

DROUGHT RESPONSE PLAN

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INTRODUCTION

Drought can be defined as an extended period of below-average precipitation and/or stream flow that stresses a water supply. Drought is a natural, on-going situation in Colorado - a phenomenon that has recurred regularly throughout Colorado's history.

For planning purposes, the City of Grand Junction, Clifton Water District, and Ute Water Conservancy District's domestic water supply strategy is to have enough water to meet unrestricted customer usage during a period similar to the 1977, 2002, 2012, and 2018 droughts.

No one can predict how long a drought will last or if it will be worse than those used in our calculations. Therefore, the providers must be prepared to recognize drought conditions early and respond appropriately. The attached Drought Response Plan (Plan) is designed to provide Governing Boards and City Council with a set of options to consider in dealing with a prolonged drought.

The City of Grand Junction, Clifton Water District, and Ute Water Conservancy District have developed a Regional Water Conservation Plan. The Regional Water Conservation Plan is tied to the Drought Response Plan through implementation of the stated water conservation goals.

The Drought Response Information Project (DRIP) committee was formed to provide public education on responsible water use and conservation. The committee is represented by the three domestic water providers; The City of Grand Junction, Clifton Water District, and Ute Water Conservancy District. The committee also includes Orchard Mesa Irrigation District, Tri River Area CSU Extension Horticulture Program, and NOAA/National Weather Service. CSU Extension provides research-based information on landscaping, irrigation, xeriscaping (dry landscaping), and appropriate maintenance that best fits the Grand Valley. NOAA/National Weather Service provides up to date information on current and past weather trends and facts to help make appropriate decisions.

The Plan is accomplished through on-going annual efforts, budgeted and paid by the three domestic water providers. The Plan includes, but is not limited to the following items:

- Acquaint customers with measures they can expect if a Voluntary or Mandatory water restriction declaration occurs, through media coverage, social media, campaigns, projects, public outreach, etc.
- Continue with the Drought Response Information Project (DRIP), which provides public education through community involvement and all forms of media on why and how to reduce per capita consumption.
- During the monthly meetings of the DRIP committee, review water supply projections, current reservoir capacity, and ongoing conservation efforts
- Develop campaign proclamations to alert the public of the need to conserve water.
- Publish "water waste reduction" suggestions for households and aggressively promote reduction by including recommendations via water bills, websites, billboards, and Public Service Announcements.
- Monitor potential drought response effectiveness; recommend adjustments as needed to the Governing Boards and Council, and report to the public regularly.
- Coordinate with Mesa County officials and invite them to monthly meetings.

- Open a discussion about solidifying a unified Grand Valley watering schedule.
- Ensure that adequate irrigation water will be available throughout the irrigation season by communicating with the irrigation districts and companies.
- Examine all municipal and county code provisions that affect water usage, such as landscape standards, storm water best management practices, and building code provisions, and if appropriate, amend applicable code provisions to meet the objectives of the code as originally intended while reducing water consumption.
- Encourage all public institutions and organizations to take the lead in evaluating indoor and outdoor water use practices. Parks, open spaces, medians, golf courses, fountains, etc. will be asked to be audited for current consumption and redesigned or re-operated to reduce consumption.
- Meet with citizen groups and convey messages of basic water conservation and what to expect during Voluntary and Mandatory Water Restriction declarations.
- Encourage customer classes utilizing research based methods provided by Colorado State University Extension to evaluate, redesign, and reconstruct existing landscapes and outdoor water uses to reduce overall consumption.
- Train customer service and field service employees to respond to conservation-related questions and provide meaningful and appropriate information. This includes training them to:
 - Monitor outdoor use.
 - Offer suggestions to customers on water wise use.
 - Identify and work with high volume water users to reduce their monthly consumption.
- Highlight unusually high use on customers' bills. Contact these customers and special interest groups with high water use to get their ideas and suggestions for obtaining long-term reductions (golf courses, parks, hospitals, schools, government).
- Suggest water-use surveys (comprehensive water use analyses) for high volume water users in all customer categories and advise them on ways to reduce water-use and, where appropriate, suggest retrofit devices.
- Develop Demonstration Xeriscape™¹ areas for customers to gain ideas.
- Encourage Xeriscaping and low-water consumption practices.
- Suggest that each water provider consider implementing drought rates.

¹ Denver Water holds the trademark for the term Xeriscape. The word Xeriscape was created in 1981 for landscape water conservation education programs. The name is a combination of “landscape” and the Greek word “xeros”, which means “dry.”

DROUGHT RESPONSE PLAN

The Drought Response Plan is based on two stages of drought – Voluntary and Mandatory Water Restrictions - each of which is triggered by one or a combination of the following: Historic Users Pool projections, water provider storage, and/or stream flow projections.

In an effort to minimize customer confusion and to keep messaging consistent, the Drought Response Plan will use the U.S. Drought Monitor to guide Grand Valley drought declarations. The U.S. Drought Monitor is produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center at the University of Nebraska-Lincoln.

The U.S. Drought Monitor provides a consistent big-picture look at drought conditions in the United States. When referencing the U.S. Drought Monitor, it’s important to remember that it’s often used to identify likely areas of drought impacts, including water shortage, but decision-makers in many circumstances have successfully taken measures to reduce vulnerability to drought. Large urban water systems generally have diverse water supplies and can keep the water flowing in both dry and wet years. The U.S. Drought Monitor is in no way intended to replace assessments or guidance from local water systems as to whether residents should conserve water. Figure 1 shows the U.S. Drought Monitor Categories.

Figure 1

Category	Description	Possible Impacts
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.
D1	Moderate Drought	Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water use restrictions requested.
D2	Severe Drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.
D3	Extreme Drought	Major crop/pasture losses; extreme fire danger; widespread water shortages or restrictions.
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies.

Awareness Restrictions (D0-D2) - On-going water conservation messaging and Regional Water Conservation Plan implementation activities

- Domestic water providers, Orchard Mesa Irrigation District, Colorado State University Extension, and NOAA/National Weather Service, are represented on the Drought Response Information Project (DRIP) Committee. The committee attends large, public events throughout the year to provide drought education to the community. The presence of this committee helps the public recognize the efforts on the domestic water provider’s end and know there is a voice to listen to in the event of a drought.

Voluntary Restrictions (D2-D3) - On-going intensive water conservation

- Conditions are similar to 2002, 2012, and 2018 droughts, but there are no substantial impacts to area domestic water providers. Statewide drought conditions may or may not exist that affect area irrigators.
- Some voluntary water use reductions anticipated.

The 2002 drought had a statewide drought declaration:

- Ute Water Conservancy District's primary water source (the Lower Molina Power Plant) was out of water by mid-July and Vega reservoir did not fill.
- The City of Grand Junction's Purdy Mesa and Juniata Reservoirs started the summer at approximately 75% full with about 1,100 acre feet of municipal water available on top of Grand Mesa.
- The Historic Users Pool (HUP) received approximately 75 – 80% of the full allocation but had water for full irrigation season.

Mandatory Restrictions (D3-D4) – Mandatory water use reductions and an Emergency Drought Rate is imposed

- **At least one of the three water provider's** supply is at or near minimum target levels for storage or stream flows requiring drastic water conservation measures to ensure water needs for most essential uses are met for all Grand Valley water customers.
- Actions undertaken involve predominately sharing water supply between domestic water providers.
- Moving from Voluntary Water Restrictions to Mandatory Water Restrictions will be dependent on several factors:
 - During Mandatory Water Restrictions, the DRIP Committee will continue meeting on a monthly basis and increase meetings as needed. All water supplies, either storage or stream flows, will be monitored closely.
 - If the Historic Users Pool (HUP) is expected to only receive less than its full entitlement and irrigation districts are anticipating they will not be able to stretch available water supplies throughout entire irrigation season, domestic water providers will need to take stronger action to ensure domestic supplies are not overburdened due to increased outdoor irrigation use of potable, domestic water.
 - If irrigation canal water is jeopardized and the demand is added to the domestic water demand, it could cause both treatment and capacity delivery problems. Individual triggers to move towards Mandatory Water Restrictions for each domestic water provider have been discussed and will be modified as weather and demand dictate:
 - Ute Water Conservancy District's Jerry Creek Reservoirs are at 75% of storage capacity by mid-summer.
 - Clifton Water District will use the Historic Users Pool storage available as their trigger as it does not anticipate any numeric triggers, only hardship may be getting water to treatment facility from GVIC canal and/or the Colorado River.
 - The City of Grand Junction's Juniata and Purdy Mesa Reservoirs are 75% of storage capacity by the end of spring run-off.

This plan identifies two ways for users and domestic water providers to respond to a drought; increasing water supply and decreasing water use.

Increasing Water Supply

The three area water providers can possibly augment their water supply from other sources. There are several options for doing this, each presenting its own set of intergovernmental and technical considerations. Among the possibilities:

- Call back water rights that others are using. (ranch lessees and water rentals)
- Augment raw water sources through River Pump Stations if river water is available.
- Seek approval from Federal and State agencies to allow diversion and use of irrigation water decrees if available.
- Obtain municipal water contracts from federal projects if available.
- Collective use of all available water rights.

Decreasing Water Use

The prime drought response is to budget water use for the most essential uses for the drought's duration. There are a wide variety of options that could be used to decrease water use. In general, it is expected that reductions would be voluntary. Reduction will become mandatory, which may include implementation of drought rates **when at least one of the three water provider's supply is at or near minimum target levels for storage or stream flows**, as outlined above. We believe it is important to ensure that any discomfort, difficulty, or potential shortage is **shared as equitably as possible across all customer classifications**. Pages 6 and 7 detail the different actions required by customers and the community as well as water providers in an effort to decrease water use for each drought stage.

Customer & Community Drought Actions

Specific details on the drought actions for customers and the community can be found in Appendix A.

<p>D1 <i>No water restrictions</i></p>	<ul style="list-style-type: none">•Develop a foundation of procedure and education on water conservation and drought.•Encourage residential water conservation techniques.
<p>D2 <i>Possible Voluntary Water Restrictions</i></p>	<ul style="list-style-type: none">•Conditions force water conservation efforts to expand beyond the household and into the community.
<p>D3 <i>Voluntary Water Restrictions, possible Mandatory Water Restrictions</i></p>	<ul style="list-style-type: none">•Hospitality entities are targeted to look for water saving changes within their organizations.•Water reduction goals are set to help implement the foundation and education developed in D1 and D2.
<p>D4 <i>Mandatory Water Restrictions</i></p>	<ul style="list-style-type: none">•Rules and regulations are established.•Governing bodies set examples and speak to the severity of the conditions.

Domestic Water Provider Drought Actions

Specific details on the drought actions for customers and the community can be found in Appendix B.

<p>D1</p> <p><i>No water restrictions</i></p>	<ul style="list-style-type: none">• There is a heavy focus on community involvement and awareness of the Drought Response Information Project (DRIP) and water conservation.• A strong foundation of education and drought procedure is developed.
<p>D2</p> <p><i>Possible Voluntary Water Restrictions</i></p>	<ul style="list-style-type: none">• Homeowners' Associations are asked to act as a governing body to help conserve water within their associations and recommend water conservation to its members.
<p>D3</p> <p><i>Voluntary Water Restrictions, possible Mandatory Water Restrictions</i></p>	<ul style="list-style-type: none">• Partnerships are established and exercised to intensify the response to extreme drought conditions and offer resources to the community to help conserve water.• The execution of getting the drought message out is intensified through communication efforts and campaigns.• Leadership within the community is heavily relied on to help push water conservation.
<p>D4</p> <p><i>Mandatory Water Restrictions</i></p>	<ul style="list-style-type: none">• Due to the severity of the conditions, drought rates are implemented and penalties are activated for those exercising wasteful water practices.• A community movement is established to intensify the need for water conservation.

PUBLIC OUTREACH

During a drought, it is essential that the three area water providers communicate effectively not only with their customers, but also with other area water suppliers, local governments, and other groups who may be affected by this drought response.

SUMMARY

Although the options listed in the Drought Response Plan are based on lessons learned, it is important to understand that every drought is different and that the Governing Boards and City Council will adjust and refine measures based on actual drought conditions. This plan is intended to help staff, customers, stakeholders and the Boards and Council to be better prepared when a drought occurs.

APPENDIX A

Suggested Customers & Community Drought Actions

D1 – *No water restrictions*

- Encourage education on water-efficient practices
 - Rain barrels
 - Direct downspouts
 - Evaporative coolers
 - Drip irrigation
 - Performing lawn water audits
 - Proper turf maintenance
- Encourage education on landscaping
 - Transitioning lawns to Xeriscape
 - Caring for landscape during each season
 - Caring for landscape during a drought
 - Low water species
- Encourage efficient watering practices
 - Encourage HOA's to adopt a schedule
 - Encourage watering before 9am and after 6pm
- Encourage the community to educate their neighbors of smart water usage and conservation techniques

D2 – *Possible Voluntary Water Restrictions*

- Recommend customers and communities continue D1 actions
- Recommend hospitality establishments make water conservation efforts
 - Recommend hotels, motels, inns, and bed & breakfast establishments to have only low-flow showerheads and aerators.
- Recommend alternative methods to avoid water waste
 - Recommend other ways to wash vehicles
 - Recommend the removal of non-native landscape
- Recommend proper maintenance of potential water wasting practices
 - Educate homeowners with private pools on efficient operation for in-ground and above-ground pools
 - Educate customers on evaporative cooler maintenance and operation
 - Recommend cutting back on street cleaning, sidewalk, and driveway washing, with the exception of toxic or hazardous substances or where public health and safety issues can only be resolved by washing the impermeable surface

D3 - *Voluntary Water Restrictions, possible Mandatory Restrictions*

- Request that customers and communities continue D1 and D2 actions
- Request hospitality agencies to eliminate common sources of wasting water
 - Request that hotels/motels asks guests to reuse sheets and towels during their stay
 - Request that restaurants only serve water upon request
- Request all ornamental fountains in buildings and parks be turned off
- Request conservation leadership from government entities

- Request entities reduce their own short-term domestic water use by 30% of the last five-year average
- Request the community to participate in limited residential outdoor watering
- Provide information and assistance to customers for post-drought planning
 - Landscaping properly
 - Transitioning into a Xeriscape
 - Low-flow fixtures
- Request homeowners to not fill up private swimming pools and ornamental fountains

D4 - Mandatory Restrictions

- Require customers and communities to continue D1, D2, and D3 actions
- Require all fire hydrant use be eliminated except those required for public health and safety
- Require all hospitality entities to have low-flow fixtures

APPENDIX B

Suggested Domestic Water Providers Drought Actions

D1 – *No water restrictions*

- Maintain monthly DRIP Committee meetings
- Encourage consistency of drought messages, conservation techniques, and drought education through all domestic water providers
 - Training of frontline staff for general drought questions and information (Customer Service, Meter Readers, etc.)
 - All domestic water providers will include the same messages on billing statements, websites, social media, etc.
- Encourage drought awareness and education through community involvement
 - Offer or sponsor a drought expo or show
 - Adopt Xeriscape demonstration gardens in high-traffic areas (Main Street, parks, etc.)
 - Provide school demonstrations and audits
 - Partner with Grand Valley welcoming groups to educate new residents (Welcome Home, Grand Junction Area Chamber of Commerce, etc.)
 - Partner with home-improvement stores to ensure proper equipment and plants are being purchased
 - Develop a leadership summit/conference on water conservation
 - Acknowledge water-smart “Landscape of the Month”
 - Partner with School District #51 to educate students through presentations and installing low-flow fixtures
- Encourage structure and the development of resources for water providers to consistently use and exercise, regardless of drought conditions
 - Develop a Drought Wheel/Monitor that can be regularly updated and displayed (Physically in all domestic water providers’ offices and on social media, websites, billing statements, etc.)
 - Create information stations at each utility office
 - Create a “Main Shut-off Valve” campaign
 - Encourage that a percentage of new construction must be Xeriscape
 - Invite irrigators to participate in DRIP Committee meetings
 - Develop a procedure for each domestic water provider to provide regular status updates
 - Partner with municipalities to discuss water savings programs (Parks & Recreations, City of Fruita, golf courses, school campuses, etc.)

D2 – *Possible Voluntary Water Restrictions*

- Recommend domestic water providers continue D1 actions
- Recommend hospitality establishments to make water conservation efforts by communicating about water smart usage
- Monitor drought response effectiveness and recommend adjustments to Governing Board and City Council.
- Partner with Home Owner’s Associations to reach more users
 - Develop regulations on turf requirements
 - Perform audits and encourage water conservation on common areas

D3- *Voluntary Water Restrictions, Possible Mandatory Restrictions*

- Increase monthly DRIP meetings as needed
- Develop a unified Grand Valley watering schedule
- Intensify the drought message
 - Localize the drought conditions for chain businesses
 - Contract with an advertising agency to carry out an intense drought campaign
 - Issue “No Watering” advisories when wind speeds create ineffective watering conditions
 - Provide regular media briefings on conditions
- Intensify water conservation leadership
 - Adopt Home Owner’s Associations to invest and tests water-saving devices
 - Encourage Colorado Mesa University to develop an on-campus drought campaign
 - Partner with residents to encourage the use of rain-barrels
- Issue notices and publicize water usage
 - Publicize smart water usage
 - Send postcard reminders of drought conditions to the top ten-percent of residential and commercial water users

D4- *Mandatory Water Restrictions*

- Increase DRIP Committee meetings as needed
- Require drought resources for the community
 - Open a centralized drought information center
 - Establish a conversation hotline
- Implement penalties and Emergency Drought Rates
 - Establish a hotline to report water waste
 - Postcards will be sent to those identified as wasting water
 - Homeowners will be required to fix leaks within 72 hours of being notified
 - Send direct notices and calls to all customers about drought conditions
 - Discourage outdoor irrigation
- Develop a community movement addressing the drought conditions
 - Create a pledge program for community leaders to take steps toward smart water usage and water conservation in their organizations
 - Commercial customers will be asked to display “Save Water” signs and develop a conservation plan