



2018 Integrated Watershed Management Activity and Results Summary

Goal 1: PROTECT OUR WATER SUPPLY

UCS2019-0654
Attachment 1

Background: Story Behind the Baseline

Goal: Ensure reliable, secure, high quality water supply for current and future generations. Reduce risks to Calgary's water supply.

Risks: Our region is prone to drought while regional growth continues to place pressures on Calgary's water supply. Impacts from future land development also pose risks to water quality. Climate change will likely impact our future water supply, as does the provincial closure of the South Saskatchewan River Basin to new water licences.

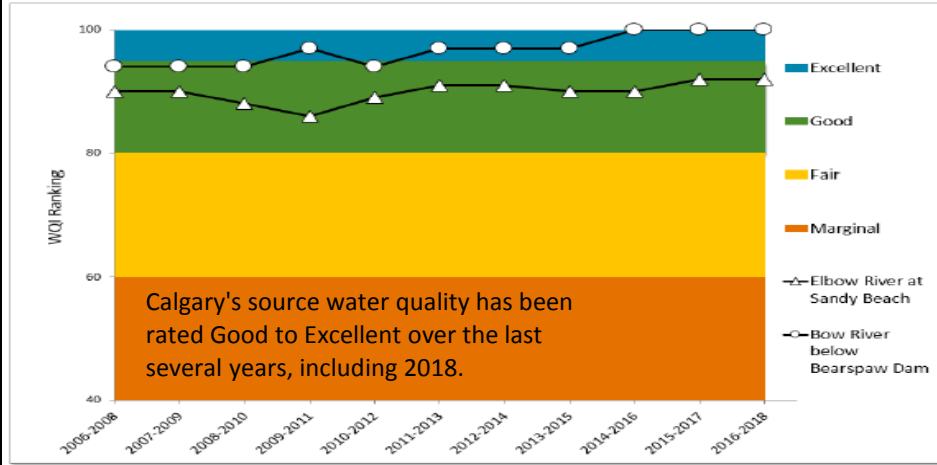
What We Did: 2018 Highlights

- The Water Security Strategy and Plan was initiated to build improved water supply solutions for the future.
- A Drought Risk and Vulnerability Assessment is underway and builds on the Water Utility's current drought response actions using lessons learned from drought prone sectors in the US and worldwide.
- The Calgary Metropolitan Region Board (CMRB) was established, and developed an Interim Growth Plan and Interim Regional Evaluation Framework for the region.
- The Source Water Protection Plan was finalized in 2018. Two related task forces were convened, and source water issues were included in the CMRB's Interim Growth Plan.
- Identified adjustments required to ensure compliance with the new Health Canada guideline for lead in drinking water.

2019 Planned Actions - Highlights

- Advance Source Water Protection Plan actions, complete Drought Vulnerability and Risk Assessment, and further the Water Utility's climate resilience activities.
- Continue work with the CMRB to ensure future regional water servicing.
- Participate in the Bow River Working Group feasibility study of major infrastructure for flood and water supply management.
- Advance Council's Integrated Watershed Management Directive through improved policy and guidebook development in the Next 20 (MDP) update.
- Adjust the existing lead management program to comply with new Health Canada Guidelines on lead.

Water Quality Index - Calgary's source water quality



Strategic Alignment

One Calgary 2019-2022: We will continue to work with stakeholders to reduce risks to our source water, all to ensure the quality and quantity of The City's drinking water.



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Goal 2: USE WATER WISELY

UCS2019-0654
Attachment 1

Background: Story Behind the Baseline

Goal: The Water Efficiency Plan (WEP) calls for the same amount of water to be withdrawn from the river in 2033 as was taken out in 2003.

Risks: Population growth continues to place increased demands on the rivers and Calgary's treatment plants. Water conservation actions remain critical to reduce per capita consumption. A focus on regional servicing agreements, including actions under the Calgary Metropolitan Region Board, will require The City to adapt service delivery, strategies and infrastructure.

What We Did: 2018 Highlights

- Focus on residential leak detection education, high water use messaging, outdoor water use and peak day specific communications.
- Despite a service population increase in Calgary and region, water withdrawn from the river remained below the 2003 benchmark and decreased slightly from 2017.
- Overall water use was 362 litres per capita per day (lpcd), representing a 30 per cent decrease since 2003 and continued progress toward our 2033 target of 350.
- Residential water demand was 210 lpcd in 2018, meeting the corporate 2020 sustainability target for single family residential water use of 201 lpcd.
- Highest total water use in a single day occurred on July 7 and remained below the current capacity of The City's water treatment plants.
- Continued to identify and fix watermain leaks, saving 119,000 litres per day in 2018.

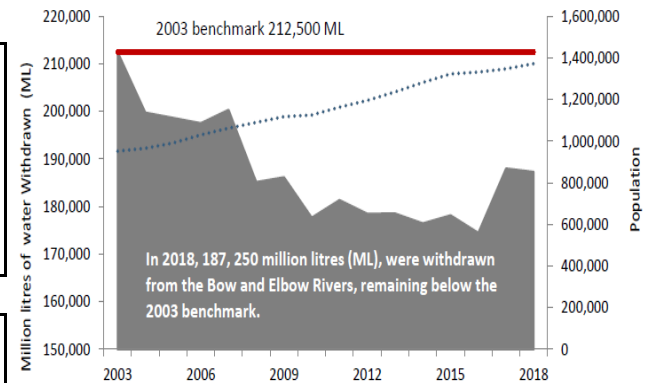
2019 Planned Actions - Highlights

- Expand water efficiency programs for business and multi-family customers.
- Begin work on revising Water Efficiency Plan targets and goals.
- Align water efficiency programming, demand forecasting and infrastructure planning.
- Continue to provide education and outreach to customers about the Water Utility, leaks and high-water consumption, address peak day demand through increased outdoor water use programming and communications.

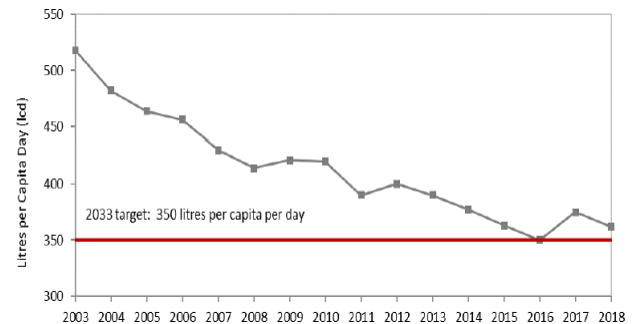
Strategic Alignment

One Calgary 2019-2022: We will continue to work with stakeholders to reduce risks to our source water, all to ensure the quality and quantity of The City's drinking water.

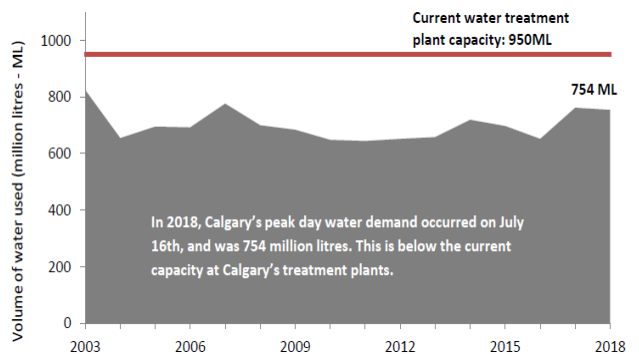
Annual water withdrawal from rivers relative to population



Calgary's total per capita water demand trend



Peak day demand: Maximum volume of water used in one day





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Goal 3: KEEP OUR RIVERS HEALTHY

Background: Story Behind the Baseline

Goal: The City's Approval to Operate, Total Loading Management Plan and Stormwater Management Strategy aim to reduce river pollutant loadings. The City's Riparian Action Program aims to improve the health of areas near rivers.

Risks: Water quality and river health are impacted by pollutants entering our rivers. Managing pollutant loadings and changes to our regulatory environment requires investment in maintenance and infrastructure upgrades.

What We Did: 2018 Highlights

- Major upgrades to the Bonnybrook Wastewater Treatment Plant continued, including a flood protection berm and four new secondary clarifiers.
- Sediment and phosphorus pollutant loadings from stormwater and wastewater remained below provincial and City limits.
- The Bowmont East Stormwater Quality Retrofit pond became operational in 2018, which will reduce sediment entering the Bow River from this catchment in NW Calgary by approximately 50 per cent.
- Continued to advance the Riparian Action Program, with 25 bioengineering and riparian planting projects underway or completed in 2018. Field monitoring work began to evaluate overall Riparian health trends.

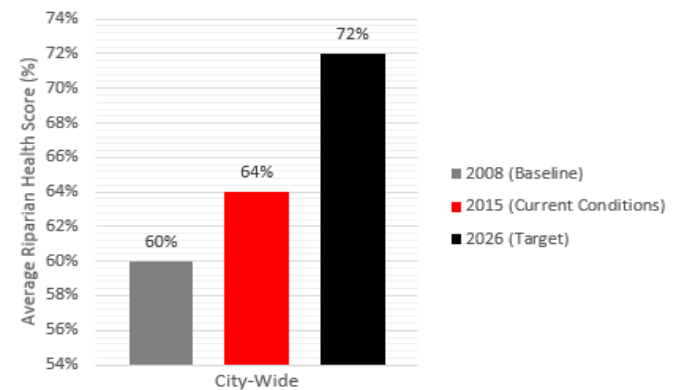
2019 Planned Actions - Highlights

- Advance the Riparian Action Program: riparian monitoring program, site restoration and continue outreach.
- Continue stakeholder engagement to inform an update of The City's Stormwater Management Strategy.
- Negotiate Wastewater Approval to Operate 2018-2028. Continue wastewater treatment plant upgrades.
- Continue stormwater pond modifications and improvements in three communities.
- Complete next phase of watershed health index reporting.

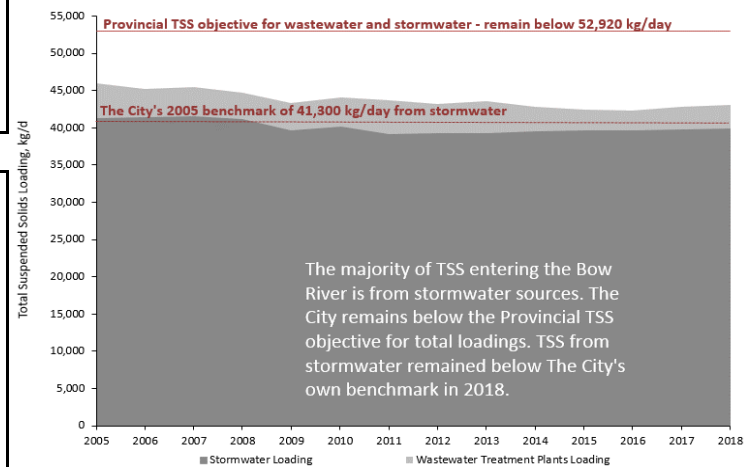
Strategic Alignment

One Calgary 2019-2022: The City will continue to work with regulators and make additional investments in wastewater treatment upgrades to meet regulatory compliance and protect the health of the river. We will strengthen our resiliency to climate change by considering climate change parameters into capital design and operating activities. The City will make investments in flood resiliency and improvements to river and riverbank health.

City-wide riparian health scores



Total Suspended Solids (TSS) to the Bow River





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Goal 4: BUILD RESILIENCY TO FLOODING

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Attachment 1

Background: Story Behind the Baseline

Goal: The City continues to advance flood resiliency, including implementing actions in the Flood Resilience Plan and reducing risk of local stormwater flooding through the Community Drainage Improvement (CDI) program

Risks: Another major flood in Calgary is likely to occur, and could cause significant damage to the downtown business core, public and private property, and disrupt critical systems and services. The costs of local flooding will continue until projects are completed.

What We Did: 2018 Highlights

- Centre Street Bridge and West Eau Claire flood barrier projects completed.
- Delivered 5 year anniversary flood readiness campaign.
- Community engagement for flood mitigation in Sunnyside and Bowness started in 2018.
- The Provincial Springbank project is undergoing Federal environmental assessment.
- The City continues to support the Bow River Working Group for upstream mitigation options on the Bow.
- Mitigation completed or ongoing has reduced exposure to river flood damage by about 30%.
- The Community Drainage Improvement Program is on track, and the Lot Drainage Improvement Project, intended to help reduce stormwater flooding on private properties, continued.

2019 Planned Actions

- Continue to build resiliency to flooding through engaging with flood-affected community members on potential mitigation projects, delivery of key flood mitigation infrastructure, and reviewing and updating The City's flood-related policies.
- Advocate with the Province on the need for upstream mitigation and funding of flood mitigation projects.
- Support delivery of Community Drainage Initiative program by investing in stormwater infrastructure improvements in communities with the highest risk of local stormwater flooding.

Strategic Alignment

One Calgary 2019-2022: The City will make investments in flood resiliency and improvements to river and riverbank health and collaborate with citizens and partners on flood mitigation and preparedness. Climate Resilience Plan: preparing for increasing risks of flooding, drought, and declining water supply.

Progress on the 27 Expert Panel recommendations

