



SURPRISE

ARIZONA

**Community Water Systems
Drought Preparedness and Resiliency Plan**

2021 Update

**City of Surprise
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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 Preparedness and Resiliency Plan submit the following:

The purpose of this Drought Preparedness and Resiliency Plan (Plan) is to provide coordination for the following participants: EPCOR, Liberty Utilities, Chaparral Water Company, City of El Mirage, City of Surprise, Saguaro Acres Homeowner's Association, and Saguaro View Homeowner's Association. This group will be referenced as the Community Water Systems (CWS) in this report.

The Community Water Systems (CWS) and the City of Surprise (City) will work together using this 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 Resource Management Department and participating CWS in the City's Special 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 manage water use by existing 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. The City may make amendments to this document as necessary in an effort to meet the intended purpose, objectives, and goals of the Plan.

Additionally, the provisions of this Plan are codified via Article VII of the Surprise Municipal Code. Although the code provides the means of inciting civil and criminal charges, it will always be the intent of the Water Resource Management Department to use education and communication as our first line of defense should this Plan be enacted.

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 nor 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 on a combination of groundwater and surface water sources, groundwater levels and the Colorado River status as determined by the Bureau of Reclamation (BOR) will serve as the primary indicators used for administering the Plan. 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 groundwater levels. To monitor groundwater levels, “beacon” wells will be utilized to provide geographical representation of the aquifer(s) throughout Surprise. These wells include (however, are not limited to) Ashton Ranch (SPA 1), Orchards (SPA 1), Surprise Point (SPA 1), Desert Oasis 1 and 2 (SPA 2), and Buena Vista 1 and 2 (SPA 3) and provide geographical representation for each of the current Special Planning Areas (SPAs).

The status of the Colorado River is reported by the BOR every August for the following calendar year, this status will also be taken into account as a baseline indicator for implementing the Plan. In August of every year, the BOR evaluates the water level in Lake Mead and determines if it will be operating in a shortage condition for the following calendar year. If this is the case, the Secretary of Interior (SOI) will then make a shortage declaration for the following calendar year. The Shortage Declaration thresholds are based upon water surface elevations within Lake Mead. These tier and lake elevation thresholds are as follows:

- Tier 0 – 1,090’
- Tier 1 – 1,075’
- Tier 2 – 1,050’
- Tier 2b – 1,045’-1025’
- Tier 3 – 1,025’

Within each of these tiers, reductions to Arizona’s supply of Colorado River water will be realized by the priorities established within the Lower Basin Drought Contingency Plan. Surprise would not see a reduction to its Central Arizona Project (CAP) allocation until a Tier 2b scenario.

Drought Stages

The Plan includes five drought response stages ranging from Stage 0 to Stage 4. Drought stages lead to increasing strategies and actions for reducing water demand. Stage 0 is where the City will remain at all times unless the Plan is implemented. Once a drought response has been declared, progression through stages 1, 2, 3 and 4 will be initiated based on the appropriate drought triggers.

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 five (5) levels of Demand Reduction Strategies correlating to each Trigger. In addition, the Demand Reduction Strategies will be divided into three (3) categories. The first category will cover Municipal water users. The second category will cover Residential, and the third category will cover Industrial and Commercial users.

Drought Stage Declaration

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

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 Water Resource Management Director is charged with communicating the drought status and any action associated with implementing the Plan to the City Manager. The Water Resource Management Director will also communicate with other CWS leadership in the event that any action associated with implementing the Plan is initiated.

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 EPCOR 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's municipal planning area. The City has been recharging groundwater since 2003. In addition to groundwater, some of the CWS also utilize surface water (CAP Water) for direct delivery to customers.

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
- Classroom Presentations
- Drought Pamphlets and Other Promotional Materials
- Arizona Department of Water Resources Drought Website
- Public Workshops and Home Owners Association Meetings
- Drought Information Center on City Website
- Public Advisory Committee
- 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 vigilant 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

Approximately 47% of the potable water served by the City in its water service area is consumed outdoors. Therefore, outdoor water use restrictions are the focus of water demand reduction measures found in the Drought Plan Measure tables.

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DROUGHT PLAN TRIGGERS

Stage 0 Trigger

This stage relates to the status in Surprise, whereas the area is an arid desert region, with limited rainfall, and has been experiencing an official drought since 1999. The purpose of this stage is for the Water Resource Management Department to manage water conservation efforts through effective demand management and targeted communication and education.

Stage 1 Trigger

Either or both of the following: (1) any CAP reductions to lower basin users due to declared shortage on the Colorado River; (2) a downward trend in groundwater levels at a beacon well exceeding 4' in one year.

Stage 2 Trigger

Either or both of the following: (1) CAP reductions to municipal priority subcontracts due to declared shortage on the Colorado River; (2) a downward trend in groundwater levels at multiple beacon wells exceeding 8' in one year.

Stage 3 Trigger

Either or both of the following: (1) severe CAP reductions to municipal priority subcontracts due to sustained shortage on the Colorado River; (2) a downward trend in groundwater levels at multiple beacon wells exceeding 12' in one year.

Stage 4 Trigger

Any of the following: (1) severe CAP reductions to municipal priority subcontracts due to sustained shortage on the Colorado River; (2) a downward trend in groundwater levels at multiple beacon wells exceeding 16' in one year; (3) use of Emergency Water Supply.

DROUGHT PLAN MEASURES

Actions Definitions

Encourage – suggest measure, not require

Expand – expand beyond current channels

Initiate – begin efforts

Limit – limit the use

Prohibit – forbid the use

Require – enforce measure

X - Standard Practice

Municipal Drought Plan Measures

Customer		Response Options	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4
Municipal	A	Public information/awareness campaign	Initiate	Expand	Expand	Expand	Expand
	B	Educate staff on indoor/outdoor water saving techniques	Initiate	Expand	Expand	Expand	Expand
	C	Reduce/eliminate irrigation for parks and landscaping		Initiate	Expand	Expand	Expand
	D	Implement policy guidelines/limitations for installation of new sod and/or other landscaping	Encourage	Initiate	Expand	Expand	Expand
	E	Limit use of ornamental fountains		Limit	Prohibit	Prohibit	Prohibit
	F	Limit use of splash pads		Limit	Limit	Prohibit	Prohibit
	G	Conduct indoor water efficiency checks	Initiate	Expand	Expand	Expand	Expand
	H	Limit/prohibit washing of fleet vehicles			Limit	Limit	Limit
	I	Limit hydrant flushing for non-water quality issues			Limit	Limit	Limit
	J	Limit use of water for fire training			Limit	Limit	Limit
	K	Eliminate all fire hydrant uses except those required for public safety					Prohibit

Residential Drought Plan Measures

Customer		Response Options	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4
Residential	A	Educate customers on indoor/outdoor water saving techniques	Expand	Expand	Expand	Expand	Expand
	B	Promote conservation with respect to operation and maintenance of swimming pools (cover, leak repair)	x	x	x	x	x
	C	Enforce restrictions on spraying of impervious surfaces			x	x	x
	D	Limit/prohibit new sod, overseeding, and/or new landscaping	Encourage	Encourage	Limit	Limit	Limit
	E	Enforce existing water conservation ordinances, e.g., water-waste fines		x	x	x	x
	F	Time of day landscape irrigation		Encourage	Expand	Expand	Expand
	G	Limit/prohibit installation of new sod, seeding, and/or other landscaping		Encourage	Limit	Limit	Prohibit
	H	Limit/prohibit use of misting systems		Encourage	Limit	Limit	Prohibit
	I	Limit/prohibit vehicle washing		Encourage	Limit	Limit	Prohibit
	J	Limit/Prohibit use of ornamental fountains		Encourage	Limit	Prohibit	Prohibit

Non-Residential Drought Plan Measures

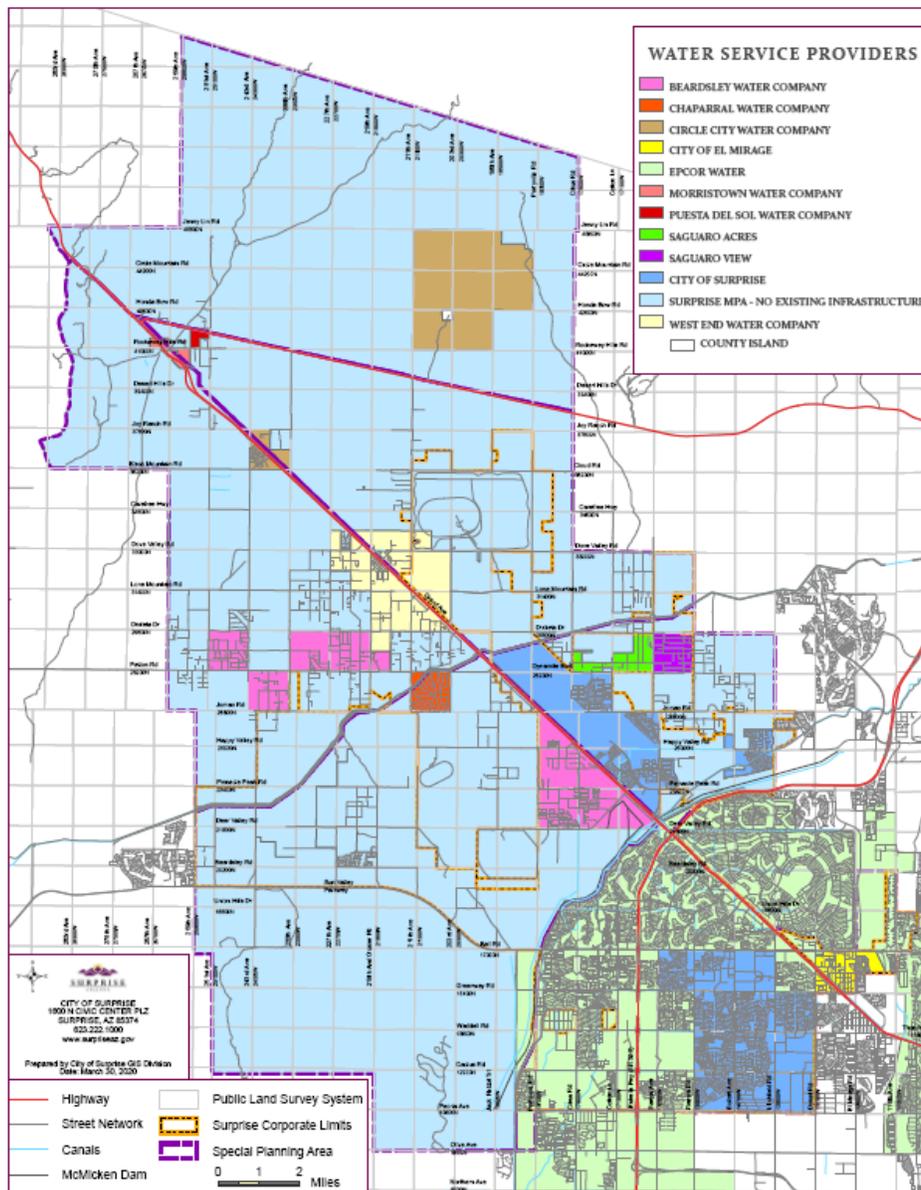
Customer		Response Options	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4	
Non-residential	A	Educate customers on indoor/outdoor water saving techniques		Initiate	Expand	Expand	Expand	
	B	Limit indoor and outdoor ornamental fountains		Encourage	Limit	Prohibit	Prohibit	
	C	Promote indoor and outdoor water efficiency checks		Promote	Promote	Promote	Promote	
	D	Promote conservation with respect to operation and maintenance of swimming pools (cover, leak repair)		Encourage	Expand	Expand	Expand	
	E	Promote/enforce providing water in restaurants only upon request		Encourage	Encourage	Encourage	Encourage	
	F	Promote/enforce signage for reduction in frequency of linen and towel washing in hotels		Encourage	Encourage	Require	Require	
	G	Limit/prohibit overseeding for winter lawn		Encourage	Limit	Prohibit	Prohibit	
	H	Limit/prohibit misting systems		Encourage	Limit	Limit	Prohibit	
	I	Establish policy guidelines/limitations for installation of new sod			Initiate	Expand	Expand	Expand
	J	Enforce landscape watering restrictions (water waste fines)			Initiate	Expand	Expand	Expand
	K	Limit/prohibit dealership & commercial washing of vehicles				Limit	Limit	Limit
	L	Require new home builders to display free low-water-use landscaping information such as a rack card with links in sales offices	Encourage		Initiate	Require	Require	Require
	M	Limit/prohibit water-cooled space operating below two cycles of concentration						x
	N	Enforce restrictions on spraying of impervious surfaces	x		x	x	x	x
	O	Prohibit commercial water haulers			Initiate	Prohibit	Prohibit	Prohibit
P	Enforce/prohibit use of construction water	Encourage non-potable use		Encourage non-potable use	Limit	Limit	Limit	

APPENDIX

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Map 1 - Surprise Special Planning Area

Surprise Special Planning Area (SPA) contains eleven Water Service Providers, including Beardsley Water Company, Chaparral Water Company, Circle City Water Company, City of El Mirage, EPCOR Water, City of Surprise, Morristoryn 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 EPCOR 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)



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 facilities, or Underground Storage Facilities, are located within Surprise Special Planning Area. These include CAWCD Hieroglyphic Mountains, Del Webb Sun City Grand, Maricopa Water District, and Surprise Wastewater Treatment. (GIS data source: Arizona Department of Water Resources, 2007)

