

Harvest Power Contract Update

Board of Directors Meeting

April 12, 2016

Harvest Power Contract Update



- Review of March 22 Workshop
 - Project Risk Factors
- Current Key Issues
 - Capital Costs
 - Schedule
 - Performance Bond
- Next Steps



From March 22 Workshop

Overall Risk Factors



1. **Aggressive Schedule**
2. District as Subcontractor to Waste Management
3. **Harvest Power Capacity and Viability**
4. **Approach to Risk and Liability Coverage**
5. Reliance on Emerging Technology
6. **Increased Capital Costs**
7. Construction Site Constraints and Interface Issues
8. Feedstock Growth
9. Operating Cost Control
10. Potential Odor Issues

Current Key Issues

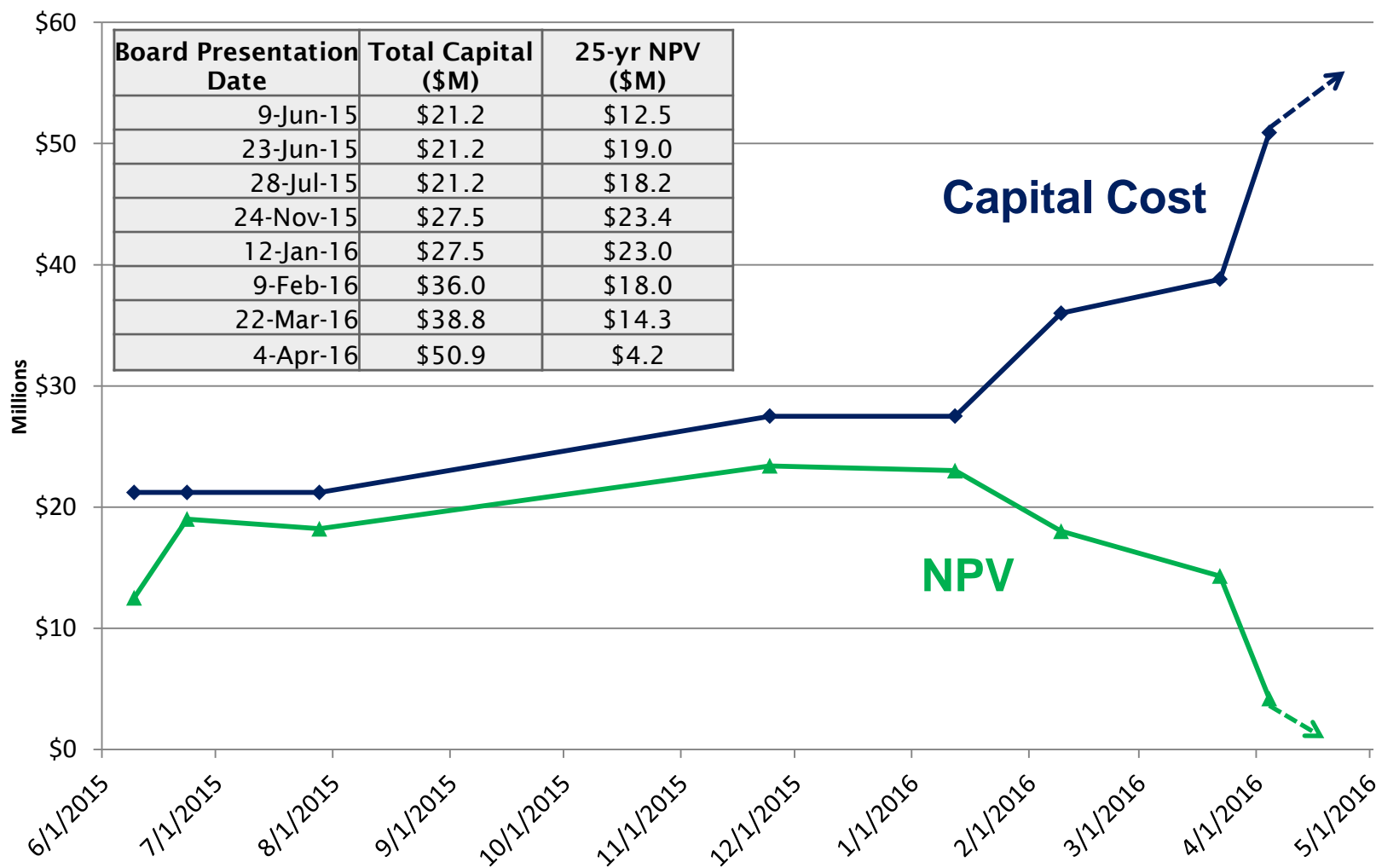
Capital Costs



- Total capital cost now estimated at **\$50.9M** (vs. \$38.8M at time of March 22 workshop)
 - On March 30, HP provided a capital cost estimate of \$41.1M, a \$5.6M increase over its March 14 estimate; HP indicated that it will not be able guarantee the capital cost at the time of contract award
 - After adjustments by EBMUD, the HP contract price is estimated at **\$43.7M** (an increase of \$6.8M over March 22 estimate)
 - Following receipt of construction bids, the Utilities and Site Improvements Project cost has increased by \$0.8M (from \$6.4M to **\$7.2M**)
 - Since the workshop, HP has stated that it cannot commit to passing through the \$4.8M CEC grant from HP to EBMUD
 - Without CEC grant, total capital cost is
$$\text{\$43.7M} + \text{\$7.2M} - \text{\$4.8M} = \text{\$50.9M (not firm)}$$

Current Key Issues

Capital Costs and NPV Impact



Current Key Issues

Project NPV



- The Project NPV:
 - Provides a net financial benefit to rate payers
 - Provides financial buffer to allow District to accept higher level of risk
 - Financial support for District staff oversight during construction and through implementation

	March 22	April 12
Capital Cost	\$38.8M	\$50.9M
25-year NPV	\$14.3M	\$4.2M
20-year NPV	\$5.6M	-\$4.5M

Current Key Issues Schedule



- Schedule Drivers
 - California Energy Commission (CEC) expects RNG Facility to be operational by December 31, 2016
 - Waste Management – District negotiated an extension with WM to December 31, 2017 for acceptance of Oakland food waste (under review by City staff)
- Additional Schedule Challenges
 - HP recently stated that it cannot commit to a schedule upon contract execution (would need to first complete design, 2-3 months out)
 - HP has yet to secure a California contractor's license; likely to delay schedule

Current Key Issues

Performance Bond



- HP proposed multiple bonds from subcontractors
- During contract negotiations, HP requested additional non-traditional limits to liability
- These non-traditional limits to liability were unacceptable to District in absence of HP performance bond to integrate project elements
- HP investigated possibility of direct HP performance bond, but HP has stated that it is not possible

Preliminary Engineering Services (PES) Contract



- \$1.2M contract with HP for critical path items:
 - **Design:** ~50% design documents
 - **Permitting:** Submittal-ready packages for permits that drive the schedule
 - **Pre-purchase of RNG equipment:** District paid \$257,000 to RNG equipment manufacturer for design work and accelerated procurement; \$107K of down payment would be refunded if District chose not to proceed with purchase by April 30
- PES contract concludes April 30, 2016

Value of PES Work Products



- Design
 - High quality work conducted to date
 - Provides a benchmark and foundation for future work
- Permitting
 - Permits pursued for HP project would be needed for other future Food Waste program efforts
- RNG Facility may be attractive as a stand alone project
 - Staff is conducting a more detailed review of RNG project economics with and without the CEC grant
- Staff redirecting remaining PES contract value to further RNG associated work

Next Steps



- Complete work under Preliminary Engineering Services Agreement
- Further evaluation of RNG Facility – as a stand alone project
- Communicate Food Waste Program status to City of Oakland/Waste Management
- Develop approach to next steps in Food Waste Program growth

BACKUP SLIDE

Details on Cost Increases



	March 22 (\$M)	April 12 (\$M)	Difference (\$M)	
<i>Harvest est. contract price</i>	35.5	41.1	5.6	
Harvest est. contract price after EBMUD adjustments	36.85	43.7	6.85	} 11.64
CEC grant	-4.79		4.79	
Grant management fee	0.25		0.25	
Site Improvements	6.4	7.2	0.8	
Total Project Est. Cost	38.71	50.9	12.2	

Water Supply Board Briefing

Water Operations Department

April 12, 2016

Water Supply Briefing

- California Water Supply
- District Water Supply
- Water Supply Projections
- Water Supply Schedule



California Water Supply

California Water Supply

Snow Surveys



April 2015



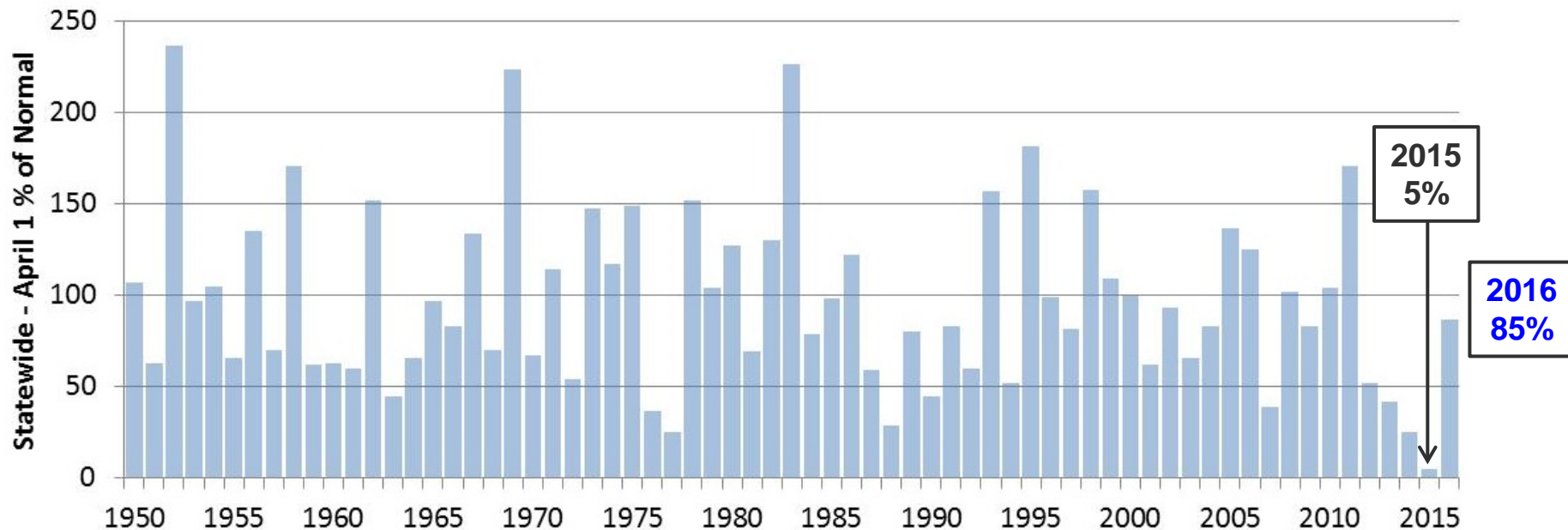
April 2016



CA Department of Water Resources

California Water Supply

April 1 Snow Survey – Historic Look



California Water Supply

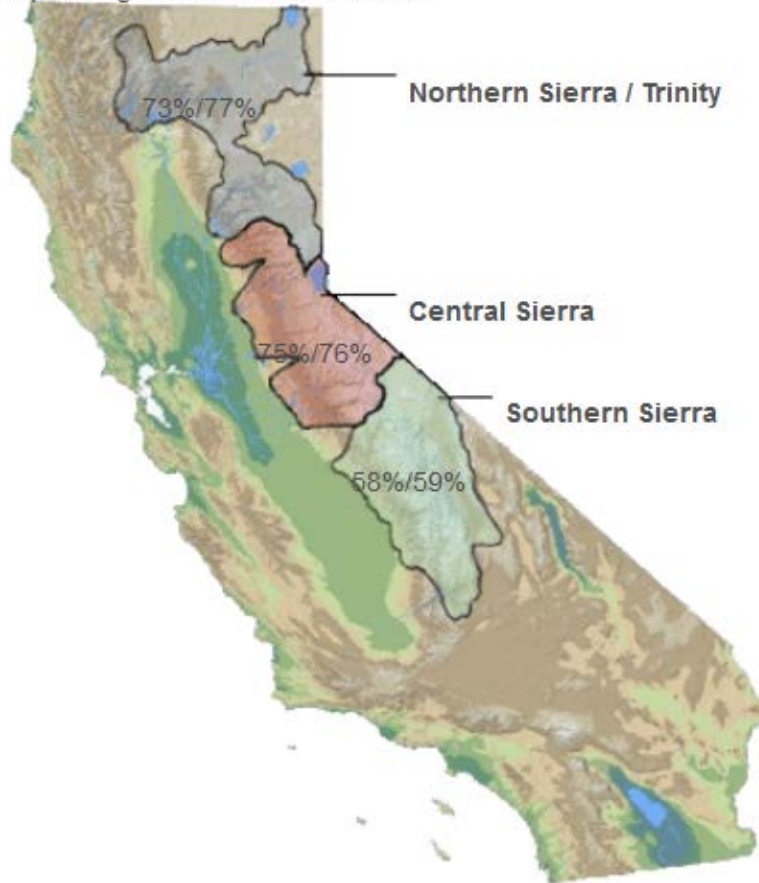
Automated Survey - Snow Water Equivalents



Provided by the California Cooperative Snow Surveys

Data For: 10-Apr-2016

% Apr 1 Avg. / % Normal for this Date



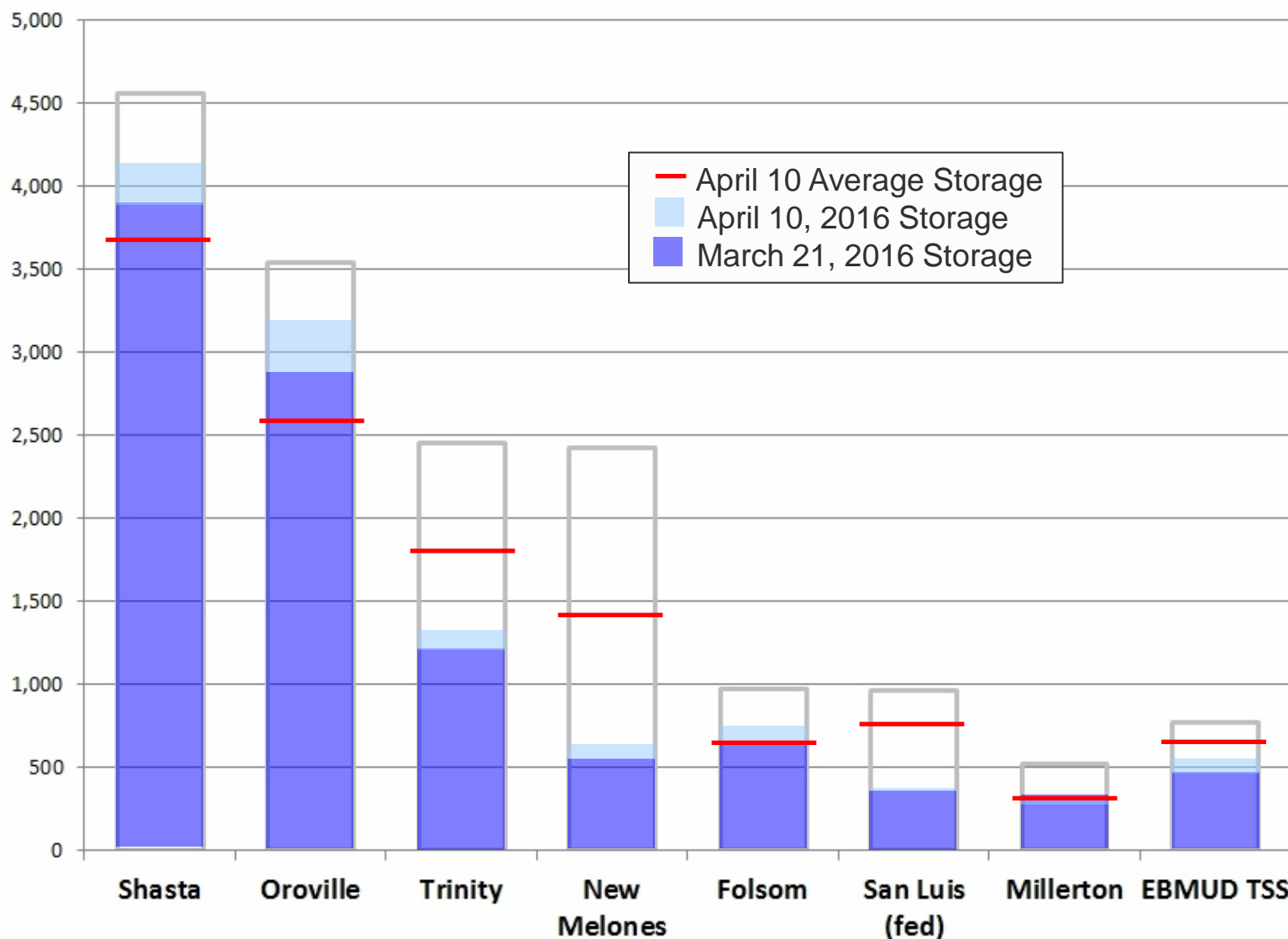
Automated Snow Measurements – Snow Water Equivalents

Year	% of Normal on April 10
2015	7%
2016	70%

- Snow station surveys conducted around April 1, 2016
- Manual readings confirm preliminary automated measurements

California Water Supply

Reservoir Storage – April 10



California Water Supply

Oroville Flood Release



Lake Oroville releases on March 24, 2016



CA Department of Water Resources

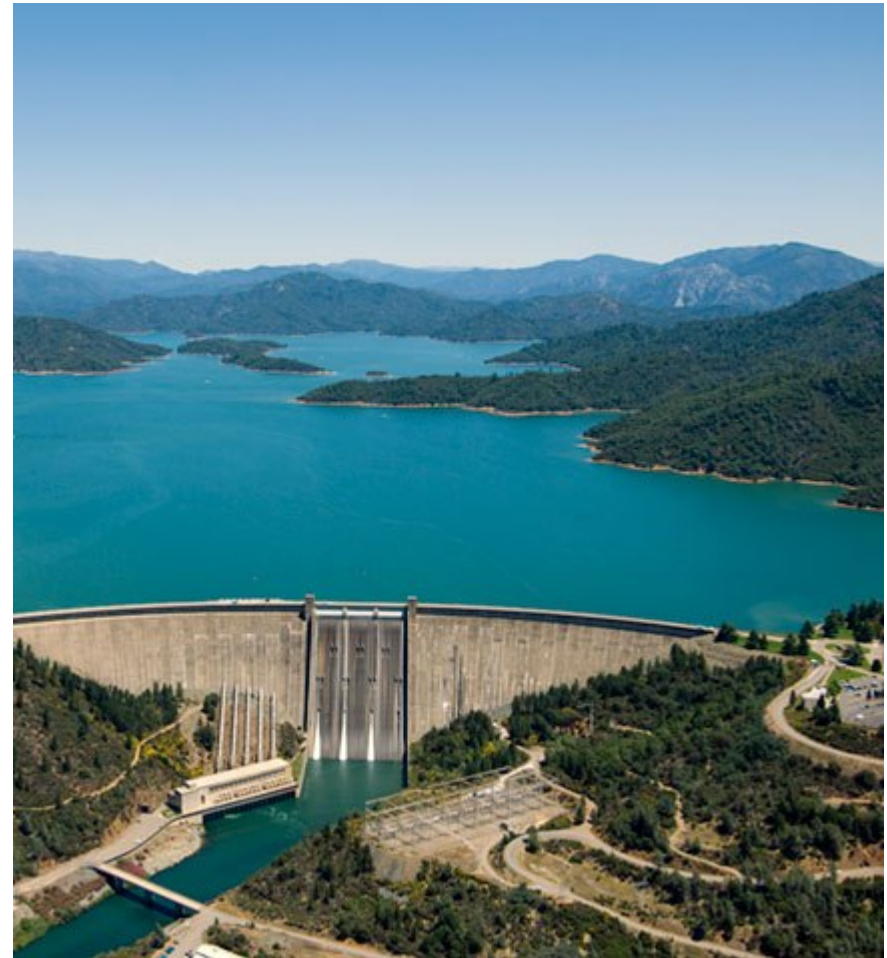
California Water Supply

USBR – Central Valley Project (CVP)



Central Valley Project

- Supplies about a million California homes and 3 million acres of agricultural land
- Dedicates water to support fish and wildlife habitat
- EBMUD CVP Contract max annual drought supply = 133 TAF



Shasta Dam

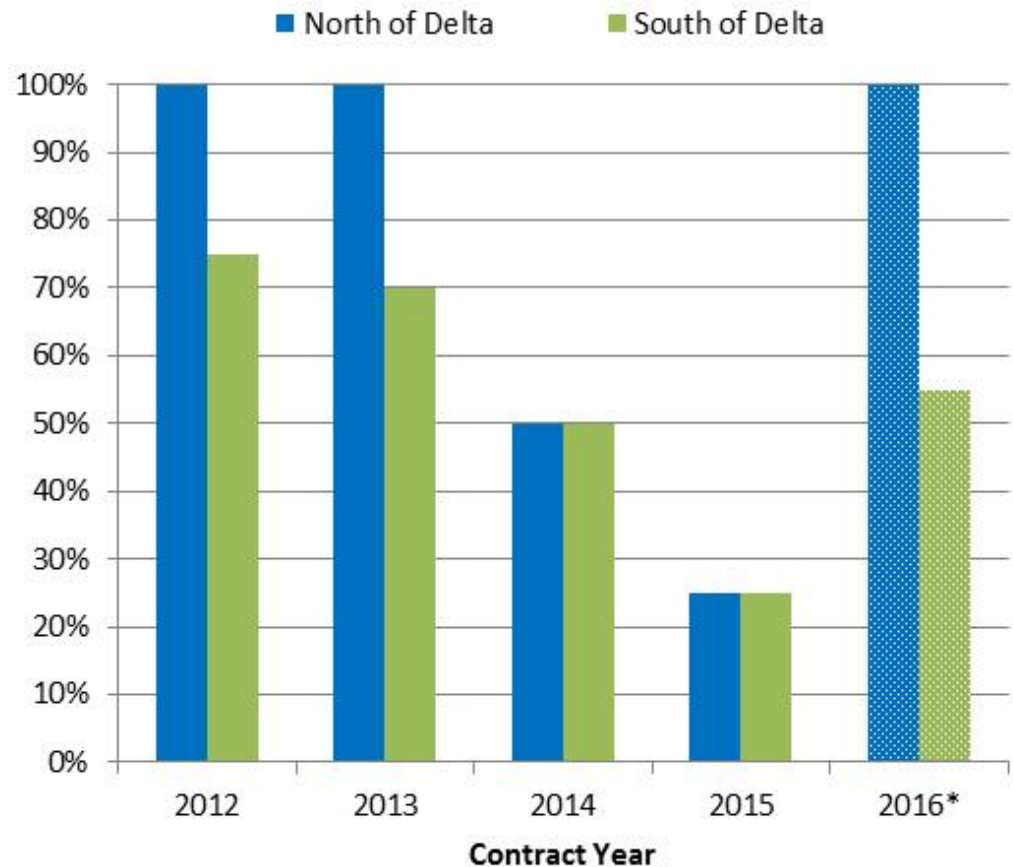
California Water Supply

USBR – Central Valley Project (CVP) Allocation



Year	North of Delta	South of Delta
2012	100%	75%
2013	100%	70%
2014	50%	50%
2015	25%	25%
2016	100%*	55%*

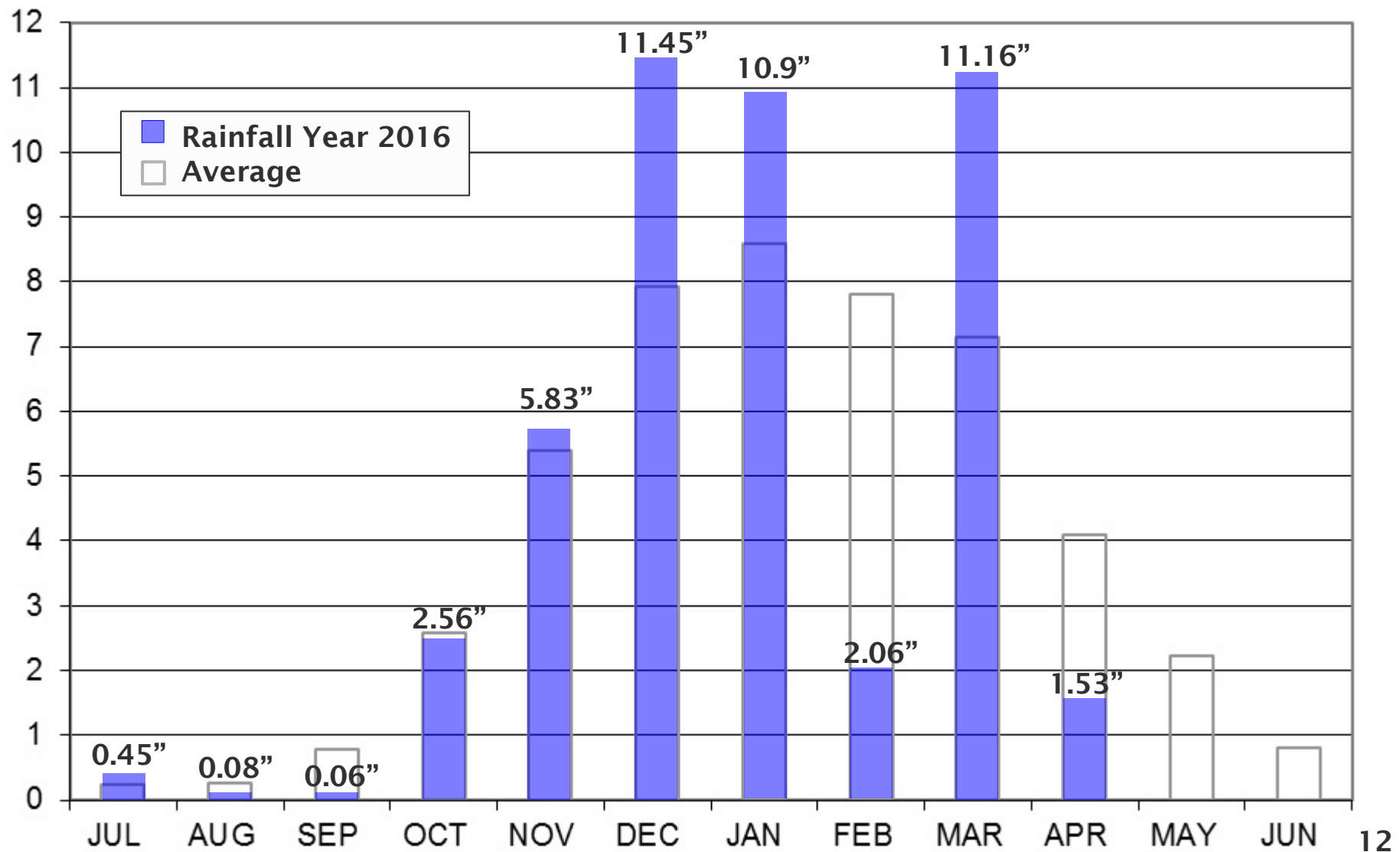
* Initial allocation as of April 1, 2016



District Water Supply

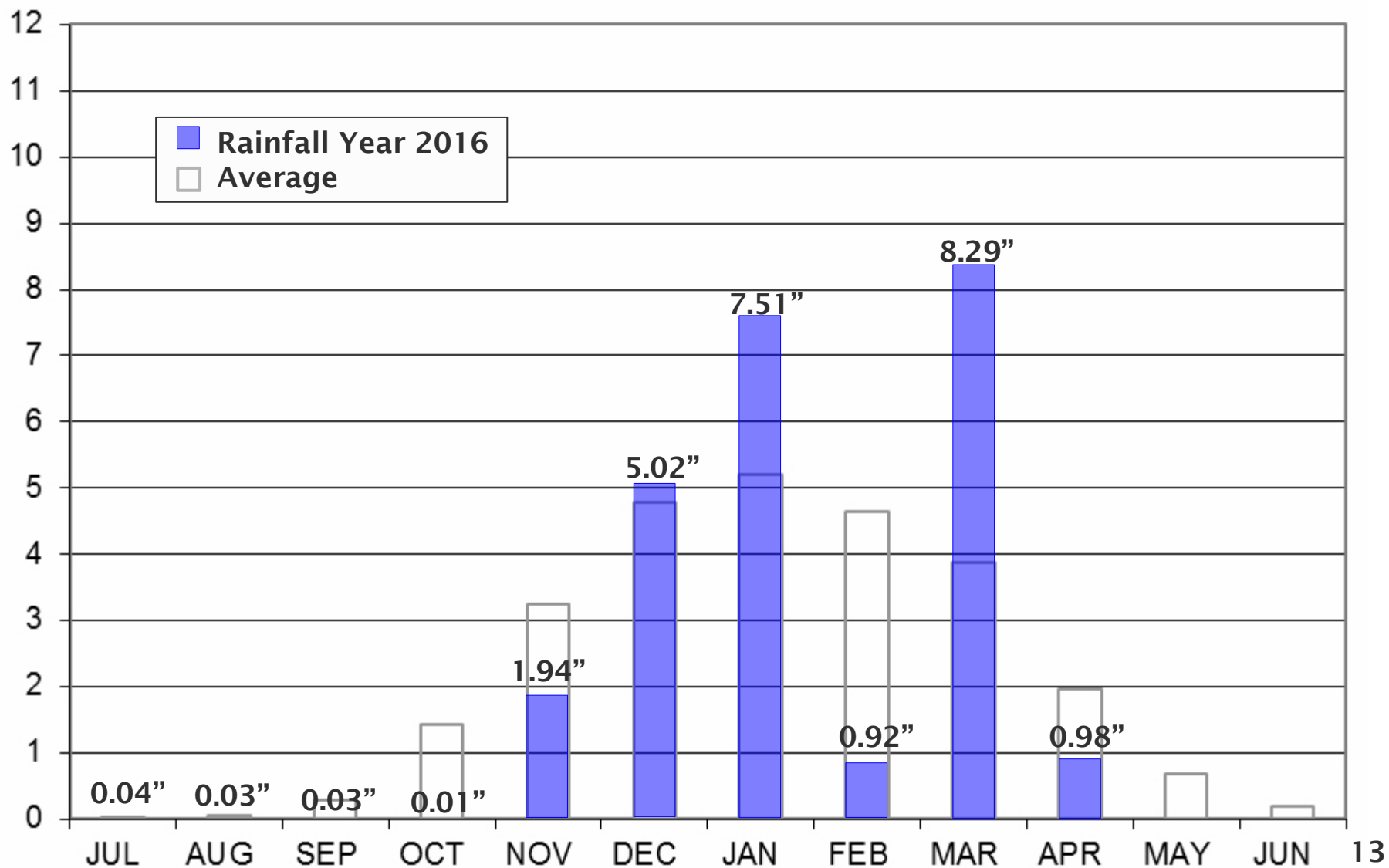
Current Water Supply

Mokelumne Precipitation



Current Water Supply

East Bay Precipitation



Current Water Supply

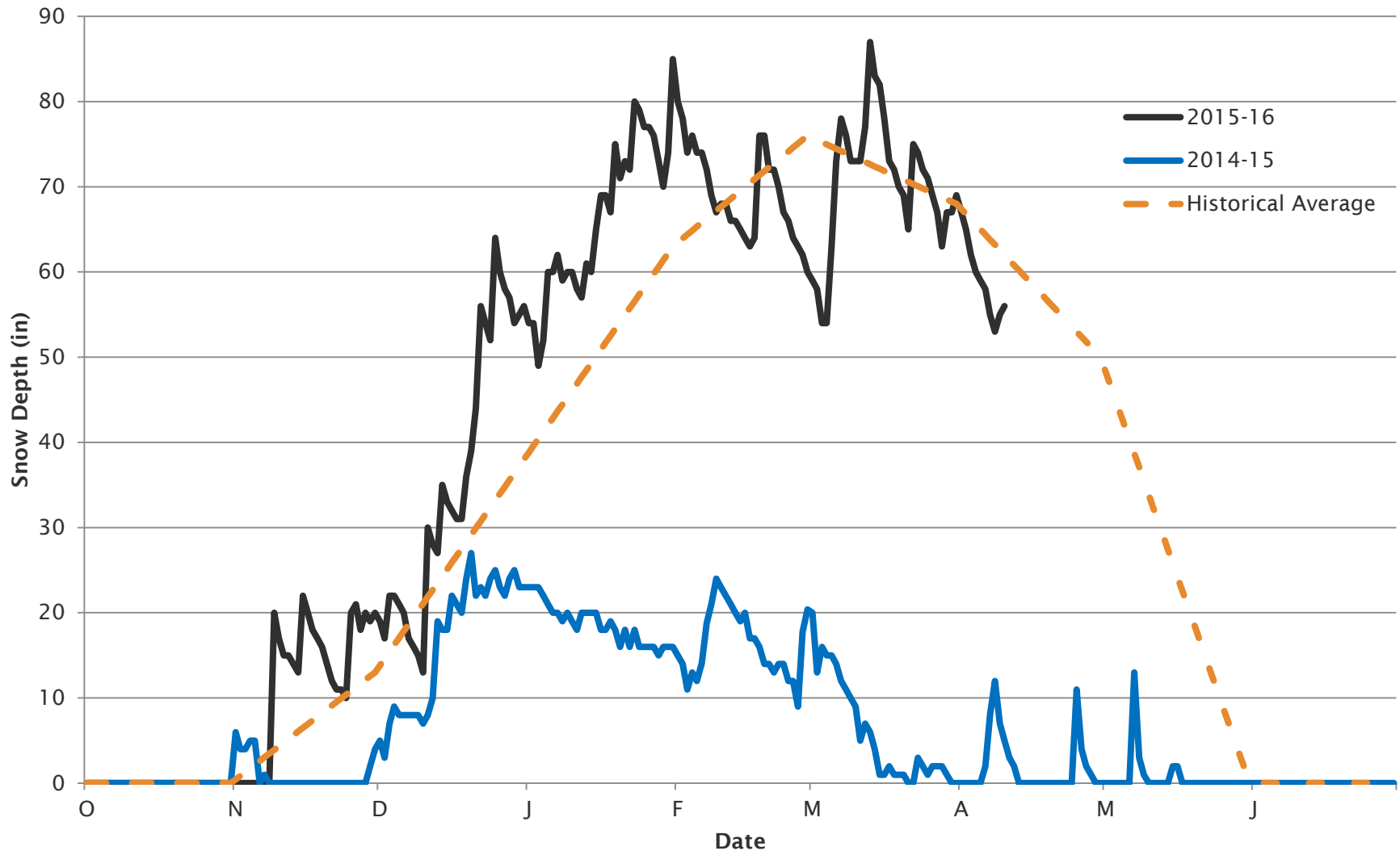
Precipitation & Snow



As of 4/10/2016	Cumulative Precipitation	% of Average
East Bay		
East Bay Watershed	24.77"	101%
Mokelumne Basin		
4-Station Average	46.08"	109%
Caples Lake Snow Depth	56"	90%
Caples Lake Snow Water Content	28.20"	105%

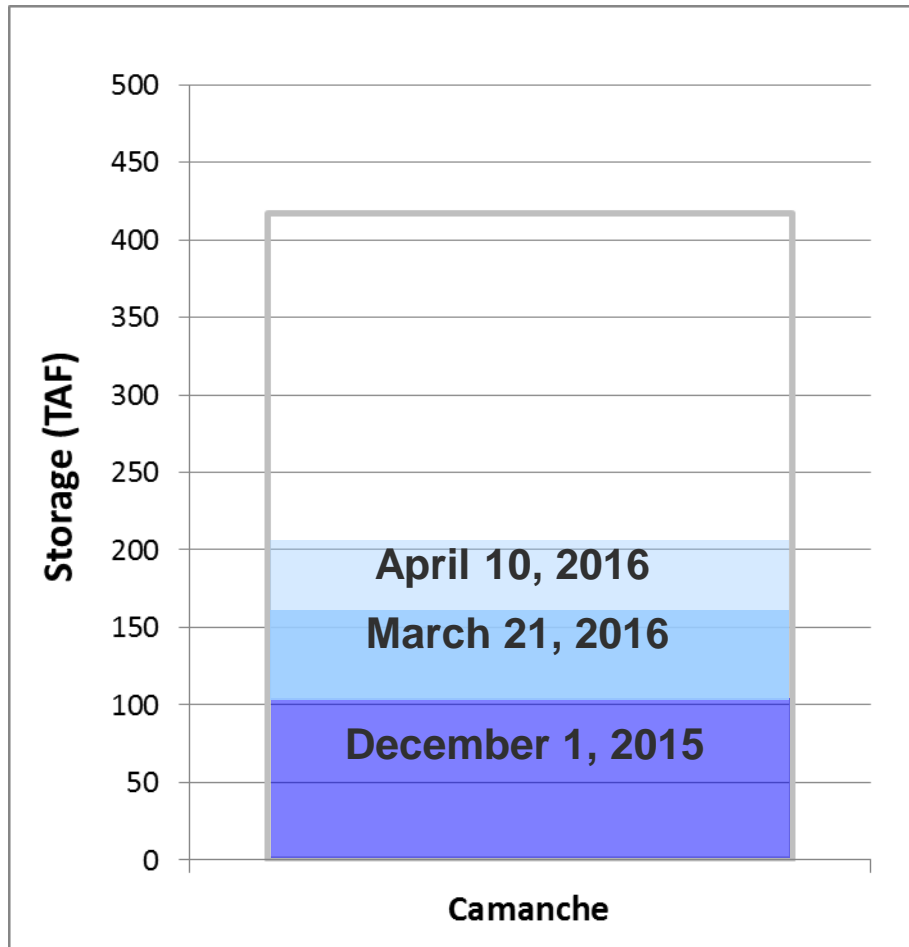
Current Water Supply

Caples Lake Snow Depth



Current Water Supply

Camanche Reservoir



Current Water Supply

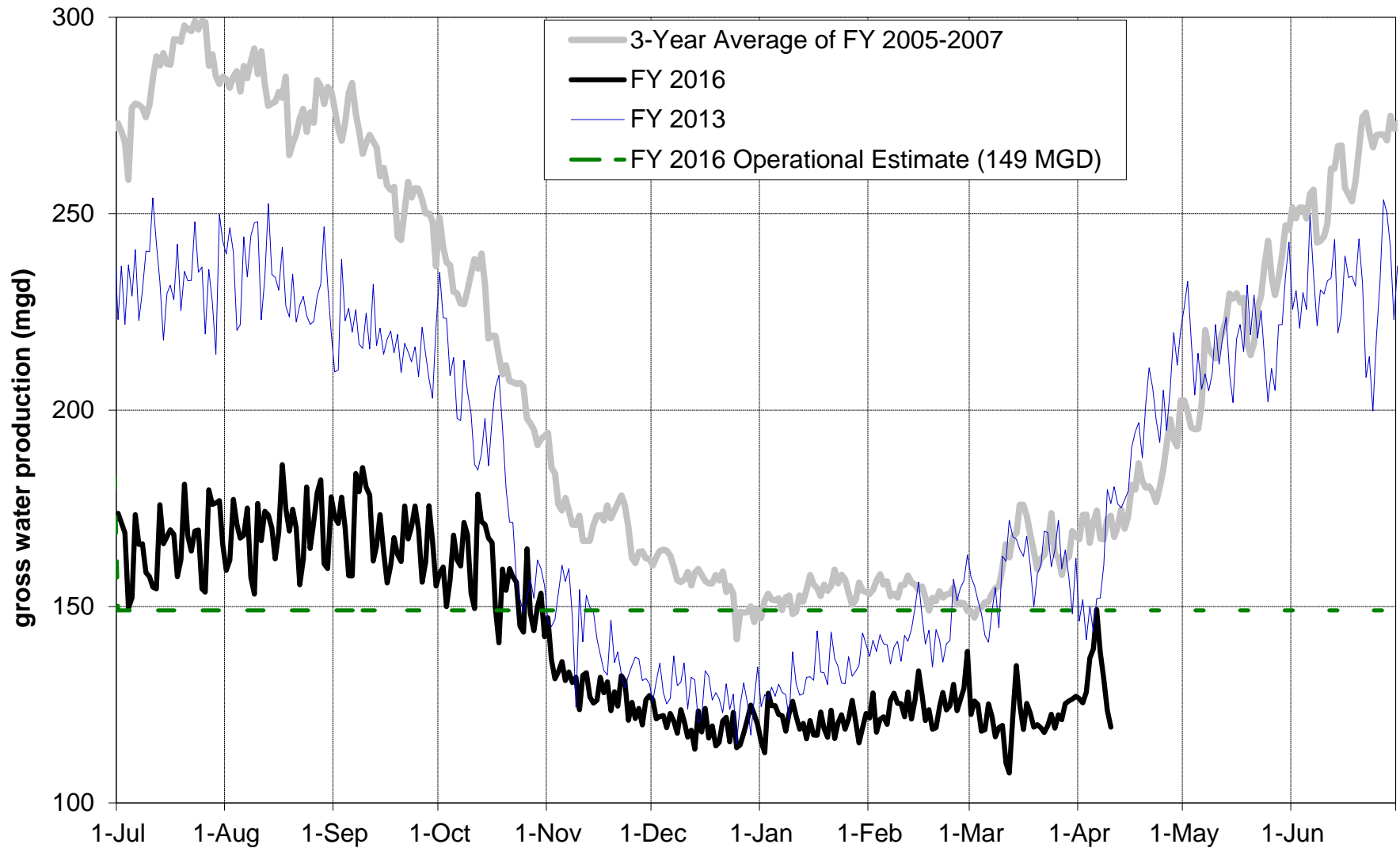
Reservoir Storage



As of 4/10/16	Current Storage	Percent of Average	Percent of Capacity
Pardee	188,880 AF	103%	95%
Camanche	202,300 AF	67%	48%
East Bay	139,010 AF	98%	92%
Total System	530,190 AF	85%	69%

Current Water Supply

Gross Water Production



Current Water Supply

Water Savings



	Savings Rate (2013 Baseline)
April 11, 2015 – April 10, 2016	24%
June 1, 2015 – April 10, 2016	23%

Water Supply Projections

Water Supply Projections

(Runoff Projections as of April 11, 2016)



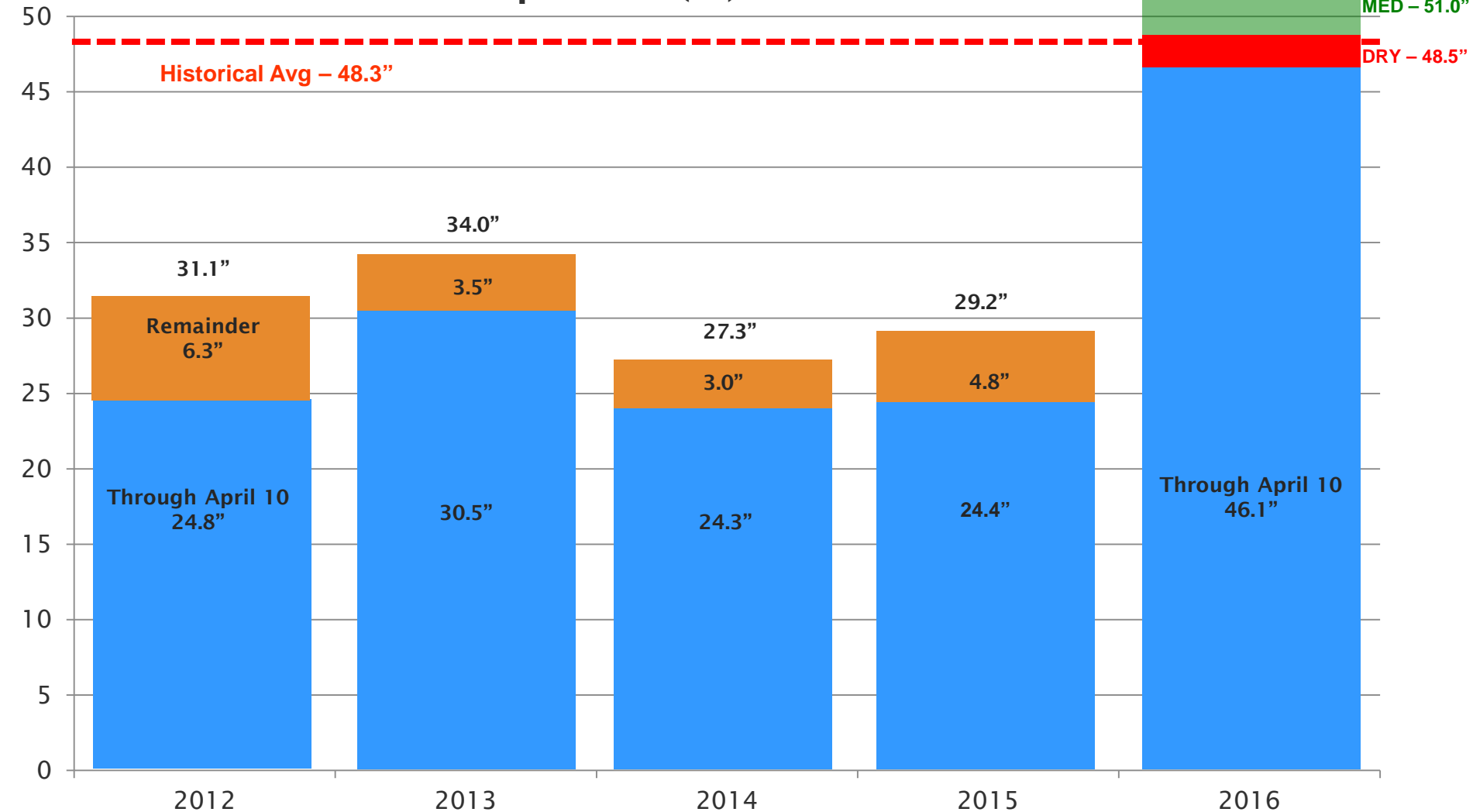
Forecast	Annual Runoff	Total System Storage (on Sept 30, 2016)
90% Exceedance (9 of 10 years are wetter)	700 TAF	595 TAF
50% Exceedance (5 of 10 years are wetter)	770 TAF	630 TAF
10% Exceedance (1 of 10 years is wetter)	900 TAF	630 TAF
Average Year	745 TAF	630 TAF

Water Supply Projections

Precipitation Comparison

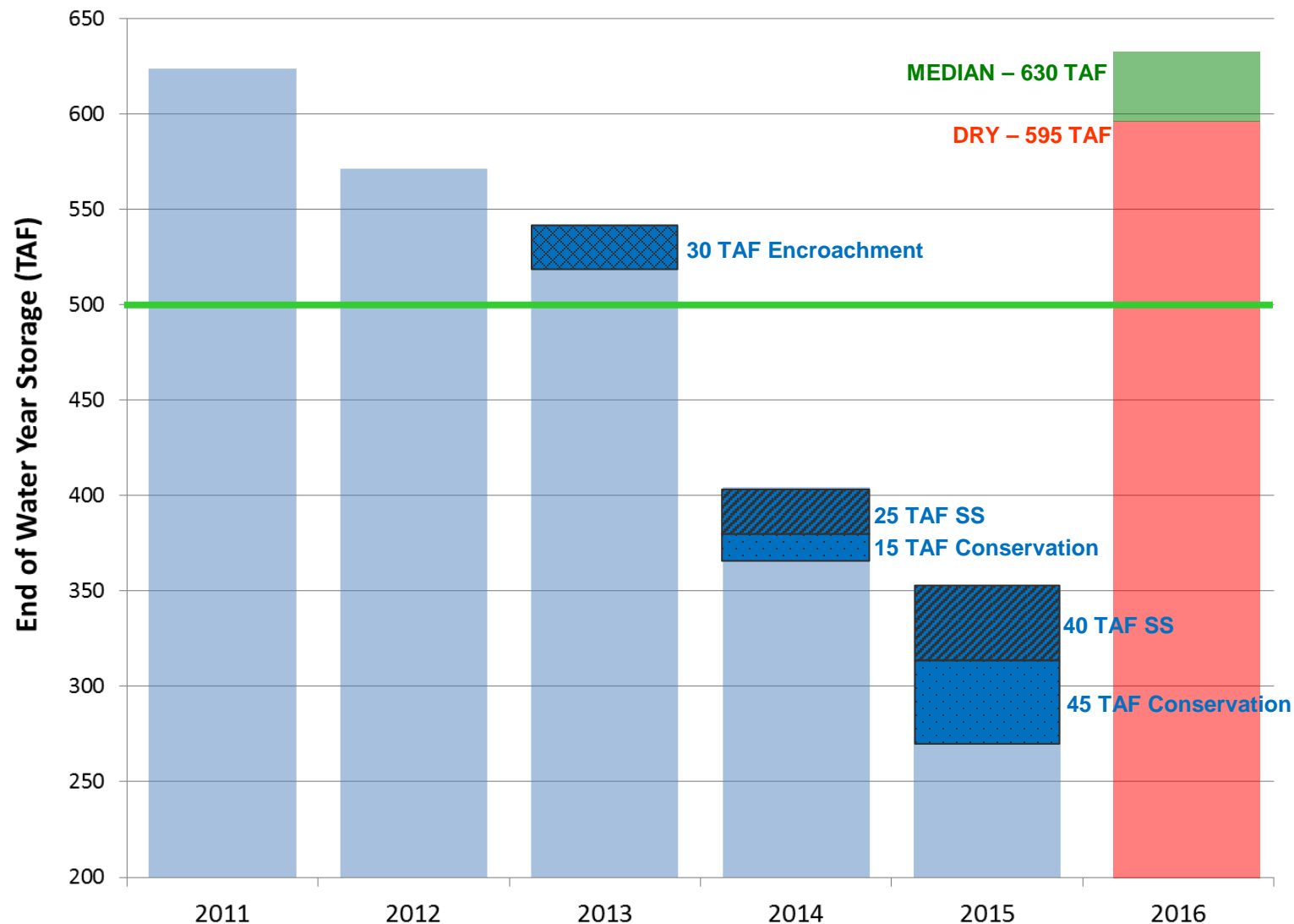


Precipitation (in) - Recent Years



Water Supply Projections

End of September Storage



Water Supply Projections

Weather Forecast



Wet Weather Continues!

Impacts

- Slick roadways
- Possible chain requirements and travel delays

Timing

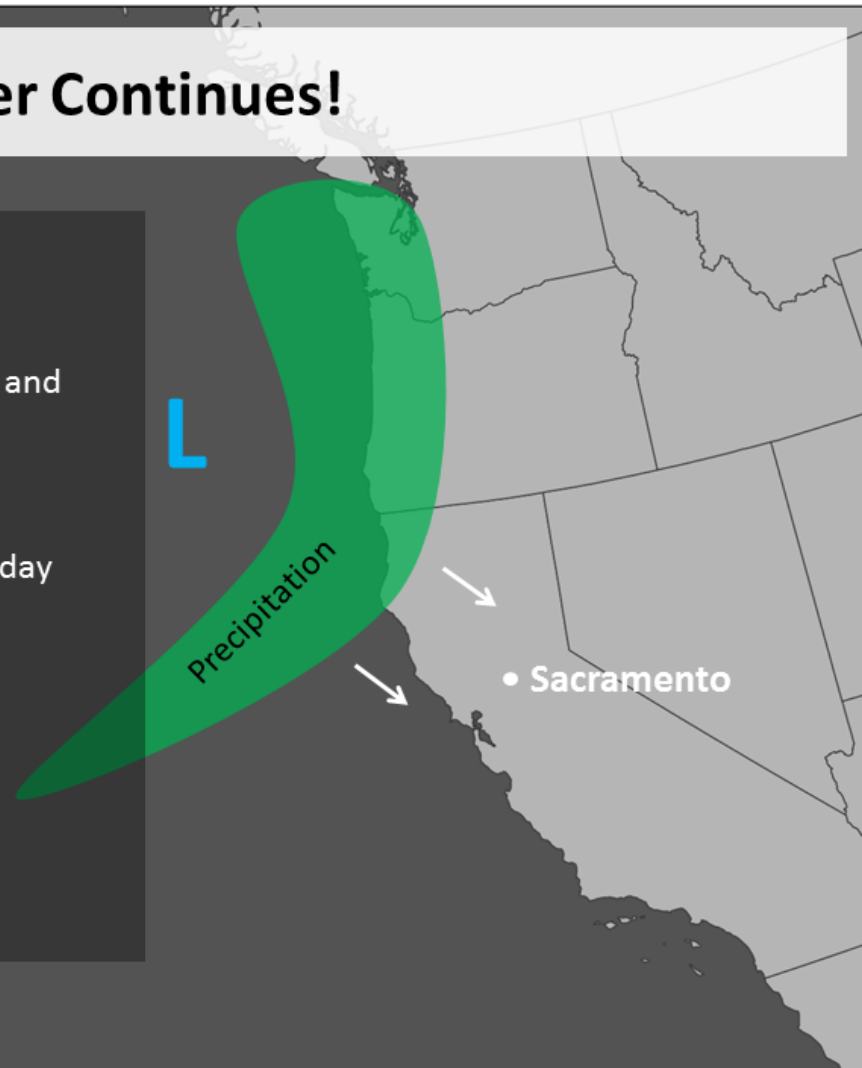
- Wednesday Night into Thursday

Precipitation

- Valley: up to 0.5"
- Sierra: up to 1"

Snowfall

- Above 5000': 4-8"



Water Supply Projections

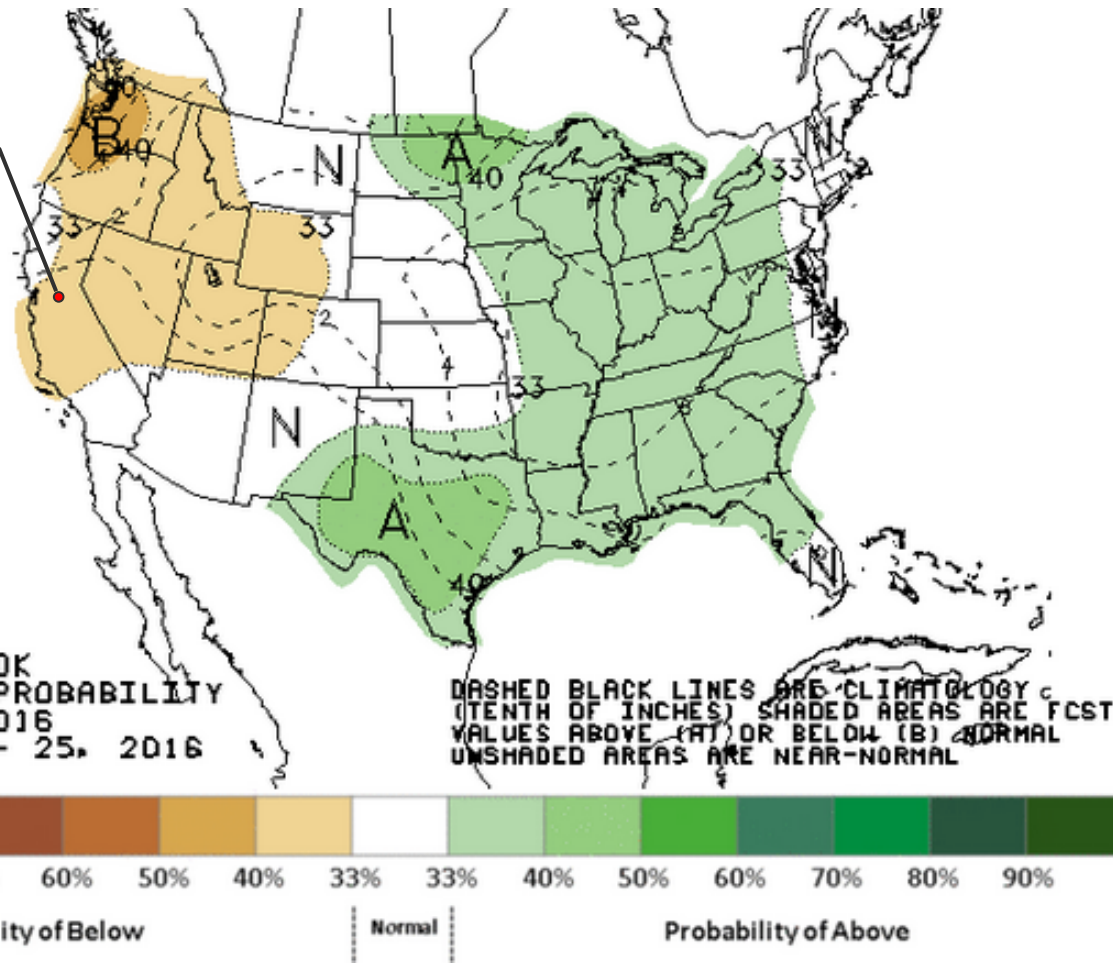
14-Day NOAA Precipitation Probability Estimate



**33 to 40% Chance of
Below-Normal
Precipitation
In the Mokelumne
Watershed**



8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 11 APR 2016
VALID APR 19 - 25, 2016



Water Year 2016

As of April 10, 2016



- Mokelumne River basin runoff is 373 TAF
- Projected end of water year storage is 595– 630 TAF (90% - 10% exceedance)
- Mokelumne River watershed season to date precipitation is 109% of average
- East Bay watershed season to date precipitation is 101% of average
- Precipitation accumulation season – 89% complete (11% remaining)

Water Year 2016

Water Supply Schedule



Date	Activity
February 2	<ul style="list-style-type: none">• DWR February Snow Survey
February 23	<ul style="list-style-type: none">• Drought Financial Impacts
March 1	<ul style="list-style-type: none">• DWR March Snow Survey
April 1	<ul style="list-style-type: none">• DWR April Snow Survey• USBR Initial Allocation
April 8	<ul style="list-style-type: none">• DWR April 1, 2016 Bulletin 120 forecasts
April 26	<ul style="list-style-type: none">• Water Supply Report• Water Supply Availability and Deficiency Report• Consider suspension of excessive use charge
May 24	<ul style="list-style-type: none">• Consider change in Drought Stage• Consider Section 28 changes• Consider stopping Supersaver



Spring Showers



WATER SUPPLY ENGINEERING DAILY REPORT

Monday, April 11, 2016

RESERVOIR STORAGE AND ELEVATION

<u>WATER SURFACE</u>			<u>STORAGE</u>		<u>MAXIMUM CAPACITY</u>			
	Elevation	+Gain		+Gain	Elevation	Storage	Release	Spill
<u>MOKELUMNE</u>	<u>Feet</u>	<u>-Loss</u>	<u>Ac-Ft</u>	<u>-Loss</u>	<u>Feet</u>	<u>Ac-Ft</u>	<u>Cfs</u>	<u>Cfs</u>
Pardee	563.31	-0.2	188450	-430	567.65	197950	1364	0
Camanche	202.16	0.37	204220	1920	235.5	417120	329	0
<u>EAST BAY</u>								
Briones	574.52	-0.04	59350	-30	576.14	60510	0	0
Chabot	223.35	0	9070	0	227.25	10350	0	0
Lafayette	445.36	0.01	3780	0	449.16	4250	0	0
San Pablo	304.21	0.03	31150	20	313.68	38600	0	0
Upper San Leandro	456.87	0.03	<u>35670</u>	<u>20</u>	459.98	<u>37960</u>	0	0
<u>Total East Bay Res.</u>			<u>139020</u>	<u>10</u>	<u>151670</u>			
TOTAL SYSTEM STORAGE			531690	1500	766740			
DISTRIBUTION SYSTEM					MOKELUMNE SYSTEM			
<u>DISTRIBUTION RESERVOIRS</u>					<u>AQUEDUCT DELIVERIES</u>			
		Storage	Operating			<u>MG</u>	<u>Flow Conditions</u>	
		<u>MG</u>	<u>Capacity</u>		Line 1	29.8	THROTTLE	
Today		385	720		Line 2	35.6	THROTTLE	
Total Previous Day		<u>389</u>			Line 3	<u>45.4</u>	<u>THROTTLE</u>	
Total Change		-4			TOTAL	110.8	171 Cfs	
<u>WATER PRODUCTION</u>					<u>FSCC to MOK AQUEDUCTS (Measured at Brandt), MG</u>			
	Million	Capacity			Mok 1	0		
<u>AND DEMAND</u>	<u>Gallons</u>	<u>MGD</u>			Mok 2	<u>0</u>		
Lafayette WTP	6.8	25				0 MG		
Orinda WTP	98.9	190			<u>RIVER FLOWS AND RELEASES</u>			
San Pablo WTP	0	30					<u>Cfs</u>	
Sobrante WTP	0	50			Mokelumne River Natural Flow		3373	
Upper San Leandro WTP	0	45			Pardee Reservoir Inflow		1322	
Walnut Creek WTP	15.2	90			Pardee Release to Camanche Res.		1364	
					Pardee Release to JVID		0	
					Camanche Release to Mokel. River		329	
<u>TOTAL SURFACE PRODUCTION</u>	120.9	430			<u>PG&E CO. STORAGE (Acre-feet)</u>			
Miscellaneous(Estimated)	0.4						Maximum	
<u>TOTAL WATER PRODUCTION</u>	<u>121.3</u>					<u>Storage</u>	<u>Change</u>	<u>Capacity</u>
Change in Distribution System	-4				Old Reservoirs	13278	-17	26560
Wash Water from Distribution Sys.	0				Salt Springs Res.	80509	2526	141857
<u>SYSTEM DEMAND</u>	125.3				Lower Bear Res.	<u>39812</u>	<u>1559</u>	<u>52025</u>
East-of-Hills Demand	26.8				Total	133599	4068	220442
West-of-Hills Demand	98.5							
RAW WATER TRANSMISSION				PRECIPITATION (Inches)				
	<u>INPUT</u>	<u>DRAFT</u>			<u>THIS YEAR</u>		<u>AVERAGE YEAR</u>	
Briones Res.	0	30				This	Season	Season
San Pablo Res.	0	0		<u>STATION</u>	<u>Today</u>	<u>Month</u>	<u>to-Date</u>	<u>to-Date</u>
U. San Leandro Res.	0	0						<u>Total</u>
				USL WTP	0	1.01	27.05	23.19
				Orinda WTP	0	0.98	29.16	29.44
				Lafayette Reservoir	0	0.94	22.49	25.96
				Walnut Creek WTP	0	1.26	21.99	21.43
				Camp Pardee	0	1.39	23.28	19.19
				Salt Springs P.H.	0	1.73	45.55	39.86
								45.51
<u>REMARKS</u>				<u>CAPLES LAKE (7,830 FT) DATA</u>				
WID Canal Diversion = 80 cfs					Today	Average		
Mokelumne River below WID = 229 cfs					Snow Depth	54 Inches	61 Inches	
					Water Content	28.1 Inches	26.8 Inches	

EAST BAY MUNICIPAL UTILITY DISTRICT



EAST BAY MUNICIPAL UTILITY DISTRICT

Water Sales Projections – Impact of Drought on Revenues

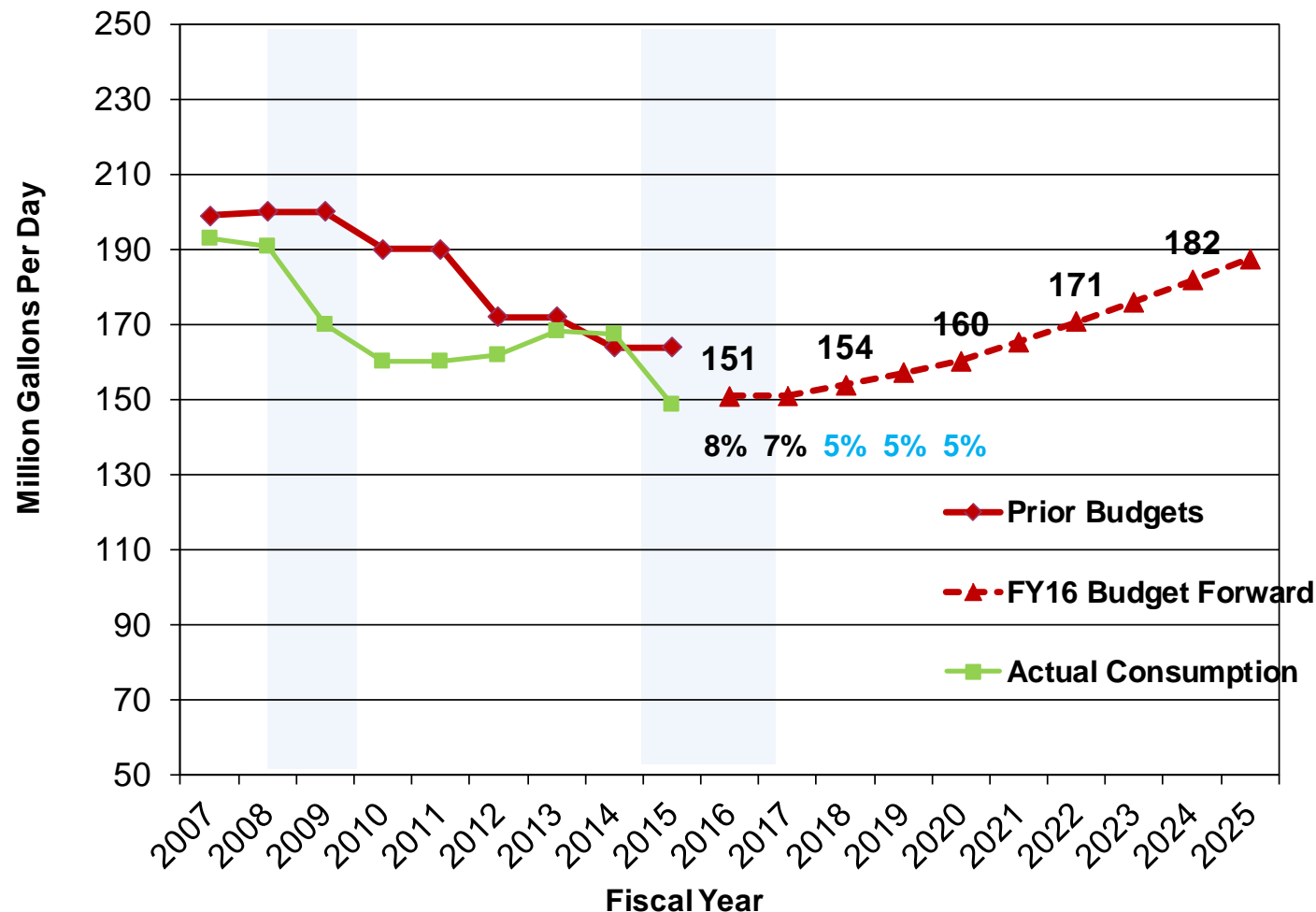
Board of Directors
April 12, 2016

Overview



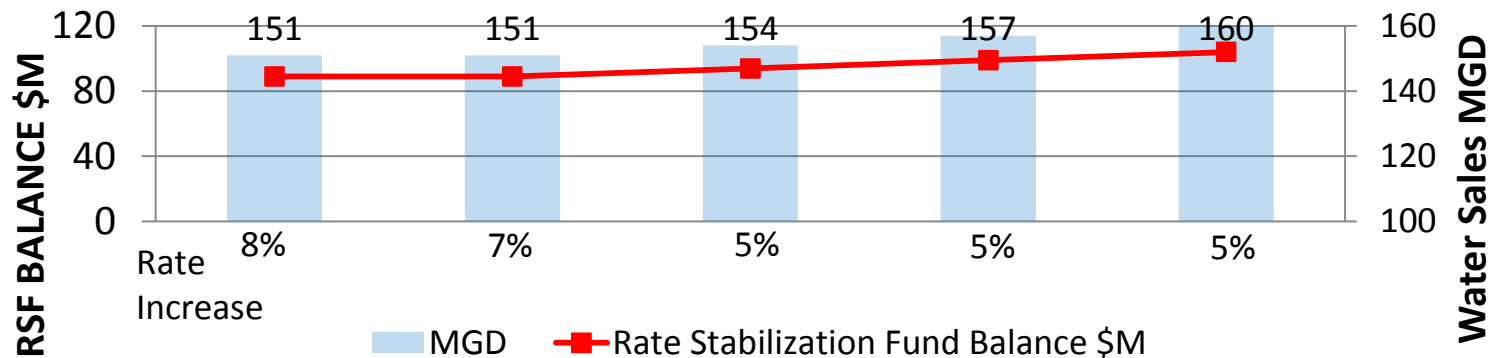
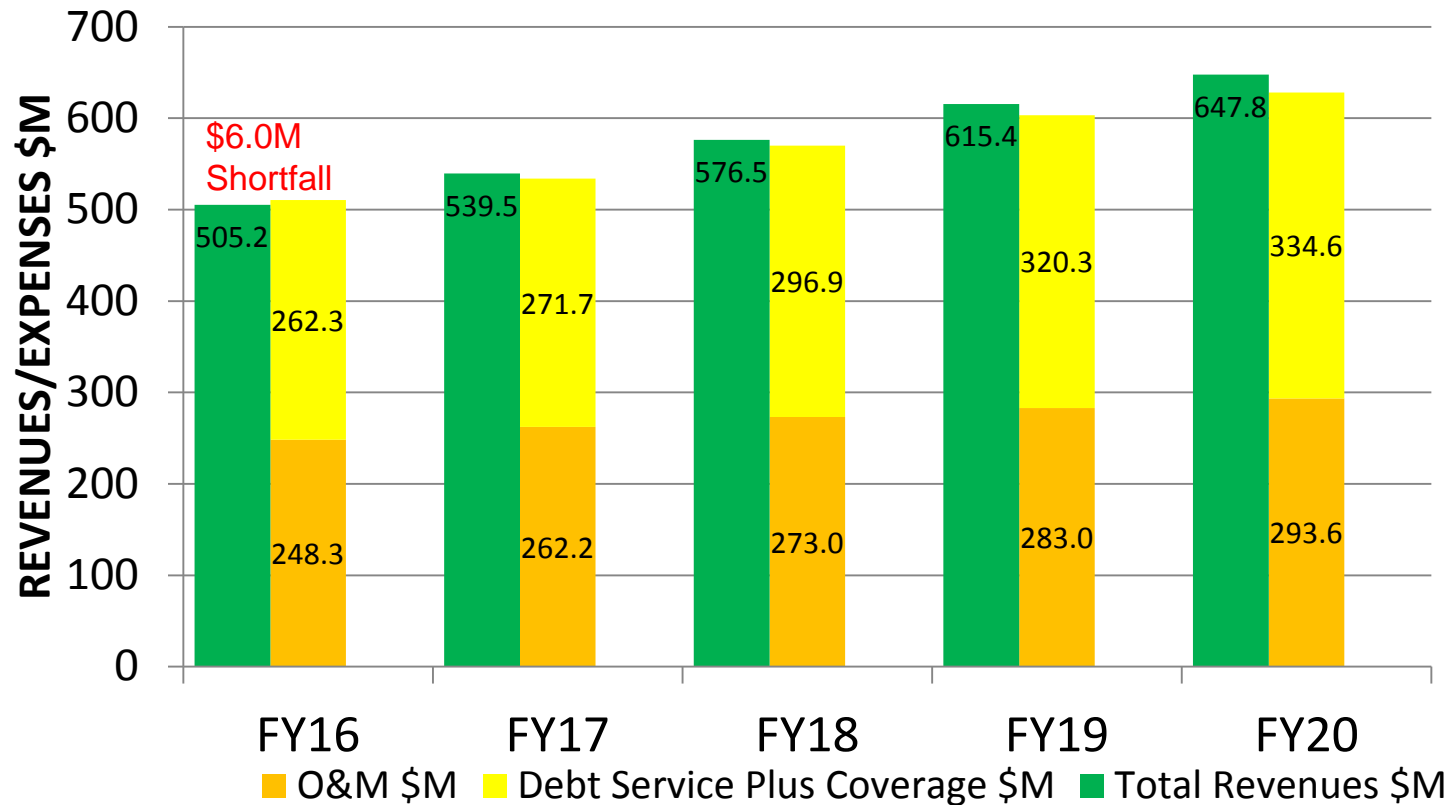
- Review of historical budget and actual water sales
- FY16/17 budgeted water sales
- Most recent projected water sales reflecting impact of drought
- Updated FY18-20 projections

Droughts Impact Water Sales for Several Years Post Drought

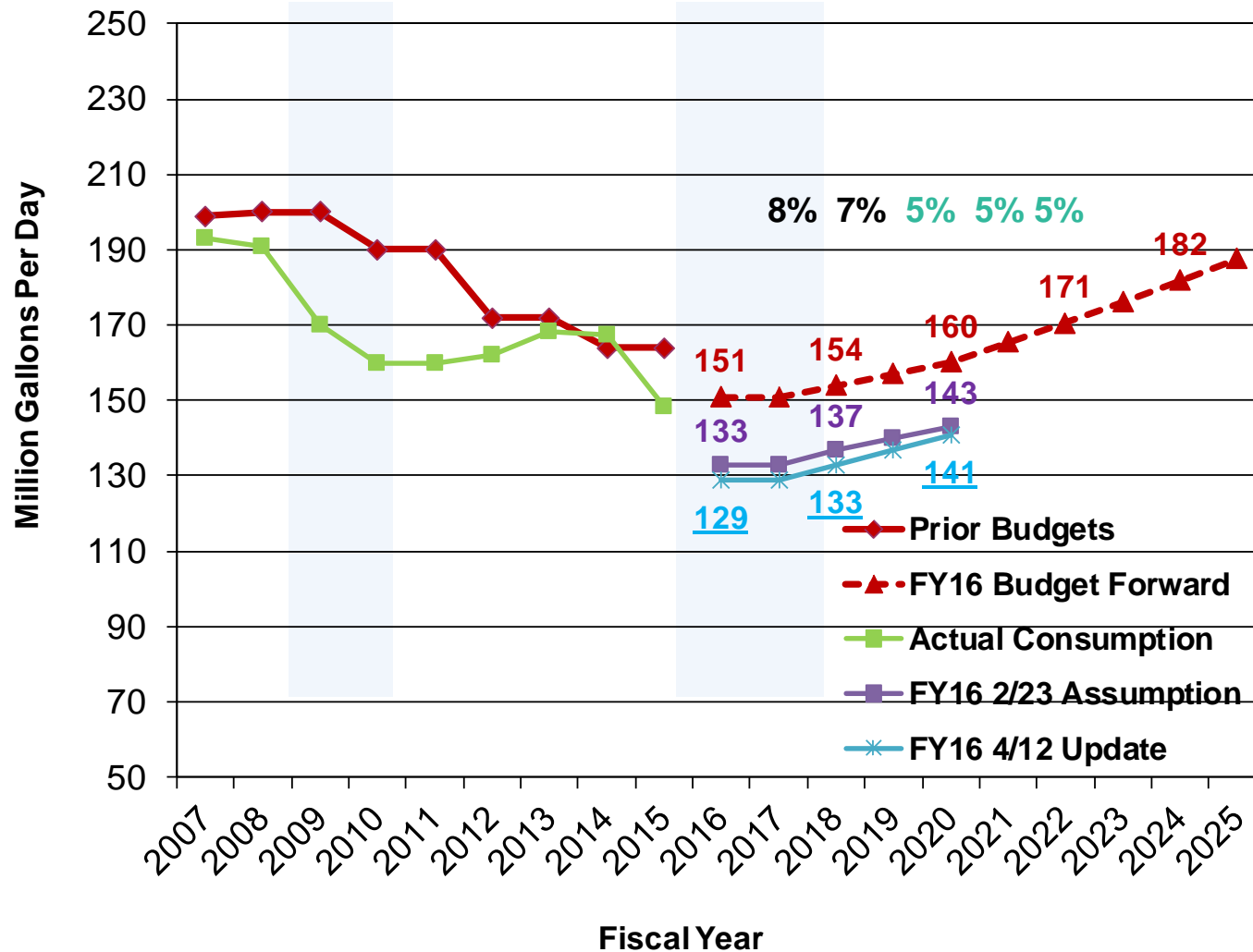


Note: Billed water sales is equal to $0.89 \times$ potable production plus 4.5 MGD for non potable water

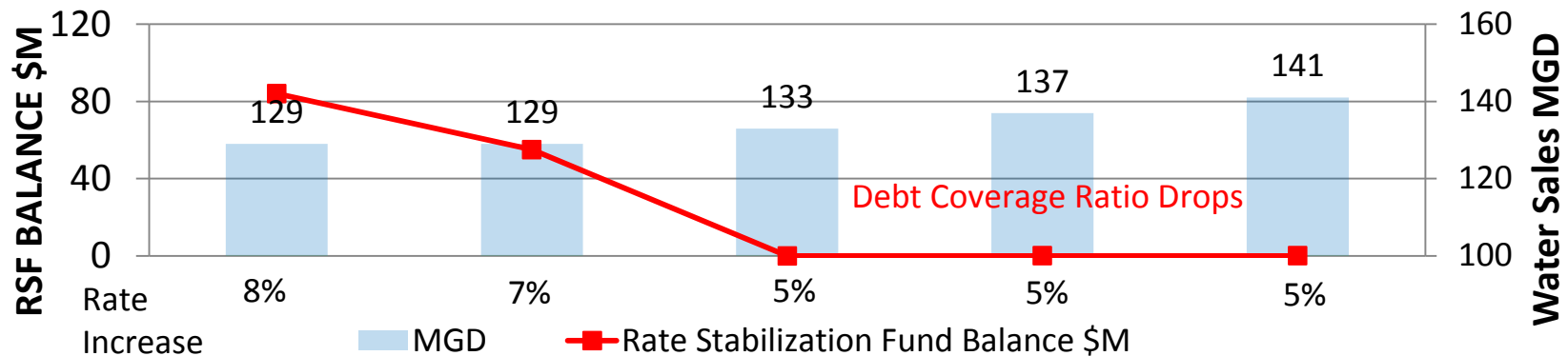
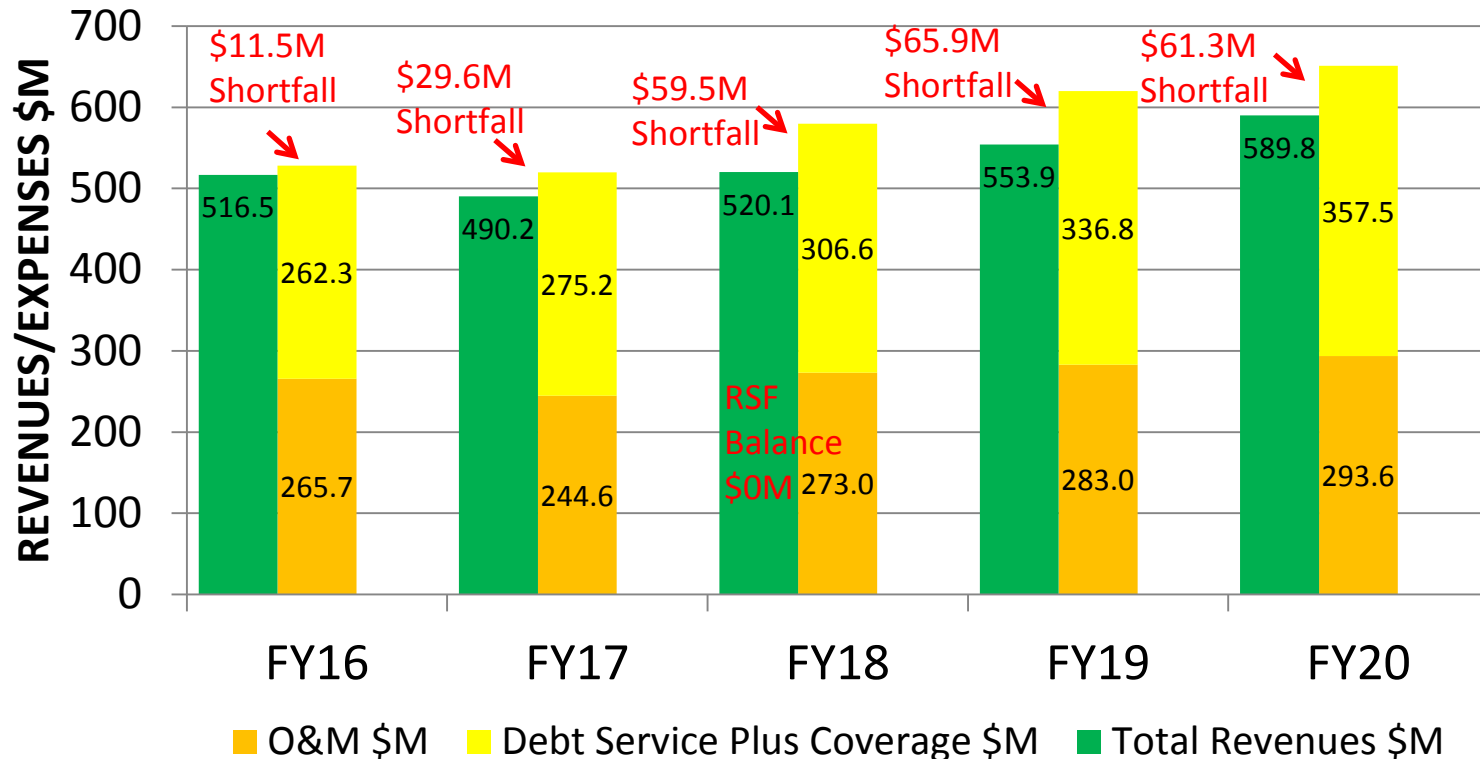
FY16 Budget 5 Year Forecast



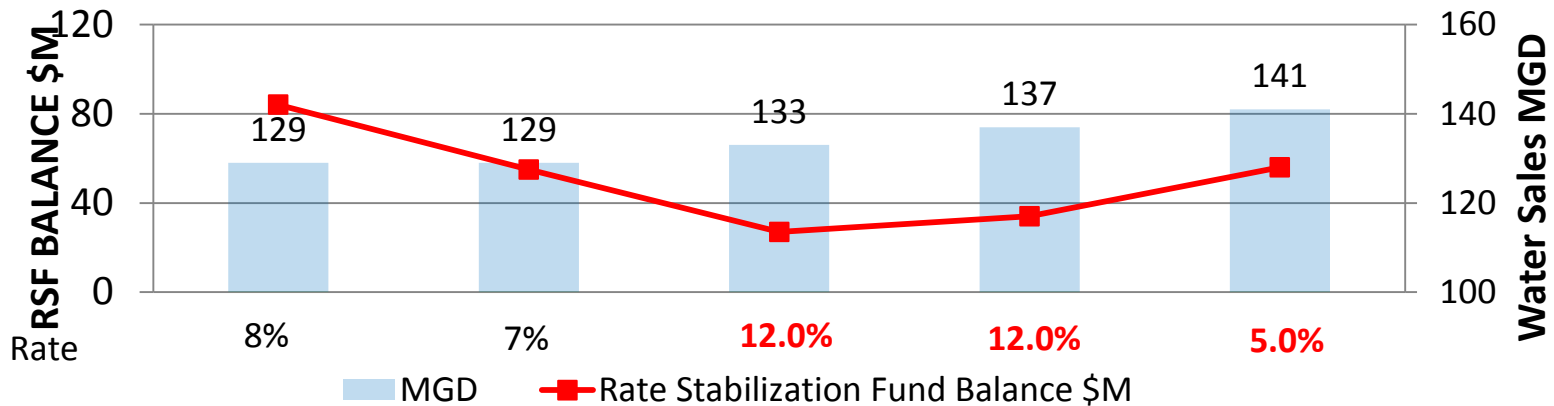
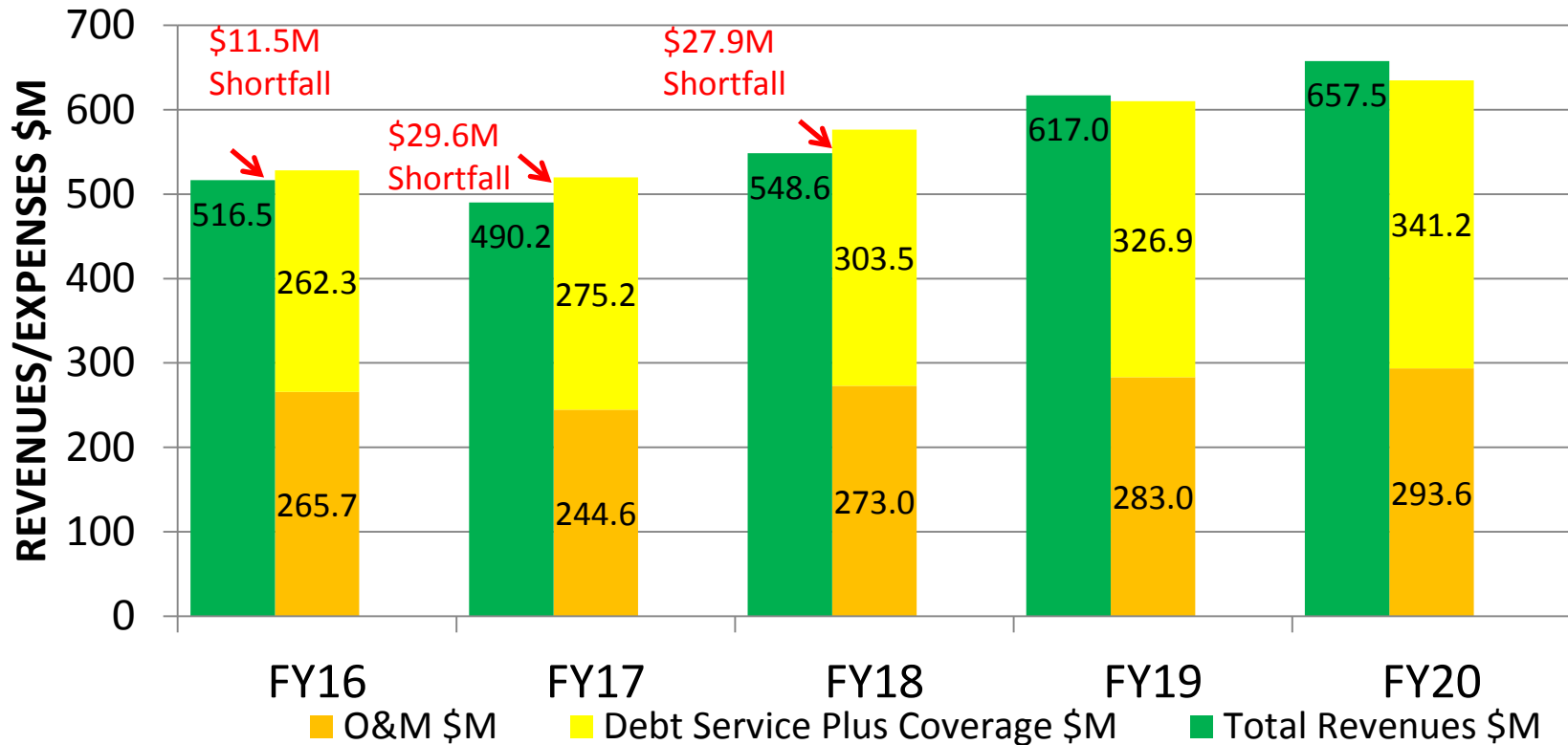
Consumption Has Continued to Drop Since February



Most Recent 5 Year Forecast – Revised Assumptions



Projected Rate Increases Have Grown



Review of Possible Scenarios Explored & Next Steps



- Reevaluate adopted FY17 rates
 - RSF funds are available
- Maintain drought Stage 2 surcharge in FY17 contingent on state conservation mandate TBD
 - Would realize \$18M in FY17 revenue
 - State vs. local drought considerations
- Reevaluate future rate increases as part of next budget cycle
- Reduce expenses
- Some combination of above

Board Discussion

