

ZONE 7 BOARD OF DIRECTORS
Water Resources Committee

Thursday, April 9, 2015
4:00 p.m.

Location: Boardroom
Zone 7 Administration Building
100 North Canyons Parkway
Livermore, CA 94551

Director Greci
Director McGrail
Director Stevens

A G E N D A

1. Public Comment on Items Not on Agenda
2. Annual Sustainability Report
3. Continued Support of Statewide Emergency Water Conservation Efforts
4. Water Supply Evaluation Amendment
5. Verbal Comments
6. Adjournment



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7

100 NORTH CANYONS PARKWAY • LIVERMORE, CA 94551 • PHONE (925) 454-5000 • FAX (925) 454-5727

ORIGINATING SECTION: Integrated Planning

CONTACT: Brad Ledesma/Carol Mahoney

AGENDA DATE: April 15, 2015

ITEM NO. X

SUBJECT: Continued Support of Statewide Emergency Water Conservation Efforts

SUMMARY:

- On January 17, 2014, Governor Brown declared a drought state of emergency and asked everyone to reduce water use by 20 percent.
- On January 29, 2014, Zone 7 declared a local state of drought emergency and adopted a drought emergency response plan.
- On April 16, 2014, Zone 7 directed staff to provide direction to the water retailers for achieving needed conservation consistent with its Stage 2 Action Plan.
- Through a tremendous effort throughout the Tri-Valley, water demands on Zone 7's system dropped by 29 percent in 2014, which bolstered future water supplies in the face of potentially dry years in 2015 and 2016.
- The 2015 Annual Sustainability Report indicates that Zone 7 can provide 100 percent of requested water deliveries in 2015 and 96 percent of requested deliveries in 2016 even if there is no conservation in 2015 and drought conditions worsen next year.
- On March 17, 2015, the State Water Resources Control Board extended and expanded statewide emergency water conservation regulations. Urban water suppliers must now limit the number of days per week that customers can irrigate outdoors in accordance with their drought contingency plans or, if their plan contains no specific limit, irrigation must be limited to no more than two days a week.
- On April 1, 2015, Governor Brown imposed 25 percent mandatory conservation statewide on all municipal and industrial water users.

FUNDING:

Not applicable.

RECOMMENDED ACTION:

Adopt attached resolution supporting statewide emergency water conservation efforts.

ATTACHMENTS:

Resolution

ZONE 7
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
BOARD OF DIRECTORS

RESOLUTION NO.

INTRODUCED BY
SECONDED BY

Continued Support for Statewide Emergency Water Conservation Efforts

WHEREAS, on January 17, 2014, Governor Jerry Brown declared a State of Emergency due to the current drought conditions and asked everyone to reduce water use by 20%; and

WHEREAS, on March 17, 2015, the State Water Resources Control Board extended and expanded statewide emergency water conservation regulations; and

WHEREAS, the 2015 Annual Sustainability Report indicates that Zone 7 can provide 100 percent of requested deliveries in 2015; and

WHEREAS, Governor Brown announced mandatory 25 percent conservation for all municipal and industrial users statewide; and

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District supports the extended and expanded statewide emergency water conservation efforts even though Zone 7 can meet 100 percent of requested deliveries.

BE IT FURTHER RESOLVED that the Board directs staff to coordinate closely with the water retailers on conservation messaging and other efforts necessary to support State Water Resources Control Board regulations and continue the local state of drought emergency.

ADOPTED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSENT:

ABSTAIN:

I certify that the foregoing is a correct copy of a Resolution adopted by the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District on April 15, 2015.

By _____
President, Board of Directors



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7

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ORIGINATING SECTION: Integrated Planning

CONTACT: Brad Ledesma/Carol Mahoney

AGENDA DATE: April 15, 2015

ITEM NO. X

SUBJECT: 2015 Annual Review of Sustainable Water Supply for Zone 7 Water Agency

SUMMARY:

- Zone 7 anticipates receiving a 20% allocation (16,100 AF) from the State Water Project (SWP) for 2015; this allocation is not expected to change.
- Lake Del Valle also captured more local runoff than in 2014; Zone 7 anticipates receiving over 2,000 AF in 2015.
- The current allocation is large enough (i.e., greater than or equal to 5%) to allow water supply exchange opportunities, giving Zone 7 access to its drought supplies in Kern County.
- Although Zone 7 has 172,300 AF of water supply in storage, only 40,700 AF is available for recovery in 2015, including SWP Carryover, groundwater, and non-local storage in Kern County. One of the reasons Zone 7 has this much water in storage is the fabulous job the community did to conserve resources in 2014.
- Zone 7 also has agreements with the California Department of Water Resources to purchase water from Yuba and the Multi-Year Pool program, should it be available.
- Together, water available in 2015 includes 18,400 AF of new water, up to 40,700 AF from storage, and possibly additional purchases, should water be made available.
- Requested deliveries (treated and untreated) for 2015 are only 46,700 AF. This is 33% higher than actual 2014 deliveries (35,136 AF) due to water use restrictions in place during 2014, and water demands are projected to increase by 11.6% percent between 2015 and 2019.
- Zone 7 can deliver 100% of requested water demands in 2015, and even assuming drought conditions are more severe next year, can deliver 96% of projected 2016 water demands.
- Zone 7 has constructed two drought emergency projects (Lake I recharge and a new groundwater well), and is currently designing a new reliability intertie with EBMUD and developing another well site for potential temporary booster pump installation located near the intersections of Stanley Boulevard and Valley Avenue.

FUNDING:

Reductions in water use associated with local compliance with statewide conservation regulations and targets will decrease water sales revenue.

RECOMMENDED ACTION:

Information only.

ATTACHMENTS:

Memorandum providing additional background and discussion of the agenda item.

INTEROFFICE MEMORANDUM

DATE: April 15, 2015
TO: Jill Duerig, General Manager
FROM: Brad Ledesma, Associate Engineer
SUBJECT: Annual Review of Sustainable Water Supply for Zone 7 Water Agency

On October 17, 2012, Zone 7 Water Agency (Zone 7) adopted the Water Supply Reliability Policy (Resolution 13-4230).¹ Resolution 13-4230 requires that Zone 7 staff complete an annual review of sustainable water supplies (Annual Review); the purpose of this memorandum is to comply with this requirement.

The 2015 annual review covers the following:

- Status of the Current Drought and Key Planning Assumptions
- Projected Water Demands: Next Five Years
- Available Water Supplies to Zone 7 at the Beginning of 2015
- Comparison of Supply and Demand: Next Five Years
- Programs Necessary to Meet Water Demands

SUMMARY OF FINDINGS

Zone 7 has received a 20% allocation (16,100 AF) from the State Water Project (SWP) for 2015; this allocation is not expected to change. Lake Del Valle also captured local runoff, and Zone 7 anticipates receiving over 2,000 AF. Additionally, the current allocation is large enough (i.e., four times larger than 5%) to allow water supply exchange opportunities in the SWP system and therefore, gives Zone 7 certain access to its drought supplies stored in Kern County. Furthermore, thanks to the incredible drought response from the Tri-Valley, Zone 7 was able to carryover water from 2014 into 2015. Zone 7 has 59,100 AF of supply available for 2015.

A comparison of water supply and demand indicates that Zone 7 can meet 100% of requested water deliveries in 2015, and can meet 96% of requested deliveries in 2016 even if there is no conservation in 2015 and the drought worsens (e.g., 2016 is a 1977 hydrological year type).

Zone 7 completed an intertie between Cope Lake and Lake I, and installed Chain of Lakes Well No. 5 in May and October 2014, respectively. Both projects will help Zone 7 optimize management of groundwater supplies during the current drought. Zone 7 is also designing a new intertie with East Bay Municipal Utility District (EBMUD) and a new well located near the intersection of Stanley Boulevard and Valley Avenue.

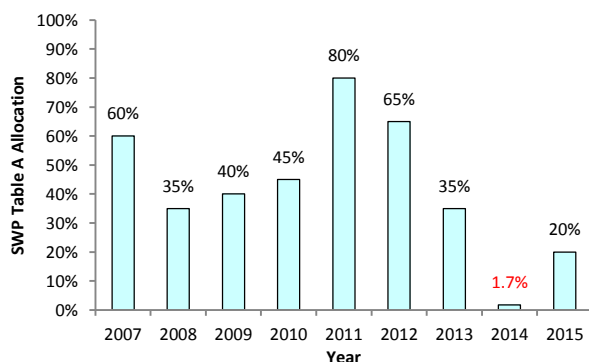
In addition to these efforts, Zone 7 continues to support statewide emergency conservation regulations and targets, and will continue to adjust operations as necessary to optimize use of all available resources.

¹ A copy of Resolution 13-4230 is provided as Attachment A.

STATUS OF THE CURRENT DROUGHT AND KEY PLANNING ASSUMPTIONS

The average State Water Project allocation over the past 9 years, including 2015 has been only

Average SWP Allocation in the Past 9 Years, including 2015: 43%



Note: Although the allocation in 2014 was 5%, its use was limited to September through December, effectively making it a 1.7% allocation.

43%, and only 30% over the past four years. Additionally, runoff in the Sacramento River has been below normal or worse in eight out of the past nine years, and statewide snowpack – a vital source of supply for the State Water Project – has averaged only 31% of normal over the past four years.² Additionally, local rainfall has also been well below average (i.e., by more than 20%) in seven out of the last nine years.

Updated Water Supply Impacts to Zone 7

Unlike 2014, the initial allocation from the State Water Project is 20%; this a large enough initial allocation (i.e., four times greater than 5%) to allow water supply exchange opportunities, which gives Zone 7 certain access to its drought supplies stored in Kern County.

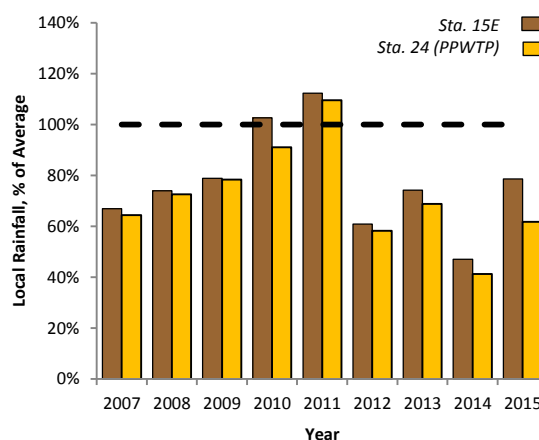
Moreover, although still below average, local rainfall through March 15, 2015, is already 70% higher than the total rainfall in 2014. More local rainfall increases available groundwater storage and surface water captured in Lake Del Valle.

Furthermore, the Tri-Valley's successful response to the drought reduced water supply needs by 29% in 2014 compared to 2013, which created carryover water and helped prepare for potentially dry years from 2015 to 2019 by bolstering future water supplies.

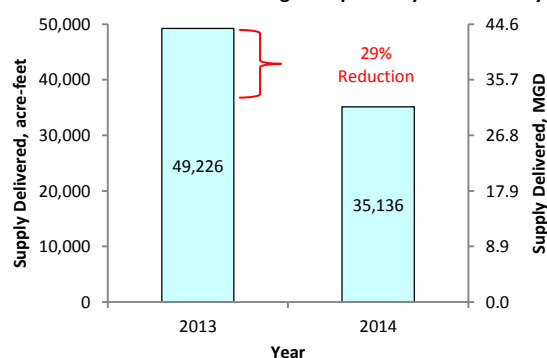
Annual Sustainability Report Assumptions

The analysis in this report conservatively assumes critically dry 1977 conditions in 2016. Given that 2007 through 2014 were below normal, dry, or critically dry, with the exception of a wet 2011, the years 2017, 2018, and 2019 were then assumed to be normal years. This scenario, therefore, conservatively assumes a ten-year drought (2007-2016), followed by a return to normal conditions.

Local rainfall has been significantly below average in 7 of the last 9 years, including 2015



Zone 7 had a 29% reduction in total supply delivered thanks to the incredible drought response by the Tri-Valley



² Based on the statewide April 1 average snowpack from 1950 to 2014; data provided by the Department of Water Resources.

PROJECTED WATER DEMANDS: NEXT FIVE YEARS

Every year Zone 7 receives requests from all of its customers for projected water supply needs for the next five years (assuming no conservation)—Table 1 summarizes these projections from 2015 to 2019, and presents 2014 actual water production for comparative purposes. As shown in Table 1, projections for 2015 are significantly higher than actual 2014 water demand; this is because requested deliveries without conservation are 95% of 2013 levels. Additionally, water demands between 2015 and 2019 are four to nine percent compared to 2014 projections due to prolonged water conservation and new recycled water projects.

Demands are projected to recover, and are slightly lower than the 2014 Annual Sustainability Report

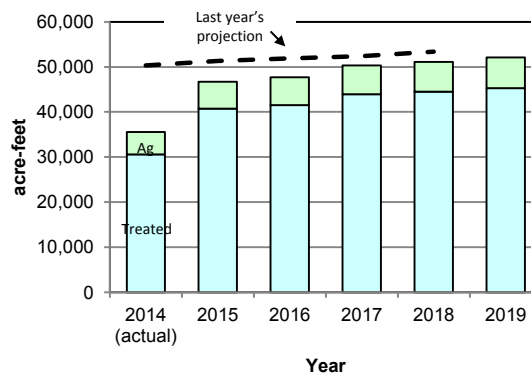


Table 1. 5-Year Water Demand Projections are Similar to Last Year's Report, acre-feet^(a)

Component	2013 (actual)	2014 (actual)	2015	2016	2017	2018	2019
M&I ^(b,c,d)	43,052	30,155	40,700	41,500	43,900	44,500	45,300
Untreated ^(e)	6,174	4,981	6,000	6,200	6,400	6,600	6,800
Total	49,226	35,136	46,700	47,700	50,300	51,100	52,100
<i>2013 Annual Report</i>		50,300	51,300	51,900	52,400	53,400	--
<i>% Increase from 2013 Annual Report</i>			-9%	-8%	-4%	-4%	

(a) Projected demands were rounded to the nearest 100 acre-feet.

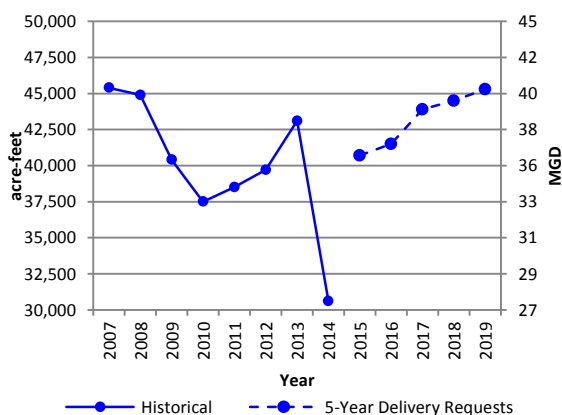
(b) M&I = Municipal and Industrial.

(c) Demands include California Water Service Company, Dublin San Ramon Services District, City of Livermore, City of Pleasanton, Zone 7's direct retail customers, and Zone 7's unaccounted-for water.

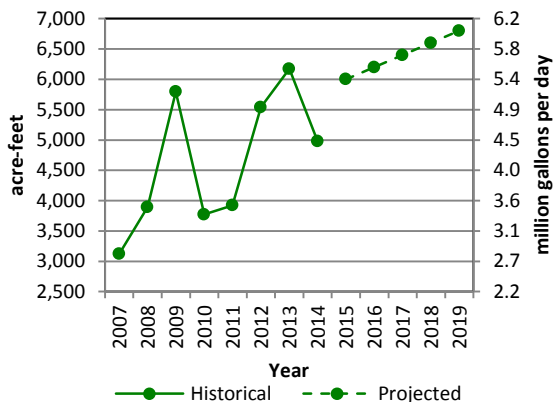
(d) Demands include unaccounted-for water and groundwater-pumping quota for Dublin San Ramon Services District.

(e) Zone 7's untreated water demand is primarily for irrigation.

Retailers are projecting a 95% recovery from 2014



Agricultural demands are highly variable, and could increase by 800 AF between 2015 & 2019



AVAILABLE WATER SUPPLIES TO ZONE 7 AT THE BEGINNING OF 2015

The purpose of this section is to review the water supplies, including contracted supply and storage, available to Zone 7 at the beginning of 2015.

Projected Yield from Contracted Water Supplies in 2015

Each year Zone 7 receives water from its contracts with the DWR for imported SWP water³, its local water right permit on Arroyo del Valle, its contract with BBID, and its contract with DWR for Yuba Accord Water and the SWP multi-year pool (formerly known as the turnback pool).

Zone 7 is expecting 18,400 acre-feet from existing contracts in 2015

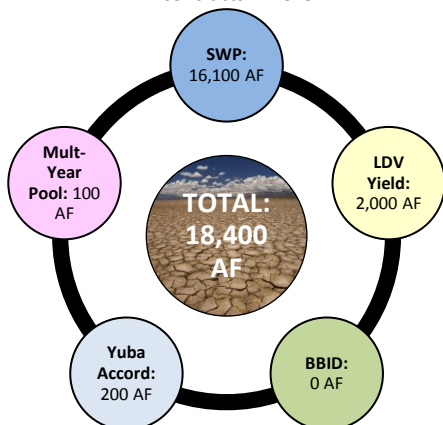


Table 2 presents the projected yield in 2015, an estimate for 2016 assuming 1977 hydrologic conditions, and then a comparison to the long-term average yield. As shown in Table 2, Zone 7 expects 18,400 acre-feet of water supply from its current contracts in 2015; if the drought continues into 2016, and conditions are more severe (i.e., 1977 conditions), Zone 7 may only receive 8,700 AF in 2016.

Table 2 also shows that the long-term average yield is slightly lower than previous projections due to the future uncertainty associated with Zone 7's existing contract with Byron Bethany Irrigation District (BBID).

Table 2. Projected Yield from Existing Contracted Water Supplies, acre-feet

Source ^(a)	2015 (1991)	2016 (1977)	2017 to 2019 (Long-term Average)	
Table A	16,100	8,100	48,400	86.1%
Byron Bethany Irrigation District (BBID)	0	0	0	0%
LDV Yield	2,000	0	7,300	13.0%
Yuba Accord	500	500	500	0.9%
Multi-Year Program	100	100	0	0%
Subtotal	18,700	8,700	56,200	100%
Operational Losses	0	0	(2,900)	(5%)
Total	18,700	8,700	53,300	95%
Yield from 2014 Annual Report	0	9,100	55,050	
% Increase from 2014 Annual Report	100%	-4%	-3%	

(a) See 2010 Urban Water Management Plan: www.zone7water.com/publications-reports/reports-planning-documents.

(b) 2015 yield is based on 20% (current 2015 allocation) of 80,619 AF; over 80% of this is already in San Luis Reservoir.

(c) Long-term average yield is 60% of Zone 7's Table A amount of 80,619 AF per DWR's Final 2013 Reliability Report.

(d) Operational losses associated with artificial groundwater recharge, brine losses, evaporative losses, and putting water into non-local banking programs. Quantity is based on the Annual Operations Plan for 2015.

³ This includes carryover from 2014, which is discussed in the next section.

Available Storage at the Beginning of 2015

Zone 7 currently stores water in various storage facilities, including Kern County groundwater-banking programs, to help meet water demands when needed. Table 3 summarizes the total accrued water in storage available to Zone 7 over the next five years, the estimated water in storage available in 2015, and estimated water supply available from storage between 2016 and 2019. As shown in Table 3, Zone 7 has about 13% less accrued storage and 38% more storage available for use in 2015 than projected in last year's report; 2017 has 41% less storage if 2016 is severely dry.

2015 Water Supply from Storage

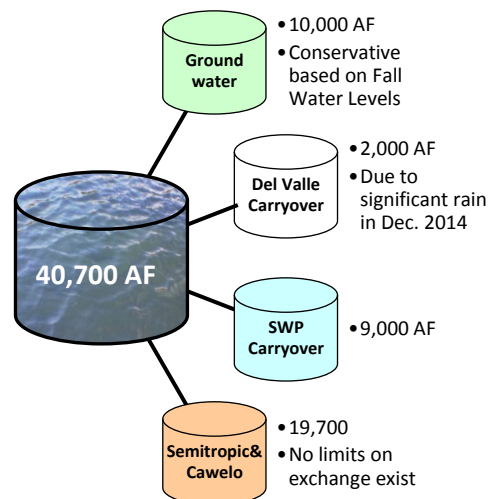


Table 3. Available Storage, acre-feet

Source	Total Accrued Water in Storage ^(a)	Estimated Supply in Storage Available for Use			
		2015 (1991)	2016 (1977)	2017 (Long-term Average)	2018 & 2019 (Long-term Average)
Main Groundwater Basin	69,000	10,000 ^(b)	8,000 ^(c)	5,000 ^(c)	5,000 ^(c)
Lake Del Valle Carryover ^(d)	2,000	2,000	2,000	0	0
State Water Project Carryover ^(e)	9,000	9,000	7,800	0	10,000
Semitropic ^(f,g)	72,018	9,700	9,100	9,100	9,100
Cawelo ^(f,h)	20,321	10,000	10,300	0 ⁽ⁱ⁾	10,000 ⁽ⁱ⁾
Total	172,339	40,700	37,200	14,100	34,100
Available Storage from 2014 Annual Report	197,600	29,500	24,100	24,100	24,100
% Increase from 2014 Annual Report	-13%	38%	54%	-41%	41%

^(a) Accrued storage estimate is through April 6, 2015.

^(b) As the amount of water stored decreases in the main basin, the amount of groundwater available in any given year also decreases due to well locations, physical/hydrogeological conditions, and defined historic lows. For 2015, Zone 7 staff estimates that approximately 10,000 acre-feet would be available in 2015 based on October 2014 water levels.

^(c) A conservatively small pumping amount of 8,000 acre-feet was used in 2016; minimal pumping (5,000 acre-feet) from 2017 to 2019 was assumed to plan for recovery of the groundwater basin.

^(d) Zone 7 will carry 2,000 AF, after evaporative losses, from 2014 into 2015, and expects to be able to carry approximately 2,000 AF of local supply from 2015 into 2016. The analysis assumed there would be no carryover from 2017 to 2019.

^(e) Zone 7's total SWP carryover from 2014 into 2015 is 9,000 acre-feet, and expects to carryover approximately 7,800 acre-feet from 2015 into 2016. Zone 7 typically carries about 10,000 acre-feet from year to year.

^(f) Water supply exchanges between SWP contractors are required for Zone 7 to receive any water from either Semitropic or Cawelo. A 20% allocation from DWR will allow Zone 7 to access its stored water in Kern County.

^(g) Zone 7 can pump back up to 9,100 acre-feet from Semitropic, and depending on the SWP allocation, also request exchange water. This analysis conservatively assumes Zone 7 can only request up to 9,100 AF between 2017 and 2019.

^(h) For this analysis, it was assumed that Zone 7 would be able to access 10,000 acre-feet in 2015, and that the remainder (10,300 acre-feet) could be available in 2016.

⁽ⁱ⁾ Zone 7 would likely add storage to Cawelo in 2017 so that it is available in future years.

COMPARISON OF SUPPLY AND DEMAND: NEXT FIVE YEARS

Table 4 compares available water supplies to projected baseline water demands over the next five years. For comparative purposes in this memorandum, long-term average supplies and water supply in storage available for use over the next five years were used to compare with projected water demands between 2017 and 2019. As shown in Table 4, Zone 7 can deliver enough water supply to meet 100% and 96% of projected water needs in 2015 and 2016, respectively, even though drought conditions persist in 2015, there is no conservation in 2015, and even if drought conditions worsen in 2016. Table 4 also shows that Zone 7 can meet 100% of water deliveries if normal hydrologic conditions return in 2017.

Zone 7 can deliver 100% of requested deliveries in 2015, and 96% in 2016 even if drought conditions worsen next year and there is not conservation in 2015

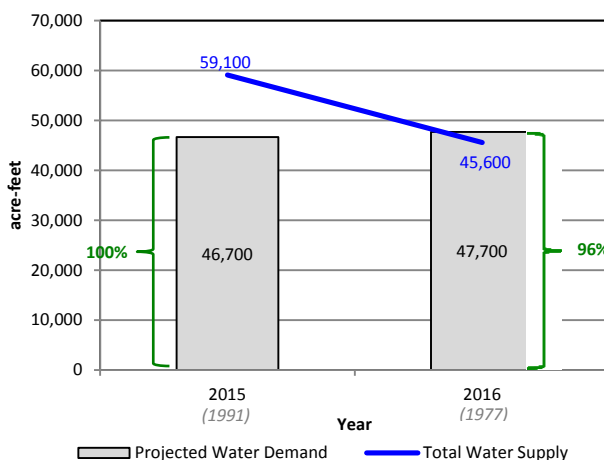


Table 4. Comparison of Supply and Demand: Next Five Years

Component	2015 (1991)	2016 (1977)	2017 (Normal)	2018 (Normal)	2019 (Normal)
Water Supply	18,400	8,700	53,300	53,300	53,300
Water Supply in Storage Available for Use	40,700	37,200	14,100	34,100	34,100
Total Water Supply ^(a)	59,100	45,900	67,400	87,400	87,400
Water Demand ^(b)	46,700	47,700	50,300	51,100	52,100
% of Demand Delivered	100%	96%	100%	100%	100%

^(a) Excess water supplies are used to replenish the local groundwater basin and banking programs in Kern County.

^(b) Includes both M&I and Untreated water demands.

PROGRAMS NECESSARY TO MEET WATER DEMANDS

The review completed as part of this memorandum indicates that Zone 7 can meet 100% of requested 2015 water demands with no conservation. The purpose of this section is to outline the demand reduction programs advisable to meet State standards while satisfying requested water deliveries from Zone 7 customers over the next two years.

Support Statewide Emergency Conservation Regulations and Targets

On March 17, 2015, the State Water Resources Control Board extended and expanded statewide emergency water conservation regulations. In particular, urban water suppliers must now limit outdoor irrigation in accordance with their drought contingency plans, or limit outdoor irrigation to no more than two days a week if their plan contains no specific limit. Zone 7 staff recommends supporting these regulations. This was expanded by Governor Brown on April 1st when he announced State-Mandated 25% conservation for all municipal and industrial water users. He also asked the State Board to adopt additional regulations to enforce this mandate.

Statewide Regulations Imposed Thus Far by the State Water Resources Control

What's Prohibited for Everyone	What's Required for Business	What Water Suppliers Must Do
→ Potable water to wash sidewalks & driveways → Runoff when irrigating with potable water → Hoses with no shutoff nozzles to wash cars → Potable water in decorative water features that do not recirculate the water → Outdoor irrigation during and 48 hours following measurable precipitation	→ Restaurants and other food service establishments can only serve water to customers on request → Hotels and Motels must provide guests with to option to not have towels and linens laundered daily	→ Impose restrictions on outdoor irrigation → Notify customers about leaks that are within the customer's control → Report on water use monthly → Report on compliance and enforcement

Emergency Drought Projects

Zone 7 completed two major emergency drought projects that help optimize management of groundwater supplies during the current drought.

Lake I to Cope Lake Pipeline Project

Since November 2013, Zone 7 has been capturing groundwater discharges by gravel-mining companies (e.g., Vulcan) in Cope Lake, which prevents percolation of that water into the local groundwater basin due to its clay-like bottom. However, in May 2014, Zone 7 completed a pipeline that transfers that water into Lake I, which does have the ability to percolate mining discharges back into the groundwater basin. Zone 7 has captured 7,449 acre-feet since 2013, and transferred 2,220 acre-feet to Lake I.



Lake I to Cope Lake Intertie
(completed in May 2014)

Chain of Lakes Well No. 5



Chain of Lakes Well No. 5
(completed in October 2014)

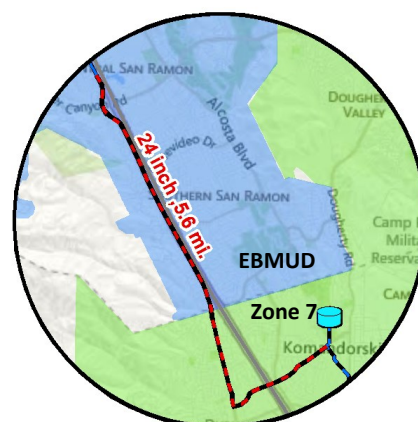
Zone 7 completed Chain of Lakes Well 5 in October 2014. This well provides 2.1 million gallons per day of additional pumping capacity, and access to additional groundwater storage for use during the drought. The well is located near the northwest corner of Lake H.

Future Projects in Support of the Drought Emergency

In addition to the emergency projects already completed, Zone 7 is also moving forward with other key projects, including a major reliability intertie with East Bay Municipal Utility District and a second new groundwater well.

Reliability Intertie with EBMUD

Zone 7 is currently working with EBMUD to design and construct a new intertie that would connect Zone 7's water system to EBMUD's water system. Once completed, the intertie will not only provide a lifeline for Zone 7 during catastrophic events (e.g., record drought, earthquake in the Delta, or loss of the South Bay Aqueduct), but also allow Zone 7 to participate in regional water supply exchanges or access to another source of supply during planned outages; all improve reliability for the Tri-Valley area.



Zone 7 is currently designing a new reliability intertie

Busch Valley Well No. 1 – Phase 1



Location of Phase 1 of the Busch Valley Well

Zone 7 is currently designing Busch Valley Well No. 1. The first phase includes a connection for the new well to Zone 7's system. In the near term, this connection can be used in conjunction with a temporary booster pump station to move well water east during periods of limited surface water. The connection should be in place by June 2015.

Other Efforts in Support of the Drought Emergency

In addition to the projects listed above, Zone 7 staff is in the process of amending its 2011 Water Supply Evaluation in light of lessons learned in 2014; the amendment is expected to be completed by the summer of 2015. Additionally, Zone 7 staff will continue to monitor local and statewide conditions, adjust operations as necessary to optimize use of available resources, remain prepared for another year of drought, and continue to regularly meet with its local water supply retailers and untreated water customers.

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ATTACHMENT A: LATEST HYDROLOGIC CONDITIONS

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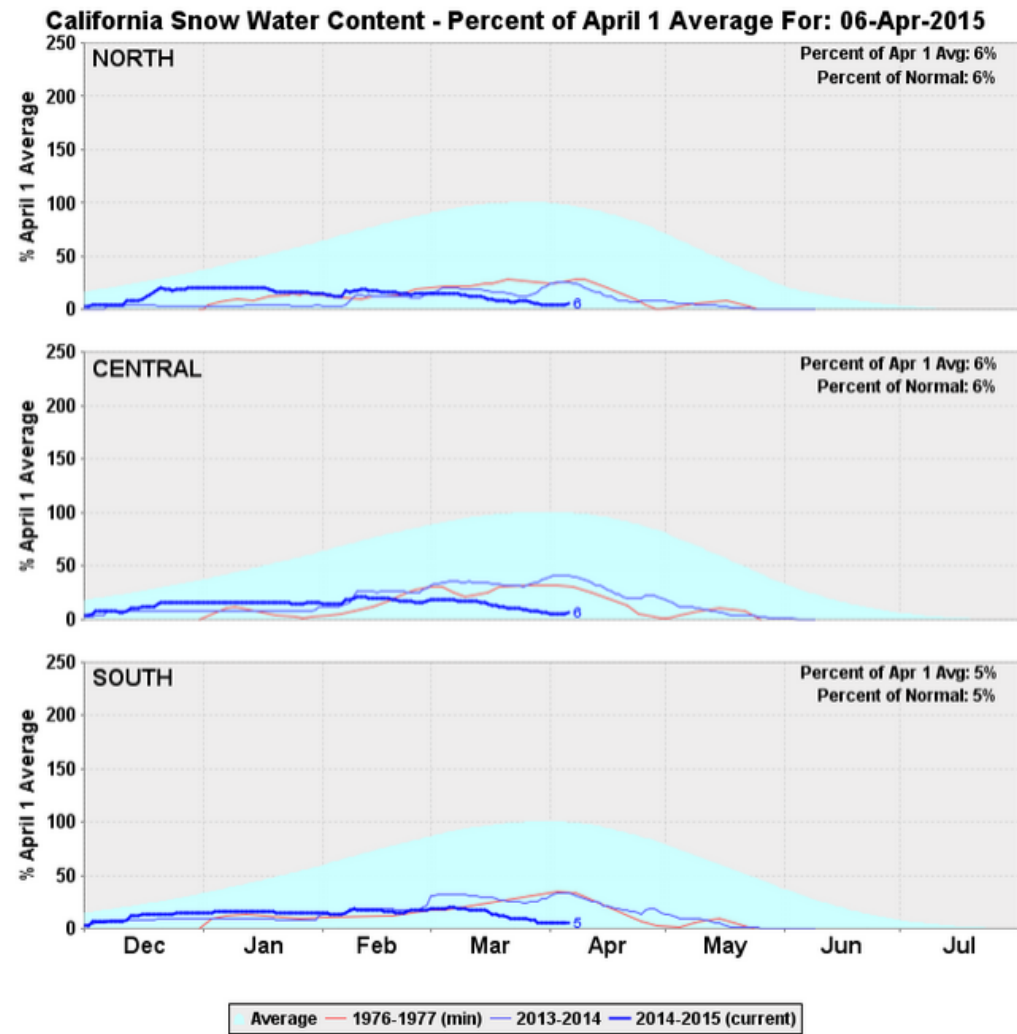
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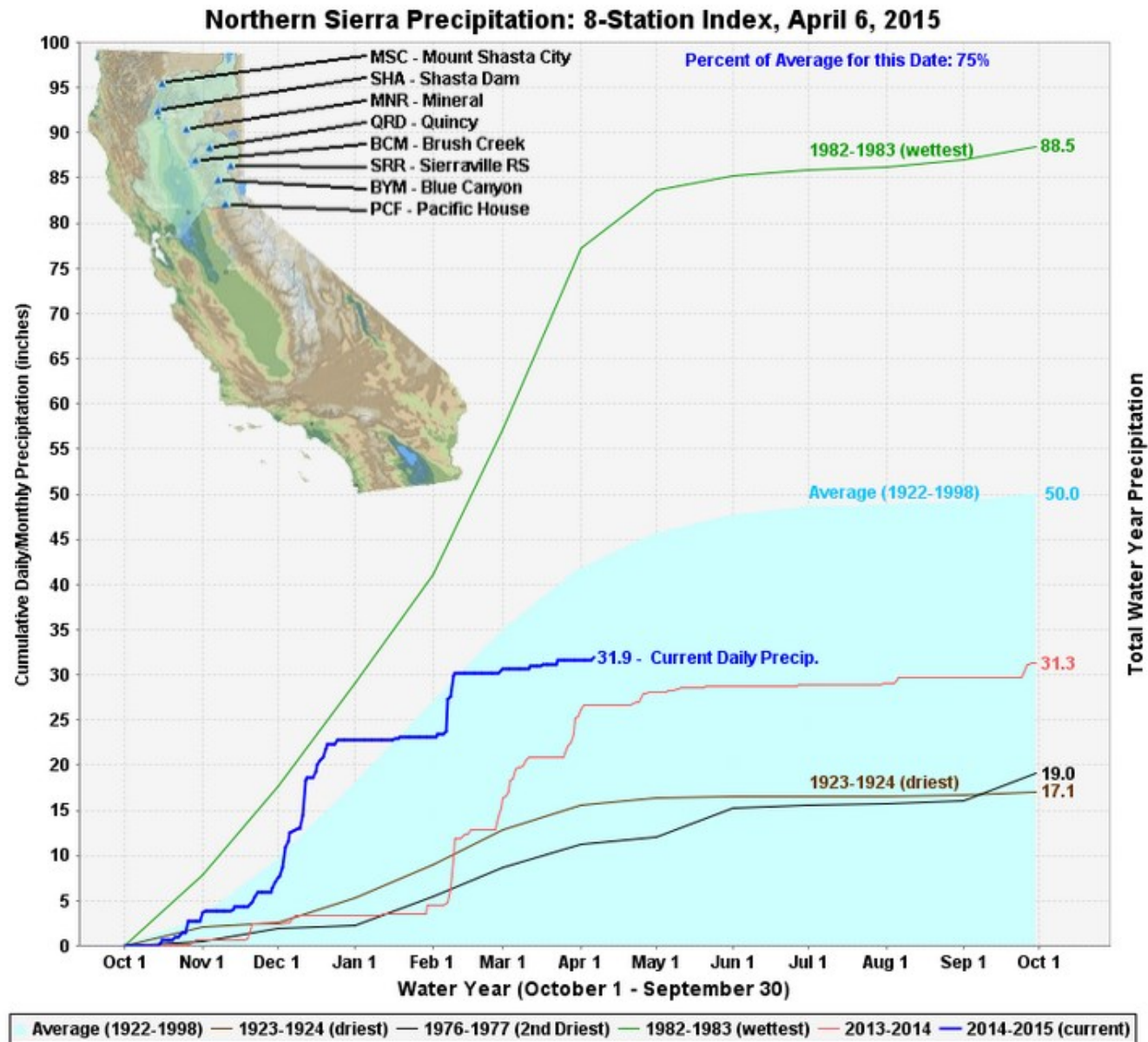
California Snow Water Content

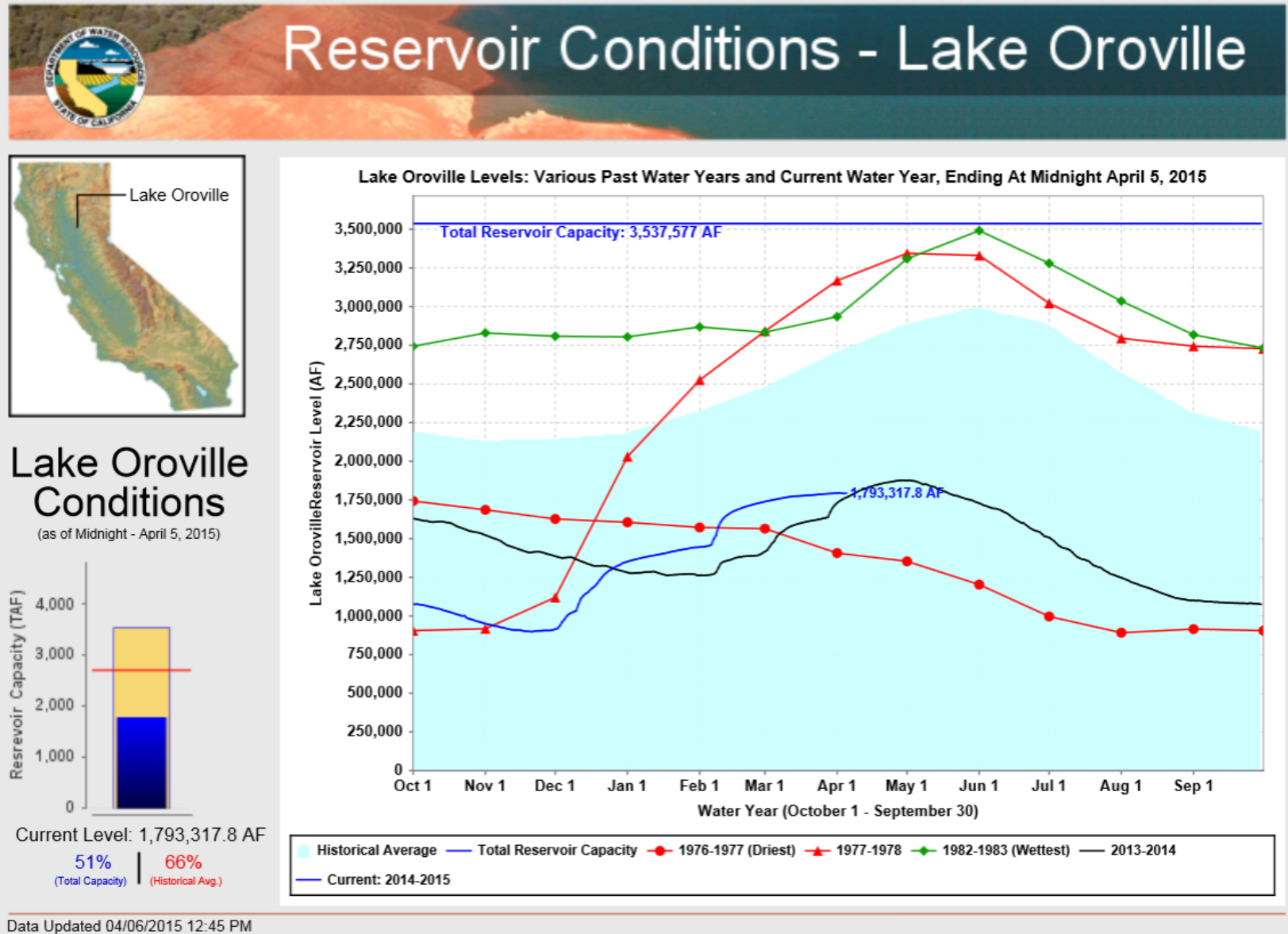
% of April 1 Average / % of Normal for This Date

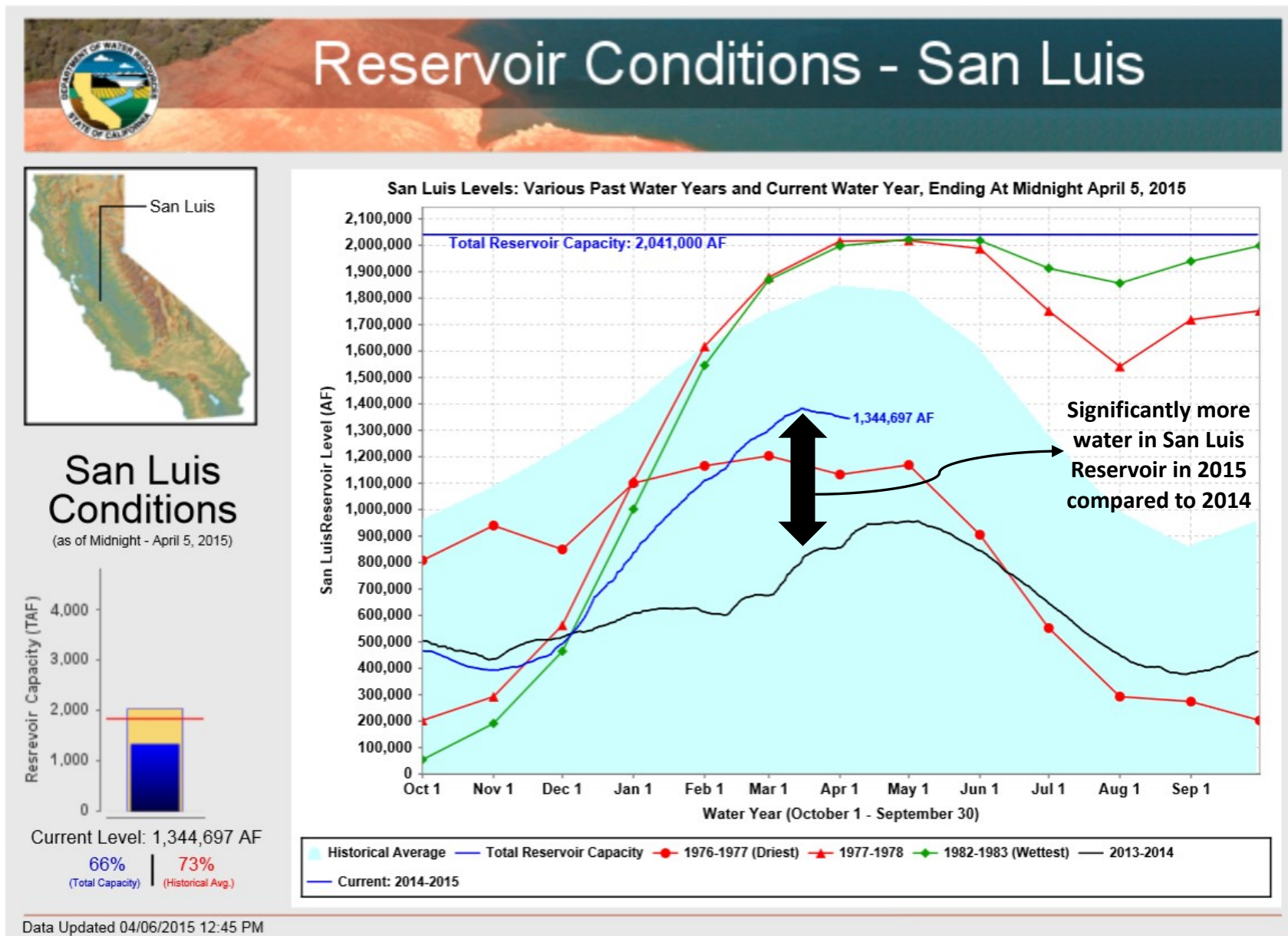


Statewide Average: 5% / 5%



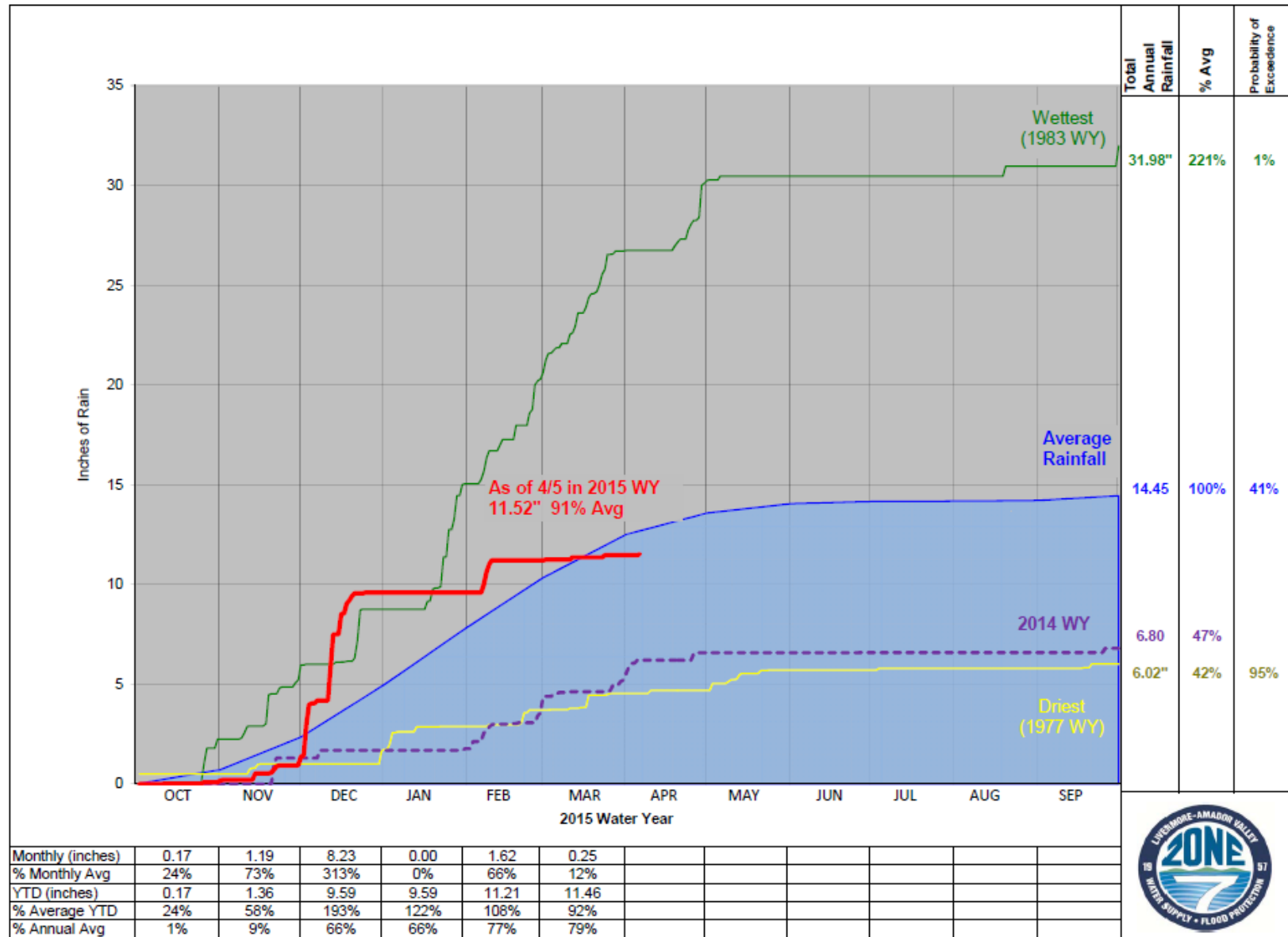






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Local Rainfall (Livermore Station 15e)



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ATTACHMENT B: WATER SUPPLY RELIABILITY POLICY

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