. In Wastewater, the bill impact is a \$1.38 increase in 2023 on a typical residential metered customer's monthly bill compared to 2022. This impact is based on the recommended rate adjustment of 2.5% per year. These impacts to a typical residential metered monthly bill based on these changes is shared in Table 7 for illustrative purposes, however impact to individual customer bills does vary based on customer class and consumption and these are prior to any change due to cost recovery and cost of service except in the case of stormwater management which is the same fixed monthly charge to all customer classes.

Table 7: Impact on typical monthly utility bill

Water Line of Service	2023 -2026 incremental change	2023 monthly bill	2024 monthly bill	2025 monthly bill	2026 monthly bill
Water Charges Residential Metered (19m ³) \$41.09 monthly in 2022	\$0.00	\$41.09	\$41.09	\$41.09	\$41.09
Wastewater Charges Residential Metered (19 m3) \$55.14 monthly in 2022	\$1.38 - \$1.48	\$56.52	\$57.93	\$59.38	\$60.86
Stormwater Charges \$15.63 in 2022	\$0.00	\$15.63	\$15.63	\$15.63	\$15.63
Total	\$1.38 - \$1.48	\$113.24	\$114.65	\$116.10	\$117.58

Cost of service recommendations, and the cost recovery approach from different customer classes means customer classes will have different impacts. Overall, the line of service rate revenue will change according to each individual line of service rate charge, however not all customer classes will see the same decrease or increase in rates. These cost of service recommendations will be presented to Council in 2022 July.