

WATERSHED MANAGEMENT PLANNING UPDATE 2013

EXECUTIVE SUMMARY

From the river to the tap – and back again, The City is dedicated to protecting and managing precious water resources. The City is proud of the holistic approach it takes to consider the watershed in its entirety. Key priorities include reducing upstream risks to our water source, reducing Calgary's impacts on the rivers (Stormwater Management Strategy and Total Loading Management Plan) and conserving this limited resource through its responsible and efficient use (30-in-30 Water Efficiency Plan).

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

The City's stormwater management goal aims 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.

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. To achieve this goal The City works with our customers to reduce water consumption city-wide by 30 per cent over 30 years. The City is on track to reach this goal.

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 2012 June 27, the SPC on Utilities and Corporate Services received the Riverbasin and Watershed Management Workplan (UCS2012-0229) for information.

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

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BACKGROUND

Watershed protection in Calgary aligns to the provincial Water for Life strategy and supports regional Watershed Management Plans (Bow Basin, Elbow River and Nose Creek). Water quality protection is guided by The City's Approval to Operate to manage sediment and pollutant loading to the Bow River. As well, given challenges such as a finite water supply, a growing population in the city and the region, and impacts of climate change, The City is managing Calgary's water use to ensure a reliable and sustainable water supply in the future.

As the city continues to grow and regional impacts on our watershed are increasing, an integrated water 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, protecting waterways, managing stormwater and by being efficient with water use. As well, given the uncertainty of climate change impacts to our source water and infrastructure, it is imperative that resiliency be built into water management planning.

Urbanization within Calgary can have a significant negative impact on the river and increases pressure on our source water supply. As the city continues to grow, Calgary faces challenges to minimize impacts from redevelopment and new development to our creeks and rivers as well as developing approaches to reduce impacts from the existing built form. Since 2003, nearly 200,000 new Calgarians were connected to Calgary's water supply and by 2033 the population is expected to increase to 1.5 million. In addition, the regional population has more than doubled from 30,000 to over 70,000 in the last ten years increasing the demand on Calgary's potable water supply.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

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

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

- In 2013, the estimate of TSS sediment loadings from stormwater to the Bow River is 39,300 kg/day which is below the 2005 level of 41,300 kg/day.

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 2013, annual water diverted from the Bow and Elbow Rivers totaled 178,530 million litres (ML), remaining below the 2003 benchmark of 212,500 ML.

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 is on track with approximately 11,350 residential flat-rate accounts remaining, bringing metering to 97 per cent.
- Per capita demand - Calgary's overall water use (including residential, commercial and municipal demand) was 403 litres per capita per day (lpcd), which is below the projected value of 448 lpcd. Of the overall water use, single family residential demand was estimated to be 231 lpcd.

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- Peak day demand - Calgary's highest total water use in a single day in 2013 was 658 ML on September 2, 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 in 2009. The ILI was measured in 2012 at 3.13, within the 2009 benchmark range.

A number of strategies are used to deliver on watershed management goals and key 2013 achievements are detailed in Attachment 1. Information was also made available to Calgarians through the 2013 Water Report on calgary.ca (Attachment 2).

Stakeholder Engagement, Research and Communication

Building on the strategies employed to protect watersheds, stakeholder engagement efforts are crucial to build support and are on-going through the implementation of watershed management planning. Key stakeholders include citizens, The City's regulator, community and regional partners, environmental groups, the development industry, large property/land managers, industrial, commercial and institutional customers and City staff. Through the continued use of surveys, focus groups and a strong presence in the community, The City continues to learn more about its customers, their level of awareness and promote targeted engagement of customer programs.

Strategic Alignment

This report aligns to the Municipal Development Plan, the 2020 Sustainability Direction and the 2012-2014 Utilities and Environmental Protection (UEP) Business Plan - UEP works with the community, the region and the Corporation to achieve land, air and water goals to help conserve, protect and enhance the environment.

Social, Environmental, Economic (External)

This report has been reviewed for alignment with The City of Calgary's Triple Bottom Line Policy Framework.

Encouraging the wise use of water fosters a culture of sustainability in Calgary and a majority of Calgarians expect water conservation programs from The City. 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, river water withdrawals are reduced and less energy is used in the treatment and distribution of drinking water. Stormwater management projects reduce sediment loadings to the river and maintain river water quality and watershed management planning ensures that Calgary's impacts are considered beyond the municipal boundaries.

Secure and reliable quantities and quality of water are important to the city and region's economic growth and vitality. Individual water management can defer infrastructure expansions and help offset increases in utility rates. Ensuring sediment loadings from stormwater to the Bow River stay below the provincially regulated loading limit is necessary to allow for ongoing urban development.

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Financial Capacity

Current and Future Operating Budget:

Program initiatives to achieve the watershed management planning goals are incorporated in the 2012-2014 Utilities budget. Financial planning for the next business planning and budget cycle is underway and there may be funding implications with respect to these programs that will be considered as part of the 2015-2018 Action Plan.

Current and Future Capital Budget:

Program initiatives to achieve the watershed management planning goals are incorporated in the 2012-2014 Utilities budget. Financial planning for the next business planning and budget cycle is underway and there may be funding implications with respect to these programs that will be considered as part of the 2015-2018 Action Plan.

Risk Assessment

As a growing city, Calgary faces significant challenges in managing its water resources. Watershed management planning programs aim to mitigate these challenges by protecting source water quality and quantity, protecting waterways, managing stormwater and by using water efficiently. Programs are continuously improved through an adaptive management model that ensures long-term watershed management risks are mitigated.

- The City's Approval to Operate includes the requirement to ensure our pollutant loadings to the Bow River remain below certain limits as part of The City's Total Loading Management Plan. Increasingly stringent regulations and policies require The City to adapt its planning, monitoring, operations and infrastructure.
- Population and economic growth for Calgary and the surrounding region are supported with a limited water supply from the Bow and Elbow Rivers. As the South Saskatchewan Basin is closed to any new allocations, in addition to increasing water efficiency and managing issues with other water users, water reuse from stormwater or reclaimed water continues to be explored.
- Future climate variability including river flooding and drought will have an impact on water supply and river water quality. With future uncertainties, it is imperative that resiliency be built into water management schemes.
- Water management strategies provide proven and cost-effective solutions to ensure a reliable and high quality water supply in the future. Water resource planning and programs are continuously improved through an adaptive management model that ensures long-term risks are identified and mitigated.

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 2013 progress
2. Water Report