

Arizona  
Department of  
Environmental  
Quality



Arizona  
Department of  
Water  
Resources



Arizona  
Corporation  
Commission



Blue Ribbon Panel on Water Sustainability

# 2010 SUMMARY OF MUNICIPAL CONSERVATION PROGRAMS IN ARIZONA

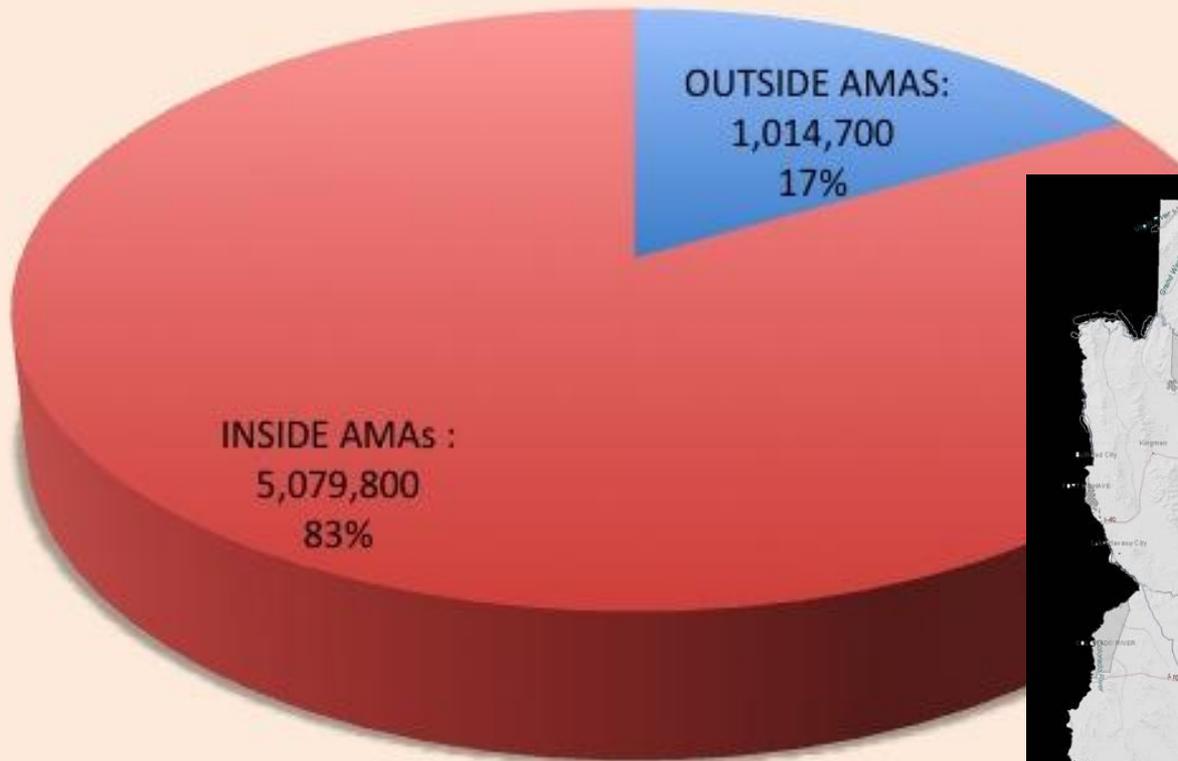
Ruth Greenhouse, ADWR  
May 7, 2010



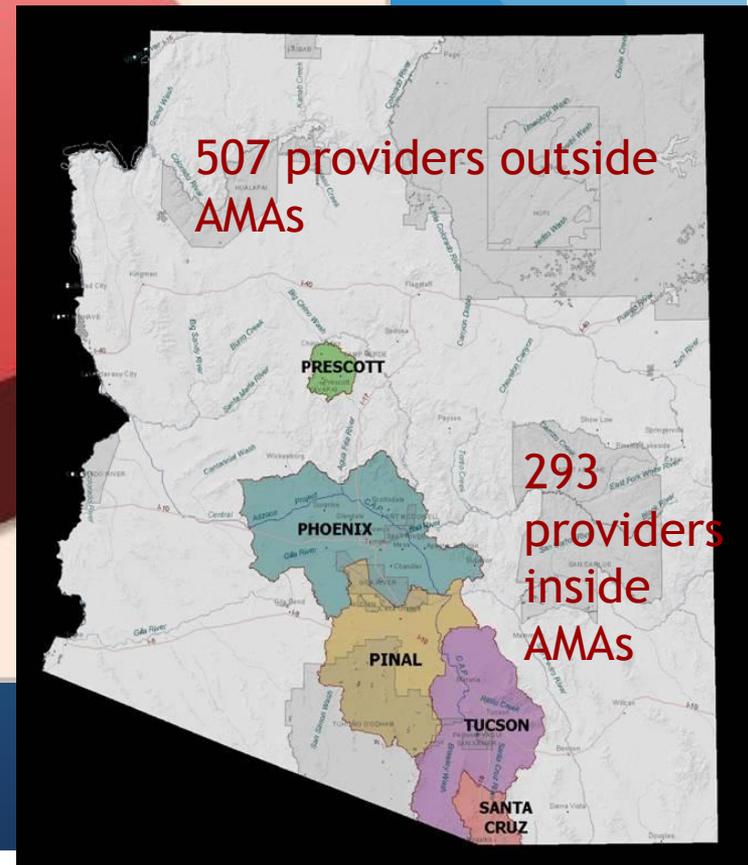
**Municipal Water Provider**  
-- a city, town, private water company or water district that delivers water for residential and/or commercial purposes



# ~ 800 Municipal Water Providers in Arizona



May 2010, ADWR

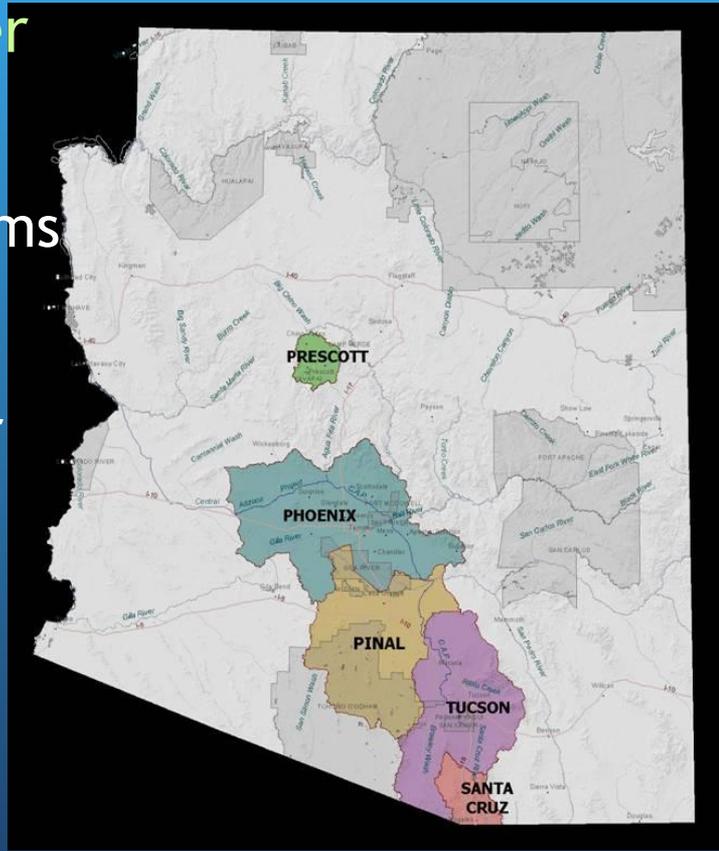


# Mandatory Conservation Requirements

## INSIDE AMAs

### 1980 Groundwater Code

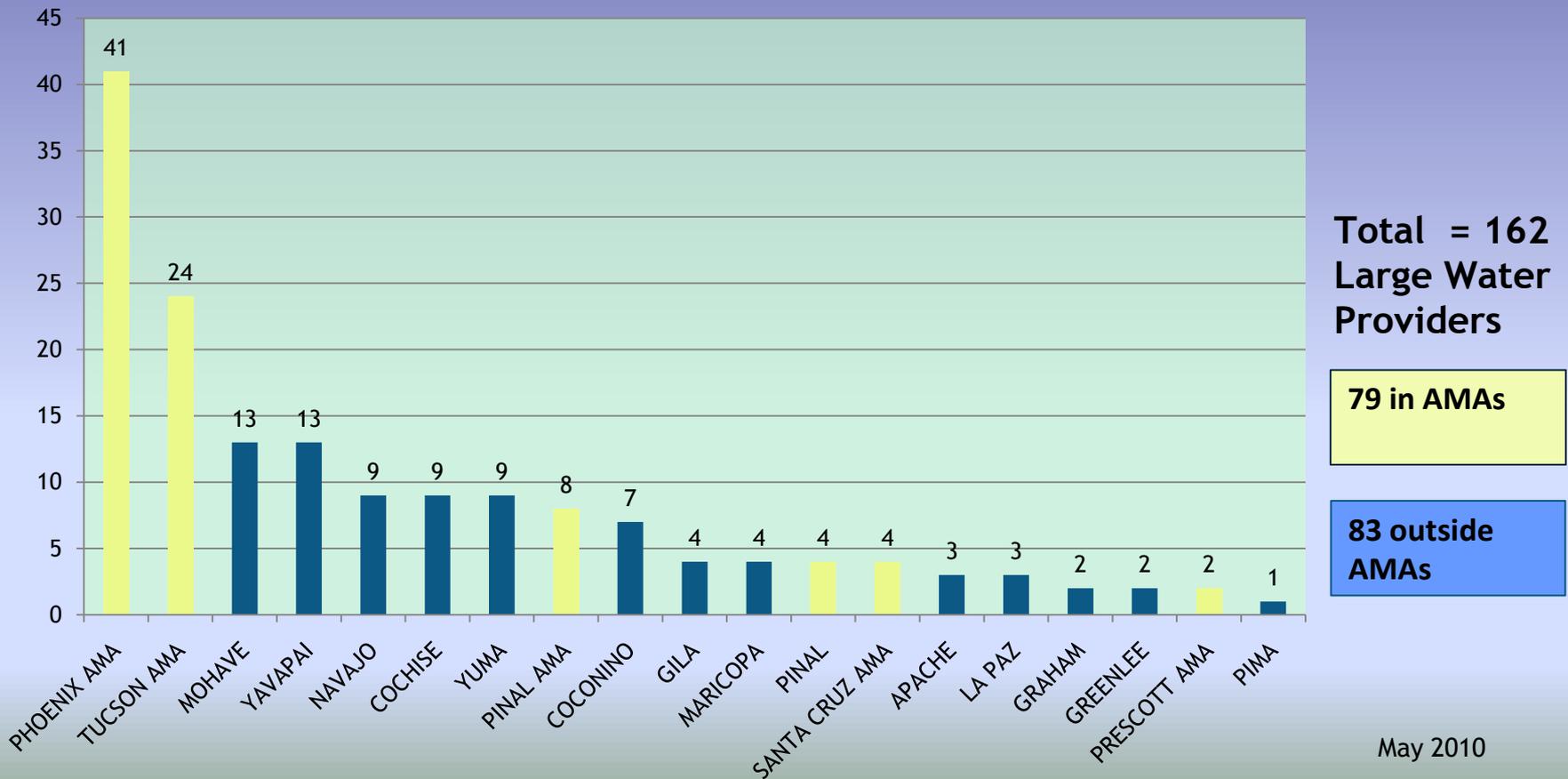
- Regulatory programs
- 100% metering
- <10% water lost or unaccounted
- Additional ADWR requirements
- Assured water supply required
- ACC requirements



## OUTSIDE AMAs

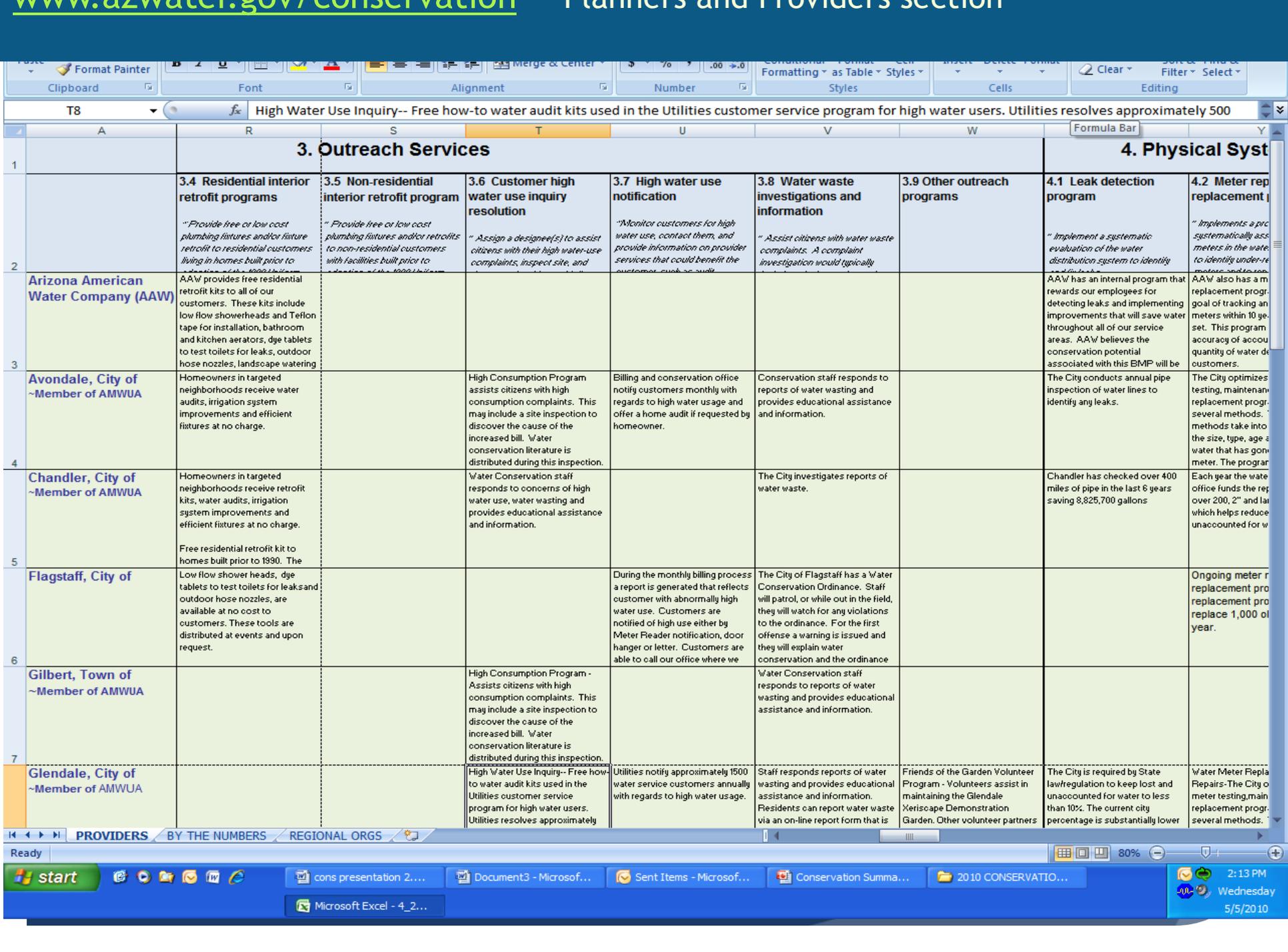
- Conservation plans
- Drought plans
- City/town ordinances and programs
- Local jurisdictions may require adequate water supply
- ACC requirements

# Number of Large Municipal Providers in Arizona Counties and AMAs



May 2010

Large providers serve >250 af/yr



Excel ribbon: Format Painter, Clipboard, Font, Alignment, Number, Styles, Cells, Editing. Formula Bar: T8 High Water Use Inquiry-- Free how-to water audit kits used in the Utilities customer service program for high water users. Utilities resolves approximately 500

|   | A   | R   | S   | T  | U   | V   | W  | Y   |   |
|---|---|---|---|--|---|---|--|---|---|
|   | <b>3. Outreach Services</b>                 |   |   |  |   |   |  | <b>4. Physical Syst</b>   |   |
| 1 |   | <b>3.4 Residential interior retrofit programs</b>   | <b>3.5 Non-residential interior retrofit program</b>  | <b>3.6 Customer high water use inquiry resolution</b>  | <b>3.7 High water use notification</b>  | <b>3.8 Water waste investigations and information</b>   | <b>3.9 Other outreach programs</b>   | <b>4.1 Leak detection program</b>   | <b>4.2 Meter replacement</b>  |
| 2 |   | <i>" Provide free or low cost plumbing fixtures and/or fixture retrofit to residential customers living in homes built prior to 1990."</i>  | <i>" Provide free or low cost plumbing fixtures and/or retrofits to non-residential customers with facilities built prior to 1990."</i> | <i>" Assign a designee(s) to assist citizens with their high water-use complaints, inspect site, and</i>   | <i>"Monitor customers for high water use, contact them, and provide information on provider services that could benefit the customer, such as well."</i>  | <i>" Assist citizens with water waste complaints. A complaint investigation would typically</i>   |  | <i>" Implement a systematic evaluation of the water distribution system to identify</i>   | <i>" Implements a pro systematically ass meters in the wa to identify under-re</i>  |
| 3 | <b>Arizona American Water Company (AAW)</b> | AAW provides free residential retrofit kits to all of our customers. These kits include low flow showerheads and Teflon tape for installation, bathroom and kitchen aerators, dye tablets to test toilets for leaks, outdoor hose nozzles, landscape watering |   |  |   |   |  | AAW has an internal program that rewards our employees for detecting leaks and implementing improvements that will save water throughout all of our service areas. AAW believes the conservation potential associated with this BMP will be | AAW also has a m replacement progr goal of tracking an meters within 10 ye set. This program accuracy of accou quantity of water de customers.        |
| 4 | <b>Avondale, City of ~Member of AMWUA</b>   | Homeowners in targeted neighborhoods receive water audits, irrigation system improvements and efficient fixtures at no charge.  |   | High Consumption Program assists citizens with high consumption complaints. This may include a site inspection to discover the cause of the increased bill. Water conservation literature is distributed during this inspection.   | Billing and conservation office notify customers monthly with regards to high water usage and offer a home audit if requested by homeowner.   | Conservation staff responds to reports of water wasting and provides educational assistance and information.  |  | The City conducts annual pipe inspection of water lines to identify any leaks.  | The City optimizes testing, maintenanc replacement progr several methods. methods take into the size, type, age a water that has gon meter. The progr |
| 5 | <b>Chandler, City of ~Member of AMWUA</b>   | Homeowners in targeted neighborhoods receive retrofit kits, water audits, irrigation system improvements and efficient fixtures at no charge.<br><br>Free residential retrofit kit to homes built prior to 1990. The  |   | Water Conservation staff responds to concerns of high water use, water wasting and provides educational assistance and information.  |   | The City investigates reports of water waste.   |  | Chandler has checked over 400 miles of pipe in the last 6 years saving 8,825,700 gallons  | Each year the water office funds the rep over 200, 2" and lar which helps reduce unaccounted for w  |
| 6 | <b>Flagstaff, City of</b>                   | Low flow shower heads, dye tablets to test toilets for leaks and outdoor hose nozzles, are available at no cost to customers. These tools are distributed at events and upon request.   |   |  | During the monthly billing process a report is generated that reflects customer with abnormally high water use. Customers are notified of high use either by Meter Reader notification, door hanger or letter. Customers are able to call our office where we | The City of Flagstaff has a Water Conservation Ordinance. Staff will patrol, or while out in the field, they will watch for any violations to the ordinance. For the first offense a warning is issued and they will explain water conservation and the ordinance |  |   | Ongoing meter r replacement pro replace 1,000 of year.  |
| 7 | <b>Gilbert, Town of ~Member of AMWUA</b>    |   |   | High Consumption Program - Assists citizens with high consumption complaints. This may include a site inspection to discover the cause of the increased bill. Water conservation literature is distributed during this inspection. |   | Water Conservation staff responds to reports of water wasting and provides educational assistance and information.  |  |   |   |
| 8 | <b>Glendale, City of ~Member of AMWUA</b>   |   |   | High Water Use Inquiry-- Free how-to water audit kits used in the Utilities customer service program for high water users. Utilities resolves approximately  | Utilities notify approximately 1500 water service customers annually with regards to high water usage.  | Staff responds reports of water wasting and provides educational assistance and information. Residents can report water waste via an on-line report form that is  | Friends of the Garden Volunteer Program - Volunteers assist in maintaining the Glendale Xeriscape Demonstration Garden. Other volunteer partners | The City is required by State law/regulation to keep lost and unaccounted for water to less than 10%. The current city percentage is substantially lower  | Water Meter Repla Repairs-The City o meter testing,main replacement progr several methods.  |

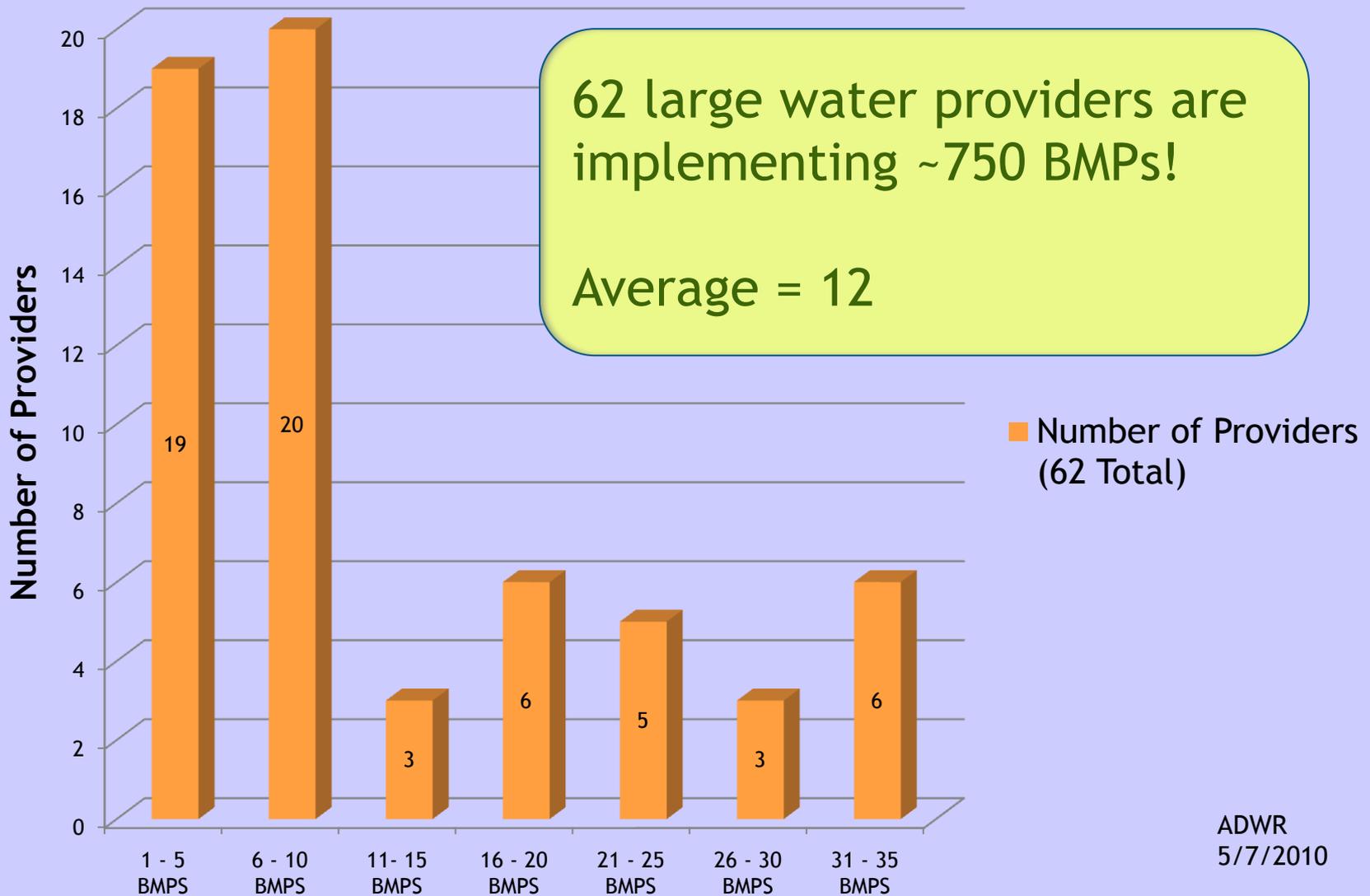
Navigation: PROVIDERS BY THE NUMBERS REGIONAL ORGS

# **BMP Format used in Modified Non-Per Capita Conservation Program ([www.azwater.gov/mnpccp](http://www.azwater.gov/mnpccp))**

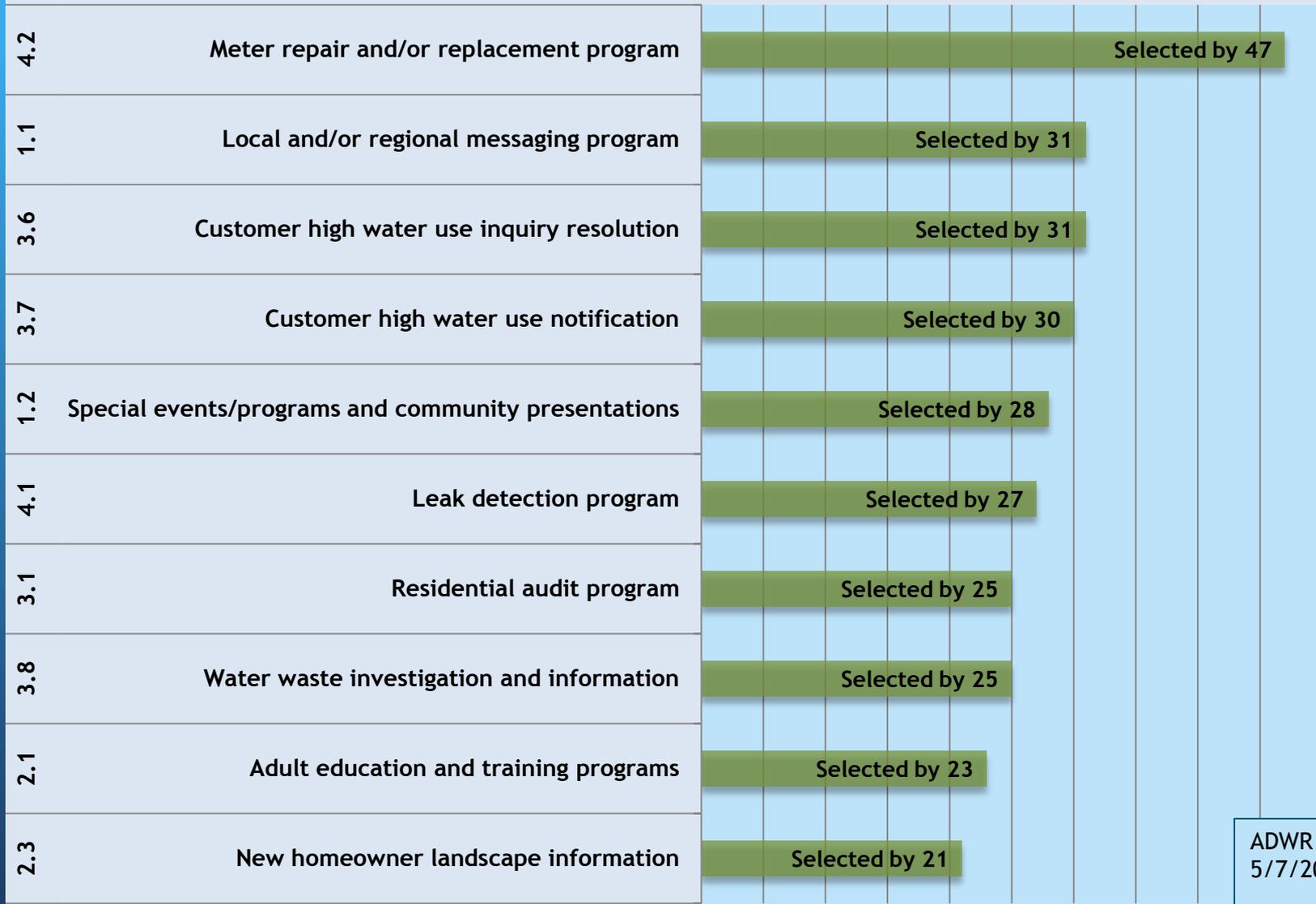
## **Basic Public Education Program**

- 1. Public Awareness**
- 2. Education and Training**
- 3. Outreach Services**
- 4. Physical System Improvements**
- 5. Ordinances, Conditions of Service, Tariffs**
- 6. Rebates & Incentives**
- 7. Research/Innovation**

# Number of BMPs Selected out of 60 Possible

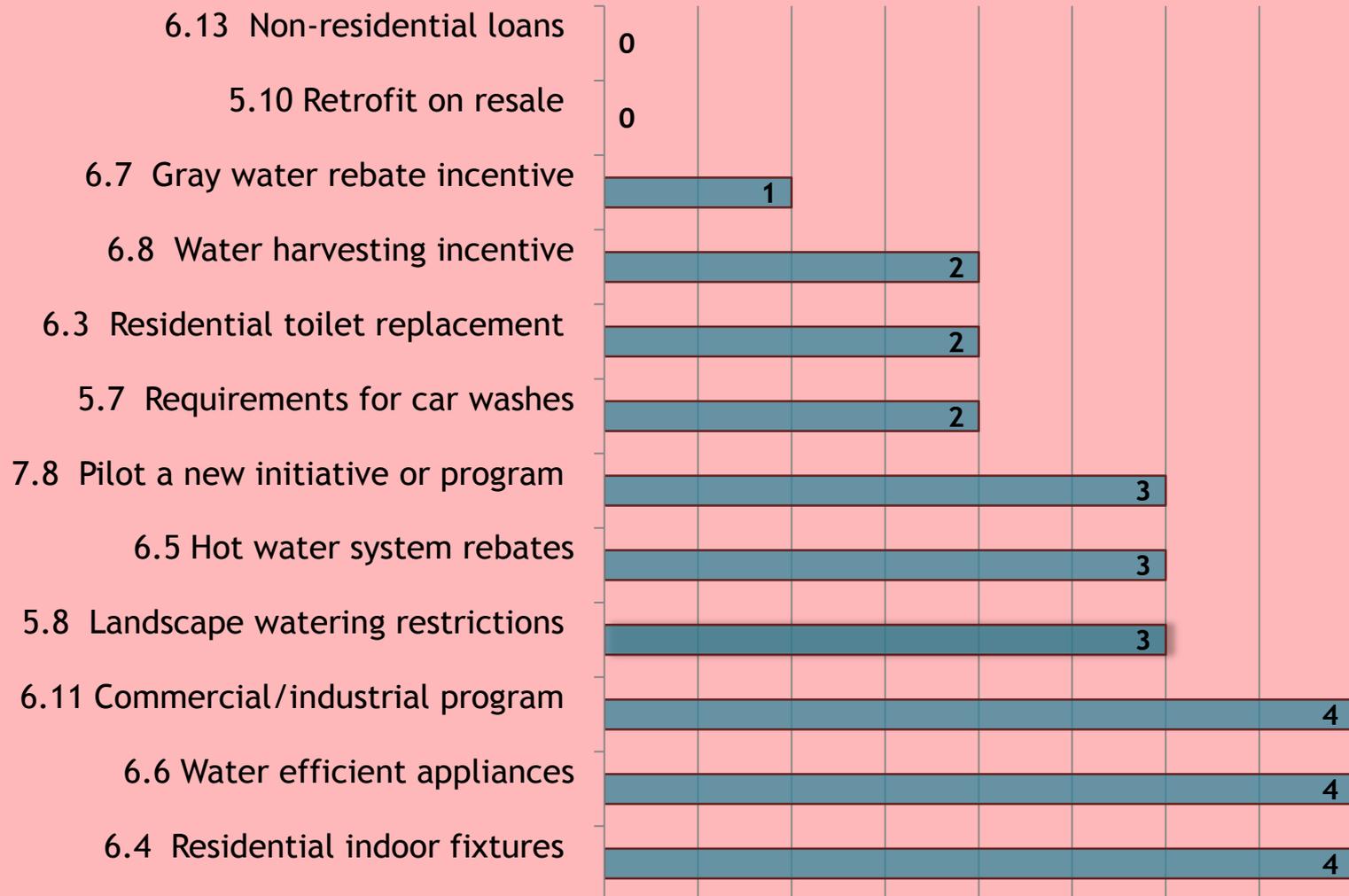


## Top 10: BMPs Implemented Most Frequently by 62 Large Providers



# BMPs Implemented Least Frequently

ADWR  
5/7/2010



## 2. Education and Training

### City of Glendale Xeriscape Demonstration Garden



- Adult Education
- Youth Education
- New Homeowner Landscape Information
- **Demonstration Garden**

- Four acres in size / more than 400 species
- Free self-guided audio tour
- Free field trips
- Outdoor classroom and events
- Valley Forward Crescordia award winner

## 2. Education and Training

### Smartscape Landscape Professional Training Program



- **Adult Education/Training**
  - Youth Education
  - New Homeowner Landscape Information
  - Demonstration Garden
- 
- Offered in Phoenix and Tucson since 1991
  - Affordable, science-based training
  - 8 workshops, exam and certification
  - Covers how to design, install, maintain and manage water efficient landscapes
  - ~ 2000 graduates

### 3. Outreach Services

- Residential Audit
- Landscape Consultation
- Water Budgeting
- Retrofits
- High Water Inquiry Resolution
- High Water Use Notification
- Water Waste Investigation

### *Gilbert High Water Use Program*

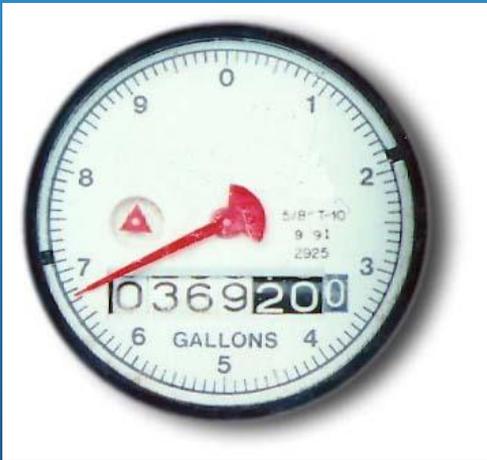


- Notify those with double water use > 20,000 g./mo.
- Sent 5,620 letters in 2009
- Provide audits, information, and follow-up survey
- Monitor pre and post-audit water use
- Change in water use per audit: ~45,000 gallons/year!

## 4. Physical System Improvements

- Leak Detection
- **Meter Repair**
- System Audit

### *AWC Meter Change-Out Program*



- ~8000 meters passed through the AWC shop in 2008
- Reduce lost and unaccounted for water
- Save water and money:

“EVERYTHING IS MULTIPLIED” Example of Inaccurate Meters

- 10% inaccuracy X 3,000 customers = ~\$143,000/yr
- In 5 years: ~\$715,000
- 20% inaccuracy In 5 years: ~\$1,430,000

## 6. Rebates & Incentives

- Rebates, grants, fee reduction, low/no interest loans, etc.

### *Chandler Washer Rebate Program*



- ~2,400 rebates 4/08 - 3/10
- Average water savings per washer/year = 10,400 gallons
- Total gallons saved = 25,000,000
- Gallons saved/dollar spent  
104 (not including staff time)  
87 (including staff time)

## 6. Rebates & Incentives

- Rebates, grants, fee reduction, low/no interest loans, etc.

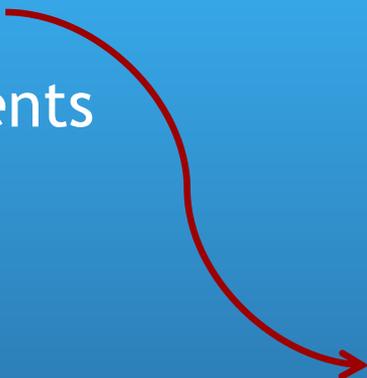
### *Mesa Turf Conversion Program*



- \$500 rebate to homeowners for converting a minimum of 500 ft<sup>2</sup> to Xeriscape
- 147 homeowner rebates since 7/07
- Average amount of grass removed is ~ 1000 ft<sup>2</sup>
- SNWA turf conversion study results:
  - Savings of 30% = 96,000 g/yr
  - Per-unit savings of 56 g. per ft<sup>2</sup>

## 5. Ordinances, Conditions of Service, Tariffs

- Landscape Requirements/Restrictions
- **Water Waste Restrictions**
- Plumbing Code Requirements
- Model Homes Ordinance
- Graywater Ordinance
- Car Wash Recycling
- Hot Water Devices
- Retrofit on Resale



**Implemented  
by 32% of the  
providers in  
the survey**

# Conservation in other Southwestern States

A Web-Based Summary of Water Conservation in Arizona, California, Colorado, Nevada, New Mexico, and Utah

ARIZONA DEPARTMENT OF WATER RESOURCES  
3550 North Central Avenue, Phoenix, Arizona 85012



## Ex. of Summary Table in Appendix

|  | Fire Water Saving Devices | Hot Water Heated/Cooler Rebates | Rain Barrel Rebates | Irrigation Timer Rebates | Commercial Landscaping Rebates | Residential Landscaping Rebates | Dishwasher Rebates | Weather Robots | ULFT Rebates | Water Use Audits | Classroom/Workshops | Demonstration Gardens | Drip Calculator | Pump Out | Yardcare Information | H2OUSE Link | Water Meter Link | Educational Materials | Watering Restrictions | Conservation Information |
|--|---------------------------|---------------------------------|---------------------|--------------------------|--------------------------------|---------------------------------|--------------------|----------------|--------------|------------------|---------------------|-----------------------|-----------------|----------|----------------------|-------------|------------------|-----------------------|-----------------------|--------------------------|
| <b>New Mexico</b>                              |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Alamogordo                             | X                         | X                               |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Albuquerque                            | X                         | X                               | X                   | X                        | X                              | X                               | X                  | X              | X            | X                | X                   | X                     | X               | X        | X                    | X           | X                | X                     | X                     | X                        |
| City of Artesia                                |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Aztec                                  | X                         | X                               |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Belem                                  |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Bloomfield                             |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Carlsbad                               | X                         |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Deming                                 |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Espanola                               |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Farmington                             |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Gallup                                 |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Grants                                 |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Las Cruces                             |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Las Vegas                              |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Lovington                              | X                         |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Portales                               |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Rio Rancho                             | X                         | X                               | X                   |                          |                                |                                 |                    |                |              |                  |                     | X                     |                 |          |                      |             |                  |                       |                       |                          |
| City of Roswell                                |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Santa Fe                               | X                         |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      | X           |                  |                       |                       |                          |
| City of Silver City                            |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Socorro                                |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| City of Tucuman                                |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| Los Alamos                                     |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| Los Lunas                                      |                           |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| New Mexico Utilities (Suburban Water Services) | X                         |                                 |                     |                          |                                |                                 |                    |                |              | X                |                     |                       |                 |          |                      |             |                  |                       |                       |                          |
| Santa Fe Utility Company                       | X                         |                                 |                     |                          |                                |                                 |                    |                |              |                  |                     |                       | X               |          |                      |             |                  |                       |                       |                          |

Water Providers

Conservation Measures Implemented

ISSUES

NEXT  
STEPS

