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“The Hidden Reservoir”

Diversifying Water Supply Through Land Use Planning

Water Research Foundation℠

4623: Integrating Land Use and Water Resources: Planning to Support Water Supply Diversification

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

Western Resource Advocates

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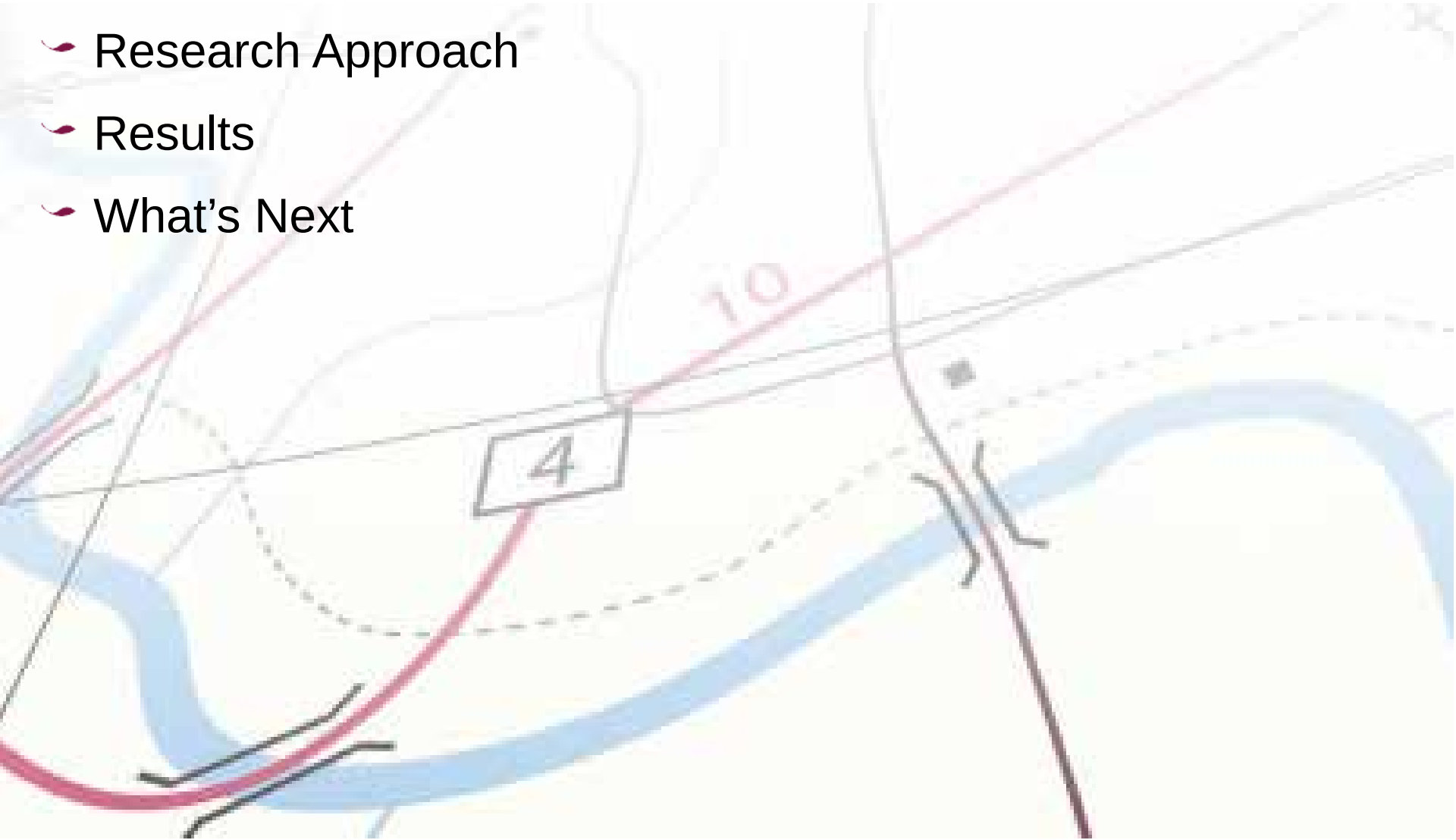
Pace Law School, Pace University

Agenda

- Introduction and Background
- Research Approach
- Results
- What's Next



WRF 4623 Research Objectives

- 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

** Collaboration with WE&RF Project No. SIWM10C15, *Joining-Up Urban Water Management with Urban Planning and Design.* Stoker, P., Pivo, G. (2017)

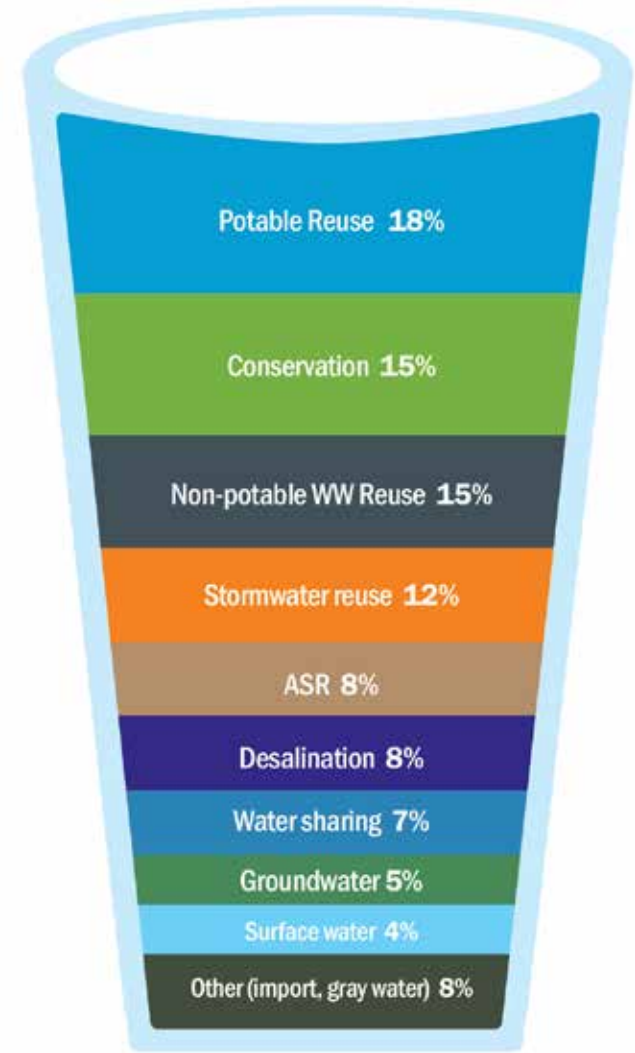
Drivers to Diversify

- Water shortages
- Water quality
- Reliability and resiliency
- Population growth
- Policy changes
- Less energy intensive
- Environmental protection
- Economic benefits

Sources: Paulson and Williams 2015, Rygaard et al. 2011, Dennis 2013, You 2010, EPA 2012, Anderson et al. 2008, LGC 2015

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

Paradigm Shift – One Water

"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, Brroley, & Stephens, 2017

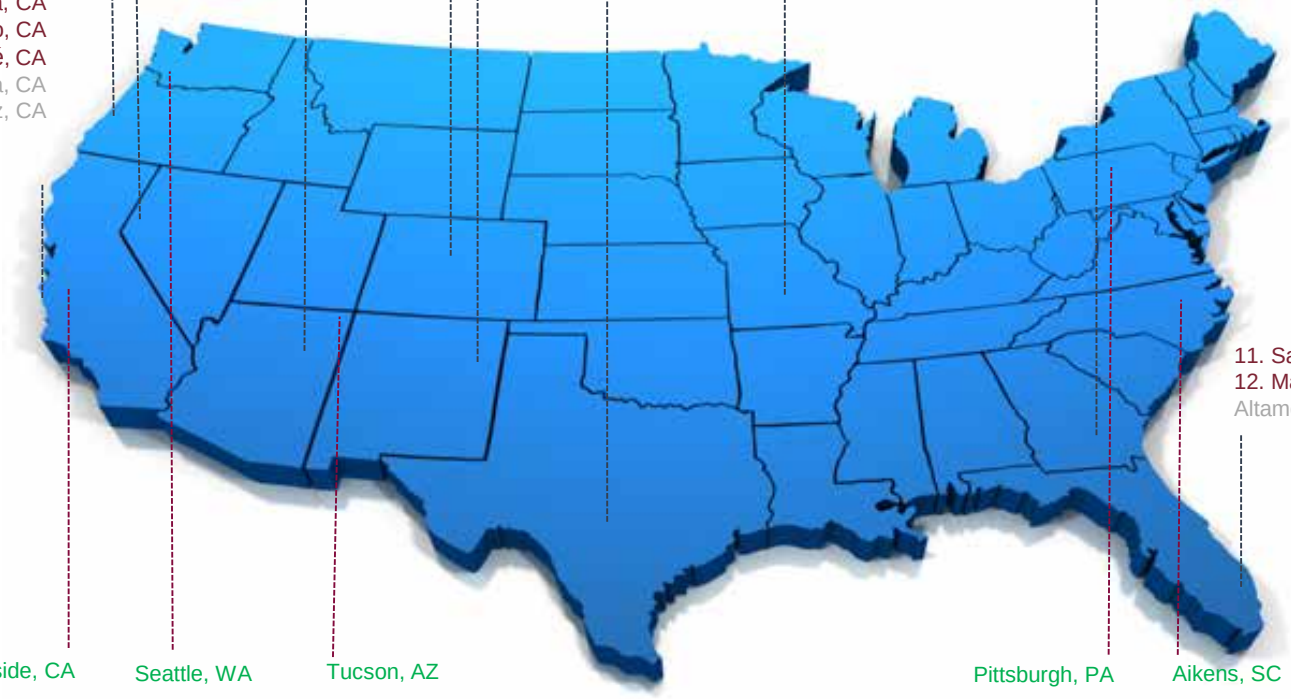
Water is a Top Planning Issue

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

American Planning Association
Making Great Communities Happen

APA Water Survey – Summary of Results
May 2016 — APA Water Working Group

Case Studies



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

Santa Fe, NM

Atlanta, GA

Southern Nevada Water Authority, Las Vegas, NV

Portland, OR

Austin, TX

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

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

Santa Ana Watershed, Riverside, CA
WE&RF

Seattle, WA
WE&RF

Tucson, AZ
WE&RF

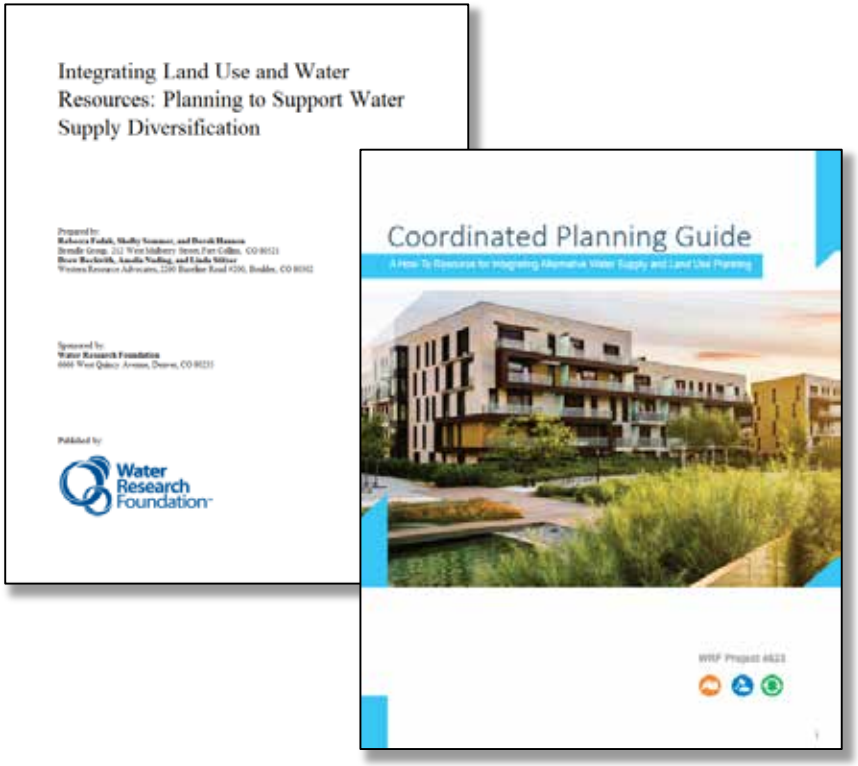
Pittsburgh, PA
WE&RF

Aikens, SC
WE&RF

Integration Solutions

BARRIERS	INTEGRATION SOLUTIONS
Inadequate Economic Justification	 **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.  **Cost-benefit tools** help make the financial case for integration and highlight the benefits of collaboration.
Lack of Coordination and/or Control	 **Institutionalized collaboration** through interagency and interdisciplinary approaches that define clear roles and responsibilities can help in prioritizing water from planning to implementation.  **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.
Lack of Public and Political Support	 **Public education and stakeholder engagement** through early communication, education and branding, and consistent messaging enable greater public buy-in.  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).
Gaps in Current Knowledge	 **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.  **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.

From Report to Planning Guide



- Practical guide for how and when to integrate water and land use.
- Specific focus on alternative water supply and cross-cutting themes.

Planning Activities

LONG RANGE PLANS

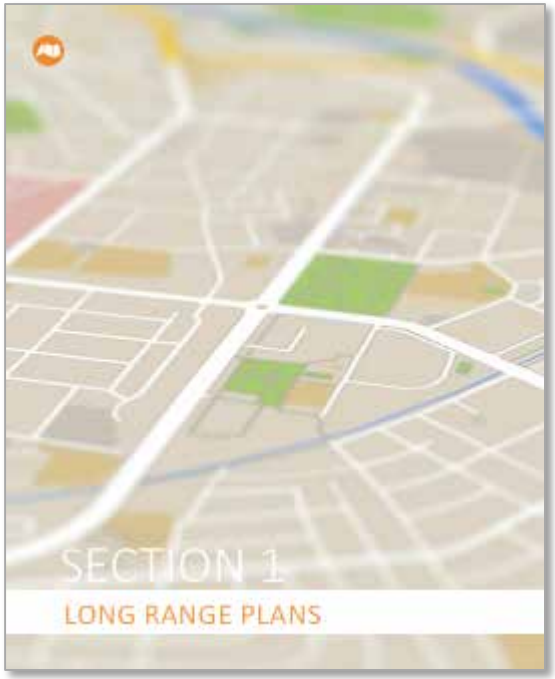
- Baseline and Forecasting
- Visioning and Goal Setting
- Scenario Planning and Alternatives Analysis
- Stakeholder Engagement

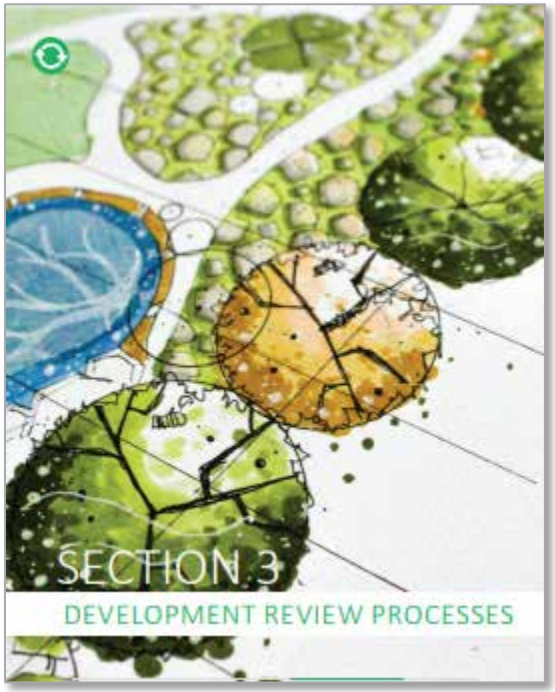
CODES AND REGULATIONS

- Zoning Codes
- Subdivision Regulations
- Development Codes
- Water Sustainability Ordinances

DEVELOPMENT REVIEW PROCESSES

- Pre-application Meeting
- Development Plan Application and Review
- Development Agreements and Fees
- Permit Review and Inspections
- Post-occupancy Considerations





10 Steps to Better Collaboration

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

Questions

Continue the Conversation!

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