Water Supply and Conservation

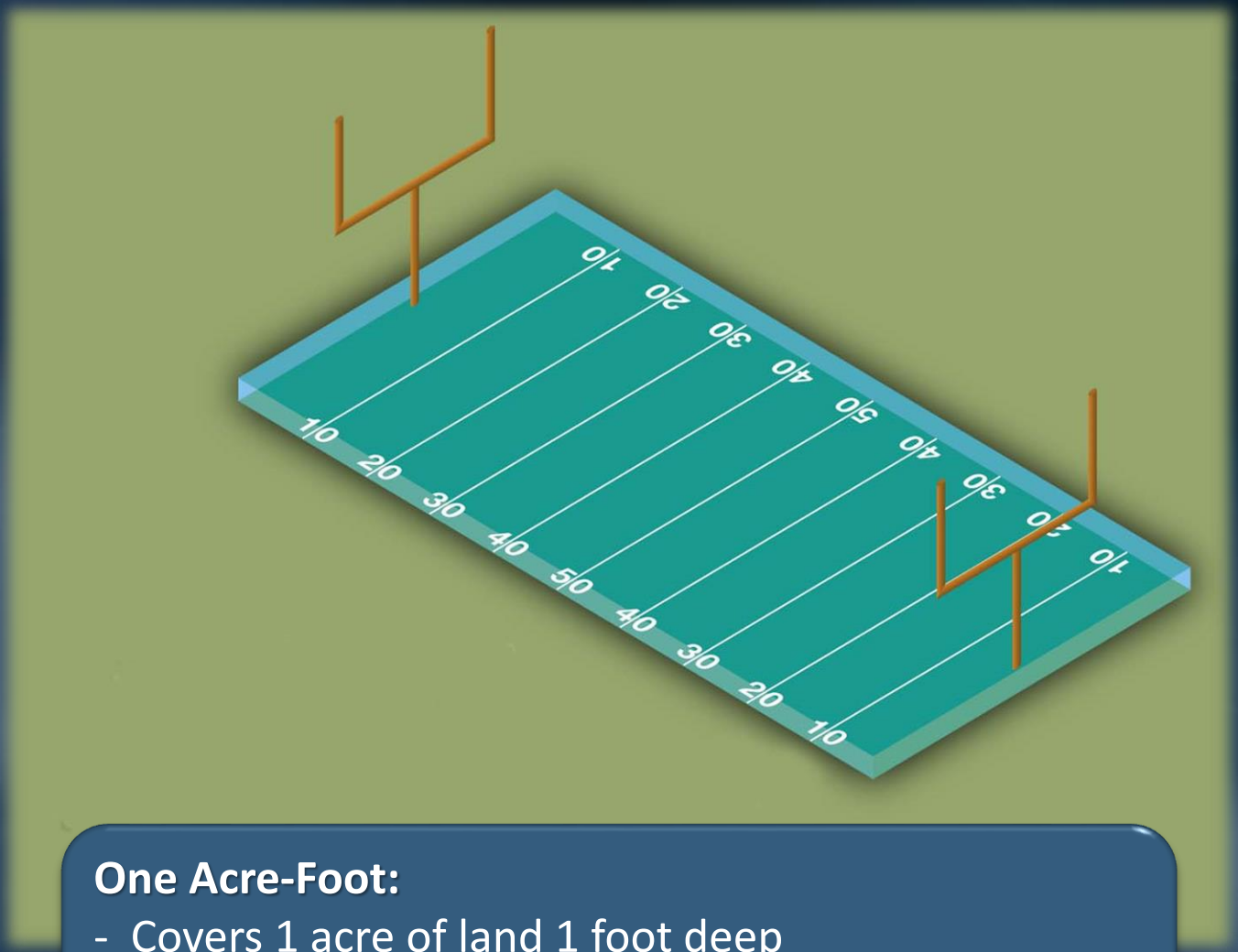
California Craft Brewers Association
April 22, 2014

Metropolitan Water District

- Regional water wholesaler
- 26 Member Agencies
- 6 Counties
- Serving Approximately 19 million residents
- 5,200 square mile service area
- $1 trillion economy

Sources of Water for Southern California

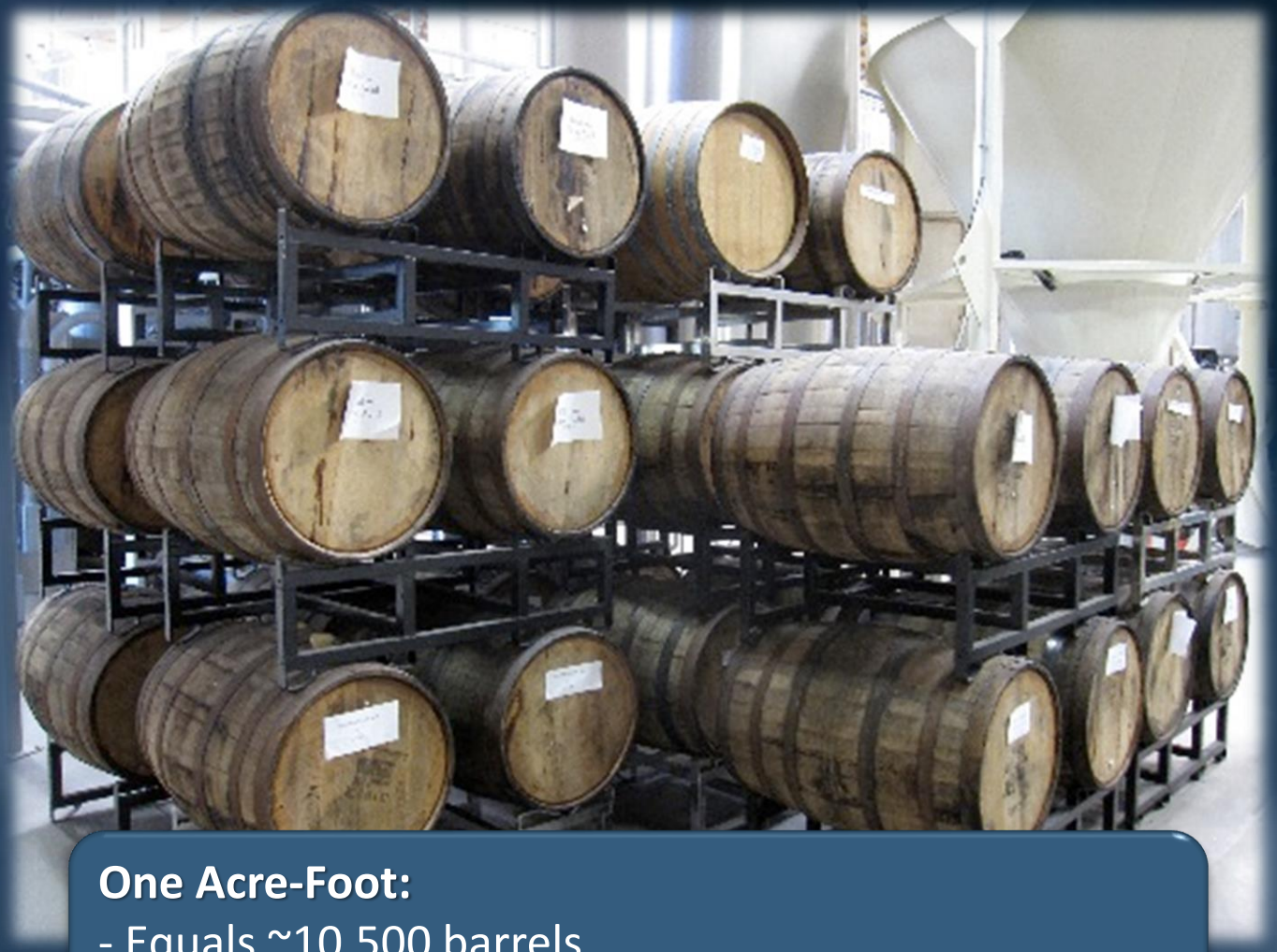
What is an Acre-Foot?



One Acre-Foot:

- Covers 1 acre of land 1 foot deep
- Equals ~326,000 gallons
- Supplies roughly two families for one year

What is an Acre-Foot?

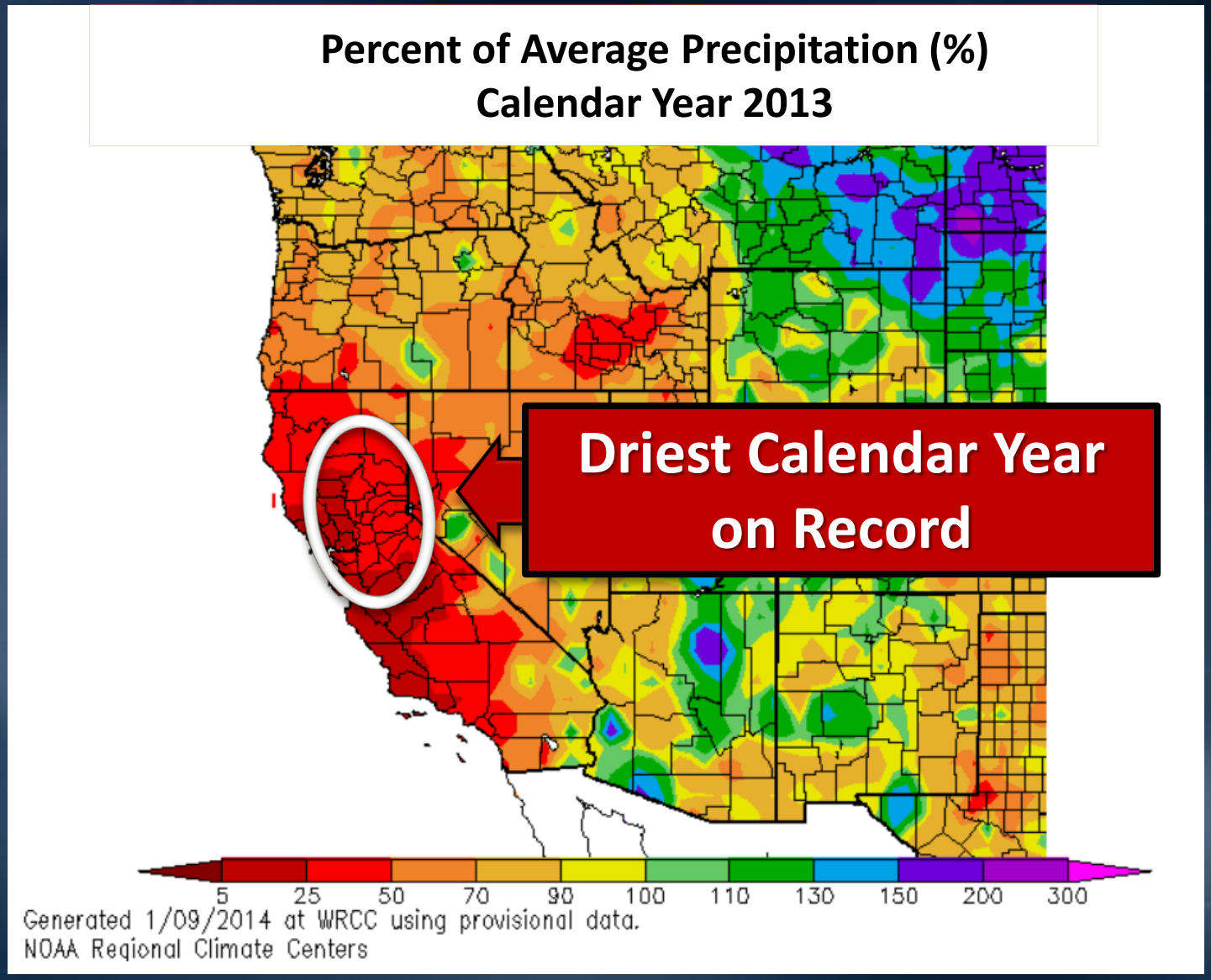


One Acre-Foot:

- Equals ~10,500 barrels
- Supplies roughly two fraternity houses for one year

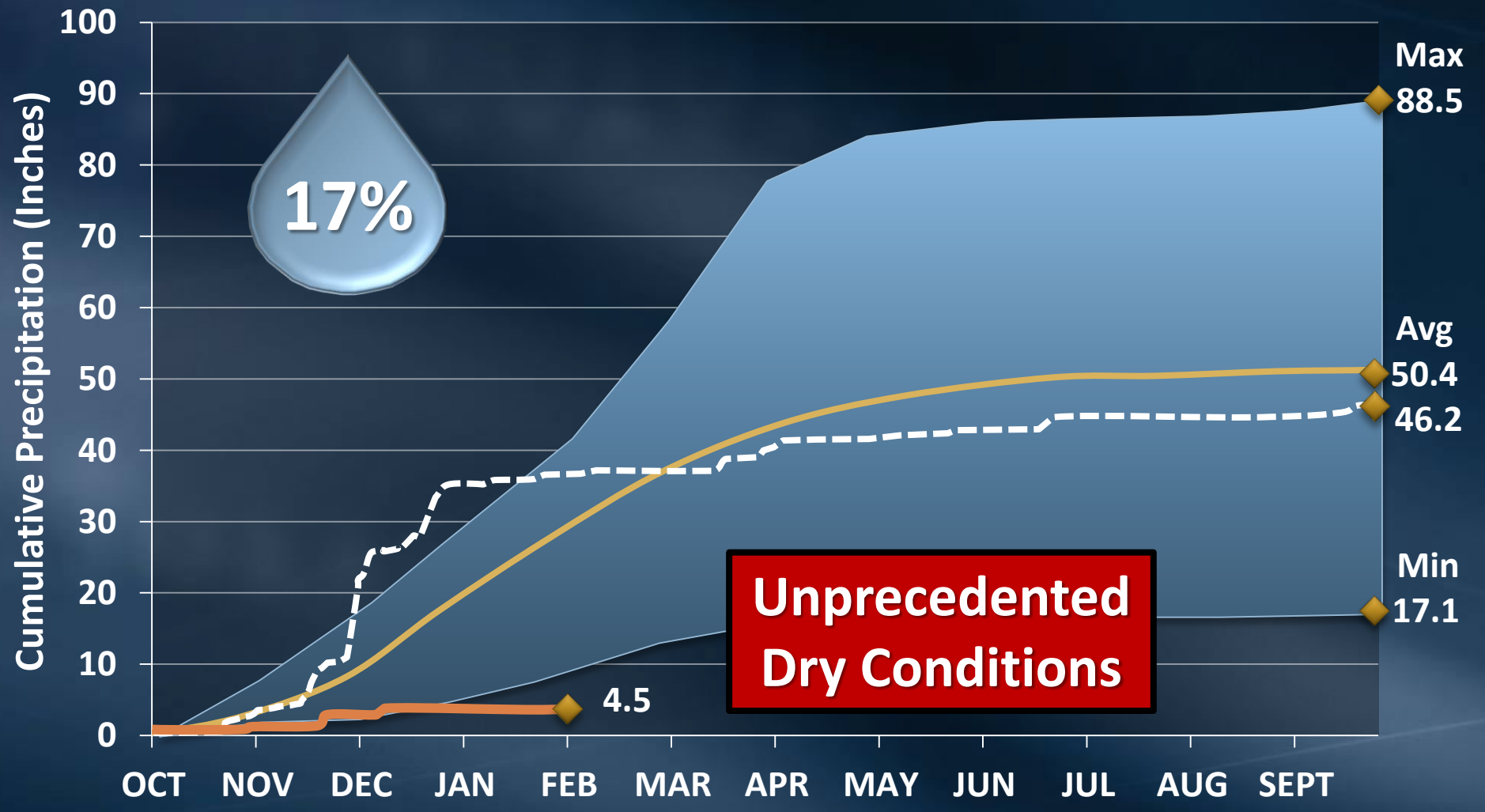
Water Supply Conditions and the California Drought

2013 Hydrologic Conditions



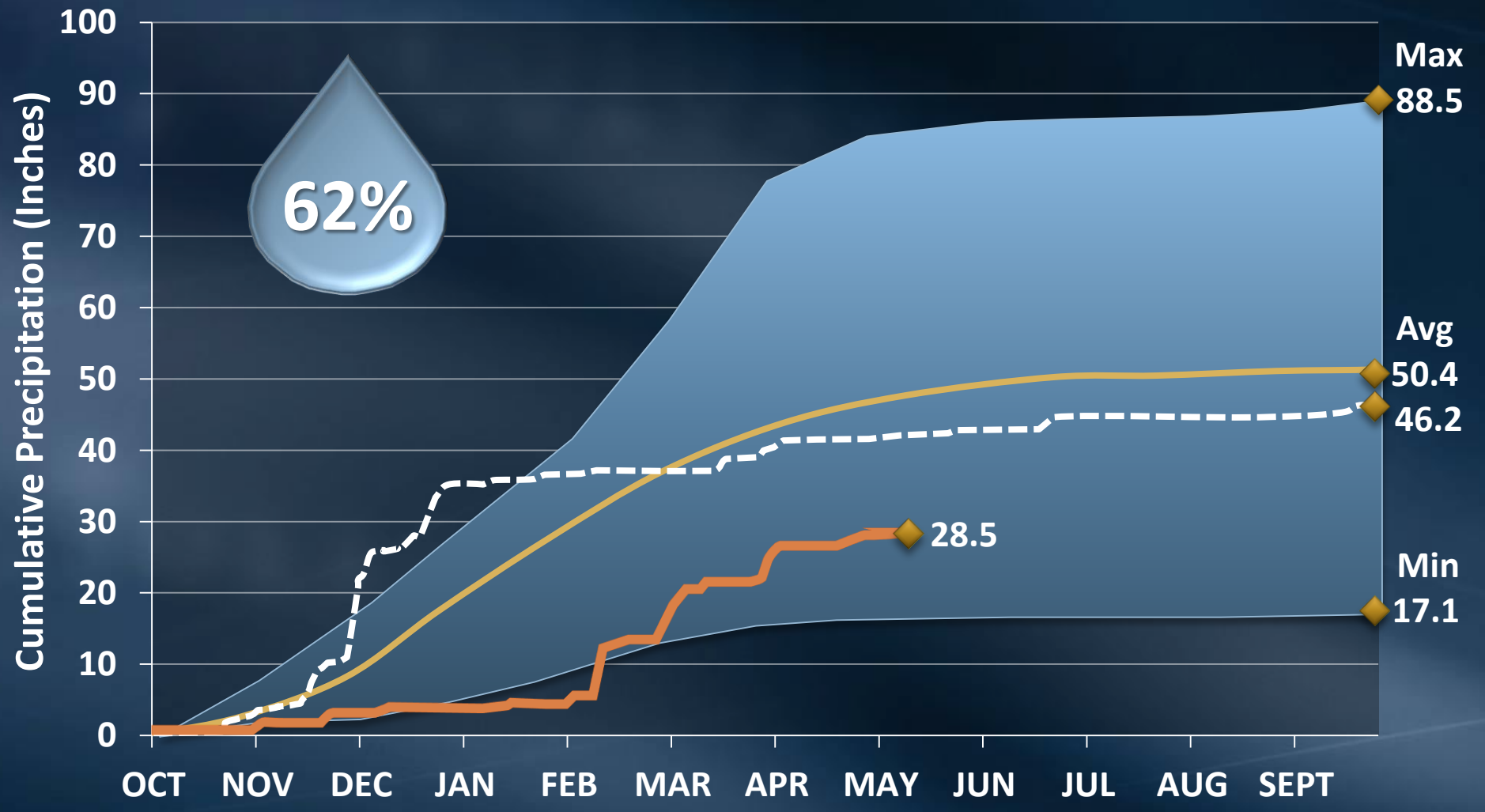
Northern Sierra Hydrologic Conditions

Eight Station Index WY 1922-2013



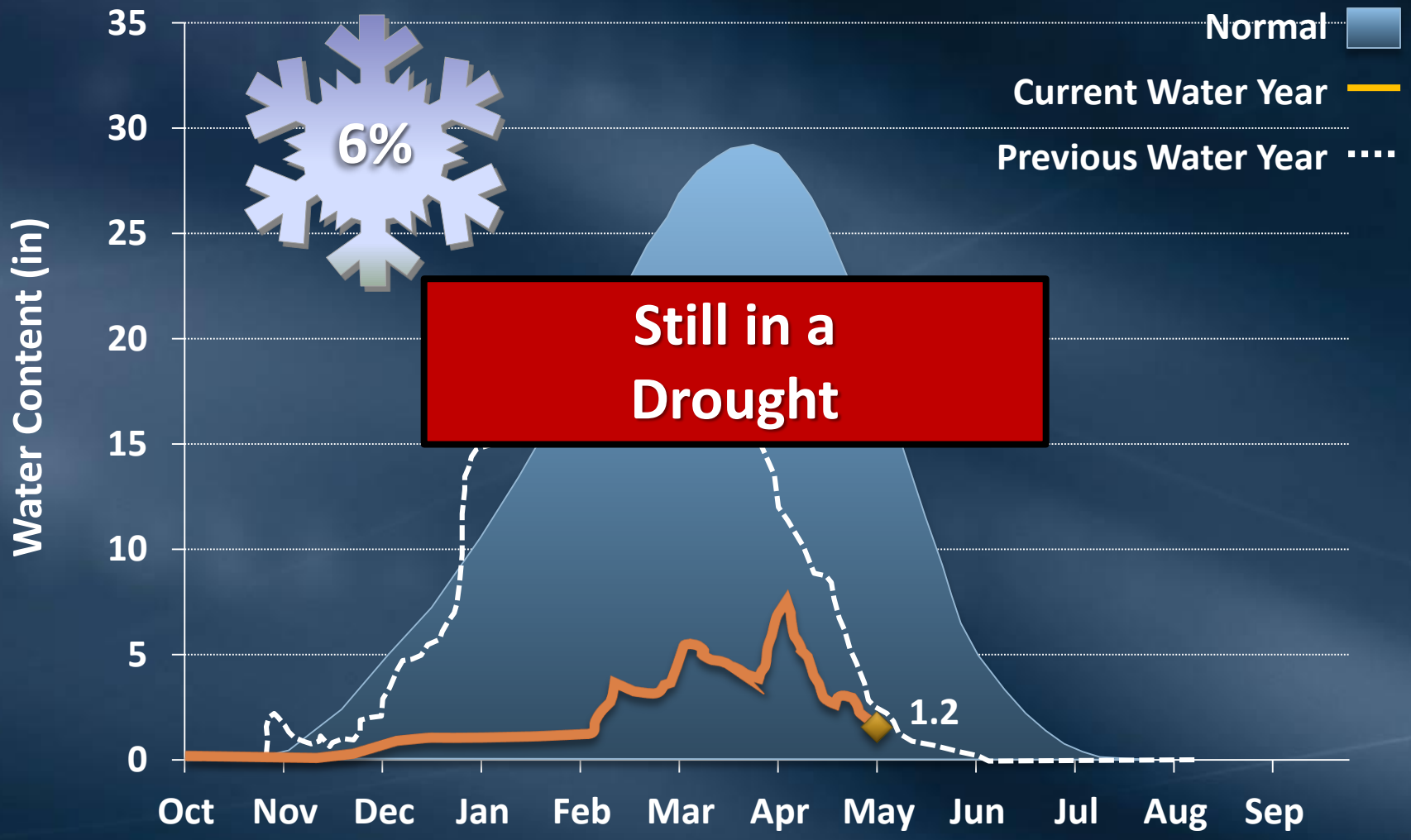
Northern Sierra Hydrologic Conditions

Eight Station Index WY 1922-2013



State Water Project Hydrologic Conditions

Northern Sierra Snowpack



2014 State Water Project Allocation

- November 19: 5% (initial)
- December 5: 5%
- December 23: 5%
- January 30: 0%
- February 26: 0%
- March 21: 0%
- April 18: 5%

Lowest Initial Allocation

1st Time in the 54-year History of the SWP

State of California Drought Emergency

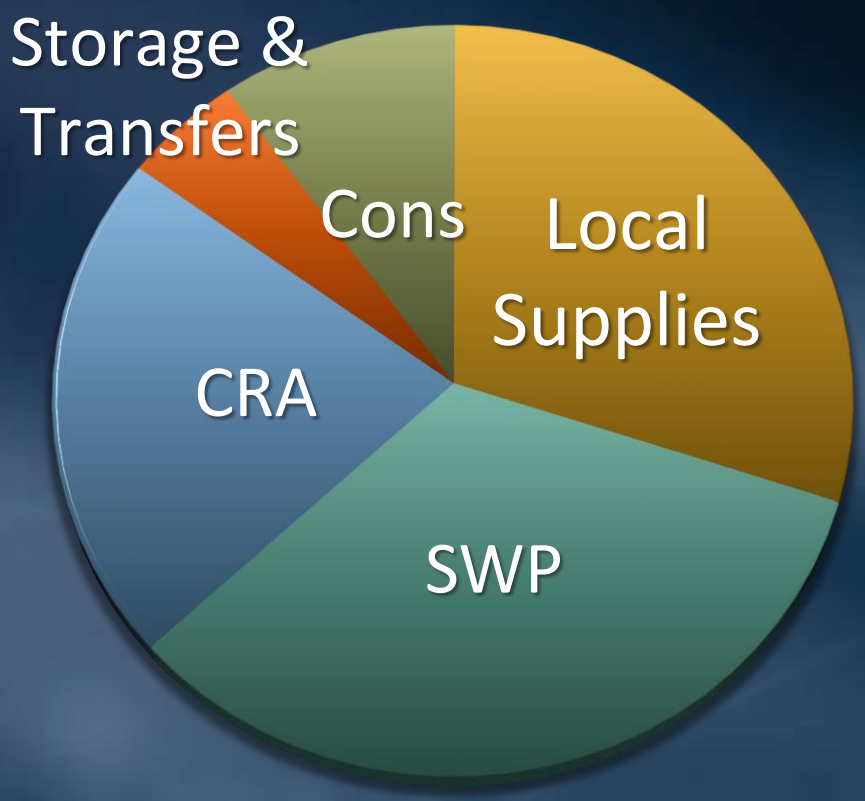
- Governor Brown declaration on January 17
- “Perhaps the worst drought California has seen since records began being kept”
- Calls for citizens to do their part and reduce water use by 20 percent
- Took actions to facilitate management of water statewide

State of California Executive Order

- Governor Brown issued on April 25
- Calls for re-doubling of drought actions
- Calls for specific actions
  - Turn off all decorative fountains
  - Water only two days per week
  - HOAs allow native landscaping and landscaping water conservation measures
  - City parks immediately implement water reduction plans

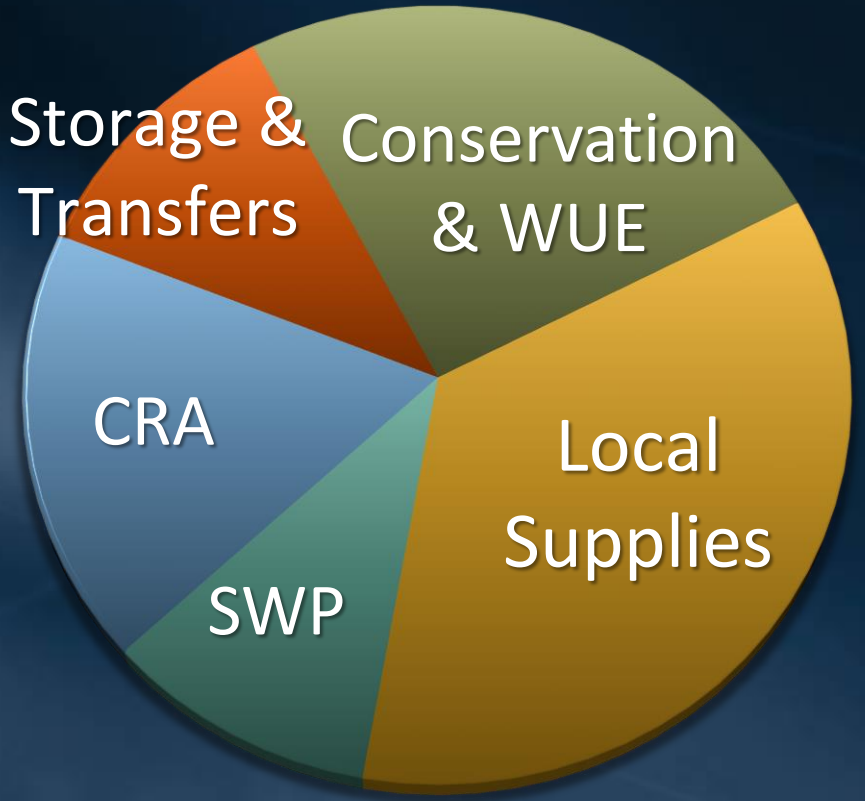
What Does the Drought Mean for Southern California?

Diversification of Water Portfolio



Early 1990's

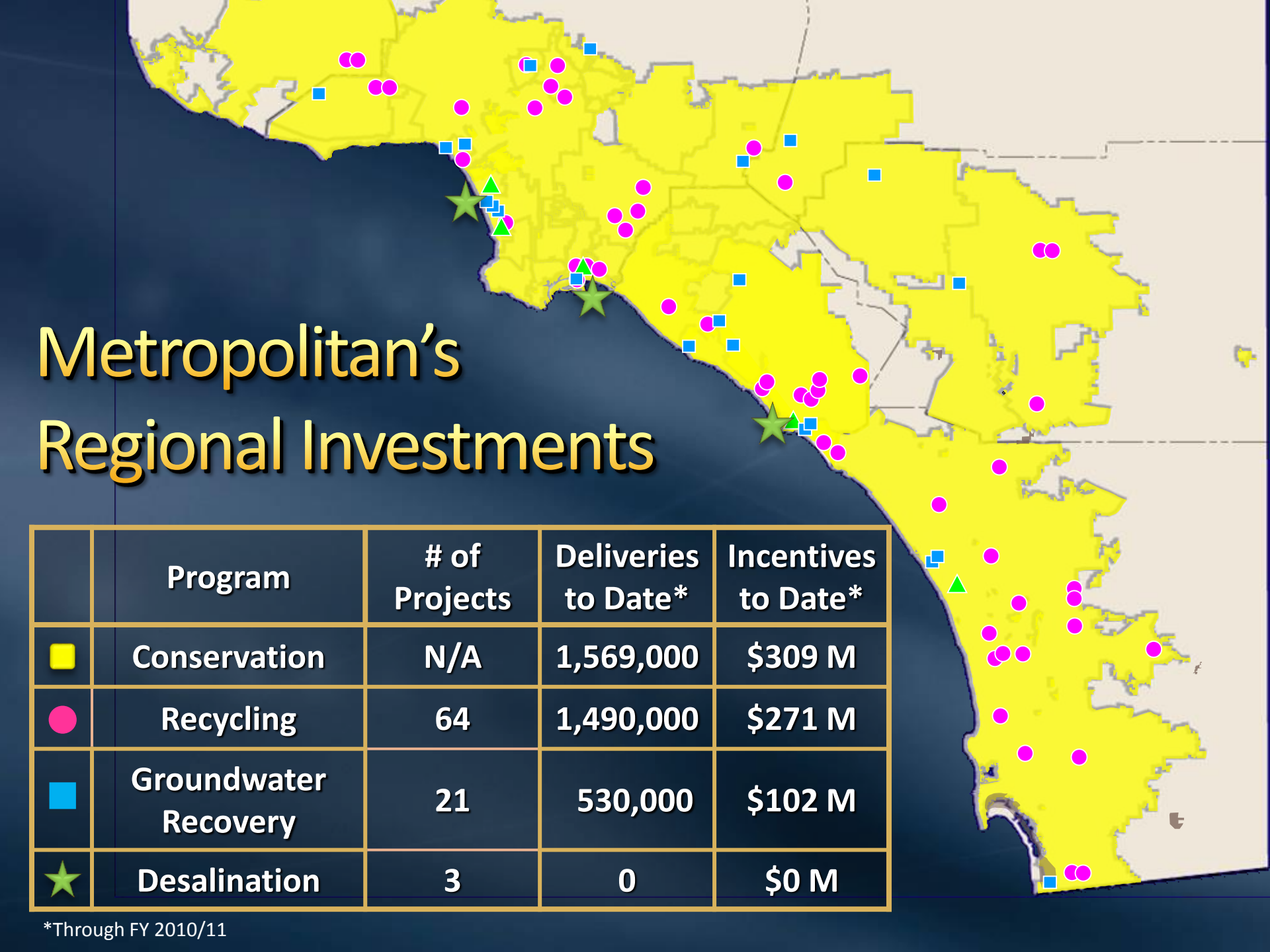
Heavy dependence on imported supply and SWP Diversions



2010 IRP Strategy

Emphasis on Conservation, Local Supplies, and Storage & Transfers

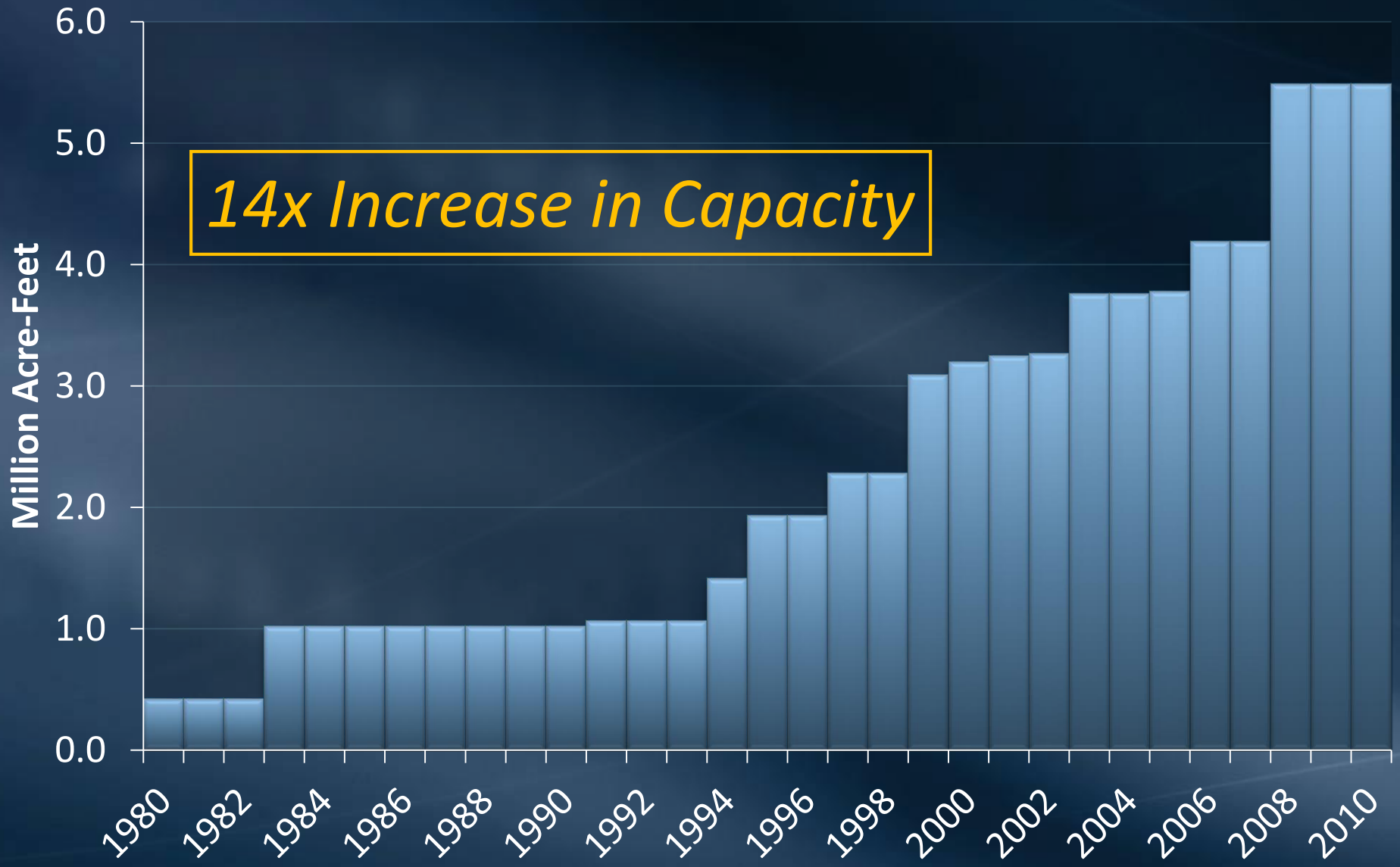
Metropolitan's Regional Investments



	Program	# of Projects	Deliveries to Date*	Incentives to Date*
■	Conservation	N/A	1,569,000	$309 M
●	Recycling	64	1,490,000	$271 M
■	Groundwater Recovery	21	530,000	$102 M
★	Desalination	3	0	$0 M

*Through FY 2010/11

Metropolitan's Storage Capacity

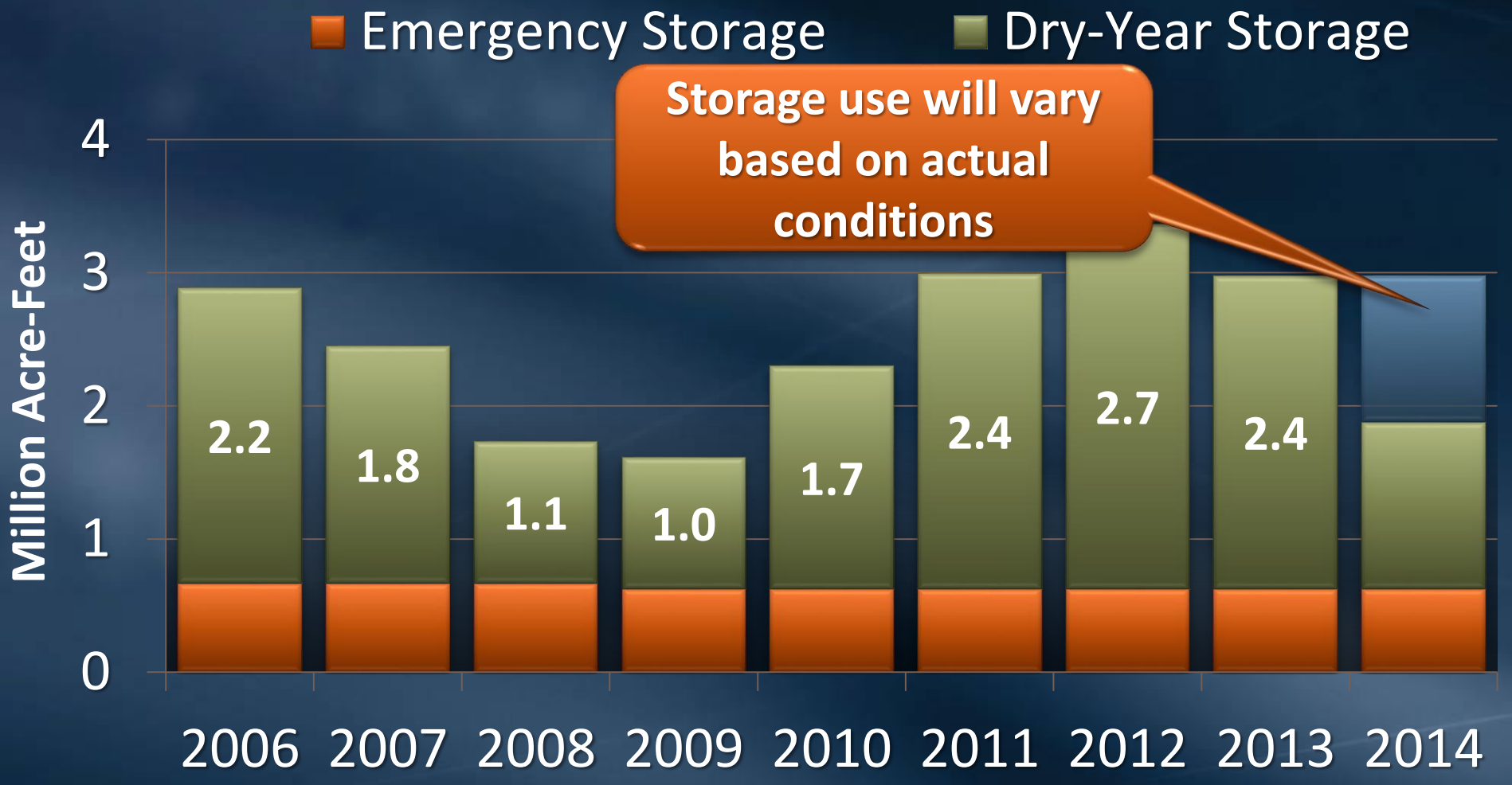


Metropolitan's Drought Actions

- Water Supply Alert
- Conservation Budget Doubled to $40M
- Increased Recycled Water Budget
- Increased coordination with other agencies statewide

MWD Storage Reserves

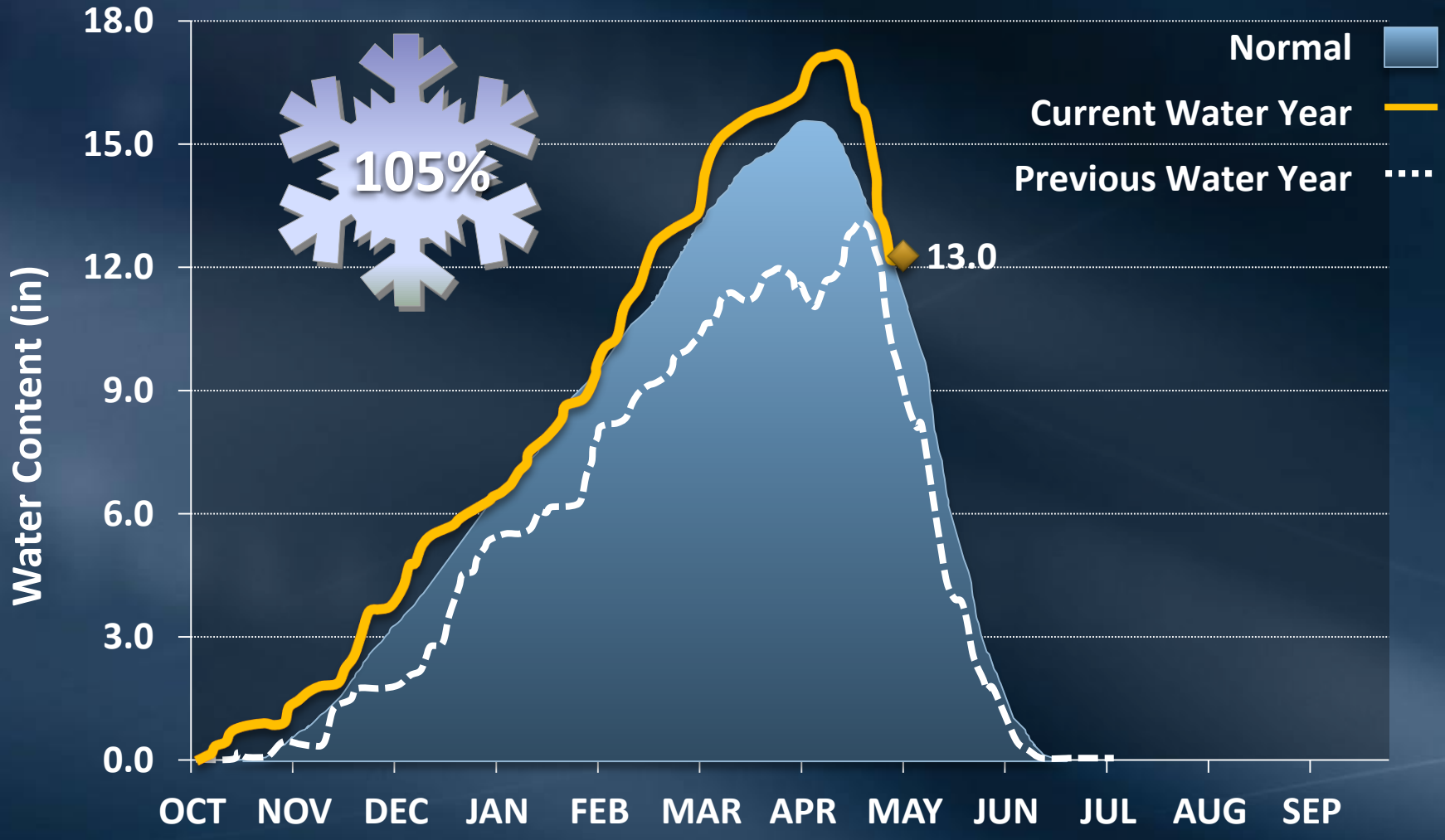
End of Year Balances*



*Estimated actual storage balances, may be subject to change.

Colorado River Hydrologic Conditions

Upper Colorado Basin Snowpack



Conservation and Water Use Efficiency

Regional Rebate Program

SoCal Water$mart

Residential and Commercial Rebate Programs

Select the applicable rebate program below.

SoCal Water$mart

For Residential Customers

SoCal Water$mart

For Commercial Customers

Commercial Plumbing

- **High Efficiency Toilets**
  - Tank, dual flush, flushometer
  - 1.28 gpf or less
  - Base rebate $50 or $100
- **Zero / Ultra Low Water Urinals**
  - From zero to .25 gpf
  - Base rebate $200

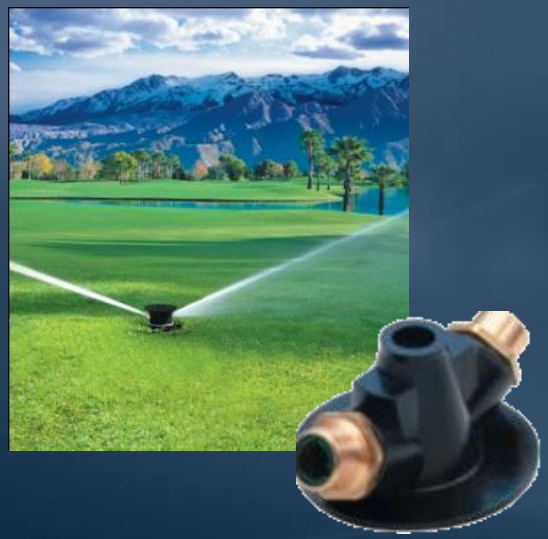
Cooling Tower Controllers

- **Conductivity Controllers**
  - Base rebate $625
- **pH Conductivity Controllers**
  - Base rebate $1,750

Landscape - Controllers

- **Weather Based**
  - Base rebate $25/station
- **Central Computer**
  - Base rebate $25/station
- **Soil Moisture Sensor System (NEW)**
  - Base rebate $25/station

Landscape - Nozzles



- **Rotating Spray Nozzles**
  - Base rebate $4 per nozzle
- **Large Rotary Nozzles**
  - Base rebate $13/set

Options for Commercial Customers Beyond the Regional Rebate Program

Water Savings Incentive Program

- **Encourage custom projects**
- **Eligible projects**
  - Industrial process
  - Irrigation system
  - Agricultural
- **Incentives**
  - $195/AF for measured savings
  - $150/AF for estimated savings
  - Up to 10 year life
  - Up to 50% of eligible project cost

Commercial Landscape Surveys

- No cost
- Minimum 1 acre irrigated area
- Commercial, institutional, public agencies, HOAs common areas
- Recommendations to improve water efficiency

Regional Turf Removal

- Online application process
- $2 per sq/ft (June)
- Agencies may add funding
- Some agencies may apply local rules

What Can Be Done at a Brewery?

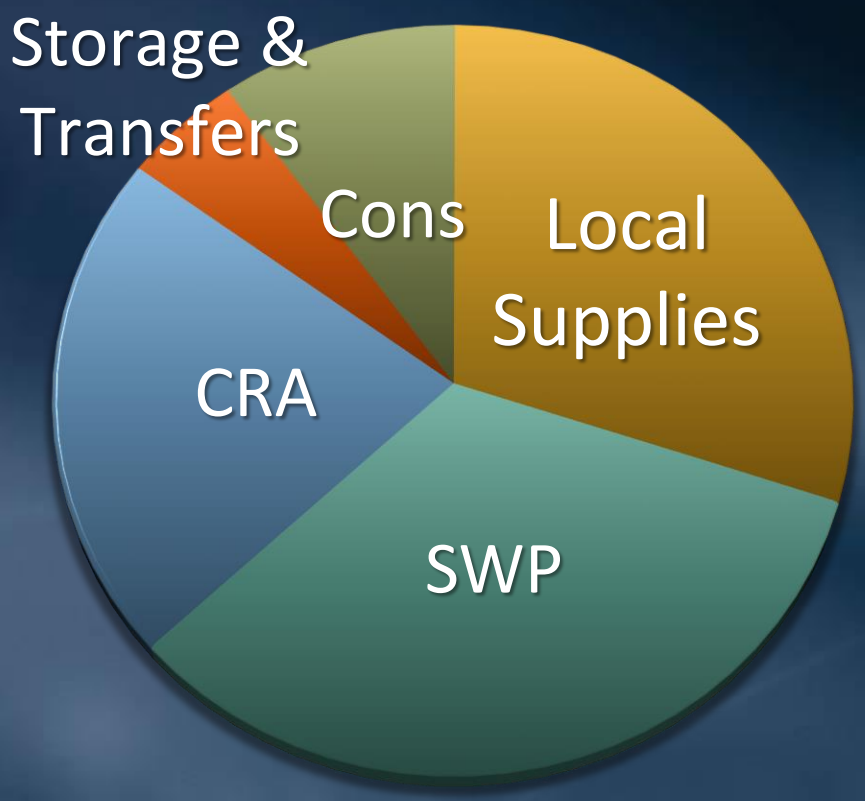
- Standard CII Devices
- Landscape Conservation
- Process Water Improvements
- Opportunity to showcase water use efficiency!

Stone Brewery Process Improvements

- Stone has already implemented a major improvement: Reverse Osmosis System
  - Allows for beneficial recirculation of process water
  - Reduced potable water demand by ~25%
- Other potential process improvements
  - RO water storage
  - Cooling Tower blow-down efficiency
- Water Efficiency Audit – April 2014

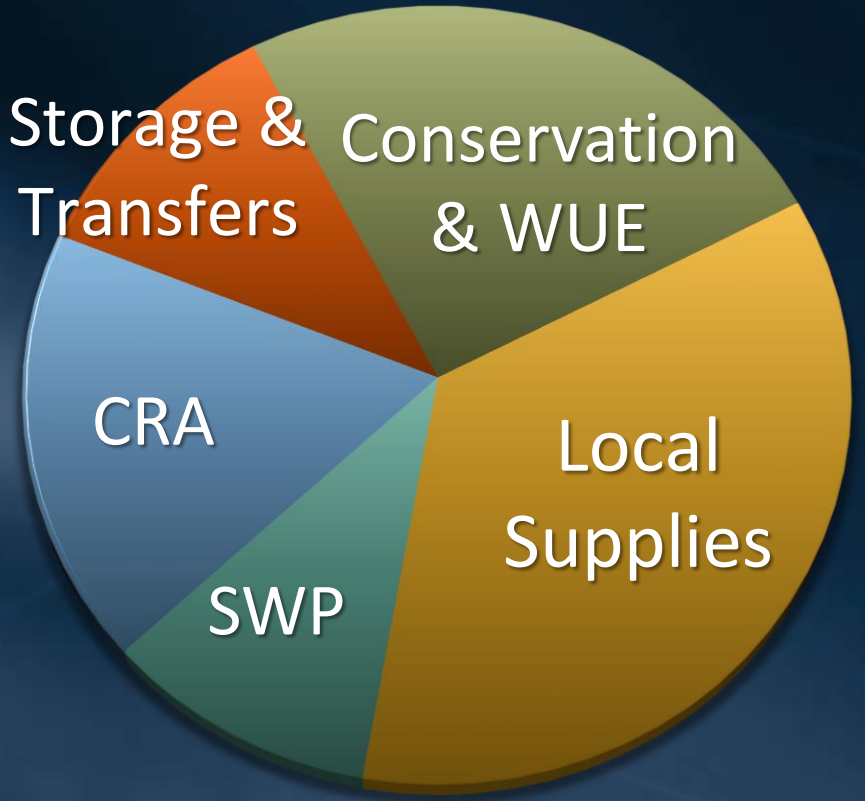
The IRP – A Long Term Plan for Water Supply Reliability

Diversification of Water Portfolio



Early 1990's

Heavy dependence on imported supply and SWP Diversions



2010 IRP Strategy

Emphasis on Conservation, Local Supplies, and Storage & Transfers

Three Component IRP Strategy

Blueprint for Adapting to Change

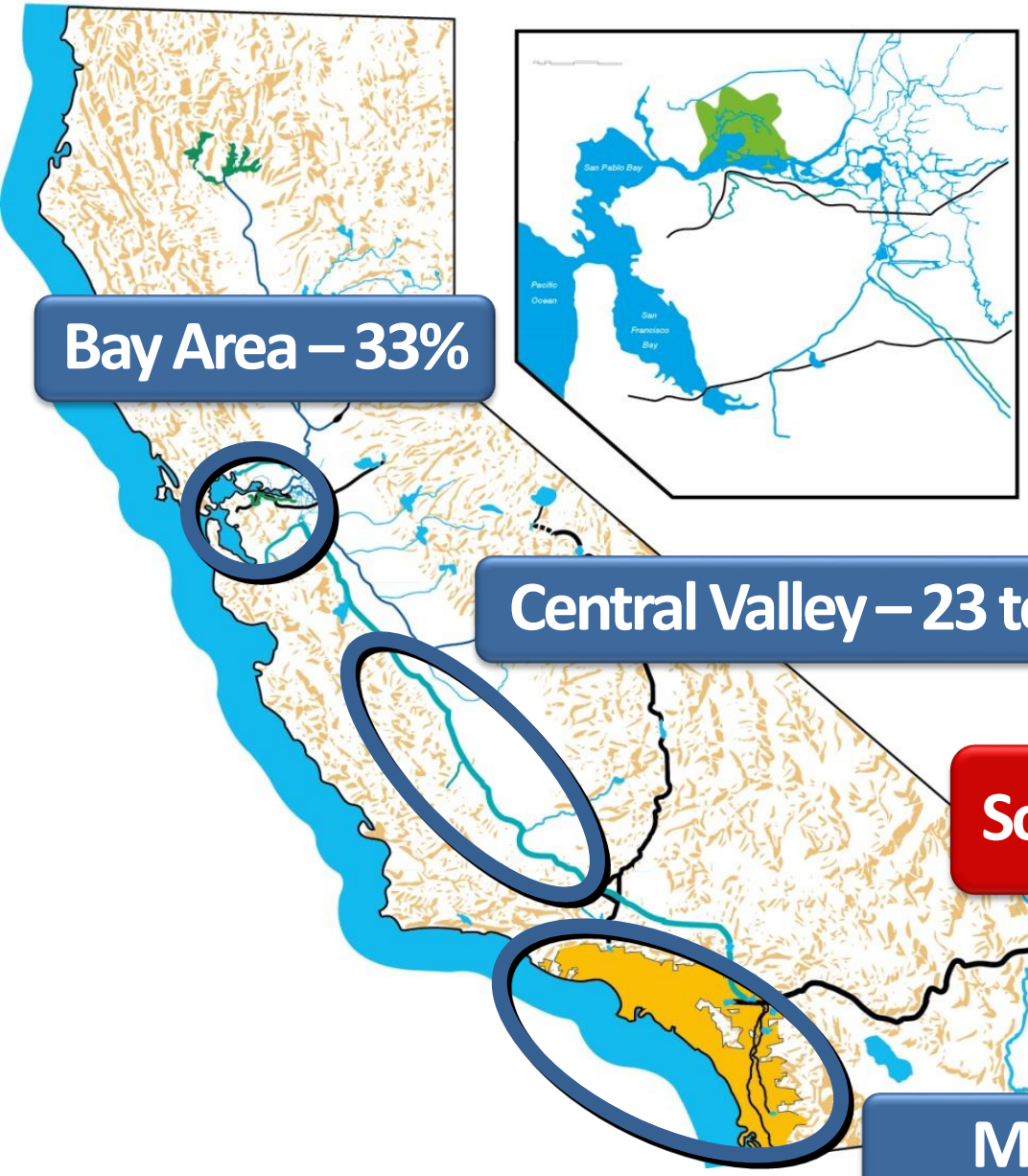
Component 1: Core Resource Strategy → Reliability Under Planned Conditions (eg. Historical weather)

Component 2: Supply Buffer → Adapt to Shorter-Term Uncertainty (Outside of planned conditions)

Component 3: Foundational Actions → Preparation for Long-Term Change (Climate Change, Supply Loss, Demands)

Addressing a Key Water Issue for California: The Bay-Delta Conservation Plan (BDCP)

California relies on water that flows through the Delta



State Water Project: Essential Baseline

- Southern California depends on a reliable baseline supply of water flowing through the Delta for:
  - Recycled water
  - Groundwater replenishment and recovery
  - Storage management
  - Blending/stretching other supplies
    - Water quality and salinity management
    - Conservation

Bay-Delta Conservation Plan

BDCP Project Costs

Improvements	Capital	O&M (Total 50 Years)	Funding Source
Conveyance	$14.5 billion	$1.5 billion	Water Contractors
Eco-Restoration & Other Stressors	$5.2 billion	$3.3 billion	Fed/State/Water Contractors/Other
TOTAL Capital/O&M	**$19.7 billion**	**$4.8 billion**	
TOTAL BDCP	**$24.5 billion**		

- Users pay for new conveyance facility & mitigation
- Beneficiaries pay for habitat conservation & statewide benefits
- $5 - 6/month per household for Southern Californians

Metropolitan's share is approximately 25 percent
Estimated costs from BDCP Administrative Draft Chapter 8 (May 2013) in undiscounted 2012 dollars.

Statewide Economic Report—Costs/Benefits of BDCP

- $5 billion in overall net benefits
- 177,000 construction and habitat restoration jobs created
- $84 billion in statewide business activity over 50-year life
- Avoidance of water shortages that could cost over 1 million jobs

Cost Comparison of Water Portfolio Projects

Metropolitan is committed to meeting future additional water supply needs through local resources and conservation

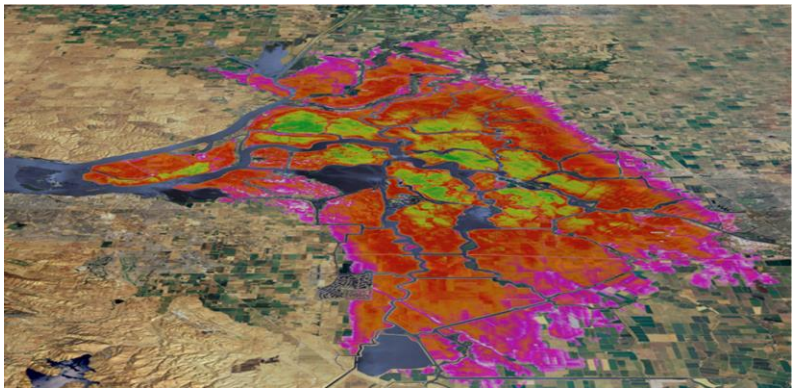
** **MWD Treated Water Rate with Delta Improvements (in 2013 dollars)***

-- Existing ($847/AF treated rate) + Delta Improvements ($138 - $166/AF melded rate) = $985 - $1,013/AF

Local project cost ranges are based on recent reports from member agencies

Risks of Doing Nothing

- **Impacts**
  - Pumping restrictions (supply reduced 30%)
  - Ecosystem decline
  - Decreased reliability
  - Increased cost
  - Stranded investments



- **Major Levee Failure**
  - Up to three-year disruption of water deliveries
  - $40 billion estimated impact to California's economy

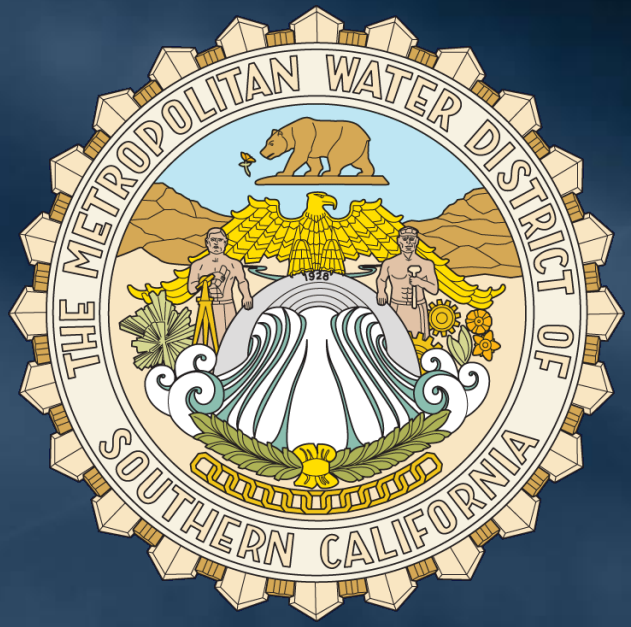
Source: DWR Delta Risk Management Study 2007 and 2009

What can you do?

Be informed.
Know the facts.
Get involved.
Our future depends on it.

Summary

- California's current drought is severe
- Conservation and Water Use Efficiency is an important part of managing current and future water supply reliability
  - Do your part and look into potential savings
- Continued water supply reliability requires investment in California's water future
  - Local supply, imported supply, and water use efficiency


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928