



# CalPERS

## Actuarial Information/Valuation 101

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Wednesday, February 16, 2022

Discover CSMFO, San Diego

# Today's Objectives

1. Provide guidance on how to extract the most value from your June 30, 2020 actuarial report
2. Review 5-year contribution projections
3. Highlight Additional Discretionary Payment (ADP)
4. Asset Liability Management Outcomes
5. FY 2020-21 Investment return impact
6. Answer any questions that we can!



# Today's Speakers

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# Key Takeaways

- ✓ Contribution Requirements for FY 2022-23
- ✓ Funded Status of the Plans
- ✓ 5-Year Contribution Projections
- ✓ FY 2020-21 Investment return impact
- ✓ Asset Liability Management Outcomes
- ✓ Alternatives for proactively managing Unfunded Accrued Liabilities

# **Background**

## **Non-Pooled Plans / Pooled Plans**

# Pooled Plans vs Non-Pooled Plans

## Pooled Plans

- Less than 100 active members
- 2 Risk Pools
  - Miscellaneous
  - Safety
- Separate normal cost rate and report for each tier
- Gains/Losses shared across all pooled plans

## Non-Pooled Plans

- More than 100 active members
- 2 Types
  - Miscellaneous
  - Safety
- Combined normal cost rate for all tiers in one report
- Gains/losses determined for each non-pooled plan separately

## Risk Pool's Required Employer Contribution

			Fiscal Year 2021-22		Fiscal Year 2022-23
<b>Contribution in Projected Dollars</b>					
a)	Risk Pool's Normal Cost	\$	471,767,122	\$	487,946,279
b)	Employee Contribution		<u>193,480,221</u>		<u>202,581,785</u>
c)	Risk Pool's Gross Employer Normal Cost [(a) - (b)]	\$	278,286,901	\$	285,364,494
d)	Payment on Risk Pool's Amortization Bases		349,138,593		385,689,552
e)	Total Required Employer Contribution* [(c) + (d)]	\$	627,425,494	\$	671,054,046
* Total may not add up due to rounding					

## Risk Pool's Normal Cost by Benefit Formula

Normal Cost Contribution as Percentage of Projected Payroll for Fiscal Year 2022-23	Benefit Formula					
	2% at 62	2% at 60	2% at 55	2.5% at 55	2.7% at 55	3% at 60
1) Total Normal Cost Contribution	14.22%	15.56%	17.24%	19.55%	21.31%	22.34%
2) Expected Employee Contribution	<u>6.75%</u>	<u>6.93%</u>	<u>6.92%</u>	<u>7.96%</u>	<u>7.96%</u>	<u>7.81%</u>
3) Total Employer Normal Cost Base Benefit [(1)-(2)]	7.47%	8.63%	10.32%	11.59%	13.35%	14.53%

Class 1 benefits as provided in Appendix C-1 are in addition to these costs.

## Funded Status of the Risk Pool

			June 30, 2019		June 30, 2020
1.	Present Value of Projected Benefits	\$	21,858,404,639	\$	23,057,820,336
2.	Entry Age Accrued Liability	\$	18,394,114,919	\$	19,437,975,961
3.	Market Value of Assets (MVA)	\$	13,985,117,157	\$	14,709,505,985
4.	Unfunded Accrued Liability (UAL) [(2) - (3)]		4,408,997,762		4,728,469,976
5.	Funded Ratio [(3) / (2)]		76.0%		75.7%

## Risk Pool's Required Employer Contribution

		Fiscal Year	Fiscal Year
		2021-22	2022-23
<b>Contribution in Projected Dollars</b>			
a)	Risk Pool's Normal Cost	\$ 524,645,645	\$ 546,766,575
b)	Employee Contribution	<u>170,973,454</u>	<u>184,059,173</u>
c)	Risk Pool's Gross Employer Normal Cost [(a) - (b)]	\$ 353,672,191	\$ 362,707,402
d)	Payment on Risk Pool's Amortization Bases	526,702,419	584,619,045
e)	Total Required Employer Contribution* [(c) + (d)]	\$ 880,374,610	\$ 947,326,447
* Total may not add up due to rounding			

## Risk Pool's Normal Cost by Benefit Formula

	Benefit Formula						
Normal Cost Contribution as Percentage of Projected Payroll for Fiscal Year 2022-23	2% at 57	2.5% at 57	2.7% at 57	2% at 55	2% at 50	3% at 55	3% at 50
1) Total Normal Cost Contribution	20.80%	24.63%	25.78%	21.71%	27.12%	29.63%	31.46%
2) Expected Employee Contribution	10.00%	12.50%	13.00%	6.97%	8.95%	8.99%	8.99%
3) Total Employer Normal Cost Base Benefit [1 - 2]	10.80%	12.13%	12.78%	14.74%	18.17%	20.64%	22.47%

Class 1 benefits as provided in Appendix C-1 are in addition to these costs.

## Funded Status of the Risk Pool

		June 30, 2019	June 30, 2020
1.	Present Value of Projected Benefits	\$ 28,696,427,012	\$ 30,337,435,539
2.	Entry Age Accrued Liability	\$ 24,262,790,251	\$ 25,696,424,194
3.	Market Value of Assets (MVA)	\$ 17,397,553,569	\$ 18,365,305,590
4.	Unfunded Accrued Liability (UAL) [(2) - (3)]	6,865,236,682	7,331,118,604
5.	Funded Ratio [(3) / (2)]	71.7%	71.5%



# Non-pooled and Pool Reports

Non-pooled

## **STANDALONE REPORT**

*Find on  
myCalPERS*

Pooled

### **SECTION**

# 1

Plan-specific info

*Find on  
myCalPERS*

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### **SECTION**

# 2

Pool-wide info  
Assumptions  
Plan provisions

*Find on  
CalPERS website*

# Actuarial Report Highlights

# Common Questions

- What are the required contributions?
- Is the plan in good shape?
- Why did the required contributions change?
- Where are the required contributions headed?
- Are there any alternative UAL amortization schedules?
- Where are the PEPRA members?
- What additional information is available in the reports?

# Non-Pooled & Pooled Plans

What are the required contributions? – Cover page

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability	Employee PEPPRA Rate
2022-23	9.83%	\$11,239,309	6.25%
<i>Projected Results</i>			
2023-24	9.6%	\$11,967,000	TBD

- Rates do not reflect any cost sharing information
- FY 2023-24 projection do not reflect :
  - FY 2020-21 asset gain of 21.2%
  - Change of discount rate for risk mitigation
  - Other potential change in discount rate due to ALM
  - Changes in demographic assumptions from the Experience Study

# Non-Pooled & Pooled Plans

## What are the required contributions? – Page 4

### Required Contributions

	Fiscal Year
<b>Required Employer Contribution</b>	<b>2022-23</b>
Employer Normal Cost Rate	9.83%
<i>Plus, Either</i>	
1) Monthly Employer Dollar UAL Payment	\$936,609
<i>Or</i>	
2) Annual UAL Prepayment Option*	\$10,865,450
<b>Required PEPPRA Member Contribution Rate</b>	<b>6.25%</b>
<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) and the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly in dollars).</i>	
<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>	
<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>	
<i>For additional detail regarding the determination of the required contribution for PEPPRA members, see "PEPPRA Member Contribution Rates" in the "Liabilities and Contributions" section. Required member contributions for Classic members can be found in Appendix B.</i>	

# Non-Pooled & Pooled Plans

## What are the required contributions?

- Employer Contribution comprised of 2 components
  1. Normal Cost Rate (% of Payroll)
  2. UAL Dollar Payment
- Annual UAL Prepayment Option
  - Only for UAL Dollar Payment component
  - Discount of a half year of interest
    - Avoid overpaying
  - Normal Cost Rate must be paid regularly throughout the year

# UAL Invoice July 1, 2021

Invoice Date: July 01, 2021  
Payment Due Date: July 31, 2021

Description	Amount				
<p>Annual Unfunded Accrued Liability as of the June 30, 2019 Actuarial Valuation for Rate Plan Identifier [REDACTED]</p> <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 Contribution Amount.</p> <p>Your agency's monthly amount due toward the Unfunded Accrued Liability is:</p> <table> <tr> <td>Amount</td><td>Due Date</td></tr> <tr> <td>\$948,350.00</td><td>July 31, 2021</td></tr> </table> <p>If you would like to prepay the entire Annual Payment toward your Plan's Unfunded Accrued Liability, you can submit the Annual Lump Sum Prepayment amount of <b>\$11,001,657.00</b> to the invoice number above by July 31, 2021 instead of the monthly amount listed.</p> <p>Please refer to the June 30, 2019 Actuarial Valuation report for the details of this calculation. Reports are available at CalPERS On-Line or by visiting <a href="http://www.mycalpers.ca.gov">www.mycalpers.ca.gov</a></p> <p>Unfunded Accrued Liability contributions are to be paid in full by the payment due date each month. Payments that are not received in full on or before this date will be assessed interest on the total outstanding balance due (Public Employees' Retirement Law § 20572 (b)). Please note that this monthly statement is a demand for payment in accordance with Public Employees' Retirement Law § 20572 (a).</p> <p><b>For questions concerning your invoice, please call our CalPERS Customer Contact Center at 888 CalPERS (or 888-225-7377) and ask to be referred to the Financial Office.</b></p>	Amount	Due Date	\$948,350.00	July 31, 2021	
Amount	Due Date				
\$948,350.00	July 31, 2021				
<b>Total Due</b>	<b>\$948,350.00</b>				

# Non-Pooled & Pooled Plans

Is the plan in good shape? – Page 6

## Plan's Funded Status

	June 30, 2019	June 30, 2020
1. Present Value of Projected Benefits	\$407,677,223	\$423,676,708
2. Entry Age Accrued Liability	359,120,519	373,699,332
3. Market Value of Assets (MVA)	<u>243,710,833</u>	<u>254,170,783</u>
4. Unfunded Accrued Liability (UAL) [(2) – (3)]	\$115,409,686	\$119,528,549
5. Funded Ratio [(3) / (2)]	67.9%	68.0%

- Unfunded Liability = UAL = Unfunded Accrued Liability
- Funded Ratio is one indicator of the plan's health
- Information as of June 30, 2020



# Non-Pooled

## Why did the required contributions change? Page 15 (Gain)/Loss Analysis 6/30/19 – 6/30/20

### 1. Total (Gain)/Loss for the Year

a) Unfunded Accrued Liability (UAL) as of 6/30/19	\$115,409,686
b) Expected Payment on the UAL during 2019-20	9,693,252
c) Interest through 6/30/20 $[\cdot 07 \times (1a) - ((1.07)^{\frac{1}{2}} - 1) \times (1b)]$	7,561,045
d) Expected UAL before all other changes $[(1a) - (1b) + (1c)]$	113,277,479
e) Change due to plan changes	0
f) Change due to AL Significant Increase	0
g) Change due to assumption change	0
h) Change due to method change	0
i) Expected UAL after all other changes $[(1d) + (1e) + (1f) + (1g) + (1h)]$	113,277,479
j) Actual UAL as of 6/30/20	119,528,549
k) Total (Gain)/Loss for 2019-20 $[(1j) - (1i)]$	\$6,251,070

### 2. Contribution (Gain)/Loss for the Year

g) Contribution (Gain)/Loss $[(2e) - (2f)]$	\$176,708
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### 3. Investment (Gain)/Loss for the Year

j) Investment (Gain)/Loss $[(3h) - (3i)]$	\$5,951,202
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### 4. Liability (Gain)/Loss for the Year

d) Liability (Gain)/Loss $[(4a) - (4b) - (4c)]$	\$123,160
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### 5. Non-Investment (Gain)/Loss for the Year

c) Non-Investment (Gain)/Loss $[(5a) + (5b)]$	\$299,868
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- Expected liability and asset values compared with actual values
- Explains changes to the UAL amount

# Pooled Plans

Why did my required contributions change?

## Gain/Loss Analysis

- Gain/Loss Analysis performed for entire pool
- Share of Gain/Loss allocated to each plan in the pool
- Appears in Section 2 Reports
  - Available on CalPERS website [www.calpers.ca.gov](http://www.calpers.ca.gov) Forms & Publications



## Section 2

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**Actuarial Valuation  
as of June 30, 2020  
for CalPERS**

**Safety Risk Pool**

**Required Contributions  
for Fiscal Year  
July 1, 2022 – June 30, 2023**

# Non-Pooled & Pooled Plans

## Where are the projected contributions – Page 6

	Required Contribution	Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2020-21)				
Fiscal Year	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Normal Cost %	9.83%	9.6%	9.4%	9.2%	9.0%	8.8%
UAL Payment	\$11,239,309	\$11,967,000	\$12,697,000	\$12,178,000	\$10,833,000	\$11,108,000
<i>Total as a % of Payroll*</i>	<i>37.32%</i>	<i>38.1%</i>	<i>38.8%</i>	<i>36.6%</i>	<i>32.7%</i>	<i>32.5%</i>
<i>Projected Payroll</i>	<i>\$40,891,555</i>	<i>\$42,016,073</i>	<i>\$43,171,515</i>	<i>\$44,358,731</i>	<i>\$45,578,597</i>	<i>\$46,832,008</i>

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

- Assumes expected return for FY2020-21 and thereafter
  - Does not reflect FY 2020-21 investment gain
  - Does not reflect any potential change in discount rate
- No demographic gains or losses after 6/30/20 included
  - Does not include impact of Experience Study currently underway
- For non-pooled plans, Normal Cost % reflects increasing PEPRA membership
- Total as % of Payroll for illustration purposes only

# Non-Pooled & Pooled Plans

## Additional Discretion Payments (ADP) – Page 5

### Minimum Required Employer Contribution for Fiscal Year 2022-23

<b>Estimated Normal Cost</b>	<b>Minimum UAL Payment</b>	<b>ADP</b>	<b>Total UAL Contribution</b>	<b>Estimated Total Contribution</b>
\$4,019,640	\$11,239,309	\$0	\$11,239,309	\$15,258,949

### Alternative Fiscal Year 2022-23 Employer Contributions for Greater UAL Reduction

<b>Funding Target</b>	<b>Estimated Normal Cost</b>	<b>Minimum UAL Payment</b>	<b>ADP<sup>1</sup></b>	<b>Total UAL Contribution</b>	<b>Estimated Total Contribution</b>
15 years	\$4,019,640	\$11,239,309	\$1,049,643	\$12,288,952	\$16,308,592
10 years	\$4,019,640	\$11,239,309	\$4,696,537	\$15,935,846	\$19,955,486
5 years	\$4,019,640	\$11,239,309	\$16,058,575	\$27,297,884	\$31,317,524

- ADPs assumed to be paid in the middle of the year

# Discount Rate Change

- 7.00% discount rate used in June 30, 2020 valuation
- Risk Mitigation Policy Event triggered
  - FY 2020-21 investment return of 21.3%
  - Discount rate reduced to 6.80%
  - Lower discount rates result in higher accrued liabilities and normal costs

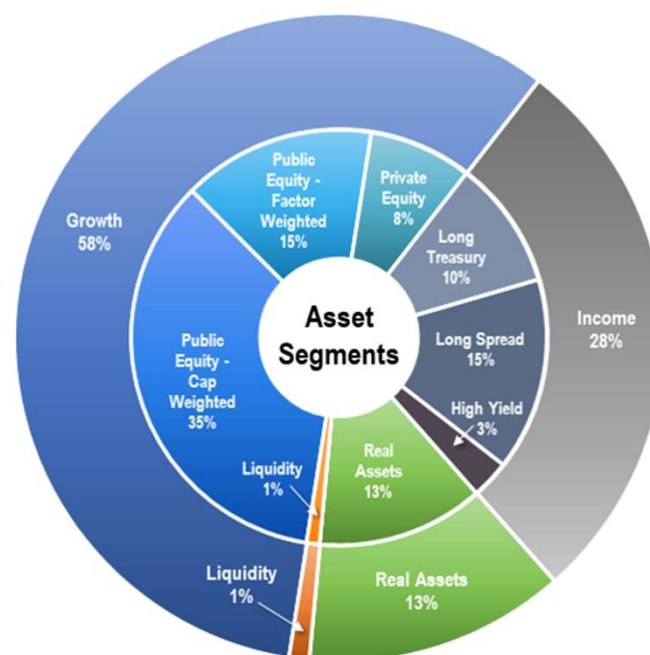
# Asset Liability Management ALM

- Asset Liability Management (ALM) Process
  - Conducted every 4 years
  - Various presentation to Board during 2021
  - Webinars to stakeholders during 2021
  - Review of Asset Allocation of the Public Employers Retirement Fund (PERF)
  - Experience Review of demographic assumption
  - 6.8% discount rate

Asset Class	Actual Allocation	Policy Target Allocation
Public Equity	53.0%	50.0%
Private Equity	6.3%	8.0%
Global Fixed Income	28.3%	28.0%
Real Assets	11.3%	13.0%
Liquidity	0.9%	1.0%
Inflation Sensitive Assets	0.0%	0.0%
Trust Level <sup>1</sup>	0.2%	0.0%
<b>Total Fund</b>	<b>100.0%</b>	<b>100.0%</b>

<sup>1</sup> Trust Level includes Multi-Asset Class, Completion Overlay, Risk Mitigation, Absolute Return Strategies, Plan Level Transition and other Total Fund level portfolios.

Strategic Asset Allocation Policy Targets



# Recent and Prospective Changes

- **Effective for June 30, 2019 valuation**

- New Amortization Policy
  - Impacts FY 2021-22 rates for public agencies
  - Prospective only (existing bases not affected)

- **Effective for June 30, 2021 valuation**

- 6.80% discount rate
- Updated demographic assumptions
  - Impact FY 2023-24 contributions

# ALM Impact

CalPERS Board Meeting, Investment Committee November 2021

ALM: PERF Policy Portfolio & Discount Rate Selection

Agenda Item 7b, Attachment 1, Page 21 of 43

## Employer Contribution Rate Changes: 6.8% Discount Rate

New Demographic Assumptions, 6.8% Discount Rate, 2.3% Inflation, Prior Year Investment Gain									
Classic Formulas	Normal Cost %			UAL Payment %			Total ER Contribution %		
	Min	Median	Max	Min	Median	Max	Min	Median	Max
2% @ 60 Miscellaneous	0.9%	1.4%	1.7%	-5.4%	-1.0%	0.0%	-3.8%	0.2%	1.4%
2% @ 55 Miscellaneous	1.0%	1.5%	1.9%	-8.8%	-1.8%	0.0%	-7.2%	-0.3%	1.5%
2.5% @ 55 Miscellaneous	1.2%	1.8%	2.4%	-10.1%	-1.9%	0.1%	-8.3%	0.0%	2.0%
2.7% @ 55 Miscellaneous	1.4%	1.9%	2.3%	-8.3%	-2.1%	-0.5%	-6.5%	-0.3%	1.4%
3% @ 60 Miscellaneous	1.4%	2.1%	2.4%	-9.1%	-2.1%	-0.3%	-6.8%	-0.1%	1.5%
2% @ 50 Safety	0.9%	1.1%	1.4%	-5.4%	-4.9%	-4.2%	-4.2%	-4.0%	-2.9%
3% @ 55 Safety	1.3%	2.1%	2.7%	-4.4%	-3.9%	-0.8%	-3.0%	-2.1%	1.7%
3% @ 50 Safety	1.5%	2.9%	4.3%	-16.1%	-3.0%	0.3%	-12.9%	-0.1%	4.3%
<b>PEPRA</b>									
2% @ 62 Miscellaneous	0.7%	1.2%	1.6%						
2.7% @ 57 Safety	1.0%	1.5%	2.6%						



# Non-Pooled & Pooled Plans

Are there any alternative UAL Amortization Schedules?

Amortization Schedule and Alternatives

- Schedule of Required UAL Amortization Payments
- Two sample Fresh Start Alternatives
  - Pay off UAL more rapidly
  - Other alternatives available

# Non-Pooled & Pooled Plans (Page 16 /Page 11)

## Schedule of Amortization Bases

Reason for Base	Date Est.	Ramp Level 2022-23	Ramp Shape	Escalation Rate	Amort. Period	Balance 6/30/20	Expected Payment 2020-21	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Minimum Required Payment 2022-23
Assumption Change	6/30/03	No Ramp		2.75%	3	4,091,029	916,316	3,429,556	941,514	2,695,715	967,406
Assets Change	6/30/03	No Ramp		2.75%	3	(74,913)	(16,779)	(62,801)	(17,241)	(49,363)	(17,715)
Method Change	6/30/04	No Ramp		2.75%	4	(323,251)	(61,524)	(282,238)	(63,216)	(236,604)	(64,955)
Benefit Change	6/30/05	No Ramp		2.75%	4	8,400,582	1,598,877	7,334,732	1,642,846	6,148,790	1,688,024
Assumption Change	6/30/09	No Ramp		2.75%	9	9,690,955	1,106,915	9,224,320	1,137,356	8,693,532	1,168,633
Special (Gain)/Loss	6/30/09	No Ramp		2.75%	19	2,051,787	147,104	2,043,247	151,149	2,029,925	155,306
Special (Gain)/Loss	6/30/10	No Ramp		2.75%	20	544,326	383,017	186,233	36,523	161,490	11,946
Assumption Change	6/30/11	No Ramp		2.75%	11	4,580,540	459,510	4,425,857	472,146	4,247,275	485,130
Special (Gain)/Loss	6/30/11	No Ramp		2.75%	21	(2,971,263)	(201,346)	(2,970,977)	(206,883)	(2,964,944)	(212,573)
(Gain)/Loss	6/30/12	No Ramp		2.75%	22	9,042,901	597,382	9,057,967	613,809	9,057,096	630,689
(Gain)/Loss	6/30/13	100%	Up/Down	2.75%	23	35,306,115	2,395,060	35,300,074	2,460,925	35,225,479	2,528,600
Assumption Change	6/30/14	100%	Up/Down	2.75%	14	17,525,394	1,666,476	17,028,355	1,712,304	16,449,119	1,759,392
(Gain)/Loss	6/30/14	100%	Up/Down	2.75%	24	(23,199,288)	(1,534,097)	(23,236,356)	(1,576,284)	(23,232,380)	(1,619,632)
(Gain)/Loss	6/30/15	100%	Up/Down	2.75%	25	15,573,949	814,581	15,821,516	1,046,228	15,846,795	1,074,999
Assumption Change	6/30/16	100%	Up/Down	2.75%	16	5,953,818	324,155	6,035,277	444,092	5,998,374	570,381
(Gain)/Loss	6/30/16	100%	Up/Down	2.75%	26	17,312,298	680,350	17,820,399	932,080	18,103,676	1,197,140
Assumption Change	6/30/17	80%	Up/Down	2.75%	17	6,348,245	231,491	6,553,166	356,786	6,642,825	488,797
(Gain)/Loss	6/30/17	80%	Up/Down	2.75%	27	(7,453,415)	(198,124)	(7,770,213)	(305,359)	(7,998,262)	(418,342)
Method Change	6/30/18	60%	Up/Down	2.75%	18	3,029,799	56,489	3,183,452	116,086	3,286,213	178,917
Assumption Change	6/30/18	60%	Up/Down	2.75%	18	11,078,619	206,557	11,640,458	424,474	12,016,211	654,221

## Schedule of Amortization Bases (continued)

Reason for Base	Date Est.	Ramp Level 2022-23	Ramp Shape	Escalation Rate	Amort. Period	Balance 6/30/20	Expected Payment 2020-21	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Minimum Required Payment 2022-23
(Gain)/Loss	6/30/18	60%	Up/Down	2.75%	28	(3,810,172)	(52,039)	(4,023,054)	(106,939)	(4,194,049)	(164,821)
Non-Investment (Gain)/Loss	6/30/19	No Ramp		0.00%	19	(582,952)	0	(623,759)	(56,920)	(608,544)	(56,920)
Investment (Gain)/Loss	6/30/19	40%	Up Only	0.00%	19	1,162,376	0	1,243,742	27,193	1,302,675	54,386
Non-Investment (Gain)/Loss	6/30/20	No Ramp		0.00%	20	299,868	0	320,859	0	343,319	31,329
Investment (Gain)/Loss	6/30/20	20%	Up Only	0.00%	20	5,951,202	0	6,367,786	0	6,813,531	148,971
<b>Total</b>						<b>119,528,549</b>	<b>9,520,371</b>	<b>118,047,598</b>	<b>10,182,669</b>	<b>115,777,894</b>	<b>11,239,309</b>

# Amortization Schedule and Alternatives

## Amortization Schedule and Alternatives (continued)

	<u>Current Amortization Schedule</u>		<u>Alternative Schedules</u>			
			<u>15 Year Amortization</u>		<u>10 Year Amortization</u>	
Date	Balance	Payment	Balance	Payment	Balance	Payment
6/30/2022	115,777,894	11,239,309	115,777,894	12,288,952	115,777,894	15,935,846
6/30/2023	112,256,314	11,966,663	111,170,556	12,288,952	107,398,179	15,935,846
6/30/2024	107,735,842	12,697,374	106,240,704	12,288,952	98,431,884	15,935,846
6/30/2025	102,143,084	12,177,918	100,965,762	12,288,951	88,837,949	15,935,846
6/30/2026	96,696,163	10,833,254	95,321,576	12,288,952	78,572,438	15,935,846
6/30/2027	92,258,889	11,107,650	89,282,296	12,288,952	67,588,341	15,935,846
6/30/2028	87,227,169	11,389,594	82,820,266	12,288,952	55,835,358	15,935,846
6/30/2029	81,551,582	11,679,285	75,905,894	12,288,951	43,259,666	15,935,846
6/30/2030	75,179,045	11,976,945	68,507,517	12,288,952	29,803,675	15,935,847
6/30/2031	68,052,530	10,790,984	60,591,252	12,288,951	15,405,764	15,935,846
6/30/2032	61,653,927	10,602,673	52,120,850	12,288,952		
6/30/2033	55,002,213	9,742,673	43,057,519	12,288,951		
6/30/2034	48,774,468	9,341,832	33,359,756	12,288,952		
6/30/2035	42,525,416	8,738,347	22,983,148	12,288,952		
6/30/2036	36,463,178	7,689,244	11,880,178	12,288,952		
6/30/2037	31,061,785	7,105,066				
6/30/2038	25,886,572	6,483,590				
6/30/2039	20,991,952	6,004,126				
6/30/2040	16,250,672	5,693,172				
6/30/2041	11,499,156	4,640,359				
6/30/2042	7,504,070	3,637,126				
6/30/2043	4,267,082	3,411,493				
6/30/2044	1,036,902	1,072,580				
6/30/2045						
<b>Total</b>		<b>200,021,257</b>		<b>184,334,276</b>		<b>159,358,461</b>
<b>Interest Paid</b>		<b>84,243,363</b>		<b>68,556,382</b>		<b>43,580,567</b>
<b>Estimated Savings</b>				<b>15,686,981</b>		<b>40,662,796</b>

# Managing Employer Contributions

## How much savings will ADPs generate?

- Excel tool developed to estimate savings for Additional Discretionary Payments (ADP) and Fresh Starts
  - Contact your actuary if you are interested in this tool
- Pension Outlook Tool
  - Run ADP scenarios



# Managing Employer Contributions

## Three Choices of Paydown Options:

1. "Longest to Shortest". Select from drop down menu (cell B7) and click "Run Scenario" button.
2. "Shortest to Longest". Select from drop down menu (cell B7) and click "Run Scenario" button.
3. Customized order of payoff. Enter a unique number for each base. **DO NOT** click "Run Scenario" button.

## Longest to Shortest

				Total Payments \$ 200,021,257		\$ 5,000,000		Total Payments \$ 192,690,576		\$ (7,330,681)		Funded Ratio 2020 val: 68.0%
Run Scenario				Interest Paid \$ 84,243,363		21 - 22 Payment Date		Interest Paid \$ 76,912,682				
						9/30/2020		Total Savings \$ 7,330,681				
1	Order of		Balance as of	Remaining	Original Schedule		Total ADP		Schedule with ADP		Contribution	Projected Funded
2	Payoff	Base Name and FULL/PARTIAL Payoff	June 30, 2022	Period		Balance Payment	(Valued Mid-year)	Balance Payment	Difference	Ratio End of Year		
3	5	Non-Investment (Gain)/Loss 2020	\$ 343,319	20	2020-21	\$ 119,528,549 \$ 9,520,371		\$ 119,528,549 \$ 9,520,371			69.6%	
4	6	Investment (Gain)/Loss 2020	6,813,531	20	2021-22	\$ 118,047,598 \$ 10,182,669	\$ 5,440,066	\$ 118,047,598 \$ 10,182,669	\$ 5,000,000		72.8%	
5	8	Investment (Gain)/Loss 2019	1,302,675	19	2022-23	\$ 115,777,894 \$ 11,239,309	-	\$ 110,150,646 \$ 10,867,196	\$ (372,113)		74.7%	
6	10	Assumption Change 2018	12,016,211	18	2023-24	\$ 112,256,314 \$ 11,966,663	-	\$ 106,620,075 \$ 11,584,318	\$ (382,345)		76.8%	
7	11	Method Change 2018	3,286,213	18	2024-25	\$ 107,735,842 \$ 12,697,374	-	\$ 102,100,567 \$ 12,304,513	\$ (392,862)		78.9%	
8	12	Assumption Change 2017	6,642,825	17	2025-26	\$ 102,143,084 \$ 12,177,918	-	\$ 96,519,718 \$ 11,774,255	\$ (403,663)		80.9%	
9	13	Assumption Change 2016	5,998,374	16	2026-27	\$ 96,696,163 \$ 10,833,254	-	\$ 91,096,715 \$ 10,418,490	\$ (414,764)		82.6%	
10	1	(Gain)/Loss 2016 PARTIAL	18,103,676	26	2027-28	\$ 92,258,889 \$ 11,107,650	-	\$ 86,696,515 \$ 10,681,479	\$ (426,171)		84.3%	
11	2	(Gain)/Loss 2015	15,846,795	25	2028-29	\$ 87,227,169 \$ 11,389,594	-	\$ 81,716,262 \$ 10,951,701	\$ (437,893)		86.0%	
12	14	Assumption Change 2014	16,449,119	14	2029-30	\$ 81,551,582 \$ 11,679,285	-	\$ 76,107,868 \$ 11,229,353	\$ (449,932)		87.7%	
13	3	(Gain)/Loss 2013	35,225,479	23	2030-31	\$ 75,179,045 \$ 11,976,945	-	\$ 69,819,685 \$ 11,514,641	\$ (462,304)		89.4%	
14	4	(Gain)/Loss 2012	9,057,096	22	2031-32	\$ 68,052,530 \$ 10,790,984	-	\$ 62,796,226 \$ 10,315,963	\$ (475,021)		90.9%	
15	15	Assumption Change 2011	4,247,275	11	2032-33	\$ 61,653,927 \$ 10,602,673	-	\$ 56,521,045 \$ 10,114,591	\$ (488,082)		92.3%	
16	7	Special (Gain)/Loss 2010	161,490	20	2033-34	\$ 55,002,213 \$ 9,742,673	-	\$ 50,014,906 \$ 9,241,169	\$ (501,504)		93.5%	
17	16	Assumption Change 2009	8,693,532	9	2034-35	\$ 48,774,468 \$ 9,341,832	-	\$ 43,956,809 \$ 8,826,536	\$ (515,296)		94.7%	
18	9	Special (Gain)/Loss 2009	2,029,925	19	2035-36	\$ 42,525,416 \$ 8,738,347	-	\$ 37,903,547 \$ 8,208,882	\$ (529,465)		95.7%	
19	17	Benefit Change 2005	6,148,790	4	2036-37	\$ 36,463,178 \$ 7,689,244	-	\$ 32,065,461 \$ 7,145,218	\$ (544,026)		96.6%	
20	18	Assumption Change 2003	2,695,715	3	2037-38	\$ 31,061,785 \$ 7,105,066	-	\$ 26,918,973 \$ 6,546,080	\$ (558,986)		97.3%	
21		-	-		2038-39	\$ 25,886,572 \$ 6,483,590	-	\$ 22,031,984 \$ 5,909,233	\$ (574,357)		98.0%	
22		-	-		2039-40	\$ 20,991,952 \$ 6,004,126	-	\$ 17,461,664 \$ 5,413,975	\$ (590,151)		98.6%	
23		-	-		2040-41	\$ 16,250,672 \$ 5,693,172	-	\$ 13,083,724 \$ 5,086,790	\$ (606,382)		99.1%	
24		-	-		2041-42	\$ 11,499,156 \$ 4,640,359	-	\$ 8,737,770 \$ 4,017,301	\$ (623,058)		99.5%	
25		-	-		2042-43	\$ 7,504,070 \$ 3,637,126	-	\$ 5,193,883 \$ 2,996,933	\$ (640,193)		99.8%	
26		-	-		2043-44	\$ 4,267,082 \$ 3,411,493	-	\$ 2,457,403 \$ 2,541,957	\$ (869,536)		100.0%	
27		-	-		2044-45	\$ 1,036,902 \$ 1,072,580	-	\$ - \$ -	\$ (1,072,580)		100.0%	
28		-	-		2045-46	\$ - \$ -	-	\$ - \$ -	\$ -		100.0%	
29		-	-		2046-47	\$ - \$ -	-	\$ - \$ -	\$ -		100.0%	
30		-	-		2047-48	\$ - \$ -	-	\$ - \$ -	\$ -		100.0%	
31		-	-		2048-49	\$ - \$ -	-	\$ - \$ -	\$ -		100.0%	
32		-	-		2049-50	\$ - \$ -	-	\$ - \$ -	\$ -		100.0%	
33		-	-		2050-51	\$ - \$ -	-	\$ - \$ -	\$ -		100.0%	
34		-	-		2051-52	\$ - \$ -	-	\$ - \$ -	\$ -		100.0%	

# Managing Employer Contributions

## Projection of FY 2020-21 Investment Earnings

<a href="#">Back to Instructions</a>				<b>Agency</b> <b>Rate Plan II</b>		<b>\$ 254,170,783</b>		<b>Economic Assumption Change</b>	
<b>Three Choices of Paydown Options:</b> 1. "Longest to Shortest". Select from drop down menu (cell B7) and click "Run Scenario" button. 2. "Shortest to Longest". Select from drop down menu (cell B7) and click "Run Scenario" button. 3. Customized order of payoff. Enter a unique number for each base. <b>DO NOT</b> click "Run Scenario" button.				2020 - 2021 21.3%		2021 - 2022 6.8%		Discount Rate: 6.80%	
<b>Shortest to Longest</b>								Inflation Rate: 2.25%	
								Payroll Growth Rate: 2.50%	
								Risk Mitigation: <a href="#">Show Risk Mitigation</a>	
<a href="#">Run Projection</a>				<b>21-22 ADP Amount</b> \$ -		Total Payments \$ 131,956,785		Funded Ratio 2020 val 68.0%	
				<b>21 - 22 Payment Data</b> 8/25/2021		Interest Paid \$ 46,931,655			
				<b>Total Savings</b> \$ -					
Order of Payoff	Base Name and FULL/PARTIAL Payo	Balance as of June 30, 2022	Remaining Period	Total ADP (Valued Mid-year)	Balance	Payment	Contribution Difference	Projected Funded Ratio End of Year	
15	Assumption Change 2021	\$ 8,210,751	21	2020-21	\$ 119,528,549	\$ 9,520,371	\$ -	77.5%	
16	Investment (Gain)/Loss 2021	(38,737,268)	21	2021-22	\$ 89,251,815	\$ 10,182,669	\$ -	79.4%	
17	Investment (Gain)/Loss 2022	-	22	2022-23	\$ 85,025,131	\$ 11,239,309	\$ -	81.5%	
12	Non-Investment (Gain)/Loss 2020	343,319	20	2023-24	\$ 79,424,742	\$ 11,850,410	\$ -	83.7%	
13	Investment (Gain)/Loss 2020	6,813,531	20	2024-25	\$ 72,578,926	\$ 11,657,748	\$ -	85.9%	
10	Investment (Gain)/Loss 2019	1,302,675	19	2025-26	\$ 65,466,700	\$ 10,225,323	\$ -	87.7%	
8	Assumption Change 2018	12,016,211	18	2026-27	\$ 59,351,170	\$ 7,980,856	\$ -	89.1%	
9	Method Change 2018	3,286,213	18	2027-28	\$ 55,139,307	\$ 7,338,826	\$ -	90.2%	
7	Assumption Change 2017	6,642,825	17	2028-29	\$ 51,304,537	\$ 7,592,243	\$ -	91.4%	
6	Assumption Change 2016	5,998,374	16	2029-30	\$ 46,947,112	\$ 7,851,995	\$ -	92.7%	
21	(Gain)/Loss 2016	18,103,676	26	2030-31	\$ 42,024,943	\$ 8,118,241	\$ -	93.9%	
20	(Gain)/Loss 2015	15,846,795	25	2031-32	\$ 36,492,917	\$ 6,933,066	\$ -	94.9%	
5	Assumption Change 2014	16,449,119	14	2032-33	\$ 31,809,521	\$ 6,725,928	\$ -	95.9%	
19	(Gain)/Loss 2013	35,225,479	23	2033-34	\$ 27,021,719	\$ 5,866,046	\$ -	96.7%	
18	(Gain)/Loss 2012	9,057,096	22	2034-35	\$ 22,796,985	\$ 5,455,935	\$ -	97.4%	
4	Assumption Change 2011	4,247,275	11	2035-36	\$ 18,708,793	\$ 4,851,315	\$ -	98.0%	
14	Special (Gain)/Loss 2010	161,490	20	2036-37	\$ 14,967,444	\$ 3,818,443	\$ -	98.5%	
3	Assumption Change 2009	8,693,532	9	2037-38	\$ 12,039,095	\$ 3,238,745	\$ -	98.8%	
11	Special (Gain)/Loss 2009	2,029,925	19	2038-39	\$ 9,510,703	\$ 2,625,927	\$ -	99.1%	
2	Benefit Change 2005	6,148,790	4	2039-40	\$ 7,443,691	\$ 2,152,360	\$ -	99.4%	
1	Assumption Change 2003	2,695,715	3	2040-41	\$ 5,725,525	\$ 1,842,468	\$ -	99.6%	
	-	-		2041-42	\$ 4,210,779	\$ 822,021	\$ -	99.6%	
	-	-		2042-43	\$ 3,647,602	\$ 3,769,581	\$ -	100.0%	
	-	-		2043-44	\$ -	\$ -	\$ -	100.0%	
	-	-		2044-45	\$ -	\$ -	\$ -	100.0%	
	-	-		2045-46	\$ -	\$ -	\$ -	100.0%	
	-	-		2046-47	\$ -	\$ -	\$ -	100.0%	
	-	-		2047-48	\$ -	\$ -	\$ -	100.0%	
	-	-		2048-49	\$ -	\$ -	\$ -	100.0%	
	-	-		2049-50	\$ -	\$ -	\$ -	100.0%	
	-	-		2050-51	\$ -	\$ -	\$ -	100.0%	
	-	-		2051-52	\$ -	\$ -	\$ -	100.0%	

# Non-Pooled Plans – Page 22/23

## Where are the PEPRA members?

- Non pooled plans include PEPRA members
- Non pooled plans require the same **employer** rate for all members in the plan
- Non pooled plans require differing **employee** rates
  - Classic member rate is set by statute
  - PEPRA member rate can be found on page 22/23

Rate Plan Identifier	Benefit Group Name	Basis for Current Rate		Rates Effective July 1, 2022			
		Total Normal Cost	Member Rate	Total Normal Cost	Change	Change Needed	Member Rate
	Miscellaneous PEPRA Level	12.591%	6.25%	13.16%	0.569%	No	6.25%

# Non-Pooled Plans

## Normal Cost for Each Group/Tier

- Page 21/22

<b>Rate Plan Identifier</b>	<b>Benefit Group Name</b>	<b>Total Normal Cost FY 2022-23</b>	<b>Number of Actives</b>	<b>Payroll on 6/30/2020</b>
9991	Miscellaneous First Level	19.72%	194	\$19,760,282
9992	Miscellaneous PEPRRA Level	13.16%	152	\$12,791,057
9993	Miscellaneous Second Level	17.06%	39	\$5,144,042
	<b>Plan Total</b>	<b>17.09%</b>	<b>385</b>	<b>\$37,695,381</b>



# Pooled Plans

Where are the PEPRA members?

- Separate report for PEPRA members
- Separate contributions for pooled PEPRA members

# Non-Pooled & Pooled Plans

Additional information – NP p25/26 / P p17/18

## Real Rate of Return Sensitivity

### Sensitivity to the Real Rate of Return Assumption

As of June 30, 2020	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
<b>Discount Rate</b>	<b>6.0%</b>	<b>7.0%</b>	<b>8.0%</b>
Inflation	2.5%	2.5%	2.5%
<b>Real Rate of Return</b>	<b>3.5%</b>	<b>4.5%</b>	<b>5.5%</b>
a) Total Normal Cost	21.59%	17.09%	13.68%
b) Accrued Liability	\$422,452,921	\$373,699,332	\$333,334,614
c) Market Value of Assets	\$254,170,783	\$254,170,783	\$254,170,783
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$168,282,138	\$119,528,549	\$79,163,831
e) Funded Status	60.2%	68.0%	76.3%

# Non-Pooled & Pooled Plans

Additional information – NP p25/26 / P p17/18

## Price Inflation Sensitivity

### Sensitivity to the Price Inflation Assumption

As of June 30, 2020	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
<b>Discount Rate</b>	<b>6.0%</b>	<b>7.0%</b>	<b>8.0%</b>
<b>Inflation</b>	<b>1.5%</b>	<b>2.5%</b>	<b>3.5%</b>
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	18.31%	17.09%	15.68%
b) Accrued Liability	\$393,336,724	\$373,699,332	\$348,094,103
c) Market Value of Assets	\$254,170,783	\$254,170,783	\$254,170,783
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$139,165,941	\$119,528,549	\$93,923,320
e) Funded Status	64.6%	68.0%	73.0%

# Non-Pooled & Pooled Plans

Additional information – NP p25/26 / P p17/18

## Mortality Rate Sensitivity

<b>As of June 30, 2020</b>	<b>10% Lower Mortality Rates</b>	<b>Current Assumptions</b>	<b>10% Higher Mortality Rates</b>
a) Total Normal Cost	17.38%	17.09%	16.82%
b) Accrued Liability	\$381,474,343	\$373,699,332	\$366,542,901
c) Market Value of Assets	\$254,170,783	\$254,170,783	\$254,170,783
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$127,303,560	\$119,528,549	\$112,372,118
e) Funded Status	66.6%	68.0%	69.3%

# Comparison of Impacts to Changes in Different Assumptions

## Real Rate of Return Sensitivity

	-1% Change	+1% Change
AL Change	+\$48.8 million (+13.6%)	-\$40.4 million (-10.8%)
NC% Change in Payroll	+4.50%	-3.41%

## Inflation Sensitivity

	-1% Change	+1% Change
AL Change	+\$19.6 million (+5.2%)	-\$25.6 million (-6.9%)
NC% Change in Payroll	+1.22%	-1.41%

## Mortality Sensitivity

	-10% Change	+10% Change
AL Change	+\$7.8 million (+2.1%)	-\$7.2 million (-1.9%)
NC% Change in Payroll	+0.29%	-0.27%

# Non-Pooled & Pooled Plans

Additional information – NP p28/29 / P p20/21

## Hypothetical Termination Liability

Market Value of Assets (MVA)	Hypothetical Termination Liability <sup>1,2</sup> at 0.75%	Funded Status	Unfunded Termination Liability at 0.75%	Hypothetical Termination Liability <sup>1,2</sup> at 2.50%	Funded Status	Unfunded Termination Liability at 2.50%
\$254,170,783	\$853,058,984	29.8%	\$598,888,201	\$646,838,803	39.3%	\$392,668,020

- Prevailing Treasury Bond rates
- Unfunded Term Liability = Hypothetical Term Liability less Market Value of Assets
- Highly sensitive to the discount rate

# Covid-19 Impact on the Actuarial Valuation

Period Covered	Actuarial Valuation	First Fiscal Year for Contributions Impact
Jan 1, 2020 – June 30, 2020	June 30, 2020	Fiscal Year 2022-2023
July 1, 2020 – June 30, 2021	June 30, 2021	Fiscal Year 2023-2024

# Other information

## **Actuarial Assumptions**

- Appendix A

## **Benefit Provisions**

- non-pooled plans Appendix B
- pooled plans – page 18

## **Participant Data**

- non-pooled plans – Appendix C
- Pooled plans – page 18



# Pension Outlook



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## Pension Outlook Overview

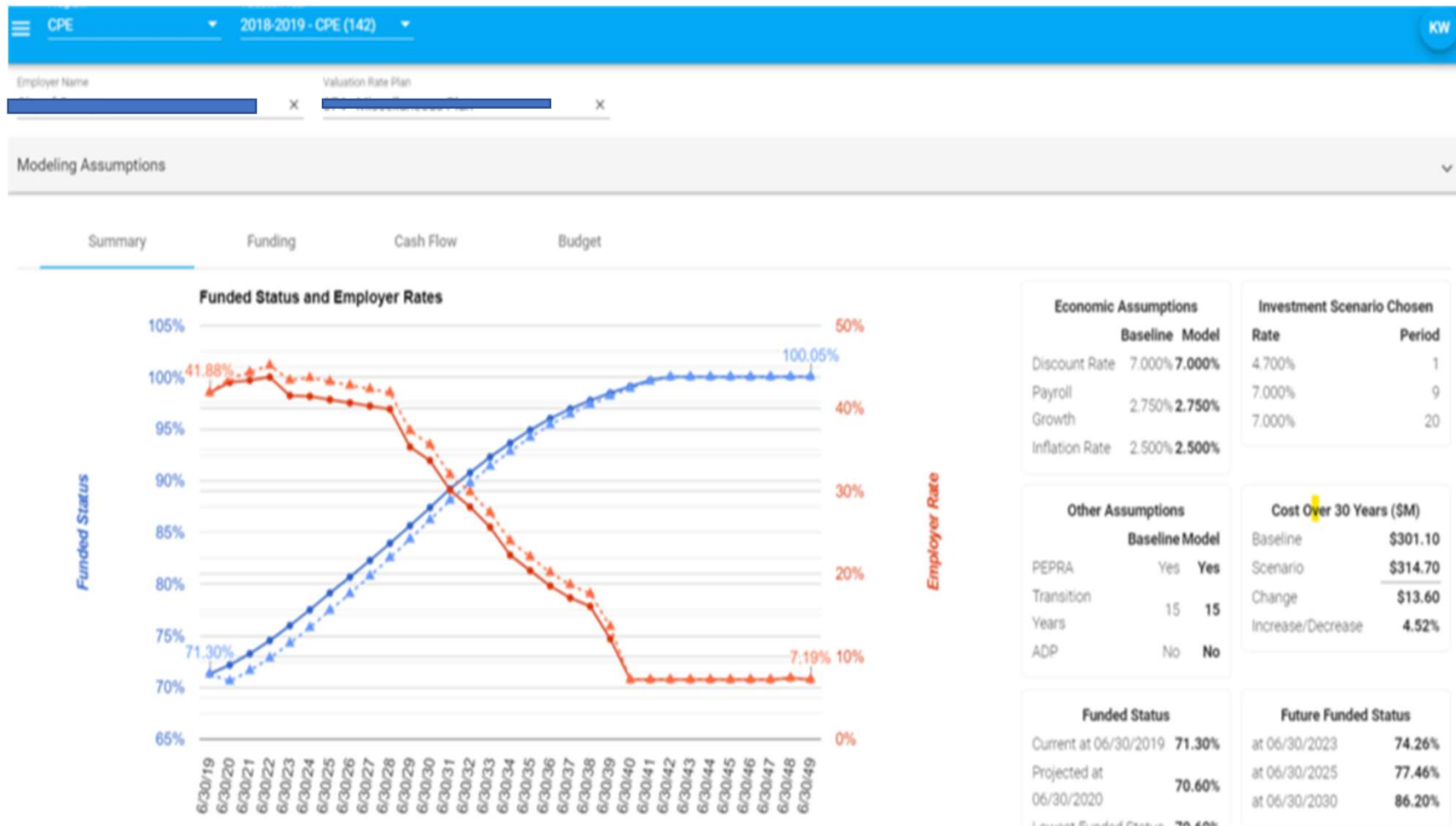
**Pension Outlook** is a tool to help plan and budget pension costs into the future with easy to understand results and charts.

You will be able to view the projected funded status and required employer contributions for pension plans in different potential scenarios for up to 30 years into the future — which will make budgeting more predictable. While Pension Outlook can't predict the future, it can provide valuable planning information based on a variety of possible future scenarios that you select.

# Pension Outlook

- ☐ Models Funded Status, Employer Rates and Total Costs under Investment Scenarios chosen by User
- ☐ Impact of Potential Discount Rate Changes
- ☐ Impact of ADP's
- ☐ Impact of PEPPRA on future costs
- ☐ Budgeting schedule available
- ☐ Available to all stakeholders/interested parties at <https://www.calpers.ca.gov/page/employers/actuarial-resources/pension-outlook-overview>
- ☐ Timeline → Updated version in September

# Pension Outlook – Employer View



# Contacting Your Actuary

Call the Customer Support Center

- 1-888-CalPERS (1-888-225-7377)

Plan actuary's name appears on page 1 of the annual report

## Actuarial Certification

To the best of our knowledge, this report is complete and accurate, and we disclose, fully and fairly, the funded condition of the Miscellaneous Retirement Plan. The valuation is based on the member and financial data as of June 30, 2014, and the benefits under this plan with CalPERS as of June 30, 2014. In our opinion, the valuation has been performed in accordance with standards of practice prescribed by the Actuarial Standards of Practice, and the assumptions and methods are internally consistent and reasonable. This certification is made in accordance with provisions of the California Retirement Law.

The undersigned is an actuary for CalPERS, a member of the Society of Actuaries and meets the Qualification Standards of the Society of Actuaries for the actuarial opinions contained herein.

*John Doe*

JOHN DOE, FSA, EA, MAAA  
Senior Pension Actuary, CalPERS

# Key Takeaways

- ✓ Contribution Requirements for FY 2022-23
- ✓ Funded Status of the Plans
- ✓ 5-Year Contribution Projections
- ✓ Alternatives for proactively managing Unfunded Accrued Liabilities
- ✓ FY 2020-21 Investment return impact
- ✓ Attend CalPERS Virtual Educational Forum



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