



WATER SHORTAGE PLAN

May 2024



ROCKY VIEW COUNTY

INTRODUCTION / PURPOSE STATEMENT

Rocky View County comprises over 950,000 acres and is home to over 45,000 residents. The County has a rich agricultural history and active farming community, as well as numerous business areas and residential communities. The unique needs of each must be considered when responding to adverse environmental conditions. The purpose of this Water Shortage Plan (WSP) is to articulate the County's response to water shortages and drought conditions and provide clear thresholds for County action to implement enhanced water conservation measures in the event of water shortages or drought conditions, and how it specifically applies to the residential water customers serviced by County water systems.

CONTEXT OF OPERATIONS

The County has numerous types of water systems within its jurisdiction. Many of these water systems fall under private ownership and operations, either through independent water coops, or private well systems. These particular systems have their own associated water licenses or approvals and are the responsibility of the holder of the approval. There is also agricultural water use provided by other sources not licensed by the County. These systems are not applicable to this WSP and will not be subject to the water restrictions listed in this Plan.

Additionally, the Industrial, Commercial, Institutional (ICI) sector that receive water service from the County will not be included in the water restrictions as listed but are encouraged to reduce water where applicable in their day-to-day operations.

This WSP is targeting residential County water customers that receive water from a surface water treatment system and is specific to outdoor irrigation use.

DROUGHT RISK ANALYSIS

The impacts of drought are cumulative and complex, which makes drought conditions difficult to understand and prepare for. Drought risk assessment follows a process similar to the Public Infrastructure Engineering Vulnerability Committee (PIEVC) Protocol for assessing and mitigating loss due to climate hazards. The following information is provided as a general overview for the purpose of understanding the criteria and parameters used to inform a drought risk assessment. Wherever applicable, risk assessment data from the City of Calgary was utilized to provide transparency, consistency, and validity from a regional perspective.

Supply criteria

- Low river flows (due to less snowpack, low precipitation, prolonged high temperatures)
- Low groundwater recharge (due to same conditions as low river flows)
- Change in flows and seasonal timing of flows
- River water contamination
- Groundwater contamination

Demand criteria

- Increased demand by existing customers in spring, summer, and fall
- Increased demand to meet new population growth and new commercial/ industrial activity
- Higher peak demands in spring, summer, and fall
- Water loss as a result of system operations
- Change in future demands as a result of increased climate fluctuations
- Maintenance of storage levels for fire protection

Severity (Impact)

Individual and combined impacts from drought include:

- Degradation or death of vegetation, fish, and wildlife
- Degradation of the groundwater table and aquifers
- Reduction in streamflow and groundwater recharge
- Economic losses in agriculture, ranching, forestry, tourism, and other industries
- Limitations of licensed water diversions where water demands exceed water supply
- Increased forest fire risk (due to trees weakened or dead from drought and pests)
- Increased commodity and food prices; food shortages
- Damage to infrastructure (loss of geotechnical integrity)
- Increased insurance and replacement costs
- Increased risk of flash floods, soil loss, bank destabilization, and water quality concerns from these conditions

Drought Risk and Response Level Based on Severity of Impact

Risk ranking	Severity of impact	Response Level
Low	Low	Level 0
Medium	Medium	Level 1
High	High	Level 2-3
Very High	High to Very High	Level 3

WATER SHORTAGE RESPONSE

Drought response measures will be implemented in advance of long-term conditions and during short term conditions (less than 5 days) where water demands are highest. Short term and long-term restrictions range from outdoor use restrictions to bans on specific uses and users depending on the severity (potential impact) of the situation.

- Short term events include unexpected operational demands or anticipated and emergency system maintenance, where restrictions are put in place out of necessity or as a cautionary measure
- Long term events include spring, summer, and fall peak demand periods when river water levels trigger local and regional restrictions, ongoing periods of high wildfire threat, or prolonged hot weather

Rocky View County may implement water use restrictions via either of the following mechanisms:

- Within its municipal authority under the Municipal Government Act/RSA 2000 cW-3
- In accordance with the Water & Wastewater Utilities Bylaw/C7662-2017

The following criteria and scenarios will trigger a Water Shortage Event:

- Provincial advisory
- Regional partner implementation
- Bow River water flow level as modelled by the Alberta Government
- Elbow River water flow level as modelled by the Alberta Government
- Minimum fire protection storage
- Western Irrigation District (WID) conveyance restrictions
- Operational requirements

The Water Shortage Response (Level 0-3) shall be determined by the level of risk and current environmental conditions associated with the severity of impact of the event:

- **Level 0:** Normal operations. Water production can meet demand on a regular basis.
- **Level 1:** Conservation practices are required in response to drought risk and/or operational conditions.
- **Level 2:** Enhanced drought risk due to environmental conditions shall trigger further restrictions to water use.
- **Level 3:** Water production must be dedicated to maintaining minimum fire protection volumes and supply for basic human consumption.

Managing discretionary (outdoor) water use is of critical importance to the Water Shortage Plan. The first levels of water shortage response planning typically focus on outdoor water use as an activity or activities that are not essential to maintain personal health and safety. Outdoor water use is any use of water outside of a building or structure for the purposes of:

- Watering or irrigating established gardens, trees, shrubs, lawns
- Applying pesticides or fertilizer in a manner that requires water
- Filling outdoor pools, hot tubs, or similar uses

- Washing vehicles, sidewalks, driveways, or garage floors
- Filling fountains, ponds, or other decorative features
- Washing home or building exteriors
- Conducting outdoor activity similar to the foregoing or any other outdoor watering purposes

Level 0

In this stage, Rocky View County shall continue to monitor drought conditions, weather patterns, and remain aware of any potential condition or event that may result in a water shortage. The County shall be prepared to notify residents of water shortage restrictions, and to implement subsequent Level(s) of Water Shortage Events (stages) as necessary based on potential or actual risk and impact.

Level 1

In this stage, residential potable customers will be required to follow an outdoor water use schedule, based on address number. Automatic irrigation system timers must run between midnight and 6 a.m. on your designated days. Manual sprinklers must be operated between 6 a.m. to 10 a.m. or 7 p.m. to midnight on your designated days. Discretionary (outdoor) water use days under Level 1 restrictions are as follows:

- Even numbered properties: Wednesdays, Fridays and Sundays
- Odd numbered properties: Tuesdays, Thursdays and Saturdays

Outdoor hand watering may occur outside set hours on your watering days. Watering new grass, shrubs and trees are exempt from this outdoor water use schedule.

County water management efforts will focus on communicating conservation messages to residents through conventional media as well as ad campaigns, billboards, and other means. The County will monitor drought conditions to determine if further action is required.

Level 2

In this stage, scheduled outdoor water use will be restricted to one day a week. As in Level 1, automatic irrigation system timers must run between midnight and 6 a.m. and manual sprinklers must be operated between 6 a.m. to 10 a.m. or 7 p.m. to midnight. Discretionary (outdoor) water use days under Level 2 restrictions are as follows:

- Even numbered properties: Wednesdays
- Odd numbered properties: Thursdays

Outdoor hand watering may occur outside set hours on your watering day or on the weekend.

Bylaw Officers will issue warnings to customers found to be using water outside of allowed hours or for prohibited activities.

County water management efforts will focus on communicating conservation messages to residents through conventional media as well as ad campaigns, billboards, and other means. The County will monitor drought conditions to determine if further action is required.

Level 3

A response in this stage will consist of a full outdoor water ban for all residential customers. All users will be requested to limit discretionary use of water. Public notification messages will be updated and issued using several forms of conventional media to ensure messaging is delivered to all residents.

The County will advise commercial customers to reduce daily consumption and will escalate Bylaw enforcement on customers using water for discretionary purposes.

Rocky View County Operations

Demonstrating leadership and governance, County Operations will adjust accordingly to conform with expectations for each Level of Water Shortage Event.

- **Level 1:** Rocky View County may cease operations using water, including but not limited to irrigation, hydrant flushing, and fountain operation
- **Level 2:** Rocky View County will cease operations using water, including but not limited to irrigation, hydrant flushing, and fountain operation
- **Level 3:** County operations which require potable water for discretionary uses will remain closed

CONCLUSION

This Water Shortage Plan provides Rocky View County with a formal process for County serviced residential outdoor use to monitor, plan for, and respond to water shortages and drought conditions. This plan is a living document that will be updated as required in response to future events and conditions, environmental and otherwise. This plan is part of our long-term water management strategy that will continue to support economic growth, community development, and the well-being of citizens in Rocky View County.