



DROUGHT MANAGEMENT PLAN

(Updated February 2012)

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I. INTRODUCTION

The City of Prescott has adopted and is continuing to develop practices in water resource planning and program development. The City is committed to providing quality and reliable water service to its residents and businesses. A major challenge facing nearly all water providers is temporary water shortages caused by droughts.

This City's Drought Management Plan confirms that the City has in place best management practices to minimize the negative impacts of temporary water shortage resulting from drought, including ordinances, policies, plans, and procedures. Additional policies are probable and identified in this document.

The City's Drought Management Plan is founded on five fundamentals.

1. To provide a quantity of adequate water meeting required quality standards to assure the safety, health, and welfare of the public including wildfire prevention.
2. To minimize disruption of economic, business, and residential activities.
3. To maintain public trust through effective communication with residents and businesses in implementing the plan.

4. To provide a balanced and equitable plan, in which all water customers share the impacts and responsibilities in proportion to the amount of water used in accordance with legal documents, and the magnitude of the water shortage.
5. To provide a comprehensive, logical, and coordinated plan that is effective, practical and flexible.

II. KEY DEFINITIONS AND DROUGHT CONCEPTS

A. DROUGHT

“Drought” is defined as an extended period of below-normal precipitation on a watershed. Cyclical conditions of drought and surplus on regional water supplies are an expected occurrence. No one can accurately predict how long a specific drought event will last, its geographical extent, nor its magnitude or severity. When an area experiences a drought it does not necessarily mean that the area will need to ration water use. The key issue is drought susceptibility.

B. DROUGHT SUSCEPTIBILITY

“Drought susceptibility” is the extent to which an area may be subject to the negative impacts of a drought. High susceptibility means that an area is more prone to experiencing a drought and is exposed or vulnerable to the negative impact of a drought, and may not have enough water to meet customer needs.

1. Different cities and places have varying drought levels even though they appear to have similar characteristics such as size, climate, precipitation pattern, and growth.
2. From a municipal water provider’s perspective, drought susceptibility is the inability to provide normal water service to its customers during different levels of droughts. Factors affecting susceptibility are groundwater-pumping rights, surface water availability/rights and reservoirs, water storage capacity, availability of alternative water resources to replace drought affected supplies, and water system infrastructure capability.
3. The availability to utilize alternate sources of water, particularly groundwater and stored water credits, and having the infrastructure (i.e., well capacity and transmission mains) in place to utilize resources during a drought is an important means of reducing drought susceptibility. Both groundwater and recharged effluent are available to Prescott during prolonged periods of drought.
4. Groundwater - well production capacity is currently not a limiting factor. Additionally, the City has purchased the Big Chino Water Ranch as a source for additional water supplies.

C. DROUGHT MANAGEMENT

“Drought management” is the plans and actions a city or water provider will implement in the event of drought. This includes the use of alternative water supplies and applying measures to reduce water demand in response to a drought.

D. WATER CONSERVATION

“Water conservation” designed programs are on-going for educational resource purposes. Customer resources are available that support reducing unnecessary or wasted water use regardless of drought condition or level. Water conservation programs are intend to change the behavior of water customers through progressive rate structure, print information, public education, and water conservation incentives.

Water conservation programs support a regional message, encouraging consumers to apply smart and practical indoor and outdoor water use practices, utilizing low water use landscaping and water saving technologies. It is important to keep drought management and water conservation separate in order to prevent consumer confusion.

E. WATER RESOURCE

Sources of water include groundwater, surface water, effluent/reclaimed water, and stored water credits. The City continues to develop its water system to maximize the usefulness of each of these sources of municipal water supplies.

Prescott has demonstrated to the Arizona Department Water Resources that it has a 100-year assured water supply for its entire water service area. The City has invested in long-term water supplies that include:

1. Groundwater: Water withdrawn from wells in Chino Valley and Prescott. Future supplies from the Big Chino Water Ranch.
2. Surface Water: Water diverted and recharged from Watson and Willow Lakes
3. Effluent: Treated wastewater used for recharge, golf course irrigation, and construction use.
4. Recharge: Effluent that is sent to the City’s underground storage facility to infiltrate back into the aquifer. Long term storage credits are accrued at ADWR for the treated effluent that is recharged, less evaporative losses.
5. Recovery: Effluent and surface water are pumped out of the ground to serve water customers based on ADWR storage credits.

III. WATER RESOURCES PLANNING PROGRAM

The City of Prescott has been designated by the Arizona Department of Water Resources as having an Assured Water Supply (AWS) to serve its current and future customers. This AWS designation means that the City has proven that it has physical, legal and continuous availability to a 100-year water supply, which is made up of many

components, including groundwater, recovered effluent credits and recovered surface water.

1. The City's AWS designation allows the City to pump up to approximately 9,500 acre-feet per year of Prescott AMA groundwater. The City currently (2000-2010) withdraws an average of 6,600 acre-feet each year, which is offset by surface water recharge. In 2004 the Big Chino Water Ranch was purchased, and with its partner Town of Prescott Valley the design of a well field and transmission pipeline commenced. This imported water from the Big Chino sub-basin aquifer is to further augment water supply and address safe-yield in the AMA. This future source is recognized in Arizona Revised Statute and in the City's AWS designation authorizing up to 8,067 acre-feet each year. Through an IGA with Prescott Valley, 45.9% of the project water will be for their use.
2. The City's 2005-2010 Water Management Policy (extended through 2012) allocates 200 acre-feet per year for new development, with 20% of that allocation earmarked for workforce housing projects. Development project requests are limited to no more than 50% of the remaining allocation on a first come, first serve basis. Allocations remaining at the end of a calendar year are placed into a contingency allocation. The City Council may use this remainder for projects that need more water than is currently available in the yearly budget. This careful management of the City's water supply reduces the possibility of over allocating the City's water resources.
3. The Water Management Policy recognizes the importance of recovering as much of the water used by the City's customers as possible. The policy places a high priority on requiring houses to connect to the City's wastewater system so effluent can be recovered.
4. This policy prohibits new golf courses to develop on the City's municipal water or effluent system. This policy emphasizes the value of both potable and recovered effluent water to the City's present and future water supply.
5. While the City's water planning efforts have significantly reduced the risk of drought related impacts, severe drought conditions can result in a reduction of available groundwater supplies. These reductions could potentially affect the City's ability to provide normal water services, thus requiring additional drought related responses from both the City and its water service customers.

It is important to note that it would take severe or prolonged drought to cause the City to suspend normal water services and mandate water reduction measures. Nonetheless, deep and prolonged droughts can occur and the City's Drought Management Plan prepares us to prescribe escalating action steps in response to the designated drought level.

It is the City's philosophy to utilize a combination of groundwater, recovered effluent credits, and surface water to meet the City's total water demand. The City places a high priority on efficient water use to comply with Arizona's Groundwater Management Act. City Leadership is committed to utilize the water resources in the Active Management Area and in the Big Chino sub-basin responsibly and efficiently.

IV. DROUGHT LEVELS AND MANAGEMENT PLAN

The City's Water Conservation Code includes provisions for restrictions during water shortages, (Prescott City Code, § 3-10-11), and provides flexibility for use in any foreseeable water supply emergency. The City Manager can declare Water Resource Status Levels based on the relationship between water demand and municipal safe production capability. These Water Resource Status Levels correspond to a mandatory Water Conservation Level that will take effect upon notice of the declaration. For example, a Water Resource Status Level III declaration will initiate Water Conservation Level III, which in turn prohibits a variety of water use activities to reduce water demand.

Following are details regarding each resource status level and the corresponding conservation measures.

A. RESOURCE STATUS LEVELS – TITLE AND DESCRIPTION

Resource Status 1: Water Awareness

Status Level 1--When water demand is equal to or less than safe production capability. "Safe production capability" shall be defined as a daily system demand of 90% of the maximum production capacity and delivery of the system as determined by the Public Works Director.

The City is still capable of providing adequate water service throughout the system. All available water resources and facilities (conveyance and production) that are necessary to meet normal water demand are utilized.

Water users are specifically encouraged to minimize waste in water used for irrigation, vehicle and pavement washing, construction and other water consuming activities.

Resource Status 2: Water Restrictions

Status Level 2--Declared by the City Manager when demand is greater than safe production capability for three (3) consecutive days.

The following water uses may be restricted or prohibited by the City Manager: irrigation, washing vehicles; filling or refilling pools, spas and/or wading pools; use of ornamental fountains; use of water from a fire hydrant (except for emergencies or upon the written approval of the Public Works Director and Fire Chief); the noncommercial washing of vehicles.

Resource Status 3: Water Emergency

Status Level 3--Declared by the City Manager when demand is greater than safe production capability for two (2) consecutive weeks.

The following water uses may be restricted or prohibited by the City Manager: irrigation, washing vehicles; filling or refilling pools, spas and/or wading pools; use of ornamental fountains; use of water from a fire hydrant (except for emergencies or upon the written approval of the Public Works Director and Fire Chief); the noncommercial washing of vehicles.

Resource Status 4: Water Crisis

Status Level 4--Declared by the City Manager when water demand exceeds total production capability, as determined by the Public Works Director.

The following water uses may be restricted or prohibited by the City Manager: those activities set forth in Status Level 3; use of potable water for irrigation; use of potable water for dust control; and the use of potable water in violation of any other restriction deemed necessary by the City Council.

B. DROUGHT MANAGEMENT PLAN IMPLEMENTATION

The Drought Management Plan will be implemented as conditions in the aquifer and water delivery system warrant. The conservation measures may also be implemented due to system restraints from excess demand, not necessarily due to drought conditions.

V. BEST DROUGHT MANAGEMENT PRACTICES

There are a number of best management practices that may be used by the City of Prescott to deal with drought. These practices include both supply management and demand management strategies.

This list of best management practices is not all-inclusive and may be amended as necessary, excluding implementation of non-voluntary water use restrictions on businesses and the public.

Implementation of the recommended best management practices may be done selectively and/or progressively at the time of initial Resource Status 1 or at any time during a Level 2 Water Restriction.

A. SUPPLY MANAGEMENT

The City's first line of defense in facing a drought is to fully utilize the water resources that are available to replace water affected by the drought. Supply management strategies are generally preferred over demand management strategies because it has minimal impact on water users. In many cases, residents and businesses may not even realize that the City has implemented supply management measures to deal with the drought

Maximize existing well capacity. In the event of a drought that causes a cutback in the City's water supply, the City will consider using all existing wells that can produce drinking water prior to asking water users to curb water consumption. City wells would be used to access the City's groundwater and stored water credits.

Maximize surface water resources. The City's Lakes Operating Plan and management procedures limit the amount of water that can be taken from Watson and Willow Lakes for recharge purposes. The City Council could waive the Conservation requirement of the procedures to allow the lake levels to decrease further in order to send more surface water to recharge for use in a drought situation.

B. DEMAND MANAGEMENT

The second line of defense when faced with a drought is to implement demand management measures. There are a number of best management practices that are designed to reduce water demand. The list of recommended drought mitigation measures is discussed below.

Generally, the implementation of measures will begin with a public education and information campaign encouraging voluntary water use reductions. As the drought impact becomes more severe, the City will implement progressive mandatory water reduction measures.

Water use curtailments focus primarily on outdoor water use because water savings can be achieved without compromising public health and safety. Outdoor water use mainly affects aesthetics, while indoor water use directly influences household use and sanitary conditions.

This list of drought mitigation measures is not all-inclusive, and may be amended or added to as necessary. Each measure designed to match the level of severity of water shortage and the type of water user.

- 1. A public information and water awareness campaign.** Provide timely information explaining the drought situation to raise awareness and solicit cooperation from the public and business community. The City will use a variety of methods in implementing the public information and water awareness campaign.

- a. Notification of the Public: The City Manager or his/her designee shall notify the public by means of:
 - Publication in a newspaper of general circulation
 - Direct mail to water customer
 - Public service announcements
 - Signs posted in public places
 - City website
 - b. Work cooperatively and in conjunction with the Arizona Department of Water Resources, and leading members of the community to assist in coordinating appropriate public information and water awareness campaigns.
 - c. Additional Notification: The Mayor or his/her designee shall notify directly, or cause to be notified directly, the following individuals and entities:
 - Members of the City Council
 - Fire Chief
 - Major water users
 - Critical water users, i.e., hospitals
 - Parks/street superintendents & public facilities managers
2. **Provide water conservation technical assistance.** Along with increasing the awareness of the need to use water efficiently, the City's Water Conservation Program will provide water conservation tips, incentives and technical assistance to residents, businesses and other City departments.
 3. **Conduct water use audits of high water use City facilities.** The City has several high water use facilities, including City parks, golf courses, cemetery, and rights-of-way. The audits will track current water use and identify the potential to curb water consumption at these facilities.
 4. **Provide technical assistance to large non-residential water users.** The City provides water savings information and conducts water audits for homeowners associations and schools.
 5. **Municipal/City Operations Water Use Restrictions.** Municipal water use restrictions are those imposed on City operations. The public and business community will look to the City for leadership. The City will demonstrate leadership through the implementation of municipal water use restrictions prior to implementing water use restrictions on businesses and residents.
 - a. Restrict turf watering/landscape irrigation: Initially, limit landscape irrigation to occur only during the night and early morning hours (8 pm to 8 am) to reduce evaporation losses. If conditions worsen, limit landscape irrigation and outdoor water to occur only on select days. Further restrict irrigation on turf landscaping if drought conditions worsen and warrant such action. Irrigated areas using 100% direct use effluent/reclaimed water are exempt.

- b. Restrict turf and re-seeding: Initially, restrict re-seeding of grass, except in high use areas or for special/priority events. Prohibit any over seeding with grass if drought conditions worsen and warrant such action. Irrigated areas using 100% direct use effluent/reclaimed water are exempt.
- c. Prohibit the use of public ornamental fountains and other water features: Initially, turn off municipally owned and operated fountains and water features, such as splash/play fountains, unless the water is re-circulated. Prohibit any use of fountains and water features, if drought conditions worsen and warrant such action. Fountains and water features using 100% direct use effluent/reclaimed water are exempt. Fountains and water features deemed by the city to be of high importance shall have a review and possible exemption on a case-by-case basis.
- d. Restrict motorized vehicle washing: Prohibit vehicle washing unless cleaned at a commercial or City facility equipped with wash water recycling.
- e. Utilize reclaimed water for dust control: Reclaimed water delivered to capital improvement and facility construction site. Maintain Clean Air Act compliance with reclaimed water at the construction site in lieu of potable water use. Delivery system of the necessary reclaimed water distribution methods for construction sites would be required.
- f. Utilize reclaimed water for street sweeping: Reclaimed water may be used for street sweeping purposes.
- g. Prohibit the washing of sidewalks, driveways, and walkways: Prohibit the washing of sidewalks, driveways or walkways, unless deemed a health or safety risk. Use of a high-pressure cleaning system shall be required.
- h. Drought surcharge on water bill: Establish a drought surcharge and implementation guidelines when drought conditions worsen and warrant such action. The drought surcharge shall discourage high or abnormal water use and will make up for expected water utility funding gap caused by lower than normal water sales caused by the drought.
 - i. The drought pricing structure is a surcharge on the cost of each unit or block of water used beyond an established baseline amount. This surcharge would be implemented as a percentage of the baseline cost of each unit or block of water for a particular meter size.
 - ii. The need for a drought surcharge will be presented to the City Council at the time of a Stage 3 Water Emergency or a Stage 4 Water Crisis. City Council shall determine the exact structure and amount of a drought surcharge.

6. Residential and Business Water Use Restrictions. Residential and businesses water use restrictions apply to all non-city government, water use. Under its police power as a municipal corporation and water service provider, the City has the authority to implement mandatory restrictions on water use for customers connected to its water system for the maintenance of public health and welfare.

This authority does not extend over other governmental jurisdictions, such as school districts, county, state, or federal facilities, connected to, and served by, Prescott's water system. It is the City's intent to request voluntary cooperation from these jurisdictions during a drought.

Water users receiving effluent service are not required to adhere to the irrigation restrictions. The City may reduce or limit the amount of water delivered to these lands during drought conditions that affect effluent water availability.

- a. Restrict outdoor watering/landscape irrigation: Limit landscape irrigation and out door water use to occur only on selected days. Allow odd numbered street addresses to water only during odd number calendar dates. Allow even number street addresses to water only during even number calendar dates. Further restrict irrigation on turf landscaping if drought conditions worsen and warrant such action. Irrigated areas using 100% direct use effluent/reclaimed water are exempt.
- b. More strictly prohibit water wasting: Strengthen the current restriction on water wasting in Drought Stages 3 and 4 by prohibiting the escape of water from any private property onto a street, gutter, alley, sidewalk, public utility easement, right-of-way, or parking area that travels more than 250 feet from the original water source or accumulates in an area 200 square feet or more.
- c. Restrict turf or grass installation: Initially, discourage turf or grass seeding. Prohibit any turf installation or grass seeding if drought conditions worsen and warrant such action. Irrigated areas using 100% direct use effluent/reclaimed water are exempt.
- d. Prohibit the use of private ornamental water fountains and other water features: Initially, prohibit the use of private fountains and water features, unless the water is re-circulated. Prohibit any use of fountains and water features, if drought conditions worsen and warrant such action.
 - i. Fountains and water features using 100% direct use effluent/reclaimed water are exempt. Fishponds are exempt.
 - ii. Private fountains and water features deemed by the City to be of high importance may be exempt on a case-by-case basis.
- e. Discourage water-misting systems: Discourage the use of outdoor misting systems used for patio seating and other uses.
- f. Restrict motorized vehicle/boat washing: Initially, prohibit vehicle and boat washing unless conducted at a commercial car washing facility or if equipped with a shutoff nozzle.
- g. Prohibit the washing of sidewalks, driveways, and walkways: Prohibit the washing of sidewalks, driveways or walkways, unless deemed a health or safety risk and a high-pressure cleaning system is used.
- h. Drought surcharge on water bill: Establish a drought surcharge to be implemented when drought conditions worsen and warrant such action. The drought surcharge is designed to both discourage high or abnormal water use

and to make up the water utility funding gap caused by lower than normal water sales caused by to the drought.

- i. The drought pricing structure is a surcharge on the cost of each unit or block of water used beyond an established baseline amount.
- ii. This surcharge would be implemented as a percentage of the baseline cost of each unit or block of water for a particular meter size.
- iii. The need for a drought surcharge will be presented to the City Council at the time of a Level 3 Water Emergency or a Level 4 Water Crisis.
- iv. The exact structure and amount of a drought surcharge will be determined by the City Council.

- 7. Moratorium on new residential water connections.** In a worst-case situation whereby the City of Prescott is experiencing a severe drought and is unable to provide sufficient water supplies to its existing customers after implementing other best management measures, the City may need to be prepared to place a temporary moratorium on new water connections, as a measure of last resort. This restriction would be placed on water connections for new residential units only.

C. MONITORING AND ENFORCEMENT OF RESTRICTED WATER USE

1. The Public Works Department will administer the implementation of the City's Drought Management Plan.
 - a. During the first two resource status levels (Water Awareness and Water Restrictions) the Public Works Water Conservation Coordinator will work closely with affected City departments to ensure City operations comply with any municipal water use restrictions.
 - b. Since the first resource status level encourages and promotes voluntary water use reductions by residential and business water users there is no need for an active enforcement until the enactment of a Level 2 Water Restriction.
2. The City will implement a more active code enforcement program when residential and business water restrictions are mandated.
3. The code enforcement program will include routine staff patrols and prompt investigations of customer complaints of improper water use or clear waste. The code enforcement officers will be empowered to issue civil citations, which can result in fines.
4. The first citation would result in a written violation. The violation letter would be combined with educational materials on water conservation. This violation letter is usually sufficient to correct most cases.
5. The second citation would result in a second written notice of violation and a fine. The amount of the fine will depend on the drought stage in which the citation was issued.

6. The third and subsequent offenses would result in additional citations and fines for each subsequent or continuing offense.
7. It is anticipated that most of the offenses will be corrected with the first letter of violation. Fines will be incorporated into the list of miscellaneous customer service fees and will be imposed on the customer's water service account.
8. Failure to pay any portion of a water user's account, including any fines imposed, would subject water service account to termination. A person will have the option to contest the citation through the existing water services administrative hearing process.

D. EXEMPTION

The Mayor or his/her designee, may, in writing, grant temporary exemptions for existing water uses otherwise prohibited under this Plan if it is determined that failure to grant such exemption would cause an emergency conditions adversely affecting the health, sanitation, or fire protection for the public or the person requesting such exemption and if one or more of the following conditions are met:

1. Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other condition for which the Plan is in effect.
2. Alternative methods can be implemented which will achieve the same level of reduction in water use.
3. Persons requesting an exemption from the provisions of his Ordinance shall file a petition for variance with the City within 5 days after the Plan or a particular drought response stage has been invoked. All petitions for variances shall be reviewed by the City Manager or his/her designee and shall include the following:
 - a. Name and address of the petitioner(s).
 - b. Purpose of water use.
 - c. Specific provision(s) of the Plan from which the petitioner is requesting relief.
 - d. Detailed statement as to how the specific provision of the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Ordinance.
 - e. Description of the relief requested.
 - f. Period of time for which the variance is sought.
 - g. Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.

- h. Other pertinent information.
- 4. City Manager shall forward the petition with recommendations to the Mayor and Council.
- 5. Exemptions granted by the City shall be subject to the following conditions, unless waived or modified by the Mayor or his/her designee:
 - a. Variances granted shall include a timetable for compliance.
 - b. Variances granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.
 - c. No variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.