

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com



Reducing Demands in San Diego through Comprehensive Shortage Management Options

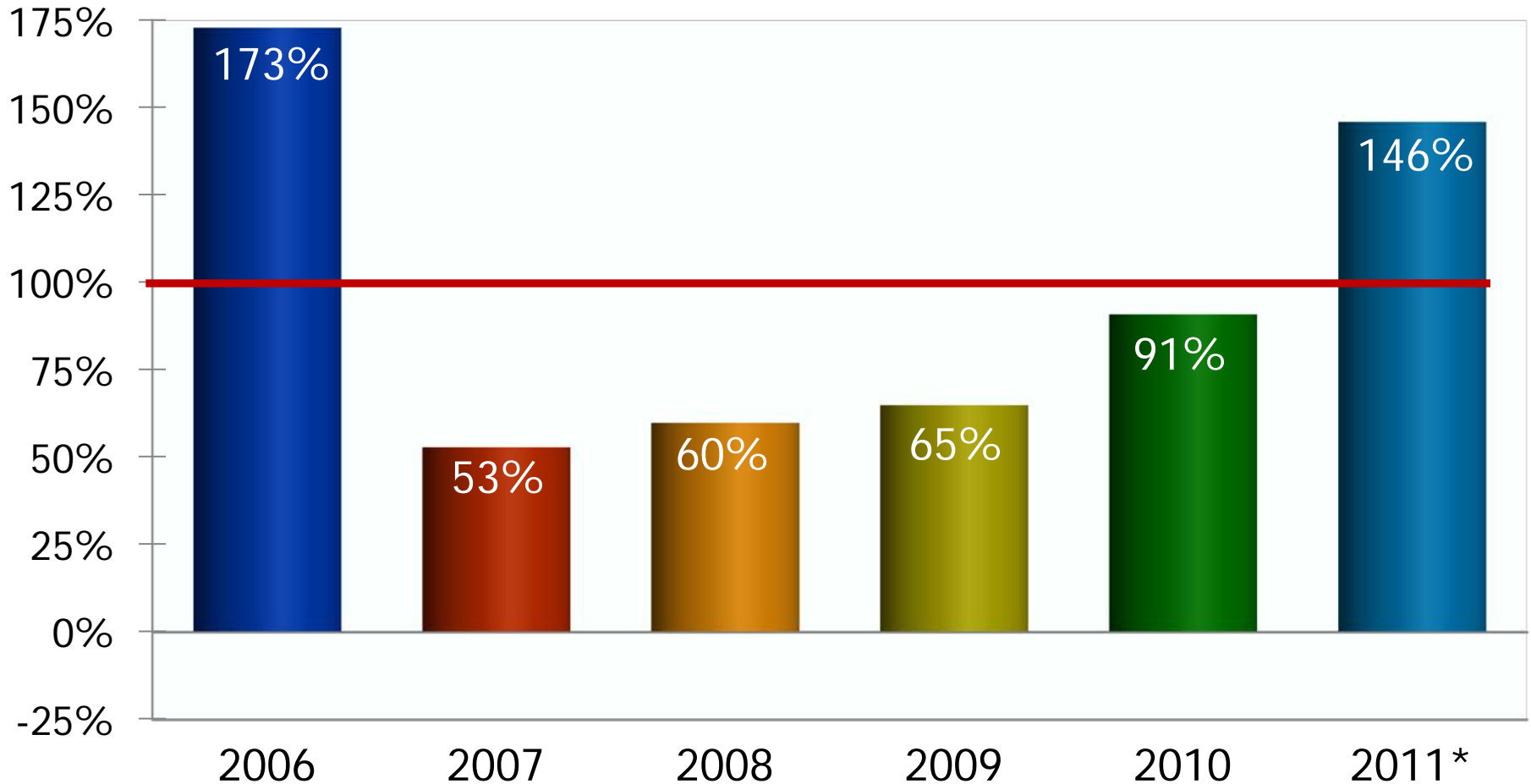
Plus...Observations and Follow-up Actions
Based on "Lessons Learned"



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San Diego County Water Authority

Dry-Year Conditions: 2007-2009

Average Water Year Statewide Runoff



Figures based on major rivers in California

**Through August 31, 2011*

What a Difference a Year can make!

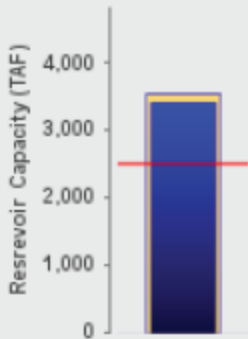


Reservoir Conditions - Lake Oroville



Lake Oroville Conditions

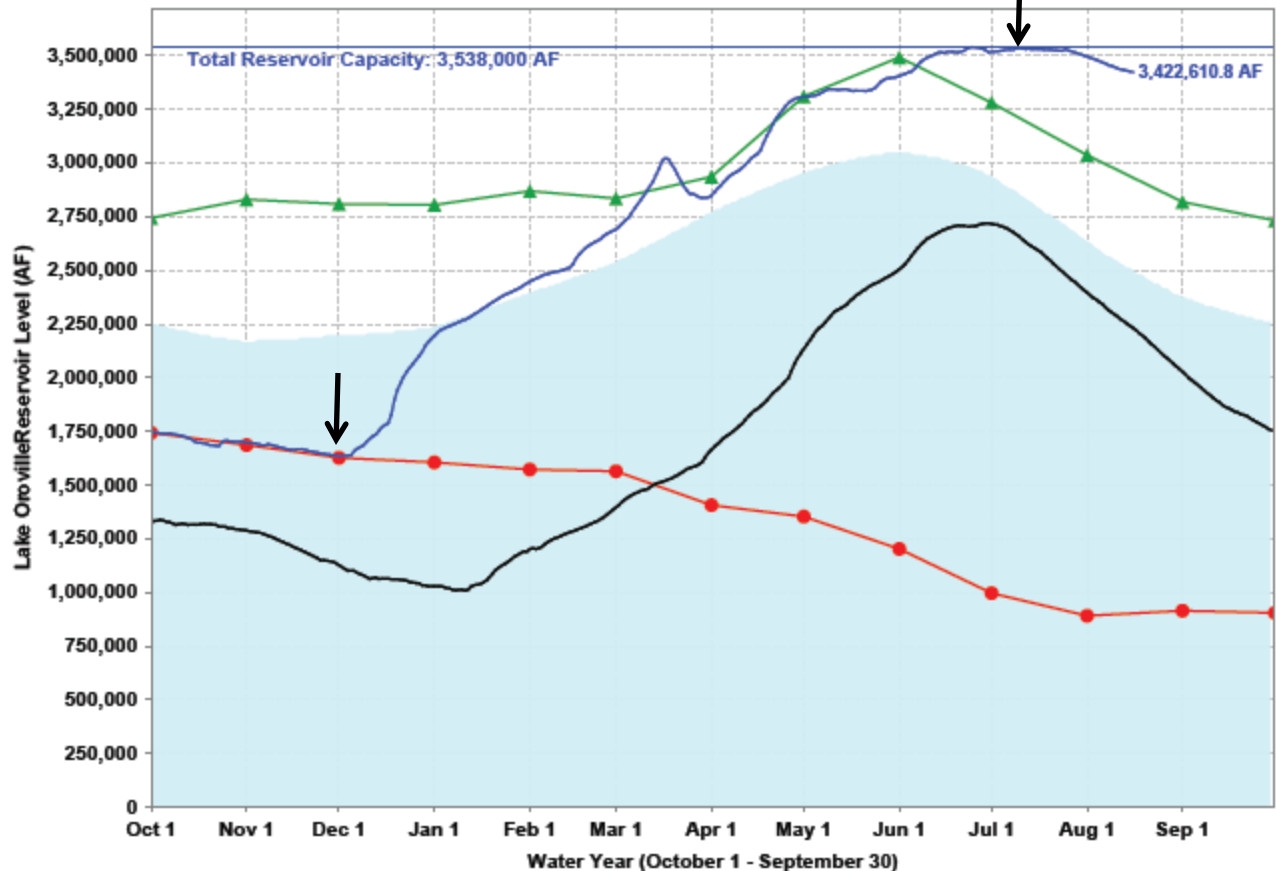
(as of Midnight - August 16, 2011)



Current Level: 3,422,610.8 AF

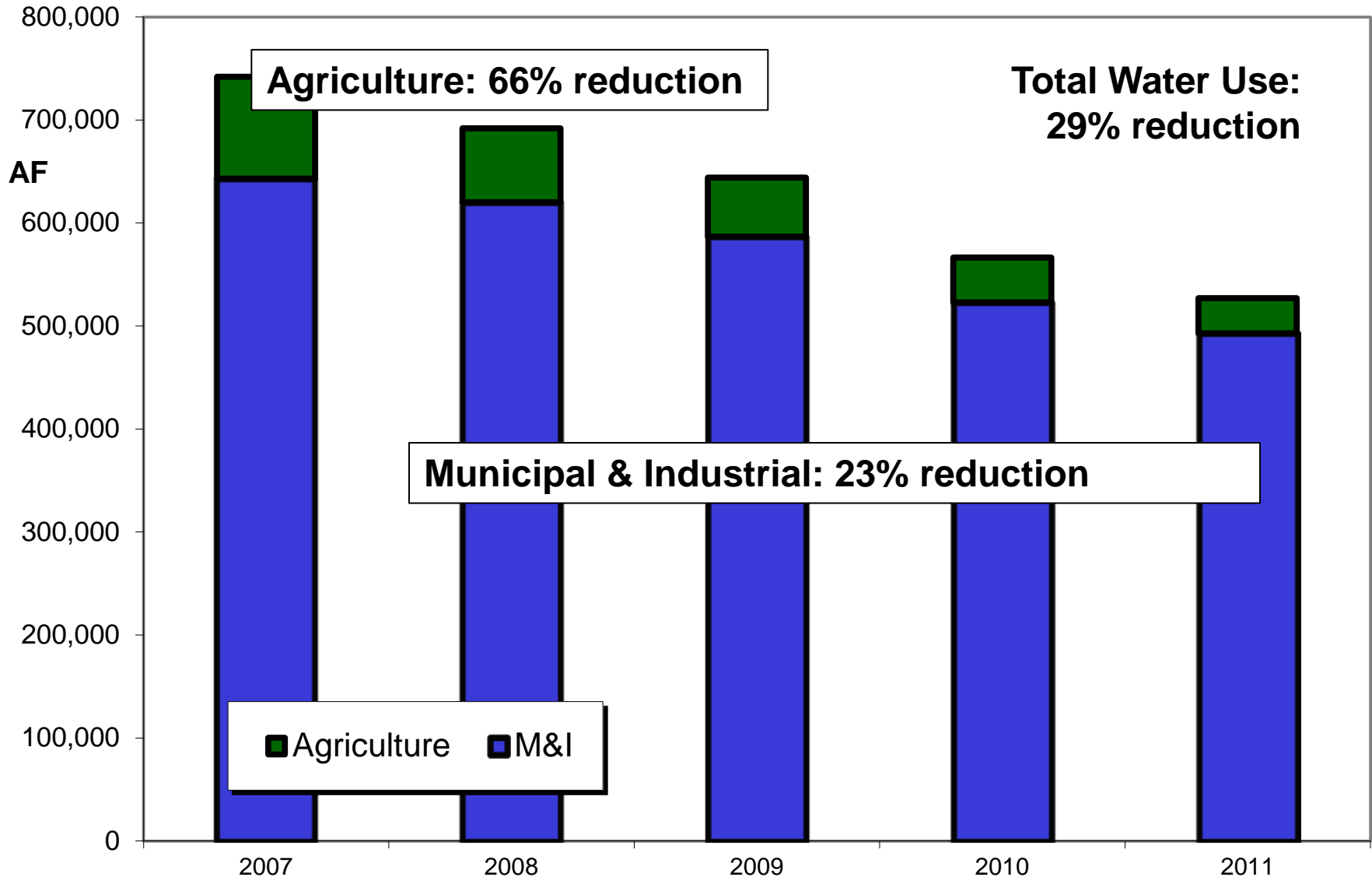
97% (Total Capacity) | 137% (Historical Avg.)

Lake Oroville Levels: Various Past Water Years and Current Water Year, Ending At Midnight August 16, 2011



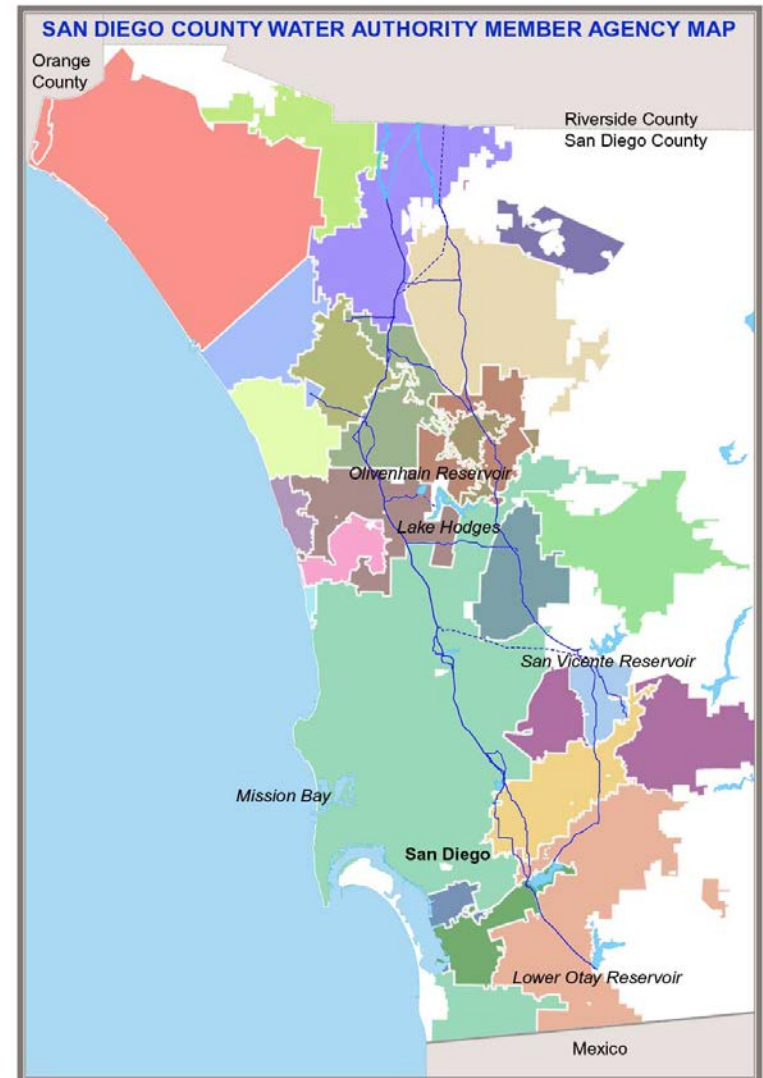
Historical Average — Total Reservoir Capacity — 1976-1977 (Driest) — 1982-1983 (Wettest) — 2009-2010 — Current: 2010-2011

San Diego County Water Authority Total Water Use - M&I and Agricultural FY's 2007-2011

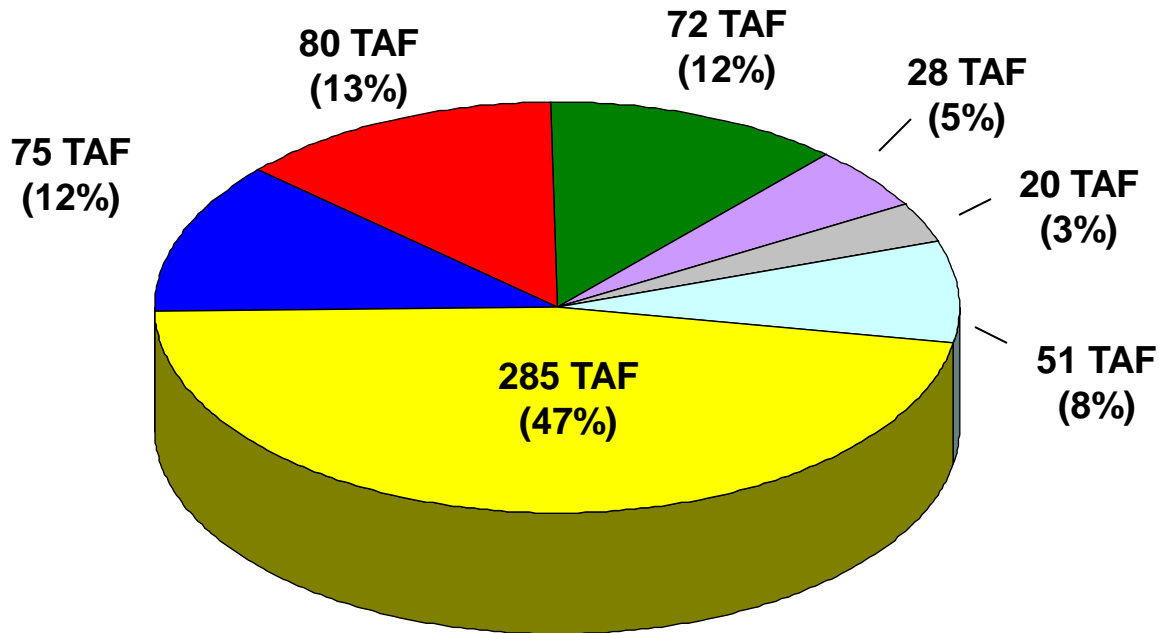


San Diego County Water Authority








- Wholesale water agency created by State Legislature in 1944
 - 24 member agencies
 - 36-member board of directors
 - Serves 3 million people and supports region's \$160 billion economy
- Service area
 - 920,000 acres
 - 97% of county's population



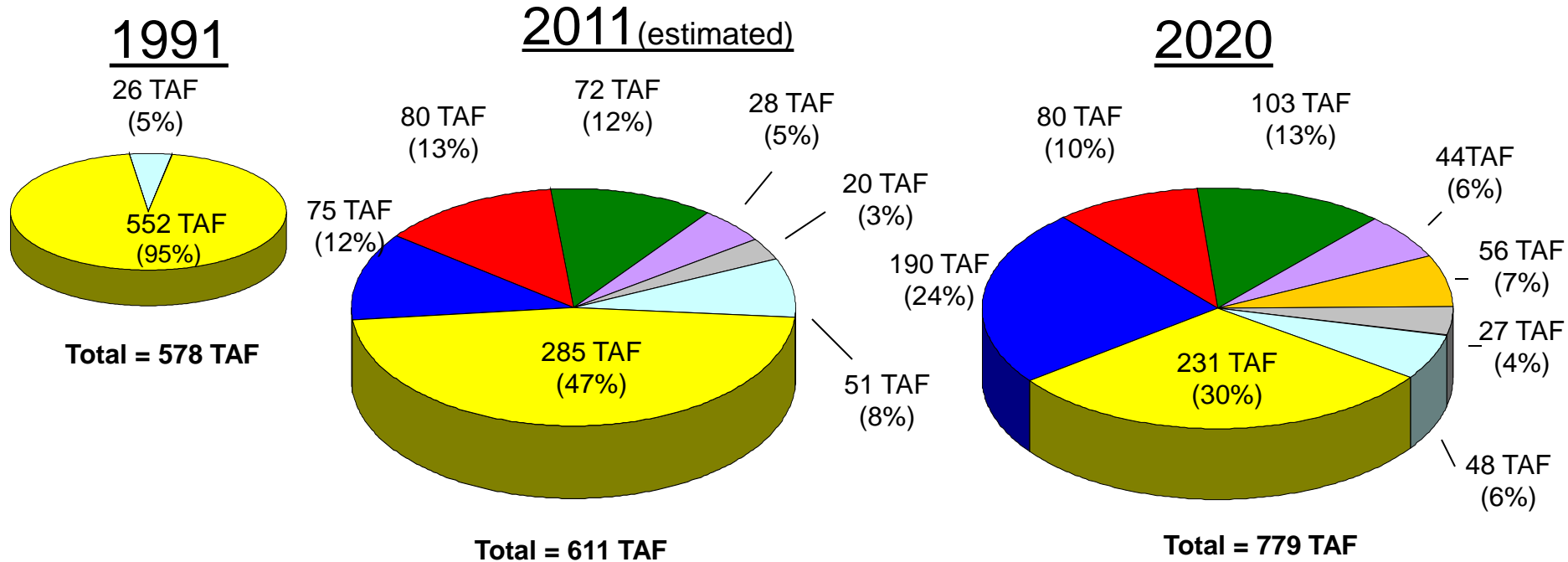
San Diego Regional FY11 Water Supply Portfolio (estimated)



Total = 611 TAF

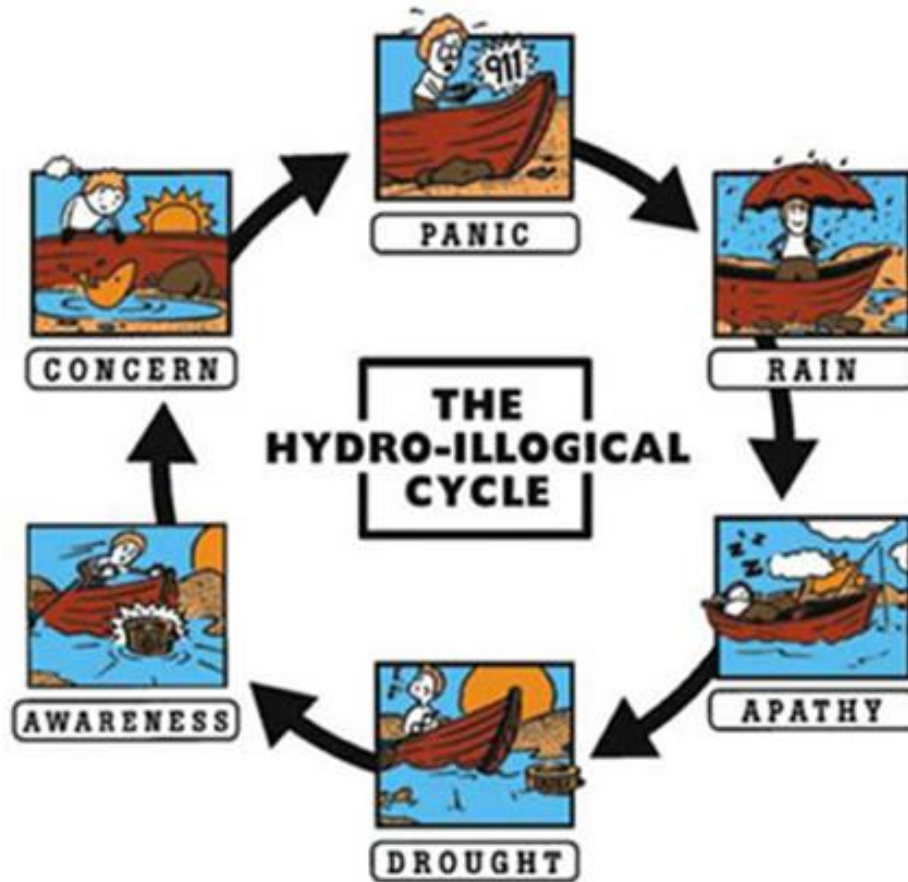
- | | |
|--|---|
|  Metropolitan Water District |  Recycled Water |
|  Imperial Irrigation District Transfer |  Groundwater |
|  All American & Coachella Canal Lining |  Local Surface Water |
|  Conservation (existing and additional) | |

Increasing San Diego County's Water Supply Reliability through Supply Diversification



- Metropolitan Water District
- Imperial Irrigation District Transfer
- All American & Coachella Canal Lining
- Conservation (existing and additional)
- Recycled Water
- Seawater Desalination
- Groundwater
- Local Surface Water

Importance of Drought Management Planning – Avoid Panic!



© National Drought Mitigation Center

Water Authority's Water Shortage and Drought Response Plan (WSDRP)

- Serve as regional guide
- Avoid crisis planning
- Be prepared with orderly, progressive approach
- Provide regional actions to manage shortage conditions
 - Including method to allocate supplies
- Meet state law requirements
 - Urban Water Management Planning Act

Actions to Manage Shortages within San Diego Region (2007-2011)

- Implementation in accordance with WSDRP
 - Orderly, progressive approach

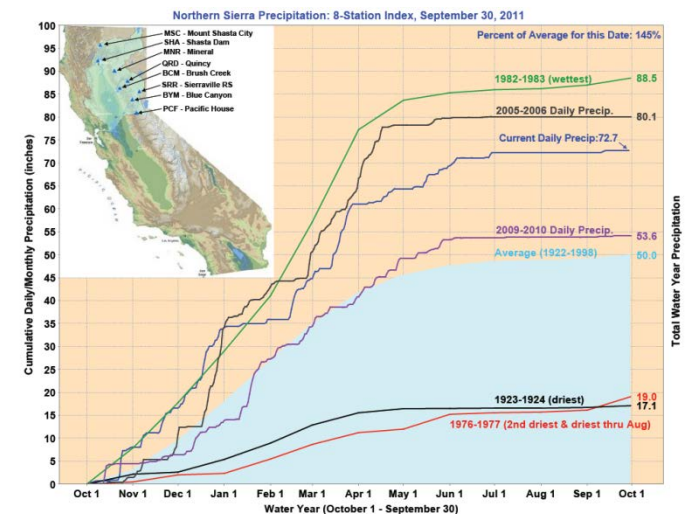
Date	Action	Major Activities
2007	Call for voluntary conservation	<ul style="list-style-type: none"> ✓ 20 Gallon Challenge ✓ Media Campaign
2008	Supply augmentation measures	<ul style="list-style-type: none"> ✓ Secured dry-year transfers ✓ Acquired carry-over storage supplies
2009/ 2010	Allocation of supplies to member agencies per WSDRP	<ul style="list-style-type: none"> ✓ Utilized dry-year transfers ✓ Declared Drought Response Level 2 <ul style="list-style-type: none"> ○ Mandatory Water-Use Restrictions ○ Drought Conservation Pricing
2011	Discontinued allocations	<ul style="list-style-type: none"> ✓ Reinforced continued water-use efficiency

Regional Shortage Response Actions

Voluntary Stage

Activated DMP May 2007 - voluntary stage

- Teams formed and began meeting
 - Internal Drought Cabinet
 - Member Agency Advisory Team
 - Member Agency Drought Communication Team
- Began monitoring supply conditions
 - Local and imported
 - Monthly reports to Board and member agencies



Regional Drought Response Actions

Voluntary Stage (cont...)

- Instituted 20-Gallon Challenge Program
 - Asks everyone to voluntarily save 20 gallons per person, per day
 - Emphasized specific water-saving tips at www.20gallonchallenge.com
- Launched \$1.8 million regional media campaign
 - Focus on reducing outdoor watering
- Goal under voluntary: 10%
 - Achieved approximately 5%



Regional Drought Response Actions

Supply Enhancement Stage

December 2007 - Enacted supply enhancement stage

- Acquire dry-year supplies to reduce potential shortage
 - Established storage accounts in local surface reservoirs
 - 41,000AF dry-year carry-over supplies
 - Acquired Central Valley Storage
 - Approx. 16,000AF (net) transfer supplies stored
 - Acquired Spot (one-year) water transfers
 - Approx. 15,000 AF (net) used in 2009



Water Authority's Model Drought Response Ordinance

- Provide regional consistency
- Core water-use restrictions
 - Prohibit wasteful water practices
 - Progressive severity of restrictions
- At more severe levels:
 - Customer allocations
 - Restrictions on new meters
 - Exemption for demand offset
- All member agencies updated ordinances
 - Consistent levels
 - Restrictions vary slightly



Water Authority Model Ordinance

Progressive Severity of Restrictions

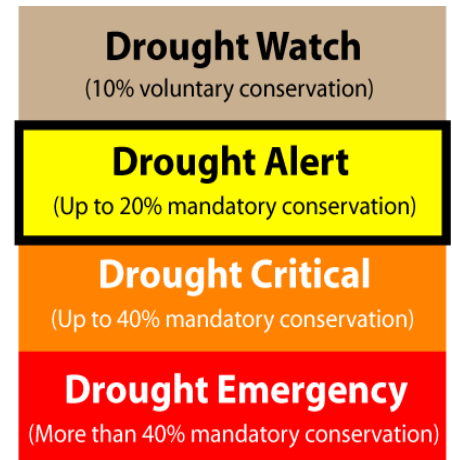
Level	Key Measures (not all measures included)
1 Voluntary Up to 10%	<ul style="list-style-type: none"> ■ Basic water waste measures <ul style="list-style-type: none"> ■ Time of day watering ■ No run-off
2 Mandatory Up to 20%	<ul style="list-style-type: none"> ■ Level 1 restrictions become mandatory ■ Limit watering time (10 min/station) ■ Assigned watering days (3 days – summer /1 day – winter)
3 Mandatory Up to 40%	<ul style="list-style-type: none"> ■ Levels 1,2 restrictions apply ■ Assigned watering days (2 days – summer/1 day – winter) ■ Restriction on issuance of meters ■ Ability to establish customer water allocation
4 Mandatory Above 40%	<ul style="list-style-type: none"> ■ Levels 1,2,3 restrictions apply ■ Prohibit landscape irrigation (with some exceptions)

Regional Drought Response Actions

Supply Allocation/Mandatory Cutback Stage

April 2009 – Moved to mandatory cutback stage (allocations)

- In response to allocations from Metropolitan Water District (MWD) starting in July 2009
- Shortage management actions:
 - Established member agency allocations
 - Utilizing WSDRP allocation methodology
 - Financial penalties in place for exceeding allocation
 - Utilize 2009 dry-year transfer supplies
 - Declared “Drought Alert” condition
 - Mandatory water use restrictions



Local Agency Shortage Actions

■ Local water agencies tools to reduce demand

- Mandatory water use restrictions
- Adopted drought rates (inclining block)
- Setting water “budgets” that determine amount each customer should use
- Limited issuance of new meters
 - Demand offset program
- Public outreach efforts

The screenshot displays the City of San Diego Water Department website. The main heading is "Water Emergency Information and Resources". A prominent banner reads "NO TIME TO WASTE NO WATER TO WASTE" with a sub-header "MANDATORY WATER USE RESTRICTIONS START JUNE 1, 2009". To the right, a vertical "CITY OF SAN DIEGO DROUGHT WATCH" scale shows four levels: Level 4 (Drought Emergency Condition), Level 3 (Drought Critical Condition), Level 2 (Drought Alert Condition), and Level 1 (Drought Watch Condition). The current status is Level 2. Below the banner, a "Water Supply Crisis" section explains the situation and lists actions: Level 2 Public Outreach Meetings Set, Level 2 Fact Sheet (PDF: 52K), Hardship Variance and Cost Recovery Fee, and Water use and Drought Ordinance (PDF: 85K). A "Recent Changes to the City's Emergency Water Regulations" section notes a December 2, 2006 ordinance update. A sidebar on the left contains "MANDATORY WATER USE RESTRICTIONS START JUNE 1, 2009" and "WATER EMERGENCY HOME" with various links.

<http://www.sandiego.gov/water/conservation/drought/> (1 of 2) [5/6/2009 2:05:25 PM]

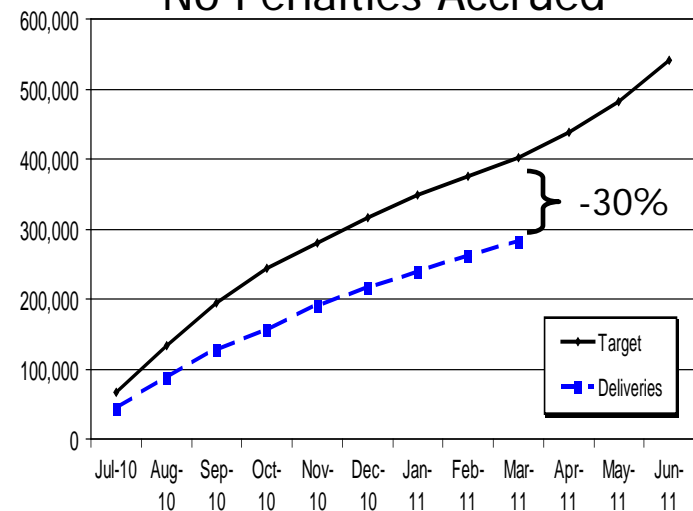
Regional Drought Response Actions

Deactivation of WSDRP

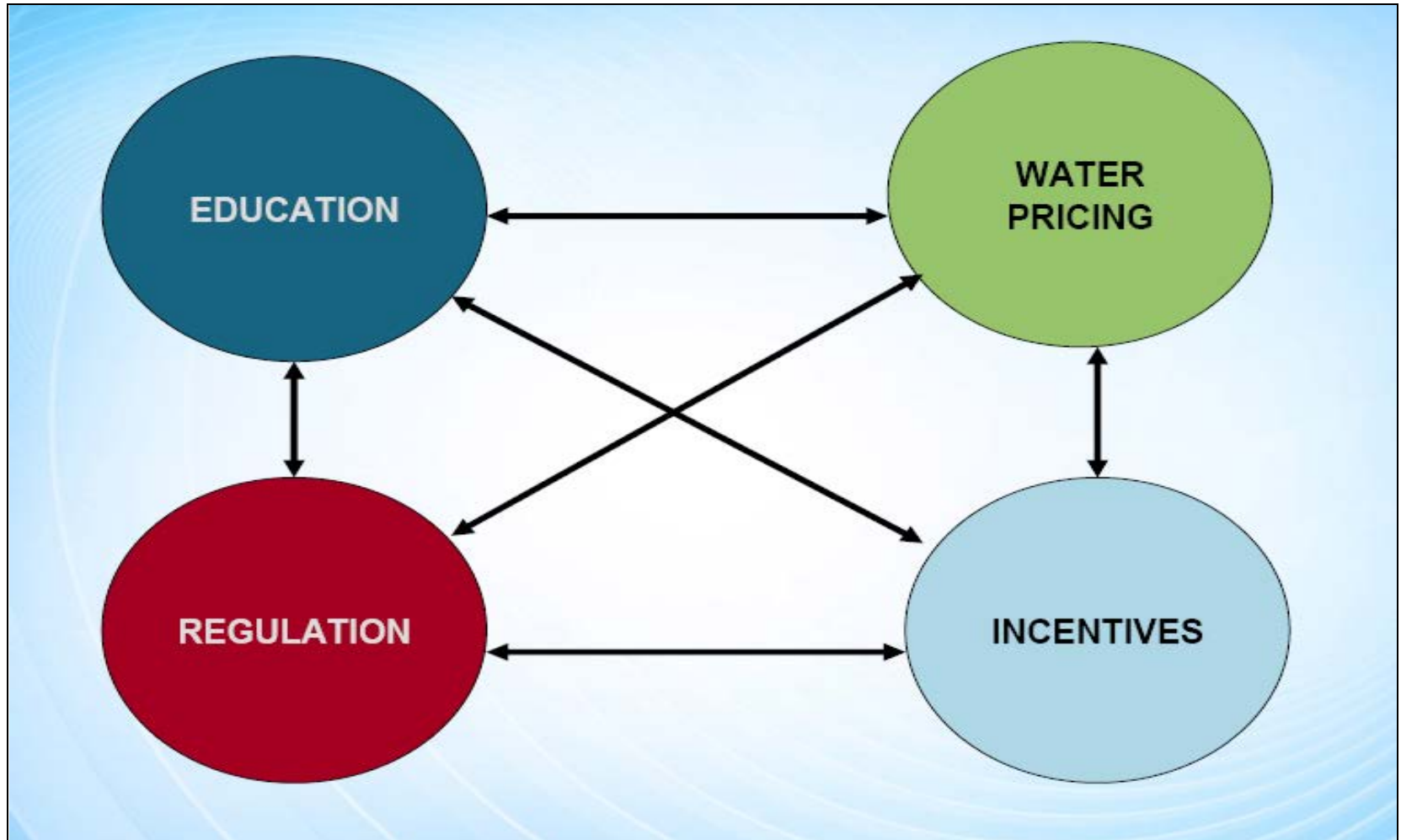
April 2011 – Discontinued member agency allocations and deactivated plan

- Actions in response to:
 - Termination of allocations from MWD
 - Significant improvements in supply conditions
 - Governor's action to rescind drought proclamation
- Board also reinforced importance of continued efficient water use practices

Region Remained under M&I Target
No Penalties Accrued



Multi-Faceted Approach to Managing Water Demand



Observations and Follow-up Actions Based on “Lessons Learned”

- WSDRP’s orderly, progressive approach was effective
- Currently conducting review of shortage response activities/actions
 - What changes could be made to improve process?
- Evaluate factors that influence demand reduction
 - Will demands rebound to pre-drought levels?
 - What conservation actions are necessary in the future to obtain savings during shortages?
- Financial sustainability

Questions and Discussion