Alameda County Employees' Retirement Association
BOARD OF RETIREMENT

ACTUARIAL COMMITTEE/BOARD MEETING NOTICE and AGENDA

ACERA MISSION:

To provide ACERA members and employers with flexible, cost-effective, participant-oriented benefits through prudent investment management and superior member services.

Thursday, April 18, 2024
11:00 am

LOCATION AND TELECONFERENCE	COMMITTEE MEMBERS	
ACERA **C.G. "BUD" QUIST BOARD ROOM** **475 14TH STREET, 10TH FLOOR** **OAKLAND, CALIFORNIA 94612-1900** **MAIN LINE: 510.628.3000** **FAX: 510.268.9574** **The public can observe the meeting and offer public comment by using the below Webinar ID and Passcode after clicking on the below link or calling the below call-in number.** https://zoom.us/join Call-In Number: 1 699 900 6833 Webinar ID: 879 6337 8479 Passcode: 699406 For help joining a Zoom meeting, see:https://support.zoom.us/hc/en-us/articles/201362193	**KELLIE SIMON, CHAIR**	**ELECTED GENERAL**
	HENRY LEVY, VICE CHAIR	**TREASURER**
	KEITH CARSON	**APPOINTED**
	TARRELL GAMBLE	**APPOINTED**
	ELIZABTEH ROGERS	**ELECTED RETIRED**

The Alternate Retired Member votes in the absence of the Elected Retired Member, or, if the Elected Retired Member is present, then votes if both Elected General members, or the Safety Member and an Elected General member, are absent.

The Alternate Safety Member votes in the absence of the Elected Safety, either of the two Elected General Members, or both the Retired and Alternate Retired members.

This is a meeting of the Actuarial Committee if a quorum of the Actuarial Committee attends, and it is a meeting of the Board if a quorum of the Board attends. This is a joint meeting of the Actuarial Committee and the Board if a quorum of each attends.

Board and Committee agendas and minutes and all documents distributed to the Board or a Committee in connection with a public meeting (unless exempt from disclosure) are posted online at www.acera.org and also may be inspected at 475 14th Street, 10th Floor, Oakland, CA 94612-1900.

Public comments are limited to four (4) minutes per person in total. The order of the items on the agenda is subject to change without notice.

Note regarding accommodations: If you require a reasonable modification or accommodation for a disability, please contact ACERA between 9:00 a.m. and 5:00 p.m. at least 72 hours prior to the meeting at accommodation@acera.org or at 510-628-3000.

ACTUARIAL COMMITTEE/BOARD MEETING

Call to Order: 11:00 am

Roll Call

Public Input

Action Items: Matters for Discussion and Possible Motion by the Committee

None

Information Items: These items are not presented for Committee action but consist of status updates and cyclical reports

1. **Presentation of the 2024 Actuarial Committee Work Plan.**

   -Lisa Johnson

2. **Presentation and discussion of the Actuarial Valuation and Review as of December 31, 2023.**

   -Lisa Johnson

   -Andy Yeung, Segal

   -Eva Yum, Segal

Trustee Input

Future Discussion Items

May

- Discussion and possible motion to Adopt the Actuarial Valuation as of December 31, 2023

Establishment of Next Meeting Date

Thursday, May 16, 2024, at 11:00 am

Adjournment

ACERA

MEMORANDUM TO THE ACTUARIAL COMMITTEE

DATE: April 18, 2024

TO: Members of the Actuarial Committee

FROM: Lisa Johnson, Assistant Chief Executive Officer

SUBJECT: **Proposed 2024 Actuarial Committee Work Plan**

The proposed 2024 Actuarial Committee Work Plan is attached for your consideration and review. A total of four meetings are scheduled. Two of the meetings contain action items and the other two contain information items. The main action and information items for 2024 are listed below for quick reference:

- **April 18, 2024**
  - Presentation and discussion of the Actuarial Valuation and review as of December 31, 2023 (Segal).
- **May 16, 2024**
  - Discussion and possible motion to adopt the Actuarial Valuation as of December 31, 2023.
- **August 15, 2024**
  - Presentation of the Deterministic projections as part of the Risk Assessment Report based on the Actuarial Valuation as of December 31, 2023.
- **October 17, 2024**
  - *Interest Crediting Policy* review, discussion and possible motion on the continued relevance and need for this policy with or without changes.
  - *Actuarial Funding Policy* review, discussion and possible motion on the continued relevance and need for this policy with or without changes.

** The Participating Employers meeting with Segal presenting the Actuarial Valuation and review as of December 31, 2023, will be held on April 24, 2024.*

Updates may be made to the work plan as the need arises during the year.

2024 Proposed Actuarial Committee Work Plan

Date	Action Items	Information Items	Staff Items
Feb 15 ***(No Meeting)***		• Proposed 2024 Actuarial Committee Work Plan (***moved to April meeting***)	• Assistant CEO-Operations to discuss work plan with Committee Chair
April 18		• Presentation and discussion of the Actuarial Valuation and Review as of December 31, 2023 (Segal) • Proposed 2024 Actuarial Committee Work Plan	• Participating Employers meeting (April 24, 2024) with **Segal to present**: ○ Actuarial Valuation as of December 31, 2023
May 16	• Discussion and possible motion to adopt the Actuarial Valuation as of December 31, 2023 (Segal)		
June 20 **(*Cancelled*)**			
August 15		• Segal presentation of the deterministic projections as part of the Risk Assessment Report based on the Actuarial Valuation and Review as of December 31, 2023	
September 19			• Participating Employers meeting (proposed date TBD)
October 17	• Interest Crediting policy • Actuarial Funding policy		
December 19			

Note: This work plan is subject to change without prior notice. Periodic rearrangements of agenda items will be made to the work plan to provide a reasonable length of time for each meeting.

MEMORANDUM TO THE ACTUARIAL COMMITTEE

DATE:	April 18, 2024
TO:	Members of the Actuarial Committee
FROM:	Lisa Johnson, Assistant Chief Executive Officer
SUBJECT:	Draft Actuarial Valuation and Review as of December 31, 2023

Executive Summary

The draft Actuarial Valuation and Review as of December 31, 2023, is attached for review and discussion. The funded ratio for December 31, 2023, on the Valuation Value of Assets (VVA) basis, increased from 86.9% to 88.0%. The increase in funded ratio is primarily due to changes in actuarial assumptions and other experience gains, offset somewhat by investment return on the valuation value (after asset smoothing) less than the assumed rate of 7.00% used in the December 31, 2022, valuation, individual salary increases greater than expected and change in the plan provision (related to optional settlement 2 election).

A summary of the UAAL and the aggregate employer and employee contribution rates from the 2023 funding valuation report are provided here for quick reference.

The UAAL decreased from $1,492.1 million in 2022 to $1,404.1 million in 2023. This change in the UAAL was primarily due to the following factors:

a) Changes in actuarial assumptions and other experience gains, offset somewhat by an investment return (after smoothing) less than the assumed rate of 7.00% used in the December 31, 2022, valuation;
b) Higher than expected salary increases for active members; and
c) Change in plan provision (related to optional settlement 2 election)

The aggregate employer contribution rate[1] has decreased from 23.72% of payroll to 23.54% of payroll. This change was primarily due to:

a) Changes in actuarial assumptions and amortizing the prior year's UAAL over a larger than expected total projected payroll; offset somewhat by
b) Lower than expected return on investments (after smoothing);
c) Change in plan provision; and
d) Higher than expected salary increases for active members

The aggregate member contribution rate decreased from 10.08% of payroll to 9.87% of payroll, mainly due to the changes in actuarial assumptions, the changes in member demographics and the change in plan provision.

[1] For employers with active member payroll.

Next Step: Prior to bringing the finalized 2023 valuation report back to the Actuarial Committee at the May 16, 2024, meeting, staff will hold a participating employers meeting on April 24, 2024, to review and discuss the results of the study with employer representatives.

Reporting Methodology for ASOP No. 51 Implementation: As required by the Actuarial Standards Board, Segal has introduced a Low-Default-Risk Obligation Measure (LDROM) in this year's funding valuation report. The LDROM when calculated using an interest rate of 3.26% developed using an all-bond portfolio instead of the long-term investment return assumption of 7.00% developed using ACERA's diversified portfolio would have increased the actuarial accrued liability of the Association to $19.3 billion from $11.7 billion.

In February 2019, the Board adopted staff's recommendation to direct Segal to prepare a separate report to identify risks that "may reasonably be anticipated to significantly affect the plan's future financial condition" (ASOP 51). Based on the Actuarial Valuation and Review as of December 31, 2023, Segal will provide the results of its risk report to the Actuarial Committee on June 20, 2024.

Return Assumption Impact

Similar to what Segal disclosed in ACERA's December 31, 2022, valuation report, the 7.0% investment return assumption that the Board approved on December 21, 2023, for determining the liabilities for funding purposes and used for establishing the employer and member contribution rates in this report has continued to be developed without considering the impact of any future 50/50 excess earnings allocation. This is based on Segal's understanding that Article 5.5 of the Statute, which authorizes the allocation of 50% of excess earnings to the SRBR, does not allow for the use of a different investment return for funding than is used for interest crediting. This would appear in effect to preclude the prefunding of the SRBR through the use of an assumption lower than the market earnings assumption rate of 7.00%.

As required by the Actuarial Standard of Practice (ASOP) No. 4 ("Measuring Pension Obligations and Determining Pension Plan Costs or Contributions"), Segal performed a stochastic model, as detailed in the 2019-2022 experience study report, to estimate the impact of the 50% allocation of future excess earnings to the SRBR. The results of this model indicated that the 50/50 allocation of future excess earnings would have about the same impact as an "outflow" (i.e., assets not available to fund the benefits included in this valuation) that would average approximately 0.75% of assets over time. *When the results of the stochastic model are applied to this valuation, it is estimated that the annual outflow would increase the Accrued Actuarial Liability (AAL) measured using a 7.00% investment return assumption from $11.75 billion to $12.83 billion (for a difference of $1.08 billion) and would increase the employer's UAAL contribution rate by about 5.5% - 6.0% of payroll.*

Conclusion

Subsequent to review, staff notes no discrepancies in the report and recommends Committee review and future Board adoption.

Attachment:

ACERA's draft Actuarial Valuation and Review as of December 31, 2023

Alameda County Employees' Retirement Association

Actuarial Valuation and Review as of December 31, 2023

Segal

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April 5, 2024

Board of Retirement
Alameda County Employees' Retirement Association
475 14th Street, Suite 1000
Oakland, CA 94612

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of December 31, 2023. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for fiscal year 2024-2025.

This report has been prepared in accordance with generally accepted actuarial principles and practices for the exclusive use and benefit of the Board of Retirement, based upon information provided by the staff of ACERA.

Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

The measurements shown in this actuarial valuation may not be applicable for other purposes. 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; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

The actuarial calculations were directed under the supervision of Eva Yum, FSA, MAAA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. The assumptions used in this actuarial valuation were selected by the Board of Retirement based upon our analysis and recommendations. In our opinion, the assumptions are reasonable and take into account the experience of the Plan and reasonable expectations. In addition, in our opinion, the combined effect of these assumptions is expected to have no significant bias.

Segal makes no representation or warranty as to the future status of the Plan and does not guarantee any particular result. This document does not constitute legal, tax, accounting or investment advice or create or imply a fiduciary relationship. The Board is encouraged to discuss any issues raised in this report with the Plan's legal, tax and other advisors before taking, or refraining from taking, any action.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal

Andy Yeung, ASA, MAAA, FCA, EA Vice President and Actuary	Eva Yum, FSA, MAAA, EA Vice President and Actuary

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Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present a valuation of the Alameda County Employees' Retirement Association ("ACERA" or "the Plan" or "the Association") as of December 31, 2023. The valuation was performed to determine whether the assets and contribution rates are sufficient to provide the prescribed benefits.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Plan, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive members and retired members and beneficiaries as of November 30, 2023,* provided by the Association;
- The assets of the Plan as of December 31, 2023, provided by ACERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board of Retirement for the December 31, 2023 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Board of Retirement for the December 31, 2023 valuation and
- The funding policy adopted by the Board of Retirement.

Certain disclosure information required by Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 as of December 31, 2023 for the Plan is provided in a separate report.

One of the general goals of an actuarial valuation is to establish contributions which fully fund the Association's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

The contribution requirements are determined as a percentage of payroll for employers with active member payroll. The contribution requirement for the Alameda County Office of Education (ACOE) with no active member payroll is expressed as a level dollar amount. The Association's employer rates provide for both normal cost and a contribution to amortize any unfunded or overfunded

* It should be noted that consistent with last year's valuation, we have also reflected the actual COLA granted by the Board on the April 1 immediately after the date of the valuation in calculating the liabilities for nonactive members.

actuarial accrued liabilities. In this valuation, we have applied the funding policy adopted by the Board of Retirement on September 18, 2014, and most recently revised on October 21, 2021. Details of the funding policy are provided in *Section 4, Exhibit 1* starting on page 92.

The rates calculated in this report may be adopted by the Board of Retirement for the fiscal year that extends from July 1, 2024 through June 30, 2025.

Valuation highlights

Experience study

1. The results of this valuation reflect changes in the actuarial assumptions as recommended by Segal and adopted by the Board of Retirement for the December 31, 2023 valuation.[1] These changes were documented in our December 1, 2019 through November 30, 2022 Actuarial Experience Study report dated January 8, 2024 and are also outlined in *Section 4, Exhibit 1* starting on page 92 of this report.

   These assumption changes, together with some adjustments in the allocation of the cost of COLA benefits after legacy Safety members reach 30 years of service as well as some technical changes to the application of the Entry Age Cost allocation method as discussed in our Actuarial Experience Study report, resulted in a decrease in the average employer rate of 0.46% of payroll and the average member rate of 0.28% of payroll.[2] There is also a decrease in the unfunded actuarial accrued liability (UAAL) of $97.5 million associated with the updated allocation and assumptions changes.

Plan amendment

2. On December 21, 2023, the Board adopted a new election process to allow active members to elect an optional settlement 2 allowance in advance to provide a continuance of 100% to the member's spouse, domestic partner or other beneficiaries upon the member's pre-retirement death. This plan change is included for the first time in this valuation, and is outlined in *Section 4, Exhibit 2* on page 128 of this report. Related assumptions we have used to value that benefit are outlined in *Section 4, Exhibit 1* on page 104.

[1] We have also included an adjustment to the compensation projection for deferred members who join a reciprocal system as recommended in the December 31, 2021 actuarial audit.

[2] This includes a decrease in the average employer rate of 0.55% of payroll for General (non-LARPD) and 1.73% of payroll for LARPD, and an increase of 0.05% of payroll for Safety. The increase in the Safety employer rate is mainly due to the change in the demographic assumptions (in particular the increase in the number of expected disabilities).

This plan change resulted in an increase in the average employer rate of 0.15% of payroll and the average member rate of 0.03% of payroll. There is also an increase in the unfunded actuarial accrued liability (UAAL) of $11.8 million associated with the plan change.

Funding measures

3. The funded ratio (the ratio of valuation value of assets to the actuarial accrued liability) increased from 86.9% in the December 31, 2022 valuation to 88.0% in the December 31, 2023 valuation. The increase in the funded ratio is primarily due to changes in actuarial assumptions and other experience gains, offset somewhat by an investment return on the valuation value (i.e., after asset smoothing) less than the assumed rate of 7.00% used in the December 31, 2022 valuation, individual salary increases greater than expected and change in plan provision (related to optional settlement 2 election). This ratio is one measure of funding status, and its history is a measure of funding progress. Using the market value of assets, the funded ratio increased from 80.7% to 86.1%. These measurements are not necessarily appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for, or the amount of, future contributions.
4. The unfunded actuarial accrued liability (the difference between the actuarial accrued liability and the valuation value of assets) decreased from $1,492.1 million to $1,404.1 million. The decrease in unfunded actuarial accrued liability (UAAL) is primarily due to changes in actuarial assumptions and other experience gains, offset somewhat by an investment return on the valuation value (i.e., after asset smoothing) less than the assumed rate of 7.00% used in the December 31, 2022 valuation, individual salary increases greater than expected and change in plan provision (related to optional settlement 2 election). A reconciliation of the Association's UAAL from the prior year is provided in *Section 2, Exhibit E* on page 32.

   A schedule of the current UAAL amortization balances and payments may be found in *Section 3, Exhibit H* starting on page 84. A graphical projection of the UAAL amortization balances and payments is provided in *Section 3, Exhibit I* starting on page 90.

Actuarial experience

5. The net actuarial loss of $57.6 million, or 0.5% of actuarial accrued liability, is due to an investment **loss** of $68.7 million, or 0.6% of actuarial accrued liability, and a net **gain** from sources other than investments of $11.1 million, or 0.1% of the actuarial accrued liability, prior to reflection of assumption or plan changes, if applicable. The gain from sources other than investments was due to differences in actual versus expected experience including (but not limited to) retirement, disability and termination experience.

6. The rate of return on the market value of assets was 12.11% for the year ending December 31, 2023. The return on the valuation value of assets was 6.30% for the same period due to the recognition of prior years' investment gains and losses.* This resulted in an actuarial loss when measured against the assumed rate of return of 7.00% used in the December 31, 2022 valuation. This actuarial investment loss (after asset smoothing) increased the average employer contribution rate by 0.38% of payroll.

Contributions

7. As reported in the December 31, 2021 valuation, the County made voluntary County Safety contributions of $800 million on around June 29, 2021 to reduce their Safety UAAL and associated contribution rates. The Livermore Area Recreation and Park District (LARPD) also made voluntary LARPD General contributions of $12.611 million on around June 29, 2021 to reduce their General UAAL and associated contribution rates. ACERA set up the County Safety UAAL Advance Reserve and the LARPD General UAAL Advance Reserve to track these voluntary UAAL contributions. Based on the Board's funding policy and interest crediting policy, these two UAAL Advance Reserves are subject to a separate 5-year asset smoothing schedule that excludes the allocation of any deferred investment gains or losses accumulated up to June 30, 2021 for interest crediting purposes. The details of the UAAL Advance Reserves have been included in *Section 4, Exhibit 6* and a reconciliation of the contribution credit available from the voluntary UAAL contributions has been included in *Section 4, Exhibit 7*.
8. The LARPD General cost sharing group has a surplus of $451,000 on a VVA basis this year compared to a surplus of $829,000 on a VVA basis last year. In order to calculate the proper offset available to LARPD from the LARPD General UAAL Advance Reserve, we have amortized the new LARPD experience loss, assumption change, and plan change layers over 13.5 years so that it will have the same amortization period as the LARPD General UAAL Advance Reserve (13.5 years remaining as of December 31, 2023). The details of the LARPD amortization bases can be found in *Section 3, Exhibit H.*
9. The average employer rate calculated in this valuation has decreased from 23.72% to 23.54% of payroll. This decrease is primarily due to the changes in actuarial assumptions and amortizing the prior year's UAAL over a larger than expected total projected payroll. That decrease was offset to some degree by an investment return on the valuation value (i.e., after asset smoothing) less than the assumed rate of 7.00% used in the December 31, 2022 valuation, the change in plan provision, and individual salary increases greater than expected. A complete reconciliation of the Association's aggregate employer rate and a detailed schedule of the employer contribution rates are provided in *Section 2, Subsection F*.

* Because the two (LARPD and County Safety) UAAL Advance Reserves are subject to a separate 5-year asset smoothing schedule that excludes the allocation of any deferred investment gains or losses accumulated up to June 30, 2021, the return on a VVA basis for the UAAL Advance Reserves are lower than that for the other valuation reserves. As a result, the return on a VVA basis for the LARPD and County Safety cost groups is lower than that for the General (non-LARPD) and Alameda County Office of Education (ACOE) cost groups.

A schedule of the projected contributions by each participating employer is provided in *Section 4, Exhibit 4*. Under the Board of Retirement's current actuarial funding policy, the UAAL is paid off by the employers in the General Tiers 1, 2, and 4 combined membership group in proportion to their payroll (with the exception of ACOE and the LARPD, based on the application of the Declining Employer Payroll Policy).

Employer rates for Alameda Health System (AHS)/Court/First 5 are higher than the County's rates to reflect that only the County has received a reimbursement for the implicit retiree health benefit subsidy paid by the County for 2023 and in prior years. The $4.1 million transfer (an estimated amount provided by ACERA for the implicit retiree health benefit subsidy paid by the County for 2023) and the unused credit from prior years' transfers (the balance of prior transfers was about $90.0 million as of December 31, 2023) have been recognized over separate 20-year periods.

10. The average member rate calculated in this valuation has decreased from 10.08% to 9.87% of payroll due to the changes in actuarial assumptions, offset to some degree by changes in active member demographics and the change in plan provision. A complete reconciliation of the Association's aggregate member rate is provided in *Section 2, Subsection F*.

    The individual member rates have been updated to reflect the valuation as of December 31, 2023. The detailed member rates by tier are provided in *Section 4, Exhibit 3* of this report.

11. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the UAAL and the principal balance. The funding policy adopted by the Board of Retirement meets this standard.

Future expectations

12. The total unrecognized net investment loss as of December 31, 2023 is $292.8 million as compared to an unrecognized net investment loss of $794.1 million in the previous valuation. This net deferred loss of $292.8 million will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years as shown in *Section 2, Subsection B*.

    The net deferred loss of $292.8 million represents about 2.6% of the market value of assets.[1] Unless offset by future investment gains or other favorable experience, the recognition of the $292.8 million net market loss is expected to have an impact on the Association's future funded ratio and contribution rate requirements. Under an approach which takes into account the size of the valuation and the SRBR reserves[2], this potential impact may be illustrated as follows:

[1] Of the $292.8 million in net deferred loss, about $48.1 million would be allocated to the LARPD General UAAL Advance Reserve and the County Safety UAAL Advance Reserve if the net deferred loss were recognized immediately in the valuation value of assets.

[2] The Market Value of Assets as of December 31, 2023 equals the Valuation Value of Assets for the Pension Plan plus the total of the SRBR, 401(h) reserve, and the deferred market losses.

a. If a proportion of the net deferred loss that is commensurate with the size of the valuation reserves were recognized immediately in the valuation value of assets, the funded ratio would decrease from 88.0% to 86.1%.

   For comparison purposes, if a proportion of the net deferred loss that is commensurate with the size of the valuation reserves in the December 31, 2022 valuation had been recognized immediately in the December 31, 2022 valuation, the funded ratio would have decreased from 86.9% to 80.7%.

b. If a proportion of the net deferred loss that is commensurate with the size of the valuation reserves were recognized immediately in the valuation value of assets, the average employer contribution rate would increase from 23.54% to about 24.8% of payroll.

   For comparison purposes, if a proportion of the net deferred loss that is commensurate with the size of the valuation reserves in the December 31, 2022 valuation had been recognized immediately in the December 31, 2022 valuation, the average employer contribution rate would have increased from 23.74% to about 28.1% of payroll.

13. Similar to what we disclosed in our December 31, 2022 valuation report, the 7.00% investment return assumption that the Board approved on December 21, 2023 for determining the liabilities for funding purposes and used for establishing the employer and member contribution rates in this report has continued to be developed without considering the impact of any future 50/50 excess earnings allocation. This is based on our understanding that Article 5.5 of the Statute, which authorizes the allocation of 50% of excess earnings to the SRBR and does not allow for the use of a different investment return for funding than is used for interest crediting. This would appear in effect to preclude the prefunding of the SRBR through the use of an assumption lower than the market earnings assumption of 7.00%.

    Actuarial Standard of Practice (ASOP) No. 4 ("Measuring Pension Obligations and Determining Pension Plan Costs or Contributions") states that some plan provisions, including gain sharing provisions, "may create pension obligations that are difficult to appropriately measure using traditional valuation procedures." ASOP No. 4 further states that "for such plan provisions, the actuary should consider using alternative valuation procedures, such as stochastic modeling…to reflect the impact of variations in experience from year to year." Accordingly, we performed a stochastic model, as detailed in our 2019-2022 experience study report, to estimate the impact of the 50% allocation of future excess earnings to the SRBR. The results of our model indicated that the 50/50 allocation of future excess earnings would have about the same impact as an "outflow" (i.e., assets not available to fund the benefits included in this valuation) that would average approximately 0.75%[1] of assets over time. For informational purposes only, when we applied the results of our stochastic model to this valuation, we have estimated that such an annual outflow would increase the AAL measured in this valuation using a 7.00% investment return assumption from

[1] In estimating the impact of any future 50/50 excess earnings allocation, we have not included the deferred investment gains/losses available as of the date of the valuation. We believe that the determination of the 0.75% average outflow should provide the stakeholders with information about the **long-term** effect of the 50/50 excess earnings allocation and therefore should not be unduly affected by the **short-term** fluctuation in the 50/50 excess earnings allocation due to the actual deferred investment gains/losses available as of the valuation date.

$11.75 billion to $12.83 billion (for a difference of $1.08 billion) and would increase the employer's UAAL contribution rate by about 5.5% - 6.0% of payroll.[1]

Risk

14. It is important to note that this actuarial valuation is based on plan assets as of December 31, 2023. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after December 31, 2023. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.
15. Because the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. We have been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Plan's future financial condition and that report will be provided later in 2024. We have also included a brief discussion of some risks that may affect the Plan in *Section 2, Subsection I* beginning on page 54.
16. The risk assessment in *Section 2, Subsection I* includes the disclosure of a "Low-Default-Risk Obligation Measure" (LDROM). This disclosure, along with commentary on the significance of the LDROM, is a new requirement under Actuarial Standard of Practice No. 4 (ASOP 4) for all pension funding actuarial valuation reports and can be found on page 56.

GASB

17. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution (ADC) under the Plan's funding policy and measuring the progress of that funding policy. The Net Pension Liability and Pension Expense under GASB Statements No. 67 and No. 68, for inclusion in the Plan's and employer's financial statements as of December 31, 2023, will be provided separately. The accounting disclosures will utilize different methodologies from those employed in the funding valuation, as required by the GASB. However, the ADC in this valuation is expected to be used as the ADC for GASB financial reporting.

[1] For employers with active member payroll.

Summary of key valuation results

Average Employer Contribution Calculated as of December 31	2023 Contribution Rate[1]	2023 Annual Amount[2] ($ in '000s)	2022 Contribution Rate	2022 Annual Amount[2] ($ in '000s)
County only				
• General Tier 1	24.35%	$751	24.77%	$763
• General Tier 2	22.69%	76,549	23.19%	78,236
• General Tier 4	22.44%	80,618	23.10%	82,988
• Safety Tier 2	27.52%	26,273	25.53%	24,372
• Safety Tier 2C	31.81%	886	30.50%	848
• Safety Tier 2D	28.50%	5,351	26.37%	4,951
• Safety Tier 4	25.26%	23,209	23.55%	21,638
– **County Combined**	**23.51%**	**$213,637**	**23.54%**	**$213,796**
AHS, Court and First 5 only				
• General Tier 1	25.43%	$90	25.80%	$92
• General Tier 2	23.77%	39,025	24.22%	39,765
• General Tier 4	23.52%	55,643	24.13%	57,087
Housing only				
• General Tier 1	30.49%	912	30.95%	926
• General Tier 2	28.83%	127	29.37%	129
• General Tier 4	28.58%	760	29.28%	778
LARPD only[3]				
• General Tier 1	10.97%	65	10.97%	65
• General Tier 3	16.49%	232	17.15%	242
• General Tier 4	9.06%	142	9.30%	146
All categories combined	**23.54%**	**$310,633**	**23.72%**	**$313,026**

1 For employers with active member payroll. The UAAL contribution for ACOE, expressed as a level dollar amount, is $120 K when made on April 1, 2025. The UAAL contribution for ACOE determined in the December 31, 2022 valuation was $110 K when made on April 1, 2024. Safety Tier 1 rates are not calculated because there were no Safety Tier 1 active members reported for the December 31, 2023 valuation.

2 Based on December 31, 2023 projected compensation.

3 For LARPD, the combined rate is 12.29% as of December 31, 2023 and 12.68% as of December 31, 2022.

Average Member Contribution Calculated as of December 31	2023 Contribution Rate	2023 Annual Amount[1] ($ in '000s)	2022 Contribution Rate[2]	2022 Annual Amount[1] ($ in '000s)
• General Tier 1	10.01%	$703	10.26%	$721
• General Tier 2	7.81%	39,205	8.10%	40,661
• General Tier 3	14.42%	203	15.48%	218
• General Tier 4	9.06%	54,366	9.30%	55,806
• Safety Tier 2	16.49%	15,742	16.90%	16,133
• Safety Tier 2C	13.86%	386	14.00%	390
• Safety Tier 2D	16.71%	3,138	16.78%	3,151
• Safety Tier 4	17.88%	16,428	17.28%	15,877
All categories combined	**9.87%**	**$130,171**	**10.08%**	**$132,957**

[1] Based on December 31, 2023 projected compensation.

[2] Average rates have been recalculated by applying the individual entry age based member rates determined in the December 31, 2022 valuation to the Association membership as of December 31, 2023. There are no active Safety Tier 1 members as of December 31, 2023.

Section 1: Actuarial Valuation Summary

Valuation Result	December 31, 2023 ($ in ’000s)	December 31, 2022 ($ in ’000s)
Actuarial accrued liability		
• Retired members and beneficiaries	$7,317,136	$7,058,378
• Inactive members	397,778	355,737
• Active members	4,031,753	4,001,005
– **Total actuarial accrued liability**[1]	**$11,746,667**	**$11,415,120**
• Normal cost for plan year beginning December 31	272,575	263,681
Assets		
• Valuation value of assets (VVA)[2]	$10,342,556	$9,923,019
• Market value of assets (MVA)[3]	10,109,342	9,206,534
• Valuation value of assets as a percentage of market value of assets	102.3%	107.8%
Funded status		
• Unfunded actuarial accrued liability on valuation value of assets	$1,404,111	$1,492,101
• Funded percentage on VVA basis	88.0%	86.9%
• Unfunded actuarial accrued liability on market value of assets	$1,637,325	$2,208,586
• Funded percentage on MVA basis	86.1%	80.7%
• Amortization period[4]	Varies	Varies
Key assumptions		
• Net investment return	7.00%	7.00%
• Inflation rate	2.50%	2.75%
• Payroll growth	3.00%	3.25%
• Cost-of-living adjustments (COLA)		
– Tiers with 3% COLA	2.75%	2.75%
– Tiers with 2% COLA	2.00%	2.00%

1 Excludes liabilities held for SRBR and other non-valuation reserves.
2 Excludes Reserve for Interest Fluctuations (Contingency Reserve) if positive, Supplemental Retirees Benefit Reserve, and 401(h) Reserve.
3 The market value of assets as of December 31, 2023 and 2022 equals the valuation value of assets plus the deferred market losses.
4 New UAAL established on each valuation after December 31, 2011 are amortized as follows: plan amendments are amortized over separate decreasing 15-year periods; early retirement incentive programs (ERIPs) are amortized over separate decreasing 5-year periods; assumption and method changes are amortized over separate decreasing 20-year periods; and experience gains/losses are also amortized over separate decreasing 20-year periods.

Demographic Data	December 31, 2023	December 31, 2022	Change
Active members			
• Number of members	11,547	11,346	1.8%
• Average age	47.0	47.0	0.0
• Average service	10.8	11.1	-0.3
• Total projected compensation[1]	$1,319,397,000	$1,258,029,000	4.9%
• Average projected compensation	$114,263	$110,879	3.1%
Retired members and beneficiaries			
• Number of members			
– Service retired	8,685	8,479	2.4%
– Disability retired	1,002	1,006	-0.4%
– Beneficiaries	1,339	1,313	2.0%
• **Total**	**11,026**	**10,798**	**2.1%**
• Average age	72.6	72.4	0.2
• Average monthly benefit[2]	$4,606	$4,485	2.7%
Inactive members			
• Number of members[3]	3,838	3,564	7.7%
• Average Age	47.1	47.1	0.0
Total members	**26,411**	**25,708**	**2.7%**

[1] Total payroll shown above may not total exactly to the amount shown elsewhere in this report when rounded to thousands of dollars due to separate rounding by tiers used elsewhere.
[2] Excludes monthly benefits payable from the SRBR.
[3] Includes inactive members due a refund of member contributions.

Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal relies on a number of input items. These include:

Input Item	Description
Plan provisions	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Member information	An actuarial valuation for a plan is based on data provided to the actuary by the Association. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Financial information	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the Association. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan members for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of members in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Section 1: Actuarial Valuation Summary

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the Association. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
- If the Association is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting or tax advice and is not acting as a fiduciary to the Plan. This valuation is based on Segal's understanding of applicable guidance in these areas and of the Plan's provisions, but they may be subject to alternative interpretations. The Association should look to their other advisors for expertise in these areas.
- While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
- Segal's report shall be deemed to be final and accepted by the Association upon delivery and review. The Association should notify Segal immediately of any questions or concerns about the final content.

Section 2: Actuarial Valuation Results

A. Member information

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive members, retired members and beneficiaries.

This section presents a summary of significant statistical data on these member groups. More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A, B, and C*.

Member Population as of December 31

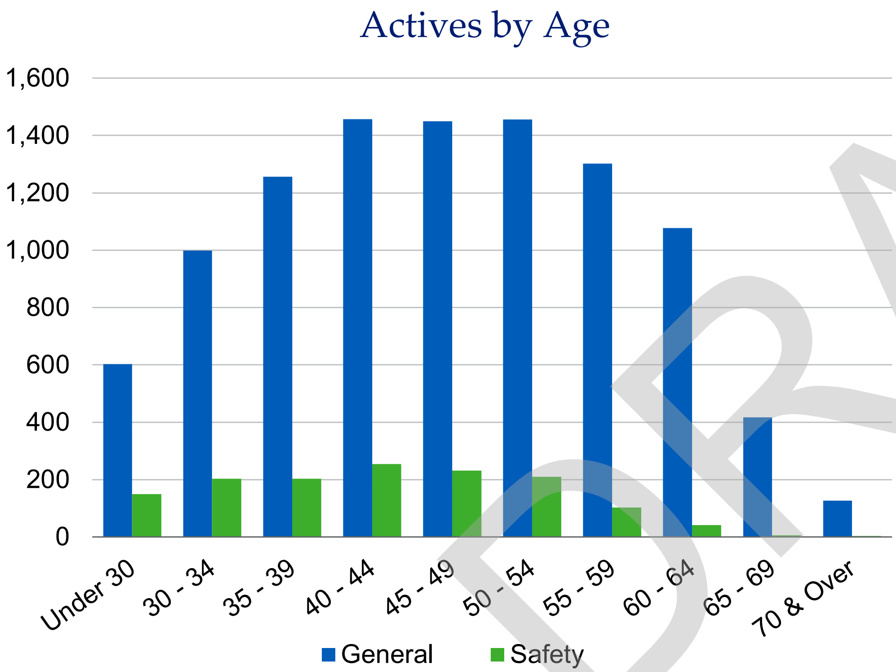
Year Ended December 31	Active Members	Inactive Members*	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2014	11,025	1,995	8,813	10,808	0.98	0.80
2015	11,071	2,027	8,990	11,017	1.00	0.81
2016	11,111	2,263	9,242	11,505	1.04	0.83
2017	11,323	2,447	9,479	11,926	1.05	0.84
2018	11,349	2,568	9,783	12,351	1.09	0.86
2019	11,336	2,821	10,078	12,899	1.14	0.89
2020	11,322	3,028	10,292	13,320	1.18	0.91
2021	11,326	3,265	10,536	13,801	1.22	0.93
2022	11,346	3,564	10,798	14,362	1.27	0.95
2023	11,547	3,838	11,026	14,864	1.29	0.95

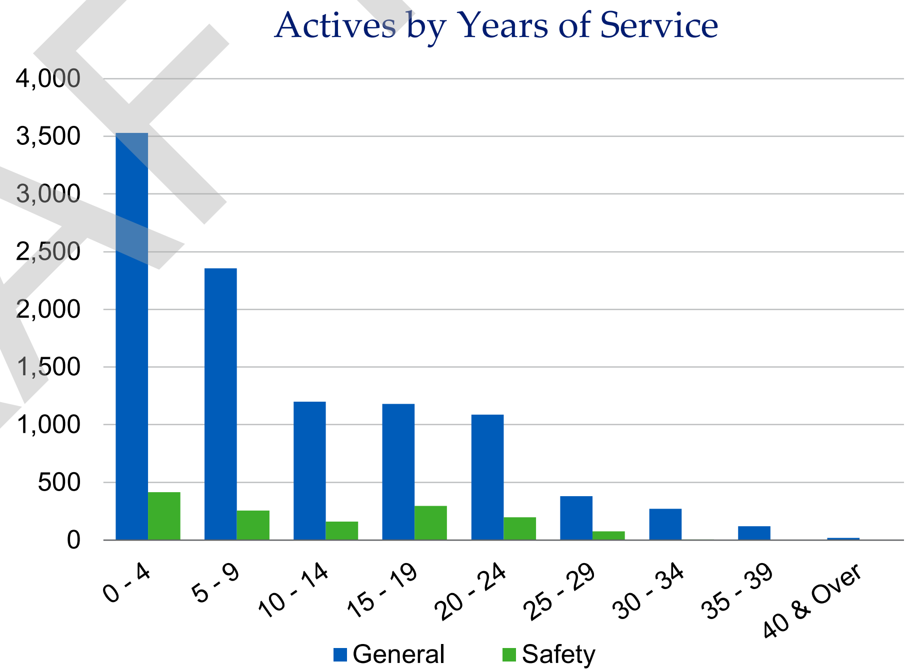
* Includes inactive members due a refund of member contributions.

Active members

As of December 31,	2023	2022	Change
Active members	11,547	11,346	1.8%
Average age[1]	47.0	47.0	0.0
Average years of service	10.8	11.1	-0.3
Average compensation	$114,263	$110,879	3.1%

Distribution of Active Members as of December 31, 2023





Inactive members

As of December 31,	2023	2022	Change
Inactive members[2]	3,838	3,564	7.7%

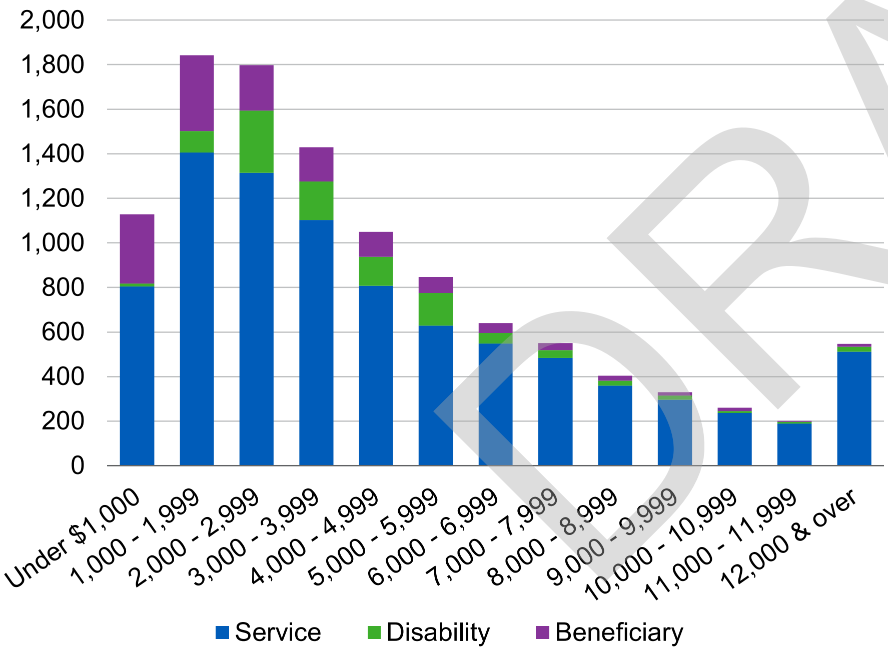
[1] Among the active members, there were none with unknown age information.
[2] Members with a vested right to a deferred (or immediate) benefit or entitled to a return of their member contributions.

Retired members and beneficiaries

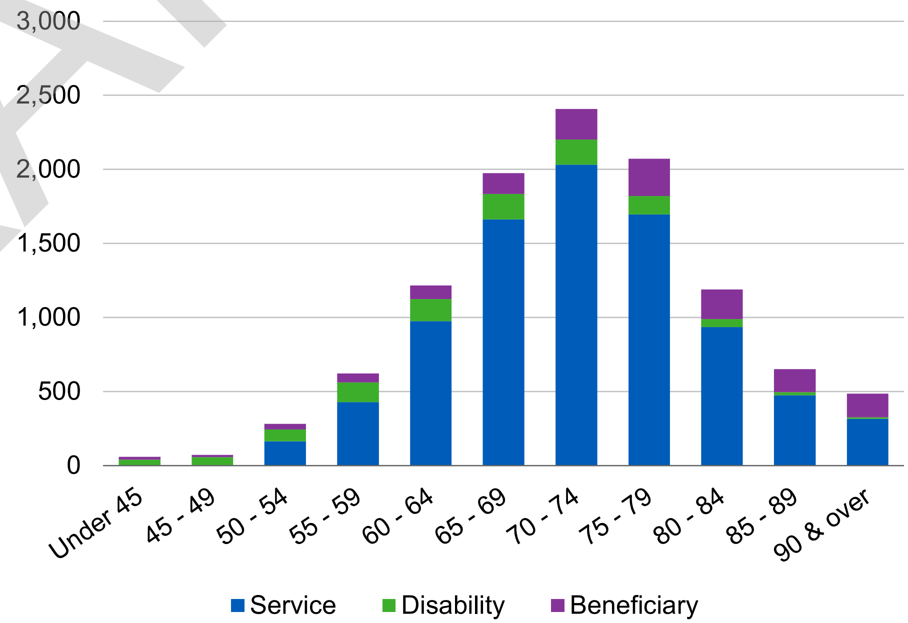
As of December 31,	2023	2022	Change
Retired members	9,687	9,485	2.1%
Beneficiaries	1,339	1,313	2.0%
Average age	72.6	72.4	0.2
Average amount	$4,606	$4,485	2.7%
Total monthly amount	$50,785,571	$48,433,195	4.9%

Distribution of Retired Members and Beneficiaries as of December 31, 2023

By Type and Monthly Amount



By Type and Age



Historical plan population

The chart below demonstrates the progression of the active population over the last 10 years. The chart also shows the growth among the retired population over the same time period.

Member Data Statistics

Active Members versus Retired Members and Beneficiaries (Pay Status)

As of December 31	Active Count	Active Average Age	Active Average Service	Pay Status Count	Pay Status Average Age	Pay Status Monthly Amount
2014	11,025	47.3	11.5	8,813	70.9	$3,549
2015	11,071	47.3	11.6	8,990	71.1	3,648
2016	11,111	47.3	11.6	9,242	71.3	3,757
2017	11,323	47.1	11.4	9,479	71.6	3,880
2018	11,349	47.0	11.4	9,783	71.7	3,983
2019	11,336	47.1	11.3	10,078	71.9	4,111
2020	11,322	47.1	11.3	10,292	72.1	4,244
2021	11,326	47.1	11.3	10,536	72.3	4,359
2022	11,346	47.0	11.1	10,798	72.4	4,485
2023	11,547	47.0	10.8	11,026	72.6	4,606

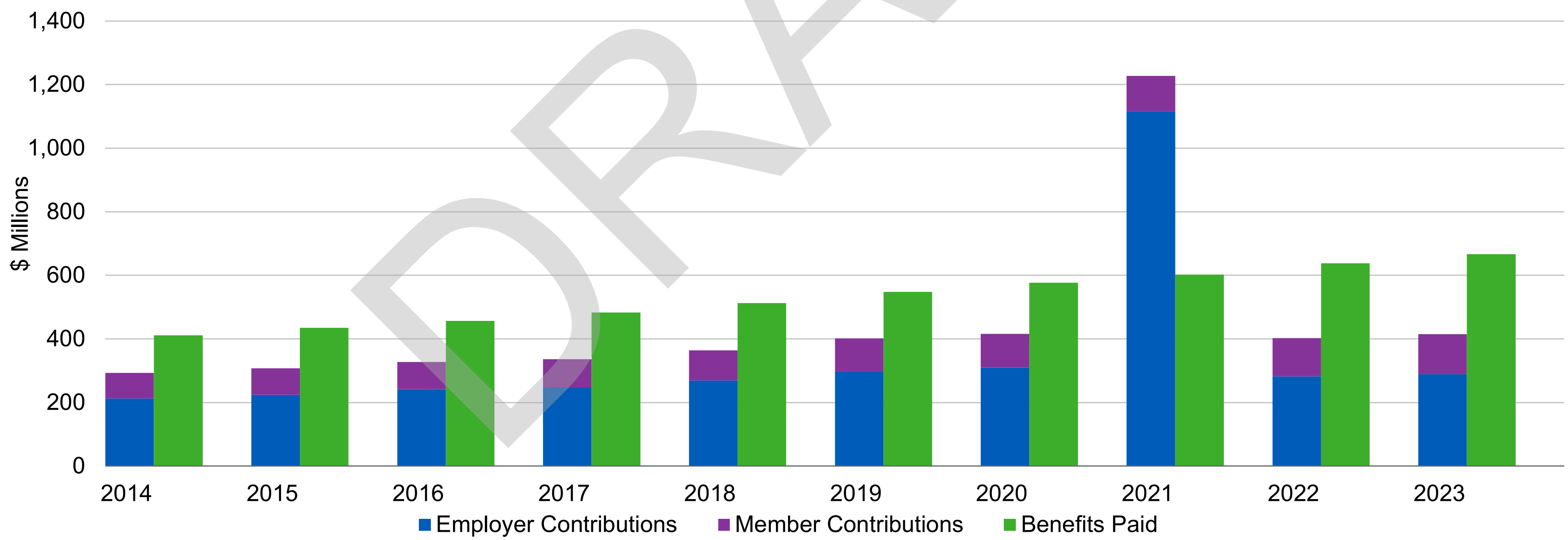
B. Financial information

Retirement plan funding anticipates that, over the long term, both contributions and investment earnings (less investment fees) will be needed to cover benefit payments and administrative expenses. Retirement plan assets change as a result of the net impact of these income and expense components.

Additional financial information, including a summary of transactions for the valuation year, is presented in *Section 3, Exhibits D, E, F, and G.*

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the valuation asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Comparison of Contributions Made with Benefits for Years Ended December 31



Note: 2021 contributions include $812,611,250 in additional voluntary Safety and LARPD General contributions to reduce their UAAL.

Determination of Actuarial Value of Assets[1] for Year Ended December 31, 2023

Step	Actual Return	Expected Return	Investment Gain/(Loss)	Percent Deferred	Deferred Amount	Amount
1. Market value of assets						$11,278,820,795
2. Calculation of unrecognized return						
a. Period ended June 30, 2019	$854,836,642	$274,040,816	$580,795,826	0%	$0	
b. Period ended December 31, 2019	487,958,159	302,301,626	185,656,533	10%	18,565,653	
c. Period ended June 30, 2020	(507,044,977)	317,318,139	(824,363,116)	20%	(164,872,623)	
d. Period ended December 31, 2020	1,508,460,094	295,971,205	1,212,488,889	30%	363,746,667	
e. Period ended June 30, 2021	1,034,858,840	347,663,410	687,195,431	40%	274,878,172	
f. Period ended December 31, 2021	550,755,442	397,125,337	153,630,105	50%	76,815,052	
g. Period ended June 30, 2022	(1,416,848,650)	412,541,243	(1,829,389,893)	60%	(1,097,633,936)	
h. Period ended December 31, 2022	110,225,365	358,854,722	(248,629,356)	70%	(174,040,549)	
i. Period ended June 30, 2023	713,510,637	358,334,297	355,176,340	80%	284,141,072	
j. Period ended December 31, 2023	518,437,250	378,873,513	139,563,737	90%	125,607,363	
k. Total unrecognized return[2]						**$(292,793,129)**
3. Actuarial value of assets (1) - (2k)[3]						**$11,571,613,924**
4. Ratio of actuarial to market value **(3) ÷ (1)**						102.6%
5. Non-valuation reserves and deductions						
a. Reserve for Interest Fluctuations (Contingency Reserve)						$36,669,849
b. Supplemental Retirees Benefit Reserve (SRBR)						1,186,387,821
c. Other Non-Valuation Reserve (401(h) Reserve)						10,116,636
d. SRBR Transfer to Employer Advance Reserve						(4,116,000)
e. Total (Sum of (5a) through (5d))						**$1,229,058,306**
6. Valuation value of assets (3) – (5e)						**$10,342,555,618**

[1] See page 105 in *Section 4, Exhibit 1* for our methodology in calculating the actuarial value of assets. Note that results may be slightly off due to rounding.

[2] Total deferred return is equal to the sum of (2a) through (2j).
The total deferred return of $(292,793,129) as of December 31, 2023 is recognized in each of the next five years as follows:

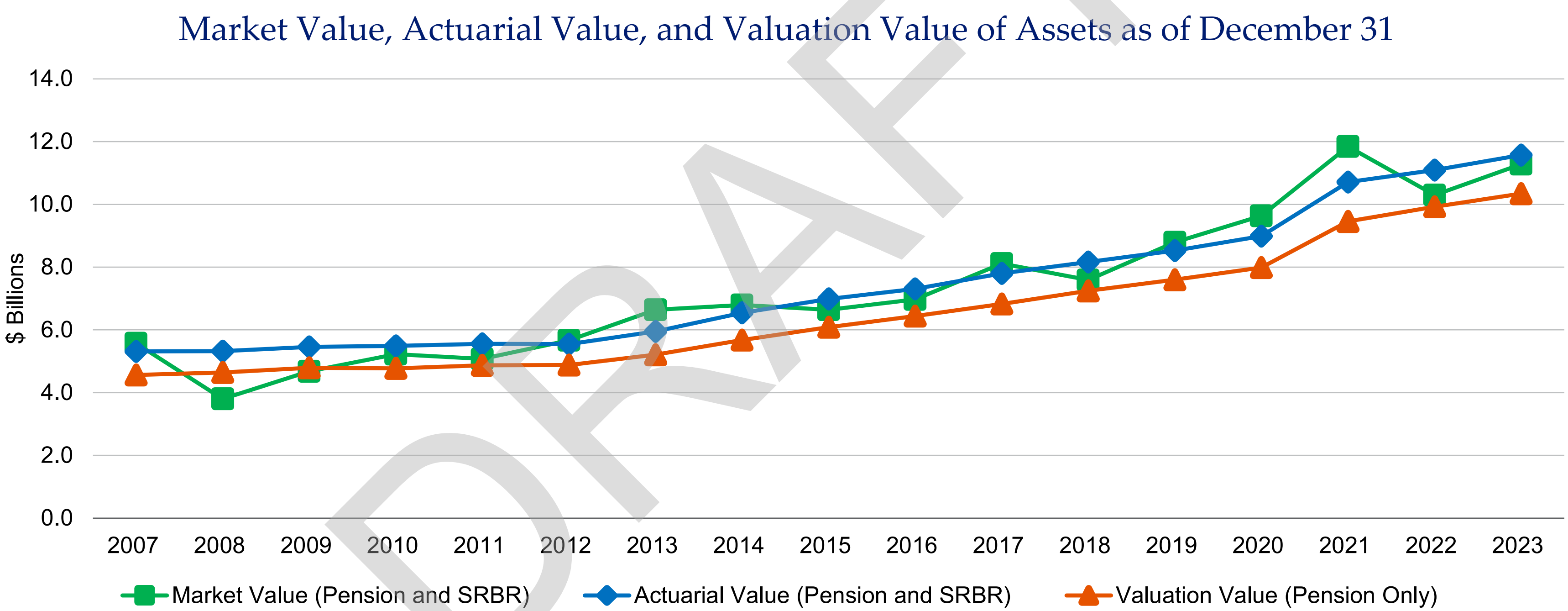
a. Amount recognized on December 31, 2024	$(52,299,919)
b. Amount recognized on December 31, 2025	(27,241,839)
c. Amount recognized on December 31, 2026	(301,292,824)
d. Amount recognized on December 31, 2027	74,085,080
e. Amount recognized on December 31, 2028	13,956,374

[3] The actuarial value of assets is within the 40% corridor (i.e., AVA is between 60% and 140% of MVA).

Asset history

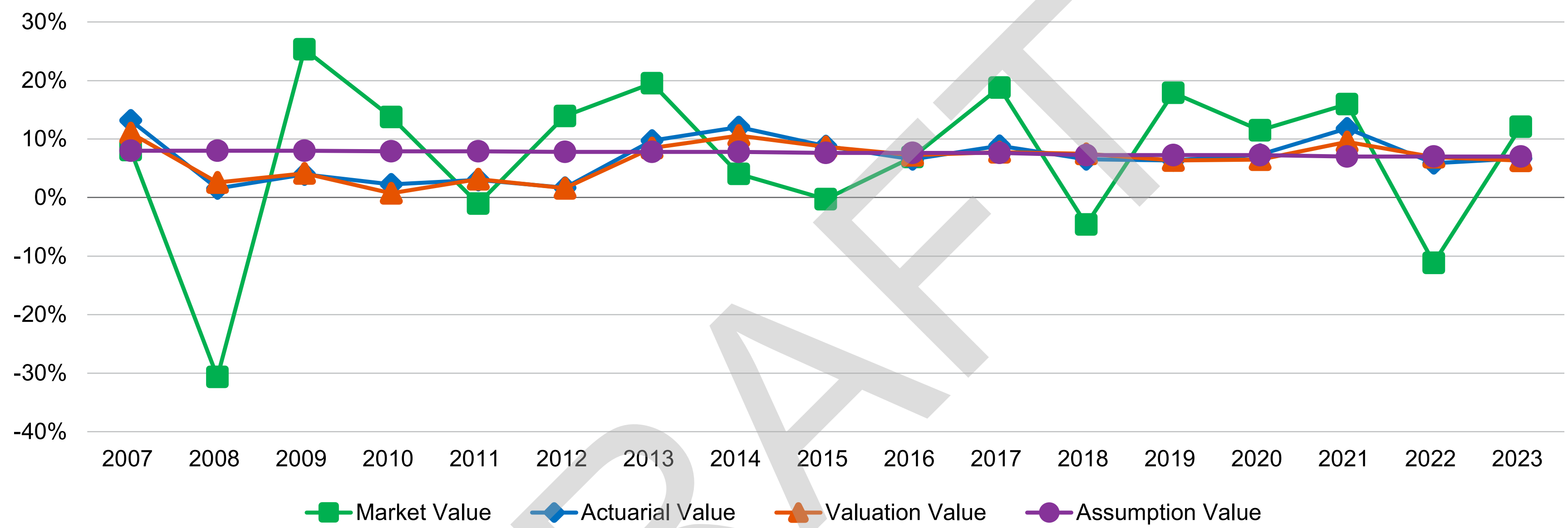
The market value, actuarial value and valuation value of assets are representations of the Plan's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The valuation value of assets is generally the actuarial value, excluding any non-valuation reserves.

The valuation value of assets is significant because the Plan's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.



Historical investment returns

Market, Actuarial and Valuation Value Rates of Return for Years Ended December 31



Legend	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
■ Market rate	8.1%	-30.7%	25.3%	13.7%	-1.0%	13.9%	19.5%	4.0%	-0.3%	6.9%	18.8%	-4.6%	17.9%	11.5%	15.9%	-11.1%	12.1%
◆ Actuarial rate	13.2%	1.5%	3.9%	2.3%	3.0%	1.7%	9.7%	12.0%	8.8%	6.5%	8.8%	6.6%	6.3%	7.3%	11.8%	5.9%	6.7%
▲ Valuation rate	11.0%	2.6%	4.1%	0.8%	3.1%	1.6%	8.5%	10.6%	8.7%	7.2%	7.8%	7.5%	6.3%	6.5%	9.5%	6.9%	6.3%
● Assumed rate	8.00%	8.00%	8.00%	7.90%	7.90%	7.80%	7.80%	7.80%	7.60%	7.60%	7.60%	7.25%	7.25%	7.25%	7.00%	7.00%	7.00%

Average Rates of Return	Market Value	Actuarial Value	Valuation Value
Most recent five-year geometric average return	8.70%	7.57%	7.11%
Most recent 10-year geometric average return	6.67%	8.05%	7.73%
Most recent 15-year geometric average return	9.04%	6.71%	6.33%

C. Actuarial experience

To calculate any actuarially determined contribution, 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 measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the actuarially determined contribution will decrease from the previous year. On the other hand, the actuarially determined contribution will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years. In this year's valuation, we have included the changes on actuarial assumptions recommended by Segal and adopted by the Board for this valuation.

The actuarial experience for the year can be found below and a discussion of the major components can be found on the following pages.

Actuarial Experience for Year Ended December 31, 2023

Source	Amount
1. Net gain/(loss) from investments[1]	$(68,726,000)
2. Net gain/(loss) from contributions	(10,853,000)
3. Net gain/(loss) from other experience[2]	21,988,000
4. Net experience gain/(loss) (1) + (2) + (3)	**$(57,591,000)**

[1] Details on next page

[2] See *Subsection E* for further details. Does not include the effect of plan, method or assumption changes, if any.

Investment experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan's investment policy.

For valuation purposes, the assumed rate of return on the valuation value of assets is 7.00% based on the December 31, 2022 valuation. The actual rate of return on a valuation basis for the 2023 plan year was 6.30% after considering the recognition of prior years' investment gains and losses. Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended December 31, 2023 with regard to its investments.

Investment Experience for Year Ended December 31, 2023

Item	Market Value	Actuarial Value	Valuation Value
1. Net investment income	$1,231,947,887	$730,627,594	$618,763,667
2. Average value of assets	10,172,692,486	10,966,805,908	9,821,277,957
3. Rate of return **(1) ÷ (2)**	12.11%	6.66%	6.30%
4. Assumed rate of return	7.00%	7.00%	7.00%
5. Expected investment income **(2) x (4)**	$712,088,474	$767,676,414	$687,489,457
6. Investment gain/(loss) (1) – (5)	**$519,859,413**	**$(37,048,820)**	**$(68,725,790)**

Contributions

Contributions for the year ended December 31, 2023 totaled $415.1 million, compared to the projected amount of $425.6 million. This resulted in a loss of $10.9 million for the year, when adjusted for timing.

Other experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- Mortality experience (more or fewer than expected deaths)
- The extent of turnover among members
- Retirement experience (earlier or later than projected)
- The number of disability retirements (more or fewer than projected)
- Salary increases (greater or smaller than projected)
- Cost-of-living adjustments (higher or lower than anticipated)

The net gain from this other experience for the year ended December 31, 2023 amounted to $22.0 million, which is 0.2% of the actuarial accrued liability. See *Section 2, Subsection E* for a detailed development of the unfunded actuarial accrued liability.

D. Other changes impacting the actuarial accrued liability

Actuarial assumptions and methods

The results of this valuation reflect changes in the actuarial assumptions as recommended by Segal and adopted by the Board for the December 31, 2023 valuation, as well as some adjustments in the allocation of the cost of COLA benefits after legacy Safety members reach 30 years of service and some technical changes to the application of the Entry Age Cost allocation method also discussed in our Actuarial Experience Study report. The assumption changes resulted in a decrease in the actuarial accrued liability of $97.5 million, or 0.8%, a decrease in the average employer contribution rate of 0.46% of payroll, and a decrease in the average member rate of 0.28% of payroll.

The assumption changes include changes to inflation, merit and promotion salary increases, additional cashout, retirement from active employment, retirement age for nonreciprocal deferred vested members, percent of members assumed to go on to work for a reciprocal system, reciprocal salary increases, pre-retirement mortality, healthy life post-retirement mortality, disabled life post-retirement mortality, beneficiary mortality, termination (refunds and deferred vested retirements), percentage expected to receive a refund or deferred vested benefit, disability incidence, percent of disabilities anticipated to be service connected or non-service connected, and sick leave conversion.

This valuation reflects four minor actuarial methodology adjustments as follows:

a. Allocating the suspended COLA normal cost contributions for legacy Safety members with at least 30 years of service to the employers instead of to the remaining legacy Safety members with less than 30 years of service;

b. Applying beginning of year timing of decrements for exiting from active membership status in calculating the normal cost rate;

c. Using the individual (instead of the aggregate) version of the Entry Age cost allocation method to determine the normal cost of the COLA benefits; and

d. Adjusting how the service is rounded in the entry age calculation.

The adjustments result in a net increase of about 0.06% in the average employer rate and a net increase of about 0.07% in the average member contribution rate.

As recommended in the December 31, 2021 actuarial audit, we have updated the calculation of the compensation for reciprocal members, if over the compensation limit, to be projected with the inflation assumption. This update has an impact of decreasing the

AAL by about $3.3 million, decreasing the average employer rate by about 0.04% of payroll, and decreasing the average member rate by about 0.02% of payroll.

Details on actuarial assumptions and methods are in *Section 4, Exhibit 1*.

Plan provision

The Board adopted a new plan provision on December 21, 2023 to provide for the election by active members of an optional settlement 2 allowance that leaves a 100% continuance to a beneficiary upon the member's pre-retirement death. Previously, vested active members who die while in active employment would only be allowed to leave a 60% automatic continuance (unless the death is service connected, in which case a 100% continuance is paid without any service requirement). The new election is expected to be rolled out to members beginning April 1, 2024. The current valuation reflects this updated plan provision.

This plan change resulted in an increase in the actuarial accrued liability of $11.8 million, or 0.1%, and an increase in the average employer contribution rate of 0.15% of payroll and the average member contribution rate of 0.03% of payroll.

A summary of plan provisions is in *Section 4, Exhibit 2*.

E. Unfunded actuarial accrued liability

Development of Unfunded Actuarial Accrued Liability for Year Ended December 31, 2023
Total Plan

	Item	Amount ($ in '000s)
1.	Unfunded actuarial accrued liability at beginning of year	$1,492,101
2.	Normal cost at middle of year	263,681
3.	Expected employer and member contributions	(425,597)
4.	Interest to end of year	101,983
5.	**Expected unfunded actuarial accrued liability at end of year**	**$1,432,168**
6.	Changes due to:	
	a. Investment return less than expected, after asset smoothing	$68,726
	b. Actual contributions less than expected[1]	10,853
	c. Individual salary increases greater than expected	21,457
	d. COLA increases less than expected for contining retirees	(1,842)
	e. Mortality greater than expected for continuing retirees	(2,737)
	f. Other net experience (gain)/loss[2]	(38,866)
	g. Changes in actuarial assumptions and methods	(97,464)
	h. Changes in plan provision	11,816
	i. Total changes	**$(28,057)**
7.	**Unfunded actuarial accrued liability at end of year**	**$1,404,111**

Note: The sum of items 6c through 6f equals the "Net gain from other experience" shown in *Section 2, Subsection C*.

[1] Includes impact of scheduled lag in rate implementation and difference between normal cost and UAAL contributions due to actual payroll different than expected during 2023.
[2] Other differences in actual versus expected experience including (but not limited to) retirement, disability, and termination experience.

Development of Unfunded Actuarial Accrued Liability for Year Ended December 31, 2023
General (Excluding LARPD and ACOE) Only

Item		Amount ($ in '000s)
1.	Unfunded actuarial accrued liability at beginning of year	$1,381,658
2.	Normal cost at middle of year	189,748
3.	Expected employer and member contributions	(338,704)
4.	Interest to end of year	92,053
5.	**Expected unfunded actuarial accrued liability at end of year**	**$1,324,755**
6.	Changes due to:	
	a. Investment return less than expected, after asset smoothing[1]	$34,714
	b. Actual contributions less than expected[2]	7,198
	c. Individual salary increases greater than expected	11,880
	d. COLA increases less than expected for continuing retirees	(1,221)
	e. Mortality less than expected for continuing retirees	2,891
	f. Other net experience (gain)/loss[3]	(33,000)
	g. Changes in actuarial assumptions and methods	(70,873)
	h. Changes in plan provision	9,665
	i. Total changes	**$(38,746)**
7.	**Unfunded actuarial accrued liability at end of year**	**$1,286,009**

[1] The return on the total valuation value of assets was 6.30% after including the smoothed rate at 4.06% on the UAAL Advance Reserves earned by contributions made on or around June 29, 2021. The smoothed return on the valuation reserves excluding the UAAL Advance Reserve was about 6.48%.
[2] Includes impact of scheduled lag in rate implementation and difference between normal cost and UAAL contributions due to actual payroll different than expected during 2023.
[3] Other differences in actual versus expected experience including (but not limited to) retirement, disability, and termination experience.

Development of Unfunded Actuarial Accrued Liability for Year Ended December 31, 2023
General (ACOE) Only

Item	Amount ($ in '000s)
1. Unfunded actuarial accrued liability at beginning of year	$1,123
2. Normal cost at middle of year	0
3. Expected employer and member contributions	(99)
4. Interest to end of year	72
5. Expected unfunded actuarial accrued liability at end of year	**$1,096**
6. Changes due to:	
a. Investment return less than expected, after asset smoothing*	$12
b. COLA increases less than expected for continuing retirees	(2)
c. Mortality less than expected for continuing retirees	89
d. Changes in actuarial assumptions and methods	(5)
e. Total changes	**$94**
7. Unfunded actuarial accrued liability at end of year	**$1,190**

* The return on the total valuation value of assets was 6.30% after including the smoothed rate at 4.06% on the UAAL Advance Reserves earned by contributions made on or around June 29, 2021. The smoothed return on the valuation reserves excluding the UAAL Advance Reserve was about 6.48%.

Development of Unfunded Actuarial Accrued Liability for Year Ended December 31, 2023
General (LARPD) Only

Item		Amount ($ in '000s)
1.	Unfunded/(overfunded) actuarial accrued liability at beginning of year	$(829)
2.	Normal cost at middle of year	893
3.	Expected employer and member contributions	(893)
4.	Interest to end of year	(23)
5.	**Expected unfunded actuarial accrued liability at end of year**	**$(852)**
6.	Changes due to:	
	a. Investment return less than expected, after asset smoothing[1]	$610
	b. Actual contributions greater than expected[2]	(41)
	c. Individual salary increases greater than expected	76
	d. COLA increases less than expected for continuing retirees	(39)
	e. Mortality less than expected for continuing retirees	420
	f. Other net experience (gain)/loss[3]	(39)
	g. Changes in actuarial assumptions and methods	(616)
	h. Changes in plan provision	30
	i. Total changes	**$401**
7.	**Unfunded/(overfunded) actuarial accrued liability at end of year**	**$(451)**

[1] The return on the total valuation value of assets was 6.30%. However, because the UAAL Advance Reserves are subject to a separate 5-year asset smoothing schedule that excludes the allocation of any deferred investment gains or losses accumulated up to June 30, 2021, the return on a VVA basis for the UAAL Advance Reserves is about 4.06% while the return on the valuation reserves excluding the UAAL Advance Reserve was about 6.48%. The smoothed return on the combined LARPD valuation reserves and LARPD General UAAL Advance Reserve was about 6.06%.

[2] Includes impact of scheduled lag in rate implementation and difference between normal cost and UAAL contributions due to actual payroll different than expected during 2023.

[3] Other differences in actual versus expected experience including (but not limited to) retirement, disability, and termination experience.

Development of Unfunded Actuarial Accrued Liability for Year Ended December 31, 2023
Safety Only

Item	Amount ($ in '000s)
1. Unfunded actuarial accrued liability at beginning of year	$110,149
2. Normal cost at middle of year	73,040
3. Expected employer and member contributions	(85,901)
4. Interest to end of year	9,881
5. Expected unfunded actuarial accrued liability at end of year	**$107,169**
6. Changes due to:	
a. Investment return less than expected, after asset smoothing[1]	$33,390
b. Actual contributions less than expected[2]	3,696
c. Individual salary increases greater than expected	9,501
d. COLA increases less than expected for continuing retirees	(580)
e. Mortality greater than expected for continuing retirees	(6,136)
f. Other net experience (gain)/loss[3]	(5,828)
g. Changes in actuarial assumptions and methods	(25,970)
h. Changes in plan provision	2,121
i. Total changes	**$10,194**
7. Unfunded actuarial accrued liability at end of year	**$117,363**

[1] The return on the total valuation value of assets was 6.30%. However, because the UAAL Advance Reserves are subject to a separate 5-year asset smoothing schedule that excludes the allocation of any deferred investment gains or losses accumulated up to June 30, 2021, the return on a VVA basis for the UAAL Advance Reserves is about 4.06% while the return on the valuation reserves excluding the UAAL Advance Reserve was about 6.48%. The smoothed return on the combined Safety valuation reserves and Safety UAAL Advance Reserve was about 5.90%.

[2] Includes impact of scheduled lag in rate implementation and difference between normal cost and UAAL contributions due to actual payroll different than expected during 2023.

[3] Other differences in actual versus expected experience including (but not limited to) retirement, disability, and termination experience.

F. Recommended contribution

The recommended contribution is equal to the employer normal cost payment and a payment on the unfunded actuarial accrued liability. As of December 31, 2023, the average recommended employer contribution is 23.54% of compensation.

The Board sets the funding policy used to calculate the recommended contribution based on layered amortization periods as a level percentage of payroll. See *Section 4, Exhibit 1* for further details on the funding policy. Based on this policy, there is no negative amortization and each amortization layer is fully funded in 20 years. As shown in the graphical projection of the UAAL amortization balances and payments found in *Section 3, Exhibit I*, before taking into consideration the deferred investment gains and/or losses that will be recognized in the next several valuations, the UAAL of the Plan is expected to be fully amortized by 2039[1], assuming all assumptions are realized and contributions are made in accordance with the funding policy.

The current funding policy is intended to fully fund the cost of the benefits and to allocate the cost of benefits reasonably and equitably over time while minimizing the volatility of employer contributions. The recommended contribution is expected to remain level as a percent of payroll, except when any current amortization layer is fully amortized and assuming there are no future actuarial gains or losses. Furthermore, the funded ratio is expected to increase as the UAAL is methodically funded by employer contributions.

Average Recommended Employer Contribution Calculated as of December 31

Item	2023 Amount ($ in '000s)	2023 % of Projected Compensation[2]	2022 Amount ($ in '000s)	2022 % of Projected Compensation
1. Total normal cost	$272,575	20.66%	$263,681	20.96%
2. Expected member contributions	130,171	9.87%	126,814	10.08%
3. Employer normal cost (1) − (2)	**$142,404**	**10.79%**	**$136,867**	**10.88%**
4. Actuarial accrued liability	$11,746,667		$11,415,120	
5. Valuation value of assets	10,342,556		9,923,019	
6. Unfunded actuarial accrued liability (4) − (5)	**$1,404,111**		**$1,492,101**	
7. Payment on unfunded actuarial accrued liability	168,229	12.75%	161,817	12.86%
8. Average recommended employer contribution (3) + (7)	**$310,633**	**23.54%**	**$298,684**	**23.74%**
9. Projected compensation	$1,319,397		$1,258,026	

Note: Contributions are assumed to be paid at the middle of the year.

[1] The UAAL is expected to be fully amortized earlier than the 20-year amortization period because there is a combination of charge and credit amortization layers.
[2] For employers with active member payroll. The UAAL contribution for ACOE, expressed as a level dollar amount, is $120 K when made on April 1, 2025.

Reconciliation of average recommended employer contribution rate

Reconciliation from December 31, 2022 to December 31, 2023
Total Plan ($ in '000s)

Item	Contribution Rate	Estimated Annual Dollar Amount[1]
Average recommended employer contribution as of December 31, 2022	23.72%	$313,026
1. Effect of investment return less than expected after asset smoothing	0.38%	5,028
2. Effect of actual contributions less than expected[2]	0.06%	788
3. Effect of individual salary increases greater than expected	0.10%	1,329
4. Effect of COLA increases less than expected for continuing retirees	(0.01%)	(157)
5. Effect of amortizing prior year's UAAL over a larger than expected total payroll	(0.23%)	(3,089)
6. Effect of mortality greater than expected for continuing retirees	(0.01%)	(178)
7. Effect of change in member demographics on normal cost	0.01%	166
8. Effect of other (gains)/losses[3]	(0.17%)	(2,245)
9. Effect of changes in actuarial assumptions and methods	(0.46%)	(6,046)
10. Effect of changes in plan provision	0.15%	2,042
11. Effect of floor on net LARPD contribution rate of no less than Normal Cost in compliance with CalPEPRA	(0.00%)	(31)
12. Total change (Sum of (1) through (11))	**(0.18%)**	**$(2,393)**
Average recommended employer contribution as of December 31, 2023	**23.54%**	**$310,633**

[1] Based on December 31, 2023 projected compensation.
[2] Includes impact of scheduled lag in rate implementation and difference between Normal Cost and UAAL contributions due to actual payroll during 2023 different than expected.
[3] Other differences in actual versus expected experience including (but not limited to) retirement, disability and termination experience.

Reconciliation from December 31, 2022 to December 31, 2023
General (Excluding LARPD and ACOE) Only ($ in '000s)

Item	Contribution Rate	Estimated Annual Dollar Amount[1]
Average recommended employer contribution as of December 31, 2022[2]	23.56%	$260,764
1. Effect of investment return less than expected after asset smoothing[3]	0.23%	2,546
2. Effect of actual contributions less than expected[4]	0.05%	523
3. Effect of individual salary increases greater than expected	0.07%	775
4. Effect of COLA increases less than expected for continuing retirees	(0.01%)	(111)
5. Effect of amortizing prior year's UAAL over a larger than expected total payroll	(0.32%)	(3,542)
6. Effect of mortality less than expected for continuing retirees	0.02%	221
7. Effect of change in member demographics on normal cost	0.04%	443
8. Effect of other (gains)/losses[5]	(0.25%)	(2,716)
9. Effect of changes in actuarial assumptions and methods	(0.55%)	(6,088)
10. Effect of changes in plan provision	0.15%	1,660
11. Total change (Sum of (1) through (10))	**(0.57%)**	**$(6,289)**
Average recommended employer contribution as of December 31, 2023	**22.99%**	**$254,475**

[1] Based on December 31, 2023 projected compensation.
[2] Determined by applying the recommended employer contribution rates as of December 31, 2022 to the projected compensation as of December 31, 2023 by cost group, membership class and tier.
[3] The return on the total valuation value of assets was 6.30% after including the smoothed rate at 4.06% on the UAAL Advance Reserves earned by contributions made on or around June 29, 2021. The smoothed return on the valuation reserves excluding the UAAL Advance Reserve was about 6.48%.
[4] Includes impact of scheduled lag in rate implementation and difference between Normal Cost and UAAL contributions due to actual payroll during 2023 different than expected.
[5] Other differences in actual versus expected experience including (but not limited to) retirement, disability and termination experience.

Reconciliation from December 31, 2022 to December 31, 2023
General (LARPD) Only ($ in '000s)

Item	Contribution Rate	Estimated Annual Dollar Amount[1]
Average recommended employer contribution as of December 31, 2022	12.68%	$453
1. Effect of investment return less than expected after asset smoothing[2]	1.65%	59
2. Effect of actual contributions greater than expected[3]	(0.11%)	(4)
3. Effect of individual salary increases greater than expected	0.30%	11
4. Effect of COLA increases less than expected for continuing retirees	(0.11%)	(4)
5. Effect of amortizing prior year's surplus over a smaller than expected total payroll	(0.20%)	(7)
6. Effect of mortality less than expected for continuing retirees	1.13%	40
7. Effect of change in member demographics on normal cost	(0.13%)	(5)
8. Effect of other (gains)/losses[4]	(0.50%)	(17)
9. Effect of changes in actuarial assumptions and methods	(1.73%)	(62)
10. Effect of changes in plan provision	0.17%	6
11. Effect of floor on net LARPD contribution rate of no less than Normal Cost in compliance with CalPEPRA[5]	(0.86%)	(31)
12. Total change (Sum of (1) through (11))	**(0.39%)**	**$(14)**
Average recommended employer contribution as of December 31, 2023	**12.29%**	**$439**

1 Based on December 31, 2023 projected compensation.

2 The return on the total valuation value of assets was 6.30%. However, because the UAAL Advance Reserves are subject to a separate 5-year asset smoothing schedule that excludes the allocation of any deferred investment gains or losses accumulated up to June 30, 2021, the return on a VVA basis for the UAAL Advance Reserves is about 4.06% while the return on the valuation reserves excluding the UAAL Advance Reserve was about 6.48%. The smoothed return on the combined LARPD valuation reserves and LARPD General UAAL Advance Reserve was about 6.06%.

3 Includes impact of scheduled lag in rate implementation and difference between Normal Cost and UAAL contributions due to actual payroll during 2023 different than expected.

4 Other differences in actual versus expected experience including (but not limited to) retirement, disability and termination experience.

5 As a result of additional voluntary UAAL contributions made by LARPD and other favorable actuarial experience, LARPD is fully funded in the December 31, 2023 valuation. In order to reflect a net 0% UAAL contribution rate after taking into account the additional UAAL contributions, we have taken the amortization period for the new LARPD experience loss, assumption change, and plan change layers and set it equal to the same remaining 13.5 years used to amortize the credit for the additional UAAL contributions. Furthermore, the voluntary UAAL contribution credit has been reduced by 1.23% of payroll to not exceed the UAAL rate before the credit. In the December 31, 2022 valuation, the voluntary UAAL contribution credit was reduced by 2.09% of payroll to not exceed the UAAL rate before the credit. The net effect of the Normal Cost floor from December 31, 2022 to December 31, 2023 is equal to 1.23% - 2.09% = (0.86%) of payroll.

Reconciliation from December 31, 2022 to December 31, 2023
Safety Only ($ in '000s)

Item	Contribution Rate	Estimated Annual Dollar Amount[1]
Average recommended employer contribution as of December 31, 2022	24.80%	$51,809
1. Effect of investment return less than expected after asset smoothing[2]	1.16%	2,423
2. Effect of actual contributions less than expected[3]	0.13%	269
3. Effect of individual salary increases greater than expected	0.26%	543
4. Effect of COLA increases less than expected for continuing retirees	(0.02%)	(42)
5. Effect of amortizing prior year's UAAL over a smaller than expected total payroll	0.22%	460
6. Effect of mortality greater than expected for continuing retirees	(0.21%)	(439)
7. Effect of change in member demographics on normal cost	(0.13%)	(272)
8. Effect of other (gains)/losses[4]	0.23%	488
9. Effect of changes in actuarial assumptions and methods	0.05%	104
10. Effect of changes in plan provision	0.18%	376
11. Total change (Sum of (1) through (10))	**1.87%**	**$3,910**
Average recommended employer contribution as of December 31, 2023	**26.67%**	**$55,719**

[1] Based on December 31, 2023 projected compensation.

[2] The return on the total valuation value of assets was 6.30%. However, because the UAAL Advance Reserves are subject to a separate 5-year asset smoothing schedule that excludes the allocation of any deferred investment gains or losses accumulated up to June 30, 2021, the return on a VVA basis for the UAAL Advance Reserves is about 4.06% while the return on the valuation reserves excluding the UAAL Advance Reserve was about 6.48%. The smoothed return on the combined Safety valuation reserves and Safety UAAL Advance Reserve was about 5.90%.

[3] Includes impact of scheduled lag in rate implementation and difference between Normal Cost and UAAL contributions due to actual payroll during 2023 different than expected.

[4] Other differences in actual versus expected experience including (but not limited to) retirement, disability and termination experience.

Reconciliation of average recommended member contribution rate

Reconciliation from December 31, 2022 to December 31, 2023
Total Plan ($ in '000s)

	Contribution Rate	Estimated Annual Dollar Amount[1]
Average recommended member contribution as of December 31, 2022	10.08%	$132,957
1. Effect of change in member demographics	0.04%	512
2. Effect of change in actuarial assumptions and methods	(0.28%)	(3,694)
3. Effect of change in plan provision	0.03%	396
4. Total change (1) + (2) + (3)	**(0.21%)**	**$(2,786)**
Average recommended member contribution as of December 31, 2023	**9.87%**	**$130,171**

[1] Based on December 31, 2023 projected compensation.

Reconciliation from December 31, 2022 to December 31, 2023
By Membership and Tier ($ in '000s)

	General Tier 1	General Tier 2	General Tier 3	General Tier 4
Average recommended member contribution as of December 31, 2022[1]	10.26%	8.10%	15.48%	9.30%
1. Effect of change in member demographics	0.00%	0.01%	0.06%	0.04%
2. Effect of change in actuarial assumptions and methods	(0.29%)	(0.32%)	(1.12%)	(0.32%)
3. Effect of change in plan provision	0.04%	0.02%	0.00%	0.04%
4. Total change (1) + (2) + (3)	**(0.25%)**	**(0.29%)**	**(1.06%)**	**(0.24%)**
Average recommended member contribution as of December 31, 2023	**10.01%**	**7.81%**	**14.42%**	**9.06%**

	Safety Tier 2	Safety Tier 2C	Safety Tier 2D	Safety Tier 4[2]
Average recommended member contribution as of December 31, 2022[1]	16.90%	14.00%	16.78%	17.28%
1. Effect of change in member demographics	0.05%	0.07%	(0.01%)	(0.05%)
2. Effect of change in actuarial assumptions and methods	(0.48%)	(0.21%)	(0.08%)	0.61%
3. Effect of change in plan provision	0.02%	0.00%	0.02%	0.04%
4. Total change (1) + (2) + (3)	**(0.41%)**	**(0.14%)**	**(0.07%)**	**0.60%**
Average recommended member contribution as of December 31, 2023	**16.49%**	**13.86%**	**16.71%**	**17.88%**

[1] Average rates have been recalculated by applying the individual entry age based member rates determined in the December 31, 2022 valuation to the Association membership as of December 31, 2023.

[2] The increase in the Safety Tier 4 member contribution rate from change in actuarial assumptions and methods is mainly due to the increase in the number of expected disabilities. The increase in the total normal cost is equally shared by the employer and the members.

Recommended employer contribution rates

Recommended Employer Contribution[1] Calculated as of December 31
County Only

Component by Tier	2023 Basic	2023 COLA	2023 Total	2023 Estimated Amount[2]	2022 Basic	2022 COLA	2022 Total	2022 Estimated Amount[2]
General Tier 1								
Normal Cost	7.95%	3.02%	10.97%	$338	8.05%	2.92%	10.97%	$338
UAAL (Before POB Credit)	14.54%	4.98%	19.52%	602	14.86%	5.12%	19.98%	616
Pension Obligation Bond Credit	(3.56%)	(1.50%)	(5.06%)	(156)	(3.61%)	(1.54%)	(5.15%)	(159)
Implicit Retiree Health Benefit Subsidy	(1.08%)	0.00%	(1.08%)	(33)	(1.03%)	0.00%	(1.03%)	(32)
Employer Contribution	**17.85%**	**6.50%**	**24.35%**	**$751**	**18.27%**	**6.50%**	**24.77%**	**$763**
General Tier 2								
Normal Cost	7.66%	1.65%	9.31%	$31,409	7.76%	1.63%	9.39%	$31,679
UAAL (Before POB Credit)	14.54%	4.98%	19.52%	65,855	14.86%	5.12%	19.98%	67,407
Pension Obligation Bond Credit	(3.56%)	(1.50%)	(5.06%)	(17,071)	(3.61%)	(1.54%)	(5.15%)	(17,375)
Implicit Retiree Health Benefit Subsidy	(1.08%)	0.00%	(1.08%)	(3,644)	(1.03%)	0.00%	(1.03%)	(3,475)
Employer Contribution	**17.56%**	**5.13%**	**22.69%**	**$76,549**	**17.98%**	**5.21%**	**23.19%**	**$78,236**
General Tier 4								
Normal Cost	7.40%	1.66%	9.06%	$32,549	7.56%	1.74%	9.30%	$33,411
UAAL (Before POB Credit)	14.54%	4.98%	19.52%	70,127	14.86%	5.12%	19.98%	71,779
Pension Obligation Bond Credit	(3.56%)	(1.50%)	(5.06%)	(18,178)	(3.61%)	(1.54%)	(5.15%)	(18,502)
Implicit Retiree Health Benefit Subsidy	(1.08%)	0.00%	(1.08%)	(3,880)	(1.03%)	0.00%	(1.03%)	(3,700)
Employer Contribution	**17.30%**	**5.14%**	**22.44%**	**$80,618**	**17.78%**	**5.32%**	**23.10%**	**$82,988**

1 For employers with active member payroll. The UAAL contribution for ACOE, expressed as a level dollar amount, is $120 K when made on April 1, 2025.
2 Estimated amounts ($ in '000s) shown on an annual basis and are based on the December 31, 2023 projected compensation shown on page 50.

Component by Tier	2023 Basic	2023 COLA	2023 Total	2023 Estimated Amount[1]	2022 Basic	2022 COLA	2022 Total	2022 Estimated Amount[1]
Safety Tier 1								
Employer Contribution				**N/A[2]**				
Safety Tier 2								
Normal Cost	18.88%	4.25%	23.13%	$22,081	18.49%	3.75%	22.24%	$21,231
Member Cost Sharing Contributions[3]	(2.99%)	0.00%	(2.99%)	(2,854)	(2.98%)	0.00%	(2.98%)	(2,845)
UAAL (Before Credits)	39.89%	12.67%	52.56%	50,176	38.98%	12.66%	51.64%	49,298
Voluntary UAAL contribution credit	(29.79%)	(9.31%)	(39.10%)	(37,326)	(30.05%)	(9.40%)	(39.45%)	(37,661)
Pension Obligation Bond Credit	(3.29%)	(1.71%)	(5.00%)	(4,773)	(3.23%)	(1.66%)	(4.89%)	(4,668)
Implicit Retiree Health Benefit Subsidy	(1.08%)	0.00%	(1.08%)	(1,031)	(1.03%)	0.00%	(1.03%)	(983)
Employer Contribution	**21.62%**	**5.90%**	**27.52%**	**$26,273**	**20.18%**	**5.35%**	**25.53%**	**$24,372**
Safety Tier 2C								
Normal Cost	20.09%	4.34%	24.43%	$680	20.00%	4.23%	24.23%	$674
Member Cost Sharing Contributions[2]	0.00%	0.00%	0.00%	0	0.00%	0.00%	0.00%	0
UAAL (Before Credits)	39.89%	12.67%	52.56%	1,463	38.98%	12.66%	51.64%	1,437
Voluntary UAAL contribution credit	(29.79%)	(9.31%)	(39.10%)	(1,088)	(30.05%)	(9.40%)	(39.45%)	(1,098)
Pension Obligation Bond Credit	(3.29%)	(1.71%)	(5.00%)	(139)	(3.23%)	(1.66%)	(4.89%)	(136)
Implicit Retiree Health Benefit Subsidy	(1.08%)	0.00%	(1.08%)	(30)	(1.03%)	0.00%	(1.03%)	(29)
Employer Contribution	**25.82%**	**5.99%**	**31.81%**	**$886**	**24.67%**	**5.83%**	**30.50%**	**$848**

1 Estimated amounts ($ in '000s) shown on an annual basis and are based on the December 31, 2023 projected compensation shown on page 50.
2 There were no Safety Tier 1 active members reported for the December 31, 2023 valuation.
3 Adjusted for refunds.

Component by Tier	2023 Basic	2023 COLA	2023 Total	2023 Estimated Amount[1]	2022 Basic	2022 COLA	2022 Total	2022 Estimated Amount[1]
Safety Tier 2D								
Normal Cost	19.70%	4.37%	24.07%	$4,520	19.00%	4.04%	23.04%	$4,326
Member Cost Sharing Contributions[2]	(2.95%)	0.00%	(2.95%)	(554)	(2.94%)	0.00%	(2.94%)	(552)
UAAL (Before Credits)	39.89%	12.67%	52.56%	9,869	38.98%	12.66%	51.64%	9,696
Voluntary UAAL contribution credit	(29.79%)	(9.31%)	(39.10%)	(7,342)	(30.05%)	(9.40%)	(39.45%)	(7,408)
Pension Obligation Bond Credit	(3.29%)	(1.71%)	(5.00%)	(939)	(3.23%)	(1.66%)	(4.89%)	(918)
Implicit Retiree Health Benefit Subsidy	(1.08%)	0.00%	(1.08%)	(203)	(1.03%)	0.00%	(1.03%)	(193)
Employer Contribution	**22.48%**	**6.02%**	**28.50%**	**$5,351**	**20.73%**	**5.64%**	**26.37%**	**$4,951**
Safety Tier 4								
Normal Cost	13.98%	3.90%	17.88%	$16,428	13.48%	3.80%	17.28%	$15,877
Member Cost Sharing Contributions[2]	0.00%	0.00%	0.00%	0	0.00%	0.00%	0.00%	0
UAAL (Before Credits)	39.89%	12.67%	52.56%	48,292	38.98%	12.66%	51.64%	47,447
Voluntary UAAL contribution credit	(29.79%)	(9.31%)	(39.10%)	(35,925)	(30.05%)	(9.40%)	(39.45%)	(36,247)
Pension Obligation Bond Credit	(3.29%)	(1.71%)	(5.00%)	(4,594)	(3.23%)	(1.66%)	(4.89%)	(4,493)
Implicit Retiree Health Benefit Subsidy	(1.08%)	0.00%	(1.08%)	(992)	(1.03%)	0.00%	(1.03%)	(946)
Employer Contribution	**19.71%**	**5.55%**	**25.26%**	**$23,209**	**18.15%**	**5.40%**	**23.55%**	**$21,638**
All County Categories Combined								
Normal Cost	9.66%	2.23%	11.89%	$108,005	9.66%	2.18%	11.84%	$107,536
Member Cost Sharing Contributions[2]	(0.38%)	0.00%	(0.38%)	(3,408)	(0.37%)	0.00%	(0.37%)	(3,397)
UAAL (Before Credits)	20.37%	6.75%	27.12%	246,384	20.41%	6.85%	27.26%	247,680
Voluntary UAAL contribution credit	(6.85%)	(2.14%)	(8.99%)	(81,681)	(6.91%)	(2.16%)	(9.07%)	(82,414)
Pension Obligation Bond Credit	(3.50%)	(1.55%)	(5.05%)	(45,850)	(3.52%)	(1.57%)	(5.09%)	(46,251)
Implicit Retiree Health Benefit Subsidy	(1.08%)	0.00%	(1.08%)	(9,813)	(1.03%)	0.00%	(1.03%)	(9,358)
Employer Contribution	**18.22%**	**5.29%**	**23.51%**	**$213,637**	**18.24%**	**5.30%**	**23.54%**	**$213,796**

[1] Estimated amounts ($ in '000s) shown on an annual basis and are based on the December 31, 2023 projected compensation shown on page 50.
[2] Adjusted for refunds.

Recommended Employer Contribution Calculated as of December 31
AHS, Court and First 5

Component by Tier	2023 Basic	2023 COLA	2023 Total	2023 Estimated Amount[1]	2022 Basic	2022 COLA	2022 Total	2022 Estimated Amount[1]
General Tier 1								
Normal Cost	7.95%	3.02%	10.97%	$39	8.05%	2.92%	10.97%	$39
UAAL (Before POB Credit)	14.54%	4.98%	19.52%	69	14.86%	5.12%	19.98%	71
Pension Obligation Bond Credit	(3.56%)	(1.50%)	(5.06%)	(18)	(3.61%)	(1.54%)	(5.15%)	(18)
Employer Contribution	**18.93%**	**6.50%**	**25.43%**	**$90**	**19.30%**	**6.50%**	**25.80%**	**$92**
General Tier 2								
Normal Cost	7.66%	1.65%	9.31%	$15,285	7.76%	1.63%	9.39%	$15,417
UAAL (Before POB Credit)	14.54%	4.98%	19.52%	32,048	14.86%	5.12%	19.98%	32,803
Pension Obligation Bond Credit	(3.56%)	(1.50%)	(5.06%)	(8,308)	(3.61%)	(1.54%)	(5.15%)	(8,455)
Employer Contribution	**18.64%**	**5.13%**	**23.77%**	**$39,025**	**19.01%**	**5.21%**	**24.22%**	**$39,765**
General Tier 4								
Normal Cost	7.40%	1.66%	9.06%	$21,434	7.56%	1.74%	9.30%	$22,002
UAAL (Before POB Credit)	14.54%	4.98%	19.52%	46,180	14.86%	5.12%	19.98%	47,269
Pension Obligation Bond Credit	(3.56%)	(1.50%)	(5.06%)	(11,971)	(3.61%)	(1.54%)	(5.15%)	(12,184)
Employer Contribution	**18.38%**	**5.14%**	**23.52%**	**$55,643**	**18.81%**	**5.32%**	**24.13%**	**$57,087**

[1] Estimated amounts ($ in '000s) shown on an annual basis and are based on the December 31, 2023 projected compensation shown on page 50.

Recommended Employer Contribution Calculated as of December 31
Housing Authority

Component by Tier	2023 Basic	2023 COLA	2023 Total	2023 Estimated Amount[1]	2022 Basic	2022 COLA	2022 Total	2022 Estimated Amount[1]
General Tier 1								
Normal Cost	7.95%	3.02%	10.97%	$328	8.05%	2.92%	10.97%	$328
UAAL	14.54%	4.98%	19.52%	584	14.86%	5.12%	19.98%	598
Employer Contribution	**22.49%**	**8.00%**	**30.49%**	**$912**	**22.91%**	**8.04%**	**30.95%**	**$926**
General Tier 2								
Normal Cost	7.66%	1.65%	9.31%	$41	7.76%	1.63%	9.39%	$41
UAAL	14.54%	4.98%	19.52%	86	14.86%	5.12%	19.98%	88
Employer Contribution	**22.20%**	**6.63%**	**28.83%**	**$127**	**22.62%**	**6.75%**	**29.37%**	**$129**
General Tier 4								
Normal Cost	7.40%	1.66%	9.06%	$241	7.56%	1.74%	9.30%	$247
UAAL	14.54%	4.98%	19.52%	519	14.86%	5.12%	19.98%	531
Employer Contribution	**21.94%**	**6.64%**	**28.58%**	**$760**	**22.42%**	**6.86%**	**29.28%**	**$778**

[1] Estimated amounts ($ in '000s) shown on an annual basis and are based on the December 31, 2023 projected compensation shown on page 50.

Recommended Employer Contribution Calculated as of December 31
LARPD

Component by Tier	2023 Basic	2023 COLA	2023 Total[1]	2023 Estimated Amount[2]	2022 Basic	2022 COLA	2022 Total[1]	2022 Estimated Amount[2]
General Tier 1								
Normal Cost	7.95%	3.02%	10.97%	$65	8.05%	2.92%	10.97%	$65
UAAL (Before Credits)	20.54%	9.69%	30.23%	179	19.47%	9.19%	28.66%	170
Voluntary UAAL contribution credit[3]	(20.54%)	(9.69%)	(30.23%)	(179)	(19.47%)	(9.19%)	(28.66%)	(170)
Employer Contribution	**7.95%**	**3.02%**	**10.97%**	**$65**	**8.05%**	**2.92%**	**10.97%**	**$65**
General Tier 3								
Normal Cost	12.26%	4.23%	16.49%	$232	12.93%	4.22%	17.15%	$242
UAAL (Before Credits)	20.54%	9.69%	30.23%	426	19.47%	9.19%	28.66%	404
Voluntary UAAL contribution credit[3]	(20.54%)	(9.69%)	(30.23%)	(426)	(19.47%)	(9.19%)	(28.66%)	(404)
Employer Contribution	**12.26%**	**4.23%**	**16.49%**	**$232**	**12.93%**	**4.22%**	**17.15%**	**$242**
General Tier 4								
Normal Cost	7.40%	1.66%	9.06%	$142	7.56%	1.74%	9.30%	$146
UAAL (Before Credits)	20.54%	9.69%	30.23%	475	19.47%	9.19%	28.66%	451
Voluntary UAAL contribution credit[3]	(20.54%)	(9.69%)	(30.23%)	(475)	(19.47%)	(9.19%)	(28.66%)	(451)
Employer Contribution	**7.40%**	**1.66%**	**9.06%**	**$142**	**7.56%**	**1.74%**	**9.30%**	**$146**

1 For LARPD, the combined rate is 12.29% as of December 31, 2023 and 12.68% as of December 31, 2022.
2 Estimated amounts ($ in ‘000s) shown on an annual basis and are based on the December 31, 2023 projected compensation shown on page 50.
3 In compliance with CalPEPRA, the net LARPD contribution rate cannot be less than the Normal Cost. In order to do that, the voluntary UAAL contribution credit has been reduced to not exceed the UAAL rate before the credit. The total voluntary UAAL contribution credit before reduction is equal to 31.46% of payroll as of December 31, 2023.

Recommended Employer Contribution Calculated as of December 31
Total Plan

Component by Tier	2023 Basic	2023 COLA	2023 Total	2023 Estimated Amount[1]	2022 Basic	2022 COLA	2022 Total	2022 Estimated Amount[1]
All Tiers								
Normal Cost (Net)	8.74%	2.05%	10.79%	$142,404	8.78%	2.03%	10.81%	$142,666
UAAL (Net)	9.56%	3.19%	12.75%	168,229	9.65%	3.26%	12.91%	170,360
Employer Contribution	**18.30%**	**5.24%**	**23.54%**	**$310,633**	**18.43%**	**5.29%**	**23.72%**	**$313,026**

Projected Compensation ($ in '000s) as of December 31, 2023

Tier	County Only	AHS, Court, and First 5	Housing Authority	LARPD	Total
General Tier 1	$3,085	$356	$2,994	$592	$7,027
General Tier 2	337,371	164,180	440		501,991
General Tier 3				1,409	1,409
General Tier 4	359,256	236,580	2,658	1,572	600,066
Safety Tier 2	95,464				95,464
Safety Tier 2C	2,783				2,783
Safety Tier 2D	18,777				18,777
Safety Tier 4	91,880				91,880
Total Payroll	**$908,616**	**$401,116**	**$6,092**	**$3,573**	**$1,319,397**

A breakdown of the approximate[2] portion of the employer contribution rate by the various types of benefit is as follows:

Benefit Type	General	Safety
Service and non-service connected disability benefits	7%	41%
Service retirement and other benefits	93%	59%
Total	**100%**	**100%**

[1] Estimated amounts ($ in '000s) shown on an annual basis and are based on the December 31, 2023 projected compensation shown on this page.

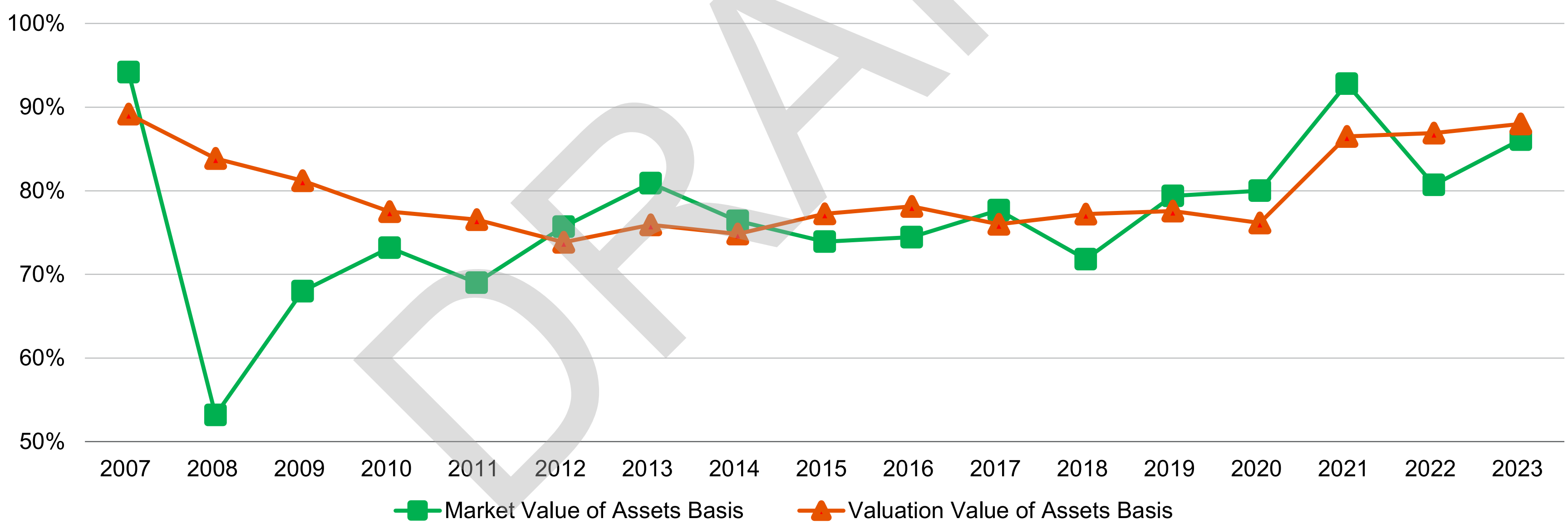
[2] In developing these percentages, we made the simplifying assumption that the liability for active and inactive members (including members who have already retired) can be approximated by the proportion of the normal cost required to fund disability and non-disability benefits.

G. Funded status

A commonly reported piece of information regarding the Plan's financial status is the funded ratio. These ratios compare the market and valuation value of assets to the actuarial accrued liability of the Plan. Higher ratios indicate a relatively well-funded plan while lower ratios may indicate recent changes to actuarial assumptions, funding of the plan below actuarial requirements, poor asset performance, or a variety of other causes.

The funded status measures shown in this valuation are appropriate for assessing the need for or amount of future contributions. However, they are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. As the chart below shows, the measures are different depending on whether the market or valuation value of assets is used.

Funded Ratio as of December 31*



* Prior to the December 31, 2013 valuation, the Funded Ratio on a Market Value basis was calculated using the end-of-year Valuation Value of Assets plus any deferred market gains. Beginning with the December 31, 2013 valuation, the Market Value of Assets for this purpose includes either one-half of any deferred market gains (after adjustment to include the balance in the Contingency Reserve) or a proportion of any deferred investment losses after netting out the Contingency Reserve that is commensurate with the size of the valuation reserves.

Schedule of Funding Progress

Actuarial Valuation Date as of December 31	Valuation Value of Assets[1] (a)	Actuarial Accrued Liability (AAL)[2] (b)	Unfunded AAL (UAAL) (b) – (a)	Funded Ratio (a) / (b)	Projected Compensation (c)	UAAL as a % of Projected Compensation [(b) – (a)] / (c)
2014	$5,681,097,000	$7,592,072,000	$1,910,975,000	74.8%	$948,848,000	201.4%
2015	6,083,536,000	7,875,020,000	1,791,484,000	77.3%	969,534,000	184.8%
2016	6,436,138,000	8,237,715,000	1,801,577,000	78.1%	1,003,651,000	179.5%
2017	6,830,379,000	8,987,061,000	2,156,682,000	76.0%	1,055,661,000	204.3%
2018	7,239,327,000	9,376,397,000	2,137,070,000	77.2%	1,093,735,000	195.4%
2019	7,599,977,000	9,795,019,000	2,195,042,000	77.6%	1,129,175,000	194.4%
2020	7,984,241,000	10,484,180,000	2,499,939,000	76.2%	1,155,697,000	216.3%
2021	9,453,108,000	10,929,935,000	1,476,827,000	86.5%	1,204,499,000	122.6%
2022	9,923,019,000	11,415,120,000	1,492,101,000	86.9%	1,258,026,000	118.6%
2023	10,342,556,000	11,746,667,000	1,404,111,000	88.0%	1,319,397,000	106.4%

[1] Excludes assets for SRBR and other non-valuation reserves (401(h) Reserve), and includes the following (whole dollar) reimbursement amounts of implicit retiree health benefit subsidy paid by the County (amounts are estimates provided by ACERA):

Actuarial Valuation Date	Reimbursement Amount	For Year	Actuarial Valuation Date	Reimbursement Amount	For Year
12/31/2014	$5,215,355	2014	12/31/2019	$6,510,876	2019
12/31/2015	5,324,502	2015	12/31/2020	7,548,683	2020
12/31/2016	8,865,275	2016	12/31/2021	5,652,613	2021
12/31/2017	5,830,283	2017	12/31/2022	7,981,476	2022
12/31/2018	6,939,808	2018	12/31/2023	4,116,000	2023

[2] Excludes liabilities for SRBR and other non-valuation reserves.

H. Actuarial balance sheet

An overview of the Plan's funding is given by an actuarial balance sheet. In this approach, first the amount and timing of all future payments that will be made by the Plan for current members is determined. Then these payments are discounted at the valuation interest rate to the date of the valuation, thereby determining the present value, referred to as the "liability" of the Plan.

Second, this liability is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments for the unfunded actuarial accrued liability.

Actuarial Balance Sheet as of December 31, 2023
($ in '000s)

Description	Basic	COLA	Total
Liabilities			
Present value of benefits for retired members and beneficiaries	$4,555,955	$2,761,181	$7,317,136
Present value of benefits for inactive members	338,129	59,649	397,778
Present value of benefits for active members	4,926,032	1,168,156	6,094,188
Total liabilities	**$9,820,116**	**$3,988,986**	**$13,809,102**
Current and future assets			
Total valuation value of assets	$7,133,181	$3,209,375	$10,342,556
Present value of future contributions by members	832,067	205,909	1,037,976
Present value of future employer contributions for:			
• Entry age normal cost	845,834	178,625	1,024,459
• Unfunded actuarial accrued liability	1,009,034	395,077	1,404,111
Total of current and future assets	**$9,820,116**	**$3,988,986**	**$13,809,102**

I. Risk

Because the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan.

This report does not contain a detailed analysis of the potential range of future measurements, but does include a concise discussion of some of the primary risks that may affect the Plan's future financial condition. We recommend a more detailed assessment of the risks to provide the Board with a better understanding of the risks inherent in the Plan that can inform both financial preparation and future decision making. This assessment would enable us to work with the Board to highlight and illustrate particular risks or potential future outcomes they may be interested in discussing and could include scenario testing, sensitivity testing, stress testing and stochastic modeling. As noted in the valuation highlights section of this report, a copy of the risk assessment report including the analysis recommended by Segal in consultation with ACERA will be available later in 2024.

This section provides descriptions and basic assessments of the primary risks that are likely to have an ongoing influence on the Plan's financial health, as well as a discussion of historical trends and maturity measures.

Risk assessments

- Asset/Liability Mismatch Risk (the potential that future plan experience does not affect asset and liability values in the same way, causing them to diverge)

  The most significant asset/liability mismatch risk to the Plan is investment risk, as discussed below. In fact, investment risk has the potential to impact asset/liability mismatch in two ways. The first mismatch is evident in annual valuations: when asset values deviate from assumptions they are typically independent from liability changes. The second mismatch can be caused when systemic asset deviations from assumptions may signal the need for an assumption change, which causes liability values and contribution rates to move in the opposite direction from any change in the expected experience of asset growth rates.

  Asset/liability mismatch can also be caused by demographic assumption risk such as longevity, which affects liabilities but have no impact on asset levels. This risk is also discussed below.

- Investment Risk (the risk that investment returns will be different than expected)

  The investment return assumption is a long-term, static assumption for valuation purposes even though in reality market experience can be quite volatile in any given year. That volatility can cause significant changes in the financial condition of the Plan, affecting both funded status and contribution rates. The inherent year-to-year volatility is reduced by smoothing through the Actuarial Value of Assets, however investment experience can still have a sizable impact. As discussed in *Section 2, Subsection J,* *Volatility Ratios*, on page 58, a 1% asset gain or loss (relative to the assumed investment return) translates to about 7.7% of one-year's payroll. Since actuarial gains and losses are amortized over 20 years, there would be a 0.6% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The year-by-year market value rate of return over the last 10 years has ranged from a low of -11.15% to a high of 18.77%.

- Longevity Risk (the risk that mortality experience will be different than expected)

  The actuarial valuation includes current life expectancy assumptions and an expectation of future improvement in life expectancy, which are significant assumptions given the relatively long duration of liabilities for pension plans. Emerging plan experience that does not match these expectations will result in increases or decreases in the actuarially determined contribution over time. This risk can be reduced by using tables appropriate for the Plan (public experience tables) that are weighted by benefit levels, and by using generational mortality projections. Effective with the December 31, 2020 valuation, the Board has adopted amount weighted mortality tables with generational mortality projections.

- Other Risks

  In addition to longevity, the valuation includes a variety of other assumptions that are unlikely to match future experience exactly. One example is projected salary scales over time. As salary is central to the determination of benefits paid in retirement, deviations from the projected salary scales could have a material impact on the benefits anticipated for each member. Examples of demographic assumptions include retirement, termination and disability assumptions, and will likely vary in significance for different groups (for example, disability assumptions are typically more significant for Safety groups).

Some plans also carry significant contribution risk, defined as the potential for actual future contributions deviating from expected future contributions. However, the employers have a proven track-record of making the actuarially determined contributions based on the Board's Actuarial Funding Policy, so contribution risk is minimal.

Evaluation of historical trends

Past experience can help demonstrate the sensitivity of key results to the Plan's actual experience. Over the past 10 years:

- The funded percentage on the valuation value of assets basis has increased from 74.8% to 88.0%. This is primarily due to contributions by all employers made to amortize the UAAL, additional voluntary County Safety and LARPD General contributions to reduce their UAAL, and higher than assumed average investment returns over recent years. For a more detailed history see *Section 2, Subsection G, Funded Status* starting on page 51.
- The average geometric investment return on the valuation value of assets over the last 10 years was 7.73%. This includes a high of 10.61% return and a low of 6.30%. The average over the last 5 years was 7.11%. For more details see the *Section 2, Subsection B, Investment Return* table on page 26.

- The primary source of new UAAL was the strengthening of assumptions through multiple assumption changes. For example, the assumption changes in 2014 added $459 million in unfunded liability. The assumption changes in 2017 changed the discount rate from 7.60% to 7.25% (as well as various other changes) adding $396 million in unfunded liability. The assumption changes in 2020 changed the discount rate from 7.25% to 7.00% (as well as various other changes) adding $321.7 million in unfunded liability. The most recent assumption change in 2023 reduced the inflationary salary increase assumption from 2.75% to 2.50% (as well as various other changes), **subtracting** $97.5 million in unfunded liability. For more details on the unfunded liability changes see *Section 3, Exhibit H, Table of Amortization Bases* starting on page 84.
- The plan's funding policy effectively deals with these unfunded liabilities over time. This can be seen most clearly in *Section 3, Exhibit I, Projection of UAAL Balances and Payments* provided on pages 90 and 91.

Maturity measures

In the last 10 years the ratio of members in pay status to active participants has increased from 0.80 to 0.95. An increased ratio indicates that the plan has grown in maturity over time. This is to be expected, but is also informative for understanding plan sensitivity to particular risks. For more details see *Section 2, Subsection A, Member Information* on page 19.

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities. Over the past year, benefits paid were $252 million more than contributions received. Plans with high levels of negative cash flows may have a need for a larger allocation to income generating assets, which can create a drag on investment return. However, the Plan currently has a relatively low level of negative cash flow and is relatively well funded (at an 88.0% funded ratio). For more details on historical cash flows see *Section 2, Subsection B, Comparison of Contributions Made with Benefits* on page 23.

A further discussion of plan maturity measures and how they relate to changes in assets and liabilities is included in *Section 2, Subsection J, Volatility Ratios* on page 58.

Low-Default-Risk Obligation Measure (LDROM)

In December 2021, the Actuarial Standards Board issued a revision of Actuarial Standard of Practice No. 4 (ASOP 4) *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*. One of the revisions to ASOP 4 requires the disclosure of a Low-Default-Risk Obligation Measure (LDROM) when performing a funding valuation. The LDROM presented in this report is calculated using the same methodology and assumptions used to determine the AAL used for funding, except for the discount rate. The LDROM is required to be calculated using "a discount rate…derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future."

The LDROM is a calculation assuming a plan's assets are invested in an all-bond portfolio, generally lowering expected long-term investment returns. The discount rate selected and used for this purpose is the Bond Buyer General Obligation 20-year Municipal Bond Index Rate, published at the end of each week. The last published rate in December of the measurement period, by The Bond Buyer, is 3.26% for use effective December 31, 2023. This is the rate used to determine the discount rate for valuing reported public pension plan liabilities in accordance with Governmental Accounting Standards when plan assets are projected to be insufficient to make projected benefit payments, and the 20-year period reasonably approximates the duration of plan liabilities. The LDROM is not used to determine a plan's funded status or actuarially determined contribution rates. The plan's expected return on assets, currently 7.00%, is used for these calculations.

As of December 31, 2023, the LDROM for the Plan is $19.3 billion. The difference between the Plan's AAL of $11.7 billion and the LDROM can be thought of as the increase in the AAL if the entire portfolio were invested in low-default-risk securities. Alternatively, this difference could also be viewed as representing the expected savings from investing in the Plan's diversified portfolio compared to investing only in low-default-risk securities.

ASOP 4 requires commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of member benefits. In general, if plan assets were invested exclusively in low-default-risk securities, the funded status would be lower and the actuarially determined contribution would be higher. While investing in a portfolio with low-default-risk securities may be more likely to reduce investment volatility and the volatility of employer contributions, it also may be more likely to result in higher employer contributions or lower benefits.

J. Volatility ratios

Retirement plans are subject to volatility in the level of required contributions. This volatility tends to increase as retirement plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by total projected compensation, provides an indication of the potential contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of contribution volatility. This is a current measurement since it is based on the current level of assets.

The current AVR is about 7.7. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 7.7% of one-year's payroll. Since actuarial gains and losses are amortized over 20 years, there would be a 0.6% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the actuarial accrued liability divided by total projected compensation, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities. For example, if a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded.

The LVR also indicates how volatile contributions will be in response to changes in the actuarial accrued liability due to actual experience or to changes in actuarial assumptions. The current total Plan LVR is about 8.9 but is 7.6 for General (non-LARPD) compared to 18.7 for General (LARPD) and 15.8 for Safety. This means that assumption changes will have a greater impact on employer contribution rates for General (LARPD) and Safety than for General (non-LARPD).

The increase in the AVR this year was caused by the 12.11% return on the market value of assets. The increase in the LVR for LARPD this year was caused by about a 3% reduction in the payroll for LARPD (relative to the assumption) as reported in the December 31, 2023 valuation.

Volatility Ratios

Asset Volatility Ratio (AVR) versus Liability Volatility Ratio (LVR)[1]

As of December 31	AVR General (non-LARPD)	AVR General (LARPD)	AVR Safety	AVR Total	LVR General (non-LARPD)	LVR General (LARPD)[2]	LVR Safety	LVR Total
2014	5.5	5.9	9.3	6.1	6.9	7.7	13.9	8.0
2015	5.5	5.7	8.8	6.0	7.0	7.3	13.7	8.1
2016	5.6	6.1	8.9	6.1	7.1	7.7	13.8	8.2
2017	6.0	7.6	9.8	6.6	7.3	9.1	14.6	8.5
2018	5.5	9.0	9.5	6.2	7.3	12.5	15.1	8.6
2019	6.1	11.1	10.8	6.9	7.4	14.1	15.4	8.7
2020	6.4	13.8	11.6	7.3	7.7	16.8	16.2	9.1
2021	6.8	18.8	16.5	8.4	7.8	17.5	15.8	9.1
2022	6.0	17.1	14.0	7.3	7.8	18.2	15.6	9.1
2023	6.3	18.4	14.9	7.7	7.6	18.7	15.8	8.9

1 Prior to the December 31, 2018 valuation, volatility ratios for the General (non-LARPD) group were calculated including assets, liabilities, and payroll attributable to Tier 1 members from the LARPD and the ACOE (payroll was $0 as of December 31, 2017).
Beginning with the December 31, 2018 valuation, the assets, liabilities, and payroll attributable to LARPD Tier 1 members are included in calculating the volatility ratios for the General (LARPD) group, and the assets and liabilities attributable to ACOE Tier 1 members are excluded from this table.

2 The ratio of retired members and beneficiaries to actives is 2.1 for LARPD compared to 0.9 for General (non-LARPD). This results in a higher LVR for LARPD as compared to General (non-LARPD).

Section 3: Supplemental Information

Exhibit A: Table of plan demographics

Total Plan

Category	As of December 31, 2023	As of December 31, 2022	Change
Active members in valuation			
• Number	11,547	11,346	1.8%
• Average age	47.0	47.0	0.0
• Average years of service	10.8	11.1	-0.3
• Total projected compensation[1]	$1,319,396,465	$1,258,029,259	4.9%
• Average projected compensation	$114,263	$110,879	3.1%
• Account balances	$1,466,082,423	$1,420,115,654	3.2%
• Total active vested members	7,621	7,608	0.2%
Inactive members[2]			
• Number	3,838	3,564	7.7%
• Average age	47.1	47.1	0.0
Retired members			
• Number in pay status	8,685	8,479	2.4%
• Average age	72.9	72.7	0.2
• Average retirement age	60.5	60.4	0.1
• Average monthly benefit[3]	$4,903	$4,786	2.4%
Disabled members			
• Number in pay status	1,002	1,006	-0.4%
• Average age	65.8	65.5	0.3
• Average retirement age	49.6	49.7	-0.1
• Average monthly benefit[3]	$4,322	$4,149	4.2%
Beneficiaries			
• Number in pay status	1,339	1,313	2.0%
• Average age	75.9	75.7	0.2
• Average monthly benefit[3]	$2,893	$2,801	3.3%

[1] Total payroll shown above may not total exactly to the amount shown elsewhere in this report when rounded to thousands of dollars due to separate rounding by tiers used elsewhere.

[2] Includes inactive members due a refund of member contributions.

[3] Excludes supplemental benefits paid from SRBR.

General Tier 1

Category	As of December 31, 2023	As of December 31, 2022	Change
Active members in valuation			
• Number	62	74	-16.2%
• Average age	60.8	60.9	-0.1
• Average years of service	28.3	29.1	-0.8
• Total projected compensation	$7,026,138	$7,843,589	-10.4%
• Average projected compensation	$113,325	$105,994	6.9%
• Account balances	$29,643,841	$34,612,512	-14.4%
• Total active vested members	62	74	-16.2%
Inactive members[1]			
• Number	29	33	-12.1%
• Average age	65.8	65.2	0.6
Retired members			
• Number in pay status	2,643	2,759	-4.2%
• Average age	78.7	78.2	0.5
• Average retirement age	59.4	59.4	0.0
• Average monthly benefit[2]	$6,064	$5,816	4.3%
Disabled members			
• Number in pay status	120	127	-5.5%
• Average age	77.0	76.3	0.7
• Average retirement age	51.5	51.4	0.1
• Average monthly benefit[2]	$3,969	$3,767	5.4%
Beneficiaries			
• Number in pay status	623	631	-1.3%
• Average age	81.2	81.0	0.2
• Average monthly benefit[2]	$3,126	$2,997	4.3%

[1] Includes inactive members due a refund of member contributions.
[2] Excludes supplemental benefits paid from SRBR.

General Tier 2

Category	As of December 31, 2023	As of December 31, 2022	Change
Active members in valuation			
• Number	4,146	4,496	-7.8%
• Average age	54.0	53.5	0.5
• Average years of service	19.3	18.7	0.6
• Total projected compensation[1]	$501,991,121	$524,849,488	-4.4%
• Average projected compensation	$121,078	$116,737	3.7%
• Account balances	$790,233,575	$797,089,493	-0.9%
• Total active vested members	4,063	4,418	-8.0%
Inactive members[2]			
• Number	1,779	1,762	1.0%
• Average age	52.2	51.8	0.4
Retired members			
• Number in pay status	4,587	4,334	5.8%
• Average age	70.9	70.5	0.4
• Average retirement age	62.5	62.5	0.0
• Average monthly benefit[3]	$3,461	$3,322	4.2%
Disabled members			
• Number in pay status	470	479	-1.9%
• Average age	67.0	66.3	0.7
• Average retirement age	50.5	50.6	-0.1
• Average monthly benefit[3]	$3,036	$2,956	2.7%
Beneficiaries			
• Number in pay status	394	371	6.2%
• Average age	70.8	70.2	0.6
• Average monthly benefit[3]	$1,617	$1,596	1.3%

[1] Projected compensation has been limited. For members with membership dates on or after January 1, 1996, the Internal Revenue Code Section 401(a)(17) limit is $345,000 for 2024.

[2] Includes inactive members due a refund of member contributions.

[3] Excludes supplemental benefits paid from SRBR.

General Tier 3

Category	As of December 31, 2023	As of December 31, 2022	Change
Active members in valuation			
• Number	13	15	-13.3%
• Average age	56.6	55.6	1.0
• Average years of service	16.9	15.5	1.4
• Total projected compensation[1]	$1,409,317	$1,516,322	-7.1%
• Average projected compensation	$108,409	$101,088	7.2%
• Account balances	$3,489,252	$3,404,350	2.5%
• Total active vested members	11	13	-15.4%
Inactive members[2]			
• Number	13	14	-7.1%
• Average age	50.1	49.6	0.5
Retired members			
• Number in pay status	35	32	9.4%
• Average age	66.1	66.0	0.1
• Average retirement age	59.3	59.6	-0.3
• Average monthly benefit[3]	$4,328	$4,411	-1.9%
Disabled members			
• Number in pay status	1	1	0.0%
• Average age	70.1	69.1	1.0
• Average retirement age	62.6	62.6	0.0
• Average monthly benefit[3]	$2,466	$2,394	3.0%
Beneficiaries			
• Number in pay status	5	5	0.0%
• Average age	67.6	66.6	1.0
• Average monthly benefit[3]	$3,777	$3,667	3.0%

[1] Projected compensation has been limited. For members with membership dates on or after January 1, 1996, the Internal Revenue Code Section 401(a)(17) limit is $345,000 for 2024.

[2] Includes inactive members due a refund of member contributions.

[3] Excludes supplemental benefits paid from SRBR.

General Tier 4

Category	As of December 31, 2023	As of December 31, 2022	Change
Active members in valuation			
• Number	5,922	5,316	11.4%
• Average age	42.9	42.6	0.3
• Average years of service	4.5	4.3	0.2
• Total projected compensation[1]	$600,065,472	$518,722,632	15.7%
• Average projected compensation	$101,328	$97,578	3.8%
• Account balances	$237,981,764	$194,129,238	22.6%
• Total active vested members	2,495	2,094	19.1%
Inactive members[2]			
• Number	1,761	1,522	15.7%
• Average age	42.2	41.7	0.5
Retired members			
• Number in pay status	119	80	48.8%
• Average age	68.0	67.2	0.8
• Average retirement age	65.8	65.2	0.6
• Average monthly benefit[3]	$1,313	$1,238	6.1%
Disabled members			
• Number in pay status	7	7	0.0%
• Average age	66.0	65.0	1.0
• Average retirement age	61.7	61.7	0.0
• Average monthly benefit[3]	$2,669	$2,617	2.0%
Beneficiaries			
• Number in pay status	5	3	66.7%
• Average age	63.3	57.9	5.4
• Average monthly benefit[3]	$1,386	$1,350	2.7%

[1] Projected compensation has been limited. It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the compensation that can be taken into account for 2024 is equal to $151,446. (For an employer that is not enrolled in Social Security, the maximum amount is 120% of $151,446, or $181,734). (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2024. (reference: Section 7522.10(d)).

[2] Includes inactive members due a refund of member contributions.

[3] Excludes supplemental benefits paid from SRBR.

Safety Tier 1

Category	As of December 31, 2023	As of December 31, 2022	Change
Active members in valuation			
• Number	0	1	-100.0%
• Average age	N/A	65.3	N/A
• Average years of service	N/A	42.9	N/A
• Total projected compensation	$0	$387,137	-100.0%
• Average projected compensation	N/A	$387,137	N/A
• Account balances	$0	$1,889,702	-100.0%
• Total active vested members	0	1	-100.0%
Inactive members[1]			
• Number	4	5	-20.0%
• Average age	67.1	64.0	3.1
Retired members			
• Number in pay status	522	549	-4.9%
• Average age	76.0	75.4	0.6
• Average retirement age	54.9	54.9	0.0
• Average monthly benefit[2]	$9,899	$9,454	4.7%
Disabled members			
• Number in pay status	86	90	-4.4%
• Average age	73.8	73.0	0.8
• Average retirement age	48.4	48.4	0.0
• Average monthly benefit[2]	$6,721	$6,446	4.3%
Beneficiaries			
• Number in pay status	199	194	2.6%
• Average age	76.9	76.4	0.5
• Average monthly benefit[2]	$4,533	$4,361	3.9%

[1] Includes inactive members due a refund of member contributions.
[2] Excludes supplemental benefits paid from SRBR.

Safety Tier 2

Category	As of December 31, 2023	As of December 31, 2022	Change
Active members in valuation			
• Number	576	638	-9.7%
• Average age	49.2	48.7	0.5
• Average years of service	20.1	19.4	0.7
• Total projected compensation[1]	$95,464,429	$100,553,460	-5.1%
• Average projected compensation	$165,737	$157,607	5.2%
• Account balances	$309,204,484	$311,551,644	-0.8%
• Total active vested members	576	638	-9.7%
Inactive members[2]			
• Number	114	120	-5.0%
• Average age	48.8	48.0	0.8
Retired members			
• Number in pay status	740	696	6.3%
• Average age	64.1	63.8	0.3
• Average retirement age	55.3	55.3	0.0
• Average monthly benefit[3]	$6,911	$6,676	3.5%
Disabled members			
• Number in pay status	297	285	4.2%
• Average age	58.4	57.8	0.6
• Average retirement age	47.8	47.7	0.1
• Average monthly benefit[3]	$5,796	$5,599	3.5%
Beneficiaries			
• Number in pay status	111	107	3.7%
• Average age	64.0	63.3	0.7
• Average monthly benefit[3]	$3,232	$3,032	6.6%

1 Projected compensation has been limited. For members with membership dates on or after January 1, 1996, the Internal Revenue Code Section 401(a)(17) limit is $345,000 for 2024.

2 Includes inactive members due a refund of member contributions.

3 Excludes supplemental benefits paid from SRBR.

Safety Tier 2C

Category	As of December 31, 2023	As of December 31, 2022	Change
Active members in valuation			
• Number	20	21	-4.8%
• Average age	46.7	47.0	-0.3
• Average years of service	11.3	10.7	0.6
• Total projected compensation[1]	$2,782,556	$2,860,100	-2.7%
• Average projected compensation	$139,128	$136,195	2.2%
• Account balances	$3,428,419	$3,375,954	1.6%
• Total active vested members	17	19	-10.5%
Inactive members[2]			
• Number	11	9	22.2%
• Average age	43.8	42.9	0.9
Retired members			
• Number in pay status	7	5	40.0%
• Average age	59.4	57.9	1.5
• Average retirement age	56.5	55.2	1.3
• Average monthly benefit[3]	$2,232	$1,513	47.5%
Disabled members			
• Number in pay status	1	1	0.0%
• Average age	64.2	63.2	1.0
• Average retirement age	62.3	62.3	0.0
• Average monthly benefit[3]	$7,630	$7,334	4.0%
Beneficiaries			
• Number in pay status	2	2	0.0%
• Average age	53.5	52.5	1.0
• Average monthly benefit[3]	$1,294	$1,269	2.0%

[1] Projected compensation has been limited. For members with membership dates on or after January 1, 1996, the Internal Revenue Code Section 401(a)(17) limit is $345,000 for 2024.
[2] Includes inactive members due a refund of member contributions.
[3] Excludes supplemental benefits paid from SRBR.

Safety Tier 2D

Category	As of December 31, 2023	As of December 31, 2022	Change
Active members in valuation			
• Number	125	126	-0.8%
• Average age	43.9	43.1	0.8
• Average years of service	12.3	11.4	0.9
• Total projected compensation[1]	$18,777,101	$18,433,073	1.9%
• Average projected compensation	$150,217	$146,294	2.7%
• Account balances	$29,149,492	$25,702,331	13.4%
• Total active vested members	112	109	2.8%
Inactive members[2]			
• Number	17	15	13.3%
• Average age	42.9	43.9	-1.0
Retired members			
• Number in pay status	14	9	55.6%
• Average age	59.8	61.3	-1.5
• Average retirement age	57.7	59.5	-1.8
• Average monthly benefit[3]	$2,918	$2,910	0.3%
Disabled members			
• Number in pay status	10	10	0.0%
• Average age	49.6	48.6	1.0
• Average retirement age	45.0	45.0	0.0
• Average monthly benefit[3]	$4,825	$4,708	2.5%
Beneficiaries			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A

[1] Projected compensation has been limited. For members with membership dates on or after January 1, 1996, the Internal Revenue Code Section 401(a)(17) limit is $345,000 for 2024.
[2] Includes inactive members due a refund of member contributions.
[3] Excludes supplemental benefits paid from SRBR.

Safety Tier 4

Category	As of December 31, 2023	As of December 31, 2022	Change
Active members in valuation			
• Number	683	659	3.6%
• Average age	37.1	36.4	0.7
• Average years of service	4.8	4.1	0.7
• Total projected compensation[1]	$91,880,333	$82,863,456	10.9%
• Average projected compensation	$134,525	$125,741	7.0%
• Account balances	$62,951,597	$48,360,429	30.2%
• Total active vested members	285	242	17.8%
Inactive members[2]			
• Number	110	84	31.0%
• Average age	36.2	35.9	0.3
Retired members			
• Number in pay status	18	15	20.0%
• Average age	61.8	61.2	0.6
• Average retirement age	59.1	59.1	0.0
• Average monthly benefit[3]	$1,991	$1,850	7.6%
Disabled members			
• Number in pay status	10	6	66.7%
• Average age	46.3	49.8	-3.5
• Average retirement age	43.6	47.1	-3.5
• Average monthly benefit[3]	$5,098	$4,831	5.5%
Beneficiaries			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A

[1] Projected compensation has been limited. It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the compensation that can be taken into account for 2024 is equal to $151,446. (For an employer that is not enrolled in Social Security, the maximum amount is 120% of $151,446, or $181,734). (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2024. (reference: Section 7522.10(d)).

[2] Includes inactive members due a refund of member contributions.

[3] Excludes supplemental benefits paid from SRBR.

Exhibit B: Members in active service as of December 31, 2023 by age, years of service, and average projected compensation

Total Plan

Age	Total	0 - 4 Years	5 - 9 Years	10 - 14 Years	15 - 19 Years	20 - 24 Years	25 - 29 Years	30 - 34 Years	35 - 39 Years	40 Years and over
Under 25	115	115	—	—	—	—	—	—	—	—
	$80,520	$80,520	—	—	—	—	—	—	—	—
25 - 29	638	572	66	—	—	—	—	—	—	—
	93,544	92,475	$102,810	—	—	—	—	—	—	—
30 - 34	1,202	760	402	40	—	—	—	—	—	—
	103,885	100,725	107,353	$129,079	—	—	—	—	—	—
35 - 39	1,459	657	552	199	51	—	—	—	—	—
	109,957	104,548	110,616	122,963	$121,775	—	—	—	—	—
40 - 44	1,711	550	492	291	333	44	1	—	—	—
	117,057	105,692	112,592	125,446	133,357	$130,971	$84,044	—	—	—
45 - 49	1,680	431	362	259	329	262	37	—	—	—
	121,735	107,126	113,486	126,215	135,937	130,039	156,166	—	—	—
50 - 54	1,666	356	271	194	297	379	135	34	—	—
	122,351	111,540	114,991	123,893	132,883	122,863	143,102	$105,324	—	—
55 - 59	1,405	253	199	160	196	300	151	112	32	2
	118,232	107,848	114,514	125,916	119,157	121,733	128,545	112,727	$118,833	$90,737
60 - 64	1,119	164	181	125	168	222	93	97	64	5
	114,355	103,034	110,371	121,027	121,319	109,028	123,628	125,350	113,118	95,692
65 - 69	422	68	66	75	71	65	30	23	15	9
	113,793	107,175	108,890	125,606	109,403	116,678	116,542	105,749	122,799	111,492
70 and over	130	17	19	15	32	14	11	10	7	5
	110,936	88,790	109,065	110,402	99,949	97,570	118,918	108,944	160,888	219,179
Total	**11,547**	**3,943**	**2,610**	**1,358**	**1,477**	**1,286**	**458**	**276**	**118**	**21**
	$114,263	**$102,558**	**$111,366**	**$124,605**	**$128,308**	**$121,362**	**$132,954**	**$115,533**	**$118,732**	**$131,393**

Note: Age and years of service were projected from November 30, 2023 to December 31, 2023.

General Tier 1

Age	Total	0 - 4 Years	5 - 9 Years	10 - 14 Years	15 - 19 Years	20 - 24 Years	25 - 29 Years	30 - 34 Years	35 - 39 Years	40 Years and over
Under 25	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
25 - 29	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
30 - 34	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
35 - 39	2	—	—	2	—	—	—	—	—	—
	$78,187	—	—	$78,187	—	—	—	—	—	—
40 - 44	3	—	—	2	1	—	—	—	—	—
	100,539	—	—	78,322	$144,971	—	—	—	—	—
45 - 49	5	—	—	4	1	—	—	—	—	—
	115,270	—	—	96,238	191,402	—	—	—	—	—
50 - 54	6	—	—	1	2	3	—	—	—	—
	121,271	—	—	75,775	100,272	$150,435	—	—	—	—
55 - 59	11	—	—	—	3	5	1	—	—	2
	82,823	—	—	—	84,813	80,323	$73,531	—	—	$90,737
60 - 64	11	—	—	—	1	2	2	1	1	4
	101,682	—	—	—	80,753	82,084	139,863	$75,618	$119,053	99,796
65 - 69	16	—	—	1	1	2	—	3	2	7
	117,304	—	—	92,606	63,712	182,227	—	70,591	180,733	111,836
70 and over	8	—	—	—	1	1	1	—	—	5
	169,719	—	—	—	75,905	106,017	79,933	—	—	219,179
Total	**62**	**—**	**—**	**10**	**10**	**13**	**4**	**4**	**3**	**18**
	$113,325	**—**	**—**	**$86,635**	**$101,173**	**$114,428**	**$108,298**	**$71,848**	**$160,173**	**$136,633**

Note: Age and years of service were projected from November 30, 2023 to December 31, 2023.

General Tier 2

Age	Total	0 - 4 Years	5 - 9 Years	10 - 14 Years	15 - 19 Years	20 - 24 Years	25 - 29 Years	30 - 34 Years	35 - 39 Years	40 Years and over
Under 25	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
25 - 29	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
30 - 34	12	—	5	7	—	—	—	—	—	—
	$108,211	—	$108,368	$108,098	—	—	—	—	—	—
35 - 39	170	8	23	110	29	—	—	—	—	—
	110,430	$98,535	125,633	113,001	$91,901	—	—	—	—	—
40 - 44	479	14	39	190	206	29	1	—	—	—
	122,142	133,376	143,895	125,425	117,648	$99,200	$84,044	—	—	—
45 - 49	690	13	34	186	251	188	18	—	—	—
	124,442	164,363	146,002	125,733	128,296	112,712	110,314	—	—	—
50 - 54	871	19	25	143	244	315	94	31	—	—
	124,051	137,200	162,149	129,034	127,991	115,807	127,967	$103,175	—	—
55 - 59	857	17	16	121	170	252	138	111	32	—
	121,829	138,568	156,893	132,102	116,942	118,179	127,541	112,549	$118,833	—
60 - 64	727	7	20	93	151	209	87	96	63	1
	117,599	121,772	133,095	125,452	119,659	106,881	122,112	125,868	113,024	$79,274
65 - 69	260	5	10	56	66	62	28	19	13	1
	118,469	85,374	139,905	138,785	109,413	114,003	114,669	111,628	113,886	102,398
70 and over	80	2	1	9	31	13	7	10	7	—
	109,947	114,003	131,151	107,700	100,725	96,920	124,173	108,944	160,888	—
Total	**4,146**	**85**	**173**	**915**	**1,148**	**1,068**	**373**	**267**	**115**	**2**
	$121,078	**$132,494**	**$143,142**	**$125,954**	**$120,754**	**$113,289**	**$124,405**	**$116,049**	**$117,651**	**$90,836**

Note: Age and years of service were projected from November 30, 2023 to December 31, 2023.

General Tier 3

Age	Total	0 - 4 Years	5 - 9 Years	10 - 14 Years	15 - 19 Years	20 - 24 Years	25 - 29 Years	30 - 34 Years	35 - 39 Years	40 Years and over
Under 25	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
25 - 29	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
30 - 34	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
35 - 39	1	1	—	—	—	—	—	—	—	—
	$125,752	$125,752	—	—	—	—	—	—	—	—
40 - 44	1	1	—	—	—	—	—	—	—	—
	121,487	121,487	—	—	—	—	—	—	—	—
45 - 49	1	—	—	—	—	—	1	—	—	—
	79,933	—	—	—	—	—	$79,933	—	—	—
50 - 54	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
55 - 59	6	—	1	2	1	1	1	—	—	—
	100,126	—	$145,015	$103,784	$88,308	$79,933	79,933	—	—	—
60 - 64	3	—	—	—	1	2	—	—	—	—
	115,770	—	—	—	181,296	83,007	—	—	—	—
65 - 69	1	—	—	—	—	—	1	—	—	—
	134,079	—	—	—	—	—	134,079	—	—	—
70 and over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**13**	**2**	**1**	**2**	**2**	**3**	**3**	**—**	**—**	**—**
	$108,409	**$123,619**	**$145,015**	**$103,784**	**$134,802**	**$81,982**	**$97,982**	**—**	**—**	**—**

Note: Age and years of service were projected from November 30, 2023 to December 31, 2023.

General Tier 4

Age	Total	0 - 4 Years	5 - 9 Years	10 - 14 Years	15 - 19 Years	20 - 24 Years	25 - 29 Years	30 - 34 Years	35 - 39 Years	40 Years and over
Under 25	90	90	—	—	—	—	—	—	—	—
	$74,187	$74,187	—	—	—	—	—	—	—	—
25 - 29	513	461	52	—	—	—	—	—	—	—
	87,062	86,397	$92,959	—	—	—	—	—	—	—
30 - 34	987	652	321	14	—	—	—	—	—	—
	97,655	96,505	99,746	$103,263	—	—	—	—	—	—
35 - 39	1,083	586	459	37	1	—	—	—	—	—
	104,063	102,708	105,421	109,331	$79,933	—	—	—	—	—
40 - 44	974	499	418	54	3	—	—	—	—	—
	104,545	102,801	106,823	104,098	85,399	—	—	—	—	—
45 - 49	753	401	307	40	4	1	—	—	—	—
	105,768	104,327	107,183	109,771	96,049	$128,262	—	—	—	—
50 - 54	579	300	234	43	—	2	—	—	—	—
	105,767	103,461	108,476	106,202	—	125,374	—	—	—	—
55 - 59	428	220	170	32	5	1	—	—	—	—
	103,144	101,282	106,049	100,211	106,429	96,413	—	—	—	—
60 - 64	336	155	148	28	5	—	—	—	—	—
	102,163	101,495	102,975	99,849	111,771	—	—	—	—	—
65 - 69	140	63	55	18	2	1	1	—	—	—
	103,917	108,905	101,926	86,436	111,364	151,446	$151,446	—	—	—
70 and over	39	15	18	6	—	—	—	—	—	—
	100,237	85,428	107,838	114,454	—	—	—	—	—	—
Total	**5,922**	**3,442**	**2,182**	**272**	**20**	**5**	**1**	**—**	**—**	**—**
	$101,328	**$98,763**	**$104,948**	**$104,099**	**$101,703**	**$125,374**	**$151,446**	**—**	**—**	**—**

Note: Age and years of service were projected from November 30, 2023 to December 31, 2023.

Safety Tier 2

Age	Total	0 - 4 Years	5 - 9 Years	10 - 14 Years	15 - 19 Years	20 - 24 Years	25 - 29 Years	30 - 34 Years	35 - 39 Years	40 Years and over
Under 25	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
25 - 29	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
30 - 34	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
35 - 39	23	—	—	4	19	—	—	—	—	—
	$170,060	—	—	$183,896	$167,148	—	—	—	—	—
40 - 44	136	—	—	12	111	13	—	—	—	—
	166,602	—	—	160,149	163,519	$198,884	—	—	—	—
45 - 49	169	—	—	13	70	68	18	—	—	—
	174,110	—	—	164,143	164,836	177,054	$206,254	—	—	—
50 - 54	145	—	—	2	46	56	41	—	—	—
	165,781	—	—	161,647	160,795	161,222	177,804	—	—	—
55 - 59	72	—	—	4	15	41	11	1	—	—
	150,962	—	—	142,122	156,737	150,269	150,564	$132,472	—	—
60 - 64	24	—	1	—	10	9	4	—	—	—
	155,270	—	$104,384	—	149,217	170,667	148,482	—	—	—
65 - 69	4	—	—	—	2	—	—	1	—	1
	119,405	—	—	—	129,956	—	—	99,521	—	$118,184
70 and over	3	—	—	—	—	—	3	—	—	—
	119,651	—	—	—	—	—	119,651	—	—	—
Total	**576**	**—**	**1**	**35**	**273**	**187**	**77**	**2**	**—**	**1**
	$165,737	**—**	**$104,384**	**$162,372**	**$162,508**	**$167,650**	**$176,774**	**$115,997**	**—**	**$118,184**

Note: Age and years of service were projected from November 30, 2023 to December 31, 2023.

Safety Tier 2C

Age	Total	0 - 4 Years	5 - 9 Years	10 - 14 Years	15 - 19 Years	20 - 24 Years	25 - 29 Years	30 - 34 Years	35 - 39 Years	40 Years and over
Under 25	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
25 - 29	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
30 - 34	1	—	—	1	—	—	—	—	—	—
	$163,366	—	—	$163,366	—	—	—	—	—	—
35 - 39	3	—	—	2	1	—	—	—	—	—
	141,860	—	—	145,619	$134,341	—	—	—	—	—
40 - 44	5	1	1	2	1	—	—	—	—	—
	120,565	$108,128	$143,698	125,738	99,521	—	—	—	—	—
45 - 49	5	1	1	3	—	—	—	—	—	—
	149,462	152,406	146,755	149,384	—	—	—	—	—	—
50 - 54	4	1	1	1	—	—	—	1	—	—
	136,454	180,072	134,341	109,178	—	—	—	$122,226	—	—
55 - 59	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
60 - 64	2	—	1	1	—	—	—	—	—	—
	148,829	—	104,985	192,673	—	—	—	—	—	—
65 - 69	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
70 and over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**20**	**3**	**4**	**10**	**2**	**—**	**—**	**1**	**—**	**—**
	$139,128	**$146,869**	**$132,445**	**$145,608**	**$116,931**	**—**	**—**	**$122,226**	**—**	**—**

Note: Age and years of service were projected from November 30, 2023 to December 31, 2023.

Safety Tier 2D

Age	Total	0 - 4 Years	5 - 9 Years	10 - 14 Years	15 - 19 Years	20 - 24 Years	25 - 29 Years	30 - 34 Years	35 - 39 Years	40 Years and over
Under 25	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
25 - 29	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
30 - 34	9	1	1	7	—	—	—	—	—	—
	$156,381	$129,701	$150,537	$161,027	—	—	—	—	—	—
35 - 39	33	5	—	27	1	—	—	—	—	—
	155,347	146,392	—	157,005	$155,336	—	—	—	—	—
40 - 44	35	3	3	16	11	2	—	—	—	—
	152,468	158,253	200,049	152,487	138,297	$150,216	—	—	—	—
45 - 49	25	1	5	11	3	5	—	—	—	—
	149,315	151,322	168,569	147,223	135,615	142,480	—	—	—	—
50 - 54	17	3	3	2	4	3	—	2	—	—
	133,175	152,397	140,766	134,242	125,071	118,451	—	$130,182	—	—
55 - 59	4	—	2	—	2	—	—	—	—	—
	152,238	—	180,103	—	124,373	—	—	—	—	—
60 - 64	2	—	1	1	—	—	—	—	—	—
	150,526	—	187,113	113,939	—	—	—	—	—	—
65 - 69	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
70 and over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**125**	**13**	**15**	**64**	**21**	**10**	**—**	**2**	**—**	**—**
	$150,217	**$149,610**	**$170,877**	**$153,250**	**$134,880**	**$136,818**	**—**	**$130,182**	**—**	**—**

Note: Age and years of service were projected from November 30, 2023 to December 31, 2023.

Safety Tier 4

Age	Total	0 - 4 Years	5 - 9 Years	10 - 14 Years	15 - 19 Years	20 - 24 Years	25 - 29 Years	30 - 34 Years	35 - 39 Years	40 Years and over
Under 25	25	25	—	—	—	—	—	—	—	—
	$103,320	$103,320	—	—	—	—	—	—	—	—
25 - 29	125	111	14	—	—	—	—	—	—	—
	120,147	117,719	$139,398	—	—	—	—	—	—	—
30 - 34	193	107	75	11	—	—	—	—	—	—
	132,721	126,168	139,265	$151,839	—	—	—	—	—	—
35 - 39	144	57	70	17	—	—	—	—	—	—
	133,395	120,266	139,740	151,291	—	—	—	—	—	—
40 - 44	78	32	31	15	—	—	—	—	—	—
	140,150	133,163	141,532	152,201	—	—	—	—	—	—
45 - 49	32	15	15	2	—	—	—	—	—	—
	138,897	126,383	148,189	163,063	—	—	—	—	—	—
50 - 54	44	33	8	2	1	—	—	—	—	—
	158,506	164,428	146,110	120,033	$139,180	—	—	—	—	—
55 - 59	27	16	10	1	—	—	—	—	—	—
	169,329	165,492	174,455	179,472	—	—	—	—	—	—
60 - 64	14	2	10	2	—	—	—	—	—	—
	167,904	156,652	167,840	179,472	—	—	—	—	—	—
65 - 69	1	—	1	—	—	—	—	—	—	—
	181,734	—	181,734	—	—	—	—	—	—	—
70 and over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**683**	**398**	**234**	**50**	**1**	**—**	**—**	**—**	**—**	**—**
	$134,525	**$127,008**	**$143,428**	**$152,596**	**$139,180**	**—**	**—**	**—**	**—**	**—**

Note: Age and years of service were projected from November 30, 2023 to December 31, 2023.

Exhibit C: Reconciliation of member data

Description	Active Members	Inactive Members[1]	Retired Members	Disabled Members	Beneficiaries	Total
Number as of December 31, 2022	**11,346**	**3,564**	**8,479**	**1,006**	**1,313**	**25,708**
New members	1,155	0	0	0	91	1,246
Terminations with vested rights	(442)	442	0	0	0	0
Contribution refunds	(149)	(122)	0	0	0	(271)
Retirements	(362)	(82)	444	0	0	0
New disabilities	(15)	(2)	(5)	22	0	0
Return to work	36	(36)	0	0	0	0
Died with or without beneficiary	(22)	(6)	(233)	(26)	(60)	(347)
Data adjustments[2]	0	80	0	0	(5)	75
Number as of December 31, 2023	**11,547**	**3,838**	**8,685**	**1,002**	**1,339**	**26,411**

[1] Includes inactive members due a refund of member contributions.

[2] Out of the net 80 data adjustments for inactive members: 74 members were hired and terminated employment after November 30, 2022 (i.e. the census data collection date for last year's valuation); and 6 non-member records were added to the terminated vested file.

Exhibit D: Summary statement of income and expenses on a market value basis

	Year Ended December 31, 2023	Year Ended December 31, 2022
Net assets at market value at the beginning of the year	**$10,298,512,063**	**$11,840,862,896**
Contribution income		
• Employer contributions	$288,640,038	$281,646,702
• Member contributions	126,471,922	120,673,520
– **Net contribution income**	**$415,111,960**	**$402,320,222**
Investment income		
• Investment, dividends and other income	$169,595,619	$160,271,535
• Asset appreciation	1,148,260,790	(1,407,721,214)
• Less investment and administrative fees	(85,908,523)	(59,173,605)
– **Net investment income**	**$1,231,947,886**	**$(1,306,623,284)**
Total income available for benefits	**$1,647,059,846**	**$(904,303,062)**
Less benefit payments		
• Service retirement and disability benefits	$(601,262,166)	$(573,319,962)
• Death benefits	(3,989,157)	(3,360,373)
• Supplemental cost of living allowance	(1,134,334)	(943,290)
• Member refunds	(13,293,111)	(13,713,029)
• Health insurance subsidies	(47,072,346)	(46,711,117)
– **Net benefit payments**	**$(666,751,114)**	**$(638,047,771)**
Change in market value of assets	**$980,308,732**	**$(1,542,350,833)**
Net assets at market value at the end of the year	**$11,278,820,795**	**$10,298,512,063**

Exhibit E: Summary statement of plan assets

Asset Class	Year Ended December 31, 2023	Year Ended December 31, 2022
Cash	$5,606,534	$6,915,492
Securities lending collateral	158,812,517	133,698,608
Accounts receivable		
• Contributions	$26,273,195	$23,161,972
• Investment receivables	24,364,477	21,207,515
• Investments sold	9,403,958	3,240,137
• Futures contracts	8,931,394	40,501
• Foreign exchange contracts	2,713,605	2,476,715
• Others	408,234	226,568
– **Total accounts receivable**	**$72,094,863**	**$50,353,408**
– **Prepaid expenses**	**$833,905**	**$805,022**
Investments		
• Short-term investments	$196,147,412	$220,267,913
• Equities	5,655,920,181	5,009,392,612
• Fixed income investments	1,594,024,175	1,487,334,528
• Real estate	804,702,607	836,238,352
• Capital assets	9,752,086	7,583,582
• Alternative investments and private equity	2,982,726,814	2,725,887,049
– **Total investments at market value**	**$11,243,273,275**	**$10,286,704,036**
Total assets	**$11,480,621,094**	**$10,478,476,565**
Accounts payable		
• Securities lending and investments purchased	$(177,801,151)	$(156,206,293)
• Investment-related payables	(13,922,794)	(12,107,349)
• Futures contracts	0	(1,041,432)
• Foreign exchange contracts	(9,939)	(393)
• Accrued administration expense	(3,083,756)	(2,932,899)
• Members benefits and refunds*	(6,748,067)	(7,622,340)
• Lease liability	(234,592)	(53,798)
– **Total accounts payable**	**$(201,800,299)**	**$(179,964,503)**
Net assets at market value	**$11,278,820,795**	**$10,298,512,063**
Net assets at actuarial value	**$11,571,613,924**	**$11,092,625,485**
Net assets at valuation value	**$10,342,555,618**	**$9,923,019,224**

* Includes retirement payroll deductions payable.

Exhibit F: Summary of reported reserve information

Reserve	As of December 31, 2023	As of December 31, 2022
Used in Development of Valuation Value of Assets		
• Member deposit – basic	$1,540,648,400	$1,483,588,952
• Member cost of living	353,992,208	338,926,926
• Employer advance (before transfer from SRBR to employer advance)	1,835,763,161	1,643,115,584
• Pension reserve-current	1,997,892,947	1,943,302,577
• Pension reserve-prior	7,201,449	6,770,845
• Annuity reserve	1,181,743,775	1,147,595,455
• Cost of living reserve	2,686,573,602	2,564,196,469
• Survivor death benefit	28,410,274	26,376,342
• SRBR transfer to employer advance[1]	4,116,000	7,981,476
• Reserve for interest fluctuations (contingency reserve), if negative	0	0
• County-Safety UAAL advance reserve	694,561,086	748,928,975
• LARPD-General UAAL advance reserve	11,652,716	12,235,622
– **Subtotal**	**$10,342,555,618**[2]	**$9,923,019,224**
Not Used in Development of Valuation Value of Assets		
• 401(h) account	$10,116,636	$8,979,234
• Supplemental retirees benefit reserve (before transfer from SRBR to employer advance)	1,186,387,821	1,168,608,503
• Reserve for interest fluctuations (contingency reserve), if positive	36,669,849	0
• Market stabilization reserve	(292,793,129)	(794,113,422)
• SRBR transfer to employer advance	(4,116,000)[2]	(7,981,476)
– **Subtotal**	**$936,265,177**	**$375,492,839**
Total	**$11,278,820,795**	**$10,298,512,063**

[1] Estimated provided by ACERA.
[2] A breakdown of this amount between different cost groups is provided in Section 4, Exhibit 6.

Exhibit G: Development of the fund through December 31, 2023

Year Ended December 31	Employer Contributions	Member Contributions	Net Investment Return[1]	Benefit Payments	Market Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Market Value
2014	$213,254,775	$79,714,187	$266,028,241	$411,279,675	$6,788,013,006	$6,545,159,225	96.4%
2015	224,607,104	82,948,934	(19,960,005)	434,984,266	6,640,624,773	6,987,026,015	105.2%
2016	241,728,451	85,736,229	454,641,033	457,150,304	6,965,580,182	7,309,485,170	104.9%
2017	247,063,550	89,325,824	1,293,322,206	483,192,206	8,112,099,556	7,803,026,229	96.2%
2018	269,684,809	94,735,673	(371,111,618)	512,821,851	7,592,586,569	8,161,706,068	107.5%
2019	298,526,950	103,117,022	1,342,794,800	547,746,289	8,789,279,051	8,528,590,602	97.0%
2020	309,752,998	106,104,226	1,001,415,117	576,784,042	9,629,767,350	8,986,481,645	93.3%
2021	1,116,575,840	111,091,264	1,585,614,282	602,185,840	11,840,862,896	10,707,915,790	90.4%
2022	281,646,702	120,673,520	(1,306,623,284)	638,047,771	10,298,512,063	11,092,625,485	107.7%
2023	288,640,038	126,471,922	1,231,947,886	666,751,114	11,278,820,795	11,571,613,924	102.6%

[1] On a market basis, net of investment fees and administrative expenses.

Exhibit H: Table of amortization bases

General (Excluding LARPD and ACOE)

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment[1] ($ in '000s)
Combined Bases	December 31, 2011	$885,036	21	$707,480	9	$94,507
Experience Loss	December 31, 2012	165,501	20	131,480	9	17,563
Experience Gain	December 31, 2013	(75,003)	20	(62,591)	10	(7,661)
Experience Gain	December 31, 2014	(156,281)	20	(135,641)	11	(15,363)
Change in Assumptions	December 31, 2014	350,827	20	304,498	11	34,489
Experience Gain	December 31, 2015	(98,619)	20	(88,488)	12	(9,351)
Experience Loss	December 31, 2016	3,655	20	3,367	13	334
Experience Gain	December 31, 2017	(27,249)	20	(25,628)	14	(2,404)
Change in Assumptions	December 31, 2017	260,437	20	244,940	14	22,976
Experience Gain[2]	December 31, 2018	(6,121)	20	(5,864)	15	(522)
Experience Loss	December 31, 2019	74,367	20	72,237	16	6,137
Experience Loss	December 31, 2020	29,771	20	29,214	17	2,376
Change in Assumptions	December 31, 2020	231,791	20	227,452	17	18,500
Experience Gain	December 31, 2021	(103,975)	20	(102,970)	18	(8,045)
Experience Loss	December 31, 2022	25,358	20	25,269	19	1,902
Experience Loss	December 31, 2023	22,462	20	22,462	20	1,633
Change in Assumptions	December 31, 2023	(70,873)	20	(70,873)	20	(5,154)
Plan Change	December 31, 2023	9,665	15	9,665	15	861
Total				**$1,286,009**		**$152,778**

1 Level percentage of payroll.
2 Includes the impact of transferring the allocated UAAL for LARPD Tier 1 members to the LARPD cost group and the allocated UAAL for ACOE Tier 1 members to the ACOE cost group.

General (LARPD)

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment[1] ($ in '000s)
Combined Bases	December 31, 2011	$7,060	21	$6,002	13.5	$579
Experience Loss	December 31, 2012	370	20	312	13.5	30
Experience Gain	December 31, 2013	(534)	20	(466)	13.5	(45)
Experience Gain	December 31, 2014	(1,562)	20	(1,395)	13.5	(135)
Change in Assumptions	December 31, 2014	1,303	20	1,165	13.5	112
Experience Gain[2]	December 31, 2015	(1,506)	20	(1,373)	13.5	(132)
Experience Loss	December 31, 2016	139	20	129	13.5	12
Experience Gain[2]	December 31, 2017	(622)	20	(583)	13.5	(56)
Change in Assumptions	December 31, 2017	1,418	20	1,328	13.5	128
Experience Loss[2]	December 31, 2018	1,058	20	1,001	13.5	96
UAAL for Tier 1 members[3]	December 31, 2018	6,576	20	6,219	13.5	600
Experience Loss[2]	December 31, 2019	980	20	933	13.5	90
Experience Gain[2]	December 31, 2020	(2,024)	20	(1,935)	13.5	(187)
Change in Assumptions	December 31, 2020	1,171	20	1,120	13.5	108
Voluntary UAAL Advance Reserve Contributions[4]	June 30, 2021	(12,611)	16	(11,653)	13.5	(1,080)
Experience Gain[2]	December 31, 2021	(488)	15.5	(468)	13.5	(45)
Experience Gain[2]	December 31, 2022	(862)	14.5	(842)	13.5	(81)

[1] Level percentage of payroll.
[2] The cause of this experience gain/loss is provided in our prior valuation report.
[3] The allocated UAAL for LARPD Tier 1 of $6,167,000 determined as of December 31, 2017 is rolled forward to December 31, 2018 to be amortized starting with the December 31, 2018 valuation.
[4] LARPD made voluntary LARPD General contributions of $12.611 million on around June 29, 2021 to reduce their UAAL and associated UAAL contribution rates. These contributions are tracked under the LARPD – General UAAL Advance Reserve based on the amount of contribution credit used and the interest credited to that reserve in accordance with the Board's Interest Crediting Policy and that balance is $11.653 million. The outstanding balance of this reserve is amortized over the remaining 13.5 years (as of December 31, 2023) as a contribution credit. Moreover, this contribution credit has been adjusted to not exceed the UAAL payment determined before including the contribution credit.

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining[1]	Annual Payment[2] ($ in '000s)
Experience Loss[3]	December 31, 2023	641	13.5	641	13.5	62
Change in Assumptions	December 31, 2023	(616)	13.5	(616)	13.5	(59)
Plan Change	December 31, 2023	30	13.5	30	13.5	3
Total				**$(451)**		**$0**

Notes: When LARPD General Tier 3 was established in 2008, they were classified as a stand-alone group because they were the only employer with the higher 2.5% at 55 benefit (i.e., Section 31676.18), and the cost to upgrade the past service under that formula was only to be paid by LARPD. (reference: Segal's letter dated October 7, 2008).

The initial UAAL rate for that group was based on an allocation of assets needed to maintain the total employer rate from the December 31, 2007 valuation before any benefit improvements for General Tier 3. The UAAL rate for LARPD General Tier 3 was then increased to reflect the benefit improvement.

When LARPD General Tier 4 was later established in 2013, that tier was combined with LARPD General Tier 3 for purpose of determining their UAAL rate only (as normal cost for LARPD General Tier 4 has continued to be developed on a pooled basis with other General employers offering General Tier 4 benefits), in order to continue with the open-group level percentage of payroll approach for paying off the UAAL amount for General Tier 3 (that is now closed to new entrants because of CalPEPRA).

Furthermore, the Board adopted the declining employer payroll policy in 2018 and determined that the policy applies to LARPD Tier 1. As a result, the UAAL (and associated assets) of LARPD Tier 1 was combined with the UAAL for LARPD Tiers 3 and 4.

1 The LARPD General cost sharing group has a surplus of $451,000 on a VVA basis. In order to calculate the proper offset available to LARPD from the LARPD General UAAL Advance Reserve, we have amortized the new LARPD experience loss, assumption change, and plan change layers over 13.5 years so that they will have the same amortization period as the LARPD General UAAL Advance Reserve (13.5 years remaining as of December 31, 2023).

2 Level percentage of payroll.

3 The loss is primarily due to lower than expected return on investments (after smoothing) and lower than expected mortality for continuing retirees as a result of no actual deaths. There is an additional loss due to investment experience related to the voluntary UAAL Advance Reserve contributions of $346,000 that we have used in updating the balance of $11.653 million.

Safety

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment[1] ($ in '000s)
Combined Bases	December 31, 2011	$598,698	21	$478,589	9	$63,931
Experience Loss	December 31, 2012	63,130	20	50,153	9	6,700
Experience Gain	December 31, 2013	(9,350)	20	(7,805)	10	(955)
Experience Gain	December 31, 2014	(43,238)	20	(37,528)	11	(4,251)
Change in Assumptions	December 31, 2014	107,552	20	93,348	11	10,573
Experience Gain	December 31, 2015	(12,850)	20	(11,530)	12	(1,218)
Experience Loss	December 31, 2016	19,183	20	17,676	13	1,755
Experience Loss	December 31, 2017	6,354	20	5,978	14	561
Change in Assumptions	December 31, 2017	134,184	20	126,199	14	11,838
Experience Loss	December 31, 2018	9,377	20	8,982	15	800
Experience Loss	December 31, 2019	24,143	20	23,451	16	1,992
Experience Loss	December 31, 2020	6,202	20	6,086	17	495
Change in Assumptions	December 31, 2020	88,760	20	87,099	17	7,084
Voluntary UAAL Advance Reserve Contributions[2]	June 30, 2021	(800,000)	13	(694,561)	10.5	(81,688)
Experience Gain	December 31, 2021	(35,445)	20	(35,103)	18	(2,743)
Experience Loss	December 31, 2022	16,969	20	16,910	19	1,273
Experience Loss[3]	December 31, 2023	13,268	20	13,268	20	965
Change in Assumptions	December 31, 2023	(25,970)	20	(25,970)	20	(1,888)
Plan Change	December 31, 2023	2,121	15	2,121	15	189
Total				**$117,363**		**$15,413**

1 Level percentage of payroll.

2 The County made voluntary County Safety contributions of $800 million on around June 29, 2021 to reduce their UAAL and associated UAAL contribution rates. These contributions are tracked under the County – Safety UAAL Advance Reserve based on the amount of contribution credit used and the interest credited to that reserve in accordance with the Board's Interest Crediting Policy and that balance is $694.561 million. The outstanding balance of this reserve is amortized over the remaining 10.5 years (as of December 31, 2023) as a contribution credit.

3 There is an additional loss due to investment experience related to the voluntary UAAL Advance Reserve contributions of $20.775 million that we have used in updating the balance of $694.561 million.

Total (Excluding ACOE)

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment[1] ($ in '000s)
Combined Bases	December 31, 2011	$1,483,734	21	$1,186,069	9	$158,438
Experience Loss	December 31, 2012	228,631	20	181,633	9	24,263
Experience Gain	December 31, 2013	(84,353)	20	(70,396)	10	(8,616)
Experience Gain	December 31, 2014	(199,519)	20	(173,169)	11	(19,614)
Change in Assumptions	December 31, 2014	458,379	20	397,846	11	45,062
Experience Gain	December 31, 2015	(111,469)	20	(100,018)	12	(10,569)
Experience Loss	December 31, 2016	22,838	20	21,043	13	2,089
Experience Gain	December 31, 2017	(20,895)	20	(19,650)	14	(1,843)
Change in Assumptions	December 31, 2017	394,621	20	371,139	14	34,814
Experience Gain	December 31, 2018	10,951	20	3,118	15	278
Experience Loss	December 31, 2019	99,599	20	95,688	16	8,129
Experience Loss	December 31, 2020	34,055	20	35,300	17	2,871
Change in Assumptions	December 31, 2020	321,740	20	314,551	17	25,584
Voluntary Contributions[2]	June 30, 2021	(800,000)	13	(694,561)	10.5	(81,688)
Experience Gain	December 31, 2021	(139,420)	20	(138,073)	18	(10,788)
Experience Loss	December 31, 2022	42,327	20	42,179	19	3,175
Voluntary Contributions[3]	June 30, 2021	(12,611)	16	(11,653)	13.5	(1,080)
LARPD – other bases	Varies[4]	Varies	Varies	11,202	13.5	1,080
Experience Loss	December 31, 2023	35,730[5]	20	35,730	20	2,598
Change in Assumptions	December 31, 2023	(96,843)	20	(96,843)	20	(7,042)
Plan Change	December 31, 2023	11,786	15	11,786	15	1,050
Total				**$1,402,921**		**$168,191**

1 Level percentage of payroll.
2 Voluntary County Safety UAAL Advance Reserve contributions.
3 Voluntary LARPD General UAAL Advance Reserve contributions.
4 This base includes all LARPD UAAL amortization bases combined through the December 31, 2023 valuation except for the Voluntary LARPD General UAAL Advance Reserve Contributions base.
5 The experience loss for the total plan of $57,591,000 shown in *Section 2, Subsection E* is different from this amount because the experience loss for the total plan also includes experience gains/losses from LARPD and ACOE as well as experience gains/losses from the Voluntary UAAL Advance Reserves.

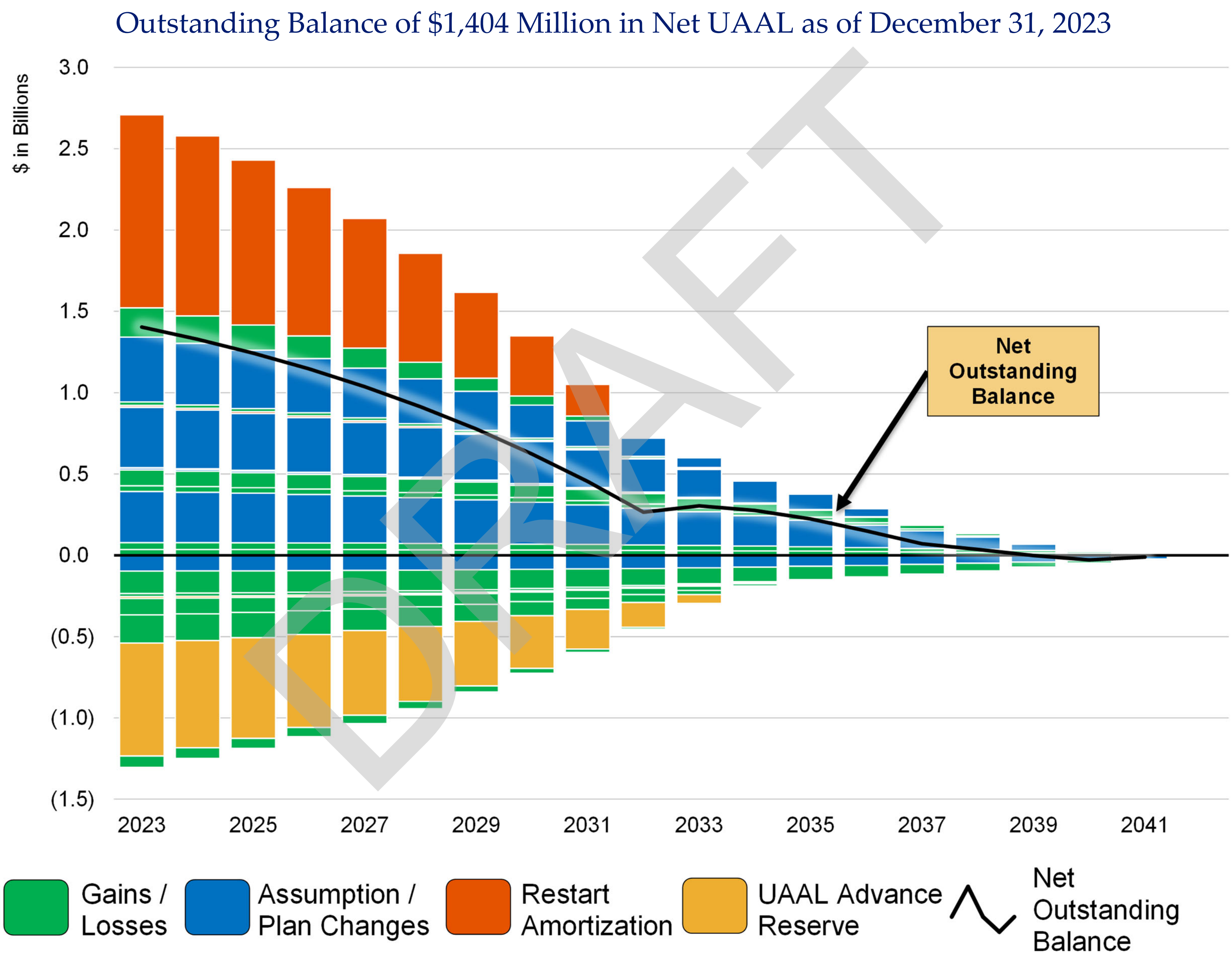
General (ACOE)

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment[1] ($ in '000s)
UAAL for Tier 1 members	December 31, 2017	$1,357	20	$608	14	$71
Experience Loss	December 31, 2018	61	20	51	15	6
Experience Loss	December 31, 2019	110	20	97	16	10
Experience Loss	December 31, 2020	106	20	98	17	10
Change in Assumptions	December 31, 2020	18	20	15	17	2
Experience Loss	December 31, 2021	13	20	13	18	1
Experience Loss	December 31, 2022	108	20	105	19	10
Experience Loss	December 31, 2023	100	20	100	20	10
Change in Assumptions	December 31, 2023	(5)	20	(5)	20	0
Subtotal				**$1,082**		**$120**
Credit for Expected UAAL Contribution				108[2]		
Total				**$1,190**		

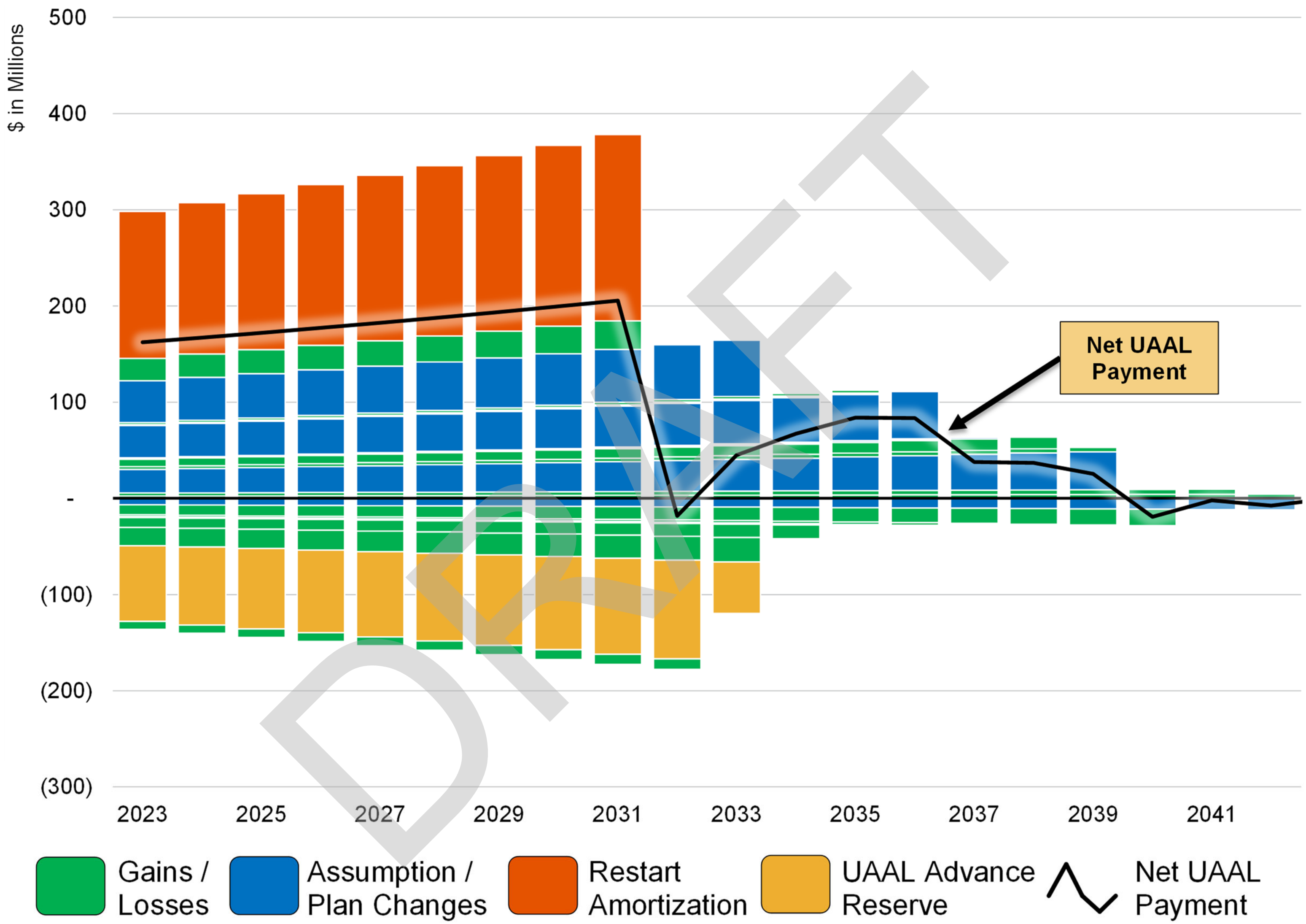
Note: The equivalent amortization period for the entire Plan is about 10 years.

[1] Level dollar, and reflects timing of payment (i.e., next scheduled on April 1, 2025).
[2] $110,000 (as determined in the December 31, 2022 valuation to be payable April 1, 2024), discounted at 7.00% to December 31, 2023.

Exhibit I: Projection of UAAL balances and payments



Annual Payments Required to Amortize $1,404 Million in Net UAAL as of December 31, 2023



Note: As UAAL contributions would be expected to be non-level starting with the 2032 valuation, Segal would bring back some proposals to levelize these amounts for the Board to consider.

Section 4: Actuarial Valuation Basis

Exhibit 1: Actuarial assumptions, methods and models

Rationale for assumptions

The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the December 1, 2019 through November 30, 2022 Actuarial Experience Study report adopted by the Board on December 21, 2023. Unless otherwise noted, all actuarial assumptions and methods shown below apply to all tiers. These assumptions were adopted by the Board.

Net investment return

7.00%, net of administrative and investment expenses.

Based on the Actuarial Experience Study referenced above, expected administrative and investment expenses represent about 0.30% of the Actuarial Value of Assets.

Employee contribution crediting rate

7.00%, compounded semi-annually.

Consumer price index (CPI or inflation)

Increase of 2.50% per year.

Retiree cost of living increases

The actual COLA granted by ACERA on April 1, 2024 has been reflected in the December 31, 2023 valuation for nonactive members.

General Tier 1, General Tier 3, and Safety Tier 1

For tiers with a 3.00% maximum COLA, retiree COLA increases of 2.75% per year.

For members with a sufficient COLA bank, withdrawals from the bank can be made to increase the retiree COLA up to 3% per year.

General Tier 2, General Tier 4, Safety Tier 2, Safety Tier 2C, Safety Tier 2D, and Safety Tier 4

For tiers with a 2.00% maximum COLA, retiree COLA increases of 2.00% per year.

Payroll growth

Inflation of 2.50% per year plus real "across the board" salary increases of 0.50% per year, used to amortize the UAAL as a level percentage of payroll.

Increase in Internal Revenue Code Section 401(a)(17) compensation limit

Increase of 2.50% per year from the valuation date.

Increase in California Government Code Section 7522.10 compensation limit

Increase of 2.50% per year from the valuation date.

Salary increases

The annual rate of compensation increase includes:

- Inflation at 2.50%, plus
- "Across-the-board" real salary increases of 0.50% per year, plus
- The following merit and promotion increases:

Years of Service	General	Safety
Less than 1	5.00%	8.40%
1 – 2	5.00%	8.40%
2 – 3	4.40%	8.40%
3 – 4	3.00%	5.40%
4 – 5	2.10%	4.00%
5 – 6	1.60%	2.50%
6 – 7	1.50%	1.80%
7 – 8	1.50%	1.60%
8 – 9	1.20%	1.20%
9 – 10	1.00%	1.20%
10 – 11	0.85%	1.00%
11 and over	0.45%	1.00%

Additional cashout assumptions

Additional pay elements are expected to be received during a member's final average earnings period. The percentages, added to the final average salary, used in this valuation are:

	Service Retirement	Disability Retirement
General Tier 1	5.0%	4.0%
General Tier 2	2.7%	1.0%
General Tier 3	5.0%	4.0%
General Tier 4	N/A	N/A
Safety Tier 1	6.0%	5.0%
Safety Tier 2	2.3%	2.2%
Safety Tier 2C	2.3%	2.2%
Safety Tier 2D	2.3%	2.2%
Safety Tier 4	N/A	N/A

Post-retirement mortality rates

The Pub-2010 mortality tables and adjustments as shown below reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Healthy

- **General members**: Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2021.
- **Safety members**: Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), with rates increased by 5% for males and unadjusted for females, projected generationally with the two-dimensional mortality improvement scale MP-2021.

Disabled

- **General members**: Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and decreased by 10% for females, projected generationally with the two-dimensional mortality improvement scale MP-2021.
- **Safety members**: Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates increased by 5% for males and unadjusted for females, projected generationally with the two-dimensional mortality improvement scale MP-2021.

Beneficiaries

- **Beneficiaries not currently in pay status**: Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2021.
- **Beneficiaries currently in pay status**: Pub-2010 General Contingent Survivor Amount-Weighted Above-Median Mortality Tables (separate tables for males and females) with rates increased by 5% for males and unadjusted for females, projected generationally with the two-dimensional mortality improvement scale MP-2021.

Pre-retirement mortality rates

- **General members:** Pub-2010 General Employee Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2021.
- **Safety members:** Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2021.

Age	General Male	General Female	Safety Male	Safety Female
20	0.04%	0.01%	0.04%	0.01%
25	0.02%	0.01%	0.03%	0.02%
30	0.03%	0.01%	0.04%	0.02%
35	0.04%	0.02%	0.04%	0.03%
40	0.06%	0.03%	0.05%	0.04%
45	0.09%	0.05%	0.07%	0.06%
50	0.13%	0.08%	0.10%	0.08%
55	0.19%	0.11%	0.15%	0.11%
60	0.28%	0.17%	0.23%	0.14%
65	0.41%	0.27%	0.35%	0.20%

Note that generational projections beyond the base year (2010) are not reflected in the above mortality rates.

All pre-retirement deaths are assumed to be non-service connected.

Mortality rates for member contributions

- **General members**: Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2021, weighted 30% male and 70% female.
- **Safety members**: Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), increased by 5% for males, projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2021, weighted 75% male and 25% female.

Optional Forms of Benefit

Service Retirement and All Beneficiaries

- **General members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2021, weighted 30% male and 70% female**.**
- **General beneficiaries:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2021, weighted 70% male and 30% female**.**
- **Safety members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), with rates increased by 5% for males and unadjusted for females, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2021, weighted 75% male and 25% female.
- **Safety beneficiaries:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2021, weighted 25% male and 75% female**.**

Disability Retirement

- **General members**: Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and decreased by 10% for females, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2021, weighted 30% male and 70% female.
- **Safety members**: Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates increased by 5% for males and unadjusted for females, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2021, weighted 75% male and 25% female.

Disability incidence rates

Age	General	Safety
20	0.00%	0.00%
25	0.01%	0.03%
30	0.02%	0.38%
35	0.05%	0.96%
40	0.08%	1.50%
45	0.13%	1.70%
50	0.21%	2.33%
55	0.31%	3.62%
60	0.35%	4.44%
65	0.44%	0.00%
70	0.62%	0.00%

70% of General disabilities are assumed to be service connected disabilities. The other 30% are assumed to be non-service connected disabilities.

100% of Safety disabilities are assumed to be service connected disabilities.

Termination rates

Years of Service	General	Safety
Less than 1	12.25%	5.20%
1 – 2	9.25%	4.20%
2 – 3	8.00%	4.20%
3 – 4	6.25%	4.00%
4 – 5	6.25%	4.00%
5 – 6	6.25%	4.00%
6 – 7	5.75%	4.00%
7 – 8	5.00%	2.40%
8 – 12	4.00%	2.00%
12 – 15	3.25%	2.00%
15 – 16	3.25%	1.50%
16 – 17	3.00%	1.40%
17 – 18	3.00%	1.30%
18 – 19	3.00%	1.20%
19 – 20	2.75%	1.10%
20 or more	2.75%	1.00%

For members with less than five years of service, 55% of all terminated members are assumed to choose a refund of contributions and the other 45% are assumed to choose a deferred vested benefit.

For members with five or more years of service, 25% of all terminated members are assumed to choose a refund of contributions and the other 75% are assumed to choose a deferred vested benefit.

No termination is assumed after a member is eligible for retirement.

Retirement rates

General

Age	Tier 1	Tier 2 Less than 30 Years of Service	Tier 2 30 or More Years of Service	Tier 3	Tier 4 Less than 30 Years of Service	Tier 4 30 or More Years of Service
50	2.0%	1.5%	3.0%	10.0%	0.0%	0.0%
51	4.0%	1.5%	3.0%	10.0%	0.0%	0.0%
52	4.0%	2.0%	3.0%	10.0%	3.0%	3.0%
53	5.0%	2.0%	3.0%	10.0%	2.0%	2.0%
54	5.0%	2.5%	3.0%	10.0%	2.0%	2.0%
55	6.0%	3.0%	5.0%	12.0%	2.0%	5.0%
56	10.0%	3.5%	5.0%	14.0%	2.0%	2.5%
57	14.0%	4.0%	5.0%	16.0%	2.0%	3.5%
58	14.0%	4.5%	7.0%	18.0%	4.0%	4.0%
59	14.0%	5.0%	10.0%	20.0%	4.0%	4.5%
60	25.0%	7.5%	12.0%	20.0%	4.0%	5.0%
61	25.0%	9.5%	12.0%	20.0%	4.0%	5.0%
62	30.0%	15.0%	23.0%	30.0%	12.0%	18.0%
63	26.0%	15.0%	25.0%	25.0%	12.0%	15.0%
64	26.0%	17.0%	28.0%	25.0%	12.0%	17.0%
65	26.0%	27.0%	35.0%	50.0%	23.0%	25.0%
66	26.0%	27.0%	35.0%	50.0%	23.0%	30.0%
67	26.0%	27.0%	35.0%	50.0%	23.0%	30.0%
68	26.0%	30.0%	35.0%	50.0%	23.0%	30.0%
69	31.0%	30.0%	35.0%	50.0%	20.0%	30.0%
70	36.0%	30.0%	30.0%	60.0%	20.0%	25.0%
71	36.0%	30.0%	30.0%	60.0%	20.0%	25.0%
72	36.0%	30.0%	30.0%	60.0%	20.0%	25.0%
73	36.0%	30.0%	30.0%	60.0%	20.0%	25.0%
74	36.0%	30.0%	30.0%	60.0%	20.0%	25.0%
75 and over	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

The retirement rates only apply to members that are eligible to retire at the age shown.

Safety

Age	Tier 1	Tier 2, 2D Less than 30 Years of Service	Tier 2, 2D 30 or More Years of Service	Tier 2C	Tier 4 Less than 30 Years of Service	Tier 4 30 or More Years of Service
45	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%
46	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%
47	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%
48	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%
49	0.0%	10.0%	18.0%	0.0%	0.0%	0.0%
50	35.0%	14.0%	18.0%	4.0%	4.0%	4.0%
51	30.0%	10.0%	24.0%	2.0%	2.0%	2.0%
52	25.0%	10.0%	24.0%	2.0%	2.0%	2.0%
53	35.0%	10.0%	25.0%	3.0%	3.0%	3.0%
54	45.0%	11.0%	27.0%	6.0%	6.0%	6.0%
55	45.0%	11.0%	29.0%	10.0%	10.0%	10.0%
56	45.0%	12.0%	32.0%	12.0%	12.0%	12.0%
57	45.0%	12.0%	32.0%	20.0%	20.0%	20.0%
58	45.0%	14.0%	37.0%	10.0%	10.0%	10.0%
59	45.0%	14.0%	37.0%	15.0%	15.0%	15.0%
60	45.0%	30.0%	37.0%	40.0%	40.0%	60.0%
61	45.0%	30.0%	37.0%	40.0%	40.0%	60.0%
62	45.0%	30.0%	37.0%	40.0%	40.0%	60.0%
63	45.0%	30.0%	37.0%	40.0%	40.0%	60.0%
64	45.0%	30.0%	37.0%	40.0%	40.0%	60.0%
65 and over	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

The retirement rates only apply to members that are eligible to retire at the age shown.

For Safety Tiers 1 and 2C, the retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Retirement age and benefit for deferred vested members

General Non-Reciprocal Retirement Age	62
General Reciprocal Retirement Age	61
Safety Non-Reciprocal Retirement Age	56
Safety Reciprocal Retirement Age	55

Current and future deferred vested non-reciprocal members who terminate with less than five years of service and are not vested are assumed to retire at age 70 for both General and Safety if they decide to leave their contributions on deposit.

20% of future General and 45% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocal members, 3.45% and 4.00% compensation increases are assumed per annum for General and Safety members, respectively.

Future benefit accruals

1.0 year of service per year of employment, plus 0.003 years of additional service for General members and 0.006 years of additional service for Safety members, to anticipate conversion of unused sick leave for each year of employment.

Unknown data for members

Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male. If not provided, salary is assumed to be equal to the average salary of the membership group.

Inclusion of deferred vested members

All deferred vested members to the extent they are reported by ACERA for this particular valuation are included.

Data adjustment

Data as of November 30 has been adjusted to December 31 by adding one month of age and, for active members, one month of service.

Form of payment

All active and inactive vested members are assumed to elect the unmodified option at retirement.

Percent married

For all active and inactive members, 70% of male members and 50% of female members are assumed to be married at pre-retirement death or retirement.

Age and gender of spouse

For all active and inactive members, male members are assumed to have a female spouse who is 3 years younger than the member and female members are assumed to have a male spouse who is 2 years older than the member.

Pre-retirement death optional form election

All active members with five or more years of service are assumed to elect the optional settlement 2 allowance that leaves a 100% continuance to their beneficiary upon the member's non-service connected pre-retirement death.

Beneficiary Type	Percentage	Age Difference with Active Member
Child	50%	30 years younger
Sibling	25%	Same age
Parent	25%	30 years older

Note: We made the simplifying assumption that the beneficiary is of the opposite sex of the member.

Actuarial cost method

Entry Age Actuarial Cost Method. Entry Age is the age on the valuation date minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation, as if the current benefit formula for each individual has always been in effect.

Actuarial value of assets

Market value of assets (MVA) less unrecognized returns in each of the last 10 six-month interest crediting periods. Unrecognized returns are equal to the difference between the actual market return and the expected return on the market value, and are recognized semi-annually over a five-year period. The actuarial value of assets (AVA) is limited by a 40% corridor; the AVA cannot be less than 60% of MVA, nor greater than 140% of MVA.

Valuation value of assets

The Actuarial Value of Assets reduced by the value of the non-valuation reserves.

Amortization policy

Prior to January 1, 2012, the total UAAL was amortized on a 30-year decreasing period, with 21 years remaining as of December 31, 2011 (and 9 years remaining as of December 31, 2023).

On or after January 1, 2012, any new UAAL resulting from plan amendments are amortized over separate decreasing 15-year periods; early retirement incentive programs (ERIPs) are amortized over separate decreasing 5-year periods; assumption and method changes are amortized over separate decreasing 20-year periods; and experience gains/losses are also amortized over separate decreasing 20-year periods.

ACOE's UAAL amortization under the declining employer payroll policy is level dollar.

The Voluntary County Safety UAAL Contributions are amortized over a 13-year period effective July 1, 2021. The Voluntary LARPD General UAAL Contributions are amortized over a 16-year period effective July 1, 2021. Effective December 31, 2023, the existing LARPD General UAAL layers are amortized over 13.5 years.*

If an overfunding exists (i.e., the total of all UAAL becomes negative so that there is a surplus) and the amount of the surplus is in excess of 20% of the AAL, such surplus that is in excess of 20% of the AAL and any subsequent such surplus will be amortized over an "open" amortization period of 30 years. Any prior UAAL amortization layers will be considered fully amortized, and any subsequent UAAL will be amortized over 20 years as the first of a new series of amortization layers.

* The LARPD General cost sharing group has a surplus of $451,000 on a VVA basis. In order to calculate the proper offset available to LARPD from the LARPD General UAAL Advance Reserve, we have amortized the new LARPD experience loss, assumption change, and plan change layers over 13.5 years so that they will have the same amortization period as the LARPD General UAAL Advance Reserve (13.5 years remaining as of December 31, 2023).

Employer Contributions

The recommended employer contributions consist of two components (normal cost and a contribution to the UAAL) and are provided in *Section 2, Subsection F*. These rates reflect the POB credits for the County, AHS, Court, and First 5; the retiree health benefit subsidy credits for the County; and the UAAL Advance Reserve credits as discussed below.

Normal cost

The annual contribution rate that, if paid annually from a member's first year of membership through the year of retirement, would accumulate to the amount necessary to fully fund the member's retirement-related benefits. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution rate is expressed as a level percentage of the member's compensation.

Contribution to the UAAL

The annual contribution rate that, if paid annually over the UAAL amortization period, would accumulate to the amount necessary to fully fund the UAAL. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution (or rate credit in the case of a negative UAAL) is calculated to remain as a level percentage of future active member payroll (including payroll for new members as they enter the Association) assuming a constant number of active members. In order to remain as a level percentage of payroll, amortization payments (credits) are scheduled to increase at the annual rate of 3.00% (i.e., 2.50% inflation plus 0.50% across-the-board salary increase).

The amortization policy is described above.

Alameda County previously issued pension obligation bonds (POB) and the net bond proceeds were contributed to ACERA. When the POBs were issued, AHS, Court and First 5 were part of the County and, consequently, they share in the proceeds. The net bond proceeds contributed to ACERA allow the Association to provide a "Pension Obligation Bond Credit" to these employers, thereby reducing their employer contribution rate. As of December 31, 2023, the outstanding balances of the POBs were $417.3 million for the General employers (County, AHS, Court, and First 5) and $78.1 million for the Safety employers (County).

For several years, the Board of Retirement has approved transfers from the SRBR to the Employer Advance Reserve to reimburse the County for their payment of the implicit retiree health benefit subsidy. The amortization credits resulting from these transfers have served to reduce the County's employer contribution rates.

LARPD General and County Safety made additional voluntary contributions to the UAAL Advance Reserve to reduce their UAAL as of June 30, 2021. The amortization credits from the UAAL Advance Reserve serve to reduce the LARPD General and County Safety employer contribution rates.

Member contributions

The member contribution rates for all members are provided in *Section 4, Exhibit 3*.

Non-Tier 4 members

Articles 6 and 6.8 of the 1937 Act define the methodology to be used in the calculation of member basic contribution rates for non-Tier 4 General and Safety members, respectively. The basic contribution rate is determined so that the accumulation of a member's basic contributions made in a given year until a certain age will be sufficient to fund an annuity at that age that is equal to 1/100 of Final Average Salary for General Tier 1, General Tier 3, and all Safety non-Tier 4 members and 1/120 of Final Average Salary for General Tier 2 members. That age is 60 for General Tier 1 and Tier 2, 55 for General Tier 3, and 50 for all Safety non-Tier 4 members. It is assumed that contributions are made annually at the same rate, starting at entry age. In addition to the basic contributions, members pay one-half of the total normal cost necessary to fund cost-of-living benefits. As instructed by ACERA, we have also included a 3% cost-sharing contribution that we understand will be paid by Safety Tier 1 and Tier 2 members. For Safety Tier 2C members, there are no cost-sharing contributions. For Safety Tier 2D members, the cost-sharing contribution rate is 5% of salary for the first 5 years of vesting service and 3% of salary for each subsequent year of vesting service. (The 3% cost-sharing contribution for Safety Tiers 1, 2, and 2D (after 5 years of service) will continue even after the member attains 30 years of service.)

Accumulation includes semi-annual crediting of interest at the assumed investment earnings rate. Following the procedure established by the Board, basic member rates have been adjusted to anticipate conversion of additional cashout at retirement.

Tier 4 members

Pursuant to Section 7522.30(a) of the Government Code, Tier 4 members are required to contribute at least 50% of the Normal Cost rate.

When previously calculating member rates, there were certain additional requirements that had to be met such as requiring the employee rates be rounded to the nearest one quarter of one percent and requiring the new employees to pay the contribution rate of "similarly situated employees", if it is greater. (reference: Section 7522.30(c)). Furthermore, Section 7522.30(d) indicated that "once established, the employee contribution rate described in subdivision (c) shall not be adjusted on account of a change to the normal cost rate unless the normal cost rate increases or decreases by more than 1 percent of payroll above or below the normal cost rate in effect at the time the employee contribution rate is first established or, if later, the normal cost rate in effect at the time of the last adjustment to the employee contribution rate under this section."

However, as we referenced in our letter dated February 26, 2014, Assembly Bill 1380 (AB 1380) was approved by the Governor on September 6, 2013. In particular, Section 31620.5(a) was added to the Government Code to provide the Board with the discretion to not apply the rounding previously required under Section 7522.30(c). We understand that our recommendation in that letter to no longer apply the rounding rule effective with the December 31, 2013 valuation was adopted by the Board, and the results in this valuation reflect that action taken by the Board.

Section 31620.5(b) of AB 1380 also stipulates that the "one percent rule" under Section 7522.30(d) "shall not apply to the contribution rates of members of retirement systems established pursuant to this chapter."

Therefore, in preparing the Normal Cost rates in this report, we have assumed that exactly 50% of the Normal Cost would be paid by the Tier 4 members.

Internal Revenue Code Section 415

Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification; active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of $160,000 indexed for inflation. That limit is $265,000 for 2023 and $275,000 for 2024. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions.

Non-Tier 4 benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m).

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

Contribution rates determined in this valuation have not been reduced for the Section 415 limitations. However, it is anticipated that PEPRA members will not be limited in the future due to the PEPRA compensation limit applied in the determination of their benefit. Actual limitations will result in gains as they occur.

Models

Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Changes in actuarial assumptions and methods

Based on the Actuarial Experience Study, the following assumptions were changed. Previously, these assumptions and methods were as follows:

Consumer price index

Increase of 2.75% per year.

Payroll growth

Inflation of 2.75% per year plus real “across the board” salary increases of 0.50% per year, used to amortize the UAAL as a level percentage of payroll.

Increase in Internal Revenue Code Section 401(a)(17) compensation limit

Increase of 2.75% per year from the valuation date.

Increase in California Government Code Section 7522.10 compensation limit

Increase of 2.75% per year from the valuation date.

Salary increases

The annual rate of compensation increase includes:

- Inflation at 2.75%, plus
- "Across-the-board" real salary increases of 0.50% per year, plus
- The following merit and promotion increases:

Years of Service	General	Safety
Less than 1	5.10%	8.00%
1 – 2	5.10%	8.00%
2 – 3	4.50%	8.00%
3 – 4	2.90%	4.90%
4 – 5	2.10%	3.70%
5 – 6	1.60%	2.10%
6 – 7	1.50%	1.30%
7 – 8	1.50%	1.20%
8 – 9	1.00%	0.90%
9 – 10	0.90%	0.90%
10 – 11	0.70%	0.80%
11 and over	0.40%	0.80%

Additional cashout assumptions

Additional pay elements are expected to be received during a member's final average earnings period. The percentages, added to the final average salary, used in this valuation are:

	Service Retirement	Disability Retirement
General Tier 1	7.5%	6.5%
General Tier 2	3.0%	1.4%
General Tier 3	7.5%	6.5%
General Tier 4	N/A	N/A
Safety Tier 1	7.5%	6.4%
Safety Tier 2	2.5%	1.9%
Safety Tier 2C	2.5%	1.9%
Safety Tier 2D	2.5%	1.9%
Safety Tier 4	N/A	N/A

Post-retirement mortality rates

The Pub-2010 mortality tables and adjustments as shown below reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Healthy

- **General members**: Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.
- **Safety members**: Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.

Disabled

- **General members**: Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates decreased 10% for females, projected generationally with the two-dimensional mortality improvement scale MP-2019.
- **Safety members**: Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2019.

Beneficiaries

- **All beneficiaries**: Pub-2010 General Contingent Survivor Amount-Weighted Above-Median Mortality Tables (separate tables for males and females) with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2019.

Pre-retirement mortality rates

- **General members:** Pub-2010 General Employee Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.
- **Safety members:** Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.

Age	General Male	General Female	Safety Male	Safety Female
20	0.04%	0.01%	0.04%	0.02%
25	0.02%	0.01%	0.03%	0.02%
30	0.04%	0.01%	0.04%	0.02%
35	0.04%	0.02%	0.04%	0.03%
40	0.06%	0.03%	0.05%	0.04%
45	0.09%	0.05%	0.07%	0.06%
50	0.13%	0.08%	0.10%	0.08%
55	0.19%	0.11%	0.15%	0.11%
60	0.28%	0.17%	0.23%	0.15%
65	0.41%	0.27%	0.35%	0.20%

Note that generational projections beyond the base year (2010) are not reflected in the above mortality rates.

All pre-retirement deaths are assumed to be non-service connected.

Mortality rates for member contributions

- **General members**: Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 30% male and 70% female.
- **Safety members**: Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 75% male and 25% female.

Optional Forms of Benefit

Service Retirement and All Beneficiaries

- **General members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 30% male and 70% female.
- **General beneficiaries:** Pub-2010 General Contingent Survivor Amount-Weighted Above-Median Mortality Tables (separate tables for males and females) with rates increased by 5% for males, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 70% male and 30% female.
- **Safety members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Tables (separate tables for males and females), projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 75% male and 25% female.
- **Safety beneficiaries:** Pub-2010 General Contingent Survivor Amount-Weighted Above-Median Mortality Tables (separate tables for males and females) with rates increased by 5% for males, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 25% male and 75% female.

Disability Retirement

- **General members:** Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates decreased 10% for females, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 30% male and 70% female.
- **Safety members:** Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates increased by 5% for males, projected 25 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 75% male and 25% female.

Disability incidence rates

Age	General	Safety
20	0.00%	0.00%
25	0.01%	0.03%
30	0.03%	0.26%
35	0.07%	0.64%
40	0.09%	1.22%
45	0.16%	1.50%
50	0.26%	2.10%
55	0.33%	2.65%
60	0.38%	3.80%

65% of General disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected disabilities.

100% of Safety disabilities are assumed to be service connected disabilities.

Termination rates

Years of Service	General	Safety
Less than 1	12.00%	4.00%
1 – 2	9.00%	4.00%
2 – 3	8.00%	4.00%
3 – 4	6.00%	3.50%
4 – 5	6.00%	3.00%
5 – 6	6.00%	2.00%
6 – 7	5.25%	1.80%
7 – 8	4.25%	1.70%
8 – 9	3.75%	1.60%
9 – 16	3.50%	1.50%
16 – 17	3.40%	1.40%
17 – 18	3.30%	1.30%
18 – 19	3.20%	1.20%
19 – 20	3.10%	1.10%
20 or more	3.00%	1.00%

For members with less than five years of service, 55% of all terminated members are assumed to choose a refund of contributions and the other 45% are assumed to choose a deferred vested benefit.

For members with five or more years of service, 30% of all terminated members are assumed to choose a refund of contributions and the other 70% are assumed to choose a deferred vested benefit.

No termination is assumed after a member is eligible for retirement.

Retirement rates

General

Age	Tier 1	Tier 2 Less than 30 Years of Service	Tier 2 Over 30 Years of Service	Tier 3	Tier 4
49	0.0%	0.0%	0.0%	0.0%	0.0%
50	2.0%	2.0%	4.0%	10.0%	0.0%
51	4.0%	2.0%	4.0%	10.0%	0.0%
52	4.0%	2.0%	4.0%	10.0%	4.0%
53	5.0%	2.0%	4.0%	10.0%	2.0%
54	5.0%	2.0%	4.0%	10.0%	2.0%
55	6.0%	2.0%	4.0%	12.0%	5.0%
56	10.0%	2.5%	4.5%	14.0%	2.5%
57	12.0%	4.0%	5.0%	16.0%	3.5%
58	12.0%	4.0%	5.0%	18.0%	3.5%
59	14.0%	4.5%	8.0%	20.0%	4.5%
60	20.0%	8.0%	8.5%	20.0%	5.0%
61	20.0%	9.0%	13.5%	20.0%	5.0%
62	35.0%	15.0%	22.5%	30.0%	18.0%
63	30.0%	15.0%	22.5%	25.0%	15.0%
64	30.0%	18.0%	27.0%	25.0%	17.0%
65	30.0%	25.0%	27.5%	50.0%	25.0%
66	30.0%	30.0%	33.0%	50.0%	30.0%
67	30.0%	30.0%	33.0%	50.0%	30.0%
68	30.0%	30.0%	33.0%	50.0%	30.0%
69	35.0%	35.0%	38.5%	50.0%	35.0%
70	40.0%	40.0%	40.0%	65.0%	25.0%
71	40.0%	40.0%	40.0%	65.0%	25.0%
72	40.0%	40.0%	40.0%	65.0%	25.0%
73	40.0%	40.0%	40.0%	65.0%	25.0%
74	40.0%	40.0%	40.0%	65.0%	25.0%
75 and over	100.0%	100.0%	100.0%	100.0%	100.0%

The retirement rates only apply to members that are eligible to retire at the age shown.

Safety

Age	Tier 1	Tier 2, 2D Less than 30 Years of Service	Tier 2, 2D Over 30 Years of Service	Tier 2C	Tier 4
49	0.0%	12.0%	18.0%	0.0%	0.0%
50	35.0%	12.0%	18.0%	4.0%	4.0%
51	30.0%	10.0%	24.0%	2.0%	2.0%
52	25.0%	10.0%	24.0%	2.0%	2.0%
53	35.0%	10.0%	25.0%	3.0%	3.0%
54	45.0%	12.0%	27.0%	6.0%	6.0%
55	45.0%	12.0%	29.0%	10.0%	10.0%
56	45.0%	14.0%	32.0%	12.0%	12.0%
57	45.0%	16.0%	32.0%	20.0%	20.0%
58	45.0%	18.0%	30.0%	10.0%	10.0%
59	45.0%	18.0%	30.0%	15.0%	15.0%
60	45.0%	25.0%	30.0%	60.0%	60.0%
61	45.0%	25.0%	30.0%	60.0%	60.0%
62	45.0%	25.0%	30.0%	60.0%	60.0%
63	45.0%	25.0%	30.0%	60.0%	60.0%
64	45.0%	30.0%	30.0%	60.0%	60.0%
65 and over	100.0%	100.0%	100.0%	100.0%	100.0%

The retirement rates only apply to members that are eligible to retire at the age shown.

For Safety Tiers 1 and 2C, the retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Retirement age and benefit for deferred vested members

General retirement age	61
Safety retirement age	55

Current and future deferred vested non-reciprocal members who terminate with less than five years of service and are not vested are assumed to retire at age 70 for both General and Safety if they decide to leave their contributions on deposit.

25% of future General and 50% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocal members, 3.65% and 4.05% compensation increases are assumed per annum for General and Safety members, respectively.

Future benefit accruals

1.0 year of service per year of employment, plus 0.003 years of additional service for General members and 0.007 years of additional service for Safety members, to anticipate conversion of unused sick leave for each year of employment.

Exhibit 2: Summary of plan provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions. If the Association should find the plan summary not in accordance with the actual provisions, the Association should alert the actuary so they can both be sure the proper provisions are valued.

Plan year

January 1 through December 31

Membership eligibility

Membership with ACERA usually begins with the second pay period following appointment to a full time County or member District position. For Housing Authority and LARPD, membership with ACERA begins on the first day of hire. ACERA members who change from full time to part time will continue to participate at ACERA.

General and Safety Tier 1

All General and Safety members hired on or before June 30, 1983. For Housing Authority General members, the hire date is on or before September 30, 2011 (instead of June 30, 1983). For LARPD General members, the hire date is on or before September 30, 2008 (instead of June 30, 1983).

General and Safety Tier 2

All General and Safety members hired after June 30, 1983, and not in any of the other Tiers listed below. For Housing Authority General members, the hire date is after September 30, 2011 (instead of June 30, 1983).

General Tier 3

Only General LARPD members hired before October 1, 2008 who elected the 2.5% at 55 formula and all General LARPD members hired after that date.

General and Safety Tier 4

All General and Safety members with membership dates on or after January 1, 2013.

Safety Tier 2C

All Safety members in the Sheriff's Department (excluding Probation Officers) hired on or after October 17, 2010 who elected the 2% at 50 formula.

Safety Tier 2D

All Safety members in the Sheriff's Department (excluding Probation Officers) hired on or after October 17, 2010 who elected the 3% at 55 formula.

Final compensation for benefit determination

General Tier 1, General Tier 3 and Safety Tier 1

Highest consecutive 12 months of compensation earnable (§31462.1) (FAS1).

General Tier 2, General Tier 4, Safety Tier 2, Safety Tier 2C, Safety Tier 2D, and Safety Tier 4

For non-Tier 4 members, highest consecutive 36 months of compensation earnable (§31462), and for Tier 4 members, highest consecutive 36 months of pensionable compensation (§7522.10(c), §7522.32 and §7522.34) (FAS3).

Compensation limit

Non-Tier 4

For members with membership dates on or after January 1, 1996, compensation earnable is limited by Internal Revenue Code Section 401(a)(17). The limit for 2024 is $345,000. The limit is indexed for inflation on an annual basis.

Tier 4

Pensionable compensation is limited to $151,446 for 2024 for an employer that is enrolled in Social Security. For an employer that is not enrolled in Social Security, the maximum amount for 2024 is 120% of $151,446, or $181,734. (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2024. (reference: Section 7522.10(d)).

Service

Years of service (Yrs) are generally based on a member's employment during a period of time for which deductions are made from their compensation.

Service retirement eligibility

General Non-Tier 4

Age 50 with 5 years of service and a total of 10 years of qualifying membership, or age 70 regardless of service, or after 30 years of service regardless of age (§31672).

General Tier 4

Age 52 with 5 years of service (§7522.20(a)) or age 70 regardless of service (§31672.3).

Safety Non-Tier 4

Age 50 with 5 years of service and a total of 10 years of qualifying membership, or age 70 regardless of service, or after 20 years of service regardless of age (§31663.25).

Safety Tier 4

Age 50 with 5 years of service (§7522.25(d)) or age 70 regardless of service (§31672.3).

Benefit formula

The offsets shown in all benefit formulas only apply to members integrated with Social Security.

General Tier 1 (§31676.12)

Retirement Age	Benefit Formula
50	1.34% x (FAS1 – $1,400) x Yrs
55	1.77% x (FAS1 – $1,400) x Yrs
60	2.34% x (FAS1 – $1,400) x Yrs
62 and over	2.62% x (FAS1 – $1,400) x Yrs

General Tier 2 (§31676.1)

Retirement Age	Benefit Formula
50	1.18% x (FAS3 – $1,400) x Yrs
55	1.49% x (FAS3 – $1,400) x Yrs
60	1.92% x (FAS3 – $1,400) x Yrs
62	2.09% x (FAS3 – $1,400) x Yrs
65 and over	2.43% x (FAS3 – $1,400) x Yrs

General Tier 3 (§31676.18)

Retirement Age	Benefit Formula
50	2.00% x FAS1 x Yrs
55 and over	2.50% x FAS1 x Yrs

General Tier 4 (§7522.20(a))

Retirement Age	Benefit Formula
52	1.00% x FAS3 x Yrs
55	1.30% x FAS3 x Yrs
60	1.80% x FAS3 x Yrs
62	2.00% x FAS3 x Yrs
65	2.30% x FAS3 x Yrs
67 and over	2.50% x FAS3 x Yrs

Safety Tier 1 (non-integrated) (§31664.1)

Retirement Age	Benefit Formula
50 and over	3.00% x FAS1 x Yrs

Safety Tier 2 (non-integrated) (§31664.1)

Retirement Age	Benefit Formula
50 and over	3.00% x FAS3 x Yrs

Safety Tier 2C (non-integrated) (§31664)

Retirement Age	Benefit Formula
50	2.00% x FAS3 x Yrs
55 and over	2.62% x FAS3 x Yrs

Safety Tier 2D (non-integrated) (§31664.2)

Retirement Age	Benefit Formula
50	2.29% x FAS3 x Yrs
55 and over	3.00% x FAS3 x Yrs

Safety Tier 4 (non-integrated) (§7522.25(d))

Retirement Age	Benefit Formula
50	2.00% x FAS3 x Yrs
55	2.50% x FAS3 x Yrs
57 and over	2.70% x FAS3 x Yrs

Maximum benefit

Non-Tier 4

100% of highest average compensation (§31676.1, §31676.12, §31676.18, §31664, §31664.1, and §31664.2).

Tier 4

None.

Non-service-connected disability

General

Eligibility	Five years of service. (§31720)
Benefit formula	1.8% of final compensation per year of service for General Tier 1 and Tier 3 and 1.5% of final compensation per year of service for General Tier 2 and Tier 4. If the benefit does not exceed one-third of final compensation, the service is projected to 62 for General Tier 1 and Tier 3, and to age 65 for General Tier 2 and Tier 4, but the total projected benefit cannot be more than one-third of final compensation (§31727.1 and §31727).

Safety

Eligibility	Five years of service (§31720).
Benefit formula	1.8% per year of service. If the benefit does not exceed one-third of final compensation, the service is projected to age 55, but the total projected benefit cannot be more than one-third of final compensation. (§31727.2)

Service-connected disability

All Members

Eligibility	No age or service requirements (§31720)
Benefit formula	50% of the final compensation or 100% of service retirement benefit, if greater (§31727.4)

Pre-retirement death

All members

Eligibility	None.
Basic Lump sum benefit	Refund of employee contributions with interest, plus one month's compensation for each year of service, to a maximum of six month's compensation (§31781).
Service-connected death	50% of final compensation or 100% of service retirement benefit, if greater, payable to spouse or minor children (§31787).

Vested members

Eligibility	Five years of service.
Basic benefit	60% of the greater of service or non-service connected disability retirement benefit payable to surviving eligible spouse (§31765.1, §31781.1), in lieu of the basic lump sum benefit above.
Service-connected death	50% of final compensation or 100% of service retirement benefit, if greater, payable to spouse or minor children (§31787).

Active members with Optional Settlement 2 election

Eligibility	Election while active with five years of service.
Non-service connected death	In lieu of the 60% continuance to a beneficiary, 100% of the greater of service or non-service connected disability retirement benefit, with actuarial adjustment for optional settlement 2, is payable to member's beneficiary (§31787).

Death after retirement

Service retirement or non-service connected disability retirement

Unless another option was selected at retirement, 60% of member's unmodified allowance continues to eligible spouse (§31760.1) and lump sum death burial benefit payable to member's beneficiary (§31789.3). An eligible spouse is a surviving spouse who was married to the member at least one year prior to the date of retirement (§31760.1).

Based on action taken by the Board in February 2014, we are continuing to exclude the death burial benefit from the pension valuation.

Service connected disability

Unless another option was selected at retirement, 100% of member's allowance continued to eligible spouse (§31786).

Withdrawal benefits

Less than Five Years of Service

Refund of accumulated employee contributions with interest, or benefit at age 70 (§31628).

Effective January 1, 2003, a member may also elect to leave contributions on deposit in the retirement fund (§31629.5).

Five or More Years of Service

If contributions left on deposit, entitled to earned benefits commencing at any time after eligible to retire (§31700).

Post-retirement cost-of-living benefits

General Tier 1, General Tier 3 and Safety Tier 1

Annual adjustment based on Consumer Price Index to a maximum of 3% per year; excess “banked” (§31870.1).

General Tier 2, General Tier 4 Safety Tier 2, Safety Tier 2C, Safety Tier 2D, and Safety Tier 4

Annual adjustment based on Consumer Price Index to a maximum of 2% per year; excess “banked” (§31870).

Supplemental benefit

Non-vested supplemental COLA and medical benefits are also paid from the Supplemental Retirees Benefit Reserve to eligible retirees and survivors. These benefits have been excluded from this valuation.

Member contributions

Please refer to *Section 4, Exhibit 3* for specific rates.

General Tier 1

Basic	Entry-age based rates that provide for an average annuity at age 60 equal to 1/100 of FAS1 (§31621.2).
Cost-of-living	Entry-age based rates that provide for one-half of future cost-of-living costs.

General Tier 2

Basic	Entry-age based rates that provide for an average annuity at age 60 equal to 1/120 of FAS3 (§31621).
Cost-of-living	Entry-age based rates that provide for one-half of future cost-of-living costs.

General Tier 3

Basic	Entry-age based rates that provide for an average annuity at age 55 equal to 1/100 of FAS1 (§31621.8).
Cost-of-living	Entry-age based rates that provide for one-half of future cost-of-living costs.

General Tier 4

50% of the total Normal Cost rate.

Safety non-Tier 4

Basic	Entry-age based rates that provide for an average annuity at age 50 equal to 1/100 of FAS1 (FAS3 for Tier 2, Tier 2C, and Tier 2D) (§31639.25). As instructed by ACERA, we have also included a 3% cost-sharing contribution that we understand will be paid by Safety Tier 1 and Tier 2 members. For Safety Tier 2C members, there are no cost-sharing contributions. For Safety Tier 2D members, the cost-sharing contribution rate is 5% of salary for the first 5 years of vesting service and 3% of salary for each subsequent year of vesting service. (The 3% cost-sharing contribution for Safety Tiers 1, 2, and 2D (after 5 years of service) will continue even after the member attains 30 years of service.)
Cost-of-living	Entry-age based rates that provide for one-half of future cost-of-living costs.

Safety Tier 4

50% of the total Normal Cost rate.

Other information

Except for the 3% cost-sharing contribution described above, non-Tier 4 Safety members are exempt from paying member contributions after 30 or more years of service. This exemption also applies for General members hired on or before March 7, 1973.

Changes in plan provisions

On December 21, 2023, the Board adopted a new election process to allow active members to elect an Optional Settlement 2 allowance in advance to provide a continuance of 100% to the member's spouse, domestic partner or other beneficiaries upon the member's active death. This process will be effective April 1, 2024.

Exhibit 3: Member contribution rates

Comparison of Total Member Rate[1]

Entry Age	Based on December 31, 2023 Valuation	Based on December 31, 2022 Valuation	Change
General Tier 1			
25	8.92%	9.54%	(0.62%)
35	10.94%	11.54%	(0.60%)
45	13.42%	13.98%	(0.56%)
General Tier 2			
25	6.62%	6.90%	(0.28%)
35	8.11%	8.34%	(0.23%)
45	9.95%	10.11%	(0.16%)
General Tier 3			
25	10.96%	11.84%	(0.88%)
35	13.41%	14.32%	(0.91%)
45	16.49%	17.41%	(0.92%)
General Tier 4[2]			
Any	9.06%	9.30%	(0.24%)
Safety Tier 2			
25	15.84%	16.19%	(0.35%)
30	17.00%	17.33%	(0.33%)
35	18.31%	18.64%	(0.33%)

[1] For the non-CalPEPRA tiers, contributions for the first $161 of biweekly payroll are based on 2/3 of the above rates for integrated members. There were no Safety Tier 1 active members reported for the December 31, 2023 valuation.

[2] Tier 4 member rates are independent of entry age.

Entry Age	Based on December 31, 2023 Valuation	Based on December 31, 2022 Valuation	Change
Safety Tier 2C			
25	12.65%	12.73%	(0.08%)
30	13.79%	13.83%	(0.04%)
35	15.09%	15.09%	0.00%
Safety Tier 2D (<5 years vesting service)			
25	17.97%	18.07%	(0.10%)
30	19.15%	19.21%	(0.06%)
35	20.47%	20.49%	(0.02%)
Safety Tier 2D (5+ years vesting service)			
25	15.97%	16.07%	(0.10%)
30	17.15%	17.21%	(0.06%)
35	18.47%	18.49%	(0.02%)
Safety Tier 4[1]			
Any	17.88%	17.28%	0.60%

[1] Tier 4 member rates are independent of entry age.

Breakdown of member rate between basic and COLA

Based on the December 31, 2023 valuation ($ in '000s)

Tier	Basic Rate	Basic Estimated Annual Amount[1]	COLA Rate	COLA Estimated Annual Amount[1]	Cost Sharing Rate[2]	Cost Sharing Estimated Annual Amount[1,2]	Total Rate	Total Estimated Annual Amount[1]
General Tier 1	7.54%	$530	2.47%	$173			10.01%	$703
General Tier 2	6.25%	31,374	1.56%	7,831			7.81%	39,205
General Tier 3	10.36%	146	4.06%	57			14.42%	203
General Tier 4	7.40%	44,405	1.66%	9,961			9.06%	54,366
Safety Tier 2	9.53%	9,098	3.96%	3,780	3.00%	$2,864	16.49%	15,742
Safety Tier 2C	9.95%	277	3.91%	109	0.00%	0	13.86%	386
Safety Tier 2D	9.57%	1,797	4.12%	774	3.02%	567	16.71%	3,138
Safety Tier 4	13.98%	12,845	3.90%	3,583	0.00%	0	17.88%	16,428
All Tiers Combined	**7.61%**	**$100,472**	**2.00%**	**$26,268**	**0.26%**	**$3,431**	**9.87%**	**$130,171**

1 Amounts are based on December 31, 2023 annual payroll (also in thousands):

	County	AHS, Court and First 5	Housing Authority	LARPD	Total
General Tier 1	$3,085	$356	$2,994	$592	$7,027
General Tier 2	337,371	164,180	440		501,991
General Tier 3				1,409	1,409
General Tier 4	359,256	236,580	2,658	1,572	600,066
Safety Tier 2	95,464				95,464
Safety Tier 2C	2,783				2,783
Safety Tier 2D	18,777				18,777
Safety Tier 4	91,880				91,880
Total	**$908,616**	**$401,116**	**$6,092**	**$3,573**	**$1,319,397**

2 Cost sharing contributions for Safety Tier 2D members are determined based on proportion of members contributing 5.00% (with less than 5 years of vesting service) and 3.00% (with 5 or more years of vesting service).

Based on the December 31, 2022 valuation[1] ($ in '000s)

	Basic Rate	Basic Estimated Annual Amount[2]	COLA Rate	COLA Estimated Annual Amount[2]	Cost Sharing Rate[3]	Cost Sharing Estimated Annual Amount[2,3]	Total Rate	Total Estimated Annual Amount[2]
General Tier 1	7.68%	$540	2.58%	$181			10.26%	$721
General Tier 2	6.46%	32,429	1.64%	8,232			8.10%	40,661
General Tier 3	10.81%	152	4.67%	66			15.48%	218
General Tier 4	7.56%	45,365	1.74%	10,441			9.30%	55,806
Safety Tier 2	9.61%	9,174	4.29%	4,095	3.00%	$2,864	16.90%	16,133
Safety Tier 2C	10.03%	279	3.97%	111	0.00%	0	14.00%	390
Safety Tier 2D	9.60%	1,803	4.16%	781	3.02%	567	16.78%	3,151
Safety Tier 4	13.48%	12,385	3.80%	3,492	0.00%	0	17.28%	15,877
All Tiers Combined	**7.74%**	**$102,127**	**2.08%**	**$27,399**	**0.26%**	**$3,431**	**10.08%**	**$132,957**

1 These rates have been re-calculated by applying the individual entry age-based member rates determined in December 31, 2022 valuation to the Association membership as of December 31, 2023.

2 Amounts are based on December 31, 2023 annual payroll (also in thousands):

	County	AHS, Court and First 5	Housing Authority	LARPD	Total
General Tier 1	$3,085	$356	$2,994	$592	$7,027
General Tier 2	337,371	164,180	440		501,991
General Tier 3				1,409	1,409
General Tier 4	359,256	236,580	2,658	1,572	600,066
Safety Tier 2	95,464				95,464
Safety Tier 2C	2,783				2,783
Safety Tier 2D	18,777				18,777
Safety Tier 4	91,880				91,880
Total	**$908,616**	**$401,116**	**$6,092**	**$3,573**	**$1,319,397**

3 Cost sharing contributions for Safety Tier 2D members are determined based on proportion of members contributing 5.00% (with less than 5 years of vesting service) and 3.00% (with 5 or more years of vesting service).

General Tier 1 Members' Contribution Rates Based on the December 31, 2023 Actuarial Valuation

(as a % of biweekly payroll)

Entry Age	Basic First $161	Basic Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
16 and under	3.72%	5.57%	1.21%	1.82%	4.93%	7.39%
17	3.80%	5.69%	1.24%	1.86%	5.04%	7.55%
18	3.88%	5.82%	1.26%	1.89%	5.14%	7.71%
19	3.96%	5.94%	1.29%	1.93%	5.25%	7.87%
20	4.04%	6.06%	1.32%	1.98%	5.36%	8.04%
21	4.13%	6.19%	1.35%	2.02%	5.48%	8.21%
22	4.21%	6.32%	1.37%	2.06%	5.58%	8.38%
23	4.30%	6.45%	1.40%	2.10%	5.70%	8.55%
24	4.39%	6.59%	1.43%	2.15%	5.82%	8.74%
25	4.48%	6.73%	1.46%	2.19%	5.94%	8.92%
26	4.58%	6.87%	1.49%	2.24%	6.07%	9.11%
27	4.67%	7.01%	1.52%	2.28%	6.19%	9.29%
28	4.77%	7.15%	1.55%	2.33%	6.32%	9.48%
29	4.87%	7.30%	1.59%	2.38%	6.46%	9.68%
30	4.97%	7.45%	1.62%	2.43%	6.59%	9.88%
31	5.07%	7.60%	1.65%	2.48%	6.72%	10.08%
32	5.17%	7.76%	1.69%	2.53%	6.86%	10.29%
33	5.28%	7.92%	1.72%	2.58%	7.00%	10.50%
34	5.39%	8.08%	1.75%	2.63%	7.14%	10.71%
35	5.50%	8.25%	1.79%	2.69%	7.29%	10.94%
36	5.61%	8.41%	1.83%	2.74%	7.44%	11.15%
37	5.72%	8.59%	1.87%	2.80%	7.59%	11.39%
38	5.84%	8.76%	1.90%	2.85%	7.74%	11.61%
39	5.96%	8.94%	1.94%	2.91%	7.90%	11.85%
40	6.08%	9.12%	1.98%	2.97%	8.06%	12.09%

* Use these rates for non-integrated members.

Entry Age	Basic First $161	Basic Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
41	6.21%	9.31%	2.02%	3.03%	8.23%	12.34%
42	6.34%	9.50%	2.07%	3.10%	8.41%	12.60%
43	6.47%	9.70%	2.11%	3.16%	8.58%	12.86%
44	6.60%	9.91%	2.15%	3.23%	8.75%	13.14%
45	6.74%	10.12%	2.20%	3.30%	8.94%	13.42%
46	6.89%	10.33%	2.25%	3.37%	9.14%	13.70%
47	7.04%	10.56%	2.29%	3.44%	9.33%	14.00%
48	7.20%	10.80%	2.35%	3.52%	9.55%	14.32%
49	7.34%	11.01%	2.39%	3.59%	9.73%	14.60%
50	7.48%	11.21%	2.43%	3.65%	9.91%	14.86%
51	7.60%	11.41%	2.48%	3.72%	10.08%	15.13%
52	7.72%	11.58%	2.51%	3.77%	10.23%	15.35%
53	7.84%	11.77%	2.55%	3.83%	10.39%	15.60%
54	7.97%	11.96%	2.60%	3.90%	10.57%	15.86%
55	8.08%	12.12%	2.63%	3.95%	10.71%	16.07%
56	8.13%	12.20%	2.65%	3.97%	10.78%	16.17%
57	8.10%	12.14%	2.64%	3.96%	10.74%	16.10%
58	7.99%	11.99%	2.61%	3.91%	10.60%	15.90%
59 and over	7.77%	11.65%	2.53%	3.80%	10.30%	15.45%

Interest	7.00% per annum
COLA	2.75%
Mortality	See *Section 4, Exhibit 1*
Salary Increase	Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor	32.58%
Additional Cashout	5.0%

* Use these rates for non-integrated members.

General Tier 2 Members' Contribution Rates Based on the December 31, 2023 Actuarial Valuation

(as a % of biweekly payroll)

Entry Age	Basic First $161	Basic Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
16 and under	2.93%	4.39%	0.73%	1.10%	3.66%	5.49%
17	2.99%	4.49%	0.75%	1.12%	3.74%	5.61%
18	3.05%	4.58%	0.76%	1.14%	3.81%	5.72%
19	3.12%	4.68%	0.78%	1.17%	3.90%	5.85%
20	3.19%	4.78%	0.79%	1.19%	3.98%	5.97%
21	3.25%	4.88%	0.81%	1.22%	4.06%	6.10%
22	3.32%	4.98%	0.83%	1.24%	4.15%	6.22%
23	3.39%	5.09%	0.85%	1.27%	4.24%	6.36%
24	3.46%	5.19%	0.87%	1.30%	4.33%	6.49%
25	3.53%	5.30%	0.88%	1.32%	4.41%	6.62%
26	3.61%	5.41%	0.90%	1.35%	4.51%	6.76%
27	3.68%	5.52%	0.92%	1.38%	4.60%	6.90%
28	3.76%	5.63%	0.94%	1.41%	4.70%	7.04%
29	3.83%	5.75%	0.96%	1.44%	4.79%	7.19%
30	3.91%	5.87%	0.98%	1.47%	4.89%	7.34%
31	3.99%	5.99%	1.00%	1.50%	4.99%	7.49%
32	4.07%	6.11%	1.02%	1.53%	5.09%	7.64%
33	4.16%	6.24%	1.04%	1.56%	5.20%	7.80%
34	4.24%	6.36%	1.06%	1.59%	5.30%	7.95%
35	4.33%	6.49%	1.08%	1.62%	5.41%	8.11%
36	4.42%	6.63%	1.11%	1.66%	5.53%	8.29%
37	4.51%	6.76%	1.13%	1.69%	5.64%	8.45%
38	4.60%	6.90%	1.15%	1.72%	5.75%	8.62%
39	4.69%	7.04%	1.17%	1.76%	5.86%	8.80%
40	4.79%	7.18%	1.19%	1.79%	5.98%	8.97%

* Use these rates for non-integrated members.

Entry Age	Basic First $161	Basic Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
41	4.89%	7.33%	1.22%	1.83%	6.11%	9.16%
42	4.99%	7.48%	1.25%	1.87%	6.24%	9.35%
43	5.09%	7.63%	1.27%	1.91%	6.36%	9.54%
44	5.20%	7.79%	1.30%	1.95%	6.50%	9.74%
45	5.31%	7.96%	1.33%	1.99%	6.64%	9.95%
46	5.42%	8.13%	1.35%	2.03%	6.77%	10.16%
47	5.53%	8.30%	1.38%	2.07%	6.91%	10.37%
48	5.64%	8.46%	1.41%	2.11%	7.05%	10.57%
49	5.74%	8.60%	1.43%	2.15%	7.17%	10.75%
50	5.83%	8.74%	1.45%	2.18%	7.28%	10.92%
51	5.92%	8.87%	1.48%	2.22%	7.40%	11.09%
52	6.00%	9.00%	1.50%	2.25%	7.50%	11.25%
53	6.08%	9.12%	1.52%	2.28%	7.60%	11.40%
54	6.14%	9.21%	1.53%	2.30%	7.67%	11.51%
55	6.15%	9.23%	1.54%	2.31%	7.69%	11.54%
56	6.13%	9.19%	1.53%	2.30%	7.66%	11.49%
57	6.06%	9.09%	1.51%	2.27%	7.57%	11.36%
58	6.26%	9.39%	1.57%	2.35%	7.83%	11.74%
59 and over	6.47%	9.71%	1.62%	2.43%	8.09%	12.14%

Interest	7.00% per annum
COLA	2.00%
Mortality	See *Section 4, Exhibit 1*
Salary Increase	Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor	24.99%
Additional Cashout	2.7%

* Use these rates for non-integrated members.

General Tier 3 Members' Contribution Rates Based on the December 31, 2023 Actuarial Valuation

(as a % of biweekly payroll)

Entry Age	Basic First $161	Basic Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
16 and under	4.35%	6.52%	1.72%	2.58%	6.07%	9.10%
17	4.44%	6.66%	1.76%	2.64%	6.20%	9.30%
18	4.53%	6.80%	1.79%	2.69%	6.32%	9.49%
19	4.63%	6.94%	1.83%	2.75%	6.46%	9.69%
20	4.73%	7.09%	1.87%	2.81%	6.60%	9.90%
21	4.82%	7.24%	1.91%	2.86%	6.73%	10.10%
22	4.92%	7.39%	1.95%	2.92%	6.87%	10.31%
23	5.03%	7.54%	1.99%	2.98%	7.02%	10.52%
24	5.13%	7.69%	2.03%	3.04%	7.16%	10.73%
25	5.23%	7.85%	2.07%	3.11%	7.30%	10.96%
26	5.34%	8.01%	2.11%	3.17%	7.45%	11.18%
27	5.45%	8.18%	2.16%	3.24%	7.61%	11.42%
28	5.56%	8.34%	2.20%	3.30%	7.76%	11.64%
29	5.68%	8.51%	2.25%	3.37%	7.93%	11.88%
30	5.79%	8.69%	2.29%	3.44%	8.08%	12.13%
31	5.91%	8.87%	2.34%	3.51%	8.25%	12.38%
32	6.03%	9.05%	2.39%	3.58%	8.42%	12.63%
33	6.15%	9.23%	2.43%	3.65%	8.58%	12.88%
34	6.28%	9.42%	2.49%	3.73%	8.77%	13.15%
35	6.41%	9.61%	2.53%	3.80%	8.94%	13.41%
36	6.54%	9.81%	2.59%	3.88%	9.13%	13.69%
37	6.68%	10.01%	2.64%	3.96%	9.32%	13.97%
38	6.82%	10.22%	2.70%	4.05%	9.52%	14.27%
39	6.96%	10.44%	2.75%	4.13%	9.71%	14.57%
40	7.11%	10.66%	2.81%	4.22%	9.92%	14.88%

* Use these rates for non-integrated members.

Entry Age	Basic First $161	Basic Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
41	7.26%	10.89%	2.87%	4.31%	10.13%	15.20%
42	7.42%	11.13%	2.93%	4.40%	10.35%	15.53%
43	7.59%	11.38%	3.00%	4.50%	10.59%	15.88%
44	7.73%	11.60%	3.06%	4.59%	10.79%	16.19%
45	7.88%	11.81%	3.12%	4.68%	11.00%	16.49%
46	8.01%	12.02%	3.17%	4.76%	11.18%	16.78%
47	8.13%	12.20%	3.22%	4.83%	11.35%	17.03%
48	8.26%	12.40%	3.27%	4.91%	11.53%	17.31%
49	8.40%	12.60%	3.33%	4.99%	11.73%	17.59%
50	8.51%	12.77%	3.37%	5.05%	11.88%	17.82%
51	8.57%	12.85%	3.39%	5.09%	11.96%	17.94%
52	8.53%	12.80%	3.37%	5.06%	11.90%	17.86%
53	8.42%	12.63%	3.33%	5.00%	11.75%	17.63%
54 and over	8.18%	12.28%	3.24%	4.86%	11.42%	17.14%

Interest	7.00% per annum
COLA	2.75%
Mortality	See *Section 4, Exhibit 1*
Salary Increase	Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor	39.58%
Additional Cashout	5.0%

* Use these rates for non-integrated members.

General Tier 4 Members' Contribution Rates Based on the December 31, 2023 Actuarial Valuation

*(as a % of biweekly eligible payroll)**

Entry Age	Basic Eligible Pay	COLA Eligible Pay	Total Eligible Pay
All Ages	7.40%	1.66%	9.06%

Interest	7.00% per annum
COLA	2.00%
Mortality	See *Section 4, Exhibit 1*
Salary Increase	Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor	22.43%
Additional Cashout	0.00%

* It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the compensation that can be taken into account for 2024 is equal to $151,446. (For an employer that is not enrolled in Social Security, the maximum amount is 120% of $151,446, or $181,734). (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2024. (reference: Section 7522.10(d)).

Safety Tier 2 Members' Contribution Rates Based on the December 31, 2023 Actuarial Valuation

(as a % of biweekly payroll)

Entry Age	Basic First $161	Basic Over $161*	Cost Sharing First $161	Cost Sharing Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
16 and under	5.19%	7.79%	3.00%	3.00%	2.15%	3.23%	10.34%	14.02%
17	5.28%	7.92%	3.00%	3.00%	2.19%	3.29%	10.47%	14.21%
18	5.37%	8.06%	3.00%	3.00%	2.23%	3.34%	10.60%	14.40%
19	5.46%	8.19%	3.00%	3.00%	2.27%	3.40%	10.73%	14.59%
20	5.56%	8.33%	3.00%	3.00%	2.31%	3.46%	10.87%	14.79%
21	5.65%	8.48%	3.00%	3.00%	2.35%	3.52%	11.00%	15.00%
22	5.75%	8.62%	3.00%	3.00%	2.39%	3.58%	11.14%	15.20%
23	5.85%	8.77%	3.00%	3.00%	2.43%	3.64%	11.28%	15.41%
24	5.95%	8.92%	3.00%	3.00%	2.47%	3.70%	11.42%	15.62%
25	6.05%	9.07%	3.00%	3.00%	2.51%	3.77%	11.56%	15.84%
26	6.15%	9.23%	3.00%	3.00%	2.55%	3.83%	11.70%	16.06%
27	6.26%	9.39%	3.00%	3.00%	2.60%	3.90%	11.86%	16.29%
28	6.37%	9.55%	3.00%	3.00%	2.65%	3.97%	12.02%	16.52%
29	6.48%	9.72%	3.00%	3.00%	2.69%	4.04%	12.17%	16.76%
30	6.59%	9.89%	3.00%	3.00%	2.74%	4.11%	12.33%	17.00%
31	6.71%	10.06%	3.00%	3.00%	2.79%	4.18%	12.50%	17.24%
32	6.83%	10.24%	3.00%	3.00%	2.83%	4.25%	12.66%	17.49%
33	6.95%	10.43%	3.00%	3.00%	2.89%	4.33%	12.84%	17.76%
34	7.08%	10.62%	3.00%	3.00%	2.94%	4.41%	13.02%	18.03%
35	7.21%	10.82%	3.00%	3.00%	2.99%	4.49%	13.20%	18.31%
36	7.35%	11.02%	3.00%	3.00%	3.05%	4.58%	13.40%	18.60%
37	7.49%	11.24%	3.00%	3.00%	3.11%	4.67%	13.60%	18.91%
38	7.64%	11.46%	3.00%	3.00%	3.17%	4.76%	13.81%	19.22%
39	7.79%	11.69%	3.00%	3.00%	3.23%	4.85%	14.02%	19.54%

* Use these rates for non-integrated members.

Entry Age	Basic First $161	Basic Over $161*	Cost Sharing First $161	Cost Sharing Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
40	7.94%	11.91%	3.00%	3.00%	3.30%	4.95%	14.24%	19.86%
41	8.09%	12.13%	3.00%	3.00%	3.36%	5.04%	14.45%	20.17%
42	8.22%	12.34%	3.00%	3.00%	3.41%	5.12%	14.63%	20.46%
43	8.32%	12.48%	3.00%	3.00%	3.45%	5.18%	14.77%	20.66%
44	8.35%	12.53%	3.00%	3.00%	3.47%	5.20%	14.82%	20.73%
45	8.28%	12.42%	3.00%	3.00%	3.44%	5.16%	14.72%	20.58%
46	8.13%	12.19%	3.00%	3.00%	3.37%	5.06%	14.50%	20.25%
47	7.93%	11.89%	3.00%	3.00%	3.29%	4.94%	14.22%	19.83%
48	8.18%	12.27%	3.00%	3.00%	3.40%	5.10%	14.58%	20.37%
49 and over	8.45%	12.68%	3.00%	3.00%	3.51%	5.26%	14.96%	20.94%

Interest	7.00% per annum
COLA	2.00%
Mortality	See *Section 4, Exhibit 1*
Salary Increase	Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor	41.52%
Additional Cashout	2.3%

* Use these rates for non-integrated members.

Safety Tier 2C Members' Contribution Rates Based on the December 31, 2023 Actuarial Valuation

(as a % of biweekly payroll)

Entry Age	Basic First $161	Basic Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
16 and under	5.19%	7.79%	2.05%	3.07%	7.24%	10.86%
17	5.28%	7.92%	2.08%	3.12%	7.36%	11.04%
18	5.37%	8.06%	2.12%	3.18%	7.49%	11.24%
19	5.46%	8.19%	2.15%	3.23%	7.61%	11.42%
20	5.56%	8.33%	2.19%	3.29%	7.75%	11.62%
21	5.65%	8.48%	2.23%	3.35%	7.88%	11.83%
22	5.75%	8.62%	2.27%	3.40%	8.02%	12.02%
23	5.85%	8.77%	2.31%	3.46%	8.16%	12.23%
24	5.95%	8.92%	2.35%	3.52%	8.30%	12.44%
25	6.05%	9.07%	2.39%	3.58%	8.44%	12.65%
26	6.15%	9.23%	2.43%	3.64%	8.58%	12.87%
27	6.26%	9.39%	2.47%	3.71%	8.73%	13.10%
28	6.37%	9.55%	2.51%	3.77%	8.88%	13.32%
29	6.48%	9.72%	2.56%	3.84%	9.04%	13.56%
30	6.59%	9.89%	2.60%	3.90%	9.19%	13.79%
31	6.71%	10.06%	2.65%	3.97%	9.36%	14.03%
32	6.83%	10.24%	2.69%	4.04%	9.52%	14.28%
33	6.95%	10.43%	2.75%	4.12%	9.70%	14.55%
34	7.08%	10.62%	2.79%	4.19%	9.87%	14.81%
35	7.21%	10.82%	2.85%	4.27%	10.06%	15.09%
36	7.35%	11.02%	2.90%	4.35%	10.25%	15.37%
37	7.49%	11.24%	2.95%	4.43%	10.44%	15.67%
38	7.64%	11.46%	3.01%	4.52%	10.65%	15.98%
39	7.79%	11.69%	3.07%	4.61%	10.86%	16.30%
40	7.94%	11.91%	3.13%	4.70%	11.07%	16.61%

* Use these rates for non-integrated members.

Entry Age	Basic First $161	Basic Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
41	8.09%	12.13%	3.19%	4.79%	11.28%	16.92%
42	8.22%	12.34%	3.25%	4.87%	11.47%	17.21%
43	8.32%	12.48%	3.28%	4.92%	11.60%	17.40%
44	8.35%	12.53%	3.29%	4.94%	11.64%	17.47%
45	8.28%	12.42%	3.27%	4.90%	11.55%	17.32%
46	8.13%	12.19%	3.21%	4.81%	11.34%	17.00%
47	7.93%	11.89%	3.13%	4.69%	11.06%	16.58%
48	8.18%	12.27%	3.23%	4.84%	11.41%	17.11%
49 and over	8.45%	12.68%	3.33%	5.00%	11.78%	17.68%

Interest	7.00% per annum
COLA	2.00%
Mortality	See *Section 4, Exhibit 1*
Salary Increase	Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor	39.46%
Additional Cashout	2.3%

* Use these rates for non-integrated members.

Safety Tier 2D Members' Contribution Rates for Members with Less than Five Years of Vesting Service Based on the December 31, 2023 Actuarial Valuation

(as a % of biweekly payroll)

Entry Age	Basic First $161	Basic Over $161*	Cost Sharing First $161	Cost Sharing Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
16 and under	5.19%	7.79%	5.00%	5.00%	2.23%	3.35%	12.42%	16.14%
17	5.28%	7.92%	5.00%	5.00%	2.27%	3.41%	12.55%	16.33%
18	5.37%	8.06%	5.00%	5.00%	2.31%	3.47%	12.68%	16.53%
19	5.46%	8.19%	5.00%	5.00%	2.35%	3.53%	12.81%	16.72%
20	5.56%	8.33%	5.00%	5.00%	2.39%	3.59%	12.95%	16.92%
21	5.65%	8.48%	5.00%	5.00%	2.43%	3.65%	13.08%	17.13%
22	5.75%	8.62%	5.00%	5.00%	2.47%	3.71%	13.22%	17.33%
23	5.85%	8.77%	5.00%	5.00%	2.51%	3.77%	13.36%	17.54%
24	5.95%	8.92%	5.00%	5.00%	2.56%	3.84%	13.51%	17.76%
25	6.05%	9.07%	5.00%	5.00%	2.60%	3.90%	13.65%	17.97%
26	6.15%	9.23%	5.00%	5.00%	2.65%	3.97%	13.80%	18.20%
27	6.26%	9.39%	5.00%	5.00%	2.69%	4.04%	13.95%	18.43%
28	6.37%	9.55%	5.00%	5.00%	2.74%	4.11%	14.11%	18.66%
29	6.48%	9.72%	5.00%	5.00%	2.79%	4.18%	14.27%	18.90%
30	6.59%	9.89%	5.00%	5.00%	2.84%	4.26%	14.43%	19.15%
31	6.71%	10.06%	5.00%	5.00%	2.89%	4.33%	14.60%	19.39%
32	6.83%	10.24%	5.00%	5.00%	2.94%	4.41%	14.77%	19.65%
33	6.95%	10.43%	5.00%	5.00%	2.99%	4.49%	14.94%	19.92%
34	7.08%	10.62%	5.00%	5.00%	3.05%	4.57%	15.13%	20.19%
35	7.21%	10.82%	5.00%	5.00%	3.10%	4.65%	15.31%	20.47%
36	7.35%	11.02%	5.00%	5.00%	3.16%	4.74%	15.51%	20.76%
37	7.49%	11.24%	5.00%	5.00%	3.23%	4.84%	15.72%	21.08%
38	7.64%	11.46%	5.00%	5.00%	3.29%	4.93%	15.93%	21.39%

* Use these rates for non-integrated members.

Entry Age	Basic First $161	Basic Over $161*	Cost Sharing First $161	Cost Sharing Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
39	7.79%	11.69%	5.00%	5.00%	3.35%	5.03%	16.14%	21.72%
40	7.94%	11.91%	5.00%	5.00%	3.42%	5.13%	16.36%	22.04%
41	8.09%	12.13%	5.00%	5.00%	3.48%	5.22%	16.57%	22.35%
42	8.22%	12.34%	5.00%	5.00%	3.54%	5.31%	16.76%	22.65%
43	8.32%	12.48%	5.00%	5.00%	3.58%	5.37%	16.90%	22.85%
44	8.35%	12.53%	5.00%	5.00%	3.59%	5.39%	16.94%	22.92%
45	8.28%	12.42%	5.00%	5.00%	3.56%	5.34%	16.84%	22.76%
46	8.13%	12.19%	5.00%	5.00%	3.49%	5.24%	16.62%	22.43%
47	7.93%	11.89%	5.00%	5.00%	3.41%	5.12%	16.34%	22.01%
48	8.18%	12.27%	5.00%	5.00%	3.52%	5.28%	16.70%	22.55%
49 and over	8.45%	12.68%	5.00%	5.00%	3.64%	5.46%	17.09%	23.14%

Interest	7.00% per annum
COLA	2.00%
Mortality	See *Section 4, Exhibit 1*
Salary Increase	Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor	43.03%
Additional Cashout	2.3%

* Use these rates for non-integrated members.

Safety Tier 2D Members' Contribution Rates for Members with Five or More Years of Vesting Service Based on the December 31, 2023 Actuarial Valuation

(as a % of biweekly payroll)

Entry Age	Basic First $161	Basic Over $161*	Cost Sharing First $161	Cost Sharing Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
16 and under	5.19%	7.79%	3.00%	3.00%	2.23%	3.35%	10.42%	14.14%
17	5.28%	7.92%	3.00%	3.00%	2.27%	3.41%	10.55%	14.33%
18	5.37%	8.06%	3.00%	3.00%	2.31%	3.47%	10.68%	14.53%
19	5.46%	8.19%	3.00%	3.00%	2.35%	3.53%	10.81%	14.72%
20	5.56%	8.33%	3.00%	3.00%	2.39%	3.59%	10.95%	14.92%
21	5.65%	8.48%	3.00%	3.00%	2.43%	3.65%	11.08%	15.13%
22	5.75%	8.62%	3.00%	3.00%	2.47%	3.71%	11.22%	15.33%
23	5.85%	8.77%	3.00%	3.00%	2.51%	3.77%	11.36%	15.54%
24	5.95%	8.92%	3.00%	3.00%	2.56%	3.84%	11.51%	15.76%
25	6.05%	9.07%	3.00%	3.00%	2.60%	3.90%	11.65%	15.97%
26	6.15%	9.23%	3.00%	3.00%	2.65%	3.97%	11.80%	16.20%
27	6.26%	9.39%	3.00%	3.00%	2.69%	4.04%	11.95%	16.43%
28	6.37%	9.55%	3.00%	3.00%	2.74%	4.11%	12.11%	16.66%
29	6.48%	9.72%	3.00%	3.00%	2.79%	4.18%	12.27%	16.90%
30	6.59%	9.89%	3.00%	3.00%	2.84%	4.26%	12.43%	17.15%
31	6.71%	10.06%	3.00%	3.00%	2.89%	4.33%	12.60%	17.39%
32	6.83%	10.24%	3.00%	3.00%	2.94%	4.41%	12.77%	17.65%
33	6.95%	10.43%	3.00%	3.00%	2.99%	4.49%	12.94%	17.92%
34	7.08%	10.62%	3.00%	3.00%	3.05%	4.57%	13.13%	18.19%
35	7.21%	10.82%	3.00%	3.00%	3.10%	4.65%	13.31%	18.47%
36	7.35%	11.02%	3.00%	3.00%	3.16%	4.74%	13.51%	18.76%
37	7.49%	11.24%	3.00%	3.00%	3.23%	4.84%	13.72%	19.08%
38	7.64%	11.46%	3.00%	3.00%	3.29%	4.93%	13.93%	19.39%

* Use these rates for non-integrated members.

Entry Age	Basic First $161	Basic Over $161*	Cost Sharing First $161	Cost Sharing Over $161*	COLA First $161	COLA Over $161*	Total First $161	Total Over $161*
39	7.79%	11.69%	3.00%	3.00%	3.35%	5.03%	14.14%	19.72%
40	7.94%	11.91%	3.00%	3.00%	3.42%	5.13%	14.36%	20.04%
41	8.09%	12.13%	3.00%	3.00%	3.48%	5.22%	14.57%	20.35%
42	8.22%	12.34%	3.00%	3.00%	3.54%	5.31%	14.76%	20.65%
43	8.32%	12.48%	3.00%	3.00%	3.58%	5.37%	14.90%	20.85%
44	8.35%	12.53%	3.00%	3.00%	3.59%	5.39%	14.94%	20.92%
45	8.28%	12.42%	3.00%	3.00%	3.56%	5.34%	14.84%	20.76%
46	8.13%	12.19%	3.00%	3.00%	3.49%	5.24%	14.62%	20.43%
47	7.93%	11.89%	3.00%	3.00%	3.41%	5.12%	14.34%	20.01%
48	8.18%	12.27%	3.00%	3.00%	3.52%	5.28%	14.70%	20.55%
49 and over	8.45%	12.68%	3.00%	3.00%	3.64%	5.46%	15.09%	21.14%

Interest	7.00% per annum
COLA	2.00%
Mortality	See *Section 4, Exhibit 1*
Salary Increase	Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor	43.03%
Additional Cashout	2.3%

* Use these rates for non-integrated members.

Safety Tier 4 Members' Contribution Rates Based on the December 31, 2023 Actuarial Valuation

*(as a % of biweekly eligible payroll)**

Entry Age	Basic Eligible Pay	COLA Eligible Pay	Total Eligible Pay
All Ages	13.98%	3.90%	17.88%

Interest	7.00% per annum
COLA	2.00%
Mortality	See *Section 4, Exhibit 1*
Salary Increase	Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor	27.90%
Additional Cashout	0.00%

* It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the compensation that can be taken into account for 2024 is equal to $151,446. (For an employer that is not enrolled in Social Security, the maximum amount is 120% of $151,446, or $181,734). (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2024. (reference: Section 7522.10(d)).

Exhibit 4: Projected employer contributions by participating employer

Estimated employer contribution requirement for each ACERA participating employer based on projected employer compensation used in the December 31, 2023 Actuarial Valuation

Employer Dollar Contribution[1,2] Calculated Based on December 31, 2023 Valuation ($ '000s)

Employer Name (Code)	General Tier 1	General Tier 2	General Tier 3	General Tier 4	Safety Tier 2	Safety Tier 2C	Safety Tier 2D	Safety Tier 4	Total
Alameda County (101)	$751	$76,549		$80,618	$26,273	$886	$5,351	$23,209	$213,637
Health System (106)	19	31,005		46,007					77,031
Superior Court (632)	71	7,410		7,564					15,045
First 5 (714)		610		2,072					2,682
Housing Authority (103)	912	127		760					1,799
LARPD (104)	65		232	142					439
Total	**$1,818**	**$115,701**	**$232**	**$137,163**	**$26,273**	**$886**	**$5,351**	**$23,209**	**$310,633**

Employer Dollar Contribution[2,3] Calculated Based on December 31, 2022 Valuation ($ '000s)

Employer Name (Code)	General Tier 1	General Tier 2	General Tier 3	General Tier 4	Safety Tier 2	Safety Tier 2C	Safety Tier 2D	Safety Tier 4	Total
Alameda County (101)	$763	$78,236		$82,988	$24,372	$848	$4,951	$21,638	$213,796
Health System (106)	20	31,593		47,201					78,814
Superior Court (632)	72	7,550		7,760					15,382
First 5 (714)		622		2,126					2,748
Housing Authority (103)	926	129		778					1,833
LARPD (104)	65		242	146					453
Total	**$1,846**	**$118,130**	**$242**	**$140,999**	**$24,372**	**$848**	**$4,951**	**$21,638**	**$313,026**

1 Includes contributions only for those employers with active member payroll. The UAAL contribution for ACOE, expressed as a level dollar amount, is $120 K when made on April 1, 2025.
2 Contribution calculated using projected compensation provided on the next page for the December 31, 2023 valuation.
3 Includes contributions only for those employers with active member payroll. The UAAL contribution for ACOE, expressed as a level dollar amount, is $110 K when made on April 1, 2024.

December 31, 2023 Projected Employer Compensation ($ '000s)

Employer Name (Code)	General Tier 1	General Tier 2	General Tier 3	General Tier 4	Safety Tier 2	Safety Tier 2C	Safety Tier 2D	Safety Tier 4	Total
Alameda County (101)	$3,085	$337,371		$359,256	$95,464	$2,783	$18,777	$91,880	$908,616
Health System (106)	77	130,441		195,610					326,128
Superior Court (632)	279	31,172		32,160					63,611
First 5 (714)		2,567		8,810					11,377
Housing Authority (103)	2,994	440		2,658					6,092
LARPD (104)	592		1,409	1,572					3,573
Total	**$7,027**	**$501,991**	**$1,409**	**$600,066**	**$95,464**	**$2,783**	**$18,777**	**$91,880**	**$1,319,397**

Exhibit 5: Schedule of outstanding balances of prior implicit retiree health benefit subsidy transfers

For Year(s)	Initial Years	Initial Amount ($ in '000s)[1]	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment ($ in '000s)[2]
Prior to 2013	[3]	[3]	$28,164	9	$3,762
2013	20	$6,993	5,635	10	690
2014	20	5,215	4,482	11	508
2015	20	5,325	4,719	12	499
2016	20	8,865	7,975	13	792
2017	20	5,830	5,384	14	505
2018	20	6,940	6,611	15	589
2019	20	6,511	6,225	16	529
2020	20	7,549	7,335	17	597
2021	20	5,653	5,531	18	432
2022	20	7,981	7,984	19	601
2023	20	4,116	4,116	20	299
Total			**$94,161**		**$9,802**

Note: Results may be slightly off due to rounding.

[1] For years 2013 and later, these amounts are estimates provided by ACERA.
[2] Level percentage of payroll.
[3] Various initial years and amounts prior to 2013.

Exhibit 6: Allocation of the valuation value of assets as of December 31, 2023

The allocation of the valuation value of assets is determined based on a roll-forward of the prior year allocation using employer contributions, member contributions, benefit payments, and calculated interest credits as provided by ACERA. The allocation is determined separately for each 6-month period, consistent with ACERA's interest crediting cycle.

Allocation of Valuation Value of Assets from January 1 – June 30, 2023

Step	(1) General (Excludes ACOE and LARPD)	(2) General (ACOE)	(3) General (LARPD)	(4) Safety	(5) LARPD General UAAL Advance Reserve[1]	(6) County Safety UAAL Advance Reserve[1]	(7) Total
A. VVA at January 1							
Basic Only	$4,745,316,726	$2,337,285	$34,168,959	$1,468,926,786	$8,730,551	$570,478,503	$6,829,958,810
COLA Only	2,011,957,731	1,227,049	19,582,153	870,356,462	3,505,071	178,450,472	3,085,078,938
Total[2]	**$6,757,274,457**	**$3,564,334**	**$53,751,112**	**$2,339,283,248**	**$12,235,622**	**$748,928,975**	**$9,915,037,748**
B. Est. SRBR Transfer							
Basic Only[2]	$6,117,446	$0	$0	$1,864,030	$0	$0	$7,981,476
C. SRBR Adjustment[3]							
Basic Only	$(106,737)	$0	$0	$(32,524)	$0	$0	$(139,261)
D. Employer Contributions							
Basic Only	$93,007,019	$101,000	$173,370	$18,062,664	$0	$0	$111,344,053
COLA Only	26,278,499	0	51,986	4,740,304	0	0	31,070,790
Total	**$119,285,518**	**$101,000**	**$225,356**	**$22,802,968**	**$0**	**$0**	**$142,414,843**
E. Employee Contributions							
Basic Only	$36,661,808	$0	$168,719	$12,921,029	$0	$0	$49,751,556
COLA Only	8,577,932	0	57,718	3,989,867	0	0	12,625,517
Total	**$45,239,740**	**$0**	**$226,438**	**$16,910,895**	**$0**	**$0**	**$62,377,073**
F. Benefit Payments							
Basic Only	$164,215,433	$137,659	$1,319,100	$61,352,452	$0	$0	$227,024,645
COLA Only	54,871,038	77,876	422,037	22,728,024	0	0	78,098,975
Total	**$219,086,472**	**$215,535**	**$1,741,137**	**$84,080,476**	**$0**	**$0**	**$305,123,620**
G. Reserve Transfer[4]							
Basic Only	$0	$0	$370,105	$32,113,048	$(370,105)	$(32,113,048)	$0
COLA Only	0	0	163,921	10,043,504	(163,921)	(10,043,504)	0
Total	**$0**	**$0**	**$534,026**	**$42,156,551**	**$(534,026)**	**$(42,156,551)**	**$0**
H. Return on VVA[5]							
Basic Only	$136,069,067	$67,020	$979,774	$42,120,581	$158,917	$10,384,024	$189,779,383
COLA Only	57,898,547	35,311	563,520	25,046,438	63,800	3,248,210	86,855,826
Total	**$193,967,614**	**$102,331**	**$1,543,294**	**$67,167,019**	**$222,717**	**$13,632,234**	**$276,635,209**
I. VVA at June 30[6]							
Basic Only	**$4,852,849,895**	**$2,367,646**	**$34,541,826**	**$1,514,623,161**	**$8,519,363**	**$548,749,479**	**$6,961,651,370**
COLA Only	**2,049,841,671**	**1,184,484**	**19,997,262**	**891,448,551**	**3,404,950**	**171,655,178**	**3,137,532,096**
Total	**$6,902,691,566**	**$3,552,130**	**$54,539,088**	**$2,406,071,712**	**$11,924,313**	**$720,404,657**	**$10,099,183,466**

Allocation of Valuation Value of Assets from July 1 – December 31, 2023

Step	(1) General (Excludes ACOE and LARPD)	(2) General (ACOE)	(3) General (LARPD)	(4) Safety	(5) LARPD General UAAL Advance Reserve[1]	(6) County Safety UAAL Advance Reserve[1]	(7) Total
I. VVA at July 1[6]							
Basic Only	$4,852,849,895	$2,367,646	$34,541,826	$1,514,623,161	$8,519,363	$548,749,479	$6,961,651,370
COLA Only	2,049,841,671	1,184,484	19,997,262	891,448,551	3,404,950	171,655,178	3,137,532,096
Total	$6,902,691,566	$3,552,130	$54,539,088	$2,406,071,712	$11,924,313	$720,404,657	$10,099,183,466
J. Employer Contributions							
Basic Only	$93,979,488	$0	$176,442	$19,558,339	$0	$0	$113,714,269
COLA Only	27,088,768	0	52,998	5,369,160	0	0	32,510,926
Total	**$121,068,256**	**$0**	**$229,440**	**$24,927,500**	**$0**	**$0**	**$146,225,196**
K. Employee Contributions							
Basic Only	$37,437,582	$0	$193,489	$13,518,763	$0	$0	$51,149,834
COLA Only	8,718,652	0	57,481	4,168,882	0	0	12,945,015
Total	**$46,156,234**	**$0**	**$250,970**	**$17,687,645**	**$0**	**$0**	**$64,094,849**
L. Benefit Payments							
Basic Only	$168,738,928	$137,105	$1,328,642	$62,095,182	$0	$0	$232,299,856
COLA Only	57,053,795	80,610	445,277	23,312,813	0	0	80,892,496
Total	**$225,792,723**	**$217,714**	**$1,773,919**	**$85,407,995**	**$0**	**$0**	**$313,192,352**
M. Reserve Transfer[4]							
Basic Only	$0	$0	356,760	31,194,972	$(356,760)	$(31,194,972)	$0
COLA Only	0	0	164,925	9,757,595	(164,925)	(9,757,595)	0
Total	**$0**	**$0**	**521,684**	**40,952,567**	**$(521,684)**	**$(40,952,567)**	**$0**
N. Return on VVA[5]							
Basic Only	$169,097,836	$82,501	$1,203,612	$52,777,132	$178,676	$11,508,884	$234,848,641
COLA Only	71,690,333	41,426	699,376	31,177,161	71,412	3,600,112	107,279,820
Total	**$240,788,170**	**$123,926**	**$1,902,988**	**$83,954,293**	**$250,088**	**$15,108,996**	**$342,128,461**
O. Preliminary VVA Dec 31[7]							
Basic Only	$4,984,626,190	$2,313,042	$35,143,489	$1,569,577,285	$8,341,279	$529,063,391	$7,129,064,676
COLA Only	2,100,285,312	1,145,300	20,526,762	918,608,436	3,311,437	165,497,695	3,209,374,942
Total	**$7,084,911,502**	**$3,458,342**	**$55,670,251**	**$2,488,185,721**	**$11,652,716**	**$694,561,086**	**$10,338,439,618**
P. Est. Transfers[8]							
Basic Only	$3,169,672	$0	$0	$946,328	$0	$0	$4,116,000
COLA Only	0	0	0	0	0	0	0
Total	**$3,169,672**	**$0**	**$0**	**$946,328**	**$0**	**$0**	**$4,116,000**
Q. VVA at December 31							
Total Basic Only	**$4,987,795,862**	**$2,313,042**	**$35,143,489**	**$1,570,523,613**	**$8,341,279**	**$529,063,391**	**$7,133,180,676**
Total COLA Only	**2,100,285,312**	**1,145,300**	**20,526,762**	**918,608,436**	**3,311,437**	**165,497,695**	**3,209,374,942**
Total VVA[9]	**$7,088,081,174**	**$3,458,342**	**$55,670,251**	**$2,489,132,049**	**$11,652,716**	**$694,561,086**	**$10,342,555,618**

Notes for Exhibit 6

Results may be slightly off due to rounding.

1. The County made voluntary County Safety contributions of $800 million on around June 29, 2021 to reduce their Safety UAAL and associated contribution rates. The Livermore Area Recreation and Park District (LARPD) also made voluntary LARPD General contributions of $12.611 million on around June 29, 2021 to reduce their General UAAL and associated contribution rates. ACERA has set up the County Safety UAAL Advance Reserve and the LARPD General UAAL Advance Reserve to track these voluntary UAAL contributions. Based on the Board's funding policy and interest crediting policy, these two UAAL Advance Reserves are subject to a separate 5-year asset smoothing schedule that excludes the allocation of any deferred investment gains or losses accumulated up to June 30, 2021 for interest crediting purposes. For purposes of determining the Basic and COLA voluntary UAAL contribution credit, we tracked internally the UAAL Advance Reserve by Basic and COLA based on the proportion of Basic and COLA voluntary contribution credits provided in our June 4, 2021 letter for County Safety and in our June 10, 2021 letter for LARPD General. ACERA continues to maintain the UAAL Advance Reserves with no Basic and COLA split.
2. The final valuation value of assets as of December 31, 2022 is $9,923,019,224, is calculated as: (A) + (B)
3. The SRBR Adjustment is calculated by taking the difference between the actual and estimated SRBR transfer used in the prior valuation.
4. The Reserve Transfer is the transfer from UAAL Advance Reserve to Employer Advance Reserve and COLA Reserve.
5. The return for LARPD General UAAL Advance Reserve and County Safety UAAL Advance Reserve are determined based on a separate 5-year asset smoothing schedule that excludes any deferred investment gains or losses accumulated up to June 30, 2021. The total return minus the returns for the UAAL Advance Reserve is allocated to the cost groups based on the cost group's valuation value of assets at beginning of period using the following formulas:

   [(7) H – (5) H – (6) H] ÷ [(7) A – (5) A – (6) A] × A for each Cost Group

   [(7) N - (5) N - (6) N] ÷ [(7) I - (5) I - (6) I] × I for each Cost Group
6. Valuation value of assets at June 30 is provided by ACERA, is calculated as: A + B + C + D + E – F + G + H
7. Preliminary VVA at December 31 is provided by ACERA, is calculated as: I + J + K – L + M + N

Note that the preliminary VVA at December 31 also includes the following manual adjustments (to align with the total basic and COLA reserves maintained by ACERA):

Manual Adjustments	(1) General (Excludes ACOE and LARPD)	(2) General (ACOE)	(3) General (LARPD)	(4) Safety	(5) LARPD General UAAL Advance Reserve[1]	(6) County Safety UAAL Advance Reserve[1]	(7) Total
Basic Only	$317	$0	$2	$100	$0	$0	$419
COLA Only	(317)	0	(2)	(100)	0	0	(419)

8. Estimated Transfers include SRBR Transfers and other Asset Transfers.
9. Valuation value of assets at December 31 is calculated as: O + P

Exhibit 7: Reconciliation of voluntary UAAL contribution rate credit as of December 31, 2023

The County made voluntary County Safety UAAL contributions of $800 million on around June 29, 2021 to reduce their UAAL and associated UAAL contribution rates. These contributions are tracked under the County – Safety UAAL Advance Reserve based on the amount of contribution credit used and the interest credited to that reserve in accordance with the Board's Interest Crediting Policy.[1] The outstanding balance of this reserve is amortized over the remaining 10.5 years (as of December 31, 2023) as a contribution credit.

Reconciliation from December 31, 2022 to December 31, 2023
Safety Only

Item	Contribution Rate
County – Safety Voluntary UAAL contribution credit as of December 31, 2022	39.45%
1. Effect of investment return less than expected after "smoothing"	(1.15%)
2. Effect of more actual contribution credit required or applied than expected[2]	(0.14%)
3. Effect of amortizing the UAAL Advance Reserve balance over a smaller than expected projected payroll	0.49%
4. Effect of assumption changes	0.45%
5. Total change	**(0.35%)**
County – Safety Voluntary UAAL contribution credit as of December 31, 2023	**39.10%**

[1] Details may be found in *Section 4, Exhibit 6*.
[2] Includes impact of scheduled lag in applying the contribution rate credit from the voluntary UAAL contributions and difference due to actual payroll during 2023 different than expected.

LARPD made voluntary LARPD General UAAL contributions of $12.611 million on around June 29, 2021 to reduce their UAAL and associated UAAL contribution rates. These contributions are tracked under the LARPD – General UAAL Advance Reserve based on the amount of contribution credit used and the interest credited to that reserve in accordance with the Board's Interest Crediting Policy.[1] The outstanding balance of this reserve is amortized over the remaining 13.5 years (as of December 31, 2023) as a contribution credit.

Reconciliation from December 31, 2022 to December 31, 2023
LARPD Only

	Contribution Rate
LARPD – General Voluntary UAAL contribution credit as of December 31, 2022	28.66%
1. Effect of investment return less than expected after "smoothing"	(0.89%)
2. Effect of less actual contribution credit required or applied than expected[2]	0.12%
3. Effect of amortizing the UAAL Advance Reserve balance over a smaller than expected projected payroll	0.95%
4. Effect of assumption changes	0.53%
5. Effect of floor on net LARPD rate of no less than Normal Cost in compliance with CalPEPRA[3]	0.86%
6. Total change	**1.57%**
LARPD – General Voluntary UAAL contribution credit as of December 31, 2023	**30.23%**

[1] Details may be found in *Section 4, Exhibit 6*.

[2] Includes impact of scheduled lag in applying the contribution rate credit from the voluntary UAAL contributions and difference due to actual payroll during 2023 different than expected.

[3] In compliance with CalPEPRA, the net LARPD contribution rate cannot be less than the Normal Cost. In order to do that, the voluntary UAAL contribution credit has been reduced by 1.23% of payroll to not exceed the UAAL rate before the credit. In the December 31, 2022 valuation, the voluntary UAAL contribution credit was reduced by 2.09% of payroll to not exceed the UAAL rate before the credit. The net effect of the Normal Cost floor from December 31, 2022 to December 31, 2023 is equal to 1.23% - 2.09% = (0.86%) of payroll.

Appendix A: Definition of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Term	Definition
Actuarial accrued liability for actives	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial accrued liability for retirees and beneficiaries	Actuarial Present Value of lifetime benefits to existing retirees and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial cost method	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial gain or loss	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected.
Actuarially equivalent	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial present value	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: 1. Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) 2. Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and 3. Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Appendix A: Definition of Pension Terms

Term	Definition
Actuarial present value of future benefits	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund of member contributions or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial valuation	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan, as well as Actuarially Determined Contributions.
Actuarial value of assets	The value of the Plan's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the Actuarially Determined Contribution.
Actuarially determined	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the Plan.
Actuarially determined contribution	The employer's contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
Amortization method	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization payment	The portion of the pension plan contribution, or ADC, that is intended to pay off the Unfunded Actuarial Accrued Liability.
Assumptions or actuarial assumptions	The estimates upon which the cost of the Plan is calculated, including: **Investment return** — the rate of investment yield that the Plan will earn over the long-term future; **Mortality rates** — the rate or probability of death at a given age for employees and retirees; **Retirement rates** — the rate or probability of retirement at a given age or service; **Disability rates** — the rate or probability of disability retirement at a given age; **Withdrawal rates** — the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; **Salary increase rates** — the rates of salary increase due to inflation, real wage growth and merit and promotion increases.

Appendix A: Definition of Pension Terms

Term	Definition
Closed amortization period	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See Open Amortization Period.
Decrements	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined benefit plan	A retirement plan in which benefits are defined by a formula based on the member's compensation, age and/or years of service.
Defined contribution plan	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer normal cost	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience study	A periodic review and analysis of the actual experience of the Plan that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified based on recommendations from the Actuary.
Funded ratio	The ratio of the Valuation Value of Assets (VVA) to the Actuarial Accrued Liability (AAL). Plans sometimes also calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the VVA.
GASB 67 and GASB 68	Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.
Investment return	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Negative amortization	Negative amortization is a result of an increase in the unfunded actuarial accrued liability when the amortization payment is less than the interest accrued on the unfunded actuarial accrued liabilty.
Net Pension Liability (NPL)	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
Normal cost	The portion of the Actuarial Present Value of Future Benefits and expenses, if applicable, allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of the Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of member contributions and employer Normal Cost unless otherwise specifically stated.

Appendix A: Definition of Pension Terms

Term	Definition
Open amortization period	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in each future year in determining the Amortization Period.
Plan Fiduciary Net Position	Market value of assets.
Service costs	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Total Pension Liability (TPL)	The actuarial accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
Unfunded actuarial accrued liability	The excess of the Actuarial Accrued Liability over the Valuation Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus or an Overfunded Actuarial Accrued Liability.
Valuation date or actuarial valuation date	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Benefits is determined. The expected benefits to be paid in the future are discounted to this date.
Valuation value of assets	The Actuarial Value of Assets reduced by the value of non-valuation reserves.

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Via Email

April 10, 2024

Lisa Johnson
Assistant Chief Executive Officer, Operations
Alameda County Employees' Retirement Association
475 14th Street, Suite 1000
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**Re: Alameda County Employees' Retirement Association
Response to Cavanaugh Macdonald's Actuarial Audit of Pension Funding Valuation as of December 31, 2021, GASB* Valuations as of December 31, 2022 and Experience Study recommending assumptions for the valuation as of December 31, 2023**

Dear Lisa:

As we previously discussed with the Actuarial Committee, we are writing to provide formal documentation to some of the comments included by Cavanaugh Macdonald Consulting (CMC) in their review of our December 31, 2021 Pension Plan Funding and December 31, 2022 GASB 67, 68, 74 and 75 Valuations and the Experience Study for the period from December 1, 2019 to November 30, 2022 recommending assumptions for the December 31, 2023 valuation.

According to CMC, their independent replication of the Funding and GASB reports confirmed that "the actuarial valuation and other reports results to be generally reasonable and accurate based on the assumptions used. The actuarial work was performed by qualified actuaries and was performed in accordance with the principles and practices prescribed by the Actuarial Standards Board." For the December 1, 2019 to November 30, 2022 experience study, CMC confirmed that "these assumptions are reasonable and appropriate for use in the valuation process." As noted in their report, these are the principal results of the actuarial audit.

In the rest of this letter, we have prepared responses to a few of the points raised in CMC's report. Note that we have included the page number references where CMC's observation and/or recommendation can be found.

* GASB stands for Government Accounting Standards Board.

Our responses are as follows:

Review of Pension Plan Funding valuation

- Projection of pay limit* in determining retirement benefit for deferred members who join a reciprocal system (Reference: Section 5, page 19–20)

  CMC recommended that for members who are over the pay limit, the compensation used for the reciprocal benefit be projected with the inflation assumption (2.75% per annum in the December 31, 2022 valuation) instead of the compensation increase assumption for reciprocal members (3.65% and 4.05% per annum increase for General and Safety members, respectively in the December 31, 2022 valuation).

  Segal agrees with CMC's recommendation and we have updated our calculation in the December 31, 2023 valuation to reflect that the compensation for reciprocal members, if over the pay limit, will be projected with the inflation assumption. This update has an impact of decreasing the actuarial accrued liability (AAL) by about $3.3 million in the December 31, 2023 valuation.

- Additional disclosure pertaining to the revision of Actuarial Standards of Practice (ASOP) 4 effective with the December 31, 2023 valuation (Reference: Section 6, page 22).

  CMC found that the December 31, 2022 valuation report to be in compliance with the applicable ASOPs. They also noted that there would be additional disclosure requirements pertaining to the revised ASOP 4 effective with the December 31, 2023 valuation, including a low-default-risk obligation measure (LDROM) and a "reasonable actuarially determined contribution" that considers the 50/50 excess earnings allocation to the SRBR.

  In preparing our December 31, 2022 risk report, we included information about the new LDROM disclosure requirement that would be effective as of the December 31, 2023 funding valuation for ACERA. Furthermore, since the implementation of GASB 74 and 75, we have been providing the effect of reflecting a discount rate assumption that takes into account the excess earning allocation in our valuation report. We believe that disclosure satisfies the revised ASOP 4 requirement.

- Comparison of Normal Cost calculated by CMC versus Segal (Reference: Section 5, page 21).

  As noted in the CMC report, the 0% to 2% difference in the present value of benefits and actuarial liabilities calculated by CMC and Segal for the total Plan are reasonable differences based on different actuarial software and approaches used in those complex calculations. For the normal cost amounts, CMC noted that while they could arrive at a reasonable match to Segal's results for a number of individual employees by applying Segal's decrement timing and employee contributions timing, the differences in the total normal cost amounts (for the total Plan and by tiers) were somewhat larger (about 13% for General and 12% for Safety). CMC concluded that much of the difference was due to "the limitation in CMC's actuarial

* For Legacy members who entered ACERA on or after January 1, 1996, the pensionable pay limit for 2024 is $345,000. For PEPRA members, the pensionable compensation limit for 2024 is $151,446 for an employer that is not enrolled in Social Security and $181,734 for an employer that is enrolled in Social Security.

software (to accommodate Segal's decrement timing) for the calculation of normal cost". We agree with CMC and in particular, we believe the CMC normal cost amounts have been reported after taking into account retirement, death and termination decrements whereas our normal cost amounts shown in the December 31, 2021 valuation were before taking into account those decrements. Regardless of the methodology, because the normal cost amounts were then divided by the corresponding payrolls (and CMC would have used the payroll after the decrements while Segal would have used the payroll before the decrements) in formulating the contribution rates recommendation, the normal cost rates produced by CMC and the normal cost rates produced by Segal in the 2021 valuation should be reasonably close.

Review of GASB reports

- Additional disclosure in the GASB reports regarding the discount rate used for financial reporting (Reference: Section 7, Page 24)

  CMC recommended that Segal include a brief summary regarding the decision to use the 7% long-term annual funding investment return assumption as the discount rate for financial reporting without accounting for the impact of the 50/50 excess earnings allocation to the SRBR.

  Segal agrees and we will include a summary in the December 31, 2023 GASB reports to provide background on the decision to use the 7% investment return assumption as the discount rate. That decision to use the investment return assumptions without accounting for the impact of the 50/50 excess earnings allocation to the SRBR was a result of several meetings with ACERA and its auditors, as well as with administrative staff, auditors, and consultants representing the County of Alameda, and after twice consulting with GASB staff.

Review of Experience Study

- In the CMC report, they included several suggestions for Segal to consider at the next triennial experience study. Those suggestions included: (a) lowering the merit and promotion salary increase assumptions for members with 25 or 30 years of service (reference: Section 8, page 28), (b) providing additional disclosure on exposures and decrements used in deriving the service retirement assumptions (reference: Section 8, page 29) and (c) setting up different refund of contributions assumptions for active members with over 5 or more years of service (reference: Section 8, page 31).

  In preparing the above demographic assumptions for ACERA, we have always taken into consideration the experience at ACERA. We would take CMC's suggestions under advisement, and we would make adjustments only if they are supported by the experience at ACERA at the next experience study.

Please let us know if you have any questions.

Sincerely,

Andy Yeung

Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary

Eva Yum

Eva Yum, FSA, MAAA, EA
Vice President and Actuary

/elf

cc: Dave Nelsen