Item No. 6
Town of Atherton

FINANCE COMMITTEE STAFF REPORT

TO: **FINANCE COMMITTEE**

FROM: **ROBERT BARRON III, FINANCE DIRECTOR**

DATE: **JANUARY 11, 2022**

SUBJECT: **PRESENTATION REVIEW AND DISCUSSION CALPERS ACTUARIAL REPORTS AS OF JUNE 30, 2020; DISCUSSION WITH JULIAN ROBINSON, SENIOR PENSION ACTUARY FROM CALPERS TO PROVIDE GENERAL UPDATE ON RETIREMENT PLANS, CALPERS ASSET LIABILITY MANAGEMENT (ALM) DISCOUNT RATE, ASSUMPTION CHANGES AND DISCUSS SCENARIOS OF ADP PAYMENTS TO PENSION PLANS**

RECOMMENDATION

Presentation review and discussion of CalPERS actuarial reports as of June 30, 2020. Discussion with Julian Robinson, senior pension actuary from CalPERS to provide general update on retirement plans, CalPERS Asset Liability Management (ALM) discount rate, assumption changes and discuss scenarios of additional discretionary payments to pension plans.

BACKGROUND

At our November meeting, we discussed the CalPERS Board Administration current review of the pension fund. We discussed that the board was in the final stages of the Asset Liability Management review. This review is done every four years. It is in addition to the modest changes the board had made to asset allocation, discount rate, actuarial demographic assumptions, and funding risk mitigation policies in previous years. These were all part of the process to ensure the investment risk and strategic asset allocation align with discount rate and continue to increase the pension funded status. The ultimate outcome of the ALM process is the discount rate. With the recent FY 2020/21 investment return of 21.3%, the Funding Risk Mitigation policy (FRMP) was triggered. Discussed in our last meeting there are thresholds used when the investment returns outperform the discount rate. These set thresholds define the total investment return required for reduction in the discount rate to take place. The FRMP lowers the discount rate in years of good investment returns. This was the first year the policy had been triggered. To be triggered,

investment returns in excess of the discount rate are required to meet a certain threshold for the rate to be reduced. *The FY 20/21 return of 21.3% falls within the 13.0% additional investment return required and thus reduces discount rate by .20%.* Based on the threshold the discount rate is reduced to 6.8%. The FRMP trigger just happened to coincide with Asset Liability Management review. This process led to balance of risk and reward approach but coincides with a discount rate review on portfolio asset allocations.

Calculation of Investment Performance

CalPERS' 2020/21 final fiscal year investment performance will be calculated based on audited figures and will be reflected in contribution levels for the State of California and school districts in fiscal year 2022-23, and for contracting cities, counties, and special districts in fiscal year 2023/24

FINDINGS

Future Discount Rate

The CalPERS Board evaluated several portfolios for consideration to align with a baseline discount rate of return of 6.8%. In September 2021, the Board reviewed various portfolios with 6.5%, 6.8%, and 7.0% discount rates with varying degrees of leverage. *At its November 15th meeting, the CalPERS Board selected a portfolio that would provide a projected rate of return of 6.8% while balancing risk and reward on investments.* This includes the balance between percentage of private assets and leverage versus tolerance for drawdown risk and volatility, or poor returns and loses. Drawdown is considered the average the worst three rolling years of losses. Over the years there has been an increase in percentage of the fund toward private assets. The new portfolio selected is Candidate Portfolio B2 with a discount rate of 6.8% and includes new strategic asset allocation with 5% leverage and increased allocation to private assets and new actuarial assumptions were adopted. Notable changes include increased allocation to private assets including private equity, real assets, and private debt from 21% to 33%. This also includes reduction of public equity exposure. Any implemented changes do not occur until July 2022 and will not affect public agency employers until FY 23/24.

The impacts of lowering the discount rate include:

- Probability of meeting investment return assumption increases
- No changes for Classic members & retirees
- PEPRA Normal Cost increases for some plans
- UAL & Normal Cost increases

One fact of lowering the discount rate means that expectation is that investments are going to grow at a slower pace over time. This in turn means that the gap between assets and liabilities will increase thus leading to a growth in unfunded liabilities and this also leads to an increase in normal costs to the plans.

Today we will revisit the Town actuarial reports in detail and have invited back our senior pension actuary to discuss our pension liabilities. ***Julian Robinson is a CalPERS senior actuary familiar with our pension plan and is here to provide a review of our June 30, 2020 actuarial reports, discuss CalPERS board implementations as a result of the ALM.*** This review of the actuary reports and changes will assist us in our recommendations in the next several years of making contributions toward pension liabilities via Pension Rate Stabilization Trust (PARS Trust).

Discussion/Review

The outlook of future pension costs and their impact to agencies has always been at the forefront as the understanding a reduction in the discount rate will lead to increase normal costs in the short term as well as increases in unfunded actuarial liabilities (UAL). There have been many discussions on how to project changes in the discount rate and the effects investment returns have on the pension liabilities. CalPERS has a Pension Outlook tool available to model expected changes in contributions to the plan and project future expected rate of returns. It is a tool to help plan and budget pension costs into the future with results and charts to assist in understanding future liabilities. The current outlook tool is based on the June 30, 2020 valuations. *We will review the tool with our CalPERS senior actuary and look at various scenarios of the new investment returns of FY 20/21 of 21.3%, the changes in the future discount rate of 6.8% for out years, and potential Additional Discretionary Payments (ADP) toward unfunded liabilities*. Scenarios could provide outlook on funding ratios of plans, changes in market value of plan assets, and impact on reduction on the Unfunded Actuarial Liabilities.

There has been discussion of what would the effect be if the Town were to make $3M, $4M, $5M lump sum payments to CaLPERS. Below is a snapshot of such scenarios compared to baseline:

$3 Million to *Miscellaneous Plan*

Baseline	**6/30/21**	**6/30/22**	**6/30/23**	**6/30/24**	**6/30/25**
UAL Base line	***$5.97M***	***$5.97M***	***$5.90M***	***$5.79M***	***$5.63M***
Funded Ratio	***72.22%***	***73.39%***	***74.79%***	***76.30%***	***77.92%***
UAL Scenario	$4.41M	$1.20M	$1.04M	$0.85M	$0.65M
Funded Ratio Scenario	80.1%	94.76%	95.68%	96.62%	97.52%
Impact on UAL	**($1.56M)**	**($4.76M)**	**($4.86M)**	**($4.95M)**	**(4.99M)**

$4 Million to *Miscellaneous Plan*

Baseline Yr.	**6/30/21**	**6/30/22**	**6/30/23**	**6/30/24**	**6/30/25**
UAL Scenario	$4.41M	$0.17M	$0	($0.19M)	($0.38M)
Funded Ratio Scenario	80.1%	92.95%	99.99%	100.75%	101.46%
Impact on UAL	**($1.56M)**	**($5.80M)**	**($5.90M)**	**($5.98M)**	**(6.02M)**

$5 Million to *Miscellaneous Plan*

Baseline Yr.	**6/30/21**	**6/30/22**	**6/30/23**	**6/30/24**	**6/30/25**
UAL Scenario	$4.41M	($0.86M)	($1.03)	($1.22M)	($1.41M)
Funded Ratio Scenario	80.1%	103.75%	104.30%	104.87%	105.40%
Impact on UAL	**($1.56M)**	**($6.83M)**	**($6.93M)**	**($7.01M)**	**($7.05M)**

Below are snapshots from Pension Plan Actuarial reports

Actuary Valuation Reports as of June 30, 2020

The Town's Miscellaneous Employees future contribution assumes the investment return of 7.00% in FY 2020/21. The actual investment return for FY 20/21 was not known at the time the valuation reports were prepared. However, the preliminary returns are 21.3% for FY 20/21The FY 2022/23 Employer Contribution rate for Miscellaneous Employees is 11.06% and this represents no change. The Unfunded Liability Payment (UAL) is $461,091. ***The current FY 21/22 Employer contribution rate for Miscellaneous employees is 11.06% and the unfunded liability payment (UAL) is $400,641.***
(page 6 of Miscellaneous Valuation Report)

	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**
	Rate Plan 64 Results					
Normal Cost %	11.06%	11.1%	11.1%	11.1%	11.1%	11.1%
UAL Payment	$461,091	$497,000	$535,000	$559,000	$581,000	$595,000

The UAL payment for FY 2022/23 is $461,091, this is an increase of $60,450 over the current year. The Plan's funded status as of June 30, 2020, for Miscellaneous Employees is currently at 70.8% with an unfunded liability of $5,867,431.

Below are projected future contribution rates for the Town Public Safety Employees and assumes the investment return of 7.00% in FY 2020/21. The projected employer rate and UAL for Safety is as follows:(page 6 of Public Safety Valuation Report)

	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**
	Rate Plan 65 Results					
Normal Cost %	25.64%	25.6%	25.6%	25.6%	25.6%	25.6%
UAL Payment	$1,172,082	$1,260,000	$1,349,000	$1,407,000	$1,461,000	$1,497,000

The current FY 2021/22 normal cost employer contribution rate as a percentage of payroll is 25.59% and the UAL $1,029,533. Based on the valuation report, the FY 2022/23 contribution rate for Public Safety is 25.64%, an increase of .05%. *The Town's employer payment of the unfunded liability for FY 2022/23 Public Safety is $1,172,082. This is an increase of $142K in UAL from the current FY of $1,029,123*

Based on the actuarial report, the Public Safety Employees Plan's funded status as of June 30, 2020, is currently at 68.7% with an unfunded liability of $14,785,971. For FY 2022/23 the projected combined UAL payment is $1,633,173 ($461,091 Miscellaneous & $1,172,082 Public Safety).

Additional discretionary contributions analysis is provided in the reports. This provides projection for agencies to select additional discretionary payments for consideration in paying down UAL. CalPERS allows employers to make additional discretionary payments (ADP) at any time and in any amount to reduce the UAL and future required contributions. (Page 5 of the Valuation reports) Alternative Fiscal Year 2022-23 employer contributions for great UAL reductions listed below.

Miscellaneous Valuation

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

Funding Target	Estimated Normal Cost	Minimum UAL Payment	ADP[1]	Total UAL Contribution	Estimated Total Contribution
20 years	$174,024	$461,091	$79,891	$540,982	$715,006
15 years	$174,024	$461,091	$168,161	$629,252	$803,276
10 years	$174,024	$461,091	$354,899	$815,990	$990,014
5 years	$174,024	$461,091	$936,689	$1,397,780	$1,571,804

Public Safety Valuation

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

Funding Target	Estimated Normal Cost	Minimum UAL Payment	ADP[1]	Total UAL Contribution	Estimated Total Contribution
20 years	$433,719	$1,172,082	$186,712	$1,358,794	$1,792,513
15 years	$433,719	$1,172,082	$408,420	$1,580,502	$2,014,221
10 years	$433,719	$1,172,082	$877,453	$2,049,535	$2,483,254
5 years	$433,719	$1,172,082	$2,338,744	$3,510,826	$3,944,545

Value of Assets (Page 6 of the Valuation Reports)

As of June 30, 2020, it was illustrated that the Town's unfunded pension liability increased. The market Value of Assets (MVA) for Miscellaneous Employees is $14,216,120 and an unfunded liability of $5,867,431. For Public Safety Employees the MVA is $32,475,905 with an unfunded liability of $14,785,971. This calculates to a total unfunded liability of $20,653,402. This is a total increase of $1,574,050 from previous year valuation reports. Amortization schedules and alternatives are illustrated in the valuation reports that show the minimum contributions required according to the CalPERS amortization schedule. (Pages 12 & 13)

Risk Analysis Tools (page 18 of valuation reports)

Included in the reports are risk analysis tools that used to estimate future Town Contributions toward unfunded liabilities, Employer normal cost rates and projection of paying down liabilities. These tools are based on the assumed annual rate of return and the impact on future UAL contributions. If the investment return was below or over the projection, these amounts will be used to set the rates in Fiscal Year 2023/24 calculations. In the reports there are different investment returns scenarios analysis of the effects on the Town UAL amount if the rate of return ranges between 1% to 12%

FISCAL IMPACT

None

PUBLIC NOTICE

Public notification was achieved by posting the agenda, with this agenda item being listed, at least 72 hours prior to the meeting in print and electronically. Information about the project is also disseminated via the Town's electronic News Flash and Atherton Online. There are approximately 1,200 subscribers to the Town's electronic News Flash publications. Subscribers include residents as well as stakeholders – to include, but be not limited to, media outlets, school districts, Menlo Park Fire District, service provides (water, power, and sewer), and regional elected officials.

ATTACHMENTS

ALM Quarterly Webinar 5: CalPERS Update

Review of ALM Decisions and the Path Forward

December 2, 2021

CalPERS

Presenters

Michael Cohen
Chief Financial Officer

Scott Terando
Chief Actuary

Sterling Gunn
Managing Investment Director

Brad Pacheco
Deputy Executive Officer, Communications & Stakeholder Relations

Agenda

- Leading up to the ALM decision
- Review of ALM outcome:
  - Discount rate
  - Actuarial assumptions
  - Strategic asset allocation
- Employer contribution rate impacts
- Member impacts
- Implementation timelines
- Q&A

Leading Up to the Discount Rate Decision

2021 – **began the ALM review**, which is conducted every 4 years

21.3% return for fiscal year 2020-21

Funding Risk Mitigation Policy **triggered**

Discount rate automatically **lowered to 6.8%** on July 1, 2021

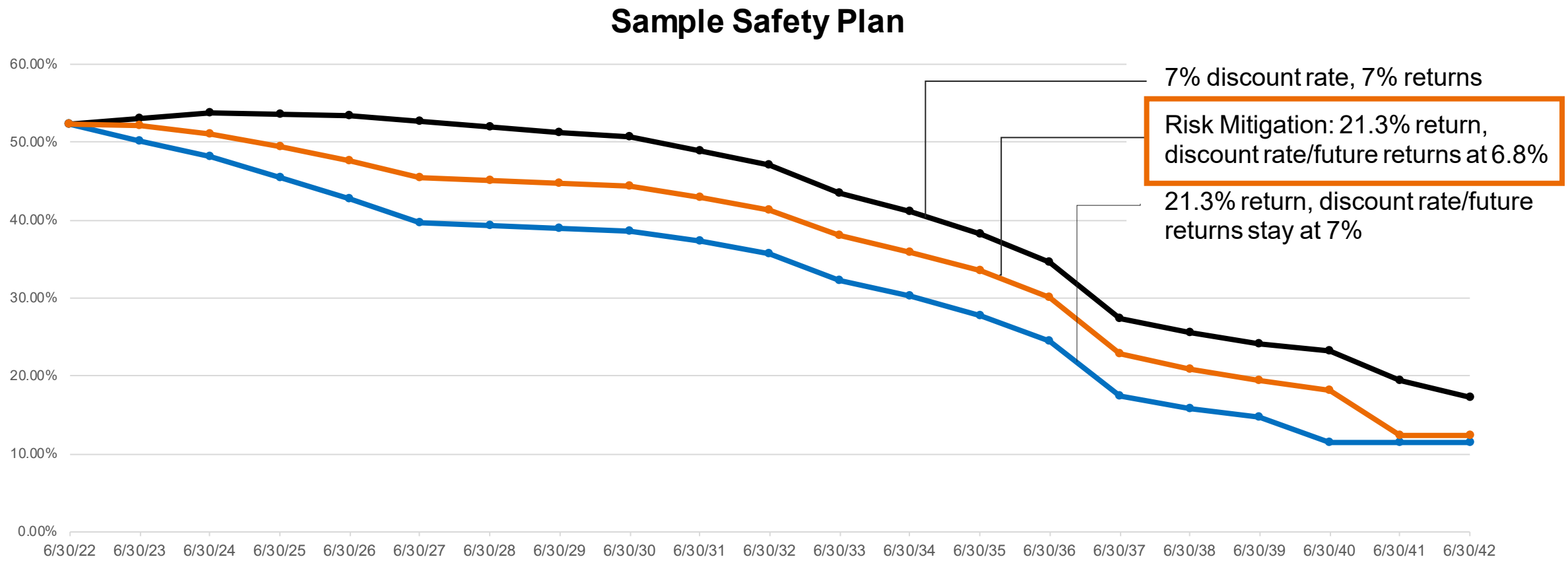
New **Capital Market Assumptions adopted** – current portfolio has projected returns of 6.2% over the next 20 years

Board **considered portfolios** with 6.5%, 6.8% and 7.0% discount rates with varying degrees of leverage

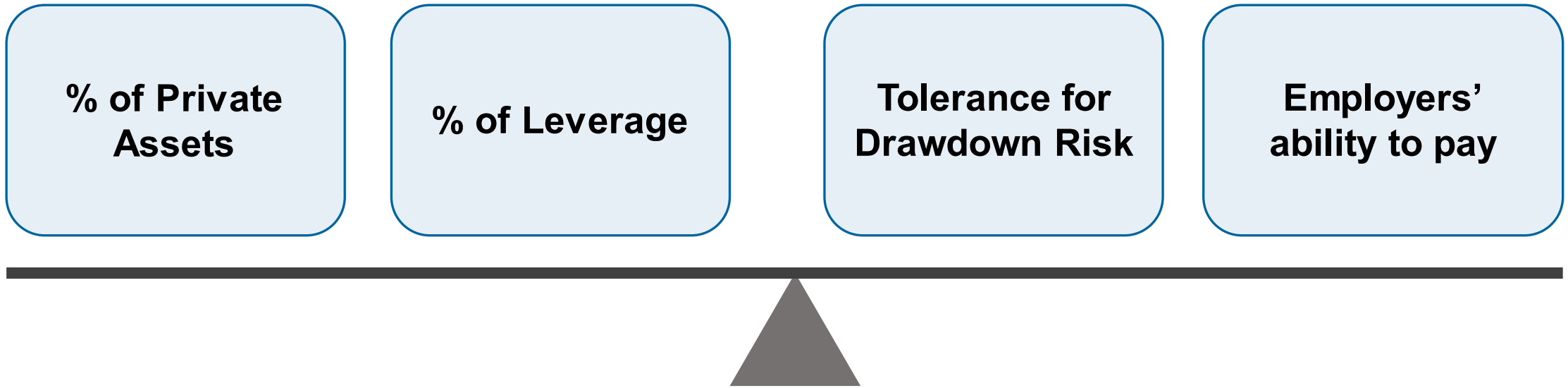
Risk Mitigation Policy Had Already Lowered Discount Rate to 6.8%

If investment returns outperform discount rate by:	**then** resulting discount rate will be:	
+2 pp → 9%	6.95%	
+7 pp → 14%	6.90%	
+10 pp → 17%	6.85%	
+13 pp → 20%	6.80%	From Risk Mitigation Policy triggering
+17 pp → 24%	6.75%	

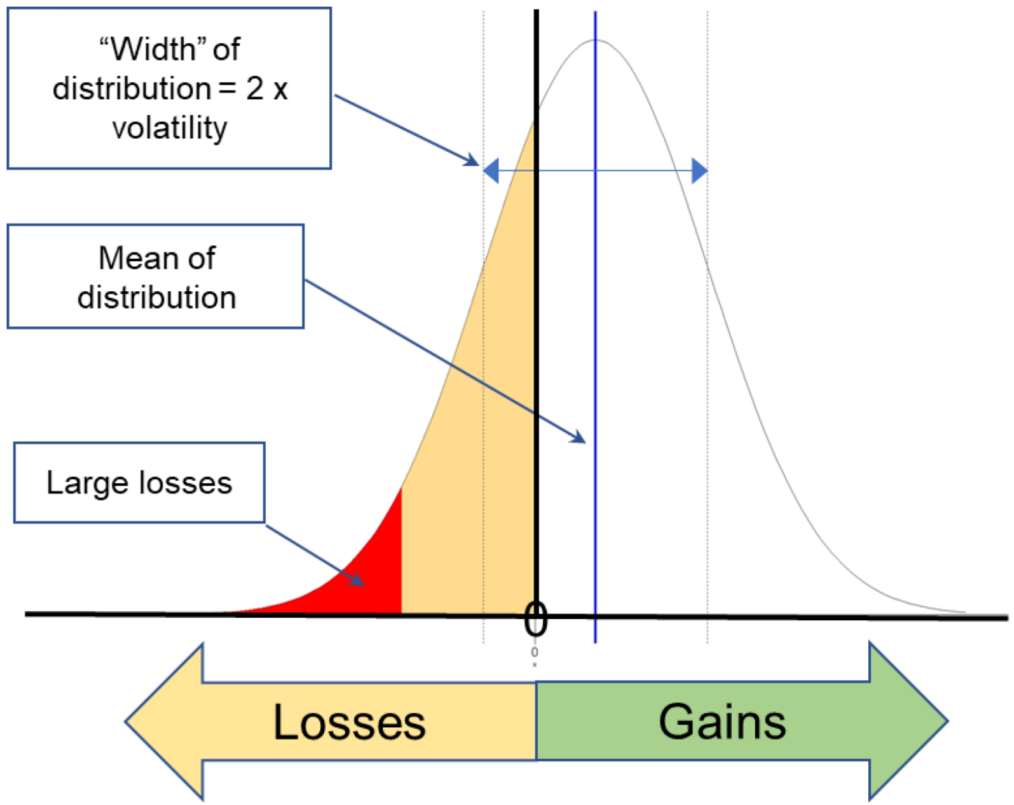
21.3% Return Softened Impact of Discount Rate Reduction for Employers



Balancing Risk & Reward



How Much Drawdown Risk and Volatility Should be Tolerated?



- Drawdown definition — the average of the worst 10% of three years losses
- Calculated using thousands of market simulations
- Investment volatility impacts somewhat ameliorated by 5-year ramp of investment gains and losses
- Impact of losses outweighs gains

Discount Rates and Portfolios Considered

Portfolio Characteristics		Years 1-20		
Name	Leverage	Discount Rate	Drawdown	Volatility
Current	0%	6.2%	22.6%	11.2%
A1	0%	6.5%	20.4%	10.9%
A2	3%	6.5%	20.1%	10.8%
B1	0%	6.8%	23.6%	12.1%
B2	5%	6.8%	23.0%	12.0%
C1	5%	7.0%	25.5%	12.9%

ALM Outcome

Board selected 6.8% discount rate with 5% leverage (Candidate Portfolio B2)

New strategic asset allocation:

- 5% leverage
- Increased allocation to private assets

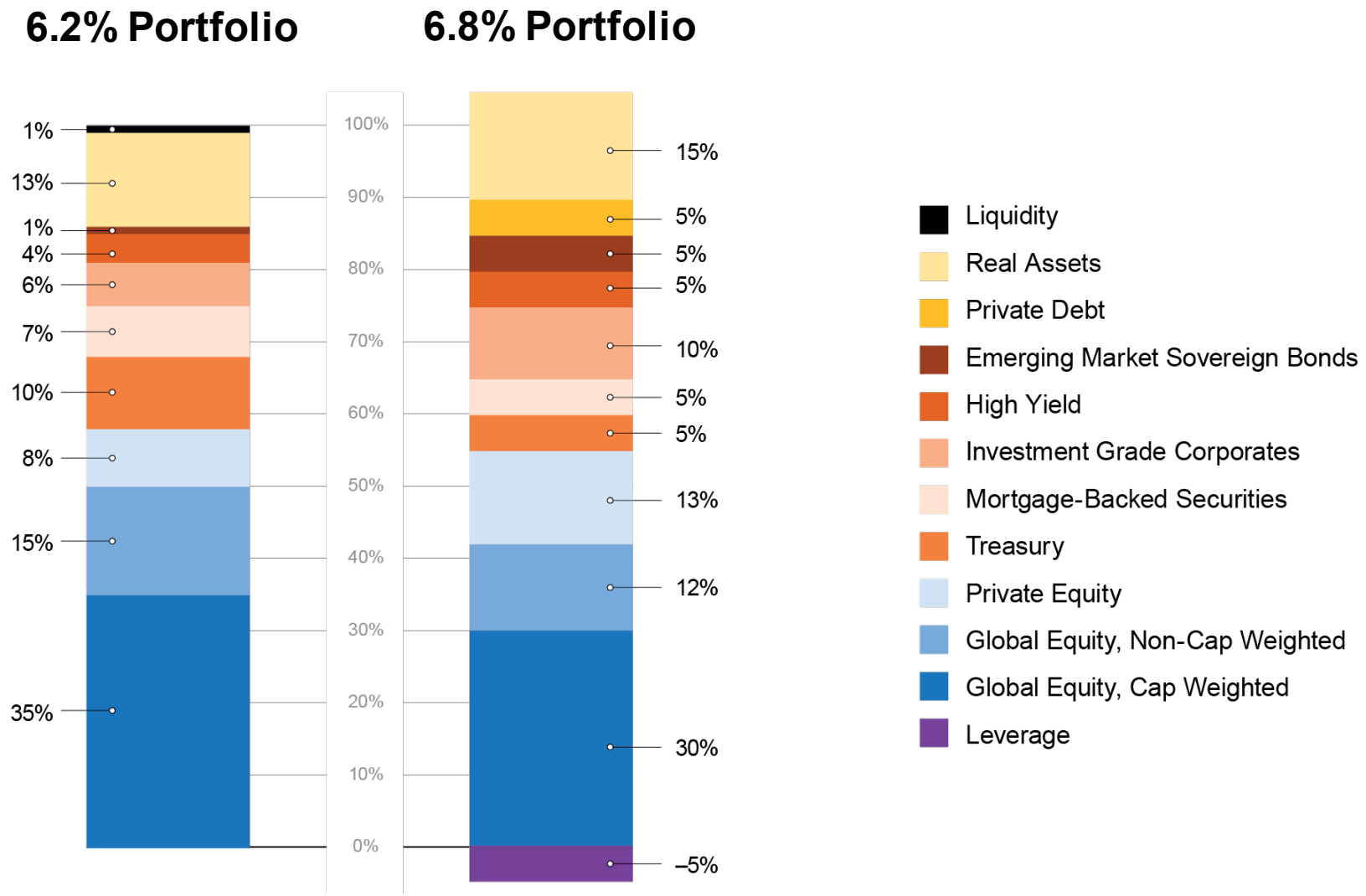
New **actuarial assumptions adopted**

Strategic Asset Allocation

- Implementation plan for new asset allocation will be delivered to the Board by July 2022, with the intent to:
  - Carefully manage implementation
  - Be opportunistic
  - Mitigate market impact

- Notable Changes:
  - Increased allocation to private assets including private equity, real assets, and private debt from 21% to 33%
  - Addition of 5% leverage
  - Reduction of public equity exposure

Previous Portfolio (6.2%) and New Portfolio (6.8%)



What Leverage Does

CalPERS & Leverage

- Board approved adding 5% leverage as a strategic asset allocation
- Current leverage is mainly in real estate portfolio and is actively managed
- Leverage is borrowing money to buy assets
- Will take several years to fully implement
- Leverage has been used in moderation for years

Why Is CalPERS Using Leverage?

- Reduce percentage of CalPERS Fund allocated to riskier assets, including public stocks
- Increase diversification by investing in less-risky assets, including fixed income, to better withstand economic downturns
- Reduces overall risk and volatility compared with a similar portfolio that contains no leverage
- Not being used to increase private asset investments

What Are the Risks?

- Leverage adds complexity to managing the fund
- Higher losses in some market conditions

Why Are Private Assets Critical to the Asset Allocation?

Highest returning asset class, past and projected

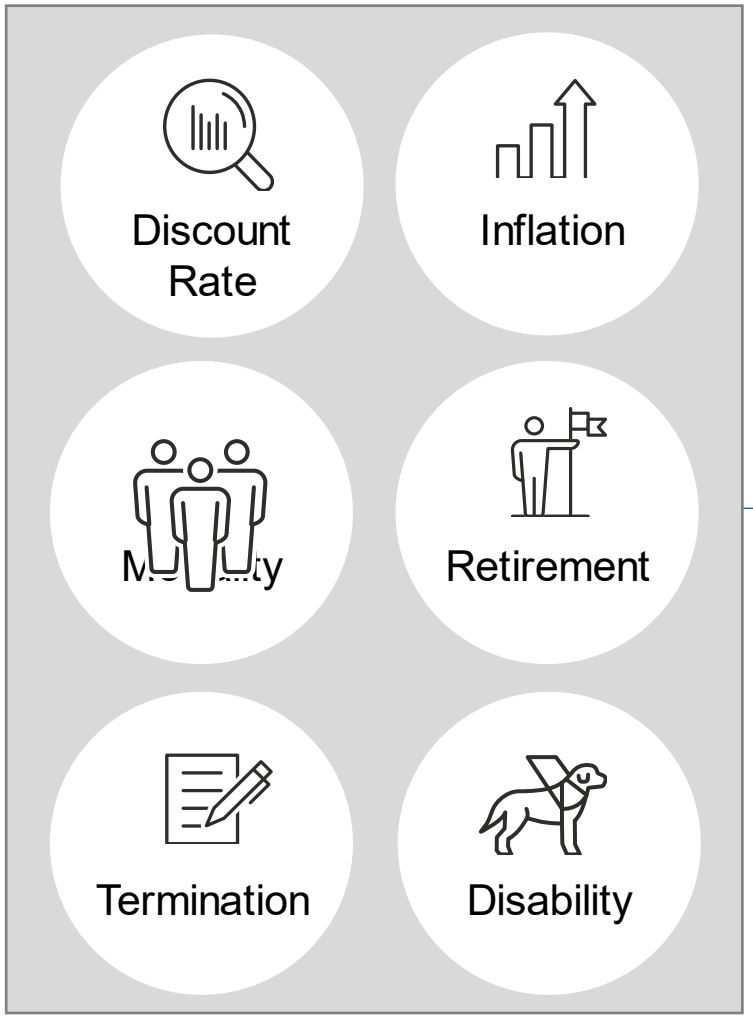
Portfolio diversifier

Access to different parts of the economy not readily available in public markets

Discount Rate

- Discount Rate set by Risk Mitigation Policy affirmed by Board
- Increases normal cost
- Increases UAL (unfunded accrued liability)
- School and State plans – effective 2022–23 fiscal year
- Public agency plans – effective 2023–24 fiscal year

ALM Outcomes for Employers — Year 1



2020–21 Investment Gain

Estimated Employer Contribution Impact*:

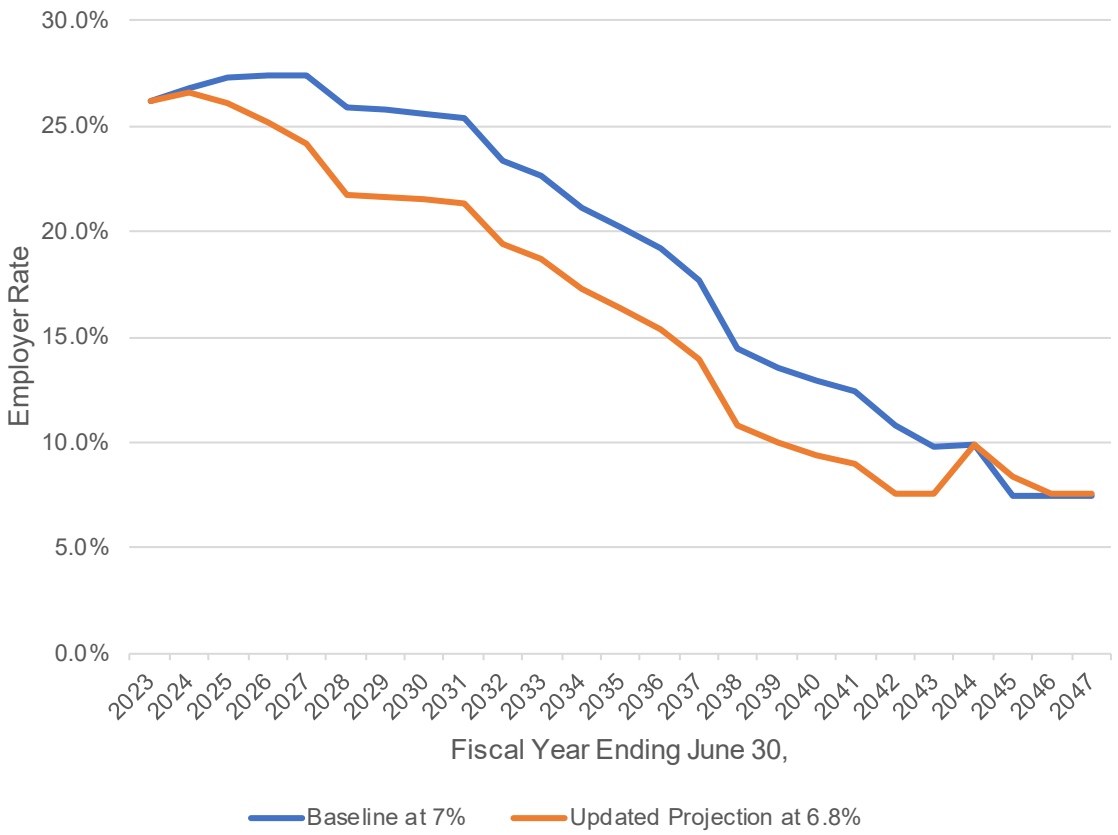
State Misc.	–0.6%
Schools	–0.1%
PA Misc.	0% median**
PA Safety:	0% median**

* *Results are as % of payroll changes*

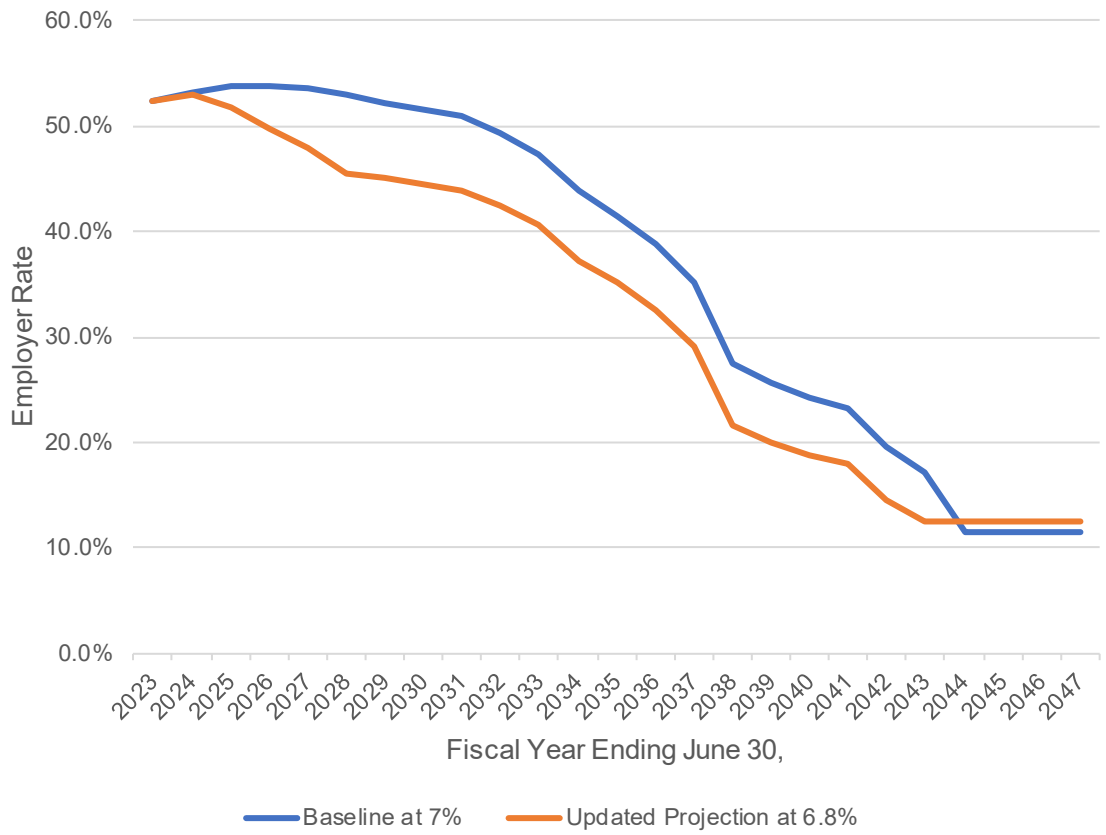
** *Ranges vary based on plan specifics*

Employer Contribution Rate Projections

Sample Public Agency Misc. Plan

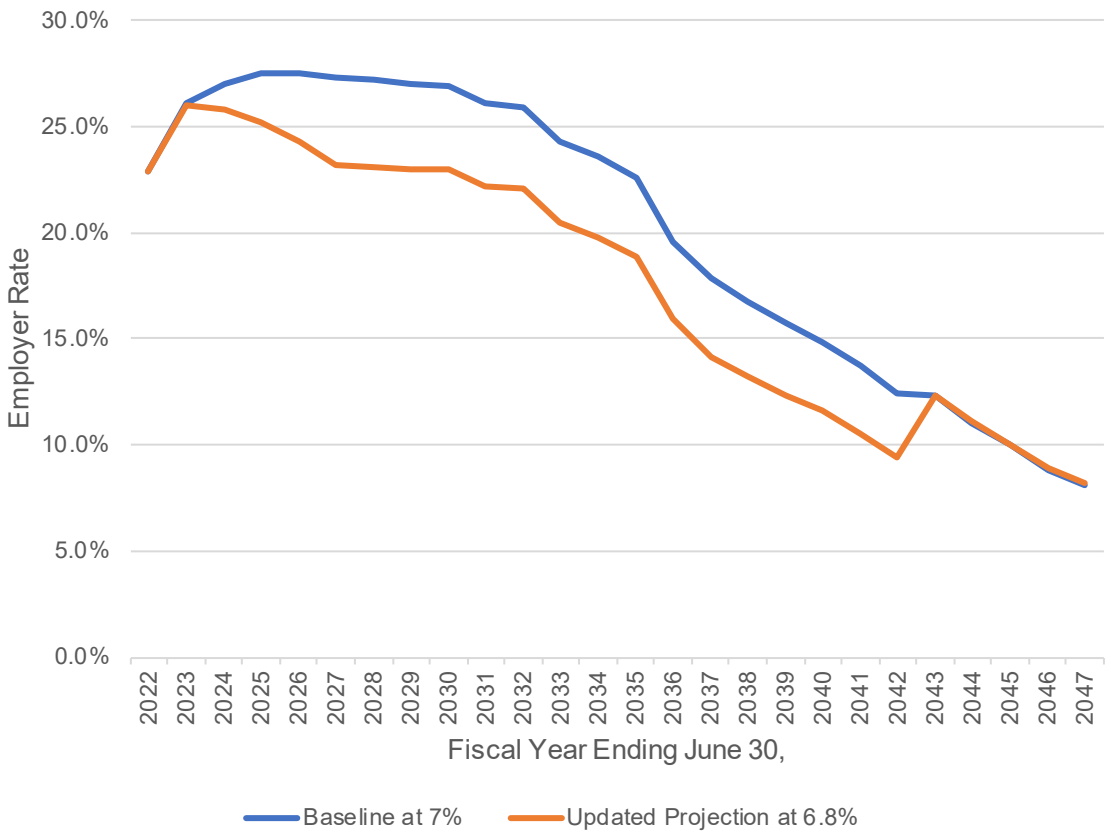


Sample Public Agency Safety Plan

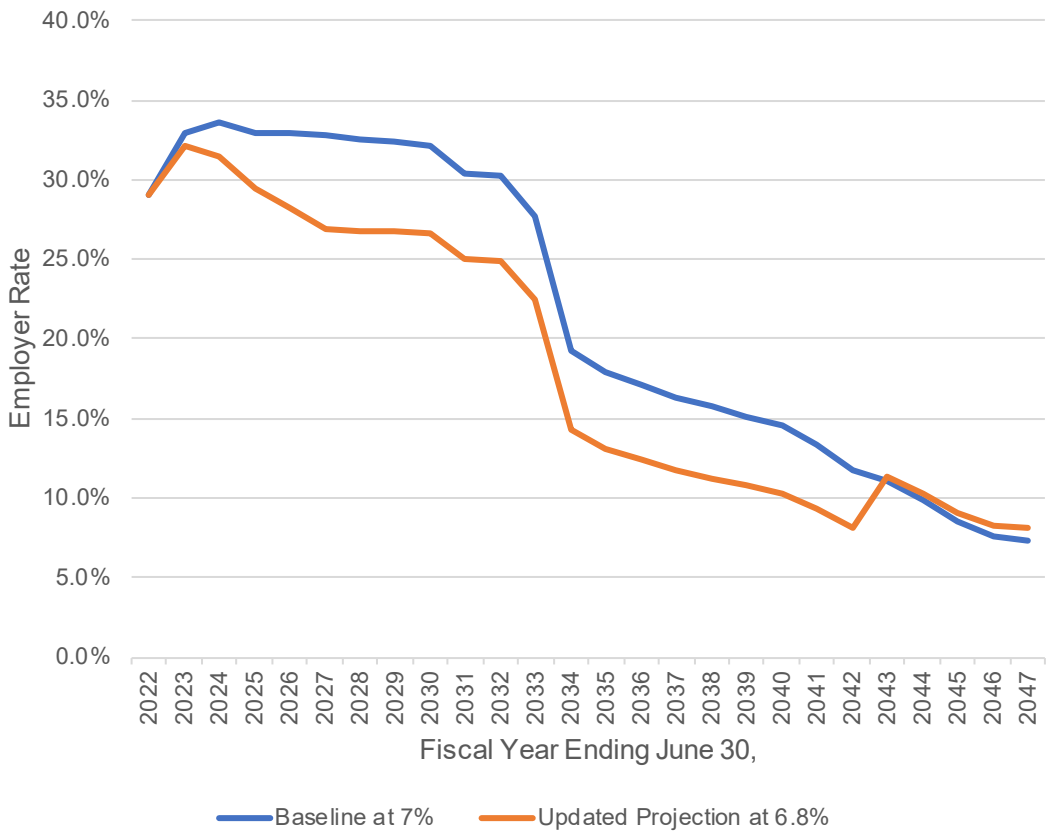


Employer Contribution Rate Projections

School Plan



State Misc. Plan



CalPERS

Pension Outlook Tool – Model Any Plan's Contribution Rate Projections

Economic Assumptions

Details	Baseline	Model
Discount Rate	7.000%	**6.800%**
Payroll Growth	2.750%	**2.750%**
Inflation Rate	2.500%	**2.500%**

Investment Scenario Chosen

Rate	Period
21.300%	1
6.800%	1
6.800%	1
6.800%	7
6.800%	20

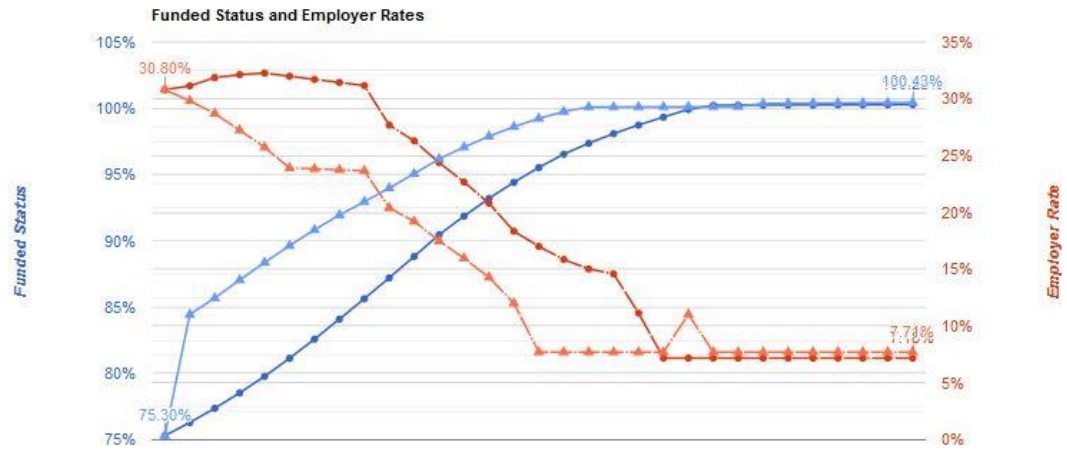
Other Assumptions

Details	Baseline	Model
PEPRA	Yes	**Yes**
Transition Years	15	**15**
ADP	No	**No**

30 Year Budget

Download the Fiscal Year Cost and Annual Relative Increase in Cost (XLSX).

Summary | Funding | Cash Flow | Glossary



How Are CalPERS Members Affected?

All members

Strengthens long-term sustainability of pension plan

Active members

- Minor technical changes to pension calculation based on retirement date
- Slight increase in service credit purchases based on date of request

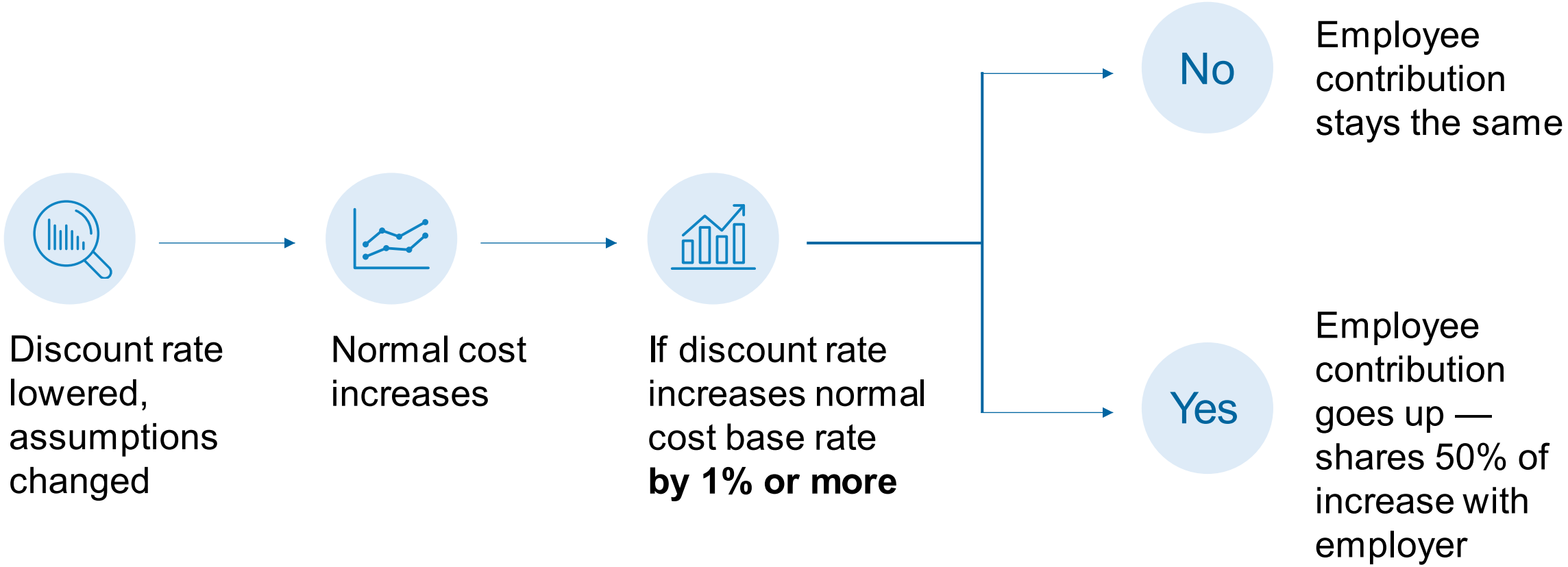
Active PEPRA members

Increase in contributions in most plans, average of 0.8%

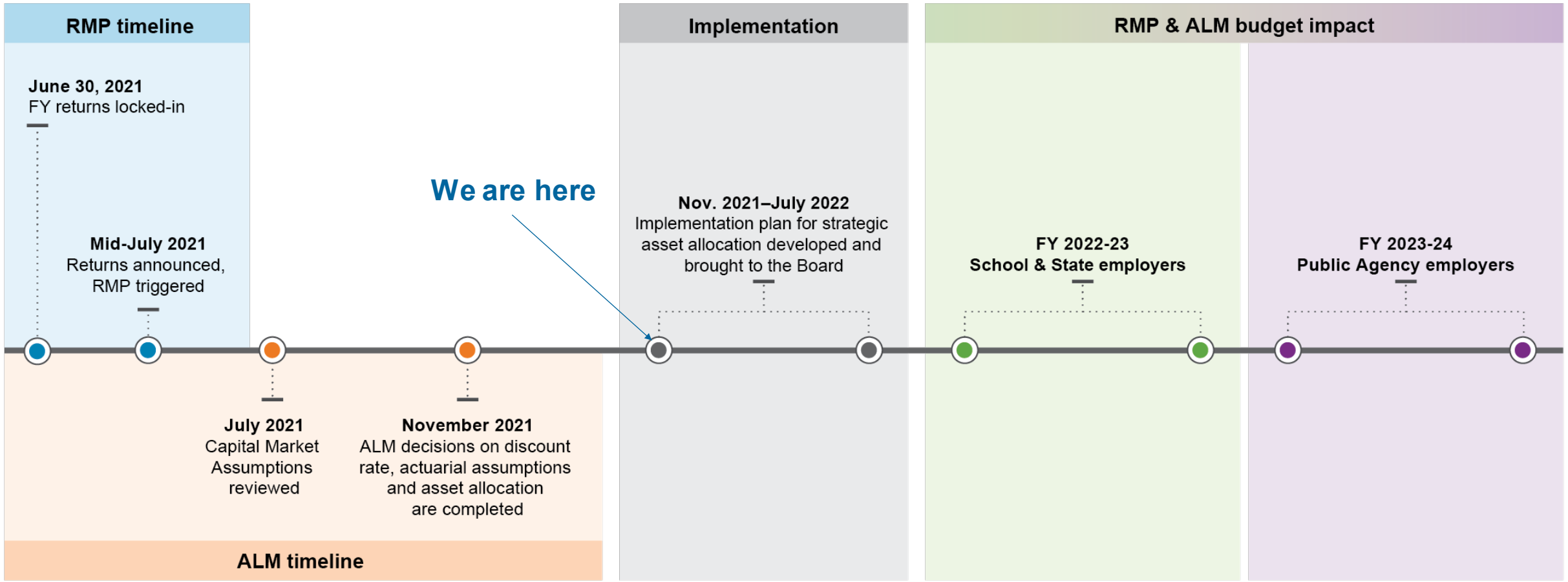
Retired members

No change to pension benefits or COLA

When Do PEPRA Member Rates Increase?



Implementation



Key Timeframes for Rates — **State**

January 2022
Addendum to June 30, 2020 actuarial valuation published online. Includes updated projections based on new assumptions and 2020-21 investment return.

April 2022
Board adopts 2022-23 employer contribution rates. 2022-23 member contribution rates for some groups presented to Board.

July 1, 2022
New employer contribution rates take effect. Some Classic and PEPRA member contribution rates are impacted by assumption changes, varies by bargaining unit.

Key Timeframes for Rates — **Schools**

January 2022
Addendum to June 30, 2020 actuarial valuation published online. Includes updated projections based on new assumptions and 2020-21 investment return.

April 2022
2022-23 employer and PEPRA member contribution rates presented to Board.

July 1, 2022
New employer contribution rates take effect. Some Classic and PEPRA member contribution rates are impacted by assumption changes, varies by bargaining unit.

Key Timeframes for Rates — **Public Agencies**

December 2021
Circular letter outlining impact of new assumptions issued.

August 2022
June 30, 2021 actuarial valuations uploaded to myCalPERS. Includes employer contribution requirements for fiscal year 2023-24, and PEPRA member contribution rates for fiscal year 2023-24.

July 1, 2023
New employer and PEPRA member contribution rates take effect.

Q&A

CalPERS_Stakeholder_Relations@calpers.ca.gov

California Public Employees' Retirement System
Actuarial Office
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888 CalPERS (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

July 2021

Miscellaneous Plan of the Town of Atherton
(CalPERS ID: 1382390535)
Annual Valuation Report as of June 30, 2020

Dear Employer,

Attached to this letter, you will find the June 30, 2020 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for fiscal year 2022-23**. In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

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, 2020.

Section 2 can be found on the CalPERS website (calpers.ca.gov). From the home page, go to *"Forms & Publications"* and select *"View All"*. In the search box, enter *"Risk Pool"* and from the results list download the Miscellaneous Risk Pool Actuarial Valuation Report for June 30, 2020.

Your June 30, 2020 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.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

Required Contribution

The exhibit below displays the minimum employer contributions for fiscal year 2022-23 along with estimates of the required contributions for fiscal year 2023-24. 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**.

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability
2022-23	11.06%	$461,091
Projected Results		
2023-24	*11.1%*	*$497,000*

The actual investment return for fiscal year 2020-21 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00%. ***To the extent the actual investment return for fiscal year 2020-21 differs from 7.00%, the actual contribution requirements for fiscal year 2023-24 will differ from those shown above.*** 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. This section also contains projected required contributions through fiscal year 2027-28.

Changes from Previous Year's Valuation

There are no significant changes in actuarial assumptions or policies in your 2020 actuarial valuation. Your annual valuation report is an important tool for monitoring the health of your CalPERS pension plan. Your report contains useful information about future required contributions and ways to control your plan's funding progress. In addition to your annual actuarial report my office has developed tools for employers to plan, project and protect the retirement benefits of your employees. 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 future scenarios that you select.

Pension Outlook can help you answer specific questions about your plans, including:

- When is my plan's funded status expected to increase?
- What happens to my required contributions in a down market?
- How does the discount rate assumption affect my contributions?
- What is the impact of making an additional discretionary payment to my plan?

To get started, visit our Pension Outlook page at www.calpers.ca.gov/page/employers/actuarial-resources/pension-outlook-overview and take the steps to register online.

CalPERS will be completing an Asset Liability Management (ALM) review process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. In addition, the Actuarial Office will be completing its Experience Study to review the demographic experience within the pension system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

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

Questions

We understand that you might have questions about these results, and your assigned CalPERS actuary whose signature is on the valuation report is available to discuss. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or (**888-225-7377**).

Sincerely,

SCOTT TERANDO, ASA, EA, MAAA, FCA, CFA
Chief Actuary

Actuarial Valuation
as of June 30, 2020

for the
Miscellaneous Plan
of the
Town of Atherton
(CalPERS ID: 1382390535)

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

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Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Plan Specific Information for the Miscellaneous Plan of the Town of Atherton

(CalPERS ID: 1382390535)
(Rate Plan ID: 64)

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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, 2020 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, 2020 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 actuaries have 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 the Unfunded Accrued Liability amortization bases as of June 30, 2020 and employer contribution as of July 1, 2022 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary who satisfies the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States with regard to pensions.

Julian M Robinson

JULIAN ROBINSON, FSA, EA, MAAA
Senior Pension Actuary, CalPERS

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Other Pooled Miscellaneous Risk Pool Rate Plans**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2020 actuarial valuation of the Miscellaneous Plan of the Town of Atherton of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for fiscal year 2022-23.

Purpose of Section 1

This Section 1 report for the Miscellaneous Plan of the Town of Atherton of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2020;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2022 through June 30, 2023; and
- Provide actuarial information as of June 30, 2020 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 Governmental Accounting Standards Board (GASB) Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available on the CalPERS 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.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0% and 8.0%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post- retirement mortality assumptions adopted in 2017.
- Pension Plan maturity measures quantifying the risks the employer bears.

Required Employer Contributions

	Fiscal Year
Required Employer Contributions	**2022-23**
Employer Normal Cost Rate	**11.06%**
Plus	
Required Payment on Amortization Bases[1]	**$461,091**
Paid either as	
1) Monthly Payment	**$38,424.25**
Or	
2) Annual Prepayment Option*	**$445,753**

The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**.*

	Fiscal Year 2021-22	Fiscal Year 2022-23
Development of Normal Cost as a Percentage of Payroll		
Base Total Normal Cost for Formula	17.25%	17.24%
Surcharge for Class 1 Benefits[2]		
a) PRSA	0.72%	0.74%
Phase out of Normal Cost Difference[3]	0.00%	0.00%
Plan's Total Normal Cost	17.97%	17.98%
Formula's Expected Employee Contribution Rate	6.91%	6.92%
Employer Normal Cost Rate	11.06%	11.06%

[1] The required payment on amortization bases does not take into account any additional discretionary payment made after April 30, 2021.

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

[3] The normal cost change is phased out over a five-year period in accordance with the CalPERS contribution allocation policy.

Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2022-23 fiscal year is $461,091. CalPERS allows employers to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Employers can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during fiscal year 2022-23 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

If you are considering making an ADP, please contact your actuary for additional information.

Minimum Required Employer Contribution for Fiscal Year 2022-23

Estimated Normal Cost	Minimum UAL Payment	ADP	Total UAL Contribution	Estimated Total Contribution
$174,024	$461,091	$0	$461,091	$635,115

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

Funding Target	Estimated Normal Cost	Minimum UAL Payment	ADP[1]	Total UAL Contribution	Estimated Total Contribution
20 years	$174,024	$461,091	$79,891	$540,982	$715,006
15 years	$174,024	$461,091	$168,161	$629,252	$803,276
10 years	$174,024	$461,091	$354,899	$815,990	$990,014
5 years	$174,024	$461,091	$936,689	$1,397,780	$1,571,804

[1] The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2022 as determined in the June 30, 2020 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.

Plan's Funded Status

	June 30, 2019	June 30, 2020
1. Present Value of Projected Benefits (PVB)	$21,572,926	$22,375,377
2. Entry Age Accrued Liability (AL)	19,232,814	20,083,551
3. Plan's Market Value of Assets (MVA)	13,847,354	14,216,120
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	5,385,460	5,867,431
5. Funded Ratio [(3) / (2)]	72.0%	70.8%

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 the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below.

	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**
	Rate Plan 64 Results					
Normal Cost %	11.06%	11.1%	11.1%	11.1%	11.1%	11.1%
UAL Payment	$461,091	$497,000	$535,000	$559,000	$581,000	$595,000

For some sources of UAL, the change in UAL is 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 the Section 2 Report. This method phases in the impact of the change in UAL over a 5-year period in order to reduce 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 when 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.

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

Our online pension plan modeling and projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook is a tool to help plan and budget pension costs into the future with results and charts that are easy to understand.

Other Pooled Miscellaneous Risk Pool Rate Plans

All of the results presented in this Section 1 report, except those shown below, correspond to rate plan 64. In many cases, employers have additional rate plans within the same risk pool. For cost analysis and budgeting it is useful to consider contributions for these rate plans as a whole rather than individually. The estimated contribution amounts and rates for all of the employer's rate plans in the Miscellaneous Risk Pool are shown below and assume that the payroll for each rate plan will grow according to the overall payroll growth assumption of 2.75% per year for three years.

	Fiscal Year 2021-22	Fiscal Year 2022-23
Estimated Combined Employer Contributions for all Pooled Miscellaneous Rate Plans		
Projected Payroll for the Contribution Year	$2,221,554	$2,456,994
Estimated Employer Normal Cost	$224,207	$242,586
Required Payment on Amortization Bases	$407,323	$468,227
Estimated Total Employer Contributions	$631,530	$710,813
Estimated Total Employer Contribution Rate (illustrative only)	28.43%	28.93%

Cost

Actuarial Determination of Pension Plan Cost

Contributions to fund the pension plan are comprised of two components:

- Normal Cost, expressed as a percentage of total active payroll
- Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with fiscal year 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component is expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 5.5% over the 20 years ending June 30, 2020, yet individual fiscal year returns have ranged from -23.6% to +20.7%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2017.

Changes Since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

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 the Section 2 Report for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

The are no significant changes to the actuarial methods or assumptions for the 2020 actuarial valuation.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2020. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase future required contributions while investment returns above the assumed rate of return will decrease future required contributions.

CalPERS will be completing an Asset Liability Management (ALM) process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. As part of the ALM process the Actuarial Office will be completing an Experience Study to review the demographic experience of the retirement system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 7.0% going forward and that the realized rate of return on assets for fiscal year 2020-21 is 7.0%.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2021. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

Breakdown of Entry Age Accrued Liability

Active Members	$2,991,753
Transferred Members	1,631,770
Terminated Members	1,252,592
Members and Beneficiaries Receiving Payments	14,207,436
Total	$20,083,551

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	$20,083,551
2.	Projected UAL balance at 6/30/2020	5,468,661
3.	Pool's Accrued Liability[1]	19,314,480,060
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/2020[1]	4,306,566,797
5.	Pool's 2019/20 Investment (Gain)/Loss[1]	344,968,792
6.	Pool's 2019/20 Non-Investment (Gain)/Loss[1]	60,428,629
7.	Plan's Share of Pool's Investment (Gain)/Loss: [(1) - (2)] ÷ [(3) - (4)] × (5)	335,935
8.	Plan's Share of Pool's Non-Investment (Gain)/Loss: (1) ÷ (3) × (6)	62,835
9.	Plan's New (Gain)/Loss as of 6/30/2020: (7) + (8)	398,770

[1] Does not include plans that transferred to Pool on the valuation date.

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

10.	Plan's UAL: (2) + (9)	$5,867,431
11.	Plan's Share of Pool's MVA: (1) - (10)	$14,216,120

Schedule of Plan's Amortization Bases

Note that 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, 2020.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: fiscal year 2022-23.

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 required 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 expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

Reason for Base	Date Est.	Ramp Level 2022-23	Ramp Shape	Escala-tion 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
Share of Pre-2013 Pool UAL	6/30/13	No Ramp		2.75%	15	1,317,531	108,716	1,297,301	111,705	1,272,564	114,777
Non-Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.75%	23	(19,189)	(1,302)	(19,185)	(1,337)	(19,145)	(1,374)
Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.75%	23	1,996,267	135,421	1,995,925	139,145	1,991,707	142,971
Non-Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.75%	24	1,611	107	1,613	109	1,613	112
Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.75%	24	(1,484,983)	(98,197)	(1,487,356)	(100,898)	(1,487,101)	(103,672)
Assumption Change	6/30/14	100%	Up/Down	2.75%	14	877,599	83,450	852,710	85,745	823,704	88,103
Non-Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.75%	25	(73,040)	(3,820)	(74,201)	(4,907)	(74,319)	(5,042)
Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.75%	25	898,861	47,014	913,150	60,384	914,609	62,044
Non-Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.75%	26	(134,864)	(5,300)	(138,822)	(7,261)	(141,029)	(9,326)
Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.75%	26	1,089,364	42,811	1,121,335	58,650	1,139,160	75,329
Assumption Change	6/30/16	100%	Up/Down	2.75%	16	328,278	17,873	332,769	24,486	330,734	31,449
Non-Investment (Gain)/Loss	6/30/17	80%	Up/Down	2.75%	27	(28,950)	(770)	(30,180)	(1,186)	(31,066)	(1,625)
Investment (Gain)/Loss	6/30/17	80%	Up/Down	2.75%	27	(561,308)	(14,920)	(585,166)	(22,996)	(602,340)	(31,505)
Assumption Change	6/30/17	80%	Up/Down	2.75%	17	378,897	13,817	391,127	21,295	396,478	29,174
AL Significant Increase*	6/30/18	60%	Up/Down	2.75%	28	57,145	780	60,338	1,604	62,902	2,472
Non-Investment (Gain)/Loss	6/30/18	60%	Up/Down	2.75%	28	83,253	1,137	87,905	2,337	91,641	3,601
Investment (Gain)/Loss	6/30/18	60%	Up/Down	2.75%	28	(166,447)	(2,273)	(175,747)	(4,672)	(183,217)	(7,200)
Method Change	6/30/18	60%	Up/Down	2.75%	18	163,546	3,049	171,840	6,266	177,387	9,658
Assumption Change	6/30/18	60%	Up/Down	2.75%	18	592,860	11,054	622,926	22,715	643,034	35,010

Schedule of Plan's Amortization Bases (continued)

Reason for Base	Date Est.	Ramp Level 2022-23	Ramp Shape	Escala-tion 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
Non-Investment (Gain)/Loss	6/30/19	No Ramp		0.00%	19	79,418	0	84,977	7,754	82,905	7,754
Investment (Gain)/Loss	6/30/19	40%	Up Only	0.00%	19	72,812	0	77,909	1,703	81,601	3,407
Non-Investment (Gain)/Loss	6/30/20	No Ramp		0.00%	20	62,835	0	67,233	0	71,939	6,565
Investment (Gain)/Loss	6/30/20	20%	Up Only	0.00%	20	335,935	0	359,450	0	384,612	8,409
Total						**5,867,431**	**338,647**	**5,927,851**	**400,641**	**5,928,373**	**461,091**

*Government Code Section 20791 requires that a significant increase in actuarial liability to a contracting agency due to increased compensation by a subsequent employer to a non-represented employee is borne by the agency that created the increase in liability.

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized in accordance with the CalPERS amortization policy in effect at the time the base was established.

Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed a desire for a more stable pattern of payments or have indicated interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings 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) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. To initiate a Fresh Start, please consult with your plan actuary.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease 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:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when 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.

Amortization Schedule and Alternatives (continued)

	Current Amortization Schedule		Alternate Schedules			
			15 Year Amortization		10 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2022	5,928,373	461,091	5,928,374	629,252	5,928,374	815,990
6/30/2023	5,866,404	497,067	5,692,457	629,252	5,499,294	815,991
6/30/2024	5,762,882	535,174	5,440,026	629,252	5,040,177	815,991
6/30/2025	5,612,697	558,726	5,169,924	629,252	4,548,922	815,990
6/30/2026	5,427,635	580,945	4,880,915	629,252	4,023,280	815,991
6/30/2027	5,206,632	595,136	4,571,676	629,252	3,460,842	815,991
6/30/2028	4,955,482	609,722	4,240,790	629,253	2,859,033	815,990
6/30/2029	4,671,663	624,705	3,886,741	629,252	2,215,099	815,991
6/30/2030	4,352,481	640,102	3,507,910	629,253	1,526,088	815,990
6/30/2031	3,995,028	655,915	3,102,559	629,252	788,848	815,991
6/30/2032	3,596,196	649,058	2,668,835	629,253		
6/30/2033	3,176,538	641,375	2,204,749	629,253		
6/30/2034	2,735,452	624,118	1,708,177	629,252		
6/30/2035	2,281,341	595,097	1,176,846	629,253		
6/30/2036	1,825,462	542,292	608,321	629,252		
6/30/2037	1,392,294	340,229				
6/30/2038	1,137,818	303,852				
6/30/2039	903,158	275,246				
6/30/2040	681,661	256,768				
6/30/2041	463,775	198,358				
6/30/2042	291,057	140,775				
6/30/2043	165,814	111,047				
6/30/2044	62,553	55,599				
6/30/2045	9,420	9,744				
6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
6/30/2050						
6/30/2051						
Total	**10,502,141**		**9,438,785**		**8,159,906**	
Interest Paid	**4,573,768**		**3,510,411**		**2,231,531**	
Estimated Savings			**1,063,357**		**2,342,237**	

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan. The amounts are based on the actuarial valuation from two years prior and does not account for prepayments or benefit changes made during a fiscal year. Additional discretionary payments before July 1, 2019 or after June 30, 2020 are not included.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment ($)	Additional Discretionary Payments
2016 - 17	9.055%	$146,085	N/A
2017 - 18	9.096%	183,236	N/A
2018 - 19	9.635%	237,450	N/A
2019 - 20	10.327%	295,438	0
2020 - 21	11.199%	338,645	
2021 - 22	11.06%	400,641	
2022 - 23	11.06%	461,091	

Funding History

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

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Unfunded Accrued Liability (UAL)	Funded Ratio	Annual Covered Payroll
06/30/2011	$14,126,030	$10,943,760	$3,182,270	77.5%	$2,098,024
06/30/2012	14,084,104	10,326,106	3,757,998	73.3%	1,062,063
06/30/2013	14,539,412	11,816,121	2,723,291	81.3%	1,369,806
06/30/2014	15,466,674	13,003,838	2,462,836	84.1%	1,395,887
06/30/2015	15,806,251	12,571,337	3,234,914	79.5%	1,452,348
06/30/2016	16,506,054	12,141,574	4,364,480	73.6%	1,399,357
06/30/2017	17,850,764	13,504,290	4,346,474	75.7%	1,562,584
06/30/2018	19,118,587	14,011,196	5,107,391	73.3%	1,478,524
06/30/2019	19,232,814	13,847,354	5,385,460	72.0%	1,452,801
06/30/2020	20,083,551	14,216,120	5,867,431	70.8%	1,450,472

Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Maturity Measures**
- **Maturity Measures History**
- **Hypothetical Termination Liability**

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 (2020-21, 2021-22, 2022-23 and 2023-24). 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.

For fiscal years 2020-21, 2021-22, 2022-23, and 2023-24, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0%, 4.0%, 7.0%, 9.0% and 12.0%.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2024. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25% had an average annual return of 4.0% or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0% or greater than 12.0% over this four-year period, the likelihood of a single investment return less than 1.0% or greater than 12.0% in any given year is much greater.

Assumed Annual Return From 2020-21 through 2023-24	Projected Employer Contributions			
	2023-24	2024-25	2025-26	2026-27
1.0%				
Normal Cost	11.1%	11.1%	11.1%	11.1%
UAL Contribution	$518,000	$599,000	$687,000	$796,000
4.0%				
Normal Cost	11.1%	11.1%	11.1%	11.1%
UAL Contribution	$508,000	$568,000	$624,000	$692,000
7.0%				
Normal Cost	11.1%	11.1%	11.1%	11.1%
UAL Contribution	$497,000	$535,000	$559,000	$581,000
9.0%				
Normal Cost	11.3%	11.5%	11.7%	12.0%
UAL Contribution	$491,000	$519,000	$526,000	$526,000
12.0%				
Normal Cost	11.3%	11.5%	11.7%	12.0%
UAL Contribution	$481,000	$485,000	$457,000	$406,000

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.50% and 2.50%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2020 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 7.0% as well as alternate discount rates of 6.0% and 8.0%. The rates of 6.0% and 8.0% were selected since they illustrate the impact of a 1.0% increase or decrease to the 7.0% assumption.

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
Discount Rate	**6.0%**	**7.0%**	**8.0%**
Inflation	2.5%	2.5%	2.5%
Real Rate of Return	**3.5%**	**4.5%**	**5.5%**
a) Total Normal Cost	22.42%	17.98%	14.58%
b) Accrued Liability	$22,577,607	$20,083,551	$18,029,777
c) Market Value of Assets	$14,216,120	$14,216,120	$14,216,120
d) Unfunded Liability/(Surplus) [(b) - (c)]	$8,361,487	$5,867,431	$3,813,657
e) Funded Status	63.0%	70.8%	78.8%

Sensitivity to the Price Inflation Assumption

As of June 30, 2020	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	**6.0%**	**7.0%**	**8.0%**
Inflation	**1.5%**	**2.5%**	**3.5%**
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	19.17%	17.98%	16.56%
b) Accrued Liability	$21,196,275	$20,083,551	$18,669,899
c) Market Value of Assets	$14,216,120	$14,216,120	$14,216,120
d) Unfunded Liability/(Surplus) [(b) - (c)]	$6,980,155	$5,867,431	$4,453,779
e) Funded Status	67.1%	70.8%	76.1%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2020 plan costs and funded status under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2020	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	18.30%	17.98%	17.69%
b) Accrued Liability	$20,495,716	$20,083,551	$19,704,237
c) Market Value of Assets	$14,216,120	$14,216,120	$14,216,120
d) Unfunded Liability/(Surplus) [(b) - (c)]	$6,279,596	$5,867,431	$5,488,117
e) Funded Status	69.4%	70.8%	72.1%

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor to tolerate risk is important in understanding how the pension plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. Since it is the employer that bears the risk, it is appropriate to perform this analysis on a pension plan level considering all rate plans. The following measures are for one rate plan only.

One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 60%-65%.

Ratio of Retiree Accrued Liability to Total Accrued Liability	**June 30, 2019**	**June 30, 2020**
1. Retired Accrued Liability	13,201,283	14,207,436
2. Total Accrued Liability	19,232,814	20,083,551
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.69	0.71

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the Support Ratio. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

Support Ratio	**June 30, 2019**	**June 30, 2020**
1. Number of Actives	13	11
2. Number of Retirees	63	67
3. Support Ratio [(1) / (2)]	0.21	0.16

Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., 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)

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR 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. 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)

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The AVR, described above, will tend to move closer to the LVR as a plan matures.

Contribution Volatility	June 30, 2019	June 30, 2020
1. Market Value of Assets	$13,847,354	$14,216,120
2. Payroll	1,452,801	1,450,472
3. Asset Volatility Ratio (AVR) [(1) / (2)]	9.5	9.8
4. Accrued Liability	$19,232,814	$20,083,551
5. Liability Volatility Ratio (LVR) [(4) / (2)]	13.2	13.8

Maturity Measures History

Valuation Date	Ratio of Retiree Accrued Liability to Total Accrued Liability	Support Ratio	Asset Volatility Ratio	Liability Volatility Ratio
06/30/2017	0.68	0.28	8.6	11.4
06/30/2018	0.72	0.20	9.5	12.9
06/30/2019	0.69	0.21	9.5	13.2
06/30/2020	0.71	0.16	9.8	13.8

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, 2020. 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 limiting the funding risk. 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 19-month period from 12 months before the valuation date to 7 months after.

Market Value of Assets (MVA)	Hypothetical Termination Liability[1,2] at 0.75%	Funded Status	Unfunded Termination Liability at 0.75%	Hypothetical Termination Liability[1,2] at 2.50%	Funded Status	Unfunded Termination Liability at 2.50%
$14,216,120	$45,053,071	31.6%	$30,836,951	$34,505,988	41.2%	$20,289,868

[1] The hypothetical liabilities calculated above include a 5% mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

[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 1.18% on June 30, 2020, and was 1.68% on January 31, 2021.

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, 2019	June 30, 2020
Active Members		
Counts	13	11
Average Attained Age	N/A	47.5
Average Entry Age to Rate Plan	N/A	37.8
Average Years of Credited Service	N/A	7.8
Average Annual Covered Pay	$111,754	$131,861
Annual Covered Payroll	$1,452,801	$1,450,472
Projected Annual Payroll for Contribution Year	$1,575,983	$1,573,457
Present Value of Future Payroll	$12,118,815	$11,844,036
Transferred Members	13	13
Separated Members	27	24
Retired Members and Beneficiaries		
Counts*	63	67
Average Annual Benefits*	N/A	$17,177

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values include community property settlements.

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- Post-Retirement Survivor Allowance (PRSA)

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 Section 2.

	Benefit Group			
Member Category	Misc	Misc	EXL*	
Demographics				
Actives	Yes	No	No	
Transfers/Separated	Yes	No	No	
Receiving	Yes	Yes	Yes	
Benefit Provision				
Benefit Formula	2% @ 55			
Social Security Coverage	No			
Full/Modified	Full			
Employee Contribution Rate	7.00%			
Final Average Compensation Period	Three Year			
Sick Leave Credit	Yes			
Non-Industrial Disability	Standard			
Industrial Disability	No			
Pre-Retirement Death Benefits				
Optional Settlement 2	Yes			
1959 Survivor Benefit Level	Level 3			
Special	No			
Alternate (firefighters)	No			
Post-Retirement Death Benefits				
Lump Sum	$500	$500	$0	
Survivor Allowance (PRSA)	Yes	Yes	No	
COLA	2%	2%	2%	

* The benefits listed here are those associated with the plan where an accrued liability adjustment has been made in accordance with Government Code Section 20791 and not of the contracting agency.

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Risk Pool Actuarial Valuation Information

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

California Public Employees' Retirement System
Actuarial Office
400 Q Street, Sacramento, CA 95811 | Phone: (916) 795-3000 | Fax: (916) 795-2744
888 CalPERS (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

July 2021

Safety Plan of the Town of Atherton
(CalPERS ID: 1382390535)
Annual Valuation Report as of June 30, 2020

Dear Employer,

Attached to this letter, you will find the June 30, 2020 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for fiscal year 2022-23**. In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

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, 2020.

Section 2 can be found on the CalPERS website (calpers.ca.gov). From the home page, go to *"Forms & Publications"* and select *"View All"*. In the search box, enter *"Risk Pool"* and from the results list download the Safety Risk Pool Actuarial Valuation Report for June 30, 2020.

Your June 30, 2020 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.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

Required Contribution

The exhibit below displays the minimum employer contributions for fiscal year 2022-23 along with estimates of the required contributions for fiscal year 2023-24. 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**.

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability
2022-23	25.64%	$1,172,082
Projected Results		
2023-24	*25.6%*	*$1,260,000*

The actual investment return for fiscal year 2020-21 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00%. ***To the extent the actual investment return for fiscal year 2020-21 differs from 7.00%, the actual contribution requirements for fiscal year 2023-24 will differ from those shown above.*** 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. This section also contains projected required contributions through fiscal year 2027-28.

Changes from Previous Year's Valuation

There are no significant changes in actuarial assumptions or policies in your 2020 actuarial valuation. Your annual valuation report is an important tool for monitoring the health of your CalPERS pension plan. Your report contains useful information about future required contributions and ways to control your plan's funding progress. In addition to your annual actuarial report my office has developed tools for employers to plan, project and protect the retirement benefits of your employees. 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 future scenarios that you select.

Pension Outlook can help you answer specific questions about your plans, including:

- When is my plan's funded status expected to increase?
- What happens to my required contributions in a down market?
- How does the discount rate assumption affect my contributions?
- What is the impact of making an additional discretionary payment to my plan?

To get started, visit our Pension Outlook page at www.calpers.ca.gov/page/employers/actuarial-resources/pension-outlook-overview and take the steps to register online.

CalPERS will be completing an Asset Liability Management (ALM) review process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. In addition, the Actuarial Office will be completing its Experience Study to review the demographic experience within the pension system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

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

Questions

We understand that you might have questions about these results, and your assigned CalPERS actuary whose signature is on the valuation report is available to discuss. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or (**888-225-7377**).

Sincerely,

SCOTT TERANDO, ASA, EA, MAAA, FCA, CFA
Chief Actuary

Actuarial Valuation
as of June 30, 2020

for the
Safety Plan
of the
Town of Atherton
(CalPERS ID: 1382390535)

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

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Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Plan Specific Information for the Safety Plan of the Town of Atherton

(CalPERS ID: 1382390535)
(Rate Plan ID: 65)

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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, 2020 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, 2020 provided by employers participating in the Safety 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 actuaries have certified that, in their opinion, the valuation of the risk pool containing your Safety 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 the Unfunded Accrued Liability amortization bases as of June 30, 2020 and employer contribution as of July 1, 2022 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary who satisfies the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States with regard to pensions.

Julian M Robinson

JULIAN ROBINSON, FSA, EA, MAAA
Senior Pension Actuary, CalPERS

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Other Pooled Safety Risk Pool Rate Plans**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2020 actuarial valuation of the Safety Plan of the Town of Atherton of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for fiscal year 2022-23.

Purpose of Section 1

This Section 1 report for the Safety Plan of the Town of Atherton of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2020;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2022 through June 30, 2023; and
- Provide actuarial information as of June 30, 2020 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 Governmental Accounting Standards Board (GASB) Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available on the CalPERS 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.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0% and 8.0%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post- retirement mortality assumptions adopted in 2017.
- Pension Plan maturity measures quantifying the risks the employer bears.

Required Employer Contributions

	Fiscal Year
Required Employer Contributions	**2022-23**
Employer Normal Cost Rate	**25.64%**
Plus	
Required Payment on Amortization Bases[1]	**$1,172,082**
Paid either as	
1) Monthly Payment	**$97,673.50**
Or	
2) Annual Prepayment Option*	**$1,133,094**

The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**.*

	Fiscal Year 2021-22	Fiscal Year 2022-23
Development of Normal Cost as a Percentage of Payroll		
Base Total Normal Cost for Formula	31.47%	31.46%
Surcharge for Class 1 Benefits[2]		
a) FAC 1	1.23%	1.28%
b) PRSA	1.88%	1.89%
Phase out of Normal Cost Difference[3]	0.00%	0.00%
Plan's Total Normal Cost	34.58%	34.63%
Formula's Expected Employee Contribution Rate	8.99%	8.99%
Employer Normal Cost Rate	25.59%	25.64%

[1] The required payment on amortization bases does not take into account any additional discretionary payment made after April 30, 2021.

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

[3] The normal cost change is phased out over a five-year period in accordance with the CalPERS contribution allocation policy.

Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2022-23 fiscal year is $1,172,082. CalPERS allows employers to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Employers can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during fiscal year 2022-23 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

If you are considering making an ADP, please contact your actuary for additional information.

Minimum Required Employer Contribution for Fiscal Year 2022-23

Estimated Normal Cost	Minimum UAL Payment	ADP	Total UAL Contribution	Estimated Total Contribution
$433,719	$1,172,082	$0	$1,172,082	$1,605,801

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

Funding Target	Estimated Normal Cost	Minimum UAL Payment	ADP[1]	Total UAL Contribution	Estimated Total Contribution
20 years	$433,719	$1,172,082	$186,712	$1,358,794	$1,792,513
15 years	$433,719	$1,172,082	$408,420	$1,580,502	$2,014,221
10 years	$433,719	$1,172,082	$877,453	$2,049,535	$2,483,254
5 years	$433,719	$1,172,082	$2,338,744	$3,510,826	$3,944,545

[1] The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2022 as determined in the June 30, 2020 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.

Plan's Funded Status

	June 30, 2019	June 30, 2020
1. Present Value of Projected Benefits (PVB)	$50,360,298	$51,291,304
2. Entry Age Accrued Liability (AL)	45,702,037	47,261,876
3. Plan's Market Value of Assets (MVA)	32,008,145	32,475,905
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	13,693,892	14,785,971
5. Funded Ratio [(3) / (2)]	70.0%	68.7%

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 the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below.

	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**
	Rate Plan 65 Results					
Normal Cost %	25.64%	25.6%	25.6%	25.6%	25.6%	25.6%
UAL Payment	$1,172,082	$1,260,000	$1,349,000	$1,407,000	$1,461,000	$1,497,000

For some sources of UAL, the change in UAL is 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 the Section 2 Report. This method phases in the impact of the change in UAL over a 5-year period in order to reduce 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 when 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.

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

Our online pension plan modeling and projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook is a tool to help plan and budget pension costs into the future with results and charts that are easy to understand.

Other Pooled Safety Risk Pool Rate Plans

All of the results presented in this Section 1 report, except those shown below, correspond to rate plan 65. In many cases, employers have additional rate plans within the same risk pool. For cost analysis and budgeting it is useful to consider contributions for these rate plans as a whole rather than individually. The estimated contribution amounts and rates for all of the employer's rate plans in the Safety Risk Pool are shown below and assume that the payroll for each rate plan will grow according to the overall payroll growth assumption of 2.75% per year for three years.

	Fiscal Year 2021-22	Fiscal Year 2022-23
Estimated Combined Employer Contributions for all Pooled Safety Rate Plans		
Projected Payroll for the Contribution Year	$2,735,572	$2,751,033
Estimated Employer Normal Cost	$583,808	$578,441
Required Payment on Amortization Bases	1,041,696	1,185,101
Estimated Total Employer Contributions	$1,625,504	$1,763,542
Estimated Total Employer Contribution Rate (illustrative only)	59.42%	64.11%

Cost

Actuarial Determination of Pension Plan Cost

Contributions to fund the pension plan are comprised of two components:

- Normal Cost, expressed as a percentage of total active payroll
- Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with fiscal year 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component is expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 5.5% over the 20 years ending June 30, 2020, yet individual fiscal year returns have ranged from -23.6% to +20.7%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2017.

Changes Since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

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 the Section 2 Report for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

The are no significant changes to the actuarial methods or assumptions for the 2020 actuarial valuation.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2020. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase future required contributions while investment returns above the assumed rate of return will decrease future required contributions.

CalPERS will be completing an Asset Liability Management (ALM) process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. As part of the ALM process the Actuarial Office will be completing an Experience Study to review the demographic experience of the retirement system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 7.0% going forward and that the realized rate of return on assets for fiscal year 2020-21 is 7.0%.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2021. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

Breakdown of Entry Age Accrued Liability

Active Members	$8,034,789
Transferred Members	3,027,712
Terminated Members	1,686,033
Members and Beneficiaries Receiving Payments	34,513,342
Total	$47,261,876

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	$47,261,876
2.	Projected UAL balance at 6/30/2020	13,877,524
3.	Pool's Accrued Liability[1]	25,304,654,410
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/2020[1]	6,693,257,955
5.	Pool's 2019/20 Investment (Gain)/Loss[1]	427,980,555
6.	Pool's 2019/20 Non-Investment (Gain)/Loss[1]	75,360,952
7.	Plan's Share of Pool's Investment (Gain)/Loss: [(1) - (2)] ÷ [(3) - (4)] × (5)	767,694
8.	Plan's Share of Pool's Non-Investment (Gain)/Loss: (1) ÷ (3) × (6)	140,753
9.	Plan's New (Gain)/Loss as of 6/30/2020: (7) + (8)	908,447

[1] Does not include plans that transferred to Pool on the valuation date.

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

10.	Plan's UAL: (2) + (9)	$14,785,971
11.	Plan's Share of Pool's MVA: (1) - (10)	$32,475,905

Schedule of Plan's Amortization Bases

Note that 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, 2020.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: fiscal year 2022-23.

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 required 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 expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

Reason for Base	Date Est.	Ramp Level 2022-23	Ramp Shape	Escala-tion 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
Share of Pre-2013 Pool UAL	6/30/13	No Ramp		2.75%	15	3,844,622	317,238	3,785,592	325,962	3,713,406	334,926
Non-Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.75%	23	(52,950)	(3,592)	(52,941)	(3,691)	(52,829)	(3,792)
Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.75%	23	4,664,341	316,415	4,663,543	325,116	4,653,688	334,057
Non-Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.75%	24	41,743	2,760	41,810	2,836	41,803	2,914
Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.75%	24	(3,344,227)	(221,143)	(3,349,571)	(227,225)	(3,348,998)	(233,473)
Assumption Change	6/30/14	100%	Up/Down	2.75%	14	2,157,319	205,138	2,096,135	210,779	2,024,833	216,575
Non-Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.75%	25	(7,497)	(392)	(7,616)	(504)	(7,628)	(517)
Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.75%	25	2,024,790	105,905	2,056,976	136,021	2,060,263	139,762
Non-Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.75%	26	(412,922)	(16,227)	(425,041)	(22,231)	(431,798)	(28,553)
Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.75%	26	2,477,261	97,353	2,549,967	133,374	2,590,502	171,302
Assumption Change	6/30/16	100%	Up/Down	2.75%	16	773,029	42,087	783,606	57,660	778,814	74,057
Non-Investment (Gain)/Loss	6/30/17	80%	Up/Down	2.75%	27	31,603	840	32,946	1,295	33,913	1,774
Investment (Gain)/Loss	6/30/17	80%	Up/Down	2.75%	27	(1,231,442)	(32,734)	(1,283,783)	(50,451)	(1,321,461)	(69,118)
Assumption Change	6/30/17	80%	Up/Down	2.75%	17	971,501	35,426	1,002,861	54,601	1,016,582	74,803
Non-Investment (Gain)/Loss	6/30/18	60%	Up/Down	2.75%	28	176,844	2,415	186,725	4,963	194,662	7,650
Investment (Gain)/Loss	6/30/18	60%	Up/Down	2.75%	28	(364,808)	(4,982)	(385,191)	(10,239)	(401,563)	(15,781)
Assumption Change	6/30/18	60%	Up/Down	2.75%	18	1,427,732	26,620	1,500,137	54,703	1,548,561	84,311
Method Change	6/30/18	60%	Up/Down	2.75%	18	325,767	6,074	342,288	12,482	353,337	19,237
Non-Investment (Gain)/Loss	6/30/19	No Ramp		0.00%	19	206,260	0	220,698	20,139	215,315	20,139

Schedule of Plan's Amortization Bases (continued)

Reason for Base	Date Est.	Ramp Level 2022-23	Ramp Shape	Escala-tion 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
Investment (Gain)/Loss	6/30/19	40%	Up Only	0.00%	19	168,558	0	180,357	3,943	188,903	7,887
Non-Investment (Gain)/Loss	6/30/20	No Ramp		0.00%	20	140,753	0	150,606	0	161,148	14,705
Investment (Gain)/Loss	6/30/20	20%	Up Only	0.00%	20	767,694	0	821,433	0	878,933	19,217
Total						**14,785,971**	**879,201**	**14,911,537**	**1,029,533**	**14,890,386**	**1,172,082**

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized in accordance with the CalPERS amortization policy in effect at the time the base was established.

Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed a desire for a more stable pattern of payments or have indicated interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings 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) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. To initiate a Fresh Start, please consult with your plan actuary.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease 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:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when 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.

Amortization Schedule and Alternatives (continued)

	Current Amortization Schedule		Alternate Schedules			
			15 Year Amortization		10 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2022	14,890,386	1,172,082	14,890,386	1,580,502	14,890,386	2,049,535
6/30/2023	14,720,301	1,260,363	14,297,829	1,580,502	13,812,658	2,049,536
6/30/2024	14,446,994	1,349,428	13,663,793	1,580,502	12,659,488	2,049,536
6/30/2025	14,062,425	1,406,716	12,985,375	1,580,503	11,425,596	2,049,536
6/30/2026	13,591,676	1,461,005	12,259,466	1,580,502	10,105,331	2,049,535
6/30/2027	13,031,820	1,497,040	11,482,745	1,580,503	8,692,649	2,049,536
6/30/2028	12,395,496	1,534,066	10,651,652	1,580,502	7,181,078	2,049,536
6/30/2029	11,676,330	1,572,111	9,762,384	1,580,503	5,563,697	2,049,536
6/30/2030	10,867,470	1,611,204	8,810,866	1,580,503	3,833,099	2,049,535
6/30/2031	9,961,549	1,651,364	7,792,742	1,580,503	1,981,360	2,049,535
6/30/2032	8,950,673	1,635,822	6,703,349	1,580,502		
6/30/2033	7,885,114	1,618,289	5,537,699	1,580,502		
6/30/2034	6,763,102	1,578,154	4,290,454	1,580,503		
6/30/2035	5,604,064	1,508,096	2,955,901	1,580,503		
6/30/2036	4,436,363	1,382,645	1,527,929	1,580,502		
6/30/2037	3,316,689	811,206				
6/30/2038	2,709,739	724,367				
6/30/2039	2,150,130	655,745				
6/30/2040	1,622,332	613,392				
6/30/2041	1,101,397	475,662				
6/30/2042	686,466	340,600				
6/30/2043	382,199	265,484				
6/30/2044	134,334	134,128				
6/30/2045	4,994	5,166				
6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
6/30/2050						
6/30/2051						
Total	**26,264,135**		**23,707,537**		**20,495,356**	
Interest Paid	**11,373,749**		**8,817,151**		**5,604,970**	
Estimated Savings			**2,556,598**		**5,768,779**	

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan. The amounts are based on the actuarial valuation from two years prior and does not account for prepayments or benefit changes made during a fiscal year. Additional discretionary payments before July 1, 2019 or after June 30, 2020 are not included.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment ($)	Additional Discretionary Payments
2016 - 17	21.230%	$402,865	N/A
2017 - 18	21.418%	496,462	N/A
2018 - 19	22.346%	627,361	N/A
2019 - 20	23.654%	771,853	0
2020 - 21	25.540%	879,200	
2021 - 22	25.59%	1,029,533	
2022 - 23	25.64%	1,172,082	

Funding History

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

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Unfunded Accrued Liability (UAL)	Funded Ratio	Annual Covered Payroll
06/30/2011	$28,919,573	$21,722,502	$7,197,071	75.1%	$1,942,071
06/30/2012	30,999,471	22,860,016	8,139,455	73.7%	1,824,609
06/30/2013	32,050,359	24,846,630	7,203,729	77.5%	1,971,765
06/30/2014	35,213,417	28,436,146	6,777,271	80.8%	1,840,375
06/30/2015	36,891,116	28,263,430	8,627,686	76.6%	2,046,383
06/30/2016	38,454,832	27,292,457	11,162,375	71.0%	2,010,099
06/30/2017	41,333,503	29,968,235	11,365,268	72.5%	1,342,110
06/30/2018	43,955,355	30,918,059	13,037,296	70.3%	1,648,799
06/30/2019	45,702,037	32,008,145	13,693,892	70.0%	1,598,921
06/30/2020	47,261,876	32,475,905	14,785,971	68.7%	1,559,354

Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Maturity Measures**
- **Maturity Measures History**
- **Hypothetical Termination Liability**

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 (2020-21, 2021-22, 2022-23 and 2023-24). 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.

For fiscal years 2020-21, 2021-22, 2022-23, and 2023-24, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0%, 4.0%, 7.0%, 9.0% and 12.0%.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2024. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25% had an average annual return of 4.0% or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0% or greater than 12.0% over this four-year period, the likelihood of a single investment return less than 1.0% or greater than 12.0% in any given year is much greater.

Assumed Annual Return From 2020-21 through 2023-24	Projected Employer Contributions			
	2023-24	2024-25	2025-26	2026-27
1.0%				
Normal Cost	25.6%	25.6%	25.6%	25.6%
UAL Contribution	$1,309,000	$1,495,000	$1,699,000	$1,948,000
4.0%				
Normal Cost	25.6%	25.6%	25.6%	25.6%
UAL Contribution	$1,285,000	$1,423,000	$1,556,000	$1,712,000
7.0%				
Normal Cost	25.6%	25.6%	25.6%	25.6%
UAL Contribution	$1,260,000	$1,349,000	$1,407,000	$1,461,000
9.0%				
Normal Cost	26.1%	26.5%	27.0%	27.5%
UAL Contribution	$1,247,000	$1,312,000	$1,334,000	$1,340,000
12.0%				
Normal Cost	26.1%	26.5%	27.0%	27.5%
UAL Contribution	$1,223,000	$1,237,000	$1,178,000	$1,068,000

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.50% and 2.50%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2020 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 7.0% as well as alternate discount rates of 6.0% and 8.0%. The rates of 6.0% and 8.0% were selected since they illustrate the impact of a 1.0% increase or decrease to the 7.0% assumption.

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
Discount Rate	**6.0%**	**7.0%**	**8.0%**
Inflation	2.5%	2.5%	2.5%
Real Rate of Return	**3.5%**	**4.5%**	**5.5%**
a) Total Normal Cost	43.67%	34.63%	27.75%
b) Accrued Liability	$53,630,376	$47,261,876	$42,051,397
c) Market Value of Assets	$32,475,905	$32,475,905	$32,475,905
d) Unfunded Liability/(Surplus) [(b) - (c)]	$21,154,471	$14,785,971	$9,575,492
e) Funded Status	60.6%	68.7%	77.2%

Sensitivity to the Price Inflation Assumption

As of June 30, 2020	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	**6.0%**	**7.0%**	**8.0%**
Inflation	**1.5%**	**2.5%**	**3.5%**
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	37.05%	34.63%	31.93%
b) Accrued Liability	$50,057,112	$47,261,876	$44,080,086
c) Market Value of Assets	$32,475,905	$32,475,905	$32,475,905
d) Unfunded Liability/(Surplus) [(b) - (c)]	$17,581,207	$14,785,971	$11,604,181
e) Funded Status	64.9%	68.7%	73.7%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2020 plan costs and funded status under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2020	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	35.09%	34.63%	34.20%
b) Accrued Liability	$48,012,167	$47,261,876	$46,567,052
c) Market Value of Assets	$32,475,905	$32,475,905	$32,475,905
d) Unfunded Liability/(Surplus) [(b) - (c)]	$15,536,262	$14,785,971	$14,091,147
e) Funded Status	67.6%	68.7%	69.7%

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor to tolerate risk is important in understanding how the pension plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. Since it is the employer that bears the risk, it is appropriate to perform this analysis on a pension plan level considering all rate plans. The following measures are for one rate plan only.

One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 60%-65%.

Ratio of Retiree Accrued Liability to Total Accrued Liability	**June 30, 2019**	**June 30, 2020**
1. Retired Accrued Liability	34,167,910	34,513,342
2. Total Accrued Liability	45,702,037	47,261,876
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.75	0.73

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the Support Ratio. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

Support Ratio	**June 30, 2019**	**June 30, 2020**
1. Number of Actives	11	10
2. Number of Retirees	59	61
3. Support Ratio [(1) / (2)]	0.19	0.16

Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., 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)

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR 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. 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)

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The AVR, described above, will tend to move closer to the LVR as a plan matures.

Contribution Volatility	June 30, 2019	June 30, 2020
1. Market Value of Assets	$32,008,145	$32,475,905
2. Payroll	1,598,921	1,559,354
3. Asset Volatility Ratio (AVR) [(1) / (2)]	20.0	20.8
4. Accrued Liability	$45,702,037	$47,261,876
5. Liability Volatility Ratio (LVR) [(4) / (2)]	28.6	30.3

Maturity Measures History

Valuation Date	Ratio of Retiree Accrued Liability to Total Accrued Liability	Support Ratio	Asset Volatility Ratio	Liability Volatility Ratio
06/30/2017	0.76	0.17	22.3	30.8
06/30/2018	0.74	0.21	18.8	26.7
06/30/2019	0.75	0.19	20.0	28.6
06/30/2020	0.73	0.16	20.8	30.3

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, 2020. 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 limiting the funding risk. 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 19-month period from 12 months before the valuation date to 7 months after.

Market Value of Assets (MVA)	Hypothetical Termination Liability[1,2] at 0.75%	Funded Status	Unfunded Termination Liability at 0.75%	Hypothetical Termination Liability[1,2] at 2.50%	Funded Status	Unfunded Termination Liability at 2.50%
$32,475,905	$116,213,400	28.0%	$83,737,495	$87,052,034	37.3%	$54,576,129

[1] The hypothetical liabilities calculated above include a 5% mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

[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 1.18% on June 30, 2020, and was 1.68% on January 31, 2021.

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, 2019	June 30, 2020
Active Members		
Counts	11	10
Average Attained Age	N/A	45.9
Average Entry Age to Rate Plan	N/A	33.1
Average Years of Credited Service	N/A	11.8
Average Annual Covered Pay	$145,356	$155,935
Annual Covered Payroll	$1,598,921	$1,559,354
Projected Annual Payroll for Contribution Year	$1,734,493	$1,691,571
Present Value of Future Payroll	$12,395,989	$10,531,164
Transferred Members	19	16
Separated Members	9	11
Retired Members and Beneficiaries		
Counts*	59	61
Average Annual Benefits*	N/A	$39,925

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values include community property settlements.

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- One Year Final Compensation (FAC 1)
- Post-Retirement Survivor Allowance (PRSA)

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 Section 2.

	Benefit Group			
Member Category	Police	Police	Police	
Demographics				
Actives	Yes	No	No	
Transfers/Separated	Yes	No	No	
Receiving	Yes	Yes	Yes	
Benefit Provision				
Benefit Formula	3% @ 50			
Social Security Coverage	No			
Full/Modified	Full			
Employee Contribution Rate	9.00%			
Final Average Compensation Period	One Year			
Sick Leave Credit	Yes			
Non-Industrial Disability	Standard			
Industrial Disability	Standard			
Pre-Retirement Death Benefits				
Optional Settlement 2	Yes			
1959 Survivor Benefit Level	Level 3			
Special	Yes			
Alternate (firefighters)	No			
Post-Retirement Death Benefits				
Lump Sum	$500	$500	$500	
Survivor Allowance (PRSA)	Yes	Yes	Yes	
COLA	2%	2%	2%	

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Risk Pool Actuarial Valuation Information

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

California Public Employees' Retirement System
Actuarial Office
400 Q Street, Sacramento, CA 95811 | Phone: (916) 795-3000 | Fax: (916) 795-2744
888 CalPERS (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

July 2021

PEPRA Miscellaneous Plan of the Town of Atherton
(CalPERS ID: 1382390535)
Annual Valuation Report as of June 30, 2020

Dear Employer,

Attached to this letter, you will find the June 30, 2020 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for fiscal year 2022-23**. In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

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, 2020.

Section 2 can be found on the CalPERS website (calpers.ca.gov). From the home page, go to *"Forms & Publications"* and select *"View All"*. In the search box, enter *"Risk Pool"* and from the results list download the Miscellaneous Risk Pool Actuarial Valuation Report for June 30, 2020.

Your June 30, 2020 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.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

Required Contribution

The exhibit below displays the minimum employer contributions and the Employee PEPRA Rate for fiscal year 2022-23 along with estimates of the required contributions for fiscal year 2023-24. 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**.

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability	PEPRA Employee Rate
2022-23	7.76%	$7,136	7.25%
Projected Results			
2023-24	*7.8%*	*$7,400*	*TBD*

The actual investment return for fiscal year 2020-21 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00%. ***To the extent the actual investment return for fiscal year 2020-21 differs from 7.00%, the actual contribution requirements for fiscal year 2023-24 will differ from those shown above.*** 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. This section also contains projected required contributions through fiscal year 2027-28.

Changes from Previous Year's Valuation

There are no significant changes in actuarial assumptions or policies in your 2020 actuarial valuation. Your annual valuation report is an important tool for monitoring the health of your CalPERS pension plan. Your report contains useful information about future required contributions and ways to control your plan's funding progress. In addition to your annual actuarial report my office has developed tools for employers to plan, project and protect the retirement benefits of your employees. 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 future scenarios that you select.

Pension Outlook can help you answer specific questions about your plans, including:

- When is my plan's funded status expected to increase?
- What happens to my required contributions in a down market?
- How does the discount rate assumption affect my contributions?
- What is the impact of making an additional discretionary payment to my plan?

To get started, visit our Pension Outlook page at www.calpers.ca.gov/page/employers/actuarial-resources/pension-outlook-overview and take the steps to register online.

CalPERS will be completing an Asset Liability Management (ALM) review process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. In addition, the Actuarial Office will be completing its Experience Study to review the demographic experience within the pension system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

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

Questions

We understand that you might have questions about these results, and your assigned CalPERS actuary whose signature is on the valuation report is available to discuss. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or (**888-225-7377**).

Sincerely,

SCOTT TERANDO, ASA, EA, MAAA, FCA, CFA
Chief Actuary

Actuarial Valuation
as of June 30, 2020

for the
PEPRA Miscellaneous Plan
of the
Town of Atherton
(CalPERS ID: 1382390535)

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

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Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Plan Specific Information for the PEPRA Miscellaneous Plan of the Town of Atherton

(CalPERS ID: 1382390535)
(Rate Plan ID: 26036)

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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, 2020 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, 2020 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 actuaries have 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 the Unfunded Accrued Liability amortization bases as of June 30, 2020 and employer contribution as of July 1, 2022 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary who satisfies the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States with regard to pensions.

Julian M Robinson

JULIAN ROBINSON, FSA, EA, MAAA
Senior Pension Actuary, CalPERS

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Other Pooled Miscellaneous Risk Pool Rate Plans**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2020 actuarial valuation of the PEPRA Miscellaneous Plan of the Town of Atherton of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for fiscal year 2022-23.

Purpose of Section 1

This Section 1 report for the PEPRA Miscellaneous Plan of the Town of Atherton of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2020;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2022 through June 30, 2023; and
- Provide actuarial information as of June 30, 2020 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 Governmental Accounting Standards Board (GASB) Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available on the CalPERS 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.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0% and 8.0%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post- retirement mortality assumptions adopted in 2017.
- Pension Plan maturity measures quantifying the risks the employer bears.

Required Employer Contributions

	Fiscal Year
Required Employer Contributions	**2022-23**
Employer Normal Cost Rate	**7.76%**
Plus	
Required Payment on Amortization Bases[1]	**$7,136**
Paid either as	
1) Monthly Payment	**$594.67**
Or	
2) Annual Prepayment Option*	**$6,899**

The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**.*

	Fiscal Year 2021-22	Fiscal Year 2022-23
Development of Normal Cost as a Percentage of Payroll		
Base Total Normal Cost for Formula	14.34%	14.22%
Surcharge for Class 1 Benefits[2]		
a) PRSA	0.64%	0.79%
Phase out of Normal Cost Difference[3]	0.00%	0.00%
Plan's Total Normal Cost	14.98%	15.01%
Plan's Employee Contribution Rate[4]	7.25%	7.25%
Employer Normal Cost Rate	7.73%	7.76%

[1] The required payment on amortization bases does not take into account any additional discretionary payment made after April 30, 2021.

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

[3] The normal cost change is phased out over a five-year period in accordance with the CalPERS contribution allocation policy.

[4] For detail regarding the determination of the required PEPRA employee contribution rate see Section on PEPRA Member Contribution Rates.

Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2022-23 fiscal year is $7,136. CalPERS allows employers to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Employers can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during fiscal year 2022-23 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

If you are considering making an ADP, please contact your actuary for additional information.

Minimum Required Employer Contribution for Fiscal Year 2022-23

Estimated Normal Cost	Minimum UAL Payment	ADP	Total UAL Contribution	Estimated Total Contribution
$68,562	$7,136	$0	$7,136	$75,698

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

Funding Target	Estimated Normal Cost	Minimum UAL Payment	ADP[1]	Total UAL Contribution	Estimated Total Contribution
5 years	$68,562	$7,136	$1,878	$9,014	$77,576

[1] The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2022 as determined in the June 30, 2020 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.

Plan's Funded Status

	June 30, 2019	June 30, 2020
1. Present Value of Projected Benefits (PVB)	$1,354,926	$1,744,868
2. Entry Age Accrued Liability (AL)	379,195	524,556
3. Plan's Market Value of Assets (MVA)	349,276	478,747
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	29,919	45,809
5. Funded Ratio [(3) / (2)]	92.1%	91.3%

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 the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below.

	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**
	Rate Plan 26036 Results					
Normal Cost %	7.76%	7.8%	7.8%	7.8%	7.8%	7.8%
UAL Payment	$7,136	$7,400	$7,700	$8,000	$1,600	$1,600

For some sources of UAL, the change in UAL is 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 the Section 2 Report. This method phases in the impact of the change in UAL over a 5-year period in order to reduce 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 when 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.

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

Our online pension plan modeling and projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook is a tool to help plan and budget pension costs into the future with results and charts that are easy to understand.

Other Pooled Miscellaneous Risk Pool Rate Plans

All of the results presented in this Section 1 report, except those shown below, correspond to rate plan 26036. In many cases, employers have additional rate plans within the same risk pool. For cost analysis and budgeting it is useful to consider contributions for these rate plans as a whole rather than individually. The estimated contribution amounts and rates for all of the employer's rate plans in the Miscellaneous Risk Pool are shown below and assume that the payroll for each rate plan will grow according to the overall payroll growth assumption of 2.75% per year for three years.

	Fiscal Year 2021-22	Fiscal Year 2022-23
Estimated Combined Employer Contributions for all Pooled Miscellaneous Rate Plans		
Projected Payroll for the Contribution Year	$2,221,554	$2,456,994
Estimated Employer Normal Cost	$224,207	$242,586
Required Payment on Amortization Bases	$407,323	$468,227
Estimated Total Employer Contributions	$631,530	$710,813
Estimated Total Employer Contribution Rate (illustrative only)	28.43%	28.93%

Cost

Actuarial Determination of Pension Plan Cost

Contributions to fund the pension plan are comprised of two components:

- Normal Cost, expressed as a percentage of total active payroll
- Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with fiscal year 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component is expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 5.5% over the 20 years ending June 30, 2020, yet individual fiscal year returns have ranged from -23.6% to +20.7%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2017.

Changes Since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

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 the Section 2 Report for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

The are no significant changes to the actuarial methods or assumptions for the 2020 actuarial valuation.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2020. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase future required contributions while investment returns above the assumed rate of return will decrease future required contributions.

CalPERS will be completing an Asset Liability Management (ALM) process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. As part of the ALM process the Actuarial Office will be completing an Experience Study to review the demographic experience of the retirement system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 7.0% going forward and that the realized rate of return on assets for fiscal year 2020-21 is 7.0%.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2021. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

Breakdown of Entry Age Accrued Liability

Active Members	$505,476
Transferred Members	13,994
Terminated Members	5,086
Members and Beneficiaries Receiving Payments	0
Total	$524,556

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	$524,556
2.	Projected UAL balance at 6/30/2020	32,866
3.	Pool's Accrued Liability[1]	19,314,480,060
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/2020[1]	4,306,566,797
5.	Pool's 2019/20 Investment (Gain)/Loss[1]	344,968,792
6.	Pool's 2019/20 Non-Investment (Gain)/Loss[1]	60,428,629
7.	Plan's Share of Pool's Investment (Gain)/Loss: [(1) - (2)] ÷ [(3) - (4)] × (5)	11,302
8.	Plan's Share of Pool's Non-Investment (Gain)/Loss: (1) ÷ (3) × (6)	1,641
9.	Plan's New (Gain)/Loss as of 6/30/2020: (7) + (8)	12,943

[1] Does not include plans that transferred to Pool on the valuation date.

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

10.	Plan's UAL: (2) + (9)	$45,809
11.	Plan's Share of Pool's MVA: (1) - (10)	$478,747

Schedule of Plan's Amortization Bases

Note that 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, 2020.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: fiscal year 2022-23.

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 required 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 expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

Reason for Base	Date Est.	Ramp Level 2022-23	Ramp Shape	Escala-tion 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
Fresh Start	6/30/19	No Ramp		0.00%	4	32,866	6,600	28,340	6,682	23,412	6,682
Non-Investment (Gain)/Loss	6/30/20	No Ramp		0.00%	20	1,641	0	1,756	0	1,879	171
Investment (Gain)/Loss	6/30/20	20%	Up Only	0.00%	20	11,302	0	12,093	0	12,940	283
Total						**45,809**	**6,600**	**42,189**	**6,682**	**38,231**	**7,136**

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized in accordance with the CalPERS amortization policy in effect at the time the base was established.

Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed a desire for a more stable pattern of payments or have indicated interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings 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) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. To initiate a Fresh Start, please consult with your plan actuary.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease 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:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when 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.

Amortization Schedule and Alternatives (continued)

	Current Amortization Schedule		Alternate Schedules			
			10 Year Amortization		5 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2022	38,231	7,136	38,231	5,262	38,231	9,014
6/30/2023	33,526	7,420	35,464	5,262	31,583	9,014
6/30/2024	28,197	7,702	32,503	5,262	24,470	9,014
6/30/2025	22,204	7,985	29,335	5,262	16,859	9,014
6/30/2026	15,498	1,586	25,945	5,262	8,715	9,015
6/30/2027	14,942	1,586	22,318	5,262		
6/30/2028	14,347	1,585	18,437	5,262		
6/30/2029	13,712	1,587	14,285	5,262		
6/30/2030	13,030	1,585	9,842	5,262		
6/30/2031	12,303	1,587	5,088	5,263		
6/30/2032	11,522	1,586				
6/30/2033	10,688	1,586				
6/30/2034	9,796	1,585				
6/30/2035	8,842	1,586				
6/30/2036	7,820	1,586				
6/30/2037	6,727	1,586				
6/30/2038	5,557	1,586				
6/30/2039	4,305	1,586				
6/30/2040	2,966	1,586				
6/30/2041	1,533	1,586				
6/30/2042						
6/30/2043						
6/30/2044						
6/30/2045						
6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
6/30/2050						
6/30/2051						
Total	**55,618**		**52,621**		**45,071**	
Interest Paid	**17,387**		**14,390**		**6,840**	
Estimated Savings			**2,997**		**10,547**	

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan. The amounts are based on the actuarial valuation from two years prior and does not account for prepayments or benefit changes made during a fiscal year. Additional discretionary payments before July 1, 2019 or after June 30, 2020 are not included.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment ($)	Additional Discretionary Payments
2016 - 17	6.930%	$0	N/A
2017 - 18	6.908%	412	N/A
2018 - 19	7.266%	1,435	N/A
2019 - 20	7.072%	3,306	0
2020 - 21	7.874%	6,600	
2021 - 22	7.73%	6,682	
2022 - 23	7.76%	7,136	

Funding History

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

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Unfunded Accrued Liability (UAL)	Funded Ratio	Annual Covered Payroll
06/30/2013	$377	$506	($129)	134.2%	$60,372
06/30/2014	12,473	13,179	(706)	105.7%	64,827
06/30/2015	34,451	33,187	1,264	96.3%	233,018
06/30/2016	83,679	75,884	7,795	90.7%	309,096
06/30/2017	162,209	155,277	6,932	95.7%	438,152
06/30/2018	266,039	246,793	19,246	92.8%	534,274
06/30/2019	379,195	349,276	29,919	92.1%	595,112
06/30/2020	524,556	478,747	45,809	91.3%	814,478

Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Maturity Measures**
- **Maturity Measures History**
- **Hypothetical Termination Liability**

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 (2020-21, 2021-22, 2022-23 and 2023-24). 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.

For fiscal years 2020-21, 2021-22, 2022-23, and 2023-24, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0%, 4.0%, 7.0%, 9.0% and 12.0%.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2024. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25% had an average annual return of 4.0% or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0% or greater than 12.0% over this four-year period, the likelihood of a single investment return less than 1.0% or greater than 12.0% in any given year is much greater.

Assumed Annual Return From 2020-21 through 2023-24	Projected Employer Contributions			
	2023-24	2024-25	2025-26	2026-27
1.0%				
Normal Cost	7.8%	7.8%	7.8%	7.8%
UAL Contribution	$8,100	$9,900	$12,000	$8,800
4.0%				
Normal Cost	7.8%	7.8%	7.8%	7.8%
UAL Contribution	$7,800	$8,800	$10,000	$5,300
7.0%				
Normal Cost	7.8%	7.8%	7.8%	7.8%
UAL Contribution	$7,400	$7,700	$8,000	$1,600
9.0%				
Normal Cost	7.9%	7.6%	7.8%	8.0%
UAL Contribution	$7,300	$7,300	$0	$0
12.0%				
Normal Cost	7.9%	7.6%	7.8%	8.0%
UAL Contribution	$6,900	$0	$0	$0

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.50% and 2.50%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2020 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 7.0% as well as alternate discount rates of 6.0% and 8.0%. The rates of 6.0% and 8.0% were selected since they illustrate the impact of a 1.0% increase or decrease to the 7.0% assumption.

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
Discount Rate	**6.0%**	**7.0%**	**8.0%**
Inflation	2.5%	2.5%	2.5%
Real Rate of Return	**3.5%**	**4.5%**	**5.5%**
a) Total Normal Cost	18.63%	15.01%	12.24%
b) Accrued Liability	$655,074	$524,556	$424,096
c) Market Value of Assets	$478,747	$478,747	$478,747
d) Unfunded Liability/(Surplus) [(b) - (c)]	$176,327	$45,809	($54,651)
e) Funded Status	73.1%	91.3%	112.9%

Sensitivity to the Price Inflation Assumption

As of June 30, 2020	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	**6.0%**	**7.0%**	**8.0%**
Inflation	**1.5%**	**2.5%**	**3.5%**
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	16.05%	15.01%	13.78%
b) Accrued Liability	$562,980	$524,556	$479,138
c) Market Value of Assets	$478,747	$478,747	$478,747
d) Unfunded Liability/(Surplus) [(b) - (c)]	$84,233	$45,809	$391
e) Funded Status	85.0%	91.3%	99.9%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2020 plan costs and funded status under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2020	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	15.30%	15.01%	14.75%
b) Accrued Liability	$533,789	$524,556	$515,991
c) Market Value of Assets	$478,747	$478,747	$478,747
d) Unfunded Liability/(Surplus) [(b) - (c)]	$55,042	$45,809	$37,244
e) Funded Status	89.7%	91.3%	92.8%

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor to tolerate risk is important in understanding how the pension plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. Since it is the employer that bears the risk, it is appropriate to perform this analysis on a pension plan level considering all rate plans. The following measures are for one rate plan only.

One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 60%-65%.

Ratio of Retiree Accrued Liability to Total Accrued Liability	**June 30, 2019**	**June 30, 2020**
1. Retired Accrued Liability	0	0
2. Total Accrued Liability	379,195	524,556
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.00	0.00

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the Support Ratio. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

Support Ratio	**June 30, 2019**	**June 30, 2020**
1. Number of Actives	7	9
2. Number of Retirees	0	0
3. Support Ratio [(1) / (2)]	N/A	N/A

Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., 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)

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR 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. 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)

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The AVR, described above, will tend to move closer to the LVR as a plan matures.

Contribution Volatility	June 30, 2019	June 30, 2020
1. Market Value of Assets	$349,276	$478,747
2. Payroll	595,112	814,478
3. Asset Volatility Ratio (AVR) [(1) / (2)]	0.6	0.6
4. Accrued Liability	$379,195	$524,556
5. Liability Volatility Ratio (LVR) [(4) / (2)]	0.6	0.6

Maturity Measures History

Valuation Date	Ratio of Retiree Accrued Liability to Total Accrued Liability	Support Ratio	Asset Volatility Ratio	Liability Volatility Ratio
06/30/2017	0.00	N/A	0.4	0.4
06/30/2018	0.00	N/A	0.5	0.5
06/30/2019	0.00	N/A	0.6	0.6
06/30/2020	0.00	N/A	0.6	0.6

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, 2020. 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 limiting the funding risk. 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 19-month period from 12 months before the valuation date to 7 months after.

Market Value of Assets (MVA)	Hypothetical Termination Liability[1,2] at 0.75%	Funded Status	Unfunded Termination Liability at 0.75%	Hypothetical Termination Liability[1,2] at 2.50%	Funded Status	Unfunded Termination Liability at 2.50%
$478,747	$1,541,504	31.1%	$1,062,757	$912,274	52.5%	$433,527

[1] The hypothetical liabilities calculated above include a 5% mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

[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 1.18% on June 30, 2020, and was 1.68% on January 31, 2021.

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, 2019	June 30, 2020
Active Members		
Counts	7	9
Average Attained Age	N/A	38.3
Average Entry Age to Rate Plan	N/A	34.9
Average Years of Credited Service	N/A	3.3
Average Annual Covered Pay	$85,016	$90,498
Annual Covered Payroll	$595,112	$814,478
Projected Annual Payroll for Contribution Year	$645,571	$883,537
Present Value of Future Payroll	$6,703,885	$8,664,846
Transferred Members	3	5
Separated Members	1	2
Retired Members and Beneficiaries		
Counts*	0	0
Average Annual Benefits*	N/A	$0

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values include community property settlements.

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- Post-Retirement Survivor Allowance (PRSA)

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 Section 2.

	Benefit Group	
Member Category	Misc	
Demographics		
Actives	Yes	
Transfers/Separated	Yes	
Receiving	No	
Benefit Provision		
Benefit Formula	2% @ 62	
Social Security Coverage	No	
Full/Modified	Full	
Employee Contribution Rate	7.25%	
Final Average Compensation Period	Three Year	
Sick Leave Credit	Yes	
Non-Industrial Disability	Standard	
Industrial Disability	No	
Pre-Retirement Death Benefits		
Optional Settlement 2	Yes	
1959 Survivor Benefit Level	Level 3	
Special	No	
Alternate (firefighters)	No	
Post-Retirement Death Benefits		
Lump Sum	$500	
Survivor Allowance (PRSA)	Yes	
COLA	2%	

PEPRA Member Contribution Rates

The California Public Employees' Pension Reform Act of 2013 (PEPRA) established new benefit formulas, final compensation period, and contribution requirements for "new" employees (generally those first hired into a CalPERS-covered position on or after January 1, 2013). In accordance with Government Code Section 7522.30(b), "new members … shall have an initial contribution rate of at least 50% of the normal cost rate." The normal cost rate is dependent on the plan of retirement benefits, actuarial assumptions and demographics of the risk pool, particularly members' entry age. Should the total normal cost rate change by more than 1% from the base total normal cost rate, the new member rate shall be 50% of the new normal cost rate rounded to the nearest quarter percent.

The table below shows the determination of the PEPRA member contribution rates effective July 1, 2022, based on 50% of the total normal cost rate as of the June 30, 2020 valuation.

		Basis for Current Rate		Rates Effective July 1, 2022			
Rate Plan Identifier	**Benefit Group Name**	**Total Normal Cost**	**Member Rate**	**Total Normal Cost**	**Change**	**Change Needed**	**Member Rate**
26036	Miscellaneous PEPRA Level	14.322%	7.25%	15.01%	0.688%	No	7.25%

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Risk Pool Actuarial Valuation Information

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

California Public Employees' Retirement System
Actuarial Office
400 Q Street, Sacramento, CA 95811 | Phone: (916) 795-3000 | Fax: (916) 795-2744
888 CalPERS (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

July 2021

PEPRA Safety Police Plan of the Town of Atherton
(CalPERS ID: 1382390535)
Annual Valuation Report as of June 30, 2020

Dear Employer,

Attached to this letter, you will find the June 30, 2020 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for fiscal year 2022-23**. In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

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, 2020.

Section 2 can be found on the CalPERS website (calpers.ca.gov). From the home page, go to *"Forms & Publications"* and select *"View All"*. In the search box, enter *"Risk Pool"* and from the results list download the Safety Risk Pool Actuarial Valuation Report for June 30, 2020.

Your June 30, 2020 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.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

Required Contribution

The exhibit below displays the minimum employer contributions and the Employee PEPRA Rate for fiscal year 2022-23 along with estimates of the required contributions for fiscal year 2023-24. 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**.

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability	PEPRA Employee Rate
2022-23	13.66%	$13,019	13.75%
Projected Results			
2023-24	*13.7%*	*$14,000*	*TBD*

The actual investment return for fiscal year 2020-21 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00%. ***To the extent the actual investment return for fiscal year 2020-21 differs from 7.00%, the actual contribution requirements for fiscal year 2023-24 will differ from those shown above.*** 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. This section also contains projected required contributions through fiscal year 2027-28.

Changes from Previous Year's Valuation

There are no significant changes in actuarial assumptions or policies in your 2020 actuarial valuation. Your annual valuation report is an important tool for monitoring the health of your CalPERS pension plan. Your report contains useful information about future required contributions and ways to control your plan's funding progress. In addition to your annual actuarial report my office has developed tools for employers to plan, project and protect the retirement benefits of your employees. 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 future scenarios that you select.

Pension Outlook can help you answer specific questions about your plans, including:

- When is my plan's funded status expected to increase?
- What happens to my required contributions in a down market?
- How does the discount rate assumption affect my contributions?
- What is the impact of making an additional discretionary payment to my plan?

To get started, visit our Pension Outlook page at www.calpers.ca.gov/page/employers/actuarial-resources/pension-outlook-overview and take the steps to register online.

CalPERS will be completing an Asset Liability Management (ALM) review process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. In addition, the Actuarial Office will be completing its Experience Study to review the demographic experience within the pension system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

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

Questions

We understand that you might have questions about these results, and your assigned CalPERS actuary whose signature is on the valuation report is available to discuss. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or (**888-225-7377**).

Sincerely,

SCOTT TERANDO, ASA, EA, MAAA, FCA, CFA
Chief Actuary

Actuarial Valuation
as of June 30, 2020

for the
PEPRA Safety Police Plan
of the
Town of Atherton
(CalPERS ID: 1382390535)

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

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Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Plan Specific Information for the PEPRA Safety Police Plan of the Town of Atherton

(CalPERS ID: 1382390535)
(Rate Plan ID: 25053)

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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, 2020 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, 2020 provided by employers participating in the Safety 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 actuaries have certified that, in their opinion, the valuation of the risk pool containing your PEPRA Safety Police 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 the Unfunded Accrued Liability amortization bases as of June 30, 2020 and employer contribution as of July 1, 2022 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary who satisfies the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States with regard to pensions.

Julian M Robinson

JULIAN ROBINSON, FSA, EA, MAAA
Senior Pension Actuary, CalPERS

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Other Pooled Safety Risk Pool Rate Plans**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2020 actuarial valuation of the PEPRA Safety Police Plan of the Town of Atherton of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for fiscal year 2022-23.

Purpose of Section 1

This Section 1 report for the PEPRA Safety Police Plan of the Town of Atherton of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2020;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2022 through June 30, 2023; and
- Provide actuarial information as of June 30, 2020 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 Governmental Accounting Standards Board (GASB) Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available on the CalPERS 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.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0% and 8.0%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post- retirement mortality assumptions adopted in 2017.
- Pension Plan maturity measures quantifying the risks the employer bears.

Required Employer Contributions

	Fiscal Year
Required Employer Contributions	**2022-23**
Employer Normal Cost Rate	**13.66%**
Plus	
Required Payment on Amortization Bases[1]	**$13,019**
Paid either as	
1) Monthly Payment	**$1,084.92**
Or	
2) Annual Prepayment Option*	**$12,586**

The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**.*

	Fiscal Year 2021-22	Fiscal Year 2022-23
Development of Normal Cost as a Percentage of Payroll		
Base Total Normal Cost for Formula	26.13%	25.78%
Surcharge for Class 1 Benefits[2]		
a) PRSA	1.60%	1.63%
Phase out of Normal Cost Difference[3]	0.00%	0.00%
Plan's Total Normal Cost	27.73%	27.41%
Plan's Employee Contribution Rate[4]	13.75%	13.75%
Employer Normal Cost Rate	13.98%	13.66%

[1] The required payment on amortization bases does not take into account any additional discretionary payment made after April 30, 2021.

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

[3] The normal cost change is phased out over a five-year period in accordance with the CalPERS contribution allocation policy.

[4] For detail regarding the determination of the required PEPRA employee contribution rate see Section on PEPRA Member Contribution Rates.

Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2022-23 fiscal year is $13,019. CalPERS allows employers to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Employers can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during fiscal year 2022-23 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

If you are considering making an ADP, please contact your actuary for additional information.

Minimum Required Employer Contribution for Fiscal Year 2022-23

Estimated Normal Cost	Minimum UAL Payment	ADP	Total UAL Contribution	Estimated Total Contribution
$144,722	$13,019	$0	$13,019	$157,741

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

Funding Target	Estimated Normal Cost	Minimum UAL Payment	ADP[1]	Total UAL Contribution	Estimated Total Contribution
10 years	$144,722	$13,019	$2,122	$15,141	$159,863
5 years	$144,722	$13,019	$12,917	$25,936	$170,658

[1] The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2022 as determined in the June 30, 2020 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.

Plan's Funded Status

	June 30, 2019	June 30, 2020
1. Present Value of Projected Benefits (PVB)	$3,978,986	$4,175,204
2. Entry Age Accrued Liability (AL)	805,567	1,024,856
3. Plan's Market Value of Assets (MVA)	724,919	907,618
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	80,648	117,238
5. Funded Ratio [(3) / (2)]	90.0%	88.6%

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 the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below.

	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**
	Rate Plan 25053 Results					
Normal Cost %	13.66%	13.7%	13.7%	13.7%	13.7%	13.7%
UAL Payment	$13,019	$14,000	$14,000	$15,000	$15,000	$15,000

For some sources of UAL, the change in UAL is 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 the Section 2 Report. This method phases in the impact of the change in UAL over a 5-year period in order to reduce 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 when 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.

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

Our online pension plan modeling and projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook is a tool to help plan and budget pension costs into the future with results and charts that are easy to understand.

Other Pooled Safety Risk Pool Rate Plans

All of the results presented in this Section 1 report, except those shown below, correspond to rate plan 25053. In many cases, employers have additional rate plans within the same risk pool. For cost analysis and budgeting it is useful to consider contributions for these rate plans as a whole rather than individually. The estimated contribution amounts and rates for all of the employer's rate plans in the Safety Risk Pool are shown below and assume that the payroll for each rate plan will grow according to the overall payroll growth assumption of 2.75% per year for three years.

	Fiscal Year 2021-22	Fiscal Year 2022-23
Estimated Combined Employer Contributions for all Pooled Safety Rate Plans		
Projected Payroll for the Contribution Year	$2,735,572	$2,751,033
Estimated Employer Normal Cost	$583,808	$578,441
Required Payment on Amortization Bases	1,041,696	1,185,101
Estimated Total Employer Contributions	$1,625,504	$1,763,542
Estimated Total Employer Contribution Rate (illustrative only)	59.42%	64.11%

Cost

Actuarial Determination of Pension Plan Cost

Contributions to fund the pension plan are comprised of two components:

- Normal Cost, expressed as a percentage of total active payroll
- Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with fiscal year 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component is expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 5.5% over the 20 years ending June 30, 2020, yet individual fiscal year returns have ranged from -23.6% to +20.7%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2017.

Changes Since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

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 the Section 2 Report for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

The are no significant changes to the actuarial methods or assumptions for the 2020 actuarial valuation.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2020. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase future required contributions while investment returns above the assumed rate of return will decrease future required contributions.

CalPERS will be completing an Asset Liability Management (ALM) process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. As part of the ALM process the Actuarial Office will be completing an Experience Study to review the demographic experience of the retirement system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 7.0% going forward and that the realized rate of return on assets for fiscal year 2020-21 is 7.0%.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2021. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

Breakdown of Entry Age Accrued Liability

Active Members	$564,874
Transferred Members	178,677
Terminated Members	6,953
Members and Beneficiaries Receiving Payments	274,352
Total	$1,024,856

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	$1,024,856
2.	Projected UAL balance at 6/30/2020	92,752
3.	Pool's Accrued Liability[1]	25,304,654,410
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/2020[1]	6,693,257,955
5.	Pool's 2019/20 Investment (Gain)/Loss[1]	427,980,555
6.	Pool's 2019/20 Non-Investment (Gain)/Loss[1]	75,360,952
7.	Plan's Share of Pool's Investment (Gain)/Loss: [(1) - (2)] ÷ [(3) - (4)] × (5)	21,434
8.	Plan's Share of Pool's Non-Investment (Gain)/Loss: (1) ÷ (3) × (6)	3,052
9.	Plan's New (Gain)/Loss as of 6/30/2020: (7) + (8)	24,486

[1] Does not include plans that transferred to Pool on the valuation date.

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

10.	Plan's UAL: (2) + (9)	$117,238
11.	Plan's Share of Pool's MVA: (1) - (10)	$907,618

Schedule of Plan's Amortization Bases

Note that 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, 2020.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: fiscal year 2022-23.

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 required 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 expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

Reason for Base	Date Est.	Ramp Level 2022-23	Ramp Shape	Escala-tion 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
Fresh Start	6/30/19	No Ramp		0.00%	9	92,752	10,518	88,365	12,163	81,969	12,163
Non-Investment (Gain)/Loss	6/30/20	No Ramp		0.00%	20	3,052	0	3,266	0	3,495	319
Investment (Gain)/Loss	6/30/20	20%	Up Only	0.00%	20	21,434	0	22,934	0	24,539	537
Total						**117,238**	**10,518**	**114,565**	**12,163**	**110,003**	**13,019**

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized in accordance with the CalPERS amortization policy in effect at the time the base was established.

Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed a desire for a more stable pattern of payments or have indicated interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings 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) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. To initiate a Fresh Start, please consult with your plan actuary.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease 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:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when 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.

Amortization Schedule and Alternatives (continued)

	Current Amortization Schedule		Alternate Schedules			
			10 Year Amortization		5 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2022	110,003	13,019	110,003	15,141	110,003	25,936
6/30/2023	104,236	13,555	102,041	15,141	90,875	25,936
6/30/2024	97,511	14,091	93,522	15,141	70,408	25,937
6/30/2025	89,761	14,628	84,407	15,141	48,507	25,936
6/30/2026	80,912	15,163	74,654	15,141	25,074	25,937
6/30/2027	70,891	15,164	64,218	15,141		
6/30/2028	60,168	15,165	53,051	15,141		
6/30/2029	48,693	15,164	41,103	15,141		
6/30/2030	36,416	15,164	28,318	15,141		
6/30/2031	23,279	3,001	14,638	15,142		
6/30/2032	21,804	3,001				
6/30/2033	20,226	3,002				
6/30/2034	18,536	3,000				
6/30/2035	16,731	3,002				
6/30/2036	14,797	3,001				
6/30/2037	12,729	3,002				
6/30/2038	10,515	3,002				
6/30/2039	8,146	3,001				
6/30/2040	5,612	3,001				
6/30/2041	2,901	3,001				
6/30/2042						
6/30/2043						
6/30/2044						
6/30/2045						
6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
6/30/2050						
6/30/2051						
Total	**164,127**		**151,411**		**129,682**	
Interest Paid	**54,124**		**41,408**		**19,679**	
Estimated Savings			**12,716**		**34,445**	

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan. The amounts are based on the actuarial valuation from two years prior and does not account for prepayments or benefit changes made during a fiscal year. Additional discretionary payments before July 1, 2019 or after June 30, 2020 are not included.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment ($)	Additional Discretionary Payments
2016 - 17	12.821%	$84	N/A
2017 - 18	12.729%	1,974	N/A
2018 - 19	12.965%	2,327	N/A
2019 - 20	13.786%	5,685	0
2020 - 21	13.884%	10,518	
2021 - 22	13.98%	12,163	
2022 - 23	13.66%	13,019	

Funding History

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

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Unfunded Accrued Liability (UAL)	Funded Ratio	Annual Covered Payroll
06/30/2014	$1,842	$1,920	($78)	104.2%	$201,037
06/30/2015	71,655	66,027	5,628	92.1%	443,135
06/30/2016	134,082	116,603	17,479	87.0%	436,385
06/30/2017	230,501	210,826	19,675	91.5%	788,055
06/30/2018	528,785	479,753	49,032	90.7%	866,882
06/30/2019	805,567	724,919	80,648	90.0%	922,832
06/30/2020	1,024,856	907,618	117,238	88.6%	976,652

Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Maturity Measures**
- **Maturity Measures History**
- **Hypothetical Termination Liability**

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 (2020-21, 2021-22, 2022-23 and 2023-24). 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.

For fiscal years 2020-21, 2021-22, 2022-23, and 2023-24, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0%, 4.0%, 7.0%, 9.0% and 12.0%.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2024. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25% had an average annual return of 4.0% or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0% or greater than 12.0% over this four-year period, the likelihood of a single investment return less than 1.0% or greater than 12.0% in any given year is much greater.

Assumed Annual Return From 2020-21 through 2023-24	Projected Employer Contributions			
	2023-24	2024-25	2025-26	2026-27
1.0%				
Normal Cost	13.7%	13.7%	13.7%	13.7%
UAL Contribution	$15,000	$18,000	$23,000	$29,000
4.0%				
Normal Cost	13.7%	13.7%	13.7%	13.7%
UAL Contribution	$14,000	$16,000	$19,000	$22,000
7.0%				
Normal Cost	13.7%	13.7%	13.7%	13.7%
UAL Contribution	$14,000	$14,000	$15,000	$15,000
9.0%				
Normal Cost	14.0%	14.3%	14.7%	14.3%
UAL Contribution	$13,000	$13,000	$13,000	$12,000
12.0%				
Normal Cost	14.0%	14.3%	14.7%	14.3%
UAL Contribution	$13,000	$11,000	$0	$0

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.50% and 2.50%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2020 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 7.0% as well as alternate discount rates of 6.0% and 8.0%. The rates of 6.0% and 8.0% were selected since they illustrate the impact of a 1.0% increase or decrease to the 7.0% assumption.

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
Discount Rate	**6.0%**	**7.0%**	**8.0%**
Inflation	2.5%	2.5%	2.5%
Real Rate of Return	**3.5%**	**4.5%**	**5.5%**
a) Total Normal Cost	34.22%	27.41%	22.22%
b) Accrued Liability	$1,244,231	$1,024,856	$856,312
c) Market Value of Assets	$907,618	$907,618	$907,618
d) Unfunded Liability/(Surplus) [(b) - (c)]	$336,613	$117,238	($51,306)
e) Funded Status	72.9%	88.6%	106.0%

Sensitivity to the Price Inflation Assumption

As of June 30, 2020	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	**6.0%**	**7.0%**	**8.0%**
Inflation	**1.5%**	**2.5%**	**3.5%**
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	29.49%	27.41%	25.11%
b) Accrued Liability	$1,097,257	$1,024,856	$942,551
c) Market Value of Assets	$907,618	$907,618	$907,618
d) Unfunded Liability/(Surplus) [(b) - (c)]	$189,639	$117,238	$34,933
e) Funded Status	82.7%	88.6%	96.3%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2020 plan costs and funded status under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2020	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	27.79%	27.41%	27.05%
b) Accrued Liability	$1,038,536	$1,024,856	$1,012,116
c) Market Value of Assets	$907,618	$907,618	$907,618
d) Unfunded Liability/(Surplus) [(b) - (c)]	$130,918	$117,238	$104,498
e) Funded Status	87.4%	88.6%	89.7%

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor to tolerate risk is important in understanding how the pension plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. Since it is the employer that bears the risk, it is appropriate to perform this analysis on a pension plan level considering all rate plans. The following measures are for one rate plan only.

One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 60%-65%.

Ratio of Retiree Accrued Liability to Total Accrued Liability	**June 30, 2019**	**June 30, 2020**
1. Retired Accrued Liability	272,623	274,352
2. Total Accrued Liability	805,567	1,024,856
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.34	0.27

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the Support Ratio. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

Support Ratio	**June 30, 2019**	**June 30, 2020**
1. Number of Actives	8	8
2. Number of Retirees	1	1
3. Support Ratio [(1) / (2)]	8.00	8.00

Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., 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)

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR 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. 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)

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The AVR, described above, will tend to move closer to the LVR as a plan matures.

Contribution Volatility	June 30, 2019	June 30, 2020
1. Market Value of Assets	$724,919	$907,618
2. Payroll	922,832	976,652
3. Asset Volatility Ratio (AVR) [(1) / (2)]	0.8	0.9
4. Accrued Liability	$805,567	$1,024,856
5. Liability Volatility Ratio (LVR) [(4) / (2)]	0.9	1.0

Maturity Measures History

Valuation Date	Ratio of Retiree Accrued Liability to Total Accrued Liability	Support Ratio	Asset Volatility Ratio	Liability Volatility Ratio
06/30/2017	0.00	N/A	0.3	0.3
06/30/2018	0.00	N/A	0.6	0.6
06/30/2019	0.34	8.00	0.8	0.9
06/30/2020	0.27	8.00	0.9	1.0

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, 2020. 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 limiting the funding risk. 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 19-month period from 12 months before the valuation date to 7 months after.

Market Value of Assets (MVA)	Hypothetical Termination Liability[1,2] at 0.75%	Funded Status	Unfunded Termination Liability at 0.75%	Hypothetical Termination Liability[1,2] at 2.50%	Funded Status	Unfunded Termination Liability at 2.50%
$907,618	$3,447,178	26.3%	$2,539,560	$2,124,868	42.7%	$1,217,250

[1] The hypothetical liabilities calculated above include a 5% mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

[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 1.18% on June 30, 2020, and was 1.68% on January 31, 2021.

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, 2019	June 30, 2020
Active Members		
Counts	8	8
Average Attained Age	N/A	34.3
Average Entry Age to Rate Plan	N/A	32.0
Average Years of Credited Service	N/A	2.4
Average Annual Covered Pay	$115,354	$122,082
Annual Covered Payroll	$922,832	$976,652
Projected Annual Payroll for Contribution Year	$1,001,079	$1,059,462
Present Value of Future Payroll	$11,399,062	$11,912,329
Transferred Members	1	2
Separated Members	0	1
Retired Members and Beneficiaries		
Counts*	1	1
Average Annual Benefits*	N/A	$17,113

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values include community property settlements.

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- Post-Retirement Survivor Allowance (PRSA)

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 Section 2.

	Benefit Group	
Member Category	Police	
Demographics		
Actives	Yes	
Transfers/Separated	Yes	
Receiving	Yes	
Benefit Provision		
Benefit Formula	2.7% @ 57	
Social Security Coverage	No	
Full/Modified	Full	
Employee Contribution Rate	13.75%	
Final Average Compensation Period	Three Year	
Sick Leave Credit	Yes	
Non-Industrial Disability	Standard	
Industrial Disability	Standard	
Pre-Retirement Death Benefits		
Optional Settlement 2	Yes	
1959 Survivor Benefit Level	Level 3	
Special	Yes	
Alternate (firefighters)	No	
Post-Retirement Death Benefits		
Lump Sum	$500	
Survivor Allowance (PRSA)	Yes	
COLA	2%	

PEPRA Member Contribution Rates

The California Public Employees' Pension Reform Act of 2013 (PEPRA) established new benefit formulas, final compensation period, and contribution requirements for "new" employees (generally those first hired into a CalPERS-covered position on or after January 1, 2013). In accordance with Government Code Section 7522.30(b), "new members … shall have an initial contribution rate of at least 50% of the normal cost rate." The normal cost rate is dependent on the plan of retirement benefits, actuarial assumptions and demographics of the risk pool, particularly members' entry age. Should the total normal cost rate change by more than 1% from the base total normal cost rate, the new member rate shall be 50% of the new normal cost rate rounded to the nearest quarter percent.

The table below shows the determination of the PEPRA member contribution rates effective July 1, 2022, based on 50% of the total normal cost rate as of the June 30, 2020 valuation.

		Basis for Current Rate		Rates Effective July 1, 2022			
Rate Plan Identifier	**Benefit Group Name**	**Total Normal Cost**	**Member Rate**	**Total Normal Cost**	**Change**	**Change Needed**	**Member Rate**
25053	Safety Police PEPRA Level	27.634%	13.75%	27.41%	(0.224%)	No	13.75%

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Risk Pool Actuarial Valuation Information

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