

**MEETING OF THE
BOARD OF DIRECTORS OF THE
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY**
Jointly with the
ADMINISTRATION & FINANCE COMMITTEE
October 11, 2017, 8:30 a.m.
MWDOC Conference Room 101

Committee:

Director J. Thomas, Chairman
Director J. Finnegan
Director B. Barbre

Staff: R. Hunter, K. Seckel, C. Harris,
K. Davanaugh, H. Chumpitazi

Ex Officio Member: W. Osborne

MWDOC Committee meetings are noticed and held as joint meetings of the Committee and the entire Board of Directors and all members of the Board of Directors may attend and participate in the discussion. Each Committee has designated Committee members, and other members of the Board are designated alternate committee members. If less than a quorum of the full Board is in attendance, the Board meeting will be adjourned for lack of a quorum and the meeting will proceed as a meeting of the Committee with those Committee members and alternate members in attendance acting as the Committee.

PUBLIC COMMENTS - Public comments on agenda items and items under the jurisdiction of the Committee should be made at this time.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED - Determine there is a need to take immediate action on item(s) and that the need for action came to the attention of the District subsequent to the posting of the Agenda. (Requires a unanimous vote of the Committee)

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO MEETING --

Pursuant to Government Code section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than seventy-two (72) hours prior to the meeting will be available for public inspection in the lobby of the District's business office located at 18700 Ward Street, Fountain Valley, California 92708, during regular business hours. When practical, these public records will also be made available on the District's Internet Web site, accessible at <http://www.mwdoc.com>.

PROPOSED BOARD CONSENT CALENDAR ITEMS

1. TREASURER'S REPORT
 - a. Revenue/Cash Receipt Report – September 2017
 - b. Disbursement Approval Report for the month of October 2017
 - c. Disbursement Ratification Report for the month of September 2017
 - d. GM Approved Disbursement Report for the month of September 2017
 - e. Water Use Efficiency Projects Cash Flow – September 30, 2017
 - f. Consolidated Summary of Cash and Investment – August 2017
 - g. OPEB Trust Fund monthly statement
2. FINANCIAL REPORT
 - a. Combined Financial Statements and Budget Comparative for the Period ending August 31, 2017

DISCUSSION ITEM

3. CALPERS ANNUAL VALUATION REPORT AS OF JUNE 30, 2017 AND UNFUNDED LIABILITY OPTIONS

INFORMATION ITEMS – (THE FOLLOWING ITEMS ARE FOR INFORMATIONAL PURPOSES ONLY – BACKGROUND INFORMATION IS INCLUDED IN THE PACKET. DISCUSSION IS NOT NECESSARY UNLESS REQUESTED BY A DIRECTOR.)

4. HEALTH SAVINGS ACCOUNT ELECTIONS FOR 2018
5. HEALTH BENEFIT RATES FOR 2018
6. OPEB PREFUNDING TRUST PROGRAM CLIENT REVIEW
7. DISPOSAL OF FIXED ASSETS
8. DEPARTMENT ACTIVITIES REPORTS
 - a. Administration
 - b. Finance and Information Technology
9. MONTHLY WATER USAGE DATA, TIER 2 PROJECTION, AND WATER SUPPLY INFORMATION

OTHER ITEMS

10. REVIEW ISSUES REGARDING DISTRICT ORGANIZATION, PERSONNEL MATTERS, EMPLOYEE BENEFITS FINANCE AND INSURANCE

ADJOURNMENT

NOTE: At the discretion of the Committee, all items appearing on this agenda, whether or not expressly listed for action, may be deliberated, and may be subject to action by the Committee. On those items designated for Board action, the Committee reviews the items and makes a recommendation for final action to the full Board of Directors; final action will be taken by the Board of Directors. Agendas for Committee and Board meetings may be obtained from the District Secretary. Members of the public are advised that the Board consideration process includes consideration of each agenda item by one or more Committees indicated on the Board Action Sheet. Attendance at Committee meetings and the Board meeting considering an item consequently is advised.

Accommodations for the Disabled. Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by telephoning Maribeth Goldsby, District Secretary, at (714) 963-3058, or writing to Municipal Water District of Orange County at P.O. Box 20895, Fountain Valley, CA 92728. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.

**Municipal Water District of Orange County
REVENUE / CASH RECEIPT REPORT
September 2017**

Item 1a

WATER REVENUES

Date	From	Description	Amount
09/01/17	City of La Habra	July 2017 Water deliveries	5,897.85
09/01/17	City of Huntington Beach	July 2017 Water deliveries	2,088,273.67
09/05/17	South Coast Water District	July 2017 Water deliveries	478,793.09
09/05/17	City of La Palma	July 2017 Water deliveries	4,152.47
09/07/17	City of Westminster	July 2017 Water deliveries	347,443.37
09/08/17	City of San Clemente	July 2017 Water deliveries	756,046.98
09/08/17	City of Garden Grove	July 2017 Water deliveries	639,441.08
09/11/17	Santa Margarita Water District	July 2017 Water deliveries	2,355,743.52
09/12/17	El Toro Water District	July 2017 Water deliveries	693,271.29
09/13/17	Laguna Beach County Water District	July 2017 Water deliveries	152,268.83
09/14/17	City of Orange	July 2017 Water deliveries	692,630.78
09/14/17	City of San Juan Capistrano	July 2017 Water deliveries	618,734.01
09/15/17	East Orange County Water District	July 2017 Water deliveries	646,635.76
09/15/17	Orange County Water District	July 2017 Water deliveries	5,294,590.80
09/15/17	Irvine Ranch Water District	July 2017 Water deliveries	2,635,045.89
09/15/17	Moulton Niguel Water District	July 2017 Water deliveries	2,393,155.72
09/15/17	Golden State Water Company	July 2017 Water deliveries	1,027,500.55
09/15/17	Yorba Linda Water District	July 2017 Water deliveries	683,219.22
09/29/17	City of La Habra	August 2017 Water deliveries	5,897.85
09/29/17	City of Brea	August 2017 Water deliveries	252,004.25
TOTAL REVENUES			\$ 21,770,746.98

Municipal Water District of Orange County
REVENUE / CASH RECEIPT REPORT
September 2017

MISCELLANEOUS REVENUES

Date	From	Description	Amount
09/01/17	Ackerman Consulting	8/30/17 Water Policy dinner	90.00
09/01/17	Square	8/30/17 Water Policy dinner	573.77
09/13/17	Costa Mesa Sanitary District	8/30/17 Water Policy dinner	90.00
09/22/17	Irvine Ranch Water District	6/1/18 OC Water Summit sponsorship	7,600.00
09/05/17	Keith Lyon	September 2017 Retiree Health insurance	259.60
09/22/17	Stan Sprague	October 2017 Retiree Health insurance	234.00
09/29/17	Keith Lyon	October 2017 Retiree Health insurance	259.60
09/29/17	P. McCauley-Volzke	Ipad Buyout	375.00
09/08/17	City of Huntington Beach	July 2017 Smartimer rebate program	427.19
09/15/17	Trabuco Canyon Water District	July 2017 Smartimer rebate program	219.99
09/07/17	City of Westminster	July 2017 Turf Removal rebate program	333.00
09/07/17	Irvine Ranch Water District	July 2017 Turf Removal rebate program	11,674.45
09/11/17	City of Fountain Valley	July 2017 Turf Removal rebate program	424.05
09/15/17	City of Garden Grove	July 2017 Turf Removal rebate program	222.00
09/22/17	City of Orange	July 2017 Turf Removal rebate program	333.00
09/08/17	City of San Clemente	July 2017 Smartimer and Turf Removal rebate program	6,460.97
09/15/17	El Toro Water District	July 2017 Smartimer and Turf Removal rebate program	1,007.96
09/11/17	Moulton Niguel Water District	July 2017 Smartimer, Rotating Nozzle & Turf Removal rebate program	14,408.25
09/22/17	El Toro Water District	July-Aug 2017 So Cal Watersmart rebate program	130.00
09/11/17	Department of Water Resources	Jan-Mar 2017 Strategic Turfgrass Removal & Design Assistance	15,468.35
09/11/17	Irvine Ranch Water District	Apr-Jun 2017 Water Savings Incentive program	674.00
09/29/17	Orange County Water District	May 2017 SAWPA Drought Response program	776.06
09/15/17	City of Fountain Valley	Water Loss Control technical assistance -WSO, Inc.	7,260.00
09/18/17	Santa Ana Police Department	Feb-Jun 2017 Purchase of 2 Fuel Trailers	36,451.58
09/11/17	City of Anaheim	Jan-Jun 2017 School Billing	6,353.75
09/11/17	City of Santa Ana	Jul-Dec 2016 School billing	17,014.47
09/11/17	City of Santa Ana	Jan-Jun 2017 School Billing	38,857.58
09/29/17	City of Anaheim	Jul-Dec 2016 School billing	32,647.70
09/11/17	City of Anaheim	FY 16-17 Choice Programs Billing Invoice	1,111.74
09/29/17	El Toro Water District	FY 17-18 Choice Programs Billing Invoice	40,126.49
09/05/17	City of Anaheim	WEROC Funding for FY 17-18	13,620.34
09/11/17	City of Santa Ana	WEROC Funding for FY 17-18	13,620.33

TOTAL MISCELLANEOUS REVENUES \$ **269,105.22**

TOTAL REVENUES \$ 22,039,852.20



Robert J. Hunter, General Manager



Hilary Chumpitazi, Treasurer

**Municipal Water District of Orange County
Disbursement Approval Report
For the month of October 2017**

Item 1b

<i>Invoice#</i>	<i>Vendor / Description</i>	<i>Amount to Pay</i>
Core Expenditures:		
1148	Richard C. Ackerman September 2017 Consulting on legal and regulatory matters	1,550.00
	*** Total ***	1,550.00
M005-2017LIAB	ACWA Joint Powers 10/1/17-10/1/18 Auto and General Liability insurance	89,234.57
	*** Total ***	89,234.57
43697	Aleshire & Wynder LLP September 2017 Legal services	1,480.62
	*** Total ***	1,480.62
517083960	ALTA FoodCraft 9/22/17 Coffee & tea supplies	89.49
	*** Total ***	89.49
804196	Best Best and Krieger LLP August 2017 State legislative advocacy services	7,500.00
55401-AUG17	August 2017 Legal services	19,823.04
	*** Total ***	27,323.04
90023532	CDM Smith June 2017 Engineering services for O.C. Water Reliability Investigation	9,332.00
90025674	7/1/17-7/29/17 Engineering services for O.C. Water Reliability Investigation	7,262.50
	*** Total ***	16,594.50
JUL-OCT2017	Hunter T. Cook August-October 2017 Retiree medical premium	1,505.52
	*** Total ***	1,505.52
AR167038	CSU Fullerton ASC 1st Quarter FY 17/18 CDR Support	10,950.64
	*** Total ***	10,950.64
2741-REVISED	Davis Farr LLP August 2017 Financial consulting	7,685.00
	*** Total ***	7,685.00
55188707	GovConnection, Inc. Data server replacement	12,907.09
	*** Total ***	12,907.09
1125	HashtagPinpoint Corporation September 2017 Social media consultation and services	9,500.00
	*** Total ***	9,500.00

**Municipal Water District of Orange County
Disbursement Approval Report
For the month of October 2017**

<i>Invoice#</i>	<i>Vendor / Description</i>	<i>Amount to Pay</i>
	James C. Barker, P.C.	
105-0917	September 2017 Federal legislative advocacy services	8,000.00
	*** Total ***	8,000.00
	Lawnscape Systems, Inc.	
391017	September 2017 Atrium garden renovation	14,827.00
391594	Replacement of 2 valves for Atrium irrigation system	456.10
	*** Total ***	15,283.10
	Philip Letrong	
SEP-NOV2017	September-November 2017 Retiree medical premium	402.00
	*** Total ***	402.00
	Lewis Consulting Group, LLC	
2017-155	September 2017 Consulting services	3,000.00
	*** Total ***	3,000.00
	Keith Lyon	
JUL-SEP2017	July-September 2017 Retiree medical premium	402.00
	*** Total ***	402.00
	Edward G. Means III	
MWDOC-1052	September 2017 MET issues and guidance to Engineering staff	1,136.77
	*** Total ***	1,136.77
	Norco Delivery Services	
711024	9/15/17 Delivery charges for Board packets	169.36
	*** Total ***	169.36
	Office Solutions	
I-01227401	9/8/17 Office supplies	6.53
I-01232483	9/15/17 Office supplies	266.81
	*** Total ***	273.34
	Orange County Business Council	
0008817-IN	2017 Annual membership renewal	5,000.00
	*** Total ***	5,000.00
	Orange County Water District	
18038	August 2017 50% share of WACO expense	216.25
18049	August 2017 Postage, shared office & maintenance expense	11,669.02
	*** Total ***	11,885.27
	Patricia Kennedy Inc.	
21479	October 2017 Plant maintenance	214.00
	*** Total ***	214.00

**Municipal Water District of Orange County
Disbursement Approval Report
For the month of October 2017**

<i>Invoice#</i>	<i>Vendor / Description</i>	<i>Amount to Pay</i>
1056577	Union Bank, N.A. June-August 2017 Custodial Bank fees *** Total ***	625.00 625.00
OCT-DEC2017	Pauline D. Wennerstrom October-December 2017 Retiree medical premium *** Total ***	318.00 318.00
	Total Core Expenditures	<hr/> 225,529.31

Choice Expenditures:

15849	City of Anaheim FY 17-18 Choice programs billing credit *** Total ***	2,631.47 2,631.47
DSOC/IV/000590	Discovery Science Center FY 17-18 Retainer for School program ***Total ***	75,000.00 75,000.00
15853	East Orange Co Water District FY 17-18 Choice programs billing credit *** Total ***	2,903.48 2,903.48
15861	Laguna Beach County Water District FY 17-18 Choice programs billing credit *** Total ***	2,780.98 2,780.98
15864	City of Newport Beach FY 17-18 Choice programs billing credit *** Total ***	1,362.78 1,362.78
15865 18049	Orange County Water District FY 17-18 Choice programs billing credit August 2017 Postage for Water Use Efficiency programs *** Total ***	2,534.15 27.89 2,562.04
15870	City of Santa Ana FY 17-18 Choice programs billing credit *** Total ***	1,343.79 1,343.79
15871	City of Seal Beach FY 17-18 Choice programs billing credit *** Total ***	210.50 210.50

**Municipal Water District of Orange County
Disbursement Approval Report
For the month of October 2017**

<i>Invoice#</i>	<i>Vendor / Description</i>	<i>Amount to Pay</i>
	<i>South Coast Water District</i>	
15873	FY 17-18 Choice programs billing credit	13,505.34
	*** Total ***	13,505.34
	<i>Top Hat Productions</i>	
93218	9/7/17 Lunch for Water Use Efficiency workgroup meeting	462.68
93233	9/12/17 Lunch for Water Loss Control workgroup meeting	338.07
93297	9/29/17 Breakfast and lunch for Model Water Efficient Landscape Ordinance workshop	1,289.77
	*** Total ***	2,090.52
	<i>Total Choice Expenditures</i>	<u>104,390.90</u>
<i>Other Funds Expenditures:</i>		
	<i>EcoTech Services, Inc.</i>	
961	8/26/17-9/25/17 One-on-One design assistance for Landscape Design program	13,050.00
962	8/26/17-9/25/17 Backyard area measurements for Turf Removal program	450.00
	*** Total ***	13,500.00
	<i>GovConnection, Inc.</i>	
55180550	Microsoft Office software license for 5 WEROC laptops	1,363.95
	*** Total ***	1,363.95
	<i>Mega Maids Cleaning Service</i>	
8874	July 2017 WEROC S. EOC cleaning services	85.00
8940	August 2017 WEROC N. EOC cleaning services	85.00
9028	September 2017 WEROC S. EOC cleaning services	85.00
	*** Total ***	255.00
	<i>Michael Baker International</i>	
989729	7/1/17-9/1/17 Orange County Regional Water & Wastewater Multijurisdictional Hazard Mitigation Plan Update	15,385.22
	*** Total ***	15,385.22
	<i>Mission RCD</i>	
23??	September 2017 Field verifications for rebate programs	17,041.96
	*** Total ***	17,041.96
	<i>Total Other Funds Expenditures</i>	<u>47,546.13</u>
	<i>Total Expenditures</i>	<u><u>377,466.34</u></u>

**Municipal Water District of Orange County
Disbursement Ratification Report
For the month of September 2017**

Item 1c

<i>Check #</i>	<i>Date</i>	<i>Vendor # Invoice/CM #</i>	<i>Name / Description</i>	<i>Net Amount</i>
Core Disbursements:				
137191	9/7/17	SPECTB 0375210082017	Spectrum Business September 2017 Telephone and internet expense ***Total ***	1,098.04 1,098.04
137192	9/7/17	VERIZO 9791562948	Verizon Wireless August 2017 4G Mobile broadband unlimited service ***Total ***	114.03 114.03
137202	9/15/17	HOMED1 7785-AUG17	Home Depot Credit Services 8/7/17 Office supplies ***Total ***	38.68 38.68
137204	9/15/17	RICOHMA 5050142873	Ricoh USA, Inc. June-August 2017 Reproduction costs ***Total ***	1,065.12 1,065.12
137209	9/15/17	SPECTB 0343564090117	Spectrum Business September 2017 Telephone expense for 3 analog fax lines ***Total ***	106.50 106.50
137213	9/15/17	VOLZKE 090117	Jonathan Volzke August-September 2017 Business expense ***Total ***	284.65 284.65
ACH002751	9/15/17	ACKEEEX 083117	Linda Ackerman August 2017 Business expense ***Total ***	14.98 14.98
ACH002754	9/15/17	BACATI 083117	Tiffany Baca July-August 2017 Business expense ***Total ***	267.81 267.81
ACH002755	9/15/17	BAEZHE 072417	Heather Baez July 2017 Business expense ***Total ***	138.89 138.89
ACH002756	9/15/17	BAEZHE 083117	Heather Baez August 2017 Business expense ***Total ***	160.00 160.00
ACH002757	9/15/17	BARBRE 083117	Brett Barbre August 2017 Business expense ***Total ***	161.57 161.57

**Municipal Water District of Orange County
Disbursement Ratification Report
For the month of September 2017**

Check #	Date	Vendor # Invoice/CM #	Name / Description	Net Amount
ACH002760	9/15/17	BUSSLI 083117	Charles Busslinger August 2017 Business expense ***Total ***	 144.13 144.13
ACH002764	9/15/17	CONWAY 083117	Matthew Conway August 2017 Business expense ***Total ***	 78.32 78.32
ACH002765	9/15/17	DICKEX 083117	Larry Dick August 2017 Business expense ***Total ***	 123.08 123.08
ACH002766	9/15/17	DINHPA 083117	Patrick Dinh August 2017 Business expense ***Total ***	 21.40 21.40
ACH002769	9/15/17	FINNEG 083117	Joan Finnegan August 2017 Business expense ***Total ***	 121.90 121.90
ACH002774	9/15/17	HOSTER 083117	Kevin Hostert July-August 2017 Business expense ***Total ***	 89.36 89.36
ACH002785	9/15/17	ROBERT 083117	Bryce Roberto August 2017 Business expense ***Total ***	 44.82 44.82
ACH002786	9/15/17	SECKEL 083117	Karl Seckel August 2017 Business expense ***Total ***	 91.49 91.49
ACH002788	9/15/17	TAMARI 083117	Satoru Tamaribuchi August 2017 Business expense ***Total ***	 173.88 173.88
ACH002789	9/15/17	THOMAS 083117	Jeffery Thomas August 2017 Business expense ***Total ***	 195.81 195.81
ACH-170922	8/23/17	WAGEWO INV274931	Wageworks August 2017 Cafeteria plan administration ***Total ***	 181.25 181.25
137282	9/28/17	VOLZKE 092717	Jonathan Volzke August-September 2017 Business expense ***Total ***	 91.52 91.52

**Municipal Water District of Orange County
Disbursement Ratification Report
For the month of September 2017**

Check #	Date	Vendor # Invoice/CM #	Name / Description	Net Amount
137291	9/29/17	IRONMO PEN7653	Iron Mountain September 2017 Archived document storage fees ***Total ***	 195.29 195.29
137298	9/29/17	USBANK 4140/5443-AUG17	U.S. Bank 7/25/17-8/22/17 Cal Card charges ***Total ***	 15,033.05 15,033.05
ACH002797	9/29/17	DELATO 091017	Harvey De La Torre August 2017 Business expense ***Total ***	 58.26 58.26
ACH002799	9/29/17	HARRIS 091517	Cathleen M. Harris September 2017 Business expense ***Total ***	 119.01 119.01
Total Core Disbursements				20,212.84

Choice Disbursements:

Total Choice Disbursements

-

Other Funds Disbursements:

137192	9/7/17	VERIZO 9791562948	Verizon Wireless August 2017 4G Mobile broadband unlimited service ***Total ***	 38.01 38.01
137193	9/12/17	DRIPPR S2D1-R-SWD-10019	Spray to Drip Program R. Brown	280.58
137194	9/12/17	S2D1-R-HB-10011	L. Park	525.00
137195	9/12/17	S2D1-R-SM-10014	M. Juarez ***Total ***	350.00 1,155.58
137196	9/13/17	TURFRP TR8A-R-IRWD-12190-12144	Turf Removal Program Z. Zhao (Re-issue) ***Total ***	 3,284.00 3,284.00
137208	9/15/17	SCHUNK 090117	Janine Schunk August-September 2017 Business expense ***Total ***	 38.73 38.73
ACH002775	9/15/17	HUBBAR 073117	Kelly Hubbard July 2017 Business expense ***Total ***	 102.97 102.97

**Municipal Water District of Orange County
Disbursement Ratification Report
For the month of September 2017**

Check #	Date	Vendor # Invoice/CM #	Name / Description	Net Amount
ACH002776	9/15/17	HUBBAR	Kelly Hubbard	
		083117	August 2017 Business expense	139.26
			***Total ***	139.26
ACH002777	9/15/17	MESAWA	Mesa Water	
		JUL2017	July 2017 Credit for Local Resources program	59,045.80
			***Total ***	59,045.80
ACH002787	9/15/17	SOTOFR	Francisco Soto	
		083117	August 2017 Business expense	134.01
			***Total ***	134.01
137216	9/20/17	ATTUVEOC	AT&T	
		8599-SEP17	September 2017 U-verse internet service for WERO N. EOC	60.00
			***Total ***	60.00
137218	9/20/17	TURFRP	Turf Removal Program	
		TR10-R-IRWD-13397-	M. Virdi (Re-issue)	634.00
			***Total ***	634.00
137219	9/25/17	TURFRP	Turf Removal Program	
		TR10-R-GG-4934-4859	A. Nguyen	1,000.00
137220	9/25/17	TR10-R-BP-6275-6202	J. Peterson	996.00
137221	9/25/17	TR10-R-MESA-7349-7302	E. Canal	1,000.00
137222	9/25/17	TR10-R-BP-7419-7367	K. Houshang	1,000.00
137223	9/25/17	TR10-R-HB-7587-7548	E. Fujimori	391.00
137224	9/25/17	TR10-R-GG-7657-7618	C. Tran	1,000.00
137225	9/25/17	TR10-R-LH-7717-7675	E. Perez	949.00
137226	9/25/17	TR10-R-GG-4258-7702	N. Nguyen	425.00
137227	9/25/17	TR10-R-GG-7986-7949	H. Hsu	1,000.00
137228	9/25/17	TR10-R-MESA-9061-9025	C. OConnell	1,000.00
137229	9/25/17	TR10-R-HB-12172-12126	P. Allan	892.00
137230	9/25/17	TR10-R-HB-13361-13310	C. Anderson	913.59
137231	9/25/17	TR10-R-GG-13372-13322	T. Le	62.12
137232	9/25/17	TR10-R-MNT-13391-13342	C. Blair	1,620.00
137233	9/25/17	TR10-R-SM-13440-13390	M. Sidner	1,000.00
137234	9/25/17	TR10-R-MNT-13478-13425	F. Ishihara	2,894.00
137235	9/25/17	TR10-R-MNT-13483-13430	S. Adams	1,098.00
137236	9/25/17	TR10-R-MESA-13496-	S. Rausch	1,000.00
137237	9/25/17	TR10-R-WEST-13537-13483	E. Huynh	486.00
137238	9/25/17	TR10-R-IRWD-13565-13510	T. Lee	750.00
137239	9/25/17	TR10-R-SOCO-13574-13519	J. Moro	286.00
137240	9/25/17	TR10-C-IRWD-14569-14516	DRC Elden Properties LLC (Costa Mesa)	738.00
137241	9/25/17	TR10-R-HB-15564-15509	C. Williams	538.00
137242	9/25/17	TR10-R-MNT-16580-16523	A. Rush	1,051.20
137243	9/25/17	TR10-R-O-16590-16537	M. Murrill	295.17

**Municipal Water District of Orange County
Disbursement Ratification Report
For the month of September 2017**

Check #	Date	Vendor # Invoice/CM #	Name / Description	Net Amount
137244	9/25/17	TR10-R-MNT-16598-16545	A. Mullane	2,478.00
137245	9/25/17	TR10-R-MNT-17585-17533	J. Kamman	580.00
137246	9/25/17	TR10-R-WEST-17592-17538	W. Nguyen	1,000.00
137247	9/25/17	TR10-R-MNT-17608-17556	L. Nadeau	560.00
137248	9/25/17	TR10-R-MNT-17614-17562	N. Bonsness	1,624.00
137249	9/25/17	TRD10-R-SC-17619-17567	N. Skutnik	1,352.00
137250	9/25/17	TR10-R-SM-17621-17569	R. Theriault	373.00
137251	9/25/17	TR10-R-MNT-17626-17574	H. Gerard	1,944.00
137252	9/25/17	TR10-R-MNT-17645-17594	S. Yim	856.00
137253	9/25/17	TR10-R-WEST-17653-17604	W. Hugron	1,000.00
137254	9/25/17	TR10-R-IRWD-17667-17619	E. Putz	1,034.00
137255	9/25/17	TR10-R-MNT-17669-17622	D. Downing	1,004.00
137256	9/25/17	TR10-R-SM-17679-17632	J. Sutton	664.00
137257	9/25/17	TR10-R-SOCO-17695-17648	A. Martinez	593.00
137258	9/25/17	TR10-R-O-17699-17651	H. Unkel	885.00
137259	9/25/17	TR10-R-MNT-17707-17658	P. Lister	1,370.00
137260	9/25/17	TR10-R-FV-17709-17659	K. Gowens	390.00
137261	9/25/17	TR10-R-O-17710-17660	A. Franco Luis	924.00
137262	9/25/17	TR10-R-IRWD-17712-17662	J. Liu	726.00
137263	9/25/17	TR10-R-IRWD-17715-17664	R. Parekh	1,632.00
137264	9/25/17	TR11-R-SOCO-17733-17683	J. Reynolds	800.00
137265	9/25/17	TR11-R-SM-17739-17687	S. Smith	544.00
137266	9/25/17	TR11-R-WEST-17741-17688	V. Bradshaw	400.00
137267	9/25/17	TR11-R-MNT-17754-17702	J. Der	1,630.00
137268	9/25/17	TR11-R-MNT-17781-17727	B. Stevens	1,500.00
137269	9/25/17	TR11-R-ETWD-17782-	E. Pourteimour	3,378.00
137270	9/25/17	TR11-R-MNT-17784-17730	J. Brandel	844.00
137271	9/25/17	TR11-R-SC-17786-17732	H. Gibson	2,389.79
137272	9/25/17	TR11-R-IRWD-17838-17749	J. Nameth	618.00
137273	9/25/17	TR11-R-MNT-17839-17750	M. Koury	566.00
137274	9/25/17	TR11-R-MNT-17843-17754	D. Trott	974.00
137275	9/25/17	TR11-R-SOCO-17856-17767	J. Aplin	1,274.00
137276	9/25/17	TR11-R-IRWD-17865-17774	J. Kittinger	616.00
137277	9/25/17	TR11-R-SM-17872-17780	S. Reed	416.00
137278	9/25/17	TR11-R-ETWD-17880-	B. Varma	1,332.00
137279	9/25/17	TR11-R-IRWD-18912-18826	D. Ottenstein	1,518.00
137280	9/25/17	TR11-R-SM-20991-20906	P. Young	269.00
137281	9/25/17	TR10-R-GG-4971-4899B	Y. Choi	1,000.00
			***Total ***	63,442.87
137287	9/29/17	CATALI	Catalina Island Conservancy	
		0014810	August 2017 WEROC radio repeater site lease	1,718.29
		0014811	September 2017 WEROC radio repeater site lease	1,718.29
			***Total ***	3,436.58
137297	9/29/17	SANTI1	Santiago Aqueduct Commission	
		JUL2017	July 2017 SAC Pipeline operation surcharge	3,950.38
			***Total ***	3,950.38

**Municipal Water District of Orange County
Disbursement Ratification Report
For the month of September 2017**

<i>Check #</i>	<i>Date</i>	<i>Vendor # Invoice/CM #</i>	<i>Name / Description</i>	<i>Net Amount</i>
ACH002808	9/29/17	SANTAM	Santa Margarita Water District	
		JUL2017	July 2017 SCP Pipeline operation surcharge	30,801.77
			Total	30,801.77
WIRE-170929	9/29/17	METWAT	Metropolitan Water District	
		9100	July 2017 Water deliveries	23,436,920.66
			Total	23,436,920.66
			Total Other Funds Disbursements	23,603,184.62
			Total Disbursements	23,623,397.46



Robert J. Hunter, General Manager



Hilary Chumpitazi, Treasurer

Cal Card Statement Detail
Statement Date: August 24, 2017
Payment Date: September 29, 2017

Date	Description	Amount
<u>K. Seckel Card</u>		
07/18/17	Lunch for Managers' meeting	\$ 579.85
07/24/17	UPS delivery charges for CDW Government return on Jul. 19, 2017	7.26
07/24/17	6/25/17-7/24/17 Monthly web hosting service for new MWDOC website	15.65
07/24/17	Lunch for MET Directors' meeting	222.68
07/26/17	Supplies for emergency water sample kits for WEROC training	21.17
07/26/17	Monster job post for Administration Assistant position - Duplicate charge refund	(459.00)
07/26/17	Sympathy flowers for staff member	84.02
07/28/17	California Emergency Services Association Training and Annual conference in Fish Camp, CA on Oct. 7, 2017 - Canceled accommodations for F. Soto refunded	(398.49)
07/31/17	UPS delivery charges for CDW Government return on Jul. 19, 2017 and Board packets on Jul. 28, 2017	37.06
08/01/17	Urban Water Institute conference in San Diego, CA from Aug. 16-18, 2017 - Registration for D. Micalizzi	475.00
08/01/17	Southern California Water Committee Quarterly luncheon in Commerce, CA on Jul. 28, 2017 - Registration for R. Hunter	75.00
08/02/17	OC Register annual subscription renewal	124.40
08/02/17	ACWA Fall conference in Anaheim, CA from Nov. 28-Dec. 1, 2017 - Registration for Director Thomas	699.00
08/03/17	3 Toner cartridges	50.67
08/03/17	Association of Legal Administrators membership	129.00
08/03/17	California Water Efficiency Partnership meeting in Sacramento, CA from Aug. 8-9, 2017 - Airfare for J. Berg	347.95
08/03/17	California Council for Environmental and Economic Balance meeting in Sacramento, CA on Aug. 11, 2017 - Airfare for R. Hunter	363.96
08/03/17	California Council for Environmental and Economic Balance meeting in Sacramento, CA on Aug. 11, 2017 - Airfare for Director Tamaribuchi	363.96
08/04/17	2 Dell computer monitors	316.48
08/04/17	Lunch for Boy Scout merit badge clinic on Aug. 4, 2017	284.95
08/04/17	Lunch for MET Managers' meeting	234.34
08/04/17	Annual Adobe Creative Cloud licenses for Public Affairs department	3,599.28
08/04/17	Orange County Business Council Washington Briefing with Hugh Hewitt in Newport Beach, CA on Aug. 31, 2017 - Registration for Director Thomas	80.00
08/07/17	UPS delivery charges for Board packets on Jul. 28, 2017	64.10
08/08/17	Association of California Cities-Orange County, Washington DC Federal Advocacy trip in Washington, DC from Sep. 24-26, 2017 - Canceled registration for Director Barbre refunded	(1,015.00)

Cal Card Statement Detail
Statement Date: August 24, 2017
Payment Date: September 29, 2017

Date	Description	Amount
08/09/17	Freight for supplies for emergency water sample kits for WEROC training	39.83
08/09/17	California Water Efficiency Partnership meeting in Sacramento, CA from Aug. 8-9, 2017 - Accommodations for J. Berg	194.80
08/10/17	Computer supplies	84.88
08/10/17	Computer supplies	34.79
08/11/17	5 Dell computers	4,773.11
08/11/17	California Environmental Dialogue meeting in San Diego, CA from Aug. 16-18, 2017 - Accommodations for Director Tamaribuchi	634.44
08/11/17	California Environmental Dialogue meeting in San Diego, CA from Aug. 16-18, 2017 - Accommodations for R. Hunter	628.05
08/11/17	Urban Water Institute conference in San Diego, CA from Aug. 16-18, 2017 - Accommodations for M. Baum-Haley	258.08
08/11/17	Brown and Caldwell job posting for Public Affairs Assistant position	200.00
08/16/17	California Emergency Services Association Training and Annual conference in Fish Camp, CA from Oct. 7-15, 2017 - Accommodations deposit for K. Hubbard	172.05
08/17/17	California Water Efficiency Partnership meeting in Oakland, CA on Aug. 22, 2017 - Airfare for J. Berg	403.96
08/20/17	Urban Water Institute conference in San Diego, CA from Aug. 15-18, 2017 - Accommodations for D. Micalizzi	878.20
08/21/17	UPS delivery charges for Board packets on Aug. 11 & 17, 2017	101.62
Total		<u>\$ 14,707.10</u>

R. Hunter Card

07/25/17-08/22/17	Meals for R. Hunter's meetings	\$ 226.75
08/11/17	California Council for Environmental and Economic Balance meeting in Sacramento, CA on Aug. 11, 2017 - Transportation for Director Tamaribuchi and R. Hunter	79.20
08/11/17	California Council for Environmental and Economic Balance meeting in Sacramento, CA on Aug. 11, 2017 - Parking for R. Hunter	20.00
Total		<u>\$ 325.95</u>

Municipal Water District of Orange County
GM Approved Disbursement Report ⁽¹⁾
For the month of September 2017

<i>Check #</i>	<i>Date</i>	<i>Vendor # Invoice/CM #</i>	<i>Name / Description</i>	<i>Net Amount</i>
Core Disbursements:				
Total Core Disbursements				-
Choice Disbursements:				
Total Choice Disbursements				-
Other Funds Disbursements:				
Total Other Funds Disbursements				-
Total Disbursements				-

No items to report



Robert J. Hunter, General Manager



Hilary Chumpitazi, Treasurer

(1) For disbursements that did not make the cut-off of previous month's Disbursement Approval report.
Disbursements are approved by GM for payment and need A & F Committee ratification.

**Municipal Water District of Orange County
WATER USE EFFICIENCY PROJECTS**
Cash Flow as of 9/30/17

Cash - Beginning Balance	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	TOTALS
\$	(72,844.08)	\$ (133,020.86)	\$ (151,184.71)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	
REVENUES:													
BUREC													\$ -
City of Brea													-
City of Buena Park		222.00											222.00
City of Fountain Valley	333.00	444.00	424.05										1,201.05
City of Fullerton													-
City of Garden Grove		888.00	222.00										1,110.00
City of Huntington Beach	264.00	379.00	427.19										1,070.19
City of La Habra		555.00											555.00
City of San Clemente	1,304.96	233.00	6,460.97										7,998.93
City of San Juan Capistrano													-
City of Tustin													-
City of Newport Beach	406.31	222.00											628.31
City of Orange	444.00	555.00	333.00										1,332.00
City of Westminster		888.00	333.00										1,221.00
Department of Water Resources		1,444.63	15,468.35										16,912.98
El Toro Water District	3,093.98	50.00	1,137.96										4,281.94
Golden State Water Company													-
Irvine Ranch Water District	38,717.96	129,174.28	12,348.45										180,240.69
Laguna Beach County Water District	85.00	90.00											175.00
Mesa Water District		500.00											500.00
Metropolitan Water District		25,735.53											25,735.53
Moulton Niguel Water District	37,634.08	3,800.00	14,408.25										55,842.33
Orange County Water District		5,510.86	776.06										6,286.92
Santa Margarita Water District	57.32	197.95											255.27
Serrano Water District													-
Trabuco Canyon Water District	201.00	39.00	219.99										459.99
Yorba Linda Water District													-
Miscellaneous Revenues	417.16												417.16
Interest Revenue													
Total Revenues	82,958.77	170,928.25	52,559.27	-	-	-	-	-	-	-	-	-	\$ 306,446.29
EXPENDITURES:													
Budget Based Tiered rates		59,356.00											59,356.00
Delorenzo International		5,050.50											5,050.50
Ecoltech	900.00	10,275.00	6,750.00										17,925.00
Golden State Water Company	80.00												80.00
Laguna Beach CWD	480.00												480.00
Metropolitan Water District	29,129.40		118,745.58										147,874.98
Mission RCD		17,627.75	33,812.14										51,439.89
Santa Margarita Water District	255.00												255.00
Spring to Drip program			1,155.58										1,155.58
Turf Removal			63,442.87										63,442.87
Village, Inc	60,861.15	96,782.85	500.00										151,144.00
Western National Property Management	51,300.00												51,300.00
Miscellaneous Expenses													
Interest Expense													
Salary & Benefit	130.00												130.00
Total Expenditures	143,135.55	189,092.10	224,406.17	-	-	-	-	-	-	-	-	-	\$ 556,633.82
Cash Ending Balance	\$ (133,020.86)	\$ (151,184.71)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	\$ (323,031.61)	



Municipal Water District of Orange County **Consolidated Summary of Cash and Investment** August 31, 2017

Item 1f

Street Address:
 18700 Ward Street
 Fountain Valley, California 92708

Mailing Address:
 P.O. Box 20895
 Fountain Valley, CA 92728-0895

(714) 963-3058
 Fax: (714) 964-9389
www.mwdoc.com

Wayne S. Osborne
President

Brett R. Barbre
Vice President

Larry D. Dick
Director

Joan C. Finnegan
Director

Megan Yoo Schneider
Director

Sat Tamaribuchi
Director

Jeffery M. Thomas
Director

Robert J. Hunter
General Manager

MEMBER AGENCIES

City of Brea
 City of Buena Park
 East Orange County Water District
 El Toro Water District
 Emerald Bay Service District
 City of Fountain Valley
 City of Garden Grove
 Golden State Water Co.
 City of Huntington Beach
 Irvine Ranch Water District
 Laguna Beach County Water District
 City of La Habra
 City of La Palma
 Mesa Water District
 Moulton Niguel Water District
 City of Newport Beach
 City of Orange
 Orange County Water District
 City of San Clemente
 City of San Juan Capistrano
 Santa Margarita Water District
 City of Seal Beach
 Serrano Water District
 South Coast Water District
 Trabuco Canyon Water District
 City of Tustin
 City of Westminster
 Yorba Linda Water District

District investments and cash balances are held in various funds designated for certain purposes as follows:

Fund	Book Value	% of Portfolio
Designated Reserves		
General Operations	\$2,715,630	15.75%
Grant & Project Cash Flow	1,500,000	8.70%
Election Expense	475,000	2.76%
Building Repair	350,407	2.03%
OPEB	209,006	1.21%
Total Designated Reserves	5,250,043	30.45%
General Fund	8,881,373	51.52%
Water Fund	2,870,074	16.65%
Conservation Fund	(151,185)	(0.88%)
Desalination Feasibility Study Fund	(145,165)	(0.84%)
WEROC Fund	543,886	3.16%
WEROC Fuel Trailers	(37,995)	(0.22%)
Trustee Activities	28,182	0.16%
Total	\$17,239,213	100.00%

The funds are invested as follows:

Term of Investment	% of Portfolio	Book Value	Market Value
Cash	0.60%	\$103,011	\$103,011
Short-term investment			
• LAIF	58.76%	\$10,128,305	\$10,128,305
• OCIP	22.63%	3,903,690	3,903,690
Long-term investment			
• Corporate Bond	6.70%	1,154,207	1,158,557
• Certificates of Deposit	11.31%	1,950,000	1,957,294
Total	100.00%	\$17,239,213	\$17,250,857

The average number of days to maturity/call as of August 31, 2017 equaled 147 and the average yield to maturity is 1.248%. During the month, the District's average daily balance was \$25,896,514.30. Funds were invested in Federal Agency Issues, Certificates of Deposit, Negotiable CD's, Miscellaneous Securities, the Local Agency Investment Funds (LAIF) and the Orange County Investment Pool (OCIP) during the month of August 2017.

The \$11,644 difference between the book value and the market value on August 31, 2017 represents the exchange difference if all investments had been liquidated on that date. Since it is the District's practice to "buy and hold" investments until maturity, the market values are a point of reference, not an indication of actual loss or gain. There are no current plans or cash flow requirements identified in the near future that would require the sale of these securities prior to maturity.


 Robert J. Hunter
 General Manager


 Hilary Chumpitazi
 Treasurer

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY



Portfolio Management - Portfolio Summary August 31, 2017

8/31/2017	Par Value	Market Value	Book Value	% of Portfolio	Days to Mat/Call	YTM @ Cost
Negotiable Certificate Of Deposit	1,950,000.00	1,957,294.00	1,950,000.00	11.38	548	1.895
Corporate Bond	1,150,000.00	1,158,557.00	1,154,207.54	6.71	1,242	2.290
Local Agency Investment Funds	10,128,304.91	10,128,304.91	10,128,304.91	59.12	1	1.079
Orange County Investment Pool	3,903,689.83	3,903,689.83	3,903,689.83	22.79	1	1.054
Total Investments	17,131,994.74	17,147,845.74	17,136,202.28	100.00	147	1.248
Cash						
Cash	103,010.61	103,010.61	103,010.61		1	0.00
Total Cash and Investments	17,235,005.35	17,250,856.35	17,239,212.89		147	1.248

Total Earnings	Month Ending August	Fiscal Year to Date
Current Year	24,104.22	43,093.77
Average Daily Balance	25,896,514.30	
Effective Rate of Return	1.248%	

We certify that this report reflects the cash and investments of the Municipal Water District of Orange County and is in conformity with the Government Code requirements and the District Investment Policy and Guidelines in effect at the time of investment. The Investment Program herein shown provides sufficient cash flow liquidity to meet the next six month's estimated expenditure. The source for the market values are from Union Bank. Per Resolution 2059 there are no compliance exceptions to report.


Robert J. Hunter, General Manager

Date

10-5-17


Hilary Chumptazi, Treasurer

Date

10/5/2017

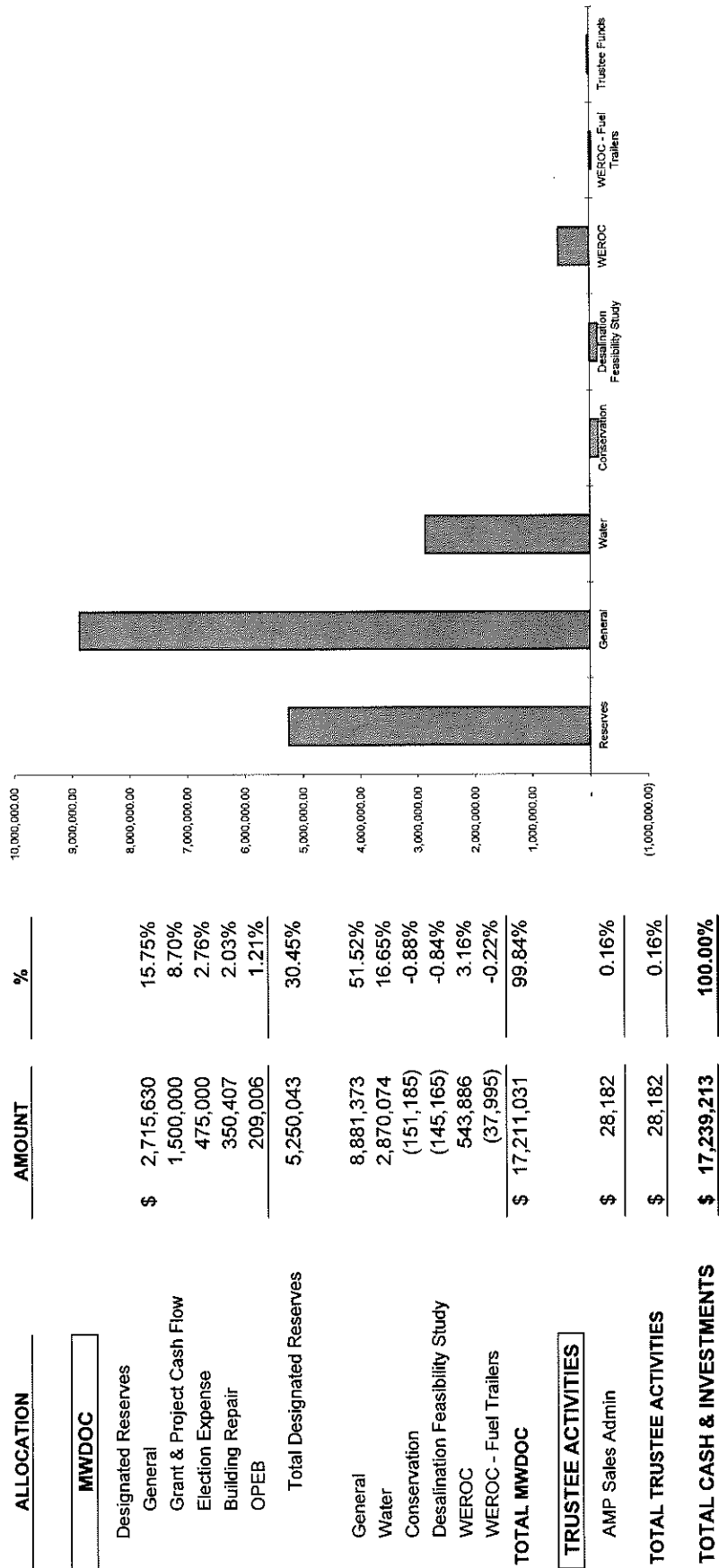
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
Portfolio Management
Long-Term Portfolio Details - Investments
August 31, 2017

Issuer	CUSIP/Ticker	Settlement Date	Par Value	Market Value	Book Value	Coupon Rate	YTM @ Cost	Days To Call/Maturity	Maturity Date
Negotiable Certificate Of Deposit									
American Express Bank	02587CEA4	7/29/2015	250,000.00	250,250.00	250,000.00	1.450	1.450	151	1/29/2018
Barclays Bank	06740KJP3	9/24/2015	250,000.00	251,627.50	250,000.00	1.900	1.900	753	9/23/2019
Capital One Bank	140420TY6	8/5/2015	250,000.00	250,272.50	250,000.00	1.700	1.700	340	8/6/2018
Capital One Natl Assn	14042E6C9	9/2/2015	250,000.00	251,875.00	250,000.00	1.950	1.950	733	9/3/2019
Comenity Capital Bank	20033AUX2	7/25/2017	200,000.00	200,894.00	200,000.00	2.000	2.000	1,415	7/16/2021
Discover Bank	2546712Y5	7/23/2014	250,000.00	250,242.50	250,000.00	1.600	1.600	326	7/23/2018
HSBC Bank	40434AK65	1/21/2016	250,000.00	250,400.00	250,000.00	1.550	2.534	143	1/21/2021
Synchrony Bank	87164XBY1	7/25/2014	250,000.00	251,732.50	250,000.00	2.050	2.050	698	7/30/2019
Sub Total			1,950,000.00	1,957,294.00	1,950,000.00	1.769	1.895	648	
Corporate Bond									
JP Morgan Chase	48625HKA7	11/2/2015	500,000.00	504,230.00	501,114.31	2.250	2.152	844	1/23/2020
National Rural Util Coop	63743FE51	7/27/2017	200,000.00	199,902.00	200,000.00	2.500	2.500	1,779	7/15/2022
Wells Fargo	94974BGR5	1/13/2016	250,000.00	253,495.00	251,075.60	2.550	2.409	1,194	12/7/2020
Westpac Banking Corp	961214DQ3	7/25/2017	200,000.00	200,930.00	202,017.63	2.500	2.278	1,762	6/28/2022
Sub Total			1,150,000.00	1,158,557.00	1,154,207.54	2.402	2.290	1,242	
Total Investments			3,100,000.00	3,115,851.00	3,104,207.54	2.004	2.042	806	
Total Earnings									
			Month Ending August		Fiscal Year To Date				
Current Year			5,129.32		9,762.32				

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
Portfolio Management
Short-Term Portfolio Details - Cash and Investments
August 31, 2017

Investments	CUSIP/Ticker	Settlement Date	Par Value	Market Value	Book Value	Coupon Rate	YTM @ Cost	Days To Call/Maturity	Maturity Date
Local Agency Investment Funds									
LAIF LGIP	LAIF	6/30/2010	10,128,304.91	10,128,304.91	10,128,304.91	1.079	1.079	1	N/A
Sub Total			10,128,304.91	10,128,304.91	10,128,304.91	1.079	1.079	1	
Orange County Investment Pool									
County of Orange LGIP	OCIP	6/29/2005	3,903,689.83	3,903,689.83	3,903,689.83	1.054	1.054	1	N/A
Sub Total			3,903,689.83	3,903,689.83	3,903,689.83	1.054	1.054	1	
Total Investments			14,031,994.74	14,031,994.74	14,031,994.74	1.072	1.072		
Cash									
Bank of America Cash	CASH0547	7/1/2011	102,510.61	102,510.61	102,510.61	0.000	0.000	1	N/A
Petty Cash Cash	CASH	7/1/2011	500.00	500.00	500.00	0.000	0.000	1	N/A
Total Cash			103,010.61	103,010.61	103,010.61	0.000	0.000	1	
Total Cash and Investments			14,135,005.35	14,135,005.35	14,135,005.35	1.072	1.072	1	
Total Earnings									
Current Year		Month Ending August	18,974.90	Fiscal Year To Date	33,331.45				

**Municipal Water District of Orange County
Cash and Investments at August 31, 2017**



MUNICIPAL WATER DIST OF ORANGE COUNTY
PARS OPEB Trust Program**Account Report for the Period**
8/1/2017 to 8/31/2017Rob Hunter
General Manager
Municipal Water Dist of Orange County
18700 Ward Street
Fountain Valley, CA 92708**Account Summary**

Source	Beginning Balance as of 8/1/2017	Contributions	Earnings	Expenses	Distributions	Transfers	Ending Balance as of 8/31/2017
OPEB	\$1,989,112.05	\$0.00	\$11,500.61	\$878.84	\$0.00	\$0.00	\$1,999,733.82
Totals	\$1,989,112.05	\$0.00	\$11,500.61	\$878.84	\$0.00	\$0.00	\$1,999,733.82

Investment Selection**Moderate HighMark PLUS****Investment Objective**

The dual goals of the Moderate Strategy are growth of principal and income. It is expected that dividend and interest income will comprise a significant portion of total return, although growth through capital appreciation is equally important. The portfolio will be allocated between equity and fixed income investments.

Investment Return

1-Month	3-Months	1-Year	Annualized Return			Plan's Inception Date
			3-Years	5-Years	10-Years	
0.58%	2.54%	9.54%	5.06%	7.45%	-	10/26/2011

Information as provided by US Bank, Trustee for PARS; Not FDIC Insured; No Bank Guarantee; May Lose Value

Past performance does not guarantee future results. Performance returns may not reflect the deduction of applicable fees, which could reduce returns. Information is deemed reliable but may be subject to change.

Investment Return: Annualized rate of return is the return on an investment over a period other than one year multiplied or divided to give a comparable one-year return.

Account balances are inclusive of Trust Administration, Trustee and Investment Management fees

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
COMBINED FINANCIAL STATEMENTS
AND
BUDGET COMPARATIVE
JULY 1, 2017 THRU AUGUST 31, 2017

**Municipal Water District of Orange County
Combined Balance Sheet
As of August 31, 2017**

<u>ASSETS</u>	Amount
Cash in Bank	103,010.61
Investments	17,136,202.28
Accounts Receivable	50,525,986.94
Accounts Receivable - Other	213,036.51
Accrued Interest Receivable	30,935.95
Prepays/Deposits	229,177.13
Leasehold Improvements	3,695,600.68
Furniture, Fixtures & Equipment	457,309.71
Less: Accum Depreciation	(2,790,895.72)
Net OPEB Asset	483,546.00
	<hr/>
TOTAL ASSETS	\$70,083,910.09
	<hr/>
<u>LIABILITIES AND FUND BALANCES</u>	
Liabilities	
Accounts Payable	50,195,298.68
Accounts Payable - Other	470.74
Accrued Salaries and Benefits Payable	341,541.74
Other Liabilities	193,507.26
Unearned Revenue	1,714,185.93
Total Liabilities	52,445,004.35
	<hr/>
Fund Balances	
Restricted Fund Balances	
Water Fund - T2C	972,685.59
Total Restricted Fund Balances	972,685.59
	<hr/>
Unrestricted Fund Balances	
Designated Reserves	
General Operations	3,199,174.86
Grant & Project Cash Flow	1,500,000.00
Election Expense	475,000.00
Building Repair	350,407.45
OPEB	209,006.00
Total Designated Reserves	5,733,588.31
	<hr/>
GENERAL FUND	2,680,940.53
WEROC Capital	281,657.00
WEROC	144,717.31
Total Unrestricted Fund Balances	8,840,903.15
	<hr/>
Excess Revenue over Expenditures	
Operating Fund	7,572,207.32
Other Funds	253,109.68
Total Fund Balance	17,638,905.74
	<hr/>
TOTAL LIABILITIES AND FUND BALANCES	\$70,083,910.09
	<hr/>

Municipal Water District of Orange County
Revenues and Expenditures Budget Comparative Report
General Fund
From July thru August 2017

	Month to Date	Year to Date	Annual Budget	% Used	Encumbrance	Budget Remaining
<u>REVENUES</u>						
Retail Connection Charge	0.00	7,435,834.00	7,435,834.00	100.00%	0.00	0.00
Ground Water Customer Charge	0.00	468,565.00	468,565.00	100.00%	0.00	0.00
Water rate revenues	0.00	7,904,399.00	7,904,399.00	100.00%	0.00	0.00
Interest Revenue	23,317.67	41,474.93	150,000.00	27.65%	0.00	108,525.07
Subtotal	23,317.67	7,945,873.93	8,054,399.00	98.65%	0.00	108,525.07
Choice Programs	1,094,256.07	1,094,256.07	1,176,618.00	93.00%	0.00	82,361.93
Miscellaneous Income	897.46	997.46	3,000.00	33.25%	0.00	2,002.54
School Contracts	0.00	0.00	70,000.00	0.00%	0.00	70,000.00
Transfer-In From Reserve	0.00	0.00	138,470.00	0.00%	0.00	138,470.00
Subtotal	1,095,153.53	1,095,253.53	1,388,088.00	78.90%	0.00	292,834.47
TOTAL REVENUES	1,118,471.20	9,041,127.46	9,442,487.00	95.75%	0.00	401,359.54

Municipal Water District of Orange County
Revenues and Expenditures Budget Comparative Report
General Fund
From July thru August 2017

	Month to Date	Year to Date	Annual Budget	% Used	Encumbrance	Budget Remaining
<u>EXPENSES</u>						
Salaries & Wages	294,756.62	568,227.30	3,571,210.00	15.91%	0.00	3,002,982.70
Salaries & Wages - Grant Recovery	0.00	0.00	(23,279.00)	0.00%	0.00	(23,279.00)
Salaries & Wages - Recovery	0.00	(109.20)	0.00	0.00%	0.00	109.20
Directors' Compensation	18,102.40	36,487.65	243,197.00	15.00%	0.00	206,709.35
MWD Representation	10,748.30	21,213.75	138,969.00	15.27%	0.00	117,755.25
Employee Benefits	90,005.91	168,279.93	1,056,766.00	15.92%	0.00	888,486.07
Employee Benefits - Grant Recovery	0.00	0.00	0.00	0.00%	0.00	0.00
Employee Benefits - Recovery	0.00	(20.80)	0.00	0.00%	0.00	20.80
Director's Benefits	6,899.03	13,337.10	81,728.00	16.32%	0.00	68,390.90
Health Ins \$'s for Retirees	3,296.76	8,417.04	59,554.00	14.13%	0.00	51,136.96
Training Expense	0.00	0.00	10,000.00	0.00%	0.00	10,000.00
Tuition Reimbursement	0.00	0.00	5,000.00	0.00%	0.00	5,000.00
Temporary Help Expense	3,182.40	4,775.18	5,000.00	95.50%	0.00	224.82
Personnel Expenses	426,991.42	820,607.95	5,148,145.00	15.94%	0.00	4,327,537.05
Engineering Expense	24,632.55	25,644.32	360,000.00	7.12%	111,894.20	222,461.48
Legal Expense	43,786.53	45,404.03	250,000.00	18.16%	204,595.97	0.00
Audit Expense	0.00	10,000.00	40,000.00	25.00%	9,000.00	21,000.00
Professional Services	36,521.28	79,747.80	1,539,809.00	5.18%	162,583.33	1,297,477.87
Professional Fees	104,940.36	160,796.15	2,189,809.00	7.34%	488,073.50	1,540,939.35
Conference-Staff	550.00	2,570.90	38,945.00	6.60%	0.00	36,374.10
Conference-Directors	859.00	2,923.00	23,700.00	12.33%	0.00	20,777.00
Travel & Accom.-Staff	3,701.71	5,987.75	95,600.00	6.26%	0.01	89,612.24
Travel & Accom.-Directors	1,038.00	2,866.00	49,850.00	5.75%	0.00	46,984.00
Travel & Conference	6,148.71	14,347.65	208,095.00	6.89%	0.01	193,747.34
Membership/Sponsorship	5,000.00	64,921.60	142,102.00	45.69%	0.00	77,180.40
CDR Support	0.00	0.00	48,803.00	0.00%	43,802.57	5,000.43
Dues & Memberships	5,000.00	64,921.60	190,905.00	34.01%	43,802.57	82,180.83
Business Expense	695.97	1,083.09	5,200.00	20.83%	0.00	4,116.91
Maintenance Office	16,758.81	16,972.81	123,500.00	13.74%	105,467.19	1,060.00
Building Repair & Maintenance	4,111.28	4,111.28	11,000.00	37.38%	5,888.72	1,000.00
Storage Rental & Equipment Lease	195.29	388.63	8,400.00	4.63%	4,611.37	3,400.00
Office Supplies	1,401.23	2,750.09	35,580.00	7.73%	3,633.09	29,196.82
Postage/Mail Delivery	981.91	1,243.39	10,500.00	11.84%	3,434.61	5,822.00
Subscriptions & Books	283.40	303.59	1,500.00	20.24%	0.00	1,196.41
Reproduction Expense	4,025.22	4,025.22	27,275.00	14.76%	2,734.88	20,514.90
Maintenance-Computers	681.88	878.08	10,000.00	8.78%	1,754.27	7,367.65
Software Purchase	3,599.28	3,817.26	44,260.00	8.62%	0.00	40,442.74
Software Support	5,280.16	9,666.61	48,894.00	19.77%	6,675.14	32,552.25
Computers and Equipment	9,704.44	8,706.36	33,050.00	26.34%	0.00	24,343.64
Automotive Expense	1,292.94	2,452.69	16,400.00	14.96%	0.00	13,947.31
Toll Road Charges	53.62	106.94	1,000.00	10.69%	0.00	893.06
Insurance Expense	8,868.10	17,720.39	110,250.00	16.07%	0.00	92,529.61
Utilities - Telephone	838.69	2,294.11	21,300.00	10.77%	0.00	19,005.89
Bank Fees	1,056.82	1,909.99	11,000.00	17.36%	0.00	9,090.01
Miscellaneous Expense	13,609.55	16,700.95	119,650.00	13.96%	0.00	102,949.05
MWDOC's Contrb. To WEROC	296,591.75	311,526.50	460,874.00	67.59%	0.00	149,347.50
Depreciation Expense	794.40	1,588.81	0.00	0.00%	0.00	(1,588.81)
Other Expenses	370,824.74	408,246.79	1,099,633.00	37.13%	134,199.27	557,186.94
MWDOC's Building Expense	0.00	0.00	356,400.00	0.00%	54,076.34	302,323.66
Capital Acquisition	0.00	0.00	249,500.00	0.00%	0.00	249,500.00
TOTAL EXPENSES	913,905.23	1,468,920.14	9,442,487.00	15.56%	720,151.69	7,253,415.17
NET INCOME (LOSS)	204,565.97	7,572,207.32	0.00			

Municipal Water District of Orange County
Revenues and Expenditures Budget Comparative Report
Water Fund
From July thru August 2017

	Month to Date	Year to Date	Annual Budget	% Used	Budget Remaining
<u>WATER REVENUES</u>					
Water Sales	25,041,840.20	47,201,196.10	154,733,881.00	30.50%	107,532,684.90
Readiness to Serve Charge	863,419.18	1,726,838.36	10,397,278.00	16.61%	8,670,439.64
Capacity Charge CCF	295,400.00	590,800.00	3,544,800.00	16.67%	2,954,000.00
SCP/SAC Pipeline Surcharge	30,215.13	64,967.28	423,000.00	15.36%	358,032.72
Interest	844.30	1,739.27	9,400.00	18.50%	7,660.73
TOTAL WATER REVENUES	<u>26,231,718.81</u>	<u>49,585,541.01</u>	<u>169,108,359.00</u>	<u>29.32%</u>	<u>119,522,817.99</u>
<u>WATER PURCHASES</u>					
Water Sales	25,041,840.20	47,201,196.10	154,733,881.00	30.50%	107,532,684.90
Readiness to Serve Charge	863,419.18	1,726,838.36	10,397,278.00	16.61%	8,670,439.64
Capacity Charge CCF	295,400.00	590,800.00	3,544,800.00	16.67%	2,954,000.00
SCP/SAC Pipeline Surcharge	30,215.13	64,967.28	423,000.00	15.36%	358,032.72
TOTAL WATER PURCHASES	<u>26,230,874.51</u>	<u>49,583,801.74</u>	<u>169,098,959.00</u>	<u>29.32%</u>	<u>119,515,157.26</u>
EXCESS OF REVENUE OVER EXPENDITURES	<u>844.30</u>	<u>1,739.27</u>	<u>9,400.00</u>		

Municipal Water District of Orange County
WUE Revenues and Expenditures (Actuals vs Budget)
From July thru August 2017

	Year to Date Actual	Annual Budget	% Used
Spray To Drip Conversion			
Revenues	0.00	257,371.00	0.00%
Expenses	72.67	257,371.00	0.03%
Excess of Revenues over Expenditures	(72.67)	0.00	
Member Agency Administered Passthru			
Revenues	0.00	7,200.00	0.00%
Expenses	0.00	7,200.00	0.00%
Excess of Revenues over Expenditures	0.00	0.00	
ULFT Rebate Program			
Revenues	8,250.64	95,000.00	8.68%
Expenses	8,250.64	95,000.00	8.68%
Excess of Revenues over Expenditures	0.00	0.00	
HECW Rebate Program			
Revenues	68,435.00	340,000.00	20.13%
Expenses	68,435.00	340,000.00	20.13%
Excess of Revenues over Expenditures	0.00	0.00	
CII Rebate Program			
Revenues	109,230.00	345,000.00	31.66%
Expenses	109,230.00	345,000.00	31.66%
Excess of Revenues over Expenditures	0.00	0.00	
Turf Removal Program			
Revenues	106,195.57	2,552,302.00	4.16%
Expenses	162,194.05	2,552,302.00	6.35%
Excess of Revenues over Expenditures	(55,998.48)	0.00	
Comprehensive Landscape (CLWUE)			
Revenues	62,663.77	520,000.00	12.05%
Expenses	54,616.31	520,000.00	10.50%
Excess of Revenues over Expenditures	8,047.46	0.00	
CII, Large Landscape, Performance (OWOW)			
Revenues	0.00	62,722.00	0.00%
Expenses	2,147.00	62,722.00	3.42%
Excess of Revenues over Expenditures	(2,147.00)	0.00	
WUE Projects			
Revenues	354,774.98	4,179,595.00	8.49%
Expenses	404,945.67	4,179,595.00	9.69%
Excess of Revenues over Expenditures	(50,170.69)	0.00	
WEROC			
Revenues	490,742.50	640,933.00	76.57%
Expenses	55,009.32	640,933.00	8.58%
Excess of Revenues over Expenditures	435,733.18	0.00	



DISCUSSION ITEM

October 11, 2017

TO: Administration & Finance Committee
(Directors Thomas, Barbre, Finnegan)

FROM: Robert Hunter, General Manager

Staff Contact: Hilary Chumpitazi and Cathy Harris

SUBJECT: CalPERS Annual Valuation Report as of June 30, 2017 and unfunded liability options

STAFF RECOMMENDATION

Staff recommends the Administration & Finance Committee: receive and file the CalPERS Annual Valuation Report and review and discuss CalPERS unfunded liability options.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

DETAILED REPORT

Attached for your information is the CalPERS Annual Valuation Report as of June 30, 2016. The report includes the following information:

- MWDOC's total PERS obligation for Classic PERS Members effective July 1, 2018 will be 16.409% compared to July 1, 2017 was 15.921%
- The District's contribution amount will be 9.409% for fiscal year 2018-19 with the employee contribution being at the full 7%
- The District's contribution amount for PEPRAs Members effective July 1, 2018, will be 6.842% compared to last year's rate of 6.533%
- MWDOC's current plan obligation as of June 30, 2016 for Classic is \$9,638,398, 77.2% funded and for PEPRAs is \$204,458, 90% funded

Section 2 of the valuation is available online and can be emailed upon request.

Budgeted (Y/N):	Budgeted amount:	Core ____	Choice ____
Action item amount:	Line item:		
Fiscal Impact (explain if unbudgeted):			

MWDOC's unfunded liability for Classic Members (2%@55) as of June 30, 2016 is \$2,193,187 and for PEPRA Members (2%@62) is \$20,477. Staff recently met with PARS to discuss the OPEB Trust at which time they introduced their Pension Rate Stabilization Program, to prefund pension liability. There are options to prefund the Classic unfunded liability if the Board chooses and they are listed as follows:

1. Public Agency Retirement Services (PARS) currently manages our OPEB liability and has implemented a new product, the Pension Rate Stabilization Program (PRSP) to prefund pension liability. It is an IRS approved 115 Trust. We can access funds at any time to be used for pension; we can aggregate our OPEB and Pension assets for lower fees on a tiered schedule; there are no setup costs or termination fees or restrictions, and no fees until assets are added. PARS already has 98 clients in this program.
2. MWDOC can establish a designated Reserve Pension Fund and contribute yearly to prefund our pension. These monies can be invested in a longer term CD or Security to earn a higher yield.



August 2017

**MISCELLANEOUS PLAN OF THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
(CalPERS ID: 6497938438)
Annual Valuation Report as of June 30, 2016**

Dear Employer,

As an attachment to this letter, you will find a copy of the June 30, 2016 actuarial valuation report of the pension plan.

Because this plan is in a risk pool, the following valuation report has been separated into two sections:

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2016.

Section 2 can be found on the CalPERS website at (www.calpers.ca.gov). From the home page, go to "Forms & Publications" and select "View All". In the search box, enter "Risk Pool Report" and from the results list download the Miscellaneous or Safety Risk Pool Actuarial Valuation Report as appropriate.

Your June 30, 2016 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you after August 31, 2017.

The exhibit below displays the minimum employer contributions, before any cost sharing, for Fiscal Year 2018-19 along with estimates of the required contributions for Fiscal Years 2019-20 and 2020-21. Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees.**

Required Contribution

Fiscal Year	Employer Normal Cost Rate	Employer Payment of Unfunded Liability
2018-19	9.409%	\$112,790
<i>Projected Results</i>		
2019-20	9.9%	\$147,000
2020-21	10.8%	\$175,000

The actual investment return for Fiscal Year 2016-17 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.375 percent. ***If the actual investment return for Fiscal Year 2016-17 differs from 7.375 percent, the actual contribution requirements for the projected years will differ from those shown above.***

Moreover, the projected results for Fiscal Years 2019-20 and 2020-21 also assume that there are no future plan changes, no further changes in assumptions other than those recently approved, and no liability gains or losses. Such changes can have a significant impact on required contributions. Since they cannot be predicted in advance, the projected employer results shown above are estimates. The actual required employer contributions for Fiscal Year 2019-20 will be provided in next year's report.

For additional details regarding the assumptions and methods used for these projections please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section.

The "Risk Analysis" section of the valuation report also contains estimated employer contributions in future years under a variety of investment return scenarios.

Changes since the Prior Year's Valuation

On December 21, 2016, the CalPERS Board of Administration lowered the discount rate from 7.50 percent to 7.00 percent using a three year phase-in beginning with the June 30, 2016 actuarial valuations. The minimum employer contributions for Fiscal Year 2018-19 determined in this valuation were calculated using a discount rate of 7.375 percent. The projected employer contributions on Page 5 are calculated assuming that the discount rate will be lowered to 7.25 percent next year and to 7.00 percent the following year as adopted by the Board.

The CalPERS Board of Administration adopted a Risk Mitigation Policy which is designed to reduce funding risk over time. This Policy has been temporarily suspended during the period over which the discount rate is being lowered. More details on the Risk Mitigation Policy can be found on our website.

Besides the above noted changes, there may also be changes specific to the plan such as contract amendments and funding changes.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report.

We understand that you might have a number of questions about these results. While we are very interested in discussing these results with your agency, in the interest of allowing us to give every public agency their results, we ask that you wait until after August 31 to contact us with actuarial related questions.

If you have other questions, please call our customer contact center at (888) CalPERS or **(888-225-7377)**.

Sincerely,

SCOTT TERANDO
Chief Actuary



**ACTUARIAL VALUATION
as of June 30, 2016**

**for the
MISCELLANEOUS PLAN
of the
MUNICIPAL WATER DISTRICT OF ORANGE
COUNTY
(CalPERS ID: 6497938438)**

**REQUIRED CONTRIBUTIONS
FOR FISCAL YEAR
July 1, 2018 - June 30, 2019**

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Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

**Plan Specific Information
for the
MISCELLANEOUS PLAN
of the
MUNICIPAL WATER DISTRICT OF
ORANGE COUNTY**

**(CalPERS ID: 6497938438)
(Rate Plan: 4054)**

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ACTUARIAL CERTIFICATION

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2016 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2016 provided by employers participating in the Miscellaneous Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the pool actuary has certified that, in their opinion, the valuation of the risk pool containing your MISCELLANEOUS PLAN has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the risk pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that Unfunded Accrued Liability amortization bases as of June 30, 2016 and employer contribution as of July 1, 2018, have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary for CalPERS, a member of both the American Academy of Actuaries and Society of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

KERRY J. WORGAN, MAAA, FSA, FCIA
Senior Pension Actuary, CalPERS
Plan Actuary

HIGHLIGHTS AND EXECUTIVE SUMMARY

- **INTRODUCTION**
- **PURPOSE OF SECTION 1**
- **REQUIRED EMPLOYER CONTRIBUTION**
- **PLAN'S FUNDED STATUS**
- **PROJECTED EMPLOYER CONTRIBUTIONS**
- **CHANGES SINCE THE PRIOR YEAR'S VALUATION**
- **SUBSEQUENT EVENTS**

Introduction

This report presents the results of the June 30, 2016 actuarial valuation of the MISCELLANEOUS PLAN of the MUNICIPAL WATER DISTRICT OF ORANGE COUNTY of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for Fiscal Year 2018-19.

Purpose of Section 1

This Section 1 report for the MISCELLANEOUS PLAN of the MUNICIPAL WATER DISTRICT OF ORANGE COUNTY of the California Public Employees' Retirement System (CalPERS) was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2016;
- Determine the required employer contribution for this plan for the fiscal year July 1, 2018 through June 30, 2019; and
- Provide actuarial information as of June 30, 2016 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on our website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial policies; and changes in plan provisions or applicable law.

California Actuarial Advisory Panel Recommendations

This report includes all the basic disclosure elements as described in the *Model Disclosure Elements for Actuarial Valuation Reports* recommended in 2011 by the California Actuarial Advisory Panel (CAAP), with the exception of including the original base amounts of the various components of the unfunded liability in the Schedule of Amortization Bases shown on page 9.

Additionally, this report includes the following "Enhanced Risk Disclosures" also recommended by the CAAP in the Model Disclosure Elements document:

- A "Deterministic Stress Test," projecting future results under different investment income scenarios
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0 percent, 7.0 percent and 8.0 percent.

Required Employer Contribution

	Fiscal Year	
Required Employer Contribution	2018-19	
Employer Normal Cost Rate	9.409%	
Plus Either		
1) Monthly Employer Dollar UAL Payment	\$	9,399.18
Or		
2) Annual Lump Sum Prepayment Option	\$	108,848
<p>The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly in dollars).</p> <p>Only the UAL portion of the employer contribution can be prepaid (which must be received in full no later than July 31). Plan Normal Cost contributions will be made as part of the payroll reporting process. If there is contractual cost sharing or other change, this amount will change.</p> <p>§ 20572 of the Public Employees' Retirement Law assesses interest at an annual rate of 10 percent if a contracting agency fails to remit the required contributions when due.</p>		

	Fiscal Year	
	2017-18	
	2018-19	
Development of Normal Cost as a Percentage of Payroll¹		
Base Total Normal Cost for Formula	15.314%	15.794%
Surcharge for Class 1 Benefits ²		
a) FAC 1	0.503%	0.517%
Phase out of Normal Cost Difference ³	0.000%	0.000%
Plan's Total Normal Cost	15.817%	16.311%
Formula's Expected Employee Contribution Rate	6.896%	6.902%
Employer Normal Cost Rate	8.921%	9.409%
Projected Payroll for the Contribution Fiscal Year	\$ 2,283,965	\$ 2,371,765
Estimated Employer Contributions Based on Projected Payroll		
Plan's Estimated Employer Normal Cost	\$ 203,752	\$ 223,159
Plan's Payment on Amortization Bases ⁴	83,180	112,790
% of Projected Payroll (illustrative only)	3.642%	4.756%
Estimated Total Employer Contribution	\$ 286,932	\$ 335,949
% of Projected Payroll (illustrative only)	12.563%	14.165%

¹ The results shown for Fiscal Year 2017-18 reflect the prior year valuation and may not take into account any lump sum payment, side fund payoff, or rate adjustment made after June 30, 2016.

² Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

³ The normal cost difference is phased out over a five year period. The phase out of normal cost difference is 100 percent for the first year of pooling, and is incrementally reduced by 20 percent of the original normal cost difference for each subsequent year. This is non-zero only for plans that joined a pool within the past 5 years. Most plans joined a pool June 30, 2003, when risk pooling was implemented.

⁴ See page 9 for a breakdown of the Amortization Bases.

Plan's Funded Status

		June 30, 2015	June 30, 2016
1. Present Value of Projected Benefits (PVB)	\$	11,154,450	\$ 12,428,801
2. Entry Age Normal Accrued Liability (AL)		8,587,815	9,638,398
3. Plan's Market Value of Assets (MVA)		7,077,429	7,445,211
4. Unfunded Accrued Liability (UAL) [(2) - (3)]		1,510,386	2,193,187
5. Funded Ratio [(3) / (2)]		82.4%	77.2%

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Projected Employer Contributions

The table below shows projected employer contributions (before cost sharing) for the next six fiscal years. Projected results reflect the adopted changes to the discount rate described in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report. The projections also assume that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period.

	Required Contribution	Projected Future Employer Contributions (Assumes 7.375% Return for Fiscal Year 2016-17)					
Fiscal Year	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Normal Cost %	9.409%	9.9%	10.8%	10.8%	10.8%	10.8%	10.8%
UAL Payment	\$112,790	\$147,000	\$175,000	\$210,000	\$241,000	\$261,000	\$278,000

Changes in the UAL due to actuarial gains or losses as well as changes in actuarial assumptions or methods are amortized using a 5-year ramp up. For more information, please see "Amortization of the Unfunded Actuarial Accrued Liability" under "Actuarial Methods" in Appendix A of Section 2. This method phases in the impact of unanticipated changes in UAL over a 5-year period and attempts to minimize employer cost volatility from year to year. As a result of this methodology, dramatic changes in the required employer contributions in any one year are less likely. However, required contributions can change gradually and significantly over the next five years. In years where there is a large increase in UAL the relatively small amortization payments during the ramp up period could result in a funded ratio that is projected to decrease initially while the contribution impact of the increase in the UAL is phased in.

Due to the adopted changes in the discount rate for the next two valuations in combination with the 5-year phase-in ramp, the increases in the required contributions are expected to continue for seven years from Fiscal Year 2018-19 through Fiscal Year 2024-25.

For projected contributions under alternate investment return scenarios, please see the "Analysis of Future Investment Return Scenarios" in the "Risk Analysis" section.

Changes since the Prior Year's Valuation

Benefits

None. This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B of Section 2 for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

On December 21, 2016, the CalPERS Board of Administration lowered the discount rate from 7.50 percent to 7.00 percent using a three year phase-in beginning with the June 30, 2016 actuarial valuations. The minimum employer contributions for Fiscal Year 2018-19 determined in this valuation were calculated using a discount rate of 7.375 percent. The projected employer contributions on Page 5 are calculated assuming that the discount rate will be lowered to 7.25 percent next year and 7.00 percent the following year as adopted by the Board. The decision to reduce the discount rate was primarily based on reduced capital market assumptions provided by external investment consultants and CalPERS investment staff. The specific decision adopted by the Board reflected recommendations from CalPERS staff and additional input from employer and employee stakeholder groups. Based on the investment allocation adopted by the Board and capital market assumptions, the reduced discount rate assumption provides a more realistic assumption for the long term investment return of the fund.

Notwithstanding the Board's decision to phase into a 7.0 percent discount rate, subsequent analysis of the expected investment return of CalPERS assets or changes to the investment allocation may result in a change to this three year discount rate schedule. A comprehensive analysis of all actuarial assumptions and methods including the discount rate will be conducted in 2017.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2016. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the required contribution, while investment returns above the assumed rate of return will decrease the actuarial cost of the plan.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2017. Any subsequent changes or actions are not reflected.

ASSETS AND LIABILITIES

- **BREAKDOWN OF ENTRY AGE NORMAL ACCRUED LIABILITY**
- **ALLOCATION OF PLAN'S SHARE OF POOL'S EXPERIENCE/ASSUMPTION CHANGE**
- **DEVELOPMENT OF PLAN'S SHARE OF POOL'S MVA**
- **SCHEDULE OF PLAN'S AMORTIZATION BASES**
- **30-YEAR AMORTIZATION SCHEDULE AND ALTERNATIVES**
- **EMPLOYER CONTRIBUTION HISTORY**
- **FUNDING HISTORY**

Breakdown of Entry Age Normal Accrued Liability

1.	Active Members	\$	5,293,155
2.	Transferred Members		1,002,726
3.	Terminated Members		637,557
4.	Members and Beneficiaries Receiving Payments		<u>2,704,960</u>
5.	Total	\$	9,638,398

Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

1.	Plan's Accrued Liability	\$	9,638,398
2.	Projected UAL balance at 6/30/16		1,581,661
3.	Pool's Accrued Liability	\$	14,775,287,594
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/16		2,987,498,021
5.	Pool's 2015/16 Investment & Asset (Gain)/Loss		771,070,186
6.	Pool's 2015/16 Other (Gain)/Loss		(95,296,686)
7.	Plan's Share of Pool's Asset (Gain)/Loss $[(1)-(2)]/[(3)-(4)] * (5)$		527,012
8.	Plan's Share of Pool's Other (Gain)/Loss $[(1)]/[(3)] * (6)$		(62,165)
9.	Plan's New (Gain)/Loss as of 6/30/2016 $[(7)+(8)]$	\$	464,847
10.	Increase in Pool's Accrued Liability due to Change in Assumptions		224,853,121
11.	Plan's Share of Pool's Change in Assumptions $[(1)]/[(3)] * (10)$	\$	146,679

Development of the Plan's Share of Pool's Market Value of Assets

1.	Plan's Accrued Liability	\$	9,638,398
2.	Plan's UAL	\$	2,193,187
3.	Plan's Share of Pool's MVA $[(1)-(2)]$	\$	7,445,211

Schedule of Plan's Side Fund and Other Amortization Bases

There is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2016.
- The employer contribution determined by the valuation is for the fiscal year beginning two years after the valuation date: Fiscal Year 2018-19.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and the need to provide public agencies with their employer contribution well in advance of the start of the fiscal year.

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the payment on the UAL for the fiscal year and adjusting for interest.

Reason for Base	Date Established	Amortization Period	Balance 6/30/16	Payment 2016-17	Balance 6/30/17	Payment 2017-18	Balance 6/30/18	Amounts for Fiscal 2018-19	
								Scheduled	Payment
ASSET (GAIN)/LOSS	06/30/13	27	\$901,880	\$24,642	\$942,859	\$38,072	\$972,944		\$51,528
SHARE OF PRE-2013 POOL UAL	06/30/13	19	\$565,170	\$41,392	\$563,960	\$42,634	\$561,374		\$43,384
NON-ASSET (GAIN)/LOSS	06/30/13	27	\$(8,670)	\$(237)	\$(9,064)	\$(366)	\$(9,353)		\$(495)
NON-ASSET (GAIN)/LOSS	06/30/14	28	\$748	\$11	\$792	\$22	\$828		\$33
ASSET (GAIN)/LOSS	06/30/14	28	\$(706,177)	\$(9,932)	\$(747,966)	\$(20,461)	\$(781,926)		\$(31,134)
ASSUMPTION CHANGE	06/30/14	18	\$445,676	\$8,489	\$469,748	\$17,488	\$486,271		\$26,720
ASSET (GAIN)/LOSS	06/30/15	29	\$415,622	\$0	\$446,274	\$6,284	\$472,675		\$12,740
NON-ASSET (GAIN)/LOSS	06/30/15	29	\$(32,588)	\$0	\$(34,991)	\$(493)	\$(37,061)		\$(999)
ASSET (GAIN)/LOSS	06/30/16	30	\$527,012	\$0	\$565,879	\$0	\$607,613		\$8,422
NON-ASSET (GAIN)/LOSS	06/30/16	30	\$(62,165)	\$0	\$(66,750)	\$0	\$(71,673)		\$(993)
ASSUMPTION CHANGE	06/30/16	20	\$146,679	\$(9,680)	\$167,527	\$(9,970)	\$190,214		\$3,585
TOTAL			\$2,193,187	\$54,685	\$2,298,268	\$73,210	\$2,391,906		\$112,791

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed on the previous page. These (gain)/loss bases will be amortized according to Board policy over 30 years with a 5-year ramp-up.

If the total Unfunded Liability is negative (i.e., plan has a surplus), the scheduled payment is \$0, because the minimum required contribution under PEPRA must be at least equal to the normal cost.

30-Year Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to CalPERS amortization policy. There has been considerable interest from many agencies in paying off these unfunded accrued liabilities sooner and the possible savings in doing so. As a result, we have provided alternate amortization schedules to help analyze the current amortization schedule and illustrate the advantages of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on: 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternate "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. Note that the payments under each alternate scenario increase by 3 percent for each year into the future. **The schedules do not attempt to reflect any experience after June 30, 2016 that may deviate from the actuarial assumptions. Therefore, future amortization payments displayed in the Current Amortization Schedule may not match projected amortization payments shown in connection with Projected Employer Contributions provided elsewhere in this report.**

The Current Amortization Schedule typically contains individual bases that are both positive and negative. Positive bases result from plan changes, assumption changes or plan experience that result in increases to unfunded liability. Negative bases result from plan changes, assumption changes or plan experience that result in decreases to unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years such as:

- A positive total unfunded liability with a negative total payment,
- A negative total unfunded liability with a positive total payment, or
- Total payments that completely amortize the unfunded liability over a very short period of time

In any year where one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single "fresh start" base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy. For purposes of this display, total payments include any negative payments. Therefore, the amount of estimated savings may be understated to the extent that negative payments appear in the current schedule.

30-Year Amortization Schedule and Alternatives

Date	<u>Current Amortization Schedule</u>		<u>Alternate Schedules</u>			
	Balance	Payment	20 Year Amortization		15 Year Amortization	
			Balance	Payment	Balance	Payment
6/30/2018	2,391,904	112,790	2,391,904	178,801	2,391,904	217,558
6/30/2019	2,451,431	145,201	2,383,030	184,165	2,342,869	224,084
6/30/2020	2,481,764	165,921	2,367,943	189,690	2,283,455	230,807
6/30/2021	2,492,864	189,348	2,346,019	195,380	2,212,694	237,731
6/30/2022	2,480,507	207,424	2,316,581	201,242	2,129,538	244,863
6/30/2023	2,448,507	213,647	2,278,898	207,279	2,032,860	252,209
6/30/2024	2,407,700	220,056	2,232,180	213,497	1,921,440	259,775
6/30/2025	2,357,241	226,658	2,175,573	219,902	1,793,962	267,568
6/30/2026	2,296,220	233,458	2,108,155	226,499	1,649,007	275,595
6/30/2027	2,223,653	240,461	2,028,928	233,294	1,485,044	283,863
6/30/2028	2,138,477	247,675	1,936,818	240,293	1,300,422	292,379
6/30/2029	2,039,544	255,106	1,830,661	247,502	1,093,359	301,151
6/30/2030	1,925,615	262,759	1,709,206	254,927	861,936	310,185
6/30/2031	1,795,353	270,642	1,571,100	262,575	604,084	319,491
6/30/2032	1,647,317	265,289	1,414,883	270,452	317,573	329,075
6/30/2033	1,493,909	259,371	1,238,983	278,566		
6/30/2034	1,335,320	247,106	1,041,703	286,923		
6/30/2035	1,177,744	233,872	821,214	295,530		
6/30/2036	1,022,260	219,621	575,544	304,396		
6/30/2037	870,076	143,849	302,569	313,528		
6/30/2038	785,185	141,689				
6/30/2039	696,272	145,940				
6/30/2040	596,396	150,318				
6/30/2041	484,618	129,648				
6/30/2042	386,015	128,677				
6/30/2043	281,146	115,239				
6/30/2044	182,467	84,860				
6/30/2045	107,991	52,554				
6/30/2046	61,498	47,422				
6/30/2047	16,894	17,506				
Totals		5,374,105		4,804,443		4,046,335
Interest Paid		2,982,202		2,412,541		1,654,432
Estimated Savings				569,662		1,327,771

* This schedule does not reflect the impact of adopted discount rate changes that will become effective beyond June 30, 2016. For Projected Employer Contributions, please see Page 5.

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan, as determined by the annual actuarial valuation. It does not account for prepayments or benefit changes made during a fiscal year.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment (\$)
2016 - 17	8.880%	\$64,364
2017 - 18	8.921%	\$83,180
2018 - 19	9.409%	\$112,790

Funding History

The funding history below shows the plan's actuarial accrued liability, share of the pool's market value of assets, share of the pool's unfunded liability, funded ratio, and annual covered payroll.

Valuation Date		Accrued Liability (AL)		Share of Pool's Market Value of Assets (MVA)		Plan's Share of Pool's Unfunded Liability	Funded Ratio		Annual Covered Payroll
06/30/2011	\$	5,636,322	\$	4,612,177	\$	1,024,145	81.8%	\$	2,665,451
06/30/2012		6,273,252		4,841,500		1,431,752	77.2%		2,664,777
06/30/2013		7,189,485		5,842,865		1,346,620	81.3%		2,378,088
06/30/2014		8,295,329		7,150,851		1,144,478	86.2%		2,274,325
06/30/2015		8,587,815		7,077,429		1,510,386	82.4%		2,090,151
06/30/2016		9,638,398		7,445,211		2,193,187	77.2%		2,170,501

RISK ANALYSIS

- **ANALYSIS OF FUTURE INVESTMENT RETURN SCENARIOS**
- **ANALYSIS OF DISCOUNT RATE SENSITIVITY**
- **VOLATILITY RATIOS**
- **HYPOTHETICAL TERMINATION LIABILITY**

Analysis of Future Investment Return Scenarios

Analysis was performed to determine the effects of various future investment returns on required employer contributions. The projections below provide a range of results based on five investment return scenarios assumed to occur during the next four fiscal years (2016-17, 2017-18, 2018-19 and 2019-20). The projections also assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

Each of the five investment return scenarios assumes a return of 7.375 percent for fiscal year 2016-17. For fiscal years 2017-18, 2018-19, and 2019-20 each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are -3.0 percent, 3.0 percent, 7.0 percent (7.25 percent for 2017-18), 11.0 percent and 17.0 percent.

Alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four year period ending June 30, 2020. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced ten thousand stochastic outcomes for this period. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all of the 4-year outcomes generated in the stochastic analysis, approximately 25 percent of them had an average annual return of 3.0 percent or less.

Required contributions outside of this range are also possible. In particular, while it is unlikely that investment returns will average less than -3.0 percent or greater than 17.0 percent over this four year period, the possibility of a single investment return less than -3.0 percent or greater than 17.0 percent in any given year is much greater.

Assumed Annual Return From 2017-18 through 2019-20	Projected Employer Contributions			
	2019-20	2020-21	2021-22	2022-23
(3.0%)				
Normal Cost	9.9%	10.8%	10.8%	10.8%
UAL Contribution	\$147,000	\$188,000	\$247,000	\$315,000
3.0%				
Normal Cost	9.9%	10.8%	10.8%	10.8%
UAL Contribution	\$147,000	\$181,000	\$226,000	\$273,000
Assumed Discount Rate				
Normal Cost	9.9%	10.8%	10.8%	10.8%
UAL Contribution	\$147,000	\$175,000	\$210,000	\$241,000
11.0%				
Normal Cost	9.9%	10.8%	11.0%	11.2%
UAL Contribution	\$147,000	\$171,000	\$196,000	\$212,000
17.0%				
Normal Cost	9.9%	10.8%	11.4%	12.1%
UAL Contribution	\$147,000	\$164,000	\$174,000	\$166,000

Given the temporary suspension of the Risk Mitigation Policy during the period over which the discount rate assumption is being phased down to 7.0 percent, the projections above were performed without reflection of any possible impact of this Policy for Fiscal Years 2019-20 and 2020-21.

Analysis of Discount Rate Sensitivity

Shown below are various valuation results as of June 30, 2016 assuming alternate discount rates. Results are shown using the current discount rate of 7.375 percent as well as alternate discount rates of 6.0 percent, 7.0 percent, and 8.0 percent. The alternate rate of 7.0 percent was selected since the Board has adopted this rate as the final discount rate at the end of the three year phase-in of the reduction in this assumption. The rates of 6.0 percent and 8.0 percent were selected since they illustrate the impact of a 1 percent increase or decrease to the 7.0 percent assumption. This analysis shows the potential plan impacts if the PERF were to realize investment returns of 6.0 percent, 7.0 percent, or 8.0 percent over the long-term.

This type of analysis gives the reader a sense of the long-term risk to required contributions. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Sensitivity Analysis				
As of June 30, 2016	Plan's Total Normal Cost	Accrued Liability	Unfunded Accrued Liability	Funded Status
7.375% (current discount rate)	16.311%	\$9,638,398	\$2,193,187	77.2%
6.0%	22.018%	\$11,656,665	\$4,211,454	63.9%
7.0%	17.663%	\$10,134,665	\$2,689,454	73.5%
8.0%	14.336%	\$8,888,516	\$1,443,305	83.8%

Volatility Ratios

Actuarial calculations are based on a number of assumptions about long-term demographic and economic behavior. Unless these assumptions (terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise required employer contributions from one year to the next. Therefore, employer contributions will inevitably fluctuate, especially due to the ups and downs of investment returns.

Asset Volatility Ratio (AVR)

Plans that have higher asset-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility, than a plan with an asset-to-payroll ratio of 4. Shown below is the asset volatility ratio, a measure of the plan's current contribution volatility. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

Liability Volatility Ratio (LVR)

Plans that have higher liability-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with a liability-to-payroll ratio of 8 is expected to have twice the contribution volatility of a plan with a liability-to-payroll ratio of 4. The liability volatility ratio is also shown in the table below. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The asset volatility ratio, described above, will tend to move closer to the liability volatility ratio as the plan matures. Since the liability volatility ratio is a long-term measure, it is shown below at the current discount rate (7.375 percent) as well as the discount rate the Board has adopted to determine the contribution requirement in the June 30, 2018 actuarial valuation (7.00 percent).

Rate Volatility	As of June 30, 2016	
1. Market Value of Assets	\$	7,445,211
2. Payroll		2,170,501
3. Asset Volatility Ratio (AVR) [(1) / (2)]		3.4
4. Accrued Liability	\$	9,638,398
5. Liability Volatility Ratio (LVR) [(4) / (2)]		4.4
6. Accrued Liability (7.00% discount rate)		10,134,665
7. Projected Liability Volatility Ratio [(6) / (2)]		4.7

Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2016. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while funding risk is limited. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 2-year period centered around the valuation date.

Market Value of Assets (MVA)	Hypothetical Termination Liability^{1,2} @ 1.75%	Funded Status	Unfunded Termination Liability @ 1.75%	Hypothetical Termination Liability^{1,2} @ 3.00%	Funded Status	Unfunded Termination Liability @ 3.00%
\$7,445,211	\$19,071,936	39.0%	\$11,626,725	\$15,810,977	47.1%	\$8,365,766

¹ The hypothetical liabilities calculated above include a 7 percent mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A.

² The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 1.75 percent on June 30, 2016, and was 2.75 percent on January 31, 2017.

In order to terminate the plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to terminate. The completed Resolution will allow the plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. CalPERS advises you to consult with the plan actuary before beginning this process.

Participant Data

The table below shows a summary of your plan's member data upon which this valuation is based:

	June 30, 2015	June 30, 2016
Reported Payroll	\$ 2,090,151	\$ 2,170,501
Projected Payroll for Contribution Purposes	\$ 2,283,965	\$ 2,371,765
Number of Members		
Active	21	21
Transferred	12	13
Separated	15	14
Retired	7	8

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- One Year Final Compensation (FAC 1)

PLAN'S MAJOR BENEFIT OPTIONS

Plan's Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in Appendix B within Section 2 of this report.

Benefit Provision	Contract package		
	Active Misc	Receiving Misc	
Benefit Formula	2.0% @ 55		
Social Security Coverage Full/Modified	No Full		
Employee Contribution Rate	7.00%		
Final Average Compensation Period	One Year		
Sick Leave Credit	Yes		
Non-Industrial Disability	Standard		
Industrial Disability	No		
Pre-Retirement Death Benefits Optional Settlement 2W	Yes level 4		
1959 Survivor Benefit Level Special	No		
Alternate (firefighters)	No	No	
Post-Retirement Death Benefits Lump Sum	\$500 No	\$500 No	
Survivor Allowance (PRSA)			
COLA	2%	2%	

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

**Section 2 may be found on the CalPERS website
(www.calpers.ca.gov) in the Forms and
Publications section**



California Public Employees' Retirement System
Actuarial Office
P.O. Box 942709
Sacramento, CA 94229-2709
TTY: (916) 795-3240
(888) 225-7377 phone – (916) 795-2744 fax
www.calpers.ca.gov

August 2017

**PEPRA MISCELLANEOUS PLAN OF THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
(CalPERS ID: 6497938438)
Annual Valuation Report as of June 30, 2016**

Dear Employer,

As an attachment to this letter, you will find a copy of the June 30, 2016 actuarial valuation report of the pension plan.

Because this plan is in a risk pool, the following valuation report has been separated into two sections:

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2016.

Section 2 can be found on the CalPERS website at (www.calpers.ca.gov). From the home page, go to "Forms & Publications" and select "View All". In the search box, enter "Risk Pool Report" and from the results list download the Miscellaneous or Safety Risk Pool Actuarial Valuation Report as appropriate.

Your June 30, 2016 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you after August 31, 2017.

The exhibit below displays the minimum employer contributions, before any cost sharing, for Fiscal Year 2018-19 along with estimates of the required contributions for Fiscal Years 2019-20 and 2020-21. Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees.**

Required Contribution

Fiscal Year	Employer Normal Cost Rate	Employer Payment of Unfunded Liability
2018-19	6.842%	\$2,172
<i>Projected Results</i>		
2019-20	6.8%	\$2,400
2020-21	7.1%	\$3,000

The actual investment return for Fiscal Year 2016-17 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.375 percent. ***If the actual investment return for Fiscal Year 2016-17 differs from 7.375 percent, the actual contribution requirements for the projected years will differ from those shown above.***

Moreover, the projected results for Fiscal Years 2019-20 and 2020-21 also assume that there are no future plan changes, no further changes in assumptions other than those recently approved, and no liability gains or losses. Such changes can have a significant impact on required contributions. Since they cannot be predicted in advance, the projected employer results shown above are estimates. The actual required employer contributions for Fiscal Year 2019-20 will be provided in next year's report.

For additional details regarding the assumptions and methods used for these projections please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section.

The "Risk Analysis" section of the valuation report also contains estimated employer contributions in future years under a variety of investment return scenarios.

Changes since the Prior Year's Valuation

On December 21, 2016, the CalPERS Board of Administration lowered the discount rate from 7.50 percent to 7.00 percent using a three year phase-in beginning with the June 30, 2016 actuarial valuations. The minimum employer contributions for Fiscal Year 2018-19 determined in this valuation were calculated using a discount rate of 7.375 percent. The projected employer contributions on Page 5 are calculated assuming that the discount rate will be lowered to 7.25 percent next year and to 7.00 percent the following year as adopted by the Board.

The CalPERS Board of Administration adopted a Risk Mitigation Policy which is designed to reduce funding risk over time. This Policy has been temporarily suspended during the period over which the discount rate is being lowered. More details on the Risk Mitigation Policy can be found on our website.

Besides the above noted changes, there may also be changes specific to the plan such as contract amendments and funding changes.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report.

We understand that you might have a number of questions about these results. While we are very interested in discussing these results with your agency, in the interest of allowing us to give every public agency their results, we ask that you wait until after August 31 to contact us with actuarial related questions.

If you have other questions, please call our customer contact center at (888) CalPERS or **(888-225-7377)**.

Sincerely,

SCOTT TERANDO
Chief Actuary



**ACTUARIAL VALUATION
as of June 30, 2016**

**for the
PEPRA MISCELLANEOUS PLAN
of the
MUNICIPAL WATER DISTRICT OF ORANGE
COUNTY
(CalPERS ID: 6497938438)**

**REQUIRED CONTRIBUTIONS
FOR FISCAL YEAR
July 1, 2018 - June 30, 2019**

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SECTION 2 – RISK POOL ACTUARIAL VALUATION INFORMATION

Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

**Plan Specific Information
for the
PEPRA MISCELLANEOUS PLAN
of the
MUNICIPAL WATER DISTRICT OF
ORANGE COUNTY**

**(CalPERS ID: 6497938438)
(Rate Plan: 26684)**

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ACTUARIAL CERTIFICATION

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2016 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2016 provided by employers participating in the Miscellaneous Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the pool actuary has certified that, in their opinion, the valuation of the risk pool containing your PEPRA MISCELLANEOUS PLAN has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the risk pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that Unfunded Accrued Liability amortization bases as of June 30, 2016 and employer contribution as of July 1, 2018, have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary for CalPERS, a member of both the American Academy of Actuaries and Society of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

KERRY J. WORGAN, MAAA, FSA, FCIA
Senior Pension Actuary, CalPERS
Plan Actuary

HIGHLIGHTS AND EXECUTIVE SUMMARY

- **INTRODUCTION**
- **PURPOSE OF SECTION 1**
- **REQUIRED EMPLOYER CONTRIBUTION**
- **PLAN'S FUNDED STATUS**
- **PROJECTED EMPLOYER CONTRIBUTIONS**
- **CHANGES SINCE THE PRIOR YEAR'S VALUATION**
- **SUBSEQUENT EVENTS**

Introduction

This report presents the results of the June 30, 2016 actuarial valuation of the PEPRA MISCELLANEOUS PLAN of the MUNICIPAL WATER DISTRICT OF ORANGE COUNTY of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for Fiscal Year 2018-19.

Purpose of Section 1

This Section 1 report for the PEPRA MISCELLANEOUS PLAN of the MUNICIPAL WATER DISTRICT OF ORANGE COUNTY of the California Public Employees' Retirement System (CalPERS) was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2016;
- Determine the required employer contribution for this plan for the fiscal year July 1, 2018 through June 30, 2019; and
- Provide actuarial information as of June 30, 2016 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on our website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial policies; and changes in plan provisions or applicable law.

California Actuarial Advisory Panel Recommendations

This report includes all the basic disclosure elements as described in the *Model Disclosure Elements for Actuarial Valuation Reports* recommended in 2011 by the California Actuarial Advisory Panel (CAAP), with the exception of including the original base amounts of the various components of the unfunded liability in the Schedule of Amortization Bases shown on page 9.

Additionally, this report includes the following "Enhanced Risk Disclosures" also recommended by the CAAP in the Model Disclosure Elements document:

- A "Deterministic Stress Test," projecting future results under different investment income scenarios
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0 percent, 7.0 percent and 8.0 percent.

Required Employer Contribution

	Fiscal Year	
Required Employer Contribution	2018-19	
Employer Normal Cost Rate	6.842%	
Plus Either		
1) Monthly Employer Dollar UAL Payment	\$	180.99
Or		
2) Annual Lump Sum Prepayment Option	\$	2,096
<p><i>The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly in dollars).</i></p> <p><i>Only the UAL portion of the employer contribution can be prepaid (which must be received in full no later than July 31). Plan Normal Cost contributions will be made as part of the payroll reporting process. If there is contractual cost sharing or other change, this amount will change.</i></p> <p><i>§ 20572 of the Public Employees' Retirement Law assesses interest at an annual rate of 10 percent if a contracting agency fails to remit the required contributions when due.</i></p>		

	Fiscal Year	
	2017-18	
	2018-19	
Development of Normal Cost as a Percentage of Payroll¹		
Base Total Normal Cost for Formula	12.783%	13.092%
Surcharge for Class 1 Benefits ²		
None	0.000%	0.000%
Phase out of Normal Cost Difference ³	0.000%	0.000%
Plan's Total Normal Cost	12.783%	13.092%
Plan's Employee Contribution Rate	6.250%	6.250%
Employer Normal Cost Rate	6.533%	6.842%
Projected Payroll for the Contribution Fiscal Year	\$ 488,582	\$ 657,463
Estimated Employer Contributions Based on Projected Payroll		
Plan's Estimated Employer Normal Cost	\$ 31,919	\$ 44,984
Plan's Payment on Amortization Bases ⁴	230	2,172
% of Projected Payroll (illustrative only)	0.047%	0.330%
Estimated Total Employer Contribution	\$ 32,149	\$ 47,156
% of Projected Payroll (illustrative only)	6.580%	7.172%

¹ The results shown for Fiscal Year 2017-18 reflect the prior year valuation and may not take into account any lump sum payment, side fund payoff, or rate adjustment made after June 30, 2016.

² Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

³ The normal cost difference is phased out over a five year period. The phase out of normal cost difference is 100 percent for the first year of pooling, and is incrementally reduced by 20 percent of the original normal cost difference for each subsequent year. This is non-zero only for plans that joined a pool within the past 5 years. Most plans joined a pool June 30, 2003, when risk pooling was implemented.

⁴ See page 9 for a breakdown of the Amortization Bases.

Plan's Funded Status

		June 30, 2015	June 30, 2016
1. Present Value of Projected Benefits (PVB)	\$	647,962	\$ 973,669
2. Entry Age Normal Accrued Liability (AL)		95,833	204,458
3. Plan's Market Value of Assets (MVA)		91,620	183,981
4. Unfunded Accrued Liability (UAL) [(2) - (3)]		4,213	20,477
5. Funded Ratio [(3) / (2)]		95.6%	90.0%

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Projected Employer Contributions

The table below shows projected employer contributions (before cost sharing) for the next six fiscal years. Projected results reflect the adopted changes to the discount rate described in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report. The projections also assume that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period.

	Required Contribution	Projected Future Employer Contributions (Assumes 7.375% Return for Fiscal Year 2016-17)					
Fiscal Year	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Normal Cost %	6.842%	6.8%	7.1%	7.1%	7.1%	7.1%	7.1%
UAL Payment	\$2,172	\$2,400	\$3,000	\$3,700	\$4,400	\$5,200	\$5,800

Changes in the UAL due to actuarial gains or losses as well as changes in actuarial assumptions or methods are amortized using a 5-year ramp up. For more information, please see "Amortization of the Unfunded Actuarial Accrued Liability" under "Actuarial Methods" in Appendix A of Section 2. This method phases in the impact of unanticipated changes in UAL over a 5-year period and attempts to minimize employer cost volatility from year to year. As a result of this methodology, dramatic changes in the required employer contributions in any one year are less likely. However, required contributions can change gradually and significantly over the next five years. In years where there is a large increase in UAL the relatively small amortization payments during the ramp up period could result in a funded ratio that is projected to decrease initially while the contribution impact of the increase in the UAL is phased in.

Due to the adopted changes in the discount rate for the next two valuations in combination with the 5-year phase-in ramp, the increases in the required contributions are expected to continue for seven years from Fiscal Year 2018-19 through Fiscal Year 2024-25.

For projected contributions under alternate investment return scenarios, please see the "Analysis of Future Investment Return Scenarios" in the "Risk Analysis" section.

Changes since the Prior Year's Valuation

Benefits

None. This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B of Section 2 for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

On December 21, 2016, the CalPERS Board of Administration lowered the discount rate from 7.50 percent to 7.00 percent using a three year phase-in beginning with the June 30, 2016 actuarial valuations. The minimum employer contributions for Fiscal Year 2018-19 determined in this valuation were calculated using a discount rate of 7.375 percent. The projected employer contributions on Page 5 are calculated assuming that the discount rate will be lowered to 7.25 percent next year and 7.00 percent the following year as adopted by the Board. The decision to reduce the discount rate was primarily based on reduced capital market assumptions provided by external investment consultants and CalPERS investment staff. The specific decision adopted by the Board reflected recommendations from CalPERS staff and additional input from employer and employee stakeholder groups. Based on the investment allocation adopted by the Board and capital market assumptions, the reduced discount rate assumption provides a more realistic assumption for the long term investment return of the fund.

Notwithstanding the Board's decision to phase into a 7.0 percent discount rate, subsequent analysis of the expected investment return of CalPERS assets or changes to the investment allocation may result in a change to this three year discount rate schedule. A comprehensive analysis of all actuarial assumptions and methods including the discount rate will be conducted in 2017.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2016. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the required contribution, while investment returns above the assumed rate of return will decrease the actuarial cost of the plan.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2017. Any subsequent changes or actions are not reflected.

ASSETS AND LIABILITIES

- **BREAKDOWN OF ENTRY AGE NORMAL ACCRUED LIABILITY**
- **ALLOCATION OF PLAN'S SHARE OF POOL'S EXPERIENCE/ASSUMPTION CHANGE**
- **DEVELOPMENT OF PLAN'S SHARE OF POOL'S MVA**
- **SCHEDULE OF PLAN'S AMORTIZATION BASES**
- **30-YEAR AMORTIZATION SCHEDULE AND ALTERNATIVES**
- **EMPLOYER CONTRIBUTION HISTORY**
- **FUNDING HISTORY**

Breakdown of Entry Age Normal Accrued Liability

1.	Active Members	\$	194,119
2.	Transferred Members		9,582
3.	Terminated Members		757
4.	Members and Beneficiaries Receiving Payments		0
5.	Total	\$	204,458

Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

1.	Plan's Accrued Liability	\$	204,458
2.	Projected UAL balance at 6/30/16		5,682
3.	Pool's Accrued Liability	\$	14,775,287,594
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/16		2,987,498,021
5.	Pool's 2015/16 Investment & Asset (Gain)/Loss		771,070,186
6.	Pool's 2015/16 Other (Gain)/Loss		(95,296,686)
7.	Plan's Share of Pool's Asset (Gain)/Loss [(1)-(2)]/[(3)-(4)] * (5)		13,002
8.	Plan's Share of Pool's Other (Gain)/Loss [(1)]/[(3)] * (6)		(1,319)
9.	Plan's New (Gain)/Loss as of 6/30/2016 [(7)+(8)]	\$	11,684
10.	Increase in Pool's Accrued Liability due to Change in Assumptions		224,853,121
11.	Plan's Share of Pool's Change in Assumptions [(1)]/[(3)] * (10)	\$	3,111

Development of the Plan's Share of Pool's Market Value of Assets

1.	Plan's Accrued Liability	\$	204,458
2.	Plan's UAL	\$	20,477
3.	Plan's Share of Pool's MVA [(1)-(2)]	\$	183,981

Schedule of Plan's Side Fund and Other Amortization Bases

There is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2016.
- The employer contribution determined by the valuation is for the fiscal year beginning two years after the valuation date: Fiscal Year 2018-19.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and the need to provide public agencies with their employer contribution well in advance of the start of the fiscal year.

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the payment on the UAL for the fiscal year and adjusting for interest.

Reason for Base	Date Established	Amortization Period	Amounts for Fiscal 2018-19				
			Balance 6/30/16	Payment 2016-17	Balance 6/30/17	Payment 2017-18	Scheduled Payment for 2018-19
FRESH START	06/30/16	20	\$20,477	\$(2,534)	\$24,614	\$(2,534)	\$2,172
TOTAL			\$20,477	\$(2,534)	\$24,614	\$(2,534)	\$2,172

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed on the previous page. These (gain)/loss bases will be amortized according to Board policy over 30 years with a 5-year ramp-up.

If the total Unfunded Liability is negative (i.e., plan has a surplus), the scheduled payment is \$0, because the minimum required contribution under PEPRA must be at least equal to the normal cost.

30-Year Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to CalPERS amortization policy. There has been considerable interest from many agencies in paying off these unfunded accrued liabilities sooner and the possible savings in doing so. As a result, we have provided alternate amortization schedules to help analyze the current amortization schedule and illustrate the advantages of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on: 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternate "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. Note that the payments under each alternate scenario increase by 3 percent for each year into the future. **The schedules do not attempt to reflect any experience after June 30, 2016 that may deviate from the actuarial assumptions. Therefore, future amortization payments displayed in the Current Amortization Schedule may not match projected amortization payments shown in connection with Projected Employer Contributions provided elsewhere in this report.**

The Current Amortization Schedule typically contains individual bases that are both positive and negative. Positive bases result from plan changes, assumption changes or plan experience that result in increases to unfunded liability. Negative bases result from plan changes, assumption changes or plan experience that result in decreases to unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years such as:

- A positive total unfunded liability with a negative total payment,
- A negative total unfunded liability with a positive total payment, or
- Total payments that completely amortize the unfunded liability over a very short period of time

In any year where one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single "fresh start" base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy. For purposes of this display, total payments include any negative payments. Therefore, the amount of estimated savings may be understated to the extent that negative payments appear in the current schedule.

30-Year Amortization Schedule and Alternatives

Date	<u>Current Amortization Schedule</u>		<u>Alternate Schedules</u>			
	Balance	Payment	15 Year Amortization		10 Year Amortization	
			Balance	Payment	Balance	Payment
6/30/2018	29,055	2,172	29,055	2,643	29,055	3,605
6/30/2019	28,947	2,237	28,459	2,722	27,463	3,713
6/30/2020	28,764	2,304	27,738	2,804	25,641	3,824
6/30/2021	28,498	2,373	26,878	2,888	23,569	3,939
6/30/2022	28,140	2,445	25,868	2,974	21,225	4,057
6/30/2023	27,682	2,518	24,694	3,064	18,587	4,179
6/30/2024	27,115	2,593	23,340	3,156	15,627	4,304
6/30/2025	26,427	2,671	21,792	3,250	12,319	4,433
6/30/2026	25,608	2,751	20,031	3,348	8,634	4,566
6/30/2027	24,646	2,834	18,039	3,448	4,539	4,703
6/30/2028	23,527	2,919	15,797	3,552		
6/30/2029	22,238	3,006	13,281	3,658		
6/30/2030	20,762	3,097	10,470	3,768		
6/30/2031	19,085	3,190	7,338	3,881		
6/30/2032	17,187	3,285	3,858	3,997		
6/30/2033	15,050	3,384				
6/30/2034	12,654	3,485				
6/30/2035	9,976	3,590				
6/30/2036	6,991	3,698				
6/30/2037	3,675	3,809				
6/30/2038	0	0				
6/30/2039	0	0				
6/30/2040	0	0				
6/30/2041	0	0				
6/30/2042	0	0				
6/30/2043	0	0				
6/30/2044	0	0				
6/30/2045	0	0				
6/30/2046	0	0				
6/30/2047	0	0				
Totals		58,361		49,152		41,324
Interest Paid		29,306		20,096		12,269
Estimated Savings				9,209		17,036

* This schedule does not reflect the impact of adopted discount rate changes that will become effective beyond June 30, 2016. For Projected Employer Contributions, please see Page 5.

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan, as determined by the annual actuarial valuation. It does not account for prepayments or benefit changes made during a fiscal year.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment (\$)
2016 - 17	6.555%	\$149
2017 - 18	6.533%	\$230
2018 - 19	6.842%	\$2,172

Funding History

The funding history below shows the plan's actuarial accrued liability, share of the pool's market value of assets, share of the pool's unfunded liability, funded ratio, and annual covered payroll.

Valuation Date		Accrued Liability (AL)		Share of Pool's Market Value of Assets (MVA)		Plan's Share of Pool's Unfunded Liability	Funded Ratio		Annual Covered Payroll
06/30/2014	\$	32,950	\$	34,415	\$	(1,465)	104.5%	\$	219,432
06/30/2015		95,833		91,620		4,213	95.6%		447,122
06/30/2016		204,458		183,981		20,477	90.0%		601,671

RISK ANALYSIS

- **ANALYSIS OF FUTURE INVESTMENT RETURN SCENARIOS**
- **ANALYSIS OF DISCOUNT RATE SENSITIVITY**
- **VOLATILITY RATIOS**
- **HYPOTHETICAL TERMINATION LIABILITY**

Analysis of Future Investment Return Scenarios

Analysis was performed to determine the effects of various future investment returns on required employer contributions. The projections below provide a range of results based on five investment return scenarios assumed to occur during the next four fiscal years (2016-17, 2017-18, 2018-19 and 2019-20). The projections also assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

Each of the five investment return scenarios assumes a return of 7.375 percent for fiscal year 2016-17. For fiscal years 2017-18, 2018-19, and 2019-20 each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are -3.0 percent, 3.0 percent, 7.0 percent (7.25 percent for 2017-18), 11.0 percent and 17.0 percent.

Alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four year period ending June 30, 2020. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced ten thousand stochastic outcomes for this period. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all of the 4-year outcomes generated in the stochastic analysis, approximately 25 percent of them had an average annual return of 3.0 percent or less.

Required contributions outside of this range are also possible. In particular, while it is unlikely that investment returns will average less than -3.0 percent or greater than 17.0 percent over this four year period, the possibility of a single investment return less than -3.0 percent or greater than 17.0 percent in any given year is much greater.

Assumed Annual Return From 2017-18 through 2019-20	Projected Employer Contributions			
	2019-20	2020-21	2021-22	2022-23
(3.0%)				
Normal Cost	6.8%	7.1%	7.1%	7.1%
UAL Contribution	\$2,400	\$3,300	\$4,600	\$6,300
3.0%				
Normal Cost	6.8%	7.1%	7.1%	7.1%
UAL Contribution	\$2,400	\$3,100	\$4,100	\$5,200
Assumed Discount Rate				
Normal Cost	6.8%	7.1%	7.1%	7.1%
UAL Contribution	\$2,400	\$3,000	\$3,700	\$4,400
11.0%				
Normal Cost	6.8%	7.1%	7.2%	7.2%
UAL Contribution	\$2,400	\$2,900	\$3,300	\$3,700
17.0%				
Normal Cost	6.8%	7.1%	7.3%	7.6%
UAL Contribution	\$2,400	\$2,700	\$2,800	\$0

Given the temporary suspension of the Risk Mitigation Policy during the period over which the discount rate assumption is being phased down to 7.0 percent, the projections above were performed without reflection of any possible impact of this Policy for Fiscal Years 2019-20 and 2020-21.

Analysis of Discount Rate Sensitivity

Shown below are various valuation results as of June 30, 2016 assuming alternate discount rates. Results are shown using the current discount rate of 7.375 percent as well as alternate discount rates of 6.0 percent, 7.0 percent, and 8.0 percent. The alternate rate of 7.0 percent was selected since the Board has adopted this rate as the final discount rate at the end of the three year phase-in of the reduction in this assumption. The rates of 6.0 percent and 8.0 percent were selected since they illustrate the impact of a 1 percent increase or decrease to the 7.0 percent assumption. This analysis shows the potential plan impacts if the PERF were to realize investment returns of 6.0 percent, 7.0 percent, or 8.0 percent over the long-term.

This type of analysis gives the reader a sense of the long-term risk to required contributions. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Sensitivity Analysis				
As of June 30, 2016	Plan's Total Normal Cost	Accrued Liability	Unfunded Accrued Liability	Funded Status
7.375% (current discount rate)	13.092%	\$204,458	\$20,477	90.0%
6.0%	17.506%	\$257,705	\$73,724	71.4%
7.0%	14.139%	\$217,428	\$33,447	84.6%
8.0%	11.561%	\$184,973	\$992	99.5%

Volatility Ratios

Actuarial calculations are based on a number of assumptions about long-term demographic and economic behavior. Unless these assumptions (terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise required employer contributions from one year to the next. Therefore, employer contributions will inevitably fluctuate, especially due to the ups and downs of investment returns.

Asset Volatility Ratio (AVR)

Plans that have higher asset-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility, than a plan with an asset-to-payroll ratio of 4. Shown below is the asset volatility ratio, a measure of the plan's current contribution volatility. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

Liability Volatility Ratio (LVR)

Plans that have higher liability-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with a liability-to-payroll ratio of 8 is expected to have twice the contribution volatility of a plan with a liability-to-payroll ratio of 4. The liability volatility ratio is also shown in the table below. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The asset volatility ratio, described above, will tend to move closer to the liability volatility ratio as the plan matures. Since the liability volatility ratio is a long-term measure, it is shown below at the current discount rate (7.375 percent) as well as the discount rate the Board has adopted to determine the contribution requirement in the June 30, 2018 actuarial valuation (7.00 percent).

Rate Volatility	As of June 30, 2016	
1. Market Value of Assets	\$	183,981
2. Payroll		601,671
3. Asset Volatility Ratio (AVR) [(1) / (2)]		0.3
4. Accrued Liability	\$	204,458
5. Liability Volatility Ratio (LVR) [(4) / (2)]		0.3
6. Accrued Liability (7.00% discount rate)		217,428
7. Projected Liability Volatility Ratio [(6) / (2)]		0.4

Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2016. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while funding risk is limited. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 2-year period centered around the valuation date.

Market Value of Assets (MVA)	Hypothetical Termination Liability^{1,2} @ 1.75%	Funded Status	Unfunded Termination Liability @ 1.75%	Hypothetical Termination Liability^{1,2} @ 3.00%	Funded Status	Unfunded Termination Liability @ 3.00%
\$183,981	\$477,116	38.6%	\$293,135	\$388,872	47.3%	\$204,891

¹ The hypothetical liabilities calculated above include a 7 percent mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A.

² The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 1.75 percent on June 30, 2016, and was 2.75 percent on January 31, 2017.

In order to terminate the plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to terminate. The completed Resolution will allow the plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. CalPERS advises you to consult with the plan actuary before beginning this process.

Participant Data

The table below shows a summary of your plan's member data upon which this valuation is based:

	June 30, 2015	June 30, 2016
Reported Payroll	\$ 447,122	\$ 601,671
Projected Payroll for Contribution Purposes	\$ 488,582	\$ 657,463
Number of Members		
Active	6	8
Transferred	1	2
Separated	0	1
Retired	0	0

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- None

PLAN'S MAJOR BENEFIT OPTIONS

Plan's Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in Appendix B within Section 2 of this report.

Contract package	
Benefit Provision	Active Misc
Benefit Formula	2.0% @ 62
Social Security Coverage Full/Modified	No Full
Employee Contribution Rate	6.25%
Final Average Compensation Period	Three Year
Sick Leave Credit	Yes
Non-Industrial Disability	Standard
Industrial Disability	No
Pre-Retirement Death Benefits Optional Settlement 2W	Yes
1959 Survivor Benefit Level Special	level 4
Alternate (firefighters)	No No
Post-Retirement Death Benefits Lump Sum	\$500
Survivor Allowance (PRSA)	No
COLA	2%

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

**Section 2 may be found on the CalPERS website
(www.calpers.ca.gov) in the Forms and
Publications section**



INFORMATION ITEM

October 11, 2017

TO: Administration & Finance Committee

FROM: Robert Hunter, General Manager

Staff Contacts: Cathy Harris, Administrative Services Manager
Katie Davanaugh, Sr. Executive Assistant

SUBJECT: Health Savings Account Contributions for 2018

STAFF RECOMMENDATION

It is recommended that the Board of Directors receive and file information regarding the HSA Account contributions for 2018.

COMMITTEE RECOMMENDATION

Committee concurred with staff recommendation.

DETAILED REPORT

Background:

2018 will be the 3rd year that the District has offered and participated in the PPO and Kaiser plans Consumer Driven Health Plans.

To continue to encourage participation in these plans, JPIA has analyzed and formulated suggested contribution amounts to participant's Health Savings Account (HSA) to maximize participation and boost cost savings to the District. The recommended contribution amounts for calendar year 2018 are listed in Table A and remain unchanged from 2017.

For the past 2 years, the District had four employees participating in the Consumer Driven Health Plans. Enrollment in the CDH plans is anticipated to remain unchanged in 2018. Savings to the District in 2017 was approximately \$3,200.

The Board requested that this item be returned for review of annual contribution amounts and frequency of the distribution. JPIA recommends making the contributions at the beginning of the plan year to encourage participation and to minimize exposure to the participant.

Budgeted (Y/N): Y	Budgeted amount: \$	Core <u>X</u>	Choice
Action item amount: 0	Line item:		
Fiscal Impact (explain if unbudgeted):			

Table A			
Plan	2018 Recommended Annual HSA Contributions by District		
	Employee only	Employee +1	Family
Kaiser CDHP HP	\$1,150	\$2,050	\$2,400
Anthem PPO CD	\$1,300	\$2,600	\$2,400

Annual savings are calculated on cost difference between the highest plan (PPO Classic) and lowest plan (Kaiser CDHP) premium costs.

Table B			
Plan	Approximate Annual Savings to District per Enrollee		
	Employee only	Employee +1	Family
Anthem PPO CDHP	\$445	\$575	\$1,875
Kaiser CDHP	\$500	\$900	\$1,775



INFORMATION ITEM
October 11, 2017

TO: Administration & Finance Committee

FROM: Robert Hunter, General Manager

Staff Contacts: Cathy Harris, Administrative Services Manager &
Katie Davanaugh, Sr. Executive Assistant

SUBJECT: Health Benefit Rates for 2018

STAFF RECOMMENDATION

Staff recommends the Administration & Finance Committee receive and file information.

COMMITTEE RECOMMENDATION

Committee recommends (to be determined at Committee meeting)

DETAILED REPORT

Open enrollment for 2018 health benefits runs from October 31, 2017 through November 10, 2017. The health plan information will be provided to all eligible participants by October 17th.

Rate changes by benefit plan are listed below:

Benefit Plan	Administrator	Carrier	% Rate Change
Health Insurance	JPIA	Anthem Blue Cross Classic PPO	4.5
"	"	Anthem Blue Cross CalCare HMO	8.26
"	"	Anthem Blue Cross Consumer Driven Health Plan	4.5
"	"	Kaiser	13.05
"	"	Kaiser Consumer Driven Health Plan	13.04
Vision	"	VSP	0
Dental	SDRMA	Delta Dental	-3
EAP	Alliant	GuidanceResources/ComPsych	Under review

Budgeted (Y/N): Y	Budgeted amount: \$589,680	Core <u>X</u>	Choice
Action item amount: 0		Line item:	
Fiscal Impact (explain if unbudgeted):			

Plan rates for the 2018 are shown below:

Plan	Total Monthly \$			Employee Monthly \$			District Monthly \$		
	Single	2-Party	Family	Single	2-Party	Family	Single	2-Party	Family
PPO (Classic)	852.34	1,736.91	2,335.06	41.87	347.38	467.01	810.47	1,389.53	1,868.05
HMO (CalCare)	758.68	1,507.46	2,021.80	32.51	301.49	404.36	726.17	1,205.97	1,617.44
Anthem CDHP	683.84	1,391.51	1,870.02	25.02	278.30	374.00	658.82	1,113.21	1,496.02
Kaiser	607.82	1,204.96	1,700.90	17.42	240.99	340.18	590.40	963.97	1,360.72
Kaiser CDHP	433.60	857.32	1,209.00	0.00	171.46	241.80	433.60	685.86	967.20
Dental	52.22	87.92	133.72	5.22	8.79	13.37	47.00	79.13	120.35
Vision	14.76	23.46	45.71	0.00	0.00	0.00	14.76	23.46	45.71
Retiree with Medicare	Total Monthly \$			Retiree Monthly \$			District Monthly \$		
	Single	2-Party	n/a	Single	2-Party	n/a	Single	2-Party	n/a
PPO	543.43	1,103.65		35.28	220.73		508.15	882.92	
HMO	532.79	1,055.75		34.22	211.15		498.57	844.60	
Kaiser Sr. Advantage	190.59	371.29		0.00	74.26		190.59	297.03	
Mixed Medicare, HMO		1,281.59			256.32		n/a	1,025.27	
Mixed Medicare, PPO		1,385.88			277.18		n/a	1,108.70	
Dental	52.22	87.92		5.22	17.58		47.00	70.34	
Vision	14.76	23.46		0.00	4.69		14.76	18.77	

- The amount budgeted for FY 2017-18 for medical, dental and vision benefits is \$589,680. Based on the plan premium increases for 2018, the projected totals for 2017-18 will be \$605,303.



INFORMATION ITEM

October 11, 2017

TO: Administration & Finance Committee
(Directors Thomas, Barbre, Finnegan)

FROM: Robert Hunter, General Manager

Staff Contact: Hilary Chumpitazi and Cathy Harris

SUBJECT: OPEB Prefunding Trust Program Client Review

STAFF RECOMMENDATION

Staff recommends the Administration & Finance Committee: Receive and file this information.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

DETAILED REPORT

Staff held its annual meeting with Public Agency Retirement Services (PARS) on August 31, 2017 to review MWDOC's OPEB Prefunding Trust Program. The following information was reviewed:

- Account Balance as of June 30, 2017 is \$1,960,367.
- As of our last actuarial evaluation dated July 1, 2016, there are 26 total participants consisting of 18 active employees and 8 retirees.
- Highmark continues to manage our balance with a Moderate HM Plus investment objective. The last 12-month changes include:
 - Recently removed over weight to value style and to small cap
 - Modest overweight to international and added floating rate notes
- Performance for MWDOC's plan inception to date (11/2011) is at 8.05% with the 1-year at 9.38%, both exceeding our target rate of return of 6%.
- The 2017 outlook is a modest GDP growth and strong US dollar moderating.

Annual Report is attached for review.

Budgeted (Y/N): NA	Budgeted amount: NA	Core X	Choice __
Action item amount:	Line item:		
Fiscal Impact (explain if unbudgeted):			



MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

OPEB Prefunding Trust Program Client Review
August 31, 2017

PUBLIC
AGENCY
RETIREMENT
SERVICES | **PARS**

TRUSTED SOLUTIONS. LASTING RESULTS.

CONTACTS

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Supervisor, Client Services



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KEITH STRIBLING

Senior Portfolio Manager



keith.stribling@highmarkcapital.com

(949) 553-2591

OPEB/PENSION PROGRAM TEAM



Trust Administrator & Consultant	Trustee	Investment Manager
<ul style="list-style-type: none"> Recordkeeping/sub-trust accounting Actuarial coordination Monitor contributions/process disbursements Monitor plan compliance Ongoing client liaison 	<ul style="list-style-type: none"> Safeguard plan assets Oversight protection Plan fiduciary Custodian of assets 	<ul style="list-style-type: none"> Investment sub-advisor to U.S. Bank Open architecture Investment strategy and asset allocation development Investment policy assistance
Corporate Experience		
33 years (1984 – 2017)	154 years (1863 – 2017)	98 years (1919 – 2017)
Plans Under Administration		
1,600+ plans, 850+ public agencies, 400,000+ participants		
Dollars under Administration		
Over \$2.4 billion	Over \$4 trillion	Over \$15.9 billion under management



OPEB/PENSION CLIENT LISTS

UPDATED: AUGUST 2017

CITIES & TOWNS

Alameda	Duarte	Mammoth Lakes	Santa Clara
Alhambra	Elk Grove	Manhattan Beach	Santa Clarita
Atherton	Fountain Valley	Morgan Hill	Sausalito
Bakersfield	Fullerton	Napa	Solana Beach
Bell Gardens	Galt	Norwalk	Stanton
Brea*	Glendale	Novato	Temple City
Brisbane	Half Moon Bay	Oakley	Tiburon
Burlingame	Healdsburg*	Palo Alto	Tustin
Camarillo	Hercules	Rancho Cucamonga*	Union City
Capitola*	Hermosa Beach	Redding	Upland
Chino Hills	Huntington Beach	Redwood City	Vallejo
Colma	La Mesa*	Rialto	West Sacramento
Commerce	La Verne	Richmond	Westminster*
Coronado	Lake Forest	Rohnert Park	Woodland
Covina	Lakewood	Rolling Hills	Yountville
Crescent City	Livermore	Rosemead	Yuba City
Cupertino	Lodi	San Leandro	Yucca Valley
Daly City	Los Gatos	Santa Ana	

COUNTIES

Amador	Mono	Solano
Contra Costa	Nevada	Sonoma
Humboldt	Placer	Sutter
Imperial	Plumas	Trinity
Inyo	Riverside	Yolo
Kern	San Benito	
Kings	Shasta	
Merced	Siskiyou	

Bolded agencies have adopted PRSP
* PRSP only

OPEB/PENSION CLIENT LISTS

UPDATED: AUGUST 2017

SPECIAL DISTRICTS

Bodega Bay Public Utility District	Mojave Desert AQMD	Superior Court of CA, County of Orange
Calaveras County Water District	Montecito Fire Protection District	Superior Court of CA, County of San Mateo
California JPIA	Monterey Bay UAPCD	Superior Court of CA, County of Shasta
California Joint Powers RMA	Moraga-Orinda Fire Protection District	Superior Court of CA, County of Siskiyou
Central Contra Costa Sanitary District	Municipal Water District of Orange County	Superior Court of CA, County of Sonoma
Central Contra Costa Transit Authority	Napa County Mosquito Abatement District	Three Valleys Municipal Water District
Coastside Fire Protection District	Nevada County Consolidated Fire District*	Twentynine Palms Water District*
Contra Costa MVCD	Novato Sanitary District	Vallejo Sanitation & Flood Control District
Crestline Village Water District	Orange County Vector Control District	Ventura Regional Sanitation District
Delta Diablo (Sanitation District)	Orange County Water District	Walnut Valley Water District
Desert Recreation District	Placer County Resource Conservation District	West Bay Sanitary District
Eastern Sierra Community Services District	Rancho Cucamonga Fire Protection District*	West County Wastewater District
El Dorado Hills County Water District	Rancho Murrieta Community Services District	Western Riverside Council of Governments
Fallbrook Public Utility District	Rowland Water District	
Fresno Irrigation District	San Mateo County MVCD	
Fresno Metropolitan Flood Control District	Santa Barbara County Law Library	
Glenn-Colusa Irrigation District	Santa Cruz Regional 9-1-1	
Goleta West Sanitary District	South Montebello Irrigation District	
Great Basin Unified APCD	South Coast Water District	
Hayward Area Recreation & Park District	South Orange County Wastewater Authority	
Housing Authority of the County of Contra Costa	South Placer Fire Protection District	
Housing Authority of the County of San Bernardino	Southern Marin Fire Protection District	
Humboldt No. 1 Fire Protection District	Superior Court of CA, County of Contra Costa	
Menlo Park Fire Protection District	Superior Court of CA, County of Imperial	
Mesa Water District	Superior Court of CA, County of Inyo	
Metropolitan Transportation Commission	Superior Court of CA, County of Kern	
Mid-Peninsula Water District	Superior Court of CA, County of Marin	
	Superior Court of CA, County of Merced	

Bolded agencies have adopted PRSP
* PRSP only

OPEB/PENSION CLIENT LISTS

UPDATED: AUGUST 2017

SCHOOL DISTRICTS

Auburn Union School District	
Bass Lake Joint Union Elementary School District	
Bellflower Unified School District	
Beverly Hills Unified School District	
Calistoga Joint Unified School District	
Campbell Union High School District	
Compton Unified School District	
Corning Union Elementary School District	
Cotati-Rohnert Park Unified School District	
El Dorado Union High School District	
Fowler Unified School District	
Hesperia Unified School District	
John Swett Unified School District	
Lakeside Union School District	
Lemon Grove School District	
Manteca Unified School District	
Moreno Valley Unified School District	
Natomas Unified School District	
	Ocean View School District
	Ontario-Montclair School District
	Placer Union High School District
	Red Bluff Joint Union High School District
	Red Bluff Union Elementary School District
	River Delta Unified School District
	Riverdale Joint Union School District
	San Bruno Park School District
	San Marino Unified School District
	Santa Barbara Unified School District
	Santa Rita Union School District
	Trona Joint Unified School District
	Twin Rivers Unified School District
	Visalia Unified School District
	Westside Union School District
	Whittier City School District
	Wilsona School District

COMMUNITY COLLEGE DISTRICTS

Coast CCD*
Grossmont-Cuyamaca CCD
Hartnell CCD*
Marin CCD
San Bernardino CCD
State Center CCD
Victor Valley CCD*
Yosemite CCD

SPECIAL EDUCATION DISTRICTS

Intelecom

Bolded agencies have adopted PRSP
* PRSP only

SUMMARY OF AGENCY'S OPEB PLAN

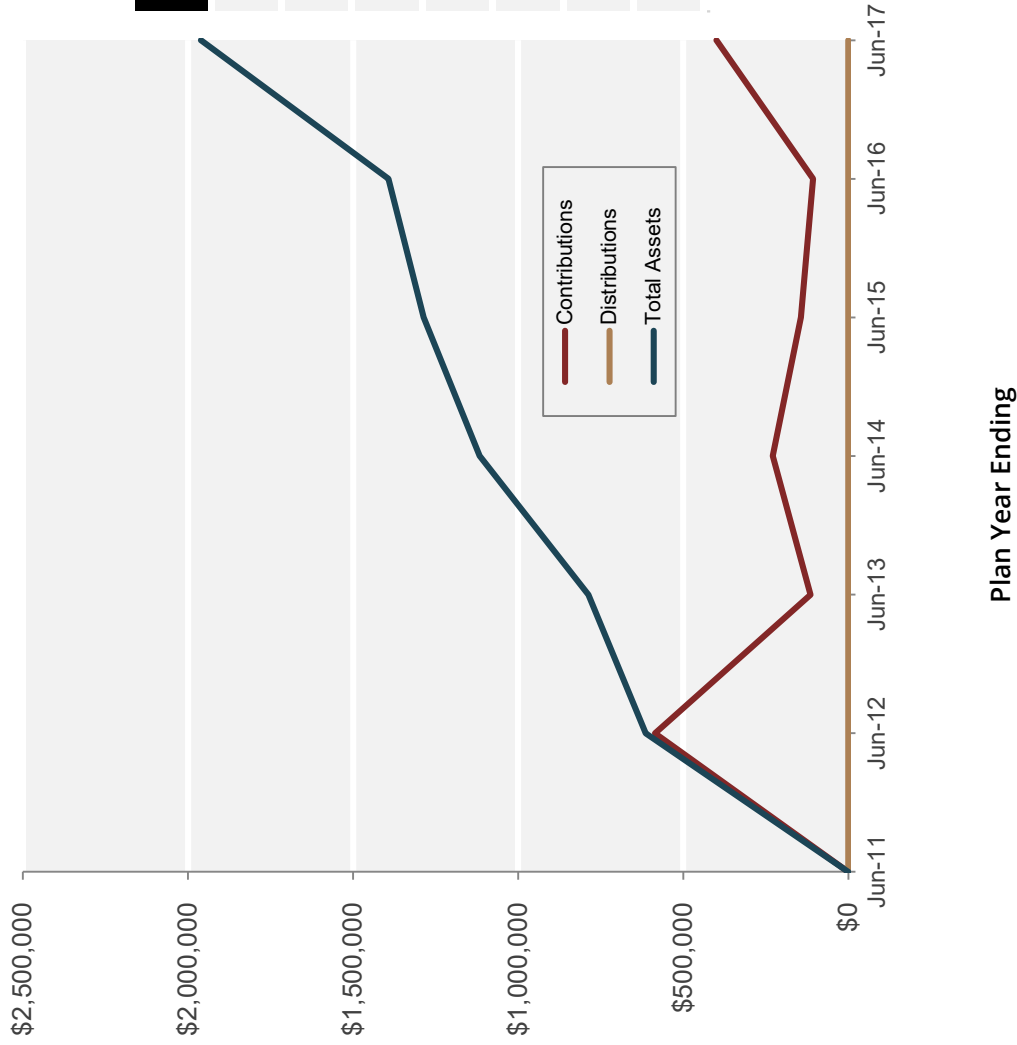
Plan Effective Date:	IRC Section 115 Irrevocable Exclusive Benefit Trust
Trustee Approach:	Discretionary
Plan Effective Date:	July 20, 2011
Plan Administrator:	Rob Hunter, General Manager
Current Investment Strategy:	Moderate HighMark PLUS (Active) Strategy; Pooled Account

AS OF JUNE 30, 2017:

Initial Contribution:	October 2011: \$500,000
Additional Contributions:	\$1,080,656
Total Contributions:	\$1,580,656
Disbursements:	\$0.00
Total Investment Earnings:	\$417,867
Account Balance:	\$1,960,367

SUMMARY OF AGENCY'S OPEB PLAN

CONTRIBUTIONS, DISTRIBUTIONS, AND TOTAL ASSETS AS OF June 30, 2017:



*Plan Year Ending June 2011 is based on 9 months of activity

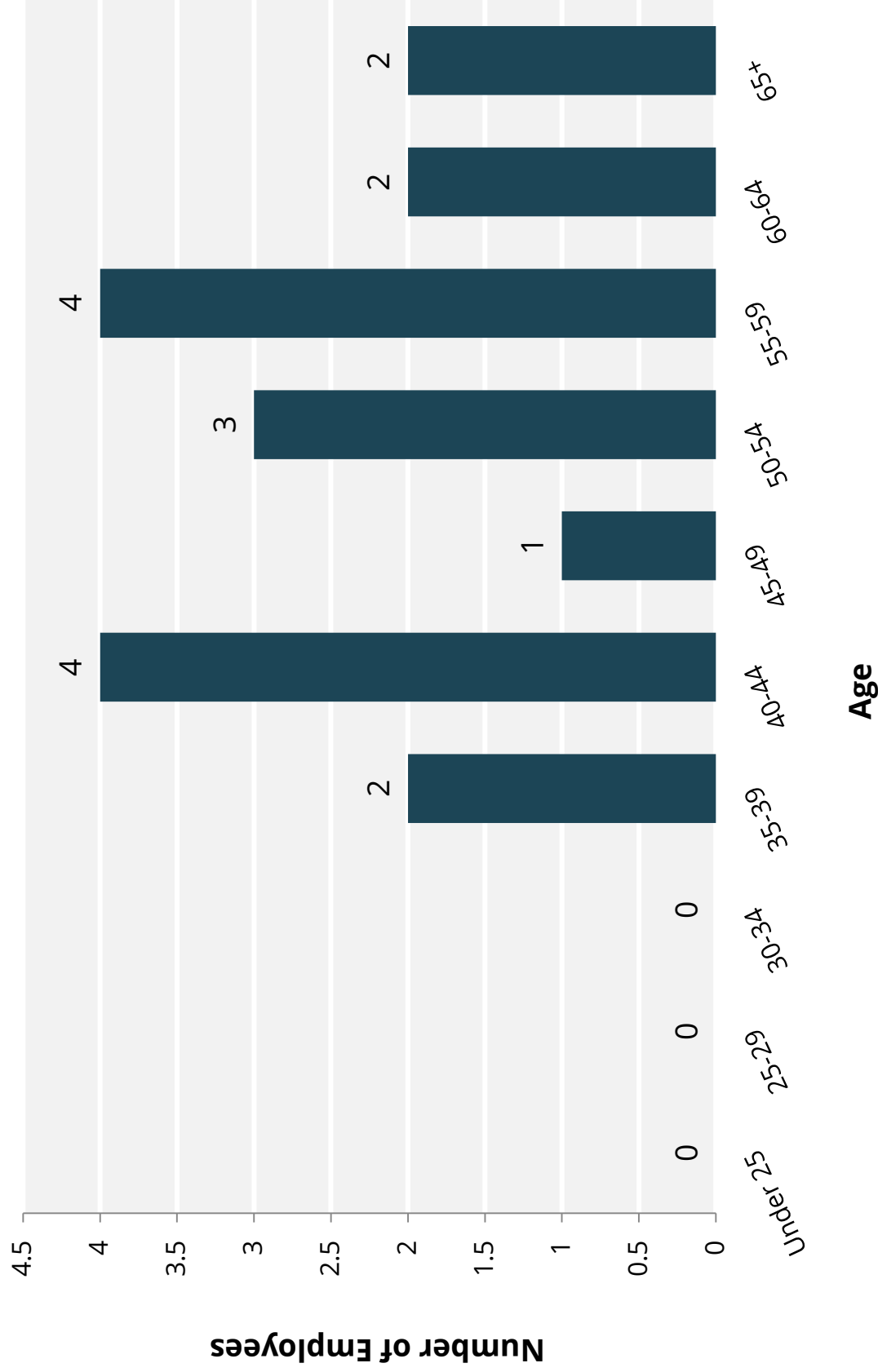
OPEB ACTUARIAL RESULTS

- We have received the actuarial report by Demsey Filliger & Associates, LLC dated October 12, 2016 with a valuation date as of July 1, 2016. In the table below, we have summarized the results.

Demographic Study Valuation Date: July 1, 2016	
Actives	18
Retirees	8
Total	26
Average Active Age	51.5
Average Active Agency Service	16.17

OPEB ACTUARIAL RESULTS

ACTIVE AGE DISTRIBUTION



OPEB ACTUARIAL RESULTS

Valuation Date: July 1, 2016	Prefunding Discount Rate: 6.00%
Actuarial Accrued Liability (AAL)	\$2,002,333
Actuarial Value of Assets	\$1,393,327
Unfunded Actuarial Accrued Liability (UAAL)	\$609,006
Normal Cost	\$39,606
UAAL Amortization	\$31,643
Annual Required Contribution (ARC) for FY 2016-17	\$71,249
Annual Benefit Payments (Pay-as-you-Go) for FY 2016-17	\$34,500

Rule of thumb: For every one percent increase in the discount rate, the unfunded liability is lowered by 10-12%.

HIGHMARK INVESTMENT REVIEW

Municipal Water District of Orange County
August 31, 2017

Presented by
Keith Stribling, CFA

DISCUSSION HIGHLIGHTS- Municipal Water District of Orange County

Investment objective – Moderate HM Plus

Asset Allocation: PARS/HCM Moderate HM Plus (As of 7-31-2017)

- Allocation Target – 50.24 stocks (40-60% range), 46.70% bonds (40-60% range), 3.06% cash (0-20% range)
- Large cap 24.9%, Mid-cap 3.6%, Small cap 7.5%, International 12.65%, REIT 1.5%

Performance: Municipal Water District of Orange County OPEB Plan (as of 7-31-2017) gross of investment management fees, net of fund fees

- 3-months: 3.21%
- Year-to-date: 8.43%
- 1-Year: 9.38%
- 3-Year: 5.53%
- Inception to date (11-2011) 8.05%
- Bonds –High Yield & general credit risk was positive
- Stocks – International finally picking up.

12-Month Changes

- Asset Allocation:
 - Recently removed over weight to value style
 - Recently removed overweight to small cap
 - Modest overweight to international
 - Added floating rate notes

DISCUSSION HIGHLIGHTS – Municipal Water District of Orange County

Economic Review

- Trump wins removing uncertainty with a Republican Congress – a new direction
- Changes in Fiscal policy – finally some inflation...but not much
- Interest rates
- Fed & monetary policy – Gradual tightening cycle & addressing the balance sheet
- Strengthening US Economy supporting stocks
- Consumer well positioned
- International challenges – Japan and Europe, China

2017 Outlook

- Modest GDP growth
 - 2017E 2.0% - 2.5%; 2018E 2.0% - 2.5%
- 10-yr yield 2.25% - 2.75%
- Fed Funds 1.25% - 1.5%
- Strong US dollar moderating

Selected Period Performance
PARS/PRHCP HIGHMARK PLUS MODERATE
Period Ending: 07/31/2017

Sector	3 Months	Year to Date (7 Months)	1 Year	3 Years	68 Months
Cash Equivalents	.19	.36	.47	.23	.13
Total Fixed Income	1.33	3.37	.89	2.61	3.33
<i>BC US Aggregate Bd Index (USD)</i>	<i>1.10</i>	<i>2.71</i>	<i>-.51</i>	<i>2.71</i>	<i>2.65</i>
Total Equities	5.20	14.14	18.85	8.48	13.15
Large Cap Funds	4.66	12.88	19.30	10.48	15.12
<i>S&P 500 Composite Index</i>	<i>4.14</i>	<i>11.59</i>	<i>16.04</i>	<i>10.87</i>	<i>15.24</i>
Mid Cap Funds	3.38	9.18	13.43	8.17	11.81
<i>Russell Midcap Index</i>	<i>3.42</i>	<i>9.58</i>	<i>13.04</i>	<i>9.31</i>	<i>14.69</i>
Small Cap Funds	3.73	11.44	19.55	11.41	15.79
<i>Russell 2000 Index (USD)</i>	<i>2.11</i>	<i>5.77</i>	<i>18.45</i>	<i>9.89</i>	<i>13.91</i>
International Equity Funds	7.88	21.26	21.37	3.69	6.75
<i>MSCI EAFE Index (Net)</i>	<i>6.47</i>	<i>17.09</i>	<i>17.77</i>	<i>2.79</i>	<i>8.55</i>
<i>MSCI EM Free Index (Net USD)</i>	<i>10.19</i>	<i>25.49</i>	<i>24.84</i>	<i>2.39</i>	<i>5.03</i>
Total Managed Portfolio	3.21	8.43	9.38	5.53	8.05

Account Inception: 11/2011

Returns are gross of account level investment advisory fees and net of any fees, including fees to manage mutual fund or exchange traded fund holdings. Returns for periods over one year are annualized. The information presented has been obtained from sources believed to be accurate and reliable. Past performance is not indicative of future returns. Securities are not FDIC insured, have no bank guarantee, and may lose value.

ASSET ALLOCATION – Moderate HM Plus

Current Asset Allocation	Ticker	Investment Vehicle	Weight
Equity			50.24%
Large Cap Core	SMGIX	Columbia Contrarian Core Cl Z	4.95%
	VGIAX	Vanguard Gro & Inc Admiral Shares	11.42%
Large Cap Value	DODGX	Dodge & Cox International Stock Fund	4.26%
Large Cap Growth	HNACX	Harbor CP Appre Rtrmt Cl	2.17%
	PRUFX	T. Rowe Price Growth Stock Fund	2.16%
Mid Cap Growth	IWR	iShares Russell Mid Cap ETF	3.58%
Small Cap Value	UBVLX	Undiscovered Mgrs Behavrl Val I	3.74%
Small Cap Growth	PRJIX	T. Rowe Price New Horizons Fund	3.77%
International Core	NWHMX	Nationwide Baillard Intl Equities Fund	4.07%
International Value	DODFX	Dodge & Cox International Stock Fund	2.67%
International Growth	MQGIX	MFS International Growth Fund	2.60%
Emerging Markets	HHHYX	Hartford Schrodr Mkts Eq Cl Y	3.33%
REIT	VNQ	Vngrd Index Tr Reit Viper Shs	1.51%
Fixed Income			46.70%
Short-Term	VFSUX	Vanguard Short-Term Corp Adm Fund	6.29%
Intermediate-Term	NWJXX	Nationwide HM Bond Fd Cl IS	15.48%
	PTTRX	PIMCO Total Return Instl Fund	9.97%
	PTRQX	Prudential Total Return BD	12.47%
	EIFHX	Eaton Vance Fltg RT & HI Incm I	2.49%
Cash			3.06%
	FGZXX	First Amern Govt Oblig Fd CL Z	3.06%
TOTAL			100.00%

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

For Period Ending July 31, 2017

LARGE CAP EQUITY FUNDS							
Fund Name	1-Month Return	3-Month Return	Year-to- Date	1-Year Return	3-Year Return	5-Year Return	10-Year Return
Columbia Contrarian Core Z	2.20	4.64	13.33	15.76	10.78	15.67	9.76
Vanguard Growth & Income Adm	2.03	3.92	10.13	14.88	10.68	14.80	7.24
Harbor Capital Appreciation Retirement	5.28	8.48	23.52	23.11	13.01	16.63	9.92
T. Rowe Price Growth Stock I	3.45	7.26	23.72	25.89	14.12	17.19	9.60
Dodge & Cox Stock	1.81	3.17	8.74	24.32	9.46	16.33	6.47
S&P 500 TR USD	2.06	4.14	11.59	16.04	10.87	14.78	7.74
MID CAP EQUITY FUNDS							
iShares Russell Mid-Cap ETF	1.45	3.37	9.46	12.83	9.12	14.81	8.09
SMALL CAP EQUITY FUNDS							
Undiscovered Managers Behavioral Val L	1.34	1.63	4.18	16.30	10.94	15.92	9.59
T. Rowe Price New Horizons I	1.92	5.70	20.16	21.91	13.48	17.67	12.23
Russell 2000 TR USD	0.74	2.11	5.77	18.45	9.89	14.19	7.76
REAL ESTATE FUNDS							
Nuveen Real Estate Securities I	1.16	3.10	3.89	-4.16	8.34	9.02	7.83
INTERNATIONAL EQUITY FUNDS							
Dodge & Cox International Stock	4.38	6.65	19.53	27.72	2.41	11.02	2.97
Nationwide Bailard Intl Eqs R6	3.62	6.76	17.68	15.18	4.02	9.55	1.79
MFS International Growth I	1.79	7.71	21.49	17.11	5.67	8.55	3.84
MSCI EAFE NR USD	2.88	6.47	17.09	17.77	2.79	9.06	1.46
Hartford Schroders Emerging Mkts Eq Y	5.36	9.79	27.12	28.04	3.77	5.26	2.70
MSCI EM Free Index	5.96	10.19	25.49	24.84	2.39	4.76	1.98
BOND FUNDS							
Nationwide HighMark Bond Instl Svc	0.37	1.02	2.51	-0.18	2.51	2.32	4.74
PIMCO Total Return Instl	0.59	1.55	4.07	1.67	2.96	2.53	5.88
Vanguard Short-Term Investment-Grade Adm	0.37	0.73	1.95	1.22	2.06	2.07	3.25
Prudential Total Return Bond Q	0.64	1.85	4.76	1.62	3.96	3.80	6.21
BBGBarc US Agg Bond TR USD	0.43	1.10	2.71	-0.51	2.71	2.02	4.44
Eaton Vance Floating-Rate & Hi Inc Inst	0.58	1.15	3.30	7.77	4.01	4.56	4.53

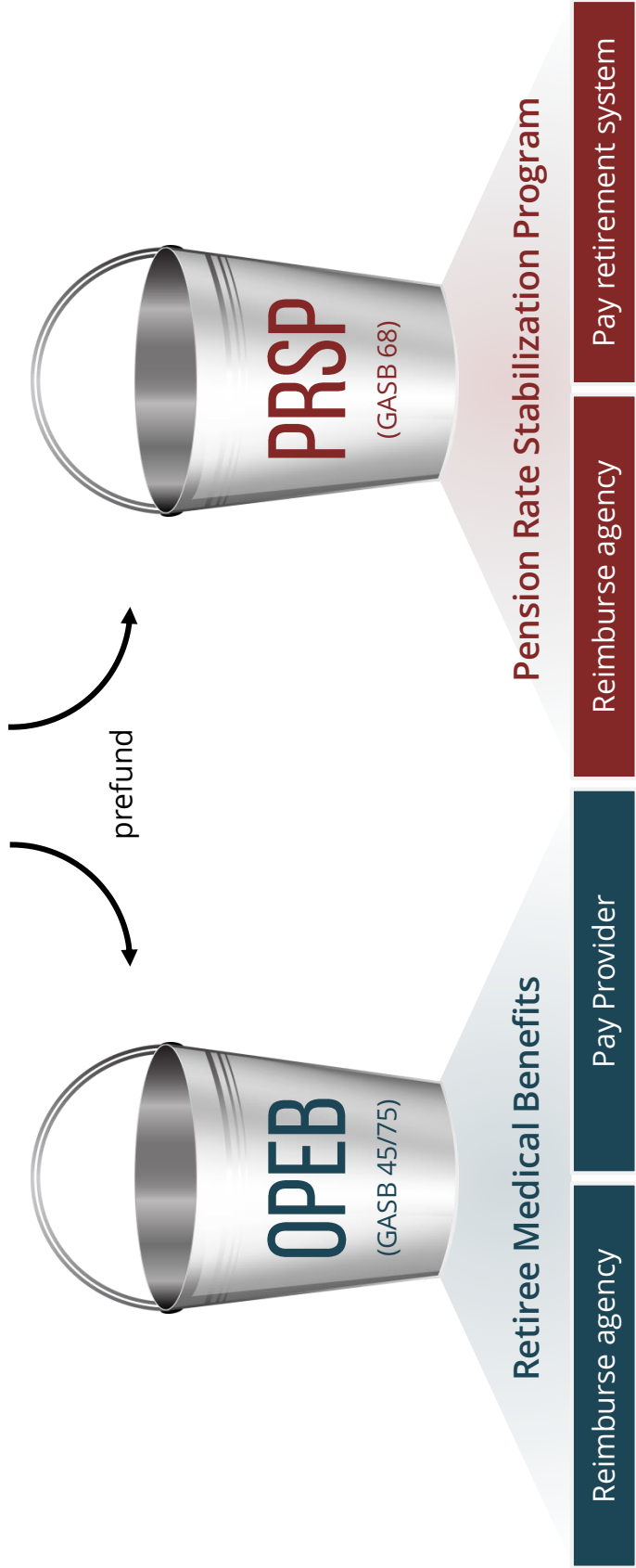
Source: SEI Investments, Morningstar Investments

Returns less than one year are not annualized. Past performance is no indication of future results. The information presented has been obtained from sources believed to be accurate and reliable. Securities are not FDIC insured, have no bank guarantee and may lose value.

ADMINISTRATIVE REVIEW

- | | |
|---|---|
| 1 | Future contributions |
| 2 | Future disbursement requests/options |
| 3 | Agency's future actuarial valuation for GASB 45/75 compliance
Next valuation due: July 1, 2017 |
| 4 | GASB 75 updates – effective for fiscal years beginning after June 15, 2017 |
| 5 | Investment Guidelines Document – Current (Signed July 10, 2014) |
| 6 | Client funding policy |
| 7 | Pension Rate Stabilization Program (PRSP) |
| 8 | Client Feedback |

THE PARS IRS-APPROVED COMBINATION 115 TRUST



- Assets are sub-accounted for separately
- Pre-fund one now and the other later
- Addresses unfunded liabilities
- Can choose different investment risk tolerance levels for each
- Can access funds at anytime; OPEB for OPEB and pension for pension
- Assets (OPEB and Pension) aggregate and reach lower fees on tiered schedule sooner – saving money!
- No cost to set up; no fees until assets are added

PARS PRSP CLIENT LIST (98)

UPDATED: AUGUST 2017

CITIES & TOWNS

City of Alameda
City of Bell Gardens
City of Brea
City of Brisbane
City of Burlingame
City of Capitola
City of Chino Hills
City of Coronado
City of Daly City
City of Dublin
City of Fountain Valley
City of Fullerton
City of Glendale
City of Half Moon Bay
City of Healdsburg
City of Huntington Beach
City of La Mesa
City of Lake Forest
City of Lodi
City of Manhattan Beach
City of Morgan Hill
City of Napa
City of Norwalk
City of Oakley
City of Palo Alto
City of Pasadena
City of Rancho Cucamonga
City of Redwood City
City of Rohnert Park
City of Rolling Hills
City of Santa Ana

County of Humboldt
County of Kings
County of Nevada
County of Placer
County of Riverside
County of San Benito
County of Siskiyou
County of Solano
County of Sutter

SPECIAL DISTRICTS

Central Contra Costa Sanitary District
Delta Diablo (Sanitation District)
El Dorado Hills County Water District
Fallbrook Public Utility District
Goleta West Sanitary District
Great Basin Unified APCD
Mesa Water District
Mojave Desert AQMD
Montecito Fire Protection District
Moraga-Orinda Fire Protection District
Napa County Mosquito Abatement District
Nevada County Consolidated Fire District
Novato Sanitary District
Rancho Cucamonga Fire PD
South Coast Water District
Southern Marin Fire Protection District
Superior Court of CA - County of Kern
Three Valleys Municipal Water District
Twentynine Palms Water District
West Bay Sanitary District

EDUCATIONAL DISTRICTS

Coast CCD
Grossmont-Cuyamaca CCD
Hartnell CCD
Marin CCD
San Bernardino CCD
Victor Valley CCD
Yosemite CCD
Corning Union ESD
Bass Lake Joint Union ESD
Calistoga Joint USD
Campbell Union HSD
Cotati-Rohnert Park USD
River Delta USD
San Marino USD
Santa Rita USD
Visalia USD
Hesperia Unified SD
Lakeside Union SD
Lemon Grove SD
Natomas USD
Ocean View SD
Ontario-Montclair SD
Placer Union SD
Whittier City SD

PENSION FUNDING STATUS

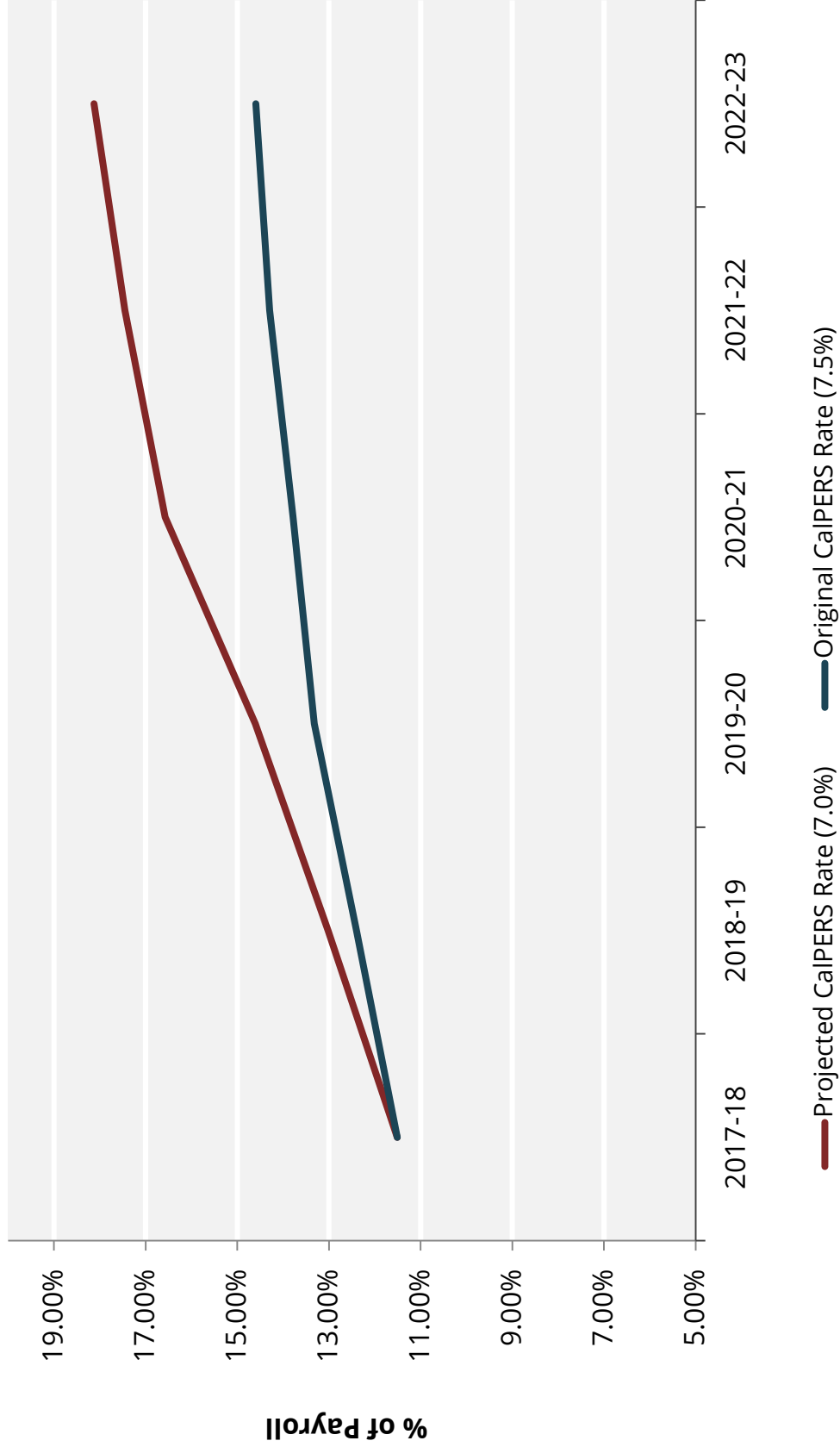
As of June 30, 2016, Municipal Water District of Orange County's CalPERS pension plan is funded as*:

Actuarial Liability	\$8.7 M
Assets	\$7.2 M
Unfunded Liability	\$1.5 M
Funded Ratio	82.6%
Employer Contribution Amount (FY 17-18)	\$319,081
Projected Employer Contribution Amount (FY 22-23)	\$582,650 (82.6% ↑)

* Data from Agency's 2015-16 CalPERS Actuarial valuation, with midpoint adjustments for discount rate projections

PROJECTED EMPLOYER CONTRIBUTIONS (MISC.)

Projected misc. contributions increase from \$319,082 to \$582,650* (82.6% ↑)



* Data from Agency's 2015-16 CalPERS Actuarial valuation, with midpoint adjustments for discount rate projections

KEY PROGRAM ADVANTAGES

- 1 IRS-approved trust structure which protects the District from Day 1 of prefunding
- 2 Market pioneer and leader with over 90 PRSP client agencies in California
- 3 Low cost prefunding solution with economies of scale and low investment fees
- 4 No start-up costs
- 5 No minimum annual fees
- 6 No fees charged until assets are in trust
- 7 No trading fees
- 8 No termination fees or restrictions
- 9 True, historical return information over 1, 3, 5 and 10 year periods – not composites
- 10 Five (5) risk tolerance portfolios that can be either actively or passively managed in addition to a customized portfolio option



Investment Guidelines Document

Municipal Water District of Orange County Post-Retirement Health Care Plan

April 2014

Investment Guidelines Document

Scope and Purpose

The purpose of this Investment Guidelines Document is to:

- Facilitate the process of ongoing communication between the Plan Sponsor and its plan fiduciaries;
- Confirm the Plan's investment goals and objectives and management policies applicable to the investment portfolio identified below and obtained from the Plan Sponsor;
- Provide a framework to construct a well-diversified asset mix that can potentially be expected to meet the account's short- and long-term needs that is consistent with the account's investment objectives, liquidity considerations and risk tolerance;
- Identify any unique considerations that may restrict or limit the investment discretion of its designated investment managers;
- Help maintain a long-term perspective when market volatility is caused by short-term market movements.
- Assist the Plan Sponsor in formulating an Investment Policy Statement ("IPS") for the account.

Key Plan Sponsor Account Information as of April 28, 2014

Plan Sponsor:	Municipal Water District of Orange County
Governance:	Financial Committee of Municipal Water District of Orange County
Plan Name ("Plan"):	Municipal Water District of Orange County Post-Retirement Health Care Plan
Trustee:	US Bank Contact: Susan Hughes, 949-224-7209 susan.hughes@usbank.com
Type of Account:	IRC Section 115 Irrevocable Exclusive Benefit Trust Post-Retirement Health Care Plan
ERISA Status:	Not subject to ERISA
Market Value of Account:	\$867,982 (as of February 28, 2014)
Investment Manager:	US Bank, as discretionary trustee, has delegated investment management responsibilities to HighMark Capital Management, Inc. ("Investment Manager"), an SEC-registered investment adviser Contact: Ahmed Khatib, CFA, CFP®, 949-553-2591 ahmed.khatib@highmarkcapital.com

- **Investment Authority:** Except as otherwise noted, the Trustee, US Bank, has delegated investment authority to HighMark Capital Management, an SEC-registered investment adviser. Investment Manager has full investment discretion over the managed assets in the account. Investment Manager is authorized to purchase, sell, exchange, invest, reinvest and manage the designated assets held in the account, all in accordance with account's investment objectives, without prior approval or subsequent approval of any other party(ies).

Investment Objectives and Constraints

The goal of the Plan's investment program is to generate adequate long-term returns that, when combined with contributions, will result in sufficient assets to pay the present and future obligations of the Plan. The following objectives are intended to assist in achieving this goal:

- The Plan should earn, on a long-term average basis, a rate of return equal to or in excess of the target rate of return of 6%.
- The Plan should seek to earn a return in excess of its policy benchmark over the long-term.
- The Plan's assets will be managed on a total return basis which takes into consideration both investment income and capital appreciation. While the Plan Sponsor recognizes the importance of preservation of capital, it also adheres to the principle that varying degrees of investment risk are generally rewarded with compensating returns. To achieve these objectives, the Plan Sponsor allocates its assets (asset allocation) with a strategic, long-term perspective of the capital markets.

Investment Time Horizon:	Long-term
Anticipated Cash Flows:	Distributions are expected to be minimal in the initial years of the Plan
Target Rate of Return:	6% annual target
Investment Objective:	The primary objective is to maximize total Plan return, subject to the risk and quality constraints set forth herein. The investment objective the Plan Sponsor has selected is the Moderate Objective, which has a dual goal to seek moderate growth of income and principal.
Risk Tolerance:	<i>Moderate</i> The account's risk tolerance has been rated moderate, which demonstrates that the account can accept average, or moderate, price fluctuations to pursue its investment objectives.

Strategic Asset Allocation: The asset allocation ranges for this objective are listed below:

<i>Strategic Asset Allocation Ranges</i>		
Cash	Fixed Income	Equity
0-20%	40%-60%	40%-60%
Policy: 5%	Policy: 45%	Policy: 50%

Market conditions may cause the account's asset allocation to vary from the stated range from time to time. The Investment Manager will rebalance the portfolio no less than quarterly and/or when the actual weighting differs substantially from the strategic range, if appropriate and consistent with your objectives.

Security Guidelines:

Equities

With the exception of limitations and constraints described above, Investment Manager may allocate assets of the equity portion of the account among various market capitalizations (large, mid, small) and investment styles (value, growth). Further, Investment Manager may allocate assets among domestic, international developed and emerging market equity securities.

Total Equities	40%-60%
<i>Equity Style</i>	<i>Range</i>
Domestic Large Cap Equity	15%-45%
Domestic Mid Cap Equity	0%-10%
Domestic Small Cap Equity	0%-15%
International Equity (incl Emerging Markets)	0%-15%
Real Estate Investment Trust (REIT)	0%-15%

Fixed Income

In the fixed income portion of the account, Investment Manager may allocate assets among various sectors and industries, as well as varying maturities and credit quality that are consistent with the overall goals and objectives of the portfolio.

Total Fixed Income	40%-60%
<i>Fixed Income Style</i>	<i>Range</i>
Long-term bonds (maturities >7 years)	0%-25%
Intermediate-term bonds (maturities 3-7 years)	25%-60%
Short-Term bonds (maturities <3 years)	0%-25%
High Yield bonds	0%-10%
Convertible bonds	0%-10%

Performance Benchmarks:

The performance of the total Plan shall be measured over a three and five-year periods. These periods are considered sufficient to accommodate the market cycles experienced with investments. The performance shall be compared to the return of the total portfolio blended benchmark shown below.

Total Portfolio Blended Benchmark

26.50%	S&P500
5.00%	Russell Mid Cap
7.50%	Russell 2000
3.25%	MSCI EM FREE
6.00%	MSCI EAFE
1.75%	Wilshire REIT
33.50%	BC US Aggregate
10.00%	ML 1-3 Year US Corp/Gov't
1.50%	US High Yield Master II
5.00%	Citi 1Mth T-Bill

Asset Class/Style Benchmarks

Over a market cycle, the long-term objective for each investment strategy is to add value to a market benchmark. The following are the benchmarks used to monitor each investment strategy:

Large Cap Equity	S&P 500 Index
Growth	S&P 500 Growth
Value	S&P 500 Value
Mid Cap Equity	Russell MidCap Index
Growth	Russell MidCap Growth
Value	Russell MidCap Value
Small Cap Equity	Russell 2000 Index
Growth	Russell 2000 Growth
Value	Russell 2000 Value
REITs	Wilshire REIT
International Equity	MSCI EAFE
Investment Grade Bonds	BarCap US Aggregate Bond
High Yield	Credit Suisse High Yield

Security Selection

Investment Manager may utilize a full range of investment vehicles when constructing the investment portfolio, including but not limited to individual securities, mutual funds, and exchange-traded funds. In addition, to the extent permissible, Investment Manager is authorized to invest in shares of mutual funds in which the Investment Manager serves as advisor or sub-advisor.

Investment Limitations:

The following investment transactions are prohibited:

- Direct investments in precious metals (precious metals mutual funds and exchange-traded funds are permissible).
- Venture Capital
- Short sales*
- Purchases of Letter Stock, Private Placements, or direct payments
- Leveraged Transactions*
- Commodities Transactions Puts, calls, straddles, or other option strategies*
- Purchases of real estate, with the exception of REITs
- Derivatives, with exception of ETFs*

**Permissible in diversified mutual funds and exchange-traded funds*

Duties and Responsibilities**Responsibilities of Plan Sponsor**

The Finance Committee of the Municipal Water District of Orange County is responsible for:

- Confirming the accuracy of this Investment Guidelines Document, in writing.
- Advising Trustee and Investment Manager of any change in the plan/account's financial situation, funding status, or cash flows, which could possibly necessitate a change to the account's overall risk tolerance, time horizon or liquidity requirements; and thus would dictate a change to the overall investment objective and goals for the account.
- Monitoring and supervising all service vendors and investment options, including investment managers.
- Avoiding prohibited transactions and conflicts of interest.

Responsibilities of Trustee

The plan Trustee is responsible for:

- Valuing the holdings.
- Collecting all income and dividends owed to the Plan.
- Settling all transactions (buy-sell orders).

Responsibilities of Investment Manager

The Investment Manager is responsible for:

- Assisting the Finance Committee with the development and maintenance of this Investment Guidelines Document annually.
- Meeting with Finance Committee annually to review portfolio structure, holdings, and performance.
- Designing, recommending and implementing an appropriate asset allocation consistent with the investment objectives, time horizon, risk profile, guidelines and constraints outlined in this statement.
- Researching and monitoring investment advisers and investment vehicles.
- Purchasing, selling, and reinvesting in securities held in the account.
- Monitoring the performance of all selected assets.
- Voting proxies, if applicable.
- Recommending changes to any of the above.

- Periodically reviewing the suitability of the investments, being available to meet with the committee at least once each year, and being available at such other times within reason at your request.
- Preparing and presenting appropriate reports.
- Informing the committee if changes occur in personnel that are responsible for portfolio management or research.

Acknowledgement and Acceptance

I/We being the Plan Sponsor with responsibility for the account(s) held on behalf of the Plan Sponsor specified below, designate Investment Manager as having the investment discretion and management responsibility indicated in relation to all assets of the Plan or specified Account. If such designation is set forth in the Plan/trust, I/We hereby confirm such designation as Investment Manager.

I have read the Investment Guidelines Document, and confirm the accuracy of it, including the terms and conditions under which the assets in this account are to be held, managed, and disposed of by Investment Manager. This Investment Guidelines Document supersedes all previous versions of an Investment Guidelines Document or investment objective instructions that may have been executed for this account.


 Plan Sponsor: Municipal Water District of Orange County Date: 7.10.14

 Plan Sponsor: Municipal Water District of Orange County Date: _____


 Investment Manager: Ahmed Khatib, CFA, CFP[®], (949) 553-2591 Date: 7/18/14

PARS DIVERSIFIED PORTFOLIOS CONSERVATIVE

Q2 2017

WHY THE PARS DIVERSIFIED CONSERVATIVE PORTFOLIO?

Comprehensive Investment Solution

HighMark® Capital Management, Inc.'s (HighMark) diversified investment portfolios are designed to balance return expectations with risk tolerance. Key features include: sophisticated asset allocation and optimization techniques, four layers of diversification (asset class, style, manager, and security), access to rigorously screened, top tier money managers, flexible investment options, and experienced investment management.

Rigorous Manager Due Diligence

Our manager review committee utilizes a rigorous screening process that searches for investment managers and styles that have not only produced above-average returns within acceptable risk parameters, but have the resources and commitment to continue to deliver these results. We have set high standards for our investment managers and funds. This is a highly specialized, time consuming approach dedicated to one goal: competitive and consistent performance.

Flexible Investment Options

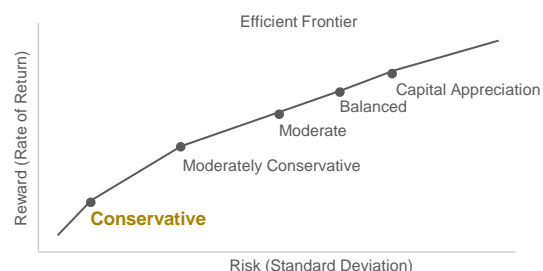
In order to meet the unique needs of our clients, we offer access to flexible implementation strategies: HighMark Plus utilizes actively managed mutual funds while Index Plus utilizes index-based securities, including exchange-traded funds. Both investment options leverage HighMark's active asset allocation approach.

Risk Management

The portfolio is constructed to control risk through four layers of diversification – asset classes (cash, fixed income, equity), investment styles (large cap, small cap, international, value, growth), managers and securities. Disciplined mutual fund selection and monitoring process helps to drive return potential while reducing portfolio risk.

INVESTMENT OBJECTIVE

To provide a consistent level of inflation-protected income over the long-term. The major portion of the assets will be fixed income related. Equity securities are utilized to provide inflation protection.



ASSET ALLOCATION — CONSERVATIVE PORTFOLIO

	Strategic Range	Policy	Tactical
Equity	5 – 20%	15%	15%
Fixed Income	60 – 95%	80%	79%
Cash	0 – 20%	5%	6%

ANNUALIZED TOTAL RETURNS (Gross of Investment Management Fees, but Net of Embedded Fund Fees)

HighMark Plus (Active)

Current Quarter*	1.92%
Blended Benchmark**	1.41%
Year To Date	3.83%
Blended Benchmark	2.85%
1 Year	3.85%
Blended Benchmark	2.88%
3 Year	2.99%
Blended Benchmark	2.82%
5 Year	3.96%
Blended Benchmark	3.46%
10 Year	4.33%
Blended Benchmark	3.91%

Index Plus (Passive)

Current Quarter*	1.63%
Blended Benchmark**	1.41%
Year To Date	3.09%
Blended Benchmark	2.85%
1 Year	2.54%
Blended Benchmark	2.88%
3 Year	2.64%
Blended Benchmark	2.82%
5 Year	3.51%
Blended Benchmark	3.46%
10 Year	3.86%
Blended Benchmark	3.91%

* Returns less than 1-year are not annualized. **Breakdown for Blended Benchmark: 7.5% S&P500, 1.5% Russell Mid Cap, 2.5% Russell 2000, 1% MSCI EM FREE, 2% MSCI EAFE, 52.25% BC US Agg, 25.75% ML 1-3 Yr US Corp/Gov't, 2% US High Yield Master II, 0.5% Wilshire REIT, and 5% Citi 1 Mth T-Bill. Prior to October 2012, the blended benchmarks were 12% S&P 500; 1% Russell 2000, 2% MSCI EAFE, 40% ML 1-3 Year Corp/Gov't, 40% BC Agg, 5% Citi 1 Mth T-Bill. Prior to April 2007, the blended benchmarks were 15% S&P 500, 40% ML 1-3Yr Corp/Gov, 40% BC Agg, and 5% Citi 1 Mth T-Bill.

ANNUAL RETURNS

HighMark Plus (Active)

2008	-9.04%
2009	15.59%
2010	8.68%
2011	2.19%
2012	8.45%
2013	3.69%
2014	3.88%
2015	0.29%
2016	4.18%

Index Plus (Passive)

2008	-6.70%
2009	10.49%
2010	7.67%
2011	3.70%
2012	6.22%
2013	3.40%
2014	4.32%
2015	0.06%
2016	3.75%

PORTFOLIO FACTS

HighMark Plus (Active)

Inception Date	07/2004
No of Funds in Portfolio	19

Index Plus (Passive)

Inception Date	07/2004
No of Funds in Portfolio	13

HOLDINGS

HighMark Plus (Active)

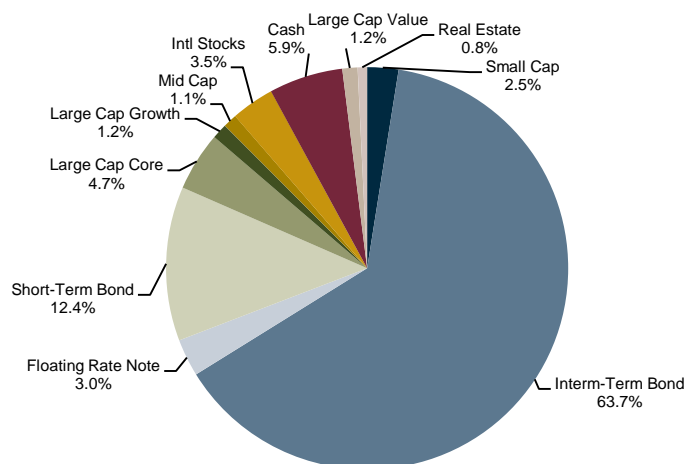
COLUMBIA CONTRARIAN CORE-Z
VANGUARD GROWTH & INCOME-ADM
DODGE & COX STOCK FUND
HARBOR CAPITAL APPRECIA-RET
T ROWE PR GROWTH STOCK-I
ISHARES RUSSELL MID-CAP ETF
VANGUARD REIT ETF
UNDISC MGRS BEHAV VAL-L
T ROWE PR NEW HORIZONS-I
NATIONW BAILRD INT EQ-INST
DODGE & COX INTL STOCK FUND
MFS INTL GROWTH-I
HRTFRD SCHR EM MRKT EQ-Y
VANGUARD S/T INVEST GR-ADM
PIMCO TOTAL RETURN FUND-INST
PRUDENTIAL TOTAL RETRN BND-Q
NATIONW HIGHMARK BND-INS SRV
EATON VAN FL RT & HI INC-INS
FIRST AM GOV OBLIG-Z

Index Plus (Passive)

ISHARES CORE S&P 500 ETF
ISHARES S&P 500 VALUE ETF
ISHARES S&P 500 GROWTH ETF
ISHARES RUSSELL MID-CAP ETF
VANGUARD REIT ETF
ISHARES RUSSELL 2000 VALUE E
ISHARES RUSSELL 2000 GROWTH
ISHARES MSCI EAFE ETF
VANGUARD FTSE EMERGING MARKE
VANGUARD S/T INVEST GR-ADM
ISHARES CORE U.S. AGGREGATE
POWERSHARES SENIOR LOAN
FIRST AM GOV OBLIG-Z

Holdings are subject to change at the discretion of the investment manager.

STYLE



The performance records shown represent size-weighted composites of tax exempt accounts that meet the following criteria: Composites are managed by HighMark's HighMark Capital Advisors (HCA) with full investment authority according to the PARS Conservative active and passive objectives and do not have equity concentration of 25% or more in one common stock security.

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Blended benchmarks represent HighMark's strategic allocations between equity, fixed income, and cash and are rebalanced monthly. Benchmark returns do not reflect the deduction of advisory fees or other expenses of investing but assumes the reinvestment of dividends and other earnings. An investor cannot invest directly in an index. The unmanaged S&P 500 Index is representative of the performance of large companies in the U.S. stock market. The MSCI EAFE Index is a free float-adjusted market capitalization index designed to measure developed market equity performance, excluding the U.S. and Canada. The MSCI Emerging Markets Free Index is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. The Russell Midcap Index measures the performance of the mid-cap segment of the U.S. equity universe. The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe. The US High Yield Master II Index tracks the performance of below investment grade U.S. dollar-denominated corporate bonds publicly issued in the U.S. domestic market. Wilshire REIT index measures U.S. publicly traded Real Estate Investment Trusts. The unmanaged Bloomberg Barclays Capital (BC) U.S. Aggregate Bond Index is generally representative of the U.S. taxable bond market as a whole. The Merrill Lynch (ML) 1-3 Year U.S. Corporate & Government Index tracks the bond performance of The ML U.S. Corporate & Government Index, with a remaining term to final maturity less than 3 years. The unmanaged Citigroup 1-Month Treasury Bill Index tracks the yield of the 1-month U.S. Treasury Bill.

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Asset Allocation Committee

Number of Members: 16
Average Years of Experience: 26
Average Tenure (Years): 13

Manager Review Group

Number of Members: 8
Average Years of Experience: 19
Average Tenure (Years): 7

PARS DIVERSIFIED PORTFOLIOS MODERATELY CONSERVATIVE

Q2 2017

WHY THE PARS DIVERSIFIED MODERATELY CONSERVATIVE PORTFOLIO?

Comprehensive Investment Solution

HighMark® Capital Management, Inc.'s (HighMark) diversified investment portfolios are designed to balance return expectations with risk tolerance. Key features include: sophisticated asset allocation and optimization techniques, four layers of diversification (asset class, style, manager, and security), access to rigorously screened, top tier money managers, flexible investment options, and experienced investment management.

Rigorous Manager Due Diligence

Our manager review committee utilizes a rigorous screening process that searches for investment managers and styles that have not only produced above-average returns within acceptable risk parameters, but have the resources and commitment to continue to deliver these results. We have set high standards for our investment managers and funds. This is a highly specialized, time consuming approach dedicated to one goal: competitive and consistent performance.

Flexible Investment Options

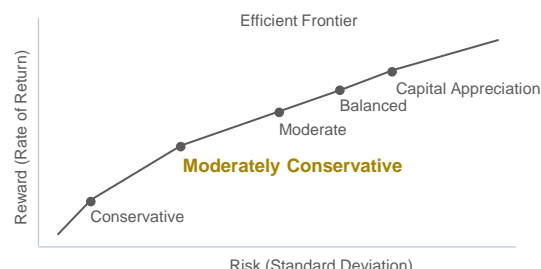
In order to meet the unique needs of our clients, we offer access to flexible implementation strategies: HighMark Plus utilizes actively managed mutual funds while Index Plus utilizes index-based securities, including exchange-traded funds. Both investment options leverage HighMark's active asset allocation approach.

Risk Management

The portfolio is constructed to control risk through four layers of diversification – asset classes (cash, fixed income, equity), investment styles (large cap, small cap, international, value, growth), managers and securities. Disciplined mutual fund selection and monitoring process helps to drive return potential while reducing portfolio risk.

INVESTMENT OBJECTIVE

To provide current income and moderate capital appreciation. The major portion of the assets is committed to income-producing securities. Market fluctuations should be expected.



ASSET ALLOCATION — MODERATELY CONSERVATIVE PORTFOLIO

	Strategic Range	Policy	Tactical
Equity	20 - 40%	30%	30%
Fixed Income	50 - 80%	65%	67%
Cash	0 - 20%	5%	3%

ANNUALIZED TOTAL RETURNS (Gross of Investment Management Fees, but Net of Embedded Fund Fees)

HighMark Plus (Active)

Current Quarter*	2.32%
Blended Benchmark**	1.85%
Year To Date	5.06%
Blended Benchmark	4.10%
1 Year	6.67%
Blended Benchmark	5.50%
3 Year	3.64%
Blended Benchmark	3.78%
5 Year	5.42%
Blended Benchmark	5.21%
10 Year	4.75%
Blended Benchmark	4.56%

Index Plus (Passive)

Current Quarter*	1.97%
Blended Benchmark**	1.85%
Year To Date	4.17%
Blended Benchmark	4.10%
1 Year	5.12%
Blended Benchmark	5.50%
3 Year	3.55%
Blended Benchmark	3.78%
5 Year	5.09%
Blended Benchmark	5.21%
10 Year	4.28%
Blended Benchmark	4.56%

* Returns less than 1-year are not annualized. **Breakdown for Blended Benchmark: 15.5% S&P500, 3% Russell Mid Cap, 4.5% Russell 2000, 2% MSCI EM FREE, 4% MSCI EAFE, 49.25% BC US Agg, 14% ML 1-3 Yr US Corp/Gov't, 1.75% US High Yield Master II, 1% Wilshire REIT, and 5% Citi 1 Mth T-Bill. Prior to October 2012, the blended benchmarks were 25% S&P 500; 1.5% Russell 2000, 3.5% MSCI EAFE, 25% ML 1-3 Year Corp./Gov't, 40% BC Agg, 5% Citi 1 Mth T-Bill. Prior to April 2007, the blended benchmarks were 30% S&P 500, 25% ML 1-3Yr Corp/Gov, 40% BC Agg, and 5% Citi 1 Mth T-Bill.

ANNUAL RETURNS

HighMark Plus (Active)

2008	-15.37%
2009	18.71%
2010	10.46%
2011	1.75%
2012	10.88%
2013	7.30%
2014	4.41%
2015	0.32%
2016	4.93%

Index Plus (Passive)

2008	-12.40%
2009	11.92%
2010	9.72%
2011	3.24%
2012	8.24%
2013	6.78%
2014	5.40%
2015	-0.18%
2016	5.42%

PORTFOLIO FACTS

HighMark Plus (Active)

Inception Data	08/2004
No of Funds in Portfolio	19

Index Plus (Passive)

Inception Data	05/2005
No of Funds in Portfolio	13

HOLDINGS

HighMark Plus (Active)

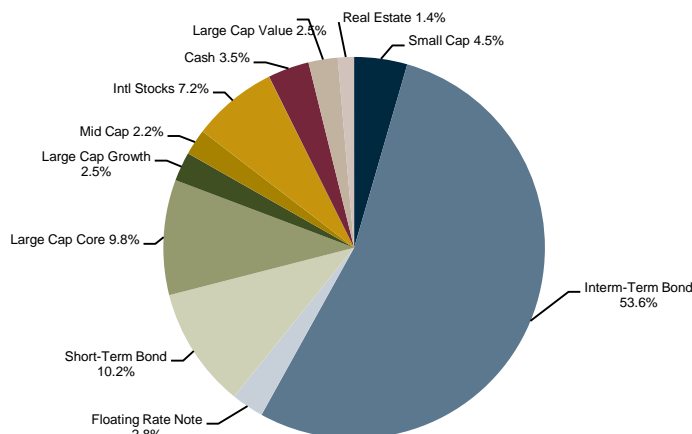
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MFS INTL GROWTH-I
HRTFRD SCHR EM MRKT EQ-Y
VANGUARD S/T INVEST GR-ADM
PIMCO TOTAL RETURN FUND-INST
PRUDENTIAL TOTAL RETRN BND-Q
NATIONW HIGHMARK BND-INS SRV
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FIRST AM GOV OBLIG-Z

Index Plus (Passive)

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ISHARES S&P 500 GROWTH ETF
ISHARES RUSSELL MID-CAP ETF
VANGUARD REIT ETF
ISHARES RUSSELL 2000 VALUE E
ISHARES RUSSELL 2000 GROWTH
ISHARES MSCI EAFE ETF
VANGUARD FTSE EMERGING MARKE
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PARS DIVERSIFIED PORTFOLIOS MODERATE

Q2 2017

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Comprehensive Investment Solution

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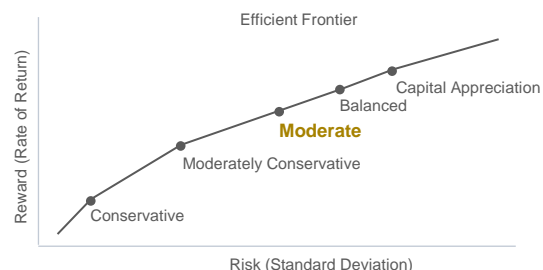
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INVESTMENT OBJECTIVE

To provide growth of principal and income. It is expected that dividend and interest income will comprise a significant portion of total return, although growth through capital appreciation is equally important.



ASSET ALLOCATION — MODERATE PORTFOLIO

	Strategic Range	Policy	Tactical
Equity	40 - 60%	50%	50%
Fixed Income	40 - 60%	45%	47%
Cash	0 - 20%	5%	3%

ANNUALIZED TOTAL RETURNS (Gross of Investment Management Fees, but Net of Embedded Fund Fees)

HighMark Plus (Active)

Current Quarter*	2.83%
Blended Benchmark**	2.30%
Year To Date	6.65%
Blended Benchmark	5.57%
1 Year	10.54%
Blended Benchmark	9.23%
3 Year	4.60%
Blended Benchmark	4.92%
5 Year	7.27%
Blended Benchmark	7.47%
10 Year	4.92%
Blended Benchmark	5.16%

Index Plus (Passive)

Current Quarter*	2.44%
Blended Benchmark**	2.30%
Year To Date	5.60%
Blended Benchmark	5.57%
1 Year	8.90%
Blended Benchmark	9.23%
3 Year	4.47%
Blended Benchmark	4.92%
5 Year	7.12%
Blended Benchmark	7.47%
10 Year	5.00%
Blended Benchmark	5.16%

* Returns less than 1-year are not annualized. **Breakdown for Blended Benchmark: 26.5% S&P500, 5% Russell Mid Cap, 7.5% Russell 2000, 3.25% MSCI EM FREE, 6% MSCI EAFE, 33.50% BC US Agg, 10% ML 1-3 Yr US Corp/Gov't, 1.50% US High Yield Master II, 1.75% Wilshire REIT, and 5% Citi 1 Mth T-Bill. Prior to October 2012, the blended benchmarks were 43% S&P 500; 2% Russell 2000, 5% MSCI EAFE, 15% ML 1-3 Year Corp./Govt, 30% BC Agg, 5% Citi 1 Mth T-Bill. Prior to April 2007, the blended benchmarks were 50% S&P 500, 15% ML 1-3Yr Corp/Gov, 30% BC Agg, and 5% Citi 1 Mth T-Bill.

ANNUAL RETURNS

HighMark Plus (Active)

2008	-22.88%
2009	21.47%
2010	12.42%
2011	0.55%
2012	12.25%
2013	13.06%
2014	4.84%
2015	0.14%
2016	6.44%

Index Plus (Passive)

2008	-18.14%
2009	16.05%
2010	11.77%
2011	2.29%
2012	10.91%
2013	12.79%
2014	5.72%
2015	-0.52%
2016	7.23%

PORTFOLIO FACTS

HighMark Plus (Active)

Inception Date	10/2004
No of Funds in Portfolio	19

Index Plus (Passive)

Inception Date	05/2006
No of Funds in Portfolio	13

HOLDINGS

HighMark Plus (Active)

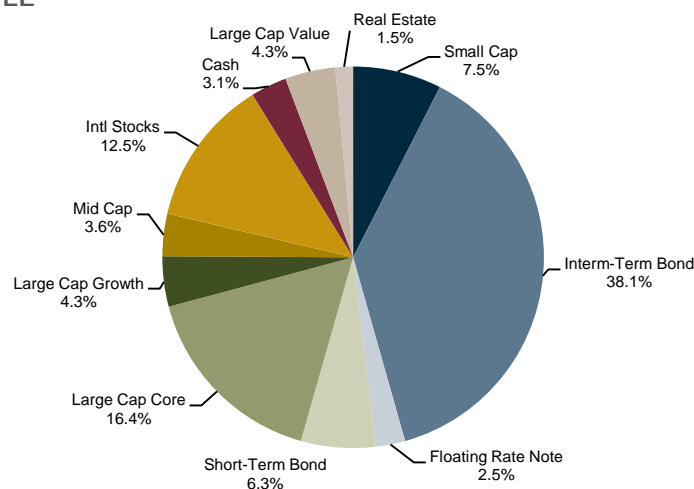
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PARS DIVERSIFIED PORTFOLIOS BALANCED

Q2 2017

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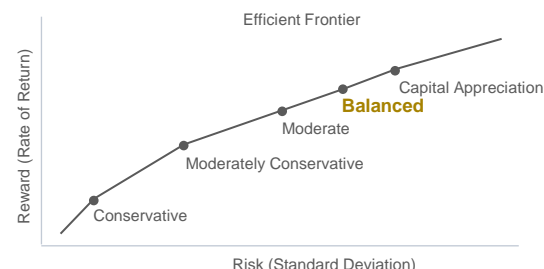
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Risk Management

The portfolio is constructed to control risk through four layers of diversification – asset classes (cash, fixed income, equity), investment styles (large cap, small cap, international, value, growth), managers and securities. Disciplined mutual fund selection and monitoring process helps to drive return potential while reducing portfolio risk.

INVESTMENT OBJECTIVE

To provide growth of principal and income. While dividend and interest income are an important component of the objective's total return, it is expected that capital appreciation will comprise a larger portion of the total return.



ASSET ALLOCATION — BALANCED PORTFOLIO

	Strategic Range	Policy	Tactical
Equity	50 – 70%	60%	60%
Fixed Income	30 – 50%	35%	37%
Cash	0 – 20%	5%	3%

ANNUALIZED TOTAL RETURNS (Gross of Investment Management Fees, but Net of Embedded Fund Fees)

HighMark Plus (Active)

Current Quarter*	3.19%
Blended Benchmark**	2.54%
Year To Date	7.68%
Blended Benchmark	6.34%
1 Year	12.65%
Blended Benchmark	11.13%
3 Year	4.97%
Blended Benchmark	5.49%
5 Year	8.31%
Blended Benchmark	8.61%
10 Year	4.99%
Blended Benchmark	5.50%

Index Plus (Passive)

Current Quarter*	2.66%
Blended Benchmark**	2.54%
Year To Date	6.32%
Blended Benchmark	6.34%
1 Year	10.83%
Blended Benchmark	11.13%
3 Year	4.92%
Blended Benchmark	5.49%
5 Year	8.13%
Blended Benchmark	8.61%
Inception to Date (117-Mos.)	4.91%
Blended Benchmark	5.42%

* Returns less than 1-year are not annualized. **Breakdown for Blended Benchmark: 32% S&P500, 6% Russell Mid Cap, 9% Russell 2000, 4% MSCI EM FREE, 7% MSCI EAFE, 27% BC US Agg, 6.75% ML 1-3 Yr US Corp/Gov't, 1.25% US High Yield Master II, 2% Wilshire REIT, and 5% Citi 1 Mth T-Bill. Prior to October 2012, the blended benchmarks were 51% S&P 500; 3% Russell 2000, 6% MSCI EAFE, 5% ML 1-3 Year Corp./Gov't, 30% BC Agg, 5% Citi 1 Mth T-Bill. Prior to April 2007, the blended benchmarks were 60% S&P 500, 5% ML 1-3Yr Corp/Gov, 30% BC Agg, and 5% Citi 1 Mth T-Bill.

ANNUAL RETURNS

HighMark Plus (Active)

2008	-25.72%
2009	21.36%
2010	14.11%
2011	-0.46%
2012	13.25%
2013	16.61%
2014	4.70%
2015	0.04%
2016	6.82%

Index Plus (Passive)

2008	-23.22%
2009	17.62%
2010	12.76%
2011	1.60%
2012	11.93%
2013	15.63%
2014	6.08%
2015	-0.81%
2016	8.26%

PORTFOLIO FACTS

HighMark Plus (Active)

Inception Data	10/2006
No of Funds in Portfolio	19

Index Plus (Passive)

Inception Data	10/2007
No of Funds in Portfolio	13

HOLDINGS

HighMark Plus (Active)

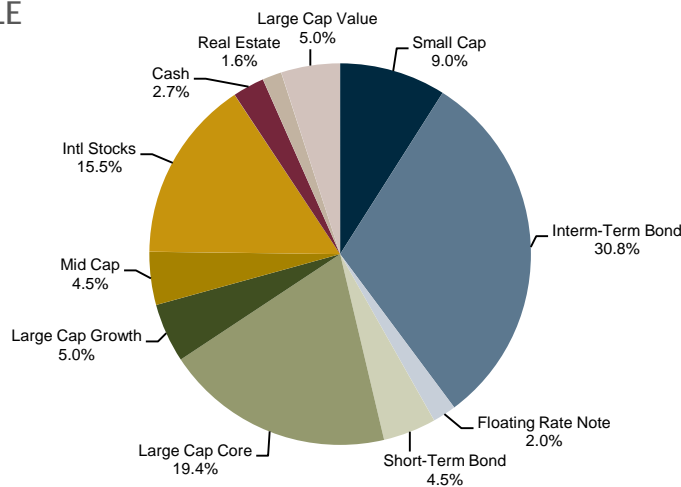
COLUMBIA CONTRARIAN CORE-Z
VANGUARD GROWTH & INCOME-ADM
DODGE & COX STOCK FUND
HARBOR CAPITAL APPRECIATION-RET
T ROWE PR GROWTH STOCK-I
ISHARES RUSSELL MID-CAP ETF
VANGUARD REIT ETF
UNDISC MGRS BEHAV VAL-L
T ROWE PR NEW HORIZONS-I
NATIONW BAILRD INT EQ-INST
DODGE & COX INTL STOCK FUND
MFS INTL GROWTH-I
HRTFRD SCHR EM MRKT EQ-Y
VANGUARD S/T INVEST GR-ADM
PIMCO TOTAL RETURN FUND-INST
PRUDENTIAL TOTAL RETRN BND-Q
NATIONW HIGHMARK BND-INS SRV
EATON VAN FL RT & HI INC-INS
FIRST AM GOV OBLIG-Z

Index Plus (Passive)

ISHARES CORE S&P 500 ETF
ISHARES S&P 500 VALUE ETF
ISHARES S&P 500 GROWTH ETF
ISHARES RUSSELL MID-CAP ETF
VANGUARD REIT ETF
ISHARES RUSSELL 2000 VALUE E
ISHARES RUSSELL 2000 GROWTH
ISHARES MSCI EAFE ETF
VANGUARD FTSE EMERGING MARKE
VANGUARD S/T INVEST GR-ADM
ISHARES CORE U.S. AGGREGATE
POWERSHARES SENIOR LOAN
FIRST AM GOV OBLIG-Z

Holdings are subject to change at the discretion of the investment manager.

STYLE



The performance records shown represent size-weighted composites of tax exempt accounts that meet the following criteria: Composites are managed by HighMark's HighMark Capital Advisors (HCA) with full investment authority according to the PARS Balanced active and passive objectives and do not have equity concentration of 25% or more in one common stock security.

The composite name has been changed from PARS Balanced/Moderately Aggressive to PARS Balanced on 5/1/2013. The adviser to the PARS portfolios is US Bank, and HighMark serves as sub-adviser to US Bank to manage these portfolios. US Bank may charge clients as much as 0.60% annual management fee based on a sliding scale. As of June 30, 2017, the blended rate is 0.58%. US Bank pays HighMark 60% of the annual management fee for assets sub-advised by HighMark under its sub-advisory agreement with US Bank. The 36 basis points paid to HighMark, as well as other expenses that may be incurred in the management of the portfolio, will reduce the portfolio returns. Assuming an investment for five years, a 5% annual total return, and an annual sub-advisory fee rate of 0.36% deducted from the assets at market at the end of each year, a 10 million initial value would grow to \$12.54 million after fees (Net-of-Fees) and \$12.76 million before fees (Gross-of-Fees). Additional information regarding the firm's policies and procedures for calculating and reporting performance results is available upon request. In Q1 2010, the PARS Composite definition was changed from \$750,000 minimum to no minimum. Performance results are calculated and presented in U.S. dollars and do not reflect the deduction of investment advisory fees, custody fees, or taxes but do reflect the deduction of trading expenses. Returns are calculated based on trade-date accounting.

Blended benchmarks represent HighMark's strategic allocations between equity, fixed income, and cash and are rebalanced monthly. Benchmark returns do not reflect the deduction of advisory fees or other expenses of investing but assumes the reinvestment of dividends and other earnings. An investor cannot invest directly in an index. The unmanaged S&P 500 Index is representative of the performance of large companies in the U.S. stock market. The MSCI EAFE Index is a free float-adjusted market capitalization index designed to measure developed market equity performance, excluding the U.S. and Canada. The MSCI Emerging Markets Free Index is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. The Russell Midcap Index measures the performance of the mid-cap segment of the U.S. equity universe. The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe. The US High Yield Master II Index tracks the performance of below investment grade U.S. dollar-denominated corporate bonds publicly issued in the U.S. domestic market. Wilshire REIT index measures U.S. publicly traded Real Estate Investment Trusts. The unmanaged Bloomberg Barclays Capital (BC) U.S. Aggregate Bond Index is generally representative of the U.S. taxable bond market as a whole. The Merrill Lynch (ML) 1-3 Year U.S. Corporate & Government Index tracks the bond performance of The ML U.S. Corporate & Government Index, with a remaining term to final maturity less than 3 years. The unmanaged Citigroup 1-Month Treasury Bill Index tracks the yield of the 1-month U.S. Treasury Bill.

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Education: BA, International Christian University, Tokyo

Anne Wimmer, CFA®

Senior Portfolio Manager
Investment Experience: since 1987
HighMark Tenure: since 2007
Education: BA, University of California, Santa Barbara

Asset Allocation Committee

Number of Members: 16
Average Years of Experience: 26
Average Tenure (Years): 13

Manager Review Group

Number of Members: 8
Average Years of Experience: 19
Average Tenure (Years): 7

PARS DIVERSIFIED PORTFOLIOS CAPITAL APPRECIATION

Q2 2017

WHY THE PARS DIVERSIFIED CAPITAL APPRECIATION PORTFOLIO?

Comprehensive Investment Solution

HighMark® Capital Management, Inc.'s (HighMark) diversified investment portfolios are designed to balance return expectations with risk tolerance. Key features include: sophisticated asset allocation and optimization techniques, four layers of diversification (asset class, style, manager, and security), access to rigorously screened, top tier money managers, flexible investment options, and experienced investment management.

Rigorous Manager Due Diligence

Our manager review committee utilizes a rigorous screening process that searches for investment managers and styles that have not only produced above-average returns within acceptable risk parameters, but have the resources and commitment to continue to deliver these results. We have set high standards for our investment managers and funds. This is a highly specialized, time consuming approach dedicated to one goal: competitive and consistent performance.

Flexible Investment Options

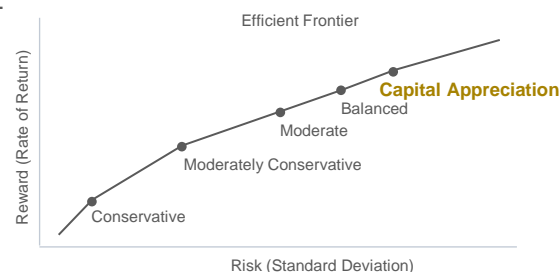
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Risk Management

The portfolio is constructed to control risk through four layers of diversification – asset classes (cash, fixed income, equity), investment styles (large cap, small cap, international, value, growth), managers and securities. Disciplined mutual fund selection and monitoring process helps to drive return potential while reducing portfolio risk.

INVESTMENT OBJECTIVE

The primary goal of the Capital Appreciation objective is growth of principal. The major portion of the assets are invested in equity securities and market fluctuations are expected.



ASSET ALLOCATION — CAPITAL APPRECIATION PORTFOLIO

	Strategic Range	Policy	Tactical
Equity	65 - 85%	75%	75%
Fixed Income	10 - 30%	20%	23%
Cash	0 - 20%	5%	2%

ANNUALIZED TOTAL RETURNS (Gross of Investment Management Fees, but Net of Embedded Fund Fees)

Current Quarter*	3.11%
Blended Benchmark**	2.96%
Year To Date	7.73%
Blended Benchmark	7.63%
1 Year	14.19%
Blended Benchmark	14.11%
3 Year	5.64%
Blended Benchmark	6.14%
5 Year	9.67%
Blended Benchmark	10.15%
Inception to Date (102-Mos.)	10.53%
Blended Benchmark	11.32%

* Returns less than 1-year are not annualized. **Breakdown for Blended Benchmark: 39.5% S&P500, 7.5% Russell Mid Cap, 10.5% Russell 2000, 5.25% MSCI EM FREE, 10.25% MSCI EAFE, 16% BC US Agg, 3% ML 1-3 Yr US Corp/Gov't, 1% US High Yield Master II, 2% Wilshire REIT, and 5% Citi 1 Mth T-Bill.

ANNUAL RETURNS

2008	N/A%
2009	23.77%
2010	12.95%
2011	-1.35%
2012	13.87%
2013	20.33%
2014	6.05%
2015	-0.27%
2016	8.81%

PORTFOLIO FACTS

HighMark Plus (Active)		Index Plus (Passive)	
Inception Data	01/2009	Inception Data	N/A
No of Funds in Portfolio	19	No of Funds in Portfolio	13

HOLDINGS

HighMark Plus (Active)

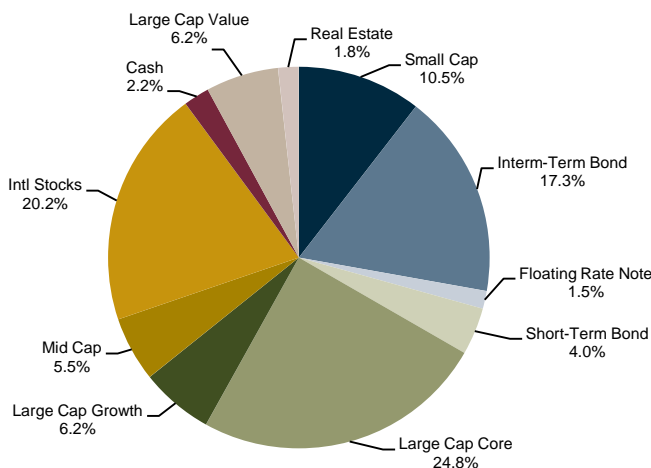
COLUMBIA CONTRARIAN CORE-Z
VANGUARD GROWTH & INCOME-ADM
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NATIONW BAILRD INT EQ-INST
DODGE & COX INTL STOCK FUND
MFS INTL GROWTH-I
HRTFRD SCHR EM MRKT EQ-Y
VANGUARD S/T INVEST GR-ADM
PIMCO TOTAL RETURN FUND-INST
PRUDENTIAL TOTAL RETRN BND-Q
NATIONW HIGHMARK BND-INS SRV
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Average Tenure (Years): 7

Municipal Water District of Orange County
Obsolete, Nonfunctional Fixed Asset to be Written-off
 Date 6/30/17

Asset Nbr	Group Nbr	Acquisition Date	Vendor	Asset Description	Cost	Life	Accumulated Depreciation	Book Value	
<u>Furniture & Fixtures</u>									
1037	200	6/30/1983	CALIFORNIA MAP CENTER	NYSTROM RAISED RELIEF MAP, CA	152.50	5.00	152.50	0.00	Donated to Salvation Army on 9/7/16
1081	200	5/24/1989	ORANGE COUNTY OFFICE FURN	VENEER BOOKCASE, WALNUT	159.00	5.00	159.00	0.00	Donated to Salvation Army on 9/7/16
1143	200	3/5/1992	CALIFORNIA BUSINESS INTER	3 BOOKCASES WHINGE DRS WALNUT	1,352.96	5.00	1,352.96	0.00	Donated to Salvation Army on 9/7/16
1189	200	9/18/1997	WESTFALL INTERIOR SYSTEMS	OFFICE CHAIR MULTIFUNC, HEATHR	274.76	5.00	274.76	0.00	Donated to Salvation Army on 9/7/16
1017	200	2/28/1971		ALMA EXECUTIVE DESK	778.05	10.00	778.05	0.00	Donated to Salvation Army on 10/17/16
1029	200	10/5/1979		ANDERSON CREDENZA	232.99	10.00	232.99	0.00	Donated to Salvation Army on 10/17/16
1162	200	7/28/1994	CITY OFFICE FURNITURE INC	BOOKCASE, WALNUT	173.34	5.00	173.34	0.00	Disposed of on 12/2/16
1209	200	6/30/2002	Systems Source	L-Shaped Desk, Cordovan color	2,001.31	5.00	2,001.31	0.00	Disposed of on 12/15/16
1138	200	1/30/1992	CALIFORNIA BUSINESS INTER	1 BLUE METAL BOOKCASES	209.99	5.00	209.99	0.00	Disposed
1138	200	1/30/1992	CALIFORNIA BUSINESS INTER	3 BLUE METAL BOOKCASES	629.97	5.00	629.97	0.00	Donated to ReStore on 1/31/17
1199	200	5/30/1999	WESTERN DATA GROUP INC	WORKSTATION IN COMPUTER ROOM	2,930.12	5.00	2,930.12	0.00	Disposed of by SPS Data Comm on 2/18/17
1033	200	1/1/1981	DAVIS STATIONERS	WALL UNIT: 2 OPEN, 1 W/2 DOORS	134.62	10.00	134.62	0.00	Donated week of 5/9/17
1044	200	5/31/1984	ORANGE COUNTY OFFICE FURN	2 HOLGA 2-RW LEGAL FILE, BLK	503.38	5.00	503.38	0.00	Donated week of 5/9/17
1083	200	7/18/1989	SOUTH COAST STATION	COMPUTER TBL, WALNUT, BLK LEGS	316.41	5.00	316.41	0.00	Donated week of 5/9/17
1120	200	6/30/1991	ORANGE COUNTY WATER DISTR	DESK, WALNUT/PUTTY	125.00	5.00	125.00	0.00	Donated week of 5/9/17
1184	200	4/3/1997	OFFICE DEPOT	4 DRW LATERAL FILE CABINET, GRY	566.73	5.00	566.73	0.00	Donated week of 5/9/17
1090	200	3/19/1990	SOUTH COAST STATION	COMPUTER TBL, WALNUT, BLK LEGS	276.25	5.00	276.25	0.00	Donated to ReStore on 5/11/17
1012	200	6/12/1975	CENTRAL OFFICE SUPPLY	2-HOLGA 4 DRW LEGAL FILES, BLK	299.98	15.00	299.98	0.00	Given to OCWD on 5/16/17
1014	200	6/30/1971	Eastman Inc.	HOLGA 4 DRW LEGAL FILE CAB, BLK	84.11	10.00	84.11	0.00	Given to OCWD on 5/16/17
1015	200	3/31/1971	Eastman Inc.	HOLGA 4 DRW LEGAL FILE CAB, BLK	84.11	10.00	84.11	0.00	Given to OCWD on 5/16/17
1023	200	9/21/1978	TIDE OFFICE SUPPLY	HOLGA 4 DRW LEGAL FILE CAB, BLK	200.55	10.00	200.55	0.00	Given to OCWD on 5/16/17
1036	200	7/31/1981	DAVIS STATIONERS	HOLGA 4 DRW LEGAL FILE CAB, BLK	190.80	5.00	190.80	0.00	Given to OCWD on 5/16/17
1080	200	5/24/1989	ORANGE COUNTY OFFICE FURN	4 DRW LEGAL FILE CAB, BLK	227.89	5.00	227.89	0.00	Given to OCWD on 5/16/17
1132	200	1/17/1992	ORANGE COUNTY OFFICE FURN	4 DRW LEGAL FILE CABINET, BLACK	244.43	5.00	244.43	0.00	Given to OCWD on 5/16/17
1098	200	3/30/1990	ORANGE COUNTY OFFICE FURN	BOOKCASE, WALNUT	179.56	5.00	179.56	0.00	Disposed of on 6/30/17
				Total Furniture & Fixtures	12,328.81		12,328.81	0.00	
<u>Equipment</u>									
3014	300	7/5/1989	SOUTH COAST STATION	TV/VCR STAND W/CABINET	224.19	5.00	224.19	0.00	Donated to Salvation Army on 9/7/16
				Total Equipment	224.19		224.19	0.00	
<u>Computer Equipment</u>									
				Total Computer Equipment	0.00		0.00	0.00	
<u>WEROC Equipment</u>									
				Total WEROC Equipment	0.00		0.00	0.00	
				Total Write-offs	12,553.00		12,553.00	0.00	

Approval to write-off

Hilary Chumplazi
 Hilary Chumplazi, Accounting Manager

Robert J. Hunter
 Robert J. Hunter, General Manager

8/22/17
 Date

8-24-17
 Date

**Administration Activities Report
September 7, 2017 to October 5, 2017**

Activity	Summary
Administration/Board	<p>Staff worked on the following:</p> <ul style="list-style-type: none"> • Scheduling meetings for Rob Hunter and other various meetings of the Board members. • Assisted Rob/Karl with various write ups and follow-up for the Committees and Board. • Sent the Water Supply Reports to the member agencies. • Responded to two Public Records Act requests. • Assisting management staff with District policy and procedures. • Review District Agreements for appropriate procedures/processes. • Prepare all of the necessary logistics for the upcoming Elected Officials Forum, including letters and emails to agencies • Assisted with the logistics for sending letters to San Diego agencies • Contact vendors/contractors whose insurance certificates are close to expiration • Researched the lowest cost off site location for the Special Board meeting and is in the process of finalizing the contract with the Great Wolf Lodge • Schedule meetings for Rob, Karl, and Harvey, MET Directors' luncheon meeting, OC MET Managers, MWDOC Managers and ordering lunches for several meetings. • Proofed documents for Public Affairs. • Registered staff and board members for conferences and events; scheduled travel for AMWA, AWWA, CCEEB; CED; ACC-OC State Advocacy; ACWA State Leg. Comm.; DC legislative initiatives, ACWA Federal Affairs Committee; CalWEP; WaterSmart Innovations Conf.; and other misc. travel and/or workshops, which includes preparation of purchase requisitions and back-up. • Assisted in scheduling meetings with the Board and the Board of Supervisors on support for WaterFix.
MWDOC/OCWD Joint Administration	<ul style="list-style-type: none"> • No new information.
Health Benefits	<ul style="list-style-type: none"> • Flu shots are scheduled for October 12th, in conjunction with Walgreens and Orange County Water District. As well as staff participation in the OCWD Health Fair, also on October 12th. • Review of Health benefits information for 2018 continues and plan highlights will be provided to staff and Board by October 17th.

Records Management	<p>Staff attended a records management software conference on September 28th in Riverside. The information received will be helpful in evaluating processes for the next phase of migrating the electronic files to the records repository.</p> <ul style="list-style-type: none"> • Staff conducted short records management training sessions with the newer District employees.
CalPERS	<p>Staff attended a CalPERS retirement planning seminar on September 16th and Katie is scheduled to attend on October 14th. This is beneficial in learning more about CalPERS Retirement benefits, as well as Social Security and Medicare.</p>
Agency Inquiries	<ul style="list-style-type: none"> • Responded to Castaic Lake Water Agency's compensation and benefits survey.
Recruitment /Departures	<ul style="list-style-type: none"> • Recruitment efforts are underway for the following positions: • Public Affairs Assistant, the pre-employment screening process is currently underway and it is anticipated the candidate will begin on October 23. • Public Affairs Manager Jonathan Volzke resigned effective September 29th to pursue a position with the City of Lake Forest. • Staff is currently evaluating the vacant Public Affairs position in preparation for recruitment efforts. • Recruitments are underway for Water Use Efficiency and Engineering Intern positions.
Other	
Projects and Activities	<ul style="list-style-type: none"> • The RFP for Architectural, Space Planning, Interior Design and Construction Administration Services was released on October 4th and will be due on October 30th. A site walk thru is scheduled for October 16th. • The landscape and irrigation work was completed on October 3rd. The hardscape work is anticipated to be completed within approximately one month. • Staff is seeking bids for painting of the wood trellis as well as the window mullions in the atrium area. • Staff is finalizing the Agreement with Ralph Andersen and Associates and will be holding a teleconference to review and finalize proposed work for the comprehensive salary and benefits study. • The Database Coordinator continues making progress in cleanup of the ACT Database. Approximately 3,000 obsolete records have been removed to date. • Staff is coordinating with the contractor on the final details for installation of conference room glass doors in the lobby. • Staff is coordinating with the Board President on preparing for the General Manager's evaluation process in accordance with District guidelines.

Projects and Activities (continued)	<ul style="list-style-type: none">• Staff completed a General Manager's survey for the Board President and the Boards review. It will also be distributed to member agencies.• Census information was provided to two vendors for life and long term disability insurance. This information will be reviewed and presented to the Board in November.• The staff holiday luncheon is scheduled for December 20.• Remaining District holidays for 2017 are November 10, 23 and 24 and December 25 and 26.• HR Member Agency Meeting was held at MWDOC offices on September 14th.• Staff met with Auditor on September 19th to discuss internal HR processes and procedures.• Staff attended monthly WEROC Training on September 25.
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INFORMATION ITEM

October 11, 2017

TO: **Administration & Finance Committee**
(Directors Thomas, Barbre, Finnegan)

FROM: Robert J. Hunter, General Manager

Staff Contact: Jeff Stalvey

SUBJECT: **Finance and IT Pending Items Report**

SUMMARY

The following list details the status of special projects that are in-progress or to be completed during FY 2017-18.

Description	% of Completion	Estimated Completion date	Status
<u>Finance</u>			
Further Implementation of WUE Landscape Programs Databases and Web Site.	On-going	On-going	In Progress
Government Compensation in California Report 2017	0%	03-30-18	Not Started
State Controller Report preparation FY16-17	0%	11-30-17	Not Started
Tax filing for Water Facilities FY16-17	100%	11-30-17	Completed
Fiscal Year 2016/17 Annual Audit by Vazquez CPA	80%	11-02-17	Auditor Review
Annual Financial Statement Report FY16-17	90%	11-02-17	Auditor Review
Preparation of documents for FY18-19 budget process.	0%	5-31-18	Not Started
Working with Davis Farr to write our grant policy to comply with audit guidelines	99%	10-31-17	In Review
2017 W-9 collection for water rebates. Currently holding 1 June and 4 September rebate checks, awaiting a completed W-9 form	On-going	On-going	In Progress
<u>Information Technology</u>			
Network security issues (hackers, viruses and spam emails)	On-going	On-going	Continuous system monitoring

Purchase and upgrade DATA Server.	65%	12/31/17	In Progress
Purchase and implement Intrusion detection and prevention for District Network.	0%	6/30/17	Not Started
Purchase and implement 2 Cisco Power Over Ethernet switches and Cisco Router into existing Network.	10%	3/31/17	In Progress
Implement Backups and Disaster Recovery for VOIP telephone System.	10%	3/31/17	In Progress

Description	% of Completion	Estimated Completion date	Status
<u>FY 2017-18 Completed Special Tasks</u>			
<u>Finance</u>			
<u>Information Technology</u>			
Purchase and implement 2 UPS units for IT Server room.	100%	9/30/17	Completed



INFORMATION ITEM

October 11, 2017

TO: **Administration & Finance Committee**
(Directors Thomas, Osborne, Finnegan)

FROM: Robert Hunter, General Manager

Staff Contact: Kevin Hostert

SUBJECT: Monthly Water Usage Data, Tier 2 Projection, and Water Supply Info.

STAFF RECOMMENDATION

Staff recommends the Administration & Finance Committee receive and file this information.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

REPORT

The attached figures show the recent trend of water consumption in Orange County (OC), an estimate of Tier 2 volume for MWDOC, and selected water supply information.

- Fig. 1 OC Water Usage, Monthly by Supply MWD imported water was the main supply in August, imported usage has increased due to the In Lieu program.
- Fig. 2 OC Water Usage, Monthly, Comparison to Previous Years Water usage in August 2017 was below average compared to the last 5 years but was higher than in August of 2015 but less than July 2016. We are seeing a slight increase in overall water usage compared to the historical lows of the 2015-16 Fiscal Year. In June 2016, all water conservation became voluntary for MWDOC agencies and the Great California Drought was declared over by the Governor in April 2017.
- Fig. 3 Historical OC Water Consumption The Fiscal Year is very new but OC water consumption is projected to be 550,000 AF in FY 2017-18 (*this includes ~15 TAF of agricultural usage and non-retail water agency usage*). This is about 25,000 AF more than FY 2016-17 and is about 58,000 AF more than FY 2015-16 (During the SWRCB mandatory water restrictions). Water usage per person is projected to be slightly higher than in FY 2017-18 for Orange County at 148

Budgeted (Y/N): N	Budgeted amount: N/A	Core <u>X</u>	Choice <u> </u>
Action item amount: N/A	Line item:		
Fiscal Impact (explain if unbudgeted):			

gallons per day (This includes recycled water). Although OC population has increased 20% over the past two decades, water usage has not increased, on average. A long-term decrease in per-capita water usage is attributed mostly to Water Use Efficiency (water conservation) efforts.

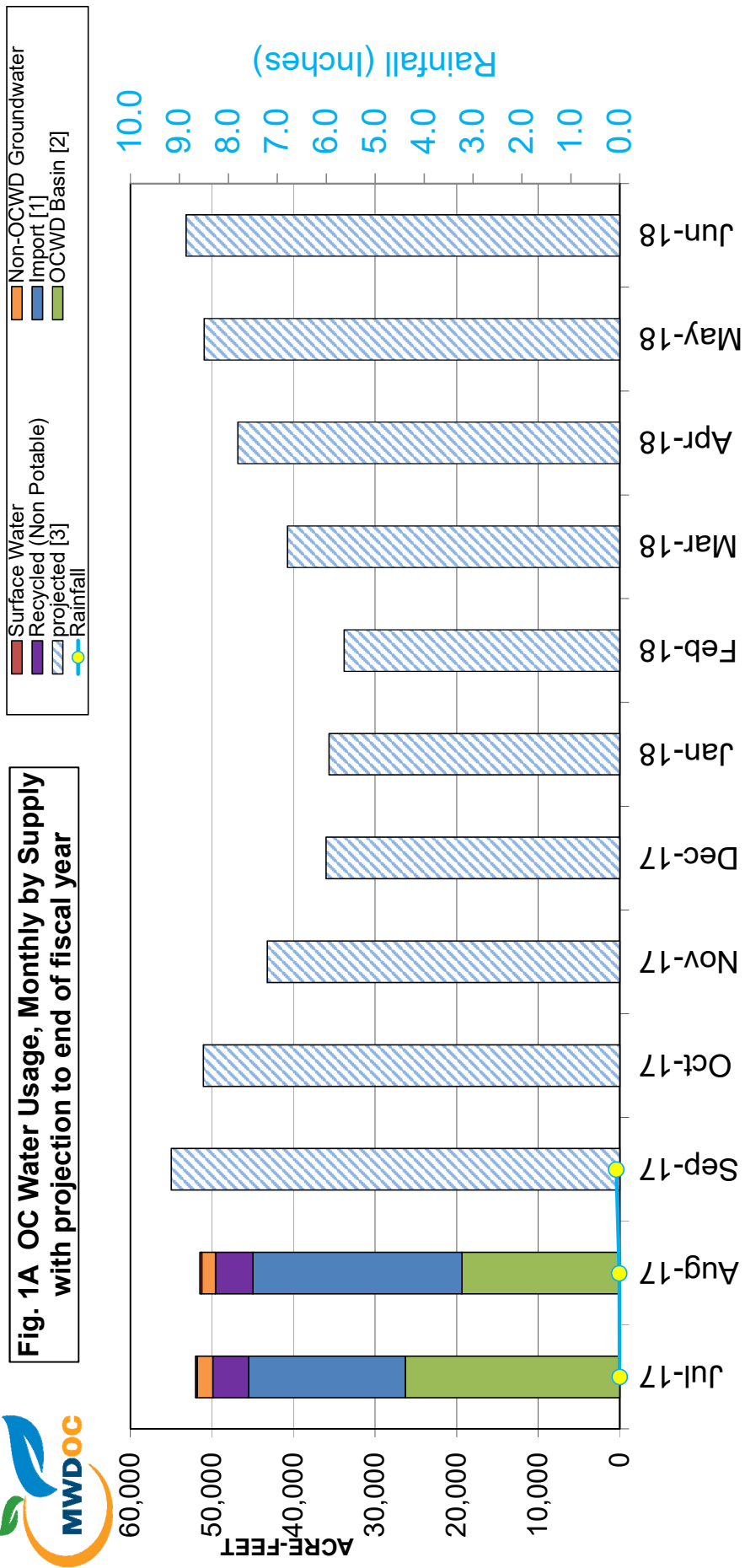
MWDOC “Firm” Water Purchases, 2016 “Firm” water above the Tier 1 limit will be charged at the higher Tier 2 rate. Tier 2 purchases are zero in 2017.

Water Supply Information Includes data on Rainfall in OC; the OCWD Basin overdraft; Northern California and Colorado River Basin hydrologic data; the State Water Project (SWP) Allocation, and regional storage volumes. The data have implications for the magnitude of supplies from the three watersheds that are the principal sources of water for OC. Note that a hydrologic year is Oct. 1st through Sept. 30th.

- Orange County’s accumulated rainfall through October was average for this period. Orange County saw rainfall 8 inches above normal in WY 2017.
- Northern California accumulated precipitation through October was around 0% of normal for this period. Water Year 2017 was the wettest water year on record. The Northern California snowpack was 195% of normal as of May 26th. The State of California was in a declared Drought Emergency that started January 2014 and just recently ended in April of 2017. As of early October, only 8% of California is still suffering from moderate or severe drought. The State Water Project Contractors Table A Allocation was set at 85% as of the end of April.
- Colorado River Basin accumulated precipitation through October was 0% average for this period. The Upper Colorado Basin snowpack was 152% of normal as of May 22nd. The Colorado River Basin saw above average conditions in WY 2017 but the region has been still trying to rebound from the previous long term drought. Lake Mead and Lake Powell combined have about 68% of their average storage volume for this time of year. If Lake Mead’s level falls below a “trigger” limit 1,075 ft. at the end of a calendar year, then a shortage will be declared by the US Bureau of Reclamation (USBR), impacting Colorado River water deliveries to the Lower Basin states. As of late August, Lake Mead levels were 6.5’ above the “trigger” limit. The USBR predicts that the end of 2017 or the end of 2018 will not hit the “trigger” level.



Fig. 1A OC Water Usage, Monthly by Supply
with projection to end of fiscal year



- [1] Imported water for consumptive use. Includes "In-Lieu" deliveries and CUP water extraction. Excludes "Direct Replenishment" deliveries of spreading water, "Barrier Replenishment" deliveries, and deliveries into Irvine Lake.
- [2] GW for consumptive use only. Excludes In-Lieu water deliveries and CUP water extraction that are counted with Import. BPP in FY '16-17 is 75%.
- [3] MWD OC's estimate of monthly demand is based on the projected FY 15-16 "Retail" water demand and historical monthly demand patterns.
- [4] Total water usage includes IRWD groundwater agricultural use and usage by non-retail water agencies.



Fig. 1B O.C. Historical Water Usage

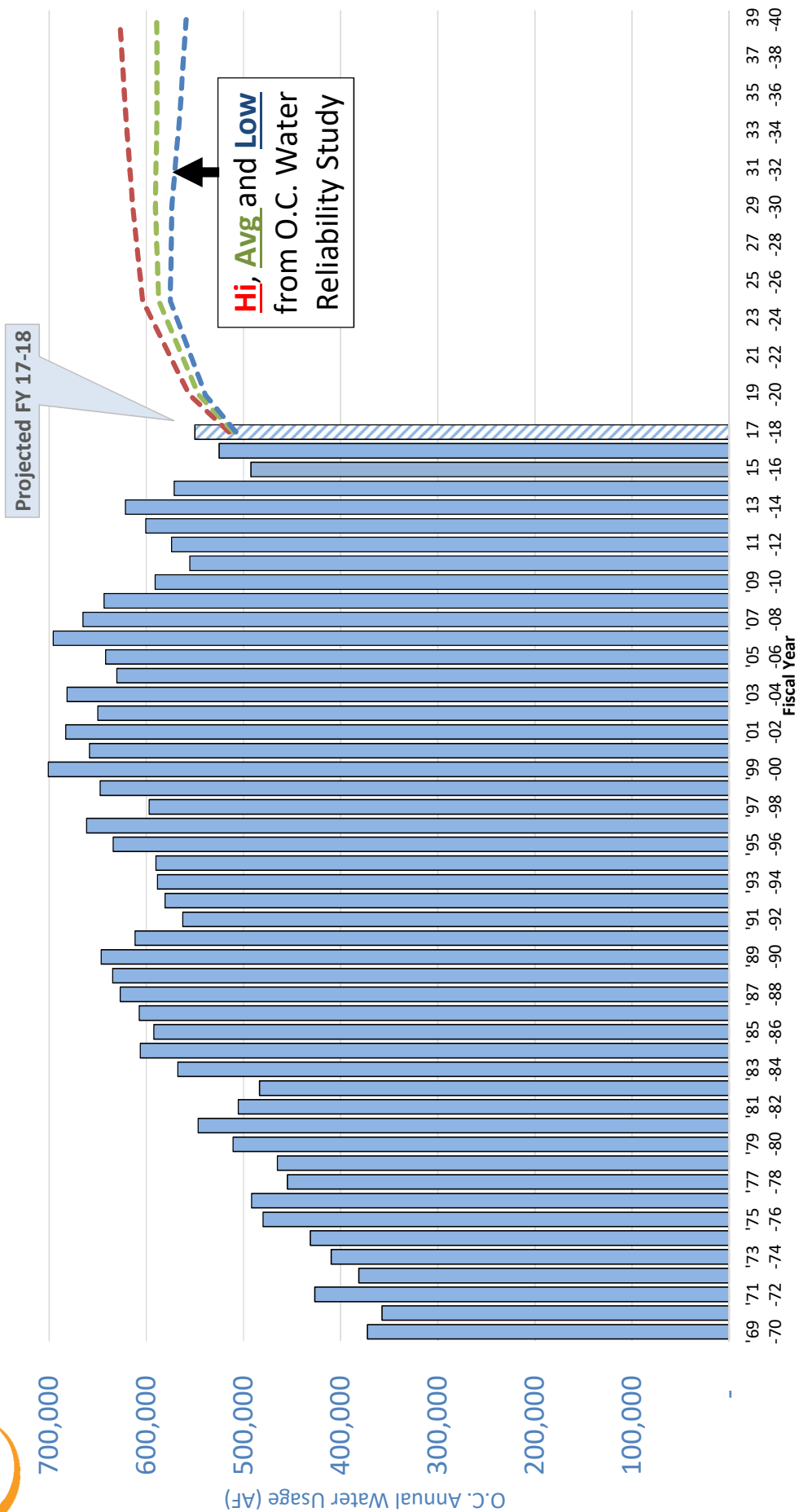
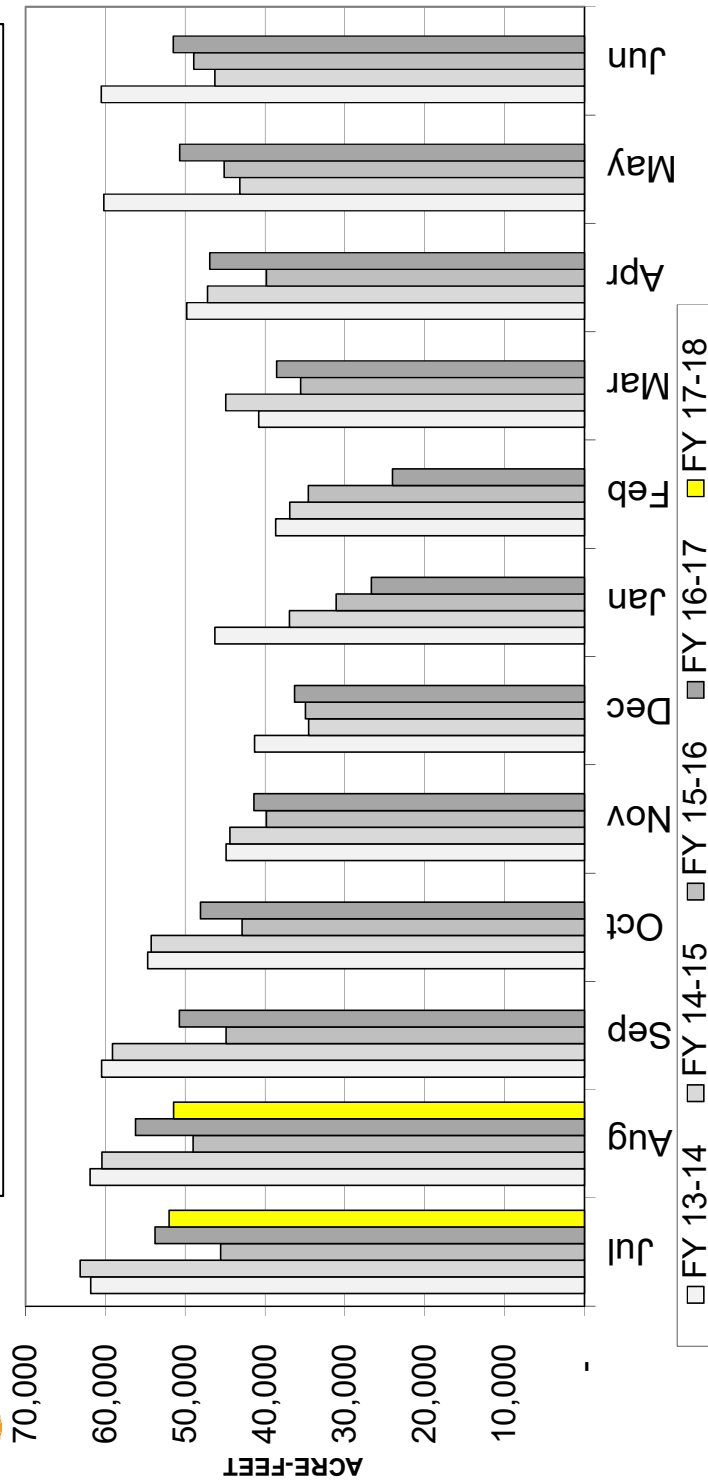
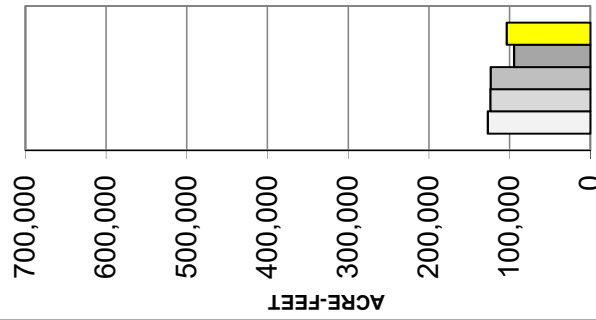




Fig. 2A OC Monthly Water Usage [1]: Comparison to Last 4 Fiscal Years

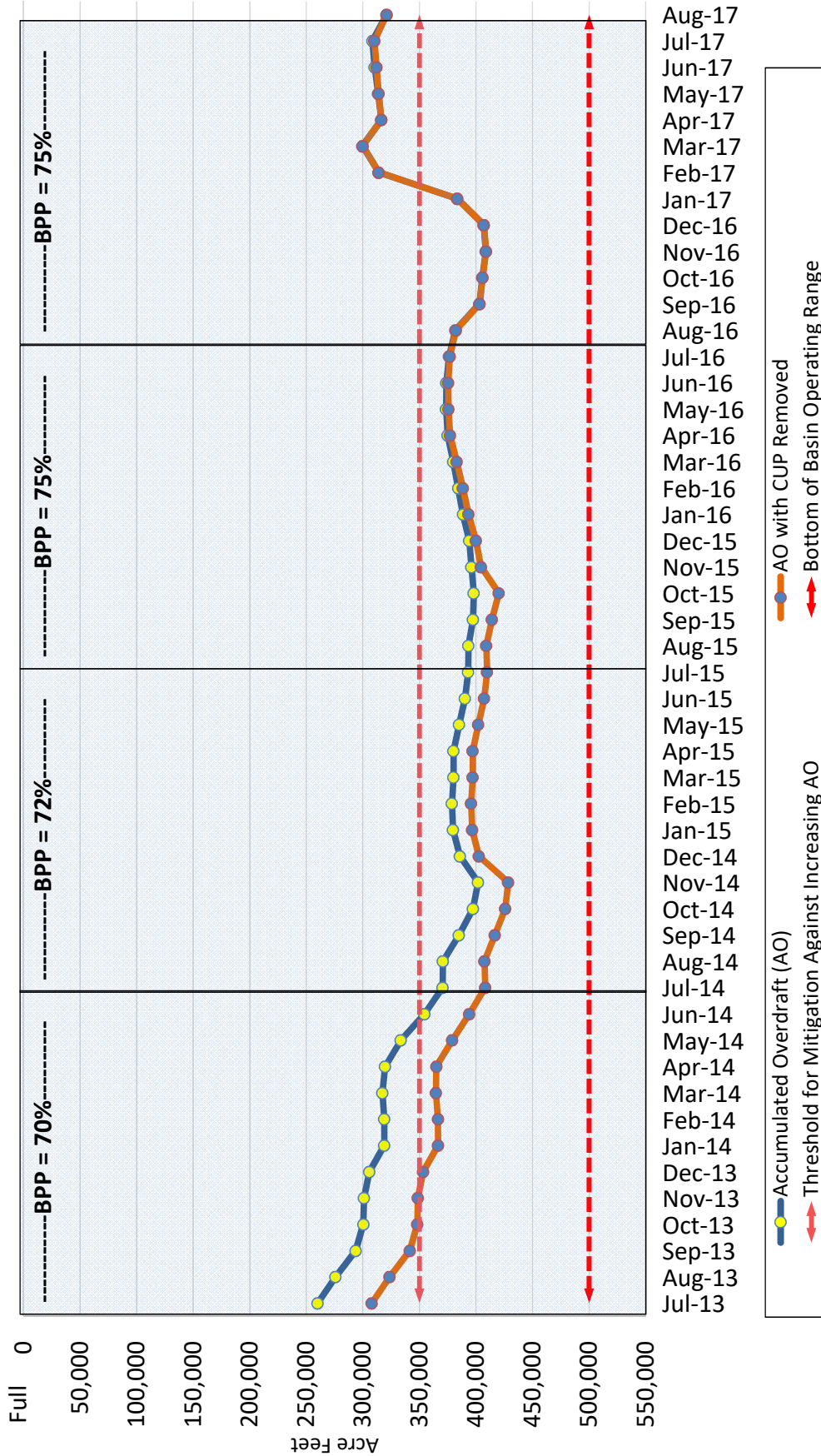


Partial Year Subtotals



[1] Sum of Imported water for consumptive use (includes "In-Lieu" deliveries; excludes "Direct Replenishment" and "Barrier Replenishment") and Local water for consumptive use (includes recycled and non-potable water; excludes GWRS production, groundwater pumped to waste, and waste brine from water treatment projects.) Recent months numbers include some estimation.

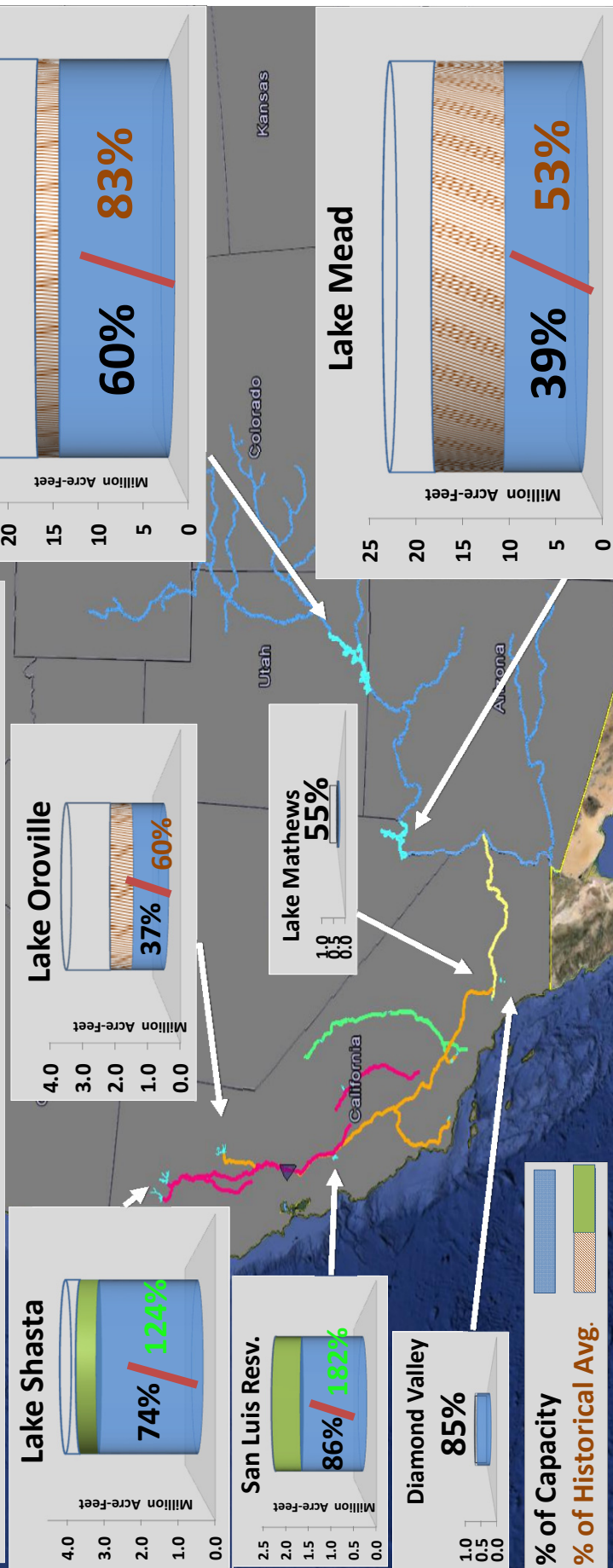
Accumulated Overdraft of the OCWD Groundwater Basin as of August 2017



	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
AO (AF)	376,310	381,800	403,047	405,635	408,729	406,832	383,548	314,004	299,755	316,286	313,468	310,434
AO w/CUP removed (AF)	376,864	382,340	403,223	405,811	408,906	407,009	383,548	314,004	299,931	316,462	314,009	312,164
AO (AF)	308,488	321,131										
AO w/CUP removed (AF)	310,216	321,131										



State Water Project, Colorado River, and MWD Reservoir Storage
as of October, 3rd 2017



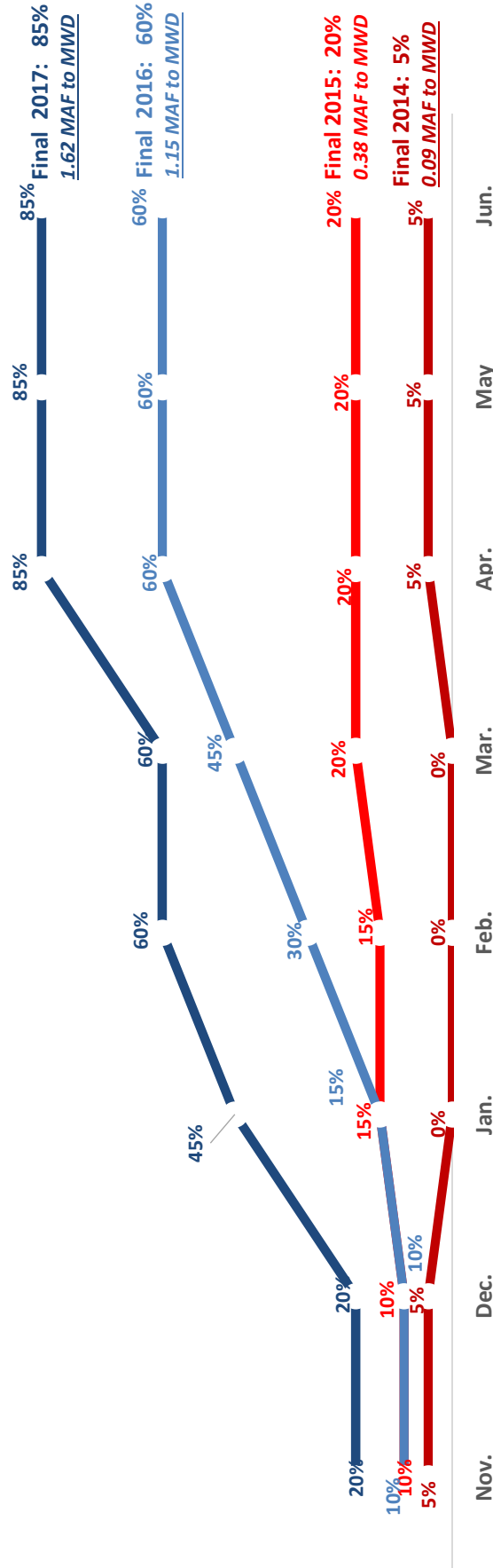
Prepared by the Municipal Water District of Orange County
Number and Subject to Change



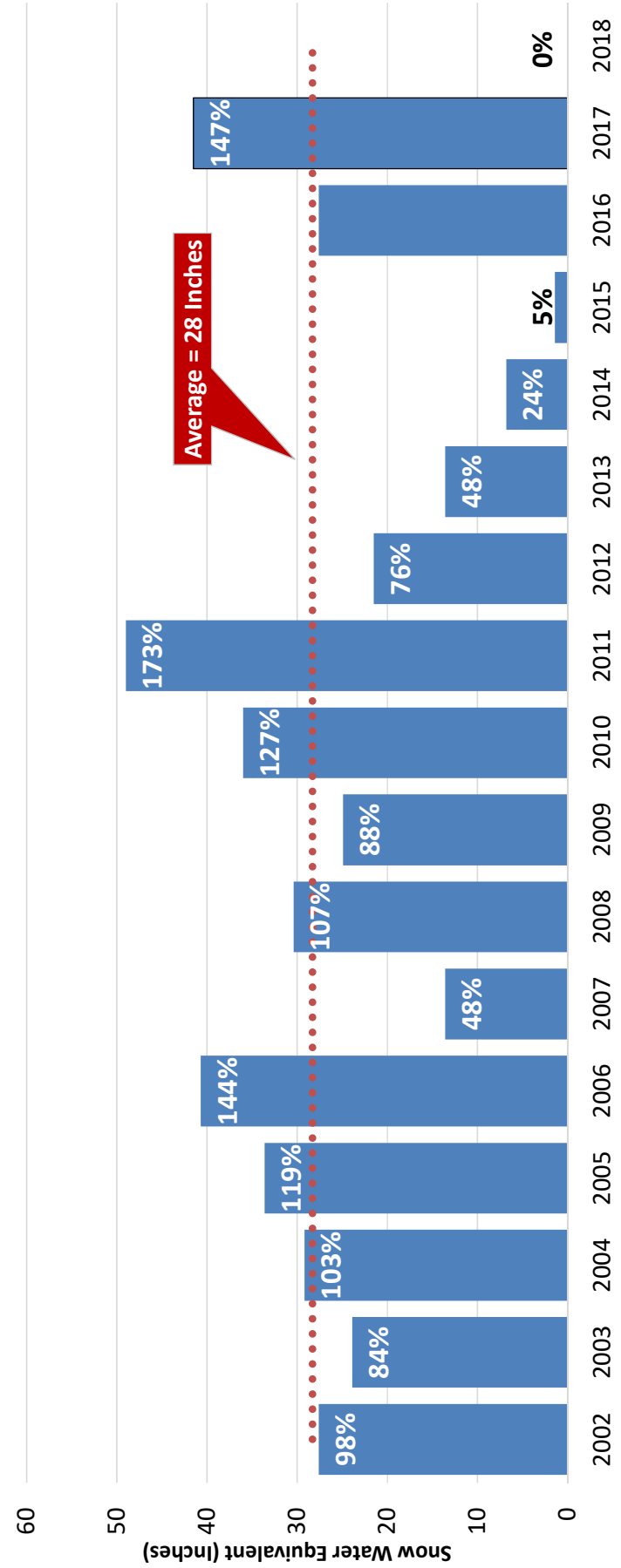
SWP TABLE A ALLOCATION

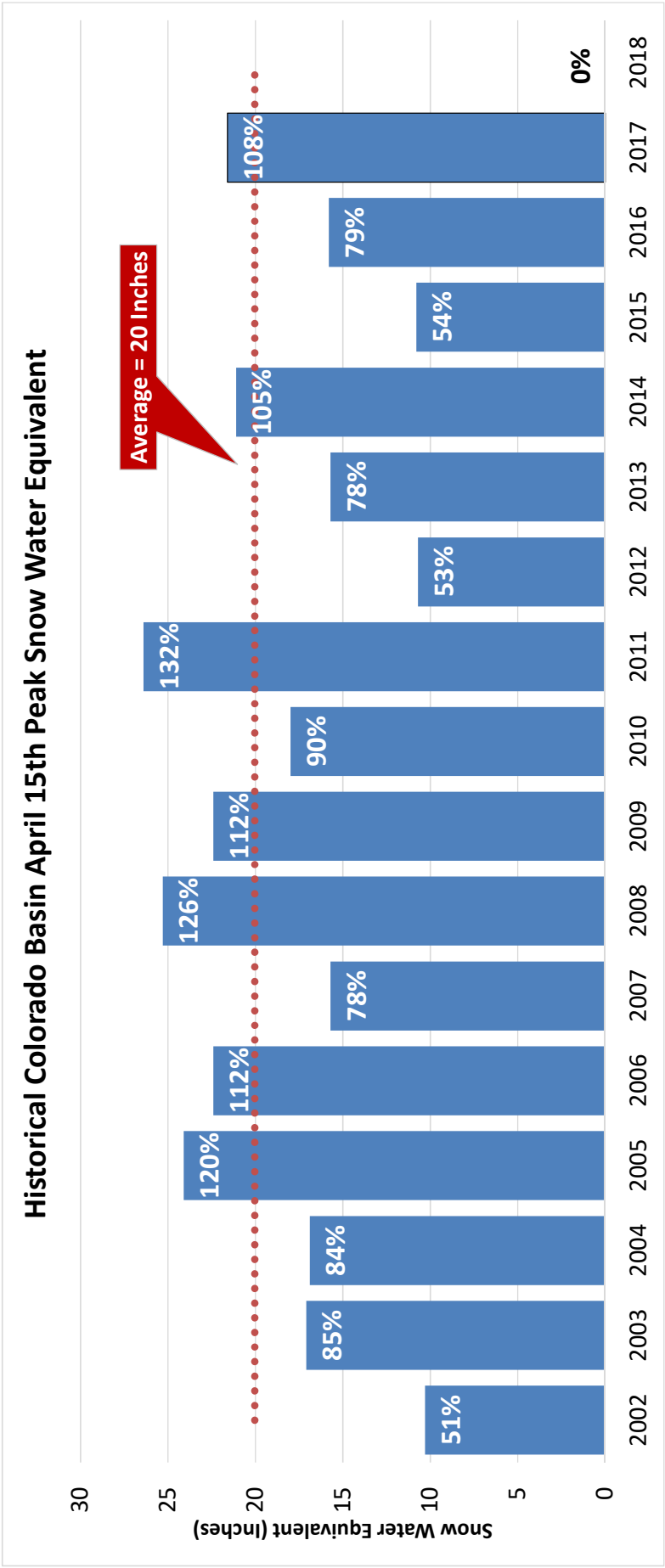
FOR STATE WATER PROJECT CONTRACTORS

Final 2018: ???



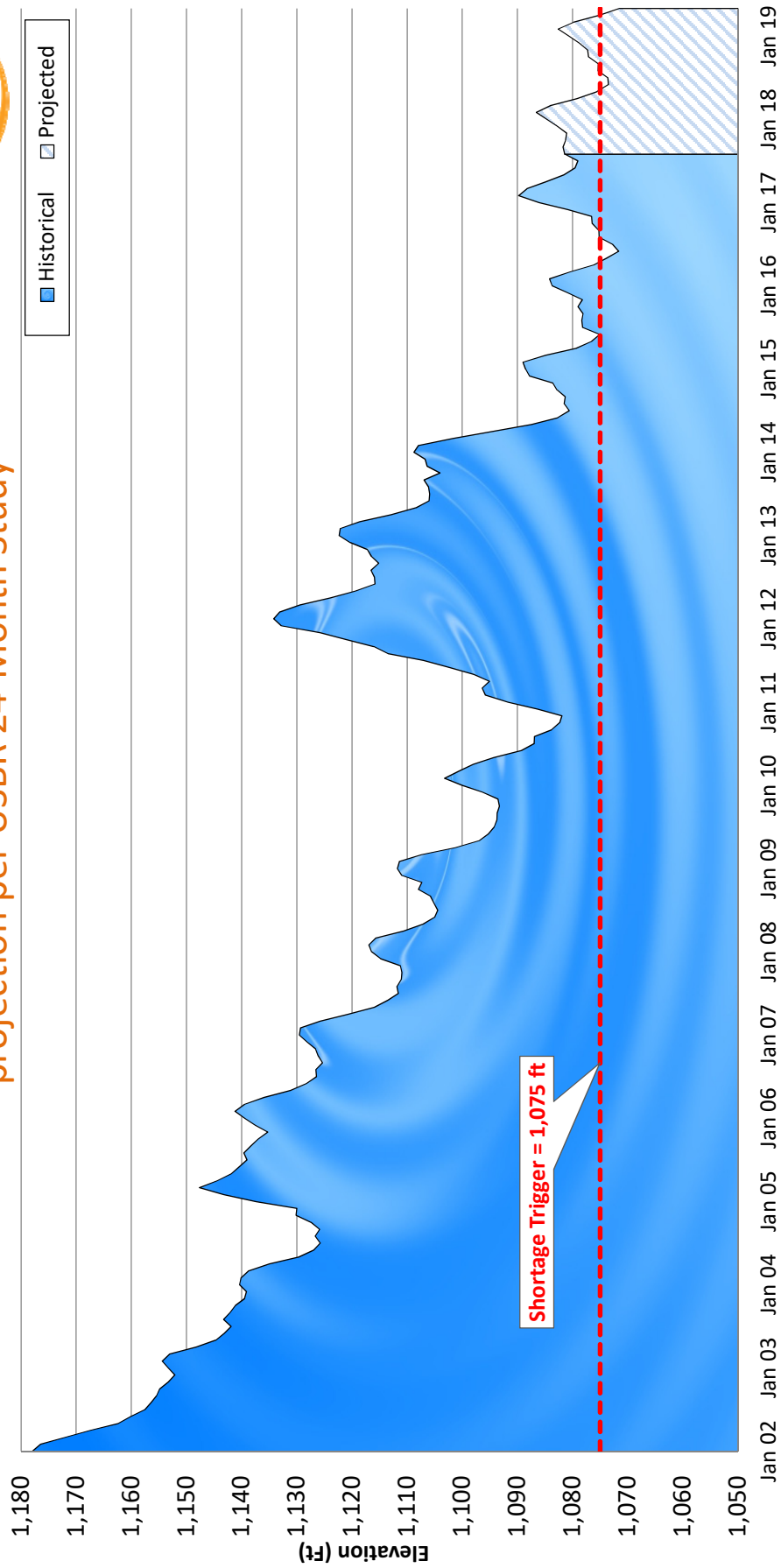
Historical Northern California April 1st Peak Snow Water Equivalent







Lake Mead Levels: Historical and Projected projection per USBR 24-Month Study





Lake Powell Levels: Historical and Projected projection per USBR 24-Month Study

