

# CalPERS Update

Department of Finance

October 28, 2019





# CalPERS Valuation Components

- **Unfunded Accrued Liability**
- **Normal Cost**
- **Section 115 Trust**



# CalPERS Valuation

- **Two Plan Types:**
  - **Miscellaneous (Non-Safety)**
  - **Safety**
- **Generated Annually with prior year data**
- **Sets Rates for FY 2021 using FY 2018 results**
- **Provides details regarding how the rates are derived**



# Misc. Plan Valuation – Page 4

## Required Contributions

	Fiscal Year 2020-21
<b>Required Employer Contribution</b>	
Employer Normal Cost Rate	10.017%
<i>Plus, Either</i>	
1) Monthly Employer Dollar UAL Payment	\$ 2,268,891
<i>Or</i>	
2) Annual UAL Prepayment Option*	\$ 26,321,033
<b>Required PEPRRA Member Contribution Rate</b>	7.00%
<p><i>The total minimum required employer contribution is the <b>sum</b> of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll) <b>plus</b> 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 (<b>which must be received in full no later than July 31</b>). Any prepayment totaling over \$5 million requires a 72-hour notice email to <a href="mailto:FCSD_public_agency_wires@calpers.ca.gov">FCSD_public_agency_wires@calpers.ca.gov</a>. 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>In accordance with Sections 20537 and 20572 of the Public Employees' Retirement Law, if a contracting agency fails to remit the required contributions when due, interest and penalties may apply.</i></p> <p><i>For additional detail regarding the determination of the required contribution for PEPRRA members, see Appendix D. Required member contributions for Classic members can be found in Appendix B.</i></p>	



# Misc. Plan Valuation – Page 4

	<b>Fiscal Year 2019-20</b>	<b>Fiscal Year 2020-21</b>
<b>Normal Cost Contribution as a Percentage of Payroll</b>		
Total Normal Cost	16.911%	17.610%
Employee Contribution <sup>1</sup>	7.665%	7.593%
Employer Normal Cost <sup>2</sup>	9.246%	10.017%
Projected Annual Payroll for Contribution Year	\$ 118,497,280	\$ 119,475,678
<b>Estimated Employer Contributions Based On Projected Payroll</b>		
Total Normal Cost	\$ 20,039,075	\$ 21,039,668
Employee Contribution <sup>1</sup>	9,082,817	9,071,788
Employer Normal Cost <sup>2</sup>	<u>10,956,258</u>	<u>11,967,880</u>
Unfunded Liability Contribution	25,084,564	27,226,688
% of Projected Payroll (illustrative only)	21.169%	22.788%
Estimated Total Employer Contribution	\$ 36,040,822	\$ 39,194,568
% of Projected Payroll (illustrative only)	30.415%	32.805%



# Plan Valuation – Page 5

## Miscellaneous Plan

### Plan's Funded Status

	<b>June 30, 2017</b>	<b>June 30, 2018</b>
1. Present Value of Projected Benefits	\$ 1,217,998,858	\$ 1,301,428,664
2. Entry Age Normal Accrued Liability	1,074,696,279	1,149,745,884
3. Market Value of Assets (MVA)	\$ 780,285,565	\$ 825,785,242
4. Unfunded Accrued Liability (UAL) [(2) – (3)]	\$ 294,410,714	\$ 323,960,642
5. Funded Ratio [(3) / (2)]	72.6%	71.8%

## Safety Plan

### Plan's Funded Status

	<b>June 30, 2017</b>	<b>June 30, 2018</b>
1. Present Value of Projected Benefits	\$ 714,151,399	\$ 772,137,540
2. Entry Age Normal Accrued Liability	604,467,787	658,183,970
3. Market Value of Assets (MVA)	\$ 438,683,394	\$ 470,973,528
4. Unfunded Accrued Liability (UAL) [(2) – (3)]	\$ 165,784,393	\$ 187,210,442
5. Funded Ratio [(3) / (2)]	72.6%	71.6%



# Plan Valuation – Page 5

## Miscellaneous Plan

	Required Contribution	Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2018-19)				
Fiscal Year	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Normal Cost %	10.017%	10.0%	10.0%	10.0%	10.0%	10.0%
UAL Payment	27,226,688	29,994,000	32,425,000	33,856,000	35,523,000	32,948,000
<i>Total as a % of Payroll*</i>	32.8%	34.4%	35.7%	36.1%	36.7%	34.1%
<i>Projected Payroll</i>	119,475,678	122,761,259	126,137,194	129,605,967	133,170,131	136,832,310

## Safety Plan

	Required Contribution	Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2018-19)				
Fiscal Year	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Normal Cost %	19.864%	19.9%	19.9%	19.9%	19.9%	19.9%
UAL Payment	14,399,802	16,257,000	17,468,000	18,505,000	15,048,000	17,169,000
<i>Total as a % of Payroll*</i>	50.1%	53.1%	54.6%	55.7%	48.2%	51.3%
<i>Projected Payroll</i>	47,648,088	48,958,410	50,304,767	51,688,148	53,109,571	54,570,084

\*Illustrative only and based on the projected payroll shown.



# Misc. Plan Valuation – Page 9

CalPERS Actuarial Valuation - June 30, 2018  
Miscellaneous Plan of the City of Pasadena  
CalPERS ID: 6556986602

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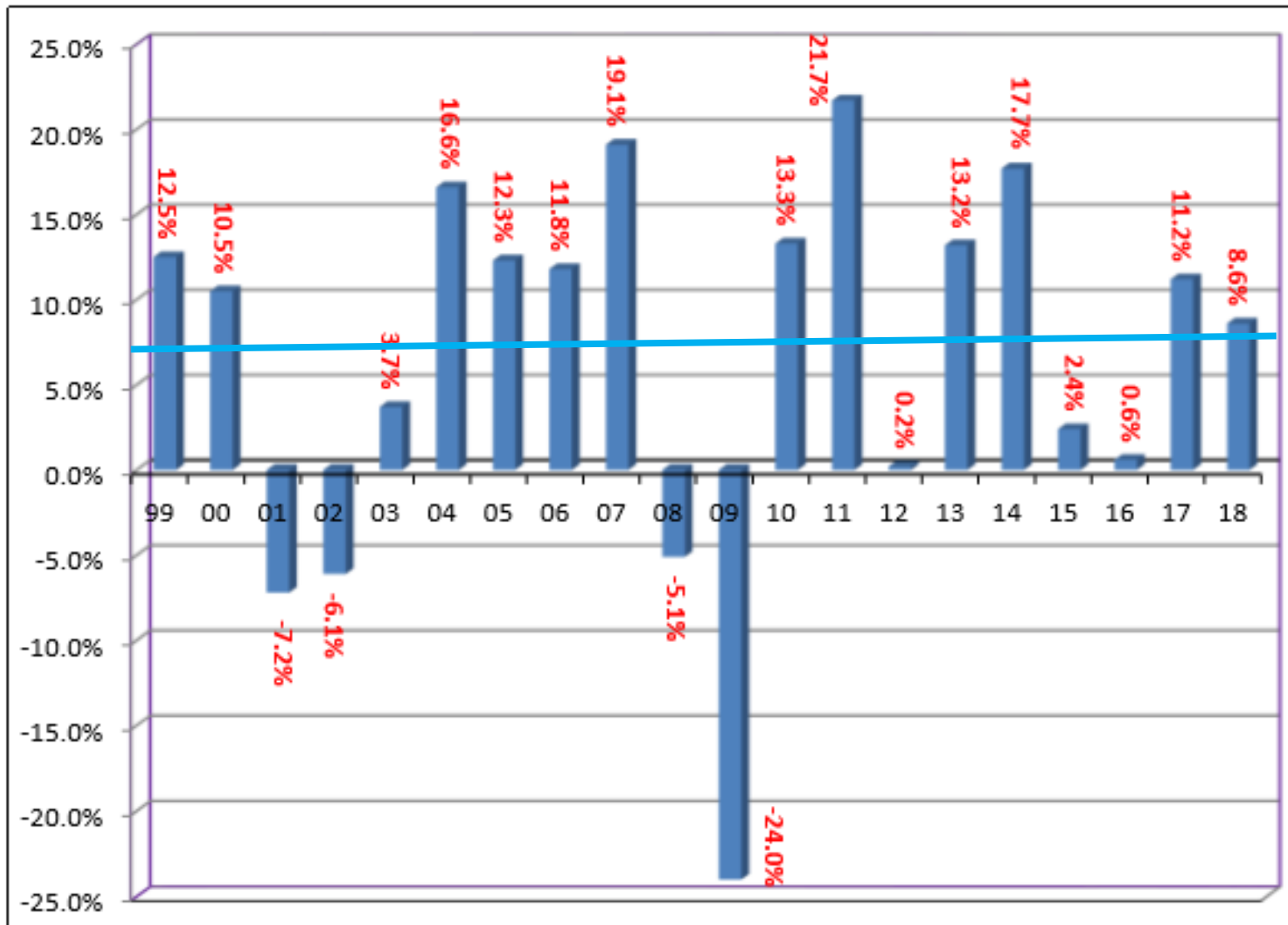
## Reconciliation of the Market Value of Assets

1. Market Value of Assets as of 6/30/17 including Receivables	\$	780,285,565
2. Change in Receivables for Service Buybacks		(249,438)
3. Employer Contributions		27,112,138
4. Employee Contributions		8,481,519
5. Benefit Payments to Retirees and Beneficiaries		(54,683,635)
6. Refunds		(680,615)
7. Transfers		(1,921)
8. Service Credit Purchase (SCP) Payments and Interest		591,822
9. Miscellaneous Adjustments		1
10. Net Investment Return		64,929,807
11. Market Value of Assets as of 6/30/18 including Receivables	\$	<u>825,785,242</u>





# Misc. Plan Valuation – Page 11





# Misc. Plan Valuation – Page 16

## Schedule of Amortization Bases

Reason for Base	Date Established	Ramp Up/Down 2020-21	Escalation Rate	Amortization Period	Balance 6/30/18	Expected Payment 2018-19	Balance 6/30/19	Expected Payment 2019-20	Balance 6/30/20	Scheduled Payment for 2020-21
ASSUMPTION CHANGE	06/30/03	No Ramp	2.750%	5	\$17,703,486	\$2,962,490	\$15,878,307	\$3,041,470	\$13,843,667	\$3,100,729
METHOD CHANGE	06/30/04	No Ramp	2.750%	6	\$(1,650,933)	\$(246,544)	\$(1,511,471)	\$(253,137)	\$(1,355,427)	\$(257,977)
BENEFIT CHANGE	06/30/05	No Ramp	2.750%	6	\$3,105,449	\$463,757	\$2,843,117	\$476,158	\$2,549,593	\$485,262
BENEFIT CHANGE	06/30/06	No Ramp	2.750%	7	\$15,800,672	\$2,138,882	\$14,694,242	\$2,196,221	\$13,451,050	\$2,237,330
ASSUMPTION CHANGE	06/30/09	No Ramp	2.750%	11	\$44,514,357	\$4,504,931	\$42,970,425	\$4,626,552	\$41,192,612	\$4,705,082
SPECIAL (GAIN)/LOSS	06/30/09	No Ramp	2.750%	21	\$28,416,930	\$1,950,479	\$28,388,524	\$2,003,693	\$28,303,085	\$2,029,200
SPECIAL (GAIN)/LOSS	06/30/10	No Ramp	2.750%	22	\$9,161,337	\$613,230	\$9,168,301	\$629,974	\$9,158,432	\$637,746
ASSUMPTION CHANGE	06/30/11	No Ramp	2.750%	13	\$18,493,291	\$1,684,124	\$18,045,750	\$1,729,709	\$17,519,727	\$1,757,540
SPECIAL (GAIN)/LOSS	06/30/11	No Ramp	2.750%	23	\$(6,871,294)	\$(449,261)	\$(6,887,566)	\$(461,537)	\$(6,892,278)	\$(467,052)
PAYMENT (GAIN)/LOSS	06/30/12	No Ramp	2.750%	24	\$809,664	\$51,784	\$812,774	\$53,200	\$814,638	\$53,816
(GAIN)/LOSS	06/30/12	No Ramp	2.750%	24	\$18,846,870	\$1,205,398	\$18,919,277	\$1,238,363	\$18,962,654	\$1,252,689
(GAIN)/LOSS	06/30/13	100% →	2.750%	25	\$109,941,697	\$5,829,494	\$111,607,541	\$7,486,295	\$111,676,185	\$7,575,776
ASSUMPTION CHANGE	06/30/14	100% →	2.750%	16	\$58,738,834	\$3,231,480	\$59,507,883	\$4,425,856	\$59,095,294	\$5,619,324
(GAIN)/LOSS	06/30/14	100% →	2.750%	26	\$(96,744,495)	\$(3,856,575)	\$(99,527,337)	\$(5,283,123)	\$(101,029,346)	\$(6,680,756)
(GAIN)/LOSS	06/30/15	80% ↗	2.750%	27	\$31,595,092	\$852,552	\$32,924,862	\$1,313,979	\$33,870,412	\$1,771,561
ASSUMPTION CHANGE	06/30/16	60% ↗	2.750%	18	\$18,048,861	\$340,588	\$18,959,975	\$699,828	\$19,563,265	\$1,065,119
(GAIN)/LOSS	06/30/16	60% ↗	2.750%	28	\$46,411,073	\$644,031	\$48,993,658	\$1,323,555	\$51,054,118	\$2,006,358
ASSUMPTION CHANGE	06/30/17	40% ↗	2.750%	19	\$17,590,526	\$(1,017,090)	\$19,873,949	\$375,390	\$20,876,819	\$761,282
(GAIN)/LOSS	06/30/17	40% ↗	2.750%	29	\$(36,182,835)	\$0	\$(38,715,633)	\$(537,882)	\$(40,869,338)	\$(1,086,375)
METHOD CHANGE	06/30/18	20% ↗	2.750%	20	\$7,002,646	\$(117,693)	\$7,614,574	\$(120,929)	\$8,272,684	\$154,241
ASSUMPTION CHANGE	06/30/18	20% ↗	2.750%	30	\$(10,849,572)	\$0	\$(11,609,042)	\$0	\$(12,421,675)	\$(169,653)

Gain for 6/30/18 = \$10,849,572



# CalPERS Amortization of UAL

Default - 30 Yr, 5 Yr Ramps			Default - 20 Yr, 5 Yr Ramps		
Balance	Period	Payment	Balance	Period	Payment
\$ 12,421,675	30	\$ 169,653	\$ 12,421,675	20	\$ 231,598
\$ 13,115,702	29	\$ 348,637	\$ 13,051,626	19	\$ 475,933
\$ 13,673,168	28	\$ 537,337	\$ 13,472,931	18	\$ 733,532
\$ 14,074,463	27	\$ 736,152	\$ 13,657,265	17	\$ 1,004,938
\$ 14,298,194	26	\$ 945,495	\$ 13,573,757	16	\$ 1,290,718
\$ 14,321,040	25	\$ 971,496	\$ 13,188,791	15	\$ 1,326,212
\$ 14,318,590	24	\$ 998,212	\$ 12,740,162	14	\$ 1,362,683
\$ 14,288,332	23	\$ 1,025,663	\$ 12,222,403	13	\$ 1,400,157
\$ 14,227,561	22	\$ 1,053,869	\$ 11,629,637	12	\$ 1,438,661
\$ 14,133,360	21	\$ 1,082,850	\$ 10,955,549	11	\$ 1,478,225
\$ 14,002,586	20	\$ 1,112,629	\$ 10,193,350	10	\$ 1,518,876
\$ 13,831,855	19	\$ 1,143,226	\$ 9,335,747	9	\$ 1,560,645
\$ 13,617,522	18	\$ 1,174,665	\$ 8,374,905	8	\$ 1,603,563
\$ 13,355,666	17	\$ 1,206,968	\$ 7,302,411	7	\$ 1,647,661
\$ 13,042,066	16	\$ 1,240,160	\$ 6,109,226	6	\$ 1,692,971
\$ 12,672,179	15	\$ 1,274,264	\$ 4,785,649	5	\$ 1,739,528
\$ 12,241,123	14	\$ 1,309,306	\$ 3,321,262	4	\$ 1,429,892
\$ 11,743,644	13	\$ 1,345,312	\$ 2,074,659	3	\$ 1,101,911
\$ 11,174,098	12	\$ 1,382,308	\$ 1,080,060	2	\$ 754,809
\$ 10,526,414	11	\$ 1,420,322	\$ 374,884	1	\$ 387,783
\$ 9,794,070	10	\$ 1,459,381	\$ (0)	-	\$ -
\$ 8,970,060	9	\$ 1,499,514			
\$ 8,046,856	8	\$ 1,540,750			
\$ 7,016,371	7	\$ 1,583,121			
\$ 5,869,924	6	\$ 1,626,657			
\$ 4,598,192	5	\$ 1,671,390			
\$ 3,191,167	4	\$ 1,373,882			
\$ 1,993,393	3	\$ 1,058,748			
\$ 1,037,753	2	\$ 725,242			
\$ 360,200	1	\$ 372,593			
\$ -					
		\$33,389,803	Sum of Payments		\$24,180,295

20 Yr, Level \$ Payment		
Balance	Period	Payment
\$ 12,421,675	20	\$ 1,175,196
\$ 12,134,831	19	\$ 1,175,196
\$ 11,826,474	18	\$ 1,175,196
\$ 11,494,991	17	\$ 1,175,196
\$ 11,138,646	16	\$ 1,175,196
\$ 10,755,575	15	\$ 1,175,196
\$ 10,343,773	14	\$ 1,175,196
\$ 9,901,087	13	\$ 1,175,196
\$ 9,425,199	12	\$ 1,175,196
\$ 8,913,620	11	\$ 1,175,196
\$ 8,363,672	10	\$ 1,175,196
\$ 7,772,478	9	\$ 1,175,196
\$ 7,136,945	8	\$ 1,175,196
\$ 6,453,746	7	\$ 1,175,196
\$ 5,719,308	6	\$ 1,175,196
\$ 4,929,787	5	\$ 1,175,196
\$ 4,081,051	4	\$ 1,175,196
\$ 3,168,661	3	\$ 1,175,196
\$ 2,187,841	2	\$ 1,175,196
\$ 1,133,460	1	\$ 1,175,196
\$ -	-	\$ -
Sum of Payments		\$23,503,923



# Misc. Plan Valuation – Page 22

## Sensitivity Analysis

Assumed Annual Return From 2018-19 through 2021-22	Projected Employer Contributions			
	2021-22	2022-23	2023-24	2024-25
<b>1.0%</b>				
Normal Cost	10.0%	10.0%	10.0%	10.0%
UAL Contribution	\$31,219,000	\$36,091,000	\$41,173,000	\$47,695,000
<b>4.0%</b>				
Normal Cost	10.0%	10.0%	10.0%	10.0%
UAL Contribution	\$30,607,000	\$34,277,000	\$37,589,000	\$41,796,000
<b>7.0%</b>				
Normal Cost	10.0%	10.0%	10.0%	10.0%
UAL Contribution	\$29,994,000	\$32,425,000	\$33,856,000	\$35,523,000
<b>9.0%</b>				
Normal Cost	10.2%	10.5%	10.7%	10.9%
UAL Contribution	\$29,658,000	\$31,483,000	\$32,017,000	\$32,435,000
<b>12.0%</b>				
Normal Cost	10.2%	10.5%	10.7%	10.9%
UAL Contribution	\$29,048,000	\$29,589,000	\$28,086,000	\$25,629,000



## Miscellaneous Plan

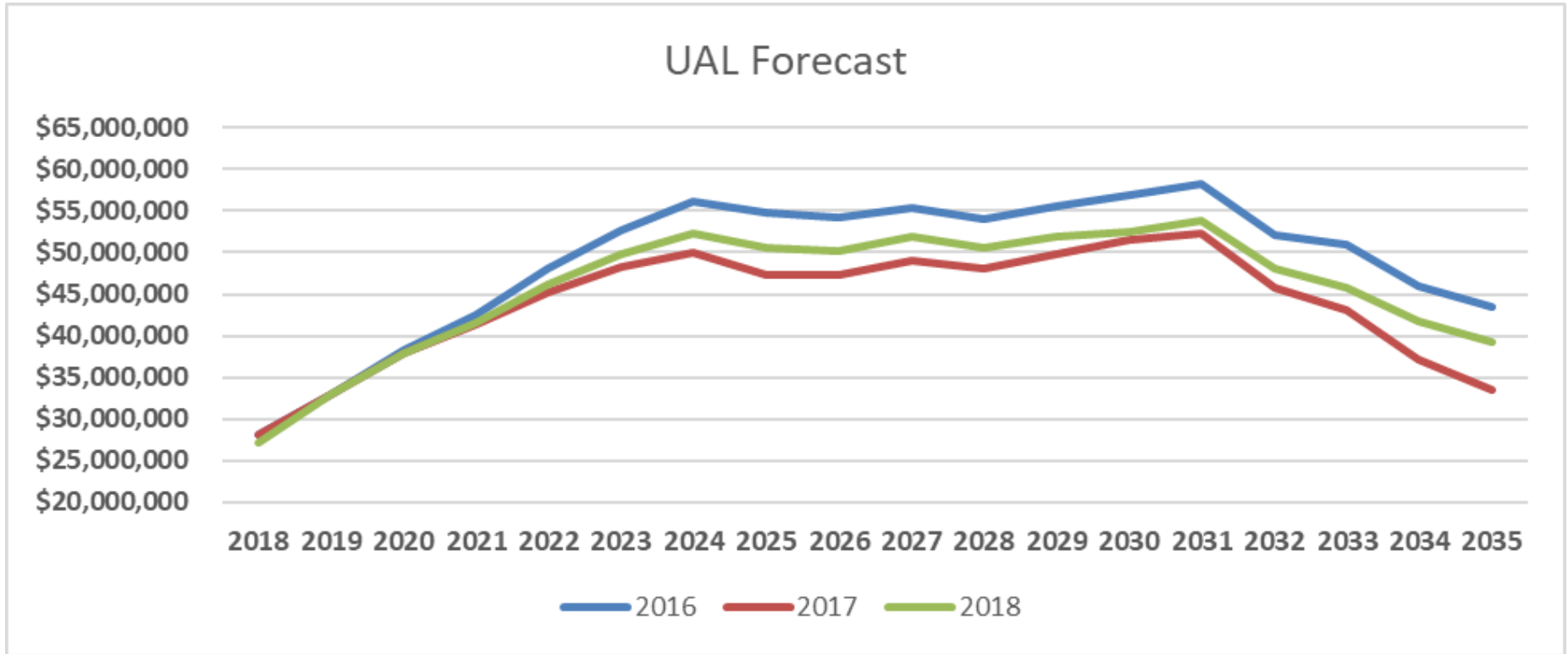
Rate Plan Identifier	Benefit Group Name	Basis for Current Rate		Rates Effective July 1, 2020			
		Total Normal Cost	Member Rate	Total Normal Cost	Change	Change Needed	Member Rate
26041	Miscellaneous PEPRA Level	12.500%	6.250%	13.845%	1.345%	Yes	7.000%

## Safety Plan

Rate Plan Identifier	Benefit Group Name	Basis for Current Rate		Rates Effective July 1, 2020			
		Total Normal Cost	Member Rate	Total Normal Cost	Change	Change Needed	Member Rate
25060	Safety Fire PEPRA Level	23.320%	11.750%	24.988%	1.668%	Yes	12.500%
25061	Safety Police PEPRA Level	23.320%	11.750%	24.988%	1.668%	Yes	12.500%



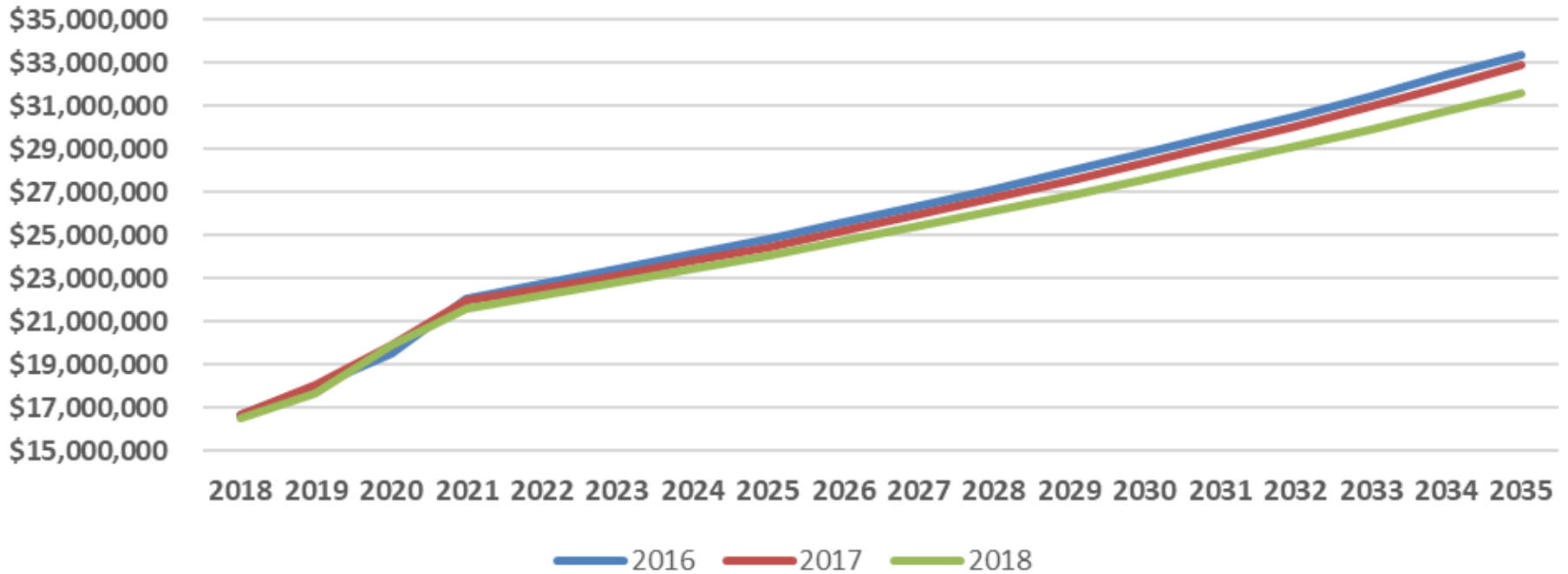
# Combined UAL Forecast





# Combined Normal Cost Forecast

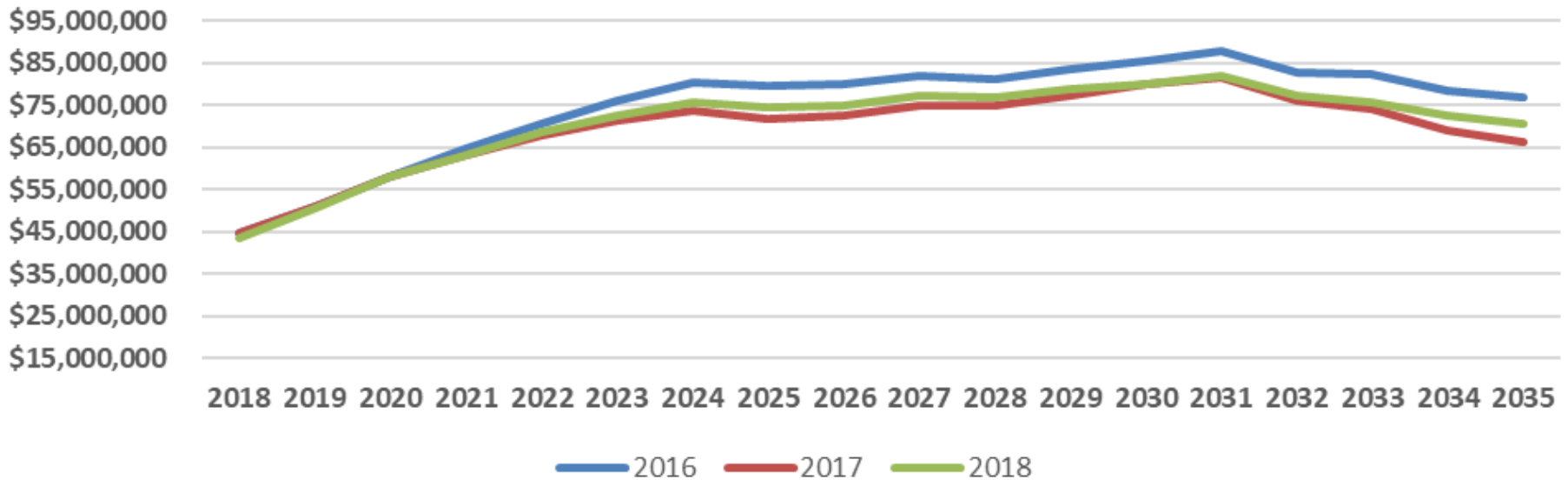
## Normal Cost Forecast





# Combined CalPERS Forecast

## Total CalPERS Cost Forecast







# Combined CalPERS Forecast

Fiscal Year	Total Cost Estimate
2020	\$57,897,000
2021	\$63,238,000
2022	\$68,454,000
2023	\$72,707,000
2024	\$75,802,000
<b>2025</b>	<b>\$74,656,000</b>
<b>2026</b>	<b>\$74,866,000</b>
2027	\$77,272,000
2028	\$76,691,000
2029	\$78,741,000
2030	\$80,148,000



# Investment Performance

## CalPERS Public Employees Retirement Fund – June 30, 2019

Performance Summary	10-Yr			5-Yr			3-Yr			1-Yr			5-Yr Realized Information Ratio <sup>5</sup>
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	
<b>Public Equity</b>	<b>11.1%</b>	<b>10.9%</b>	<b>20</b>	<b>6.7%</b>	<b>6.7%</b>	<b>(8)</b>	<b>12.3%</b>	<b>12.5%</b>	<b>(25)</b>	<b>6.1%</b>	<b>6.2%</b>	<b>(16)</b>	<b>(0.3)</b>
Cap Weighted	11.0%	10.8%	20	6.5%	6.5%	(9)	11.9%	12.2%	(27)	5.1%	5.3%	(20)	(0.3)
Factor Weighted	-	-	-	-	-	-	-	-	-	13.4%	13.5%	(10)	-
<b>Private Equity</b>	<b>14.0%</b>	<b>16.6%</b>	<b>(254)</b>	<b>9.6%</b>	<b>10.3%</b>	<b>(80)</b>	<b>12.5%</b>	<b>14.1%</b>	<b>(156)</b>	<b>7.7%</b>	<b>4.0%</b>	<b>368</b>	-
<b>Income</b>	<b>6.6%</b>	<b>5.2%</b>	<b>137</b>	<b>4.1%</b>	<b>3.5%</b>	<b>56</b>	<b>3.3%</b>	<b>2.7%</b>	<b>62</b>	<b>9.6%</b>	<b>9.3%</b>	<b>31</b>	<b>1.2</b>
Long Spread	-	-	-	-	-	-	-	-	-	9.5%	9.0%	49	-
Long Treasury	-	-	-	-	-	-	-	-	-	10.5%	10.5%	(3)	-
High Yield	-	-	-	-	-	-	-	-	-	8.4%	8.0%	40	-
<b>Real Assets</b>	<b>4.1%</b>	<b>8.4%</b>	<b>(430)</b>	<b>7.5%</b>	<b>8.6%</b>	<b>(111)</b>	<b>6.4%</b>	<b>6.8%</b>	<b>(42)</b>	<b>3.7%</b>	<b>6.5%</b>	<b>(283)</b>	-
<b>Inflation<sup>2</sup></b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	<b>NM</b>	-
<b>Liquidity</b>	<b>1.1%</b>	<b>1.2%</b>	<b>(9)</b>	<b>1.3%</b>	<b>1.2%</b>	<b>10</b>	<b>1.7%</b>	<b>1.3%</b>	<b>37</b>	<b>2.6%</b>	<b>2.2%</b>	<b>45</b>	-
<b>Trust Level<sup>3</sup></b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total PERF</b>	<b>9.1%</b>	<b>9.5%</b>	<b>(33)</b>	<b>5.8%</b>	<b>6.1%</b>	<b>(23)</b>	<b>8.8%</b>	<b>9.0%</b>	<b>(21)</b>	<b>6.7%</b>	<b>7.1%</b>	<b>(42)</b>	-



# Section 115 Trust for Pension

- **June 30, 2019 - \$11,230,935**
- **No immediate plans to spend the funds**
- **Will continue to review options to utilize these funds to pay down future UAL amounts or balance the budget in a recession**