

How Solano County is Meeting Water Conservation Goals in the Current Drought

A White Paper from the Solano Water Advisory Commission About Water Use Efficiency and How to Prepare for 2023

Purpose

This white paper documents previous and current water use efficiency actions taken by Solano County Water Agency's (SCWA) Solano Water Advisory Commission (SWAC) members, with special focus on municipal systems, during the current drought (2020 - ?). This paper also demonstrates that through active management and coordination at the local level, Solano County is meeting its water conservation targets.

Background

Following two successive years of low precipitation in the state of California, beginning on April 21, 2021, Governor Newsom issued a series of proclamations and executive orders declaring drought emergencies throughout multiple counties in California. After a promising start to the 2021-2022 rainy season, dry weather conditions returned and continue to persist in Water Year 2022, resulting in reduced water supplies throughout the state. To preserve water storage, on April 12, 2022, Governor Newsom issued Executive Order N-7-22 directing several actions intended to improve drought resiliency and achieve statewide water conservation goals. Executive Order N-7-22 directed the State Water Resources Control Board (State Water Board) to draft emergency drought regulations, which became law on June 10, 2022. Major elements of 23 CCR § 996 include:

1. Urban water suppliers shall submit a preliminary and final water supply and demand assessment to the State Water Board by July 1, 2022.
2. Urban water supplier that submitted an urban water shortage contingency plan shall implement at minimum a Stage 2 water shortage response action designed to respond to a water shortage of between 10 to 20%. Other potable water systems were directed to conduct actions similar to Stage 2.
3. A determination that irrigation of "non-functional turf" (ornamental and not used for human recreational purposes) is prohibited excepting as it may be required to maintain the health of trees and other non-turf plantings.

In response to these actions by the State, SWAC members that are responsible for a urban water systems enacted Stage 2 of their respective Urban Water Shortage Contingency Plans and is implementing the following range of actions to improve water use efficiency:

1. Expanding public outreach to market our water incentive and rebate programs, including rebates for the replacement of turf with water efficient landscaping, purchase of water efficient appliances, and installation of water efficient fixtures.
2. Increased public education campaigns including city council reports, farmer’s market stalls, and informational sessions at libraries.
3. Reinstating the residential and commercial water use survey program in partnership with SCWA to help water customers identify leaks and opportunities for improved water use efficiency.
4. Prohibiting, monitoring, and educating residents on prevention of the following water waste activities:
 - a. use of water hoses without a shutoff nozzle
 - b. washing of equipment, structures, driveways, sidewalks, parking lots, and other hardscapes with water except for health or safety purposes
 - c. outdoor irrigation resulting in excess water runoff or overspray
 - d. outdoor irrigation within 48 hours before or after, or during, a significant rain event
 - e. use of non-recirculating water ornamental features such as fountains
 - f. the escape of water through significant breaks or leaks for a substantial period of time without correction
5. Making water usage data available to water customers through a variety of applications enabling customers to better track and monitor individual water consumption.
6. Enacting water irrigation programs calling for reductions in the days customers irrigate their landscapes per week and designating preferred watering times.
7. Leak detection and meter calibration and replacement programs designed to mitigate water loss in each agencies’ water distribution systems.

Most of these measures had already been implemented and actively administered by SWAC members. However, the Stage 2 response declaration and implementation formalizes compliance with the Governor’s Executive Orders, enhances existing programs and allows for more restrictive measures, if necessary, in accordance with each agencies Urban Water Shortage Contingency Plan.

Compliance Methodology

The State Water Board has not published 23 CCR § 996 compliance methodology. In the absence of regulations or guidelines, SWAC recommends the following methodology to calculate water conservation:

1. Water systems should use 2020 as a baseline year against which water use efficiency can be measured.
2. Water systems should compare 2022 and 2020 water use data to determine compliance.

3. If there is significant growth within the water system, the water system should compare the 2022 and 2020 per-capita water use data to determine compliance.
4. If water use in the system is dominated by agricultural, commercial, industrial, or institutional customers, the water system should use 2022 and 2020 residential per-capita water use data to determine compliance.

When and if the State Water Board publishes compliance guidance, this section should be updated.

Compliance Update

Using the above compliance methodology, cities are meeting their conservation targets.

Percent Water Conservation Compared to Baseline			
	June 2022	July 2022	August 2022
Benicia	12%	17%	19%
Fairfield	3%	(13%)	28%
Suisun City	14%	13%	16%
Vacaville	8%	7%	11%
Vallejo	11%	12%	13%

The beginning of 2022 was dry and water use started to climb in late spring/early summer. By July, cities were coordinating outreach and uniformly moved to Stage 2 water conservation, which immediately resulted in demand reductions. As an example, Fairfield water demand was 13% higher in July 2022 when compared to July 2020; but, through outreach and education, was able to reduce August 2022 water use by 28% compared to August 2020.

Water Supply

Water supplies in the State Water Project and the Solano Water Project are decreasing while groundwater levels seem to be stable (no change). Below is a summary of water storage in both surface water systems.

Reservoir	Percent of Historical Average	Percent of Capacity
Oroville	64%	35%
San Luis	67%	29%
Berryessa	68%	54%

While all SWAC members have access to stored water, supplies are diminishing. Conservative water use will be crucial to protect future years' water storage. If Lake Berryessa's capacity is less than 800,000 acre-feet by December 1, member agencies will begin planning pursuant to the Solano Project Members' Agreement as to Drought Measures and Water Allocation, signed in 1999. More intensive, data informed water planning will begin January 2023 as the wet season reaches its historical midpoint.

Tools to Increase Water Use Efficiency

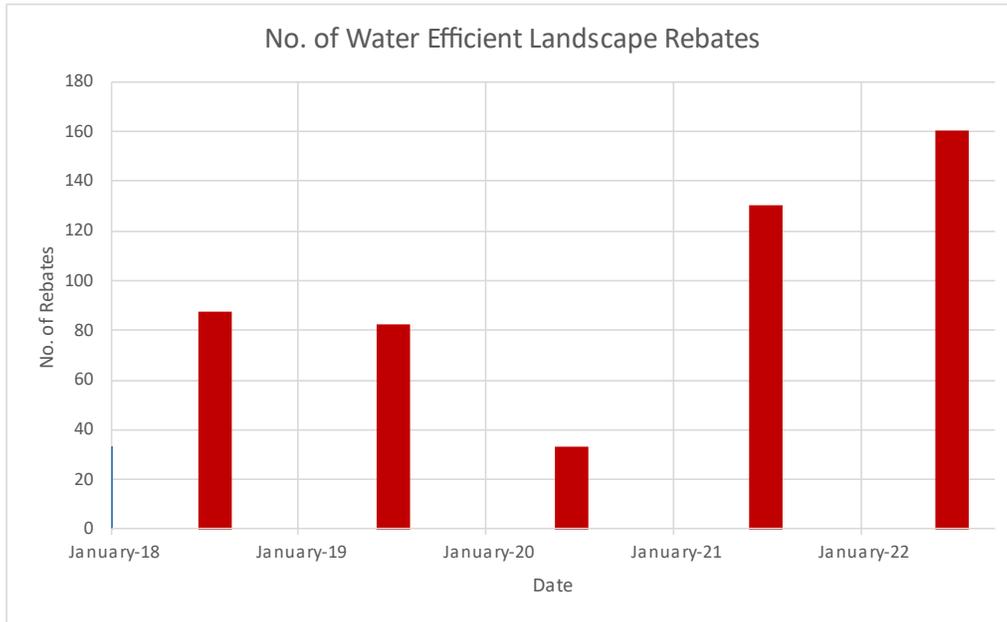
Below is a suite of tools water systems can use to increase water use efficiency within their systems. These tools are meant to be used as an overall outreach strategy.

1. Social media posts
2. Articles/advertisements in local newspapers (print and electronic)
3. Develop branding and graphics
4. Direct mailings including postcards
5. Yard signs
6. Farmer's Market booths
7. Water conservation rebates
 - a. Turf replacement
 - b. High efficiency appliances
 - c. Rain barrels
8. Installation of advanced metering infrastructure (smart meters)
9. Leak repair kits administered by libraries
10. Continuously updated websites
11. Billboard advertisements
12. Facility tours of water treatment plants/pump stations
13. Elementary school educational program
14. Water conservation fliers mailed to highest 10% water users
15. City Council meeting updates
16. Meeting (in-person or virtual) with homeowner associations, and other neighborhood-level organizations

In addition to the tools above, cities continue to use the Model Water Efficient Landscape Ordinances as part of the design/permitting process. Some communities, Vacaville, use or plan to use recycled water to offset potable water demands. Further, communities should use low impact design principles and infrastructure to use runoff rainwater to irrigate drought tolerant landscapes.

Water Conservation Program

SCWA administers a regional water use efficiency program that covers the entire county. The program offers rebates to both residential and Commercial, Industrial, & Institutional (CII) accounts for the installation of water-efficient appliances and the replacement of turf with climate appropriate sustainable landscaping. SCWA also offers residential and CII customers a no-cost water audit to identify water wasting practices. SCWA manages county-wide public outreach and school education programs. The Water Agency has also hired an Assistant Water Resource Specialist to help implement water use efficiency programs. The 2022/2023 fiscal year budget for the SCWA urban water use efficiency program is \$1,200,000.



Solano Water Advisory Commission Coordination

Key strategies used by SWAC members include:

1. Meeting once per month to discuss water availability and use within the county
2. Using a common methodology to measure water use efficiency
3. Setting a common baseline year
4. Coordinating messages to ensure consistency throughout the county and customer class
5. Cooperatively working to ensure all members have sufficient water
6. When necessary, completing inter-county water transfers
7. Routine updates to SCWA Board of Directors

Next Steps

SWAC will continue to meet to discuss resource availability, water use efficiency, and to coordinate messages to the public. In November, SCWA staff will provide an in-depth presentation on water sources and reliability to the Board of Directors. Cities will continue to monitor water use within their water systems. In January 2023, SWAC members will begin reviewing data and forecasts to begin calculating water availability in calendar year 2023.