



CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: February 23, 2016

TO: Mayor and Councilmembers

FROM: Water Resources Division, Public Works Department

SUBJECT: Stage Three Drought Update

RECOMMENDATION:

That Council receive an update on the status of the current drought, drought-response capital projects, and continuing conservation efforts.

DISCUSSION:

As a result of the unprecedented ongoing drought, Council declared a Stage One Drought condition on February 11, 2014, which was subsequently elevated to a Stage Two on May 20, 2014. On May 5, 2015, in response to the driest consecutive four-year period on record, Council declared a Stage Three Drought Emergency, increasing the community's water conservation target to 25 percent and adopting additional water use regulations by Resolution on May 12, 2015.

This drought update will cover the following items:

- Water Supply Outlook/Weather Forecast
- Drought Response Capital Projects
- Conservation Efforts

Water Supply Outlook

Rainfall for the last four years has averaged less than half of the long-term average. In accordance with the City's Long Term Water Supply Plan, depleted surface water supplies have been replaced with increased groundwater production and purchases of supplemental water.

This strategy has been successful in securing supplies sufficient to meet demand through 2016, assuming continued water conservation of 25 percent or more.

National Oceanic and Atmospheric Administration (NOAA) weather forecasts continue to support a strong El Niño condition through March 2016. Such conditions are often associated with increased rainfall for Southern California; however, to date, rainfall has not materialized in Southern California. There have only been six strong El Niño events in recorded history. Four of those events have yielded rainfall that was average or above, and two have yielded rainfall below average. Given the unpredictable nature of El Niño events, and the unprecedented nature of the current drought situation, this phenomenon cannot be counted on to improve or end the current drought; therefore, the City is planning for continued drought conditions.

Staff is assessing the water supply strategy to respond to projected water shortages through 2018, assuming extreme drought conditions continue. The recommended strategy will be presented in March 2016.

Drought Response Capital Projects

With the increase in water main breaks over the last year, Water Resources staff is planning to reinstate the Water Main Replacement Program, which has been on hold since 2014. This program was placed on hold due to concerns about water loss during construction and having adequate staffing resources as a result of other drought related projects. At the direction of Council, full funding of \$4.7 million was budgeted this year for water main replacement. It is anticipated that a Water Main Replacement Project design can be finished, bid, and awarded in time for construction to begin in Fall 2016.

In 2015, the City experienced 89 water main breaks. Although this number is significant for a distribution system of approximately 300 miles, many communities of comparable age throughout the country are struggling with a similar break history. This spring, staff is planning to discuss with Council options to reduce the frequency of water main breaks as much of the City's water main infrastructure reaches the end of its useful life.

Work continues to move forward on the reactivation of the desalination facility. The recent contaminated soil issues are being resolved, and the contractor has received clear direction in moving forward. Off-site work on the treatment units is on schedule, with delivery to the site anticipated in May 2016.

To summarize, the current desalination plant reactivation will produce 3,125 AF annually for City water customers, and completion is anticipated for October 2016.

Negotiations continue with the Montecito Water District on an arrangement to assist them with their current and long-term water needs. At this time, there has been no substantial progress to report with the negotiations.

Conservation Efforts

The City's water conservation numbers for January 2016 show a reduction of 29 percent, compared to 2013 water demands. The cumulative average reduction since the Stage Three Drought Emergency declaration is 34 percent.

The City's water customers continue to meet and exceed both the City's and the state's targets for extraordinary conservation measures. The Stage Three Drought Emergency requires a citywide 25 percent reduction to ensure the City has adequate supplies for the 2016 water year.

The state-mandated water use reduction for the City is 12 percent below 2013 water usage. The City has been one of the few water providers statewide that has consistently met or exceeded the state's water use reduction targets and mandated conservation standards.

PREPARED BY: Joshua Haggmark, Water Resources Manager/MW/mh

SUBMITTED BY: Rebecca J. Bjork, Public Works Director

APPROVED BY: City Administrator's Office



PUBLIC WORKS DEPARTMENT

WATER RESOURCES DIVISION

STAGE THREE DROUGHT UPDATE

City Council
February 23, 2016

Outline

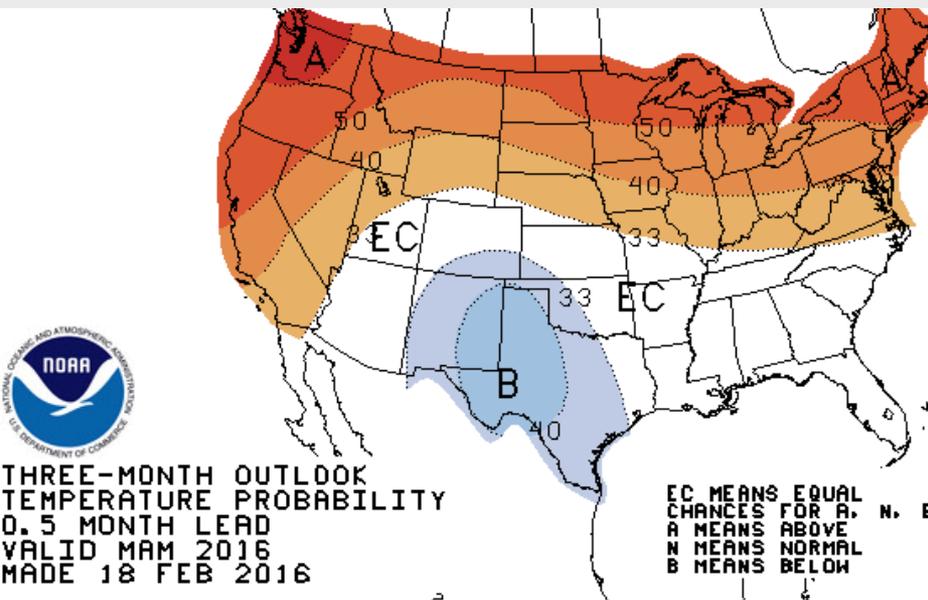
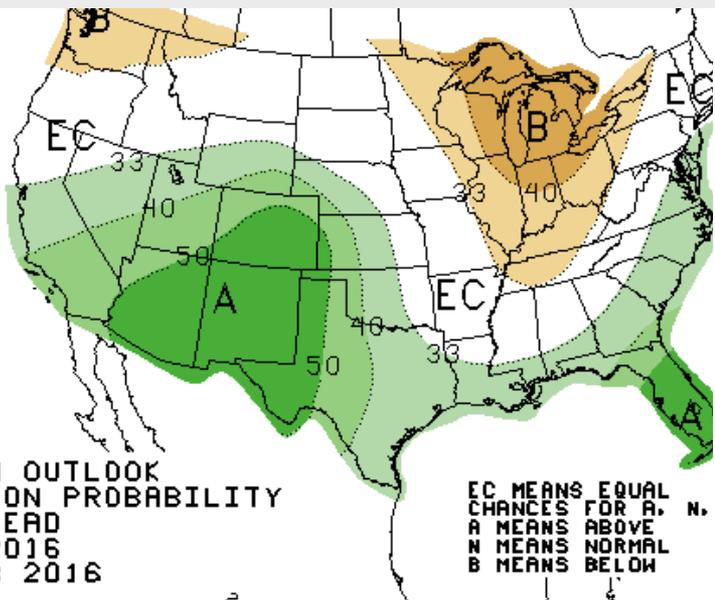
- Monthly Drought Update
 - Weather Forecast and Rain Totals
 - Community Conservation
 - Water Supply Strategy
 - Lake and Reservoir Operations
 - Capital Projects
 - Water Conservation Program



WEATHER FORECAST AND RAIN TOTALS

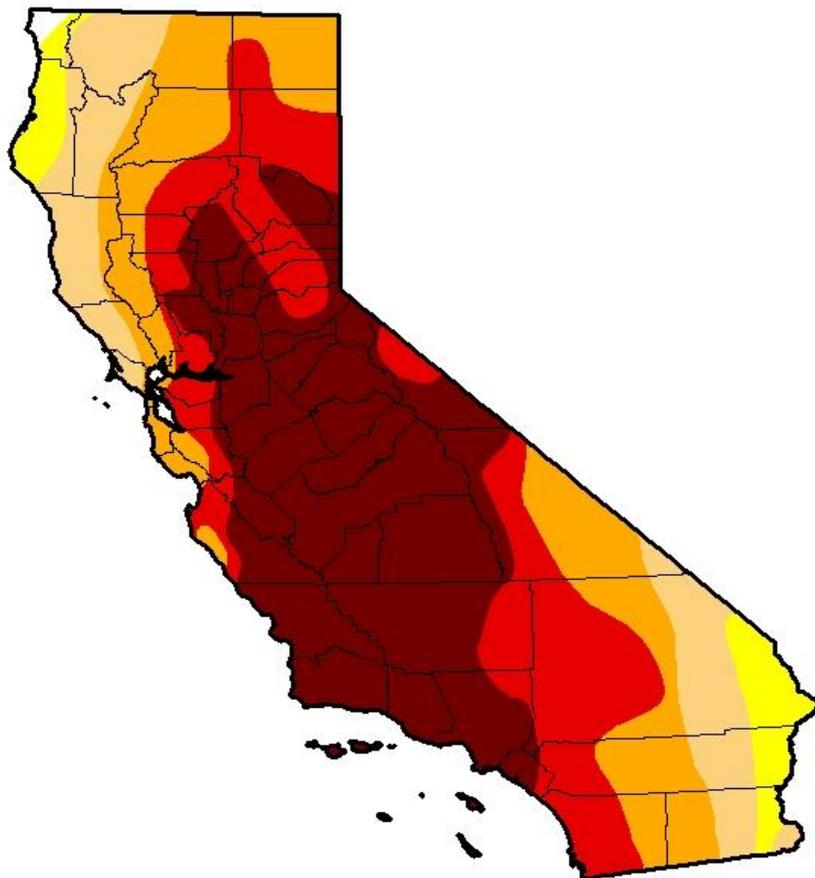
National Weather Forecast

- Three-Month Outlook:
 - Above Average Rainfall
 - Above Average Temperatures



U.S. Drought Monitor California

February 16, 2016
(Released Thursday, Feb. 18, 2016)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.29	99.71	94.69	81.82	61.40	38.48
Last Week <i>2/9/2016</i>	0.22	99.78	94.77	81.82	61.40	38.48
3 Months Ago <i>11/17/2015</i>	0.14	99.86	97.33	92.26	70.55	44.84
Start of Calendar Year <i>12/29/2015</i>	0.00	100.00	97.33	87.55	69.07	44.84
Start of Water Year <i>9/29/2015</i>	0.14	99.86	97.33	92.36	71.08	46.00
One Year Ago <i>2/17/2015</i>	0.16	99.84	98.10	93.44	67.46	41.20

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Eric Luebbehusen
U.S. Department of Agriculture



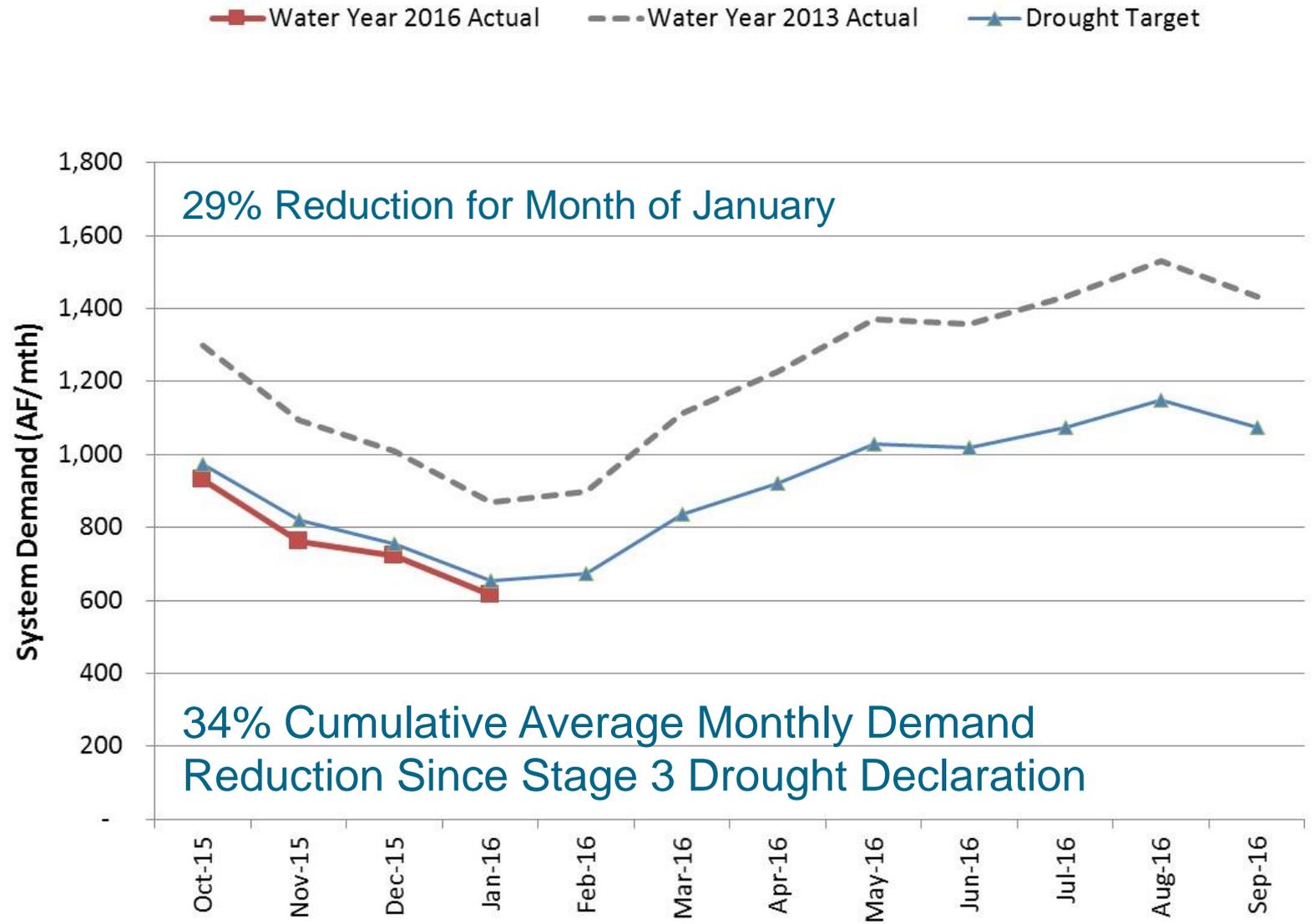
<http://droughtmonitor.unl.edu/>

Rain Totals for WY 16

- Rainfall for the Water Year as of 2/19/16:
 - Gibraltar Lake – 8.55” (50% of Normal)
 - Lake Cachuma – 7.98” (61% of Normal)
 - Santa Barbara – 7.63” (64% of Normal)



COMMUNITY CONSERVATION

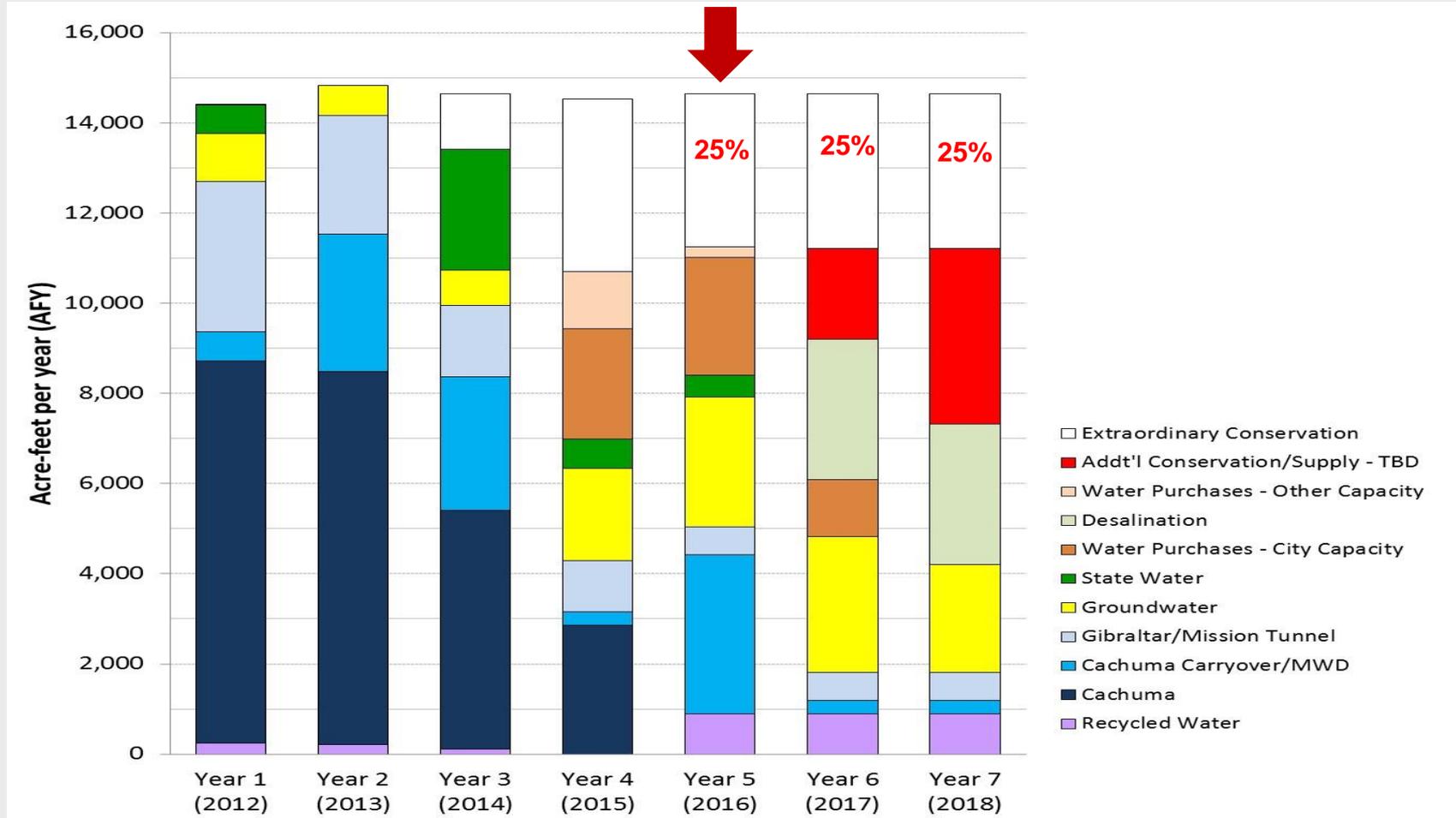




WATER SUPPLY STRATEGY

Current Supply Strategy

(based on no reservoir inflows, no State Water)



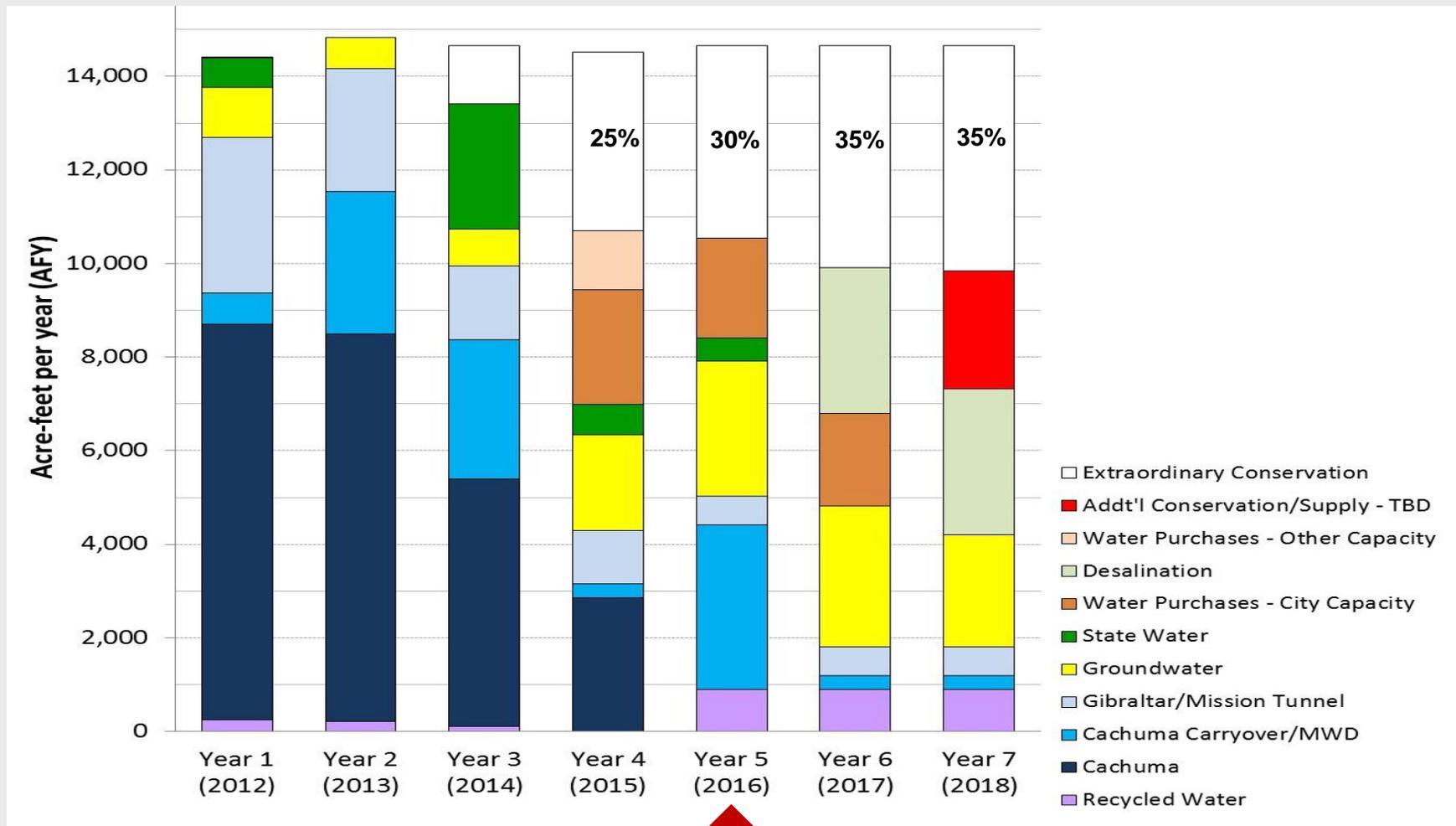
Water Supply Strategy

- Goal
 - Address the supply shortfall in 2017 & 2018
 - Delay desal expansion decision at least one year
- Desal expansion (3,125 AFY to 7,500 AFY)
 - Treatment plant expansion and distribution improvements
 - *Cost: ~\$45 million*
 - *Schedule: 18 months (winter 2018)*
- Tools
 - Demand management - conservation
 - Supply management - supplemental water purchases



Projected Supply Strategy

(based on no reservoir inflows, no State Water, 35% conservation in May 2016)



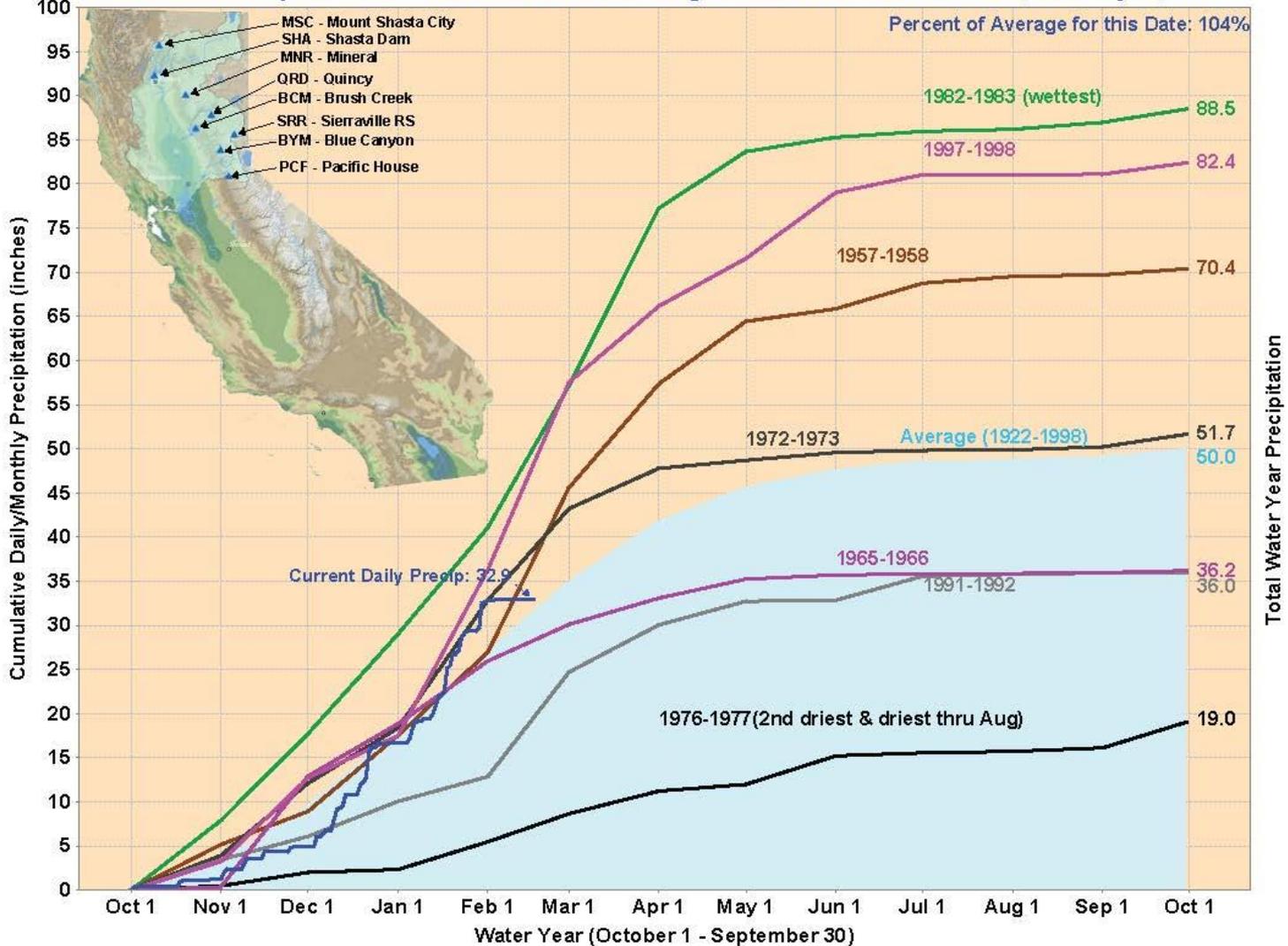
Demand Management

- Conservation Target
- Regulations
- Rates
- Schedule
 - March 2016 – Discuss changes to conservation target
 - April/May 2016 – Implement changes to conservation target

Supply Management - Supplemental Water Purchases

- Assuming a 35% Conservation Target (closely matching the community's current conservation level)
- Supplemental Water Purchase Goal would be 3,000 AF
 - *2,500 AF - Additional water needed through 2018*
 - *500 AF - Contingency water*
- \$3M Budgeted for Water Purchases in FY16
- Looking for Water North of Delta
 - *Avoid requirement for return water*
 - *Return water balance – 5,000 AF within 10 years*
 - *Average rainfall in Northern California*

Northern Sierra Precipitation Chart Includes Historical Strong El Nino Years: 8-Station Index, February 17, 2016



Supplemental Water Purchases

- CCWA Option - North Delta Water
 - *Sacramento Valley Irrigation District*
 - *Assumed carriage losses – ~30%*
 - Would need to purchase ~4,000 AF to get 3,000 AF delivered
 - *Cost*
 - \$700/AF - Estimated water unit costs
 - ~\$3 million – purchase costs
 - Delivery costs
 - Take or pay arrangement
 - *Schedule*
 - April 25, 2016 – Deadline to commit
 - July-September – Water delivered



LAKE AND RESERVOIR OPERATIONS

Lake Cachuma

- Storage as of 1/16/16
 - 28,795 Acre Feet
(14.9% of capacity)
- Barge Relocation
 - Critical facility
 - Minimum of 90 days to complete work
 - \$750K – Budgeted





Photo Courtesy of Bill Dewey

Barge Relocation is Critical

- Water quality impacts increase as the lake drops at the current location
- Required for delivery of over 50% of our planned water for this year
- Catastrophic if barge is not relocated – inadequate water to meet demands
- Needs to be in place and operational in July 2016
- Requires unanimous project approval at COMB

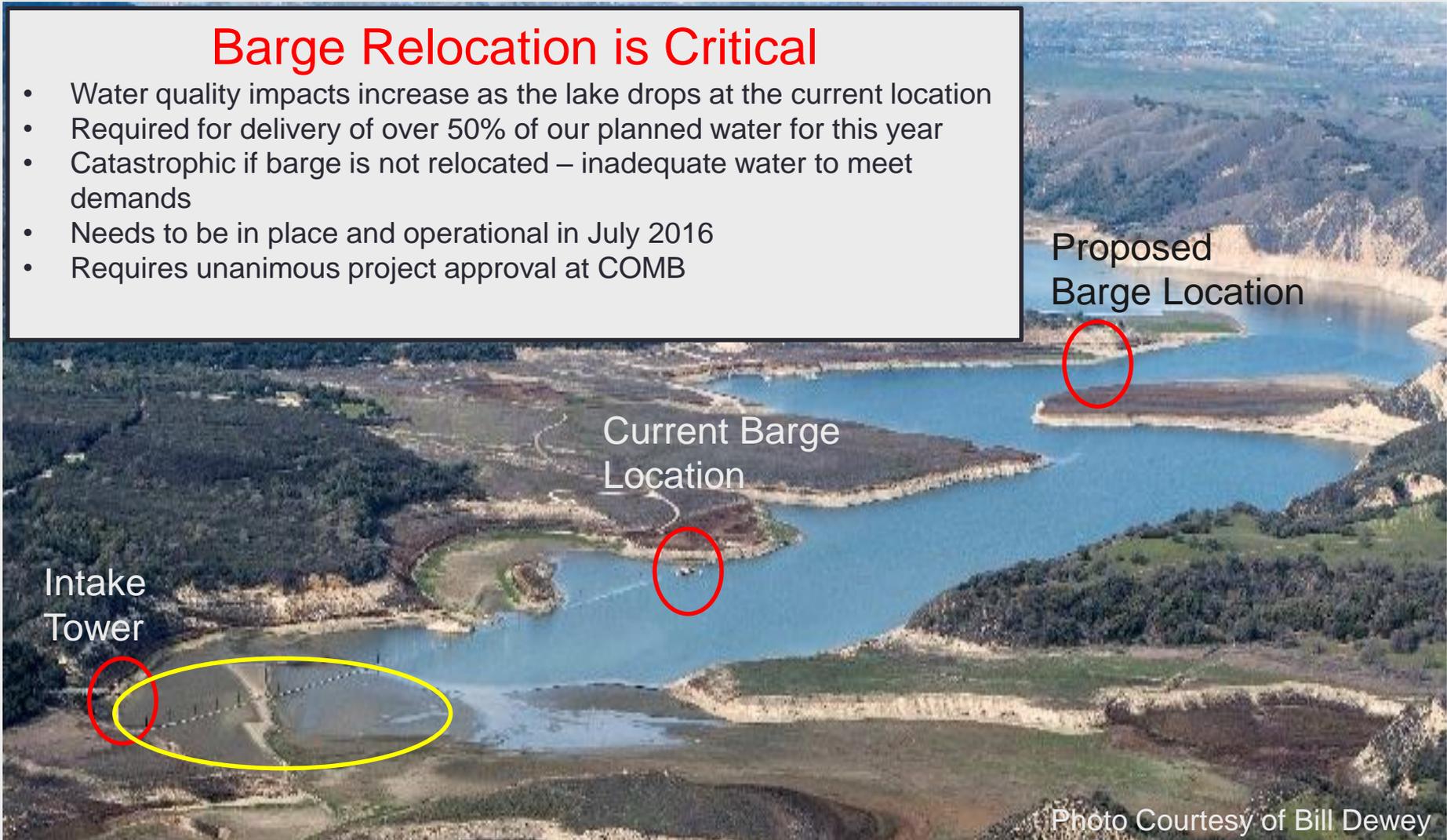
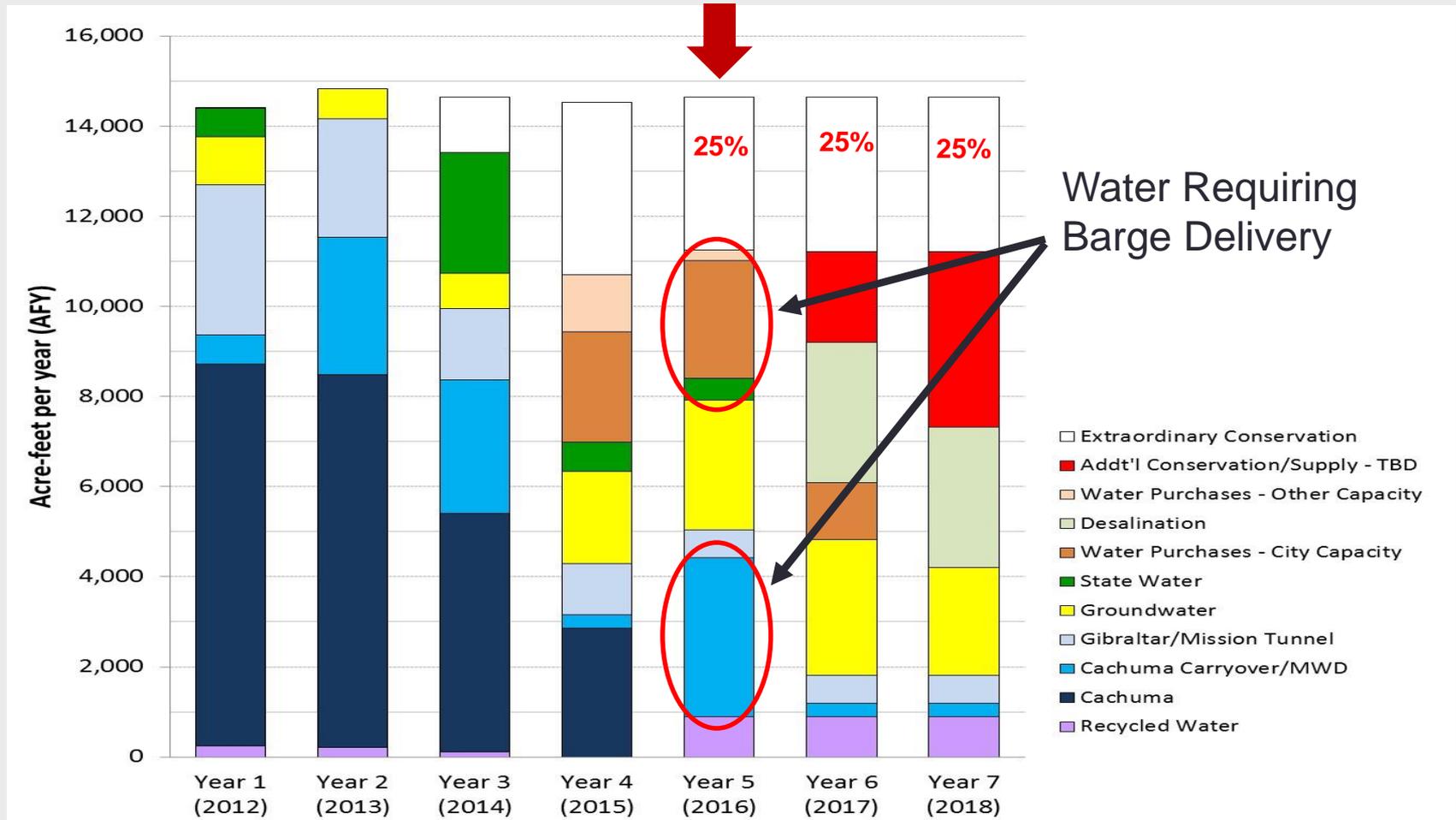


Photo Courtesy of Bill Dewey

Current Supply Strategy

(based on no reservoir inflows, no State Water)



Gibraltar Reservoir

- Storage as of 1/16/16
 - 665 Acre Feet (12.7% of capacity)
 - Temporary Backup if Barge relocation is delayed



DROUGHT RESPONSE CAPITAL PROJECTS

Recycled Water System

- Recycled Water Facility
 - Experienced an equipment failure and fire on Wednesday, February 17
 - No one was injured
 - Investigation is underway
 - *Permanent Repairs likely to be covered under warranty*
 - *Facility was put back online the next day in a temporary configuration*



Desal Project Update

- Onsite:
 - Work continues onsite with underground conduits and piping
- Offsite:
 - Treatment units remain on schedule for delivery in May 2016
- Contaminated Soils
 - Contaminated Soil removal ongoing
- Schedule
 - *Wrapping up negotiations to accelerate work (mitigating time loss for contaminated soils)*
 - *On schedule for water delivery in October 2016*



Desal Project Update

- Feasibility Studies:
 - Subsurface Intake Study
 - *Held public meeting on Wednesday, January 27*
 - *Presenting a summary of the meeting to Council in March*
 - Potable Reuse Study
 - *Work in progress*
 - *Public meeting tentatively scheduled for July 2016*
- Desal Grant Funding
 - Prop. 1 Funding for Desal Projects
 - *Round 1 funding - \$50M*
 - Project Eligibility

Montecito Water District Water Sales Agreement

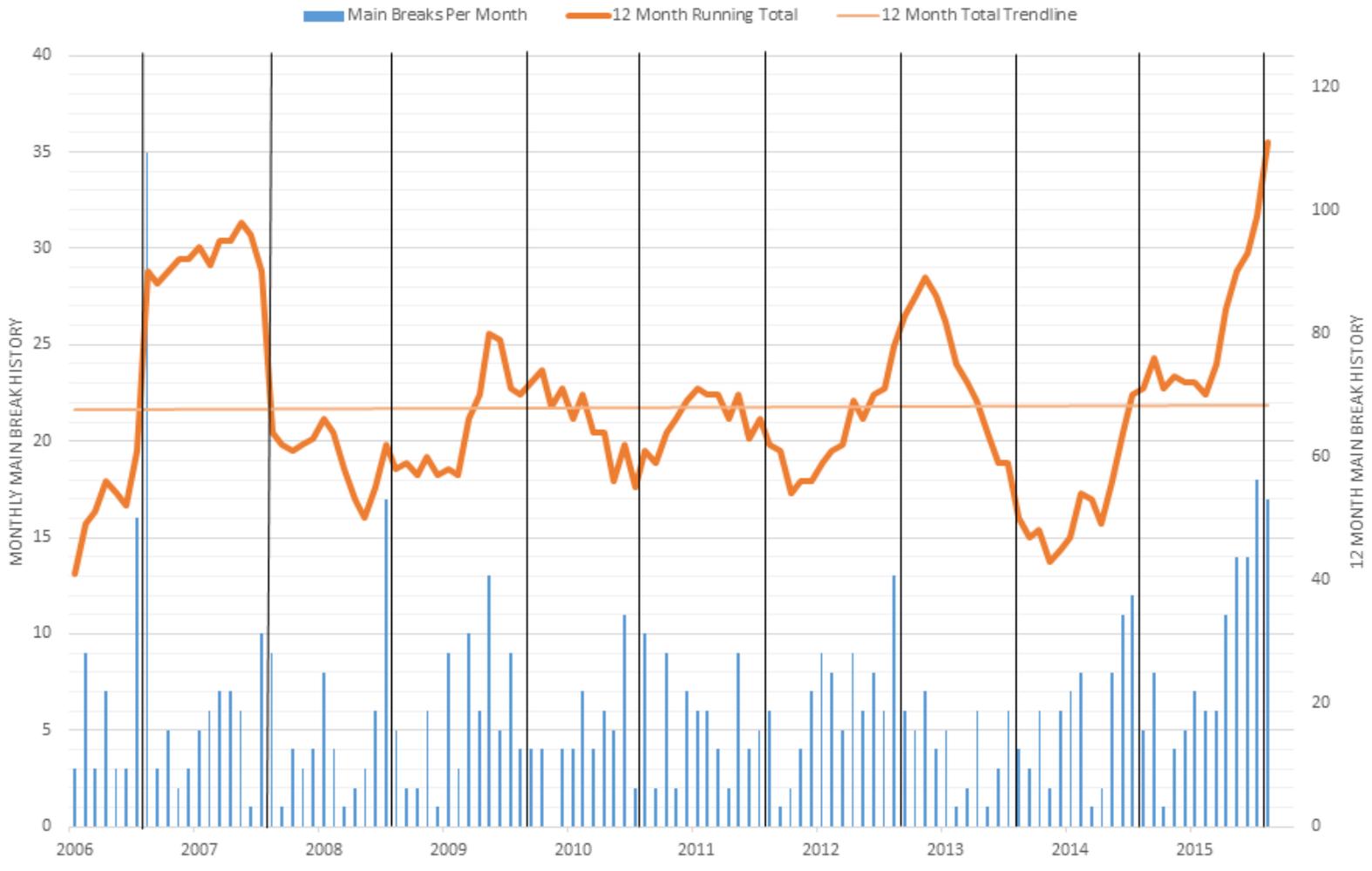
- Discussions continue at the staff level
- No significant progress to report

Water Main Replacement Program

- Restarting Water Main Replacement Work
 - Finish Design of up to 5 Priority Locations
 - *Construction by Fall 2016*
 - Scoping Work for Larger Project
 - *Construction in Spring 2017*
- Main Replacement Program
 - Policy Discussion in May/June 2016
 - *Discuss Options to reduce Main Break History*
- Restart Water Main Flushing Program
 - Address Water Quality Concerns
 - Investigating a new technology to eliminate water loss and improve flushing results



Main Break History 12 Month Running Average





WATER CONSERVATION PROGRAM

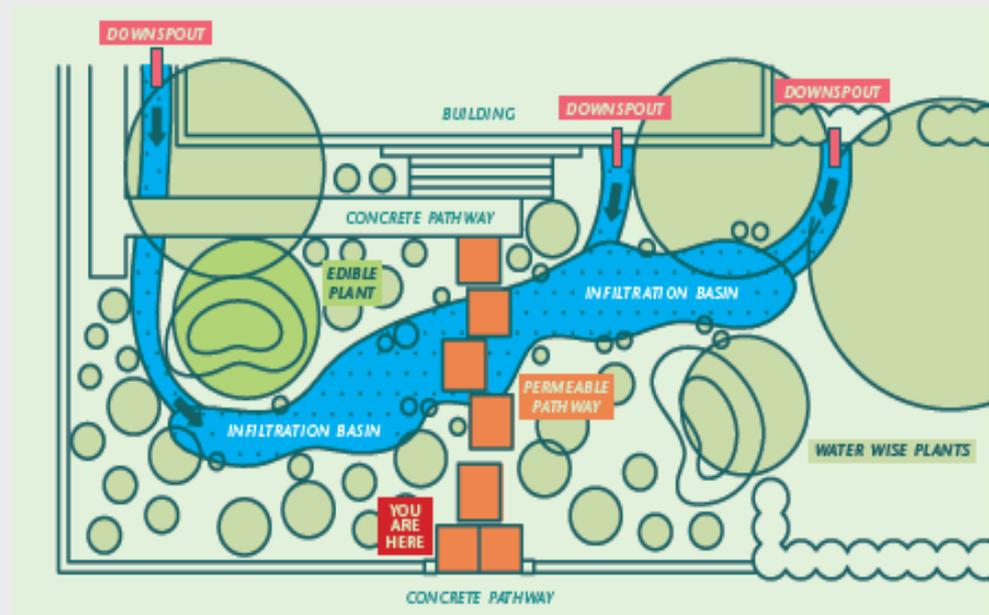
Put the Rain to Good Use!

- Where is the best place to store rainwater?
In your soil!
- Rain Gardens:
 - Reduce the need for irrigation
 - Reduce stormwater runoff and ocean pollution
 - Reduce maintenance needs/costs
 - Recharge groundwater



Rain Gardens

- **Slow, spread, sink**
- Break up hard surfaces
- Create infiltration basins
- Redirect downspouts
- Add mulch
- Plant water wise plants



Rainwater Demonstration Gardens

Spencer Adams Park, 1216 De La Vina

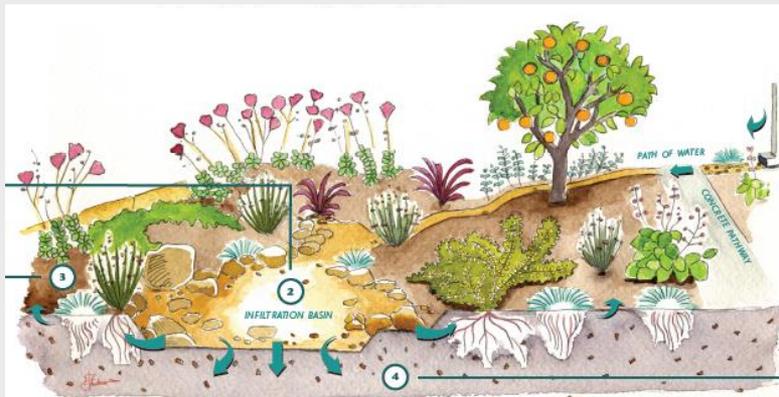
- Series of hands-on workshops to upgrade from lawn to native rain garden
- Surfrider Foundation Ocean Friendly Garden



Rainwater Demonstration Gardens

Santa Barbara Association of Realtors, 1415 Chapala

- Curb appeal of sustainable landscaping
- 3 downspouts diverted



Rainwater Demonstration Gardens

SBCC Schott Center, 310 W. Padre

- Removed lawn to create meandering dry creek bed
- Created permeable path and seating area



Hands-on Workshops and Classes

- Partnership with Sweetwater Collaborative
- Upcoming City sponsored events:
 - Hands-on rain garden workshop: Sat, Feb 27, 10 am-3 pm
 - Rainwater Harvesting 101 class: Thurs, March 24, 6:30-8:00 pm
 - Graywater 101 class: Weds, March 30, 7:00-8:30 pm



For more information:

www.SantaBarbaraCA.gov/Water

Call: 564-5460





- Backup slides

Well Highlights

- Hope Well Rehabilitation Project
 - Completed Well Cleaning
 - Pump Testing confirmed 240 gpm at new depth
 - Pump/Motor to be delivered in early March
 - Operational by the end of March 2016
- San Roque Well
 - Pump/Motor Failure (anticipated after 4.5 years of continuous operation)
 - Lower New Pump/Motor to boost production
 - Operational by the end of March 2016
- High School Wellhead Improvements
 - Work onsite begins next week
 - Operational by May 2016

