

# WaterSmart Workshops

## *Strategies for Water-Efficient Landscapes*

San Diego Gas & Electric, Energy Innovations Center

May 13–14, 2015



**Carlos Michelin**  
Principal Water Resources Specialist

# Overview

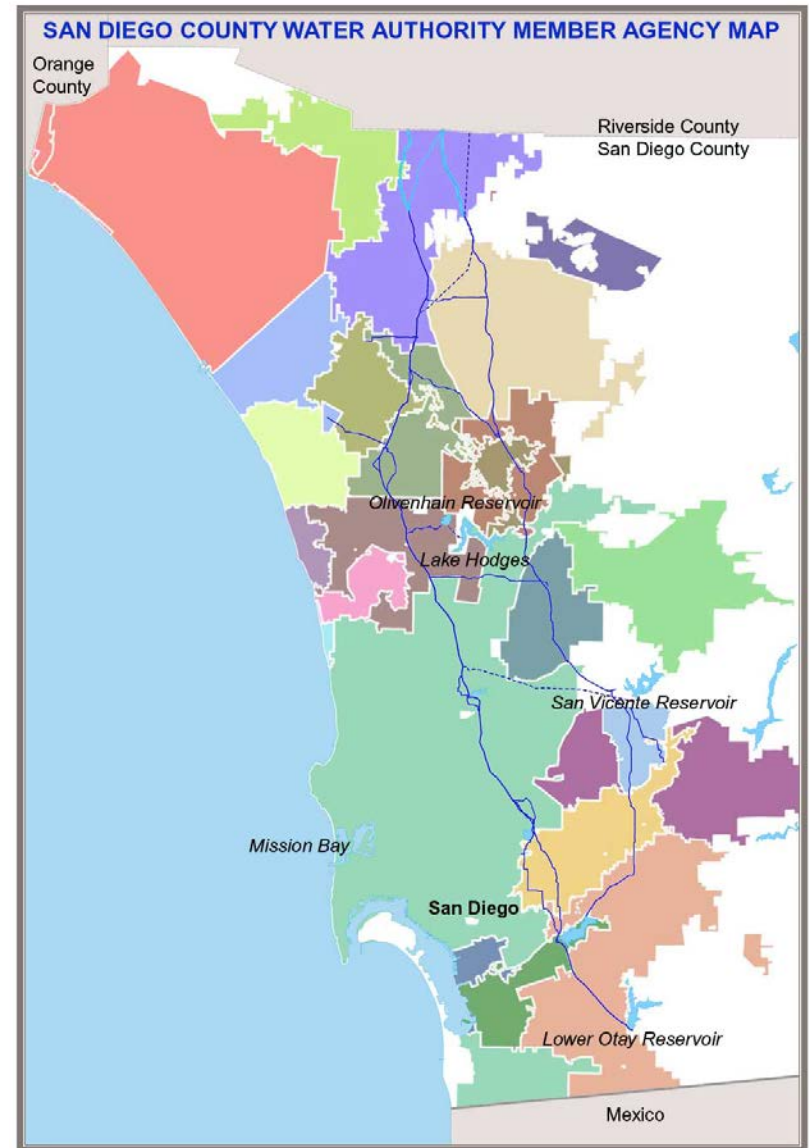
- 1. Drought Update (8:15 A.M.)**
- 2. WaterSmart Resources (3:45 P.M.)**



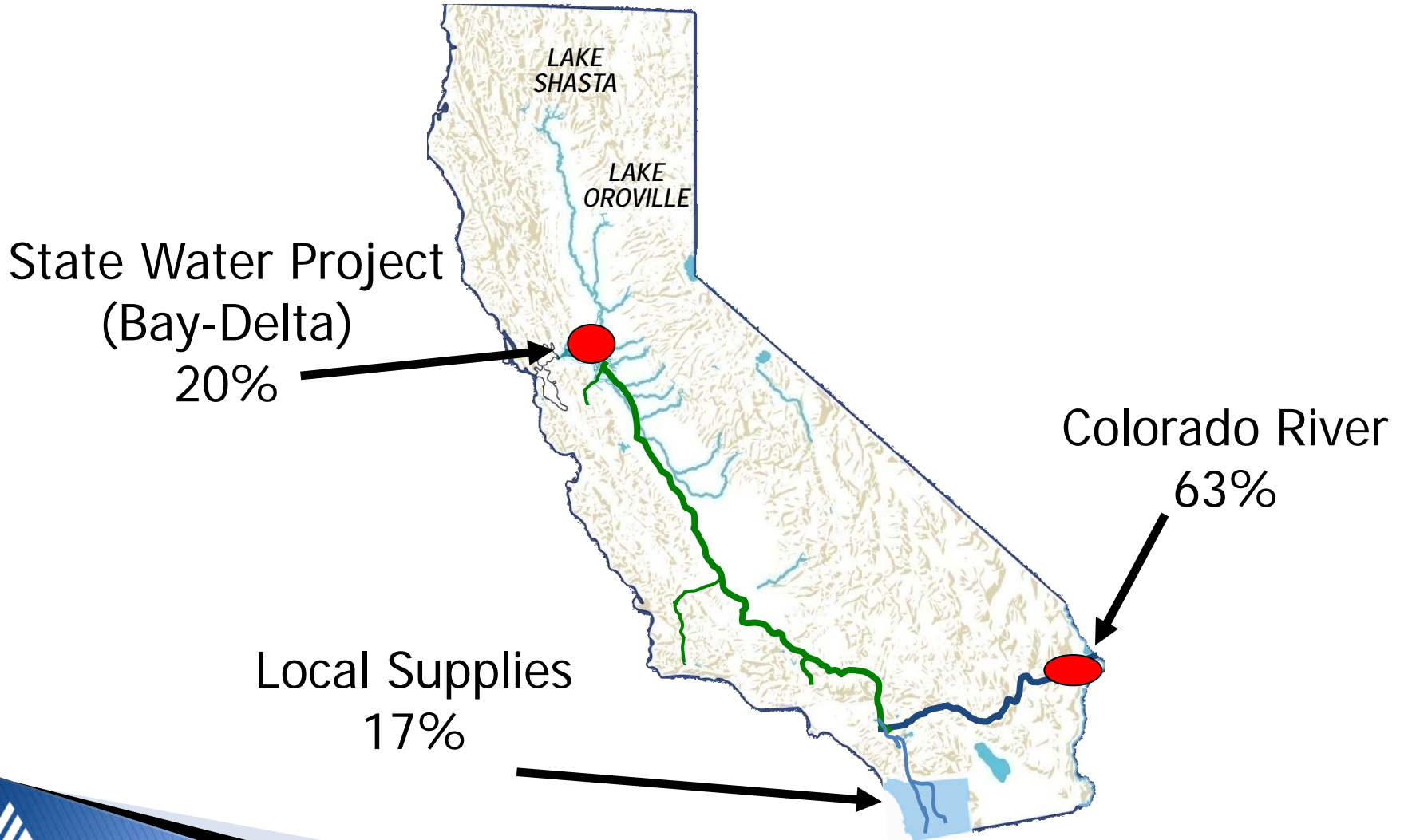
# **1. Drought Update**

# San Diego County Water Authority

- ▶ Wholesale water agency created by State Legislature in 1944
  - 24 member agencies
  - Serves 3.1 million people and region's \$191 billion economy
  - 97% of county's population
- ▶ Mission is to provide safe and reliable water supply to member agencies



# Sources of Water Supply (2009-2013, 5-year average)





# Northern Sierra Snowpack (As of April 1, 2015)

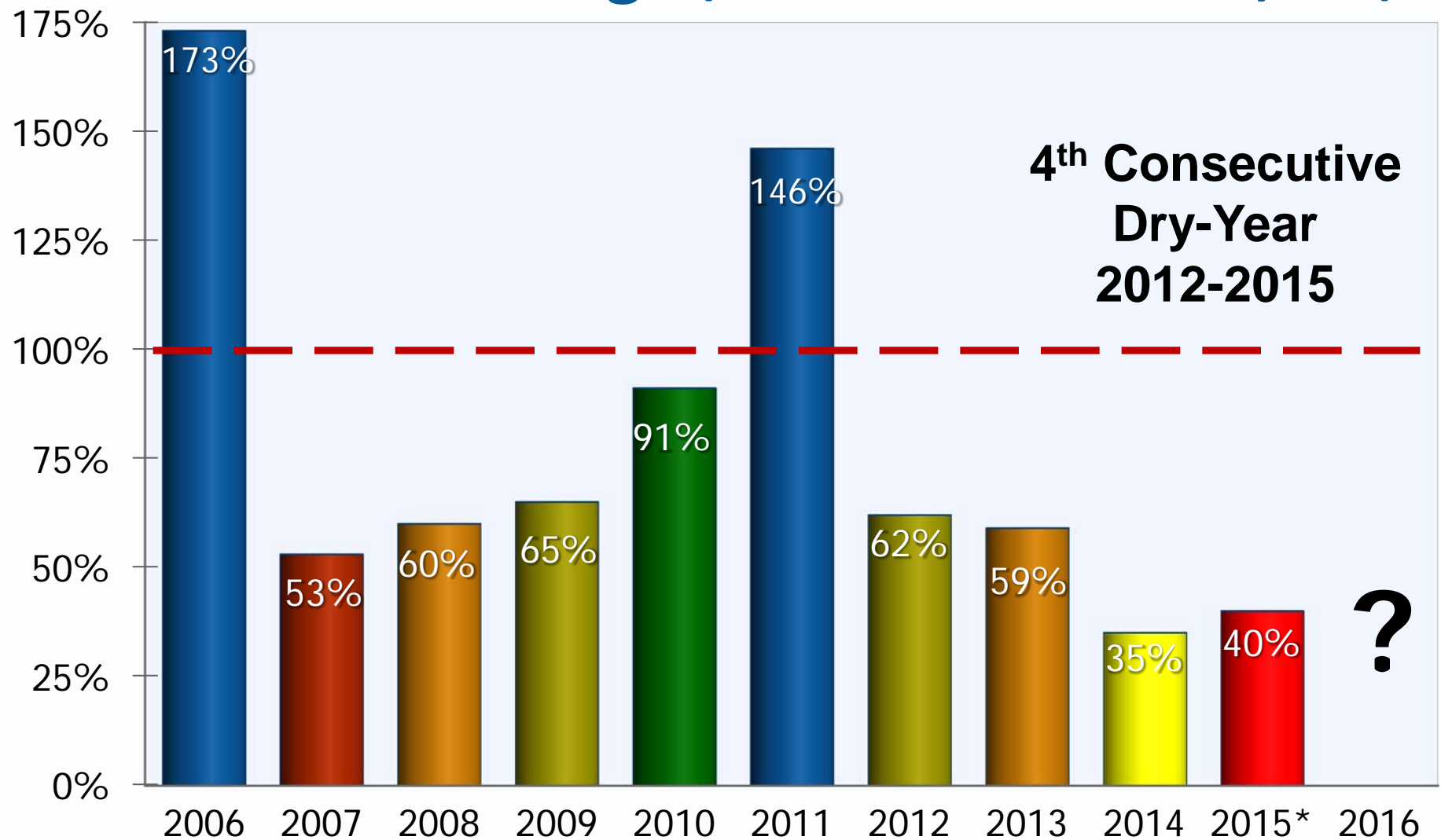


April 1, 2015 Manual Snow Survey

(AP Photo/Rich Pedroncelli)

# Average Water Year Statewide Runoff

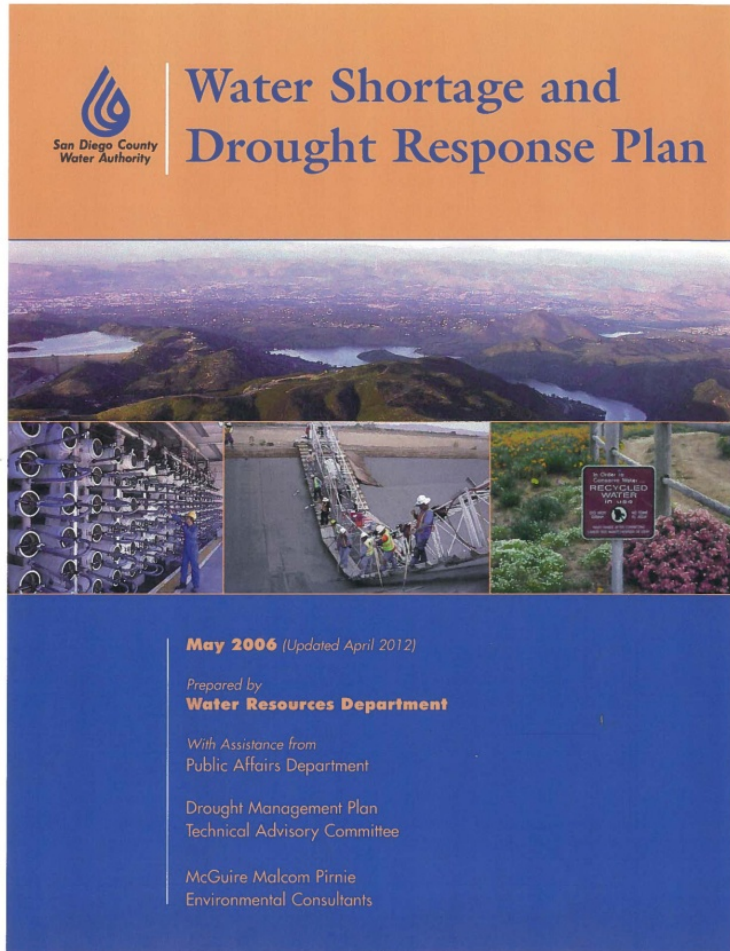
## Percent of Average (Water Year: Oct 1 – Sept 30)



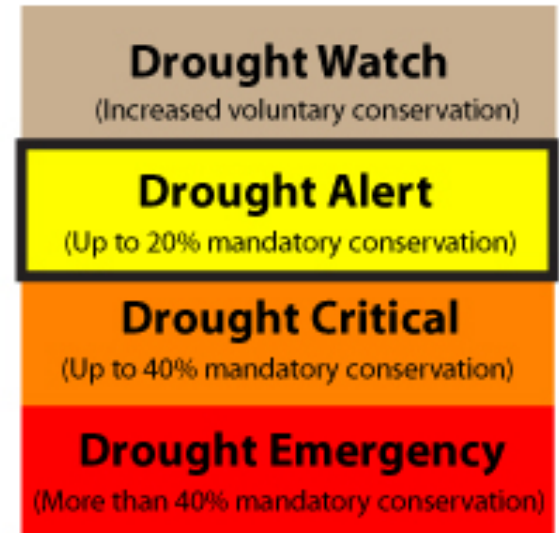
\*DWR Apr. 1, 2015 Forecast for Water Year

# Water Authority Drought Response

## Orderly and Coordinated Approach to Managing Droughts



  
**We Are Here**





# Current Activities Influencing Potential Drought Response Actions in 2015/2016

- Supply availability from MWD
  - 15% cutback allocation FY 2015-16
  - Exceedance surcharges: up to \$2,960/AF
- Demand reductions required statewide
  - Governor's April 1 Executive Order: 25% water savings mandate
  - SWRCB emergency regulations





## NEW Emergency Regulations

- Agencies report potable usage compared to 2013
- Compliance measured monthly beginning June 2015
- Exempt agricultural deliveries

# Drought Management Actions

## Tentative Schedule

Date	Action
April 14	MWD Board approved Level 3, 15% supply cutback
April 18	SWRCB Draft regulations released for comment
April 22	Deadline for comments on draft regulations
April 28	SWRCB emergency rulemaking formal notice
May 5-6	SWRCB hearing and adoption
<b>May 14</b>	<b>Water Authority Special Board meeting</b>
June 1	Mandatory conservation regulation takes effect
July 1	MWD allocation period begins

# Water Waste Prohibitions

Following actions prohibited:

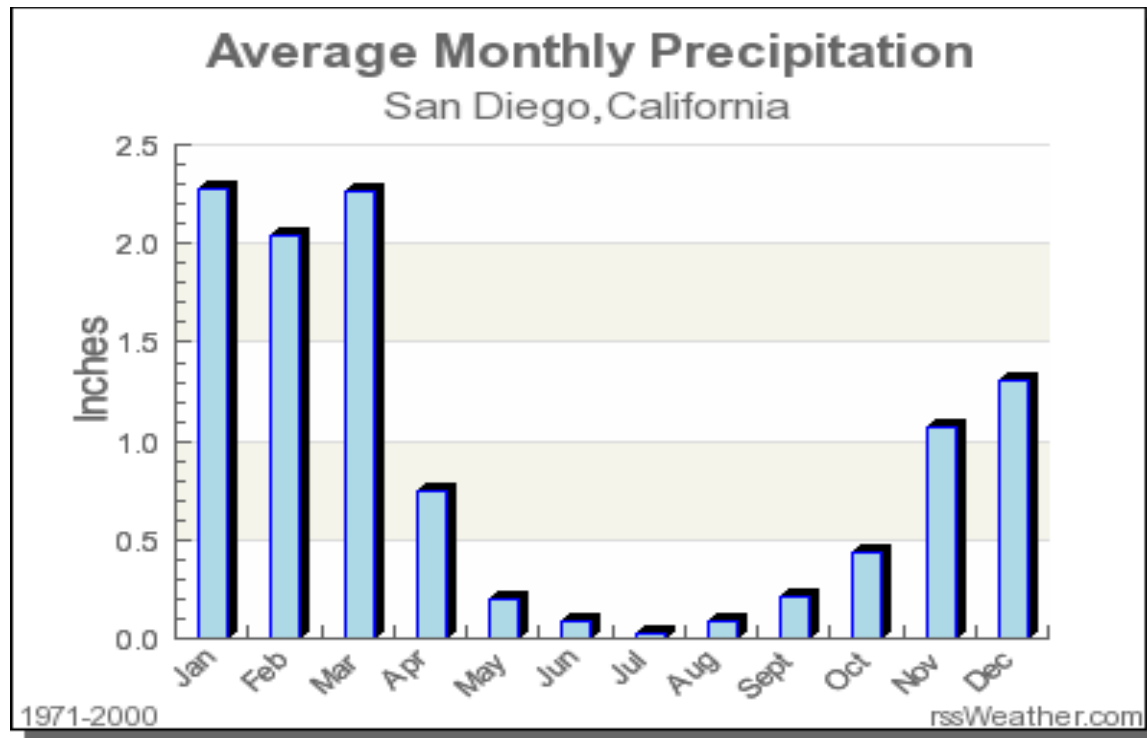
1. Watering of outdoor landscapes that cause excess runoff
2. Using hose to wash motor vehicle, without shut-off nozzle
3. Washing down driveways and sidewalks
4. Use of potable water in fountains or water features unless it is recirculating



(Except for health and safety purposes)

# Q: What is Annual Rainfall in San Diego?

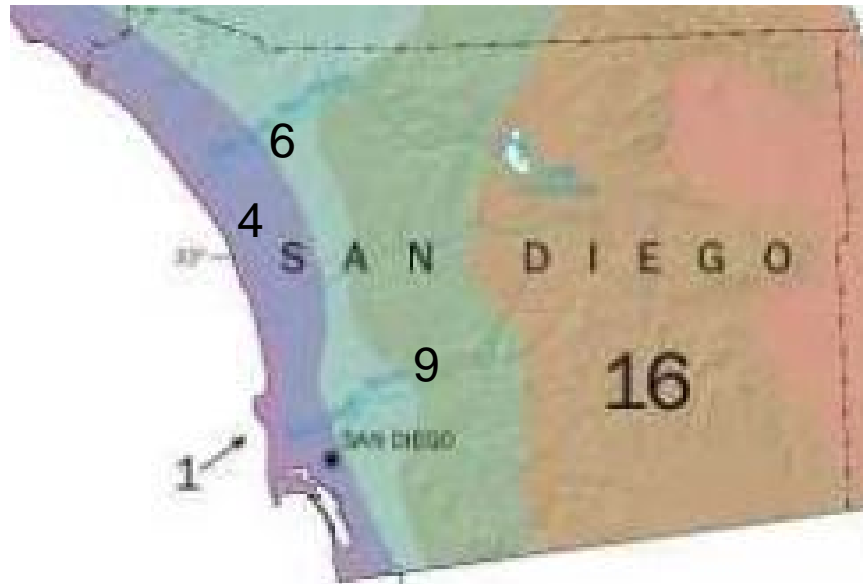
Avg. Rainfall in San Diego = **10 inches/year**  
(data from 1914-2011)





# What is the local $ET_0$ in San Diego?

- Zone 1 (33")
- Zone 4 (47")
- Zone 6 (50")
- Zone 9 (55")

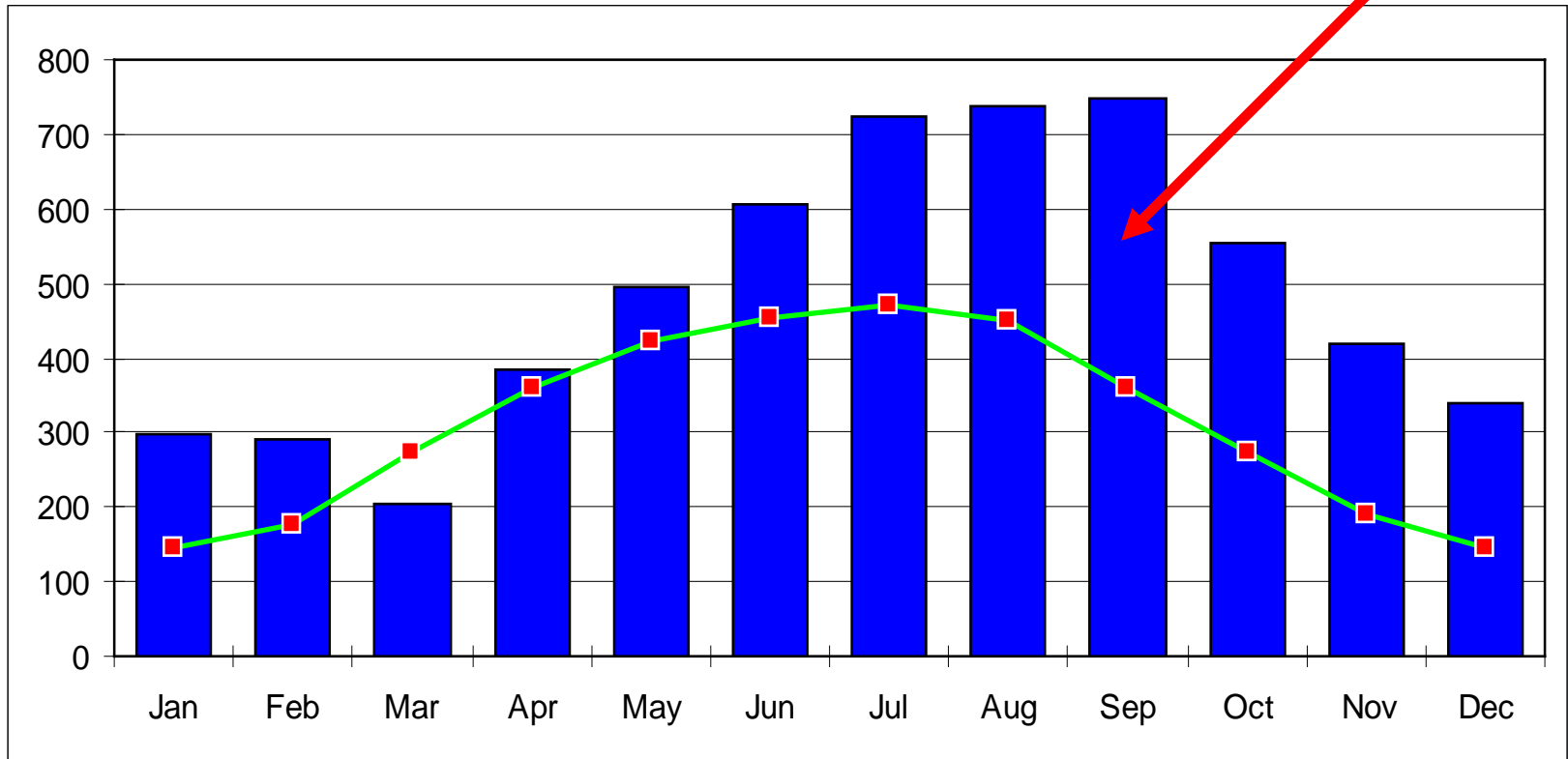


Monthly Average Reference Evapotranspiration by ETo Zone (inches/month)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1	0.93	1.40	2.48	3.30	4.03	4.50	4.65	4.03	3.30	2.48	1.20	0.62	33.0
2	1.24	1.68	3.10	3.90	4.65	5.10	4.96	4.65	3.90	2.79	1.80	1.24	39.0
3	1.86	2.24	3.72	4.80	5.27	5.70	5.58	5.27	4.20	3.41	2.40	1.86	46.3
4	1.86	2.24	3.41	4.50	5.27	5.70	5.89	5.58	4.50	3.41	2.40	1.86	46.6
5	0.93	1.68	2.79	4.20	5.58	6.30	6.51	5.89	4.50	3.10	1.50	0.93	43.9
6	1.86	2.24	3.41	4.80	5.58	6.30	6.51	6.20	4.80	3.72	2.40	1.86	49.7
7	0.62	1.40	2.48	3.90	5.27	6.30	7.44	6.51	4.80	2.79	1.20	0.62	43.4
8	1.24	1.68	3.41	4.80	6.20	6.90	7.44	6.51	5.10	3.41	1.80	0.93	49.4
9	2.17	2.80	4.03	5.10	5.89	6.60	7.44	6.82	5.70	4.03	2.70	1.86	55.1

# Water Applied vs. Plant Water Use

Water Waste!



—■— Actual Plant Water Use  
■ Landscape Water Applied

# Is this the right Norm?



## **2. WaterSmart Resources**



A BETTER WAY TO BEAUTIFUL



San Diego County  
Water Authority



# Multiple Benefits

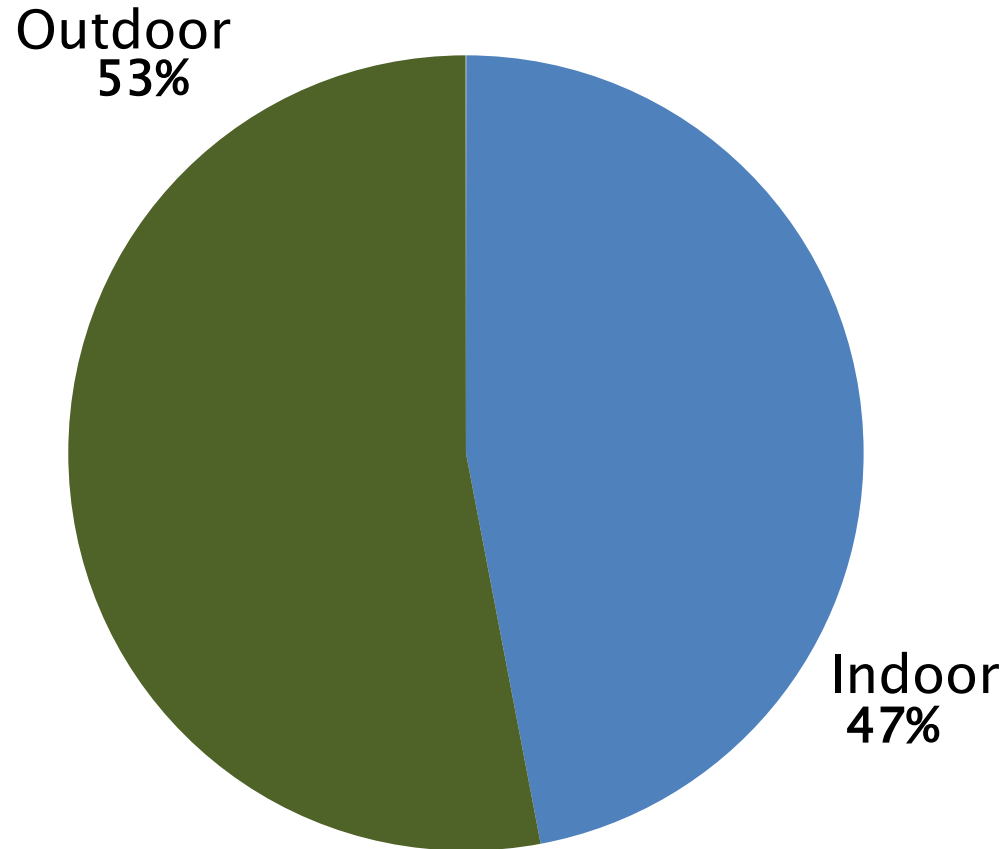
An aerial photograph of a river winding through a dense, green forested area. In the background, a city skyline is visible under a clear blue sky. The river is dark blue and reflects the surrounding greenery. The text 'Multiple Benefits' is overlaid in the top left corner in a large, white, sans-serif font.

- Water efficiency
- Runoff reduction
- Embedded energy
- Green waste reduction
- Reduced green house gas emissions
- Habitat restoration
- Labor reduction

After



# Typical Single-Family Use





# AB 1881 – Water Efficient Landscape Ordinance

An objective water budget methodology:

$$\text{MAWA} = (\text{ETo}) \times (.62) \times ((\text{ETAF } 0.7) \times (\text{Landscape Area}) + (0.3) \times (\text{SLA}))$$

$$\text{ETWU} = (\text{ETo}) \times (.62) \times \text{PF} \times \text{HA/IE}$$

**Maximum Applied  
Water Allowance**

*Gallons per year  
depends on ...*

**Estimated Total  
Water Usage in gallons**

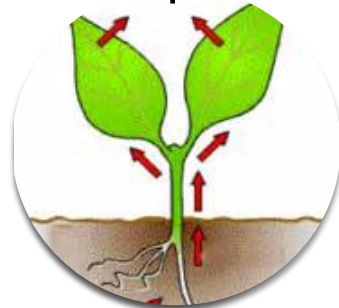
Should be less than  
MAWA



Size of Area



Irrigation System  
Efficiency



Evapotranspiration



Plant Factor

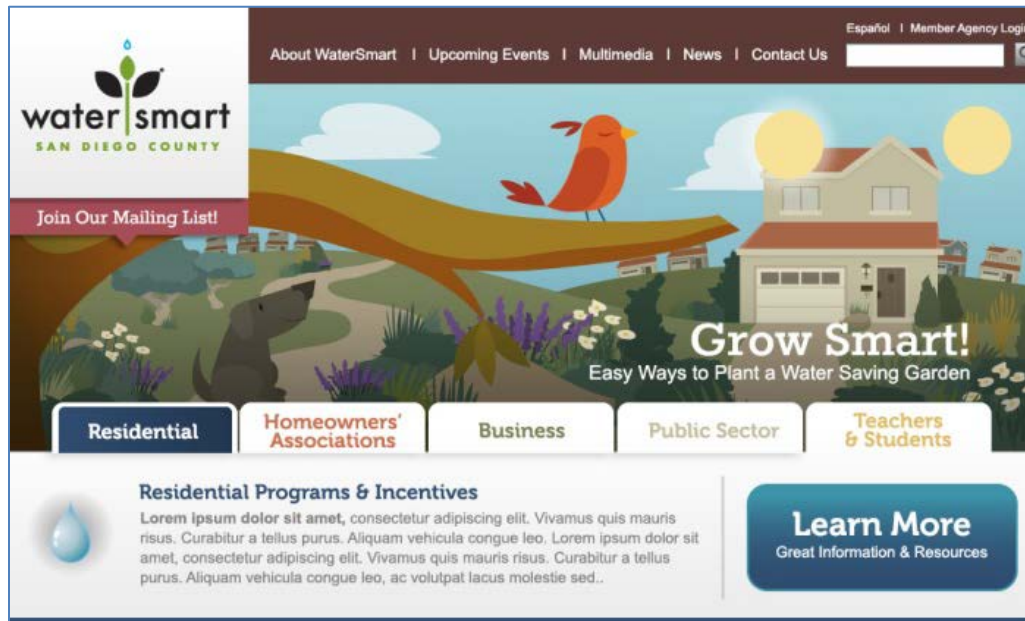


It's an upgrade,  
not a compromise!



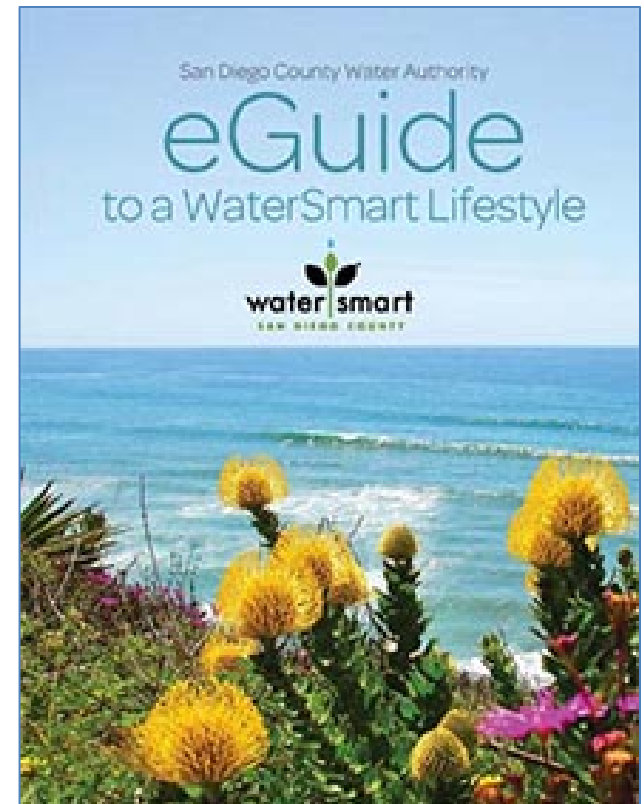


# WaterSmart Resources



[WaterSmartSD.org](http://WaterSmartSD.org)

## eGuide





**FREE**

Services

# WaterSmart Checkup



## Want to control irrigation costs?

### Get a checkup and find out how!

A WaterSmart Checkup is your free opportunity to receive site-specific water-saving recommendations. You'll benefit from the perspective of our certified irrigation professionals. And you decide if and when to implement the suggestions. There is no obligation.

We offer several different Checkup services and will match your property to the best available option. Participation is limited, so don't miss out. If you own or manage a commercial, multifamily,

- ✓ Free
- ✓ No obligation
- ✓ Prepare for seasonal irrigation changes

**Apply today.  
Participation is  
limited.**

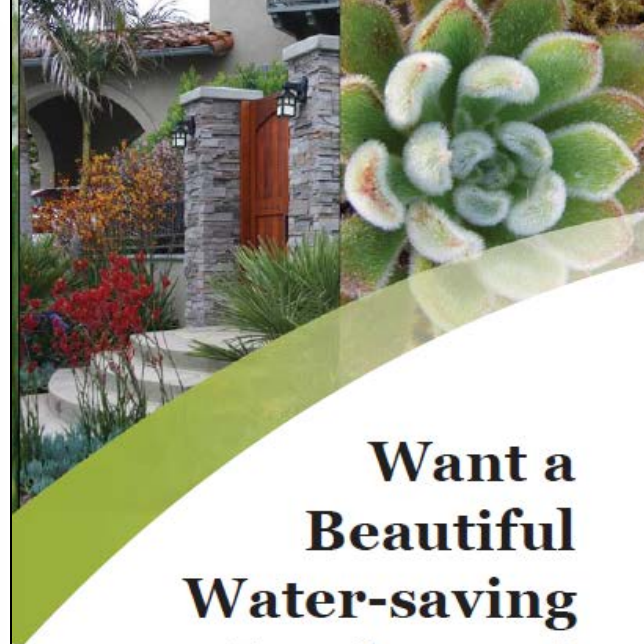
**Find Out More  
and Apply**

Download

**[www.watersmartcheckup.org](http://www.watersmartcheckup.org)**



# A Homeowner's Guide to a WaterSmart Landscape



**Want a  
Beautiful  
Water-saving  
Landscape?**

**FREE**

**Landscape  
Makeover  
Workshop Series**

Now accepting applications  
Spring series begins **February 23, 2013**  
at the San Diego Botanic Garden



# Regional Rebate Program



*Residential and Commercial Rebate Programs*

Select the applicable rebate program below.



**SoCal Water\$mart  
For Residential Customers**



**SoCal Water\$mart  
For Commercial Customers**



# Landscape - Controllers



- Weather Based (“Smart”)

- Res: \$80/unit

- Base rebate \$35/station

- Central Computer

- Base rebate \$35/station

- Soil Moisture Sensor System

- Base rebate \$35/station





# Commercial Landscape - Nozzles



- **Rotating Spray Nozzles**

- Base rebate \$4 per nozzle

- **Large Rotary Nozzles**

- Base rebate \$13/set



# Regional Turf Removal

- Online application process
- \$2 per sq/ft
- Some Agencies may:
  - Add funding
  - Apply local rules







A BETTER WAY TO BEAUTIFUL

**Carlos Michelin**

Principal Water Resources Specialist

San Diego County Water Authority

(858) 522-6756

[cmichelon@sdcwa.org](mailto:cmichelon@sdcwa.org)