



# Planning a Sustainable Water Supply for Southern California

American Academy of Environmental Engineers & Scientists  
October 22, 2015

# Metropolitan Water District of Southern California

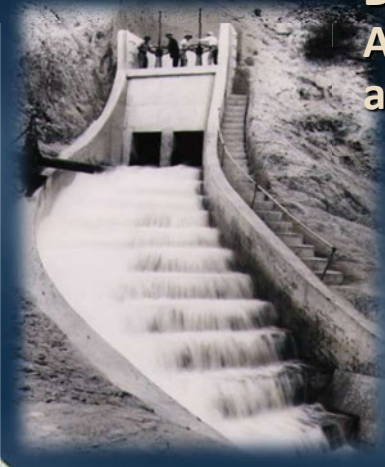


- Regional water wholesaler to 6 counties
  - 5,200 square mile service area
- 26 member agencies
- ~19 million residents
- Regional economy: \$1 trillion
- Retail demand:
  - 4 million acre-feet
  - Metropolitan supplies over 50% of retail demand

# Southern California Water Trends



Declining LA  
Aqueduct  
allocation



Reduced CRA  
deliveries



Los Angeles  
Aqueduct

Growing  
population

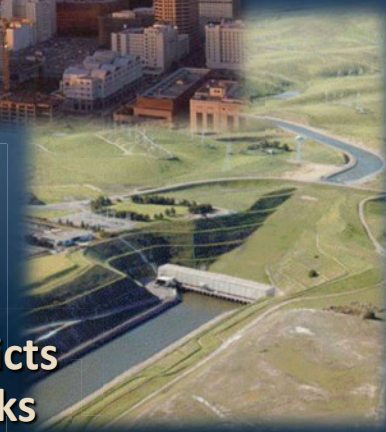


State Water  
Project

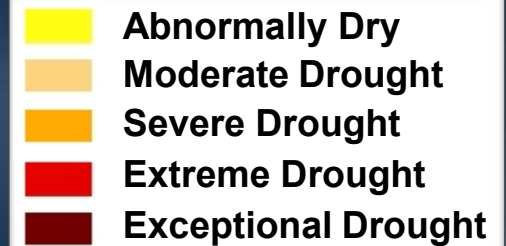
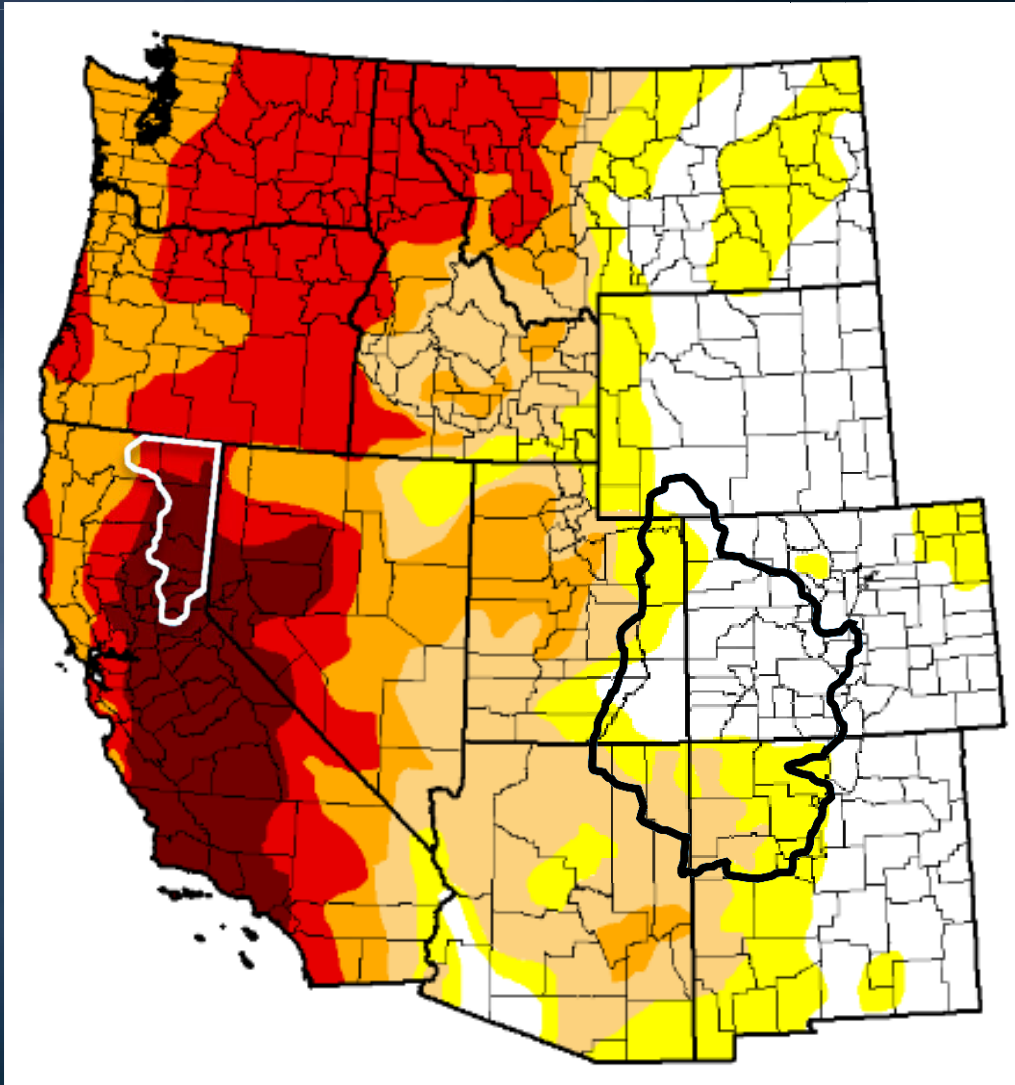
Colorado River  
Aqueduct

Local Supplies

Fishery conflicts  
cause cutbacks

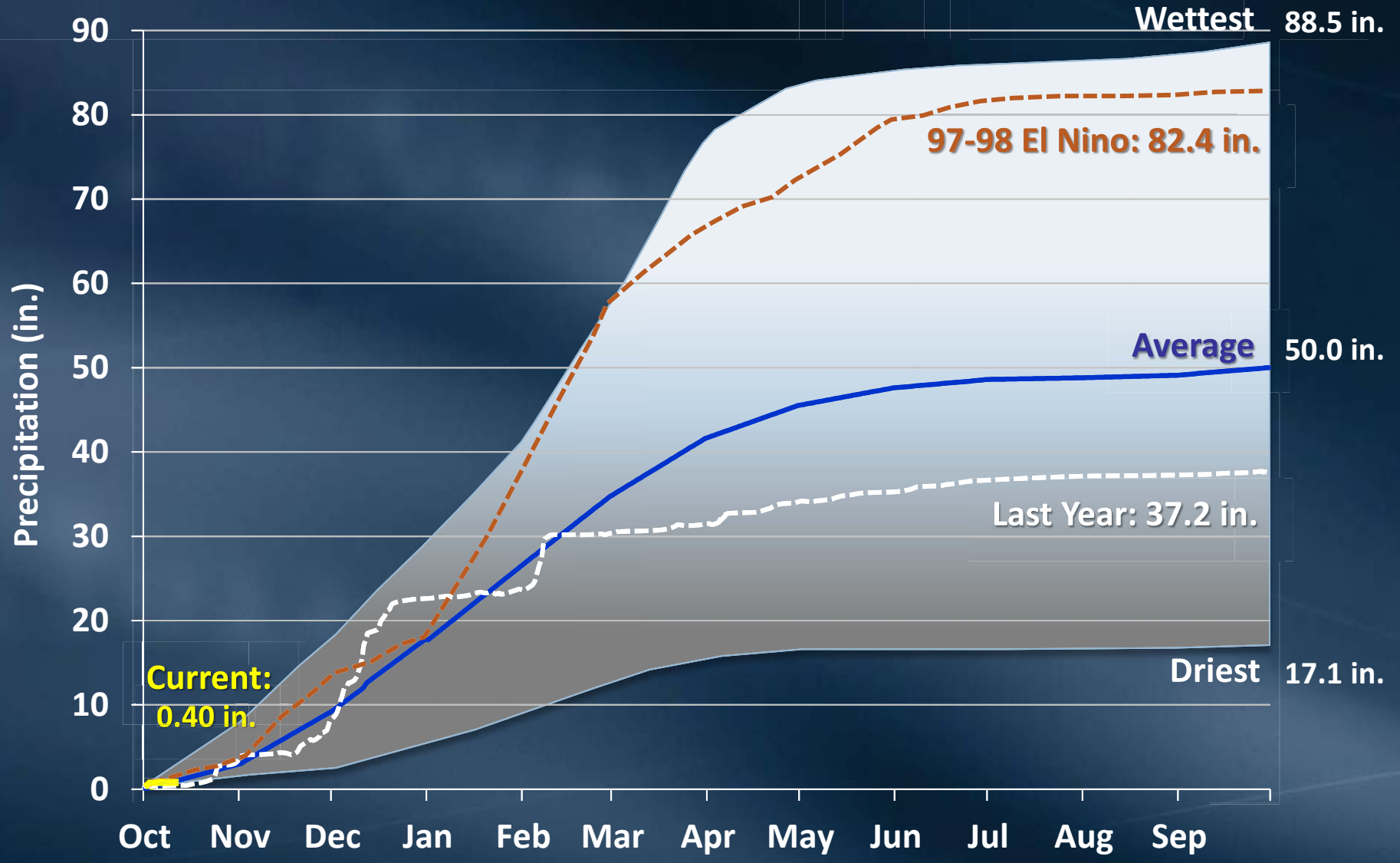


# U.S. Drought Monitor – October 2015

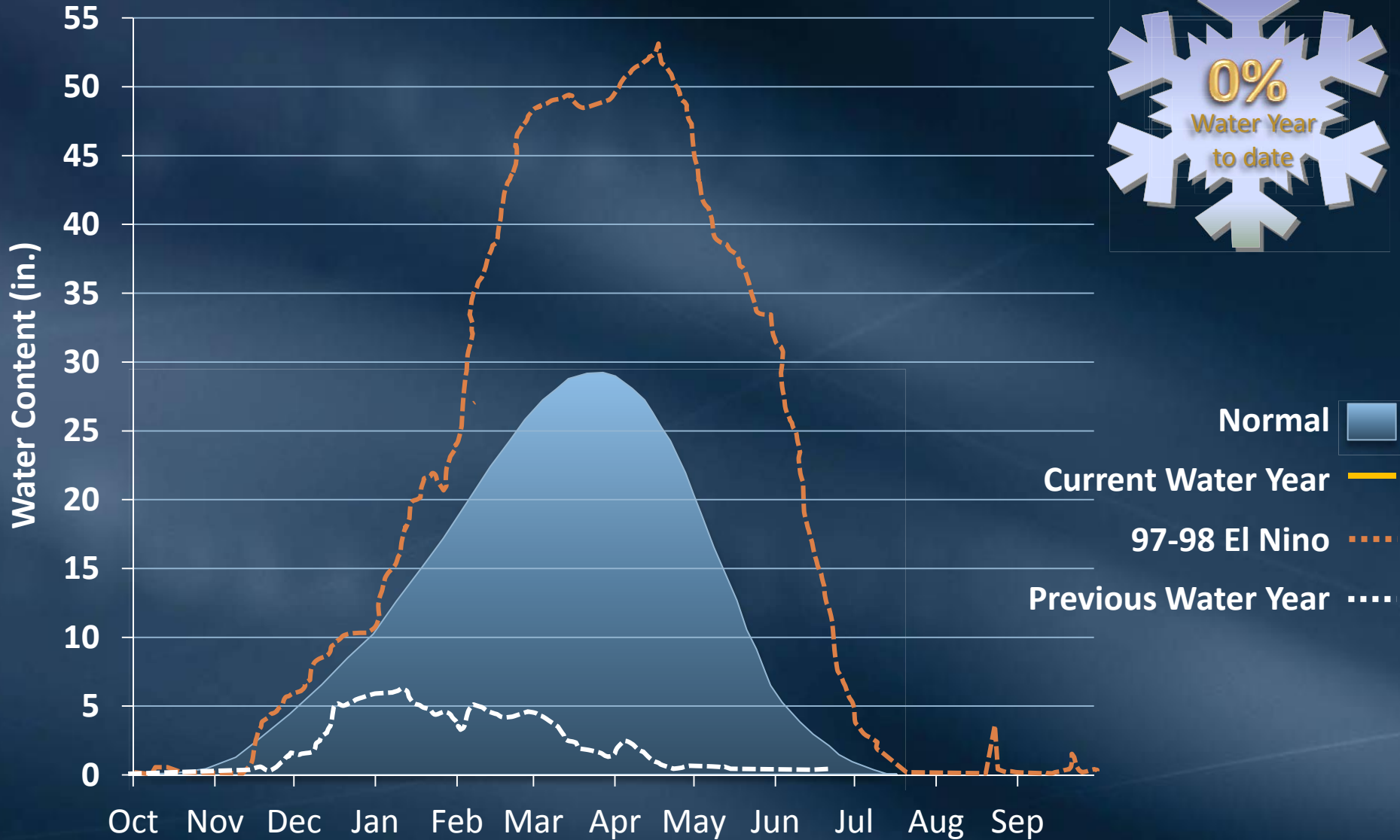


<http://droughtmonitor.unl.edu/>

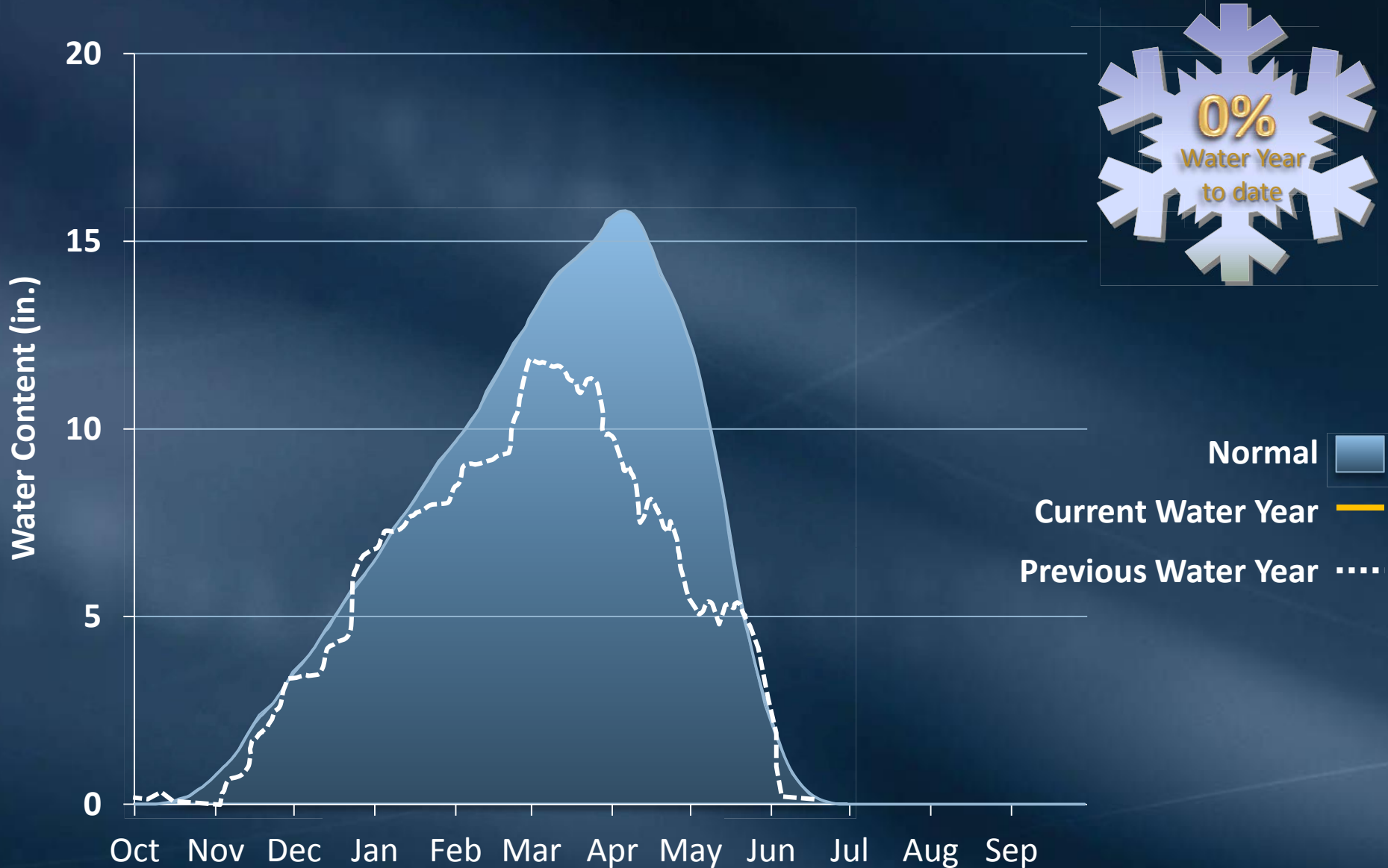
# Northern Sierra Rainfall - Cumulative



# Northern Sierra Snowpack

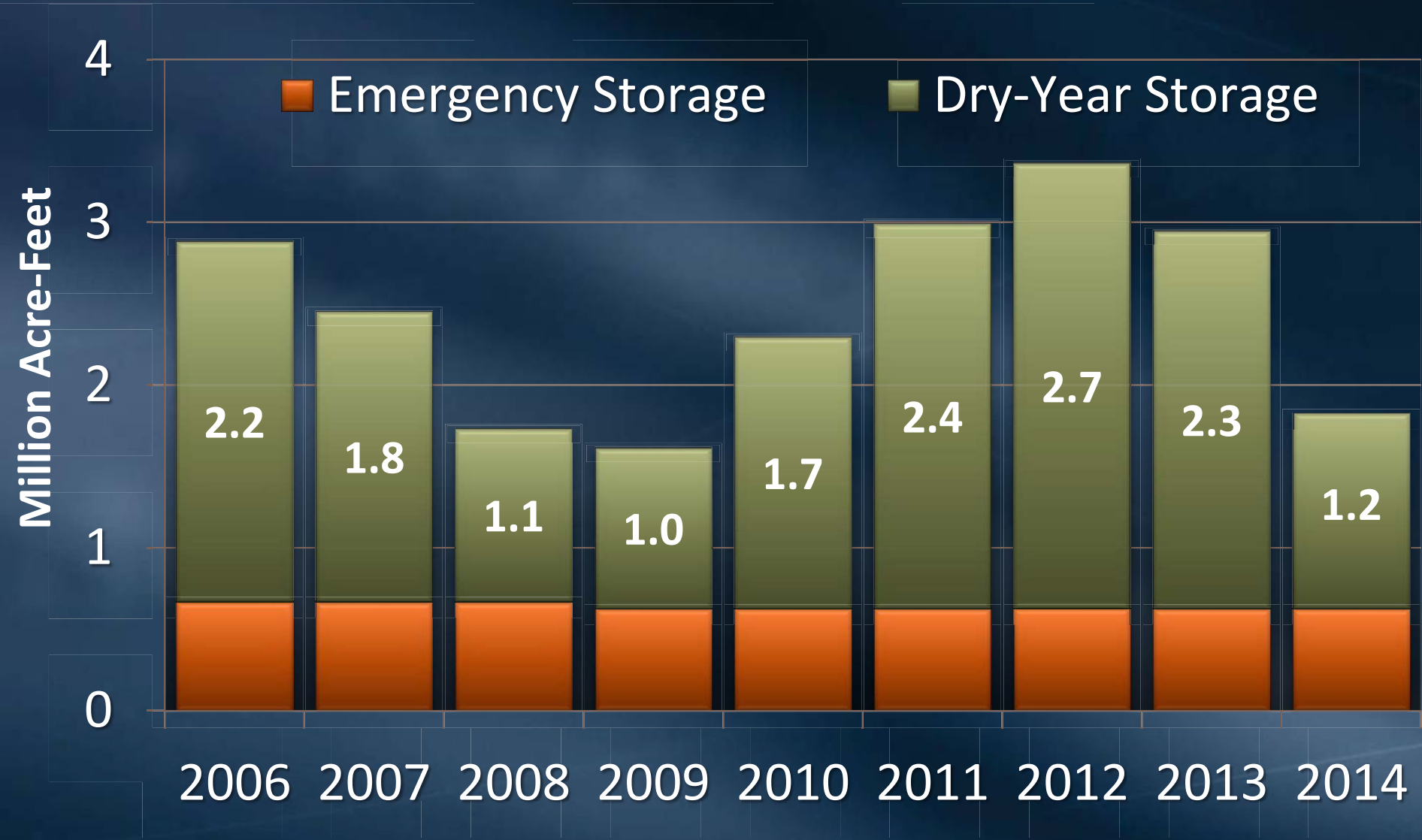


# Upper Colorado River Basin Snowpack



# Metropolitan Storage Reserves

End of Year Balances

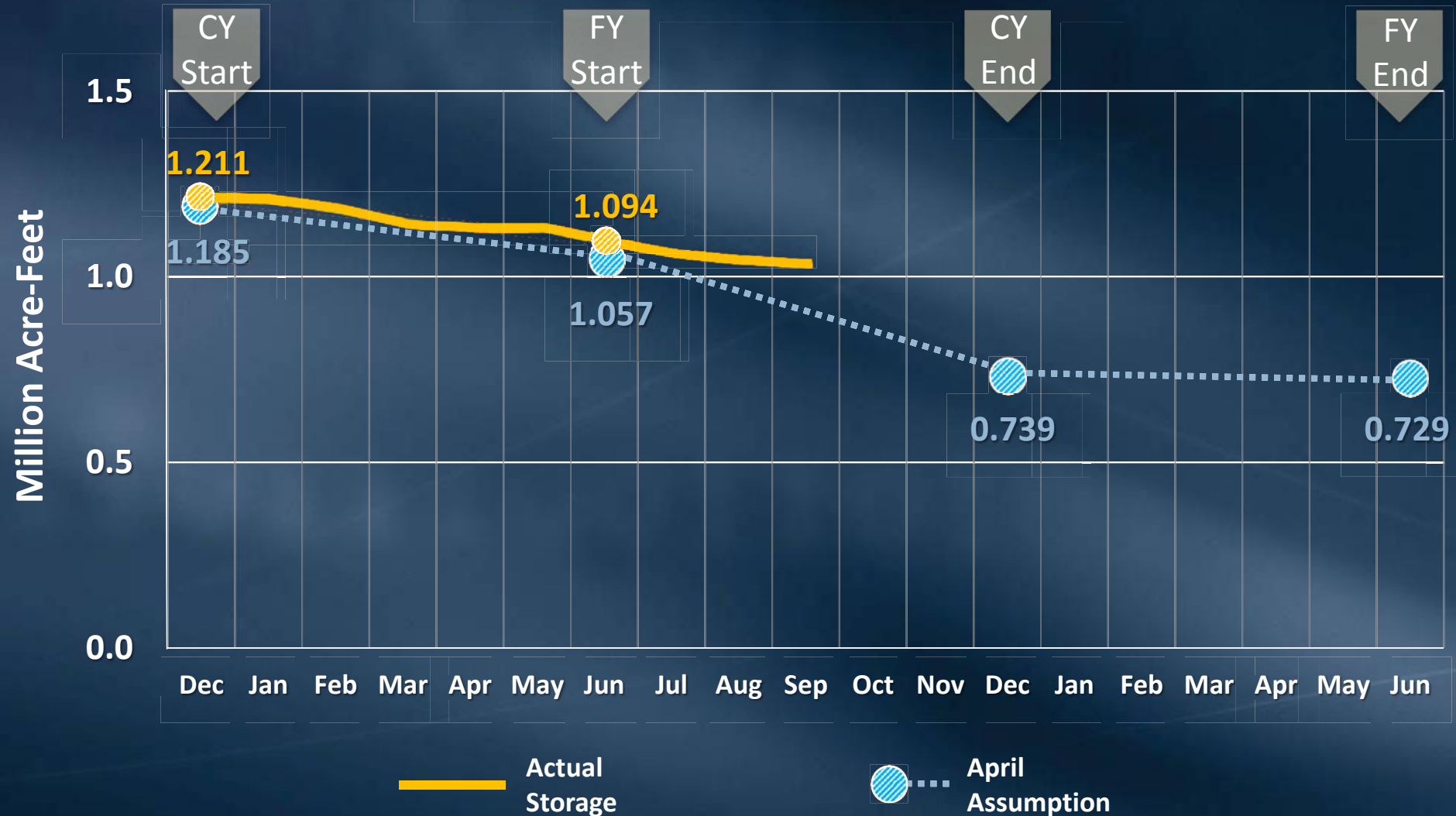




# Monthly Storage Reserve Tracking

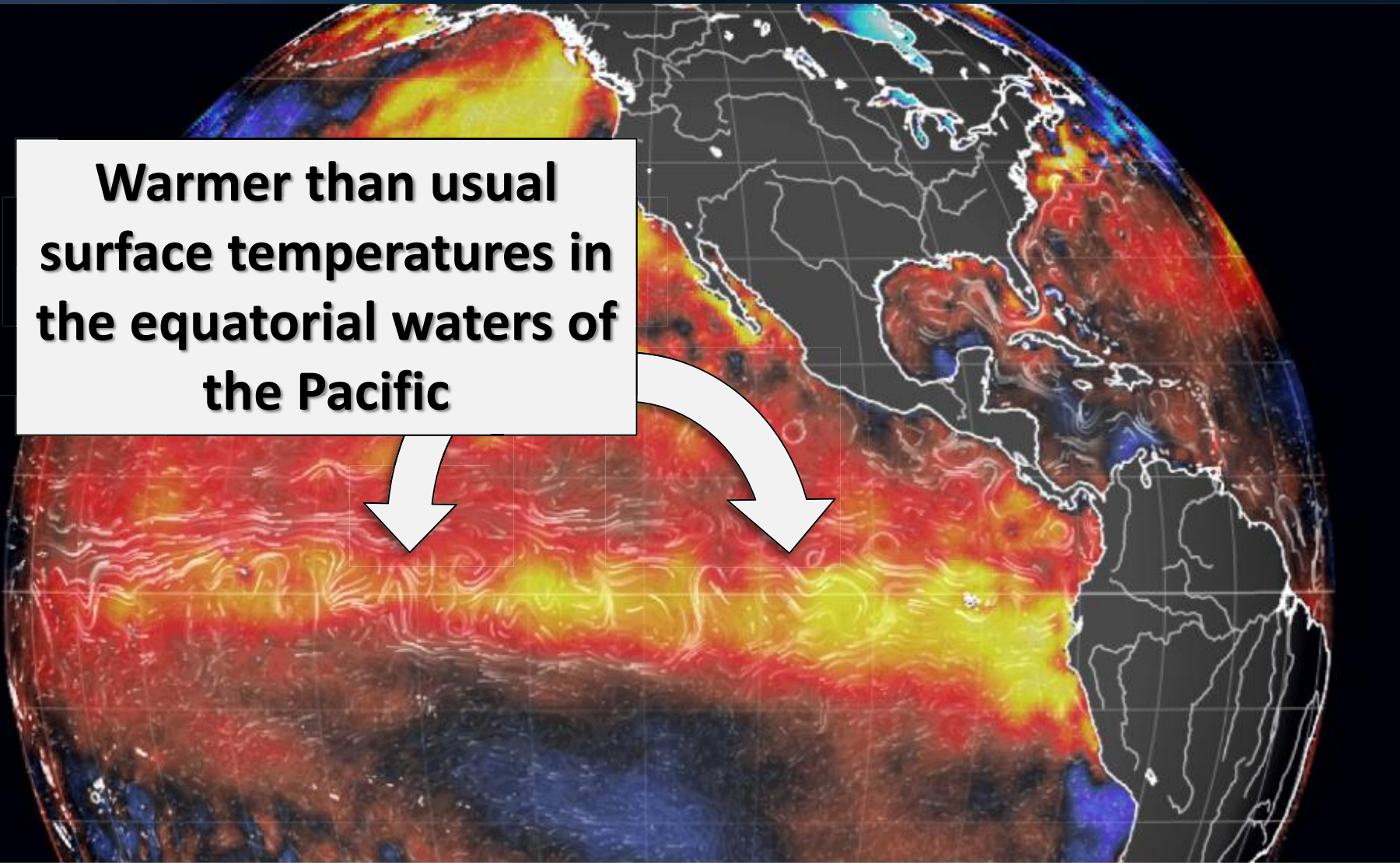
Assuming 20% SWP Allocation

## Dry Year Storage Reserves (MAF)



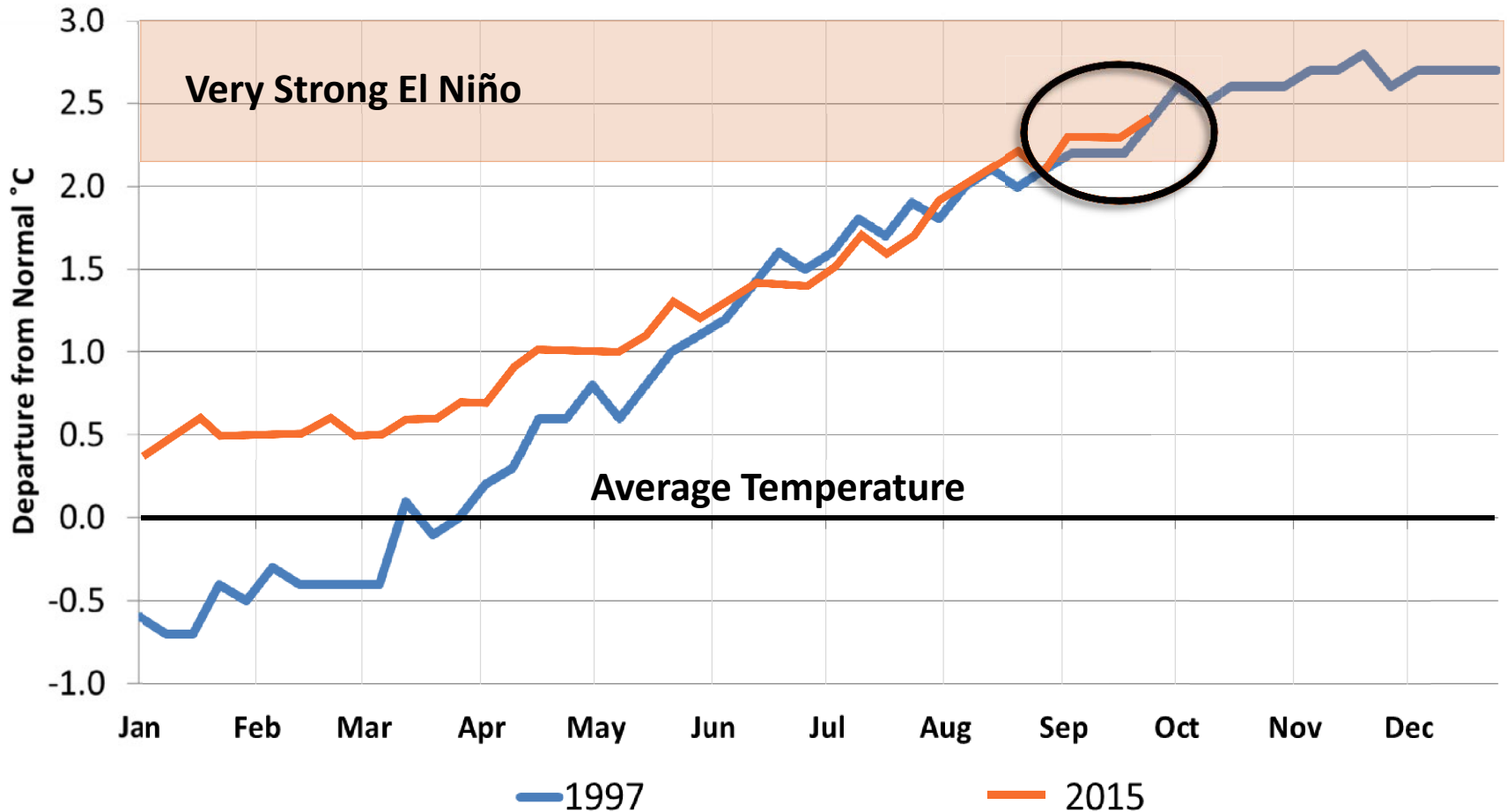
# What is El Niño?

**Warmer than usual  
surface temperatures in  
the equatorial waters of  
the Pacific**

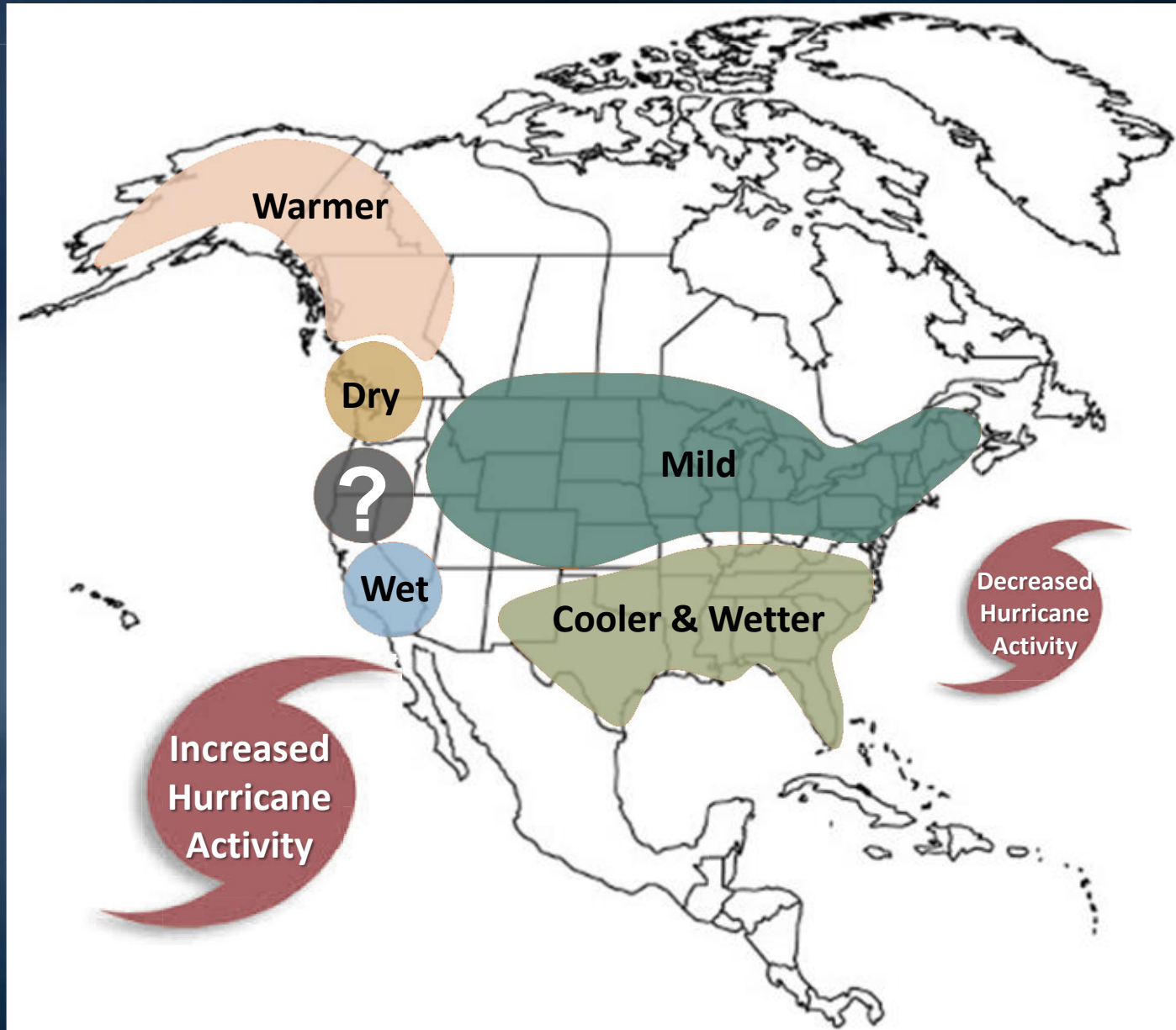


# Strongest El Niño in the Making?

Current Year Compared to Strongest El Niño on Record

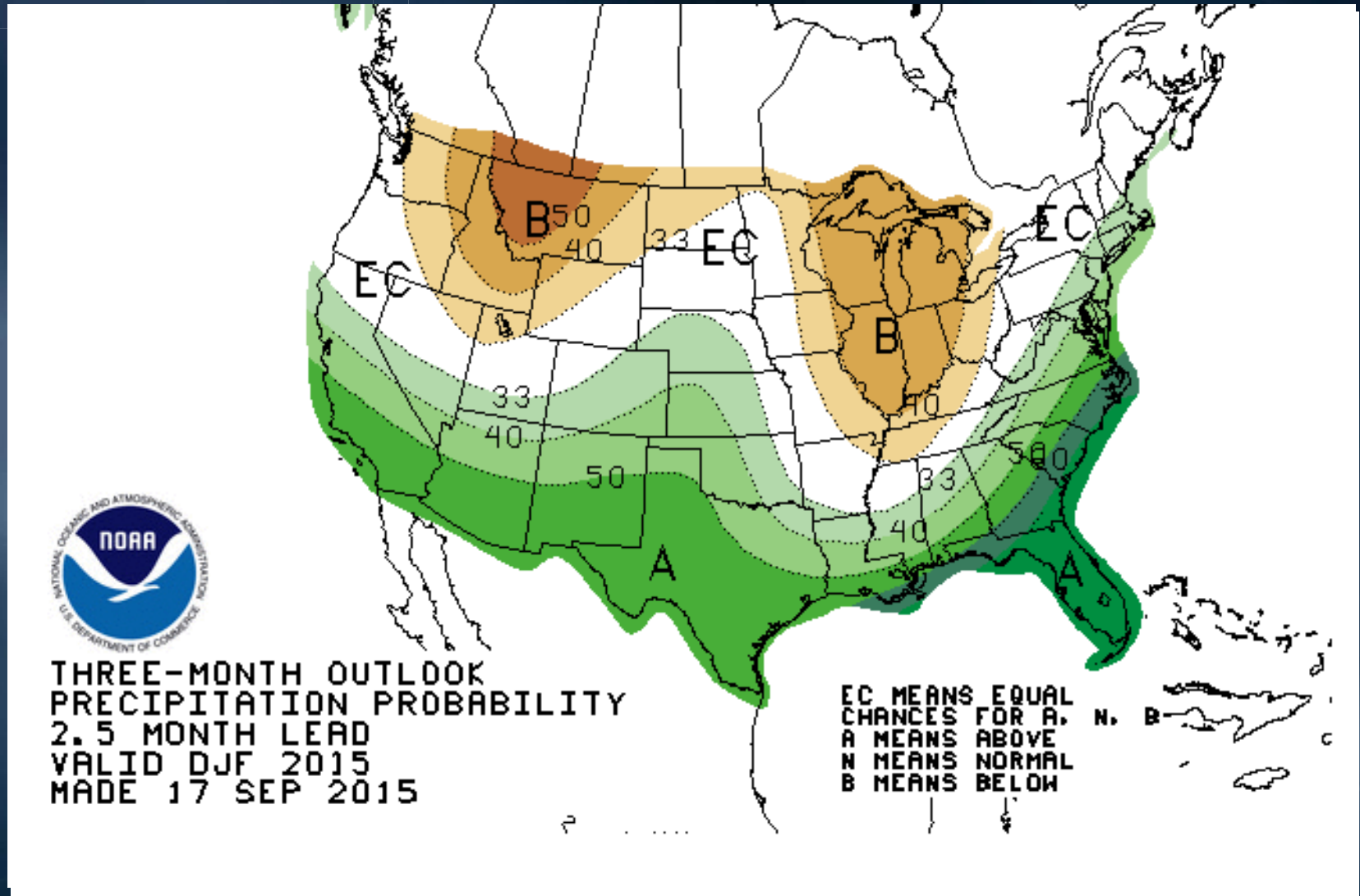


# What Could El Niño Mean for the U.S.?



# Three Month Precipitation Outlook

December 2015 – February 2016



# Water Delivery Reliability

Reliability

Water  
Supply

System  
Capacity

Infrastructure  
Reliability

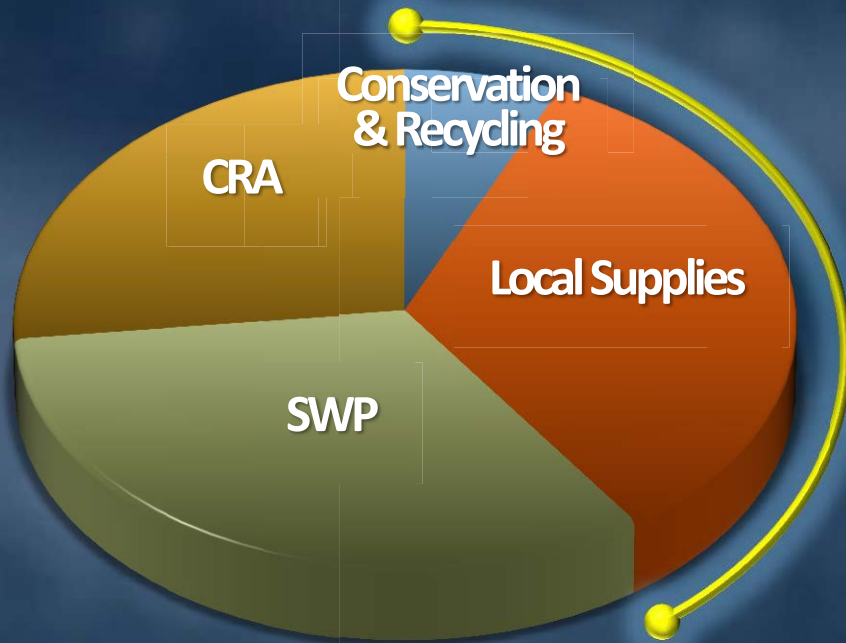
System  
Flexibility

Emergency  
Response



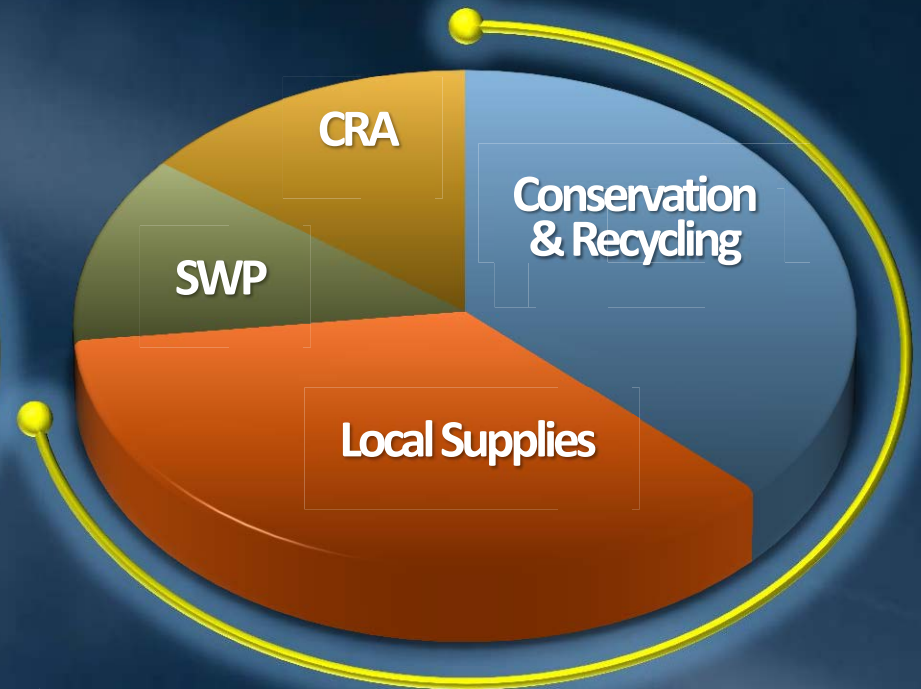
# Diversification of Water Portfolio

Integrated Water Resource Plan (IRP)



**Early 1990's**

*Heavy dependence on imported supplies*

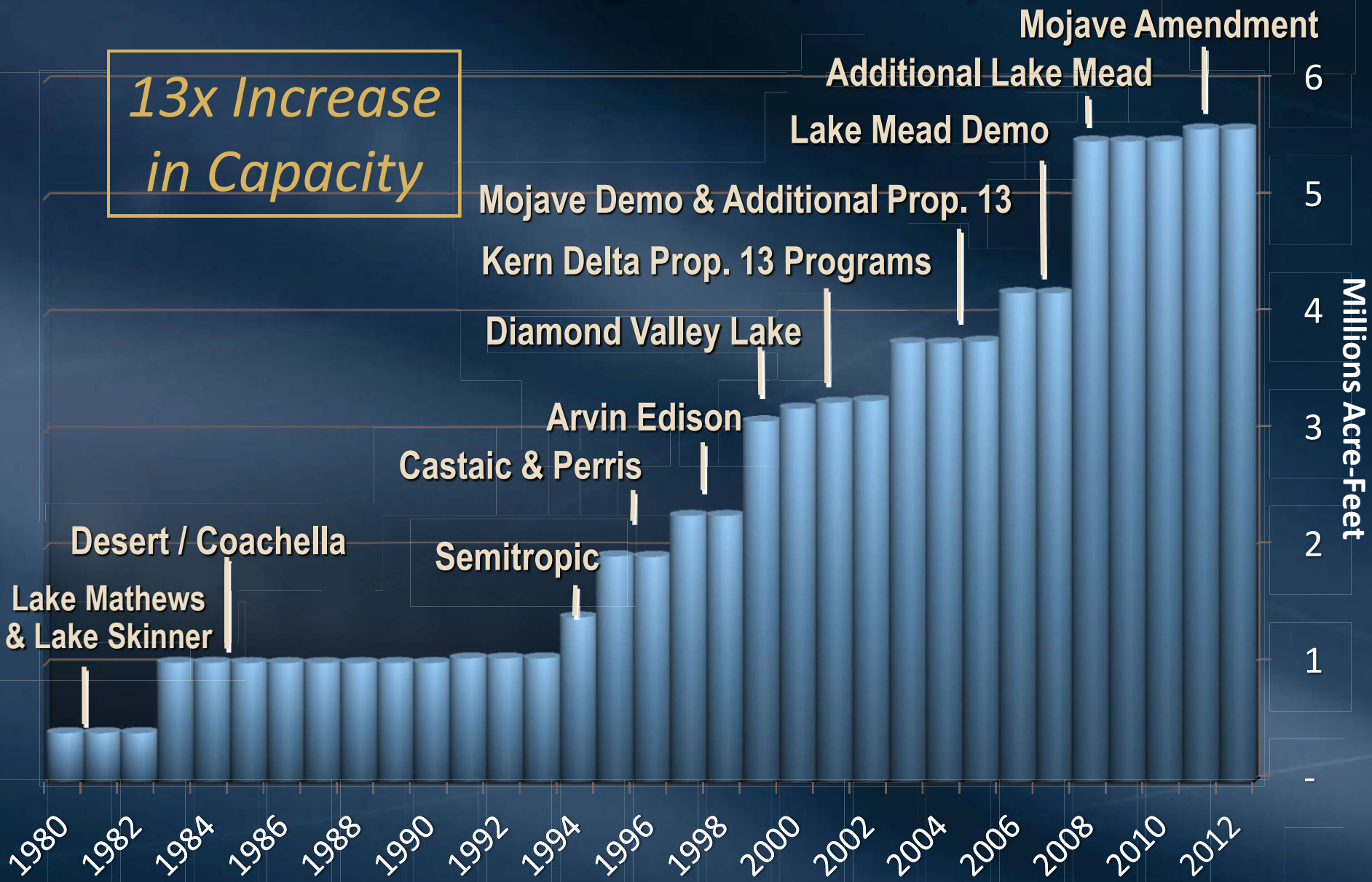


**2035 IRP Strategy**

*Emphasis on conservation, recycling & local supplies*

# Increased Storage Capacity

*13x Increase  
in Capacity*





# Diamond Valley Lake



- Constructed on coastal side of major faults
- Can directly supply 4 of 5 treatment plants
- With local production & conservation, can provide 6 months of emergency supply

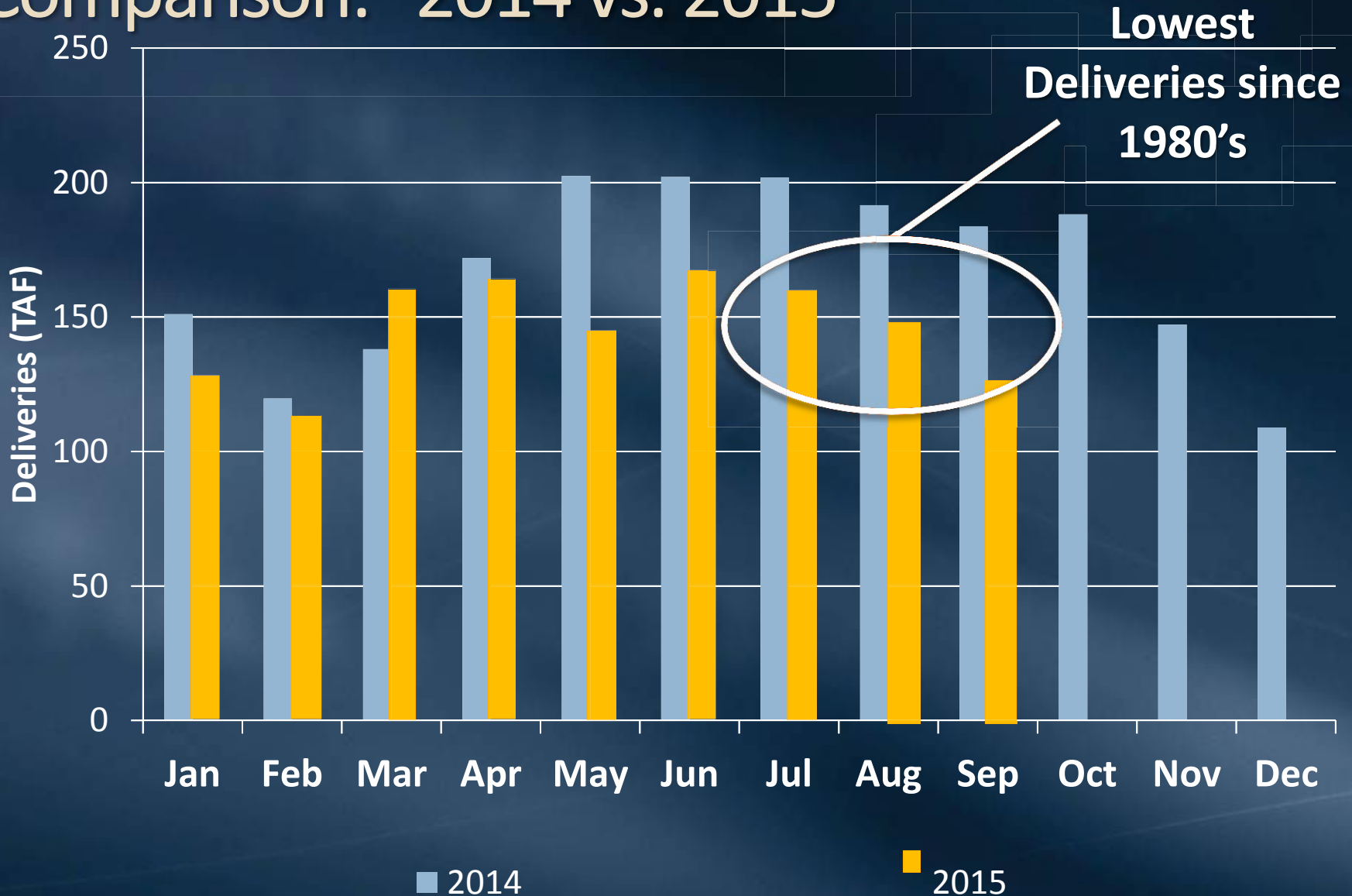
# Conservation



- Gov. Brown declaration of drought emergency
- “Perhaps the worst drought California has seen since records began being kept”
- Calls for citizens to do their part & reduce water use by 20%
- Clears the way for water transfers, exchanges & recycled water

# Deliveries to Member Agencies

## Comparison: 2014 vs. 2015



# California Water Fix

## CONVEYANCE

- Three intakes/pumping plants
- State-of-the-art fish screens
- Forebay temporarily stores water pumped from river
- Two gravity flow tunnels (30 miles long, 9,000 cfs)

## ECOSYSTEM RESTORATION

- 56 species
- ~150,000 acres



Sacramento  
River

Sacramento

North Diversion

Stockton

SWP Pumps

CVP Pumps

South Diversion

SJ River

# Potential Regional Recycled Water Supply Program

- Regional Approach Meets Resource Needs
  - Significant, reliable new supply
    - Up to 150 MGD
  - Favorably located to meet multiple member agency needs
  - Importance of timing
- Addresses Uncertainty
  - Climate change
  - Variations in existing supplies
  - Demographic & economic change
  - Emergencies & earthquakes

# Potential Regional Recycled Water Supply Program

