

Water Shortage Management Plan

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Purpose

Seeking recommendation to full Council for adoption of the Water Shortage Management Plan.



What is a water shortage?

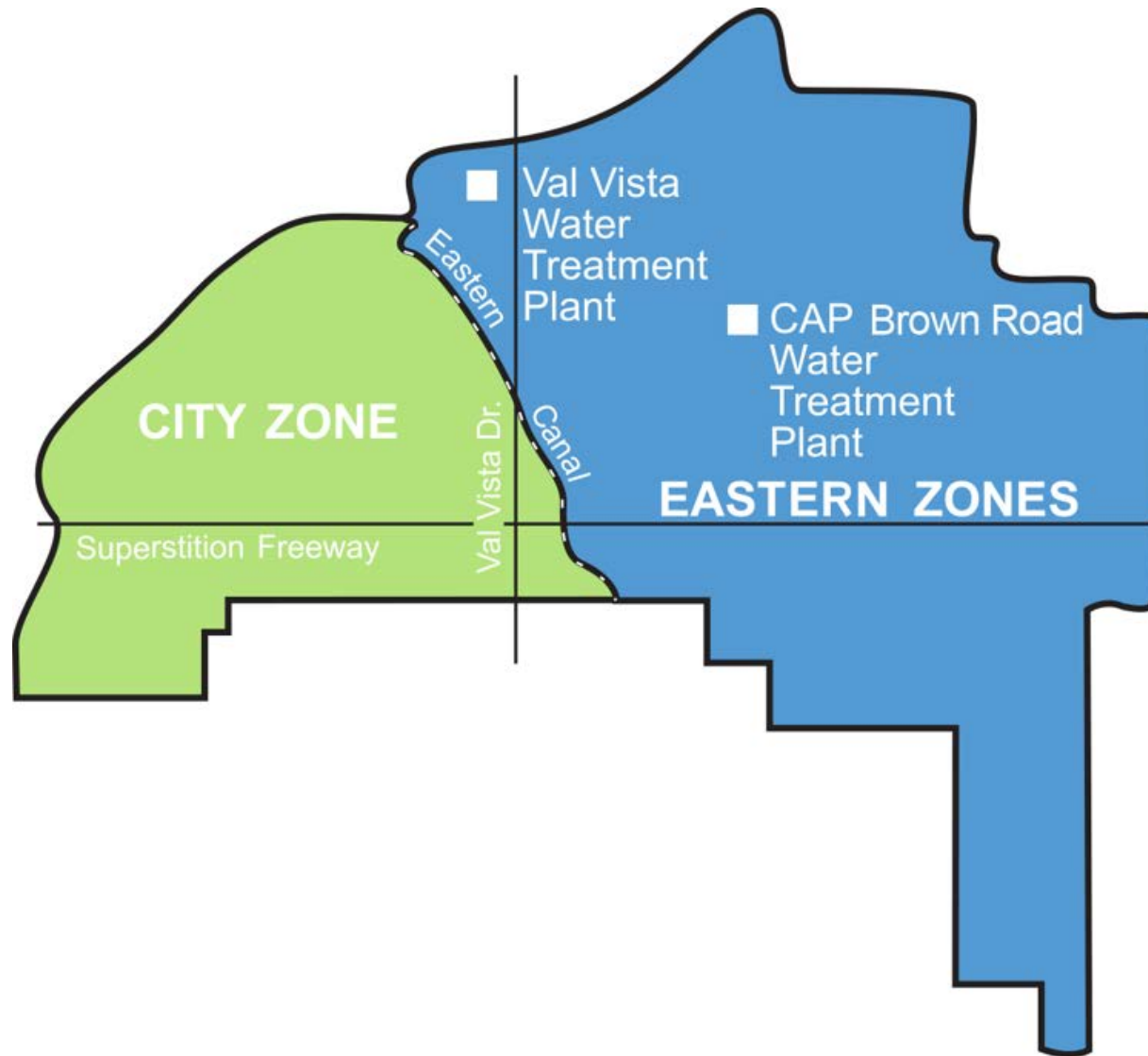
City-wide or localized water supply is reduced to a level that demand cannot be met.

- Drought
- Infrastructure failure
- Customer demand
- Regulatory actions
- Outages

Purpose

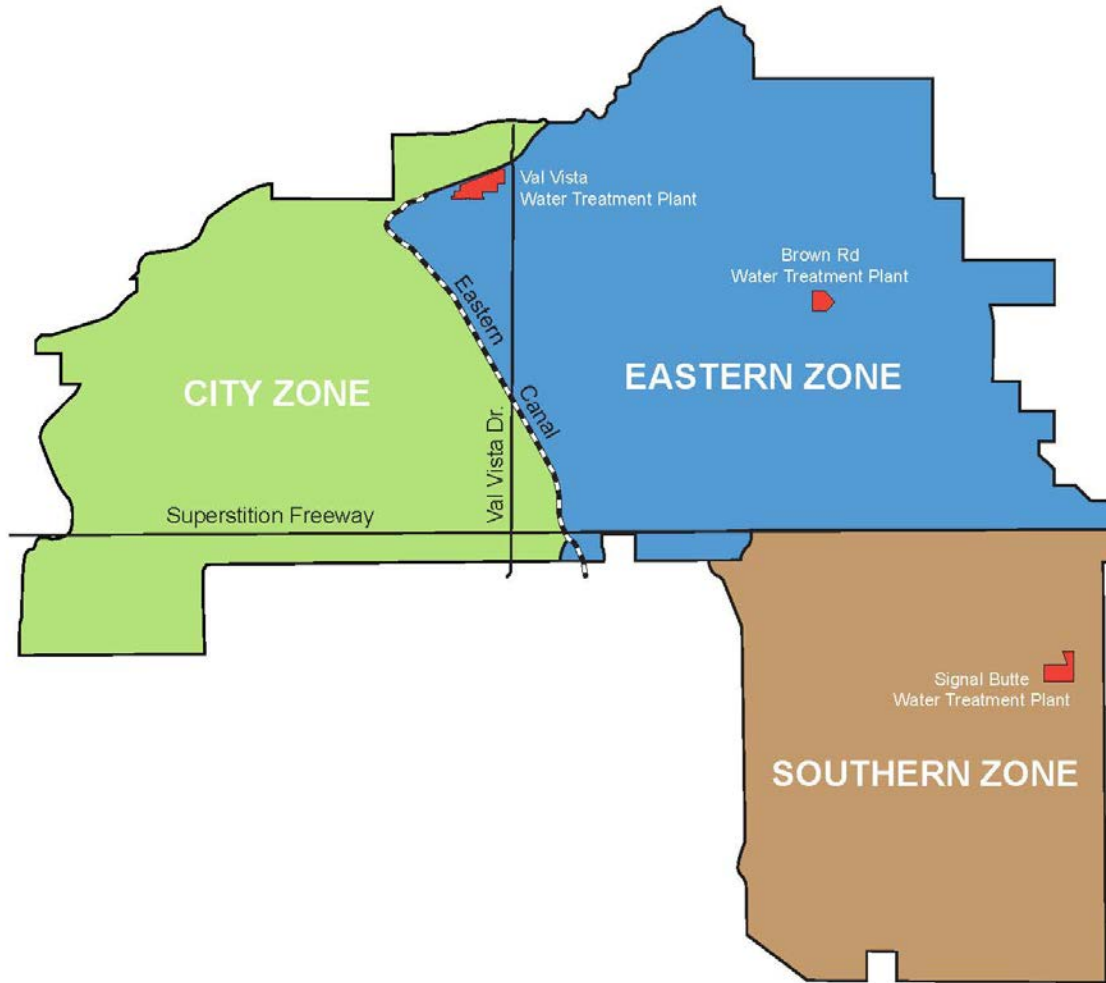
Manage	Manage shortage conditions as they occur
Prevent	Prevent the need to implement drastic demand reduction measures
Plan	Plan for future conditions before they occur

Mesa Service Area



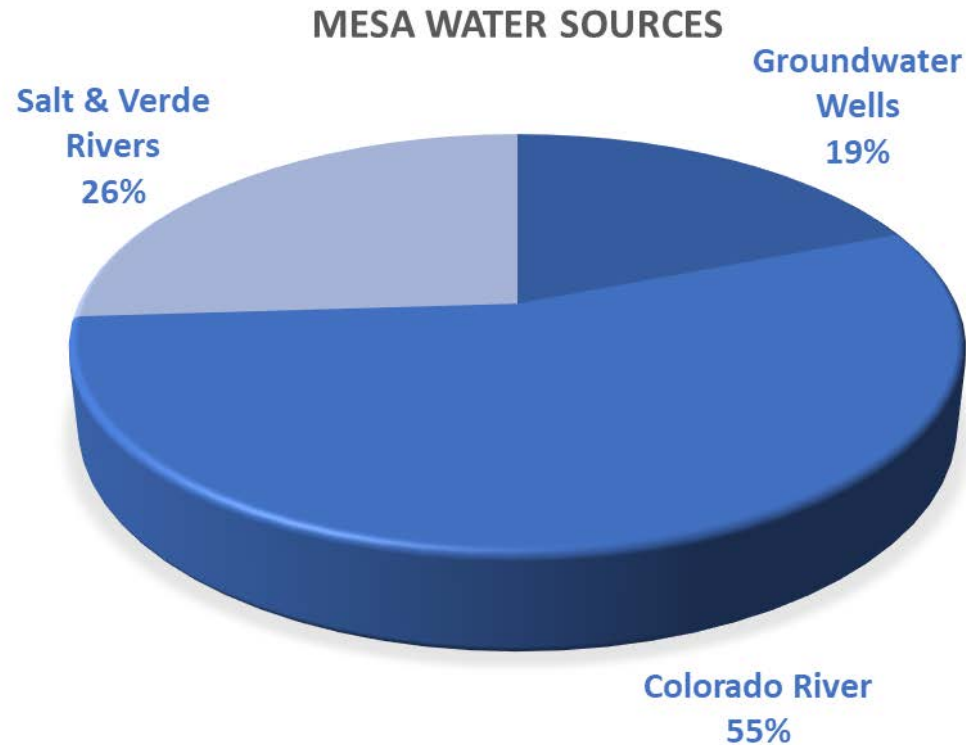
- Mesa is divided into two zones separated by the Eastern Canal: City and Eastern zones
- City Zone: Salt/Verde River water delivered through SRP (treated at Val Vista WTP)
- Eastern Zone: Colorado River water delivered through CAP (treated at Brown Road WTP)
- City and Eastern wells provide water throughout Mesa

Mesa Service Area



- May 2018 Signal Butte Water Treatment Plant will deliver first treated water into the distribution system
- Southern Zone: Colorado River water delivered through CAP

Water Supply

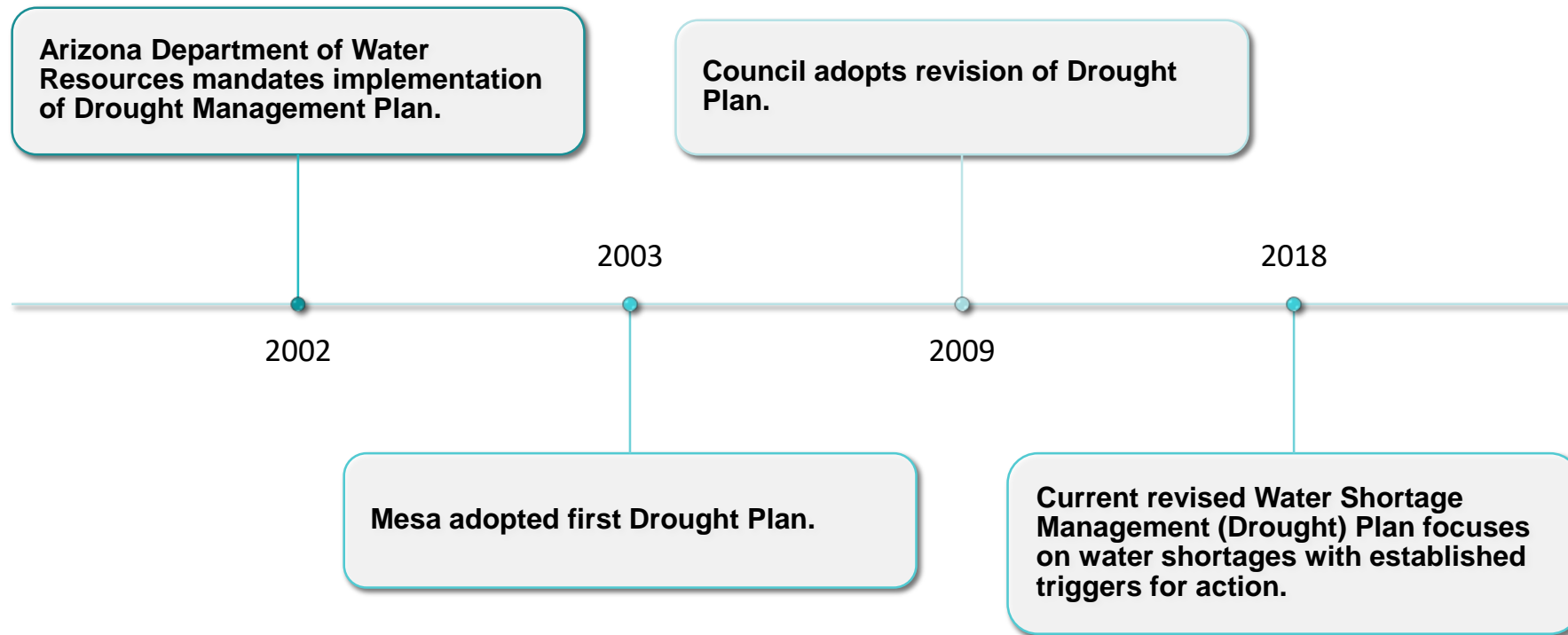


- Two sources: surface and groundwater
- Abundant groundwater credits and allowances – nearly 1 million acre-feet
- Groundwater is used during peak demand and emergencies
- The Assured Water Supply Program: framework for designating Mesa's 100-year supply for current and future demands

Shortage Planning and Preparation

Securing and managing	Securing, banking and managing a variety of different water sources
Maintaining	Maintaining water treatment capacity needed to meet customer demand
Promoting and encouraging	Promoting and encouraging voluntary water conservation since 1982

State Requirement



The Plan

1

Evaluation of shortage conditions based on current and forecasted water supply and demand, as well as the economic impact to the City.

2

Cross-Departmental team

3

Four stages with increasing severity may be declared by the City Council upon recommendation of the City Manager.



Stage One – Water Watch

- Increase awareness of actual reductions in water supplies several months in advance.
- Surface water shortage that will affect the City of Mesa is predicted or occurs.
- Mesa is capable of meeting demand through remaining supplies.
- Water demand management strategies may include: internal water reductions, increased community education.

Stage 1- Water Watch

City is capable of providing normal water service, but prolonged water shortage conditions exist or supply reductions predicted.		
Supply Management Measures	Municipal Demand Reduction Measures	Residential, Commercial, and Industrial Demand Reduction Measures
<ul style="list-style-type: none"> • Monitor available surface water supplies. • Monitor groundwater pumping capacity. • Planning to maximize use of water supplies "On" and "Off-Project." • Planning to maximize use of New Conservation Space water to maintain water levels behind Roosevelt Dam or underground storage. 	<ul style="list-style-type: none"> • Request employees to conserve water at home and at work. • Request City departments to identify possible reductions (1% to 5%) of water. • Initiate Public Information/Awareness campaign. • Water in the Street: Request City Inspectors and Customer Service Representatives to identify and counsel customers on water waste. 	<ul style="list-style-type: none"> • Promote conservation measures. • Educate customers on indoor/outdoor water saving techniques.

Description: This stage will be characterized by increased awareness and customer communication to alert the community that there may be an upcoming episode of water supply reduction. Regional water suppliers may be experiencing the effects of extended dry weather conditions and may be preparing to respond to a potential reduction in future water deliveries due to differing water portfolios. The City may not need to respond in similar fashion.



Stage Two – Water Alert

- **SRP deliveries of Stored & Developed water are cut to less than or equal to 50% of supplies and/or CAP Subcontract & Lease water is cut to less than or equal to 80% of water supply.**
- **Mesa is capable of meeting demand through remaining supplies.**
- **Voluntary water demand management strategies may be implemented for all water customers.**
- **Goal of 5% reduction in water demand.**

Stage 2- Water Alert

City is capable of providing normal water service, but supply reductions predicted.		
Supply Management Measures	Municipal Demand Reduction Measures	Residential, Commercial, and Industrial Demand Reduction Measures
<ul style="list-style-type: none"> • Monitor available surface water supplies. • Monitor groundwater pumping capacity. • Planning to maximize use of water supplies “On” and “Off-Project.” • Planning to maximize use of New Conservation Space water to maintain water levels behind Roosevelt Dam or underground storage. • Utilize stored water credits to offset groundwater pumping. • Prepare application to Arizona Department of Water Resources for drought groundwater pumping exemption. 	<ul style="list-style-type: none"> • All municipal demand reductions measures from previous stage. • Request City departments to identify possible reductions (5% to 10%) of water. • Strengthen public information campaign initiated in Stage One. • Limit routine hydrant flushing. • Restrict turf watering/landscaping irrigation, at City facilities other than parks and right-of-way. 	<ul style="list-style-type: none"> • All demand reduction measures identified for this user category from previous stage. • Limit construction water use during peak demand. Use reclaimed water whenever possible. • Promote indoor/outdoor water audits. • Promote conservation with respect to operation and maintenance of swimming pools (i.e.: cover, leak repairs). • Water use reduction goal of 5%.

Description: This stage will be characterized by increased monitoring and evaluation activities related to the water shortage. Customer water usage and the corresponding revenue generated will be compared to normal use. The Team may recommend more specific restrictions depending on conditions.



Stage Three – Water Warning

- **SRP deliveries of Stored & Developed water are cut to less than 33% and/or CAP Subcontract & Lease water is cut to less than or equal to 60% of water used in the most recent non-drought year.**
- **Mesa is capable of meeting demand through remaining supplies.**
- **Mandatory water demand management strategies may be implemented for all water customers.**
- **Goal of 10% reduction in water demand.**

Stage 3- Water Warning

City is capable of providing normal water service, but supply reductions eminent.		
Supply Management Measures	Municipal Demand Reduction Measures	Residential, Commercial, and Industrial Demand Reduction Measures
<ul style="list-style-type: none"> • Monitor available surface water supplies. • Monitor groundwater pumping capacity. • Planning to maximize use of water supplies “On” and “Off-Project.” • Planning to maximize use of New Conservation Space water to maintain water levels behind Roosevelt Dam or underground storage. • Utilize stored water credits to offset groundwater pumping. • Prepare and consider submitting application to Arizona Department of Water Resources for drought groundwater pumping exemption. 	<ul style="list-style-type: none"> • All municipal demand reductions measures from previous stages. • Request City departments to identify possible reductions (10% to 15%) of water. • Intensify public information campaign initiated in Stage Two. • Restrict winter grass, unless 100% effluent/reclaimed water is used. • Reduce turf watering/landscaping irrigation, at City facilities other than parks and right-of-way. 	<ul style="list-style-type: none"> • All demand reduction measures identified for this user category from previous stage. • Limit/enforce construction water use during peak demand. Use reclaimed water whenever possible. • Limit over-seeding for winter lawn. • Promote conservation with respect to operation and maintenance of swimming pools (i.e.: cover, leak repairs). • Water use reduction goal of 10%.

Description: In this stage it is anticipated that water shortage restrictions will become more severe. The Team will evaluate the need to recommend imposing mandatory water use restrictions on water use.



Stage Four – Water Emergency

- **Water supply deliveries are insufficient to meet demand.**
- **Mandatory water demand management strategies are implemented for all water customers to ensure basic water needs for residents and businesses will be met.**
- **Goal of 20% reduction in water demand.**

Stage 4- Water Emergency

City is not capable of providing normal water service.		
Supply Management Measures	Municipal Demand Reduction Measures	Residential, Commercial, and Industrial Demand Reduction Measures
<ul style="list-style-type: none"> • Maximize available surface water supplies. • Maximize groundwater pumping capacity. • Planning to maximize use of water supplies “On” and “Off-Project.” • Planning to maximize use of New Conservation Space water to maintain water levels behind Roosevelt Dam or underground storage. • Utilize stored water credits to offset groundwater pumping. • Submit application to Arizona Department of Water Resources for drought groundwater pumping exemption. 	<ul style="list-style-type: none"> • All municipal demand reductions measures from previous stages. • Request City departments to identify possible reductions (20%) of water. • Intensify public information campaign initiated in Stage Three. • No turf irrigation, unless 100% effluent/reclaimed water is used. • Eliminate turf watering/landscaping irrigation, at City facilities other than parks and right-of-way. • No hydrant uses except those required for public safety. • Prohibit ornamental fountains and water features. 	<ul style="list-style-type: none"> • All demand reduction measures identified for this user category from previous stage. • Prohibit construction water use during peak demand. Use reclaimed water whenever possible. • Prohibit over-seeding for winter lawn. • Promote conservation with respect to operation and maintenance of swimming pools (i.e.: cover, leak repairs). • Water use reduction goal of 20%. • Enforce reduction of cooling towers and evaporative coolers. • Enforce limitations for new sod and other landscape installations.

Description: Conditions that lead to this stage are unlikely. During this stage the primary focus of the Team response will be to maintain the health, safety, and economic vitality of the community to the maximum extent possible.

Sample City Code: Chandler

ARTICLE V. - WATER USE REGULATIONS DURING STAGE FOUR DROUGHT

52-40. - Water use regulations.

Upon adoption by the City Council of a resolution declaring a Stage Four Drought condition and for as long as that condition exists, the following water use regulations, and such other regulations as may be adopted by resolution, shall apply to all use of potable water that is provided by the City water supply system. The City of Chandler City Council shall have the authority to declare a Stage Four Drought when the Municipal Utilities Director determines that there is a significant possibility that the City's water supplies needed to meet the following year's demand may be reduced if drought conditions are not reversed, and it is unlikely that the City will be able to deliver sufficient water to meet all demands. The public will be notified of a Stage Four Drought condition and mandatory water use regulations as further described in [Section 52-42](#).

A. Lawn, tree and shrub watering is restricted to once per week. The City Manager shall determine selected watering days for all users of City potable water.

B. All landscape watering using City potable water may only be done between the hours of 9:00 p.m.—5:00 a.m. when potable water is used as the irrigation source.

C. Use of outdoor water features using City potable water is prohibited.

D. Use of outdoor water misters is prohibited.

E. Auto/truck washing is allowed only at commercial facilities or with pail and hose with a shut off nozzle.

F. Overseeding winter grass on City parks and facilities is prohibited.

G. Other conservation measures as adopted by the City Council, needed to balance water demand with the available water supply.

(Ord. No. 3498, § 1, 12-15-03)

52-41. - Variances.

Variances to the water use regulations set forth in this Article may be granted at the discretion of the City Manager or designee. Applicants for a variance must apply in writing to the Municipal Utilities Department, and demonstrate special circumstances such as health and safety needs.

(Ord. No. 3498, § 1, 12-15-03)

52-42. - Notification.

The City of Chandler Communications & Public Affairs Department will notify the public of a Stage Four Drought condition and mandatory water use regulations using available media sources.

Questions/Discussion
