City of Santa Rosa
Groundwater Master Plan

Water Advisory Committee (WAC)
Technical Advisory Committee (TAC) Meeting
November 5, 2012
Presentation Overview

- City’s Use of Groundwater
- Groundwater Policy Background
- Groundwater Master Plan
- Emergency Groundwater Analysis
- Benefits to Groundwater Management
- Tentative Timeline
City’s Use of Groundwater

- Prior to 1959, City relied primarily on groundwater for water supply
- By 1980’s, City relied solely on purchased water from SCWA for water supply
- In July 2005, City converted Farmers Lane wells from emergency to active status
- City began using Farmers Lane wells in 2007 to provide supplemental supply during peak summer months
City’s Potable Water Use
Groundwater Policy Background

- 1998 – City identified need to develop additional 8.7 mgd of emergency groundwater supply
  - Established CIP fund to investigate groundwater
- September 2003 – Council directed Utilities staff to ask BPU to evaluate role of local supply in meeting water supply needs
- December 2003 – BPU adopted Resolution No. 776
  - Directed Utilities to pursue development of water sources to provide reliable water supply through the General Plan Building Horizon
  - Include development of local groundwater, additional recycled water use, additional supplies from SCWA and other sources as they become available
  - Evaluate sources based on supply reliability, cost, timing and environmental impact
Groundwater Background

- March 2005 – City entered into funding agreement for 5-year USGS Study of Santa Rosa Plain
  - Staff participating and providing technical input
- March 2011 – BPU authorized staff to prepare and issue an RFP to prepare a Groundwater Master Plan
- October 2011 – BPU approved development of Groundwater Master Plan
Restructured Agreement Requirements

- Sections 1.13 and 1.15 of the Restructured Agreement contain specific requirements for local supply development.
- Summarized from Restructured Agreement:
  - **1.13 Recycled Water and Local Supply Project Requirements** – Within 10 years from the date of the Agreement, the Water Contractors shall use best efforts to develop at least 7,500 AFY of recycled water or local supply projects, with approximately 50% coming from recycled water projects.
  - **1.15 Local Production Capacity Goals** – Highly desirable for each Water Contractor to develop and maintain local water production capacity capable of meeting approximately 40% of the Water Contractor’s average day maximum month demand.
Groundwater Master Plan

Water Resources
- Policy
- Studies
- Master Plan Development

Consultants
- Engineering & Environmental Support

Asset Management
- Data Mgt
- Mapping
- Environmental

Local Operations
- Well Operation

CIP
- Test Borings
- Construction Contracts
Groundwater Master Plan

- West Yost Associates with ECON and Pueblo Water Resources

- Scope of Services includes:
  - Development of a GIS-based groundwater database
  - Evaluation and interpretation of local groundwater data
  - Establishment of a city-wide well monitoring network
  - Feasibility level evaluation of Aquifer Storage and Recovery
  - Review of the USGS Groundwater Model findings and conclusions
  - Development of recommended groundwater policy and projects
  - CEQA support activities
  - Development of a Groundwater Master Plan
Emergency GW Planning Criteria

**EMERGENCY SCENARIOS**
- Full Loss of Agency Supply
- Partial Loss of Agency Supply

**OUTAGE DURATIONS**
- Short-term (2 days)
- Long-term (14 days)

**DEMAND CONDITIONS**
- Existing & Buildout Conditions
- Buildout Demand based on uniform growth in City
- Health & Safety = 50% Average Day Demand

**FACILITY STATUS**
- All Tanks Half Full
- Pump Stations Operational
- Pipelines Operational
- Existing City Wells Operational
- New Wells Produce 700 gpm (equivalent to 1 mgd)

**LEVEL OF SERVICE**
- Service to all pressure zones to extent possible
- Provide supply to key pump stations or other key locations within City for distribution to customers
Methodology

- Calculate Health & Safety Demand (50% of Average Day Demand) for each scenario for each Master Zone
- Determine available City and/or Agency storage in each Master Zone
- Identify existing well capacity in each Master Zone
- Calculate emergency supply shortage under each scenario
- Determine the number of new wells required within each Master Zone
- “Living” document, to be reviewed every 5 years
# Summary of Required Emergency Supply

<table>
<thead>
<tr>
<th>Master Zone</th>
<th>Existing Demands</th>
<th>Buildout Demands</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>14-day outage gpm</td>
<td>14-day outage mgd</td>
</tr>
<tr>
<td>S-1</td>
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<td>S-4</td>
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<td>S-6</td>
<td>470</td>
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<td>S-9</td>
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<td>S-12</td>
<td>50</td>
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<td>Central City—Aqueduct</td>
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<td>Oakmont—Aqueduct</td>
<td>140</td>
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<tr>
<td>Add’l Emergency GW Supply Required</td>
<td>~1,600</td>
<td>~2.4</td>
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Notes: Original City target of 8.7 mgd of emergency groundwater production capacity

Current emergency supply capacity accounted for: Farmers 1&2, Carley, Peters Spring = ~4.3 mgd

* Depending on specific operational conditions, S-9 could be short of supply (but would be balanced by an equal reduction in required supply in Central City)
Other Policy Direction to be Considered

- Adopt GW Master Plan and implement recommendations to inform City’s participation in the GW Management Plan
- Prepare an Annual GW Status Report to track local GW elevation
- Consider Aquifer Storage & Recovery, if feasible
Benefits to Groundwater Management

- Information developed will be shared and incorporated into GWMP as applicable
- Monitoring well network will provide additional data for CASGEM and better understanding of basin
- Provide staff guidance for participation on Basin Advisory Panel
Master Plan Development

- Tentative Timeline
  - Draft Document – Spring 2013
  - Final Adoption – Summer 2013

- Website
  - www.srcity.org/groundwater
Questions?

Additional Information

www.srcity.org/groundwater