



INFORMATION ONLY COUNCIL REPORT

To: Mayor and Council

Date: April 18, 2023

From: Paul Gipps, CAO

File No: 5600-42

Subject: **Spring 2023 Water Supply Update**

Report Prepared by: Allen Fillion, Director of Engineering & Operations

Water Supply Update

Adequate snowpack is a key contributor to ensuring our water storage reservoirs can fill in the spring. Full reservoirs in the spring ensures adequate water supply throughout the typically warm and dry summer months and into the fall without drawing our reservoirs down too low and compromising the ability to refill them for the following year. The main risk with our reservoir levels is subsequent drought years and hence the importance of always being able to refill our reservoirs over the winter and spring.

This past fall our reservoir levels were drawn down to average levels relative to the last fourteen years of data. Figure 1 shows Total Reservoir Storage for the Powers Creek system.

Much of British Columbia was reported to have lower than normal snowpack this past winter. The Okanagan however was one area that was an anomaly and experienced higher than average snowpack. The Province's Snow Survey and Water Supply Bulletin for April 1, 2023, reported Okanagan snowpack at 113% of normal.

City of West Kelowna (CWK) staff have been measuring snowpack levels at Islaht (Horseshoe) Lake dating back to 1982. Islaht Lake is in the upper portion of the Powers Creek watershed. Staff were at this site on March 30th to measure snowpack and snow water equivalent levels. The data staff measured is a bit higher than the numbers from the Province. Snowpack was measured to be 127% of normal and the snow water equivalent was 135% of normal. Snow water equivalent is the amount of water contained within the snowpack. It can be thought of as the depth of water that would theoretically result if you melted the entire snowpack instantaneously.

FIGURE 1 – Total Reservoir Storage

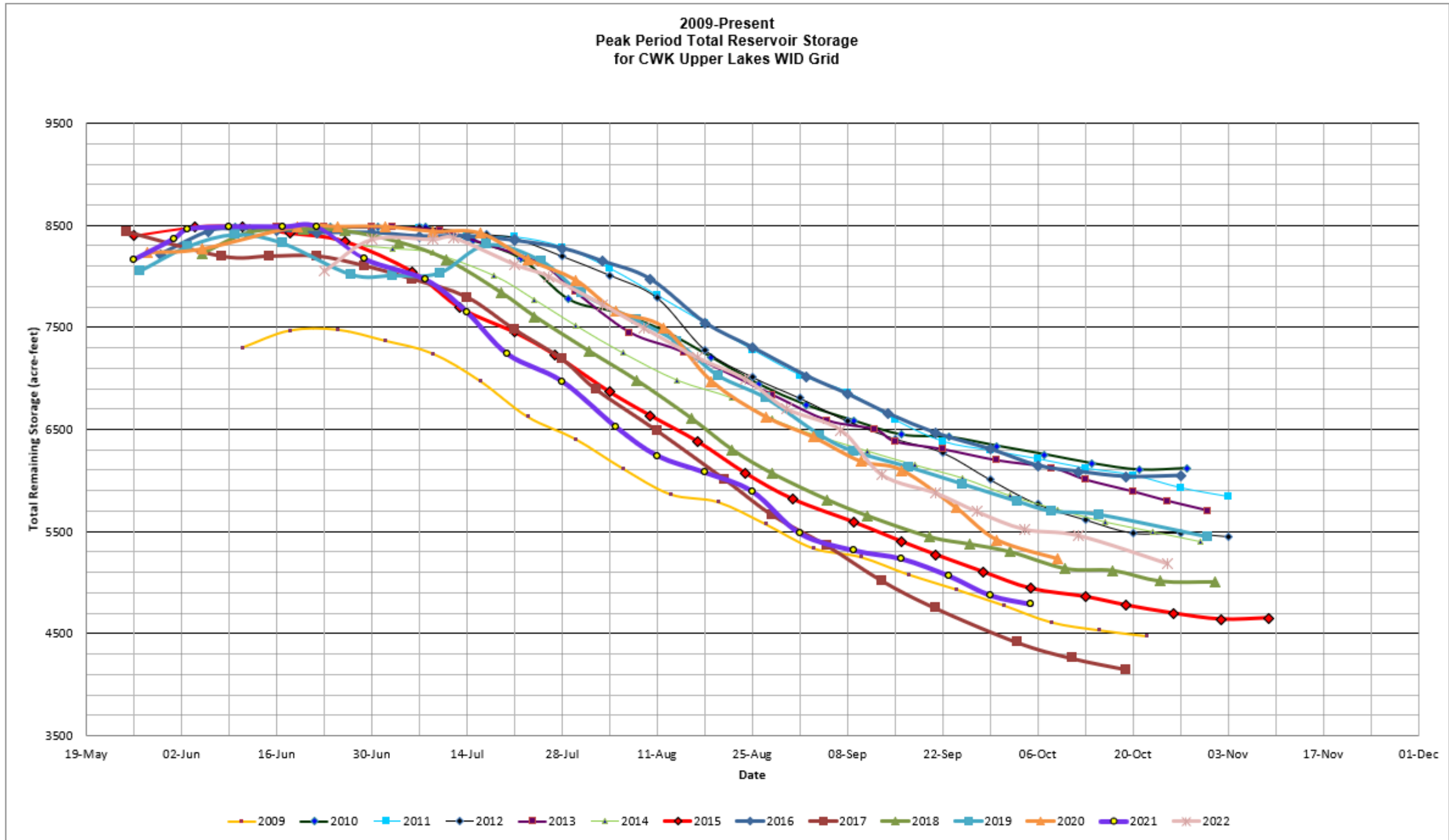


FIGURE 2 – SNOWPACK AT ISLAHT (HORSESHOE) LAKE



Drought Planning

Drought occurs naturally in the Okanagan and hence it is imperative that communities conserve water, have current drought plans in place, and are actively managing their water supply.

The City of West Kelowna Drought Plan was updated in 2019 in conjunction with the OBWB and Provincial initiatives on drought planning.

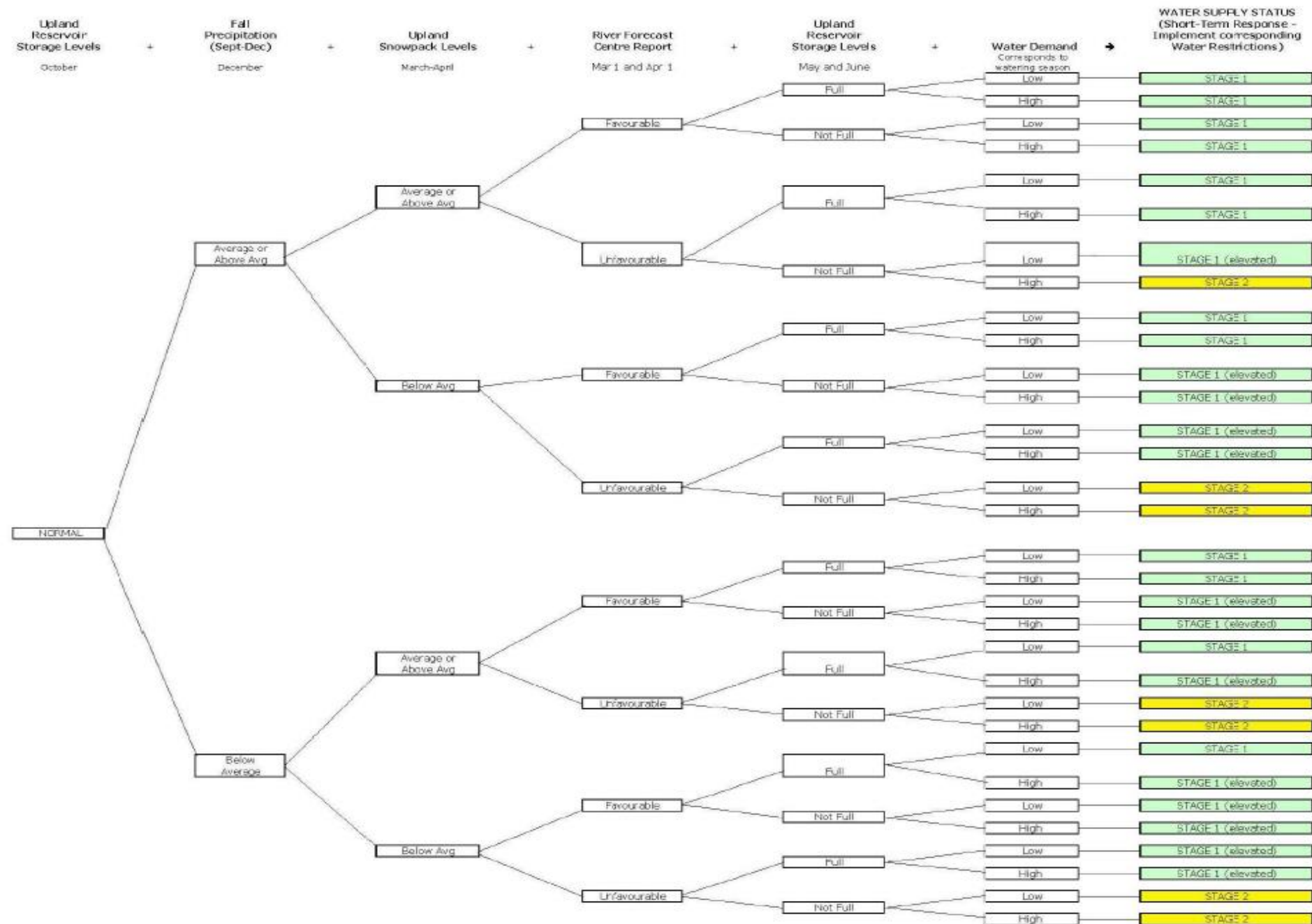
A key output of the plan is a drought response decision tree that was developed to guide decision making related to setting the appropriate level of watering restrictions.

The intent is to ensure a science based and consistent approach to this critical decision making. The decision tree considers reservoir levels in the fall, the amount of fall precipitation, snowpack levels over the winter, information provided from the Province's River Forecast Centre, reservoir levels in May and June, and finally the anticipated demand heading into the summer months. Figure 3 shows an example of the matrix considered for current conditions.

FIGURE 3 – Drought Response Decision Tree

Figure 6.1: Normal Decision Tree for City of West Kelowna

Figure 6.1: 2019 DROUGHT RESPONSE DECISION-TREE FOR CITY OF WEST KELOWNA
 (TO BE USED DURING **NORMAL** or **ABOVE-NORMAL** FALL RESERVOIR LEVELS)



Drought planning is a continuous process for CWK staff. The conditions last fall were near normal. These normal reservoir levels last fall combined with the above average snowpack indicate we will be able to fill our reservoirs this spring and start the year with Stage 1 watering restrictions. Staff will be actively monitoring storage levels and will continually re-evaluate our storage requirements and will advise should conditions change.

Managing Water Supply

Given the changes in weather patterns and with a focus on planning for the future it is imperative to continually focus on water conservation and education around the importance of water as a resource.

Watering Regulations are one tool available to help manage water demand. The current CWK regulations are as such:

General Rules for Stages 1 to 3

- Hand watering of all landscape plant materials and vegetable plantings, excluding lawns, is permitted, except during Stage 4.
- Sprinkling is never permitted between 11 a.m. and 6 p.m.
- Only one half-inch diameter outside tap may be used at any one time for sprinkling.
- Never use an open, free flowing pipe, outlet, or hose for any watering.
- Properties equipped with automated sprinkler systems may only water between midnight and 6 a.m. on the days described below.
- Properties equipped with manually controlled sprinkling systems, including those attached to outside taps, may only water from 6 to 11 a.m. or 6 p.m. to midnight on the days described below.

Stage 1

- Even numbered addresses may only water on even calendar days.
- Odd numbered addresses may only water on odd calendar days.

Stage 2

- Even numbered addresses may only water on Saturdays and Tuesdays.
- Odd numbered addresses may only water on Sundays and Wednesdays.

Stage 3

- Even numbered addresses may only water on Saturdays.
- Odd numbered addresses may only water on Sundays.
- No filling of swimming pools, hot tubs, garden ponds or decorative fountains is permitted.
- No washing of vehicles, boats, bikes - motorized or otherwise, RVs or ATVs is allowed.

- No washing of sidewalks, driveways, patios, or eaves can occur.

Stage 4

- No watering is permitted outdoors for any purpose.

Engineering staff will work with Communications staff to develop a comprehensive communications plan as conditions warrant.

Typical information provided to residents focuses on delivering the message of the importance of using water wisely. Water conservation offers several benefits including:

- Operations and maintenance cost savings by reducing the volume of water treated (further highlighted as we move towards full treatment for all systems).
- Future cost savings through deferral of capital investment as a result of population growth and expansion.
- Environmental benefits: less water could be removed from the environment for human purposes.
- Competing beneficial uses: more water could be available for competing beneficial uses such as agriculture, or recreation.
- Stewardship: utilities that conserve water demonstrate leadership in resource management.

The CWK is a partner in the Okanagan Basin Water Board's Waterwise Initiative. This initiative aims primarily to educate residents of the Okanagan Valley about water issues in our region. This includes promoting water conservation and protecting water quality. There are also tips on how to conserve water in the home, yard, and business:

<https://okwaterwise.ca/>

A current initiative of the WaterWise program is the Make Water Work program which is anticipated will be live again in May 2023. Residents are encouraged to take the pledge at:

<https://www.makewaterwork.ca/pledge/>

The CWK website also has several tips for conserving water inside and outside the house:

<https://www.westkelownacity.ca/en/our-community/conservation.aspx>

Water conservation is everyone's responsibility. Residential, agricultural, and industrial water users in areas affected by drought should observe all water conservation bylaws, watering restrictions and advice from their local government, irrigation district or water utility.

Irrigators, water licensees and water users in watersheds experiencing water scarcity should prepare and plan in case additional targeted local water restrictions or provincial temporary protection orders under the Water Sustainability Act are required as the summer progresses.

REVIEWED BY

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APPROVED FOR THE AGENDA BY

Paul Gipps, CAO

Powerpoint: Yes No