CITY OF REDONDO BEACH
BUDGET & FINANCE COMMISSION AGENDA
Thursday, October 9, 2025

415 DIAMOND STREET, REDONDO BEACH

CITY COUNCIL CHAMBER

REGULAR MEETING OF THE BUDGET & FINANCE COMMISSION - 6:30 PM

ALL PUBLIC MEETINGS HAVE RESUMED IN THE CITY COUNCIL CHAMBER. MEMBERS OF THE PUBLIC MAY PARTICIPATE IN-PERSON, BY ZOOM, EMAIL OR eCOMMENT.

Budget & Finance Commission meetings are broadcast live through Spectrum Cable, Channel 8, and Frontier Communications, Channel 41. Live streams and indexed archives of meetings are available via internet. Visit the City's office website at www.Redondo.org/rbtv.

TO WATCH MEETING LIVE ON CITY'S WEBSITE:
https://redondo.legistar.com/Calendar.aspx
*Click "In Progress" hyperlink under Video section of meeting

TO WATCH MEETING LIVE ON YOUTUBE:
https://www.youtube.com/c/CityofRedondoBeachIT

TO JOIN ZOOM MEETING (FOR PUBLIC COMMENT ONLY):
Register in advance for this meeting:
https://www.zoomgov.com/webinar/register/WN_WvcYPJOxT_q9ZkYTF4gRjg
After registering, you will receive a confirmation email containing information about joining the meeting.
If you are participating by phone, be sure to provide your phone # when registering. You will be provided a Toll Free number and a Meeting ID to access the meeting. Note; press # to bypass Participant ID. Attendees will be muted until the public participation period is opened. When you are called on to speak, press *6 to unmute your line. Note, comments from the public are limited to 3 minutes per speaker.

eCOMMENT: COMMENTS MAY BE ENTERED DIRECTLY ON WEBSITE AGENDA PAGE:
https://redondo.granicusideas.com/meetings
1) Public comments can be entered before and during the meeting.
2) Select a SPECIFIC AGENDA ITEM to enter your comment;
3) Public will be prompted to Sign-Up to create a free personal account (one-time) and then comments may be added to each Agenda item of interest.
4) Public comments entered into eComment (up to 2200 characters; equal to approximately 3 minutes of oral comments) will become part of the official meeting record.

EMAIL: TO PARTICIPATE BY WRITTEN COMMUNICATION WITH ATTACHED DOCUMENTS BEFORE 3PM DAY OF MEETING:
Written materials that include attachments pertaining to matters listed on the posted agenda received after the agenda has been published will be added as supplemental materials under the relevant agenda item. Financemail@redondo.org

REGULAR MEETING OF THE BUDGET & FINANCE COMMISSION - 6:30 PM

A. CALL MEETING TO ORDER

B. ROLL CALL

C. SALUTE TO THE FLAG

D. APPROVE ORDER OF AGENDA

E. BLUE FOLDER ITEMS - ADDITIONAL BACK UP MATERIALS

Blue folder items are additional back up material to administrative reports and/or public comments received after the printing and distribution of the agenda packet for receive and file.

E.1. For Blue Folder Documents Approved at the Budget and Finance Commission Meeting

F. CONSENT CALENDAR

Business items, except those formally noticed for public hearing, or discussion are assigned to the Consent Calendar. The Commission Members may request that any Consent Calendar item(s) be removed, discussed, and acted upon separately. Items removed from the Consent Calendar will be taken up under the "Excluded Consent Calendar" section below. Those items remaining on the Consent Calendar will be approved in one motion following Oral Communications.

F.1. APPROVAL OF AFFIDAVIT OF POSTING FOR THE REGULAR BUDGET AND FINANCE COMMISSION MEETING OF OCTOBER 9, 2025

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

F.2. APPROVAL OF THE MINUTES FROM THE REGULAR MEETING OF SEPTEMBER 11, 2025

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

G. EXCLUDED CONSENT CALENDAR ITEMS

H. PUBLIC PARTICIPATION ON NON-AGENDA ITEMS

This section is intended to provide members of the public with the opportunity to comment on any subject that does not appear on this agenda for action. This section is limited to 30 minutes. Each speaker will be afforded three minutes to address the Commission. Each speaker will be permitted to speak only once. Written requests, if any, will be considered first under this section.

H.1. For eComments and Emails Received from the Public

I. ITEMS CONTINUED FROM PREVIOUS AGENDAS

I.1. RESERVES AND BUDGET CONCERNS

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

J. ITEMS FOR DISCUSSION PRIOR TO ACTION

J.1. NOMINATIONS AND ELECTION OF CHAIRPERSON AND VICE-CHAIR

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

J.2. CALPERS VALUATION UPDATE

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

K. COMMISSION MEMBER ITEMS AND FUTURE COMMISSION AGENDA TOPICS

L. ADJOURNMENT

The next meeting of the Redondo Beach Budget & Finance Commission will be a regular meeting to be held at 6:30 p.m. on November 13, 2025, in the Redondo Beach Council Chambers, at 415 Diamond Street, Redondo Beach, California.

It is the intention of the City of Redondo Beach to comply with the Americans with Disabilities Act (ADA) in all respects. If, as an attendee or a participant at this meeting you will need special assistance beyond what is normally provided, the City will attempt to accommodate you in every reasonable manner. Please contact the City Clerk's Office at (310) 318-0656 at least forty-eight (48) hours prior to the meeting to inform us of your particular needs and to determine if accommodation is feasible. Please advise us at that time if you will need accommodations to attend or participate in meetings on a regular basis.

An agenda packet is available 24 hours at www.redondo.org under the City Clerk.

Administrative Report

E.1., **File #** BF25-1398 **Meeting Date:** 10/9/2025

TITLE

For Blue Folder Documents Approved at the Budget and Finance Commission Meeting

Administrative Report

F.1., **File #** 25-1393 **Meeting Date:** 10/9/2025

TITLE

APPROVAL OF AFFIDAVIT OF POSTING FOR THE REGULAR BUDGET AND FINANCE COMMISSION MEETING OF OCTOBER 9, 2025

Tel: 310.697.3648

Redondo.org

REDONDO BEACH

Financial Services
415 Diamond Street
Redondo Beach CA 90277

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS
CITY OF REDONDO BEACH)

AFFIDAVIT OF POSTING

In compliance with the Brown Act, the following materials have been posted at the locations indicated below.

Legislative Body	Budget and Finance Commission
Posting Type	Regular Meeting Agenda
Posting Locations	415 Diamond Street, Redondo Beach, CA 90277 ✓ Adjacent to Council Chambers ✓ City Clerk's Counter, Door "1"
Meeting Date & Time	October 9, 2025 6:30 p.m.

As the Finance Director of the City of Redondo Beach, I declare, under penalty of perjury, the document noted above was posted at the date displayed below.

Stephanie Meyer, Finance Director
Budget and Finance Commission

Date: October 6, 2025

Administrative Report

F.2., **File #** 25-1394 **Meeting Date:** 10/9/2025

TITLE

APPROVAL OF THE MINUTES FROM THE REGULAR MEETING OF SEPTEMBER 11, 2025

Minutes
City of Redondo Beach – Regular Meeting
Budget & Finance Commission
September 11, 2025

REGULAR MEETING OF THE BUDGET AND FINANCE COMMISSION – 6:30 P.M.

A. CALL MEETING TO ORDER

A Regular Meeting of the Redondo Beach Public Safety Commission was called to order at 6:30 p.m. by Vice Chair Sherbin, in the City Hall Council Chambers, 415 Diamond Street, Redondo Beach, California. Beach, California.

B. ROLL CALL

Commissioners Present: Jeste, Vice Chair Sherbin, Ramcharan, Staples, Chair Allen (arrived at 7:14 pm),

Commissioners Absent: Woodham, Marin

Officials Present: Stephanie Meyer, Finance Director
Melissa Villa, Budget & Finance Liaison
Emily Bodkin, Budget & Finance Liaison

C. SALUTE TO THE FLAG

Vice Chair led the Commissioners in a salute to the flag.

D. APPROVE ORDER OF AGENDA

Motion by Vice Chair Sherbin seconded by Commissioner Jeste, to approve the order of agenda.

Motion carried 4-0-3, by voice vote. Commissioners Allen, Woodham and Marin were absent.

E. BLUE FOLDER ITEMS - ADDITIONAL BACK UP MATERIALS

E.1. FOR BLUE FOLDER DOCUMENTS APPROVED AT THE BUDGET AND FINANCE COMMISSION MEETING

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

Melissa Villa announced there was a Blue Folder Item for J.2: the discussion in regard to the Annual Financial Reports for Fiscal Year Ending June 30, 2024, the Draft Annual Comprehensive Financial Report, the ACFR; requested a motion to receive and file.

Motion by Vice Chair Sherbin seconded by Commissioner Ramcharan to receive and file.

Motion carried 4-0-3, by voice vote. Commissioners Allen, Woodham and Marin were absent.

F. CONSENT CALENDAR

F.1. APPROVAL OF AFFIDAVIT OF POSTING FOR THE REGULAR BUDGET AND FINANCE COMMISSION MEETING OF SEPTEMBER 11, 2025

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

F.2. APPROVAL OF THE MINUTES FROM THE REGULAR MEETING OF AUGUST 14, 2025

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

Motion by Commissioner Staples seconded by Commissioner Ramcharan to approve the consent calendar as proposed.

Motion carried 4-0-3, by voice vote. Commissioners Allen, Woodham and Marin were absent.

There were no public comments or eComments.

G. EXCLUDED CONSENT CALENDAR ITEMS - None

H. PUBLIC PARTICIPATION ON NON-AGENDA ITEMS

H.1. For eComments and Emails Received by the Public

Vice Chair Sherbin introduced H.1. and opened the floor for public comment.

Redondo Beach resident Wayne Craig shared he had learned the City applied for a grant through a community meeting; referenced past conversations had been had by the Finance and Budget Commission as well as the Planning Commission in regard to the gun range; understood the grant was $19 million dollars and fully paid for with conditions; shared if the conditions were not met, the City would have to come up with a 20 or 30% difference; remarked the City allocated $1.3 million and spent $200,00 in applying to the grant; remarked the Budget and Finance Commission know more than him, the City is at a $3.5 million deficit; remarked the City has $1.1 million in their account; recommended transferring the money back into a general fund, the street paving project on Grant Ave,

contingency budget or to pay off debts; recommended the Budget and Finance Commission should write a letter to council; disagreed with the City applying for a grant.

Commissioner Jeste asked Wayne Craig about the purpose of the grant.

Mr. Craig answered the grant funds were to go towards the gun range; shared there were many questions and concerns in regard to payment; shared the City is in a budget deficit; felt the City should be more conscious.

Vice Chair Sherbin thanked Mr. Craig; shared the Budget and Finance Commission have started to weigh in on possible alternatives to the current economic situation; called the next speaker, Jim Mueller.

Jim Mueller from District five expressed shock concerning low attendance despite the importance of finances; asked himself questions about financial analysis; referenced the general fund as well as sixteen other funds for special budgets; shared he compared Redondo Beach to Montebello and Monterey Park's general fund spend on a per resident basis using each City's fiscal year 2025-26 Budget Book; found Redondo Beach's per capita general fund spending to be meaningfully higher; would like for the Budget and Finance Commission to investigate; would like the City to update the Comprehensive Financial Report on the Redondo website;

There were no public comments or eComments.

I. ITEMS CONTINUED FROM PREVIOUS AGENDAS

I.1 BUILDING MAINTENANCE/REPLACEMENT PLANNING

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

I.2 RESERVES AND BUDGET CONCERNS

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

Finance Director Stephanie Meyer introduced items I.1 as prior topics discussed at prior meetings; shared there were no presentations, only items the Budget and Finance Commission had asked to retain on the agenda until they are specifically addressed; introduced I.2 as an opportunity for Commissioner Jeste to share the information he communicated to The Daily Breeze and the Mayor; requested to let the auditors speak prior to the discussion.

Vice Chair Sherbin suggested to move the agenda around.

Commissioner Jeste asked if the Commission had a copy of the letter he wrote to the Mayor.

Finance Director Stephanie Meyer confirmed a copy of the letter was in the agenda.

Commissioner Staples suggested to move item I.2 to a later meeting where there are fewer absences.

Commissioner Jeste agreed with Commissioner Staples; expressed it was highly irresponsible for the City Council and City Management to dip into the pension reserves when there are opportunities for saving money or deferring projects; felt it should be last resort; expressed concern that serious issues are on the horizon; felt best to reserve the discussion for the next meeting or a full quorum.

Commissioner Staples expressed the City has been consistently loose with what they would consider reserves, and steal reserves from the pension fund in order to pay for other city services; referenced a past discussion about the standing reserve fund; felt what was not discussed was whether the City has a minimum and maximum amount to spend rather than various departments having reserves; advised for future commissioners to continue the discussion going forward.

Vice Chair Sherbin thanked Commissioner Staples; affirmed the Budget and Finance Commission take his concerns very seriously and his legacy will be with them going forward.

Motion by Commissioner Staples seconded by Commissioner Jeste to move I.2 to the next Budget and Finance Commission meeting.

Vice Chair Sherbin called for a voice vote.

AYES: Jeste, Ramcharan, Staples, Sherbin
NOES: None
ABSTAIN: None
ABSENT: Woodham, Chair Allen, Marin

There were no public comments or eComments.

J. ITEMS FOR DISCUSSION PRIOR TO ACTION

J.1. PROFESSIONAL SERVICES PROCUREMENT

CONTACT: STEPHANIE MEYER, FINANCE DIRECTOR

Finance Director Stephanie Meyer introduce J.1 as an item the Budget and Finance Commission had asked to leave on the agenda until addressed; referenced Mr. Mueller concerns in regard to procurement from the last Budget and Finance Commission meeting; notified the item does not have a prepared presentation.

Vice Chair Sherbin opened the floor to open comment.

Jim Mueller shared Finance Director Stephanie Meyer had sent him a copy pf the purchasing procedures, which he reviewed in conjunction with Chapter 2-6 of the code; shared professional services alone account for 10 to $12 million or 8 to 10% of the general fund budget; expressed three areas of concern within the procurement system such as professional services procurement, contract administration and sole sourcing; elaborated on his concerns in regards to procurement; expressed concerns over long-term contracts; expressed generating new contracts are a hassle because newer professionals do not get the opportunity to work with the City; shared concerns over contract management procedures; recommended specific goals and periodic reviews to be specified within each contract; felt there was no written justification for sole source contracts.

Vice Chair Sherbin asked Finance Director Stephanie Meyer if the items Jim Mueller were referencing were in the City Charter or City Policy.

Finance Director Stephanie Meyer confirmed it is part of the administrative policies and procedures; elaborated they are more detailed than municipal code and its provisions are tied directly to the City's municipal code; stated the municipal code specifically states that the City is not required to look for competition in professional services, however the City in practice will frequently look for competition; shared it can be changed by City Council.

Commissioner Staples recommended that if City policy and administrative code had not been reviewed in the last three years, the City Manager and staff should review the code for consistency; expressed interest in comparing the City to what other cities are doing; acknowledged there is an ongoing process in place led by the City Manager to review contracting generally and address the concerns Jim Mueller had expressed such as contract management, performance management objectives and the full life cycle of management of contract; agreed with Jim Mueller's discussion regarding sole source contracts; shared his own experience with other cities on the process in regard to sole source contracts.

J. 2 DISCUSSION AND POSSIBLE ACTION REGARDING ANNUAL FINANCIAL REPORTS FOR FISCAL YEAR ENDED JUNE 30, 2024

Finance Director Stephanie Meyer introduced auditor Mr. Bob Callanan to elaborate on item J.2; thanked auditors for their work in reviewing the City's practices; expressed the City's goal is to manage the City's finances with transparency and accurately; shared a brief explanation to Mr. Callanan's presentation; opened the floor to Mr. Callanan.

Vice Chair Sherbin asked if the year Mr. Callanan audited was the first year he worked with the City.

Bob Callanan confirmed Vice Chair Sherbin was correct; introduced himself as the engagement partner that specializes in state and local government audits with over 30 years of experience; shared the first year is difficult from an audit perspective as he attempts to get an understanding of the City's internal control structure; shared the difficulties were exasperated due to staff turnover and the hiring of new staff who were unaware of helpful historical knowledge; introduced the presentation layout:

Agenda

- Audit Scope
- Audit Process
- Audit Opinions and Results
- Governance Communications
- Upcoming GASB Standards

Explained he is auditing the City's financial statements contained within the Annual Comprehensive Financial Report; defined the limitations with what is able to be audited; shared auditing checks what is not in the accounting system that should be on the financial statements; shared they take a risk based approach; notified he has a report on internal control and financial reporting and compliance; shared the auditors do have a requirement to look at compliance and be aware of any noncompliance and how that impacts the financial statement, preparation and other liabilities.

Vice Chair Sherbin asked how the auditor would handle something that is out of the scope of their audit.

Bob Callanan stated his team discuss before and after an audit with management offering advice on how to go forward to City Council; stated after his team offers advice, it would ultimately be up to Management and City Council to follow their advice and make financial decisions.

Vice Chair Sherbin asked if the discussion is informal or written suggestions.

Bob Callanan stated it would depend on the level of priority with the highest levels requiring a written form; shared he has three levels:

1) material weaknesses – the highest level

2) significant deficiencies – a lesser level

3) other matters

Informed his team are required report to City Council on the material weaknesses and significant deficiencies immediately; spoke about the single audit report:

Single Audit Report

- Informed they are currently in process of
- A way to audit federal grant programs the City has received federal funds for
- Selecting major grant programs within the selected fiscal year and testing for compliance
- Shared his team has one more grant program left and hopes to finish off this stage by the end of the month

The Audit Process

- Risk based approach
- Automatically his firm look at the potential for override for internal controls
- Revenue recognition
    - What is reported on financial statements

- Significant estimates
    - Financial statements do contain several significant estimates such as the OPEB (Other Post-Employment Benefit) plan, pension plan, deprecation on capital assets, allowances on receivables from a collectability standpoint)
    - Values of the investments as of June 30?

- Accounting for capital assets

Audit Opinions

- On page one of the report, there are unmodified opinions
- Unmodified opinions: the highest form of opinion that audit firms can provide on the financial statements

Audit Results

- Three material weaknesses were identified
  - Grant accounting
  - Construction in progress accounting
  - Accounting for third-party activity
- Two significant deficiencies
  - Deposits payable
  - Financial statement closing process

- All were immediately brought to the attention of management early to create a game plan for the June 30, 2024, audit and forward.

Required Communications

- Which accounting standard was implemented during the year
  - GASB Statement 100: error corrections and financial statement reporting

- Audit standards changed
  - SAS 143-145: IT, general controls and impacts on risk assessment

- No unusual transactions identified, however felt that certain transactions were not being accounted for accurately, and have now been fixed
- All comments have been fixed and will not affect the opinions before the Budget and Finance Commission.
- Receipt of management representation letter

Difficulties

- Staff turnover
- New hires
- Loss of historical knowledge
- No disagreements with staff or management
- No consultations with outside accountants identified

Most Sensitive Estimates

- OBEB liability and related deferred inflows and outflows
- Claims payable

Other

- There were no uncorrected misstatements identified
- Corrected misstatements – Material – 4
- Material weakness in internal control over financial reporting – Financial close and reporting

New Accounting Changes

- Statement 100
- The material, corrected misstatements are in the area of grants receivable and the related unavailable available revenues and unearned revenues
- There were a lot of stale receivables on there that shouldn't have been on there
- Balance sheet time asset
- There was unavailable revenue and unearned revenue that did impact some of the fund balance
- Material adjustment of about 250,000 for other governmental grants fund as a result of weeding out stale receivables

Vice Chair Sherbin asked if corrections made to the receivables would impact income and if there was an allowance set in place a year ago.

Bob Callanan responded it would depend on the situation; stated generally, based off of the rules form the modified accrual basis of accounting for governmental funds, if the grant money is not collected and the reimbursement is not received within 60 days after year's end, it will not be recognized as income. It would have to be put into an unavailable revenue liability account, with no impact on fund balance unless the funds were received.

More discussion ensued regarding impact on the income statement.

Chair Allen arrived at the meeting at 7:14 pm.

Commissioner Staples was focused on the number of $32 million, asked how that would be reflected in the City's financials.

Bob Callanan responded the $32 million had to do with construction in progress that was shown as an asset on the government wide financial statements, not the fund. Further discussion on the difference between the impact on governmental wide financial statements and the general fund ensued

Bob Callanan continued his presentation:

- Spoke about the Dredging project which started in the fiscal year of 22-23 and was completed in 23-24
    - There was a $400,000 adjustment to the net position, restating the beginning balance in the Harbor Tidelands
    - The Dredging project got expensed through instead of getting capitalized in the Harbor fund

Commissioner Jeste asked if routine regular maintenance should not be capitalized.

Bob Callanan confirmed it would be correct not to under the City's Policy Capitalization policies; explained why this item was a repair and maintenance.

Commissioner Jeste expressed he had been concerned since joining the Budget and Finance Commission, about routine maintenance being lumped with improvement or extending life; suggested routine maintenance should be kept as a separate category.

Bob Callanan stated City staff were looking at projects to separate what should be capitalized from repair and maintenance.

Further discussion in regard to the capital asset guidelines ensued.

Bob Callanan continued his presentation; shared:

- The Marine Hotel Agreements were a complex arrangement from many years ago.
    - Money that came in were for TOT revenue from the hotels, which was allowed as a trust fund for operators to use in case of deficits, however when the revenue was paid out to the trust account, it hit the revenue account.
    - Revenue became net not gross and an adjustment had to be made

Vice Chair Sherbin asked if the financial adjustment would be reflected in the financial statements.

Bob Callanan confirmed it would be reflected in the financial statements; shared in his presentation:

- A strong collaborative effort was made from both the Finance department and the auditing team to discover discrepancies
- Found a third-party management company who operated and handled the lease on the Harbor Tidelands and Harbor Uplands were recording money in net.
    - The auditing team have yet to finalize the balance sheet impact
    - The auditing team planned for grossing the money, uncover true revenue and true expenditure based on the information the management company have provided, and to fix the balance sheets.
    - City staff have worked with the management company to streamline the information and form a different process to be a part of the year end process of closing the books

Upcoming GASB Standards

- GASB 101 will be for the 2025 fiscal year to account for compensated absences

- Compensated absences were found to be recorded on the City's financial statements

GASB 102 Certain Risk Disclosures

- Shared they do not believe it would be applied
- If impact will be made on the general fund, there would be disclosures surrounding risk
  - Limitations on raising revenue
  - Concentrations related to tax revenue or vendors
  - Debt or mandated spending – especially unfunded mandates
  - Impact of major employer leaving the community
  - Collective bargaining agreements

GASB 103 Financial Reporting Module

- GASB 34 used to go far into the 80s, and has now been tweaked
- Updated disclosure guidance for:
  - MD&A consistency
  - Clearer definition of unusual or infrequent items
  - Presentation of proprietary fund statements
  - Major component unit information
  - Budgetary comparison information

Disclosure of Capital Assets

- Reassessment of various categories
  - Consistent reporting across governmental entities

Bob Callanan opened the floor for feedback and questions; reminded the Budget and Finance Commission, the material adjustments he presented on had to do with the internal control findings that are material weaknesses; shared the process is to establish and enhance the financial closing process, put in controls, and account for the gross level; shared shoring capital asset are done at the end of the year; worked to establish there are policies and procedures in place to close the capital assets out properly and ensure street infrastructure projects will be carefully vetted; summarized the significant deficiencies had to do with grant accounting to avoid stale receivables.

Commissioner Jeste asked for the number of cities Bob Callanan has audited for.

Bob Callanan shared he has audited seven cities, three special districts, and one county in California for the year of 2024.

Commissioner Jeste asked if comparisons are made to discuss best practices.

Bob Callanan notified he has shared those comparisons with management and the Finance Department; shared there was no standard guide since it is not part of the service he provides; emphasized he does not audit internal controls.

Vice Chair Sherbin thanked Bob Callanan for the presentation; expressed it was an exciting year with the changes in the department.

Motion by Chair Allen seconded by Commissioner Ramcharan to receive and file Bob Callanan's presentation.

Motion carried 5-0-2, by voice vote. Commissioners Woodham and Marin were absent.

Chair Allen opened the floor to public comment.

Jim Mueller asked when the audit will be posted on the City website; asked for clarification about a fund that is funded out of the TOT reserve for the benefit of the hotels.

Bob Callanan clarified TOT revenue is recorded in the City's general fund and there was an agreement made to build hotels; understood that the City accepted there would be debt incurred and wanted to set aside a reserve fund; explained the City planned to put

revenue generated from the hotels into a trust fund to cover the reserve fund that was made to establish said hotels; clarified it was not a separate fund from the general fund; further elaborates his point to the Budget and Finance Commission.

There were no public comments or eComments.

K. COMMISSION MEMBER ITEMS AND FUTURE COMMISSION AGENDA TOPICS

Vice Chair Sherbin thanked Bob Callanan for the presentation and Commissioner Staples for serving eight years in the Budget and Finance Commission.

Commissioner Staples shared a speech to commemorate his time within the Commission.

L. ADJOURNMENT

There being no further business to come before the Budget & Finance Commission, motion by Chair Allen seconded by Commissioner Staples to adjourn the meeting at 7:39 p.m., to a regular meeting to be held at 6:30 p.m. on Thursday, October 9, 2025, in the Redondo Beach City Hall Council Chambers 415 N. Pacific Coast Hwy. Redondo Beach, California.

All written comments submitted via eComment are included in the record and available for public review on the City website.

Respectfully submitted:

_____

Stephanie Meyer
Finance Director

Administrative Report

H.1., **File #** BF25-1399 **Meeting Date:** 10/9/2025

TITLE

For eComments and Emails Received from the Public

Administrative Report

I.1., **File #** 25-1392 **Meeting Date:** 10/9/2025

To: **BUDGET & FINANCE COMMISSION**

From: STEPHANIE MEYER, FINANCE DIRECTOR

TITLE

RESERVES AND BUDGET CONCERNS

Los Angeles County's meager budget for disaster response

The county is massive and at high risk, yet it has a fraction of what other major cities budget to respond to emergencies.

August 4, 2025

By Brianna Sacks (The Washington Post)

Los Angeles County, the most populated in the United States, has a paltry budget for its office that manages natural disasters, major emergencies and other hazards such as cyberattacks and earthquakes, according to documents obtained by The Washington Post.

Documents that include a fiscal year 2024 budget sheet show the county's operating finances for its Office of Emergency Management is about $15 million. The budget for this office is not typically made public, nor is it widely shared among emergency management employees. The details have not previously been reported.

Of the office's budget, nearly $4 million comes from federal grants. The office has 36 full-time positions, and about $9.2 million of the $15 million goes to salaries and employee benefits, according to the documents and a person familiar with the county's grants and emergency management operations. That leaves a fraction for other key functions, including its utilities and office expenses. The county's executive office, which oversees emergency management, is going through its budget allocations for this year, according to a person familiar with the process.

"L.A. County has no real emergency management budget," said an official familiar with the county's grants and emergency management operation who, like others in this story, spoke on the condition of anonymity because of fear of professional retaliation.

"Essentially all the systems and projects are funded through grants, but we have to pick and choose and piecemeal together what we can work on and with to stay within the constraints of that $4 million."

For a county with nearly 10 million residents who live across 4,100 square miles, emergency management experts said that the office's budget is shockingly low, especially when compared with similar major municipalities. For example, the emergency management budget for New York County, also known as Manhattan, sits at about $88 million; the office in Illinois' Cook County, home to Chicago, had more than $130 million in funding for fiscal year 2025.

And L.A. County is no stranger to catastrophes. It has declared 74 disasters over the past 20 years and is barely recovering from the January firestorm that was one of the most destructive in state history. It often hosts major events, such as some World Cup matches in 2026 and the next Summer Olympics in 2028. The county's emergency management budget underlines growing concerns about whether officials can properly prepare for and respond to all-encompassing incidents while carrying out everyday functions.

Los Angeles County, like Cook County and many other communities across the country, gets a chunk of its emergency management money from federal grants that fund mitigation, preparedness and security initiatives. The office uses those funds to cover critical services such as some salaries; equipment; their alert, evacuation and situational awareness systems; community preparedness initiatives such as distributing weather radios to hard-to-reach communities; all the office's trainings and exercises, including

those for the Olympics; updates to its safety plans; and cybersecurity planning, according to the documents and a person familiar with the county's grants.

As the Trump administration continues to consider possible changes to the Federal Emergency Management Administration and curb the kind of grant funding sent to states, that could even further shrink the county's resources at a time when climate change, population growth and the upcoming Olympics and World Cup are maxing out what county emergency managers can handle, according to three people familiar with disaster management in the county.

The city of Los Angeles, which has its own emergency management budget of about $4.5 million, has also been struggling to obtain more funding, the Los Angeles Times reported in May.

Unlike other public safety agencies such as police and fire departments, most people don't understand what emergency management offices do, experts say. There is little public education or exposure to emergency managers and the role they play in protecting communities — and that can make it even harder to push for funding that's already in short supply.

L.A. County's sheriff office, for example, gets more than $4 billion of the county's $48.8 billion total budget at a time when many other agencies had to make significant cuts. After the wildfires, and a sweeping sexual assault scandal that led to a historic settlement, county officials recently had to trim millions to stay afloat.

"We have historically always been underfunded," said Soraya Sutherlin, a disaster management area coordinator for a part of L.A. County. "So many emergency managers pay for their own stuff out of pocket because there is no money. That is how it works. We get creative. I can't provide paper copies unless I am paying to print them. We continue to do a lot with less and less."

Sutherlin and seven other disaster coordinators are funded through federal emergency management grants, which the county gets from FEMA and then disburses. Over the past five years, those grants have been slashed by nearly 40 percent, she said, and the county has not been able to fill the gaps. This year, she said her Disaster Management Area C office — one of eight such offices in the county — does not have enough money to cover operating expenses.

After the historic January fires that killed at least 30 people and destroyed tens of thousands of homes and structures across the region, the county and city came under intense scrutiny for its failure to prepare and respond.

The budget document shows the county switched its alert systems this past fall, shifting from one notification system called CodeRED to another known as Genasys. According to a person familiar with the systems, the best practice for switching from one platform to another is to have both systems running concurrently for about a year to enable training and practice. At the time of the fires, there were only two employees trained to send the new system's AMBER-style wireless emergency alerts when the fires sparked, a person familiar with the alerts said.

In the chaos of the rapidly evolving fire, officials did not send those warnings to an entire subset of Altadena, where 17 people died, The Post has reported.

The county had other issues sending alerts during the firestorm, sparking an investigation, and struggled to properly disseminate information to the public. As the fires unfolded, the county did not immediately set up a joint information center, and the Office of Emergency Management had only one trained public information officer, who

then had to evacuate, said a person familiar with the emergency management operations. It took a few days for the county to find additional people to help that official field the slew of requests for information and to coordinate messaging, documents show.

Emergency management departments don't just respond to major natural disasters. These agencies are responsible for projects that reduce risks and threats of all kinds and prepare communities and people for a wide range of dangers, such as cyberattacks, terrorism, earthquakes and floods; lead the recovery after such catastrophic events; train volunteers that may become community responders; ensure underserved and vulnerable populations are accounted for and have evacuation plans; and more.

"Emergency management has a tremendous scope of responsibility, and it takes a lot of different people with different skill sets, knowledge and experience, especially for a place like L.A. County, to effectively do the job," said Samantha Montano, an emergency management expert. "That is where this capacity piece becomes important. There is no way to do all the mitigation, preparedness, response, recovery that a community needs on that kind of budget. It's not possible."

After the devastating 2018 Woolsey Fire, a scathing after-action report concluded that the county needed to give more power and coordination to its Office of Emergency Management. The office received slightly more funding and added a few more people to its roster, but it is still far from where it should be, experts said.

L.A. County's operating budget also reflects a growing concern that recent disasters across the U.S. have further brought to light: that counties and communities are ill-equipped to protect people. When hurricanes, wildfires and flash floods sweep through, they further illuminate how often residents are caught without warning and without the proper information and tools to help them safely evacuate or escape.

"This is why we see these disasters play out," said Montano, also a professor of emergency management at Massachusetts Maritime Academy. "It's always been the case for underfunding emergency management because there are so many things in a community you need to find money to cover, and officials will take that risk that no big disaster will happen in their time."

When catastrophic flash floods rushed through Kerr County in the Texas Hill Country on July 4, years of meeting minutes showed that its emergency management coordinator had repeatedly sounded the alarm that the county needed more robust warning infrastructure. But it also did not use the system it did have.

Similar problems plagued mountainous communities in North Carolina when Hurricane Helene pummeled the western parts of the state, and in Maui when grass fires sparked in August 2023.

A recent study from the National Preparedness Analytics Center, part of the Argonne National Laboratory, collected feedback from more than 1,600 state and local emergency management directors across the country. Those officials said their departments are barely able to function because of a lack of funding, staffing shortages and burnout. Many rural agencies have only one staff member. Losing federal grants, they said, would mean they'd lose what few people and services they do have.

If FEMA had to further winnow L.A. County's emergency management performance grant, Sutherlin's job would probably disappear, she said.

From: **Vijay Jeste** <jestevijay@gmail.com>
Date: Tue, Jul 15, 2025 at 6:12 PM
Subject: Wake-up call
To: James Light <james.light@redondo.org>

Dear Mr. Mayor,

I don't believe you know me, so let me introduce myself.

I am a resident of Redondo Beach (District 3), a U.S. citizen, and a retired executive with over 40 years of experience in a wide variety of industries. I was appointed to the Budget & Finance Commission by your predecessor. My term ends in September 2026.

I am writing this not as a commissioner, but as a resident, voter and taxpayer. I see dark clouds gathering over our city's future, and I'm deeply concerned by the lack of urgency in addressing this looming crisis.

Redondo Beach, after decades of relative financial stability, is now facing a structural revenue shortfall. It is a wake-up call demanding bold leadership and immediate action.

Yet, from what I observed and read in Easy Reader on June 26 about the city council's meeting, there seems to be a troubling preference for temporary fixes, such as dipping into pension reserves. It is distressing to note our representatives have adopted a "business as usual" attitude and passed the budget unanimously without making any serious efforts to balance the budget. Their wish list is long. But they need to understand that their wishful thinking, hope, optimism and baseless prediction of an improved economy do not generate revenues and pay for everything.

For years, our city has enjoyed a fairly stable economy and adequate revenues to balance the budget with minimum reserves. Even during the pandemic, money poured in from the state and federal government to soften the impact of the pandemic. We have not faced budget-busting calamities such as earthquakes, flooding, fires, riots, or landslides for decades. So the administration has been getting by with a "business as usual" attitude with little desire to prepare for a downturn, falling revenues or unplanned emergency. Each council member pushes for his/her constituents' wishes, demands, and needs. Balancing the budget is not a top priority for them.

In the meetings of our commission, I have noticed an attitude of complacency and resistance to change at every level. There is no effort to improve internal operations to make them more efficient and cost-effective.

In my view, five key areas demand immediate and decisive action:

1. **Balance the budget** - Under no circumstances should the city plan to spend more money than the revenues, and borrow funds from the reserves. It is irresponsible to dip into pension reserves instead of trimming the fat in the budget. Instead of spending reserves to pay for CIPs or salaries of new hires, we need to boost them so we are prepared to provide the city's services in a recessionary environment.

2. **Capital Improvement Projects** – There is no transparency or accountability for the CIPs that will cost the city well over $94 million over the next five years. For over a year, I have been asking repeatedly for more data on the CIPs in our meetings, and every time this topic comes up for discussion, we face stiff resistance and pushback from Mike (City Manager), Finance Director and staff members from the Planning department.

3. **Homelessness** – What are the true costs, and what revenues are we receiving from grants or state taxes?

4. **Housing Affordability** – Replacing single-family homes with multi-unit structures enriches developers, but it doesn't lower housing costs. Cramming more units, especially in North Redondo, has added to traffic, pollution, crime, and deterioration of safety and public services.

5. **Emergency Reserves** – Our current reserves cover only one month of operations (8.3%). Some of the neighboring cities hold twice as much. We must act swiftly to strengthen our fiscal safety net.

Complacency is dangerous. California continues to lose high-income taxpayers to states like Texas and Florida. We can't afford to wait until crisis forces our hand. The time has come for a comprehensive overhaul of internal processes and to utilize new technology and AI tools to achieve significant savings. I know this won't be easy. Change never is, especially when it challenges the status quo. But without strong leadership from the top, starting with you and the Council, it will not happen.

As a mayor, you are the CEO of the city. Only you can put your foot down and not allow the budget to run into a deficit.

I lived in Fort Wayne, Indiana, for six years (2006-2012). During those years, I watched a business-savvy mayor dramatically transform the city operations using TQM (Total Quality Management), Lean/Six Sigma methodology, "Toyota Way" (continuous process improvement), and data-driven governance. I've attached an article describing the process in more detail for your reference.

Even today, Fort Wayne is ranked among this year's Top 10 best-run cities in America—proof that these strategies work. They deliver results: high-quality services, low debt, and financial resilience.

I speak from experience. I underwent extensive training in TQM and successfully implemented it in both the private and public sectors on three separate occasions. Every time we implemented the TQM philosophy and methodology, we got amazing results. These personal experiences made me a firm believer in it.

Complacency is what led to a stunning defeat of the candidate in the last presidential election. One candidate offered business as usual with minor tweaks, while the other promised a radical change. Now the new administration has launched a massive efficiency improvement program with a chainsaw-wielding technocrat and his staff. This initiative is likely to fail in the long term without achieving the savings they promised.

There is a better, more thoroughly tested and proven way to achieve the results through the use of TQM methodology and rigorous data collection & analysis. We now have the tools, thanks to AI, that will produce analyses in a matter of minutes instead of days or weeks. Unfortunately, nobody in the administration is either aware of it or interested, trained, and experienced in it. Only you can push for a change, just as the mayor of Fort Wayne did.

Sometimes, changing times demand changes in leadership. Corporate CEOs as well as leaders in the public sector such as mayors, governors or president who excelled over the last decade may find they are not well suited for the AI era, which will require bold vision, sense of urgency, willingness to take risks and make big bets, change of organizational structures, and lots of nimbleness in order to thrive or even survive. Seismic changes have already taken place in Washington D.C. and will likely happen in large cities such as New York, states like California and even at the city level.

The choice before us is clear:

· Face the unavoidable consequences of the status quo if or when the economy suffers a downturn, unpredictable catastrophic events strike the region, revenues decline, and you are compelled to take drastic measures, or

· Take positive, prompt, and decisive actions to employ the latest technology, process and efficiency improvement tools, and be ready to face any challenges as Fort Wayne has.

I am willing to help as much as I can, for as long as I live in Redondo Beach. But real change must come from leadership that is willing to challenge old assumptions, face uncomfortable truths, and take bold action.

Thank you again for your time and your service to our community.

Best regards,
V**ijay Jeste**

Email: jestevijay@gmail.com

From: **James Light** <james.light@redondo.org>
Date: Tue, Jul 22, 2025 at 6:26 PM
Subject: RE: Wake-up call
To: Vijay Jeste <jestevijay@gmail.com>

Thanks for your email. There is a lot to unpack here.

1) **Balance the budget**. I urged the council not to spend the discretionary funds, but they did not listen. It was a 5 – 0 vote so a veto would really serve no purpose. That said, I still would have supported some reserve spending due to the circumstances. We have projects we need to continue and a hopefully short term impact of visitor loss and the impacts of market fear on tariffs should not slow those projects down. If the deficit continues next year we will have to make some hard choices.

2) **Capital Improvement Projects**. I agree they are confusing. Some are funded by grants. Some are out of our budget. Some are deferred projects. I have recommended some improvements so they are more understandable, but so far no changes.
3) **Homelessness** – I have the same concern. Stephanie has agreed to work with Joy to build more tracking into the reporting systems. But for right now she has to focus on producing the ACFR.

4) **Totally agree on housing affordability**. I have a briefing I have given to the Governor's staff and am getting to our state representatives about how bad the housing mandates are impacting cities like Redondo. I was supposed to be meeting with the head of the Senate Housing Committee this week but the meeting is postponed due to the Senator's family emergency.
5) **Emergency reserves** – If the Commission agrees we should increase our emergency reserves, has it sent such advice to the Council. If so, I've never seen it. It is something we may be able to tackle at the midyear budget meeting.

VR

Jim Light

Mayor

310.989.3332

415 Diamond St., Redondo Beach, CA 90277

redondo.org

Administrative Report

J.1., **File #** 25-1395 **Meeting Date:** 10/9/2025

To: **BUDGET AND FINANCE COMMISSION**

From: STEPHANIE MEYER, FINANCE DIRECTOR

TITLE

NOMINATIONS AND ELECTION OF CHAIRPERSON AND VICE-CHAIR

Administrative Report

J.2., **File #** 25-1396 **Meeting Date:** 10/9/2025

To: **BUDGET & FINANCE COMMISSION**

From: STEPHANIE MEYER, FINANCE DIRECTOR

TITLE

CALPERS VALUATION UPDATE

ATTACHMENTS

1) CalPERS Valuation Update Presentation
2) City of Redondo Beach Valuation Report-Miscellaneous (June 30, 2025)
3) City of Redondo Beach Valuation Report-Safety (June 30, 2025)

Budget and Finance Commission

CalPERS Valuation Update

October 9, 2025

REDONDO BEACH

CalPERS Valuation Update

Report Parameters

- Report dated July 2025
- Data for year ending 06/30/2024
- Sets rates and payments for FY 2026-27

Results

- Total UAL and funded levels improved
- Employer normal cost rates decreased
- FY 26-27 UAL payment matches current year ($4.3 million)

REDONDO BEACH

Unfunded Accrued Liability

Plan	Year			Delta	
	FY 24-25	FY 25-26	FY 26-27	$	%
	Prior Valuation (data 6/30/22)	Prior Valuation (data 6/30/23)	**Current Valuation** (data 6/30/24)		
Miscellaneous	10,581,634	12,769,056	9,548,749	(3,220,307)	-25.2%
Safety	31,964,244	45,265,008	41,428,291	(3,836,717)	-8.5%
COMBINED	42,545,878	58,034,064	50,977,040	(7,057,024)	-12.2%

Funded Level

Plan	Year		
	FY 24-25	FY 25-26	FY 26-27
	Prior Valuation (data 6/30/22)	Prior Valuation (data 6/30/23)	**Current Valuation** (data 6/30/24)
Miscellaneous	95.6%	94.9%	96.3%
Safety	92.6%	89.9%	91.0%
COMBINED	**93.7%**	**91.7%**	**92.9%**

REDONDO BEACH

Normal Cost (% of pensionable payroll)

Plan	Year		
	FY 24-25	FY 25-26	FY 26-27
	Prior Valuation (data 6/30/22)	Prior Valuation (data 6/30/23)	**Current Valuation** (data 6/30/24)
Miscellaneous	10.31%	9.98%	9.72%
Safety	33.72%	33.62%	32.87%

REDONDO BEACH

Unfunded Accrued Liability Payment

Plan	Year			Delta	
	FY 24-25	FY 25-26	FY 26-27	$	%
	Prior Valuation (data 6/30/22)	Prior Valuation (data 6/30/23)	**Current Valuation** (data 6/30/24)		
Miscellaneous	815,663	942,428	841,023	(101,405)	-10.8%
Safety	2,436,363	3,320,609	3,469,892	149,283	4.5%
COMBINED	**3,252,026**	**4,263,037**	**4,310,915**	**47,878**	**1.1%**

REDONDO BEACH

Unfunded Accrued Liability Payment Detail

- Each year's investment and non-investment experience constitutes an amortization base
- Investment and non-investment experience are amortized over 20 years
- Investment gains and losses are ramped in over five years (20%, 40%, 60%, 80%, 100%)
- **Each year's UAL payment is the sum of prior year amortization bases: the sum of the current year amortization of prior year experience**

REDONDO BEACH

Amortization Bases (Misc.)

CalPERS Actuarial Valuation - June 30, 2024
Miscellaneous Plan of the City of Redondo Beach
CalPERS ID: 5681155915

FY 21-22 Investment Return (-6.1%)

FY 23-24 Investment Return (+9.3%)

FY 26-27 UAL payment (misc. portion)

Schedule of Amortization Bases

Below is the schedule of the plan's amortization bases. Note that there is a two-year lag between the valuation date and the start of the contribution year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2024.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: FY 2026-27.

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 on the UAL for FY 2024-25 is based on the actuarial valuation two years ago, adjusted for additional discretionary payments, if necessary, and the expected payment for FY 2025-26 is based on the actuarial valuation one year ago.

Reason for Base	Date Est.	Ramp Level 2026-27	Ramp Shape	Escalation Rate	Amort. Period	Balance 6/30/24	Expected Payment 2024-25	Balance 6/30/25	Expected Payment 2025-26	Balance 6/30/26	Minimum Required Payment 2026-27
Benefit Change	6/30/22	No Ramp		0.00%	18	395,643	35,578	385,779	35,578	375,244	35,578
Non-Investment (Gain)/Loss	6/30/22	No Ramp		0.00%	18	(803,036)	(72,212)	(783,016)	(72,212)	(761,634)	(72,212)
Partial Fresh Start	6/30/22	60%	Up Only	0.00%	18	12,803,560	275,209	13,389,790	550,417	13,731,472	825,626
Investment (Gain)/Loss	6/30/23	40%	Up Only	0.00%	19	1,972,060	558,414	1,529,072	45,271	1,586,264	65,207
Non-Investment (Gain)/Loss	6/30/23	No Ramp		0.00%	19	(726,601)	0	(776,010)	(69,782)	(756,663)	(69,782)
Investment (Gain)/Loss	6/30/24	20%	Up Only	0.00%	20	(6,103,760)	0	(6,518,816)	0	(6,962,095)	(149,648)
Non-Investment (Gain)/Loss	6/30/24	No Ramp		0.00%	20	2,010,883	0	2,147,623	0	2,293,661	206,254
Total						**9,548,749**	**796,989**	**9,374,422**	**489,272**	**9,506,249**	**841,023**

Amortization Bases (Safety)

CalPERS Actuarial Valuation - June 30, 2024
Safety Plan of the City of Redondo Beach
CalPERS ID: 5681155915

FY 21-22 Investment Return (-6.1%)

FY 23-24 Investment Return (+9.3%)

FY 26-27 UAL payment (safety portion)

Schedule of Amortization Bases

Below is the schedule of the plan's amortization bases. Note that there is a two-year lag between the valuation date and the start of the contribution year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2024.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: FY 2026-27.

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 on the UAL for FY 2024-25 is based on the actuarial valuation two years ago, adjusted for additional discretionary payments, if necessary, and the expected payment for FY 2025-26 is based on the actuarial valuation one year ago.

Reason for Base	Date Est.	Ramp Level 2026-27	Ramp Shape	Escalation Rate	Amort Period	Balance 6/30/24	Expected Payment 2024-25	Balance 6/30/25	Expected Payment 2025-26	Balance 6/30/26	Minimum Required Payment 2026-27
Benefit Change	6/30/22	No Ramp		0.00%	18	196,239	17,647	191,346	17,646	186,121	17,646
Non-Investment (Gain)/Loss	6/30/22	No Ramp		0.00%	18	4,676,391	420,518	4,559,805	420,518	4,435,291	420,518
Partial Fresh Start	6/30/22	60%	Up Only	0.00%	18	32,154,387	691,149	33,626,624	1,382,297	34,484,712	2,073,446
Investment (Gain)/Loss	6/30/23	40%	Up Only	0.00%	19	3,519,019	1,264,755	2,451,263	80,784	2,534,463	104,185
Non-Investment (Gain)/Loss	6/30/23	No Ramp		0.00%	19	7,799,060	0	8,329,396	749,009	8,121,738	749,009
Investment (Gain)/Loss	6/30/24	20%	Up Only	0.00%	20	(10,435,877)	0	(11,145,517)	0	(11,903,412)	(255,860)
Non-Investment (Gain)/Loss	6/30/24	No Ramp		0.00%	20	3,519,072	0	3,758,369	0	4,013,938	360,948
Total						**41,428,291**	**2,394,069**	**41,771,286**	**2,650,254**	**41,872,851**	**3,469,892**

Returns & UAL

Fiscal Year	CalPERS Investment Return	Actuarial Report Year	Valuation Date	UAL in Valuation	% Annual Change	Notes
2010-11	21.7%	6/30/2011	6/30/2012	110,497,727		
2011-12	0.1%	6/30/2012	6/30/2013	132,733,669	20%	
2012-13	13.2%	6/30/2013	6/30/2014	119,722,222	-10%	
2013-14	18.4%	6/30/2014	6/30/2015	115,941,505	-3%	
2014-15	4.8%	6/30/2015	6/30/2016	137,483,684	19%	
2015-16	0.6%	6/30/2016	6/30/2017	174,162,856	27%	
2016-17	11.2%	6/30/2017	6/30/2018	173,854,333	0%	
2017-18	8.6%	6/30/2018	6/30/2019	202,395,183	16%	
2018-19	6.7%	6/30/2019	6/30/2020	208,715,529	3%	
2019-20	4.7%	6/30/2020	6/30/2021	218,668,761	5%	
2020-21	21.3%	6/30/2021	6/30/2022	163,400,593	-25%	Reflected 21.3% return
2021-22	-6.1%	6/30/2022	6/30/2023	42,545,878	-74%	Payoff made 7/15/21 UAL was $0 as of September 2021 (start of FY 21-22) UAL reflects -6.1% impact on larger asset pool
2022-23	5.8%	6/30/2023	6/30/2024	58,034,065	36%	Adds 5.8% investment return & FY 22-23 experience impact to UAL
2023-24	9.3%	6/30/2024	6/30/2025	50,977,040	-12%	Adds 9.3% investment return and FY 23-24 experience impact to UAL
2024-25	11.6%	6/30/2025	6/30/2026			July 2026 valuation will incorporate 11.6% return

Future Outlook

- Factors Impacting UAL Payment
  - Ramping of negative & positive returns
  - Non-investment factors
  - Likely to see gradual changes (improvements)
- Annual payments will likely remain at the same/ a similar level for at least next two years
- Other factors to consider:
  - Growing PEPRA enrollment
  - 2025 Asset Liability Management Review

REDONDO BEACH

PEPRA Transition

- Balance continues to shift towards PEPRA
- Miscellaneous makeup changing more quickly

Plan	PEPRA Statistics			
	% of Members	Annual Covered Payroll	Present Value of Future Covered Payroll	Accrued Liabilities
Miscellaneous	60.2%	51.9%	63.2%	4.8%
Safety	55.6%	46.3%	65.6%	3.5%

REDONDO BEACH

Next Steps

- Budget & Finance Commission session to discuss CalPERS
- Will include review of projections created through CalPERS' pension tool

REDONDO BEACH

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 2025

Miscellaneous Plan of the City of Redondo Beach (CalPERS ID: 5681155915)
Annual Valuation Report as of June 30, 2024

Dear Employer,

Attached to this letter is the June 30, 2024, actuarial valuation report for the plan noted above. **Provided in this report is the determination of the minimum required employer contributions for fiscal year (FY) 2026-27.** 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.

Required Contributions

The table below shows the minimum required employer contributions and the PEPRA member contribution rates for FY 2026-27 along with an estimate of the employer contribution requirements for FY 2027-28. **The required employer and member contributions in this report do not reflect any cost sharing arrangement between the agency and the employees.**

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability	PEPRA Member Contribution Rate
2026-27	9.72%	$841,023	7.75%
Projected Results			
2027-28	*9.6%*	*$999,000*	*TBD*

The actual investment return for FY 2024-25 was not known at the time this report was prepared. The projection UAL payment above assumes the investment return for that year would be 6.8%. To the extent the actual investment return for FY 2024-25 differs from 6.8%, the actual UAL contribution requirement for FY 2027-28 will differ from that shown above. For additional information on future contribution requirements, please refer to Projected Employer Contributions. This section also contains projected required contributions through FY 2031-32.

PEPRA Member Contribution Rate

The employee contribution rate for PEPRA members can change based on the results of the actuarial valuation. See Member Contribution Rates for more information.

Report Navigation Features

The valuation report has a number of features to ease navigation and allow the reader to find specific information more quickly. The tables of contents are "clickable." This is true for the main table of contents that follows the title page and the intermediate tables of contents at the beginning of sections. The Adobe navigation pane on the left can also be used to skip to specific exhibits.

There are a number of links throughout the document in blue text. Links that are internal to the document are not underlined, while underlined links will take you to the CalPERS website. Examples are shown below.

Internal Bookmarks	CalPERS Website Links
Required Employer Contributions	Required Employer Contribution Search Tool
Member Contribution Rates	Public Agency PEPRA Member Contribution Rates
Summary of Key Valuation Results	Pension Outlook Overview
Funded Status – Funding Policy Basis	Interactive Summary of Public Agency Valuation Results
Projected Employer Contributions	Public Agency Actuarial Valuation Reports

Further descriptions of general changes are included in the Highlights and Executive Summary section and in Appendix A - Actuarial Methods and Assumptions. The effects of any changes on the required contributions are included in the Reconciliation of Required Employer Contributions section.

Questions

A CalPERS actuary is available to answer questions about this report. Other questions may be directed to the Customer Contact Center at **888 CalPERS** (or **888**-225-7377).

Sincerely,

Paul Tschida, FSA, EA, MAAA
Senior Actuary, CalPERS

Randall Dziubek, ASA, MAAA
Deputy Chief Actuary, Valuation Services, CalPERS

Scott Terando, ASA, EA, MAAA, FCA, CFA
Chief Actuary, CalPERS

California Public Employees' Retirement System

Actuarial Valuation for the Miscellaneous Plan of the City of Redondo Beach

as of June 30, 2024

(CalPERS ID: 5681155915)
(Rate Plan ID: 221)

Required Contributions for Fiscal Year

July 1, 2026 — June 30, 2027

CalPERS

Table of Contents

Actuarial Certification

It is our opinion that the valuation has been performed in accordance with generally accepted actuarial principles as well as the applicable Standards of Practice promulgated by the Actuarial Standards Board. While this report is intended to be complete, our office is available to answer questions as needed. All of the undersigned are actuaries who satisfy the *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* of the American Academy of Actuaries with regard to pensions.

Actuarial Methods and Assumptions

It is our opinion that the assumptions and methods, as recommended by the Chief Actuary and adopted by the CalPERS Board of Administration, are internally consistent and reasonable for this plan.

Randall Dziubek, ASA, MAAA
Deputy Chief Actuary, Valuation Services, CalPERS

Scott Terando, ASA, EA, MAAA, FCA, CFA
Chief Actuary, CalPERS

Actuarial Data and Rate Plan Results

To the best of my knowledge and having relied upon the attestation above that the actuarial methods and assumptions are reasonable, this report is complete and accurate and contains sufficient information to disclose, fully and fairly, the funded condition of the Miscellaneous Plan of the City of Redondo Beach and satisfies the actuarial valuation requirements of Government Code section 7504. This valuation and related validation work was performed by the CalPERS Actuarial Office. The valuation was based on the member and financial data as of June 30, 2024, provided by the various CalPERS databases and the benefits under this plan with CalPERS as of the date this report was produced.

Paul Tschida, FSA, EA, MAAA
Senior Actuary, CalPERS

Highlights and Executive Summary

Introduction

This report presents the results of the June 30, 2024, actuarial valuation of the Miscellaneous Plan of the City of Redondo Beach of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the minimum required contributions for fiscal year (FY) 2026-27.

Purpose

This report documents the results of the actuarial valuation prepared by the CalPERS Actuarial Office using data as of June 30, 2024. This report contains actuarial information for the following rate plan(s).

- 221, Miscellaneous First Level
- 30315, Miscellaneous Second Level
- 26140, Miscellaneous PEPRA Level

The purpose of the valuation is to:

- Set forth the assets and accrued liabilities of this rate plan as of June 30, 2024;
- Determine the minimum required employer contributions for this rate plan for FY July 1, 2026, through June 30, 2027;
- Determine the required member contribution rate for FY July 1, 2026, through June 30, 2027, for employees subject to the California Public Employees' Pension Reform Act of 2013 (PEPRA); and
- Provide actuarial information as of June 30, 2024, to the CalPERS Board of Administration (board) 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 an Agent Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on the CalPERS website (www.calpers.ca.gov).

The measurements shown in this actuarial valuation may not be applicable for other purposes. The agency should contact a CalPERS 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; changes in plan provisions or applicable law; and differences between the required contributions determined by the valuation and the actual contributions made by the agency.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the guidance of the Actuarial Standards of Practice:

- 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 5.8% and 7.8%.
- 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 2021.
- Plan maturity measures indicating how sensitive a plan may be to the risks noted above.
- The funded status on a termination basis.
- A low-default-risk obligation measure (LDROM) of benefit costs accrued as of the valuation date.

Summary of Key Valuation Results

Below is a brief summary of key valuation results along with page references where more detailed information can be found.

Required Employer Contributions — page 13

	Fiscal Year 2025-26	Fiscal Year 2026-27
Employer Normal Cost Rate	9.98%	9.72%
Unfunded Accrued Liability (UAL) Contribution Amount	$489,272	$841,023
Paid either as		
Option 1) 12 Monthly Payments of	$40,773	$70,085
Option 2) Annual Prepayment in July	$473,440	$813,809

Member Contribution Rates — page 14

	Fiscal Year 2025-26	Fiscal Year 2026-27
Classic Member Contribution Rate	7.00%	7.00%
PEPRA Member Contribution Rate	7.75%	7.75%

Projected Employer Contributions — page 17

Fiscal Year	Normal Cost (% of payroll)	Annual UAL Payment
2027-28	9.6%	$999,000
2028-29	9.4%	$1,157,000
2029-30	9.3%	$1,040,000
2030-31	9.2%	$891,000
2031-32	9.1%	$891,000

Funded Status – Funding Policy Basis — page 15

	June 30, 2023	June 30, 2024
Entry Age Accrued Liability (AL)	$248,656,696	$256,506,181
Market Value of Assets (MVA)	235,887,640	246,957,432
Unfunded Accrued Liability (UAL) [AL – MVA]	$12,769,056	$9,548,749
Funded Ratio [MVA ÷ AL]	94.9%	96.3%

Summary of Valuation Data — page 33

	June 30, 2023	June 30, 2024
Active Member Count	299	289
Annual Covered Payroll	$21,467,647	$22,387,066
Transferred Member Count	208	224
Separated Member Count	253	265
Retired Members and Beneficiaries Count	555	575

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. For rate plans that are not in a risk pool (non-pooled), benefit changes by contract amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the effective date of the amendment is after the valuation date.

Please refer to the Plan's Major Benefit Options and Appendix B - Principal Plan Provisions for a summary of the plan provisions used in this valuation. The effect of any mandated benefit changes or plan amendments on the unfunded liability is shown in the (Gain)/Loss Analysis 6/30/23 – 6/30/24 and the effect on the employer contribution is shown in the Reconciliation of Required Employer Contributions. It should be noted that no change in liability or contribution is shown for any plan changes which were already included in the prior year's valuation.

Board Policy

On April 16, 2024, the board took action to modify the Funding Risk Mitigation Policy to remove the automatic change to the discount rate when the investment return exceeds various thresholds. Rather than an automatic change to the discount rate, a board discussion would be placed on the calendar. The 95th percentile return in the Future Investment Return Scenarios exhibit in this report, which includes returns high enough to trigger a board discussion, does not reflect any change in the discount rate.

Actuarial Methods and Assumptions

There are no significant changes to the actuarial methods or assumptions for the June 30, 2024, actuarial valuation.

Subsequent Events

This actuarial valuation report reflects fund investment return through June 30, 2024, as well as statutory changes, regulatory changes and board actions through January 2025.

CalPERS will be completing an Asset Liability Management (ALM) review process in November 2025 that will review the capital market assumptions and the CalPERS Total Fund Investment Policy and ascertain whether a change in the discount is warranted. In addition, the Actuarial Office will be presenting the findings of its Experience Study which reviews economic assumptions other than the discount rate as well as all demographic assumptions and makes recommendations to modify actuarial assumptions where appropriate. Any changes in actuarial assumptions will be reflected in the June 30, 2025, actuarial valuations.

The 2024 annual benefit limit under Internal Revenue Code (IRC) section 415(b) and annual compensation limits under IRC section 401(a)(17) and Government Code section 7522.10 were used for this valuation and are assumed to increase 2.3% per year based on the price inflation assumption. The actual 2025 limits, determined in October 2024, are not reflected.

To the best of our knowledge, there have been no other subsequent events that could materially affect current or future certifications rendered in this report.

Assets

Reconciliation of the Market Value of Assets

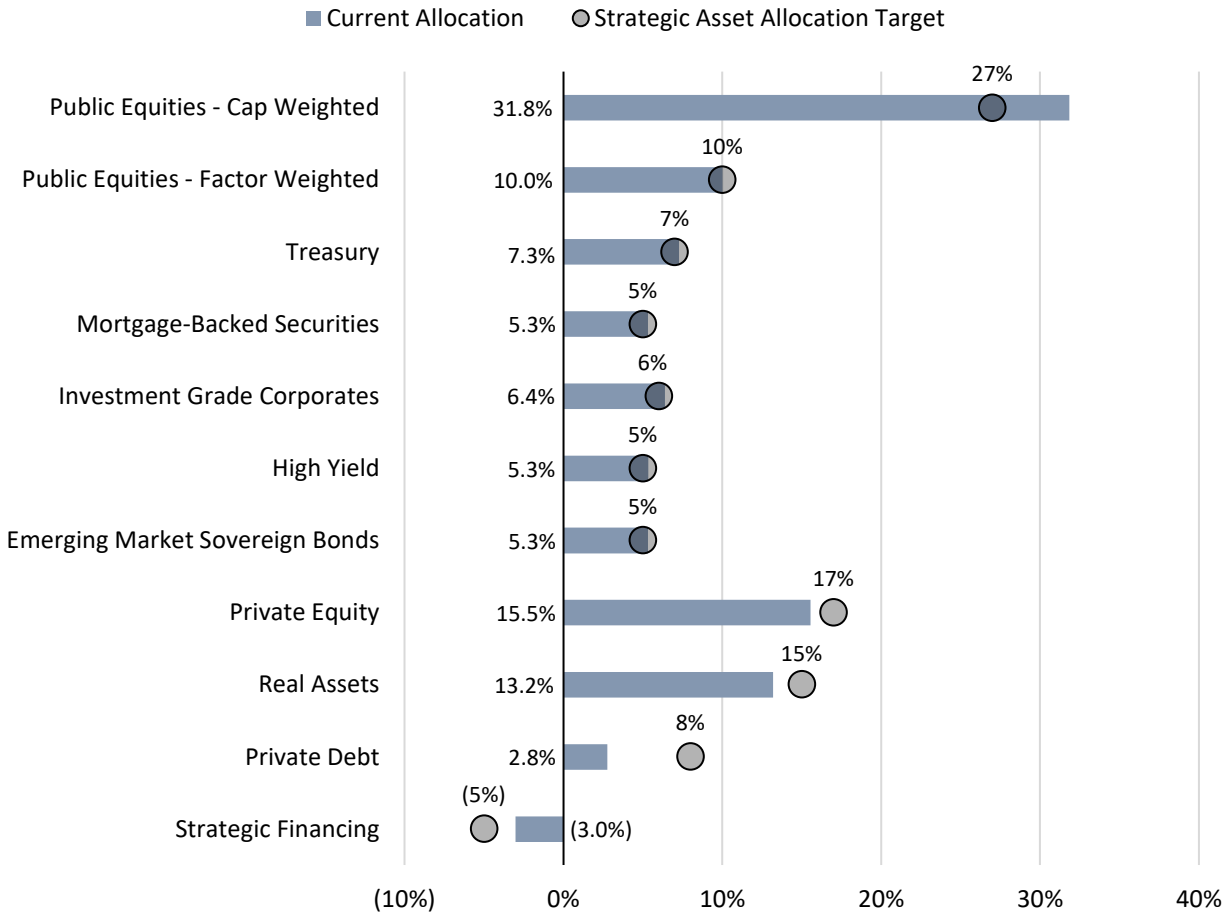
1.	Market Value of Assets as of 6/30/23 including Receivables	$235,887,640
2.	Change in Receivables for Service Buybacks	(57,309)
3.	Employer Contributions	2,382,412
4.	Employee Contributions	1,660,113
5.	Benefit Payments to Retirees and Beneficiaries	(14,320,060)
6.	Refunds	(443,095)
7.	Transfers	1,527
8.	Service Credit Purchase (SCP) Payments and Interest	73,373
9.	Administrative Expenses	(172,056)
10.	Miscellaneous Adjustments	0
11.	Investment Return (Net of Investment Expenses)	21,944,887
12.	Market Value of Assets as of 6/30/24 including Receivables	$246,957,432

Asset Allocation

CalPERS adheres to an Asset Allocation Strategy which establishes asset class allocation policy targets and ranges and manages those asset class allocations within their policy ranges. CalPERS Investment Belief No. 6 recognizes that strategic asset allocation is the dominant determinant of portfolio risk and return.

The asset allocation shown below reflects the allocation of the Public Employees' Retirement Fund (PERF) in its entirety. The assets for City of Redondo Beach Miscellaneous Plan are a subset of the PERF and are invested accordingly.

On March 20, 2024, the board adopted changes to the strategic asset allocation. The new allocation was effective July 1, 2024. The asset allocation as of June 30, 2024, is shown below, along with the strategic asset allocation targets.

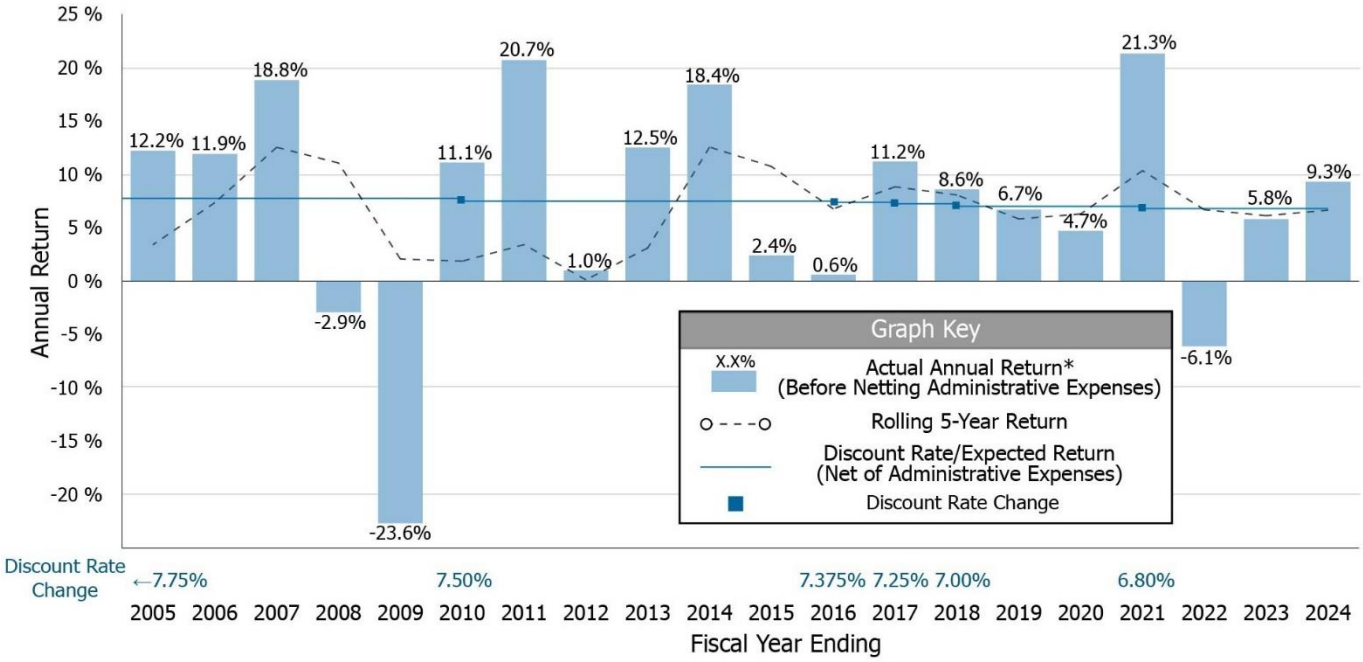


For more information see the Trust Level Review as of June 30, 2024, which is available on the CalPERS website.

CalPERS History of Investment Returns

The following is a chart with 20 years of historical annual returns of the PERF for each fiscal year ending on June 30 as reported by the Investment Office. Investment returns reported are net of investment expenses but without reduction for administrative expenses. The assumed rate of return, however, is net of both investment and administrative expenses. Also, the Investment Office uses lagged private asset valuations for investment performance reporting purposes. This can lead to a timing difference in private asset influence on performance in the returns below and those used for financial reporting purposes. The investment gain or loss calculation in this report relies on final assets that have been audited and are appropriate for financial reporting. Because of these differences, the effective investment return for funding purposes in a single year can be higher or lower than the return reported by the Investment Office shown here.

History of Investment Returns (2005 through 2024)



* As reported by the Investment Office with lagged private valuations and without any reduction for administrative expenses.

The table below shows annualized investment returns of the PERF for various time periods ending on June 30, 2024. These returns are the annual rates that if compounded over the indicated number of years would equate to the actual time-weighted investment performance of the PERF. It should be recognized that the annual rate of return is volatile, as the chart above illustrates, so when looking at investment returns, it is informative to look at average returns over longer time horizons.

PERF Realized Rates of Return as of June 30, 2024

1 year	3 year	5 year	10 year	20 year	30 year
9.3%	2.8%	6.6%	6.2%	6.7%	7.7%

Liabilities and Contributions

Determination of Required Contributions

Contributions to fund the plan are determined by an actuarial valuation performed each year. The valuation employs complex calculations based on a set of actuarial assumptions and methods. See Appendix A for information on the assumptions and methods used in this valuation. The valuation incorporates all plan experience through the valuation date and sets required contributions for the fiscal year that begins two years after the valuation date.

Contribution Components

Two components comprise required contributions:

- Normal Cost — expressed as a percentage of pensionable payroll
- Unfunded Accrued Liability (UAL) Contribution — expressed as a dollar amount

Normal Cost represents the value of benefits allocated to the upcoming year for active employees. If all plan experience exactly matched the actuarial assumptions, normal cost would be sufficient to fully fund all benefits. The employer and employees each pay a share of the normal cost with contributions payable as part of the regular payroll reporting process. The contribution rate for Classic members is set by statute based on benefit formula whereas for PEPRA members it is based on 50% of the total normal cost.

When plan experience differs from the actuarial assumptions, UAL emerges. The new UAL may be positive or negative. If the total UAL is positive (i.e., accrued liability exceeds assets), the employer is required to make contributions to pay off the UAL over time. This is called the UAL Contribution component. There is an option to prepay this amount during July of each fiscal year, otherwise it is paid monthly.

In measuring the UAL each year, plan experience is split by source. Common sources of UAL include investment experience different than expected, non-investment experience different than expected, assumption changes, and benefit changes. Each source of UAL (positive or negative) forms a base that is amortized, or paid off, over a specified period of time in accordance with the CalPERS Actuarial Amortization Policy. The UAL Contribution is the sum of the payments on all bases. See the Schedule of Amortization Bases section of this report for an inventory of existing bases and Appendix A for more information on the amortization policy.

Development of Accrued and Unfunded Liabilities

		June 30, 2023	June 30, 2024
1.	Present Value of Projected Benefits		
	a) Active Members	$94,906,048	$98,396,615
	b) Transferred Members	12,103,905	13,543,954
	c) Separated Members	5,910,095	6,583,706
	d) Members and Beneficiaries Receiving Payments	167,965,717	172,173,573
	e) Total	$280,885,765	$290,697,848
2.	Present Value of Future Employer Normal Costs	$17,662,567	$18,562,803
3.	Present Value of Future Employee Contributions	$14,566,502	$15,628,864
4.	Entry Age Accrued Liability		
	a) Active Members [(1a) - (2) - (3)]	$62,676,979	$64,204,948
	b) Transferred Members (1b)	12,103,905	13,543,954
	c) Separated Members (1c)	5,910,095	6,583,706
	d) Members and Beneficiaries Receiving Payments (1d)	167,965,717	172,173,573
	e) Total	$248,656,696	$256,506,181
5.	Market Value of Assets (MVA)	$235,887,640	$246,957,432
6.	Unfunded Accrued Liability (UAL) [(4e) - (5)]	$12,769,056	$9,548,749
7.	Funded Ratio [(5) ÷ (4e)]	94.9%	96.3%

Required Employer Contributions

The required employer contributions in this report do not reflect any cost sharing arrangement between the agency and the employees.

	Fiscal Year
Required Employer Contributions	**2026-27**
Employer Normal Cost Rate	**9.72%**
Plus	
Unfunded Accrued Liability (UAL) Contribution Amount	**$841,023**
Paid either as	
1) Monthly Payment	**$70,085**
Or	
2) Annual Prepayment Option*	**$813,809**

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) and the 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)**.

For Member Contribution Rates see the following page.

	Fiscal Year 2025-26	Fiscal Year 2026-27
Normal Cost Contribution as a Percentage of Payroll		
Total Normal Cost[1]	17.28%	17.06%
Offset due to Employee Contributions[2]	(7.30%)	(7.34%)
Employer Normal Cost	9.98%	9.72%
Projected Annual Payroll for Contribution Year	$23,321,893	$24,320,725
Estimated Employer Contributions Based on Projected Payroll		
Total Normal Cost	$4,030,023	$4,149,116
Expected Employee Contributions	(1,702,498)	(1,785,141)
Employer Normal Cost	$2,327,525	$2,363,975
Unfunded Liability Contribution	$489,272	$841,023
% of Projected Payroll (illustrative only)	2.10%	3.46%
Estimated Total Employer Contribution	$2,816,797	$3,204,998
% of Projected Payroll (illustrative only)	12.08%	13.18%

[1] The Total Normal Cost is a blended rate for all benefit groups in the plan. For a breakout of normal cost by benefit group, see Normal Cost by Benefit Group.

[2] This is the expected employee contributions, taking into account individual benefit formula and any offset from the use of a modified formula, divided by projected annual payroll. For member contribution rates above the breakpoint for each benefit formula, see Member Contribution Rates.

Member Contribution Rates

The required member contributions in this report do not reflect any cost sharing arrangement between the agency and the employees.

Classic Members

Each member contributes toward their retirement based upon the retirement formula. The standard Classic member contribution rate above the breakpoint, if any, is as described below.

Benefit Formula	Percent Contributed above the Breakpoint
Miscellaneous, 1.5% at age 65	2%
Miscellaneous, 2% at age 60	7%
Miscellaneous, 2% at age 55	7%
Miscellaneous, 2.5% at age 55	8%
Miscellaneous, 2.7% at age 55	8%
Miscellaneous, 3% at age 60	8%

Auxiliary organizations of the CSU system may elect reduced contribution rates for Miscellaneous members, in which case the contribution rate above the breakpoint is 6% if members are not covered by Social Security and 5% if they are.

PEPRA Members

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 for the plan is dependent on the benefit levels, actuarial assumptions, and demographics of the plan, particularly members' entry age into the plan. Should the total normal cost rate of the plan change by more than 1% from the base total normal cost rate established for the plan, 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, 2026, based on 50% of the total normal cost rate for each respective rate plan as of the June 30, 2024, valuation.

		Basis for Current Rate		Rates Effective July 1, 2026			
Rate Plan Identifier	Benefit Group Name	Total Normal Cost	Member Rate	Total Normal Cost	Change in Normal Cost	Adj. Needed	Member Rate
26140	Miscellaneous PEPRA Level	15.670%	7.75%	15.67%	0.000%	No	7.75%

For a description of the methodology used to determine the Total Normal Cost for this purpose, see PEPRA Normal Cost Rate Methodology in Appendix A.

Funded Status – Funding Policy Basis

The table below provides information on the current funded status of the plan under the funding policy. The funded status for this purpose is based on the market value of assets relative to the funding target produced by the entry age actuarial cost method and actuarial assumptions adopted by the board. The actuarial cost method allocates the total expected cost of a member's projected benefit (**Present Value of Benefits**) to individual years of service (the **Normal Cost**). The value of the projected benefit that is not allocated to future service is referred to as the **Accrued Liability** and is the plan's funding target on the valuation date. The **Unfunded Accrued Liability** (UAL) equals the funding target minus the assets. The UAL is an absolute measure of funded status and can be viewed as employer debt. The **Funded Ratio** equals the assets divided by the funding target. The funded ratio is a relative measure of the funded status and allows for comparisons between plans of different sizes.

	June 30, 2023	June 30, 2024
1. Present Value of Benefits	$280,885,765	$290,697,848
2. Entry Age Accrued Liability	248,656,696	256,506,181
3. Market Value of Assets (MVA)	235,887,640	246,957,432
4. Unfunded Accrued Liability (UAL) [(2) – (3)]	$12,769,056	$9,548,749
5. Funded Ratio [(3) ÷ (2)]	94.9%	96.3%

A funded ratio of 100% (UAL of $0) implies that the funding of the plan is on target and that future contributions equal to the normal cost of the active plan members will be sufficient to fully fund all retirement benefits if future experience matches the actuarial assumptions. A funded ratio of less than 100% (positive UAL) implies that in addition to normal costs, payments toward the UAL will be required. Plans with a funded ratio greater than 100% have a negative UAL (or surplus) but are required under current law to continue contributing the normal cost in most cases, preserving the surplus for future contingencies.

Calculations for the funding target reflect the expected long-term investment return of 6.8%. If it were known on the valuation date that future investment returns will average something greater/less than the expected return, calculated normal costs and accrued liabilities provided in this report would be less/greater than the results shown. Therefore, for example, if actual average future returns are less than the expected return, calculated normal costs and UAL contributions will not be sufficient to fully fund all retirement benefits. Under this scenario, required future normal cost contributions will need to increase from those provided in this report, and the plan will develop unfunded liabilities that will also add to required future contributions. For illustrative purposes, funded statuses based on a 1% lower and higher average future investment return (discount rate) are as follows:

	1% Lower Average Return	Current Assumption	1% Higher Average Return
Discount Rate	5.8%	6.8%	7.8%
1. Present Value of Benefits	$335,949,955	$290,697,848	$255,133,433
2. Entry Age Accrued Liability	288,459,403	256,506,181	230,066,965
3. Market Value of Assets (MVA)	246,957,432	246,957,432	246,957,432
4. Unfunded Accrued Liability (UAL) [(2) – (3)]	$41,501,971	$9,548,749	($16,890,467)
5. Funded Ratio [(3) ÷ (2)]	85.6%	96.3%	107.3%

The Risk Analysis section of the report provides additional information regarding the sensitivity of valuation results to the expected investment return and other factors. Also provided in that section are measures of funded status that are appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities.

Additional Employer Contributions

The CalPERS amortization policy provides a systematic methodology for paying down a plan's unfunded accrued liability (UAL) over a reasonable period of years. The projected schedule of required payments for this plan under the amortization policy is provided in Amortization Schedule and Alternatives. Certain aspects of the policy such as 1) layered amortization bases (positive and negative) with different remaining payoff periods, and 2) the phase-in of required payments toward investment gains and losses, can result in volatility in year-to-year projected UAL payments. Provided below is information on how an Additional Discretionary Payment (ADP), together with your required UAL payment of $841,023 for FY 2026-27, may better accomplish your agency's specific objectives with regard to either smoothing out projected future payments or achieving a greater reduction in UAL than would otherwise occur when making only the minimum required payment. Such additional payments are allowed at any time and can also result in significant long-term savings.

Fiscal Year 2026-27 Employer Contribution Versus Agency Funding Objectives

The interest-to-payment ratio for the FY 2026-27 minimum required UAL payment is 74%, which means the required payment of $841,023 includes $618,300 of interest cost and results in a $222,723 reduction in the UAL, as can be seen in Amortization Schedule and Alternatives (see columns labelled Current Amortization Schedule). If the interest-to-payment ratio is close to 100%, and the reduction in the UAL is small, it may indicate that required contributions will be increasing in the coming years, which would be shown in Projected Employer Contributions. Another measure that can be used to evaluate how well the FY 2026-27 required UAL payment meets the agency's specific funding objectives is the number of years required to pay off the existing UAL if the annual payment were held constant in future years. With an annual payment of $841,023 it would take over 20 years to pay off the current UAL. A result that is longer than the agency's target funding period suggests that the option of supplementing the minimum payment with an ADP should be weighed against the agency's budget constraints.

Provided below are select ADP options for consideration. Making such an ADP during FY 2026-27 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 Amortization Schedule and Alternatives. Agencies considering making an ADP should contact CalPERS for additional information.

Fiscal Year 2026-27 Employer Contributions — Illustrative Scenarios

If the Annual UAL Payment Each Year Were…	The Current UAL Would be Paid Off in…	This Would Require an ADP[1] in FY 2026-27 of…	Plus the Estimated Normal Cost of…	Estimated Total Contribution
$841,023	Over 20 years	$0	$2,363,975	$3,204,998
854,836	20 years	13,813	2,363,975	3,218,811
997,240	15 years	156,217	2,363,975	3,361,215
1,297,597	10 years	456,574	2,363,975	3,661,572
2,231,462	5 years	1,390,439	2,363,975	4,595,437

[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.

The calculations above are based on the projected UAL as of June 30, 2026, as determined in the June 30, 2024, 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.

Additional Discretionary Payment History

The following table provides a recent history of actual ADPs made to the plan.

Fiscal Year	ADP	Fiscal Year	ADP
2017-18	N/A	2021-22	$63,894,298
2018-19	$0	2022-23	0
2019-20	0	2023-24	0
2020-21	0	2024-25	577,088

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. In particular, the investment return beginning with FY 2024-25 is assumed to be 6.80% per year, net of investment and administrative expenses. The actual long-term cost of the plan will depend on the actual benefits and expenses paid and the actual investment experience of the fund.

The projected normal cost percentages below reflect that the normal cost is expected to continue to decline over time as new employees are hired into lower cost benefit tiers. Future contribution requirements may differ significantly from those shown below. The actuarial valuation does not include payroll beyond the valuation date. For the most realistic projections, the employer should apply projected payroll amounts to the rates below based on the most recent information available, such as current payroll as well as any plans to fill vacancies or add or remove positions.

	Required Contribution	**Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2024-25 and Beyond)**				
	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32
Normal Cost %	9.72%	9.6%	9.4%	9.3%	9.2%	9.1%
UAL Payment	$841,023	$999,000	$1,157,000	$1,040,000	$891,000	$891,000
Total as a % of Payroll*	13.18%	13.6%	13.9%	13.2%	12.4%	12.2%
Projected Payroll	$24,320,725	$25,001,706	$25,701,753	$26,421,402	$27,161,201	$27,921,715

*Illustrative only and based on the projected payroll shown.

The required UAL payments are expected to vary significantly from the projections above due to experience, particularly investment experience. For projected contributions under alternate investment return scenarios, please see the Future Investment Return Scenarios exhibit. Our online pension plan projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook can help plan and budget pension costs under various scenarios.

For ongoing plans, investment gains and losses are amortized using an initial 5-year ramp. For more information, please see Amortization of Unfunded Actuarial Accrued Liability in Appendix A. 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 investment loss, the relatively small amortization payments during the initial ramp period could result in contributions that are less than interest on the UAL (i.e. negative amortization) while the contribution impact of the increase in the UAL is phased in.

(Gain)/Loss Analysis 6/30/23 – 6/30/24

To calculate the cost requirements of the plan, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year, actual experience is compared to the expected experience based on the actuarial assumptions. This results in actuarial gains or losses, as shown below.

1.	Total (Gain)/Loss for the Year	
a)	Unfunded Accrued Liability (UAL) as of 6/30/23	$12,769,056
b)	Expected payment on the UAL during 2023-24	(4,136)
c)	Interest through 6/30/24 [0.068 x (1a) - ((1.068)^{½} - 1) x (1b)]	868,434
d)	Expected UAL before all other changes [(1a) - (1b) + (1c)]	13,641,626
e)	Change due to plan changes	0
f)	Change due to AL Significant Increase	0
g)	Change due to assumption changes	0
h)	Change due to method changes	0
i)	Change due to discount rate change with Funding Risk Mitigation	0
j)	Expected UAL after all other changes [(1d) + (1e) + (1f) + (1g) + (1h) + (1i)]	13,641,626
k)	Actual UAL as of 6/30/24	9,548,749
l)	Total (Gain)/Loss for 2023-24 [(1k) - (1j)]	($4,092,877)
2.	Investment (Gain)/Loss for the Year	
a)	Market Value of Assets as of 6/30/23	$235,887,640
b)	Prior fiscal year receivables	(224,779)
c)	Current fiscal year receivables	167,471
d)	Contributions received	4,042,525
e)	Benefits and refunds paid	(14,763,155)
f)	Transfers, SCP payments and interest, and miscellaneous adjustments	74,900
g)	Expected return at 6.8% per year	15,669,072
h)	Expected assets as of 6/30/24 [(2a) + (2b) + (2c) + (2d) + (2e) + (2f) + (2g)]	240,853,672
i)	Actual Market Value of Assets as of 6/30/24	246,957,432
j)	Investment (Gain)/Loss [(2h) - (2i)]	($6,103,760)
3.	Non-Investment (Gain)/Loss for the Year	
a)	Total (Gain)/Loss (1l)	($4,092,877)
b)	Investment (Gain)/Loss (2j)	(6,103,760)
c)	Non-Investment (Gain)/Loss [(3a) - (3b)]	$2,010,883

Schedule of Amortization Bases

Below is the schedule of the plan's amortization bases. Note that there is a two-year lag between the valuation date and the start of the contribution year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2024.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: FY 2026-27.

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 on the UAL for FY 2024-25 is based on the actuarial valuation two years ago, adjusted for additional discretionary payments, if necessary, and the expected payment for FY 2025-26 is based on the actuarial valuation one year ago.

Reason for Base	Date Est.	Ramp Level 2026-27	Ramp Shape	Escalation Rate	Amort. Period	Balance 6/30/24	Expected Payment 2024-25	Balance 6/30/25	Expected Payment 2025-26	Balance 6/30/26	Minimum Required Payment 2026-27
Benefit Change	6/30/22	No Ramp		0.00%	18	395,643	35,578	385,779	35,578	375,244	35,578
Non-Investment (Gain)/Loss	6/30/22	No Ramp		0.00%	18	(803,036)	(72,212)	(783,016)	(72,212)	(761,634)	(72,212)
Partial Fresh Start	6/30/22	60%	Up Only	0.00%	18	12,803,560	275,209	13,389,790	550,417	13,731,472	825,626
Investment (Gain)/Loss	6/30/23	40%	Up Only	0.00%	19	1,972,060	558,414	1,529,072	45,271	1,586,264	65,207
Non-Investment (Gain)/Loss	6/30/23	No Ramp		0.00%	19	(726,601)	0	(776,010)	(69,782)	(756,663)	(69,782)
Investment (Gain)/Loss	6/30/24	20%	Up Only	0.00%	20	(6,103,760)	0	(6,518,816)	0	(6,962,095)	(149,648)
Non-Investment (Gain)/Loss	6/30/24	No Ramp		0.00%	20	2,010,883	0	2,147,623	0	2,293,661	206,254
Total						**9,548,749**	**796,989**	**9,374,422**	**489,272**	**9,506,249**	**841,023**

Amortization Schedule and Alternatives

The amortization schedule on the previous page(s) shows the minimum contributions required according to the CalPERS amortization policy. Each year, many agencies express a desire for a more stable pattern of payments or indicate 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 contact a CalPERS 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 an appropriate 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 Actuarial Amortization Policy.

Amortization Schedule and Alternatives (continued)

	Current Amortization Schedule		Alternative Schedules			
			15 Year Amortization		10 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2026	9,506,249	841,023	9,506,249	997,240	9,506,249	1,297,597
6/30/2027	9,283,526	999,186	9,122,085	997,240	8,811,684	1,297,598
6/30/2028	8,882,208	1,157,351	8,711,798	997,240	8,069,888	1,297,597
6/30/2029	8,290,144	1,040,307	8,273,612	997,240	7,277,651	1,297,598
6/30/2030	7,778,778	890,656	7,805,629	997,241	6,431,540	1,297,597
6/30/2031	7,387,294	890,658	7,305,822	997,240	5,527,895	1,297,598
6/30/2032	6,969,187	890,657	6,772,029	997,240	4,562,801	1,297,597
6/30/2033	6,522,651	890,657	6,201,938	997,241	3,532,082	1,297,598
6/30/2034	6,045,749	890,657	5,593,080	997,240	2,431,273	1,297,598
6/30/2035	5,536,419	890,659	4,942,821	997,240	1,255,609	1,297,598
6/30/2036	4,992,452	890,658	4,248,344	997,241		
6/30/2037	4,411,497	890,660	3,506,642	997,240		
6/30/2038	3,791,035	890,660	2,714,505	997,241		
6/30/2039	3,128,381	890,658	1,868,502	997,241		
6/30/2040	2,420,667	890,659	964,971	997,240		
6/30/2041	1,664,829	890,659				
6/30/2042	857,595	886,274				
6/30/2043						
6/30/2044						
6/30/2045						
6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
Total	**15,612,039**		**14,958,605**		**12,975,976**	
Interest Paid	**6,105,790**		**5,452,356**		**3,469,727**	
Estimated Savings			**653,434**		**2,636,063**	

Reconciliation of Required Employer Contributions

Normal Cost (% of Payroll)

1.	For Period 7/1/25 – 6/30/26	
	a) Employer Normal Cost	9.98%
	b) Employee contribution	7.30%
	c) Total Normal Cost	17.28%
2.	Changes since the prior year annual valuation	
	a) Effect of demographic experience	(0.22%)
	b) Effect of plan changes	0.00%
	c) Effect of discount rate change due to Funding Risk Mitigation	0.00%
	d) Effect of assumption changes	0.00%
	e) Effect of method changes	0.00%
	f) Net effect of the changes above [sum of (a) through (e)]	(0.22%)
3.	For Period 7/1/26 – 6/30/27	
	a) Employer Normal Cost	9.72%
	b) Employee contribution	7.34%
	c) Total Normal Cost	17.06%
	Employer Normal Cost Change [(3a) – (1a)]	(0.26%)
	Employee Contribution Change [(3b) – (1b)]	0.04%

Unfunded Liability Contribution ($)

1.	For Period 7/1/25 – 6/30/26	489,272
2.	Changes since the prior year annual valuation	
	a) Effect of adjustments to prior year's amortization schedule	0
	b) Effect of elimination of amortization bases	0
	c) Effect of progression of amortization bases[1]	295,145
	d) Effect of investment (gain)/loss during prior year[2]	(149,648)
	e) Effect of non-investment (gain)/loss during prior year	206,254
	f) Effect of re-amortizing existing bases due to Funding Risk Mitigation	0
	g) Effect of Golden Handshake	0
	h) Effect of plan changes	0
	i) Effect of AL Significant Increase (Government Code section 20791)	0
	j) Effect of assumption changes	0
	k) Effect of adjustments to the amortization schedule (e.g., Fresh Start)	0
	l) Effect of method change	0
	m) Net effect of the changes above [sum of (a) through (l)]	351,751
3.	For Period 7/1/26 – 6/30/27 [(1) + (2m)]	841,023

The amounts shown for the period 7/1/25 – 6/30/26 may be different if a prepayment of unfunded actuarial liability is made or a plan change became effective after the prior year's actuarial valuation was performed.

[1] Includes scheduled escalation in individual amortization base payments due to the 5-year ramp and payroll growth assumption used in the pre-2019 amortization policy.

[2] The unfunded liability contribution for the investment (gain)/loss during the year prior to the valuation date is 20% of the "full" annual requirement due to the 5-year ramp. Increases to this amount that occur during the ramp period will be included in line c) for each of the next four years.

Employer Contribution History

The table below provides a 10-year history of the employer contribution requirements for the plan, as determined by the annual actuarial valuation. Changes due to prepayments or plan amendments after the valuation report was finalized are not reflected.

Valuation Date	Contribution Year	Employer Normal Cost Rate	Unfunded Liability Payment
06/30/2015	2017-18	8.235%	$2,755,226
06/30/2016	2018-19	8.650%	3,422,760
06/30/2017	2019-20	9.152%	4,131,464
06/30/2018	2020-21	9.342%	4,666,365
06/30/2019	2021-22	9.30%	5,220,816
06/30/2020	2022-23	9.23%	5,777,050
06/30/2021	2023-24	10.34%	0
06/30/2022	2024-25	10.31%	238,575
06/30/2023	2025-26	9.98%	489,272
06/30/2024	2026-27	9.72%	841,023

Funding History

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

Valuation Date	Accrued Liability (AL)	Market Value of Assets (MVA)	Unfunded Accrued Liability (UAL)	Funded Ratio	Annual Covered Payroll
6/30/2015	$181,491,258	$139,569,093	$41,922,165	76.9%	$17,770,488
6/30/2016	191,929,650	135,743,828	56,185,822	70.7%	19,748,596
6/30/2017	200,944,292	145,751,158	55,193,134	72.5%	20,474,302
6/30/2018	217,328,949	152,780,201	64,548,748	70.3%	20,973,543
6/30/2019	223,341,730	157,762,297	65,579,433	70.6%	21,199,899
6/30/2020	229,090,370	160,348,692	68,741,678	70.0%	20,281,288
6/30/2021	237,072,769	192,173,151	44,899,618	81.1%	19,052,737
6/30/2022	242,865,755	232,284,121	10,581,634	95.6%	19,556,612
6/30/2023	248,656,696	235,887,640	12,769,056	94.9%	21,467,647
6/30/2024	256,506,181	246,957,432	9,548,749	96.3%	22,387,066

Risk Analysis

Future Investment Return Scenarios

Analysis using the investment return scenarios from the Asset Liability Management process completed in 2021 was performed to determine the effects of various future investment returns on required employer UAL contributions. The CalPERS Funding Risk Mitigation Policy stipulates that when the investment return exceeds the discount rate by at least 2%, the board will consider adjustments to the discount rate. The projections below use a discount rate of 6.8% for all scenarios even though an annual return of 10.8% is high enough to trigger a board discussion on the discount rate. The projections also assume that all other actuarial assumptions will be realized and that no further changes in assumptions, contributions, benefits , or funding will occur.

The employer normal cost rates are not affected by investment returns, and since no future assumption changes are being reflected, the projected employer normal cost rates for every future investment return scenario are the same as those shown earlier in this report. See Projected Employer Contributions for more information on projecting the employer normal cost.

The first table shows projected UAL contribution requirements if the fund were to earn either 3.0% or 10.8% annually. These alternate investment returns were chosen because 90% of long-term average returns are expected to fall between them over the 20-year period ending June 30, 2044.

Assumed Annual Return FY 2024-25 through FY 2043-44	Projected Employer UAL Contributions				
	2027-28	2028-29	2029-30	2030-31	2031-32
3.0% (5th percentile)	$1,224,000	$1,830,000	$2,379,000	$3,111,000	$4,205,000
10.8% (95th percentile)	$0	$0	$0	$0	$0

Required UAL contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 3.0% or greater than 10.8% over a 20-year period, the likelihood of a single investment return less than 3.0% or greater than 10.8% in any given year is much greater. The following analysis illustrates the effect of an extreme, single year investment return.

The portfolio has an expected volatility (or standard deviation) of 12.0% per year. Accordingly, in any given year there is a 16% probability that the annual return will be -5.2% or less and a 2.5% probability that the annual return will be -17.2% or less. These returns represent one and two standard deviations below the expected return of 6.8%.

The following table shows the effect of one and two standard deviation investment losses in FY 2024-25 on the FY 2027-28 contribution requirements. Note that a single-year investment gain or loss decreases or increases the required UAL contribution amount incrementally for each of the next five years, not just one, due to the 5-year ramp in the amortization policy. However, the contribution requirements beyond the first year are also impacted by investment returns beyond the first year. Historically, significant downturns in the market are often followed by higher than average returns. Such investment gains would offset the impact of these single year negative returns in years beyond FY 2027-28.

Assumed Annual Return for Fiscal Year 2024-25	Required Employer UAL Contributions	Projected Employer UAL Contributions
	2026-27	2027-28
(17.2%) (2 standard deviation loss)	$841,023	$2,420,000
(5.2%) (1 standard deviation loss)	$841,023	$1,710,000

- Without investment gains (returns higher than 6.8%) in FY 2025-26 or later, projected contributions rates would continue to rise over the next four years due to the continued phase-in of the impact of the illustrated investment loss in FY 2024-25.
- The Pension Outlook Tool can be used to model projected contributions for these scenarios beyond FY 2027-28 as well as to model other investment return scenarios.

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 4.5% and 2.3%, 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, 2024, assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 6.8% as well as alternate discount rates of 5.8% and 7.8%. The rates of 5.8% and 7.8% were selected since they illustrate the impact of a 1.0% increase or decrease to the 6.8% assumption.

Sensitivity to the Discount Rate Due to Varying the Real Rate of Return Assumption

As of June 30, 2024	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Price Inflation	2.3%	2.3%	2.3%
Real Rate of Return	**3.5%**	**4.5%**	**5.5%**
a) Total Normal Cost	21.74%	17.06%	13.55%
b) Accrued Liability	$288,459,403	$256,506,181	$230,066,965
c) Market Value of Assets	$246,957,432	$246,957,432	$246,957,432
d) Unfunded Liability/(Surplus) [(b) - (c)]	$41,501,971	$9,548,749	($16,890,467)
e) Funded Ratio	85.6%	96.3%	107.3%

Sensitivity to the Discount Rate Due to Varying the Price Inflation Assumption

As of June 30, 2024	1% Lower Price Inflation	Current Assumptions	1% Higher Price Inflation
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Price Inflation	**1.3%**	**2.3%**	**3.3%**
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	18.00%	17.06%	15.46%
b) Accrued Liability	$264,731,786	$256,506,181	$239,482,286
c) Market Value of Assets	$246,957,432	$246,957,432	$246,957,432
d) Unfunded Liability/(Surplus) [(b) - (c)]	$17,774,354	$9,548,749	($7,475,146)
e) Funded Ratio	93.3%	96.3%	103.1%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2024, plan costs and funded status under two different longevity scenarios, namely assuming rates of post-retirement mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2021. This type of analysis highlights the impact on the plan of a change in the mortality assumption.

As of June 30, 2024	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	17.33%	17.06%	16.81%
b) Accrued Liability	$262,245,387	$256,506,181	$251,251,838
c) Market Value of Assets	$246,957,432	$246,957,432	$246,957,432
d) Unfunded Liability/(Surplus) [(b) - (c)]	$15,287,955	$9,548,749	$4,294,406
e) Funded Ratio	94.2%	96.3%	98.3%

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.

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 increases. A mature plan will often have a ratio above 60%-65%.

Ratio of Retiree Accrued Liability to Total Accrued Liability	June 30, 2023	June 30, 2024
1. Retiree Accrued Liability	$167,965,717	$172,173,573
2. Total Accrued Liability	$248,656,696	$256,506,181
3. Ratio of Retiree AL to Total AL [(1) ÷ (2)]	68%	67%

Another measure of the maturity level of CalPERS and its plans is 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 declines. A mature plan will often have a ratio near or below one.

To calculate the support ratio for the rate plan, retirees and beneficiaries receiving a continuance are each counted as one, even though they may have only worked a portion of their careers as an active member of this rate plan. For this reason, the support ratio, while intuitive, may be less informative than the ratio of retiree liability to total accrued liability above.

For comparison, the support ratio for all CalPERS public agency plans as of June 30, 2023, was 0.78 and was calculated consistently with how it is for the individual rate plan. Note that to calculate the support ratio for all public agency plans, a retiree with service from more than one CalPERS agency is counted as a retiree more than once.

Support Ratio	June 30, 2023	June 30, 2024
1. Number of Actives	299	289
2. Number of Retirees	555	575
3. Support Ratio [(1) ÷ (2)]	0.54	0.50

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 increases, 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

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 a higher AVR experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an AVR of 8 may experience twice the contribution volatility due to investment return volatility than a plan with an AVR 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 a plan matures.

Liability Volatility Ratio

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 changes in liability. For example, a plan with an LVR of 8 is expected to have twice the contribution volatility of a plan with an LVR of 4 when there is a change in accrued liability, such as when there is a change in actuarial assumptions. It should be noted that this ratio indicates a longer-term potential for contribution volatility, since the AVR, described above, will tend to move closer to the LVR as the funded ratio approaches 100%.

Contribution Volatility	June 30, 2023	June 30, 2024
1. Market Value of Assets without Receivables	$235,662,860	$246,789,961
2. Payroll	21,467,647	22,387,066
3. Asset Volatility Ratio (AVR) [(1) ÷ (2)]	11.0	11.0
4. Accrued Liability	$248,656,696	$256,506,181
5. Liability Volatility Ratio (LVR) [(4) ÷ (2)]	11.6	11.5

Maturity Measures History

Valuation Date	Ratio of Retiree Accrued Liability to Total Accrued Liability	Support Ratio	Asset Volatility Ratio	Liability Volatility Ratio
6/30/2017	60%	0.71	7.1	9.8
6/30/2018	62%	0.67	7.3	10.4
6/30/2019	62%	0.65	7.4	10.5
6/30/2020	63%	0.60	7.9	11.3
6/30/2021	63%	0.52	10.1	12.4
6/30/2022	66%	0.52	11.9	12.4
6/30/2023	68%	0.54	11.0	11.6
6/30/2024	67%	0.50	11.0	11.5

Funded Status – Termination Basis

The funded status measured on a termination basis is an estimated range for the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2024. The accrued liability on a termination basis (termination liability) is calculated differently from the plan's ongoing funding liability. For the 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. Unlike the actuarial cost method used for ongoing plans, the termination liability is the present value of the benefits earned through the valuation date.

A more conservative investment policy and asset allocation strategy was adopted by the 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 remainder of the PERF and consequently, a lower discount rate assumption. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The discount rate used for actual termination valuations is a weighted average of the 10-year and 30-year Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the following analysis is based on 20-year Treasury bonds, which is a good proxy for most plans. The discount rate upon contract termination will depend on actual Treasury rates on the date of termination, which varies over time, as demonstrated below.

Valuation Date	20-Year Treasury Rate	Valuation Date	20-Year Treasury Rate
06/30/2015	2.83%	06/30/2020	1.18%
06/30/2016	1.86%	06/30/2021	2.00%
06/30/2017	2.61%	06/30/2022	3.38%
06/30/2018	2.91%	06/30/2023	4.06%
06/30/2019	2.31%	06/30/2024	4.61%

As Treasury rates are variable, the table below shows a range for the termination liability using discount rates 1% below and above the 20-year Treasury rate on the valuation date. The price inflation assumption is the 20-year Treasury breakeven inflation rate, that is, the difference between the 20-year inflation indexed bond and the 20-year fixed-rate bond.

The Market Value of Assets (MVA) also varies with interest rates and will fluctuate depending on other market conditions on the date of termination. Since it is not possible to approximate how the MVA will change in different interest rate environments, the results below use the MVA as of the valuation date.

	Discount Rate: 3.61% Price Inflation: 2.45%	Discount Rate: 5.61% Price Inflation: 2.45%
1. Termination Liability[1]	$378,761,392	$292,145,236
2. Market Value of Assets (MVA)	246,957,432	246,957,432
3. Unfunded Termination Liability [(1) – (2)]	$131,803,960	$45,187,804
4. Funded Ratio [(2) ÷ (1)]	65.2%	84.5%

[1] The termination liabilities calculated above include a 5% contingency load. The contingency load and other actuarial assumptions can be found in Appendix A.

In order to terminate the plan, first contact our Pension Contract Services unit to initiate a Resolution of Intent to Termin ate. The completed Resolution will allow a CalPERS actuary to provide a preliminary termination valuation with a more up-to-date estimate of the plan's assets and liabilities. Before beginning this process, please consult with a CalPERS actuary.

Funded Status – Low-Default-Risk Basis

Actuarial Standard of Practice (ASOP) No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, requires the disclosure of a low-default-risk obligation measure (LDROM) of benefit costs accrued as of the valuation date using a discount rate based on the yields of high quality fixed income securities with cash flows that replicate expected benefit payments. Conceptually, this measure represents the level at which financial markets would value the accrued plan costs, and would be approximately equal to the cost of a portfolio of low-default-risk bonds with similar financial characteristics to accrued plan costs.

As permitted in ASOP No. 4, the Actuarial Office uses the Entry Age Actuarial Cost Method to calculate the LDROM. This methodology is in line with the measure of "benefit entitlements" calculated by the Bureau of Economic Analysis and used by the Federal Reserve to report the indebtedness due to pensions of plan sponsors and, conversely, the household wealth due to pensions of plan members.

As shown below, the discount rate used for the LDROM is 5.35%, which is the Standard FTSE Pension Liability Index[1] discount rate as of June 30, 2024.

Selected Measures on a Low-Default-Risk Basis	**June 30, 2024**
Discount Rate	5.35%
1. Accrued Liability – Low-Default-Risk Basis (LDROM)	
a) Active Members	$80,795,714
b) Transferred Members	18,397,233
c) Separated Members	8,129,473
d) Members and Beneficiaries Receiving Payments	197,707,507
e) Total	$305,029,927
2. Market Value of Assets (MVA)	246,957,432
3. Unfunded Accrued Liability – Low-Default-Risk Basis [(1e) – (2)]	$58,072,495
4. Unfunded Accrued Liability – Funding Policy Basis	9,548,749
5. Present Value of Unearned Investment Risk Premium [(3) – (4)]	$48,523,746

The difference between the unfunded liabilities on a low-default-risk basis and on the funding policy basis represents the present value of the investment risk premium that must be earned in future years to keep future contributions for currently accrued plan costs at the levels anticipated by the funding policy.

Benefit security for members of the plan relies on a combination of the assets in the plan, the investment income generated from those assets and the ability of the plan sponsor to make necessary future contributions. If future returns fall short of 6.8%, benefit security could be at risk without higher than currently anticipated future contributions.

The funded status on a low-default-risk basis is not appropriate for assessing the sufficiency of plan assets to cover the cost of settling the plan's benefit obligations (see Funded Status – Termination Basis), nor is it appropriate for assessing the need for future contributions (see Funded Status – Funding Policy Basis).

[1] This index is based on a yield curve of hypothetical AA-rated zero-coupon corporate bonds whose maturities range from 6 months to 30 years. The index represents the single discount rate that would produce the same present value as discounting a standardized set of liability cash flows for a fully open pension plan using the yield curve. The liability cash flows are reasonably consistent with the pattern of benefits expected to be paid from the entire Public Employees' Retirement Fund for current and former plan members. A different index, hence a different discount rate, may be needed to measure the LDROM for a subset of the fund, such as a single rate plan or a group of retirees.

Supplementary Information

Normal Cost by Benefit Group

The table below displays the Total Normal Cost broken out by benefit group for FY 2026-27. The Total Normal Cost is the annual cost of service accrual for the fiscal year for active employees and can be viewed as the long-term contribution rate for the benefits contracted. Generally, the normal cost for a benefit group subject to more generous benefit provisions will exceed the normal cost for a group with less generous benefits. However, based on the characteristics of the members (particularly when the number of actives is small), this may not be the case. Future measurements of the Total Normal Cost for each group may differ significantly from the current values due to such factors as: changes in the demographics of the group, changes in economic and demographic assumptions, changes in plan benefits or applicable law.

Rate Plan Identifier	Benefit Group Name	Total Normal Cost FY 2026-27	Offset due to Employee Contributions FY 2026-27	Employer Normal Cost[1] FY 2026-27	Number of Actives	Payroll on 6/30/2024
221	Miscellaneous First Level	18.02%	6.87%	11.15%	91	$7,744,880
30315	Miscellaneous Second Level	20.05%	6.91%	13.14%	24	3,023,934
26140	Miscellaneous PEPRA Level	15.67%	7.75%	7.92%	174	11,618,252
	Plan Total	**17.06%**	**7.34%**	**9.72%**	**289**	**$22,387,066**

[1] The employer normal cost for individual rate plans is provided for illustrative purposes only. The employer normal cost rate for contribution purposes is the blended rate shown in the Plan Total row and is the employer normal cost contribution rate that applies to the covered payroll of members in every rate plan shown above.

Note that if a Benefit Group above has multiple bargaining units, each of which has separately contracted for different benefits such as Employer Paid Member Contributions, then the Normal Cost shown for the respective benefit level does not reflect those differences. Additionally, if a Second Level Benefit Group amended to the same benefit formula as a First Level Benefit Group, their Normal Costs may be dissimilar due to demographic or other population differences. For questions in these situations, please contact a CalPERS actuary.

Summary of Valuation Data

	June 30, 2023	June 30, 2024
1. **Active Members**		
a) Counts	299	289
b) Average Attained Age	44.28	44.11
c) Average Entry Age to Rate Plan	34.14	34.15
d) Average Years of Credited Service	9.60	9.55
e) Average Annual Covered Payroll	$71,798	$77,464
f) Annual Covered Payroll	$21,467,647	$22,387,066
g) Projected Annual Payroll for Contribution Year	$23,321,893	$24,320,725
h) Present Value of Future Payroll	$196,919,894	$210,054,021
2. **Transferred Members**		
a) Counts	208	224
b) Average Attained Age	43.31	42.77
c) Average Years of Credited Service	2.90	2.86
d) Average Annual Covered Payroll	$102,870	$105,647
3. **Separated Members**		
a) Counts	253	265
b) Average Attained Age	46.26	45.97
c) Average Years of Credited Service	2.37	2.42
d) Average Annual Covered Payroll	$52,064	$54,245
4. **Retired Members and Beneficiaries Receiving Payments**		
a) Counts	555	575
b) Average Attained Age	70.51	70.86
c) Average Annual Benefits	$25,074	$25,236
d) Total Annual Benefits	$13,915,932	$14,510,900
5. **Active to Retired Ratio** [(1a) ÷ (4a)]	0.54	0.50

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.

Average Annual Benefits represents benefit amounts payable by this plan only. Some members may have service with another agency and would therefore have a larger total benefit than would be included as part of the average shown here.

Status of PEPRA Transition

The California Public Employees' Pension Reform Act of 2013 (PEPRA), which took effect in January 2013, changed CalPERS retirement benefits and placed compensation limits on new members joining CalPERS on or after January 1, 2013. One of the objectives of PEPRA was to improve the ability of employers to manage the costs of retirement benefits for their members. While such changes can reduce future benefit costs in a meaningful way, the full impact on employer contributions will not occur until all active members are subject to the rules and provisions of PEPRA. The table below illustrates the status of this transition as of June 30, 2024.

	Classic	PEPRA	PEPRA as a Percent of Total
Active Members			
Count	115	174	60.2%
Average Attained Age	53.75	37.74	
Average Entry Age	34.08	34.19	
Average Years of Credited Service	18.96	3.33	
Average Annual Covered Payroll	$93,642	$66,772	
Annual Covered Payroll	$10,768,814	$11,618,252	51.9%
Present Value of Future Payroll	$77,215,930	$132,838,091	63.2%
Transferred Members			
Count	113	111	49.6%
Separated Members			
Count	152	113	42.6%
Retired Members and Beneficiaries Receiving Payments			
Count	568	7	1.2%
Average Annual Benefit	$25,436	$9,075	
Total Annual Benefits	$14,447,375	$63,525	0.4%
Accrued Liabilities			
Active Members	$56,019,467	$8,185,481	12.7%
Transferred Members	11,226,429	2,317,525	17.1%
Separated Members	5,699,449	884,257	13.4%
Retired Members and Beneficiaries	171,233,006	940,567	0.5%
Total	$244,178,351	$12,327,830	4.8%

Plan's Major Benefit Options

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

	Benefit Group						
Member Category	**Misc**	**Misc**	**Misc**	**Misc**	**Misc**	**Misc**	**Misc**
Demographics							
Actives	Yes	No	Yes	Yes	Yes	No	No
Transfers/Separated	Yes	No	Yes	Yes	Yes	No	No
Receiving	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit Provision							
Benefit Formula	2% @ 55		2% @ 55	2% @ 62	2% @ 60		
Social Security Coverage	Yes		Yes	Yes	Yes		
Full/Modified	Modified		Modified	Full	Modified		
Employee Contribution Rate	7.00%		7.00%	7.75%	7.00%		
Final Average Compensation Period	One Year		One Year	Three Year	Three Year		
Sick Leave Credit	Yes		Yes	Yes	Yes		
Non-Industrial Disability	Standard		Standard	Standard	Standard		
Industrial Disability	No		No	No	No		
Pre-Retirement Death Benefits							
Optional Settlement 2	Yes		Yes	Yes	Yes		
1959 Survivor Benefit Level	No		No	No	No		
Special	No		No	No	No		
Alternate (firefighters)	No		No	No	No		
Post-Retirement Death Benefits							
Lump Sum	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Survivor Allowance (PRSA)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
COLA	2%	2%	2%	2%	2%	2%	2%

Plan's Major Benefit Options (Continued)

Shown below is a summary of the major optional benefits for which the agency has contracted. A description of principal stand ard and optional plan provisions is in Appendix B.

	Benefit Group		
Member Category	**Misc**	**Misc**	
Demographics			
Actives	No	No	
Transfers/Separated	No	No	
Receiving	Yes	Yes	
Benefit Provision			
Benefit Formula			
Social Security Coverage			
Full/Modified			
Employee Contribution Rate			
Final Average Compensation Period			
Sick Leave Credit			
Non-Industrial Disability			
Industrial Disability			
Pre-Retirement Death Benefits			
Optional Settlement 2			
1959 Survivor Benefit Level			
Special			
Alternate (firefighters)			
Post-Retirement Death Benefits			
Lump Sum	$2,000	$2,000	
Survivor Allowance (PRSA)	Yes	Yes	
COLA	2%	2%	

Appendix A - Actuarial Methods and Assumptions

Actuarial Data

As stated in the Actuarial Certification, the data which serves as the basis of this valuation has been obtained from the various CalPERS databases. We have reviewed the valuation data and believe that it is reasonable and appropriate in aggregate. We are unaware of any potential data issues that would have a material effect on the results of this valuation, except that data does not always contain the latest salary information for former members now in reciprocal systems and does not recognize the potential for unusually large salary deviation in certain cases such as elected officials. Therefore, salary information in these cases may not be accurate. These situations are relatively infrequent, however, and generally do not have a material impact on the required employer contributions.

Actuarial Methods

Actuarial Cost Method

With one exception, the actuarial cost method used in this valuation is the Entry Age Actuarial Cost Method. This method is used to calculate the required employer contributions and the PEPRA member contribution rate. Under this method, the cost of the projected benefits is allocated on an individual basis as a level percent of earnings for the individual between entry age and retirement age. The portion allocated to the year following the valuation date is the normal cost. This method yields a total normal cost rate, expressed as a percentage of payroll, which is designed to remain level throughout the member's career.

The actuarial accrued liability for active members is then calculated as the present value of benefits minus the present value of future normal cost, or the portion of the total present value of benefits allocated to prior years. The actuarial accrued liability for members currently receiving benefits and for members entitled to deferred benefits is equal to the present value of the benefits expected to be paid. No normal costs are applicable for these participants.

To calculate the accrued liability on termination basis, this valuation used the Traditional Unit Credit Actuarial Cost Method. This method differs from the entry age method only for active members where the accrued liability is the present value of benefits assuming no future pay increases or service accruals.

Amortization of Unfunded Actuarial Accrued Liability

The excess of the total actuarial accrued liability over the market value of plan assets is called the unfunded actuarial accrued liability (UAL). Funding requirements are determined by adding the normal cost and a payment toward the UAL. The UAL payment is equal to the sum of individual amortization payments, each representing a different source of UAL for a given measurement period.

Amortization payments are determined according to the CalPERS Actuarial Amortization Policy. The board adopted a new policy effective for the June 30, 2019, actuarial valuation. The new policy applies prospectively only; amortization bases (sources of UAL) established prior to the June 30, 2019, valuation will continue to be amortized according to the prior policy.

Amortization of Unfunded Actuarial Accrued Liability (continued)

Prior Policy (Bases Established on or after June 30, 2013, and prior to June 30, 2019)

Amortization payments are determined as a level percentage of payroll whereby the payment increases each year at an escalation rate. Gains or losses are amortized over a fixed 30-year period with a 5-year ramp up at the beginning and a 5-year ramp down at the end of the amortization period. All changes in liability due to plan amendments (other than golden handshakes) are amortized over a 20-year period with no ramp. Changes in actuarial assumptions or changes in actuarial methodology are amortized over a 20-year period with a 5-year ramp up at the beginning and a 5-year ramp down at the end of the amortization period. Changes in unfunded accrued liability due to a Golden Handshake are amortized over a period of five years (20 years prior to June 30, 2014). A summary is provided in the following table:

	Source				
	(Gain)/Loss				
Driver	Investment	Non-investment	Assumption/Method Change	Benefit Change	Golden Handshake
Amortization Period	30 Years	30 Years	20 Years	20 Years	5 Years
Escalation Rate - Active Plans - Inactive Plans	2.80% 0%	2.80% 0%	2.80% 0%	2.80% 0%	2.80% 0%
Ramp Up	5	5	5	0	0
Ramp Down	5	5	5	0	0

The 5-year ramp up means that the payments in the first four years of the amortization period are 20%, 40%, 60% and 80% of the "full" payment which begins in year five. The 5-year ramp down means that the reverse is true in the final four years of the amortization period.

Current Policy (Bases Established on or after June 30, 2019)

Amortization payments are determined as a level dollar amount. Investment gains or losses are amortized over a fixed 20-year period with a 5-year ramp up at the beginning of the amortization period. Non-investment gains or losses are amortized over a fixed 20-year period with no ramps. All changes in liability due to plan amendments (other than golden handshakes) are amortized over a 20-year period with no ramps. Changes in actuarial assumptions or changes in actuarial methodology are amortized over a 20-year period with no ramps. Changes in unfunded accrued liability due to a Golden Handshake are amortized over a period of five years. A summary is provided in the table below:

	Source				
	(Gain)/Loss				
Driver	Investment	Non-investment	Assumption/ Method Change	Benefit Change	Golden Handshake
Amortization Period	20 Years	20 Years	20 Years	20 Years	5 Years
Escalation Rate	0%	0%	0%	0%	0%
Ramp Up	5	0	0	0	0
Ramp Down	0	0	0	0	0

The 5-year ramp up means that the payments in the first four years of the amortization period are 20%, 40%, 60% and 80% of the "full" payment which begins in year five.

Amortization of Unfunded Actuarial Accrued Liability (continued)

Exceptions for Inconsistencies

An exception to the amortization rules above is used whenever their application results in inconsistencies. In these cases, a "fresh start" approach is used. This means that the current unfunded actuarial liability is projected and amortized over a set number of years. For example, a fresh start is needed in the following situations:

- 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.

It should be noted that the actuary may determine that a fresh start is necessary under other circumstances. In all cases of a fresh start, the period is set by the actuary at what is deemed appropriate; however, the period will not be greater than 20 years.

Exceptions for Plans in Surplus

If a surplus exists (i.e., the Market Value of Assets exceeds the plan's accrued liability) any prior amortization layers shall be considered fully amortized, and the surplus shall not be amortized.

In the event of any subsequent unfunded liability, a Fresh Start shall be used with an amortization period of 20 years or less.

Exceptions for Small Amounts

Where small unfunded liabilities are identified in annual valuations which result in small payment amounts, the actuary may shorten the remaining period for these bases.

- When the balance of a single amortization base has an absolute value less than $250, the amortization period is reduced to one year.
- When the entire unfunded liability is a small amount, the actuary may perform a Fresh Start and use an appropriate amortization period.

Exceptions for Inactive Plans

The following exceptions apply to plans classified as Inactive. These plans have no active members and no expectation to have active members in the future.

- Amortization of the unfunded liability is on a "level dollar" basis rather than a "level percent of pay" basis. For amortization layers, which utilize a ramp up and ramp down, the "ultimate" payment is constant.
- Actuarial judgment will be used to shorten amortization periods for Inactive plans with existing periods that are deemed too long given the duration of the liability. The specific demographics of the plan will be used to determine if shorter periods may be more appropriate.

Exceptions for Inactive Agencies

For a public agency with no active members in any CalPERS rate plan, the unfunded liability shall be amortized over a closed amortization period of no more than 15 years.

Asset Valuation Method

The Actuarial Value of Assets is set equal to the market value of assets. Asset values include accounts receivable.

PEPRA Normal Cost Rate Methodology

Per Government Code section 7522.30(b), the "normal cost rate" shall mean the annual actuarially determined normal cost for the plan of retirement benefits provided to the new member and shall be established based on actuarial assumptions used to determine the liabilities and costs as part of the annual actuarial valuation. The plan of retirement benefits shall include any elements that would impact the actuarial determination of the normal cost, including, but not limited to, the retirement formula, eligibility and vesting criteria, ancillary benefit provisions, and any automatic cost-of-living adjustments as determined by the public retirement system.

PEPRA Normal Cost Rate Methodology (continued)

For purposes of setting member rates, it is preferable to determine total normal cost using a large active population so that the rate remains relatively stable. While each CalPERS non-pooled plan has a sufficiently large active population for this purpose, the PEPRA active population by itself may not be sufficiently large enough yet. The total PEPRA normal cost for each PEPRA benefit tier will be determined based on the entire active plan population (both PEPRA and Classic) only until the number of members covered under the PEPRA formula meets either:

1. 50% of the active population, or
2. 25% of the active population and 100 or more PEPRA members

Once one of these conditions is met, the total PEPRA normal cost for each PEPRA benefit tier will be determined using the entire active PEPRA population.

Actuarial Assumptions

In 2021, CalPERS completed its most recent asset liability management study incorporating actuarial assumptions and strategic asset allocation. In November 2021, the board adopted changes to the asset allocation that increased the expected volatility of returns. The adopted asset allocation was expected to have a long-term blended return that continued to support a discount rate assumption of 6.80%. The board also approved several changes to the demographic assumptions that more closely aligned with actual experience.

For more details and additional rationale for the selection of the actuarial assumptions, please refer to the 2021 CalPERS Experience Study and Review of Actuarial Assumptions that can be found on the CalPERS website under: Forms and Publications. Click on "View All" and search for Experience Study.

All actuarial assumptions (except the discount rates and price inflation assumption used for the accrued liability on a termination basis and the interest rate used for the low-default-risk obligation measure) represent an estimate of future experience rather than observations of the estimates inherent in market data.

Economic Assumptions

Discount Rate
The prescribed discount rate assumption, adopted by the board on November 17, 2021, is 6.80% compounded annually (net of investment and administrative expenses) as of June 30, 2024. The discount rate is based on the long-term expected rate of return on assets using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. The current assumption, originally based on capital market assumptions developed by the Investment Office in 2021, has been reviewed for this valuation based on capital market assumptions developed by the Investment Office in 2023.

Termination Liability Discount Rate
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 accrued liabilities on a termination basis in this report use discount rates that are based on the 20-year Treasury rate on the valuation date.

To illustrate the impact of the variability of interest rates, the accrued liabilities on a termination basis in this report use discount rates 1% below and 1% above the 20-year Treasury rate on the valuation date. The 20-year Treasury rate was 4.61% on June 30, 2024.

Salary Increases

Annual increases vary by category, entry age, and duration of service. A sample of assumed increases due to seniority, merit and promotion are shown below. Assumed wage inflation is combined with these factors to develop the total expected salary increases.

Public Agency Miscellaneous

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.0764	0.0621	0.0521
1	0.0663	0.0528	0.0424
2	0.0576	0.0449	0.0346
3	0.0501	0.0381	0.0282
4	0.0435	0.0324	0.0229
5	0.0378	0.0276	0.0187
10	0.0201	0.0126	0.0108
15	0.0155	0.0102	0.0071
20	0.0119	0.0083	0.0047
25	0.0091	0.0067	0.0031
30	0.0070	0.0054	0.0020

Public Agency Fire

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.1517	0.1549	0.0631
1	0.1191	0.1138	0.0517
2	0.0936	0.0835	0.0423
3	0.0735	0.0613	0.0346
4	0.0577	0.0451	0.0284
5	0.0453	0.0331	0.0232
10	0.0188	0.0143	0.0077
15	0.0165	0.0124	0.0088
20	0.0145	0.0108	0.0101
25	0.0127	0.0094	0.0115
30	0.0112	0.0082	0.0132

Public Agency Police

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.1181	0.1051	0.0653
1	0.0934	0.0812	0.0532
2	0.0738	0.0628	0.0434
3	0.0584	0.0485	0.0353
4	0.0462	0.0375	0.0288
5	0.0365	0.0290	0.0235
10	0.0185	0.0155	0.0118
15	0.0183	0.0150	0.0131
20	0.0181	0.0145	0.0145
25	0.0179	0.0141	0.0161
30	0.0178	0.0136	0.0179

Salary Increases (continued)

Public Agency County Peace Officers

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.1238	0.1053	0.0890
1	0.0941	0.0805	0.0674
2	0.0715	0.0616	0.0510
3	0.0544	0.0471	0.0387
4	0.0413	0.0360	0.0293
5	0.0314	0.0276	0.0222
10	0.0184	0.0142	0.0072
15	0.0174	0.0124	0.0073
20	0.0164	0.0108	0.0074
25	0.0155	0.0094	0.0075
30	0.0147	0.0083	0.0077

Schools

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.0275	0.0275	0.0200
1	0.0422	0.0373	0.0298
2	0.0422	0.0373	0.0298
3	0.0422	0.0373	0.0298
4	0.0388	0.0314	0.0245
5	0.0308	0.0239	0.0179
10	0.0236	0.0160	0.0121
15	0.0182	0.0135	0.0103
20	0.0145	0.0109	0.0085
25	0.0124	0.0102	0.0058
30	0.0075	0.0053	0.0019

- The Miscellaneous salary scale is used for Local Prosecutors.
- The Police salary scale is used for Other Safety, Local Sheriff, and School Police.

Price Inflation
2.30% compounded annually.

Termination Liability Price Inflation
The breakeven inflation rate for 20-year Treasuries on the valuation date, 2.45%.

Wage Inflation
2.80% compounded annually. This is used in projecting individual salary increases.

Payroll Growth
2.80% compounded annually. This is used as the escalation rate of the amortization payments on level percent of payroll amortization bases, that is, on any amortization bases established prior to 2019 for plans that currently have active members.

Miscellaneous Loading Factors

Credit for Unused Sick Leave
Total years of service is increased by 1% for those plans that have adopted the provision of providing Credit for Unused Sick Leave.

Conversion of Employer Paid Member Contributions (EPMC)
Total years of service is increased by the Employee Contribution Rate for those plans with the provision providing for the Conversion of Employer Paid Member Contributions (EPMC) during the final compensation period.

Norris Decision (Best Factors)
Employees hired prior to July 1, 1982, have projected benefit amounts increased in order to reflect the use of "Best Factors" in the calculation of optional benefit forms. This is due to a 1983 Supreme Court decision, known as the Norris decision, which required males and females to be treated equally in the determination of benefit amounts. Consequently, anyone already employed at that time is given the best possible conversion factor when optional benefits are determined. No loading is necessary for employees hired after July 1, 1982.

Termination Liability
The termination liabilities include a 5% contingency load. This load is for unforeseen improvements in mortality.

Demographic Assumptions

Pre-Retirement Mortality
The mortality assumptions are based on mortality rates resulting from the most recent CalPERS Experience Study adopted by the CalPERS Board in November 2021. For purposes of the mortality rates, the rates incorporate generational mortality to capture ongoing mortality improvement. Generational mortality explicitly assumes that members born more recently will live longer than the members born before them thereby capturing the mortality improvement seen in the past and expected continued improvement. For more details, please refer to the 2021 CalPERS Experience Study and Review of Actuarial Assumptions report that can be found on the CalPERS website.

Rates vary by age and gender. This table only contains a sample of the 2017 base table rates for illustrative purposes. The non-industrial death rates are used for all plans. The industrial death rates are used for Safety plans, except for local Safety members described in Government Code section 20423.6 where the agency has not specifically contracted for industrial death benefits.

	Miscellaneous		Safety			
	Non-Industrial Death (Not Job-Related)		Non-Industrial Death (Not Job-Related)		Industrial Death (Job-Related)	
Age	Male	Female	Male	Female	Male	Female
20	0.00039	0.00014	0.00038	0.00014	0.00004	0.00002
25	0.00033	0.00013	0.00034	0.00018	0.00004	0.00002
30	0.00044	0.00019	0.00042	0.00025	0.00005	0.00003
35	0.00058	0.00029	0.00048	0.00034	0.00005	0.00004
40	0.00075	0.00039	0.00055	0.00042	0.00006	0.00005
45	0.00093	0.00054	0.00066	0.00053	0.00007	0.00006
50	0.00134	0.00081	0.00092	0.00073	0.00010	0.00008
55	0.00198	0.00123	0.00138	0.00106	0.00015	0.00012
60	0.00287	0.00179	0.00221	0.00151	0.00025	0.00017
65	0.00403	0.00250	0.00346	0.00194	0.00038	0.00022
70	0.00594	0.00404	0.00606	0.00358	0.00067	0.00040
75	0.00933	0.00688	0.01099	0.00699	0.00122	0.00078
80	0.01515	0.01149	0.02027	0.01410	0.00225	0.00157

- The pre-retirement mortality rates above are for 2017 and are projected generationally for future years using 80% of the Society of Actuaries' Scale MP-2020.
- Miscellaneous plans usually have industrial death rates set to zero unless the agency has specifically contracted for industrial death benefits. If so, each non-industrial death rate shown above will be split into two components: 99% will become the non-industrial death rate and 1% will become the industrial death rate.

Post-Retirement Mortality
Rates vary by age, type of retirement, and gender. See sample rates in table below. These rates are used for all plans.

	Service Retirement		Non-Industrial Disability (Not Job-Related)		Industrial Disability (Job-Related)	
Age	Male	Female	Male	Female	Male	Female
50	0.00267	0.00199	0.01701	0.01439	0.00430	0.00311
55	0.00390	0.00325	0.02210	0.01734	0.00621	0.00550
60	0.00578	0.00455	0.02708	0.01962	0.00944	0.00868
65	0.00857	0.00612	0.03334	0.02276	0.01394	0.01190
70	0.01333	0.00996	0.04001	0.02910	0.02163	0.01858
75	0.02391	0.01783	0.05376	0.04160	0.03446	0.03134
80	0.04371	0.03403	0.07936	0.06112	0.05853	0.05183
85	0.08274	0.06166	0.11561	0.09385	0.10137	0.08045
90	0.14539	0.11086	0.16608	0.14396	0.16584	0.12434
95	0.24665	0.20364	0.24665	0.20364	0.24665	0.20364
100	0.36198	0.31582	0.36198	0.31582	0.36198	0.31582
105	0.52229	0.44679	0.52229	0.44679	0.52229	0.44679
110	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

- The post-retirement mortality rates above are for 2017 and are projected generationally for future years using 80% of the Society of Actuaries' Scale MP-2020.

Marital Status
For active members, a percentage who are married upon retirement is assumed according to the member category as shown in the following table.

Member Category	Percent Married
Miscellaneous Member	70%
Local Police	85%
Local Fire	85%
Other Local Safety	70%
School Police	85%
Local County Peace Officers	75%

Age of Spouse
It is assumed that female spouses are 3 years younger than male spouses. This assumption is used for all plans.

Separated Members
It is assumed that separated members refund immediately if non-vested. Separated members who are vested are assumed to retire at age 59 for Miscellaneous members and age 54 for Safety members.

Termination with Refund

Rates vary by entry age and service for Miscellaneous plans. Rates vary by service for Safety plans. See sample rates in tables below.

Public Agency Miscellaneous

Duration of Service	Entry Age 20		Entry Age 25		Entry Age 30		Entry Age 35		Entry Age 40		Entry Age 45	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0	0.1851	0.1944	0.1769	0.1899	0.1631	0.1824	0.1493	0.1749	0.1490	0.1731	0.1487	0.1713
1	0.1531	0.1673	0.1432	0.1602	0.1266	0.1484	0.1101	0.1366	0.1069	0.1323	0.1037	0.1280
2	0.1218	0.1381	0.1125	0.1307	0.0970	0.1183	0.0815	0.1058	0.0771	0.0998	0.0726	0.0938
3	0.0927	0.1085	0.0852	0.1020	0.0727	0.0912	0.0601	0.0804	0.0556	0.0737	0.0511	0.0669
4	0.0672	0.0801	0.0616	0.0752	0.0524	0.0670	0.0431	0.0587	0.0392	0.0523	0.0352	0.0459
5	0.0463	0.0551	0.0423	0.0517	0.0358	0.0461	0.0292	0.0404	0.0261	0.0350	0.0230	0.0296
10	0.0112	0.0140	0.0101	0.0129	0.0083	0.0112	0.0064	0.0094	0.0048	0.0071	0.0033	0.0049
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Public Agency Safety

Duration of Service	Fire		Police		County Peace Officer	
	Male	Female	Male	Female	Male	Female
0	0.1022	0.1317	0.1298	0.1389	0.1086	0.1284
1	0.0686	0.1007	0.0789	0.0904	0.0777	0.0998
2	0.0441	0.0743	0.0464	0.0566	0.0549	0.0759
3	0.0272	0.0524	0.0274	0.0343	0.0385	0.0562
4	0.0161	0.0349	0.0170	0.0206	0.0268	0.0402
5	0.0092	0.0214	0.0113	0.0128	0.0186	0.0276
10	0.0015	0.0000	0.0032	0.0047	0.0046	0.0038
15	0.0000	0.0000	0.0000	0.0000	0.0023	0.0036
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

- The police termination and refund rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff, and School Police.

Termination with Refund (continued)

Schools

Duration of Service	Entry Age 20		Entry Age 25		Entry Age 30		Entry Age 35		Entry Age 40		Entry Age 45	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0	0.2054	0.2120	0.1933	0.1952	0.1730	0.1672	0.1527	0.1392	0.1423	0.1212	0.1318	0.1032
1	0.1922	0.2069	0.1778	0.1883	0.1539	0.1573	0.1300	0.1264	0.1191	0.1087	0.1083	0.0910
2	0.1678	0.1859	0.1536	0.1681	0.1298	0.1383	0.1060	0.1086	0.0957	0.0934	0.0853	0.0782
3	0.1384	0.1575	0.1256	0.1417	0.1042	0.1155	0.0829	0.0893	0.0736	0.0774	0.0643	0.0656
4	0.1085	0.1274	0.0978	0.1143	0.0800	0.0925	0.0622	0.0707	0.0542	0.0620	0.0462	0.0533
5	0.0816	0.0991	0.0732	0.0887	0.0590	0.0713	0.0449	0.0539	0.0383	0.0476	0.0317	0.0413
10	0.0222	0.0248	0.0200	0.0221	0.0163	0.0174	0.0125	0.0128	0.0094	0.0100	0.0063	0.0072
15	0.0106	0.0132	0.0095	0.0113	0.0077	0.0083	0.0058	0.0052	0.0040	0.0039	0.0021	0.0026
20	0.0059	0.0065	0.0050	0.0054	0.0035	0.0036	0.0021	0.0019	0.0010	0.0009	0.0000	0.0000
25	0.0029	0.0034	0.0025	0.0029	0.0018	0.0020	0.0010	0.0012	0.0005	0.0006	0.0000	0.0000
30	0.0012	0.0015	0.0011	0.0013	0.0011	0.0011	0.0010	0.0009	0.0005	0.0005	0.0000	0.0000
35	0.0006	0.0007	0.0006	0.0007	0.0005	0.0006	0.0005	0.0005	0.0003	0.0002	0.0000	0.0000

Termination with Vested Benefits

Rates vary by entry age and service for Miscellaneous plans. Rates vary by service for Safety plans. See sample rates in tables below.

Public Agency Miscellaneous

Duration of Service	Entry Age 20		Entry Age 25		Entry Age 30		Entry Age 35		Entry Age 40	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
5	0.0381	0.0524	0.0381	0.0524	0.0358	0.0464	0.0334	0.0405	0.0301	0.0380
10	0.0265	0.0362	0.0265	0.0362	0.0254	0.0334	0.0244	0.0307	0.0197	0.0236
15	0.0180	0.0252	0.0180	0.0252	0.0166	0.0213	0.0152	0.0174	0.0119	0.0132
20	0.0141	0.0175	0.0141	0.0175	0.0110	0.0131	0.0079	0.0087	0.0000	0.0000
25	0.0084	0.0108	0.0084	0.0108	0.0064	0.0076	0.0000	0.0000	0.0000	0.0000
30	0.0047	0.0056	0.0047	0.0056	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0038	0.0041	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Public Agency Safety

Duration of Service	Fire		Police		County Peace Officer	
	Male	Female	Male	Female	Male	Female
5	0.0089	0.0224	0.0156	0.0272	0.0177	0.0266
10	0.0066	0.0164	0.0113	0.0198	0.0126	0.0189
15	0.0048	0.0120	0.0083	0.0144	0.0089	0.0134
20	0.0035	0.0088	0.0060	0.0105	0.0063	0.0095
25	0.0024	0.0061	0.0042	0.0073	0.0042	0.0063
30	0.0012	0.0031	0.0021	0.0037	0.0021	0.0031
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

- After termination with vested benefits, a Miscellaneous member is assumed to retire at age 59 and a Safety member at age 54.
- The Police termination with vested benefits rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff, and School Police.

Schools

Duration of Service	Entry Age 20		Entry Age 25		Entry Age 30		Entry Age 35		Entry Age 40	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
5	0.0359	0.0501	0.0359	0.0501	0.0332	0.0402	0.0305	0.0304	0.0266	0.0272
10	0.0311	0.0417	0.0311	0.0417	0.0269	0.0341	0.0228	0.0265	0.0193	0.0233
15	0.0193	0.0264	0.0193	0.0264	0.0172	0.0220	0.0151	0.0175	0.0123	0.0142
20	0.0145	0.0185	0.0145	0.0185	0.0113	0.0141	0.0080	0.0097	0.0000	0.0000
25	0.0089	0.0123	0.0089	0.0123	0.0074	0.0093	0.0000	0.0000	0.0000	0.0000
30	0.0057	0.0064	0.0057	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0040	0.0049	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Non-Industrial (Not Job-Related) Disability
Rates vary by age and gender for Miscellaneous plans. Rates vary by age and category for Safety plans.

	Miscellaneous		Fire	Police	County Peace Officer	Schools	
Age	Male	Female	All	All	All	Male	Female
20	0.0001	0.0000	0.0001	0.0001	0.0001	0.0000	0.0002
25	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0002
30	0.0002	0.0003	0.0001	0.0001	0.0001	0.0002	0.0002
35	0.0004	0.0007	0.0001	0.0002	0.0003	0.0005	0.0004
40	0.0009	0.0012	0.0001	0.0002	0.0006	0.0010	0.0008
45	0.0015	0.0019	0.0002	0.0003	0.0011	0.0019	0.0015
50	0.0015	0.0019	0.0004	0.0005	0.0016	0.0027	0.0021
55	0.0014	0.0013	0.0006	0.0007	0.0009	0.0024	0.0017
60	0.0012	0.0009	0.0006	0.0011	0.0005	0.0020	0.0010

- The Miscellaneous non-industrial disability rates are used for Local Prosecutors.
- The police non-industrial disability rates are also used for Other Safety, Local Sheriff, and School Police.

Industrial (Job-Related) Disability
Rates vary by age and category.

Age	Fire	Police	County Peace Officer
20	0.0001	0.0000	0.0004
25	0.0002	0.0017	0.0013
30	0.0006	0.0048	0.0025
35	0.0012	0.0079	0.0037
40	0.0023	0.0110	0.0051
45	0.0040	0.0141	0.0067
50	0.0208	0.0185	0.0092
55	0.0307	0.0479	0.0151
60	0.0438	0.0602	0.0174

- The police industrial disability rates are also used for Local Sheriff and Other Safety.
- 50% of the police industrial disability rates are used for School Police.
- 1% of the police industrial disability rates are used for Local Prosecutors.
- Normally, rates are zero for Miscellaneous plans unless the agency has specifically contracted for industrial disability benefits. If so, each Miscellaneous non-industrial disability rate will be split into two components: 50% will become the non-industrial disability rate and 50% will become the industrial disability rate.

Service Retirement

Retirement rates vary by age, service, and formula, except for the Safety Half Pay at 55 and 2% at 55 formulas, where retirement rates vary by age only.

Public Agency Miscellaneous 1.5% at age 65

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.008	0.011	0.013	0.015	0.017	0.019
51	0.007	0.010	0.012	0.013	0.015	0.017
52	0.010	0.014	0.017	0.019	0.021	0.024
53	0.008	0.012	0.015	0.017	0.019	0.022
54	0.012	0.016	0.019	0.022	0.025	0.028
55	0.018	0.025	0.031	0.035	0.038	0.043
56	0.015	0.021	0.025	0.029	0.032	0.036
57	0.020	0.028	0.033	0.038	0.043	0.048
58	0.024	0.033	0.040	0.046	0.052	0.058
59	0.028	0.039	0.048	0.054	0.060	0.067
60	0.049	0.069	0.083	0.094	0.105	0.118
61	0.062	0.087	0.106	0.120	0.133	0.150
62	0.104	0.146	0.177	0.200	0.223	0.251
63	0.099	0.139	0.169	0.191	0.213	0.239
64	0.097	0.136	0.165	0.186	0.209	0.233
65	0.140	0.197	0.240	0.271	0.302	0.339
66	0.092	0.130	0.157	0.177	0.198	0.222
67	0.129	0.181	0.220	0.249	0.277	0.311
68	0.092	0.129	0.156	0.177	0.197	0.221
69	0.092	0.130	0.158	0.178	0.199	0.224
70	0.103	0.144	0.175	0.198	0.221	0.248

Public Agency Miscellaneous 2% at age 60

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.010	0.011	0.014	0.014	0.017	0.017
51	0.017	0.013	0.014	0.010	0.010	0.010
52	0.014	0.014	0.018	0.015	0.016	0.016
53	0.015	0.012	0.013	0.010	0.011	0.011
54	0.006	0.010	0.017	0.016	0.018	0.018
55	0.012	0.016	0.024	0.032	0.036	0.036
56	0.010	0.014	0.023	0.030	0.034	0.034
57	0.006	0.018	0.030	0.040	0.044	0.044
58	0.022	0.023	0.033	0.042	0.046	0.046
59	0.039	0.033	0.040	0.047	0.050	0.050
60	0.063	0.069	0.074	0.090	0.137	0.116
61	0.044	0.058	0.066	0.083	0.131	0.113
62	0.084	0.107	0.121	0.153	0.238	0.205
63	0.173	0.166	0.165	0.191	0.283	0.235
64	0.120	0.145	0.164	0.147	0.160	0.172
65	0.138	0.160	0.214	0.216	0.237	0.283
66	0.198	0.228	0.249	0.216	0.228	0.239
67	0.207	0.242	0.230	0.233	0.233	0.233
68	0.201	0.234	0.225	0.231	0.231	0.231
69	0.152	0.173	0.164	0.166	0.166	0.166
70	0.200	0.200	0.200	0.200	0.200	0.200

Service Retirement (continued)

Public Agency Miscellaneous 2% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.014	0.014	0.017	0.021	0.023	0.024
51	0.013	0.017	0.017	0.018	0.018	0.019
52	0.013	0.018	0.018	0.020	0.020	0.021
53	0.013	0.019	0.021	0.024	0.025	0.026
54	0.017	0.025	0.028	0.032	0.033	0.035
55	0.045	0.042	0.053	0.086	0.098	0.123
56	0.018	0.036	0.056	0.086	0.102	0.119
57	0.041	0.046	0.056	0.076	0.094	0.120
58	0.052	0.044	0.048	0.074	0.106	0.123
59	0.043	0.058	0.073	0.092	0.105	0.126
60	0.059	0.064	0.083	0.115	0.154	0.170
61	0.087	0.074	0.087	0.107	0.147	0.168
62	0.115	0.123	0.151	0.180	0.227	0.237
63	0.116	0.127	0.164	0.202	0.252	0.261
64	0.084	0.138	0.153	0.190	0.227	0.228
65	0.167	0.187	0.210	0.262	0.288	0.291
66	0.187	0.258	0.280	0.308	0.318	0.319
67	0.195	0.235	0.244	0.277	0.269	0.280
68	0.228	0.248	0.250	0.241	0.245	0.245
69	0.188	0.201	0.209	0.219	0.231	0.231
70	0.229	0.229	0.229	0.229	0.229	0.229

Public Agency Miscellaneous 2.5% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.014	0.017	0.027	0.035	0.046	0.050
51	0.019	0.021	0.025	0.030	0.038	0.040
52	0.018	0.020	0.026	0.034	0.038	0.037
53	0.013	0.021	0.031	0.045	0.052	0.053
54	0.025	0.025	0.030	0.046	0.057	0.068
55	0.029	0.042	0.064	0.109	0.150	0.225
56	0.036	0.047	0.068	0.106	0.134	0.194
57	0.051	0.047	0.060	0.092	0.116	0.166
58	0.035	0.046	0.062	0.093	0.119	0.170
59	0.029	0.053	0.072	0.112	0.139	0.165
60	0.039	0.069	0.094	0.157	0.177	0.221
61	0.080	0.077	0.086	0.140	0.167	0.205
62	0.086	0.131	0.149	0.220	0.244	0.284
63	0.135	0.135	0.147	0.214	0.222	0.262
64	0.114	0.128	0.158	0.177	0.233	0.229
65	0.112	0.174	0.222	0.209	0.268	0.273
66	0.235	0.254	0.297	0.289	0.321	0.337
67	0.237	0.240	0.267	0.249	0.267	0.277
68	0.258	0.271	0.275	0.207	0.210	0.212
69	0.117	0.208	0.266	0.219	0.250	0.270
70	0.229	0.229	0.229	0.229	0.229	0.229

Service Retirement (continued)

Public Agency Miscellaneous 2.7% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.011	0.016	0.022	0.033	0.034	0.038
51	0.018	0.019	0.023	0.032	0.031	0.031
52	0.019	0.020	0.026	0.035	0.034	0.037
53	0.020	0.020	0.025	0.043	0.048	0.053
54	0.018	0.030	0.040	0.052	0.053	0.070
55	0.045	0.058	0.082	0.138	0.208	0.278
56	0.057	0.062	0.080	0.121	0.178	0.222
57	0.045	0.052	0.071	0.106	0.147	0.182
58	0.074	0.060	0.074	0.118	0.163	0.182
59	0.058	0.067	0.086	0.123	0.158	0.187
60	0.087	0.084	0.096	0.142	0.165	0.198
61	0.073	0.084	0.101	0.138	0.173	0.218
62	0.130	0.133	0.146	0.187	0.214	0.249
63	0.122	0.140	0.160	0.204	0.209	0.243
64	0.104	0.124	0.154	0.202	0.214	0.230
65	0.182	0.201	0.242	0.264	0.293	0.293
66	0.272	0.249	0.273	0.285	0.312	0.312
67	0.182	0.217	0.254	0.249	0.264	0.264
68	0.223	0.197	0.218	0.242	0.273	0.273
69	0.217	0.217	0.217	0.217	0.217	0.217
70	0.227	0.227	0.227	0.227	0.227	0.227

Public Agency Miscellaneous 3% at age 60

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.015	0.020	0.025	0.039	0.040	0.044
51	0.041	0.034	0.032	0.041	0.036	0.037
52	0.024	0.020	0.022	0.039	0.040	0.041
53	0.018	0.024	0.032	0.047	0.048	0.057
54	0.033	0.033	0.035	0.051	0.049	0.052
55	0.137	0.043	0.051	0.065	0.076	0.108
56	0.173	0.038	0.054	0.075	0.085	0.117
57	0.019	0.035	0.059	0.088	0.111	0.134
58	0.011	0.040	0.070	0.105	0.133	0.162
59	0.194	0.056	0.064	0.081	0.113	0.163
60	0.081	0.085	0.133	0.215	0.280	0.333
61	0.080	0.090	0.134	0.170	0.223	0.292
62	0.137	0.153	0.201	0.250	0.278	0.288
63	0.128	0.140	0.183	0.227	0.251	0.260
64	0.174	0.147	0.173	0.224	0.239	0.264
65	0.152	0.201	0.262	0.299	0.323	0.323
66	0.272	0.273	0.317	0.355	0.380	0.380
67	0.218	0.237	0.268	0.274	0.284	0.284
68	0.200	0.228	0.269	0.285	0.299	0.299
69	0.250	0.250	0.250	0.250	0.250	0.250
70	0.245	0.245	0.245	0.245	0.245	0.245

Service Retirement (continued)

Public Agency Miscellaneous 2% at age 62

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.000	0.000	0.000	0.000	0.000	0.000
51	0.000	0.000	0.000	0.000	0.000	0.000
52	0.005	0.008	0.012	0.015	0.019	0.031
53	0.007	0.011	0.014	0.018	0.021	0.032
54	0.007	0.011	0.015	0.019	0.023	0.034
55	0.010	0.019	0.028	0.036	0.061	0.096
56	0.014	0.026	0.038	0.050	0.075	0.108
57	0.018	0.029	0.039	0.050	0.074	0.107
58	0.023	0.035	0.048	0.060	0.073	0.099
59	0.025	0.038	0.051	0.065	0.092	0.128
60	0.031	0.051	0.071	0.091	0.111	0.138
61	0.038	0.058	0.079	0.100	0.121	0.167
62	0.044	0.074	0.104	0.134	0.164	0.214
63	0.077	0.105	0.134	0.163	0.192	0.237
64	0.072	0.101	0.129	0.158	0.187	0.242
65	0.108	0.141	0.173	0.206	0.239	0.300
66	0.132	0.172	0.212	0.252	0.292	0.366
67	0.132	0.172	0.212	0.252	0.292	0.366
68	0.120	0.156	0.193	0.229	0.265	0.333
69	0.120	0.156	0.193	0.229	0.265	0.333
70	0.120	0.156	0.193	0.229	0.265	0.333

Public Agency Fire Half Pay at age 55 and 2% at age 55

Age	Rate	Age	Rate
50	0.016	56	0.111
51	0.000	57	0.000
52	0.034	58	0.095
53	0.020	59	0.044
54	0.041	60	1.000
55	0.075		

Public Agency Police Half Pay at age 55 and 2% at age 55

Age	Rate	Age	Rate
50	0.026	56	0.069
51	0.000	57	0.051
52	0.016	58	0.072
53	0.027	59	0.070
54	0.010	60	0.300
55	0.167		

Service Retirement (continued)

Public Agency Police 2% at age 50

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.018	0.077	0.056	0.046	0.043	0.046
51	0.022	0.087	0.060	0.048	0.044	0.047
52	0.020	0.102	0.081	0.071	0.069	0.075
53	0.016	0.072	0.053	0.045	0.042	0.046
54	0.006	0.071	0.071	0.069	0.072	0.080
55	0.009	0.040	0.099	0.157	0.186	0.186
56	0.020	0.051	0.108	0.165	0.194	0.194
57	0.036	0.072	0.106	0.139	0.156	0.156
58	0.001	0.046	0.089	0.130	0.152	0.152
59	0.066	0.094	0.119	0.143	0.155	0.155
60	0.177	0.177	0.177	0.177	0.177	0.177
61	0.134	0.134	0.134	0.134	0.134	0.134
62	0.184	0.184	0.184	0.184	0.184	0.184
63	0.250	0.250	0.250	0.250	0.250	0.250
64	0.177	0.177	0.177	0.177	0.177	0.177
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 2% at age 50

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.054	0.054	0.056	0.080	0.064	0.066
51	0.020	0.020	0.021	0.030	0.024	0.024
52	0.037	0.037	0.038	0.054	0.043	0.045
53	0.051	0.051	0.053	0.076	0.061	0.063
54	0.082	0.082	0.085	0.121	0.097	0.100
55	0.139	0.139	0.139	0.139	0.139	0.139
56	0.129	0.129	0.129	0.129	0.129	0.129
57	0.085	0.085	0.085	0.085	0.085	0.085
58	0.119	0.119	0.119	0.119	0.119	0.119
59	0.167	0.167	0.167	0.167	0.167	0.167
60	0.152	0.152	0.152	0.152	0.152	0.152
61	0.179	0.179	0.179	0.179	0.179	0.179
62	0.179	0.179	0.179	0.179	0.179	0.179
63	0.179	0.179	0.179	0.179	0.179	0.179
64	0.179	0.179	0.179	0.179	0.179	0.179
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Public Agency Police 3% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.019	0.053	0.045	0.054	0.057	0.061
51	0.002	0.017	0.028	0.044	0.053	0.060
52	0.002	0.031	0.037	0.051	0.059	0.066
53	0.026	0.049	0.049	0.080	0.099	0.114
54	0.019	0.034	0.047	0.091	0.121	0.142
55	0.006	0.115	0.141	0.199	0.231	0.259
56	0.017	0.188	0.121	0.173	0.199	0.199
57	0.008	0.137	0.093	0.136	0.157	0.157
58	0.017	0.126	0.105	0.164	0.194	0.194
59	0.026	0.146	0.110	0.167	0.195	0.195
60	0.155	0.155	0.155	0.155	0.155	0.155
61	0.210	0.210	0.210	0.210	0.210	0.210
62	0.262	0.262	0.262	0.262	0.262	0.262
63	0.172	0.172	0.172	0.172	0.172	0.172
64	0.227	0.227	0.227	0.227	0.227	0.227
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 3% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.003	0.006	0.013	0.019	0.025	0.028
51	0.004	0.008	0.017	0.026	0.034	0.038
52	0.005	0.011	0.022	0.033	0.044	0.049
53	0.005	0.034	0.024	0.038	0.069	0.138
54	0.007	0.047	0.032	0.051	0.094	0.187
55	0.010	0.067	0.046	0.073	0.134	0.266
56	0.010	0.063	0.044	0.069	0.127	0.253
57	0.135	0.100	0.148	0.196	0.220	0.220
58	0.083	0.062	0.091	0.120	0.135	0.135
59	0.137	0.053	0.084	0.146	0.177	0.177
60	0.162	0.063	0.099	0.172	0.208	0.208
61	0.598	0.231	0.231	0.231	0.231	0.231
62	0.621	0.240	0.240	0.240	0.240	0.240
63	0.236	0.236	0.236	0.236	0.236	0.236
64	0.236	0.236	0.236	0.236	0.236	0.236
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Public Agency Police 3% at age 50

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.124	0.103	0.113	0.143	0.244	0.376
51	0.060	0.081	0.087	0.125	0.207	0.294
52	0.016	0.055	0.111	0.148	0.192	0.235
53	0.072	0.074	0.098	0.142	0.189	0.237
54	0.018	0.049	0.105	0.123	0.187	0.271
55	0.069	0.074	0.081	0.113	0.209	0.305
56	0.064	0.108	0.113	0.125	0.190	0.288
57	0.056	0.109	0.160	0.182	0.210	0.210
58	0.108	0.129	0.173	0.189	0.214	0.214
59	0.093	0.144	0.204	0.229	0.262	0.262
60	0.343	0.180	0.159	0.188	0.247	0.247
61	0.221	0.221	0.221	0.221	0.221	0.221
62	0.213	0.213	0.213	0.213	0.213	0.213
63	0.233	0.233	0.233	0.233	0.233	0.233
64	0.234	0.234	0.234	0.234	0.234	0.234
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 3% at age 50

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.095	0.048	0.053	0.093	0.134	0.175
51	0.016	0.032	0.053	0.085	0.117	0.149
52	0.013	0.032	0.054	0.087	0.120	0.154
53	0.085	0.044	0.049	0.089	0.129	0.170
54	0.038	0.065	0.074	0.105	0.136	0.167
55	0.042	0.043	0.049	0.085	0.132	0.215
56	0.133	0.103	0.075	0.113	0.151	0.209
57	0.062	0.048	0.060	0.124	0.172	0.213
58	0.124	0.097	0.092	0.153	0.194	0.227
59	0.092	0.071	0.078	0.144	0.192	0.233
60	0.056	0.044	0.061	0.131	0.186	0.233
61	0.282	0.219	0.158	0.198	0.233	0.260
62	0.292	0.227	0.164	0.205	0.241	0.269
63	0.196	0.196	0.196	0.196	0.196	0.196
64	0.197	0.197	0.197	0.197	0.197	0.197
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Public Agency Police 2% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.040	0.040	0.040	0.040	0.040	0.080
51	0.028	0.028	0.028	0.028	0.040	0.066
52	0.028	0.028	0.028	0.028	0.043	0.061
53	0.028	0.028	0.028	0.028	0.057	0.086
54	0.028	0.028	0.028	0.032	0.069	0.110
55	0.050	0.050	0.050	0.067	0.099	0.179
56	0.046	0.046	0.046	0.062	0.090	0.160
57	0.054	0.054	0.054	0.072	0.106	0.191
58	0.060	0.060	0.060	0.066	0.103	0.171
59	0.060	0.060	0.060	0.069	0.105	0.171
60	0.113	0.113	0.113	0.113	0.113	0.171
61	0.108	0.108	0.108	0.108	0.108	0.128
62	0.113	0.113	0.113	0.113	0.113	0.159
63	0.113	0.113	0.113	0.113	0.113	0.159
64	0.113	0.113	0.113	0.113	0.113	0.239
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 2% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.005	0.005	0.005	0.005	0.008	0.012
51	0.006	0.006	0.006	0.006	0.009	0.013
52	0.012	0.012	0.012	0.012	0.019	0.028
53	0.033	0.033	0.033	0.033	0.050	0.075
54	0.045	0.045	0.045	0.045	0.069	0.103
55	0.061	0.061	0.061	0.061	0.094	0.140
56	0.055	0.055	0.055	0.055	0.084	0.126
57	0.081	0.081	0.081	0.081	0.125	0.187
58	0.059	0.059	0.059	0.059	0.091	0.137
59	0.055	0.055	0.055	0.055	0.084	0.126
60	0.085	0.085	0.085	0.085	0.131	0.196
61	0.085	0.085	0.085	0.085	0.131	0.196
62	0.085	0.085	0.085	0.085	0.131	0.196
63	0.085	0.085	0.085	0.085	0.131	0.196
64	0.085	0.085	0.085	0.085	0.131	0.196
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Public Agency Police 2.5% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.050	0.050	0.050	0.050	0.050	0.100
51	0.038	0.038	0.038	0.038	0.055	0.089
52	0.038	0.038	0.038	0.038	0.058	0.082
53	0.036	0.036	0.036	0.036	0.073	0.111
54	0.036	0.036	0.036	0.041	0.088	0.142
55	0.061	0.061	0.061	0.082	0.120	0.217
56	0.056	0.056	0.056	0.075	0.110	0.194
57	0.060	0.060	0.060	0.080	0.118	0.213
58	0.072	0.072	0.072	0.079	0.124	0.205
59	0.072	0.072	0.072	0.083	0.126	0.205
60	0.135	0.135	0.135	0.135	0.135	0.205
61	0.130	0.130	0.130	0.130	0.130	0.153
62	0.135	0.135	0.135	0.135	0.135	0.191
63	0.135	0.135	0.135	0.135	0.135	0.191
64	0.135	0.135	0.135	0.135	0.135	0.287
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 2.5% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.007	0.007	0.007	0.007	0.010	0.015
51	0.008	0.008	0.008	0.008	0.012	0.018
52	0.016	0.016	0.016	0.016	0.025	0.038
53	0.042	0.042	0.042	0.042	0.064	0.096
54	0.057	0.057	0.057	0.057	0.088	0.132
55	0.074	0.074	0.074	0.074	0.114	0.170
56	0.066	0.066	0.066	0.066	0.102	0.153
57	0.090	0.090	0.090	0.090	0.139	0.208
58	0.071	0.071	0.071	0.071	0.110	0.164
59	0.066	0.066	0.066	0.066	0.101	0.151
60	0.102	0.102	0.102	0.102	0.157	0.235
61	0.102	0.102	0.102	0.102	0.157	0.236
62	0.102	0.102	0.102	0.102	0.157	0.236
63	0.102	0.102	0.102	0.102	0.157	0.236
64	0.102	0.102	0.102	0.102	0.157	0.236
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Public Agency Police 2.7% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.050	0.050	0.050	0.050	0.050	0.100
51	0.040	0.040	0.040	0.040	0.058	0.094
52	0.038	0.038	0.038	0.038	0.058	0.083
53	0.038	0.038	0.038	0.038	0.077	0.117
54	0.038	0.038	0.038	0.044	0.093	0.150
55	0.068	0.068	0.068	0.091	0.134	0.242
56	0.063	0.063	0.063	0.084	0.123	0.217
57	0.060	0.060	0.060	0.080	0.118	0.213
58	0.080	0.080	0.080	0.088	0.138	0.228
59	0.080	0.080	0.080	0.092	0.140	0.228
60	0.150	0.150	0.150	0.150	0.150	0.228
61	0.144	0.144	0.144	0.144	0.144	0.170
62	0.150	0.150	0.150	0.150	0.150	0.213
63	0.150	0.150	0.150	0.150	0.150	0.213
64	0.150	0.150	0.150	0.150	0.150	0.319
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 2.7% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.007	0.007	0.007	0.007	0.010	0.015
51	0.008	0.008	0.008	0.008	0.013	0.019
52	0.016	0.016	0.016	0.016	0.025	0.038
53	0.044	0.044	0.044	0.044	0.068	0.102
54	0.061	0.061	0.061	0.061	0.093	0.140
55	0.083	0.083	0.083	0.083	0.127	0.190
56	0.074	0.074	0.074	0.074	0.114	0.171
57	0.090	0.090	0.090	0.090	0.139	0.208
58	0.079	0.079	0.079	0.079	0.122	0.182
59	0.073	0.073	0.073	0.073	0.112	0.168
60	0.114	0.114	0.114	0.114	0.175	0.262
61	0.114	0.114	0.114	0.114	0.175	0.262
62	0.114	0.114	0.114	0.114	0.175	0.262
63	0.114	0.114	0.114	0.114	0.175	0.262
64	0.114	0.114	0.114	0.114	0.175	0.262
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Schools 2% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.003	0.004	0.006	0.007	0.010	0.010
51	0.004	0.005	0.007	0.008	0.011	0.011
52	0.005	0.007	0.008	0.009	0.012	0.012
53	0.007	0.008	0.010	0.012	0.015	0.015
54	0.006	0.009	0.012	0.015	0.020	0.021
55	0.011	0.023	0.034	0.057	0.070	0.090
56	0.012	0.027	0.036	0.056	0.073	0.095
57	0.016	0.027	0.036	0.055	0.068	0.087
58	0.019	0.030	0.040	0.062	0.078	0.103
59	0.023	0.034	0.046	0.070	0.085	0.109
60	0.022	0.043	0.062	0.095	0.113	0.141
61	0.030	0.051	0.071	0.103	0.124	0.154
62	0.065	0.098	0.128	0.188	0.216	0.248
63	0.075	0.112	0.144	0.197	0.222	0.268
64	0.091	0.116	0.138	0.180	0.196	0.231
65	0.163	0.164	0.197	0.232	0.250	0.271
66	0.208	0.204	0.243	0.282	0.301	0.315
67	0.189	0.185	0.221	0.257	0.274	0.287
68	0.127	0.158	0.200	0.227	0.241	0.244
69	0.168	0.162	0.189	0.217	0.229	0.238
70	0.191	0.190	0.237	0.250	0.246	0.254

Schools 2% at age 62

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.000	0.000	0.000	0.000	0.000	0.000
51	0.000	0.000	0.000	0.000	0.000	0.000
52	0.004	0.007	0.010	0.011	0.013	0.015
53	0.004	0.008	0.010	0.013	0.014	0.016
54	0.005	0.011	0.015	0.018	0.020	0.022
55	0.014	0.027	0.038	0.045	0.050	0.056
56	0.013	0.026	0.037	0.043	0.048	0.055
57	0.013	0.027	0.038	0.045	0.050	0.055
58	0.017	0.034	0.047	0.056	0.062	0.069
59	0.019	0.037	0.052	0.062	0.068	0.076
60	0.026	0.053	0.074	0.087	0.097	0.108
61	0.030	0.058	0.081	0.095	0.106	0.119
62	0.053	0.105	0.147	0.174	0.194	0.217
63	0.054	0.107	0.151	0.178	0.198	0.222
64	0.053	0.105	0.147	0.174	0.194	0.216
65	0.072	0.142	0.199	0.235	0.262	0.293
66	0.077	0.152	0.213	0.252	0.281	0.314
67	0.070	0.139	0.194	0.229	0.255	0.286
68	0.063	0.124	0.173	0.205	0.228	0.255
69	0.066	0.130	0.183	0.216	0.241	0.270
70	0.071	0.140	0.196	0.231	0.258	0.289

Miscellaneous

Models

The valuation results are based on proprietary actuarial valuation models. The models are centralized and maintained by a specialized team to achieve a high degree of accuracy and consistency. The Actuarial Office is responsible for confirming the appropriateness of the inputs (such as participant data, actuarial methods and assumptions, and plan provisions) as well as performing tests and validating the reasonableness of the output. The results of our models are independently confirmed by parallel valuations performed by outside actuaries on a periodic basis using their models. In our professional judgment, our actuarial valuation models produce comprehensive pension funding information consistent with the purposes of the valuation and have no material limitations or known weaknesses.

Internal Revenue Code Section 415(b)

The limitations on benefits imposed by Internal Revenue Code section 415(b) are taken into account in this valuation. Each year, the impact of any changes in this limitation other than assumed since the prior valuation is included and amortized as part of the non-investment gain or loss base. This results in lower contributions for those employers contributing to the Replacement Benefit Fund and protects CalPERS from prefunding expected benefits in excess of limits imposed by federal tax law. The Section 415(b) dollar limit for the 2024 calendar year is $275,000.

Internal Revenue Code Section 401(a)(17)

The limitations on compensation imposed by Internal Revenue Code section 401(a)(17) are taken into account in this valuation. Each year, the impact of any changes in the compensation limitation other than assumed since the prior valuation is included and amortized as part of the non-investment gain or loss base. The compensation limit for classic members for the 2024 calendar year is $345,000.

PEPRA Compensation Limits

The limitations on compensation for PEPRA members imposed by Government Code section 7522.10 are taken into account in this valuation. Each year, the impact of any changes in the compensation limitation other than assumed since the prior valuation is included and amortized as part of the non-investment gain or loss base. The PEPRA compensation limit for 2024 is $151,446 for members who participate in Social Security and $181,734 for those who do not. The limits are adjusted annually based on changes to the CPI for all urban consumers.

Appendix B - Principal Plan Provisions

The following is a description of the principal plan provisions used in calculating costs and liabilities. We have indicated whether a plan provision is standard or optional. Standard benefits are applicable to all members while optional benefits vary among employers. Optional benefits that apply to a single period of time, such as Golden Handshakes, have not been included. Many of the statements in this summary are general in nature, and are intended to provide an easily understood summary of the Public Employees' Retirement Law and the California Public Employees' Pension Reform Act of 2013. The law itself governs in all situations.

Service Retirement

Eligibility

A classic CalPERS member or PEPRA Safety member becomes eligible for Service Retirement upon attainment of age 50 with at least 5 years of credited service (total service across all CalPERS employers, and with certain other retirement systems with which CalPERS has reciprocity agreements). For employees hired into a plan with the 1.5% at age 65 formula, eligibility for service retirement is age 55 with at least 5 years of service. PEPRA Miscellaneous members become eligible for service retirement upon attainment of age 52 with at least 5 years of service.

Benefit

The service retirement benefit is a monthly allowance equal to the product of the *benefit factor*, *years of service*, and *final compensation.* The *benefit factor* depends on the benefit formula specified in the agency's contract. The table below shows the factors for each of the available formulas. Factors vary by the member's age at retirement. Listed are the factors for retirement at whole year ages:

Miscellaneous Plan Formulas

Retirement Age	1.5% at age 65	2% at age 60	2% at age 55	2.5% at age 55	2.7% at age 55	3% at age 60	PEPRA 2% at age 62
50	0.5000%	1.092%	1.426%	2.000%	2.000%	2.000%	N/A
51	0.5667%	1.156%	1.522%	2.100%	2.140%	2.100%	N/A
52	0.6334%	1.224%	1.628%	2.200%	2.280%	2.200%	1.000%
53	0.7000%	1.296%	1.742%	2.300%	2.420%	2.300%	1.100%
54	0.7667%	1.376%	1.866%	2.400%	2.560%	2.400%	1.200%
55	0.8334%	1.460%	2.000%	2.500%	2.700%	2.500%	1.300%
56	0.9000%	1.552%	2.052%	2.500%	2.700%	2.600%	1.400%
57	0.9667%	1.650%	2.104%	2.500%	2.700%	2.700%	1.500%
58	1.0334%	1.758%	2.156%	2.500%	2.700%	2.800%	1.600%
59	1.1000%	1.874%	2.210%	2.500%	2.700%	2.900%	1.700%
60	1.1667%	2.000%	2.262%	2.500%	2.700%	3.000%	1.800%
61	1.2334%	2.134%	2.314%	2.500%	2.700%	3.000%	1.900%
62	1.3000%	2.272%	2.366%	2.500%	2.700%	3.000%	2.000%
63	1.3667%	2.418%	2.418%	2.500%	2.700%	3.000%	2.100%
64	1.4334%	2.418%	2.418%	2.500%	2.700%	3.000%	2.200%
65	1.5000%	2.418%	2.418%	2.500%	2.700%	3.000%	2.300%
66	1.5000%	2.418%	2.418%	2.500%	2.700%	3.000%	2.400%
67 & up	1.5000%	2.418%	2.418%	2.500%	2.700%	3.000%	2.500%

Classic Safety Plan Formulas

Retirement Age	Half Pay at age 55*	2% at age 55	2% at age 50	3% at age 55	3% at age 50
50	1.783%	1.426%	2.000%	2.400%	3.000%
51	1.903%	1.522%	2.140%	2.520%	3.000%
52	2.035%	1.628%	2.280%	2.640%	3.000%
53	2.178%	1.742%	2.420%	2.760%	3.000%
54	2.333%	1.866%	2.560%	2.880%	3.000%
55 & Up	2.500%	2.000%	2.700%	3.000%	3.000%

* For this formula, the benefit factor also varies by entry age. The factors shown are for members with an entry age of 35 or greater. If entry age is less than 35, then the age 55 benefit factor is 50% divided by the difference between age 55 and entry age. The benefit factor for ages prior to age 55 is the same proportion of the age 55 benefit factor as in the above table.

PEPRA Safety Plan Formulas

Retirement Age	2% at age 57	2.5% at age 57	2.7% at age 57
50	1.426%	2.000%	2.000%
51	1.508%	2.071%	2.100%
52	1.590%	2.143%	2.200%
53	1.672%	2.214%	2.300%
54	1.754%	2.286%	2.400%
55	1.836%	2.357%	2.500%
56	1.918%	2.429%	2.600%
57 & Up	2.000%	2.500%	2.700%

- The *years of service* is the amount credited by CalPERS to a member while he or she is employed in this group (or for other periods that are recognized under the employer's contract with CalPERS). For a member who has earned service with multiple CalPERS employers, the benefit from each employer is calculated separately according to each employer's contract, and then added together for the total allowance. An agency may contract for an optional benefit where any unused sick leave accumulated at the time of retirement will be converted to credited service at a rate of 0.004 years of service for each day of sick leave.

- The *final compensation* is the monthly average of the member's highest 36 or 12 consecutive months' full-time equivalent monthly pay (no matter which CalPERS employer paid this compensation). The standard benefit is 36 months. Employers had the option of providing a final compensation equal to the highest 12 consecutive months for classic plans only. Final compensation must be defined by the highest 36 consecutive months' pay under the 1.5% at age 65 formula. PEPRA members have a limit on the annual compensation that can be used to calculate final compensation. The limits are adjusted annually based on changes to the CPI for all urban consumers.

- PEPRA benefit formulas have no Social Security offsets and Social Security coverage is optional. For Classic benefit formulas, employees must be covered by Social Security with the 1.5% at age 65 formula. Social Security is optional for all other Classic benefit formulas. For employees covered by Social Security, the modified formula is the standard benefit. Under this type of formula, the final compensation is offset by $133.33 (or by one third if the final compensation is less than $400). Employers may contract for the full benefit with Social Security that will eliminate the offset applicable to the final compensation. For employees not covered by Social Security, the full benefit is paid with no offsets. Auxiliary organizations of the CSUC system may elect reduced contribution rates, in which case the offset is $317 if members are not covered by Social Security or $513 if members are covered by Social Security.

- The Miscellaneous and PEPRA Safety service retirement benefit is not capped. The Classic Safety service retirement benefit is capped at 90% of final compensation.

Vested Deferred Retirement

Eligibility for Deferred Status

CalPERS members becomes eligible for a deferred vested retirement benefit when they leave employment, keep their contribution account balance on deposit with CalPERS, **and** have earned at least 5 years of credited service (total service across all CalPERS employers, and with certain other retirement systems with which CalPERS has reciprocity agreements).

Eligibility to Start Receiving Benefits

The CalPERS classic members and PEPRA Safety members become eligible to receive the deferred retirement benefit upon satisfying the eligibility requirements for deferred status and upon attainment of age 50 (55 for employees hired into a 1.5% at age 65 plan). PEPRA Miscellaneous members become eligible to receive the deferred retirement benefit upon satisfying the eligibility requirements for deferred status and upon attainment of age 52.

Benefit

The vested deferred retirement benefit is the same as the service retirement benefit, where the benefit factor is based on the member's age at allowance commencement. For members who have earned service with multiple CalPERS employers, the benefit from each employer is calculated separately according to each employer's contract, and then added together for the total allowance.

Non-Industrial Disability Retirement

Eligibility

A CalPERS member is eligible for Non-Industrial (non-job related) Disability Retirement if he or she becomes *disabled* and has at least 5 years of credited service (total service across all CalPERS employers, and with certain other retirement systems with which CalPERS has reciprocity agreements). There is no special age requirement. *Disabled* means the member is unable to perform their job because of an illness or injury, which is expected to be permanent or to last indefinitely. The illness or injury does not have to be job related. A CalPERS member must be actively employed by any CalPERS employer at the time of disability in order to be eligible for this benefit.

Standard Benefit

The standard Non-Industrial Disability Retirement benefit is a monthly allowance equal to 1.8% of final compensation, multiplied by *service*, which is determined as follows:

- *Service* is CalPERS credited service, for members with less than 10 years of service or greater than 18.518 years of service; or
- *Service* is CalPERS credited service plus the additional number of years that the member would have worked until age 60, for members with at least 10 years but not more than 18.518 years of service. The maximum benefit in this case is 33⅓% of final compensation.

Improved Benefit

Employers have the option of providing the improved Non-Industrial Disability Retirement benefit. This benefit provides a monthly allowance equal to 30% of final compensation for the first 5 years of service, plus 1% for each additional year of service to a maximum of 50% of final compensation.

Members who are eligible for a larger service retirement benefit may choose to receive that benefit in lieu of a disability benefit. Members eligible to retire, and who have attained the normal retirement age determined by their service retirement benefit formula, will receive the same dollar amount for disability retirement as that payable for service retirement. For members who have earned service with multiple CalPERS employers, the benefit attributed to each employer is the total disability allowance multiplied by the ratio of service with a particular employer to the total CalPERS service.

Industrial Disability Retirement

This is a standard benefit for Safety members except those described in Section 20423.6. For excluded Safety members and all Miscellaneous members, employers have the option of providing this benefit. An employer may choose to provide the increased benefit option or the improved benefit option.

Eligibility

An employee is eligible for Industrial (job related) Disability Retirement if he or she becomes disabled while working, where disabled means the member is unable to perform the duties of the job because of a work-related illness or injury, which is expected to be permanent or to last indefinitely. A CalPERS member who has left active employment within this group is not eligible for this benefit, except to the extent described below.

Standard Benefit

The standard Industrial Disability Retirement benefit is a monthly allowance equal to 50% of final compensation.

Increased Benefit (75% of Final Compensation)

The increased Industrial Disability Retirement benefit is a monthly allowance equal to 75% of final compensation for total disability.

Improved Benefit (50% to 90% of Final Compensation)

The improved Industrial Disability Retirement benefit is a monthly allowance equal to the Workman's Compensation Appeals Board permanent disability rate percentage (if 50% or greater, with a maximum of 90%) times the final compensation.

For a CalPERS member not actively employed in this group who became disabled while employed by some other CalPERS employer, the benefit is a return of accumulated member contributions with respect to employment in this group. With the standard or increased benefit, a member may also choose to receive the annuitization of the accumulated member contributions.

If a member is eligible for service retirement and if the service retirement benefit is more than the industrial disability retirement benefit, the member may choose to receive the larger benefit.

Post-Retirement Death Benefit

Standard Lump Sum Payment

Upon the death of a retiree, a one-time lump sum payment of $500 will be made to the retiree's designated survivor(s), or to the retiree's estate. The lump sum payment amount increases to $2,000 for any death occurring on or after July 1, 2023, due to SB 1168.

Optional Lump Sum Payment

In lieu of the standard lump sum death benefit, employers have the option of providing a lump sum death benefit of $600, $3,000, $4,000 or $5,000.

Form of Payment for Retirement Allowance

Standard Form of Payment

Generally, the retirement allowance is paid to the retiree in the form of an annuity for as long as he or she is alive. The retiree may choose to provide for a portion of their allowance to be paid to any designated beneficiary after the retiree's death. CalPERS provides for a variety of such benefit options, which the retiree pays for by taking a reduction in their retirement allowance. Such reduction takes into account the amount to be provided to the beneficiary and the probable duration of payments (based on the ages of the member and beneficiary) made subsequent to the member's death.

Improved Form of Payment (Post-Retirement Survivor Allowance)

Employers have the option to contract for the post-retirement survivor allowance.

For retirement allowances with respect to service subject to a modified Classic formula, 25% of the retirement allowance will automatically be continued to certain statutory beneficiaries upon the death of the retiree, without a reduction in the retiree's allowance. For retirement allowances with respect to service subject to a PEPRA formula or a full or supplemental Classic formula, 50% of the retirement allowance will automatically be continued to certain statutory beneficiaries upon the death of the retiree, without a reduction in the retiree's allowance. This additional benefit is referred to as post-retirement survivor allowance (PRSA) or simply as survivor continuance.

In other words, 25% or 50% of the allowance, the continuance portion, is paid to the retiree for as long as he or she is alive, and that same amount is continued to the retiree's spouse (or if no eligible spouse, to unmarried child(ren) until they attain age 18; or, if no eligible child(ren), to a qualifying dependent parent) for the rest of their lifetime. This benefit will not be discontinued in the event the spouse remarries.

The remaining 75% or 50% of the retirement allowance, which may be referred to as the option portion of the benefit, is paid to the retiree as an annuity for as long as he or she is alive. Or, the retiree may choose to provide for some of this option portion to be paid to any designated beneficiary after the retiree's death. Benefit options applicable to the option portion are the same as those offered with the standard form. The reduction is calculated in the same manner but is applied only to the option portion.

Pre-Retirement Death Benefits

Basic Death Benefit

This is a standard benefit.

Eligibility

An employee's beneficiary (or estate) may receive the basic death benefit if the member dies while actively employed. A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this basic death benefit.

Benefit

The basic death benefit is a lump sum in the amount of the member's accumulated contributions, where interest is credited annually at the greater of 6% or the prevailing discount rate through the date of death, plus a lump sum in the amount of one month's salary for each completed year of current service, up to a maximum of six months' salary. For purposes of this benefit, one month's salary is defined as the member's average monthly full-time rate of compensation during the 12 months preceding death.

1957 Survivor Benefit

This is a standard benefit.

Eligibility

An employee's *eligible survivor(s)* may receive the 1957 Survivor benefit if the member dies while actively employed, has attained at least age 50 for classic and PEPRA Safety members and age 52 for PEPRA Miscellaneous members, and has at least 5 years of credited service (total service across all CalPERS employers and with certain other retirement systems with which CalPERS has reciprocity agreements). A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. An eligible survivor means the surviving spouse to whom the member was married at least one year before death or, if there is no eligible spouse, to the member's unmarried child(ren) under age 18. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this 1957 Survivor benefit.

Benefit

The 1957 Survivor benefit is a monthly allowance equal to one-half of the unmodified service retirement benefit that the member would have been entitled to receive if the member had retired on the date of their death. If the benefit is payable to the spouse, the benefit is discontinued upon the death of the spouse. If the benefit is payable to dependent child(ren), the benefit will be discontinued upon death or attainment of age 18, unless the child(ren) is disabled. The total amount paid will be at least equal to the basic death benefit.

Optional Settlement 2 Death Benefit

This is an optional benefit.

Eligibility

An employee's *eligible survivor* may receive the Optional Settlement 2 Death benefit if the member dies while actively employed, has attained at least age 50 for classic and PEPRA Safety members and age 52 for PEPRA Miscellaneous members, and has at least 5 years of credited service (total service across all CalPERS employers and with certain other retirement systems with which CalPERS has reciprocity agreements). A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married at least one year before death. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this Optional Settlement 2 Death benefit.

Benefit

The Optional Settlement 2 Death benefit is a monthly allowance equal to the service retirement benefit that the member would have received had the member retired on the date of their death and elected 100% to continue to the eligible survivor after the member's death. The allowance is payable to the surviving spouse until death, at which time it is continued to any unmarried child(ren), if applicable. The total amount paid will be at least equal to the basic death benefit.

Special Death Benefit

This is a standard benefit for Safety members except those described in Section 20423.6. For excluded Safety members and all Miscellaneous members, employers have the option of providing this benefit.

Eligibility

An employee's *eligible survivor(s)* may receive the special death benefit if the member dies while actively employed and the death is job-related. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married prior to the onset of the injury or illness that resulted in death. If there is no eligible spouse, an eligible survivor means the member's unmarried child(ren) under age 22. An eligible survivor who chooses to receive this benefit will not receive any other death benefit.

Benefit

The special death benefit is a monthly allowance equal to 50% of final compensation and will be increased whenever the compensation paid to active employees is increased but ceasing to increase when the member would have attained age 50. The allowance is payable to the surviving spouse until death, at which time the allowance is continued to any unmarried child(ren) under age 22. There is a guarantee that the total amount paid will at least equal the basic death benefit.

If the member's death is the result of an accident or injury caused by external violence or physical force incurred in the performance of the member's duty, and there are *eligible* surviving child(ren) (*eligible* means unmarried child(ren) under age 22) in addition to an eligible spouse, then an **additional monthly allowance** is paid equal to the following:

- if 1 eligible child: 12.5% of final compensation
- if 2 eligible children: 20.0% of final compensation
- if 3 or more eligible children: 25.0% of final compensation

Alternate Death Benefit for Local Fire Members

This is an optional benefit available only to local fire members.

Eligibility

An employee's *eligible survivor(s)* may receive the alternate death benefit in lieu of the basic death benefit or the 1957 Survivor benefit if the member dies while actively employed and has at least 20 years of total CalPERS service. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married prior to the onset of the injury or illness that resulted in death. If there is no eligible spouse, an eligible survivor means the member's unmarried child(ren) under age 18.

Benefit

The Alternate Death benefit is a monthly allowance equal to the service retirement benefit that the member would have received had the member retired on the date of their death and elected Optional Settlement 2. (A retiree who elects Optional Settlement 2 receives an allowance that has been reduced so that it will continue to be paid after their death to a surviving beneficiary.) If the member has not yet attained age 50, the benefit is equal to that which would be payable if the member had retired at age 50, based on service credited at the time of death. The allowance is payable to the surviving spouse until death, at which time it is continued to any unmarried child(ren), if applicable. The total amount paid will be at least equal to the basic death benefit.

Cost-of-Living Adjustments (COLA)

Standard Benefit

Retirement and survivor allowances are adjusted each year in May for cost of living, beginning the second calendar year after the year of retirement. The standard cost-of-living adjustment (COLA) is 2%. Annual adjustments are calculated by first determining the lesser of 1) 2% compounded from the end of the year of retirement or 2) actual rate of price inflation. The resulting increase is divided by the total increase provided in prior years. For any given year, the COLA adjustment may be less than 2% (when the rate of price inflation is low), may be greater than the rate of price inflation (when the rate of price inflation is low after several years of high price inflation) or may even be greater than 2% (when price inflation is high after several years of low price inflation).

Improved Benefit

Employers have the option of providing a COLA of 3%, 4%, or 5%, determined in the same manner as described above for the standard 2% COLA. An improved COLA is not available with the 1.5% at age 65 formula.

Purchasing Power Protection Allowance (PPPA)

Retirement and survivor allowances are protected against price inflation by PPPA. PPPA benefits are cost-of-living adjustments that are intended to maintain an individual's allowance at 80% of the initial allowance at retirement adjusted for price inflation since retirement. The PPPA benefit will be coordinated with other cost-of-living adjustments provided under the plan.

Employee Contributions

Each employee contributes toward their retirement based upon the retirement formula. The standard employee contribution is as described below.

- The percent contributed below the monthly compensation breakpoint is 0%.
- The monthly compensation breakpoint is $0 for all PEPRA members and Classic members covered by a full or supplemental formula and $133.33 for Classic members covered by a modified formula.
- The percent contributed above the monthly compensation breakpoint depends upon the benefit formula, as shown in the table below.

Benefit Formula	Percent Contributed above the Breakpoint
Miscellaneous, 1.5% at age 65	2%
Miscellaneous, 2% at age 60	7%
Miscellaneous, 2% at age 55	7%
Miscellaneous, 2.5% at age 55	8%
Miscellaneous, 2.7% at age 55	8%
Miscellaneous, 3% at age 60	8%
Miscellaneous, 2% at age 62	50% of the Total Normal Cost
Miscellaneous, 1.5% at age 65	50% of the Total Normal Cost
Safety, Half Pay at age 55	Varies by entry age
Safety, 2% at age 55	7%
Safety, 2% at age 50	9%
Safety, 3% at age 55	9%
Safety, 3% at age 50	9%
Safety, 2% at age 57	50% of the Total Normal Cost
Safety, 2.5% at age 57	50% of the Total Normal Cost
Safety, 2.7% at age 57	50% of the Total Normal Cost

The employer may choose to “pick-up” these contributions for classic members (Employer Paid Member Contributions or EPMC). EPMC is prohibited for new PEPRA members.

An employer may also include Employee Cost Sharing in the contract, where employees agree to share the cost of the employer contribution. These contributions are paid in addition to the member contribution.

Auxiliary organizations of the CSU system may elect reduced contribution rates, in which case the offset is $317 and the contribution rate is 6% if members are not covered by Social Security. If members are covered by Social Security, the offset is $513 and the contribution rate is 5%.

Refund of Employee Contributions

If the member’s service with the employer ends, and if the member does not satisfy the eligibility conditions for any of the retirement benefits above, the member may elect to receive a refund of their employee contributions, which are credited with 6% interest compounded annually.

1959 Survivor Benefit

This is a pre-retirement death benefit available only to members not covered by Social Security. Any agency joining CalPERS subsequent to 1993 is required to provide this benefit if the members are not covered by Social Security. The benefit is optional for agencies joining CalPERS prior to 1994. Levels 1, 2, and 3 are now closed. Any new agency or any agency wishing to add this benefit or increase the current level may only choose the 4th or Indexed Level.

This benefit is not included in the results presented in this valuation. More information on this benefit is available on the CalPERS website.

Appendix C - Participant Data

Active Members

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.

Distribution of Active Members by Age and Service

	Years of Service at Valuation Date						
Attained Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25+**	**Total**
15-24	14	0	0	0	0	0	14
25-29	36	4	0	0	0	0	40
30-34	18	8	0	0	0	0	26
35-39	18	14	6	0	0	0	38
40-44	18	12	0	3	1	0	34
45-49	13	6	4	3	8	2	36
50-54	10	3	0	2	6	8	29
55-59	5	8	2	5	5	12	37
60-64	3	3	1	5	6	7	25
65 and Over	2	1	1	2	2	2	10
All Ages	**137**	**59**	**14**	**20**	**28**	**31**	**289**

Distribution of Average Annual Salaries by Age and Service

	Years of Service at Valuation Date						
Attained Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25+**	**Average Salary**
15-24	$60,619	$0	$0	$0	$0	$0	$60,619
25-29	59,995	57,770	0	0	0	0	59,773
30-34	63,267	66,967	0	0	0	0	64,406
35-39	70,771	87,660	65,491	0	0	0	76,160
40-44	88,597	85,103	0	62,389	80,271	0	84,807
45-49	95,072	70,105	142,492	143,448	73,659	63,359	93,691
50-54	74,002	86,945	0	68,062	80,036	107,794	85,501
55-59	54,677	62,337	42,773	92,249	70,406	77,105	70,166
60-64	28,821	147,279	34,320	105,105	88,875	109,050	95,390
65 and Over	63,248	129,704	49,030	106,213	75,642	96,607	86,215
Average	**$69,184**	**$80,796**	**$80,844**	**$97,642**	**$78,083**	**$92,609**	**$77,464**

Transferred and Separated Members

Distribution of Transfers to Other CalPERS Plans by Age, Service, and average Salary

	Years of Service at Valuation Date							
Attained Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25+**	**Total**	**Average Salary**
15-24	10	0	0	0	0	0	10	$84,624
25-29	14	1	0	0	0	0	15	88,523
30-34	31	4	0	0	0	0	35	98,770
35-39	27	4	0	0	0	0	31	83,368
40-44	37	7	2	0	0	0	46	106,842
45-49	21	6	2	0	0	0	29	132,280
50-54	18	6	1	1	0	0	26	129,520
55-59	8	6	4	0	0	0	18	108,476
60-64	8	1	0	1	0	0	10	106,506
65 and Over	4	0	0	0	0	0	4	78,393
All Ages	**178**	**35**	**9**	**2**	**0**	**0**	**224**	**$105,647**

Distribution of Separated Participants with Funds on Deposit by Age, Service, and average Salary

	Years of Service at Valuation Date							
Attained Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25+**	**Total**	**Average Salary**
15-24	5	0	0	0	0	0	5	$52,795
25-29	24	0	0	0	0	0	24	59,129
30-34	26	3	0	0	0	0	29	56,450
35-39	39	3	1	0	0	0	43	57,817
40-44	28	3	1	0	1	0	33	54,956
45-49	18	6	2	0	0	0	26	67,375
50-54	30	5	1	0	1	1	38	49,464
55-59	22	3	0	0	0	0	25	52,083
60-64	15	4	0	0	1	0	20	42,216
65 and Over	18	3	0	1	0	0	22	44,419
All Ages	**225**	**30**	**5**	**1**	**3**	**1**	**265**	**$54,245**

Retired Members and Beneficiaries

Distribution of Retirees and Beneficiaries by Age and Retirement Type*

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 30	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0
35-39	0	0	1	0	0	0	1
40-44	0	1	1	0	0	0	2
45-49	0	2	2	0	0	2	6
50-54	14	2	4	0	0	3	23
55-59	32	3	4	0	0	2	41
60-64	82	3	5	0	0	3	93
65-69	91	1	1	1	0	5	99
70-74	99	7	7	1	0	12	126
75-79	68	3	3	1	0	5	80
80-84	45	2	0	0	0	5	52
85 and Over	34	0	0	1	0	17	52
All Ages	**465**	**24**	**28**	**4**	**0**	**54**	**575**

Distribution of Average Annual Disbursements to Retirees and Beneficiaries by Age and Retirement Type*

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Average
Under 30	$0	$0	$0	$0	$0	$0	$0
30-34	0	0	0	0	0	0	0
35-39	0	0	158	0	0	0	158
40-44	0	6,141	790	0	0	0	3,466
45-49	0	15,886	251	0	0	15,427	10,521
50-54	5,088	15,194	3,274	0	0	18,379	7,385
55-59	11,895	30,961	2,780	0	0	10,396	12,328
60-64	28,901	14,658	7,134	0	0	7,141	26,569
65-69	33,627	17,589	329	9,405	0	17,064	32,048
70-74	30,814	24,704	7,780	33,484	0	13,494	27,566
75-79	25,919	21,933	2,064	12,940	0	5,551	23,440
80-84	34,784	27,615	0	0	0	28,165	33,872
85 and Over	21,400	0	0	11,445	0	16,043	19,457
All Ages	**$27,931**	**$21,530**	**$4,368**	**$16,819**	**$0**	**$15,125**	**$25,236**

* Counts of members do not include alternate payees receiving benefits while the member is still working. Therefore, the total counts may not match information on C-1 of the report. Multiple records may exist for those who have service in more than one coverage group. This does not result in double counting of liabilities.

Retired Members and Beneficiaries (continued)

Distribution of Retirees and Beneficiaries by Years Retired and Retirement Type*

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 5 Yrs	104	4	5	0	0	19	132
5-9	113	3	8	0	0	14	138
10-14	108	0	1	1	0	9	119
15-19	71	1	5	0	0	5	82
20-24	36	7	3	1	0	2	49
25-29	18	3	3	1	0	1	26
30 and Over	15	6	3	1	0	4	29
All Years	**465**	**24**	**28**	**4**	**0**	**54**	**575**

Distribution of Average Annual Disbursements to Retirees and Beneficiaries by Years Retired and Retirement Type*

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Average
Under 5 Yrs	$28,174	$11,460	$3,142	$0	$0	$18,138	$25,275
5-9	32,603	31,215	5,079	0	0	16,575	29,351
10-14	25,104	0	14,872	33,484	0	10,830	24,009
15-19	29,585	19,626	8,017	0	0	20,267	27,580
20-24	23,464	22,023	3,185	9,405	0	8,343	21,113
25-29	20,245	34,122	308	12,940	0	2,926	18,599
30 and Over	23,520	16,845	178	11,445	0	5,419	16,811
All Years	**$27,931**	**$21,530**	**$4,368**	**$16,819**	**$0**	**$15,125**	**$25,236**

* Counts of members do not include alternate payees receiving benefits while the member is still working. Therefore, the total counts may not match information on C-1 of the report. Multiple records may exist for those who have service in more than one coverage group. This does not result in double counting of liabilities .

Appendix D - Glossary

Glossary

Accrued Liability (Actuarial Accrued Liability)
The portion of the Present Value of Benefits allocated to prior years. It can also be expressed as the Present Value of Benefits minus the present value of future Normal Cost. Different actuarial cost methods and different assumptions will lead to different measures of Accrued Liability.

Actuarial Assumptions
Assumptions made about certain events that will affect pension costs. Assumptions generally can be broken down into two categories: demographic and economic. Demographic assumptions include such things as mortality, disability, and retirement rates. Economic assumptions include discount rate, wage inflation, and price inflation.

Actuarial Methods
Procedures employed by actuaries to achieve certain funding goals of a pension plan. Actuarial methods include an actuarial cost method, an amortization policy, and an asset valuation method.

Actuarial Valuation
The determination as of a valuation date of the Normal Cost, Accrued Liability, and related actuarial present values for a pension plan. These valuations are performed annually or when an employer is contemplating a change in plan provisions.

Actuary
A business professional proficient in mathematics and statistics who measures and manages risk. A public retirement system actuary in California performs actuarial valuations necessary to properly fund a pension plan and disclose its liabilities and must satisfy the qualification standards for actuaries issuing statements of actuarial opinion in the United States with regard to pensions.

Amortization Bases
Separate payment schedules for different portions of the Unfunded Accrued Liability (UAL). The total UAL of a rate plan can be segregated by cause. The impact of such individual causes on the UAL are quantified at the time of their occurrence, resulting in new amortization bases. Each base is separately amortized and paid for over a specific period of time. Generally, in an actuarial valuation, the separate bases consist of changes in UAL due to contract amendments, actuarial assumption changes, method changes, and/or experience gains and losses.

Amortization Period
The number of years required to pay off an Amortization Base.

Classic Member (under PEPRA)
A member who joined a public retirement system prior to January 1, 2013, and who is not defined as a new member under PEPRA. (See definition of New Member below.)

Discount Rate
The rate used to discount the expected future benefit payments to the valuation date to determine the Projected Value of Benefits. Different discount rates will produce different measures of the Projected Value of Benefits. The discount rate for funding purposes is based on the assumed long-term rate of return on plan assets, net of investment and administrative expenses. This rate is called the “actuarial interest rate” in Section 20014 of the California Public Employees’ Retirement Law.

Entry Age
The earliest age at which a plan member begins to accrue benefits under a defined benefit pension plan. In most cases, this is the age of the member on their date of hire.

Entry Age Actuarial Cost Method
An actuarial cost method that allocates the cost of the projected benefits on an individual basis as a level percent of earnings for the individual between entry age and retirement age. This method yields a total normal cost rate, expressed as a percentage of payroll, which is designed to remain level throughout the member’s career.

Fresh Start
A Fresh Start is when multiple amortization bases are combined into a single base and amortized over a new Amortization Period.

Glossary (continued)

Funded Ratio
Defined as the Market Value of Assets divided by the Accrued Liability. Different actuarial cost methods and different assumptions will lead to different measures of Funded Ratio. The Funded Ratio with the Accrued Liability equal to the funding target is a measure of how well funded a rate plan is. A ratio greater than 100% means the rate plan has more assets than the funding target and the employer need only contribute the Normal Cost. A ratio less than 100% means assets are less than the funding target and contributions in addition to Normal Cost are required.

Funded Status
Any comparison of a particular measure of plan assets to a particular measure of pension obligations. The methods and assumptions used to calculate a funded status should be consistent with the purpose of the measurement.

Funding Target
The Accrued Liability measure upon which the funding requirements are based. The funding target is the Accrued Liability under the Entry Age Actuarial Cost Method using the assumptions adopted by the board.

GASB 68
Statement No. 68 of the Governmental Accounting Standards Board; the accounting standard governing a state or local governmental employer's accounting and financial reporting for pensions.

New Member (under PEPRA)
A new member includes an individual who becomes a member of a public retirement system for the first time on or after January 1, 2013, and who was not a member of another public retirement system prior to that date, and who is not subject to reciprocity with another public retirement system.

Normal Cost
The portion of the Present Value of Benefits allocated to the upcoming fiscal year for active employees. Different actuarial cost methods and different assumptions will lead to different measures of Normal Cost. The Normal Cost under the Entry Age Actuarial Cost Method, using the assumptions adopted by the board, plus the required amortization of the UAL, if any, make up the required contributions.

PEPRA
The California Public Employees' Pension Reform Act of 2013.

Present Value of Benefits (PVB)
The total dollars needed as of the valuation date to fund all benefits earned in the past or expected to be earned in the future for *current* members.

Traditional Unit Credit Actuarial Cost Method
An actuarial cost method that sets the Accrued Liability equal to the Present Value of Benefits as suming no future pay increases or service accruals. The Traditional Unit Credit Cost Method is used to measure the accrued liability on a termination basis.

Unfunded Accrued Liability (UAL)
The Accrued Liability minus the Market Value of Assets. If the UAL for a rate plan is positive, the employer is required to make contributions in excess of the Normal Cost.

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 2025

Safety Plan of the City of Redondo Beach (CalPERS ID: 5681155915)
Annual Valuation Report as of June 30, 2024

Dear Employer,

Attached to this letter is the June 30, 2024, actuarial valuation report for the plan noted above. **Provided in this report is the determination of the minimum required employer contributions for fiscal year (FY) 2026-27.** 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.

Required Contributions

The table below shows the minimum required employer contributions and the PEPRA member contribution rates for FY 2026-27 along with an estimate of the employer contribution requirements for FY 2027-28. **The required employer and member contributions in this report do not reflect any cost sharing arrangement between the agency and the employees.**

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability	PEPRA Member Contribution Rate
2026-27	21.71%	$3,469,892	13.50%
Projected Results			
2027-28	*21.0%*	*$3,957,000*	*TBD*

The actual investment return for FY 2024-25 was not known at the time this report was prepared. The projection UAL payment above assumes the investment return for that year would be 6.8%. To the extent the actual investment return for FY 2024-25 differs from 6.8%, the actual UAL contribution requirement for FY 2027-28 will differ from that shown above. For additional information on future contribution requirements, please refer to Projected Employer Contributions. This section also contains projected required contributions through FY 2031-32.

PEPRA Member Contribution Rate

The employee contribution rate for PEPRA members can change based on the results of the actuarial valuation. See Member Contribution Rates for more information.

Report Navigation Features

The valuation report has a number of features to ease navigation and allow the reader to find specific information more quickly. The tables of contents are "clickable." This is true for the main table of contents that follows the title page and the intermediate tables of contents at the beginning of sections. The Adobe navigation pane on the left can also be used to skip to specific exhibits.

There are a number of links throughout the document in blue text. Links that are internal to the document are not underlined, while underlined links will take you to the CalPERS website. Examples are shown below.

Internal Bookmarks	CalPERS Website Links
Required Employer Contributions	Required Employer Contribution Search Tool
Member Contribution Rates	Public Agency PEPRA Member Contribution Rates
Summary of Key Valuation Results	Pension Outlook Overview
Funded Status – Funding Policy Basis	Interactive Summary of Public Agency Valuation Results
Projected Employer Contributions	Public Agency Actuarial Valuation Reports

Further descriptions of general changes are included in the Highlights and Executive Summary section and in Appendix A - Actuarial Methods and Assumptions. The effects of any changes on the required contributions are included in the Reconciliation of Required Employer Contributions section.

Questions

A CalPERS actuary is available to answer questions about this report. Other questions may be directed to the Customer Contact Center at **888 CalPERS** (or **888**-225-7377).

Sincerely,

Paul Tschida, FSA, EA, MAAA
Senior Actuary, CalPERS

Randall Dziubek, ASA, MAAA
Deputy Chief Actuary, Valuation Services, CalPERS

Scott Terando, ASA, EA, MAAA, FCA, CFA
Chief Actuary, CalPERS

California Public Employees' Retirement System

Actuarial Valuation for the Safety Plan of the City of Redondo Beach

as of June 30, 2024

(CalPERS ID: 5681155915)
(Rate Plan ID: 222)

Required Contributions for Fiscal Year

July 1, 2026 — June 30, 2027

CalPERS

Table of Contents

Actuarial Certification

It is our opinion that the valuation has been performed in accordance with generally accepted actuarial principles as well as the applicable Standards of Practice promulgated by the Actuarial Standards Board. While this report is intended to be complete, our office is available to answer questions as needed. All of the undersigned are actuaries who satisfy the *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* of the American Academy of Actuaries with regard to pensions.

Actuarial Methods and Assumptions

It is our opinion that the assumptions and methods, as recommended by the Chief Actuary and adopted by the CalPERS Board of Administration, are internally consistent and reasonable for this plan.

Randall Dziubek, ASA, MAAA
Deputy Chief Actuary, Valuation Services, CalPERS

Scott Terando, ASA, EA, MAAA, FCA, CFA
Chief Actuary, CalPERS

Actuarial Data and Rate Plan Results

To the best of my knowledge and having relied upon the attestation above that the actuarial methods and assumptions are reasonable, this report is complete and accurate and contains sufficient information to disclose, fully and fairly, the funded condition of the Safety Plan of the City of Redondo Beach and satisfies the actuarial valuation requirements of Government Code section 7504. This valuation and related validation work was performed by the CalPERS Actuarial Office. The valuation was based on the member and financial data as of June 30, 2024, provided by the various CalPERS databases and the benefits under this plan with CalPERS as of the date this report was produced.

Paul Tschida, FSA, EA, MAAA
Senior Actuary, CalPERS

Highlights and Executive Summary

Introduction

This report presents the results of the June 30, 2024, actuarial valuation of the Safety Plan of the City of Redondo Beach of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the minimum required contributions for fiscal year (FY) 2026-27.

Purpose

This report documents the results of the actuarial valuation prepared by the CalPERS Actuarial Office using data as of June 30, 2024. This report contains actuarial information for the following rate plan(s).

- 222, Safety Fire First Level
- 30316, Safety Police First Level
- 30317, Safety Fire Second Level
- 30318, Safety Police Second Level
- 25192, Safety Fire PEPRA Level
- 25193, Safety Police PEPRA Level

The purpose of the valuation is to:

- Set forth the assets and accrued liabilities of this rate plan as of June 30, 2024;
- Determine the minimum required employer contributions for this rate plan for FY July 1, 2026, through June 30, 2027;
- Determine the required member contribution rate for FY July 1, 2026, through June 30, 2027, for employees subject to the California Public Employees' Pension Reform Act of 2013 (PEPRA); and
- Provide actuarial information as of June 30, 2024, to the CalPERS Board of Administration (board) 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 an Agent Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on the CalPERS website (www.calpers.ca.gov).

The measurements shown in this actuarial valuation may not be applicable for other purposes. The agency should contact a CalPERS 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; changes in plan provisions or applicable law; and differences between the required contributions determined by the valuation and the actual contributions made by the agency.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the guidance of the Actuarial Standards of Practice:

- 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 5.8% and 7.8%.
- 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 2021.
- Plan maturity measures indicating how sensitive a plan may be to the risks noted above.
- The funded status on a termination basis.
- A low-default-risk obligation measure (LDROM) of benefit costs accrued as of the valuation date.

Summary of Key Valuation Results

Below is a brief summary of key valuation results along with page references where more detailed information can be found.

Required Employer Contributions — page 13

	Fiscal Year 2025-26	Fiscal Year 2026-27
Employer Normal Cost Rate	22.78%	21.71%
Unfunded Accrued Liability (UAL) Contribution Amount	$2,650,254	$3,469,892
Paid either as		
Option 1) 12 Monthly Payments of	$220,855	$289,158
Option 2) Annual Prepayment in July	$2,564,495	$3,357,611

Member Contribution Rates — page 14

	Fiscal Year 2025-26	Fiscal Year 2026-27
Classic Member Contribution Rate	9.00%	9.00%
PEPRA Member Contribution Rate	13.50%	13.50%

Projected Employer Contributions — page 17

Fiscal Year	Normal Cost (% of payroll)	Annual UAL Payment
2027-28	21.0%	$3,957,000
2028-29	20.3%	$4,445,000
2029-30	19.8%	$4,241,000
2030-31	19.2%	$3,985,000
2031-32	18.7%	$3,985,000

Funded Status – Funding Policy Basis — page 15

	June 30, 2023	June 30, 2024
Entry Age Accrued Liability (AL)	$448,492,891	$462,174,101
Market Value of Assets (MVA)	403,227,883	420,745,810
Unfunded Accrued Liability (UAL) [AL – MVA]	$45,265,009	$41,428,291
Funded Ratio [MVA ÷ AL]	89.9%	91.0%

Summary of Valuation Data — page 33

	June 30, 2023	June 30, 2024
Active Member Count	140	153
Annual Covered Payroll	$19,248,215	$21,326,474
Transferred Member Count	29	30
Separated Member Count	42	45
Retired Members and Beneficiaries Count	333	337

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. For rate plans that are not in a risk pool (non-pooled), benefit changes by contract amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the effective date of the amendment is after the valuation date.

Please refer to the Plan's Major Benefit Options and Appendix B - Principal Plan Provisions for a summary of the plan provisions used in this valuation. The effect of any mandated benefit changes or plan amendments on the unfunded liability is shown in the (Gain)/Loss Analysis 6/30/23 – 6/30/24 and the effect on the employer contribution is shown in the Reconciliation of Required Employer Contributions. It should be noted that no change in liability or contribution is shown for any plan changes which were already included in the prior year's valuation.

Board Policy

On April 16, 2024, the board took action to modify the Funding Risk Mitigation Policy to remove the automatic change to the discount rate when the investment return exceeds various thresholds. Rather than an automatic change to the discount rate, a board discussion would be placed on the calendar. The 95th percentile return in the Future Investment Return Scenarios exhibit in this report, which includes returns high enough to trigger a board discussion, does not reflect any change in the discount rate.

Actuarial Methods and Assumptions

There are no significant changes to the actuarial methods or assumptions for the June 30, 2024, actuarial valuation.

Subsequent Events

This actuarial valuation report reflects fund investment return through June 30, 2024, as well as statutory changes, regulatory changes and board actions through January 2025.

CalPERS will be completing an Asset Liability Management (ALM) review process in November 2025 that will review the capital market assumptions and the CalPERS Total Fund Investment Policy and ascertain whether a change in the discount is warranted. In addition, the Actuarial Office will be presenting the findings of its Experience Study which reviews economic assumptions other than the discount rate as well as all demographic assumptions and makes recommendations to modify actuarial assumptions where appropriate. Any changes in actuarial assumptions will be reflected in the June 30, 2025, actuarial valuations.

The 2024 annual benefit limit under Internal Revenue Code (IRC) section 415(b) and annual compensation limits under IRC section 401(a)(17) and Government Code section 7522.10 were used for this valuation and are assumed to increase 2.3% per year based on the price inflation assumption. The actual 2025 limits, determined in October 2024, are not reflected.

To the best of our knowledge, there have been no other subsequent events that could materially affect current or future certifications rendered in this report.

Assets

Reconciliation of the Market Value of Assets

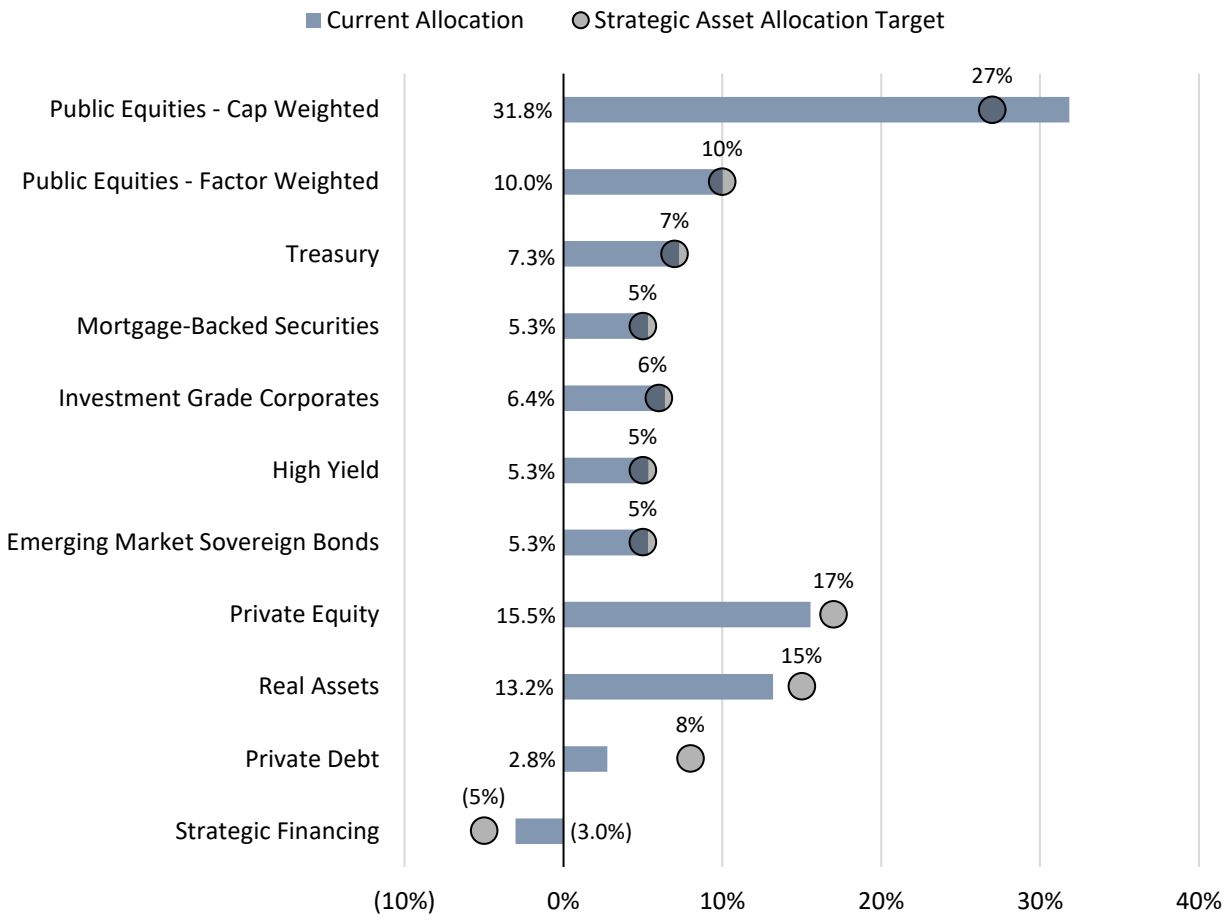
1.	Market Value of Assets as of 6/30/23 including Receivables	$403,227,883
2.	Change in Receivables for Service Buybacks	(37,644)
3.	Employer Contributions	4,975,968
4.	Employee Contributions	2,290,514
5.	Benefit Payments to Retirees and Beneficiaries	(26,931,468)
6.	Refunds	(12,892)
7.	Transfers	(1,527)
8.	Service Credit Purchase (SCP) Payments and Interest	41,323
9.	Administrative Expenses	(294,015)
10.	Miscellaneous Adjustments	0
11.	Investment Return (Net of Investment Expenses)	37,487,667
12.	Market Value of Assets as of 6/30/24 including Receivables	$420,745,810

Asset Allocation

CalPERS adheres to an Asset Allocation Strategy which establishes asset class allocation policy targets and ranges and manages those asset class allocations within their policy ranges. CalPERS Investment Belief No. 6 recognizes that strategic asset allocation is the dominant determinant of portfolio risk and return.

The asset allocation shown below reflects the allocation of the Public Employees' Retirement Fund (PERF) in its entirety. The assets for City of Redondo Beach Safety Plan are a subset of the PERF and are invested accordingly.

On March 20, 2024, the board adopted changes to the strategic asset allocation. The new allocation was effective July 1, 2024. The asset allocation as of June 30, 2024, is shown below, along with the strategic asset allocation targets.

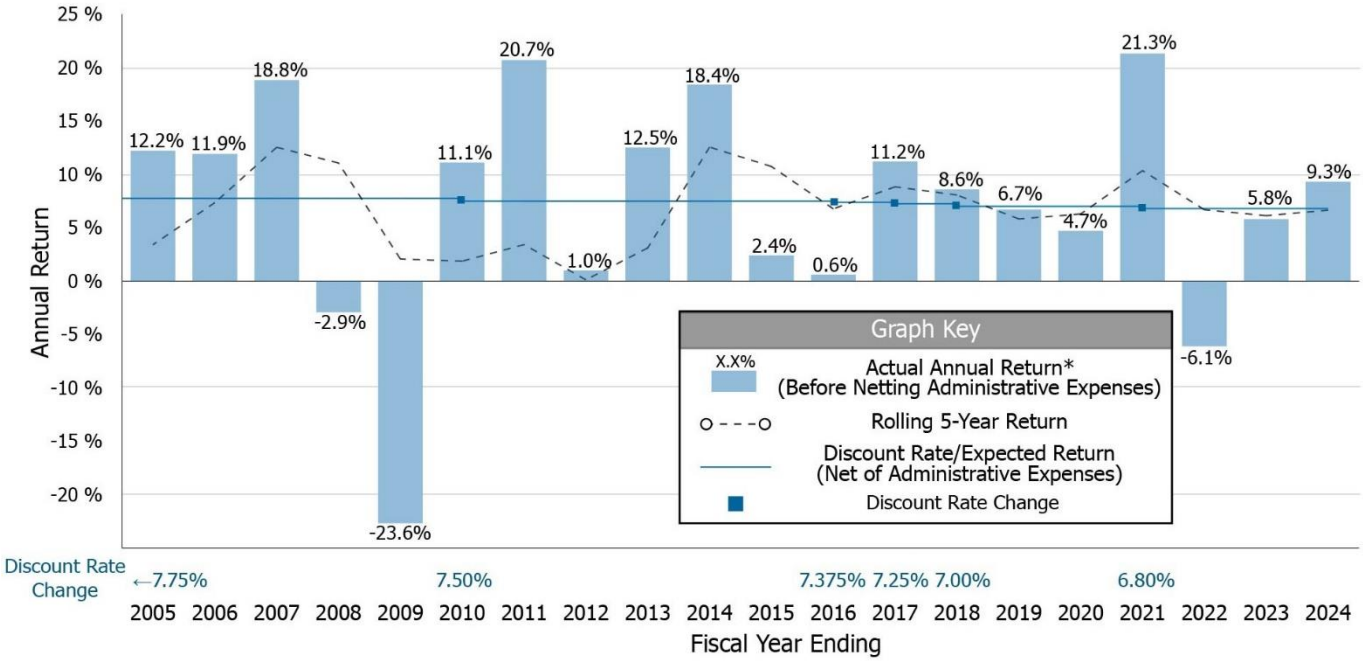


For more information see the Trust Level Review as of June 30, 2024, which is available on the CalPERS website.

CalPERS History of Investment Returns

The following is a chart with 20 years of historical annual returns of the PERF for each fiscal year ending on June 30 as reported by the Investment Office. Investment returns reported are net of investment expenses but without reduction for administrative expenses. The assumed rate of return, however, is net of both investment and administrative expenses. Also, the Investment Office uses lagged private asset valuations for investment performance reporting purposes. This can lead to a timing difference in private asset influence on performance in the returns below and those used for financial reporting purposes. The investment gain or loss calculation in this report relies on final assets that have been audited and are appropriate for financial reporting. Because of these differences, the effective investment return for funding purposes in a single year can be higher or lower than the return reported by the Investment Office shown here.

History of Investment Returns (2005 through 2024)



* As reported by the Investment Office with lagged private valuations and without any reduction for administrative expenses.

The table below shows annualized investment returns of the PERF for various time periods ending on June 30, 2024. These returns are the annual rates that if compounded over the indicated number of years would equate to the actual time-weighted investment performance of the PERF. It should be recognized that the annual rate of return is volatile, as the chart above illustrates, so when looking at investment returns, it is informative to look at average returns over longer time horizons.

PERF Realized Rates of Return as of June 30, 2024

1 year	3 year	5 year	10 year	20 year	30 year
9.3%	2.8%	6.6%	6.2%	6.7%	7.7%

Liabilities and Contributions

Determination of Required Contributions

Contributions to fund the plan are determined by an actuarial valuation performed each year. The valuation employs complex calculations based on a set of actuarial assumptions and methods. See Appendix A for information on the assumptions and methods used in this valuation. The valuation incorporates all plan experience through the valuation date and sets required contributions for the fiscal year that begins two years after the valuation date.

Contribution Components

Two components comprise required contributions:

- Normal Cost — expressed as a percentage of pensionable payroll
- Unfunded Accrued Liability (UAL) Contribution — expressed as a dollar amount

Normal Cost represents the value of benefits allocated to the upcoming year for active employees. If all plan experience exactly matched the actuarial assumptions, normal cost would be sufficient to fully fund all benefits. The employer and employees each pay a share of the normal cost with contributions payable as part of the regular payroll reporting process. The contribution rate for Classic members is set by statute based on benefit formula whereas for PEPRA members it is based on 50% of the total normal cost.

When plan experience differs from the actuarial assumptions, UAL emerges. The new UAL may be positive or negative. If the total UAL is positive (i.e., accrued liability exceeds assets), the employer is required to make contributions to pay off the UAL over time. This is called the UAL Contribution component. There is an option to prepay this amount during July of each fiscal year, otherwise it is paid monthly.

In measuring the UAL each year, plan experience is split by source. Common sources of UAL include investment experience different than expected, non-investment experience different than expected, assumption changes, and benefit changes. Each source of UAL (positive or negative) forms a base that is amortized, or paid off, over a specified period of time in accordance with the CalPERS Actuarial Amortization Policy. The UAL Contribution is the sum of the payments on all bases. See the Schedule of Amortization Bases section of this report for an inventory of existing bases and Appendix A for more information on the amortization policy.

Development of Accrued and Unfunded Liabilities

		June 30, 2023	June 30, 2024
1.	Present Value of Projected Benefits		
	a) Active Members	$158,710,317	$168,260,011
	b) Transferred Members	1,506,516	1,524,845
	c) Separated Members	4,766,962	3,447,458
	d) Members and Beneficiaries Receiving Payments	341,855,510	354,268,476
	e) Total	$506,839,305	$527,500,790
2.	Present Value of Future Employer Normal Costs	$36,571,061	$38,918,708
3.	Present Value of Future Employee Contributions	$21,775,353	$26,407,981
4.	Entry Age Accrued Liability		
	a) Active Members [(1a) - (2) - (3)]	$100,363,903	$102,933,322
	b) Transferred Members (1b)	1,506,516	1,524,845
	c) Separated Members (1c)	4,766,962	3,447,458
	d) Members and Beneficiaries Receiving Payments (1d)	341,855,510	354,268,476
	e) Total	$448,492,891	$462,174,101
5.	Market Value of Assets (MVA)	$403,227,883	$420,745,810
6.	Unfunded Accrued Liability (UAL) [(4e) - (5)]	$45,265,009	$41,428,291
7.	Funded Ratio [(5) ÷ (4e)]	89.9%	91.0%

Required Employer Contributions

The required employer contributions in this report do not reflect any cost sharing arrangement between the agency and the employees.

	Fiscal Year
Required Employer Contributions	**2026-27**
Employer Normal Cost Rate	**21.71%**
Plus	
Unfunded Accrued Liability (UAL) Contribution Amount	**$3,469,892**
Paid either as	
1) Monthly Payment	**$289,158**
Or	
2) Annual Prepayment Option*	**$3,357,611**

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) and the 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)**.

For Member Contribution Rates see the following page.

	Fiscal Year 2025-26	Fiscal Year 2026-27
Normal Cost Contribution as a Percentage of Payroll		
Total Normal Cost[1]	33.62%	32.87%
Offset due to Employee Contributions[2]	(10.84%)	(11.16%)
Employer Normal Cost	22.78%	21.71%
Projected Annual Payroll for Contribution Year	$20,910,759	$23,168,526
Estimated Employer Contributions Based on Projected Payroll		
Total Normal Cost	$7,030,197	$7,615,494
Expected Employee Contributions	(2,266,726)	(2,585,608)
Employer Normal Cost	$4,763,471	$5,029,886
Unfunded Liability Contribution	$2,650,254	$3,469,892
% of Projected Payroll (illustrative only)	12.67%	14.98%
Estimated Total Employer Contribution	$7,413,725	$8,499,778
% of Projected Payroll (illustrative only)	35.45%	36.69%

[1] The Total Normal Cost is a blended rate for all benefit groups in the plan. For a breakout of normal cost by benefit group, see Normal Cost by Benefit Group.

[2] This is the expected employee contributions, taking into account individual benefit formula and any offset from the use of a modified formula, divided by projected annual payroll. For member contribution rates above the breakpoint for each benefit formula, see Member Contribution Rates.

Member Contribution Rates

The required member contributions in this report do not reflect any cost sharing arrangement between the agency and the employees.

Classic Members

Each member contributes toward their retirement based upon the retirement formula. The standard Classic member contribution rate above the breakpoint, if any, is as described below.

Benefit Formula	Percent Contributed above the Breakpoint
Safety, Half Pay at age 55	Varies by entry age
Safety, 2% at age 55	7%
Safety, 2% at age 50	9%
Safety, 3% at age 55	9%
Safety, 3% at age 50	9%

PEPRA Members

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 for the plan is dependent on the benefit levels, actuarial assumptions, and demographics of the plan, particularly members' entry age into the plan. Should the total normal cost rate of the plan change by more than 1% from the base total normal cost rate established for the plan, 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, 2026, based on 50% of the total normal cost rate for each respective rate plan as of the June 30, 2024, valuation.

		Basis for Current Rate		Rates Effective July 1, 2026			
Rate Plan Identifier	Benefit Group Name	Total Normal Cost	Member Rate	Total Normal Cost	Change in Normal Cost	Adj. Needed	Member Rate
25192	Safety Fire PEPRA Level	26.940%	13.50%	27.06%	0.120%	No	13.50%
25193	Safety Police PEPRA Level	26.940%	13.50%	27.06%	0.120%	No	13.50%

For a description of the methodology used to determine the Total Normal Cost for this purpose, see PEPRA Normal Cost Rate Methodology in Appendix A.

Funded Status – Funding Policy Basis

The table below provides information on the current funded status of the plan under the funding policy. The funded status for this purpose is based on the market value of assets relative to the funding target produced by the entry age actuarial cost method and actuarial assumptions adopted by the board. The actuarial cost method allocates the total expected cost of a member's projected benefit (**Present Value of Benefits**) to individual years of service (the **Normal Cost**). The value of the projected benefit that is not allocated to future service is referred to as the **Accrued Liability** and is the plan's funding target on the valuation date. The **Unfunded Accrued Liability** (UAL) equals the funding target minus the assets. The UAL is an absolute measure of funded status and can be viewed as employer debt. The **Funded Ratio** equals the assets divided by the funding target. The funded ratio is a relative measure of the funded status and allows for comparisons between plans of different sizes.

	June 30, 2023	June 30, 2024
1. Present Value of Benefits	$506,839,305	$527,500,790
2. Entry Age Accrued Liability	448,492,891	462,174,101
3. Market Value of Assets (MVA)	403,227,883	420,745,810
4. Unfunded Accrued Liability (UAL) [(2) – (3)]	$45,265,009	$41,428,291
5. Funded Ratio [(3) ÷ (2)]	89.9%	91.0%

A funded ratio of 100% (UAL of $0) implies that the funding of the plan is on target and that future contributions equal to the normal cost of the active plan members will be sufficient to fully fund all retirement benefits if future experience matches the actuarial assumptions. A funded ratio of less than 100% (positive UAL) implies that in addition to normal costs, payments toward the UAL will be required. Plans with a funded ratio greater than 100% have a negative UAL (or surplus) but are required under current law to continue contributing the normal cost in most cases, preserving the surplus for future contingencies.

Calculations for the funding target reflect the expected long-term investment return of 6.8%. If it were known on the valuation date that future investment returns will average something greater/less than the expected return, calculated normal costs and accrued liabilities provided in this report would be less/greater than the results shown. Therefore, for example, if actual average future returns are less than the expected return, calculated normal costs and UAL contributions will not be sufficient to fully fund all retirement benefits. Under this scenario, required future normal cost contributions will need to increase from those provided in this report, and the plan will develop unfunded liabilities that will also add to required future contributions. For illustrative purposes, funded statuses based on a 1% lower and higher average future investment return (discount rate) are as follows:

	1% Lower Average Return	Current Assumption	1% Higher Average Return
Discount Rate	5.8%	6.8%	7.8%
1. Present Value of Benefits	$608,592,825	$527,500,790	$463,478,023
2. Entry Age Accrued Liability	519,251,244	462,174,101	414,951,881
3. Market Value of Assets (MVA)	420,745,810	420,745,810	420,745,810
4. Unfunded Accrued Liability (UAL) [(2) – (3)]	$98,505,434	$41,428,291	($5,793,929)
5. Funded Ratio [(3) ÷ (2)]	81.0%	91.0%	101.4%

The Risk Analysis section of the report provides additional information regarding the sensitivity of valuation results to the expected investment return and other factors. Also provided in that section are measures of funded status that are appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities.

Additional Employer Contributions

The CalPERS amortization policy provides a systematic methodology for paying down a plan's unfunded accrued liability (UAL) over a reasonable period of years. The projected schedule of required payments for this plan under the amortization policy is provided in Amortization Schedule and Alternatives. Certain aspects of the policy such as 1) layered amortization bases (positive and negative) with different remaining payoff periods, and 2) the phase-in of required payments toward investment gains and losses, can result in volatility in year-to-year projected UAL payments. Provided below is information on how an Additional Discretionary Payment (ADP), together with your required UAL payment of $3,469,892 for FY 2026-27, may better accomplish your agency's specific objectives with regard to either smoothing out projected future payments or achieving a greater reduction in UAL than would otherwise occur when making only the minimum required payment. Such additional payments are allowed at any time and can also result in significant long-term savings.

Fiscal Year 2026-27 Employer Contribution Versus Agency Funding Objectives

The interest-to-payment ratio for the FY 2026-27 minimum required UAL payment is 79%, which means the required payment of $3,469,892 includes $2,731,317 of interest cost and results in a $738,575 reduction in the UAL, as can be seen in Amortization Schedule and Alternatives (see columns labelled Current Amortization Schedule). If the interest-to-payment ratio is close to 100%, and the reduction in the UAL is small, it may indicate that required contributions will be increasing in the coming years, which would be shown in Projected Employer Contributions. Another measure that can be used to evaluate how well the FY 2026-27 required UAL payment meets the agency's specific funding objectives is the number of years required to pay off the existing UAL if the annual payment were held constant in future years. With an annual payment of $3,469,892 it would take over 20 years to pay off the current UAL. A result that is longer than the agency's target funding period suggests that the option of supplementing the minimum payment with an ADP should be weighed against the agency's budget constraints.

Provided below are select ADP options for consideration. Making such an ADP during FY 2026-27 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 Amortization Schedule and Alternatives. Agencies considering making an ADP should contact CalPERS for additional information.

Fiscal Year 2026-27 Employer Contributions — Illustrative Scenarios

If the Annual UAL Payment Each Year Were…	The Current UAL Would be Paid Off in…	This Would Require an ADP[1] in FY 2026-27 of…	Plus the Estimated Normal Cost of…	Estimated Total Contribution
$3,469,892	Over 20 years	$0	$5,029,886	$8,499,778
3,765,356	20 years	295,464	5,029,886	8,795,242
4,392,616	15 years	922,724	5,029,886	9,422,502
5,715,620	10 years	2,245,728	5,029,886	10,745,506
9,829,078	5 years	6,359,186	5,029,886	14,858,964

[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.

The calculations above are based on the projected UAL as of June 30, 2026, as determined in the June 30, 2024, 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.

Additional Discretionary Payment History

The following table provides a recent history of actual ADPs made to the plan.

Fiscal Year	ADP	Fiscal Year	ADP
2017-18	N/A	2021-22	$141,581,634
2018-19	$0	2022-23	0
2019-20	0	2023-24	0
2020-21	0	2024-25	1,307,049

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. In particular, the investment return beginning with FY 2024-25 is assumed to be 6.80% per year, net of investment and administrative expenses. The actual long-term cost of the plan will depend on the actual benefits and expenses paid and the actual investment experience of the fund.

The projected normal cost percentages below reflect that the normal cost is expected to continue to decline over time as new employees are hired into lower cost benefit tiers. Future contribution requirements may differ significantly from those shown below. The actuarial valuation does not include payroll beyond the valuation date. For the most realistic projections, the employer should apply projected payroll amounts to the rates below based on the most recent information available, such as current payroll as well as any plans to fill vacancies or add or remove positions.

	Required Contribution	**Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2024-25 and Beyond)**				
	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32
Normal Cost %	21.71%	21.0%	20.3%	19.8%	19.2%	18.7%
UAL Payment	$3,469,892	$3,957,000	$4,445,000	$4,241,000	$3,985,000	$3,985,000
Total as a % of Payroll*	36.69%	37.6%	38.5%	36.6%	34.6%	33.7%
Projected Payroll	$23,168,526	$23,817,244	$24,484,128	$25,169,683	$25,874,435	$26,598,918

*Illustrative only and based on the projected payroll shown.

The required UAL payments are expected to vary significantly from the projections above due to experience, particularly investment experience. For projected contributions under alternate investment return scenarios, please see the Future Investment Return Scenarios exhibit. Our online pension plan projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook can help plan and budget pension costs under various scenarios.

For ongoing plans, investment gains and losses are amortized using an initial 5-year ramp. For more information, please see Amortization of Unfunded Actuarial Accrued Liability in Appendix A. 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 investment loss, the relatively small amortization payments during the initial ramp period could result in contributions that are less than interest on the UAL (i.e. negative amortization) while the contribution impact of the increase in the UAL is phased in.

(Gain)/Loss Analysis 6/30/23 – 6/30/24

To calculate the cost requirements of the plan, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year, actual experience is compared to the expected experience based on the actuarial assumptions. This results in actuarial gains or losses, as shown below.

1.	Total (Gain)/Loss for the Year	
a)	Unfunded Accrued Liability (UAL) as of 6/30/23	$45,265,009
b)	Expected payment on the UAL during 2023-24	(2,000)
c)	Interest through 6/30/24 [0.068 x (1a) - ((1.068)^{½} - 1) x (1b)]	3,078,088
d)	Expected UAL before all other changes [(1a) - (1b) + (1c)]	48,345,096
e)	Change due to plan changes	0
f)	Change due to AL Significant Increase	0
g)	Change due to assumption changes	0
h)	Change due to method changes	0
i)	Change due to discount rate change with Funding Risk Mitigation	0
j)	Expected UAL after all other changes [(1d) + (1e) + (1f) + (1g) + (1h) + (1i)]	48,345,096
k)	Actual UAL as of 6/30/24	41,428,291
l)	Total (Gain)/Loss for 2023-24 [(1k) - (1j)]	($6,916,805)
2.	Investment (Gain)/Loss for the Year	
a)	Market Value of Assets as of 6/30/23	$403,227,883
b)	Prior fiscal year receivables	(73,619)
c)	Current fiscal year receivables	35,976
d)	Contributions received	7,266,482
e)	Benefits and refunds paid	(26,944,359)
f)	Transfers, SCP payments and interest, and miscellaneous adjustments	39,796
g)	Expected return at 6.8% per year	26,757,775
h)	Expected assets as of 6/30/24 [(2a) + (2b) + (2c) + (2d) + (2e) + (2f) + (2g)]	410,309,933
i)	Actual Market Value of Assets as of 6/30/24	420,745,810
j)	Investment (Gain)/Loss [(2h) - (2i)]	($10,435,877)
3.	Non-Investment (Gain)/Loss for the Year	
a)	Total (Gain)/Loss (1l)	($6,916,805)
b)	Investment (Gain)/Loss (2j)	(10,435,877)
c)	Non-Investment (Gain)/Loss [(3a) - (3b)]	$3,519,072

Schedule of Amortization Bases

Below is the schedule of the plan's amortization bases. Note that there is a two-year lag between the valuation date and the start of the contribution year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2024.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: FY 2026-27.

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 on the UAL for FY 2024-25 is based on the actuarial valuation two years ago, adjusted for additional discretionary payments, if necessary, and the expected payment for FY 2025-26 is based on the actuarial valuation one year ago.

Reason for Base	Date Est.	Ramp Level 2026-27	Ramp Shape	Escalation Rate	Amort. Period	Balance 6/30/24	Expected Payment 2024-25	Balance 6/30/25	Expected Payment 2025-26	Balance 6/30/26	Minimum Required Payment 2026-27
Benefit Change	6/30/22	No Ramp		0.00%	18	196,239	17,647	191,346	17,646	186,121	17,646
Non-Investment (Gain)/Loss	6/30/22	No Ramp		0.00%	18	4,676,391	420,518	4,559,805	420,518	4,435,291	420,518
Partial Fresh Start	6/30/22	60%	Up Only	0.00%	18	32,154,387	691,149	33,626,624	1,382,297	34,484,712	2,073,446
Investment (Gain)/Loss	6/30/23	40%	Up Only	0.00%	19	3,519,019	1,264,755	2,451,263	80,784	2,534,463	104,185
Non-Investment (Gain)/Loss	6/30/23	No Ramp		0.00%	19	7,799,060	0	8,329,396	749,009	8,121,738	749,009
Investment (Gain)/Loss	6/30/24	20%	Up Only	0.00%	20	(10,435,877)	0	(11,145,517)	0	(11,903,412)	(255,860)
Non-Investment (Gain)/Loss	6/30/24	No Ramp		0.00%	20	3,519,072	0	3,758,369	0	4,013,938	360,948
Total						**41,428,291**	**2,394,069**	**41,771,286**	**2,650,254**	**41,872,851**	**3,469,892**

Amortization Schedule and Alternatives

The amortization schedule on the previous page(s) shows the minimum contributions required according to the CalPERS amortization policy. Each year, many agencies express a desire for a more stable pattern of payments or indicate 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 contact a CalPERS 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 an appropriate 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 Actuarial Amortization Policy.

Amortization Schedule and Alternatives (continued)

	Current Amortization Schedule		Alternative Schedules			
			15 Year Amortization		10 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2026	41,872,851	3,469,892	41,872,851	4,392,616	41,872,851	5,715,620
6/30/2027	41,134,276	3,957,272	40,180,696	4,392,616	38,813,450	5,715,620
6/30/2028	39,841,801	4,444,654	38,373,474	4,392,616	35,546,009	5,715,620
6/30/2029	37,957,756	4,240,885	36,443,361	4,392,615	32,056,382	5,715,620
6/30/2030	36,156,180	3,985,026	34,382,002	4,392,615	28,329,461	5,715,620
6/30/2031	34,496,511	3,985,025	32,180,470	4,392,616	24,349,109	5,715,620
6/30/2032	32,723,986	3,985,025	29,829,233	4,392,615	20,098,093	5,715,620
6/30/2033	30,830,930	3,985,026	27,318,113	4,392,615	15,558,008	5,715,619
6/30/2034	28,809,145	3,985,026	24,636,237	4,392,616	10,709,198	5,715,619
6/30/2035	26,649,879	3,985,025	21,771,992	4,392,615	5,530,669	5,715,619
6/30/2036	24,343,783	3,985,025	18,712,980	4,392,616		
6/30/2037	21,880,874	3,985,025	15,445,954	4,392,616		
6/30/2038	19,250,485	3,985,025	11,956,770	4,392,615		
6/30/2039	16,441,230	3,985,024	8,230,323	4,392,616		
6/30/2040	13,440,947	3,985,024	4,250,476	4,392,616		
6/30/2041	10,236,644	3,985,022				
6/30/2042	6,814,450	3,985,022				
6/30/2043	3,159,548	3,265,206				
6/30/2044						
6/30/2045						
6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
Total	**71,183,229**		**65,889,234**		**57,156,197**	
Interest Paid	**29,310,378**		**24,016,383**		**15,283,346**	
Estimated Savings			**5,293,995**		**14,027,032**	

Reconciliation of Required Employer Contributions

Normal Cost (% of Payroll)

1.	For Period 7/1/25 – 6/30/26	
	a) Employer Normal Cost	22.78%
	b) Employee contribution	10.84%
	c) Total Normal Cost	33.62%
2.	Changes since the prior year annual valuation	
	a) Effect of demographic experience	(0.75%)
	b) Effect of plan changes	0.00%
	c) Effect of discount rate change due to Funding Risk Mitigation	0.00%
	d) Effect of assumption changes	0.00%
	e) Effect of method changes	0.00%
	f) Net effect of the changes above [sum of (a) through (e)]	(0.75%)
3.	For Period 7/1/26 – 6/30/27	
	a) Employer Normal Cost	21.71%
	b) Employee contribution	11.16%
	c) Total Normal Cost	32.87%
	Employer Normal Cost Change [(3a) – (1a)]	(1.07%)
	Employee Contribution Change [(3b) – (1b)]	0.32%

Unfunded Liability Contribution ($)

1.	For Period 7/1/25 – 6/30/26	2,650,254
2.	Changes since the prior year annual valuation	
	a) Effect of adjustments to prior year's amortization schedule	0
	b) Effect of elimination of amortization bases	0
	c) Effect of progression of amortization bases[1]	714,550
	d) Effect of investment (gain)/loss during prior year[2]	(255,860)
	e) Effect of non-investment (gain)/loss during prior year	360,948
	f) Effect of re-amortizing existing bases due to Funding Risk Mitigation	0
	g) Effect of Golden Handshake	0
	h) Effect of plan changes	0
	i) Effect of AL Significant Increase (Government Code section 20791)	0
	j) Effect of assumption changes	0
	k) Effect of adjustments to the amortization schedule (e.g., Fresh Start)	0
	l) Effect of method change	0
	m) Net effect of the changes above [sum of (a) through (l)]	819,638
3.	For Period 7/1/26 – 6/30/27 [(1) + (2m)]	3,469,892

The amounts shown for the period 7/1/25 – 6/30/26 may be different if a prepayment of unfunded actuarial liability is made or a plan change became effective after the prior year's actuarial valuation was performed.

[1] Includes scheduled escalation in individual amortization base payments due to the 5-year ramp and payroll growth assumption used in the pre-2019 amortization policy.

[2] The unfunded liability contribution for the investment (gain)/loss during the year prior to the valuation date is 20% of the "full" annual requirement due to the 5-year ramp. Increases to this amount that occur during the ramp period will be included in line c) for each of the next four years.

Employer Contribution History

The table below provides a 10-year history of the employer contribution requirements for the plan, as determined by the annual actuarial valuation. Changes due to prepayments or plan amendments after the valuation report was finalized are not reflected.

Valuation Date	Contribution Year	Employer Normal Cost Rate	Unfunded Liability Payment
06/30/2015	2017-18	21.107%	$5,638,360
06/30/2016	2018-19	21.660%	6,777,958
06/30/2017	2019-20	22.320%	8,027,764
06/30/2018	2020-21	23.353%	9,031,050
06/30/2019	2021-22	22.93%	10,301,929
06/30/2020	2022-23	21.90%	11,356,847
06/30/2021	2023-24	23.34%	0
06/30/2022	2024-25	23.28%	1,129,314
06/30/2023	2025-26	22.78%	2,650,254
06/30/2024	2026-27	21.71%	3,469,892

Funding History

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

Valuation Date	Accrued Liability (AL)	Market Value of Assets (MVA)	Unfunded Accrued Liability (UAL)	Funded Ratio	Annual Covered Payroll
6/30/2015	$318,552,570	$222,991,051	$95,561,519	70.0%	$14,420,025
6/30/2016	332,848,368	214,871,334	117,977,034	64.6%	15,084,320
6/30/2017	348,258,484	229,597,285	118,661,199	65.9%	16,643,216
6/30/2018	377,611,582	239,765,147	137,846,435	63.5%	17,560,203
6/30/2019	389,449,076	246,312,980	143,136,096	63.2%	18,132,646
6/30/2020	398,974,260	249,047,177	149,927,083	62.4%	17,226,744
6/30/2021	415,972,475	297,471,500	118,500,975	71.5%	18,443,362
6/30/2022	430,654,339	398,690,095	31,964,244	92.6%	18,926,515
6/30/2023	448,492,891	403,227,883	45,265,009	89.9%	19,248,215
6/30/2024	462,174,101	420,745,810	41,428,291	91.0%	21,326,474

Risk Analysis

Future Investment Return Scenarios

Analysis using the investment return scenarios from the Asset Liability Management process completed in 2021 was performed to determine the effects of various future investment returns on required employer UAL contributions. The CalPERS Funding Risk Mitigation Policy stipulates that when the investment return exceeds the discount rate by at least 2%, the board will consider adjustments to the discount rate. The projections below use a discount rate of 6.8% for all scenarios even though an annual return of 10.8% is high enough to trigger a board discussion on the discount rate. The projections also assume that all other actuarial assumptions will be realized and that no further changes in assumptions, contributions, benefits , or funding will occur.

The employer normal cost rates are not affected by investment returns, and since no future assumption changes are being reflected, the projected employer normal cost rates for every future investment return scenario are the same as those shown earlier in this report. See Projected Employer Contributions for more information on projecting the employer normal cost.

The first table shows projected UAL contribution requirements if the fund were to earn either 3.0% or 10.8% annually. These alternate investment returns were chosen because 90% of long-term average returns are expected to fall between them over the 20-year period ending June 30, 2044.

Assumed Annual Return FY 2024-25 through FY 2043-44	Projected Employer UAL Contributions				
	2027-28	2028-29	2029-30	2030-31	2031-32
3.0% (5th percentile)	$4,341,000	$5,591,000	$6,524,000	$7,774,000	$9,643,000
10.8% (95th percentile)	$3,553,000	$144,000	$0	$0	$0

Required UAL contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 3.0% or greater than 10.8% over a 20-year period, the likelihood of a single investment return less than 3.0% or greater than 10.8% in any given year is much greater. The following analysis illustrates the effect of an extreme, single year investment return.

The portfolio has an expected volatility (or standard deviation) of 12.0% per year. Accordingly, in any given year there is a 16% probability that the annual return will be -5.2% or less and a 2.5% probability that the annual return will be -17.2% or less. These returns represent one and two standard deviations below the expected return of 6.8%.

The following table shows the effect of one and two standard deviation investment losses in FY 2024-25 on the FY 2027-28 contribution requirements. Note that a single-year investment gain or loss decreases or increases the required UAL contribution amount incrementally for each of the next five years, not just one, due to the 5-year ramp in the amortization policy. However, the contribution requirements beyond the first year are also impacted by investment returns beyond the first year. Historically, significant downturns in the market are often followed by higher than average returns. Such investment gains would offset the impact of these single year negative returns in years beyond FY 2027-28.

Assumed Annual Return for Fiscal Year 2024-25	Required Employer UAL Contributions	Projected Employer UAL Contributions
	2026-27	2027-28
(17.2%) (2 standard deviation loss)	$3,469,892	$6,379,000
(5.2%) (1 standard deviation loss)	$3,469,892	$5,169,000

- Without investment gains (returns higher than 6.8%) in FY 2025-26 or later, projected contributions rates would continue to rise over the next four years due to the continued phase-in of the impact of the illustrated investment loss in FY 2024-25.
- The Pension Outlook Tool can be used to model projected contributions for these scenarios beyond FY 2027-28 as well as to model other investment return scenarios.

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 4.5% and 2.3%, 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, 2024, assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 6.8% as well as alternate discount rates of 5.8% and 7.8%. The rates of 5.8% and 7.8% were selected since they illustrate the impact of a 1.0% increase or decrease to the 6.8% assumption.

Sensitivity to the Discount Rate Due to Varying the Real Rate of Return Assumption

As of June 30, 2024	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Price Inflation	2.3%	2.3%	2.3%
Real Rate of Return	**3.5%**	**4.5%**	**5.5%**
a) Total Normal Cost	41.58%	32.87%	26.29%
b) Accrued Liability	$519,251,244	$462,174,101	$414,951,881
c) Market Value of Assets	$420,745,810	$420,745,810	$420,745,810
d) Unfunded Liability/(Surplus) [(b) - (c)]	$98,505,434	$41,428,291	($5,793,929)
e) Funded Ratio	81.0%	91.0%	101.4%

Sensitivity to the Discount Rate Due to Varying the Price Inflation Assumption

As of June 30, 2024	1% Lower Price Inflation	Current Assumptions	1% Higher Price Inflation
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Price Inflation	**1.3%**	**2.3%**	**3.3%**
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	34.58%	32.87%	29.79%
b) Accrued Liability	$476,984,230	$462,174,101	$433,182,667
c) Market Value of Assets	$420,745,810	$420,745,810	$420,745,810
d) Unfunded Liability/(Surplus) [(b) - (c)]	$56,238,420	$41,428,291	$12,436,857
e) Funded Ratio	88.2%	91.0%	97.1%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2024, plan costs and funded status under two different longevity scenarios, namely assuming rates of post-retirement mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2021. This type of analysis highlights the impact on the plan of a change in the mortality assumption.

As of June 30, 2024	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	33.30%	32.87%	32.48%
b) Accrued Liability	$471,488,398	$462,174,101	$453,617,195
c) Market Value of Assets	$420,745,810	$420,745,810	$420,745,810
d) Unfunded Liability/(Surplus) [(b) - (c)]	$50,742,588	$41,428,291	$32,871,385
e) Funded Ratio	89.2%	91.0%	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.

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 increases. A mature plan will often have a ratio above 60%-65%.

Ratio of Retiree Accrued Liability to Total Accrued Liability	June 30, 2023	June 30, 2024
1. Retiree Accrued Liability	$341,855,510	$354,268,476
2. Total Accrued Liability	$448,492,891	$462,174,101
3. Ratio of Retiree AL to Total AL [(1) ÷ (2)]	76%	77%

Another measure of the maturity level of CalPERS and its plans is 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 declines. A mature plan will often have a ratio near or below one.

To calculate the support ratio for the rate plan, retirees and beneficiaries receiving a continuance are each counted as one, even though they may have only worked a portion of their careers as an active member of this rate plan. For this reason, the support ratio, while intuitive, may be less informative than the ratio of retiree liability to total accrued liability above.

For comparison, the support ratio for all CalPERS public agency plans as of June 30, 2023, was 0.78 and was calculated consistently with how it is for the individual rate plan. Note that to calculate the support ratio for all public agency plans, a retiree with service from more than one CalPERS agency is counted as a retiree more than once.

Support Ratio	June 30, 2023	June 30, 2024
1. Number of Actives	140	153
2. Number of Retirees	333	337
3. Support Ratio [(1) ÷ (2)]	0.42	0.45

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 increases, 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

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 a higher AVR experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an AVR of 8 may experience twice the contribution volatility due to investment return volatility than a plan with an AVR 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 a plan matures.

Liability Volatility Ratio

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 changes in liability. For example, a plan with an LVR of 8 is expected to have twice the contribution volatility of a plan with an LVR of 4 when there is a change in accrued liability, such as when there is a change in actuarial assumptions. It should be noted that this ratio indicates a longer-term potential for contribution volatility, since the AVR, described above, will tend to move closer to the LVR as the funded ratio approaches 100%.

Contribution Volatility	June 30, 2023	June 30, 2024
1. Market Value of Assets without Receivables	$403,154,263	$420,709,834
2. Payroll	19,248,215	21,326,474
3. Asset Volatility Ratio (AVR) [(1) ÷ (2)]	20.9	19.7
4. Accrued Liability	$448,492,891	$462,174,101
5. Liability Volatility Ratio (LVR) [(4) ÷ (2)]	23.3	21.7

Maturity Measures History

Valuation Date	Ratio of Retiree Accrued Liability to Total Accrued Liability	Support Ratio	Asset Volatility Ratio	Liability Volatility Ratio
6/30/2017	72%	0.51	13.8	20.9
6/30/2018	74%	0.48	13.6	21.5
6/30/2019	73%	0.48	13.6	21.5
6/30/2020	76%	0.44	14.4	23.2
6/30/2021	75%	0.45	16.1	22.6
6/30/2022	74%	0.44	21.1	22.8
6/30/2023	76%	0.42	20.9	23.3
6/30/2024	77%	0.45	19.7	21.7

Funded Status – Termination Basis

The funded status measured on a termination basis is an estimated range for the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2024. The accrued liability on a termination basis (termination liability) is calculated differently from the plan's ongoing funding liability. For the 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. Unlike the actuarial cost method used for ongoing plans, the termination liability is the present value of the benefits earned through the valuation date.

A more conservative investment policy and asset allocation strategy was adopted by the 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 remainder of the PERF and consequently, a lower discount rate assumption. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The discount rate used for actual termination valuations is a weighted average of the 10-year and 30-year Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the following analysis is based on 20-year Treasury bonds, which is a good proxy for most plans. The discount rate upon contract termination will depend on actual Treasury rates on the date of termination, which varies over time, as demonstrated below.

Valuation Date	20-Year Treasury Rate	Valuation Date	20-Year Treasury Rate
06/30/2015	2.83%	06/30/2020	1.18%
06/30/2016	1.86%	06/30/2021	2.00%
06/30/2017	2.61%	06/30/2022	3.38%
06/30/2018	2.91%	06/30/2023	4.06%
06/30/2019	2.31%	06/30/2024	4.61%

As Treasury rates are variable, the table below shows a range for the termination liability using discount rates 1% below and above the 20-year Treasury rate on the valuation date. The price inflation assumption is the 20-year Treasury breakeven inflation rate, that is, the difference between the 20-year inflation indexed bond and the 20-year fixed-rate bond.

The Market Value of Assets (MVA) also varies with interest rates and will fluctuate depending on other market conditions on the date of termination. Since it is not possible to approximate how the MVA will change in different interest rate environments, the results below use the MVA as of the valuation date.

	Discount Rate: 3.61% Price Inflation: 2.45%	Discount Rate: 5.61% Price Inflation: 2.45%
1. Termination Liability[1]	$686,582,051	$525,169,659
2. Market Value of Assets (MVA)	420,745,810	420,745,810
3. Unfunded Termination Liability [(1) – (2)]	$265,836,241	$104,423,849
4. Funded Ratio [(2) ÷ (1)]	61.3%	80.1%

[1] The termination liabilities calculated above include a 5% contingency load. The contingency load and other actuarial assumptions can be found in Appendix A.

In order to terminate the plan, first contact our Pension Contract Services unit to initiate a Resolution of Intent to Termin ate. The completed Resolution will allow a CalPERS actuary to provide a preliminary termination valuation with a more up-to-date estimate of the plan's assets and liabilities. Before beginning this process, please consult with a CalPERS actuary.

Funded Status – Low-Default-Risk Basis

Actuarial Standard of Practice (ASOP) No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, requires the disclosure of a low-default-risk obligation measure (LDROM) of benefit costs accrued as of the valuation date using a discount rate based on the yields of high quality fixed income securities with cash flows that replicate expected benefit payments. Conceptually, this measure represents the level at which financial markets would value the accrued plan costs, and would be approximately equal to the cost of a portfolio of low-default-risk bonds with similar financial characteristics to accrued plan costs.

As permitted in ASOP No. 4, the Actuarial Office uses the Entry Age Actuarial Cost Method to calculate the LDROM. This methodology is in line with the measure of "benefit entitlements" calculated by the Bureau of Economic Analysis and used by the Federal Reserve to report the indebtedness due to pensions of plan sponsors and, conversely, the household wealth due to pensions of plan members.

As shown below, the discount rate used for the LDROM is 5.35%, which is the Standard FTSE Pension Liability Index[1] discount rate as of June 30, 2024.

Selected Measures on a Low-Default-Risk Basis	**June 30, 2024**
Discount Rate	5.35%
1. Accrued Liability – Low-Default-Risk Basis (LDROM)	
a) Active Members	$131,017,799
b) Transferred Members	2,239,307
c) Separated Members	4,502,488
d) Members and Beneficiaries Receiving Payments	411,112,598
e) Total	$548,872,192
2. Market Value of Assets (MVA)	420,745,810
3. Unfunded Accrued Liability – Low-Default-Risk Basis [(1e) – (2)]	$128,126,382
4. Unfunded Accrued Liability – Funding Policy Basis	41,428,291
5. Present Value of Unearned Investment Risk Premium [(3) – (4)]	$86,698,091

The difference between the unfunded liabilities on a low-default-risk basis and on the funding policy basis represents the present value of the investment risk premium that must be earned in future years to keep future contributions for currently accrued plan costs at the levels anticipated by the funding policy.

Benefit security for members of the plan relies on a combination of the assets in the plan, the investment income generated from those assets and the ability of the plan sponsor to make necessary future contributions. If future returns fall short of 6.8%, benefit security could be at risk without higher than currently anticipated future contributions.

The funded status on a low-default-risk basis is not appropriate for assessing the sufficiency of plan assets to cover the cost of settling the plan's benefit obligations (see Funded Status – Termination Basis), nor is it appropriate for assessing the need for future contributions (see Funded Status – Funding Policy Basis).

[1] This index is based on a yield curve of hypothetical AA-rated zero-coupon corporate bonds whose maturities range from 6 months to 30 years. The index represents the single discount rate that would produce the same present value as discounting a standardized set of liability cash flows for a fully open pension plan using the yield curve. The liability cash flows are reasonably consistent with the pattern of benefits expected to be paid from the entire Public Employees' Retirement Fund for current and former plan members. A different index, hence a different discount rate, may be needed to measure the LDROM for a subset of the fund, such as a single rate plan or a group of retirees.

Supplementary Information

Normal Cost by Benefit Group

The table below displays the Total Normal Cost broken out by benefit group for FY 2026-27. The Total Normal Cost is the annual cost of service accrual for the fiscal year for active employees and can be viewed as the long-term contribution rate for the benefits contracted. Generally, the normal cost for a benefit group subject to more generous benefit provisions will exceed the normal cost for a group with less generous benefits. However, based on the characteristics of the members (particularly when the number of actives is small), this may not be the case. Future measurements of the Total Normal Cost for each group may differ significantly from the current values due to such factors as: changes in the demographics of the group, changes in economic and demographic assumptions, changes in plan benefits or applicable law.

Rate Plan Identifier	Benefit Group Name	Total Normal Cost FY 2026-27	Offset due to Employee Contributions FY 2026-27	Employer Normal Cost[1] FY 2026-27	Number of Actives	Payroll on 6/30/2024
222	Safety Fire First Level	34.09%	9.00%	25.09%	16	$2,661,523
30316	Safety Police First Level	41.93%	9.00%	32.93%	32	5,994,106
30317	Safety Fire Second Level	32.10%	9.00%	23.10%	12	1,619,461
30318	Safety Police Second Level	38.41%	9.00%	29.41%	8	1,174,837
25192	Safety Fire PEPRA Level	26.08%	13.50%	12.58%	32	3,585,341
25193	Safety Police PEPRA Level	27.63%	13.50%	14.13%	53	6,291,206
	Plan Total	**32.87%**	**11.16%**	**21.71%**	**153**	**$21,326,474**

[1] The employer normal cost for individual rate plans is provided for illustrative purposes only. The employer normal cost rate for contribution purposes is the blended rate shown in the Plan Total row and is the employer normal cost contribution rate that applies to the covered payroll of members in every rate plan shown above.

Note that if a Benefit Group above has multiple bargaining units, each of which has separately contracted for different benefits such as Employer Paid Member Contributions, then the Normal Cost shown for the respective benefit level does not reflect those differences. Additionally, if a Second Level Benefit Group amended to the same benefit formula as a First Level Benefit Group, their Normal Costs may be dissimilar due to demographic or other population differences. For questions in these situations, please contact a CalPERS actuary.

Summary of Valuation Data

	June 30, 2023	June 30, 2024
1. **Active Members**		
a) Counts	140	153
b) Average Attained Age	40.37	39.56
c) Average Entry Age to Rate Plan	29.76	29.90
d) Average Years of Credited Service	10.57	9.63
e) Average Annual Covered Payroll	$137,487	$139,389
f) Annual Covered Payroll	$19,248,215	$21,326,474
g) Projected Annual Payroll for Contribution Year	$20,910,759	$23,168,526
h) Present Value of Future Payroll	$192,352,277	$220,954,748
2. **Transferred Members**		
a) Counts	29	30
b) Average Attained Age	37.15	37.93
c) Average Years of Credited Service	1.96	1.89
d) Average Annual Covered Payroll	$101,909	$108,418
3. **Separated Members**		
a) Counts	42	45
b) Average Attained Age	38.07	38.02
c) Average Years of Credited Service	3.18	2.80
d) Average Annual Covered Payroll	$77,504	$81,073
4. **Retired Members and Beneficiaries Receiving Payments**		
a) Counts	333	337
b) Average Attained Age	69.64	69.87
c) Average Annual Benefits	$79,516	$82,178
d) Total Annual Benefits	$26,478,878	$27,693,839
5. **Active to Retired Ratio** [(1a) ÷ (4a)]	0.42	0.45

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.

Average Annual Benefits represents benefit amounts payable by this plan only. Some members may have service with another agency and would therefore have a larger total benefit than would be included as part of the average shown here.

Status of PEPRA Transition

The California Public Employees' Pension Reform Act of 2013 (PEPRA), which took effect in January 2013, changed CalPERS retirement benefits and placed compensation limits on new members joining CalPERS on or after January 1, 2013. One of the objectives of PEPRA was to improve the ability of employers to manage the costs of retirement benefits for their members. While such changes can reduce future benefit costs in a meaningful way, the full impact on employer contributions will not occur until all active members are subject to the rules and provisions of PEPRA. The table below illustrates the status of this transition as of June 30, 2024.

	Classic	PEPRA	PEPRA as a Percent of Total
Active Members			
Count	68	85	55.6%
Average Attained Age	47.08	33.54	
Average Entry Age	30.24	29.63	
Average Years of Credited Service	16.75	3.93	
Average Annual Covered Payroll	$168,381	$116,195	
Annual Covered Payroll	$11,449,927	$9,876,547	46.3%
Present Value of Future Payroll	$76,020,218	$144,934,530	65.6%
Transferred Members			
Count	5	25	83.3%
Separated Members			
Count	14	31	68.9%
Retired Members and Beneficiaries Receiving Payments			
Count	333	4	1.2%
Average Annual Benefit	$82,580	$48,672	
Total Annual Benefits	$27,499,150	$194,689	0.7%
Accrued Liabilities			
Active Members	$92,013,064	$10,920,258	10.6%
Transferred Members	345,244	1,179,601	77.4%
Separated Members	2,775,471	671,987	19.5%
Retired Members and Beneficiaries	350,713,207	3,555,269	1.0%
Total	$445,846,986	$16,327,115	3.5%

Plan's Major Benefit Options

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

	Benefit Group						
Member Category	**Fire**	**Police**	**Fire**	**Police**	**Fire**	**Police**	**Fire**
Demographics							
Actives	No	Yes	Yes	Yes	Yes	Yes	Yes
Transfers/Separated	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Receiving	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit Provision							
Benefit Formula	3% @ 55	3% @ 50	3% @ 55	3% @ 50	2.7% @ 57	2.7% @ 57	3% @ 55
Social Security Coverage	No	No	No	No	No	No	No
Full/Modified	Full	Full	Full	Full	Full	Full	Full
Employee Contribution Rate		9.00%	9.00%	9.00%	13.50%	13.50%	9.00%
Final Average Compensation Period	One Year	One Year	One Year	One Year	Three Year	Three Year	One Year
Sick Leave Credit	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non-Industrial Disability	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Industrial Disability	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Pre-Retirement Death Benefits							
Optional Settlement 2	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1959 Survivor Benefit Level	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
Special	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alternate (firefighters)	No	No	No	No	No	No	No
Post-Retirement Death Benefits							
Lump Sum	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Survivor Allowance (PRSA)	Yes	Yes	Yes	Yes	No	No	No
COLA	2%	2%	2%	2%	2%	2%	2%

Plan's Major Benefit Options (Continued)

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

	Benefit Group						
Member Category	**Police**	**Fire**	**Fire**	**Fire**	**Police**	**Police**	**Police**
Demographics							
Actives	Yes	No	No	No	No	No	No
Transfers/Separated	Yes	No	No	No	No	No	No
Receiving	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit Provision							
Benefit Formula	3% @ 55						
Social Security Coverage	No						
Full/Modified	Full						
Employee Contribution Rate	9.00%						
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 4						
Special	Yes						
Alternate (firefighters)	No						
Post-Retirement Death Benefits							
Lump Sum	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Survivor Allowance (PRSA)	No	Yes	Yes	Yes	Yes	Yes	Yes
COLA	2%	2%	2%	2%	2%	2%	2%

Appendix A - Actuarial Methods and Assumptions

Actuarial Data

As stated in the Actuarial Certification, the data which serves as the basis of this valuation has been obtained from the various CalPERS databases. We have reviewed the valuation data and believe that it is reasonable and appropriate in aggregate. We are unaware of any potential data issues that would have a material effect on the results of this valuation, except that data does not always contain the latest salary information for former members now in reciprocal systems and does not recognize the potential for unusually large salary deviation in certain cases such as elected officials. Therefore, salary information in these cases may not be accurate. These situations are relatively infrequent, however, and generally do not have a material impact on the required employer contributions.

Actuarial Methods

Actuarial Cost Method

With one exception, the actuarial cost method used in this valuation is the Entry Age Actuarial Cost Method. This method is used to calculate the required employer contributions and the PEPRA member contribution rate. Under this method, the cost of the projected benefits is allocated on an individual basis as a level percent of earnings for the individual between entry age and retirement age. The portion allocated to the year following the valuation date is the normal cost. This method yields a total normal cost rate, expressed as a percentage of payroll, which is designed to remain level throughout the member's career.

The actuarial accrued liability for active members is then calculated as the present value of benefits minus the present value of future normal cost, or the portion of the total present value of benefits allocated to prior years. The actuarial accrued liability for members currently receiving benefits and for members entitled to deferred benefits is equal to the present value of the benefits expected to be paid. No normal costs are applicable for these participants.

To calculate the accrued liability on termination basis, this valuation used the Traditional Unit Credit Actuarial Cost Method. This method differs from the entry age method only for active members where the accrued liability is the present value of benefits assuming no future pay increases or service accruals.

Amortization of Unfunded Actuarial Accrued Liability

The excess of the total actuarial accrued liability over the market value of plan assets is called the unfunded actuarial accrued liability (UAL). Funding requirements are determined by adding the normal cost and a payment toward the UAL. The UAL payment is equal to the sum of individual amortization payments, each representing a different source of UAL for a given measurement period.

Amortization payments are determined according to the CalPERS Actuarial Amortization Policy. The board adopted a new policy effective for the June 30, 2019, actuarial valuation. The new policy applies prospectively only; amortization bases (sources of UAL) established prior to the June 30, 2019, valuation will continue to be amortized according to the prior policy.

Amortization of Unfunded Actuarial Accrued Liability (continued)

Prior Policy (Bases Established on or after June 30, 2013, and prior to June 30, 2019)

Amortization payments are determined as a level percentage of payroll whereby the payment increases each year at an escalation rate. Gains or losses are amortized over a fixed 30-year period with a 5-year ramp up at the beginning and a 5-year ramp down at the end of the amortization period. All changes in liability due to plan amendments (other than golden handshakes) are amortized over a 20-year period with no ramp. Changes in actuarial assumptions or changes in actuarial methodology are amortized over a 20-year period with a 5-year ramp up at the beginning and a 5-year ramp down at the end of the amortization period. Changes in unfunded accrued liability due to a Golden Handshake are amortized over a period of five years (20 years prior to June 30, 2014). A summary is provided in the following table:

	Source				
	(Gain)/Loss				
Driver	Investment	Non-investment	Assumption/Method Change	Benefit Change	Golden Handshake
Amortization Period	30 Years	30 Years	20 Years	20 Years	5 Years
Escalation Rate - Active Plans - Inactive Plans	2.80% 0%	2.80% 0%	2.80% 0%	2.80% 0%	2.80% 0%
Ramp Up	5	5	5	0	0
Ramp Down	5	5	5	0	0

The 5-year ramp up means that the payments in the first four years of the amortization period are 20%, 40%, 60% and 80% of the "full" payment which begins in year five. The 5-year ramp down means that the reverse is true in the final four years of the amortization period.

Current Policy (Bases Established on or after June 30, 2019)

Amortization payments are determined as a level dollar amount. Investment gains or losses are amortized over a fixed 20-year period with a 5-year ramp up at the beginning of the amortization period. Non-investment gains or losses are amortized over a fixed 20-year period with no ramps. All changes in liability due to plan amendments (other than golden handshakes) are amortized over a 20-year period with no ramps. Changes in actuarial assumptions or changes in actuarial methodology are amortized over a 20-year period with no ramps. Changes in unfunded accrued liability due to a Golden Handshake are amortized over a period of five years. A summary is provided in the table below:

	Source				
	(Gain)/Loss				
Driver	Investment	Non-investment	Assumption/ Method Change	Benefit Change	Golden Handshake
Amortization Period	20 Years	20 Years	20 Years	20 Years	5 Years
Escalation Rate	0%	0%	0%	0%	0%
Ramp Up	5	0	0	0	0
Ramp Down	0	0	0	0	0

The 5-year ramp up means that the payments in the first four years of the amortization period are 20%, 40%, 60% and 80% of the "full" payment which begins in year five.

Amortization of Unfunded Actuarial Accrued Liability (continued)

Exceptions for Inconsistencies

An exception to the amortization rules above is used whenever their application results in inconsistencies. In these cases, a "fresh start" approach is used. This means that the current unfunded actuarial liability is projected and amortized over a set number of years. For example, a fresh start is needed in the following situations:

- 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.

It should be noted that the actuary may determine that a fresh start is necessary under other circumstances. In all cases of a fresh start, the period is set by the actuary at what is deemed appropriate; however, the period will not be greater than 20 years.

Exceptions for Plans in Surplus

If a surplus exists (i.e., the Market Value of Assets exceeds the plan's accrued liability) any prior amortization layers shall be considered fully amortized, and the surplus shall not be amortized.

In the event of any subsequent unfunded liability, a Fresh Start shall be used with an amortization period of 20 years or less.

Exceptions for Small Amounts

Where small unfunded liabilities are identified in annual valuations which result in small payment amounts, the actuary may shorten the remaining period for these bases.

- When the balance of a single amortization base has an absolute value less than $250, the amortization period is reduced to one year.
- When the entire unfunded liability is a small amount, the actuary may perform a Fresh Start and use an appropriate amortization period.

Exceptions for Inactive Plans

The following exceptions apply to plans classified as Inactive. These plans have no active members and no expectation to have active members in the future.

- Amortization of the unfunded liability is on a "level dollar" basis rather than a "level percent of pay" basis. For amortization layers, which utilize a ramp up and ramp down, the "ultimate" payment is constant.
- Actuarial judgment will be used to shorten amortization periods for Inactive plans with existing periods that are deemed too long given the duration of the liability. The specific demographics of the plan will be used to determine if shorter periods may be more appropriate.

Exceptions for Inactive Agencies

For a public agency with no active members in any CalPERS rate plan, the unfunded liability shall be amortized over a closed amortization period of no more than 15 years.

Asset Valuation Method

The Actuarial Value of Assets is set equal to the market value of assets. Asset values include accounts receivable.

PEPRA Normal Cost Rate Methodology

Per Government Code section 7522.30(b), the "normal cost rate" shall mean the annual actuarially determined normal cost for the plan of retirement benefits provided to the new member and shall be established based on actuarial assumptions used to determine the liabilities and costs as part of the annual actuarial valuation. The plan of retirement benefits shall include any elements that would impact the actuarial determination of the normal cost, including, but not limited to, the retirement formula, eligibility and vesting criteria, ancillary benefit provisions, and any automatic cost-of-living adjustments as determined by the public retirement system.

PEPRA Normal Cost Rate Methodology (continued)

For purposes of setting member rates, it is preferable to determine total normal cost using a large active population so that the rate remains relatively stable. While each CalPERS non-pooled plan has a sufficiently large active population for this purpose, the PEPRA active population by itself may not be sufficiently large enough yet. The total PEPRA normal cost for each PEPRA benefit tier will be determined based on the entire active plan population (both PEPRA and Classic) only until the number of members covered under the PEPRA formula meets either:

1. 50% of the active population, or
2. 25% of the active population and 100 or more PEPRA members

Once one of these conditions is met, the total PEPRA normal cost for each PEPRA benefit tier will be determined using the entire active PEPRA population.

Actuarial Assumptions

In 2021, CalPERS completed its most recent asset liability management study incorporating actuarial assumptions and strategic asset allocation. In November 2021, the board adopted changes to the asset allocation that increased the expected volatility of returns. The adopted asset allocation was expected to have a long-term blended return that continued to support a discount rate assumption of 6.80%. The board also approved several changes to the demographic assumptions that more closely aligned with actual experience.

For more details and additional rationale for the selection of the actuarial assumptions, please refer to the 2021 CalPERS Experience Study and Review of Actuarial Assumptions that can be found on the CalPERS website under: Forms and Publications. Click on "View All" and search for Experience Study.

All actuarial assumptions (except the discount rates and price inflation assumption used for the accrued liability on a termination basis and the interest rate used for the low-default-risk obligation measure) represent an estimate of future experience rather than observations of the estimates inherent in market data.

Economic Assumptions

Discount Rate
The prescribed discount rate assumption, adopted by the board on November 17, 2021, is 6.80% compounded annually (net of investment and administrative expenses) as of June 30, 2024. The discount rate is based on the long-term expected rate of return on assets using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. The current assumption, originally based on capital market assumptions developed by the Investment Office in 2021, has been reviewed for this valuation based on capital market assumptions developed by the Investment Office in 2023.

Termination Liability Discount Rate
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 accrued liabilities on a termination basis in this report use discount rates that are based on the 20-year Treasury rate on the valuation date.

To illustrate the impact of the variability of interest rates, the accrued liabilities on a termination basis in this report use discount rates 1% below and 1% above the 20-year Treasury rate on the valuation date. The 20-year Treasury rate was 4.61% on June 30, 2024.

Salary Increases

Annual increases vary by category, entry age, and duration of service. A sample of assumed increases due to seniority, merit and promotion are shown below. Assumed wage inflation is combined with these factors to develop the total expected salary increases.

Public Agency Miscellaneous

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.0764	0.0621	0.0521
1	0.0663	0.0528	0.0424
2	0.0576	0.0449	0.0346
3	0.0501	0.0381	0.0282
4	0.0435	0.0324	0.0229
5	0.0378	0.0276	0.0187
10	0.0201	0.0126	0.0108
15	0.0155	0.0102	0.0071
20	0.0119	0.0083	0.0047
25	0.0091	0.0067	0.0031
30	0.0070	0.0054	0.0020

Public Agency Fire

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.1517	0.1549	0.0631
1	0.1191	0.1138	0.0517
2	0.0936	0.0835	0.0423
3	0.0735	0.0613	0.0346
4	0.0577	0.0451	0.0284
5	0.0453	0.0331	0.0232
10	0.0188	0.0143	0.0077
15	0.0165	0.0124	0.0088
20	0.0145	0.0108	0.0101
25	0.0127	0.0094	0.0115
30	0.0112	0.0082	0.0132

Public Agency Police

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.1181	0.1051	0.0653
1	0.0934	0.0812	0.0532
2	0.0738	0.0628	0.0434
3	0.0584	0.0485	0.0353
4	0.0462	0.0375	0.0288
5	0.0365	0.0290	0.0235
10	0.0185	0.0155	0.0118
15	0.0183	0.0150	0.0131
20	0.0181	0.0145	0.0145
25	0.0179	0.0141	0.0161
30	0.0178	0.0136	0.0179

Salary Increases (continued)

Public Agency County Peace Officers

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.1238	0.1053	0.0890
1	0.0941	0.0805	0.0674
2	0.0715	0.0616	0.0510
3	0.0544	0.0471	0.0387
4	0.0413	0.0360	0.0293
5	0.0314	0.0276	0.0222
10	0.0184	0.0142	0.0072
15	0.0174	0.0124	0.0073
20	0.0164	0.0108	0.0074
25	0.0155	0.0094	0.0075
30	0.0147	0.0083	0.0077

Schools

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.0275	0.0275	0.0200
1	0.0422	0.0373	0.0298
2	0.0422	0.0373	0.0298
3	0.0422	0.0373	0.0298
4	0.0388	0.0314	0.0245
5	0.0308	0.0239	0.0179
10	0.0236	0.0160	0.0121
15	0.0182	0.0135	0.0103
20	0.0145	0.0109	0.0085
25	0.0124	0.0102	0.0058
30	0.0075	0.0053	0.0019

- The Miscellaneous salary scale is used for Local Prosecutors.
- The Police salary scale is used for Other Safety, Local Sheriff, and School Police.

Price Inflation
2.30% compounded annually.

Termination Liability Price Inflation
The breakeven inflation rate for 20-year Treasuries on the valuation date, 2.45%.

Wage Inflation
2.80% compounded annually. This is used in projecting individual salary increases.

Payroll Growth
2.80% compounded annually. This is used as the escalation rate of the amortization payments on level percent of payroll amortization bases, that is, on any amortization bases established prior to 2019 for plans that currently have active members.

Miscellaneous Loading Factors

Credit for Unused Sick Leave
Total years of service is increased by 1% for those plans that have adopted the provision of providing Credit for Unused Sick Leave.

Conversion of Employer Paid Member Contributions (EPMC)
Total years of service is increased by the Employee Contribution Rate for those plans with the provision providing for the Conversion of Employer Paid Member Contributions (EPMC) during the final compensation period.

Norris Decision (Best Factors)
Employees hired prior to July 1, 1982, have projected benefit amounts increased in order to reflect the use of "Best Factors" in the calculation of optional benefit forms. This is due to a 1983 Supreme Court decision, known as the Norris decision, which required males and females to be treated equally in the determination of benefit amounts. Consequently, anyone already employed at that time is given the best possible conversion factor when optional benefits are determined. No loading is necessary for employees hired after July 1, 1982.

Termination Liability
The termination liabilities include a 5% contingency load. This load is for unforeseen improvements in mortality.

Demographic Assumptions

Pre-Retirement Mortality
The mortality assumptions are based on mortality rates resulting from the most recent CalPERS Experience Study adopted by the CalPERS Board in November 2021. For purposes of the mortality rates, the rates incorporate generational mortality to capture ongoing mortality improvement. Generational mortality explicitly assumes that members born more recently will live longer than the members born before them thereby capturing the mortality improvement seen in the past and expected continued improvement. For more details, please refer to the 2021 CalPERS Experience Study and Review of Actuarial Assumptions report that can be found on the CalPERS website.

Rates vary by age and gender. This table only contains a sample of the 2017 base table rates for illustrative purposes. The non-industrial death rates are used for all plans. The industrial death rates are used for Safety plans, except for local Safety members described in Government Code section 20423.6 where the agency has not specifically contracted for industrial death benefits.

	Miscellaneous		Safety			
	Non-Industrial Death (Not Job-Related)		Non-Industrial Death (Not Job-Related)		Industrial Death (Job-Related)	
Age	Male	Female	Male	Female	Male	Female
20	0.00039	0.00014	0.00038	0.00014	0.00004	0.00002
25	0.00033	0.00013	0.00034	0.00018	0.00004	0.00002
30	0.00044	0.00019	0.00042	0.00025	0.00005	0.00003
35	0.00058	0.00029	0.00048	0.00034	0.00005	0.00004
40	0.00075	0.00039	0.00055	0.00042	0.00006	0.00005
45	0.00093	0.00054	0.00066	0.00053	0.00007	0.00006
50	0.00134	0.00081	0.00092	0.00073	0.00010	0.00008
55	0.00198	0.00123	0.00138	0.00106	0.00015	0.00012
60	0.00287	0.00179	0.00221	0.00151	0.00025	0.00017
65	0.00403	0.00250	0.00346	0.00194	0.00038	0.00022
70	0.00594	0.00404	0.00606	0.00358	0.00067	0.00040
75	0.00933	0.00688	0.01099	0.00699	0.00122	0.00078
80	0.01515	0.01149	0.02027	0.01410	0.00225	0.00157

- The pre-retirement mortality rates above are for 2017 and are projected generationally for future years using 80% of the Society of Actuaries' Scale MP-2020.
- Miscellaneous plans usually have industrial death rates set to zero unless the agency has specifically contracted for industrial death benefits. If so, each non-industrial death rate shown above will be split into two components: 99% will become the non-industrial death rate and 1% will become the industrial death rate.

Post-Retirement Mortality
Rates vary by age, type of retirement, and gender. See sample rates in table below. These rates are used for all plans.

	Service Retirement		Non-Industrial Disability (Not Job-Related)		Industrial Disability (Job-Related)	
Age	Male	Female	Male	Female	Male	Female
50	0.00267	0.00199	0.01701	0.01439	0.00430	0.00311
55	0.00390	0.00325	0.02210	0.01734	0.00621	0.00550
60	0.00578	0.00455	0.02708	0.01962	0.00944	0.00868
65	0.00857	0.00612	0.03334	0.02276	0.01394	0.01190
70	0.01333	0.00996	0.04001	0.02910	0.02163	0.01858
75	0.02391	0.01783	0.05376	0.04160	0.03446	0.03134
80	0.04371	0.03403	0.07936	0.06112	0.05853	0.05183
85	0.08274	0.06166	0.11561	0.09385	0.10137	0.08045
90	0.14539	0.11086	0.16608	0.14396	0.16584	0.12434
95	0.24665	0.20364	0.24665	0.20364	0.24665	0.20364
100	0.36198	0.31582	0.36198	0.31582	0.36198	0.31582
105	0.52229	0.44679	0.52229	0.44679	0.52229	0.44679
110	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

- The post-retirement mortality rates above are for 2017 and are projected generationally for future years using 80% of the Society of Actuaries' Scale MP-2020.

Marital Status
For active members, a percentage who are married upon retirement is assumed according to the member category as shown in the following table.

Member Category	Percent Married
Miscellaneous Member	70%
Local Police	85%
Local Fire	85%
Other Local Safety	70%
School Police	85%
Local County Peace Officers	75%

Age of Spouse
It is assumed that female spouses are 3 years younger than male spouses. This assumption is used for all plans.

Separated Members
It is assumed that separated members refund immediately if non-vested. Separated members who are vested are assumed to retire at age 59 for Miscellaneous members and age 54 for Safety members.

Termination with Refund

Rates vary by entry age and service for Miscellaneous plans. Rates vary by service for Safety plans. See sample rates in tables below.

Public Agency Miscellaneous

Duration of Service	Entry Age 20		Entry Age 25		Entry Age 30		Entry Age 35		Entry Age 40		Entry Age 45	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0	0.1851	0.1944	0.1769	0.1899	0.1631	0.1824	0.1493	0.1749	0.1490	0.1731	0.1487	0.1713
1	0.1531	0.1673	0.1432	0.1602	0.1266	0.1484	0.1101	0.1366	0.1069	0.1323	0.1037	0.1280
2	0.1218	0.1381	0.1125	0.1307	0.0970	0.1183	0.0815	0.1058	0.0771	0.0998	0.0726	0.0938
3	0.0927	0.1085	0.0852	0.1020	0.0727	0.0912	0.0601	0.0804	0.0556	0.0737	0.0511	0.0669
4	0.0672	0.0801	0.0616	0.0752	0.0524	0.0670	0.0431	0.0587	0.0392	0.0523	0.0352	0.0459
5	0.0463	0.0551	0.0423	0.0517	0.0358	0.0461	0.0292	0.0404	0.0261	0.0350	0.0230	0.0296
10	0.0112	0.0140	0.0101	0.0129	0.0083	0.0112	0.0064	0.0094	0.0048	0.0071	0.0033	0.0049
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Public Agency Safety

Duration of Service	Fire		Police		County Peace Officer	
	Male	Female	Male	Female	Male	Female
0	0.1022	0.1317	0.1298	0.1389	0.1086	0.1284
1	0.0686	0.1007	0.0789	0.0904	0.0777	0.0998
2	0.0441	0.0743	0.0464	0.0566	0.0549	0.0759
3	0.0272	0.0524	0.0274	0.0343	0.0385	0.0562
4	0.0161	0.0349	0.0170	0.0206	0.0268	0.0402
5	0.0092	0.0214	0.0113	0.0128	0.0186	0.0276
10	0.0015	0.0000	0.0032	0.0047	0.0046	0.0038
15	0.0000	0.0000	0.0000	0.0000	0.0023	0.0036
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

- The police termination and refund rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff, and School Police.

Termination with Refund (continued)

Schools

Duration of Service	Entry Age 20		Entry Age 25		Entry Age 30		Entry Age 35		Entry Age 40		Entry Age 45	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0	0.2054	0.2120	0.1933	0.1952	0.1730	0.1672	0.1527	0.1392	0.1423	0.1212	0.1318	0.1032
1	0.1922	0.2069	0.1778	0.1883	0.1539	0.1573	0.1300	0.1264	0.1191	0.1087	0.1083	0.0910
2	0.1678	0.1859	0.1536	0.1681	0.1298	0.1383	0.1060	0.1086	0.0957	0.0934	0.0853	0.0782
3	0.1384	0.1575	0.1256	0.1417	0.1042	0.1155	0.0829	0.0893	0.0736	0.0774	0.0643	0.0656
4	0.1085	0.1274	0.0978	0.1143	0.0800	0.0925	0.0622	0.0707	0.0542	0.0620	0.0462	0.0533
5	0.0816	0.0991	0.0732	0.0887	0.0590	0.0713	0.0449	0.0539	0.0383	0.0476	0.0317	0.0413
10	0.0222	0.0248	0.0200	0.0221	0.0163	0.0174	0.0125	0.0128	0.0094	0.0100	0.0063	0.0072
15	0.0106	0.0132	0.0095	0.0113	0.0077	0.0083	0.0058	0.0052	0.0040	0.0039	0.0021	0.0026
20	0.0059	0.0065	0.0050	0.0054	0.0035	0.0036	0.0021	0.0019	0.0010	0.0009	0.0000	0.0000
25	0.0029	0.0034	0.0025	0.0029	0.0018	0.0020	0.0010	0.0012	0.0005	0.0006	0.0000	0.0000
30	0.0012	0.0015	0.0011	0.0013	0.0011	0.0011	0.0010	0.0009	0.0005	0.0005	0.0000	0.0000
35	0.0006	0.0007	0.0006	0.0007	0.0005	0.0006	0.0005	0.0005	0.0003	0.0002	0.0000	0.0000

Termination with Vested Benefits

Rates vary by entry age and service for Miscellaneous plans. Rates vary by service for Safety plans. See sample rates in tables below.

Public Agency Miscellaneous

Duration of Service	Entry Age 20		Entry Age 25		Entry Age 30		Entry Age 35		Entry Age 40	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
5	0.0381	0.0524	0.0381	0.0524	0.0358	0.0464	0.0334	0.0405	0.0301	0.0380
10	0.0265	0.0362	0.0265	0.0362	0.0254	0.0334	0.0244	0.0307	0.0197	0.0236
15	0.0180	0.0252	0.0180	0.0252	0.0166	0.0213	0.0152	0.0174	0.0119	0.0132
20	0.0141	0.0175	0.0141	0.0175	0.0110	0.0131	0.0079	0.0087	0.0000	0.0000
25	0.0084	0.0108	0.0084	0.0108	0.0064	0.0076	0.0000	0.0000	0.0000	0.0000
30	0.0047	0.0056	0.0047	0.0056	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0038	0.0041	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Public Agency Safety

Duration of Service	Fire		Police		County Peace Officer	
	Male	Female	Male	Female	Male	Female
5	0.0089	0.0224	0.0156	0.0272	0.0177	0.0266
10	0.0066	0.0164	0.0113	0.0198	0.0126	0.0189
15	0.0048	0.0120	0.0083	0.0144	0.0089	0.0134
20	0.0035	0.0088	0.0060	0.0105	0.0063	0.0095
25	0.0024	0.0061	0.0042	0.0073	0.0042	0.0063
30	0.0012	0.0031	0.0021	0.0037	0.0021	0.0031
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

- After termination with vested benefits, a Miscellaneous member is assumed to retire at age 59 and a Safety member at age 54.
- The Police termination with vested benefits rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff, and School Police.

Schools

Duration of Service	Entry Age 20		Entry Age 25		Entry Age 30		Entry Age 35		Entry Age 40	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
5	0.0359	0.0501	0.0359	0.0501	0.0332	0.0402	0.0305	0.0304	0.0266	0.0272
10	0.0311	0.0417	0.0311	0.0417	0.0269	0.0341	0.0228	0.0265	0.0193	0.0233
15	0.0193	0.0264	0.0193	0.0264	0.0172	0.0220	0.0151	0.0175	0.0123	0.0142
20	0.0145	0.0185	0.0145	0.0185	0.0113	0.0141	0.0080	0.0097	0.0000	0.0000
25	0.0089	0.0123	0.0089	0.0123	0.0074	0.0093	0.0000	0.0000	0.0000	0.0000
30	0.0057	0.0064	0.0057	0.0064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0040	0.0049	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Non-Industrial (Not Job-Related) Disability
Rates vary by age and gender for Miscellaneous plans. Rates vary by age and category for Safety plans.

	Miscellaneous		Fire	Police	County Peace Officer	Schools	
Age	Male	Female	All	All	All	Male	Female
20	0.0001	0.0000	0.0001	0.0001	0.0001	0.0000	0.0002
25	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0002
30	0.0002	0.0003	0.0001	0.0001	0.0001	0.0002	0.0002
35	0.0004	0.0007	0.0001	0.0002	0.0003	0.0005	0.0004
40	0.0009	0.0012	0.0001	0.0002	0.0006	0.0010	0.0008
45	0.0015	0.0019	0.0002	0.0003	0.0011	0.0019	0.0015
50	0.0015	0.0019	0.0004	0.0005	0.0016	0.0027	0.0021
55	0.0014	0.0013	0.0006	0.0007	0.0009	0.0024	0.0017
60	0.0012	0.0009	0.0006	0.0011	0.0005	0.0020	0.0010

- The Miscellaneous non-industrial disability rates are used for Local Prosecutors.
- The police non-industrial disability rates are also used for Other Safety, Local Sheriff, and School Police.

Industrial (Job-Related) Disability
Rates vary by age and category.

Age	Fire	Police	County Peace Officer
20	0.0001	0.0000	0.0004
25	0.0002	0.0017	0.0013
30	0.0006	0.0048	0.0025
35	0.0012	0.0079	0.0037
40	0.0023	0.0110	0.0051
45	0.0040	0.0141	0.0067
50	0.0208	0.0185	0.0092
55	0.0307	0.0479	0.0151
60	0.0438	0.0602	0.0174

- The police industrial disability rates are also used for Local Sheriff and Other Safety.
- 50% of the police industrial disability rates are used for School Police.
- 1% of the police industrial disability rates are used for Local Prosecutors.
- Normally, rates are zero for Miscellaneous plans unless the agency has specifically contracted for industrial disability benefits. If so, each Miscellaneous non-industrial disability rate will be split into two components: 50% will become the non-industrial disability rate and 50% will become the industrial disability rate.

Service Retirement

Retirement rates vary by age, service, and formula, except for the Safety Half Pay at 55 and 2% at 55 formulas, where retirement rates vary by age only.

Public Agency Miscellaneous 1.5% at age 65

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.008	0.011	0.013	0.015	0.017	0.019
51	0.007	0.010	0.012	0.013	0.015	0.017
52	0.010	0.014	0.017	0.019	0.021	0.024
53	0.008	0.012	0.015	0.017	0.019	0.022
54	0.012	0.016	0.019	0.022	0.025	0.028
55	0.018	0.025	0.031	0.035	0.038	0.043
56	0.015	0.021	0.025	0.029	0.032	0.036
57	0.020	0.028	0.033	0.038	0.043	0.048
58	0.024	0.033	0.040	0.046	0.052	0.058
59	0.028	0.039	0.048	0.054	0.060	0.067
60	0.049	0.069	0.083	0.094	0.105	0.118
61	0.062	0.087	0.106	0.120	0.133	0.150
62	0.104	0.146	0.177	0.200	0.223	0.251
63	0.099	0.139	0.169	0.191	0.213	0.239
64	0.097	0.136	0.165	0.186	0.209	0.233
65	0.140	0.197	0.240	0.271	0.302	0.339
66	0.092	0.130	0.157	0.177	0.198	0.222
67	0.129	0.181	0.220	0.249	0.277	0.311
68	0.092	0.129	0.156	0.177	0.197	0.221
69	0.092	0.130	0.158	0.178	0.199	0.224
70	0.103	0.144	0.175	0.198	0.221	0.248

Public Agency Miscellaneous 2% at age 60

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.010	0.011	0.014	0.014	0.017	0.017
51	0.017	0.013	0.014	0.010	0.010	0.010
52	0.014	0.014	0.018	0.015	0.016	0.016
53	0.015	0.012	0.013	0.010	0.011	0.011
54	0.006	0.010	0.017	0.016	0.018	0.018
55	0.012	0.016	0.024	0.032	0.036	0.036
56	0.010	0.014	0.023	0.030	0.034	0.034
57	0.006	0.018	0.030	0.040	0.044	0.044
58	0.022	0.023	0.033	0.042	0.046	0.046
59	0.039	0.033	0.040	0.047	0.050	0.050
60	0.063	0.069	0.074	0.090	0.137	0.116
61	0.044	0.058	0.066	0.083	0.131	0.113
62	0.084	0.107	0.121	0.153	0.238	0.205
63	0.173	0.166	0.165	0.191	0.283	0.235
64	0.120	0.145	0.164	0.147	0.160	0.172
65	0.138	0.160	0.214	0.216	0.237	0.283
66	0.198	0.228	0.249	0.216	0.228	0.239
67	0.207	0.242	0.230	0.233	0.233	0.233
68	0.201	0.234	0.225	0.231	0.231	0.231
69	0.152	0.173	0.164	0.166	0.166	0.166
70	0.200	0.200	0.200	0.200	0.200	0.200

Service Retirement (continued)

Public Agency Miscellaneous 2% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.014	0.014	0.017	0.021	0.023	0.024
51	0.013	0.017	0.017	0.018	0.018	0.019
52	0.013	0.018	0.018	0.020	0.020	0.021
53	0.013	0.019	0.021	0.024	0.025	0.026
54	0.017	0.025	0.028	0.032	0.033	0.035
55	0.045	0.042	0.053	0.086	0.098	0.123
56	0.018	0.036	0.056	0.086	0.102	0.119
57	0.041	0.046	0.056	0.076	0.094	0.120
58	0.052	0.044	0.048	0.074	0.106	0.123
59	0.043	0.058	0.073	0.092	0.105	0.126
60	0.059	0.064	0.083	0.115	0.154	0.170
61	0.087	0.074	0.087	0.107	0.147	0.168
62	0.115	0.123	0.151	0.180	0.227	0.237
63	0.116	0.127	0.164	0.202	0.252	0.261
64	0.084	0.138	0.153	0.190	0.227	0.228
65	0.167	0.187	0.210	0.262	0.288	0.291
66	0.187	0.258	0.280	0.308	0.318	0.319
67	0.195	0.235	0.244	0.277	0.269	0.280
68	0.228	0.248	0.250	0.241	0.245	0.245
69	0.188	0.201	0.209	0.219	0.231	0.231
70	0.229	0.229	0.229	0.229	0.229	0.229

Public Agency Miscellaneous 2.5% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.014	0.017	0.027	0.035	0.046	0.050
51	0.019	0.021	0.025	0.030	0.038	0.040
52	0.018	0.020	0.026	0.034	0.038	0.037
53	0.013	0.021	0.031	0.045	0.052	0.053
54	0.025	0.025	0.030	0.046	0.057	0.068
55	0.029	0.042	0.064	0.109	0.150	0.225
56	0.036	0.047	0.068	0.106	0.134	0.194
57	0.051	0.047	0.060	0.092	0.116	0.166
58	0.035	0.046	0.062	0.093	0.119	0.170
59	0.029	0.053	0.072	0.112	0.139	0.165
60	0.039	0.069	0.094	0.157	0.177	0.221
61	0.080	0.077	0.086	0.140	0.167	0.205
62	0.086	0.131	0.149	0.220	0.244	0.284
63	0.135	0.135	0.147	0.214	0.222	0.262
64	0.114	0.128	0.158	0.177	0.233	0.229
65	0.112	0.174	0.222	0.209	0.268	0.273
66	0.235	0.254	0.297	0.289	0.321	0.337
67	0.237	0.240	0.267	0.249	0.267	0.277
68	0.258	0.271	0.275	0.207	0.210	0.212
69	0.117	0.208	0.266	0.219	0.250	0.270
70	0.229	0.229	0.229	0.229	0.229	0.229

Service Retirement (continued)

Public Agency Miscellaneous 2.7% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.011	0.016	0.022	0.033	0.034	0.038
51	0.018	0.019	0.023	0.032	0.031	0.031
52	0.019	0.020	0.026	0.035	0.034	0.037
53	0.020	0.020	0.025	0.043	0.048	0.053
54	0.018	0.030	0.040	0.052	0.053	0.070
55	0.045	0.058	0.082	0.138	0.208	0.278
56	0.057	0.062	0.080	0.121	0.178	0.222
57	0.045	0.052	0.071	0.106	0.147	0.182
58	0.074	0.060	0.074	0.118	0.163	0.182
59	0.058	0.067	0.086	0.123	0.158	0.187
60	0.087	0.084	0.096	0.142	0.165	0.198
61	0.073	0.084	0.101	0.138	0.173	0.218
62	0.130	0.133	0.146	0.187	0.214	0.249
63	0.122	0.140	0.160	0.204	0.209	0.243
64	0.104	0.124	0.154	0.202	0.214	0.230
65	0.182	0.201	0.242	0.264	0.293	0.293
66	0.272	0.249	0.273	0.285	0.312	0.312
67	0.182	0.217	0.254	0.249	0.264	0.264
68	0.223	0.197	0.218	0.242	0.273	0.273
69	0.217	0.217	0.217	0.217	0.217	0.217
70	0.227	0.227	0.227	0.227	0.227	0.227

Public Agency Miscellaneous 3% at age 60

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.015	0.020	0.025	0.039	0.040	0.044
51	0.041	0.034	0.032	0.041	0.036	0.037
52	0.024	0.020	0.022	0.039	0.040	0.041
53	0.018	0.024	0.032	0.047	0.048	0.057
54	0.033	0.033	0.035	0.051	0.049	0.052
55	0.137	0.043	0.051	0.065	0.076	0.108
56	0.173	0.038	0.054	0.075	0.085	0.117
57	0.019	0.035	0.059	0.088	0.111	0.134
58	0.011	0.040	0.070	0.105	0.133	0.162
59	0.194	0.056	0.064	0.081	0.113	0.163
60	0.081	0.085	0.133	0.215	0.280	0.333
61	0.080	0.090	0.134	0.170	0.223	0.292
62	0.137	0.153	0.201	0.250	0.278	0.288
63	0.128	0.140	0.183	0.227	0.251	0.260
64	0.174	0.147	0.173	0.224	0.239	0.264
65	0.152	0.201	0.262	0.299	0.323	0.323
66	0.272	0.273	0.317	0.355	0.380	0.380
67	0.218	0.237	0.268	0.274	0.284	0.284
68	0.200	0.228	0.269	0.285	0.299	0.299
69	0.250	0.250	0.250	0.250	0.250	0.250
70	0.245	0.245	0.245	0.245	0.245	0.245

Service Retirement (continued)

Public Agency Miscellaneous 2% at age 62

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.000	0.000	0.000	0.000	0.000	0.000
51	0.000	0.000	0.000	0.000	0.000	0.000
52	0.005	0.008	0.012	0.015	0.019	0.031
53	0.007	0.011	0.014	0.018	0.021	0.032
54	0.007	0.011	0.015	0.019	0.023	0.034
55	0.010	0.019	0.028	0.036	0.061	0.096
56	0.014	0.026	0.038	0.050	0.075	0.108
57	0.018	0.029	0.039	0.050	0.074	0.107
58	0.023	0.035	0.048	0.060	0.073	0.099
59	0.025	0.038	0.051	0.065	0.092	0.128
60	0.031	0.051	0.071	0.091	0.111	0.138
61	0.038	0.058	0.079	0.100	0.121	0.167
62	0.044	0.074	0.104	0.134	0.164	0.214
63	0.077	0.105	0.134	0.163	0.192	0.237
64	0.072	0.101	0.129	0.158	0.187	0.242
65	0.108	0.141	0.173	0.206	0.239	0.300
66	0.132	0.172	0.212	0.252	0.292	0.366
67	0.132	0.172	0.212	0.252	0.292	0.366
68	0.120	0.156	0.193	0.229	0.265	0.333
69	0.120	0.156	0.193	0.229	0.265	0.333
70	0.120	0.156	0.193	0.229	0.265	0.333

Public Agency Fire Half Pay at age 55 and 2% at age 55

Age	Rate	Age	Rate
50	0.016	56	0.111
51	0.000	57	0.000
52	0.034	58	0.095
53	0.020	59	0.044
54	0.041	60	1.000
55	0.075		

Public Agency Police Half Pay at age 55 and 2% at age 55

Age	Rate	Age	Rate
50	0.026	56	0.069
51	0.000	57	0.051
52	0.016	58	0.072
53	0.027	59	0.070
54	0.010	60	0.300
55	0.167		

Service Retirement (continued)

Public Agency Police 2% at age 50

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.018	0.077	0.056	0.046	0.043	0.046
51	0.022	0.087	0.060	0.048	0.044	0.047
52	0.020	0.102	0.081	0.071	0.069	0.075
53	0.016	0.072	0.053	0.045	0.042	0.046
54	0.006	0.071	0.071	0.069	0.072	0.080
55	0.009	0.040	0.099	0.157	0.186	0.186
56	0.020	0.051	0.108	0.165	0.194	0.194
57	0.036	0.072	0.106	0.139	0.156	0.156
58	0.001	0.046	0.089	0.130	0.152	0.152
59	0.066	0.094	0.119	0.143	0.155	0.155
60	0.177	0.177	0.177	0.177	0.177	0.177
61	0.134	0.134	0.134	0.134	0.134	0.134
62	0.184	0.184	0.184	0.184	0.184	0.184
63	0.250	0.250	0.250	0.250	0.250	0.250
64	0.177	0.177	0.177	0.177	0.177	0.177
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 2% at age 50

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.054	0.054	0.056	0.080	0.064	0.066
51	0.020	0.020	0.021	0.030	0.024	0.024
52	0.037	0.037	0.038	0.054	0.043	0.045
53	0.051	0.051	0.053	0.076	0.061	0.063
54	0.082	0.082	0.085	0.121	0.097	0.100
55	0.139	0.139	0.139	0.139	0.139	0.139
56	0.129	0.129	0.129	0.129	0.129	0.129
57	0.085	0.085	0.085	0.085	0.085	0.085
58	0.119	0.119	0.119	0.119	0.119	0.119
59	0.167	0.167	0.167	0.167	0.167	0.167
60	0.152	0.152	0.152	0.152	0.152	0.152
61	0.179	0.179	0.179	0.179	0.179	0.179
62	0.179	0.179	0.179	0.179	0.179	0.179
63	0.179	0.179	0.179	0.179	0.179	0.179
64	0.179	0.179	0.179	0.179	0.179	0.179
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Public Agency Police 3% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.019	0.053	0.045	0.054	0.057	0.061
51	0.002	0.017	0.028	0.044	0.053	0.060
52	0.002	0.031	0.037	0.051	0.059	0.066
53	0.026	0.049	0.049	0.080	0.099	0.114
54	0.019	0.034	0.047	0.091	0.121	0.142
55	0.006	0.115	0.141	0.199	0.231	0.259
56	0.017	0.188	0.121	0.173	0.199	0.199
57	0.008	0.137	0.093	0.136	0.157	0.157
58	0.017	0.126	0.105	0.164	0.194	0.194
59	0.026	0.146	0.110	0.167	0.195	0.195
60	0.155	0.155	0.155	0.155	0.155	0.155
61	0.210	0.210	0.210	0.210	0.210	0.210
62	0.262	0.262	0.262	0.262	0.262	0.262
63	0.172	0.172	0.172	0.172	0.172	0.172
64	0.227	0.227	0.227	0.227	0.227	0.227
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 3% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.003	0.006	0.013	0.019	0.025	0.028
51	0.004	0.008	0.017	0.026	0.034	0.038
52	0.005	0.011	0.022	0.033	0.044	0.049
53	0.005	0.034	0.024	0.038	0.069	0.138
54	0.007	0.047	0.032	0.051	0.094	0.187
55	0.010	0.067	0.046	0.073	0.134	0.266
56	0.010	0.063	0.044	0.069	0.127	0.253
57	0.135	0.100	0.148	0.196	0.220	0.220
58	0.083	0.062	0.091	0.120	0.135	0.135
59	0.137	0.053	0.084	0.146	0.177	0.177
60	0.162	0.063	0.099	0.172	0.208	0.208
61	0.598	0.231	0.231	0.231	0.231	0.231
62	0.621	0.240	0.240	0.240	0.240	0.240
63	0.236	0.236	0.236	0.236	0.236	0.236
64	0.236	0.236	0.236	0.236	0.236	0.236
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Public Agency Police 3% at age 50

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.124	0.103	0.113	0.143	0.244	0.376
51	0.060	0.081	0.087	0.125	0.207	0.294
52	0.016	0.055	0.111	0.148	0.192	0.235
53	0.072	0.074	0.098	0.142	0.189	0.237
54	0.018	0.049	0.105	0.123	0.187	0.271
55	0.069	0.074	0.081	0.113	0.209	0.305
56	0.064	0.108	0.113	0.125	0.190	0.288
57	0.056	0.109	0.160	0.182	0.210	0.210
58	0.108	0.129	0.173	0.189	0.214	0.214
59	0.093	0.144	0.204	0.229	0.262	0.262
60	0.343	0.180	0.159	0.188	0.247	0.247
61	0.221	0.221	0.221	0.221	0.221	0.221
62	0.213	0.213	0.213	0.213	0.213	0.213
63	0.233	0.233	0.233	0.233	0.233	0.233
64	0.234	0.234	0.234	0.234	0.234	0.234
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 3% at age 50

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.095	0.048	0.053	0.093	0.134	0.175
51	0.016	0.032	0.053	0.085	0.117	0.149
52	0.013	0.032	0.054	0.087	0.120	0.154
53	0.085	0.044	0.049	0.089	0.129	0.170
54	0.038	0.065	0.074	0.105	0.136	0.167
55	0.042	0.043	0.049	0.085	0.132	0.215
56	0.133	0.103	0.075	0.113	0.151	0.209
57	0.062	0.048	0.060	0.124	0.172	0.213
58	0.124	0.097	0.092	0.153	0.194	0.227
59	0.092	0.071	0.078	0.144	0.192	0.233
60	0.056	0.044	0.061	0.131	0.186	0.233
61	0.282	0.219	0.158	0.198	0.233	0.260
62	0.292	0.227	0.164	0.205	0.241	0.269
63	0.196	0.196	0.196	0.196	0.196	0.196
64	0.197	0.197	0.197	0.197	0.197	0.197
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Public Agency Police 2% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.040	0.040	0.040	0.040	0.040	0.080
51	0.028	0.028	0.028	0.028	0.040	0.066
52	0.028	0.028	0.028	0.028	0.043	0.061
53	0.028	0.028	0.028	0.028	0.057	0.086
54	0.028	0.028	0.028	0.032	0.069	0.110
55	0.050	0.050	0.050	0.067	0.099	0.179
56	0.046	0.046	0.046	0.062	0.090	0.160
57	0.054	0.054	0.054	0.072	0.106	0.191
58	0.060	0.060	0.060	0.066	0.103	0.171
59	0.060	0.060	0.060	0.069	0.105	0.171
60	0.113	0.113	0.113	0.113	0.113	0.171
61	0.108	0.108	0.108	0.108	0.108	0.128
62	0.113	0.113	0.113	0.113	0.113	0.159
63	0.113	0.113	0.113	0.113	0.113	0.159
64	0.113	0.113	0.113	0.113	0.113	0.239
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 2% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.005	0.005	0.005	0.005	0.008	0.012
51	0.006	0.006	0.006	0.006	0.009	0.013
52	0.012	0.012	0.012	0.012	0.019	0.028
53	0.033	0.033	0.033	0.033	0.050	0.075
54	0.045	0.045	0.045	0.045	0.069	0.103
55	0.061	0.061	0.061	0.061	0.094	0.140
56	0.055	0.055	0.055	0.055	0.084	0.126
57	0.081	0.081	0.081	0.081	0.125	0.187
58	0.059	0.059	0.059	0.059	0.091	0.137
59	0.055	0.055	0.055	0.055	0.084	0.126
60	0.085	0.085	0.085	0.085	0.131	0.196
61	0.085	0.085	0.085	0.085	0.131	0.196
62	0.085	0.085	0.085	0.085	0.131	0.196
63	0.085	0.085	0.085	0.085	0.131	0.196
64	0.085	0.085	0.085	0.085	0.131	0.196
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Public Agency Police 2.5% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.050	0.050	0.050	0.050	0.050	0.100
51	0.038	0.038	0.038	0.038	0.055	0.089
52	0.038	0.038	0.038	0.038	0.058	0.082
53	0.036	0.036	0.036	0.036	0.073	0.111
54	0.036	0.036	0.036	0.041	0.088	0.142
55	0.061	0.061	0.061	0.082	0.120	0.217
56	0.056	0.056	0.056	0.075	0.110	0.194
57	0.060	0.060	0.060	0.080	0.118	0.213
58	0.072	0.072	0.072	0.079	0.124	0.205
59	0.072	0.072	0.072	0.083	0.126	0.205
60	0.135	0.135	0.135	0.135	0.135	0.205
61	0.130	0.130	0.130	0.130	0.130	0.153
62	0.135	0.135	0.135	0.135	0.135	0.191
63	0.135	0.135	0.135	0.135	0.135	0.191
64	0.135	0.135	0.135	0.135	0.135	0.287
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 2.5% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.007	0.007	0.007	0.007	0.010	0.015
51	0.008	0.008	0.008	0.008	0.012	0.018
52	0.016	0.016	0.016	0.016	0.025	0.038
53	0.042	0.042	0.042	0.042	0.064	0.096
54	0.057	0.057	0.057	0.057	0.088	0.132
55	0.074	0.074	0.074	0.074	0.114	0.170
56	0.066	0.066	0.066	0.066	0.102	0.153
57	0.090	0.090	0.090	0.090	0.139	0.208
58	0.071	0.071	0.071	0.071	0.110	0.164
59	0.066	0.066	0.066	0.066	0.101	0.151
60	0.102	0.102	0.102	0.102	0.157	0.235
61	0.102	0.102	0.102	0.102	0.157	0.236
62	0.102	0.102	0.102	0.102	0.157	0.236
63	0.102	0.102	0.102	0.102	0.157	0.236
64	0.102	0.102	0.102	0.102	0.157	0.236
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Public Agency Police 2.7% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.050	0.050	0.050	0.050	0.050	0.100
51	0.040	0.040	0.040	0.040	0.058	0.094
52	0.038	0.038	0.038	0.038	0.058	0.083
53	0.038	0.038	0.038	0.038	0.077	0.117
54	0.038	0.038	0.038	0.044	0.093	0.150
55	0.068	0.068	0.068	0.091	0.134	0.242
56	0.063	0.063	0.063	0.084	0.123	0.217
57	0.060	0.060	0.060	0.080	0.118	0.213
58	0.080	0.080	0.080	0.088	0.138	0.228
59	0.080	0.080	0.080	0.092	0.140	0.228
60	0.150	0.150	0.150	0.150	0.150	0.228
61	0.144	0.144	0.144	0.144	0.144	0.170
62	0.150	0.150	0.150	0.150	0.150	0.213
63	0.150	0.150	0.150	0.150	0.150	0.213
64	0.150	0.150	0.150	0.150	0.150	0.319
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Public Agency Fire 2.7% at age 57

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.007	0.007	0.007	0.007	0.010	0.015
51	0.008	0.008	0.008	0.008	0.013	0.019
52	0.016	0.016	0.016	0.016	0.025	0.038
53	0.044	0.044	0.044	0.044	0.068	0.102
54	0.061	0.061	0.061	0.061	0.093	0.140
55	0.083	0.083	0.083	0.083	0.127	0.190
56	0.074	0.074	0.074	0.074	0.114	0.171
57	0.090	0.090	0.090	0.090	0.139	0.208
58	0.079	0.079	0.079	0.079	0.122	0.182
59	0.073	0.073	0.073	0.073	0.112	0.168
60	0.114	0.114	0.114	0.114	0.175	0.262
61	0.114	0.114	0.114	0.114	0.175	0.262
62	0.114	0.114	0.114	0.114	0.175	0.262
63	0.114	0.114	0.114	0.114	0.175	0.262
64	0.114	0.114	0.114	0.114	0.175	0.262
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement (continued)

Schools 2% at age 55

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.003	0.004	0.006	0.007	0.010	0.010
51	0.004	0.005	0.007	0.008	0.011	0.011
52	0.005	0.007	0.008	0.009	0.012	0.012
53	0.007	0.008	0.010	0.012	0.015	0.015
54	0.006	0.009	0.012	0.015	0.020	0.021
55	0.011	0.023	0.034	0.057	0.070	0.090
56	0.012	0.027	0.036	0.056	0.073	0.095
57	0.016	0.027	0.036	0.055	0.068	0.087
58	0.019	0.030	0.040	0.062	0.078	0.103
59	0.023	0.034	0.046	0.070	0.085	0.109
60	0.022	0.043	0.062	0.095	0.113	0.141
61	0.030	0.051	0.071	0.103	0.124	0.154
62	0.065	0.098	0.128	0.188	0.216	0.248
63	0.075	0.112	0.144	0.197	0.222	0.268
64	0.091	0.116	0.138	0.180	0.196	0.231
65	0.163	0.164	0.197	0.232	0.250	0.271
66	0.208	0.204	0.243	0.282	0.301	0.315
67	0.189	0.185	0.221	0.257	0.274	0.287
68	0.127	0.158	0.200	0.227	0.241	0.244
69	0.168	0.162	0.189	0.217	0.229	0.238
70	0.191	0.190	0.237	0.250	0.246	0.254

Schools 2% at age 62

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.000	0.000	0.000	0.000	0.000	0.000
51	0.000	0.000	0.000	0.000	0.000	0.000
52	0.004	0.007	0.010	0.011	0.013	0.015
53	0.004	0.008	0.010	0.013	0.014	0.016
54	0.005	0.011	0.015	0.018	0.020	0.022
55	0.014	0.027	0.038	0.045	0.050	0.056
56	0.013	0.026	0.037	0.043	0.048	0.055
57	0.013	0.027	0.038	0.045	0.050	0.055
58	0.017	0.034	0.047	0.056	0.062	0.069
59	0.019	0.037	0.052	0.062	0.068	0.076
60	0.026	0.053	0.074	0.087	0.097	0.108
61	0.030	0.058	0.081	0.095	0.106	0.119
62	0.053	0.105	0.147	0.174	0.194	0.217
63	0.054	0.107	0.151	0.178	0.198	0.222
64	0.053	0.105	0.147	0.174	0.194	0.216
65	0.072	0.142	0.199	0.235	0.262	0.293
66	0.077	0.152	0.213	0.252	0.281	0.314
67	0.070	0.139	0.194	0.229	0.255	0.286
68	0.063	0.124	0.173	0.205	0.228	0.255
69	0.066	0.130	0.183	0.216	0.241	0.270
70	0.071	0.140	0.196	0.231	0.258	0.289

Miscellaneous

Models

The valuation results are based on proprietary actuarial valuation models. The models are centralized and maintained by a specialized team to achieve a high degree of accuracy and consistency. The Actuarial Office is responsible for confirming the appropriateness of the inputs (such as participant data, actuarial methods and assumptions, and plan provisions) as well as performing tests and validating the reasonableness of the output. The results of our models are independently confirmed by parallel valuations performed by outside actuaries on a periodic basis using their models. In our professional judgment, our actuarial valuation models produce comprehensive pension funding information consistent with the purposes of the valuation and have no material limitations or known weaknesses.

Internal Revenue Code Section 415(b)

The limitations on benefits imposed by Internal Revenue Code section 415(b) are taken into account in this valuation. Each year, the impact of any changes in this limitation other than assumed since the prior valuation is included and amortized as part of the non-investment gain or loss base. This results in lower contributions for those employers contributing to the Replacement Benefit Fund and protects CalPERS from prefunding expected benefits in excess of limits imposed by federal tax law. The Section 415(b) dollar limit for the 2024 calendar year is $275,000.

Internal Revenue Code Section 401(a)(17)

The limitations on compensation imposed by Internal Revenue Code section 401(a)(17) are taken into account in this valuation. Each year, the impact of any changes in the compensation limitation other than assumed since the prior valuation is included and amortized as part of the non-investment gain or loss base. The compensation limit for classic members for the 2024 calendar year is $345,000.

PEPRA Compensation Limits

The limitations on compensation for PEPRA members imposed by Government Code section 7522.10 are taken into account in this valuation. Each year, the impact of any changes in the compensation limitation other than assumed since the prior valuation is included and amortized as part of the non-investment gain or loss base. The PEPRA compensation limit for 2024 is $151,446 for members who participate in Social Security and $181,734 for those who do not. The limits are adjusted annually based on changes to the CPI for all urban consumers.

Appendix B - Principal Plan Provisions

The following is a description of the principal plan provisions used in calculating costs and liabilities. We have indicated whether a plan provision is standard or optional. Standard benefits are applicable to all members while optional benefits vary among employers. Optional benefits that apply to a single period of time, such as Golden Handshakes, have not been included. Many of the statements in this summary are general in nature, and are intended to provide an easily understood summary of the Public Employees' Retirement Law and the California Public Employees' Pension Reform Act of 2013. The law itself governs in all situations.

Service Retirement

Eligibility

A classic CalPERS member or PEPRA Safety member becomes eligible for Service Retirement upon attainment of age 50 with at least 5 years of credited service (total service across all CalPERS employers, and with certain other retirement systems with which CalPERS has reciprocity agreements). For employees hired into a plan with the 1.5% at age 65 formula, eligibility for service retirement is age 55 with at least 5 years of service. PEPRA Miscellaneous members become eligible for service retirement upon attainment of age 52 with at least 5 years of service.

Benefit

The service retirement benefit is a monthly allowance equal to the product of the *benefit factor*, *years of service*, and *final compensation.* The *benefit factor* depends on the benefit formula specified in the agency's contract. The table below shows the factors for each of the available formulas. Factors vary by the member's age at retirement. Listed are the factors for retirement at whole year ages:

Miscellaneous Plan Formulas

Retirement Age	1.5% at age 65	2% at age 60	2% at age 55	2.5% at age 55	2.7% at age 55	3% at age 60	PEPRA 2% at age 62
50	0.5000%	1.092%	1.426%	2.000%	2.000%	2.000%	N/A
51	0.5667%	1.156%	1.522%	2.100%	2.140%	2.100%	N/A
52	0.6334%	1.224%	1.628%	2.200%	2.280%	2.200%	1.000%
53	0.7000%	1.296%	1.742%	2.300%	2.420%	2.300%	1.100%
54	0.7667%	1.376%	1.866%	2.400%	2.560%	2.400%	1.200%
55	0.8334%	1.460%	2.000%	2.500%	2.700%	2.500%	1.300%
56	0.9000%	1.552%	2.052%	2.500%	2.700%	2.600%	1.400%
57	0.9667%	1.650%	2.104%	2.500%	2.700%	2.700%	1.500%
58	1.0334%	1.758%	2.156%	2.500%	2.700%	2.800%	1.600%
59	1.1000%	1.874%	2.210%	2.500%	2.700%	2.900%	1.700%
60	1.1667%	2.000%	2.262%	2.500%	2.700%	3.000%	1.800%
61	1.2334%	2.134%	2.314%	2.500%	2.700%	3.000%	1.900%
62	1.3000%	2.272%	2.366%	2.500%	2.700%	3.000%	2.000%
63	1.3667%	2.418%	2.418%	2.500%	2.700%	3.000%	2.100%
64	1.4334%	2.418%	2.418%	2.500%	2.700%	3.000%	2.200%
65	1.5000%	2.418%	2.418%	2.500%	2.700%	3.000%	2.300%
66	1.5000%	2.418%	2.418%	2.500%	2.700%	3.000%	2.400%
67 & up	1.5000%	2.418%	2.418%	2.500%	2.700%	3.000%	2.500%

Classic Safety Plan Formulas

Retirement Age	Half Pay at age 55*	2% at age 55	2% at age 50	3% at age 55	3% at age 50
50	1.783%	1.426%	2.000%	2.400%	3.000%
51	1.903%	1.522%	2.140%	2.520%	3.000%
52	2.035%	1.628%	2.280%	2.640%	3.000%
53	2.178%	1.742%	2.420%	2.760%	3.000%
54	2.333%	1.866%	2.560%	2.880%	3.000%
55 & Up	2.500%	2.000%	2.700%	3.000%	3.000%

* For this formula, the benefit factor also varies by entry age. The factors shown are for members with an entry age of 35 or greater. If entry age is less than 35, then the age 55 benefit factor is 50% divided by the difference between age 55 and entry age. The benefit factor for ages prior to age 55 is the same proportion of the age 55 benefit factor as in the above table.

PEPRA Safety Plan Formulas

Retirement Age	2% at age 57	2.5% at age 57	2.7% at age 57
50	1.426%	2.000%	2.000%
51	1.508%	2.071%	2.100%
52	1.590%	2.143%	2.200%
53	1.672%	2.214%	2.300%
54	1.754%	2.286%	2.400%
55	1.836%	2.357%	2.500%
56	1.918%	2.429%	2.600%
57 & Up	2.000%	2.500%	2.700%

- The *years of service* is the amount credited by CalPERS to a member while he or she is employed in this group (or for other periods that are recognized under the employer's contract with CalPERS). For a member who has earned service with multiple CalPERS employers, the benefit from each employer is calculated separately according to each employer's contract, and then added together for the total allowance. An agency may contract for an optional benefit where any unused sick leave accumulated at the time of retirement will be converted to credited service at a rate of 0.004 years of service for each day of sick leave.

- The *final compensation* is the monthly average of the member's highest 36 or 12 consecutive months' full-time equivalent monthly pay (no matter which CalPERS employer paid this compensation). The standard benefit is 36 months. Employers had the option of providing a final compensation equal to the highest 12 consecutive months for classic plans only. Final compensation must be defined by the highest 36 consecutive months' pay under the 1.5% at age 65 formula. PEPRA members have a limit on the annual compensation that can be used to calculate final compensation. The limits are adjusted annually based on changes to the CPI for all urban consumers.

- PEPRA benefit formulas have no Social Security offsets and Social Security coverage is optional. For Classic benefit formulas, employees must be covered by Social Security with the 1.5% at age 65 formula. Social Security is optional for all other Classic benefit formulas. For employees covered by Social Security, the modified formula is the standard benefit. Under this type of formula, the final compensation is offset by $133.33 (or by one third if the final compensation is less than $400). Employers may contract for the full benefit with Social Security that will eliminate the offset applicable to the final compensation. For employees not covered by Social Security, the full benefit is paid with no offsets. Auxiliary organizations of the CSUC system may elect reduced contribution rates, in which case the offset is $317 if members are not covered by Social Security or $513 if members are covered by Social Security.

- The Miscellaneous and PEPRA Safety service retirement benefit is not capped. The Classic Safety service retirement benefit is capped at 90% of final compensation.

Vested Deferred Retirement

Eligibility for Deferred Status

CalPERS members becomes eligible for a deferred vested retirement benefit when they leave employment, keep their contribution account balance on deposit with CalPERS, **and** have earned at least 5 years of credited service (total service across all CalPERS employers, and with certain other retirement systems with which CalPERS has reciprocity agreements).

Eligibility to Start Receiving Benefits

The CalPERS classic members and PEPRA Safety members become eligible to receive the deferred retirement benefit upon satisfying the eligibility requirements for deferred status and upon attainment of age 50 (55 for employees hired into a 1.5% at age 65 plan). PEPRA Miscellaneous members become eligible to receive the deferred retirement benefit upon satisfying the eligibility requirements for deferred status and upon attainment of age 52.

Benefit

The vested deferred retirement benefit is the same as the service retirement benefit, where the benefit factor is based on the member's age at allowance commencement. For members who have earned service with multiple CalPERS employers, the benefit from each employer is calculated separately according to each employer's contract, and then added together for the total allowance.

Non-Industrial Disability Retirement

Eligibility

A CalPERS member is eligible for Non-Industrial (non-job related) Disability Retirement if he or she becomes *disabled* and has at least 5 years of credited service (total service across all CalPERS employers, and with certain other retirement systems with which CalPERS has reciprocity agreements). There is no special age requirement. *Disabled* means the member is unable to perform their job because of an illness or injury, which is expected to be permanent or to last indefinitely. The illness or injury does not have to be job related. A CalPERS member must be actively employed by any CalPERS employer at the time of disability in order to be eligible for this benefit.

Standard Benefit

The standard Non-Industrial Disability Retirement benefit is a monthly allowance equal to 1.8% of final compensation, multiplied by *service*, which is determined as follows:

- *Service* is CalPERS credited service, for members with less than 10 years of service or greater than 18.518 years of service; or
- *Service* is CalPERS credited service plus the additional number of years that the member would have worked until age 60, for members with at least 10 years but not more than 18.518 years of service. The maximum benefit in this case is 33⅓% of final compensation.

Improved Benefit

Employers have the option of providing the improved Non-Industrial Disability Retirement benefit. This benefit provides a monthly allowance equal to 30% of final compensation for the first 5 years of service, plus 1% for each additional year of service to a maximum of 50% of final compensation.

Members who are eligible for a larger service retirement benefit may choose to receive that benefit in lieu of a disability benefit. Members eligible to retire, and who have attained the normal retirement age determined by their service retirement benefit formula, will receive the same dollar amount for disability retirement as that payable for service retirement. For members who have earned service with multiple CalPERS employers, the benefit attributed to each employer is the total disability allowance multiplied by the ratio of service with a particular employer to the total CalPERS service.

Industrial Disability Retirement

This is a standard benefit for Safety members except those described in Section 20423.6. For excluded Safety members and all Miscellaneous members, employers have the option of providing this benefit. An employer may choose to provide the increased benefit option or the improved benefit option.

Eligibility

An employee is eligible for Industrial (job related) Disability Retirement if he or she becomes disabled while working, where disabled means the member is unable to perform the duties of the job because of a work-related illness or injury, which is expected to be permanent or to last indefinitely. A CalPERS member who has left active employment within this group is not eligible for this benefit, except to the extent described below.

Standard Benefit

The standard Industrial Disability Retirement benefit is a monthly allowance equal to 50% of final compensation.

Increased Benefit (75% of Final Compensation)

The increased Industrial Disability Retirement benefit is a monthly allowance equal to 75% of final compensation for total disability.

Improved Benefit (50% to 90% of Final Compensation)

The improved Industrial Disability Retirement benefit is a monthly allowance equal to the Workman's Compensation Appeals Board permanent disability rate percentage (if 50% or greater, with a maximum of 90%) times the final compensation.

For a CalPERS member not actively employed in this group who became disabled while employed by some other CalPERS employer, the benefit is a return of accumulated member contributions with respect to employment in this group. With the standard or increased benefit, a member may also choose to receive the annuitization of the accumulated member contributions.

If a member is eligible for service retirement and if the service retirement benefit is more than the industrial disability retirement benefit, the member may choose to receive the larger benefit.

Post-Retirement Death Benefit

Standard Lump Sum Payment

Upon the death of a retiree, a one-time lump sum payment of $500 will be made to the retiree's designated survivor(s), or to the retiree's estate. The lump sum payment amount increases to $2,000 for any death occurring on or after July 1, 2023, due to SB 1168.

Optional Lump Sum Payment

In lieu of the standard lump sum death benefit, employers have the option of providing a lump sum death benefit of $600, $3,000, $4,000 or $5,000.

Form of Payment for Retirement Allowance

Standard Form of Payment

Generally, the retirement allowance is paid to the retiree in the form of an annuity for as long as he or she is alive. The retiree may choose to provide for a portion of their allowance to be paid to any designated beneficiary after the retiree's death. CalPERS provides for a variety of such benefit options, which the retiree pays for by taking a reduction in their retirement allowance. Such reduction takes into account the amount to be provided to the beneficiary and the probable duration of payments (based on the ages of the member and beneficiary) made subsequent to the member's death.

Improved Form of Payment (Post-Retirement Survivor Allowance)

Employers have the option to contract for the post-retirement survivor allowance.

For retirement allowances with respect to service subject to a modified Classic formula, 25% of the retirement allowance will automatically be continued to certain statutory beneficiaries upon the death of the retiree, without a reduction in the retiree's allowance. For retirement allowances with respect to service subject to a PEPRA formula or a full or supplemental Classic formula, 50% of the retirement allowance will automatically be continued to certain statutory beneficiaries upon the death of the retiree, without a reduction in the retiree's allowance. This additional benefit is referred to as post-retirement survivor allowance (PRSA) or simply as survivor continuance.

In other words, 25% or 50% of the allowance, the continuance portion, is paid to the retiree for as long as he or she is alive, and that same amount is continued to the retiree's spouse (or if no eligible spouse, to unmarried child(ren) until they attain age 18; or, if no eligible child(ren), to a qualifying dependent parent) for the rest of their lifetime. This benefit will not be discontinued in the event the spouse remarries.

The remaining 75% or 50% of the retirement allowance, which may be referred to as the option portion of the benefit, is paid to the retiree as an annuity for as long as he or she is alive. Or, the retiree may choose to provide for some of this option portion to be paid to any designated beneficiary after the retiree's death. Benefit options applicable to the option portion are the same as those offered with the standard form. The reduction is calculated in the same manner but is applied only to the option portion.

Pre-Retirement Death Benefits

Basic Death Benefit

This is a standard benefit.

Eligibility

An employee's beneficiary (or estate) may receive the basic death benefit if the member dies while actively employed. A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this basic death benefit.

Benefit

The basic death benefit is a lump sum in the amount of the member's accumulated contributions, where interest is credited annually at the greater of 6% or the prevailing discount rate through the date of death, plus a lump sum in the amount of one month's salary for each completed year of current service, up to a maximum of six months' salary. For purposes of this benefit, one month's salary is defined as the member's average monthly full-time rate of compensation during the 12 months preceding death.

1957 Survivor Benefit

This is a standard benefit.

Eligibility

An employee's *eligible survivor(s)* may receive the 1957 Survivor benefit if the member dies while actively employed, has attained at least age 50 for classic and PEPRA Safety members and age 52 for PEPRA Miscellaneous members, and has at least 5 years of credited service (total service across all CalPERS employers and with certain other retirement systems with which CalPERS has reciprocity agreements). A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. An eligible survivor means the surviving spouse to whom the member was married at least one year before death or, if there is no eligible spouse, to the member's unmarried child(ren) under age 18. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this 1957 Survivor benefit.

Benefit

The 1957 Survivor benefit is a monthly allowance equal to one-half of the unmodified service retirement benefit that the member would have been entitled to receive if the member had retired on the date of their death. If the benefit is payable to the spouse, the benefit is discontinued upon the death of the spouse. If the benefit is payable to dependent child(ren), the benefit will be discontinued upon death or attainment of age 18, unless the child(ren) is disabled. The total amount paid will be at least equal to the basic death benefit.

Optional Settlement 2 Death Benefit

This is an optional benefit.

Eligibility

An employee's *eligible survivor* may receive the Optional Settlement 2 Death benefit if the member dies while actively employed, has attained at least age 50 for classic and PEPRA Safety members and age 52 for PEPRA Miscellaneous members, and has at least 5 years of credited service (total service across all CalPERS employers and with certain other retirement systems with which CalPERS has reciprocity agreements). A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married at least one year before death. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this Optional Settlement 2 Death benefit.

Benefit

The Optional Settlement 2 Death benefit is a monthly allowance equal to the service retirement benefit that the member would have received had the member retired on the date of their death and elected 100% to continue to the eligible survivor after the member's death. The allowance is payable to the surviving spouse until death, at which time it is continued to any unmarried child(ren), if applicable. The total amount paid will be at least equal to the basic death benefit.

Special Death Benefit

This is a standard benefit for Safety members except those described in Section 20423.6. For excluded Safety members and all Miscellaneous members, employers have the option of providing this benefit.

Eligibility

An employee's *eligible survivor(s)* may receive the special death benefit if the member dies while actively employed and the death is job-related. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married prior to the onset of the injury or illness that resulted in death. If there is no eligible spouse, an eligible survivor means the member's unmarried child(ren) under age 22. An eligible survivor who chooses to receive this benefit will not receive any other death benefit.

Benefit

The special death benefit is a monthly allowance equal to 50% of final compensation and will be increased whenever the compensation paid to active employees is increased but ceasing to increase when the member would have attained age 50. The allowance is payable to the surviving spouse until death, at which time the allowance is continued to any unmarried child(ren) under age 22. There is a guarantee that the total amount paid will at least equal the basic death benefit.

If the member's death is the result of an accident or injury caused by external violence or physical force incurred in the performance of the member's duty, and there are *eligible* surviving child(ren) (*eligible* means unmarried child(ren) under age 22) in addition to an eligible spouse, then an **additional monthly allowance** is paid equal to the following:

- if 1 eligible child: 12.5% of final compensation
- if 2 eligible children: 20.0% of final compensation
- if 3 or more eligible children: 25.0% of final compensation

Alternate Death Benefit for Local Fire Members

This is an optional benefit available only to local fire members.

Eligibility

An employee's *eligible survivor(s)* may receive the alternate death benefit in lieu of the basic death benefit or the 1957 Survivor benefit if the member dies while actively employed and has at least 20 years of total CalPERS service. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married prior to the onset of the injury or illness that resulted in death. If there is no eligible spouse, an eligible survivor means the member's unmarried child(ren) under age 18.

Benefit

The Alternate Death benefit is a monthly allowance equal to the service retirement benefit that the member would have received had the member retired on the date of their death and elected Optional Settlement 2. (A retiree who elects Optional Settlement 2 receives an allowance that has been reduced so that it will continue to be paid after their death to a surviving beneficiary.) If the member has not yet attained age 50, the benefit is equal to that which would be payable if the member had retired at age 50, based on service credited at the time of death. The allowance is payable to the surviving spouse until death, at which time it is continued to any unmarried child(ren), if applicable. The total amount paid will be at least equal to the basic death benefit.

Cost-of-Living Adjustments (COLA)

Standard Benefit

Retirement and survivor allowances are adjusted each year in May for cost of living, beginning the second calendar year after the year of retirement. The standard cost-of-living adjustment (COLA) is 2%. Annual adjustments are calculated by first determining the lesser of 1) 2% compounded from the end of the year of retirement or 2) actual rate of price inflation. The resulting increase is divided by the total increase provided in prior years. For any given year, the COLA adjustment may be less than 2% (when the rate of price inflation is low), may be greater than the rate of price inflation (when the rate of price inflation is low after several years of high price inflation) or may even be greater than 2% (when price inflation is high after several years of low price inflation).

Improved Benefit

Employers have the option of providing a COLA of 3%, 4%, or 5%, determined in the same manner as described above for the standard 2% COLA. An improved COLA is not available with the 1.5% at age 65 formula.

Purchasing Power Protection Allowance (PPPA)

Retirement and survivor allowances are protected against price inflation by PPPA. PPPA benefits are cost-of-living adjustments that are intended to maintain an individual's allowance at 80% of the initial allowance at retirement adjusted for price inflation since retirement. The PPPA benefit will be coordinated with other cost-of-living adjustments provided under the plan.

Employee Contributions

Each employee contributes toward their retirement based upon the retirement formula. The standard employee contribution is as described below.

- The percent contributed below the monthly compensation breakpoint is 0%.
- The monthly compensation breakpoint is $0 for all PEPRA members and Classic members covered by a full or supplemental formula and $133.33 for Classic members covered by a modified formula.
- The percent contributed above the monthly compensation breakpoint depends upon the benefit formula, as shown in the table below.

Benefit Formula	Percent Contributed above the Breakpoint
Miscellaneous, 1.5% at age 65	2%
Miscellaneous, 2% at age 60	7%
Miscellaneous, 2% at age 55	7%
Miscellaneous, 2.5% at age 55	8%
Miscellaneous, 2.7% at age 55	8%
Miscellaneous, 3% at age 60	8%
Miscellaneous, 2% at age 62	50% of the Total Normal Cost
Miscellaneous, 1.5% at age 65	50% of the Total Normal Cost
Safety, Half Pay at age 55	Varies by entry age
Safety, 2% at age 55	7%
Safety, 2% at age 50	9%
Safety, 3% at age 55	9%
Safety, 3% at age 50	9%
Safety, 2% at age 57	50% of the Total Normal Cost
Safety, 2.5% at age 57	50% of the Total Normal Cost
Safety, 2.7% at age 57	50% of the Total Normal Cost

The employer may choose to “pick-up” these contributions for classic members (Employer Paid Member Contributions or EPMC). EPMC is prohibited for new PEPRA members.

An employer may also include Employee Cost Sharing in the contract, where employees agree to share the cost of the employer contribution. These contributions are paid in addition to the member contribution.

Auxiliary organizations of the CSU system may elect reduced contribution rates, in which case the offset is $317 and the contribution rate is 6% if members are not covered by Social Security. If members are covered by Social Security, the offset is $513 and the contribution rate is 5%.

Refund of Employee Contributions

If the member’s service with the employer ends, and if the member does not satisfy the eligibility conditions for any of the retirement benefits above, the member may elect to receive a refund of their employee contributions, which are credited with 6% interest compounded annually.

1959 Survivor Benefit

This is a pre-retirement death benefit available only to members not covered by Social Security. Any agency joining CalPERS subsequent to 1993 is required to provide this benefit if the members are not covered by Social Security. The benefit is optional for agencies joining CalPERS prior to 1994. Levels 1, 2, and 3 are now closed. Any new agency or any agency wishing to add this benefit or increase the current level may only choose the 4th or Indexed Level.

This benefit is not included in the results presented in this valuation. More information on this benefit is available on the CalPERS website.

Appendix C - Participant Data

Active Members

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.

Distribution of Active Members by Age and Service

	Years of Service at Valuation Date						
Attained Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25+**	**Total**
15-24	9	0	0	0	0	0	9
25-29	15	2	0	0	0	0	17
30-34	19	9	1	0	0	0	29
35-39	9	5	9	1	0	0	24
40-44	7	8	6	9	0	0	30
45-49	2	1	5	5	6	3	22
50-54	0	1	1	2	9	2	15
55-59	1	0	0	2	1	0	4
60-64	0	1	0	1	0	0	2
65 and Over	0	0	0	0	0	1	1
All Ages	**62**	**27**	**22**	**20**	**16**	**6**	**153**

Distribution of Average Annual Salaries by Age and Service

	Years of Service at Valuation Date						
Attained Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25+**	**Average Salary**
15-24	$101,896	$0	$0	$0	$0	$0	$101,896
25-29	106,445	114,869	0	0	0	0	107,436
30-34	113,085	128,757	169,324	0	0	0	119,888
35-39	98,422	124,050	138,486	177,429	0	0	122,077
40-44	122,540	129,517	143,149	165,187	0	0	141,317
45-49	149,040	119,765	173,723	165,949	200,017	235,849	182,903
50-54	0	152,973	173,462	143,174	186,726	242,036	185,159
55-59	179,691	0	0	144,556	146,940	0	153,936
60-64	0	149,270	0	147,585	0	0	148,428
65 and Over	0	0	0	0	0	223,043	223,043
Average	**$111,028**	**$128,405**	**$150,758**	**$160,845**	**$189,224**	**$235,777**	**$139,389**

Transferred and Separated Members

Distribution of Transfers to Other CalPERS Plans by Age, Service, and average Salary

	Years of Service at Valuation Date							
Attained Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25+**	**Total**	**Average Salary**
15-24	0	0	0	0	0	0	0	$0
25-29	1	0	0	0	0	0	1	102,348
30-34	10	1	0	0	0	0	11	114,133
35-39	8	1	0	0	0	0	9	105,138
40-44	4	1	0	0	0	0	5	108,827
45-49	1	0	0	0	0	0	1	100,190
50-54	2	1	0	0	0	0	3	101,385
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65 and Over	0	0	0	0	0	0	0	0
All Ages	**26**	**4**	**0**	**0**	**0**	**0**	**30**	**$108,418**

Distribution of Separated Participants with Funds on Deposit by Age, Service, and average Salary

	Years of Service at Valuation Date							
Attained Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25+**	**Total**	**Average Salary**
15-24	0	0	0	0	0	0	0	$0
25-29	4	1	0	0	0	0	5	97,937
30-34	14	2	0	0	0	0	16	74,857
35-39	8	3	0	0	0	0	11	78,284
40-44	3	1	0	0	0	0	4	82,668
45-49	1	0	1	1	1	0	4	111,491
50-54	4	0	0	0	0	0	4	70,785
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65 and Over	1	0	0	0	0	0	1	40,000
All Ages	**35**	**7**	**1**	**1**	**1**	**0**	**45**	**$81,073**

Retired Members and Beneficiaries

Distribution of Retirees and Beneficiaries by Age and Retirement Type*

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 30	0	0	0	0	0	0	0
30-34	0	0	2	0	0	0	2
35-39	0	0	2	0	0	0	2
40-44	0	0	1	0	0	0	1
45-49	0	0	2	0	0	0	2
50-54	15	0	9	0	0	1	25
55-59	25	0	3	0	0	2	30
60-64	33	0	11	0	0	0	44
65-69	35	0	23	0	0	5	63
70-74	33	0	15	0	0	5	53
75-79	27	0	18	0	0	12	57
80-84	8	0	12	0	0	9	29
85 and Over	13	0	4	0	0	12	29
All Ages	**189**	**0**	**102**	**0**	**0**	**46**	**337**

Distribution of Average Annual Disbursements to Retirees and Beneficiaries by Age and Retirement Type*

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Average
Under 30	$0	$0	$0	$0	$0	$0	$0
30-34	0	0	56,399	0	0	0	56,399
35-39	0	0	58,784	0	0	0	58,784
40-44	0	0	59,643	0	0	0	59,643
45-49	0	0	74,133	0	0	0	74,133
50-54	119,273	0	58,479	0	0	46,466	94,475
55-59	85,684	0	83,541	0	0	49,857	83,081
60-64	95,124	0	89,352	0	0	0	93,681
65-69	84,917	0	84,239	0	0	74,949	83,878
70-74	106,681	0	92,146	0	0	66,319	98,760
75-79	75,509	0	80,374	0	0	61,963	74,193
80-84	99,200	0	62,453	0	0	52,353	69,456
85 and Over	67,161	0	49,698	0	0	37,130	52,326
All Ages	**$91,367**	**$0**	**$77,576**	**$0**	**$0**	**$54,626**	**$82,178**

* Counts of members do not include alternate payees receiving benefits while the member is still working. Therefore, the total counts may not match information on C-1 of the report. Multiple records may exist for those who have service in more than one coverage group. This does not result in double counting of liabilities.

Retired Members and Beneficiaries (continued)

Distribution of Retirees and Beneficiaries by Years Retired and Retirement Type*

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 5 Yrs	40	0	13	0	0	14	67
5-9	30	0	14	0	0	10	54
10-14	44	0	13	0	0	10	67
15-19	24	0	17	0	0	2	43
20-24	28	0	9	0	0	4	41
25-29	11	0	6	0	0	4	21
30 and Over	12	0	30	0	0	2	44
All Years	**189**	**0**	**102**	**0**	**0**	**46**	**337**

Distribution of Average Annual Disbursements to Retirees and Beneficiaries by Years Retired and Retirement Type*

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Average
Under 5 Yrs	$89,059	$0	$83,359	$0	$0	$72,180	$84,426
5-9	105,548	0	95,049	0	0	45,282	91,666
10-14	91,641	0	110,445	0	0	63,987	91,162
15-19	102,710	0	83,534	0	0	36,187	92,035
20-24	86,033	0	120,978	0	0	23,590	87,612
25-29	65,006	0	71,953	0	0	43,299	62,856
30 and Over	76,522	0	37,400	0	0	34,830	47,953
All Years	**$91,367**	**$0**	**$77,576**	**$0**	**$0**	**$54,626**	**$82,178**

* Counts of members do not include alternate payees receiving benefits while the member is still working. Therefore, the total counts may not match information on C-1 of the report. Multiple records may exist for those who have service in more than one coverage group. This does not result in double counting of liabilities .

Appendix D - Glossary

Glossary

Accrued Liability (Actuarial Accrued Liability)
The portion of the Present Value of Benefits allocated to prior years. It can also be expressed as the Present Value of Benefits minus the present value of future Normal Cost. Different actuarial cost methods and different assumptions will lead to different measures of Accrued Liability.

Actuarial Assumptions
Assumptions made about certain events that will affect pension costs. Assumptions generally can be broken down into two categories: demographic and economic. Demographic assumptions include such things as mortality, disability, and retirement rates. Economic assumptions include discount rate, wage inflation, and price inflation.

Actuarial Methods
Procedures employed by actuaries to achieve certain funding goals of a pension plan. Actuarial methods include an actuarial cost method, an amortization policy, and an asset valuation method.

Actuarial Valuation
The determination as of a valuation date of the Normal Cost, Accrued Liability, and related actuarial present values for a pension plan. These valuations are performed annually or when an employer is contemplating a change in plan provisions.

Actuary
A business professional proficient in mathematics and statistics who measures and manages risk. A public retirement system actuary in California performs actuarial valuations necessary to properly fund a pension plan and disclose its liabilities and must satisfy the qualification standards for actuaries issuing statements of actuarial opinion in the United States with regard to pensions.

Amortization Bases
Separate payment schedules for different portions of the Unfunded Accrued Liability (UAL). The total UAL of a rate plan can be segregated by cause. The impact of such individual causes on the UAL are quantified at the time of their occurrence, resulting in new amortization bases. Each base is separately amortized and paid for over a specific period of time. Generally, in an actuarial valuation, the separate bases consist of changes in UAL due to contract amendments, actuarial assumption changes, method changes, and/or experience gains and losses.

Amortization Period
The number of years required to pay off an Amortization Base.

Classic Member (under PEPRA)
A member who joined a public retirement system prior to January 1, 2013, and who is not defined as a new member under PEPRA. (See definition of New Member below.)

Discount Rate
The rate used to discount the expected future benefit payments to the valuation date to determine the Projected Value of Benefits. Different discount rates will produce different measures of the Projected Value of Benefits. The discount rate for funding purposes is based on the assumed long-term rate of return on plan assets, net of investment and administrative expenses. This rate is called the “actuarial interest rate” in Section 20014 of the California Public Employees’ Retirement Law.

Entry Age
The earliest age at which a plan member begins to accrue benefits under a defined benefit pension plan. In most cases, this is the age of the member on their date of hire.

Entry Age Actuarial Cost Method
An actuarial cost method that allocates the cost of the projected benefits on an individual basis as a level percent of earnings for the individual between entry age and retirement age. This method yields a total normal cost rate, expressed as a percentage of payroll, which is designed to remain level throughout the member’s career.

Fresh Start
A Fresh Start is when multiple amortization bases are combined into a single base and amortized over a new Amortization Period.

Glossary (continued)

Funded Ratio
Defined as the Market Value of Assets divided by the Accrued Liability. Different actuarial cost methods and different assumptions will lead to different measures of Funded Ratio. The Funded Ratio with the Accrued Liability equal to the funding target is a measure of how well funded a rate plan is. A ratio greater than 100% means the rate plan has more assets than the funding target and the employer need only contribute the Normal Cost. A ratio less than 100% means assets are less than the funding target and contributions in addition to Normal Cost are required.

Funded Status
Any comparison of a particular measure of plan assets to a particular measure of pension obligations. The methods and assumptions used to calculate a funded status should be consistent with the purpose of the measurement.

Funding Target
The Accrued Liability measure upon which the funding requirements are based. The funding target is the Accrued Liability under the Entry Age Actuarial Cost Method using the assumptions adopted by the board.

GASB 68
Statement No. 68 of the Governmental Accounting Standards Board; the accounting standard governing a state or local governmental employer's accounting and financial reporting for pensions.

New Member (under PEPRA)
A new member includes an individual who becomes a member of a public retirement system for the first time on or after January 1, 2013, and who was not a member of another public retirement system prior to that date, and who is not subject to reciprocity with another public retirement system.

Normal Cost
The portion of the Present Value of Benefits allocated to the upcoming fiscal year for active employees. Different actuarial cost methods and different assumptions will lead to different measures of Normal Cost. The Normal Cost under the Entry Age Actuarial Cost Method, using the assumptions adopted by the board, plus the required amortization of the UAL, if any, make up the required contributions.

PEPRA
The California Public Employees' Pension Reform Act of 2013.

Present Value of Benefits (PVB)
The total dollars needed as of the valuation date to fund all benefits earned in the past or expected to be earned in the future for *current* members.

Traditional Unit Credit Actuarial Cost Method
An actuarial cost method that sets the Accrued Liability equal to the Present Value of Benefits as suming no future pay increases or service accruals. The Traditional Unit Credit Cost Method is used to measure the accrued liability on a termination basis.

Unfunded Accrued Liability (UAL)
The Accrued Liability minus the Market Value of Assets. If the UAL for a rate plan is positive, the employer is required to make contributions in excess of the Normal Cost.