

WATERSHED MANAGEMENT PLANNING UPDATE 2014

EXECUTIVE SUMMARY

From the river to the tap – and back again, The City is dedicated to protecting and managing precious water resources. The City demonstrates leadership of this holistic approach by considering the watershed in its entirety in order to protect our water supply, use water wisely, keep our rivers clean and be good neighbours through our work with regional partners.

The City's 30-in-30 water efficiency goal aims to accommodate Calgary's future population growth with the same amount of water removed from the river as in 2003. Through work with our customers and improvements within our own operations, The City is on track to reach the goal to reduce water consumption city-wide by 30 per cent over 30 years.

The goal of the City's Stormwater Management Strategy is to maintain sediment loadings to our rivers at or below 2005 levels regardless of how much Calgary's urban landscape grows. The City is on track to meet this goal through measures such as new stormwater ponds, engineered wetlands and innovative stormwater management practices.

ADMINISTRATION RECOMMENDATION(S)

That the SPC on Utilities and Corporate Services receive this report for information.

PREVIOUS COUNCIL DIRECTION / POLICY

On 2005 November 07, Council adopted the 30-in-30 Water Efficiency Plan (UE2005-55) and Stormwater Management Strategy (UE2005-35) and requested annual progress updates.

On 2007 July 16, Council approved the Nose Creek Watershed Water Management Plan (UE2007-22) and on 2008 September 08, Council approved the Bow Basin Watershed Management Plan (UE2008-25) and the Elbow River Water Management Plan (UE2008-26).

At the 2009 September 28 Regular Meeting of Council, Council approved the Calgary Transportation Plan (CTP) and Municipal Development Plan (MDP), which include policies to protect the watershed.

On 2011 March 01, Council received the 2020 Sustainability Direction (C2011-20) for information which includes targets for water quality and quantity.

On 2013 May 29, the SPC on Utilities and Corporate Services received the Watershed Management Planning Annual Update (UCS2013-0046) report for information.

On 2013 July 24, the SPC on Utilities and Corporate Services received the Riparian Strategy (UCS2013-0048) report for information.

On 2014 March 19, the SPC on Utilities and Corporate Services received the Watershed Management Planning Update 2013 (UCS2014-0108) report for information.

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BACKGROUND

As the city continues to grow and regional impacts on our watershed are increasing, an integrated watershed management approach is necessary to ensure water quality and supply for the future. Watershed management planning programs aim to mitigate these challenges through a holistic approach by protecting source water quality and quantity, being efficient with water use, managing stormwater to keep our rivers clean and working with partners in the region.

The City has a number of guiding strategies and plans, both existing and in development, that articulate desired outcomes and key performance goals to monitor progress. This includes the Water Efficiency Plan, Stormwater Management Strategy, and Total Loading Management Plan. In recognition of the challenges of climate change, rapid growth in Calgary and the region, and a closed basin to new water allocations, The City must proactively reduce risks to its water supply and is developing a Water Supply Master Plan. This plan will characterize and evaluate a spectrum of current and future risks facing The City's water supplies and integrate actions of the Water Efficiency Plan, The City of Calgary Drought Management Plan, water infrastructure planning and regional servicing.

The City also aligns with and actively participates with regional partners to collaborate to manage this precious resource for all users. The City is actively involved in a number of watershed stewardship groups in the region including the Bow River Basin Council, Elbow River Watershed Partnership and Nose Creek Watershed Partnership to protect water resources and advance stewardship opportunities.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

To measure progress on watershed management planning, key performance goals are monitored based on the Water Efficiency Plan and Stormwater Management Strategy.

The City is on track to achieve the 30-in-30 goal to accommodate Calgary's continuing population growth with the same amount of water removed from the river as in 2003.

- In 2014, annual water diverted from the Bow and Elbow Rivers totaled 176,445 million litres (ML), remaining below the 2003 benchmark of 212,500 ML.

Total suspended solids (TSS) entering the Bow River remain below 2005 levels.

- In 2014, the estimate of TSS sediment loadings from stormwater to the Bow River is 39,520 kg/day which is below the 2005 level of 41,300 kg/day.

In addition, indicators for water efficiency are tracked to determine how far along The City is in reaching the 30-in-30 goal.

- Universal water metering - The program has limited residential flat-rate accounts remaining (approximately 9,700), bringing metering to 97 per cent.
- Per capita demand - Calgary's overall water use (including residential, commercial and municipal demand) was 389 litres per capita per day (lpcd), well on track to meet the 2033 target of 350 lpcd. Of the overall water use, single family residential demand was estimated to be 220 lpcd.

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- Peak day demand - Calgary's highest total water use in a single day in 2014 was 719 ML on July 29, remaining below the target value of 950 ML.
- Non-revenue water - Non-revenue water is reported as an Infrastructure Leakage Index (ILI) benchmarked between 3.1 and 3.9. The ILI was measured in 2013 at 4.03, slightly outside the benchmark range. Work will continue in 2015 to further investigate sources of non-revenue water and areas for improvement.

The City's Stormwater Management Strategy and Total Loading Management Plan guide The City's actions to maintain river health and meet regulatory commitments. Major stormwater quality retrofit projects, innovative stormwater management practices, flood mitigation and riparian management contribute to protecting the health of our watersheds by reducing the rates and volumes of stormwater runoff and controlling sediment loads to the river.

Numerous activities throughout 2014 have contributed to our watershed management goals as detailed in Attachment 1. Information will also be made available to Calgarians through the 2014 Water Report on calgary.ca (Attachment 2).

Stakeholder Engagement, Research and Communication

Stakeholder engagement, research and communication are all critical elements to achieve watershed management goals. The City works internally along with numerous key external stakeholders including residents, community and regional partners, the development industry, land owners, and the Province. Through the continued use of surveys, focus groups and a strong presence in the community, The City continues to learn more about its customers and their level of awareness and expectations to inform targeted programs to improve performance.

Strategic Alignment

This report aligns to the Municipal Development Plan, the 2020 Sustainability Direction and the Healthy and Green Council Priority in the 2015-2018 Action Plan. The Utilities and Environmental Protection Department works with the community, the region and The Corporation to achieve land, air and water goals to help conserve, protect and enhance the environment.

Watershed planning initiatives are aligned to the Municipal Development Plan and Calgary Transportation Plan, provincial Water for Life strategy and regional watershed management plans. The City's actions also ensure compliance to The City's Approval to Operate from Alberta Environment and Sustainable Resource Development.

Social, Environmental, Economic (External)

Encouraging the wise use of water fosters a culture of sustainability in Calgary and responds to Calgarian's expectations of The City to promote water conservation. Watershed management programs address public safety, protection of property, public health and increase understanding about the importance of protecting our watersheds.

Through watershed management programming and projects, source water is protected, river water withdrawals are reduced, and sediment loadings to the river are managed to maintain

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river water quality. The City also addresses impacts outside of our municipal boundaries in collaboration with regional partners.

Secure and reliable water sources are important to the city and region's economic growth and vitality. Water efficiency measures can defer infrastructure expansions and help offset increases in utility rates. Ensuring sediment loadings from stormwater to the Bow River stay below loading limits is necessary to allow for continued development.

Financial Capacity

Current and Future Operating Budget:

Program initiatives to achieve the watershed management planning goals are incorporated in the 2015-2018 Utilities budget.

Current and Future Capital Budget:

Program initiatives to achieve the watershed management planning goals are incorporated in the 2015-2018 Utilities budget.

Risk Assessment

As a growing city, Calgary faces significant challenges in managing its water resources. Integrated watershed management planning helps to evaluate and reduce long-term risks to water quality and quantity and meet regulatory commitments.

- The City's Approval to Operate includes the requirement to ensure our pollutant loadings to the Bow River remain below certain levels as part of The City's Total Loading Management Plan. New and/or increasingly stringent regulations and policies, such as The South Saskatchewan Regional Plan, require The City to adapt its planning, monitoring, operations and infrastructure. The City maintains a close working relationship with regulators to help inform and anticipate upcoming regulatory changes.
- Future climate variability, growth and a closed basin to new water allocations present water supply risks for The City. The City continues to review water efficiency programs and seek new opportunities such as water reuse to be as efficient with water resources as possible. Development of a Water Supply Master Plan will help further define current and future risks facing The City's water supplies and recommend a path forward.

REASON(S) FOR RECOMMENDATION(S):

This report is provided for information as an update on progress of watershed management planning.

ATTACHMENT(S)

1. Watershed management planning 2014 progress
2. 2014 Water Report