

Water Conservation, Efficiency and Productivity

Water Availability Engagement



Population growth, economic growth and water variability are challenging the water management system in Alberta. New policy and regulatory tools could be used to increase water availability for Albertans and optimize the water management system to better address these issues while continuing to protect the aquatic environment.

This document provides background information on just one type of water management opportunity identified through conversations with stakeholders. It is intended to spark ideas and generate conversation.

The Government of Alberta invites your feedback on any opportunity to increase water availability in the province.

Water variability

Demand management through water conservation, water use efficiency, and productivity is one of the key strategies that could be used to address water variability. Efficient water use can ensure users get the most out of every drop of water. Reducing demand can also delay or offset the need for building expensive water storage infrastructure.

Current situation

Water conservation tools and strategies can be adopted at multiple levels. Provincial level policies and rules such as Alberta's Water for Life policy and licensing requirements under the *Water Act* can set expectations and requirements around water use through licences.

Water conservation is any beneficial reduction in water use, loss, or waste.

Water efficiency is the accomplishment of a function, task, process, or result with the minimal amount of water feasible.

Water productivity is the amount of water required to produce a unit of any good, service, or societal value.

Municipal bylaws and programs such as water loss audits, watering schedules and per-capita water consumption targets can encourage and/or require residents within municipalities to reduce water use. Sectoral plans such as conservation, efficiency and productivity plans that were developed under Alberta's Water for Life strategy enable major water using industries to plan and set goals to reduce water use and improve water use efficiency.

Alberta's Water for Life strategy adopted the aspirational goal of improving water efficiency and productivity by 30% from 2005 levels by 2015. Alberta's seven major water using sectors voluntarily developed their own water conservation, efficiency, and productivity (CEP) plans to achieve this goal. In 2017, the Alberta Water Council reported that the Water for Life target was exceeded, with overall water use efficiency and productivity of Alberta's seven major water-using sectors improving by 32%.

The seven major water using sectors that worked voluntarily to develop and implement plans to meet Water for Life's 30% conservation, efficiency and productivity target:

- Chemical producers
- Downstream petroleum products
- Forestry
- Irrigation
- Upstream oil and gas
- Power generation
- Urban municipalities

Alberta's Water Conservation Policy for Upstream Oil and Gas Operations is a provincial policy that applies to the upstream oil and gas sector. Under this policy, non-water technologies, saline groundwater, recycled wastewater and deeper groundwater are preferred sources to high-quality surface sources. Oil and gas operators are required to assess the feasibility of using alternatives to high quality fresh water sources prior to applying for a water licence.

Municipalities in Alberta can adopt a variety of water conservation tools, including water use pricing, water use restrictions, water loss audits and public education campaigns. Alberta Municipalities provides a range of tools that can be and are used by municipalities in Alberta to conserve water.

Examples of water conservation measures

Recent years' drought conditions have prompted many jurisdictions, including Alberta, to adopt different kinds of water conservation measures. Tools include voluntary measures, mandatory requirements and market-based mechanisms.

Examples of voluntary measures

- Financial assistance for water efficient technologies
- Water conservation targets

Examples of mandatory approaches

- Province wide and/or area-specific mandatory water conservation targets
- Urban water use objectives based on indoor, outdoor, commercial, industrial and institutional and water loss efficient standards
- Sector or industry-based water use efficiency objectives or standards
- Mandatory water audits
- Installation and use of indoor and outdoor low flow appliances

Examples of market-based mechanisms

- Volumetric water pricing
- Sale of water rights

The opportunity

Alberta has made significant efforts and progress in water conservation, efficiency, and productivity, with opportunities to advance even further. Continuous reporting of water use and addressing any existing barriers in water use reporting could help strengthen these efforts. While water metering and reporting are practiced in Alberta, they are more established in other regions facing water variability and drought, such as California, Nevada, and Australia, where clear guidelines for water metering are in place. Although Alberta has good information on overall water allocations, there is room to improve the availability of detailed water use data to support future water management efforts.

Volumetric water use pricing is used in Alberta (by water utility providers), British Columbia, Saskatchewan, Quebec, Nevada, and Arizona to incent water use efficiency and conservation. In Alberta, municipalities have reduced total per capita water use by 23%, in part due to increased water metering and volumetric pricing. In Australia, national pricing principles were established as part of the National Water Initiative to promote water use efficiency and ensure sufficient revenues to support water delivery services. Some jurisdictions also provide financial assistance in the form of rebates or grant funding to adopt water efficient technologies and behaviours.

Other potential measures include simplifying the water allocation transfer system in Alberta, which may encourage greater water use efficiency, and moving water allocations between different uses.

We want to hear from you

Consider these questions on water conservation, efficiency and productivity before providing your feedback:

- What policy measures are most needed and effective to support behaviour change to increase water conservation, efficiency, and productivity? Individual and sector-specific actions and tools?
- What tools or systems can better support movement of underutilized or less productive uses of water to more productive uses or new users (e.g., water trading or transfers)?
- How can we effectively quantify the costs and benefits of water use within allocations, across uses and sectors, and across Alberta?
- Can the maximum use of available water (and making more water available) be achieved through conservation, efficiency, and productivity measures without impacting first-in-time first-in-right prior allocation principles?
- What are the pros and cons of voluntary, mandatory and market-based water conservation strategies?
- How should government consider the costs associated with implementing water conserving technologies?

Get engaged

Learn more about the Water Availability engagement and have your say at alberta.ca/water-availability-engagement