Santa Fe Water Reuse Feasibility Study

Public Forum

January 17, 2017
4:30 – 6:30 pm

Genoveva Chavez Community Center
Santa Fe, New Mexico

RECLAMATION
Managing Water in the West
Santa Fe Water Reuse Feasibility Study

Agenda

• Ground Rules: Lynn Komer
• Welcome: Councilor Rivera
• Study Overview: Bill Schneider
• Santa Fe Basin Study: Dagmar Llewellyn
• Study Findings: John Rehring
• Closing remarks: Councilor Maestas
• Q&A at Tables
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Santa Fe has been sustainably reusing water since the 1950s
Topics for our Public Forum

1. Why Increase Water Reuse?
2. What Alternatives Were Studied?
3. What does the Feasibility Study Recommend? Why?
4. Next Steps
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Climate change will drive future shortages of water supply and demand. By 2055, shortages could reach up to 9,300 AFY. Expanding water reuse is key for mitigating these gaps.
Santa Fe’s industry-leading conservation programs are working.
Conservation and conjunctive use have reduced demands and enhanced sustainability.
Basin Study: Water Reuse Availability

- Total Demand
- Reclaimed Wastewater Produced
- Reclaimed Wastewater Used

Acre Feet per Year

- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
How much water can we reuse?

Assumed Releases to Lower Santa Fe River

Existing Non-Potable Reuse Contracts
1,500 AFY

Remaining Water Available for Additional Reuse
2,400 AFY
Reuse Alternatives
Communities nationwide are expanding reuse and augmenting drinking water supplies

Orange County, CA

Gwinnett County, GA

Big Spring, TX

Cloudcroft, NM
Feasibility Study examined 7 alternatives for expanding water reuse

1. Expand Non-Potable Reuse
   - Conveyance

2. Rio Grande Return Flow Credits
   - Conveyance

3. Enhanced Living River and Aquifer Storage & Recovery
   - Advanced Water Purification Facility

4. Aquifer Storage & Recovery via Lower Santa Fe River

5. Buckman Wells ASR

6. Augment Nichols Reservoir

7. Direct Potable Reuse
Reuse alternatives vary in the amount of “new plumbing” and treatment required.
Cost-effectiveness highlights differences

* Peak summer supply limitations not resolved
Challenges in expanding irrigation reuse: Seasonal demand, limited summer supplies

Demand is Highest when Available Supply is Lowest!
Water supply benefit drives cost-effectiveness

Highest cost per acre-foot of water supply benefit

Lowest cost per AF

+130 AFY

+1300 to +2300 AFY
Initial Screening Evaluation: Four of the alternatives could meet our community’s needs.

<table>
<thead>
<tr>
<th>1st Alternative</th>
<th>2nd Alternative</th>
<th>3rd Alternative</th>
<th>4th Alternative</th>
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</thead>
<tbody>
<tr>
<td>Rio Grande Return Flow Credits</td>
<td>Enhanced Living River and Aquifer Storage &amp; Recovery</td>
<td>Aquifer Storage &amp; Recovery via Lower Santa Fe River</td>
<td>Direct Potable Reuse</td>
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</tbody>
</table>
Alternative 2
Full Use of SJCP Rights via Rio Grande
Return Flow Credits

- Reroute up to 3 mgd WRF discharge by pumping to Rio Grande
- Exchange for Rio Grande water
- Divert additional 2300 AFY through existing Buckman system
Alternative 3
Enhanced Living River and Upper Santa Fe River Recharge

- Discharge to Upper Santa Fe River at Two Mile
- Living River
- Divert via upper aquifer wells below Siler Road
Alternative 4
Aquifer Storage and Recovery via Lower Santa Fe River

- Discharge to Lower Santa Fe River at Siler Rd.
- Divert via upper aquifer wells below Siler Road

Advanced Water Purification

Up to 3 mgd

Recovery Wells

Paseo Real WRF

[CATE GOR... [CATE GOR...]
Alternative 7
Direct Potable Reuse

- Up to 3 mgd to Advanced Water Purification Facility
- Pump to Buckman WTP for blending with Rio Grande raw water & further treatment
Life-cycle costs are much lower for Alt. 2

- 2: Rio Grande Return Flow Credits
- 3: Enhanced Living River & ASR
- 4: ASR via Lower Santa River
- 7: Direct Potable Reuse
- Purchase Water Rights instead of Reuse

- ✓ No advanced treatment
- ✓ 1 pump station
- ✓ No recovery wells
- ✓ Use existing BDD

Capital

20-Year O&M

$17.8

$48.9

$30.2

$37.2

$71.0

$0

$10

$20

$30

$40

$50

$60

$70

$80

NET PRESENT VALUE (2016 $M)
Recommendations and Next Steps
“Triple Bottom Line” analysis

- **ECONOMIC**: Cost-Effective Supply Augmentation
- **SOCIAL**: Public Benefit and Social Acceptability
- **ENVIRONMENTAL**: Protect and Sustain the Environment
- **TECHNICAL / OTHER**: Timely Implementability and Operability
- **TECHNICAL / OTHER**: Project Risk Mitigation

Rio Grande Return Flow Credits (Alt. 2) best meets the community’s needs
Key Benefits of Alternative 2: Full Consumption of SJCP Water via Rio Grande Return Flow Credits

<table>
<thead>
<tr>
<th>✓ Full use of SJCP water</th>
<th>✓ Lowest cost</th>
<th>✓ Best return on investment</th>
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<tbody>
<tr>
<td>✓ Leverages existing capacity in Buckman Direct Diversion</td>
<td>✓ No advanced treatment</td>
<td>✓ Least complex permitting and implementation</td>
</tr>
<tr>
<td>✓ Living River through reservoir bypass flows</td>
<td>✓ Flexible and adaptable</td>
<td></td>
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</tbody>
</table>
Recommendations and Next Steps

- Alternative that best meets the community’s needs: **Full Consumption of San Juan-Chama Project Water via Rio Grande Return Flow Credits**

- Finalize report April 2017 → Bureau of Reclamation approval

- Long-Range Water Supply Plan update: Addressing remaining shortages

- Pursue Congressional authorization for construction under Reclamation Title XVI Program

- Consider Preliminary Design, Final Design, Construction and Startup
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Where can I find more information?

www.savewatersantafe.com / 505.955.4225

http://www.santafemenm.gov/reclaimed_wastewater_reuse
Please join us for Q&A at the tables

Drivers for Increasing Water Reuse in Santa Fe and Across the U.S.

Community Benefits of the Highest-Ranked Water Reuse Alternative

Path Toward Implementation
Santa Fe Water Reuse Feasibility Study

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