

Santa Barbara County Water Supply Issues



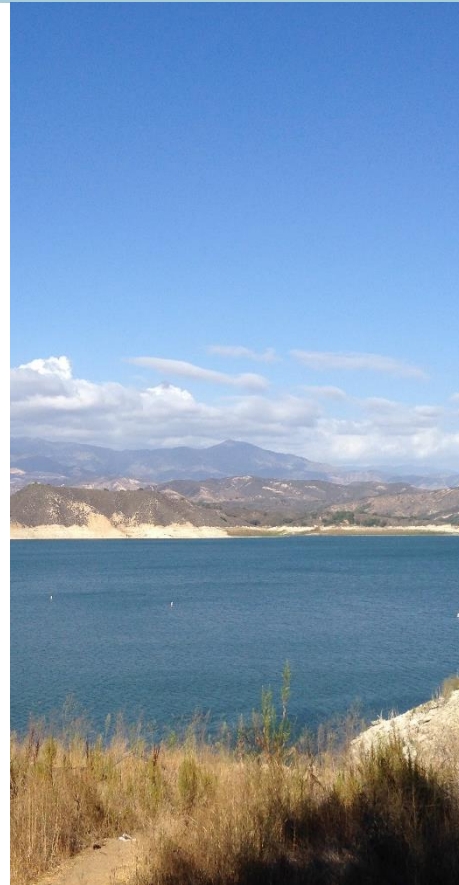
Board of Supervisors
December 15, 2015



- 1) Long-Term Supplemental Water Supply Alternatives Study
- 2) Update on Drought and Short-Term Water Issues

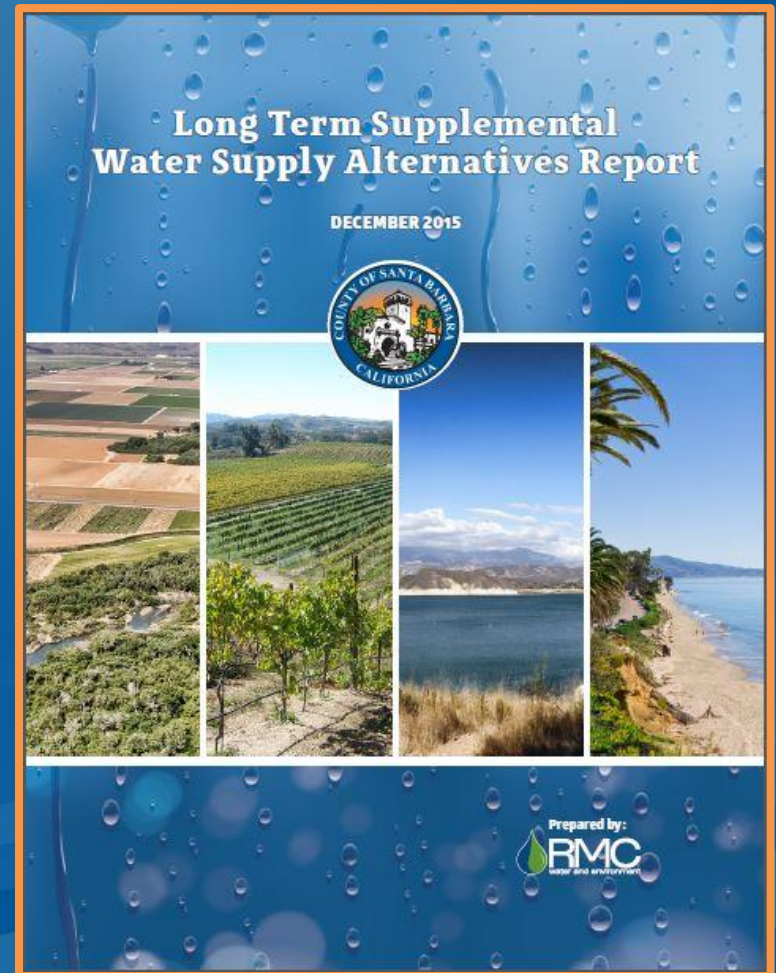


Long-Term Supplemental Water Supply Alternatives Report



Long-Term Supplemental Water Supply Alternatives Study

- Approved by BOS on August 26, 2014
- RMC Water and Environment
- Input from County-wide water purveyors
- Long-term planning horizon (2040)
- Focus on regional solutions
- Compliments IRWMP planning process



Project Objectives

- Identify options to access new supplies for the Region by 2040
- Identify a comprehensive list of subregional, regional, and inter-regional supply options
- Characterize feasibility, reliability, cost, and implementation considerations for options
- Involve technical planning partners and public in the process
- Provide the technical basis for future decision making and implementation
- Begin collaboration on regional projects for future implementation



Project Process

Identify Supply Options

- Collect and review data
- Define subregional, regional and inter-regional options
- Identify key constraints and data gaps



Develop Supply Options

- Make assumptions
- Conduct technical analysis

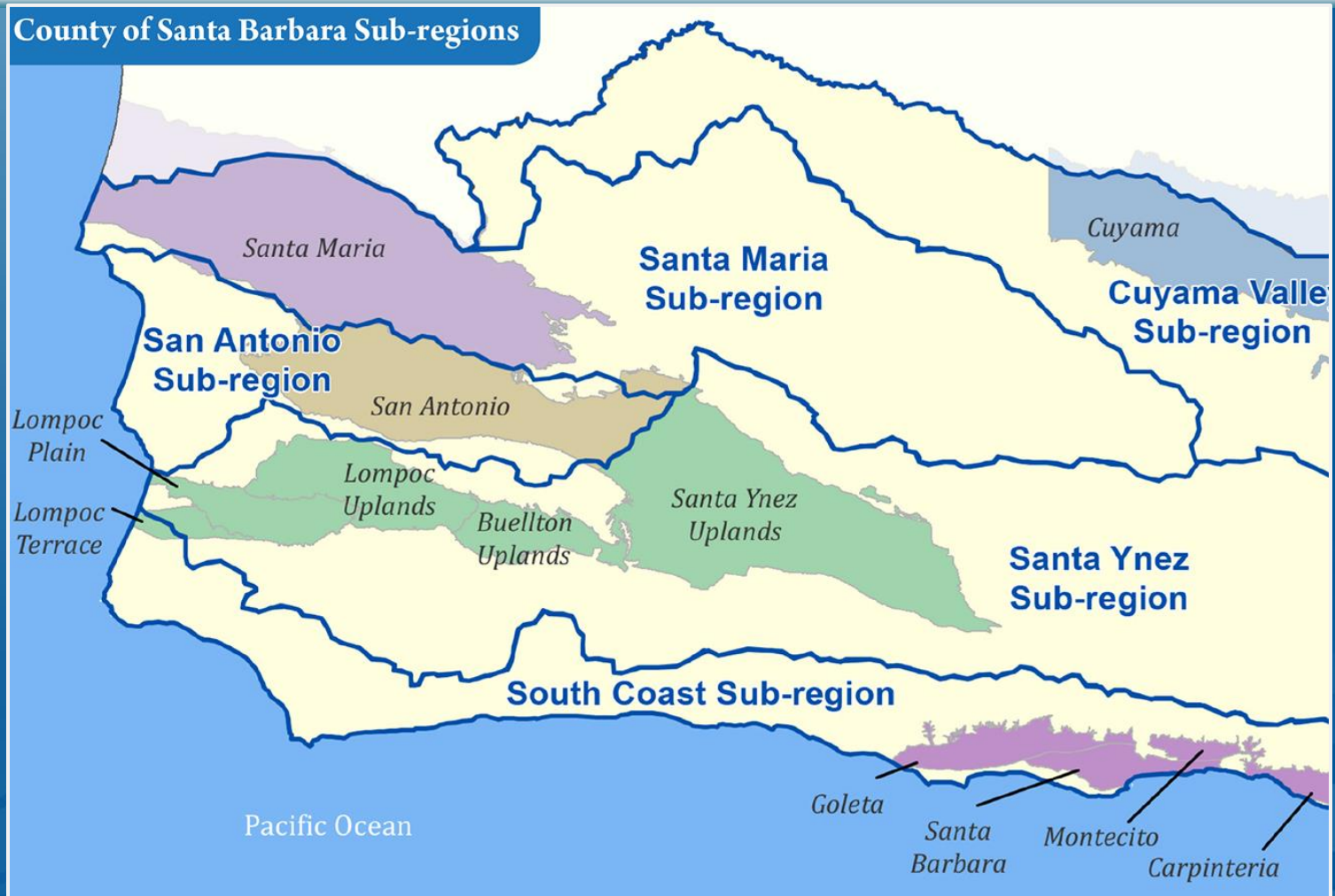


Characterize Supply Options

- Model reliability of system
- Develop cost estimates
- Assess funding and implementation considerations



Santa Barbara County Sub-regions



Project Participants

- Santa Barbara County Water Agency Staff
- RMC Water and Environment Consultant Team
- Planning Partner Group
 - Water purveyor staff
 - Wastewater agency staff
 - CCWA
 - Agricultural user representatives
- Public

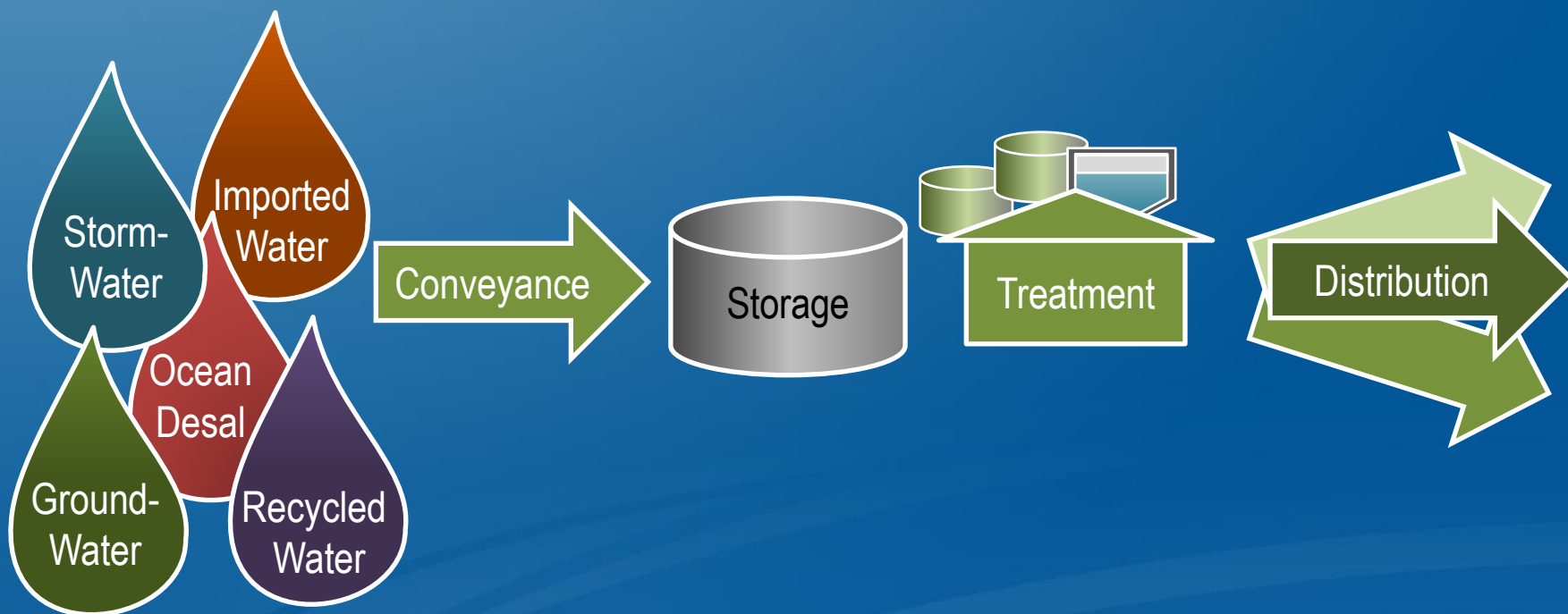


Public and Planning Partner Meetings

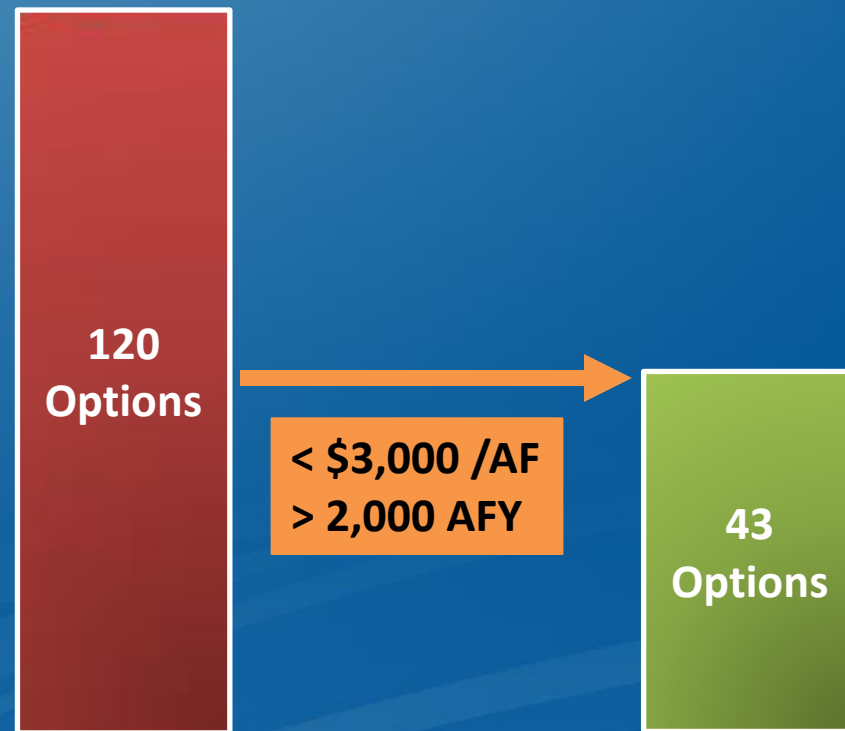
Meeting		Meeting Date
Public Meetings	Public Meeting 1	September 29, 2014
	Public Meeting 2	September 30, 2014
Planning Partner Meetings	Santa Ynez Subregional Meeting	September 29, 2014
	San Antonio Subregional Meeting	September 29, 2014
	South Coast Subregional Meeting	October 15, 2014
	Santa Maria Subregional Meeting	October 29, 2014
	Cuyama Subregional Meeting	November 25, 2014
	Regional Meeting 1	February 26, 2015
	Regional Meeting 2	June 9, 2015



Comprehensive Supply Option



Options Screening for Regional Consideration



More Feasible Options

- Recycled Water
 - Indirect
 - Direct
 - Non-potable
- Desalinization
 - Including regional options
- Other
 - Reservoir operations / enhancements
 - Banking
 - Imported water options





Recycled Water Options

Option	Supply (AFY)	Unit Cost (\$/AF)	Timeframe
Non-Potable Reuse (NPR)			
Laguna San NPR (M&I)	2,900	\$300	<5 years
Laguna San NPR (Ag)	5,000	\$300	<5 years
Lompoc NPR (Ag)	4,400	\$1,200	<5 years
Direct Potable Reuse (DPR)			
Laguna San DPR	4,700	\$1,400	5-10 years
Lompoc DPR	3,700	\$1,550	5-10 years
Goleta DPR	6,500	\$1,300	5-10 years
Santa Barbara DPR	6,600	\$1,800	5-10 years
Indirect Potable Reuse*			
Laguna San IPR (injection)	4,700	\$1,300	<5 years
Laguna San IPR (surface)	5,540	\$700	<5 years
Lompoc IPR (injection)	3,700	\$1,500	<5 years
Lompoc IPR (surface)	4,400	\$500	<5 years
Goleta IPR (injection)	6,500	\$1,300	<5 years
Goleta IPR (surface)	7,600	\$1,400	<5 years
Santa Barbara IPR (injection)	6,600	\$1,200	<5 years
Santa Barbara IPR (surface)	7,500	\$2,200	<5 years

* Some costs for IPR not included in costs



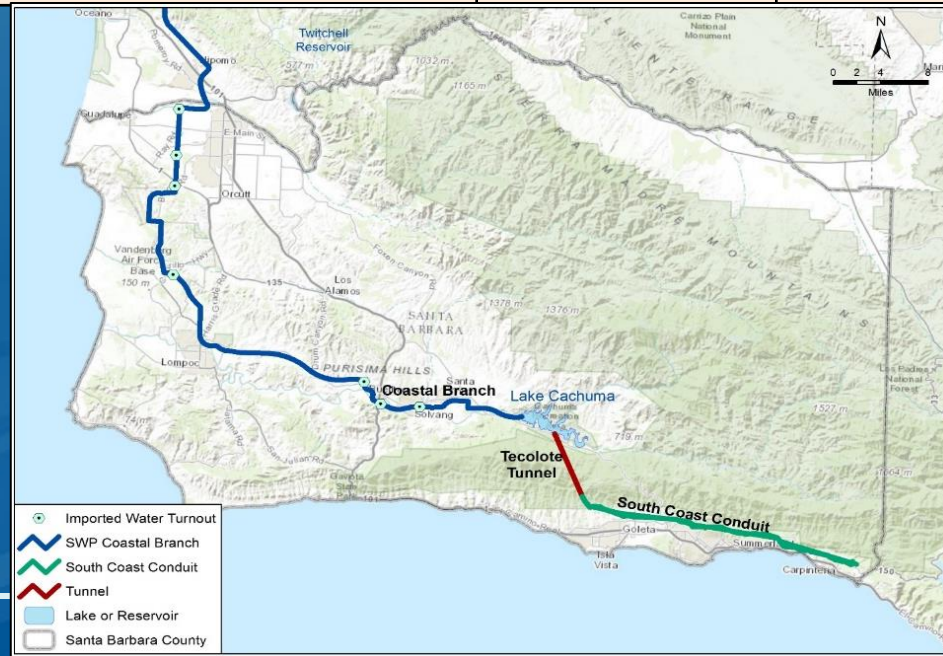
Desalinated Ocean Water Options

Option	Supply (AFY)	Unit Cost (\$/AF)	Timeframe
Southern SLO Plant Regional Desal Supply	26,000	\$1,900 - \$2,000	5-10 years
Southern SLO Plant Local Desal Supply	6,300	\$2,700 - \$2,800	5-10 years
San Antonio Regional Desal	14,400	\$2,200 - \$2,300	5-10 years
Montecito Plant Desal	2,800	\$2,700 - \$2,900	5-10 years
Santa Barbara Local Plant Desal Supply	3,100	\$2,400	5-10 years



Imported Water Options

Option	Supply (AFY)	Unit Cost (\$/AF)	Timeframe
Direct Use			
SB Undelivered SWP for Direct Use	7,500	\$1,700	<5 years
SLO Undelivered SWP	3,400	\$650	<5 years
SB Suspended Table A	8,000	\$600	<5 years
SWP Article 21	5,000	\$400	<5 years
Undelivered CA Imports, Short-Term Agreement	6,300	\$1,800	<5 years
Undelivered CA Imports, Long-Term Agreement	6,300	\$1,000-\$1,600	<5 years
Groundwater Recharge			
SB Undelivered SWP for Spreading Basins	6,300	\$2,800	<5 years
SB Undelivered SWP for Injection Wells	6,300	\$1,900	<5 years



Other Options

- Reservoir Operations
- Groundwater
- Imported Water
- Conservation



Options Not Selected for Regional Consideration

- Large scale reservoir dredging
- Most new in-stream and off-stream reservoirs/storage
- Decentralized stormwater capture, graywater use and some NPR (on-going)
- Out-of-state imported water



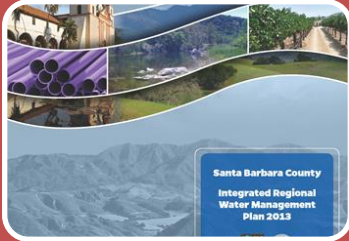
Summary

- Water supply options within the County can be from many sources
- Regional opportunities due to existing delivery pipes from North to South County
- For drought resilience, desalinization and recycled water have the most promise

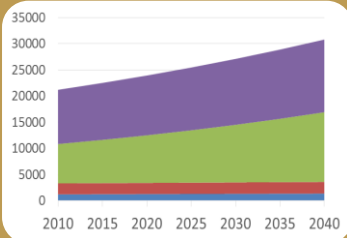
	Santa Maria	San Antonio	Santa Ynez	Cuyama	South Coast
Stormwater/Surface Water					
Reservoir Sediment Removal	○	○	○	○	●
Dam Modifications	●	○	●	○	○
Off-Stream Storage or New Dam	●	○	●	○	○
Stormwater Recharge	●	○	●	●	●
Decentralized Stormwater Capture	○	○	○	○	○
Recycled Water					
Non-Potable Direct Use	●	○	●	○	○
Potable Direct Use	●	○	●	○	●
Indirect Potable Use	●	○	●	○	●
Graywater	○	○	○	○	○
Imported Water					
Santa Barbara Undelivered SWP Direct	●	●	●	○	●
Suspended Table A	●	●	●	○	●
San Luis Obispo Undelivered SWP	●	●	●	○	●
SWP Article 21	●	●	●	○	●
Undelivered CA Imported Water	●	●	●	○	●
Undelivered Non-CA Imported Water	○	○	○	○	○
Out of State Imported Water	○	○	○	○	○
Imported Water for Recharge	●	●	●	○	●
Ocean Water Desalination					
Local Ocean Water Desalination	●	○	○	○	●
Regional Ocean Water Desalination	●	●	●	○	●
Groundwater					
Groundwater Cleanup	●	○	●	○	○



Key Next Steps



Use Santa Barbara County IRWM Program



Complete demand assessments and identify water use efficiency options



Track and apply for funding of feasibility studies and implementation

Update on Drought and Short-Term Water Issues

Cachuma Lake



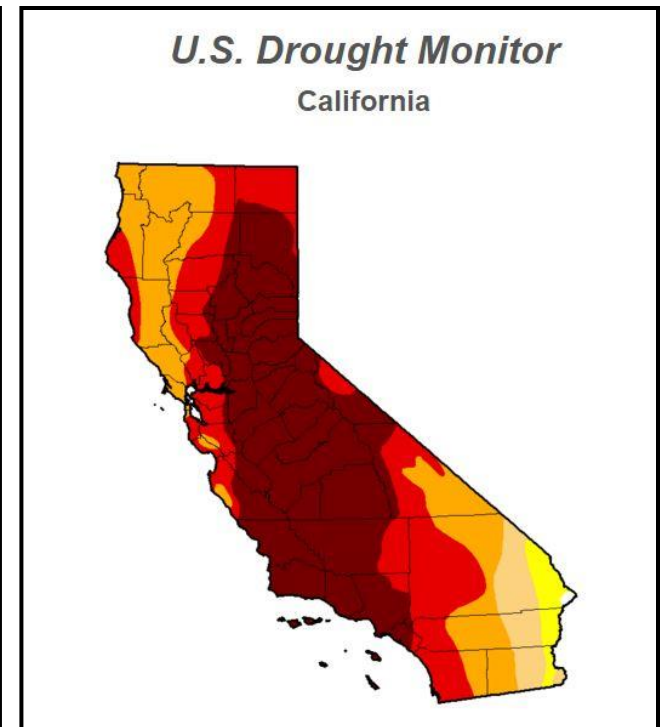
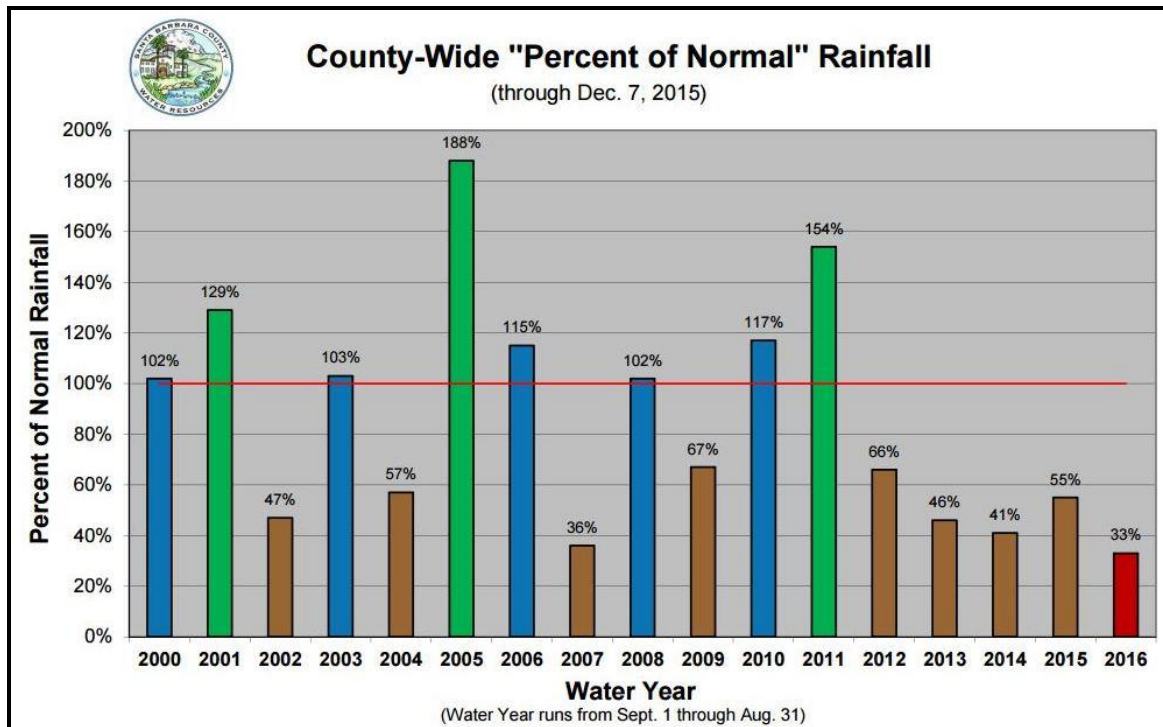
December, 2014



October, 2015

Drought Summary

- 4 years of severe drought has left supplies strained for many purveyors



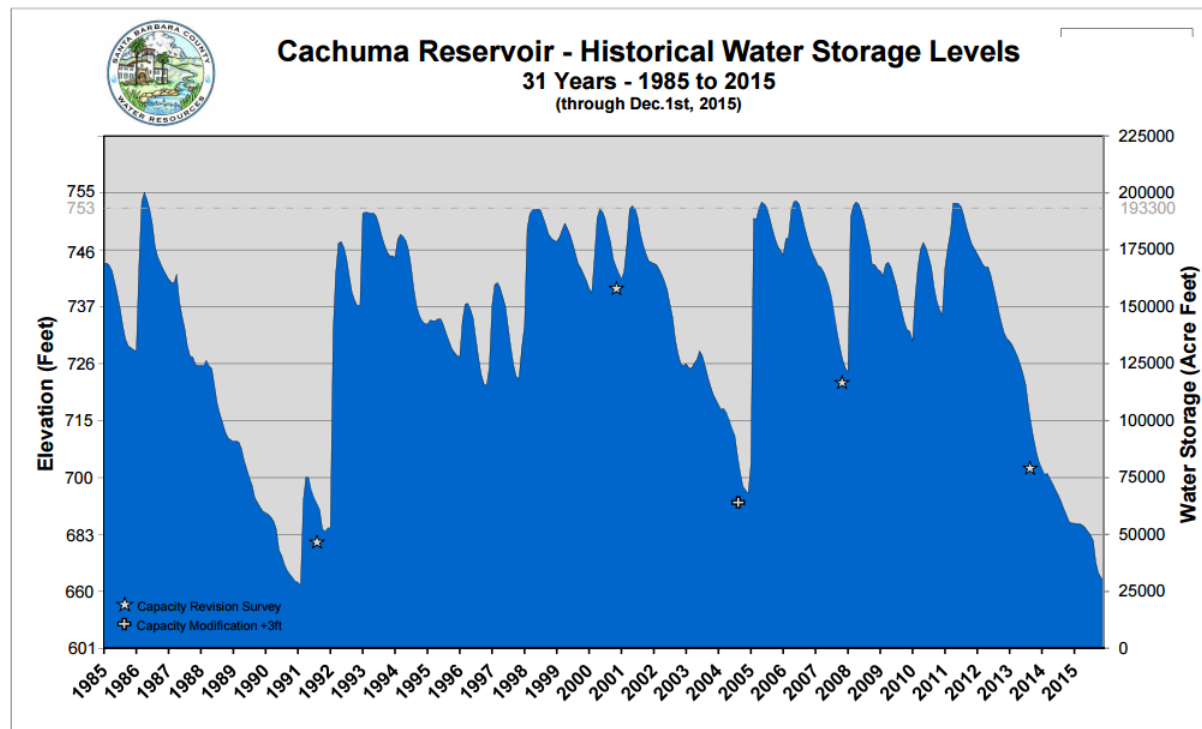
December 1, 2015

General Supply Status

- No Cachuma Allocation for 2016
 - Carry Over Water In Reservoir
- State Water Project Initial Allocation - 10%
- North County Purveyors Rely on Groundwater
- South County Purveyors Increasing Groundwater Pumping, Supplemental Imported, and Desalinization

Cachuma Current Storage

- 29,521 Acre-Feet (*December 1, 2015*)
- 15.3% capacity
- Cachuma pivotal in conveyance of State Water and supplemental purchases



Cachuma Status

- No Allocation for 2016
- Member Units (*Goleta, Santa Barbara, Montecito, Carpinteria, Santa Ynez*) have carry-over water
- Pump barge operational since August, 2015
- Need for new yield analysis
 - Safe Yield
 - Optimized Yield



Emergency Pumping System

Summary of Drought Action Status

Water Purveyor in SBC	Drought Action Status
Carpinteria Valley Water District	Stage 2
City of Buellton	Stage 2
City of Guadalupe	Passed resolution re SWRCB rules
City of Lompoc	Stage 2
City of Santa Barbara	Stage 3
City of Santa Maria	No action; SWRCB rules apply
City of Solvang	Stage 2
Cuyama CSD	Stage 2
Golden State Water Company (Orcutt, S. Maria)	Stage 1
Goleta Water District	Stage 3
La Cumbre Mutual Water Co. (Hope Ranch)	Stage 2
Los Alamos CSD	Passed ordinance to adopt SWRCB rules
Mission Hills CSD	No action; SWRCB rules apply
Montecito Water District	Stage 4; water rationing
Santa Ynez River Water Conservation Dist. ID#1	Stage 2
Vandenburg Village CSD	Issued notice re SWRCB rules; restrictions

Summary of Conservation Efforts

Water Production: May-Oct 2013 vs. 2015

Urban Water Supplier	May	June	July	August	September	October	TOTAL	% change	
Carpinteria Valley WD	491	440	563	515	537	476	3021	23%	2013
	358	324	401	425	400	410	2318		2015
Montecito WD	631	607	799	710	760	669	4176	46%	
	353	313	396	421	393	393	2269		
City of Santa Barbara	1373	1359	1432	1531	1434	1299	8429	36%	
	859	806	913	982	935	930	5425		
Goleta WD	1454	1339	1590	1449	1504	1454	8790	28%	
	1054	925	1057	1133	1083	1070	6322		
City of Lompoc	458	498	502	521	420	458	2856	22%	
	391	334	412	355	363	367	2222		
City of Santa Maria	1311	1375	1453	1388	1314	1240	8081	17%	
	1102	1125	1146	1167	1119	1064	6723		

Non-urban data:

City of Solvang	39%
Cuyama CSD	20%
La Cumbre MWC CSD	40%
Los Alamos CSD	33%
Vandenberg Village CSD	36%

Short Term Actions

- CCWA Supplemental Water Purchase Program
 - 2014 (6,000 AF)
 - 2015 (8,000 AF)
 - 2016 (?)
- City of Santa Barbara Desalinization Plant
 - Operational Fall, 2016
- New Safe Yield analysis for Cachuma Reservoir
- Increased reliance on groundwater, including south coast



Cloudseeding Aircraft

CCWA Update



- Supplemental Water Purchases
 - **2014** purchased **6,000 AF** for \$4.3 million
 - **2015** purchased **8,000 AF** for \$3.9 million
 - **2016** currently pursuing additional purchases
- Purchased Supplies:
 - Farmers north of the Sacramento San Joaquin Delta
 - Internal transfers
 - Exchanges/Purchases from other SWP Contractors

Value of the SWP Facilities

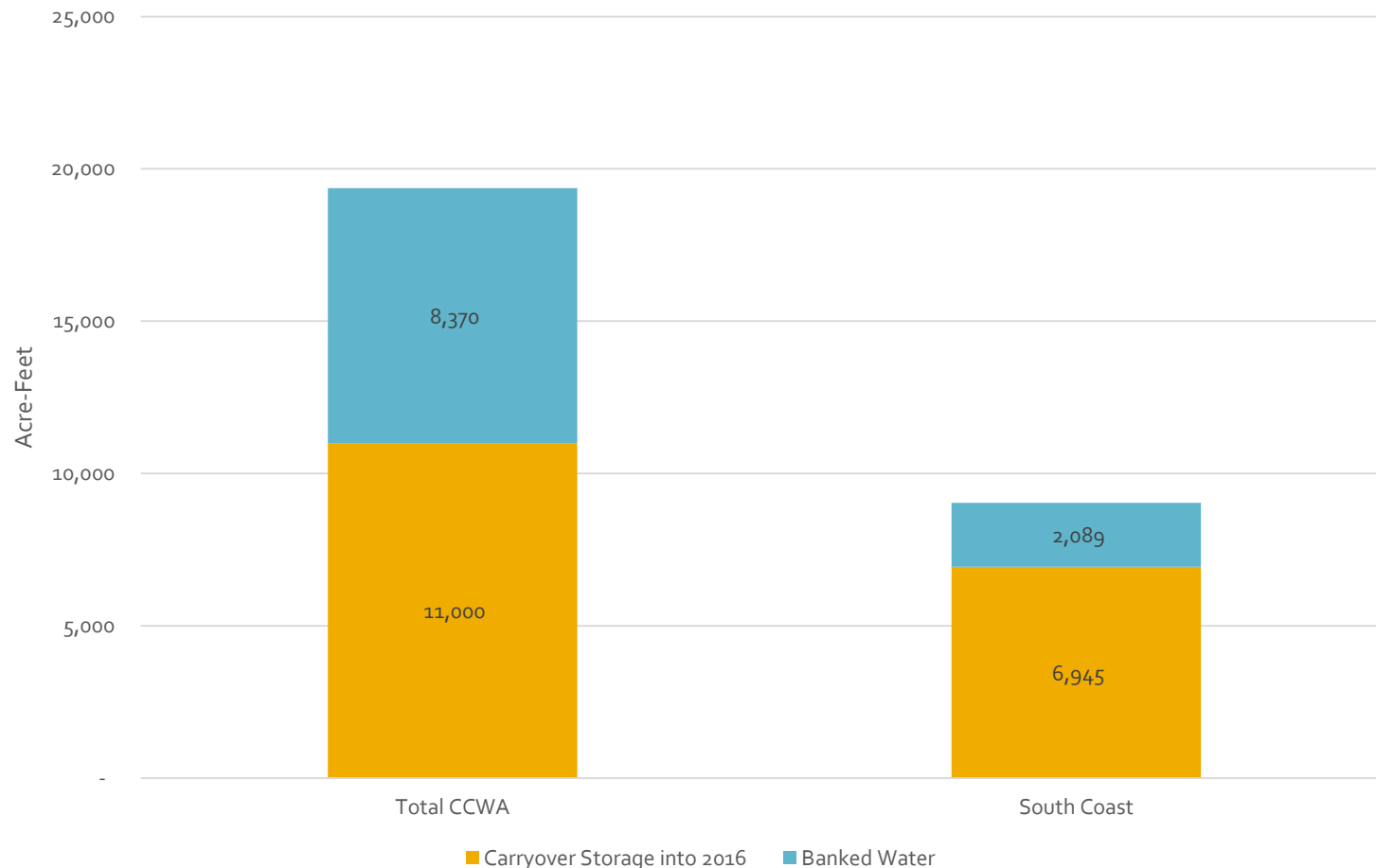
- The plumbing system
- Can move water from almost anywhere in the State
- Can maximize water movement within Santa Barbara County from other sources



Carryover Storage & Banked Water at January 1, 2016 (estimate)

Carryover Storage and Banked Water

Estimated as of January 1, 2016



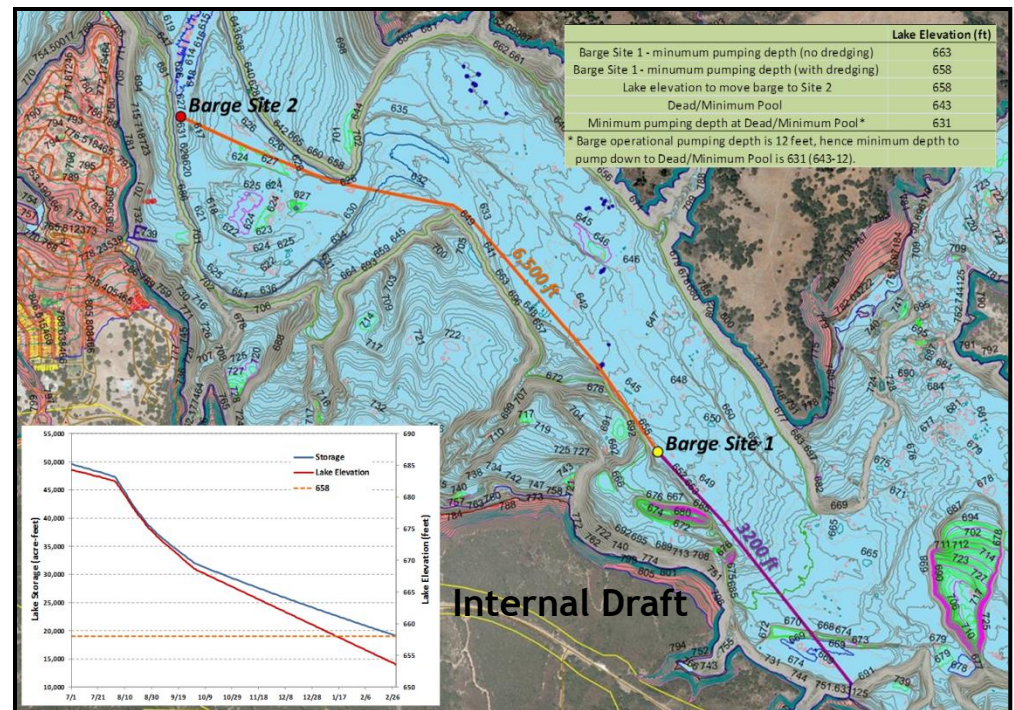
Calendar Year 2016 and Beyond

CCWA Strategic Initiatives

- 2016 Supplemental Water Purchase Program
- Reacquisition of Santa Barbara County 12,214 AF of suspended Table A
- Groundwater banking
- Longer term exchange/banking agreements

Future Options if Drought Continues

- Additional CCWA Supplemental Purchases
- Expansion of Desalinization Plant Capacity
- “In-County” State Water Transfers
 - City of Santa Maria
 - Others?



Emergency Pumping System Sites

Next Steps

- Continue to coordinate with purveyors and emphasize conservation
- Some purveyors may increase restrictions if drought continues (outside watering ban, etc.)
- CCWA Supplemental Water Purchase Program
- Work with CCWA participants on SWP exchanges if possible
- Develop current Cachuma Yield to allow for deliveries through a critical drought; Safe Yield or Optimized Yield
- Work through IRWMP for Funding Support of Long Term Supply Options

Questions?



Reference Data Supplied by Purveyors

(will not be presented unless requested by the Board)

City of Santa Maria

2015 Projected Water Demand- 12,370 AF

2015 Secured Water Supply

- State Water – 3,690 AF
- Local Groundwater – 8,680 AF

Future Water Supply Sources (2016, Dry Winter, assumes 5% State Water Allocation)

- State Water – 1,290 AF
- Local Groundwater – 11,000+ AF

City of Guadalupe

2015 Projected Water Demand = 1050 acre feet.

2015 Secured Water Supply

- Well Water = 1300 acre feet = adjudicated amount.
- State Water = 121 acre feet.
= 20% of Table A amount of 605 acre feet.

City plans to purchase additional 600 acre feet of Table A State Water based on CCWA/DWR negotiations and ultimate Santa Barbara County sign off.

For long-term planning purposes, City counts State Water at 40% based on ability to bank water in San Luis Reservoir. 45% = median annual allocation since San Luis Reservoir last spilled and City carryover was lost.

Los Alamos Community Services District

- The Districts Anticipated Water Demand for 2015 is 81.180 Million Gallons or 249.13 Acre Feet.
- The District was not required to meet a percentage reduction in water demand because we are a Rural Area Water Purveyor and not an Urban Area Water Purveyor. The District was told by the State to implement some other form of Water Conservation.
- New Water Conservation Requirements adopted July 15, 2014 by the State Water Board and by the Los Alamos CSD August 27, 2014. The Districts Ordinance was extended April 22, 2015, and will remain in effect until December 31, 2015. It is more than likely that our conservation efforts will be extended unless lifted by the State Water Board.
- Based on the Los Alamos CSD's Water Conservation Efforts, we have achieved a 20.15% reduction in 2015 compared to 2014 and a 32.95% reduction compared to 2013 in water production.
- The Districts 2016 Anticipated Water Demand is expected to be about the same as 2015 at +/- 250 Acre feet/year.
- The Districts 2016 Water Supply will also be from the San Antonino Groundwater Basin and is the Districts only water supply. Please visit our website at www.losalamos.com for more information on our Water Conservation Efforts and what we do.

Vandenberg Village Community Services District (VVCSD)

2015 Projected Water Demand: **1,180 Acre-Feet**

2015 Secured Water Supply: **1,180 Acre-Feet**
Source: Groundwater (Lompoc Uplands)

Future Water Supply Sources (2016)
Groundwater (Lompoc Uplands) – 100%

Mission Hills Community Service District

202.77 MG – 2015 Projected Water Demand

2015 Secured Water Supply

- Source (3) Groundwater Wells

Future Water Supply Sources (2016) if we
have Dry Winter-Aquifer has sufficient
capacity for any requirements

City of Lompoc

Projected 2015 Water Demand – 1,393.4 Million Gallons

2015 Secured Water Supply -
10 City of Lompoc Groundwater Wells

Future Water Supply Sources (2016) if we have Dry Winter –
BNA (Below Narrows Account) Release from Cachuma,
Summer of 2016

City of Buellton

1,300 AF –2015 Projected Water Demand

2015 Secured Water Supply

- Source A – Buellton Uplands
- Source B – Santa Ynez River Underflow
- Source C – State Water Project

2016 Future Water Supply Sources - Same

City of Solvang

2015 Projected Water Demand as of January 2015 was 1,524 AF

2015 Secured Water Supply Sources as of May 2015:

- 2015 State Water Allocation of 20% = 300 AF
- State Carryover (from 2013 & 2014 supplemental purchases) = 559 AF
- River Wells = 250 AF
- Existing Upland Wells = 220 AF
- New Upland Well = 0 AF
- ID#1 Purchase = 104 AF
- **Deficit = 91 AF**

2015 Projected Water Demand as of November 2015 is 1,150 AF

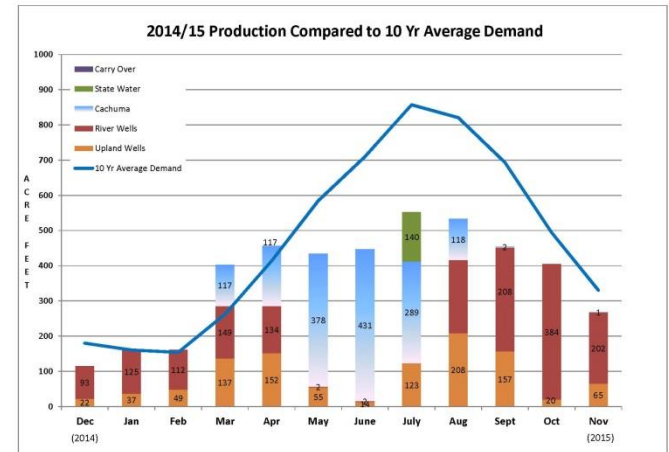
SYRWCD, ID No. 1

Water Production and Demand

- ❑ Annual 10-year High Production = 6,368 AF
- ❑ 10-yr Average Annual Production = 5,663 AF
- ❑ 2014/15 Drought Annual Production = 4,864 AF

- ❑ Planned Supplies to meet 2015/2016 Demand
 - Santa Ynez Upland Groundwater Basin Wells
 - Santa Ynez River SWRCB licensed diversions
 - State Water Project 10% allocation
 - Cachuma Project 0%

- ❑ Domestic, Ag and Commercial Customer forecast 2015/16 drought water demand
 - 4,555 AF



La Cumbre Mutual Water Company

1,350 AF 2015 Projected Water Demand

2015 Secured Water Supply

1,000 AF - Goleta GW Basin

300 AF- Foothill Basin

220 State Water

1,1560.46 AF 2013 Production Jun-Nov

698.99 AF 2015 Production Jun-Nov

40% Reduction

Carpinteria Valley Water District

12/1/15

Projected CY 2016 Demand: 3,740 AF

Secured Source of Supply:

- Groundwater:	2,820 AF
- Cachuma Project:	600 AF
- State Water Project:	<u>600 AF</u>

difference: + 280 AF

If the drought continues to negate both Cachuma and State Water beyond CY 2016 the District will rely on local Groundwater.

Goleta Water District

Water Year 2015-16 Projected Water Demand: 8,236 acre feet (AF)

Water Year 2015-16 Secured Water Supply

- Lake Cachuma: 2,168 AF
- State Water: 745 AF
- Groundwater: 6,115 AF

Future Water Supply Sources (Water Year 2016-17) if we have Dry Winter

- Groundwater: 6,833 AF

Jun-Oct 2015 demand reduction (compared to Jun-Oct 2013): 28%

City of Santa Barbara

