

**Utilities & Environmental Protection Report to
SPC on Utilities and Corporate Services
2019 December 18**

**ISC: UNRESTRICTED
UCS2019-1539**

City of Calgary Water Security

EXECUTIVE SUMMARY

The purpose of this report is to provide Council with an update on water security for The City of Calgary (The City). Water security is having enough safe water for human well-being, ecosystem resilience and economic activities now and in the future. Water security also ensures a suitable supply of water exceeds demand.

Today, The City has a secure water supply serving 1.3 million people daily. The security of this service is achieved by managing Calgary's source water supply, managing demand through water conservation and investing in operational efficiencies in our water treatment and distribution systems. Our future water security outlook will deteriorate if we do not respond to three key risks: a changing climate, regulatory and water licence limits, as well as population and economic growth pressures.

This report outlines six priority actions to address these risks to ensure water security is maintained into the future:

- Develop future water supply scenarios
- Address water licence limits on high demand days
- Ensure collaboration on a regional solution for water security
- Advocate for new upstream reservoir on the Bow River
- Finalize the Drought Management Plan
- Finalize the Source Water Protection Plan and Policy

Council's awareness and support of these actions and advocacy with other orders of government and watershed stakeholders will advance water security for Calgarians and The City's water customers.

ADMINISTRATION RECOMMENDATION:

That the Standing Policy Committee on Utilities and Corporate Services recommend that Council direct Administration to:

1. Report on water security annually as part of the Water Utility update to the Standing Policy Committee on Utilities and Corporate Services, and;
2. Report on the Source Water Protection Plan and Policy by end of Q2 2020.

PREVIOUS COUNCIL DIRECTION / POLICY

On 2019 May 13, the Water Utility (The Utility) facilitated a Strategic Meeting of Council (C2019-0648) on Integrated Watershed Management, which included a recommendation:

- (1) That Council, using today's discussion as input, direct Administration to provide an update to Council with short and long-term recommendations, through the SPC on Utilities and Corporate Services, on The City of Calgary's Water Security Strategy no later than Q4 2019.

BACKGROUND

The United Nations and governments around the world, including Canada are highlighting water security as a critical global issue. Central to this issue is the question: "*Will there be enough*

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water to meet the needs of citizens, the environment, and ensure a sustainable economy in the future?". The City has a secure water supply serving more than 1.3 million people daily. To maintain this water secure future, The Utility is carefully managing The City's water licences to accommodate growth for the next two decades within the limited water resources in Southern Alberta. However, with a changing climate and a growing population Calgary is not immune to water security challenges. Actions taken today with a view to the future will work towards a water secure future for generations to come.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

Water security is maintained as long as a suitable supply of water exceeds demand. Recognizing there are water supply limitations in the region, The Utility has invested significantly in water treatment and distribution infrastructure as well as water efficiency programming for customers. Through these investments, The City continues to protect and manage water resources, and delivers safe, clean and reliable drinking water to one in three Albertans.

Over the past decade, three risks have emerged that challenge the balance of water supply and demand. The following risks require The City to take an integrated and adaptive long-term management approach to ensure future water security:

- A changing climate, which introduces uncertainty regarding water quality and quantity in the future, including disruptive events like drought;
- Regulatory and water licence limits that impact river water availability; and
- Population and economic growth pressures that change Calgary's balance of water supply and demand.

To date, The Utility has managed these risks through infrastructure investments, programs and policies that achieve water security outcomes in water supply (the amount and quality of water supply), water demand (how much water customers use) and systems operations (the infrastructure that delivers the water service) (Figure 1).

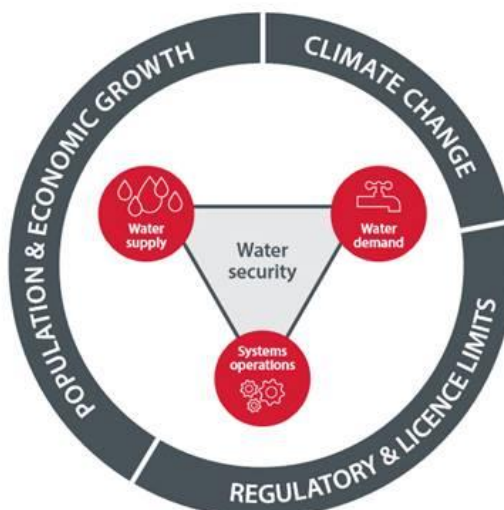


Figure 1. Key risks and water security elements

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Examples of these programs and policies include implementation of the Source Water Protection Plan, development of an updated Drought Management Plan, and collaboration with the Calgary Metropolitan Region Board (CMRB) on regional planning. The Utility has also invested in the new Glenmore Gates for the Glenmore Reservoir and advanced treatment technologies to improve water security.

Focused efforts on prioritizing new and existing work will be critical to managing the risks identified in an integrated and fiscally responsible manner.

One Calgary One Water: A framework for Calgary's water secure future (Attachment 1) expands on the top risks identified that will impact water security now and in the future. The Framework also highlights The Utility's key initiatives and the following near-term actions to manage risks:

- Develop future water supply scenarios
- Address water licence limits on high demand days
- Ensure collaboration on a regional solution for water security
- Advocate for a new upstream reservoir on the Bow River
- Finalize the Drought Management Plan
- Finalize the Source Water Protection Plan and Policy

Council's awareness and support of these actions and advocacy with other orders of government and watershed stakeholders will advance water security for our customers. Administration will provide an annual progress update to Council, which will include a report back on these six actions.

Stakeholder Engagement, Research and Communication

Administration engaged Council at the 2019 May 13 Strategic Session to explore issues of water security. Through open-ended dialogue, an interactive water supply exercise and presentations from subject matter experts, Councillors were able to explore water security and its connection to city-building. This input was used in developing this Framework.

The CMRB and its members are key stakeholders in regional water supply and servicing discussions. The City of Calgary continues to participate in building a sustainable regional growth and servicing plan.

Strategic Alignment

One Calgary One Water: A framework for Calgary's water secure future aligns to:

- The Government of Alberta's *Water for Life Strategy* that identifies goals of safe, secure drinking water supply, healthy aquatic ecosystems and reliable, quality water supplies for a sustainable economy.
- Council's One Calgary directive: Integrated watershed management is essential to protect public health and the environment, while strengthening our resiliency to a changing climate. Calgary must develop our communities with a focus on achieving future water security and a sustainable water supply.
- Corporate plans including the Climate Resilience Strategy (2018) and The Resilient Calgary Strategy (2019).

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Social, Environmental, Economic (External)

Water security is an essential component of livability in any urban environment. A water secure future will make life better every day for citizens, communities and businesses. Water security is critical for public health and strengthens the ability to attract and retain businesses, promote recreation and tourism, benefit from healthy watersheds and continue to live in safe and resilient communities.

Financial Capacity

Current and Future Operating Budget:

Strategic priorities and actions to achieve water security priorities are incorporated in the 2019-2022 Utilities operating budget.

Current and Future Capital Budget:

Additional capital budget is not required during this business cycle.

Risk Assessment

Although The Utility is confident in Calgary's water security today, there is risk of future demand for water exceeding the supply. This potential could jeopardize The City's levels of service, result in increased programming and infrastructure costs, and limit when and where water services can be delivered to new customers. Proactive near-term actions, refreshed as new data becomes available, will help mitigate these risks.

Due to the various stakeholders involved in water security, there continues to be uncertainty in how this issue will be addressed more broadly. Current provincial support for climate change research and initiatives is limited. The implications of the CMRB's Regional Growth and Servicing Plans for Calgary's water security are not yet determined. The future of Calgary's water licencing and regulatory environment requires action to ensure access to The City's full water licences. If these or other risks to Calgary's water security require urgent attention from Council, we will communicate with Council outside of the Annual Water Utility Update.

REASON(S) FOR RECOMMENDATION(S):

1. The One Calgary One Water: A framework for Calgary's water secure future is needed to influence and align with municipal, regional, and provincial policies and regulations as the framework articulates The City of Calgary's commitment to specific actions that advance water security.
2. Administration is actively managing risks to water security and will provide Council updates on progress through the Annual Water Utility Update.
3. Council support is needed to ensure source water protection is a consideration in City and regional planning and development decisions.

ATTACHMENT(S)

1. Attachment 1 – One Calgary One Water: A Framework for Calgary's Water Secure Future