Responding to Drought and Planning for Future Water Supply Resiliency

Public Works Officers Institute
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Santa Rosa Water

- Annual budget - $160 million
- Provide water and sewer service to 54,000 accounts in Santa Rosa, serving a population of 175,000+
- Provide regional wastewater treatment for 230,000+ customers
- Maintain over 1,200 miles of water and sewer pipe
- Treat and beneficially reuse 7 billion gallons of recycled water per year
- Employ 270+ highly trained and skilled staff
2020 Water Use in Santa Rosa
6.3 billion gallons (19,387 acre-feet)

WATER USE

- Residential: 68%
- Commercial, Institutional, Industrial, and CII Irrig: 24%
- Non-revenue: 8%

WATER SOURCES

- Sonoma Water: 93%
- City wells: 6%
- Recycled: 1%
Sonoma Water – Regional Water Supply Wholesaler

• Contracts with nine municipalities and water utilities in Sonoma and Marin Counties
• Russian River has no connection to Bay-Delta
• Lake Sonoma holds 3-4 years of water supply for contractors when normal conditions exist
• In 2021/2022, Lake Sonoma fell to historically low levels, necessitating delivery cutbacks
Drought 2021-23 Summary

• 2019-20 & 2020-21 were two of the driest water years for the region in 128 years of record keeping
• 2021 & 2022 Sonoma Water Russian River Supply Shortages
  • Santa Rosa Water has received contract allocations reducing deliveries
• Since July 2021, Santa Rosa has instituted stage 3 of the Water Shortage Contingency Plan
  • Up to 20% reduction in water use
  • Corresponding restrictions on water use

Credit: Press Democrat, April 2021
Existing Drought Playbook

- Institute Water Shortage Contingency Plan
- Customer Outreach and Education
- Dedicate/Increase staffing resources to implement response
- Incentivize short- and long-term customer investment in water use efficiency
- Enforce Prohibitions and Restrictions
- Plan for revenue or operational impacts
Drought Response Success: Outreach and Education

The Sonoma Marin Saving Water Partnership:

- 13 water suppliers
- Consistent message
- Outreach tool-kits
- Advertisements
- Radio, social media
- Events & Workshops
Water Use Efficiency Calls per Month
January 2020 - September 2022
Success: Customer Service and Assistance

• COVID Emergency: we needed to evolve our approach
• Zoom Hosted Workshops, DIY home water audits kits, Virtual inspections for rebates
• Automatic Metering Infrastructure became so valuable
• Found new ways to meet customers where they are in community
Santa Rosa overachieves!

SINCE JULY 2021, YOU’VE:

- Reduced total water use by 18% compared to 2020
- Saved more than 1.8 Billion gallons of water during this water shortage emergency
Planning for the next drought(s)?

Water Supply Alternatives Plan (2023)

Purpose

Improve water supply reliability to address severe droughts and emergencies and prepare for climate change impacts.

Approach

Evaluate possible new water supply options and develop a plan for increasing resiliency.
Santa Rosa’s total water consumption has decreased. 2020 water use was 14% less than 1990 and 20% less than 2004.

From 1990 - 2020 = 57% population increase
In average rainfall years, water supply meets the needs of our growing community through 2045 and beyond.

What about years when there is a drought?
Lake Sonoma Water Supply Storage

- 30-yr avg (1992-2021)
- Lowest 1992-2020
- 100,000 AF
- Recent Actual

Water Year 2019-20
Water Year 2020-21
Water Year 2021-22

Acre-Feet

100,000
150,000
200,000
250,000

Severe shortages (30% or greater) would occur if there was approximately one year or less of water supply in Lake Sonoma.

Projected Demand
Stage 5 Supply

30% shortage

Billion Gallons

2025 2030 2035 2040 2045
Questions the Project Will Address

- How much new water supply is appropriate to mitigate the risk of shortages?
- Which supply options should be studied?
- What criteria should be used to assess each supply option?
- Which mix(es) of options will help us meet the local water supply goals?
- What is the most reasonable path forward?
Study Methodology

Initial List of Supply Options

Screening Analysis

Short List of Supply Options

Detailed Analysis

- Cost-effectiveness
- Scalability (volume)

Clearly document why options were removed from short list

Score each option using complete list of criteria and criteria weights
Things to Ponder – Future Supplies

We have a duty to provide water supplies to support growth and meet economic, human health, and safety needs.

- Conservation in light of demand hardening
- Reliability and cost implications
- Scalability and vulnerability to uncertainties
- Equity considerations
Thank you!