



**SURPRISE**  

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**ARIZONA**

**Community Water Systems  
Drought Contingency  
Plan**

**May 2008**

**City of Surprise  
Water Services Department  
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# PREAMBLE

## Purpose and Scope

In May of 2005, the Arizona Legislature passed House Bill 2277, *Water Supply Planning and Water Use Reporting for Community Water Systems in the State of Arizona*. In adherence to the Arizona Drought Preparedness Plan issued by the Governor of Arizona, the City of Surprise and all community water systems participating in this Drought Contingency Plan submit the following:

The purpose of this Plan is to protect the water supplies of the participating Community Water Systems (CWS) that are participating in this plan: Arizona American Water, Beardsley Water Company, Chaparral Water Company, City of El Mirage, City of Surprise, Saguaro Acres Homeowner's Association, and Saguaro View Homeowner's Association.

The Community Water Systems (CWS) and the City of Surprise (City) will work together with this Drought Contingency Plan (Plan) during drought conditions by establishing both **voluntary** and **mandatory** responses that are applicable to all persons, residents and property served by the City Water Services Department, and participating CWS in the City's planning areas. (Refer to Map 1 in the Appendix) for participating water service providers and planning areas.

The provisions in this Plan allow the City and CWS to monitor and control water use by existing, pending and future developments within its jurisdictional boundaries to ensure that (i) the water resources available to the City and participating CWS are put to the maximum beneficial use and (ii) the waste or unreasonable use of water is prevented. In an effort to meet the intended purpose, objectives and goals of the Plan the City may make amendments to this document as necessary.

## Introduction

The City and participating CWS recognize the necessity for the protection of their water supply and are committed to providing quality water services to their residents and businesses. The Plan ensures that the City and participating CWS have best management practices in place to minimize the negative impacts of long term water shortages. This plan provides procedures and strategies for when our water supplies are at risk of not meeting our customer demand. Specifically, the Plan provides ways for the City and participating CWS, businesses, and customers to aid in water demand reductions when a drought or shortage occurs.

# **DROUGHT PLAN ADMINISTRATION**

Since it is evident that drought is not a constant or totally predictable condition or duration there are multiple stages of drought, and therefore differing levels of reduction strategies.

## **Drought Triggers**

Drought triggers indicate a decrease in water supply requiring a reduction in water demand. Since the City and participating CWS rely solely on groundwater the indicator used for administering the Plan will be a specific drop in the aquifer's water level over a certain period of time. A baseline for the aquifer water level will be set and then the aquifer will be monitored for any precipitous or extraordinary unforeseen drops in the aquifer's water level.

## **Drought Stages**

The Plan includes four drought response stages ranging from Stage 1 to Stage 4. Drought stages lead to increasing strategies for reducing drinking water demand. Once a drought response has been declared, progression through stages 1, 2, 3 and 4 will be indicated based on the appropriate drought triggers referenced above. Each drought stage has a corresponding color to help identify severity. The colors are Green, Yellow, Orange and Red for Stages 1 through 4 respectively.

## **Demand Reduction Strategies**

Demand Reduction Strategies incorporate a variety of measures to reduce the demand of drinking water (potable water). Water demand reduction during a drought may incorporate both voluntary and mandatory measures.

The Plan includes four (4) levels of Demand Reduction Strategies correlating to the four (4) drought stages. In addition the Demand Reduction Strategies will be divided into 2 categories.

The first category will cover Municipal water users. The second category will cover Residential, Industrial and Commercial (RIC) users.

## **Drought Stage Declaration**

The City manager is hereby authorized to declare drought stages, and during any drought stage declaration the City manager may apply alternative water use restrictions than prescribed by this article, which may be necessary to achieve a desired reduction in water use. The participating CWS will be apprised of a drought condition before the City manager makes the official announcement.

Following the declaration of a drought stage the City shall publish written notice thereof for a minimum three (3) consecutive days in the appropriate local newspapers. The declaration of a drought stage will trigger an intensive public education and information campaign by the City to assist all residents with understanding the drought stage and the application of voluntary and mandatory water use restrictions. During all drought stages, the City Manager or a designee shall monitor the City's use of water to ensure compliance with the Plan, and the participating CWS will monitor their water usage in their communities.

## **Chain of Command**

The appropriate City Water Services staff will notify the Water Services Operations Division Manager when aquifer monitoring levels are within range of the drought plan triggers. The Operations Division Manager will contact the Environmental Division Manager who will then report the drought situation to the Water Services Director. In addition, the Environmental Division Manager will contact the participating CWS notify them a drought plan trigger has been reached. The Water Services Director will report the appropriate drought stage to the Assistant City Manager, who in turn reports the information to the City Manager. The City Manager is then responsible for informing the Mayor and City Council and also for making the public declaration.

## **Emergency Water Supply**

Emergency water supply can come from multiple sources. The City has four interconnects. Two are with the City of El Mirage and two are with Arizona American Water. (See Map 1 in the Appendix). In addition, the City has identified resources for transporting drinking water for participants of the Plan. A list of these resources will be maintained by the City and provided to participating CWS's as requested. The City will assist with emergency water as necessary and based on ability if any of the CWS experience a reduction in their drinking water supply,

## **Water Supply**

The City and participating CWS water supply comes from the West Salt River Valley Aquifer and the Hassayampa Aquifer (See Map 2 in the Appendix.) The groundwater is returned to the aquifer by recharge basins throughout the City planning area. The City has been recharging groundwater since 2003.

# **DROUGHT PLAN IMPLEMENTATION**

## **Public Information**

Communicating with the public is an integral component of this Plan. The following are options considered for public outreach.

- Water Bill Inserts
- Public Service Announcements and Paid Advertising
- Chamber of Commerce Newsletter
- Classroom Presentations
- Drought Pamphlets
- Arizona Department of Water Resources Drought Website
- Public Workshops and Home Owners Association Meetings
- Drought Information Center on City Website
- Public Advisory Committee
- Promotional Materials
- Other Government Access Channels and Media

The City will provide timely information explaining the drought situation to raise awareness and solicit cooperation from the public and business community. The City and participating CWS will assist each other on communicating with their residents and customers if there is a water emergency.

## **Public Education for Voluntary Reduction**

The goal of a good public education program is to generate an appropriate level of public awareness that results in desired participation. While recognizing the City and participating CWS live in a desert with a limited supply of water, the City and participating CWS will need to go above and beyond their normal conservation efforts during a drought situation. The first step will be to highlight the drought situation and the need for immediate cutbacks in water usage. The second step will be to increase water conservation messaging emphasizing the appropriate demand reduction strategies.

### **Municipal Use Restrictions**

The City will be the first to implement water conservation and drought efforts through internal communications and vigilante operations. The amount of municipal water use is relatively small and restrictions are not expected to produce a large volume of savings. However, essential steps will be taken to establish the City as a leader in the drought effort.

### **Outdoor Use Restrictions and Bans**

Outdoor water use restrictions shall be considered because of the potential benefits for early implementation and the water savings that can be derived. Outdoor use is a significant portion of the (potable) drinking water consumption in the City planning area. Effective restrictions include time-of-day watering and odd/even lawn watering plans based on house numbering, or a combination of the two. Implementation requires the commitment of resources to monitor violators and enforce restrictions. An appeal process is also necessary.



# DROUGHT PLAN TRIGGERS

## **Stage 1 Trigger**

Aquifer drops an average of 5' per year, over 2 years measured in 3 or more monitoring wells. After the first year of a 5' drop, monitoring will be conducted quarterly.

## **Stage 2 Trigger**

Aquifer drops an average of 5' per year over 4 years measured in 3 or more monitoring wells.

## **Stage 3 Trigger**

Aquifer drops an average of 5' per year over 6 years measured in 3 or more monitoring wells.

## **Stage 4 trigger**

Aquifer drops an average of 5' per year over 8 years measured in 3 or more monitoring wells.

Aquifer monitoring will be conducted on an annual basis at the appropriate designated wells.

# DROUGHT PLAN STAGES

**Drought Stage 1** **GREEN** **Low Alert**

A Stage 1 drought response may be declared by the City Manager, on the advice of the Water Services Director, based on the Stage 1 trigger above. The goal during stage 1 is to encourage a demand reduction in drinking water through indoor and outdoor water conservation by public outreach and education. The following **voluntary** strategies apply:

## **Municipal Demand Reduction Strategies:**

- General reduction of non essential (potable) drinking water use by 5%
- Landscape irrigation should NOT occur during peak demand time frames (6 am – 9 pm).
- All leaks and breaks in the (potable) drinking water distribution system should be repaired or replaced in a timely manner
- All plumbing devices leaking or running should be repaired or replaced in a timely manner.

## **RIC Demand Reduction Strategies:**

- Washing automobiles, trucks, trailers and other types of mobile equipment with a bucket and hose is discouraged; an automatic shut-off nozzle is required.
- Landscape irrigation during peak demand time frames (6 am – 9 pm) is discouraged.
- Construction projects are encouraged to use non-potable water for dust control purposes.
- All leaks and breaks in the drinking water distribution system should be repaired or replaced in a timely manner
- All plumbing devices leaks or breaks should be repaired or replaced in a timely manner.
- Restaurants and other food service establishments are discouraged from serving water to their customers unless it is specifically requested by the customer.
- Hotel, motels and other temporary lodging facilities are encouraged to wash towels and linens only upon request.

## **Drought Stage 2 **YELLOW** Moderate Alert**

A Stage 2 drought response may be declared by the City Manager, on the advice of the Water Services Director, based on the Stage 2 trigger above. The focus of Stage 2 demand reduction strategies for the City and participating CWS will be to communicate conditions and increase conservation outreach. In addition the City and/or CWS may provide incentives for or require non-potable water to be used where available and adopt increased conservation rate changes or surcharges in response to increasing drought conditions. The following **mandatory** strategies apply:

### **Municipal Demand Reduction Strategies:**

All municipal demand reduction measures from previous drought stage apply with the following modifications or additions:

- Winter grass is restricted except in high use active recreation areas or priority events.
- Landscape watering for City facilities (other than parks and right-of- ways) should not occur between the hours of 6:00 am and 9:00pm. Watering days should correspond with the facility address as follows:
  - Addresses ending in an EVEN number should irrigate on WEDNESDAY and SUNDAY.
  - Addresses ending in an ODD number should irrigate on TUESDAY and SATURDAY.
  - Locations with no discernable address (right-of-ways, medians, etc.) should irrigate using the EVEN date schedule.
- Use of ornamental fountains and other water features shall be prohibited.
- Washing sidewalks, driveways, parking areas, patios or other paved areas with drinking water from any pressurized source, including garden hoses, except to alleviate immediate health or safety hazards shall be prohibited.
- Motorized vehicle washing (unless conducted at a commercial facility utilizing non-potable or an automatic wash system) shall be prohibited.
- Non-potable water will be utilized for dust control.

### **RIC Demand Reduction Strategies**

All RIC demand reduction measures from the previous drought stage apply with the following modifications or additions:

- Water should be conserved both inside and outside the home using best practices available to minimize waste.
- All leaks, running faucets and toilets shall be repaired to prevent waste.

- Winter grass is restricted except in high use active recreation areas and for priority events.
- Landscaping for residential or commercial uses should be accomplished with plant materials requiring little or no supplemental irrigation water. Outdoor water use should not occur between the hours of 6:00 am and 9:00pm. Watering days should correspond with your home address as follows:
  - Addresses ending in an EVEN number should irrigate on WEDNESDAY and SUNDAY.
  - Addresses ending in an ODD number should irrigate on TUESDAY and SATURDAY.
  - Locations with no discernable address (HOA greenbelts, etc.) should irrigate using the EVEN date schedule.
- Washing automobiles, trucks, trailers and other types of mobile equipment shall be prohibited, except at facilities equipped with wash water recirculation systems and for vehicles requiring frequent washing to protect public health, safety and welfare.
- Misting systems used to cool outdoor space shall be prohibited.
- Sidewalks, driveways, parking areas, tennis courts, patios, or other similar paved surfaces shall not be washed using drinking water.
- Construction projects are encouraged to use non-potable water for construction and dust control purposes.
- Restaurants and other food service establishments are discouraged from serving water to their customers unless it is specifically requested by the customer.
- Hotel, motels and other temporary lodging facilities are encouraged to wash towels and linens only upon request

## **Drought Stage 3** **ORANGE** **Moderate High Alert**

A Stage 3 drought response may be declared by the City Manager, on the advice of the Water Services Director, based on the Stage 3 trigger above. The focus of the Stage 3 demand reduction strategies for the City and the participating CWS will be to restrict non-essential uses of drinking water in response to ongoing drought conditions. The following **mandatory** strategies apply:

### **Municipal Demand Reduction Strategies**

All municipal demand reduction measures from the previous drought stages apply with the following modifications or additions:

- All passive recreation turf and/or landscape irrigation shall be prohibited.
- All new landscaping for commercial projects shall be prohibited.
- All residential, industrial, and commercial application of overseeding for winter grass is restricted.
- Only non-potable water is allowed for sweeping / sanitizing streets, and for dust control.

### **RIC Demand Reduction Strategies**

All RIC demand reduction measures from the previous drought stages apply with the following modifications or additions:

- Residential landscaping shall be restricted to plant materials requiring little or no supplemental irrigation.
- Washing sidewalks, driveways, parking areas, patios or other paved areas with drinking water from any pressurized source, including garden hoses, except to alleviate immediate health or safety hazards shall be prohibited.
- The filling of swimming pools (with exception of community pools), fountains, spas or other exterior water features shall be prohibited.
- The outdoor use of any water-based play apparatus connected to a pressurized source shall be prohibited (unless at a community event).
- New landscaping for commercial projects shall be prohibited.
- Any residential landscaping, right-of-ways, parks and golf courses irrigated with (potable) drinking water shall be prohibited. Irrigation with non-potable water is permissible.

**Drought Stage 4 RED High Alert**

A Stage 4 drought response may be declared by the City Manager, on the advice of the Water Services Director, based on the Stage 4 trigger above. The focus of the Stage 4 demand reduction strategies for the City and the participating CWS will be to further restrict non essential uses of (potable) drinking water in response to ongoing drought conditions. The following **mandatory** strategies apply:

**Municipal Demand Reduction Strategies**

All municipal demand reduction measures from the previous drought stage apply with the following modifications or additions:

- Non-essential outdoor (potable) drinking water use shall be prohibited except to alleviate immediate health or safety hazards.
- Only non-potable water is allowed for sweeping / sanitizing streets and dust control.
- Consider a moratorium on issuing building permits requiring an increase of the current (potable) drinking water demand.

**RIC Demand Reduction Strategies**

All RIC demand reduction measures from the previous drought stages apply with the following modifications or additions:

- Non-essential outdoor (potable) drinking water use shall be prohibited except to alleviate immediate health or safety hazards.
- Operation of water cooled space and equipment cooling systems below an operating efficiency level of 2 cycles of concentration is prohibited.

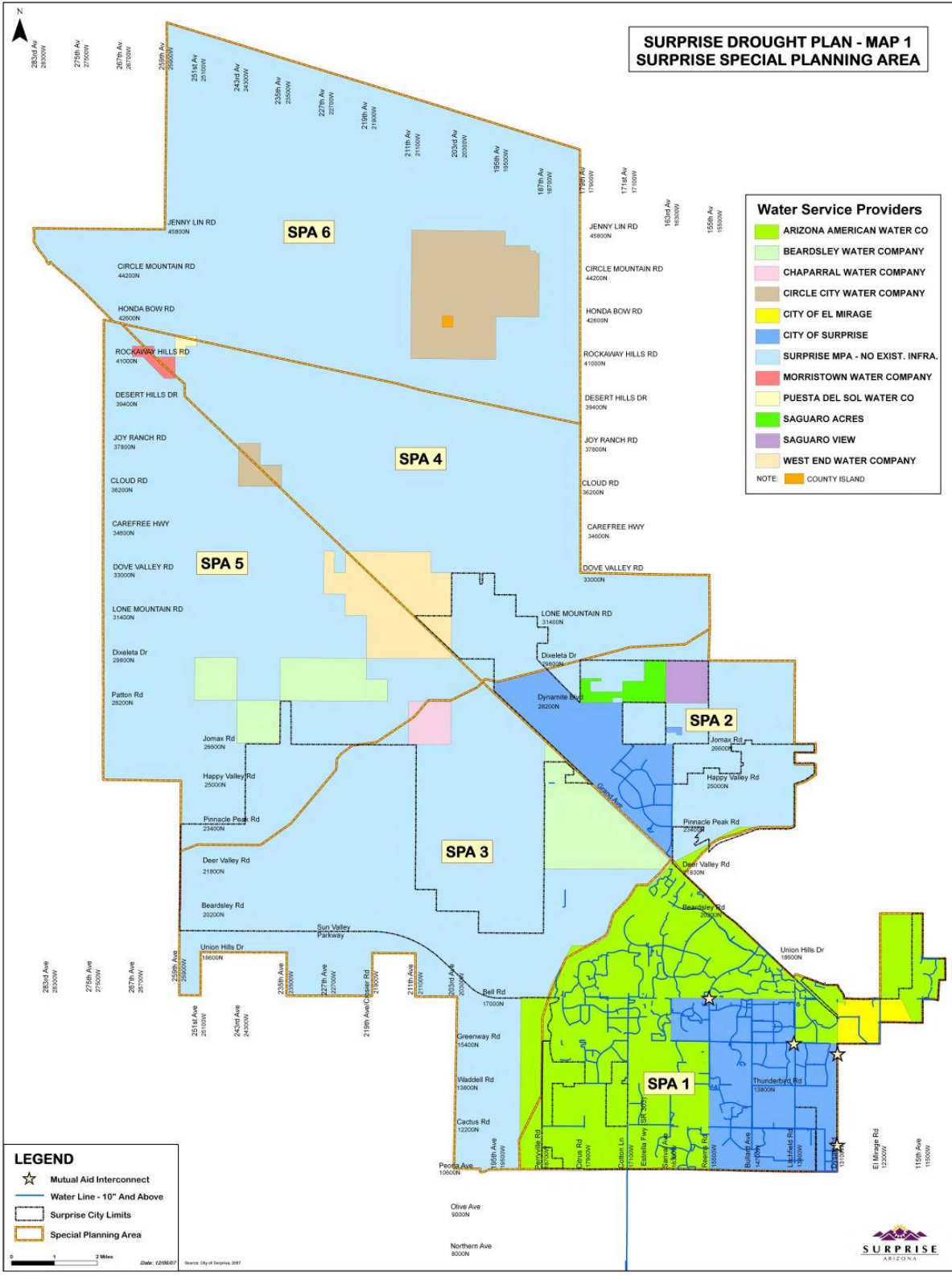
**Requests for an exemption from any Demand Reduction Strategy must be made in writing to the City Manager, and must include all documentation supporting the request. Individual exemptions shall only be made for the protection of public safety, health and welfare.**

## **Maps**

### **Map 1 - Surprise Special Planning Area**

Surprise Special Planning Area (SPA) contains eleven Water Service Providers, including Arizona American Water Company, Beardsley Water Company, Chaparral Water Company, Circle City Water Company, City of El Mirage, City of Surprise, Morristown Water Company, Puesta Del Sol Water Company, Saguaro Acres, Saguaro View, and West End Water Company. Four Mutual Aid Interconnects (MAIs) exist along City of Surprise water service area boundary. Two MAIs are located between City of Surprise and Arizona American Water Company water service areas, and the other two MAIs are located on Dysart Road between City of Surprise and City of El Mirage water service areas. Water lines with a pipe size of 10-inch in diameter or above are also displayed on the map. (*GIS data source: City of Surprise, 2007*)

**SURPRISE DROUGHT PLAN - MAP 1  
SURPRISE SPECIAL PLANNING AREA**



**LEGEND**

- ☆ Mutual Aid Interconnect
- Water Line - 10" And Above
- ▭ Surprise City Limits
- ▭ Special Planning Area



Source: City of Surprise, 2017



## Map 2 - West Salt River Valley Sub-basin

The Phoenix Active Management Area contains seven sub-basins, including West Salt River Valley, Hassayampa, Lake Pleasant, Carefree, Fountain Hills, East Salt River Valley, and Rainbow Valley Sub-basins. Surprise SPA lies in the northwest portion of the West Salt River Valley Sub-basin and encompasses the northeastern portion of Hassayampa sub-basin, as shown on the map. Four Recharge Facility Plants are located within Surprise Special Planning Area, including CAWCD Hieroglyphic Mountains, Del Webb Sun City Grand, Maricopa Water District, and Surprise Wastewater Treatment. (GIS data source: Arizona Department of Water Resources, 2007)

