

Reclaimed Water Rules Revision: A Progress Report

by
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Arizona WaterReuse Symposium
Flagstaff, Arizona
July 26, 2016

A smidgen of AZ reclaimed water history

A dash of Arizona's current program

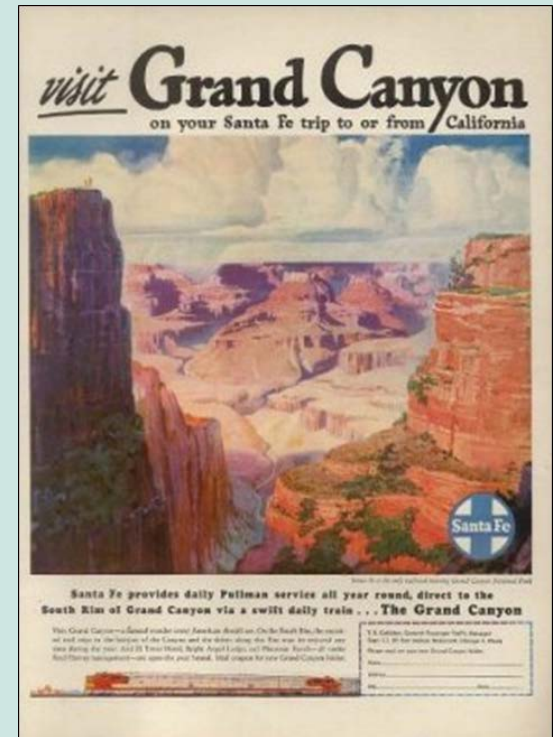
A dollop* of public comments on revising the rules

A dusting of rule revision plans going forward

***dollop** *n.* a shapeless mass or blob of something; glob

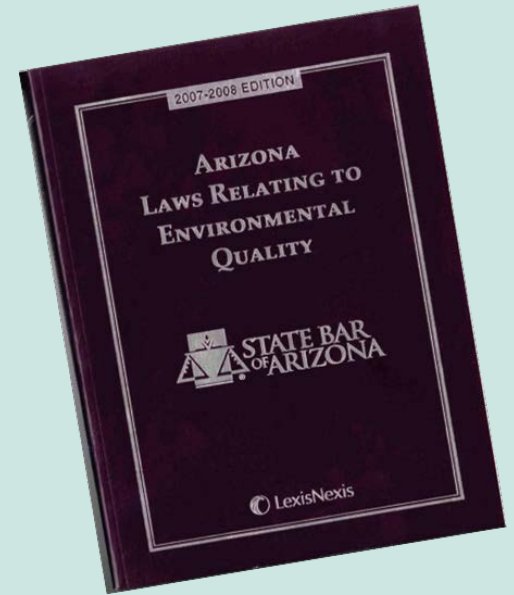
Reclaimed Water Timeline

- 1926** – Reuse of reclaimed water begins at South Rim, Grand Canyon
- 1932** – Reclaimed water from new Phx 23rd Ave WWTP goes to farm irrigation
- 1972** – First reclaimed water rules, ADHS
- 1983** – Phx 91st Ave WWTP begins delivering reclaimed water to PVNGS



Reclaimed Water Timeline

- 1987** – EQA establishes ADEQ, which begins administering reclaimed rules
- 1999** – ADEQ gets clear legislative authority for permitting use of reclaimed water
- 2001** – New comprehensive rules transform program
- 2016** – ADEQ begins revision of reclaimed water rules



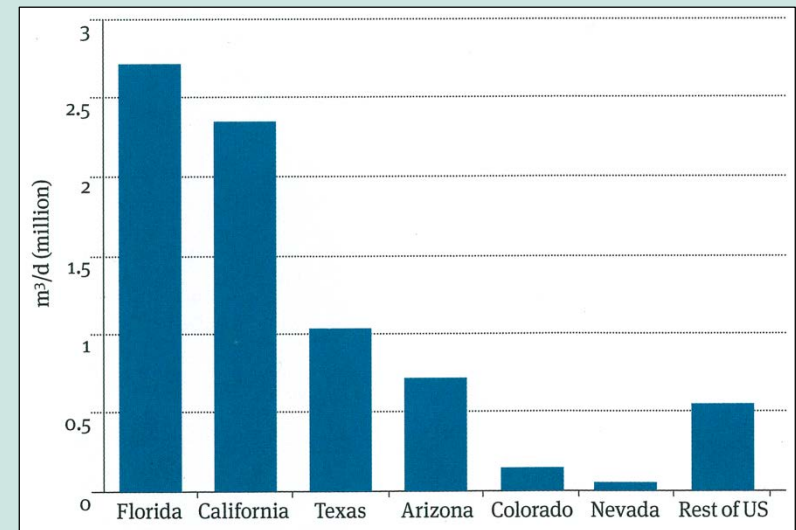
Reclaimed Water Use

82% of reuse occurs in just four states, Arizona being one



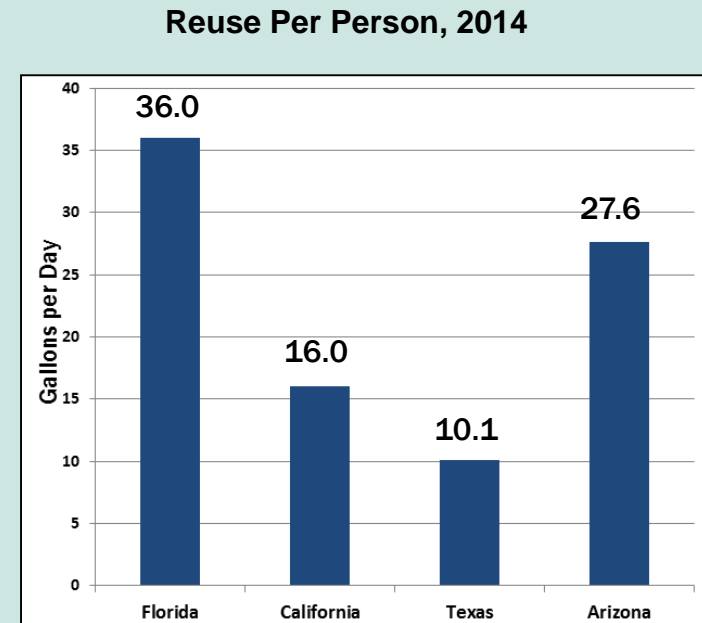
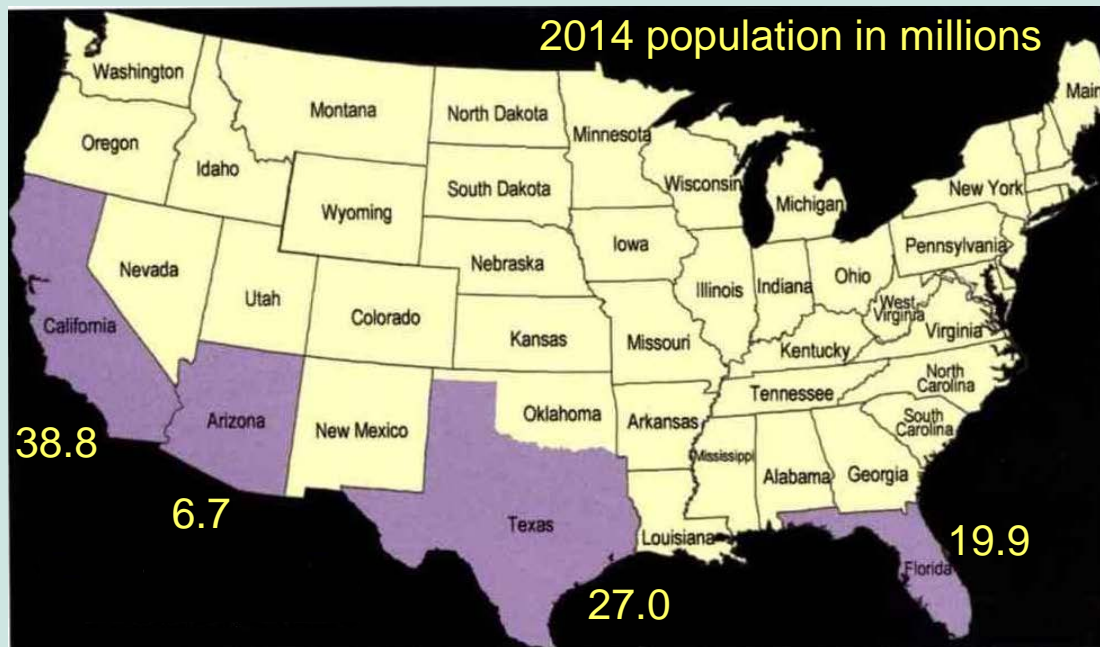
Map: Western Water, July/August 2008

Reused Wastewater Flows, 2014



Source: Bluefield Research

Arizona is 2nd highest nationally in per capita reuse



Reclaimed Water Use

Water Reuse Capacity (AF/yr)		Reclaimed Water as % of Total Water Supply
Israel	510,000	20%
Singapore	80,783	30%
United States	3,400,000	3%
Florida	955,000	4%
California	807,000	2%
Texas	482,000	3%
Arizona	504,000	7%

**Source:
Bluefield Research**



...but #1 at integrating reuse into the water supply portfolio

Arizona's 98 largest WWTPs

- Comprise 1/3 of total, yet treat 95% of AZ sewer flows
- 93% distribute at least some reclaimed water for reuse!



**Landscape impoundment,
Freestone Park,
Gilbert, AZ**

Another Surprising Statistic

Of Arizona's 98 largest WWTPs (≥ 1 mgd)

- 56% distribute Class A+ water



**Mesa Northwest Water
Reclamation Plant**

Reuse is Pervasive

More than 82% of treated wastewater generated in the Phoenix metro area is reused

- represents wastewater from 60% of AZ population**



Reuse in the Greater Phoenix Area

- **Disposition of treated wastewater**

- Power	22%
- Agriculture	22%
- Recharge	21%
- Environmental (i.e., Tres Rios)	11%
- Landscape, turf irrigation	6%

SUBTOTAL THAT IS REUSED	82%
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- Discharged (uncommitted)	18%
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TOTAL	100%
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Arizona's Largest Reclaimed Water System

City of Tucson

- Serves 1000s of residential, M & I, and agricultural users

160 miles of purple pipe

18 golf courses

50 parks

65 schools (incl. Univ. of Arizona)

>700 single family homes

**Irrigating athletic field with reclaimed water,
University of Arizona**



- 1. Keep up with the rapidly moving reclaimed/reuse field**
- 2. Sustainable water supplies are becoming increasingly important**
- 3. Advance ADEQ Strategic Goals**
 - a. Support environmentally responsible economic growth**
 - b. Enhance Arizona's unique environment**

Jan 1, 2016 – ADEQ opens docket to revise reclaimed water rules

- 1. Conveyances/Infrastructure**
- 2. Permits/Permitting Process**
- 3. Reclaimed Water Quality Standards**
 - the five classes: A+, A, B+, B, C
- 4. Associated end uses**

Three listening session workshops held

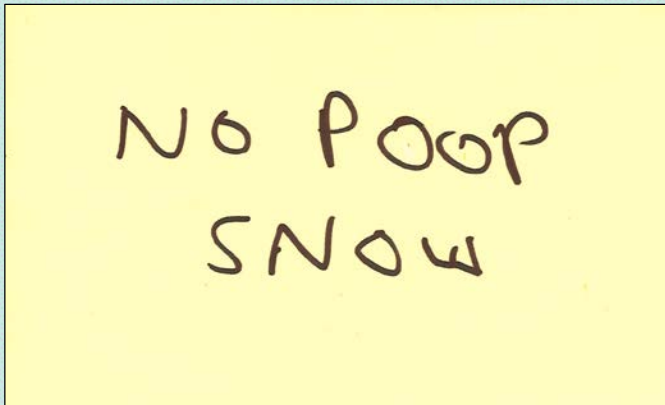
Feb 12 Tucson

Mar 10 Phoenix

May 5 Flagstaff

Listening Session Workshops

- 40 - 70 people attended each workshop
- More than 300 comments received



- Compiled into Issues Matrix

<http://www.azdeq.gov/reclaimed-water-rulemaking>

Conveyances/Infrastructure

Chlorine residual in distribution systems?

Signage requirements for Class A+ distribution systems

**Specific cross-connection control criteria
in reclaimed water rules?**

**Detailed design, construction,
O&M criteria in rules?**

**Require certified operator for
distribution systems?**



**Reclaimed water pipeline,
City of Chandler**

Permits/Permitting Process

Create a distribution system permit that has some of the characteristics of the current “Agent” permit?

Review signage requirements for end use sites

Change A+ end use permit from
Type 2 to Type 1 permit?

Make it easier to allow integrated use of
reclaimed water with other waters
(stormwater, canal water, etc.)



**Kino Environmental
Restoration Project
(combined reclaimed/
stormwater)**

Credit: Pima County

Reclaimed Water Quality Standards and End Uses

Review parameters, limits, monitoring frequencies for all classes of reclaimed water to ensure safe use

Add new end uses (e.g., wildfire & structural fire fighting, splashpads, open loop cooling systems, metal finishing, ecosystem restoration & enhancement, full-body contact)

Allow technologies other than filtration for meeting Class A+

Remove prohibition for reuse of reclaimed water for human consumption

Other

**Develop streamlined permits for large-scale,
non-residential use of gray water**

Modernize terminology regarding reclaimed water



**Large-scale gray water reuse,
Barrett Honors College, ASU**



Addressing Terminology: Current Rule Structure

Direct Reuse of Reclaimed Water (18 AAC, Chapter 9, Article 7)

Overall reclaimed water requirements

Signage requirements for end uses of reclaimed water

Individual reclaimed water permit requirements (incl. industrial)

Household gray water

General reclaimed water permits (Class A+, A, B+, B, C)

Non-household gray water use permit

Addressing Terminology: New Rule Structure?

Chapter 9, Article 7. Reuse of Recycled Waters

New **Part A. Reclaimed Water**

New **Part B. On-site Wastewater Treatment Systems**

New **Part C. Recycled Industrial Water**

New **Part D. Gray Water**

- **Establish expert workgroups**
 - Technology
 - Water quality standards
- **Develop first rule package concurrently**
- **Initiate formal rulemaking for first rule package (adoption by end of 2016)**
- **Second rulemaking based on input from expert workgroups (adoption by end of 2017?)**

To be on listserv for rule revision:

Send e-mail to: reuserulemaking@azdeq.gov

Or e-mail me at: cgg@azdeq.gov

Rule revision info & Issue Matrix:

<http://www.azdeq.gov/reclaimed-water-rulemaking>



**Town of Payson
Green Valley Lake**