



WATER USE REVIEW

Issue

A review of the Town's summer 2024 water usage is presented to Council for information.

Motion Proposed by Administration

That the Water Use Review report be accepted as presented.

Report, Analysis and Financial Implications

This report compares the Town's water usage for summer 2024 compared to previous summers (2022 to 2023). Usage trends are indicative of the effectiveness of newly implemented water policies and conservation measures, including the Water Shortage Response Plan and updated Water Bylaw 25-21, in managing outdoor water usage.

Environmental Conditions and Impact on Water Supply:

In an effort to proactively address the drought conditions predicted for summer 2024 and reduce overall community water use, the Water Shortage Response Plan and Water Bylaw 25-21 were amended to update the outdoor watering schedule. These changes also introduced adjustments to water conservation stages and strengthened public outreach through increased messaging and education efforts.

Heading into the summer season of 2024, environmental conditions had significantly improved highlighted by a substantial increase in snowpack levels within the Sheep River Watershed west of Okotoks. In March and April, snowpack levels at the Mount Odlum monitoring station rose to historical average levels, after being well below average in January and February. This, combined with timely precipitation throughout the summer, helped sustain Sheep River flow rates during the entire summer season. The impact on the Town's ability to withdraw water from the Sheep River was positive, allowing the Town to maintain well field pumping capacity. Instream objectives for the Sheep River, as defined by Alberta Environment and Protected Areas, were largely met throughout the summer. This marked a significant improvement compared to previous years, when the Sheep River failed to meet these objectives for substantial portions of the season.

Community Water Use

Summer 2024 was highly positive in terms of community water use. The charts below provide a comparison of summer water use (May 1 to September 30) over the past three (3) years (2022 to 2024). The volumes are based on total pumped to the distribution network (from the reservoirs).

Chart A

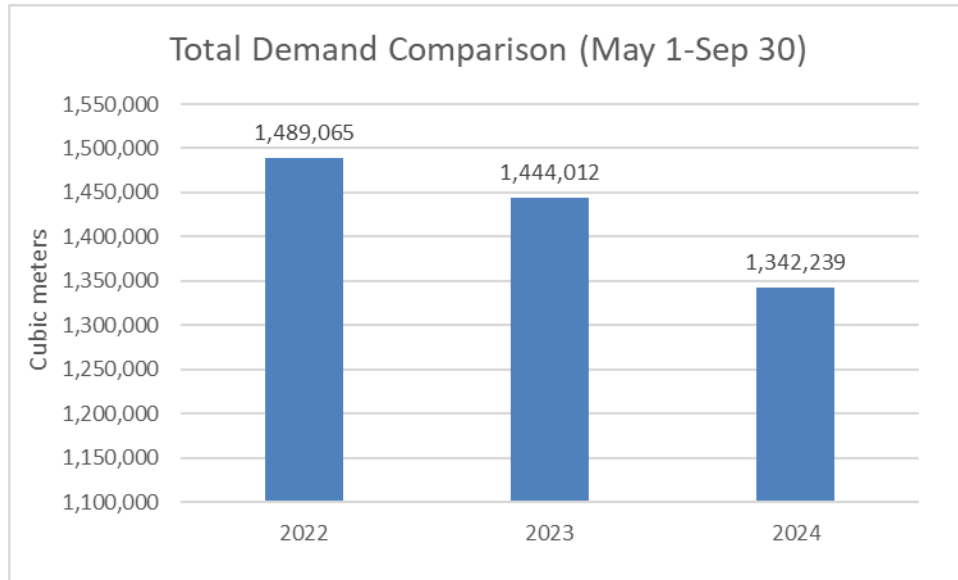


Chart A shows total distribution water demand (in cubic meters) during the outdoor watering season from 2022 to 2024. As illustrated, water demand has decreased over the past three years, with 2024 volumes being 10% lower than in 2022 and 7% lower than in 2023.

Chart B

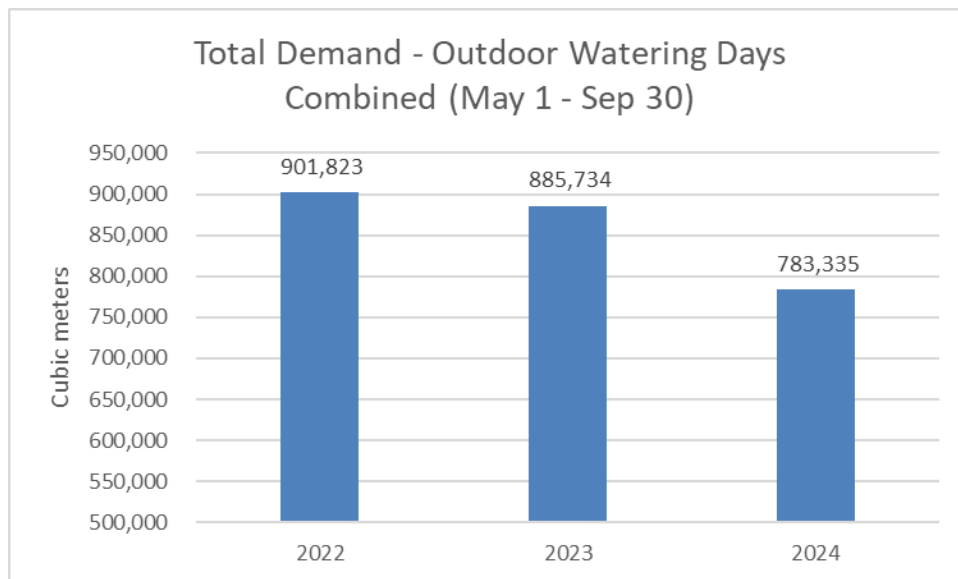


Chart B shows total water demand on outdoor watering days only from 2022 to 2024. Similar to Chart A, water demand on outdoor watering days has decreased over the past three years, with 2024 volumes being 13% lower than in 2022 and 12% lower than in 2023.

Chart C

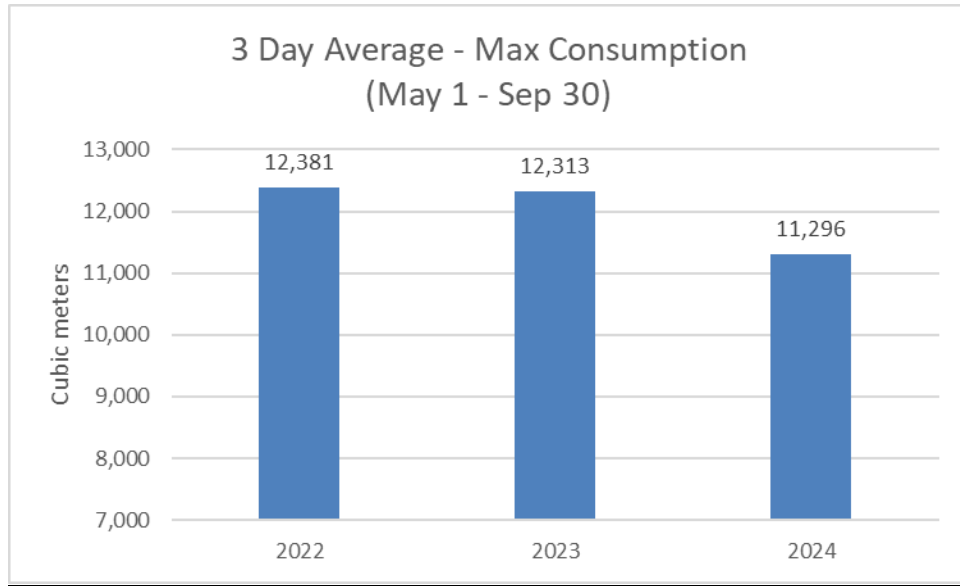


Chart C shows the maximum '3-day average' value for years 2022 to 2024. The 2024 3-day average volumes were 10% lower than in 2022 and 8% lower than in 2023.

Chart D

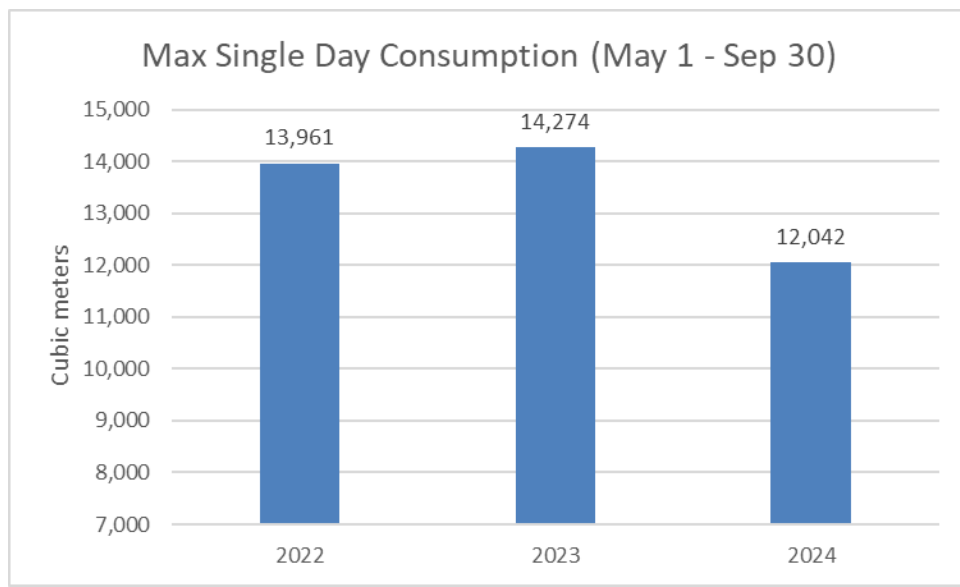


Chart D shows the maximum single day consumption for years 2022 to 2024. The 2024 max day volumes were 14% lower than in 2022 and 16% lower than in 2023. It is worth noting that the peak water usage days in 2022 and 2023 occurred on Sundays (August 14 and June 4 respectively), while in 2024, the peak day was on a Thursday (August 1). This shift demonstrates a positive impact of removing weekend days from the outdoor watering schedule.

2024 summer water consumption trends are positive with a demonstrated reduction in total usage and peak day consumption. Additional years of data will help validate whether these reductions have been permanently achieved. Several factors have contributed to these reductions as follows:

1. Outdoor Watering Schedule - The updated outdoor watering schedule has led to reduced water consumption on designated watering days. By limiting the available hours and removing weekends from the schedule, the Town has seen operational benefits during peak periods while maintaining reservoir levels within Stage 1 throughout the summer.
2. Community Outreach - As part of drought preparation efforts, the Town developed a comprehensive communications strategy which included:
 - Integrated Communication Campaign (social media, local newspapers, local radio, Town website, digital sign boards).
 - Community Workshops and info sessions (Chamber Trade Show – April).
 - Resources for residents - updated green guide and watering schedule magnet to reinforce key messages and encourage behaviour change.
 - Business Engagement - in person meetings with businesses most affected by Stage 5 of the updated Water Shortage Response Plan to draw attention to the likelihood of a severe drought, explain potential impacts to their business, and brainstorm possible solutions. In May, Town officials met with local carwashes, hotels, and laundromat.
3. Enhanced Leak Detection - In 2024, Water Operations increased leak detection efforts with focus on individual water services (the water line running between the main and the property). Service line leaks tend to go unnoticed until a complete failure/loss of water service occurs. By proactively assessing service lines in targeted areas (using leak detection equipment), Water Operations successfully increased the identification and repair of leaks. Seven service line leaks were repaired between June and October.
4. Environmental Conditions - Substantial increases in snowpack levels, along with timely summer precipitation, contributed to sustained water supply conditions, including higher river flows and well production capacity.

Strategic Plan Goals

<input type="checkbox"/>	Responsibly Managed Growth	<input checked="" type="checkbox"/>	Demonstrated Environmental Leadership
<input type="checkbox"/>	Strong Local Economy		
<input checked="" type="checkbox"/>	Organizational Excellence	<input checked="" type="checkbox"/>	Enhanced Culture & Community Health

Equity/Diversity/Inclusivity Impacts and Strategy

The Water Shortage Response Plan and Water Bylaw 25-21 have been implemented equitably across all community sectors, ensuring fair access to water resources for residential, commercial, and institutional users.

Environmental Impacts

The reduction in water consumption has had positive environmental impacts, including:

- Reduced strain on local water sources: Lower water withdrawal from the Sheep River has contributed to regulatory compliance (i.e. meeting instream objectives) and preserving aquatic ecosystems during the dry summer months.
- Improved soil moisture retention: The outdoor watering schedule has resulted in more efficient irrigation, promoting better plant health and reducing runoff.
- Reduction in greenhouse gas emissions: By reducing the need for energy-intensive water treatment, the community has lowered its carbon footprint associated with water use.

Governing Policies/Bylaws/Legislation or Agreements

- Water Shortage Response Plan (2024): Introduced new schedules for outdoor watering during peak demand periods.
- Water Bylaw 25-21 (2024): Updated to reflect new restrictions on outdoor water use, with stricter penalties for non-compliance.
- Municipal Bylaws on Water Conservation: Provides guidelines for water-efficient landscaping and irrigation practices.

Community Engagement Strategy

Public engagement was key in the successful rollout of the Water Shortage Response Plan and Water Bylaw 25-21. The strategy included:

- Drought Preparation: as part of drought preparation efforts, the Town developed a comprehensive communications strategy, including targeted outreach initiatives.
- Educational campaigns: Conducted through social media, local radio, and community events (i.e. Chamber Trade Show), educating residents about water conservation and the new regulations (i.e. outdoor watering schedule).
- Consultations with local businesses: In-person collaborations with carwashes, hotels and laundromat to review the new Water Shortage Response Plan and water bylaw, explaining potential impacts of Stage 5 water conservation measures and what it could mean for their business.

Alternatives for Consideration

n/a

CAO Comments

This report was requested by Council and captures the impacts of the governance changes on overall use, and peak consumption in alignment with the new schedules. The community support for these changes can be seen through the reduction in water use and changes to maximum and peak demand schedules. These changes need to be done in partnership with the community and the effort of all Okotokians is appreciated.

Attachment(s)

n/a

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October 07, 2024