

# Water Conservation Strategy Update

## ISSUE

The City of Saskatoon (City) has identified water conservation as an important measure to defer infrastructure costs, reduce energy and greenhouse gases, and increase water system resiliency. Water and wastewater treatment accounts for a third of the total corporate emissions annually, and the [Low Emissions Community Plan](#) (LEC) includes two actions related to water conservation that are required to meet the City's greenhouse gas (GHG) reduction targets.

The Water Treatment Plant is designed to meet typical peak summer usage and water usage is continuously monitored. However, prolonged hot weather and drought conditions can strain the water system and climate change is increasing the likelihood of experiencing these conditions. The [Local Actions Climate Projects & Possible Impacts](#) report identifies increased demand on the water and wastewater systems as a high risk.

There is also a concern that the impacts of climate change and rising energy prices disproportionately impact lower income communities, and at the same time, water and energy conservation programs are mostly accessed by higher-income households. Low- and moderate-income households may face barriers that make it difficult to access programs including access to credit, split incentives between landlords and tenants, participation requirements, outreach and awareness, and other programmatic barriers.

To address these issues, a Water Conservation Strategy (the Strategy) is being developed to outline a comprehensive and prioritized list of actions to help reduce peak-summer demand and overall water use, reduce emissions related to treating and pumping water, and consider equity and serving those who have been structurally excluded. This report provides an update on the Strategy including the near-term priorities and resources needed for an ongoing water conservation program.

## BACKGROUND

A 2011 report from the Saskatoon Environmental Advisory Committee recommended that the City pursue water conservation, including implementing a low-volume toilet rebate program and developing “new programs and incentives for water conservation”.

At its meeting held in April 2016, City Council resolved:

- That a rebate program for indoor plumbing fixtures be considered in the 2017 Business Plan and Budget deliberations as part of the Utility Business Line;
- That the Administration continue to develop protocols for outdoor watering schedules based on annual monitoring of peak demand at the Water Treatment Plant;
- That the Administration report back on how the Advanced Metering Infrastructure (AMI) system will encourage water conservation; and

- That the 'Be Water Wise' campaign continue and a plan for 2017-2019 be developed for the 2017 Business Plan and Budget deliberations as part of the Utility Business Line.

In September 2019, the LEC Plan was completed which sets out 40 emission-reduction actions including two that would together reduce corporate and community water use. Action 25 in the plan is a 5% reduction in absolute water demand by 2026 through efficiency, monitoring, and leak reduction. Action 26 in the plan is a 20% outdoor and 30% indoor water use reduction by 2050 through residential and commercial education and water efficiency incentive programs.

### CURRENT STATUS

The City has several water conservation initiatives in place including:

- [Healthy Yards](#), focused on outdoor water conservation as an expansion to [Be Water Wise](#), includes educational materials, rain-barrel and compost-bin rebates, and a focus on low-water gardening (i.e. mulching, composting, etc.) to create healthy soils that hold water.
- The inclining-block residential rates incentivize water conservation while also supporting affordability by maintaining lower water rates for basic levels of consumption.
- \$10,000 was added to the [Environmental Grant](#) starting in 2017 for projects related to protection and conservation of water resources. \$50,000 has been awarded to support 13 projects in the five years that the water conservation grant has been offered. \$500,000 has been leveraged from the community and other organizations for water conservation.
- [Energy Assistance Program](#), in partnership with SaskPower, provides energy and water efficiency education and free installation of energy and water saving measures to residents (both renters and owners) that have not traditionally been able to access other efficiency programs.
- [Advanced Metering Infrastructure \(AMI\)](#) is an automatic system that collects water-use data several times a day and transmits it wirelessly over a secure network to a central data-management system. Until AMI, all of Saskatoon's water meters were read manually, often just a few times per year. Residential and commercial customers had no up-to-date information about day-to-day water use or how their choices impacted their bills. Also, water leaks could go undetected for months, resulting in large losses and bills.
- The [Home Energy Loan Program](#) was approved by City Council in 2021 and is expected to launch in September. This program provides low-interest loans to residents for energy efficiency, renewable energy, and water improvements to their homes.
- An irrigation pilot is underway to improve park watering efficiency by using weather data, AMI data, and irrigation software to control irrigation systems and replace only the amount of water lost from evapotranspiration. This can help maintain healthy turf, prevent overwatering, and minimize water use. This pilot could lead to upgrades throughout the park irrigation system and optimized water use.

To date, water conservation initiatives have been pursued in an *ad hoc* manner, without the guidance of an overarching strategic plan.

### **DISCUSSION/ANALYSIS**

#### Water Conservation Strategy

The Strategy provides a roadmap of actions to achieve water conservation outcomes such as the reduction of peak summer use to ease demands on capacity-limited infrastructure, GHG reductions, improved water affordability, and capital-cost management. The long-term Strategy aims to reduce water use through a series of initiatives for indoor and outdoor use in all sectors, including residential; industrial, commercial, and institutional sectors; and the City itself.

There are many reasons to conserve water, including:

1. To help households and businesses moderate their water bills and relieve utility burden to those most impacted by cost increases. Place equity and opportunity at the forefront of water conservation, making the program accessible.
2. Reduce the City's corporate GHG emissions by 80% (below 2014 levels) by 2050. Emissions related to treating and pumping water make up about a third of overall City emissions and can be reduced with a combination of conservation, system efficiency, and use of renewable energy.
3. Increase our water systems' resilience. Prepare for a changing climate by reducing demand.
4. Possibly postponing major and costly upgrades to add capacity to Saskatoon's water and wastewater systems.

Initial planning identified completion of the Strategy in 2021, however, there are factors that require further consideration in the technical report before it is finalized and presented to Committee. Water use is currently at its lowest in a decade, with a 10% decline in 2019 and a continued downward trend, as shown below in Figures 1 and 2. In addition, coordination with the Strategy with Saskatoon Water's Long-term Capital Plan is also required, prior to delivery of the completed Strategy.

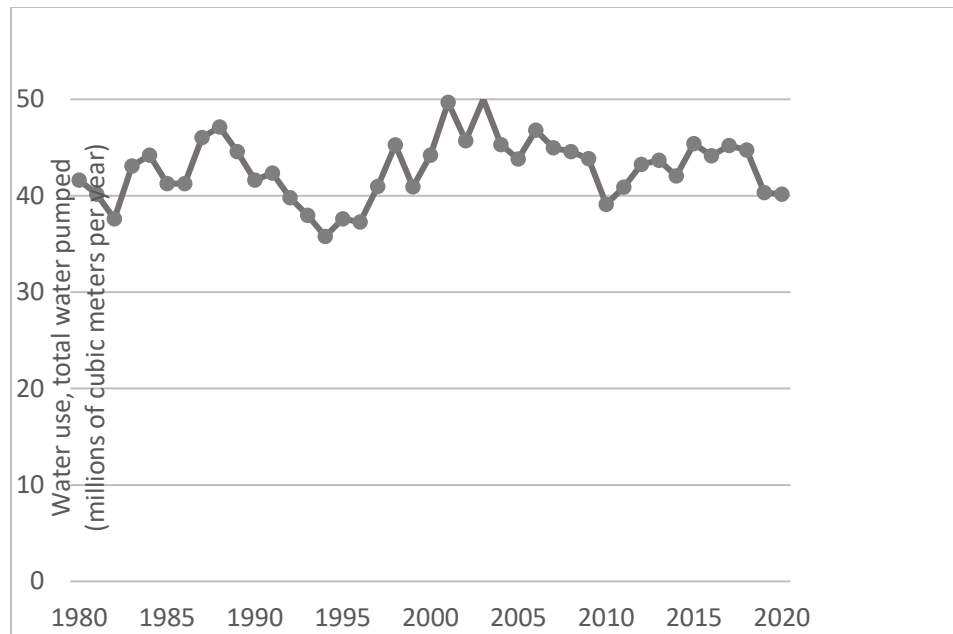


Figure 1. Total water pumped through Water Treatment Plant 1980-2020

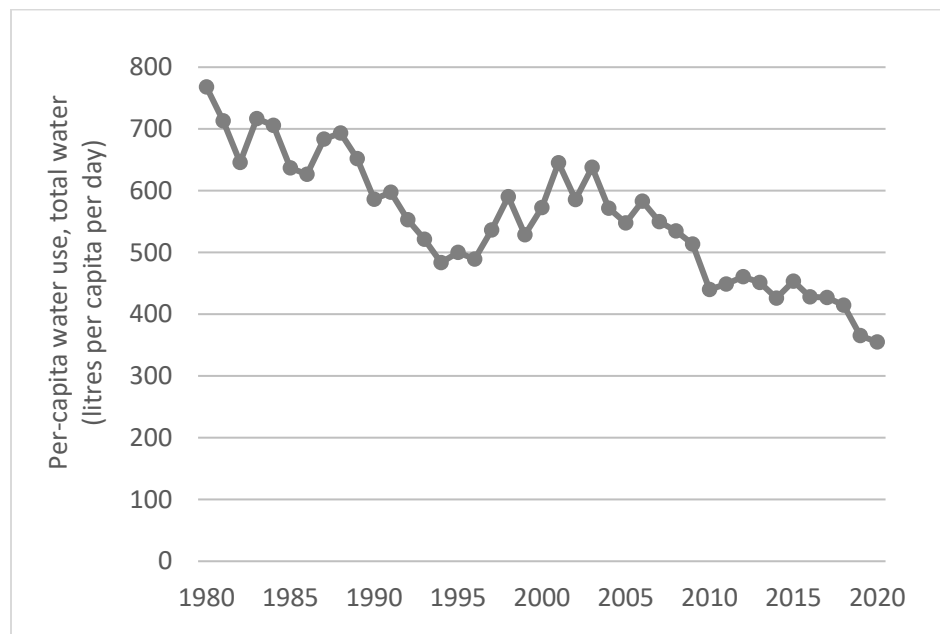


Figure 2. Saskatoon per capita water use 1980-2020

Public and internal stakeholder engagement on water conservation has revealed that improving City efficiencies, increasing the resiliency of our water system, and improving equity are priorities. While not finalized, the Strategy has been extensively developed and vetted, positioning it to recommend near-term priorities. Implementation of priority initiatives is expected to begin concurrently with the coordination and delivery of the final Strategy. Resources for this work are requested through the 2022-2023 capital budget.

### Implementation

Near-term priorities are described in Appendix 1 – Water Conservation Near-term Priorities.

Education is foundational to any work on water conservation and will be a component of most initiatives as well as a stand-alone program. Initiatives will aim to make it easier to view and compare water use through updates to water bills to make them easier to understand and the introduction of web-based tools such as online savings calculators, budgeting tools, and checklists.

The AMI web presentment is currently in development. By the end of 2021, internet tools will be available to customers to enable them to view their water usage data and potentially set threshold warnings or conservation goals. AMI also provides more detailed and timely data on water uses such as for single detached homes or, at the City, for park watering, fleet washing, or indoor office use. Such data will be valuable for efforts to select, plan, scale, target, monitor, and assess water-conservation initiatives.

Incentives are another important way to increase the likelihood of homes and businesses making improvements. However, there are challenges to relying on incentives and rebates as incentive programs are often tailored towards middle- and high-income households and risk leaving out the financially disadvantaged or structurally excluded groups within our community. Renters also may not have access to incentives and rebates due to landlords or condo boards not tracking individual use, leading to there being no incentive for the tenant to participate if the benefits stay with the property. In the 2017 Environmental Awareness survey, not owning the property was the second most-cited reason (next to cost) for not installing water-efficient appliances. For this reason, incentives are not being prioritized in the near-term, but will be important in the final Strategy, and will be tailored to low- and moderate-income households or those experiencing energy poverty.

Consideration for low-income and rental households, as well as equitable access to programs is important and stakeholder feedback emphasized working with non-profits and affordable housing providers to reach equity-deserving groups. The Administration plans to look for partnerships with affordable housing providers to facilitate water and energy upgrades.

Public engagement participants also felt the City should lead by example, and outdoor City water use has a high potential for return on investment. In addition to optimizing park watering noted above, spray pad improvements are being explored from both a conservation and equity lens.

### **FINANCIAL IMPLICATIONS**

Development of the Strategy has been funded from Capital Project P.02197 and there are some funds in P.02197 to begin implementing some near-term priorities, described in Appendix 1.

Previous budgets have included \$340,000 in recurring annual capital funding from the Waterworks reserve. The 2022-2023 Business Plan and Budget includes a request for \$150,000 in annual operating funding and capital funding of \$190,000. When combined, operating and capital total \$340,000 annually from the Waterworks reserve and as such the operating request is mill rate neutral.

### **PUBLIC ENGAGEMENT**

There is broad public support for water conservation within Saskatoon. A 2017 survey found that more than half of our residents' conserve water by taking shorter showers and reducing lawn and garden watering, and 71% had installed appliances or fixtures that use less water. Unfortunately, about half of respondents graded the City's conservation programs as fair or poor.

[Public engagement](#) was conducted from February 2020 to June 2021, in which public and industry surveys were conducted seeking feedback on prioritizing a list of initiatives that improve water conservation. Most industry (79%) and public (66%) participants view water conservation as important. The top reasons for conserving water amongst both groups were to reduce unnecessary water usage, caring for the environment, and reducing their water bill. Participants most frequently identified the top barriers in adopting water conservation methods in their home or business as not knowing whether they currently use too much water, the upgrades being too costly, they are unsure what to do or where to start, and there are few funding opportunities and resources.

Out of the proposed programs represented within the Strategy the community identified the following as their top programs:

1. Maximize watering efficiency in parks;
2. Residential toilet rebate;
3. Developing a grey-water strategy;
4. Increase naturalized areas in parks; and
5. Maximize efficiency of City facilities and operations.

### **TRIPLE BOTTOM LINE IMPLICATIONS**

The Water Conservation Program aligns with the City's sustainability priorities and helps the City achieve more Triple Bottom Line outcomes. Key benefits include:

- Environmental – Supporting climate change mitigation and adaptation by conserving water, reducing emissions related to treating water, and increasing resiliency and dependability of the water system.
- Social – Prioritizing equity and opportunity in program design, supporting affordability of water, preventing essential service disruptions by managing peak use.
- Economic – Finding and fixing leaks in the distribution system, improving City efficiencies by optimizing park watering and other uses, providing incentives for homeowners and businesses to conserve water.
- Governance – Helping the City achieve its climate change targets and commitments, addressing risks to the water system, positioning education and communication as a foundation, considering proven track record in other jurisdictions.

**OTHER IMPLICATIONS**

There are no additional implications or considerations.

**NEXT STEPS**

Strategy development will continue in alignment with the Long-term Water Capital Plan. In the interim, the Administration will continue to implement near-term priorities including working with the Parks Department to improve park watering efficiencies, working with Saskatoon Water to identify opportunities that benefit water system management, and working with the AMI team on the web-presentment communications plan and implementation to promote conservation.

**APPENDICES**

1. Water Conservation Near-Term Priorities

Report Approval

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