City of Kamloops

Water Conservation Plan 2025

APRIL 2025

Canada's Tournament Capital

The City of Kamloops acknowledges that we are located on Tk̓emlúps te Secwépemc territory, situated within the unceded ancestral lands of the Secwépemc Nation. We honour and respect the people, the territory, and the land that houses our community.

Front Cover: Travis Bonner Inside Cover: AdamDonnelly

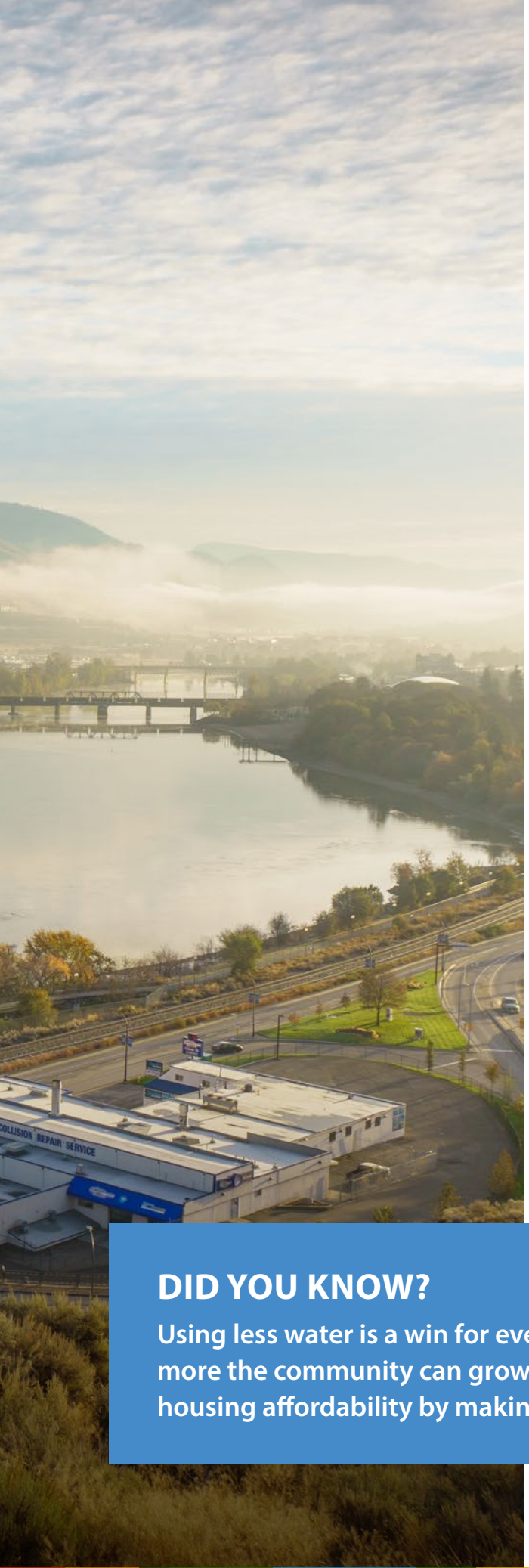


Table of Contents

DID YOU KNOW?

Using less water is a win for everyone. The more water we conserve, the more the community can grow with less infrastructure, which supports housing affordability by making development more cost-effective.

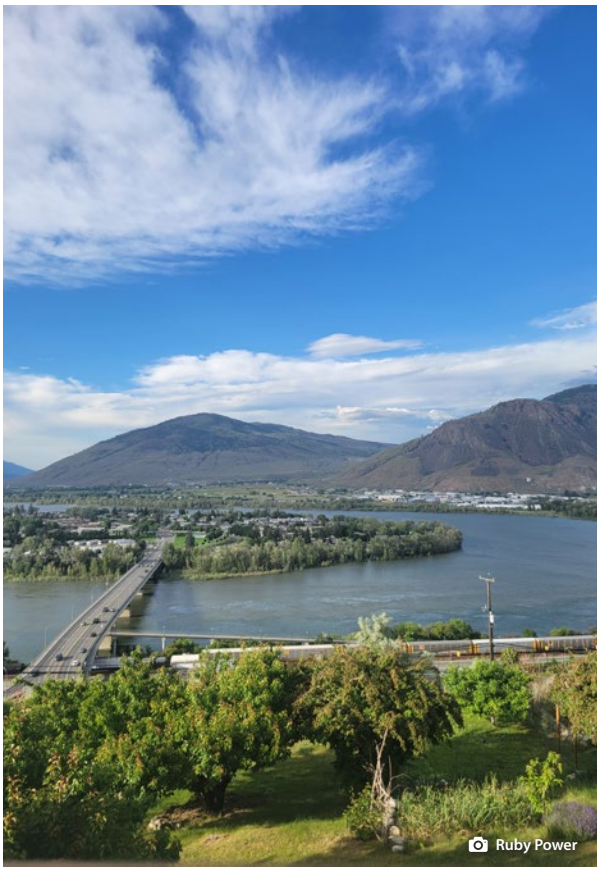
Introduction

The City of Kamloops operates a water utility that provides water to its residents spread over 300 km^2 and an elevation range of up to 550 m.

Major components of the water supply system consist of the river intake and low lift pump station, the Kamloops Centre for Water Quality, the River Street high lift pump station, the distribution system, and the North Thompson emergency water intake.

The transmission and distribution of water throughout this system is considered the most complex system in Canada. The potable water distribution system is divided into 69 pressure zones within three sectors: north, south, and southeast. The pressure zones range in elevation from approximately 350 m in the valley to 900 m in the upper areas. Pumping treated water to higher pressure zones results in the system being a large consumer of energy relative to other municipalities.

Water is critical to our city and to our environment, and efforts to conserve water must occur year-round. Reducing the amount of water we use helps protect our ecosystems and reduces the energy used to pump, treat, and distribute water. These are all impacts that help keep water affordable. Reducing water use benefits community growth by decreasing infrastructure needs and costs to supply water to more people.


Ruby Power

DID YOU KNOW?

Over the past 20 years, residents have decreased the maximum daily water use by 50%. The reduction was attributed to both public education on water conservation and the implementation of universal water metering.

Water Conservation Through the Years

Over the past 20 years, educational efforts, plumbing code changes, and universal water metering have resulted in a 50% decrease in maximum day per capita demands within Kamloops. These efforts have allowed continuous growth with a limited need to invest in water infrastructure. For context, the city's current annual water production is comparable to the volumes used during the late 1980s, despite the population nearly doubling.

During the construction of the Kamloops Centre for Water Quality in 2005, efforts towards water conservation were increased. This was followed by the implementation of water meters in 2013.

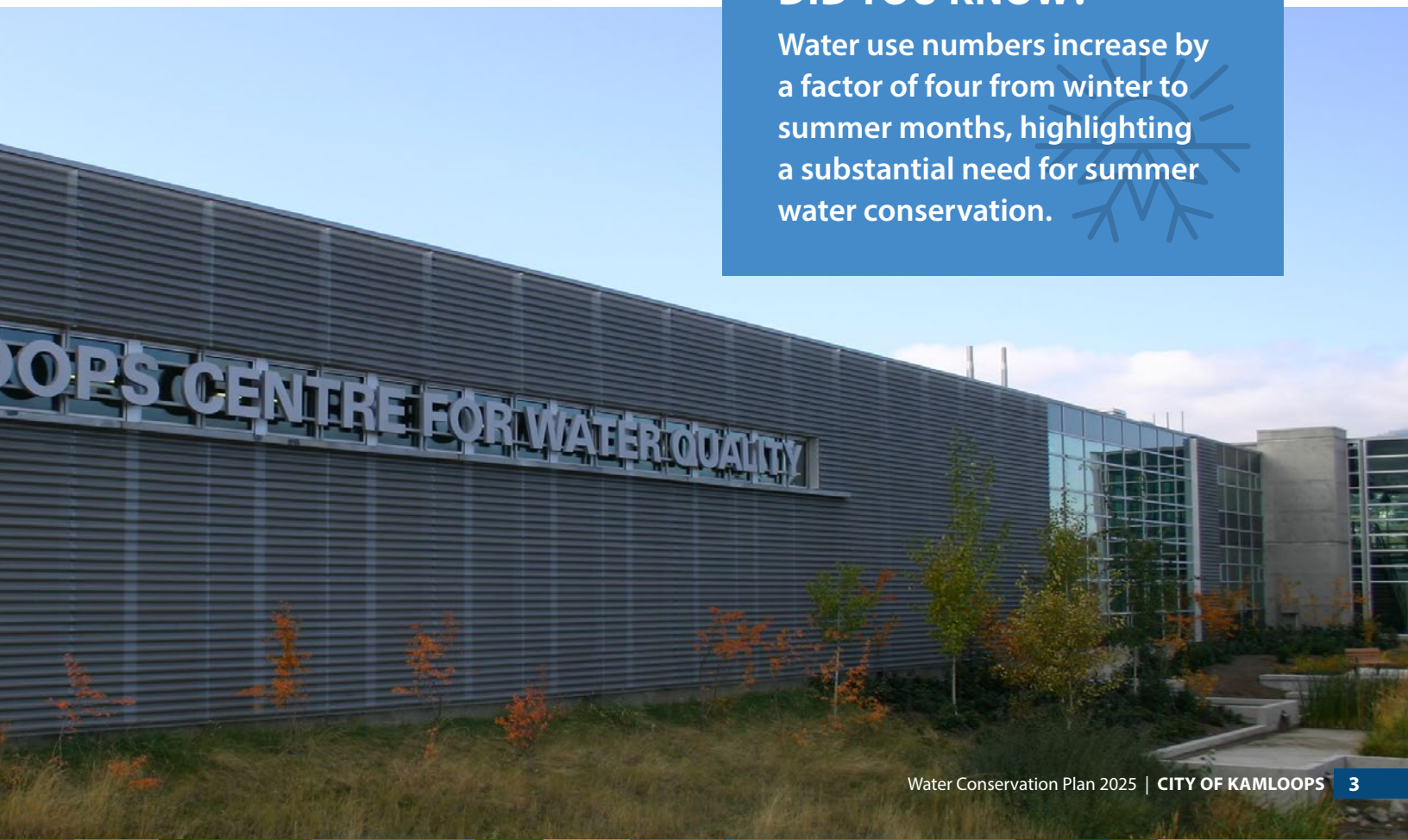
Despite a growing population and service area, the city's maximum day water use has steadily decreased from 2006 to 2020. However, over the past four years, it has increased.

There continues to be water conservation opportunities in Kamloops to reduce future infrastructure needs and maintain affordability. While the City and its residents have made great gains in water conservation, Kamloops still has one of the highest per person water use rates in Canada.

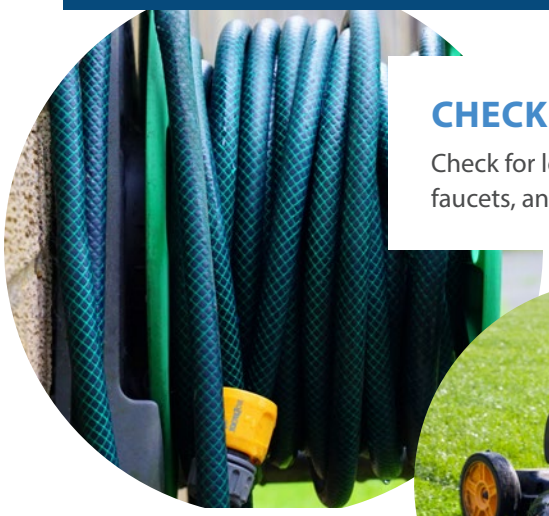
Water conservation has become exceedingly more important as water scarcity and drought trends emerge. Conservation provides opportunities to reduce future infrastructure needs and development costs. There are substantial benefits to maintaining and advocating for water conservation.

DID YOU KNOW?

Water use numbers increase by a factor of four from winter to summer months, highlighting a substantial need for summer water conservation.



OUTDOOR WATER SAVING TIPS



CHECK FOR LEAKS

Check for leaks in pipes, faucets, and hoses.

USE AN AUTO SHUT-OFF NOZZLE HOSE

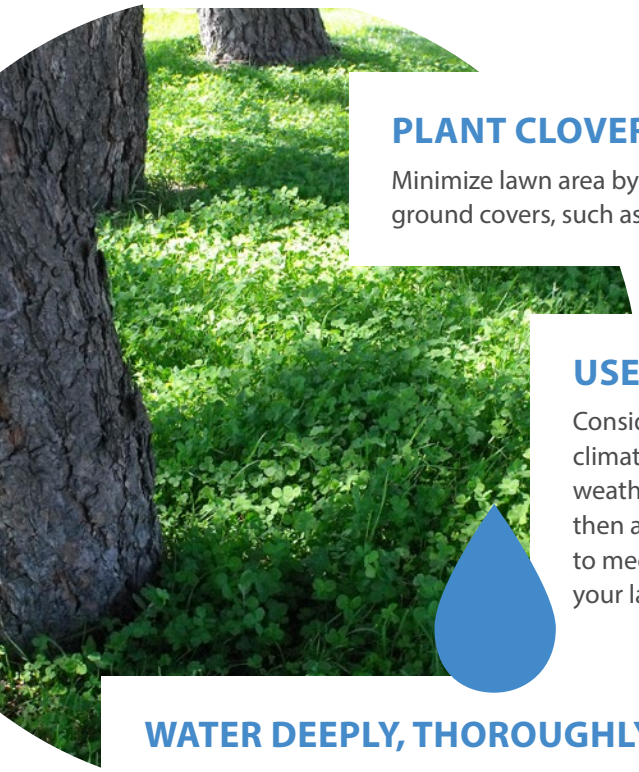
Always use a hose with an automatic shut-off nozzle when watering plants or washing your car, as required by Waterworks Bylaw No. 12-31.

GRASSCYCLE

Grasscycle by leaving the clippings on the lawn. This will help with water retention and provide your lawn with nutrients.

UPGRADE YOUR WATERING DEVICES

Consider installing irrigation devices, such as micro and drip irrigation, soaker hoses, and sprinklers with timing devices.



PLANT CLOVER

Minimize lawn area by using ground covers, such as clover.

USE A RAIN BARREL

Use rain barrels to collect rainwater for outdoor plant use.

USE SMART TECHNOLOGY

Consider utilizing "smart" technology, such as climate or soil-based controllers that evaluate weather or soil moisture conditions and then adjust the irrigation schedule to meet the specific needs of your landscape.

XERISCAPE

Select drought-tolerant flora and group according to their water needs.

WATER DEEPLY, THOROUGHLY, AND LESS OFTEN

Lawns only need about 2.5 cm (1 in.) of water per week. When mowing, cut your grass to between 5 cm (2 in.) and 7.5 cm (3 in.) tall to provide shade for roots and to help prevent evaporation.

Find more water saving tips at **Kamloops.ca/WaterUse.**

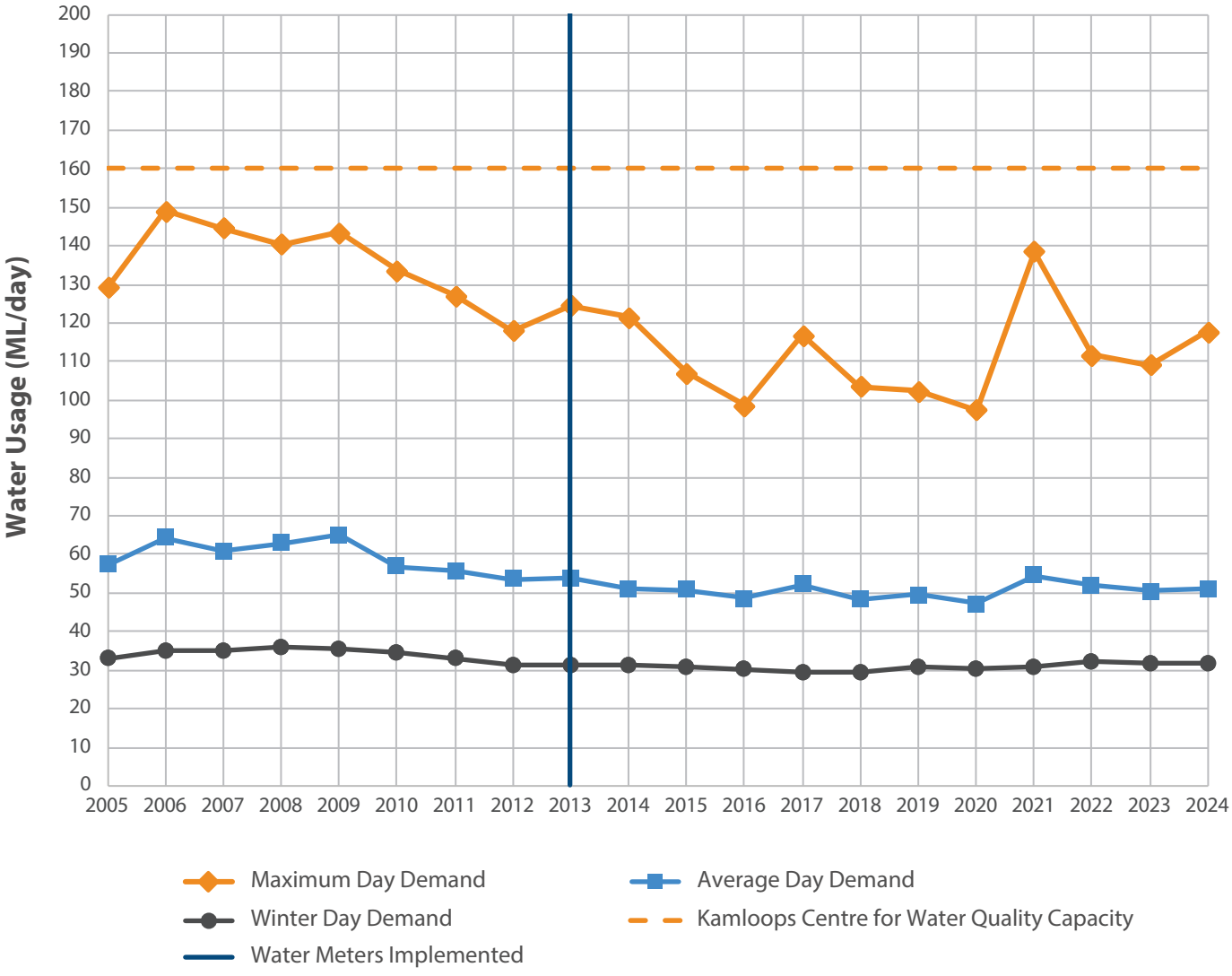
History of Heat Domes and Interface Fires

In 2017 and 2021, the City had uncharacteristically high water use trends due to severe heat and interface fires, resulting in summer water use being 10% (2017) and 35% (2021) higher than usual summer demands (Figure 1).

In 2021, the water use peak was city-wide and centred around the timing of that year's east Kamloops interface wildfire. Leading up to that event, the 2021 heat dome also saw a 15% increase in water use above historic maximum day summer use. Consequently, these events strained critical water supply infrastructure.

Managing water use during periods of interface fire risk is an important part of water conservation and is critical to ensure Kamloops Fire Rescue has the water needed to respond.

FIGURE 1 - WATER USAGE



PROTECTING OUR WATER SUPPLY

If similar trends continue, our water supply will not keep up. To mitigate future impacts on water use from severe heat and interface fires, the City has implemented the following measures:

1

DROUGHT RESPONSE PLAN

Introducing outdoor water use restrictions and bans during extreme weather.

2

FIRESMART ASSESSMENTS

FireSmart assessments to help homeowners reduce property risks from interface fires.

3

FIREFIGHTING EDUCATION

Providing education programs on Kamloops Fire Rescue's interface firefighting ability. Kamloops Fire Rescue's equipment minimizes impacts on our water supply through strategic planning, structural protection and defence, and other critical measures.

4

BYLAW ENFORCEMENT

Working with Community Services to enforce water restrictions when required.

If measures to mitigate current water use trends are unsuccessful, increased investment in water infrastructure will be required to keep up with unprecedented demands.

DID YOU KNOW?

Kamloops Fire Rescue prepares strategic fire response plans to respond to interface fires during wildfire season.

FIRESMART YOUR HOME

The best thing you can do to keep your home safe in the event of a wildfire is to ensure your home has a 3 m combustible-free zone around the entire perimeter. For instance, coniferous trees with cones and needles (like spruce, pine, fir, and cedar) are highly flammable and should not be within 10 m of your home. Choose fire-resistant plants and shrubs when planning your landscaping.

For more FireSmart tips and information, visit **LetsTalk.Kamloops.ca/FireSmart.**


KFR

DID YOU KNOW?

The City has developed a phased Water Use Restrictions Plan to strategically reduce overall water use during drought conditions while maintaining crucial public assets, such as trees and playing fields.

Karley Robinson

Capacity

Until recently, water conservation has deferred the need for large capital projects in the city. In recent years, population growth has begun to outpace water conservation rates. Projected future water needs for the city are shown in Figure 2.

Projections indicate that expansion of the water supply will be required within the Water Conservation Plan's 10-year horizon. Due to the magnitude of these works, planning has begun. The impacts of water scarcity due to a changing climate are a strong consideration for future expansion of water supply.

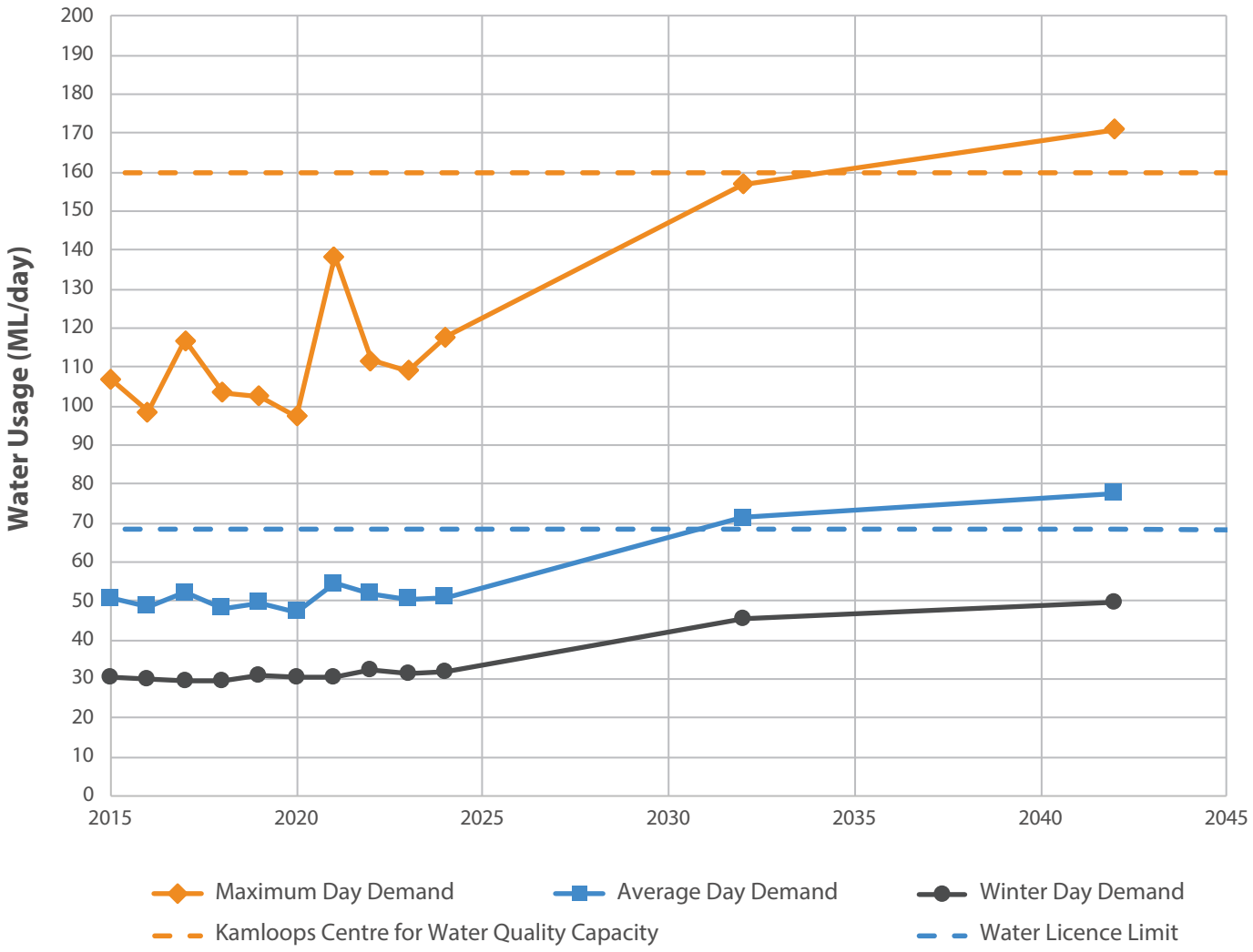
Investment in water infrastructure to support community growth is required. An assessment of growth needs has identified where future upgrades are required and highlighted areas with the capacity to support infill while leveraging existing infrastructure.

A deliberate land use policy to incentivize infill in areas with capacity will be a tool to mitigate portions of these identified upgrades. It is also acknowledged that rural areas within city boundaries will have different fire protection needs and different standards/levels of service.

DID YOU KNOW?

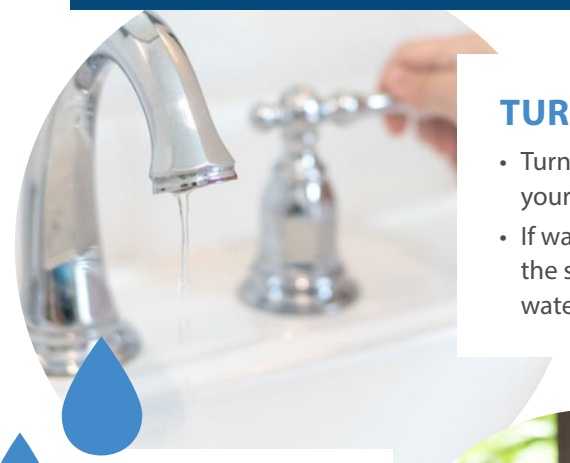
Our Civic Operations Department operates a central irrigation control system, which automates watering schedules on City sports fields. This system leverages real-time weather data to optimize water usage and minimize overwatering as much as possible.

FIGURE 2 - PROJECTED WATER DEMAND*



** without a change in water conservation*

INDOOR WATER SAVING TIPS



TURN OFF THE TAP

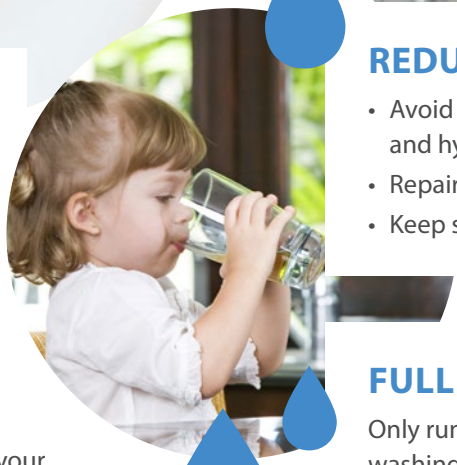
- Turn off the tap when brushing your teeth or shaving.
- If washing dishes by hand, fill the sink rather than letting the water run freely.

REDUCE BATHROOM WATER USE

- Avoid flushing the toilet unnecessarily. Tissues, wipes, and hygiene products belong in the wastebin.
- Repairing a leaky toilet can save 100 L per day.
- Keep showers to five minutes or less.

KEEP WATER IN THE FRIDGE

Keep a jug of cool water in the fridge instead of running the tap.



USE LOW-FLOW FIXTURES

Install low-flow fixtures in your house, including shower heads, toilets, and taps.

FULL LOADS ONLY

Only run your dishwasher or washing machine when it is full, and be sure to select the shortest run cycle.

REPURPOSE WATER

Avoid pouring water down the drain. Use it to water plants or fill your pet's dish.

Find more water saving tips at **Kamloops.ca/WaterUse.**

DID YOU KNOW?

In certain years, when the snowpack is limited and rainfall amounts are below average, drought conditions can occur, making water conservation efforts even more important to protect the water levels in our rivers for fish and aquatic species.

Water Supply

Managing and maintaining a sustainable water supply amid a growing population and shifting climate requires strengthened conservation efforts. As such, the Utility and Environmental Services Division aims to achieve a 5% reduction in per capita water usage over the next five years. Strategies and recommendations to maintain and meet the water supply goals of the community include:

1. WATER CONSERVATION EFFORTS

There are substantial ecological benefits to maintaining and advocating for habitual and long-term water conservation, including the following:

ACTION	STATUS
Strengthen public education campaigns by: • showing customers how to reduce water use and implement FireSmart principles on their properties • keeping the public informed on the importance of maintaining water supply for Kamloops Fire Rescue to fight fires	Ongoing initiatives and future opportunities
Promote and incentivize higher-density developments closer to the city centre as they use less water per person and utilize existing infrastructure.	Underway - part of 2025 Official Community Plan and Development Cost Charges Bylaw updates
Implement water restrictions and provisions for outdoor water bans to mitigate peak events around heat domes and interface fires.	Completed in 2022–2023
Incentivize water conservation through a more equitable water rate structure (i.e. usage-based billing).	Underway - part of 2024/2025 Waterworks Bylaw and rate review
Assess the conservation benefits of implementing a landscaping rebate program, where the City provides rebates for residents to implement water-efficient landscaping.	Future opportunity
Facilitate internal collaboration on landscape planning and FireSmart principles, which can have contrary or competing goals. Materials should be prepared to educate the public on safe, efficient landscaping.	Underway as part of Water Conservation Plan
Review and implement opportunities for the City to improve water system efficiency. Examples include: • utilizing asset management funds to replace or rehabilitate aging infrastructure that is more likely to leak	Ongoing initiative
• completing water loss audits	Completed for 2021–2023
• formalizing and funding a leak detection and repair program	Implementation in 2025
• identifying opportunities for more water-efficient landscaping in parks, such as artificial turf	Future opportunity
• identifying opportunities for raw water or reusing water	Future opportunity

2. CLIMATE CHANGE

Water conservation is viewed through two lenses of climate change.

1

DROUGHT MANAGEMENT

Manage drought and protect the environment.

2

WATER SYSTEM CAPACITY

Maintaining water system capacity for emergency response while striving to provide affordable water to customers.

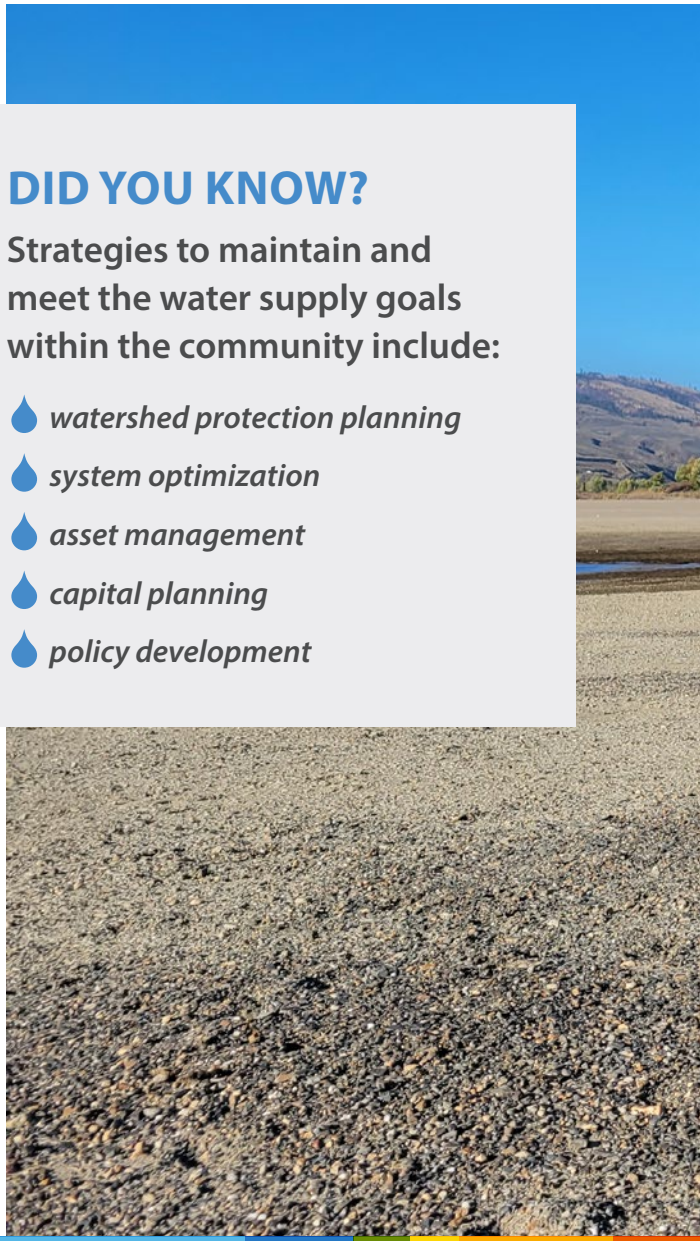
The impacts of climate change on the Kamloops region are expected to result in shorter, wetter winters and longer, drier summers. Long-term impacts on the flow of the South Thompson River are unclear. They depend upon watershed conditions, including the snowpack at higher elevations and the intensity and frequency of rain events. The City utilizes a small fraction of the Thompson River's total flow. However, lower water levels can impact the City's ability to withdraw water and have negative impacts on aquatic ecosystems and salmon.

Extreme heat events also result in increased water use for landscaping and keeping residents cool. Extreme heat is often paired with wildfires that can threaten property within the city. In 2017, elevated temperatures and wildfires in the Kamloops Fire Centre resulted in city water use increasing by 10% over typical maximum day summer use. In 2021, during the provincial heat dome, water use increased by 15% and then by 35% during the east Kamloops interface fire. The peak summer water use in 2021 stressed the City's infrastructure. If infrastructure planning were to centre around that event, 20 years of water conservation efforts would be undone. Water infrastructure would need to be expanded at an extensive cost to residents and other customers.

DID YOU KNOW?

Strategies to maintain and meet the water supply goals within the community include:

- *watershed protection planning*
- *system optimization*
- *asset management*
- *capital planning*
- *policy development*



DID YOU KNOW?

Recent changes to water restrictions were largely in response to the feedback received during the drought response restrictions in 2023 and are part of the City's ongoing efforts towards water stewardship and sustainability.

Managing these peak events through conservation efforts and education is critical to maintaining an affordable water supply in our community. The City has initiated a Water Supply and Climate Change Adaptation Study to better understand the implications of changes to our watershed and how they will impact the sustainability of our water supply.

3. WATER LOSS

Water is lost from the distribution system between withdrawal from the river and delivery through a meter to customers. Unaccounted-for water is primarily from leaks in aging infrastructure, but in some cases, it is from theft.

Universal water metering was a key step in quantifying this lost or unaccounted-for water. Since then, the City has completed audits to quantify the amount of unaccounted-for water. Audits have informed the need to initiate a formalized leak detection program within the City.

The City is currently taking the following actions to improve the efficiency of water distribution and reduce unaccounted-for water.

- Identified water leaks are repaired in a timely manner.
- An assessment plan has been initiated for large distribution pipes.
- Ongoing leak detection is being evaluated as part of the water utility operation.
- Asset management projects are being prioritized to replace aging pipes that are more prone to leaks.

Continued efforts to detect and repair leaks in aging infrastructure contribute to the City providing affordable services, supporting community growth, and reducing environmental impacts.

DID YOU KNOW?

Xeriscaping (water conservation through creative landscaping) is a landscape practice that requires 50% (or less) water than a traditional landscape. Even better, xeriscaping usually requires less fertilizer, less pruning, and less mowing.

Tharoushan Kandarajah

Drought Response Plan and Water Use Restriction Plan

WATER USE RESTRICTIONS PLAN

The City recently adopted the Water Use Restrictions Plan outlining water use activity in drought levels 0–3 (normal), drought level 4 (heightened), and drought level 5 (severe), based on the provincial drought level for the South Thompson River. These restriction plans can also be leveraged for water conservation during extreme weather events and interface fires.

DROUGHT RESPONSE PLAN

During times of drought, as determined by the Province, various degrees of water restrictions are implemented. The City also launches communications to residents and businesses through various formats, including targeted mailers, social media, radio, website notifications, and public signage. Education campaigns also occur throughout the year to ensure that water conservation stays top of mind for residents.

Water Use Restrictions Plan

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Based off of Provincial Drought Level for the South Thompson River

Water Use Activity		Levels 0–3 Normal	Level 4 Heightened	Level 5 Severe
Lawns	**Sprinkler Use** (automated or manual)	3 days/ week	1 day/ week	Not Allowed
	Hand Watering (spring-loaded nozzle or watering can)			
	New Lawns (sod or seed) *Permit required from City of Kamloops for additional watering*	As per permit	As per permit	No new permits issued
Trees, Shrubs, Plants, Flowers	**Sprinkler Use** (automated or manual)	3 days/ week	1 day/ week	Not Allowed
	Drip Irrigation (automated or manual)		3 days/ week	1 day/ week
	Hand Watering (spring-loaded nozzle or watering can)	Allowed	Allowed	Allowed
	New Trees or Shrubs *Permit required from City of Kamloops for additional watering*	As per permit	As per permit	No new permits issued
Food-Producing Plants and Crops	**Sprinkler Use** (automated or manual)	3 days/ week	1 day/ week	Not Allowed
	Drip Irrigation (automated or manual)		3 days/ week	1 day/ week
	Hand Watering (spring-loaded nozzle or watering can)	Allowed	Allowed	Allowed
Other	**Washing Vehicles or Boats** (spring-loaded nozzle or pressure washer only)	Allowed	Allowed	Permitted only to wash boats for control of invasive species
	Commercial Car Washes *Must have business licence to operate as a car wash*			Allowed
	Washing Hard Surfaces (spring-loaded nozzle or pressure washer only) *examples: sidewalks, driveways, patios, building exteriors*		Pressure washing only	For safety purposes only
	Filling Swimming Pools, Hot Tubs, Ponds, Fountains		Allowed	Not Allowed

Preferred time for automated irrigation is 12 am to 7 am

No irrigating between 11 am and 7 pm

Year-Round Water Use Schedule	3 days/week	1 day/week
GROUP A: addresses ending in 00–30	Sun, Tue, Fri	Tue
GROUP B: addresses ending in 31–60	Mon, Wed, Sat	Wed
GROUP C: addresses ending in 61–99	Sun, Tue, Thu	Thu

Note: properties with internal addressing should use the street address to determine their watering day.

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City of Kamloops British Columbia, Canada

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