

# **Drought Response Plan**

**Clifton Water District  
City of Grand Junction  
Town of Palisade  
Ute Water Conservancy District**

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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, Ute Water Conservation District, Clifton Water District and the Town of Palisade water supply strategy is to have enough water to meet unrestricted customer usage during a period similar to the 1977 or 2002 droughts.

No one can predict how long a drought will last or if it will be worse than those used in our calculations. Therefore, even though Grand Valley domestic water supply currently exceeds its use, the providers must be prepared to recognize drought conditions early and respond appropriately. The attached Drought Response Plan (DRP) is designed to provide Governing Boards and City Councils with a set of options to consider in dealing with a prolonged drought.

Each domestic water provider has developed a water conservation plan. Implementation of this plan will be accomplished through an on-going annual effort, budgeted and paid from the four domestic water providers. These plans include, but are not limited to, the following items:

- Initiate Drought Response Information Project to provide public education through all sources of media on why and how to reduce per capita consumption.
- Encourage all customer classes to evaluate, redesign and reconstruct existing landscapes and outdoor water uses to reduce overall consumption.
- All public institutions to take the lead in evaluating in-door and out-door water use practices. Parks, open spaces, medians, golf courses, fountains, etc. to be audited for current consumption and redesigned or re-operated to reduce consumption.
- Examine all municipal and county code provisions that affect water usage, such as landscape standards, storm water best management practices, and building codes provisions and amend, if appropriate, these code provisions to meet not only the objectives of the Code as originally intended but also to reduce water consumption.
- Campaign proclamation to alert public to the need to conserve water.
- Acquaint customers with measures they can expect if Stage I or Stage II drought occurs.
- Monitor potential drought response effectiveness; recommend adjustments as needed to the City Councils and Governing Boards and report to the public regularly.
- Highlight unusually high use on customers' bills. Contact these customers and special interest groups with heavy 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 classes, advise them on ways to reduce water use and, where appropriate, suggest retrofit devices.
- Coordinate with Mesa County; invite to meetings.
- Meet with citizens groups and convey messages of basic water conservation and Stage I and Stage II drought conditions.

- Publish “water waste reduction” suggestions for households and aggressively promote it by including it with water bills, putting it on web sites, and using other effective distribution methods, including bill boards, and Public Service Announcements.
- Train customer service employees to respond to conservation-related questions and give information.
- Communicate with the irrigation districts and companies to cooperatively work with them to ensure that adequate irrigation water will be available throughout irrigation season.
- Develop some Demonstration Xeriscape™ areas for customers to identify with.
- Encourage Xeriscaping and low-water consumption practices.
- Quarterly meetings of domestic water providers to review water supply projections, current reservoir capacity and ongoing conservation efforts.
- Consider incentives by the domestic water providers to customers to replace out-dated, water consuming in-door plumbing fixtures, faucets and shower heads.
- Each provider consider adjusting increasing block rate (separation of residential from commercial/industrial rates.)
- Train and assign field and customer service personnel to:
  - Monitor outdoor use.
  - Offer suggestions to customers on water wise use.
  - Identify and work with high water users.

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, each of which is triggered by either a combination of the Historic User Pool projections, Water Provider storage, or stream flow projections.

**Stage I Drought** - On-going intensive water conservation – Conditions are similar to 2002 drought, but no real impacts to area domestic water providers; Statewide drought conditions may or may not exist that affect area irrigators. Some voluntary water use reductions anticipated. Actions undertaken involve predominately sharing water supply.

- The 2002 drought had a Statewide drought declaration, Ute Water Conservancy Districts primary water source and the Lower Molina power plant was out of water by mid July, Vega reservoir did not fill. The Town of Palisade’s cabin reservoir had only 75% of normal but springs remained steady. The City of Grand Junction’s Purdy Mesa and Juniata Reservoirs started out about 75% full with about 1,100 acre feet of municipal water available on top of Grand Mesa. The Historic User Pool (HUP) received approximately 75 – 80% of full allocation but had water for full irrigation season.

**Stage II Drought** - At least one of the four water provider’s supply is at or near minimum target levels (to be determined) for either storage or stream flows requiring drastic water conservation

measures to ensure water needs, for the most essential uses are met for all Valley water customers. Mandatory water use reductions and a drought rate imposed.

- Moving from a Stage I Drought to a Stage II Drought will be dependent on several factors. During a Stage I drought all water providers will have gone from meeting on a quarterly basis to be meeting on a monthly basis and all water supplies, either storage or stream flows, will be monitored very closely. If it is anticipated that the Historic User Pool (HUP) is expected to only receive 75% of entitlement and irrigation districts are anticipating they will not be able to stretch available water supplies throughout entire irrigation season we will need to take stronger action to ensure our domestic supplies are not over burdened. Domestic water suppliers usually have enough water resources to supply their current water demands, if outside irrigation demand that has normally been supplied by one of the irrigation canals is suddenly added to the domestic demand it will cause both treatment and capacity delivery problems. Individual triggers for each domestic water provider have been discussed and will be modified as weather and demand dictate. Currently the Ute Water District trigger for moving to Stage II will be they will be at 75% of storage capacity in Jerry Creek reservoirs by mid summer. The Town of Palisade's Cabin Reservoir is below 75% capacity right after spring runoff and Ute Water may not have capacity to keep them whole. Clifton Water District will use the 75% of Historic User Pool storage available as their trigger as does not anticipate any numeric triggers, only hardship may be getting water to treatment facility from river. The City of Grand Junction is anticipating a trigger of 50% of storage for Juniata and Purdy Mesa Reservoirs by end of irrigation season.

This plan identifies two ways to respond to a drought: increasing water supply and decreasing water use.

Increasing Water Supply. The four 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 we allow others to use. (Ranch lessees)
- Augment raw water sources through River Pump Stations if river water is in priority.
- Pay an upstream water user to allow us to divert more water.
- Seek waivers from State agencies to allow us to divert and use irrigation water decrees if available.
- Purchase Municipal Water contracts from federal projects if available. (possibly must do in advance)

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, we expect that reductions would be voluntary as outlined above in the introduction. Voluntary measures would continue with a Stage I drought. Mandatory measures would be implemented during a Stage II drought. We believe it is important to ensure that any discomfort, difficulty or potential loss is shared as equitably as possible across all customer classes.

**Stage I Drought** – Based on past experience of other domestic water providers we can expect to achieve between 0% and 10% reduction in water consumption with the following measures.

- Monthly meetings of domestic water providers to review water supply projections, current reservoir capacity and ongoing conservation efforts.
- Continue all measures outlined in the on-going water conservation plan implementation as outlined above.
- Initiate campaign to alert public of Stage I drought conditions.
- Monitor drought response effectiveness; recommend adjustments as needed to the City Councils and Governing Boards, report to the public regularly.
- Request all government entities to reduce their own short term domestic water use by 30 percent of last five year average to demonstrate leadership in dealing with the crisis, and then publicize the results.
- Publicize creative water saving efforts of individuals and business customers as examples of leadership.
- Assist city and county health departments in distributing guidelines for using gray water where legal and appropriate.
  
- Suggest the following ideas to reduce indoor water use:
  - Serve water in restaurants only upon request.
  - Encourage all hotels, motels, inns and bed and breakfast establishments to have only showerheads meeting maximum flow rates of 2.5 gallons per minute and faucet aerators meeting maximum flow rates of 2.2 gallons per minute.
  - Promote the reduction of water-cooled air conditioning.
- Suggest the following ideas to reduce outdoor water use:
  - Cut back on street cleaning, sidewalk and driveway washing—except where spills of toxic or hazardous substances or where public health and safety issues can only be resolved by washing the impermeable surface.
  - Suggest to customers other ways to clean sidewalks or driveways and any other hard surfaces without the use of hoses.
  - Suggest to customers other ways to wash vehicles to minimize water waste.
  - Suggest home owners not to fill private swimming pools.
  - Require that ornamental fountains in buildings and parks be turned off.
- Provide information and assistance to customers planning for post-drought landscape revival or replacement.

**Stage II Drought** - Based on past experience of other domestic water providers we can expect to achieve between 10% and 20% reduction in water consumption with the following measures.

- Continue all measures initiated in Stage I droughts.
- Increase meeting frequency from monthly to weekly.
- Adjust drought water rates to increase financial incentives for using less water.
- Intensify public information to reinforce the need for extreme measures (generate awareness of drought status, response, policy recommendations, requirements and penalties).
- Provide information and assistance to customers planning for post-drought landscape revival or replacement.

- Eliminate all fire hydrant uses except those required for public health and safety.
- Reduce indoor water use:
  - Eliminate serving water in restaurants except upon request.
  - Require all hotels, motels, inns and bed and breakfast establishments to have only showerheads meeting maximum flow rates of 2.5 gallons per minute and faucet aerators meeting maximum flow rates of 2.2 gallons per minute.
  - Assist County health department in distributing guidelines prohibiting use of gray water.
- Intensify reductions of outdoor water use:
  - Increase penalties for wasting water, violating any permits or ignoring restrictions.
  - Prohibit street, sidewalk and driveway washing by flushing methods—except where spills of toxic or hazardous substances or where public health and safety issues can only be resolved by washing the impermeable surface.
  - Prohibit curbside car/truck washing by all customers.
  - Prohibit car/truck washing on dealers’ lots.
  - Prohibit filling private swimming pools.
  - Require that ornamental fountains in buildings and parks be turned off.
  - Impose restrictions in landscape water use in proportion to the severity of the drought.
  - Prohibit all new landscaping including planting of trees and shrubs.
  - Train and assign field and customer service personnel to:
    - Police outdoor water use.
    - Issue warnings.
    - Impose penalties for water waste, violations of any permits and noncompliance with restrictions.
- Prohibit outdoor water use (as a last resort in an extremely severe drought) except for subsistence irrigation of trees and shrubs.

## **PUBLIC OUTREACH**

During a drought, it is essential that the four 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. An intense water conservation effort is being implemented during 2003. This effort once initiated is planned to be on going with continued support from Ute Water Conservancy District, Town of Palisade, Clifton Water District and the City of Grand Junction.

## **SUMMARY**

While the options listed in the Drought Response Plan are based on lessons learned here and from other water utilities during past droughts, 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 be better prepared when a drought occurs.