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# World Water Leaders – Innovative National/International Program Strategies

WaterSmart Innovations  
Las Vegas, NV

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City of Austin Office of Sustainability

In association with:



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**BUILDING A BETTER WORLD**



# Agenda

1. Overview and Goal of the Survey
2. Industry Trends
3. Key Findings & Highlights
4. Questions



*Photo Credit: Austin Water, Wildland Conservation Division*



# Overview and Goal of the Survey

- City of Austin requested survey of 11 Programs in Western US and Australia
  - Mature and successful conservation programs
  - Water efficiency leaders
  - Compiled savings goals, conservation measures, budgets
  - Payment mechanisms and staffing needs
- Gained lessons learned from conservation programs



Water Conservation Study

Prepared For:



City of Austin Office of Sustainability & Austin Water Utility

Prepared by:



# Survey Approach and Participants

- Data gathering via Internet
- Confirmation of and enhancement of data with phone interviews
- Confirmation of data with Administrative Draft Report

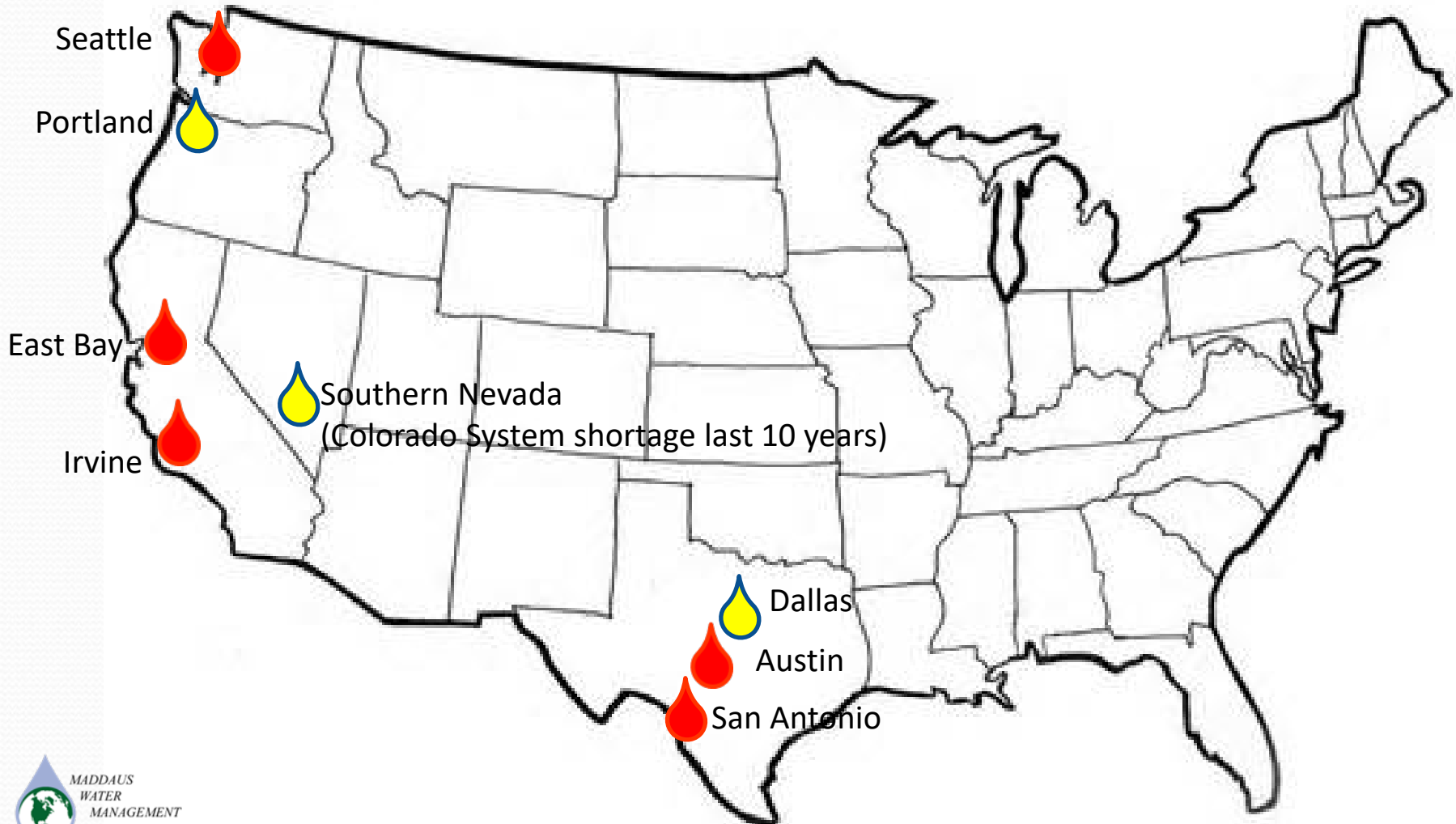
Western States	Texas	Australia
<ul style="list-style-type: none"><li>▪ Seattle, WA</li><li>▪ Portland, OR</li><li>▪ East Bay Municipal Utility District (EBMUD), Oakland, CA</li><li>▪ Irvine, CA</li><li>▪ Southern Nevada, NV</li></ul>	<ul style="list-style-type: none"><li>▪ City of Austin, TX</li><li>▪ San Antonio, TX</li><li>▪ Dallas, TX</li></ul>	<ul style="list-style-type: none"><li>▪ Perth</li><li>▪ Newcastle</li><li>▪ Melbourne</li></ul>



A red drop indicates drought stage

A yellow drop indicates system  
been drier than normal

# Map of Survey Participants in US





# 3 out of 6 States in Australia



Drought



Newcastle



No Drought

14 year drought ended 2012

# Type of Data Collected

- Reviewed programs including public info and rebates, system water demand, reclaimed water, and communication with customers
- Summary tables include the following:
  - Service Area Population
  - Service Area Location
  - Water Demand
  - Conservation Budget
  - Conservation Staff
  - Conservation Goals
  - Conservation Programs
  - Reports and Supporting Documentation



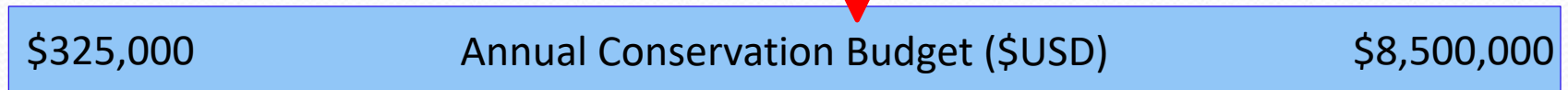
# Industry Trends

	Number of Survey Participants with the Program	Comments
Automatic Meter Infrastructure	Most looking at AMI	Leaders are ALL considering or working on implementing AMI
CII Efficient Custom Rebate Program	9 offer CII incentives	Leaders are targeting high CII water users with more targeted measures.
Rainwater Capture	4 offer incentives + 7 others provide information.	For irrigation in US; for irrigation, toilet, and other indoor uses in Australia.
Grey Water	5 offer incentives + 2 more offer information.	Been a slow sell with the public.
Reclaimed Water % of Annual Demand	0%-40% (Average: 9% & Median:4%)	8 with both large-scale purple pipe deliveries <i>and</i> on-site recycling schemes.
Social Media / Home Water Use Reports	ALL 11 are doing some form of Social Media	Home water use reports and online billing data increasingly popular

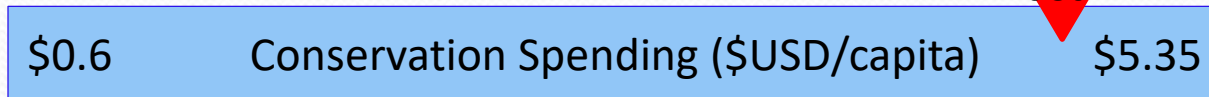
# Key Finding 1: Staff and Spending

	Range of Survey Participants
Annual Conservation Budget (\$USD)	\$325,000 - \$8,500,000 (Average: \$3.6 million & Median: \$3.2 million)
Conservation Spending (\$/capita)	\$0.6 - \$5.35 (Average: \$2.93 and Median: \$3.00)
Conservation Staff in FTE	3 – 20 (Average: 12.3 and Median: 13)

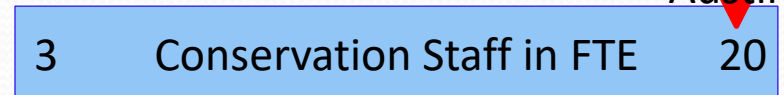
Austin



Austin

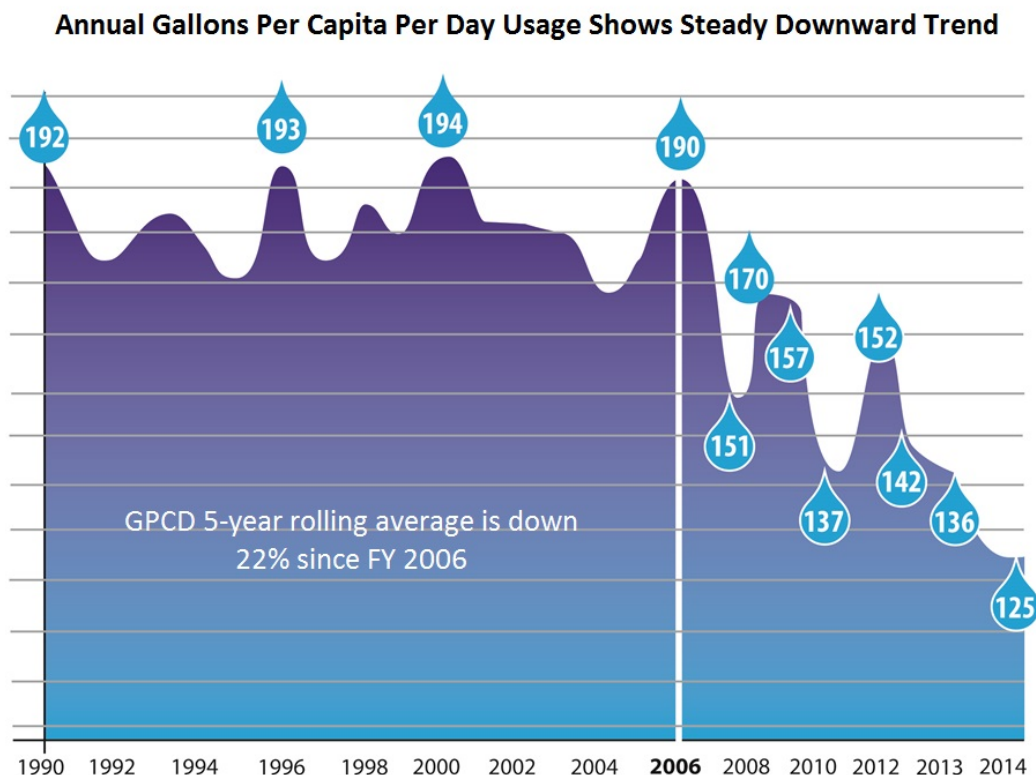


Austin



## Key Finding 2: Water Savings Goals

- **Savings goals range: 0.5 – 1.5 % demand reduction per year**
- 6 of 11 agencies are currently exceeding their goal
- Austin 140 GPCD Goal equates to 1% reduction per year



Austin exceeded their 140 GPCD by 2020 goal. Should review savings goal as part of the Integrated Plan.



# Key Finding 2: Water Savings Goals

## Saving Water Partnership, Seattle

- Reduce total demand for SWP by 2018 to 105 MGD despite population growth.

## Portland Water Bureau

- Maintain residential use below 63 GPCD.

## East Bay Municipal Utility District

- Save 62 MGD through conservation initiatives by 2040. Target in 2015 is 1.2MGD average annual conservation savings.

## Irvine Ranch Water District

- Year 2020 GPCD target of 170 GPCD.

## Southern Nevada Water Authority

- Goal of 199 gallons per capita per day (GPCD) to be achieved by year 2035. On track to meet target.

## San Antonio Water System

- Draft pending updated plan approval: By 2070, reduce total GPCD to 88 (+/- 7 for weather variability) and residential GPCD to 55.

## Dallas Water Utilities

- Year 2019 goal of 196 GPCD including residential water use of 97 GPCD.

## Austin Water

- Reach 140 GPCD by year 2020 and reduce peak demand by 1% each year over 10 years.

## City West Water

- Working on new conservation plan. In 2013/14 water use declined to 67 GPCD.

## Water Corporation

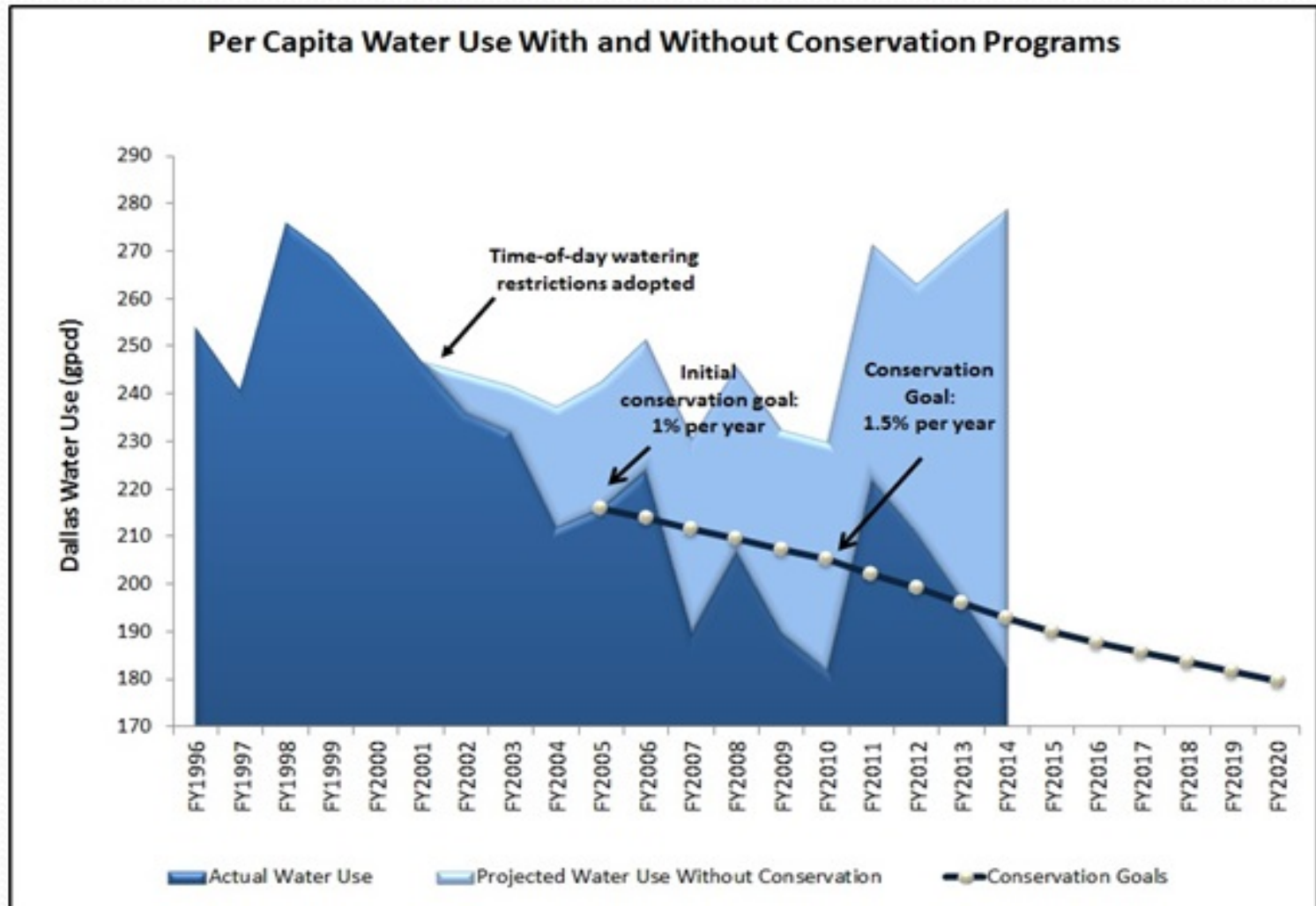
- 15% demand reduction from 2009 to the year 2030.

## Hunter Water

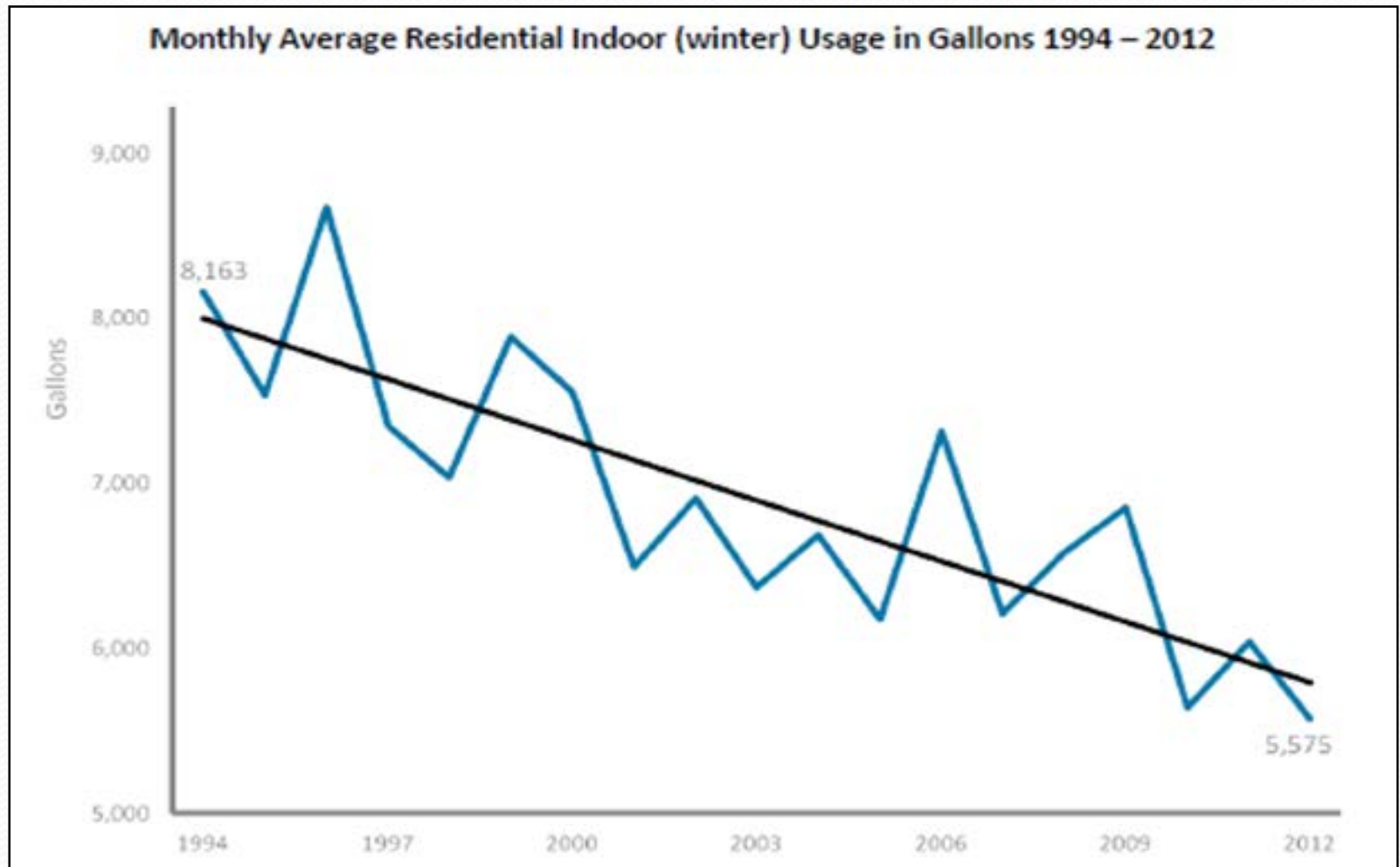
- Save 4 MGD (4.5 billion liters per year) by year 2034.

Goal is typically ~1% demand reduction per year. 6 of 11 are currently exceeding their goal.

# Key Finding 2: Dallas Water Use



# Key Finding 2: San Antonio Use





# Key Finding 3: Top 5 Common Measures

The 11 surveyed programs varied. The most common measures are:

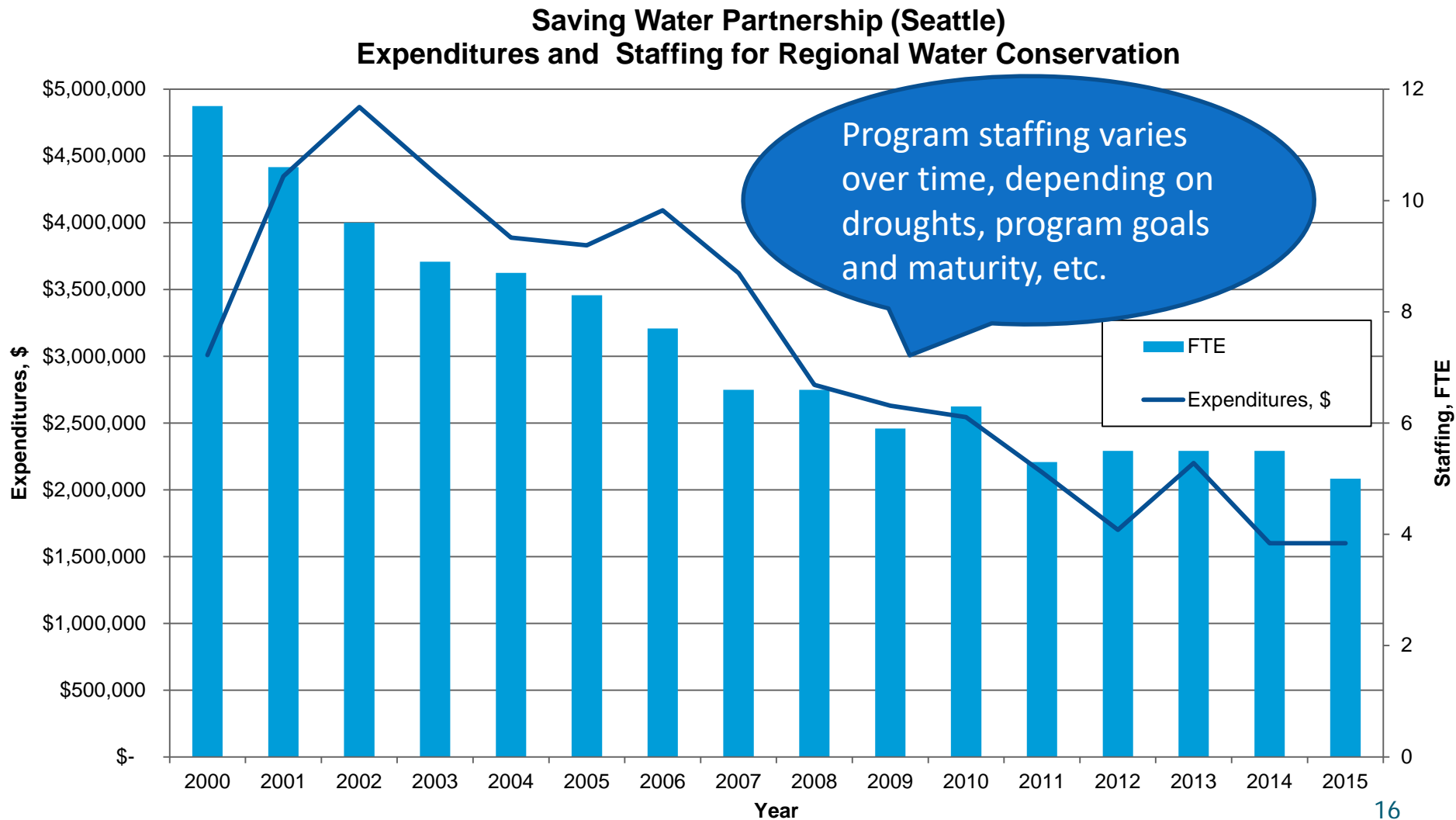
- **Public and School Education Programs**
- **Residential Indoor Programs**
  - clothes washer and toilet incentives
- **Commercial Indoor Programs**
  - water efficient commercial technologies for process water use and efficient water fixtures (toilets, urinals, etc.)
- **Residential Landscape Programs**
  - promotional campaigns with local nurseries, education and incentives
- **Commercial Landscape Programs**
  - irrigation equipment and system improvement incentives

# Key Finding 4: Program Funding Source

- **Water charges** (rates and/or system connection fees) and grants are the most common source of funding
- Conservation at a regional level is funded through rates and dues
- Some work with **private parties** who offer funding from businesses who want to be sustainable.

Most fund programs through rates and grants - Consider partnerships with businesses beyond rebates and case studies.

# Key Finding 5: Cost and Staffing Example





# Key Finding 6: Commercial Programs

## **Commercial Customers: Challenges can be rewarded with big savings**

- Offering significant funds with a simpler process and targeted by industry is helpful.

## **Semiconductors: Often efficient but there are lots of ways to save**

- Large water user. Lots of rebate ideas are possible.

## **Universities, Schools, Government Buildings: Possible Untapped Savings**

- Typically older buildings and good water savings potential.

Most agree in the future  
biggest savings are available  
with commercial accounts.



**Business Industry and Government (BIG) Water Conservation**

*Photo: Portland Water Bureau – Business, Industry and Government (BIG) Water Conservation Program*

# Key Finding 7: Outdoor Water Savings

- **Car wash coupons**
- **Proper plant selection and new landscape design**
- **Landscape rebates for existing irrigation upgrades:**
  - Weather-based irrigation controller rebates
  - High-efficiency rotating Sprinkler nozzle rebates
  - Drip irrigation to replace sprinkler rebates
  - Soil amendment program
  - Turf replacement program
  - Rebates for low-water use landscaping



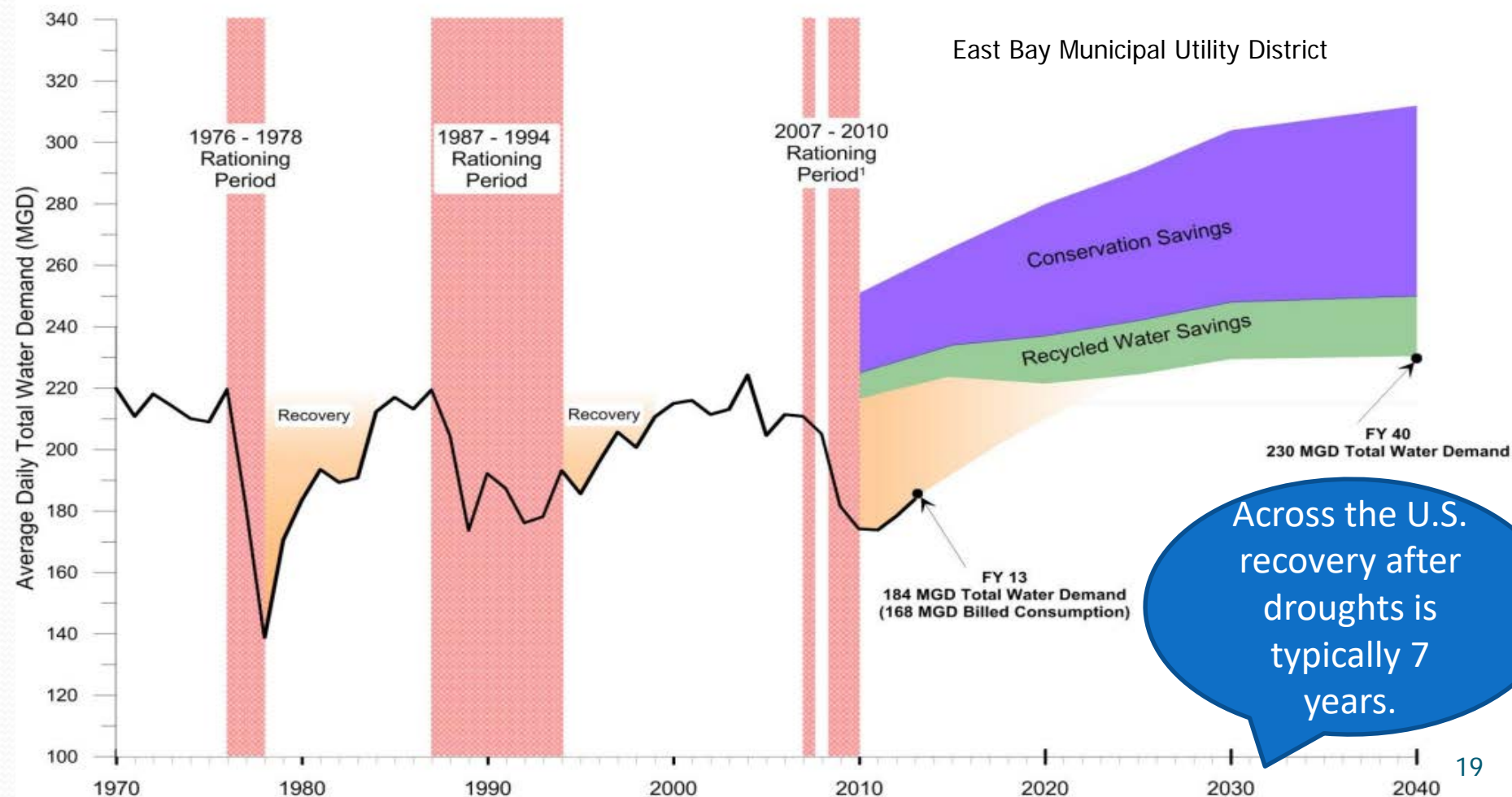
Most agencies do not have any coupon programs which are well liked by customers and businesses.





# Key Finding 8: Alternative Water Sources

Reclaimed water and non-potable reuse are increasing in popularity, i.e, EBMUD (example below) and Water Corporation (Western Australia)

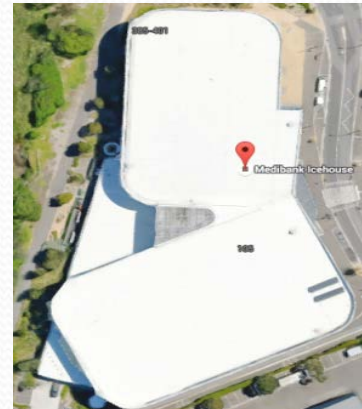




# Key Finding 8: Rainwater Catchment

- 36% of Australian households use rainfall for irrigation.
- Rainwater capture challenging to make cost effective.
- Ongoing and regular maintenance difficult for residential home owners.
- Large scale successful programs like fields at schools, and roofs of businesses such as ice rinks.

Austin offers homeowners and schools a WaterWise Rainscape Rebate of up to \$500



Medibank IceHouse in Melbourne Australia uses rain capture on roof for their for resurfacing their ice.

# Key Finding 9: Rebates and Incentives

- Rebates/incentives remain a popular method for encouraging water conservation.
- **Review market saturation:**
  - Many agencies assess fixture saturation to determine the continuation of long standing incentive programs (especially residential toilets and clothes washers).
  - Many rebates and incentives shifting to:
    - Landscape irrigation
    - CII accounts

Austin regularly evaluates device saturation levels and modifies their programs accordingly.



Southern Nevada Water Authority  
- Water Smart  
Landscape conversion rebate

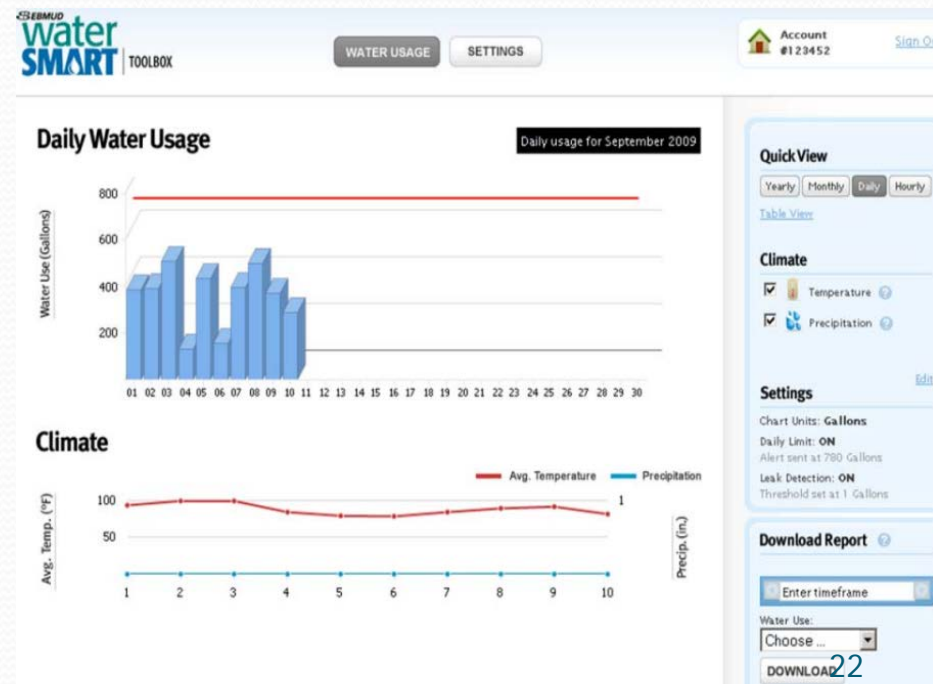


# Key Finding 10: Leak Management

## Water Loss Reduction: Pressure Regulation, Meter Testing, Replacement & Leak

- All 11 survey participants conduct leak management.
- Most use American Water Works Association Water Loss Software.
- Meters have accuracy issues.
- Many utilities have increased meter testing and replacement.
- Automatic Metering Infrastructure (AMI) is more popular.

AMI is the future.  
Most are  
interested in AMI  
and exploring  
funding.





# Key Finding 11: Communication – Social Media

- Communication works best during a water shortage – take advantage of it!
  - Old: Websites, newsletters, mass e-mails, bill inserts
  - New: Facebook, Twitter, video sites, and targeted letters and emails
- Continued research conducted on effective ways to communicate water conservation to customers
- Austin Water pilot study: mobile app with Dropcountr, Inc., to provide 10,000 residential customers with free home water use reports
- Consider innovative pricing structures



Most plan to  
continue to  
expand use of  
Social Media



# Summary Conclusions:

## 1. **Surveys are a great way to review your program**

- Find new ideas BEFORE you redesign your program
- Phone conversations with agencies helpful to get detailed information not available on websites

## 2. **Communication with customers is important!**

- Conduct regular surveys of customers to know what is needed
- Put case studies on the utility website
- Use online social networking and marketing, which offer two-way conversations with customers

Surveys are valuable to communicate customer needs. Austin can do more customer surveys. Especially now with a change in drought conditions.



# Summary Conclusions (continued)

## 3. Program Implementation Ideas

- Identify and target large water savings opportunities applicable to the service area.
- CII programs can be tricky but yield big savings when successful.
- Work together regionally. Leverage programs with neighboring utilities, including energy and wastewater.
- Buy-in is critical at all levels. Engage decision makers and stakeholders:
  - General Managers
  - Conservation Program Managers
  - Water Conservation Coordinators
  - Public
  - Other Interested Parties



# Questions?

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# Participating Agency Contact Info

- Saving Water Partnership, Seattle, WA
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- Portland Water Bureau, OR
  - [www.portlandoregon.gov/water/26426](http://www.portlandoregon.gov/water/26426)
- East Bay Municipal Utility District, CA
  - [www.ebmud.com](http://www.ebmud.com)
- Irvine Ranch Water District, CA
  - [irwd.com](http://irwd.com)
- Southern Nevada Water Authority, NV
  - [www.snwa.com](http://www.snwa.com)
- San Antonio Water System, TX
  - [www.saws.org](http://www.saws.org)
- Dallas Water Utilities, TX
  - [dallascityhall.com/departments/waterutilities](http://dallascityhall.com/departments/waterutilities)
- Austin Water, TX
  - [www.austintexas.gov/department/water](http://www.austintexas.gov/department/water)
- City West Water, Melbourne, Australia
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- Water Corporation, Perth, Australia
  - [www.watercorporation.com.au](http://www.watercorporation.com.au)
- Hunter Water, New South Wales, Australia
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