Study Parameters for the Water Supply Alternatives Plan

Board of Public Utilities
January 19, 2023

Colin Close
Senior Water Resources Planner
Purpose for Today

Staff is seeking Board direction on the study parameters for assessing potential water supply options.

- Water Supply Resiliency Goal
- Supply Options for Study
- Evaluation Criteria
- Study Methodology
Water Supply Alternatives Plan

Purpose
Enhance Santa Rosa’s water supply resiliency and reliability to mitigate impacts of shortages due to severe droughts and emergencies.

Approach
Assess the feasibility of new water supply options and develop a plan for increasing resiliency.
Questions the Project Will Address

• How much new water supply is optimal 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 best help us meet our supply resiliency goal?
• What is the most reasonable and adaptive path forward?
Scope of Work

Engage wide range of interests.
  • Water Team, Stakeholder Group, Community, BPU

Establish study parameters.
  • Resiliency goal and supply options
  • Evaluation criteria and study methods

Conduct study.
  • Determine feasibility of supply options

Develop portfolios of options.
  • Sets of supply options to achieve the goal over time

Develop Water Supply Alternatives Plan.
  • Adaptive path to achieve water supply resiliency
Work Completed to Date

Understand the foundational work to build the plan

Christy Kennedy, Woodard & Curran
We are here! Finalizing study proposal and beginning feasibility analysis.
Project Work Update

**Water Team**
- Site visit (10/13). 1st working session (10/17). Input on goals, supply options, and criteria via homework.
- 2nd working session (12/15). Input on study proposal. Reached consensus on study proposal to move forward.

**Community**
- 1st community webinar (10/25). Input on goals, supply options, and criteria via poll questions and Q&A session during webinar.

**Stakeholder Group**
- 1st working session (11/16). Input on goals & supply options via interactive exercises. Input on evaluation criteria via homework.
- 2nd working session (12/14). Input on proposed goals, supply options, evaluation criteria, and study methodology.

**Woodard & Curran**
- In addition to work to support above tasks, prepared study proposal for Water Team and Stakeholder Group.
Input Received to Date

- Water Team, Stakeholder Group, and Community
- Gathered input through Q&A, interactive exercises, and facilitated discussions
- Received additional input from Water Team and Stakeholder Group through follow-up assignments
- Key themes:
  - Equity
  - Cost-effectiveness of supply options
  - Community impacts (e.g., level of conservation required, impacts on rates)
  - Desire for greater independence and diversification
- Study proposal incorporates key input from meetings to date
Proposed Study Approach

Review goal, water supply options, evaluation criteria, study methodology

Christy Kennedy, Woodard & Curran
Water Supply Resiliency Goal

Diversify and increase city supplies to reduce dependence on Sonoma Water, particularly during Sonoma Water supply shortages or disruption in delivery.

• Mitigating Droughts (7,500 acre-feet per year in 2045)
  Meet 30% of city’s water demand with city supplies to mitigate impacts of Sonoma Water supply shortages.

• Mitigating Natural Disasters and Catastrophic Events (9 million gals/day)
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• Mitigating Peak Day Demand (9 million gallons per day in 2045)
  Meet 30% of peak month average day demand for potable water with city supplies.
Rationale for Goal

• Provides guidance to support decision making regarding magnitude of resiliency portfolio.
• Increases city supply resiliency and reduces demand on Sonoma Water.
• Mitigates shortages in Sonoma Water supply and interruptions in service.
• Increases ability to meet a portion of peak day demand with city supplies.
• Could be achieved over time with a mix of supplies.
• Allows for adjustments to volume target if demands are lower/higher than anticipated (percentage-based goals).
• Integrates input from Water Team, Community, and Stakeholder Group.
Supply Options for Study

Study will include

- Description of source
- Potential supply
  - Acre-feet per year (AFY)
  - Million gallons per day (MGD)
- Limiting factors for supply
- Proposed/likely location
- Components to be constructed
- Considerations (e.g., permitting)
Water Supply Options for Study

Initial List of Options to Undergo Screening Analysis

Groundwater
- Add groundwater extraction wells
- Convert emergency wells to production
- Add Aquifer Storage and Recovery wells
- Regional groundwater extraction wells
- Regional Aquifer Storage and Recovery

Nonpotable Recycled
- Expand nonpotable recycled water service

Desalination
- Brackish desalination (likely Regional)
- Ocean desalination (Santa Rosa or Regional)

Surface/Stormwater
- Capture excess winter flows from creek(s), Laguna de Santa Rosa, Sonoma Water/Russian River, other
  - Inject and store in aquifer for later potable use
  - Store in enlarged Lake Ralphine (or alt.) and construct treatment plant for later potable use

Purified Recycled Water
- Produce at LTP for direct use
- Produce at a satellite site for direct use
- Produce at LTP or satellite for indirect use
  - Inject into groundwater via ASR wells
  - Add to Lake Ralphine or alternate
  - Add to Russian River, Lake Sonoma, or alt.
- Regional purified recycled water

Efficiency Programs to Reduce Demand
- Add aggressive incentives for efficiency programs to reduce demand (continue existing programs)
Rationale for Supply Options

• Retains a broad diversity of options.
• Includes City and Regional projects.
• Includes aggressive efficiency incentives to reduce demand over time.
• Integrates input from Water Team, Community, and Stakeholder Group.
# Evaluation Criteria

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Rationale for Criteria

- Captures key considerations that differentiate projects.
- Consolidates criteria where appropriate.
- Removes criteria that would pose a fatal flaw if not met.
- Removes criteria that did not need to stand alone.
- Integrates input from Water Team, Community, and Stakeholder Group.
Study Methodology

1. Screen all supply options.
   - Use 2 key criteria: high-level assessment of cost effectiveness and scalability.
   - Document reasoning for why supply options advance for further consideration (or not)
   - Yield manageable “short list” of options for detailed analysis.

2. Use defined metrics for each criterion for scoring.

3. Assign weight to each criterion to inform scoring process.
## Study Methodology

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Rationale for Study Methodology

- Uses screening process to identify any non-starter options.
- Emphasizes key considerations such as cost, resiliency, and equity via weighting.
- Enables comparisons based on qualitative factors such as permitting/regulatory considerations.
- Provides enough detail for meaningful comparison, given level of available information.
- Integrates input from Water Team and Stakeholder Group.
Next Steps

Review of next steps

Colin Close, Santa Rosa Water
# Project Timeline and Milestones

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<th>WORKING SESSIONS</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>JAN</th>
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Community Meeting #2 – Our Water Future

Wednesday, January 25th, 5-7 p.m., via Zoom

• Provide project update
• Review study parameters:
  ➢ Resiliency Goal and Supply Options
  ➢ Evaluation Criteria and Study Methodology
• Seek community comments and questions
• Provide live (simultaneous) Spanish translation

More information & registration link
srcity.org/OurWaterFuture
Discussion/Direction

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