



## **WATER MANAGEMENT UPDATE**

### **Council / Governance Issue**

An update regarding drought management initiatives and proposed service level changes is provided to the Governance and Priorities Committee for consideration.

### **Recommendation**

That, prior to March 31, 2024, Water Bylaw 23-21 be amended to incorporate changes to the watering schedule in accordance with Consideration # 1 (Option A or B) and provided to Council for consideration; and

That changes to the utility rate structure including changing the methodology of calculation of wastewater consumption to replace the summer discount with a fixed percentage calculation (Consideration 2A) and an increase of the Tier 3 rate to a 3x multiplier (Option 2B) are included in the 2025 Fees, Rates and Charges Bylaw for Council's consideration; and

That, prior to March 31, 2024, Water Bylaw 23-21 and the Water Shortage Response Plan be amended to add an additional water conservation stage that includes indoor water conservation measures (Option C) and provided to Council for consideration.

### **Background and Considerations**

The Town's water supply, the Sheep River, faces challenges. Higher seasonal demands, lower river flows, license withdrawal restrictions, and infrastructure limitations continue to constrain the existing water system. The issue of raw water supply challenges has worsened due to the severe drought conditions observed in recent years. In 2023, all basins within the South Saskatchewan River Basin experienced a critical water shortage due to low rainfall and high temperatures. The historical low flows have posed challenges for Groundwater Under the Direct Influence (GWUDI) withdrawals from the Town's 13 wells.

On June 5, 2023, Stage 2 Water Conservation measures were implemented due to low Sheep River flows and expected impacts on reservoir levels. Although Stage 2 does not further restrict outdoor watering, increased public communication around water conservation resulted in a 40% reduction in temperature correlated water use. This allowed the Town to stay within Stage 2 for the remainder of the summer season and not move to the higher-level restriction observed elsewhere in the region.

### **For information – Drought Preparedness**

In 2022-2023, because of low precipitation (snowpack and rainfall) and high temperatures, multiple river basins in Alberta experienced critical water shortage conditions. This situation is expected to deteriorate through 2024 due to a combination of a strong El Nino winter, above normal temperatures, and minimal precipitation and snowpack forecast. Alberta is currently in water shortage management stage 4 (out of 5) with the potential to move to stage 5 prior to spring 2024, if conditions do not improve with increased mountain snowpack.

### What This Means for Okotoks

- Increased focus on water conservation (i.e. outdoor watering schedule, utility rate review, public education, and conservation programs).
- Water Shortage Response Plan – review and potentially update to include additional indoor measures during higher stages pending feedback from the GPC (refer to consideration #3 below).
- Close communication and collaboration with the Town’s municipal neighbours and regulator (Alberta Environment).
- Increased public communication and awareness leading into spring 2024.
- Close monitoring of water supply wells, including well levels and drawdown rates.

Additionally, a portion of the Town’s water license portfolio restricts water withdrawals during low flow periods. Due to the extreme drought conditions in 2023, the Sheep River has been under a Water Shortage Advisory (i.e. flow targets are not being met) for the entire summer season. This places the Town in a position of regulatory risk as a significant portion of the Town’s licensing cannot be accessed during periods of low flow restrictions. Continuing to explore risk mitigation strategies in alignment with the Town’s Environmental Master Plan, Climate Action Plan, Municipal Development Plan, and Water Shortage Response Plan would be prudent in this situation.

### Consideration #1 – Service Level Changes to Outdoor Watering Schedule

Water Services proposes changes to the outdoor watering schedule to reduce peak demands and provide better system recovery when the Town’s well production capacity is most challenged. Both of these options are expected to improve system resiliency and reduce the risk of higher-level restrictions being triggered. Water Services provides the following schedule options for council’s considerations:

CURRENT SCHEDULE (6 available hours per week)			
General outdoor use		OR	Automated irrigation only
SUN & THU	ODD Numbered Addresses 6-9 AM OR 7-10 PM		2-5 AM
WED & SAT	EVEN Numbered Addresses 6-9 AM OR 7-10 PM		2-5 AM

### Option A: One day per week

Option A reduces available watering days to one day per week and eliminates higher weekend watering days when non-irrigation demands are highest. The watering window (6 to 9 AM or 7 to 10 PM) remains the same. This option represents a 50% reduction in outdoor watering time with a potential estimated annual water savings of 75,000 m<sup>3</sup> and provides the best outcome for water operations (including water license management) and reservoir recovery. The Water Bylaw

will incorporate supplementary conditions to meet service level expectations for high use sports fields, exemptions for non-potable usage, and timing considerations to accommodate larger, multi-zone ICI (industrial, commercial, institutional) systems (by permit only).

Although this option is best from a water conservation and drought resilience perspective, it is expected to have an impact on the ratepayer's ability to maintain a green lawn during higher seasonal temperatures.

OPTION A - One day per week (3 available hours per week)				
General outdoor use			OR	Automated irrigation only
THU	ODD Numbered Addresses	6-9 AM <b>OR</b> 7-10 PM		2-5 AM
MON	EVEN Numbered Addresses	6-9 AM <b>OR</b> 7-10 PM		2-5 AM

1) Time exemption by permit for large automated systems only

2) Conservation schedule exemption for sports fields and non-potable

#### Option B: Modified two days per week:

Option B continues with a two day per week schedule but with reduced hours (4 available hours from 6) and eliminates weekend watering. From a turf management standpoint, this option is preferred and allows for more days of reservoir recovery and reduces weekend watering pressures. This option represents a 33% reduction in outdoor watering time with an estimated water savings of 40,000 m<sup>3</sup>. Additional provisions will be included in the Bylaw to meet service level expectations for high use sports fields, exemptions for non-potable usage, and timing considerations to accommodate larger, multi-zone ICI systems (by permit only).

OPTION B - 2 days per week (4 available hours per week)				
General outdoor use			OR	Automated irrigation only
MON & THU	ODD Numbered Addresses	6-8 AM <b>OR</b> 8-10 PM		2-4 AM
TUE & FRI	EVEN Numbered Addresses	6-8 AM <b>OR</b> 8-10 PM		2-4 AM

1) Time exemption by permit for large automated systems only

2) Conservation schedule exemption for sports fields and non-potable

## Consideration #2 – Changes to the Utility Rate Structure

As part of the Town's continued effort to encourage water conservation, Administration is seeking input from GPC's on whether we should consider changes to how rates are applied to irrigation and high-water users. Any potential changes are proposed to be implemented in the 2025 rates and fees bylaw update.

### Consideration 2A – Revise Summer Sanitary Irrigation Discount Methodology

Currently Okotoks applies a "summer discount" to sanitary sewer rates whereby in the summer wastewater variable charges are billed on winter average water usage. This discount was implemented on the principle of not charging a sanitary fee on irrigation water that does not return to the sanitary system.

During the summer period a user pays a lower total effective rate for irrigation water than they pay for consumption water throughout the year (as they only pay for the water charge and not \$2.30/m<sup>3</sup> variable sanitary charge). Although the Town does not have the wastewater treatment cost for irrigation water, irrigation water has a larger impact on our system than consumptive water. This irrigation impact is comprised of two components: infrastructure sizing and greater operational risk. Water infrastructure sizing typically has a peak day component (which occurs in the summer). Operational risks are experienced when river levels are low, and demand is high.

Administration is looking for feedback from GPC on whether we should revise our billing methodology to better reflect the increased impacts of irrigation water on the utility. The City of Calgary has taken the approach of always charging a variable wastewater charge on a fixed percentage of water usage to reflect the average annual amount of wastewater that returns to the system. An excerpt from the cities' website is provided below for information:

*"\* Not all of the water delivered to your home over 12 months is returned to the wastewater system. The wastewater usage is your water usage multiplied by 0.88 to reflect that over the course of the year you return around 88% of the water used to the wastewater system. This percentage is used year-round and recognizes seasonal fluctuations where you send more water to the wastewater treatment system in the winter months and less during the summer months because of outdoor activities like watering."*

Some municipalities do not apply a sanitary discount and their sanitary variable charge is based upon straight water billing.

Given the potential impacts of irrigation water, Administration is seeking input from GPC on whether we should consider a change in methodology on the application of the summer discount. Consideration 2B below can be implemented in conjunction with and/or separately with a potential change in methodology.

### Consideration 2B – Adjust Tier 3 water rates

Okotoks currently has a block rate structure to promote conservation and discourage excessive water usage. 2024 residential water variable rates are outlined in the table below. A percentage estimate of the amount of total water currently billed within each tier is also provided.

	Rate	Multiplier Target	% of water billed
Tier 1 (<23 m <sup>3</sup> )	\$1.70	1x	65%
Tier 2 (24-46 m <sup>3</sup> )	\$2.10	1.5x	25%
Tier 3 (>46 m <sup>3</sup> )	\$3.50	2x	10%

Currently Tier 3 rates are approximately double Tier 1 rates. Administration could adjust the Tier 3 multiplier to add additional financial disincentive to higher water usage.

Adjusting the Tier 3 rate multiplier from 2x to 3x would be expected to generate around \$250K of revenue from Tier 3 users at current usage patterns. Administration would typically use additional revenue to offset projected rate increases and/or revenue losses created by water conservation measures (see recommendation 1).

### Consideration #3 – Add Indoor Restrictions to the Water Shortage Response Plan (WSRP) and Water Bylaw

The Town's WSRP currently includes four (4) stages as outlined below and within Appendix B of Water Bylaw 23-21. Although the Water Bylaw does include "further actions as deemed necessary by the Chief Administrative Officer" within the outdoor water ban section of the Appendix, an additional stage that would include indoor and discretionary water restrictions has not been established within these plans or policy documents. Administration recommends that an additional stage be added that would include a mandatory shut down of all "non-essential" water use activities (i.e. carwash facilities, filling of pools/hot tubs, construction (flushing) water, etc.) and voluntary reductions to "in-home/facility" use. It may also contemplate reductions to system wide water pressure (as required and in consultation with the fire department).

### **Current Policy or Bylaw Analysis**

Fees, Rates and Charges Bylaw 09-24

Water Bylaw 23-21

Water Shortage Response Plan – Version 3.0 May 30, 2023

Climate Action Plan – Town of Okotoks

Environmental Master Plan – Town of Okotoks

### **Municipal Comparisons**

A review of outdoor watering conservation policies/bylaws was completed for Calgary, Airdrie, Chestermere, Strathmore, Canmore, Cochrane, High River, Diamond Valley, and the Region of Waterloo (ON).

### **CAO Comments**

Proposed in this report are potential changes to water service levels and associated bylaws to support the proposed service levels. The Town of Okotoks has a long history of being a water steward and a community that has well-established watering schedules to ensure the community can live within the means of the Sheep River.

Guiding documents from the Town provide direction on where water consumptions is envisioned to evolve. Council has also established guiding documents with the water shortage response plan that would be used as the Town's drought plan that will be required by the province for the upcoming 2024 year.

The question before Council is if the Town's service levels should be changed to align with our sustainability goals, and if further adjustments should be made to the water shortage response plan to align with potential drought conditions. The Committee is asked to provide direction on what service level changes should be considered moving forward.

### **Attachment(s)**

1. Water Management PowerPoint Presentation

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