

# This presentation premiered at WaterSmart Innovations

[watersmartinnovations.com](http://watersmartinnovations.com)



# What Works, What Doesn't and Why - Sacramento Regional Drought Response

- ▶ Lisa Maddaus, P.E.
  - ▶ Maddaus Water Management, Inc.
  - ▶ Co-owner/Principal Engineer
- ▶ Amy Talbot
  - ▶ Regional Water Authority
  - ▶ Water Efficiency Program Manager



Governor Jerry Brown, April 1, 2015  
Announces Statewide Mandates for  
Water Reductions

# Overview

- ▶ Summary of CA and Sacramento drought conditions
- ▶ Statewide drought response
- ▶ Sacramento drought response
- ▶ What worked, what didn't
- ▶ Ongoing state policy and regulation
- ▶ Next Steps

# Drought Drives Change in California



March 28, 2016 - California



Source: [http://modis.gsfc.nasa.gov/gallery/individual.php?db\\_date=2016-03-28](http://modis.gsfc.nasa.gov/gallery/individual.php?db_date=2016-03-28)

**FOLSOM LAKE 3/10/14**



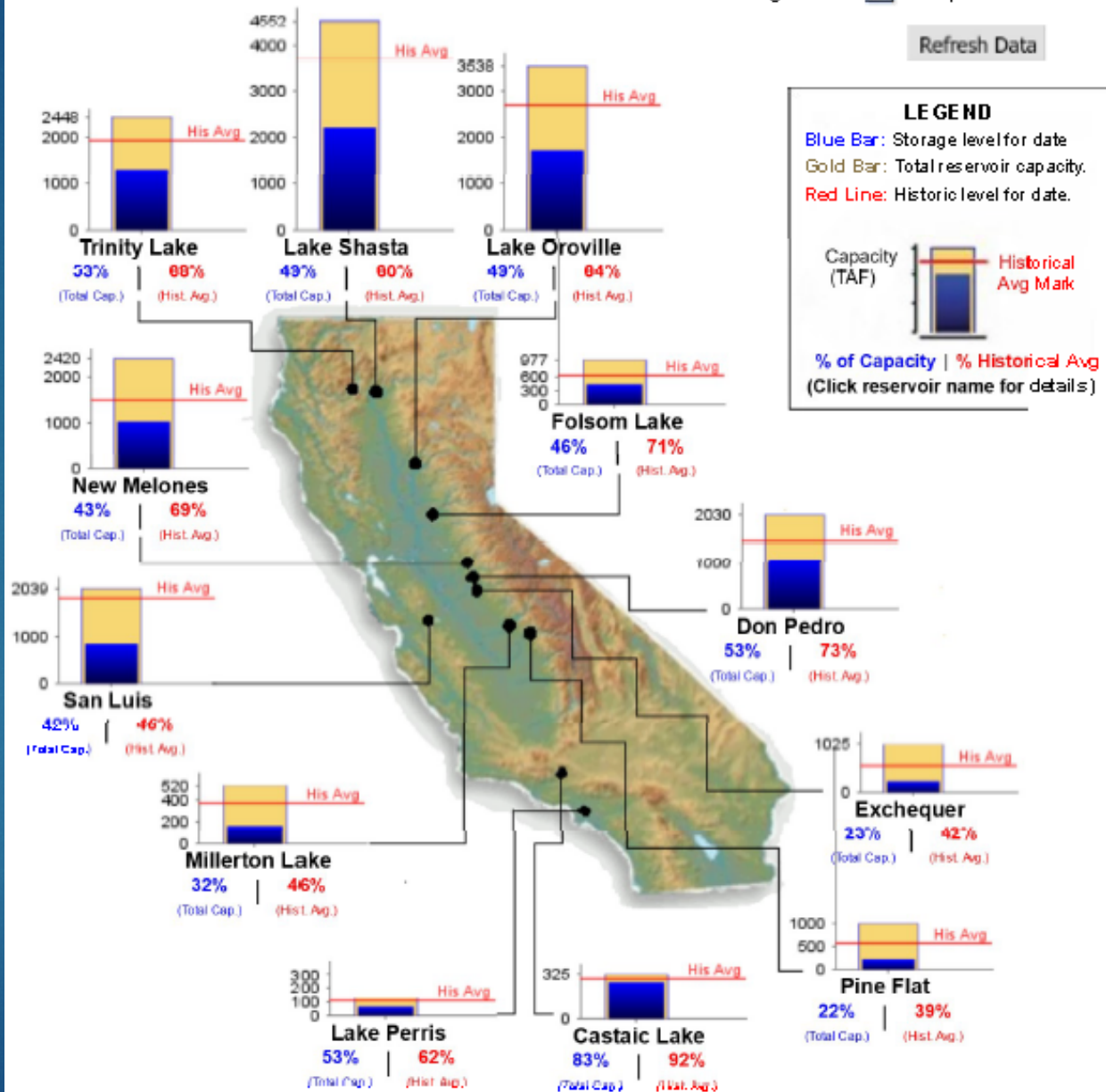
**FOLSOM LAKE 3/10/16**

CONDITIONS FOR MAJOR RE SERVOIRS: 01-APR-2014

Data as of Midnight: 01-Apr-2014

Change Date: 01-Apr-2014

Refresh Data

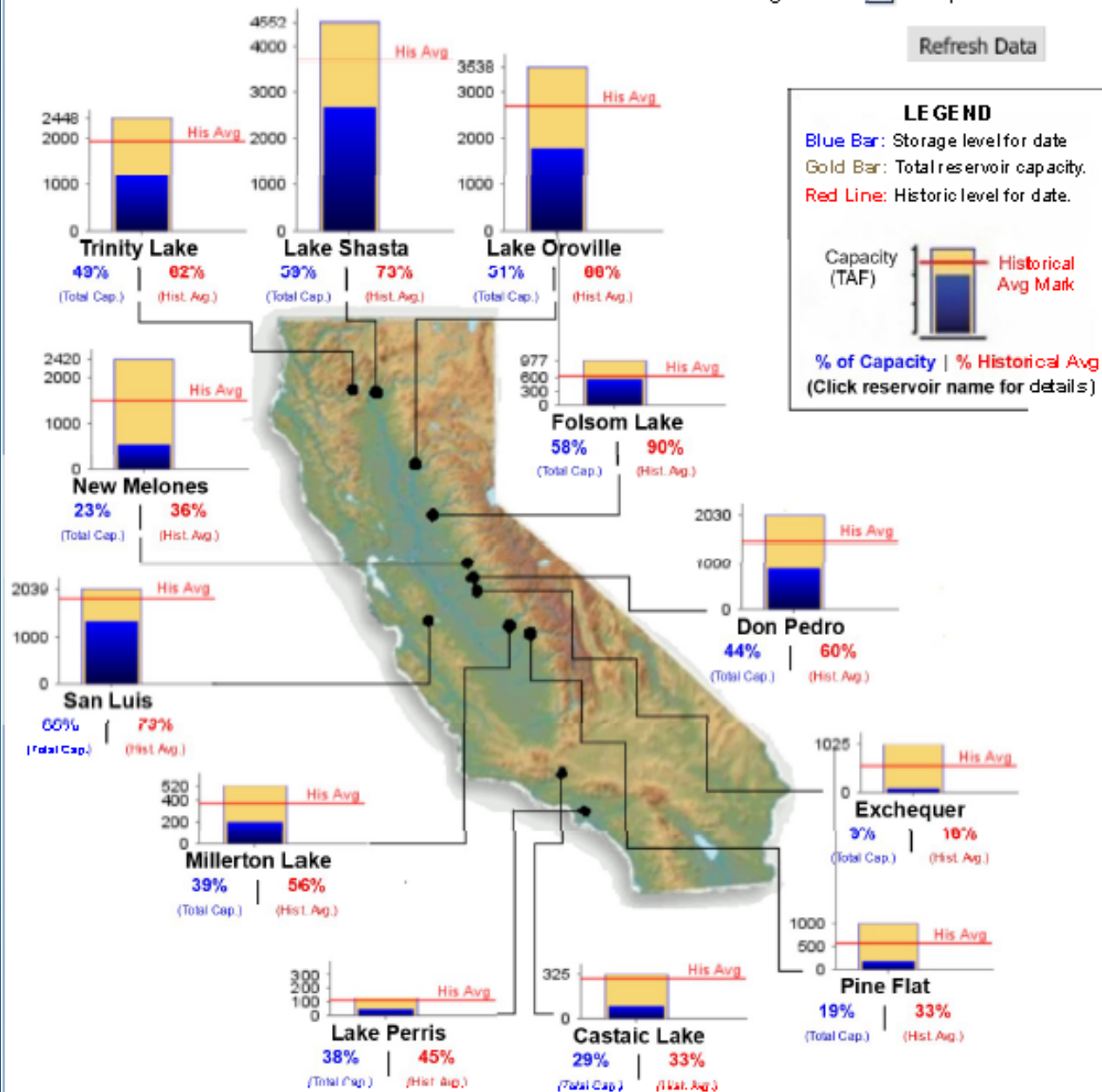


# CONDITIONS FOR MAJOR RESERVOIRS: 01-APR-2015

Data as of Midnight: 01-Apr-2015

Change Date: 01-Apr-2015

Refresh Data



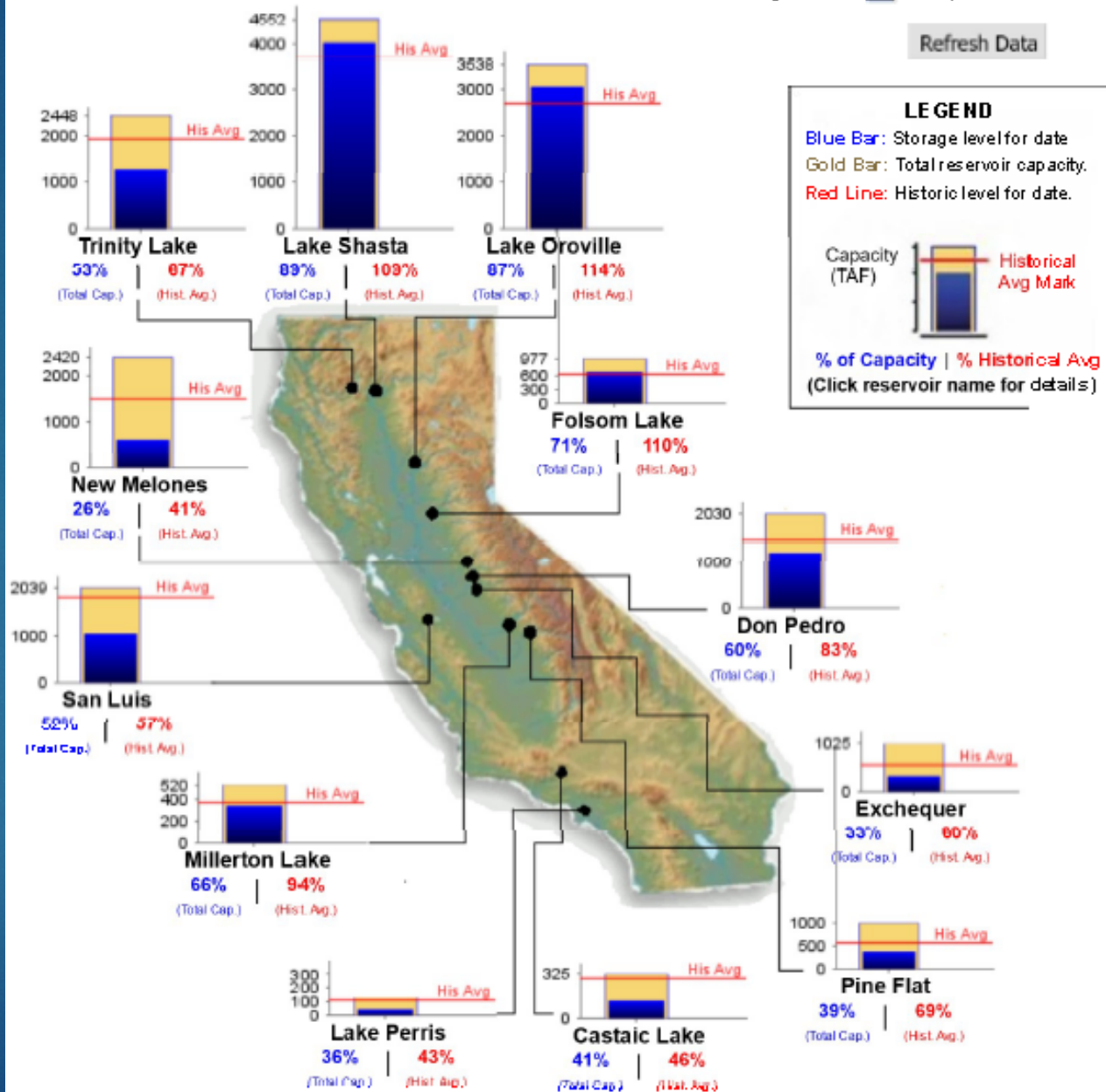


CONDITIONS FOR MAJOR RESERVOIRS: 01-APR-2016

Data as of Midnight: 01-Apr-2016

Change Date: 01-Apr-2016

Refresh Data



# Where did we start?

## Our Responsibility

- ▶ CA Water Code Chapter 3
- ▶ Section 353 – Priority of Uses
  - ▶ Human Consumption (domestic, health care)
  - ▶ Human Sanitation
  - ▶ Fire Protection
  - ▶ Next priorities for essential uses
    - ▶ Commercial & Agricultural (jobs)
    - ▶ Landscape
    - ▶ Construction
- ▶ CA Water Code Section 10632
  - ▶ Urban systems with >3,000 AF or 3,000 connections plan for cutback 50% supply
  - ▶ Ag systems with >10,000 acres served



# Governor's Executive Order

## April 2014: NEW State Mandates



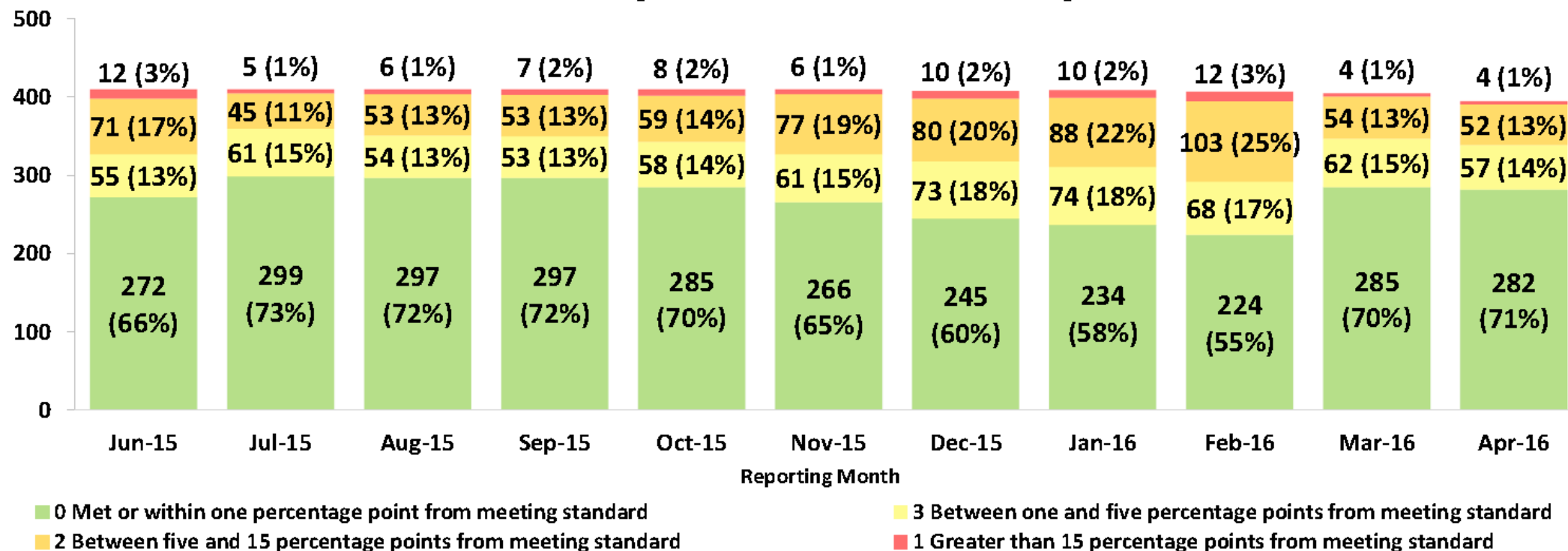
- ▶ State Building Code – Emergency Update - DONE
- ▶ State Model Landscape Ordinance – Emergency Update - DONE
- ▶ Plumbing Code Updates - DONE
  
- ▶ Minimize system leakage, using Safe Drinking Water Act Funds
- ▶ Accelerate data collection, improve water system management and prioritize capital projects to reduce water waste, CPUC to accelerate investment by IOUs to work on minimizing leaks.

# 2014/2015 Mandated Demand Reductions

- ▶ In 2014, unprecedented statewide cutbacks regulated by State Water Resources Control (water rights/water quality)
- ▶ In 2015, 25% Mandatory “average” cutback on water utilities
  - ▶ Scaled based on “Residential Gallons Per Capita Per Day” – R-GPCD
  - ▶ % target for each utility in 8 tiers
  - ▶ Range 8% for lowest tier to 36% highest tier
  - ▶ **No connection to supply reliability or local utility situation**
  - ▶ Fines for daily violations
- ▶ Update local drought response plans
- ▶ More information:  
[http://www.waterboards.ca.gov/water\\_issues/programs/conservation\\_portal/](http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/)

# Stepping Up to the Challenge

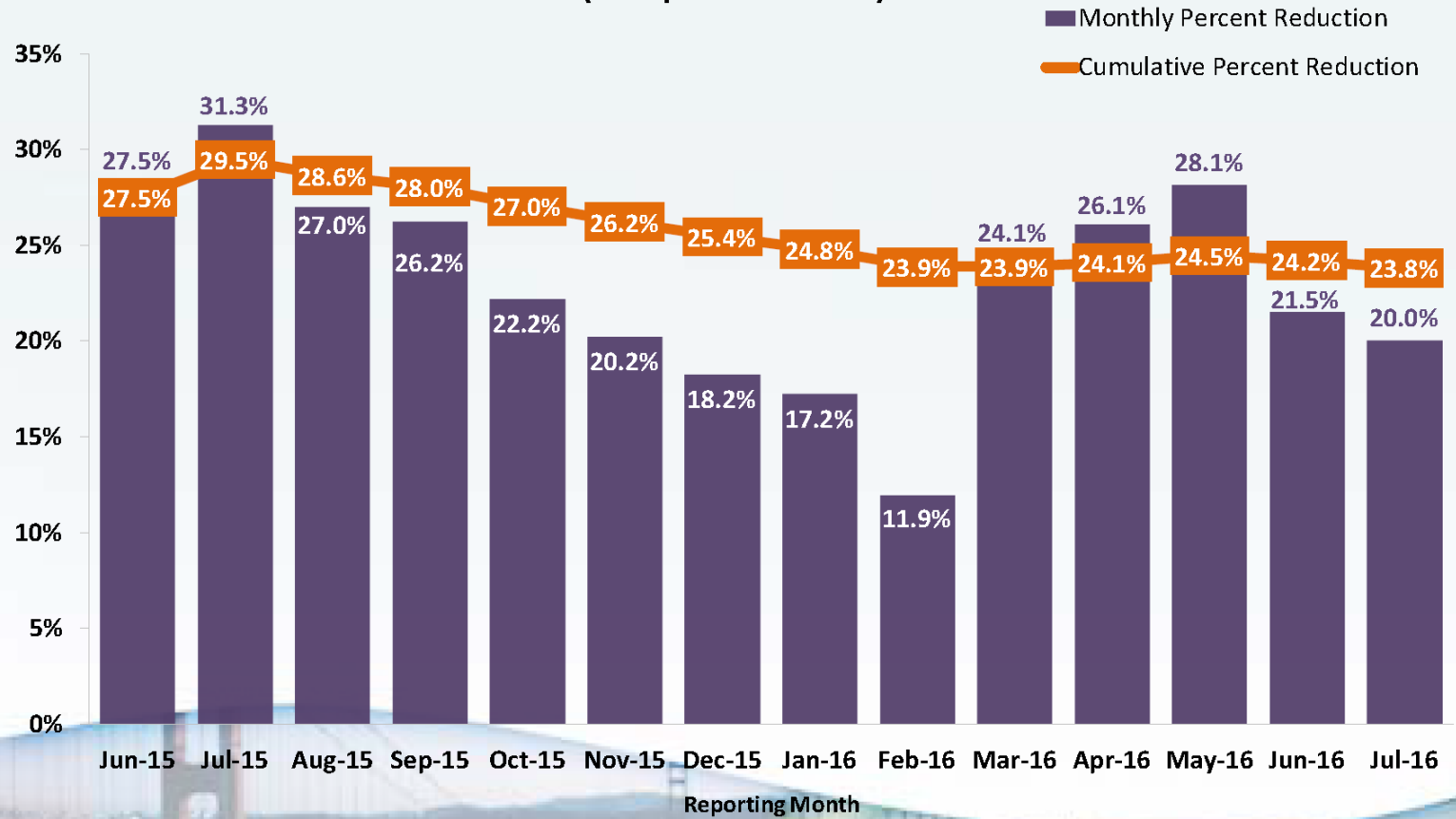
## Conservation Standard Compliance June 2015 to April 2016\*



\* Includes suppliers under alternative compliance orders. Alternate compliance orders do not substitute for individual conservation standards, however, suppliers meeting the terms of their alternate compliance orders are not priorities for enforcement.

# Statewide Water Production Percent Reduction

(Compared to 2013)

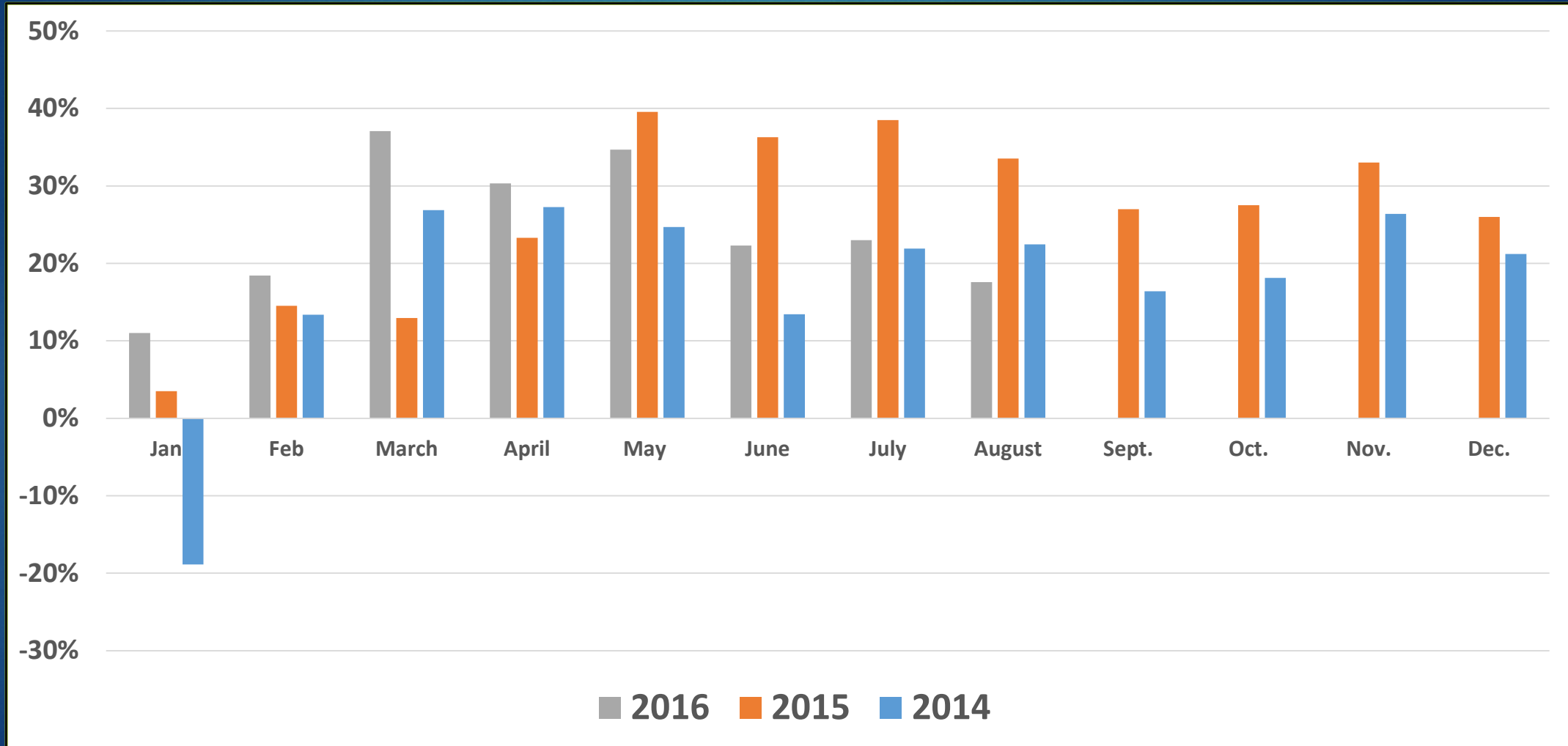


**Average Statewide July 2016 R-GPCD = 114**

Source: State Water Resources Control Board, 2016

More Information: [http://www.waterboards.ca.gov/water\\_issues/programs/conservation\\_portal/](http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/)  
CPUC Information: <http://www.cpuc.ca.gov/water/>

# Sacramento Region Water Savings



# What Worked! Utility Side

- ▶ Creation of inter/intra entity “Drought Teams”
- ▶ Modification to water shortage stages
- ▶ Accelerating water loss surveying
- ▶ Infrastructure solutions-pumps, interties, pressure reduction
- ▶ Drought pricing
- ▶ Creative partnerships with larger user
  - ▶ Park Districts
- ▶ Regional RWA programs (direct install and rebates)




# What Worked! Customer side

- ▶ Increasing public outreach
  - ▶ Coordinating messages
  - ▶ Increased budget
  - ▶ Targeted with programs like Dropcountr, WaterSmart & Waterfluence
- ▶ All agencies decreased watering days
  - ▶ 2 days a week
- ▶ Increasing conservation programs
  - ▶ Cash for grass is all the rage!
- ▶ Media coverage
  - ▶ 30 press releases, 30 radio/TV interviews and 200 news articles
- ▶ Increasing enforcement
  - ▶ Security firms for night patrol and internal staff shifts

**Bottom Line: Outreach and Enforcement key to savings**

# Water Agency Survey

- ▶ Conservation, Enforcement and Drought Pricing
- ▶ Covers 2015 drought activities
- ▶ N=15
- ▶ Organized by size of agency
  - ▶ Small=under 12,000 connections (n=4)
  - ▶ Medium= between 12,000 and 20,000 connections (n=4)
  - ▶ Large=over 20,000 connections (n=7)



Carmichael Water District  
San Juan Water District  
Del Paso Manor Water District  
Rio Linda / Elverta CWD  
Elk Grove Water District  
City of Lincoln  
Citrus Heights Water District  
City of West Sacramento  
Sacramento Suburban Water Agency  
City of Sacramento  
Sacramento County Water Agency  
California American Water  
City of Roseville  
El Dorado Irrigation District  
Placer County Water Agency

# What outreach methods were used?

Mailers, Door Tags, Social Media, Agency Website

Outreach Method	SMALL AGENCIES N=4	MEDIUM AGENCIES N=4	LARGE AGENCIES N=7
Mailers	3	4	7
Door tags	4	3	7
Online ads (weather.com, etc.)	0	1	4
Social media ads (Facebook, etc.)	1	2	5
Social media posts (Facebook, twitter)	3	3	5
Billboards	0	0	3
Newspaper ads	2	3	4
Tv ads	0	1	0
Personal calls to select customer groups	2	1	4
Personalized conservation information reports	1	0	5
Agency website	3	4	7
E-blasts	1	3	5

# Which program provides most SAVINGS?

Cash for Grass, Irrigation, House Calls, Outreach

Water Program	SMALL AGENCIES N=4	MEDIUM AGENCIES N=4	LARGE AGENCIES N=7
Cash for Grass	1	1	3
Toilet Rebates	1	1	2
Clothes Washer Rebates	0	0	0
Irrigation Efficiency Rebates	0	0	3
Indoor Fixtures Direct Installation	0	0	0
Residential surveys	1	1	1
CII surveys	0	0	0
Large Landscape Survey	1	1	1
Residential Retrofit Kits	0	0	0
Pre-rinse Spray Valves	0	0	0
Water Wise House Calls	0	2	1
Local School Education Program	0	0	0
Local Public Outreach Program	3	0	1

# Which program is most COST EFFECTIVE?

## Public outreach

	SMALL AGENCIES N=4	MEDIUM AGENCIES N=4	LARGE AGENCIES N=7
<b>Water Program</b>			
<b>Cash for Grass</b>	0	0	1
<b>Toilet Rebates</b>	1	1	1
<b>Clothes Washer Rebates</b>	0	0	0
<b>Irrigation Efficiency Rebates</b>	0	1	2
<b>Indoor Fixtures Direct Installation</b>	0	0	0
<b>Residential surveys</b>	2	0	0
<b>CII surveys</b>	0	0	0
<b>Large Landscape Survey</b>	1	1	1
<b>Residential Retrofit Kits</b>	0	0	2
<b>Pre-rinse Spray Valves</b>	0	0	0
<b>Water Wise House Calls</b>	0	1	2
<b>Local School Education Program</b>	0	1	0
<b>Local Public Outreach Program</b>	2	0	3

# Which program is most STAFF INTENSIVE?

## Cash for Grass

Water Program	SMALL AGENCIES N=4	MEDIUM AGENCIES N=4	LARGE AGENCIES N=7
Cash for Grass	1	2	6
Toilet Rebates	0	0	1
Clothes Washer Rebates	0	0	0
Irrigation Efficiency Rebates	0	1	2
Indoor Fixtures Direct Installation	0	0	0
Residential surveys	1	1	1
CII surveys	0	0	0
Large Landscape Survey	1	0	2
Residential Retrofit Kits	0	0	0
Pre-rinse Spray Valves	0	0	0
Water Wise House Calls	1	1	1
Local School Education Program	0	0	0
Local Public Outreach Program	1	0	0

# Which program is most POPULAR?

## Cash for Grass

	SMALL AGENCIES N=4	MEDIUM AGENCIES N=4	LARGE AGENCIES N=7
<b>Water Program</b>			
<b>Cash for Grass</b>	1	2	6
<b>Toilet Rebates</b>	1	1	4
<b>Clothes Washer Rebates</b>	0	0	0
<b>Irrigation Efficiency Rebates</b>	0	0	0
<b>Indoor Fixtures Direct Installation</b>	0	0	0
<b>Residential surveys</b>	2	0	2
<b>CII surveys</b>	0	0	0
<b>Large Landscape Survey</b>	0	0	0
<b>Residential Retrofit Kits</b>	0	0	0
<b>Pre-rinse Spray Valves</b>	0	0	0
<b>Water Wise House Calls</b>	1	2	2
<b>Local School Education Program</b>	0	0	0
<b>Local Public Outreach Program</b>	1	0	0

# What just happened?

- ▶ There was variation between utility size and preferred programs
- ▶ Savings achieved from all size agencies was similar
  - ▶ 31%-34%
- ▶ OUTREACH-Door Tags, Mailers, Social Media, Agency Website
- ▶ MOST SAVINGS-Cash for Grass, Irrigation, House Calls, Outreach
- ▶ MOST COST EFFECTIVE-Public Outreach
- ▶ STAFF INTENSIVE-Cash for Grass
- ▶ POPULAR-Cash for Grass





# DROUGHT FACE

BEARDS SAVE WATER - ABOUT 5 GALLONS PER SHAVE  
SO DO SHORTER SHOWERS AND FIXING LEAKS

CONSERVE WATER THIS WINTER

[BeWaterSmart.info](http://BeWaterSmart.info)

# What Didn't Work

- ▶ Savings spread (20%-36%) limited regional messaging
- ▶ Watering day confusion! Drought map to the rescue but...
- ▶ Synchronizing Water Shortage Plan stages
- ▶ Increase in rebate programs=increase in staff time
- ▶ Disconnect between mandatory savings and local supply



# What is the Sac region doing now?

- ▶ Most agencies -least 3 day a week watering
- ▶ 10 agencies have min. of 10% voluntary goal
- ▶ 12 agencies –same conservation programs compared to funding June 2015-March 2016
  - ▶ Public outreach, school education, toilet, irrigation efficiency upgrades and CII rebates and cash for grass
- ▶ Savings: 21% in June, 23% in July, 18% in Aug.

# What did we learn from all of this?

- ▶ Simplicity. Simplicity. Simplicity. (with messaging)
- ▶ Efficiency, conservation and drought are different.
- ▶ Silos between state, regional and local still exist (sigh).

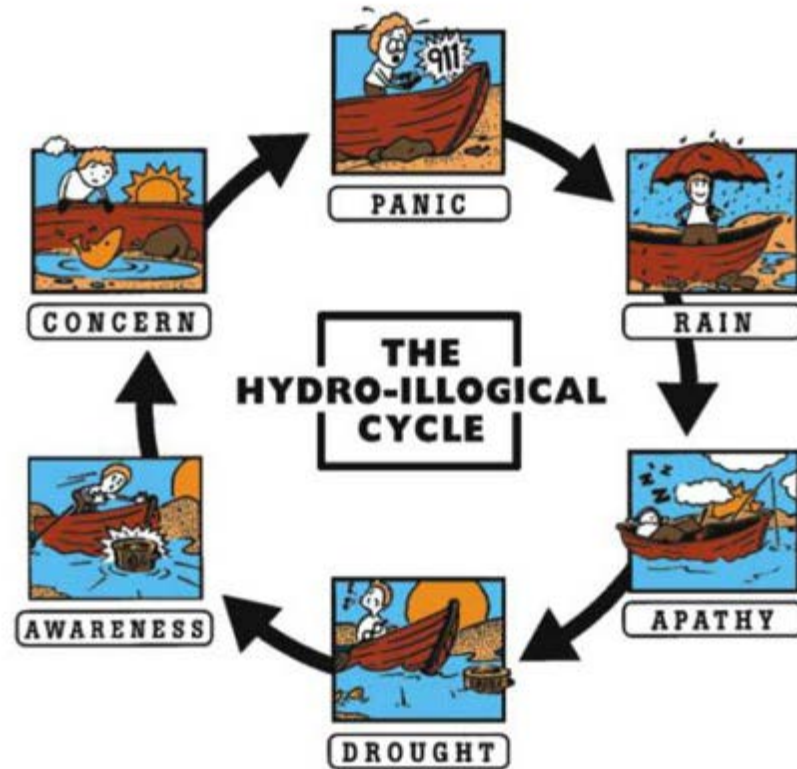
# State Policy and Regulation

- ▶ May 2016 Executive Order
  - ▶ Long Term Policy
    - ▶ Water Loss
    - ▶ Water Use Standards
    - ▶ Water Shortage Contingency Plans
    - ▶ Reporting and Enforcement
  - ▶ Updated Emergency Regulation
  - ▶ Senate Bill 555- Water Loss Audit and Reporting
    - ▶ Require validated water audit in 2018

# Thank you!

Lisa Maddaus  
lisa@maddauswater.com  
916.730.1456

Amy Marie Talbot  
atalbot@rwah2o.org  
916.967.7692



© National Drought Mitigation Center