

# This presentation premiered at WaterSmart Innovations

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# Setting Up Your Sustainable Funding Portfolio For Successful Conservation Programs

## Panel Discussion

Lisa Maddaus, Maddaus Water Management, Inc. (Moderator)

Doug Bennett, Southern Nevada Water Authority

Karen Guz, San Antonio Water System

William Granger, City of Sacramento

Tess Kretschmann, Maddaus Water Management, Inc.



Water Smart Innovations Conference  
October 9, 2015



# **Southern Nevada Water Authority:** *Regional Collaboration, Regional Success*

*Doug Bennett, Conservation Manager*



Southern Nevada Water Authority

# Conservation Funding History

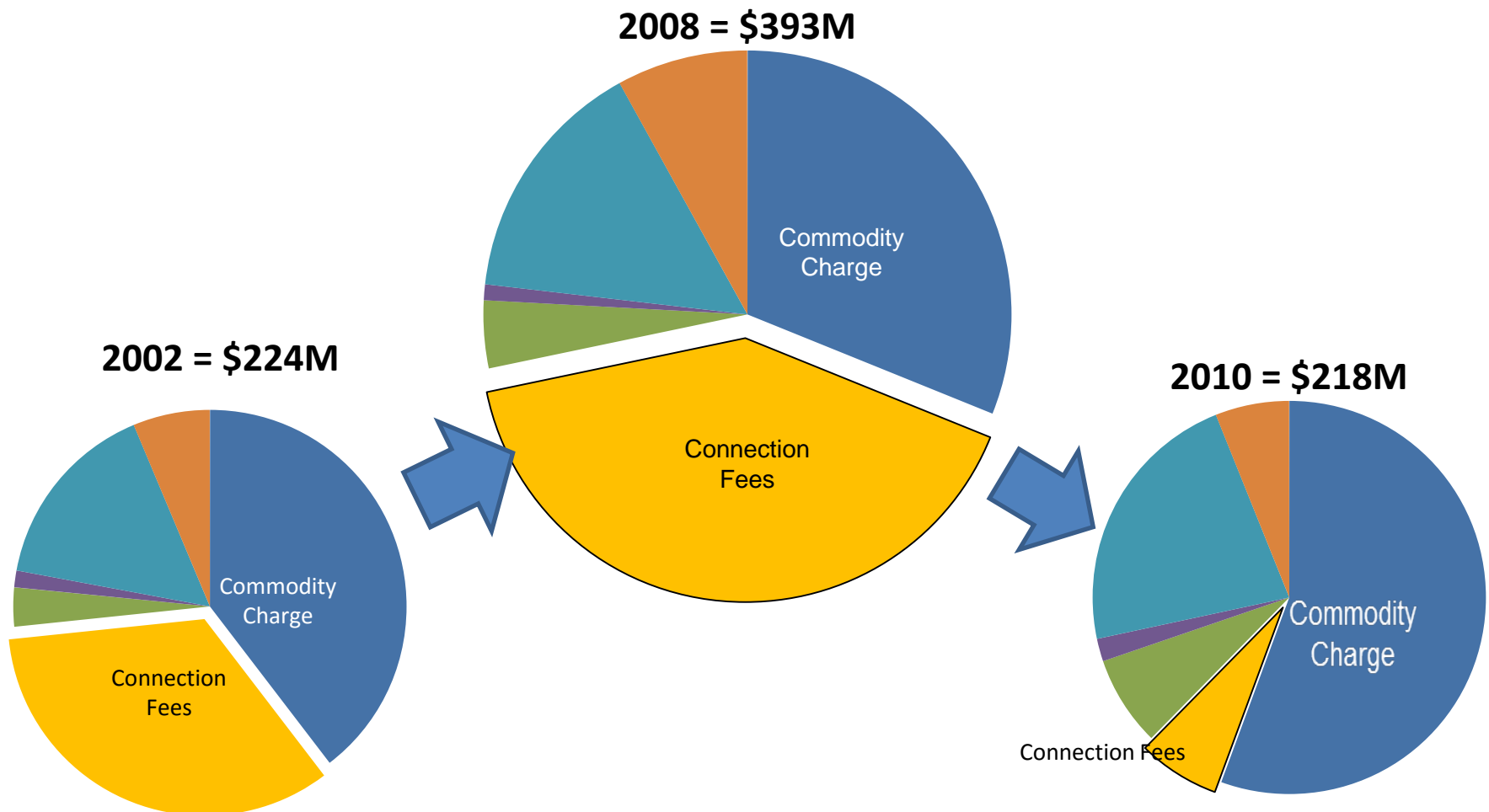
# Authority Revenues

- Wholesale water delivery charges
- Regional connection fees
- Sales tax
- Federal land sales proceeds
- Reliability surcharge on purveyor bills
- Bond sale proceeds (capital)

New Expansion  
& Debt Service



# Revenue Volatility





# Operating, Capital & Bonds



Wholesale Water  
Charges

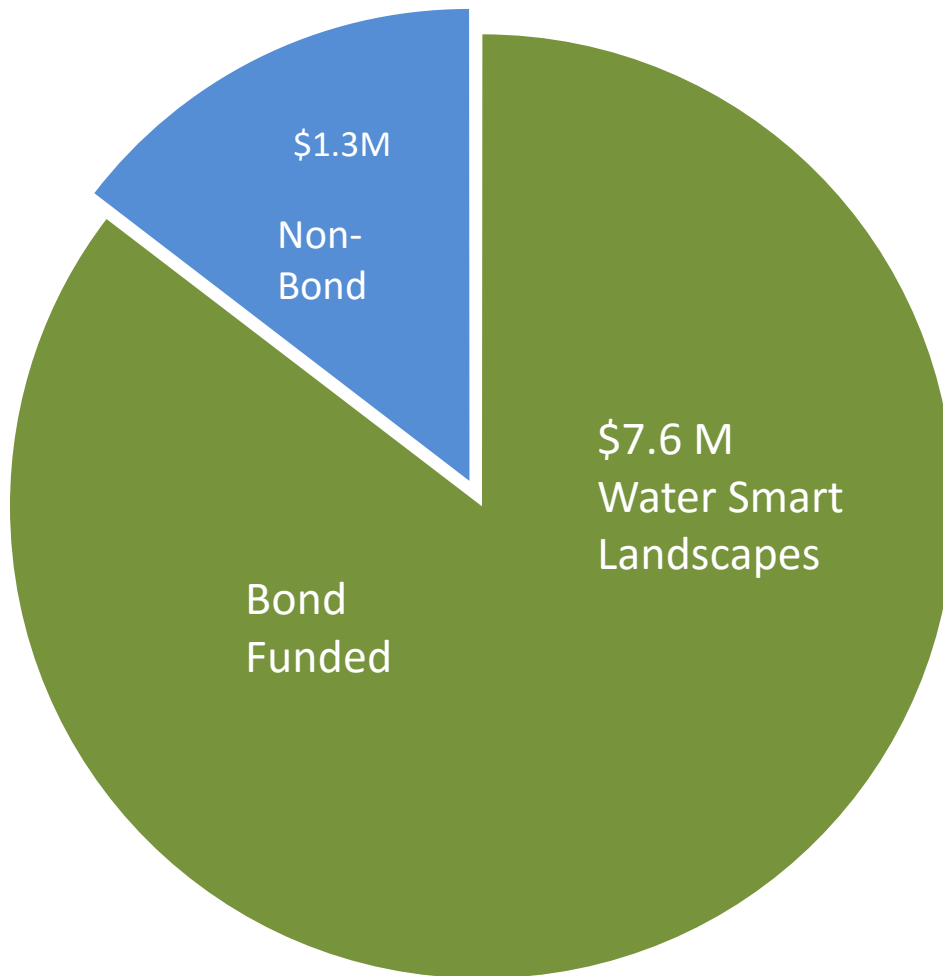


New Expansion  
and Debt Fund



Capital  
Construction

# Capitalized & Non-capitalized Conservation Programs



## Bond-Funded Programs

- Water Smart Landscapes

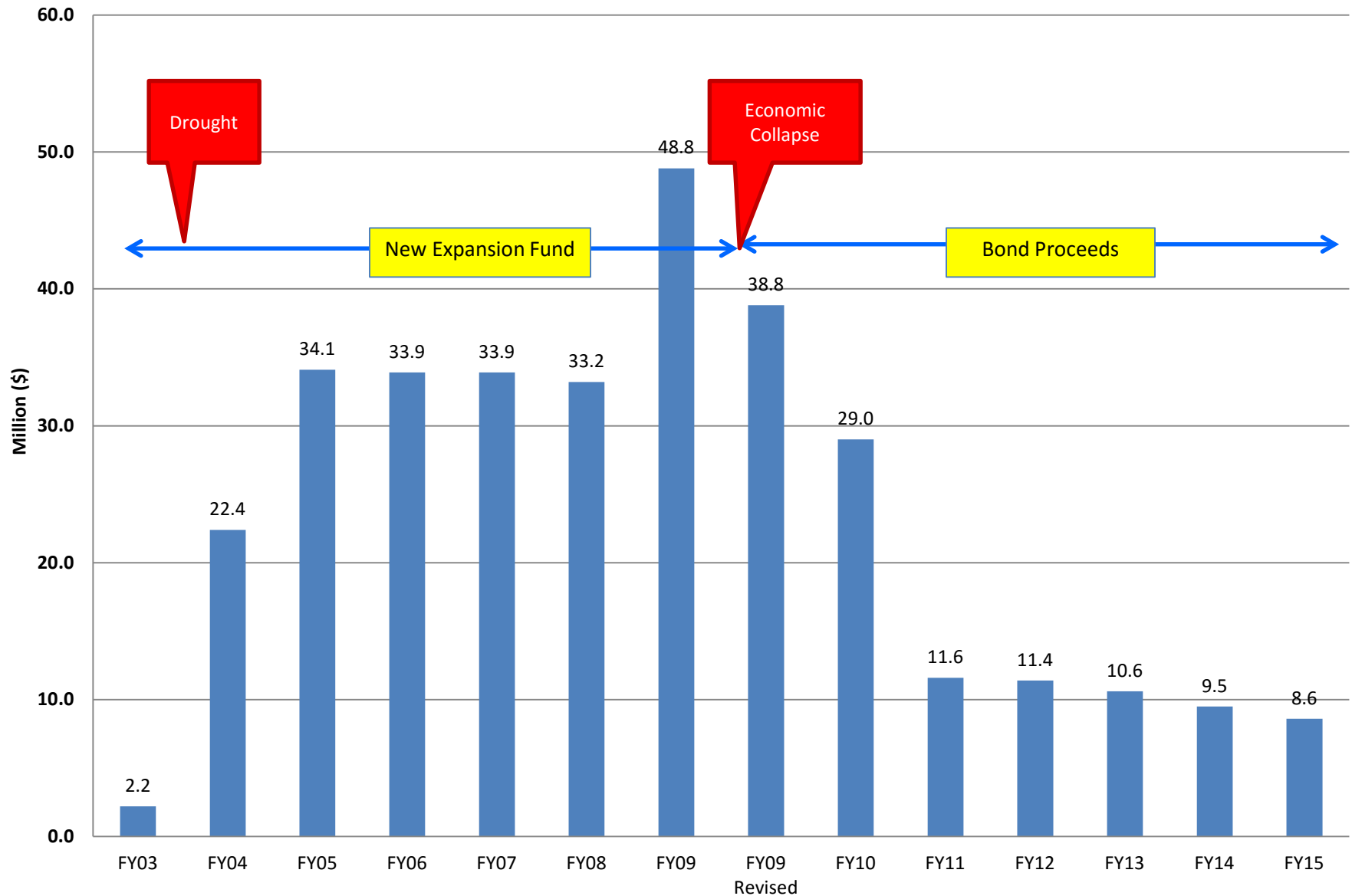
## Non-Bond Programs

- Research Programs
- Pool cover vouchers
- Water Efficient Technologies
- Smart Irrigation Equipment



# SNWA Conservation Budget

Excludes Personnel costs



# Conservation Funding pre-2003

- Wholesale water delivery charges
  - Budget of approximately \$2M
  - Predictable expense
  - Radical changes result in rate problems for purveyors



# Conservation Funding 2003-2009

- Regional Connection Charges
  - Budget of \$20-48M
  - Period of abundant revenue
  - Growth exclusively paying for conservation



# Conservation Funding 2009 onward

- Bond funds + New Expansion fund
  - Budget of approximately \$10M
  - Bond proceeds can only be used for landscape conversion
  - Requires customers to grant a perpetual conservation easement
  - With the covenant, landscape conversion is considered equivalent to a new water resource



# Resources for Conservation

**Karen Guz**

Director, Water Conservation  
San Antonio Water System



# Getting Funding Is Never Easy!

- Go for dedicated revenue if possible!
- Show data on how budget will be used and results from prior years!
- Engage stakeholders as support for conservation



# Dedicated Conservation Funding

Historical investment \$3.5 per capita on demand side conservation

## Residential

- Portion of top tier consumption charges
- Tracked in SAWS annual financial reports

## Commercial

- Small portion of each commercial meter fee
- Tracked in annual reports

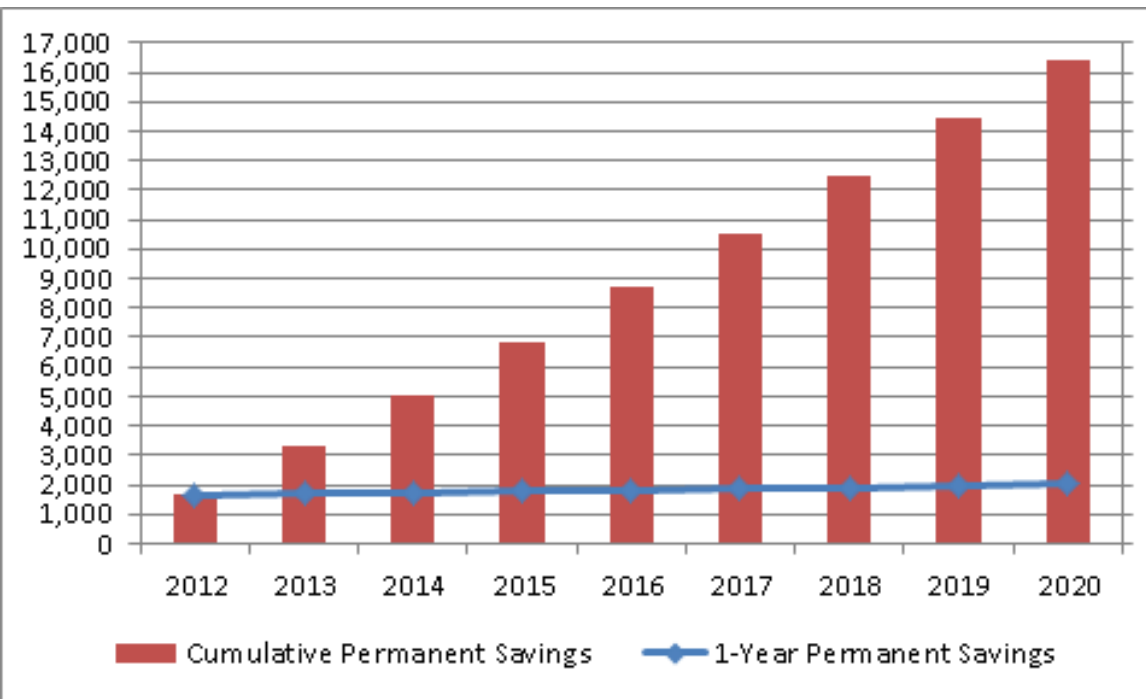
# SAWS Conservation Spending Per Customer

Be able to compare your spending per capita to others

Year	2006	2007	2008	2009	2010	2011	2012
Operating Expense	\$4,599,653.56	\$4,904,258.09	\$5,047,252.30	\$5,799,248.89	\$5,078,586.03	\$5,068,312.55	\$5,217,163
Service population	1,200,413	1,223,115	1,243,189	1,262,035	1,283,087	1,300,689	1,650,000
Op. Exp. per Person	\$3.83	\$4.01	\$4.06	\$4.60	\$3.96	\$3.90	\$3.16

# Water Management Plan Targets

Constant reminders of how conservation is a supply help



Goals that clarify how much permanent savings must be achieved per year help secure annual budget needed to meet the targets.

Savings targets are peak, not annual savings. This translates to savings during six hottest months of the year.

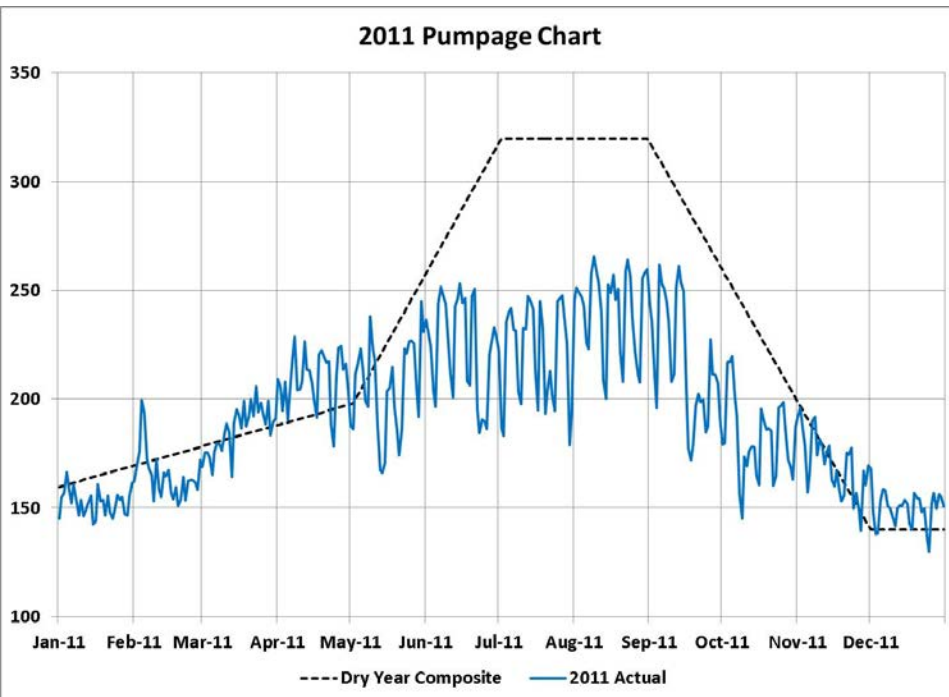
# Relate Funding to Results

Be able to defend every line item with some impact

Expense	Detail	Budget	Water Saved (Acre-Feet / 1-Year)	People Reached
<b>Conservation Administration <sup>†</sup></b>		<b>\$ 1,780,192.81</b>	<b>1,254</b>	<b>3,500</b>
	5004400-Conservation - Office of the Director	\$ 461,095.42		
	5004500-Indoor Conservation Administration	\$ 482,492.51		
	5004600-Outdoor Conservation Administration	\$ 715,475.41		
	5008400-Planning and Research	\$ 121,129.48		
<sup>†</sup> Includes 299 AF for consultations, 552 AF for 5-Acre reports, 344 AF for newsletter, and 59 AF for high use residential				
<b>Critical Period Management</b>		<b>\$ 94,708.02</b>	<b>84</b>	
<b>Direct Programming</b>		<b>\$ 3,078,729.00</b>	<b>2,600</b>	
	5009000-Residential - Toilet Distribution	\$ 200,000.00	100	
	5009200-Residential - Plumbers to People	\$ 233,000.00	118	
	5009500-Residential - Watersaver	\$ 207,000.00	122	
	5010500-Commercial - General Commercial Indoor	\$ 67,500.00		
	5010700-Commercial - Toilet Distribution	\$ 547,800.00	238	
	5011000-Commercial - General Commercial Outdoor	\$ 358,000.00	325	
	5011300-Residential - Conservation Makeover	\$ 200,000.00	68	
	5012000-Commercial - Large Scale Indoor	\$ 80,177.00	602	
	5012100-Commercial - Large Scale Outdoor	\$ 350,000.00	318	
	5012800-Outdoor Conservation - Rebate 1	\$ 96,500.00	88	
	5012900-Outdoor Conservation - Rebate 2	\$ 734,252.00	618	
	5041100-Residential - Pool Filter Exchange	\$ 4,500.00	4	
<b>Outreach</b>		<b>\$ 532,574.96</b>		<b>177,000</b>
	5010000-Residential - Public Education	\$ 532,574.96		177,000
<b>Grand Total</b>		<b>\$ 5,486,204.79</b>	<b>3,938</b>	<b>180,500</b>

# Drought Costs Must Be Data Supported

## Impact of restrictions on customer demand

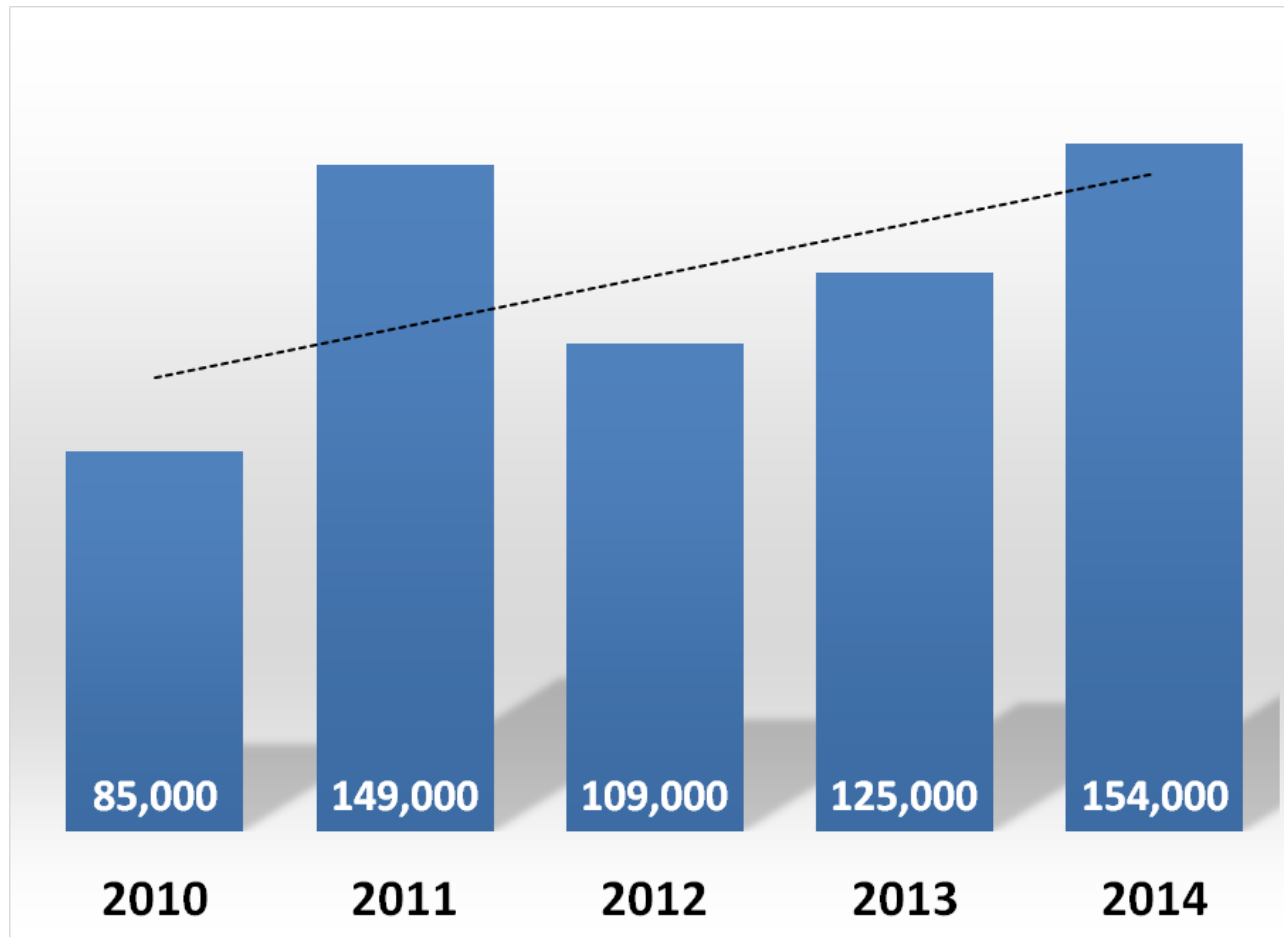


## Restrictions provide cost-effective & timely supply

- Costs for all education and enforcement in 2012 was \$281,132
- Savings estimates vary
  - 17,000 AF (High)
  - 11,000 AF (Medium)
  - 5,100 AF (Low)
- Cost/acre foot range
  - From \$16.54 to \$55.12

# Conservation Impact Growing

Keep track of the people you reach annually



- Conservation Consults
- Workshops
- Rebates
- Presentations
- Education Events



# Have Conservation Constituency

Tell conservation story often to many audiences

- Community Conservation Committee
- Stakeholders:
  - Industry groups
  - Environmental groups
  - Followers on web and program users
- Understand the politics
  - What would each council person want?
  - What is view of current leadership?

# Resources for Conservation

**Karen Guz**

Director, Water Conservation  
San Antonio Water System



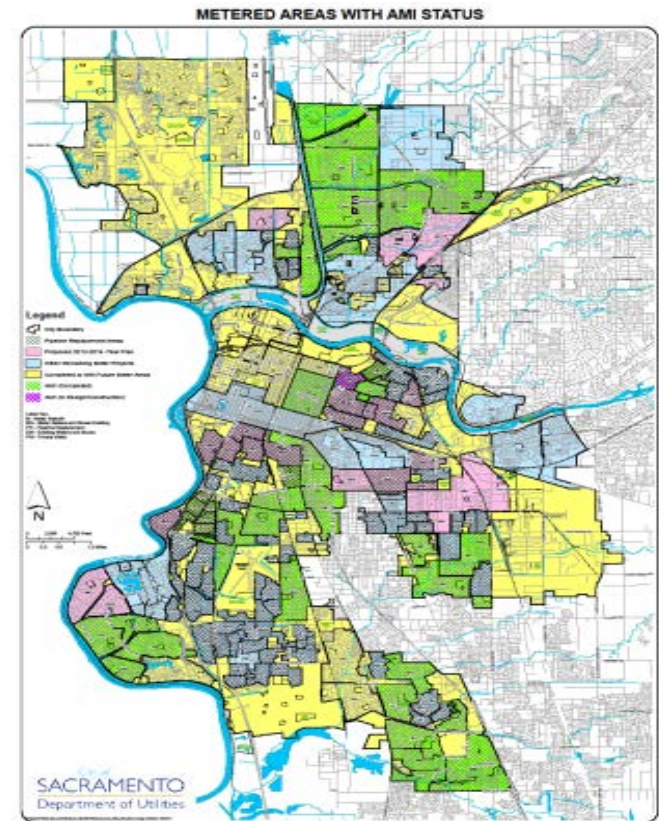
# DEVELOPING A SUSTAINABLE WATER CONSERVATION PROGRAM IN THE CITY OF SACRAMENTO



William Granger, Water Conservation Administrator

# Foundations of City's Water Use

- 135,580 Service Connections
- Population of 475,000
- 2 Water Treatment Plants
- 60% of City is metered; will be fully metered by 12/31/2020
- 85% of our water comes from two rivers
- 15% of our water comes from ground water
- Average metered Sacramento household uses 327 gallons/day annually (2014)
- 60% of our water is used on landscapes
- Average residential landscape receives 400-600 gallons per irrigation cycle.

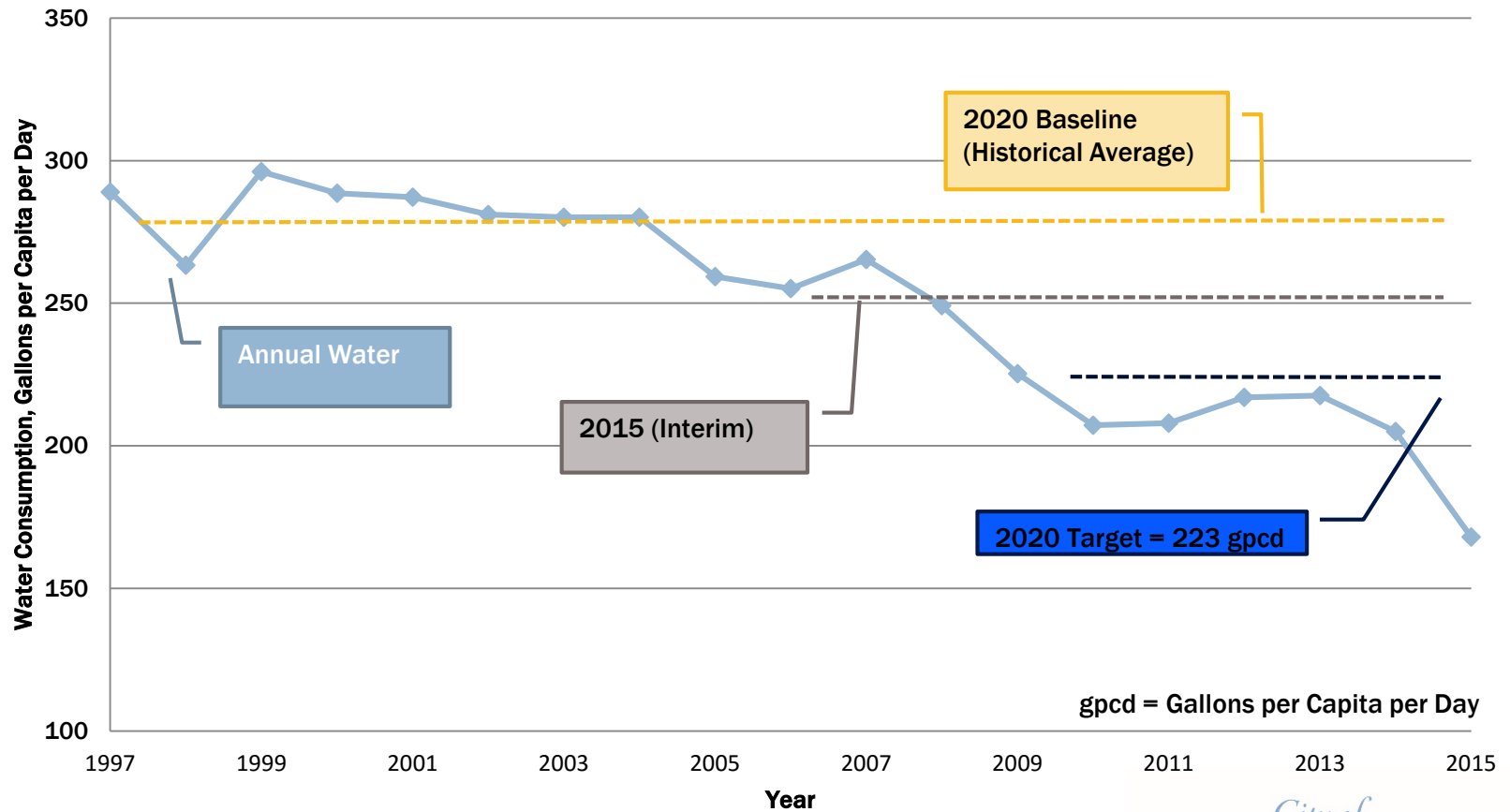


# Sacramento's Drivers for Water Conservation:

- **SBX7-7: 20% by 2020**
- **Water Conservation Programs**
  - ▣ Educational focus in the past
  - ▣ Rebates started in 1995
  - ▣ CUWCC Signatory in 1995
- **Four Year Drought**

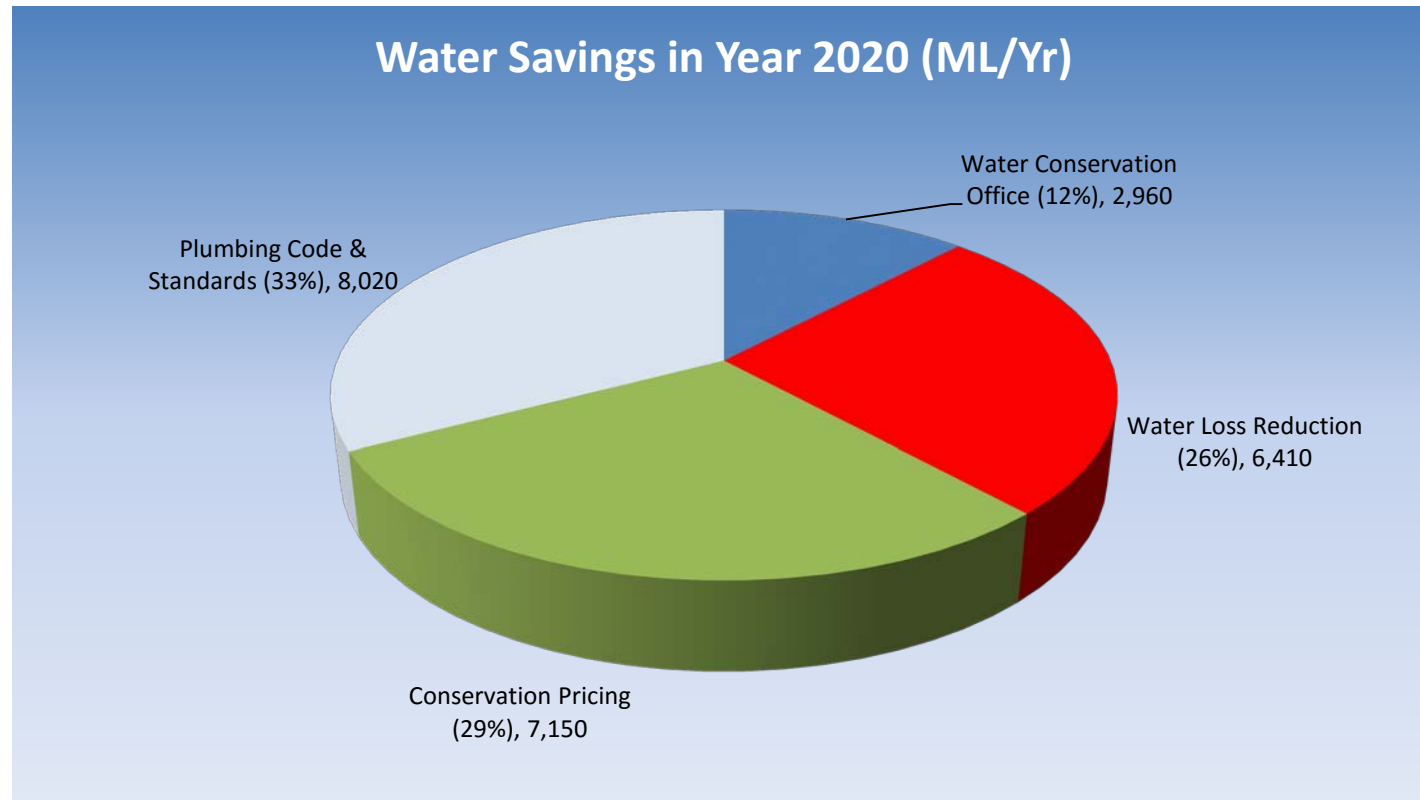
# City of Sacramento GPCD

## FY 1997-2015





# Projected 2020 Water Savings



# Per Capita Cost of Conservation

## Select California Cities (2010 data)

Agency	2010 Population	Per Capita Use, gal/cap/day (per 2010 UWMPs)	Annual Cost in 2010, Million \$	Per Capita Cost <sup>1</sup> in 2010, \$/capita/yr
City of Oceanside, CA	183,059	167	2.9	12.51
City of Santa Barbara, CA <sup>2</sup>	94,773	128	0.23	3.24
South Lake Tahoe, CA	33,552	201	0.52	15.47
Santa Clara Valley WD, CA <sup>3</sup>	1,822,000	171	6.0	3.29
City of Palo Alto, CA <sup>3</sup>	64,762	171	0.32	4.96
<i>City of Sacramento</i>	<i>466,488</i>	<i>267</i>	<i>1.56</i>	<i>3.04</i>
City of Mountain View, CA <sup>3</sup>	75,275	132	0.50	6.63
Alameda Co. WD, CA	348,616	162	1.2	3.44
Marin Municipal WD, CA	195,362	145	3.3	16.89
EBMUD, CA	1,349,493	190	16	11.86
City of Santa Rosa, CA	189,050	140	1.1	5.70
City of Petaluma, CA	63,072	136	0.7	11.27
<b>Average</b>	<b>407,125</b>	<b>168</b>	<b>2.9</b>	<b>8.19</b>
<sup>1</sup> Programs were designed by Maddaus Water Management.			Median:	6.17
<sup>2</sup> City of Santa Barbara only has a 5% target to meet SB x7-7 Method 3 at 123 gpcd in 2020.			Range:	3.04- 16.89

<sup>3</sup> Wholesaler contribution only to retailer conservation budgets (additive to City of Palo Alto and Mountain View ).

# Drought Drives Change in Sacramento

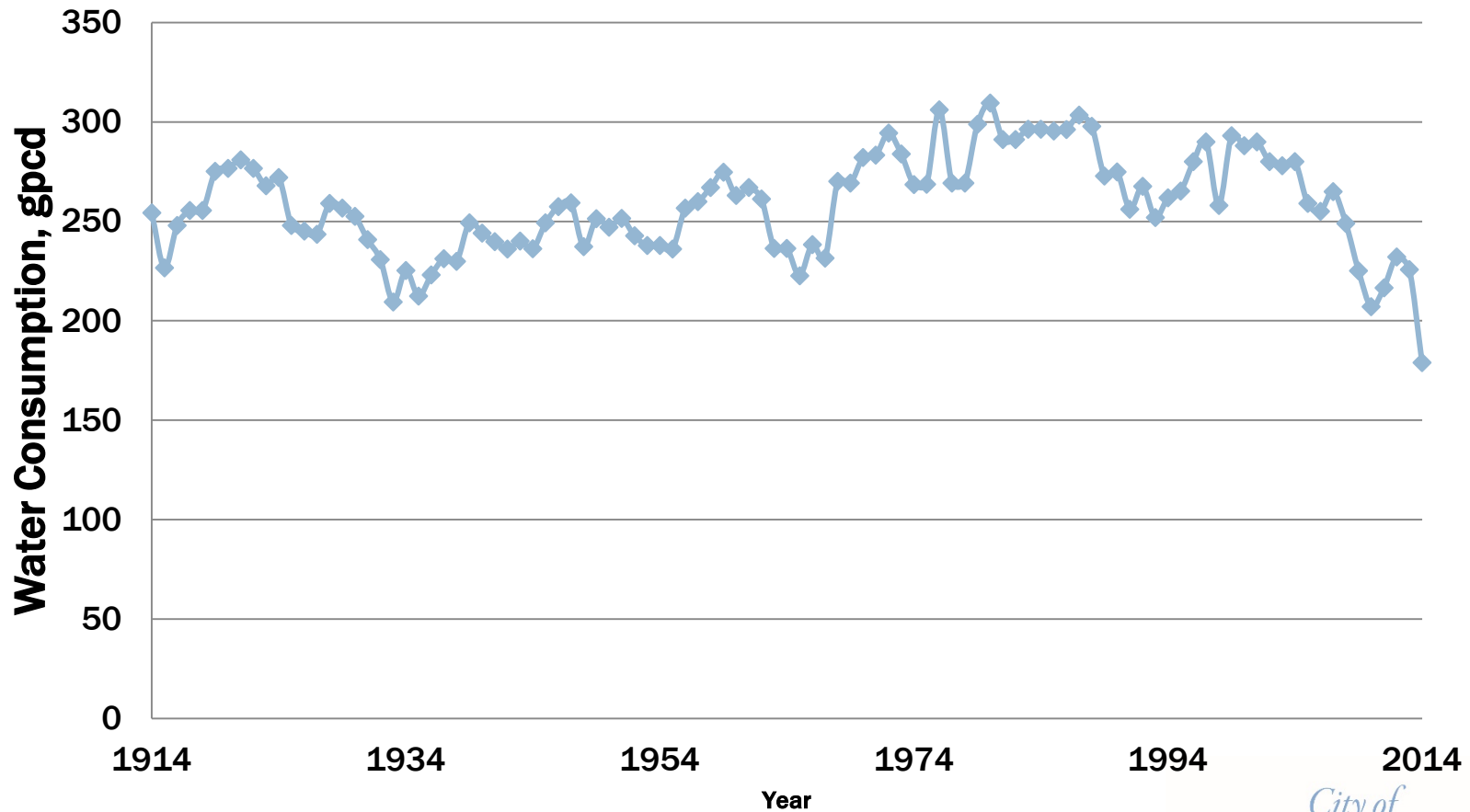


# Water Meter Program

- 135,580 water services
- Metered: 55 percent (75,000 services)
  - 70% by WSI in 2016
  - 100% by 12/31/2020
- Remaining to meter: 61,000 services
- Replace aging water mains



# City of Sacramento Water Consumption



# Funding Water Conservation

- Operating budget
- Multi-Year Operating Budget (MYOP)



# Setting Up Your Sustainable Funding Portfolio For Successful Conservation Programs

Tess Kretschmann, Maddaus Water Management, Inc.

Water Smart Innovations Conference  
October 9, 2015



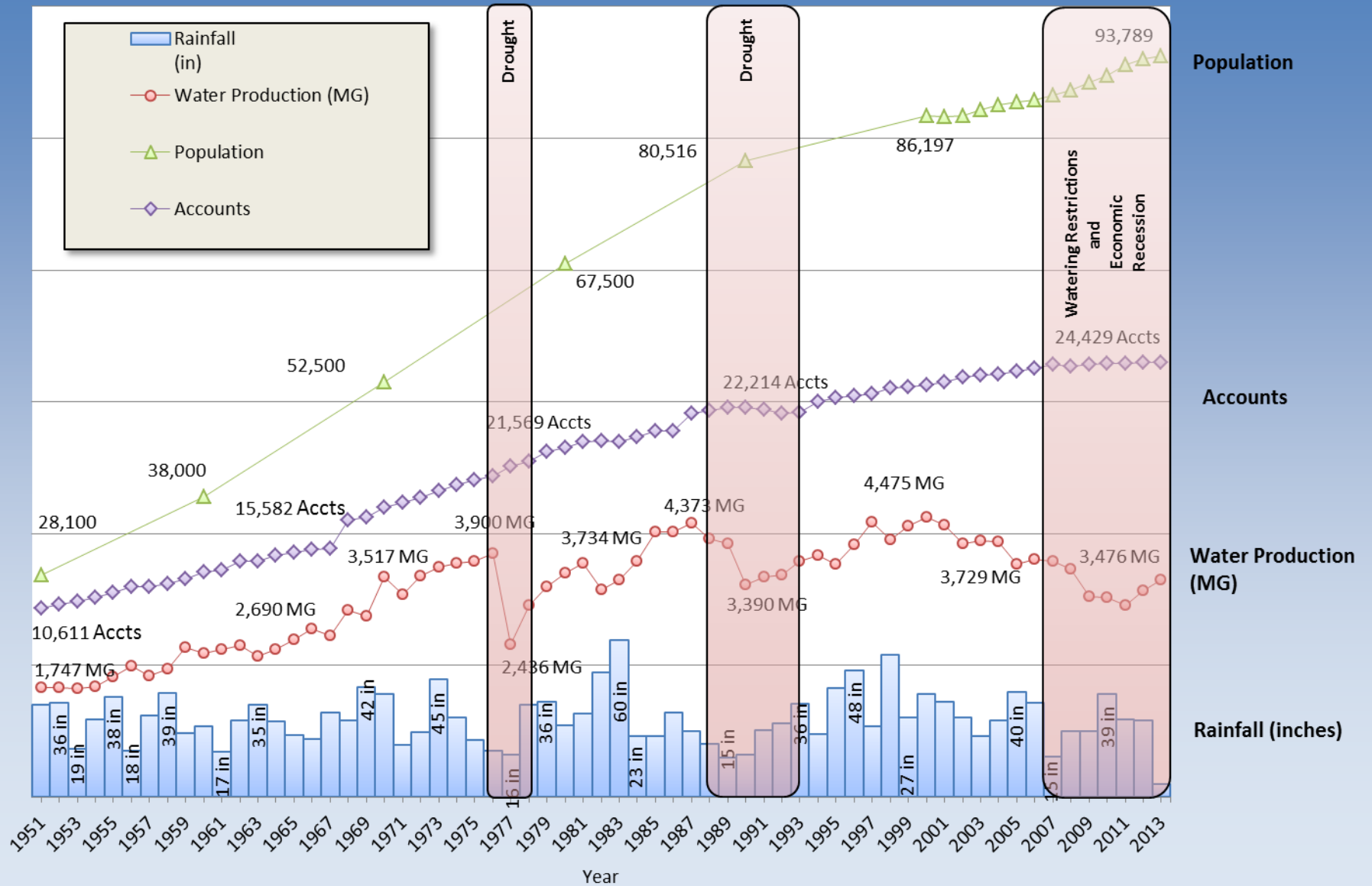
# Finding the Shared Vision

- **Drivers for Water Use Efficiency/Conservation**
- **Advisory Committee**
  - **Seek stakeholders support for funding**
- **Commitment in the planning and budget approval process**
  - **Internal**
  - **External**

# Understanding Water Story (AWWA M52)

- **Review your utility's history with a timeline and past expenditures**
- **What are your planning goals?**
  - **What are your agencies current demands?**
  - **What are future demands?**
  - **What conservation mean in terms of lower future demands?**
- **What do existing and future operations and/or customers need to have water?**
  - **Water Loss or Rebates or Pricing schemes?**

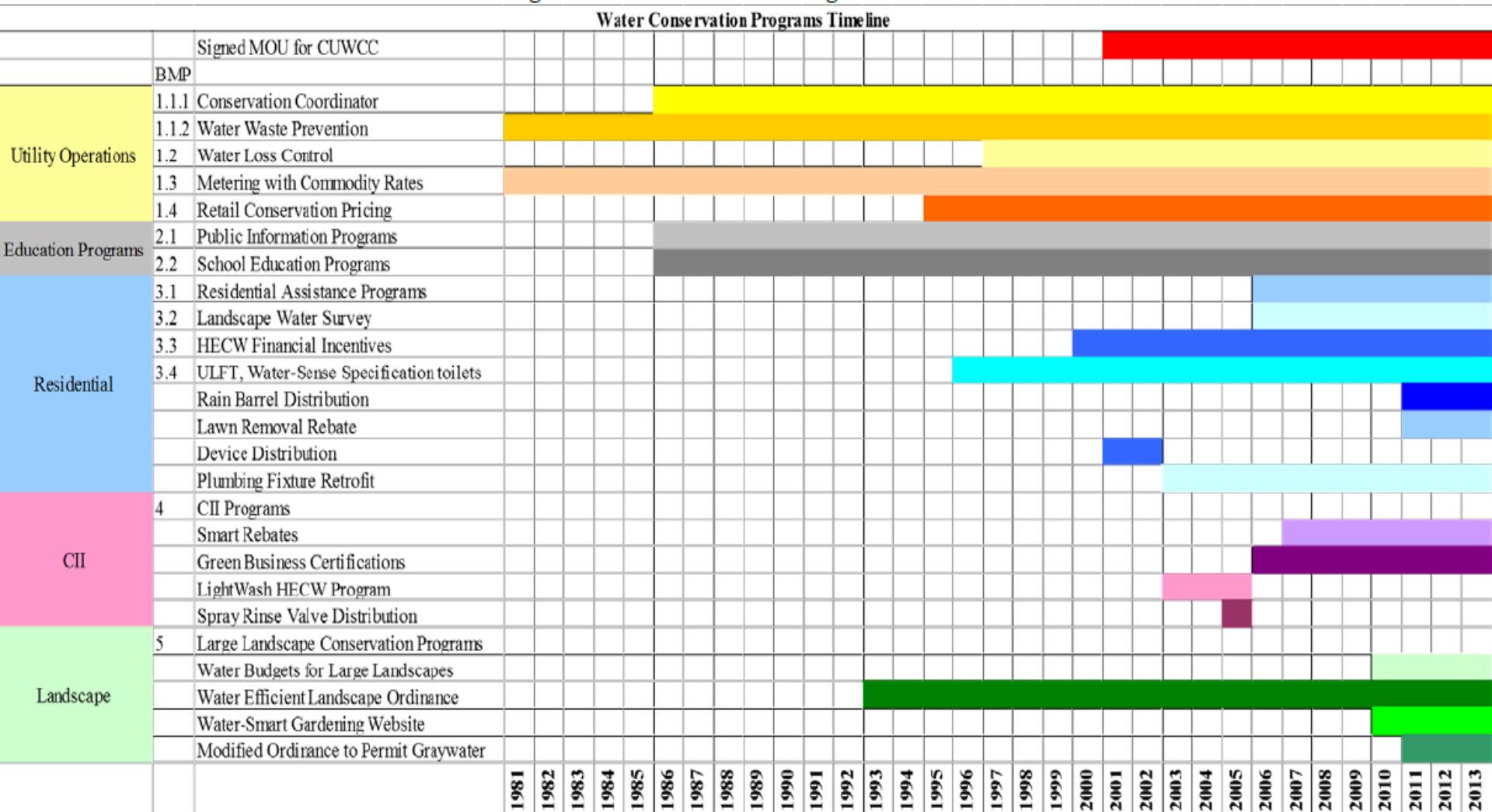
# Population, Accounts, Water Production, and Rainfall 1951-2013 City of Santa Cruz



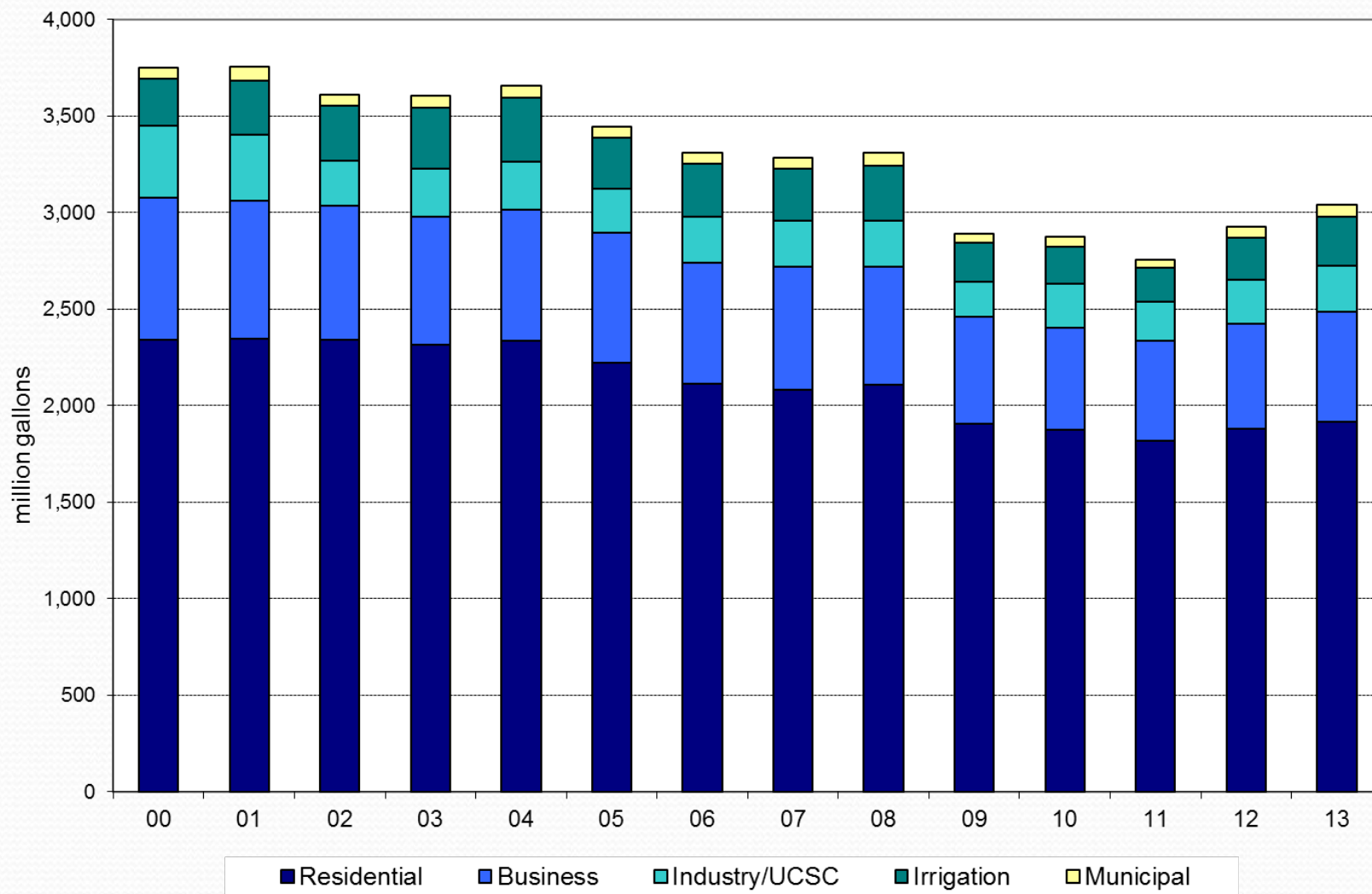


# Conservation Program Timeline

Figure 1. Water Conservation Program Timeline



# Recent Water Use Trends



# Scale Programs to Leverage Targeted Investment Opportunities

- **Size of Population**
  - Revenue capacity
  - Who will participate? What are the drivers for customers?
  - Important to have targeted programs



# Scale by Utility Size and Need

- **Size of Utility**
  - **Small utility**
    - Education and very targeted programs on most savings
    - Water loss and pricing – operations and motivated customers
  - **Medium utility (>10-100k population)**
    - More diversity in customer base means more measures
    - More capacity of staff? Budget flexibility?
  - **Large utility (>100k population)**
    - Economies of scale
    - More complexity overall, leads to comprehensive program designs and diverse funding portfolios

# Program Ramp Up Over Time

- **Seek out examples of other utilities and programs like yours**
  - **Cost spent per capita**
  - **Budget approvals**
  - **Staffing examples**
  - **Participation levels**



# Industry Trends

	Range of Survey Participants
Approximate Population	370,000 - 2.6 million
Service Area Size (sq. mi.)	181 - over 1 million
System Demand (MGD)	61 - 418 (Average: 181 MGD & Median: 119 MGD)
Recycled Water	0% - 40% (Average 8.7% & Median 4.4%) 8 with both large-scale purple pipe deliveries and on-site recycling schemes.
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)
Savings Goals	Savings goals range: 0.5 – 1.5 % demand reduction per year 6 of 11 agencies are currently exceeding their goal





Office of Sustainability

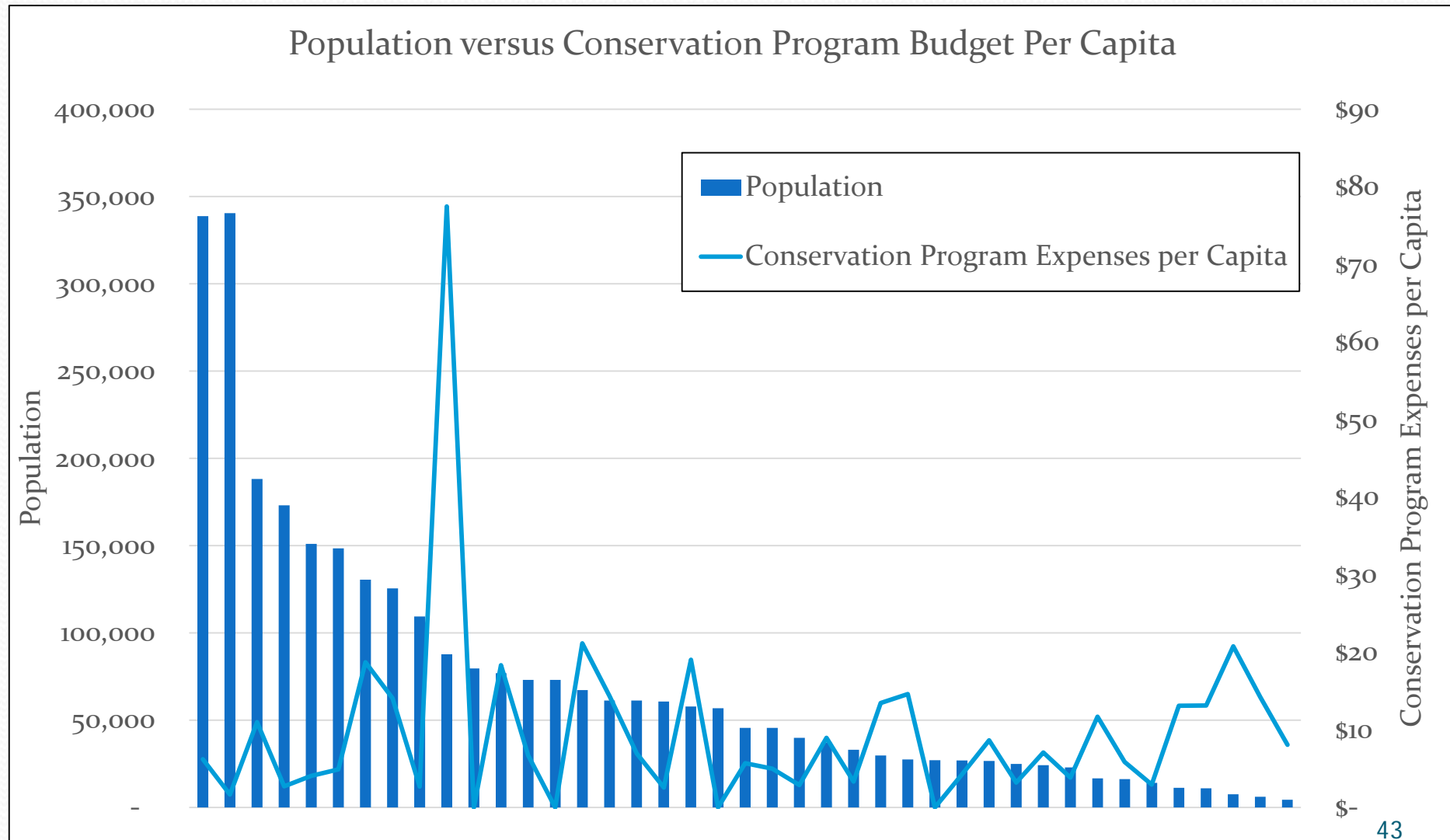
# Industry Trends

	Surveyed Participant Trends
Automatic Meter Infrastructure	Leaders are ALL considering or working on implementing AMI
CII Efficient Custom Rebate Program	82% offer CII incentives. Leaders are targeting high CII water users with more targeted measures.
Rainwater Capture	36% offer incentives. 64% more provide information. For irrigation in US; for irrigation, toilet, and other indoor uses in Australia.
Grey Water	45% offer incentives. 18% more offer incentives. Been a slow sell with the public.
Social Media / Home Water Use Reports	All surveyed doing some form of Social Media. Home water use reports and online billing data increasingly popular

## City of Austin Water Conservation Study Surveyed Participants

Western States	Texas	Australia
<ul style="list-style-type: none"><li>Seattle, WA</li><li>Portland, OR</li><li>East Bay Municipal Utility District, 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>

# Conservation Program Per Capita Budget



# Trend: 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
- Consider innovative pricing structures





# Trend: Program Funding Source

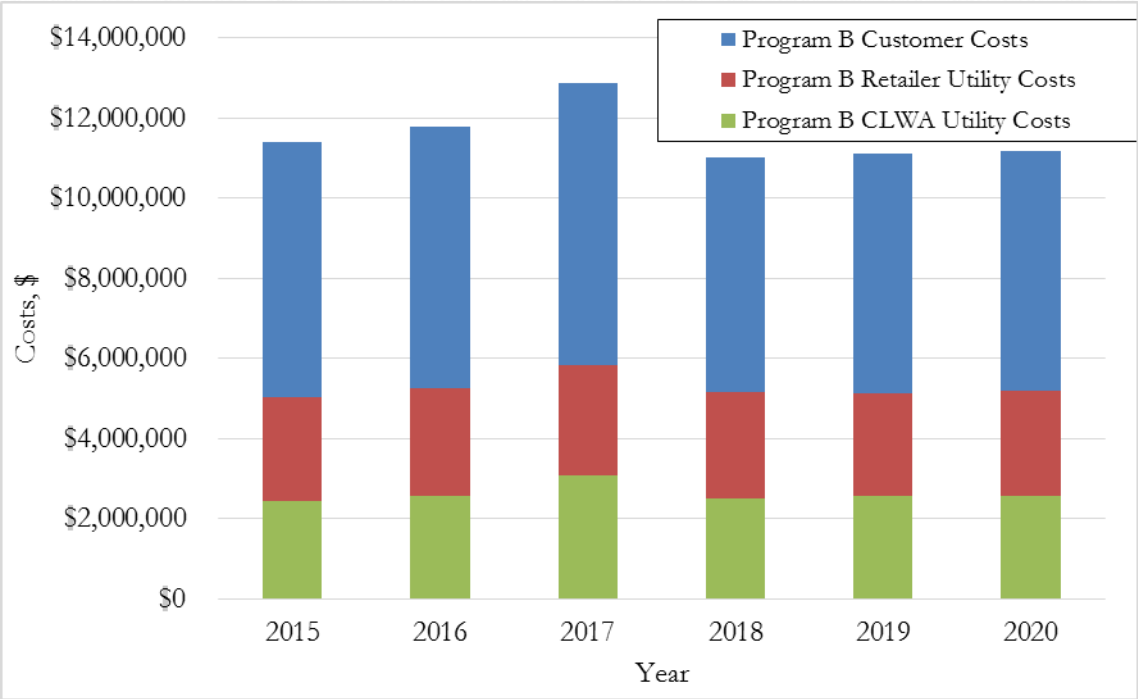
- Water charges (rates and/or system connection fees) and grants are the most common source of funding
- Conservation at a regional level is funded through rates and dues (as applicable).
- Supplemental funding comes from state and federal grants.
- Some work with private parties who offer funding from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



# Trend: Survey Participant Suggestions on Program Funding

- Steady and consistent conservation program is wise - less reactivity to the economy and drought is more effective.
- Enforcement of landscape regulations/ordinances is vital to long term efficiency.
- Fund and publish research on new innovative technologies.
  - Research new innovative devices to how they work and if they save water (example: Home Water Use Reports)
  - Conduct research or pilot studies on new technologies (example: AMI)
  - Leaders similarly fund and publish innovative study findings for industry benefits

# Castaic Lake Water Agency



Population	2015
LACWD	5,992
NCWD	48,105
SCWD	124,571
VWC	101,695
CLWA	280,362

	Year				
	2016	2017	2018	2019	2020
MF CII WBIC Free Controller Program					
School Building Retrofit					
HECW Rebates					
CII UHET Rebates					
HE Urinal Rebates					
Pre-Rinse Spray Nozzle					
Low-Income HE Fixture Installation					
Soil Moisture Sensor Rebates					
Pool Cover Rebates					

# Understanding Utility Finances for your Unique Utility

- **Rate Models Assumptions**
  - What is “conservative” for financial assumptions?
- **Revenue streams**
- **Expenses O&M and Capital Costs**



# Contact Information

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