This presentation premiered at WaterSmart Innovations

watersmartinnovations.com
“The Hidden Reservoir”
Diversifying Water Supply Through Land Use Planning

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October 5, 2017   - Water Smart Innovations   - Las Vegas, NV
Agenda

- Introduction and Background
- Research Approach
- Results
- What’s Next
To communicate the current state of water supply diversification

To identify and highlight key opportunities and challenges of integrated water resource and land use planning

To develop user-friendly resources that can help advance the integration of water resource and land use planning

Drivers to Diversify

- Water shortages
- Water quality
- Reliability and resiliency
- Population growth

- Policy changes
- Less energy intensive
- Environmental protection
- Economic benefits

Alternative Water Supplies

- Auxiliary/augmentation supplies
- Supplement more traditional surface and groundwater supplies
- Right water, right source (scale, demands/use, etc.)

*Source:* Paulson and Williams 2015
“One Water is the future of the water industry. Many benefits are realized when the barriers traditionally separating water, wastewater, stormwater, and reuse are broken down. One Water is a guiding principle of the Water Research Foundation, which works to advance the science of water in all portions of the water cycle.”

-Robert C. Renner, PE, BCEE
CEO, Water Research Foundation

Source: Water Research Foundation Paulson, Brrole, & Stephens, 2017
Water is a Top Planning Issue

- APA Water Survey
- Water is a top or top ten issue (91% of respondents)
- Concerns:
  - Stormwater mgmt (82%)
  - Flooding (70%)
  - Water supply (67%)
  - Water resource/env degradation (62%)
- Water supply key issue in dry states
- Flooding key issue in both wet & dry states
Case Studies

1. Soquel Creek Water District, Capitola, CA
2. San Francisco, CA
3. San José, CA
   Rio Vista, CA
   Santa Cruz, CA

4. Pima County/Tucson, AZ
   Chandler, AZ
   Cochise County, AZ
   Yavapai, AZ
   Flagstaff, AZ
   Mesa, AZ
   City of Sierra Vista, AZ
   Avondale, AZ

5. Aurora, CO
6. Boulder, CO
7. City of Fort Collins, CO
8. Westminster, CO
9. Sterling Ranch, CO
   City of Fountain, CO

10. Kansas City, MO

11. Sarasota, FL
12. Manatee County, FL
   Altamonte Springs, FL

Southern Nevada Water Authority, Las Vegas, NV

Portland, OR

Santa Fe, NM

Austin, TX

Atlanta, GA

Santa Ana Watershed, Riverside, CA

Seattle, WA

Tucson, AZ

Pittsburgh, PA

Aikens, SC

WE&RF
## Integration Solutions

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<tr>
<th>BARRIERS</th>
<th>INTEGRATION SOLUTIONS</th>
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<tr>
<td>Inadequate Economic Justification</td>
<td>Funding solutions, such as alternative funding sources, pilot projects, and improved financial planning and budget priorities, can help to address the significant capital outlay required for many water supply projects.</td>
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<td>Cost-benefit tools help make the financial case for integration and highlight the benefits of collaboration.</td>
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<td>Lack of Coordination and/or Control</td>
<td>Institutionalized collaboration through interagency and interdisciplinary approaches that define clear roles and responsibilities can help in prioritizing water from planning to implementation.</td>
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<td>Planning at the right scale and knowing when it is important to expand the reach to a larger geographic scale (e.g., from municipal to regional or watershed) will help to ensure the right stakeholders are at the table for decision making and building trust and relationships.</td>
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<td>Lack of Public and Political Support</td>
<td>Public education and stakeholder engagement through early communication, education and branding, and consistent messaging enable greater public buy-in.</td>
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<td>Informing decision makers to enact policy and regulatory changes can also go a long way towards creating the appropriate mandates and/or incentives for increased collaboration (e.g., requiring a comprehensive plan water element).</td>
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<td>Gaps in Current Knowledge</td>
<td>Data collection and sharing can help to better link water provider and community planning processes while also filling knowledge gaps and getting all stakeholders aligned.</td>
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<td>New technology and innovation will continue to increase the performance of alternative water supply technologies, making them more cost effective, and thereby encouraging greater adoption.</td>
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From Report to Planning Guide

Integrating Land Use and Water Resources: Planning to Support Water Supply Diversification


• Practical guide for how and when to integrate water and land use.

• Specific focus on alternative water supply and cross-cutting themes.
### Planning Activities

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<th>LONG RANGE PLANS</th>
<th>CODES AND REGULATIONS</th>
<th>DEVELOPMENT REVIEW PROCESSES</th>
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<td>• Baseline and Forecasting</td>
<td>• Zoning Codes</td>
<td>• Pre-application Meeting</td>
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<td>• Visioning and Goal Setting</td>
<td>• Subdivision Regulations</td>
<td>• Development Plan Application and Review</td>
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<tr>
<td>• Scenario Planning and Alternatives Analysis</td>
<td>• Development Codes</td>
<td>• Development Agreements and Fees</td>
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<td>• Stakeholder Engagement</td>
<td>• Water Sustainability Ordinances</td>
<td>• Permit Review and Inspections</td>
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<td>• Post-occupancy Considerations</td>
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10 Steps to Better Collaboration

DEVELOPMENT REVIEW PROCESSES

7. Build Teams
Invite your water utility or community planner counterpart to a meeting to get to know them and explore opportunities for enhanced collaboration on alternative water supplies. If such a relationship already exists, expand your efforts to establish a multi-disciplinary team of water and land use planning professionals and set up a mechanism for routine coordination.

8. Clarify Review Processes
Examine the steps in the development review process to see where/how water utilities can or should be more engaged. Formalize those opportunities for collaboration via steps or sub-steps in your development review process.

9. Inform Decision Makers
Provide training or information to elected and appointed officials (especially those involved in land use approvals) about alternative supply types, methods, options, and/or challenges in your community.

10. Revisit Inspection Procedures
Review your community’s inspection procedures and staffing assignments to ensure that inspections are happening at the right time(s) and that staff has sufficient training.
In Closing

- Draft deliverables to WRF in Spring 2018; publication by summer/fall

- Project outcomes include
  - Research report
    - Research approach and process
    - Research findings
    - Survey and interview details
    - Case studies
  - Coordinated planning guide
Continue the Conversation!

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