

# Ventura County Employees' Retirement Association

## **Actuarial Valuation and Review**

As of June 30, 2023



This report has been prepared at the request of the Board of Retirement to assist in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Retirement and may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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December 12, 2023

Board of Retirement  
Ventura County Employees' Retirement Association  
1190 S. Victoria Avenue, Suite 200  
Ventura, CA 93003-6572

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2023. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for July 1, 2024 to June 30, 2025.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Retirement Association. The census information and financial information on which our calculations were based was prepared by the staff of the Association. That assistance is gratefully acknowledged.

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 completed under the supervision of Molly Calcagno, ASA, Enrolled Actuary, MAAA. 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 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.

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

Sincerely,

Segal



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Paul Angelo, FSA, EA, MAAA, FCA  
Senior Vice President and Actuary



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Molly Calcagno, ASA, EA, MAAA  
Senior Actuary

JY/jl

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# Section 1: Actuarial Valuation Summary

## Purpose and Basis

This report was prepared by Segal to present a valuation of the Ventura County Employees' Retirement Association ("VCERA" or "the Association") as of June 30, 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 pension plan, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2023, provided by VCERA;
- The assets of the plan as of June 30, 2023, provided by VCERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board of Retirement for the June 30, 2023 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Board of Retirement for the June 30, 2023 valuation; and
- The funding policy adopted by the Board of Retirement.

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.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions to evaluate the Association's liabilities and future contribution requirements. Our calculations are based upon member data and financial information provided to us by the Association's staff. This information has not been audited by us, but it has been reviewed and found to be consistent, both internally and with prior year's information.

The contribution requirements are determined as a percentage of payroll. The Association's employer rates provide for both Normal Cost and a contribution to amortize any unfunded or overfunded Actuarial Accrued Liabilities. In this valuation, we have applied the funding policy last reviewed and approved by the Board in 2022. Details of the funding policy are provided in *Section 4, Exhibit 1* on pages 88 and 89.

## Section 1: Actuarial Valuation Summary

A schedule of current amortization balances and payments may be found in *Section 3, Exhibit H* starting on page 70. A graphical projection of the Unfunded Actuarial Accrued Liability (UAAL) amortization balances and payments has been included in *Section 3, Exhibit I* on pages 74 and 75.

The Actuarial Standards Board Actuarial Standard of Practice (ASOP) No. 4 provides guidelines for actuaries to follow when measuring pension obligations. For a plan such as that offered by the Retirement Association that may use undesignated excess earnings to provide supplemental benefits, the valuation report must indicate that the impact of any such future use of undesignated excess earnings on the future financial condition of the plan has not been explicitly measured or otherwise reflected in the valuation. However, it should be noted that under the Board's Interest Crediting Policy, the balance of \$1.34 billion (negative) in the Interest Crediting Shortfall Tracking Account (also known as the Contra Reserve) has to be fully restored out of future excess earnings before any subsequent earnings can be used to provide for any supplemental benefits. The Contra Reserve tracks any cumulative shortfalls in investment earnings relative to earnings required to credit full interest at the assumed rate to valuation reserves.

In this report, the employer and member contribution rates shown in *Section 2, Subsection F* and *Section 4, Exhibit 3*, respectively, are calculated based on a 50/50 sharing of Normal Cost for both PEPRA and non-PEPRA Tiers. For purposes of these calculations, we have been previously directed by VCERA to assume that the cessation of member contributions after 30 years of service for non-PEPRA members continues per the County Employees Retirement Law (CERL) and that the cost associated with this provision is to be paid for by employers.

The employer and member contribution rates calculated under the prior method (i.e., under the CERL statutory formula without 50/50 sharing of Normal Cost for non-PEPRA tiers) are shown in *Section 4, Exhibit 4* and *Exhibit 5*, respectively, starting on page 100.

Effective with future service accrued on or after July 1, 2023, California Nurses Association (CNA) members will receive a fixed 2% COLA. This valuation report shows the General COLA UAAL contribution rates on a combined basis for all General Tiers that have a COLA and the General Tier 2 COLA Normal Cost contribution rates on a combined basis for Service Employees International Union (SEIU) and CNA. Segal will provide a stand-alone letter that calculates the separate contribution rates to be payable for each of the General Tiers at a later date.

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

# Section 1: Actuarial Valuation Summary

## Valuation Highlights

1. A fixed 2% COLA for General Tier 2 future service earned effective July 1, 2023 has been adopted for active members in the California Nurses Association (CNA). This plan provision change increased the UAAL by \$3.0 million. The average employer contribution rate increase as a result of this plan provision change was 0.10% of payroll and the average member contribution rate increase was 0.24% of payroll.<sup>1</sup> Note that this valuation report shows the General COLA UAAL contribution rates on a combined basis for all General Tiers that have a COLA, and the General Tier 2 COLA Normal Cost contribution rates on a combined basis for Service Employees International Union (SEIU) and CNA. Segal will provide a stand-alone letter that calculates the separate contribution rates to be payable for each of the General Tiers at a later date.
2. This valuation reflects two minor technical actuarial refinements as follows:
  - a. applying beginning of year timing of decrements for exiting from active membership status in calculating the normal cost rate; and
  - b. aligning projected salary in current life and replacement life when calculating normal cost rates for active members.

The refinements resulted in a one-time net decrease of 0.18% in the average employer rate and a one-time net increase of 0.07% in the average member contribution rate.<sup>2</sup>

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3. The ratio of the Valuation Value of Assets to Actuarial Accrued Liability decreased slightly from 97.2% to 97.1%. This ratio is one measure of funding status, and its history is a measure of funding progress. The ratio of the Market Value of Assets to the Actuarial Accrued Liability increased from 93.8% to 96.3%. 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 of the amount of future contributions.
- Pg. 32
4. The Association's UAAL (which is based on the Valuation Value of Assets) has increased from \$212 million to \$230 million. The increase in UAAL is primarily due to individual salary increases greater than expected for active members, investment return (after smoothing) less than the 7.00% assumed rate, and COLA increases greater than expected for General Tier 1 and Safety retirees and beneficiaries offset to some extent by actual contributions greater than expected due to the scheduled one-year delay in implementing contributions rates determined in the last valuation. A complete reconciliation of the Association's UAAL is provided in *Section 2, Subsection E*.
- Pg. 26
5. The actuarial loss of \$73.2 million,<sup>3</sup> or 0.9% of the Actuarial Accrued Liability, is due to an investment loss of \$35.8 million, or 0.5% of the Actuarial Accrued Liability, a contribution gain of \$22.5 million, or 0.3% of the Actuarial Accrued Liability, and a net experience loss from sources other than investments and contributions of \$59.9, or 0.8% of the Actuarial Accrued Liability prior to reflection of plan provision change. This loss was primarily due to individual salary increases higher than expected.

<sup>1</sup> The plan provision change only affects the member contribution rate for CNA members. The increase for CNA members was 2.63% of payroll.

<sup>2</sup> There was an increase in the average member contribution rate when the rates are composited on salaries after applying beginning of year decrements even though the individual member contribution rates decreased for most of the groups as a result of this refinement.

<sup>3</sup> Includes effect of two minor technical actuarial refinements.



## Section 1: Actuarial Valuation Summary

- Pg. 35 6. The average employer contribution rate calculated in this valuation increased from 18.23% of payroll to 18.56% of payroll. This increase is primarily due to individual salary increases greater than expected for active members, investment return (after smoothing) less than the 7.00% assumed rate, and COLA increases greater than expected for General Tier 1 and Safety retirees and beneficiaries offset to some extent by the effect of amortizing prior year's UAAL over a larger than expected projected total salary and actual contributions greater than expected due to the scheduled one-year delay in implementing contributions rates determined in the last valuation. A complete reconciliation of the Association's average employer rate is provided in *Section 2, Subsection F*.

As previously adopted by the Board, we have continued to calculate the Basic and COLA UAAL rates on a combined basis for all General Tiers even though General Tier 2 and associated PEPPRA tiers are overfunded this year. This results in more stable UAAL rates for General Tier 1.

- Pg. 70 7. Several UAAL amortization layers established between June 30, 2006 valuation and June 30, 2009 valuation will be fully amortized in the June 30, 2024 valuation. This alone will result in a reduction in the UAAL contribution rate of over 3% of payroll for the plan in total (approximately 2% of payroll for General and 7% of payroll for Safety) in the June 30, 2024 valuation.

- Pg. 36 8. The average member rate calculated in this valuation increased from 10.49% of payroll to 10.76% of payroll. This change is primarily due to the plan provision change to provide a fixed 2% COLA on future service for CNA members. A complete reconciliation of the Association's average member rate is provided in *Section 2, Subsection F*.

- Pg. 27 9. The rate of return on the Market Value of Assets was 9.49% for the 2022-2023 plan year. The return on the Valuation Value of Assets was 6.50% for the same period after considering the gradual recognition of current and prior years' investment gains and losses. This resulted in an actuarial loss when measured against the assumed rate of return of 7.00%. This actuarial investment loss increased the average employer contribution rate by 0.34% of payroll.

- Pg. 23 10. The total unrecognized net investment loss as of June 30, 2023 is about \$62.5 million as compared to an unrecognized net investment loss of \$254.3 million in the previous valuation. This net deferred investment loss of \$62.5 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 losses of \$62.5 million represent about 0.8% of the Market Value of Assets. Unless offset by future investment gains or other favorable experience, the recognition of the \$62.5 million market losses is expected to have an impact on the Association's future funded ratio and contribution rate requirements. This potential impact may be illustrated as follows:

- a. If the net deferred losses in this year's valuation were recognized immediately and entirely in the Valuation Value of Assets, the funded ratio would decrease from 97.1% to 96.3%.

For comparison purposes, if all the net deferred losses in the June 30, 2022 valuation had been recognized immediately in the June 30, 2022 valuation, the funded ratio in last year's valuation would have decreased from 97.2% to 93.8%.

- b. If the net deferred losses in this year's valuation were recognized immediately and entirely in the Valuation Value of Assets, the average employer contribution rate would increase from 18.56% to 19.15% of payroll.

## Section 1: Actuarial Valuation Summary

For comparison purposes, if all the net deferred losses in the June 30, 2022 valuation had been recognized immediately in the June 30, 2022 valuation, the average employer contribution rate in last year's valuation would have increased from 18.23% to 20.82% of payroll.

11. The footnote on page 23 shows that under the asset smoothing method the \$62.5 million in net deferred losses will be recognized in the next four and a half years, but in a very non-level (uneven) pattern. In particular, there will be gains of \$80.3 million and \$45.8 million recognized in the next two years, followed by offsetting losses of \$129.0 million and \$95.4 million in the two years after that, followed by one final year of gains of \$35.8 million, so as to ultimately recognize all of the current total net deferred losses of \$62.5 million. This means that, absent any new gains or losses in the future, there will be two years of decreases in the employer contribution rate followed by two years of increases followed by a year of decreases before the \$62.5 million in net deferred losses are fully recognized.

In keeping with model actuarial practice for this situation as well as Section II, Item 5b of the Board's Actuarial Funding Policy, and similar to what was proposed and adopted for the June 30, 2012 valuation, the asset smoothing method could be modified, effective July 1, 2024, by combining the net deferred loss of \$62.5 million from the current valuation into a single four and a half year smoothing "layer" and thereby recognizing that loss over the next four and a half years in four level amounts of approximately \$13.9 million in each year with an additional amount of \$6.9 million in the next half year. This would reduce the volatility associated with the current pattern of deferred gain/loss recognition and thereby result in both more stable funded ratios (on a valuation value basis) and more level employer contribution rates.

This change would have no impact on the current June 30, 2023 valuation results as the total amount of unrecognized losses as of June 30, 2023 would remain unchanged. Additionally, we recommend using a four and a half year smoothing period for the combined deferred losses as that will complete the recognition of the net deferred loss over the same period as under the current separate smoothing layers. We can provide more details of this policy option as requested.

12. On July 30, 2020, the California Supreme Court issued a decision in the Alameda County Deputy Sheriffs' Assn. et al. v. Alameda County Employees' Retirement Assn. litigation that clarified what should be considered compensation earnable for non-PEPRA members and pensionable compensation for PEPRA members. In response, the Board adopted a series of Resolutions to implement certain aspects of the Alameda Decision. The October 2020 Resolution set forth exclusions from compensation earnable and pensionable compensation consisting of payment for services outside of normal working hours (e.g., standby and call-back pay), excess leave cash-outs beyond what is both earned and payable in each 12-month period, and leave donations which are an "in-kind" benefit. The July 2021 Resolution limited inclusion of flexible benefit plan allowances, or "flex credit," to the "employee-only" rate for labor agreements that provide tiered rates for healthcare coverage, subject to further modification based on pending legislation concerning flex credit. Following the subsequent veto of such legislation, the Board adopted a Resolution in April of 2023, excluding from compensation earnable flex credit amounts in excess of what all members in a bargaining group may receive in unrestricted cash, which are deemed "in-kind" benefits. As discussed with VCERA staff, the effect of the Alameda Decision will be reflected as gains and losses as issues are settled and corrections are made to the membership data provided for each valuation. In addition, any

## Section 1: Actuarial Valuation Summary

additional impact on the UAAL related to recovery of benefits and/or refunds of member contributions previously paid in conjunction with these pay items has not been reflected in this valuation but will be reflected in future valuations once it is known.

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13. The Actuarial Standards Board approved Actuarial Standard of Practice No. 51 (ASOP 51) regarding risk assessment, which was first effective with VCERA's June 30, 2019 actuarial valuation. ASOP 51 requires actuaries to identify and assess risks that "may reasonably be anticipated to significantly affect the plan's future financial condition". Examples of key risks listed that are particularly relevant to VCERA are asset/liability mismatch risk, investment risk, and longevity risk. The standard also requires an actuary to consider if there is any ongoing contribution risk to the plan, however it does not require the actuary to evaluate the particular ability or willingness of contributing entities to make contributions when due, nor does it require the actuary to assess the likelihood or consequences of future changes in applicable law.

The actuary's initial assessment can be strictly a qualitative discussion about potential adverse experience and the possible effect on future results, but it may also include quantitative numerical demonstrations where informative. The actuary is also encouraged to consider a recommendation as to whether a more detailed assessment or risk report would be significantly beneficial for the intended user in order to examine particular financial risks. When making that recommendation, the actuary will take into account such factors as the plan's design, risk profile, maturity, size, funded status, asset allocation, cash flow, possible insolvency and current market conditions.

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. We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Association's future financial condition, but have included a brief discussion of key risks that may affect the Association in *Section 2, Subsection J*. A more detailed assessment of the risks tailored to specific interests or concerns of the Board would provide the Board with a better understanding of the inherent risks. This assessment would further discuss and highlight information and risks particular to VCERA such as detailed historical experience and key events, growing plan maturity, heightened contribution sensitivity to asset and liability changes, and projected sensitivity to potential future investment returns through selected scenario or stress test projections.

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Note that this year the risk assessment section includes the disclosure of a "Low-Default-Risk Obligation Measure" (LDRM). This disclosure, along with commentary on the significance of the LDRM, is a new requirement under Actuarial Standard of Practice No. 4 (ASOP 4) for all pension funding actuarial valuation reports.

14. Segal strongly recommends an actuarial funding policy 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 as described in *Section 4, Exhibit 1* meets this standard.
15. 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 (NPL) and Pension Expense under

## Section 1: Actuarial Valuation Summary

Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68, for inclusion in the plan and employer's financial statements as of June 30, 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.

16. It is important to note that this actuarial valuation is based on plan assets as of June 30, 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 June 30, 2023 due to COVID-19. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.

# Section 1: Actuarial Valuation Summary

## Summary of Key Valuation Results

		June 30, 2023		June 30, 2022	
		Total Rate	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)	Total Rate	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)
<b>Employer Contribution Rates:<sup>2</sup></b>	• General Tier 1	20.30%	\$278	22.64%	\$397
	• General Tier 2	11.01%	18,464	10.91%	21,549
	• General PEPRA Tier 2	11.05%	12,342	10.92%	14,084
	• General Tier 2 w/ COLA <sup>3</sup>	16.89%	34,643	17.91%	32,088
	• General PEPRA Tier 2 w/ COLA <sup>3</sup>	16.84%	41,833	17.84%	30,183
	• General Combined	14.64%	107,560	14.53%	98,301
	• Safety	33.11%	46,093	31.74%	45,381
	• Safety PEPRA	31.03%	20,956	29.04%	15,530
	• Safety Combined	32.43%	67,049	31.00%	60,911
	<b>All Categories Combined</b>	<b>18.56%</b>	<b>\$174,609</b>	<b>18.23%</b>	<b>\$159,212</b>
<b>Average Member Contribution Rates:<sup>2,4,5</sup></b>	• General Tier 1	11.83%	\$162	12.21%	\$214
	• General Tier 2	7.70%	12,913	7.72%	15,248
	• General PEPRA Tier 2	7.74%	8,645	7.73%	9,970
	• General Tier 2 w/ COLA <sup>3</sup>	10.33%	21,188	10.35%	18,543
	• General PEPRA Tier 2 w/ COLA <sup>3</sup>	10.37%	25,761	10.36%	17,528
	• Safety	15.76%	21,940	15.27%	21,833
	• Safety PEPRA	15.70%	10,603	15.41%	8,241
		<b>All Categories Combined</b>	<b>10.76%</b>	<b>\$101,212</b>	<b>10.49%</b>

<sup>1</sup> Based on projected compensation for each year.

<sup>2</sup> Before reflection of any member rate that may be “picked-up” by the employer. Contributions are assumed to be paid throughout the year.

<sup>3</sup> Throughout this report, this category represents those Tier 2 members who contribute a negotiated 2.63% of compensation for a fixed 2% COLA pursuant to Government Code 31627 that applies to service after March 2003 for SEIU members and July 2023 for CNA members.

<sup>4</sup> The non-refundability factors are 1.00 for General Tier 1, Tier 2 (non-PEPRA) and Safety (non-PEPRA) for both June 30, 2023 and June 30, 2022.

<sup>5</sup> Average member contribution rates for non-PEPRA tiers as shown in this exhibit are after reflecting the impact of the cessation of member contributions after 30 years of service. Individual member rates can be found in *Section 4, Exhibit 3*.

## Section 1: Actuarial Valuation Summary

### Summary of Key Valuation Results (continued)

		June 30, 2023 (\$ in '000s)	June 30, 2022 (\$ in '000s)
<b>Actuarial Accrued Liability as of June 30:</b>	• Retired members and beneficiaries	\$4,640,127	\$4,399,379
	• Inactive vested members <sup>1</sup>	250,638	234,807
	• Active members	<u>2,980,036</u>	<u>2,857,141</u>
	• Total Actuarial Accrued Liability	\$7,870,801	\$7,491,327
	• Normal Cost for plan year beginning June 30	\$196,440	\$180,302
<b>Assets as of June 30:</b>	• Market Value of Assets (MVA)	\$7,578,238	\$7,025,332
	• Valuation Value of Assets (VVA) <sup>2</sup>	7,640,705	7,279,606
<b>Funded status as of June 30:</b>	• Unfunded Actuarial Accrued Liability on Market Value of Assets basis	\$292,563	\$465,995
	• Funded percentage on MVA basis	96.28%	93.78%
	• Unfunded Actuarial Accrued Liability on Valuation Value of Assets basis	\$230,096	\$211,721
	• Funded percentage on VVA basis	97.08%	97.17%
<b>Key assumptions:</b>	• Net investment return	7.00%	7.00%
	• Price inflation	2.50%	2.50%
	• Payroll growth increase	3.00%	3.00%
	• Cost of living adjustments		
	– Tiers with 3.00% COLA	2.75%	2.75%
	– Tiers with fixed 2.00% COLA	2.00%	2.00%
	– Tiers without COLA	0.00%	0.00%
• Amortization period on VVA basis <sup>3</sup>	15	15	

<sup>1</sup> Includes inactive members with member contributions on deposit.

<sup>2</sup> Excludes non-valuation reserves.

<sup>3</sup> Changes in UAAL as a result of gains or losses and changes in plan provisions for each valuation are amortized over separate 15-year periods while changes in UAAL as a result of changes in actuarial assumptions or methods are amortized over separate 20-year periods. Details of the funding policy are provided in *Section 4, Exhibit 1*.

## Section 1: Actuarial Valuation Summary

### Summary of Key Valuation Results (continued)

	June 30, 2023	June 30, 2022	Change From Prior Year
<b>Demographic data as of June 30:</b>			
<b>Active Members:</b>			
• Number of members	9,384	9,077	3.4%
• Average age	44.2	44.5	-0.3
• Average service	10.5	10.8	-0.3
• Total projected compensation	\$941,042,109	\$873,042,611	7.8%
• Average projected compensation	\$100,282	\$96,182	4.3%
<b>Retired Members and Beneficiaries:</b>			
• Number of members:			
• Service retired	6,278	6,067	3.5%
• Disability retired	809	801	1.0%
• Beneficiaries	<u>1,170</u>	<u>1,139</u>	2.7%
• Total	8,257	8,007	3.1%
• Average age	71.3	71.1	0.2
• Average monthly benefit	\$3,758	\$3,653	2.9%
<b>Inactive Vested Members:</b>			
• Number of members <sup>1</sup>	4,085	3,812	7.2%
• Average age	45.6	45.7	-0.1
<b>Total Members:</b>	21,726	20,896	4.0%

<sup>1</sup> Includes inactive members with member contributions on deposit.

## Section 1: Actuarial Valuation Summary

### 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:

<b>Plan Provisions</b>	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.
<b>Participant Information</b>	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.
<b>Financial Information</b>	The valuation is based on the Market Value of Assets as of the valuation date, as provided by the Association. The Association uses a “Valuation Value of Assets” that differs from market value to gradually reflect six-month changes in the Market Value of Assets in determining the contribution requirements.
<b>Actuarial Assumptions</b>	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants 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 participants 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 (if any). 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.
<b>Models</b>	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.



## 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, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. 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. Future contribution requirements may differ from those determined in the valuation because of:

- Differences between actual experience and anticipated experience;
- Changes in actuarial assumptions or methods;
- Changes in statutory provisions; and
- Differences between the contribution rates determined by the valuation and those adopted by the Board of Retirement.<sup>1</sup>

Some actuarial results in this report are not rounded, but that does not imply precision.

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. Segal's valuation is based on our 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.

As Segal has no discretionary authority with respect to the management or assets of the plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the plan.

<sup>1</sup> VCERA has a proven track record of adopting the Actuarially Determined Contributions as determined by the valuation and based on the Board's Actuarial Funding Policy.

# Section 2: Actuarial Valuation Results

## A. Member Data

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive vested 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: 2014 – 2023

Year Ended June 30	Active Members	Inactive Vested Members <sup>1</sup>	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2014	8,210	2,339	6,121	8,460	1.03	0.75
2015	8,299	2,441	6,338	8,779	1.06	0.76
2016	8,509	2,639	6,539	9,178	1.08	0.77
2017	8,636	2,809	6,766	9,575	1.11	0.78
2018	8,611	2,909	7,038	9,947	1.16	0.82
2019	8,696	3,041	7,280	10,321	1.19	0.84
2020	8,644	3,218	7,521	10,739	1.24	0.87
2021	8,491	3,491	7,751	11,242	1.32	0.91
2022	9,077	3,812	8,007	11,819	1.30	0.88
2023	9,384	4,085	8,257	12,342	1.32	0.88

<sup>1</sup> Includes inactive members with member contributions on deposit.

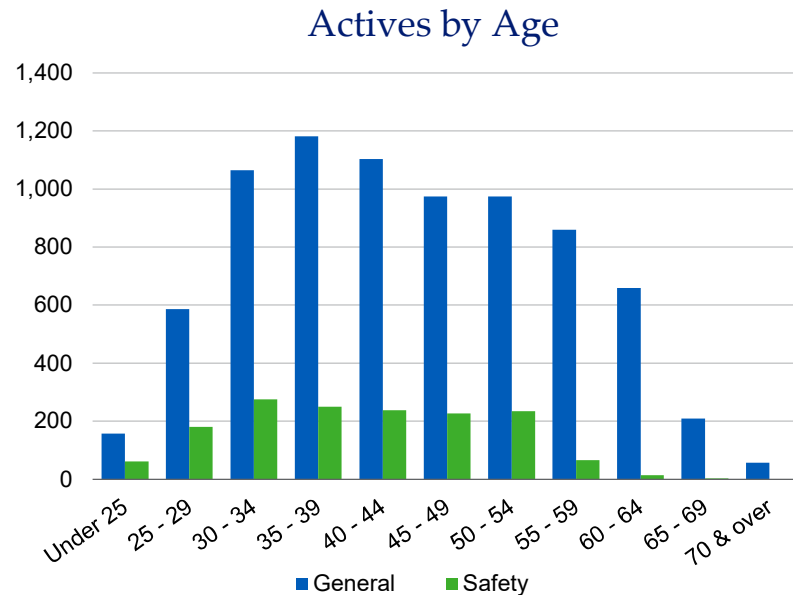
## Section 2: Actuarial Valuation Results

### Active Members

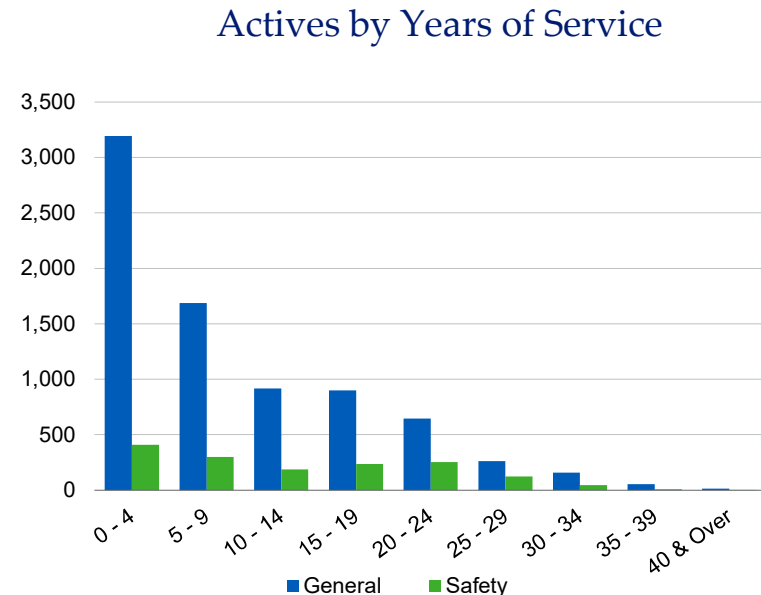
Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 9,384 active members with an average age of 44.2, average years of service of 10.5 years and average compensation of \$100,282. The 9,077 active members in the prior valuation had an average age of 44.5, average service of 10.8 years and average compensation of \$96,182.

Among the active members, there were none with unknown age information.

Distribution of Active Members as of June 30, 2023



Average age	44.2
Prior year average age	44.5
Difference	(0.3)



Average years of service	10.5
Prior year average years of service	10.8
Difference	(0.3)

### Inactive Members

In this year's valuation, there were 4,085 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 3,812 in the prior valuation.

## Section 2: Actuarial Valuation Results

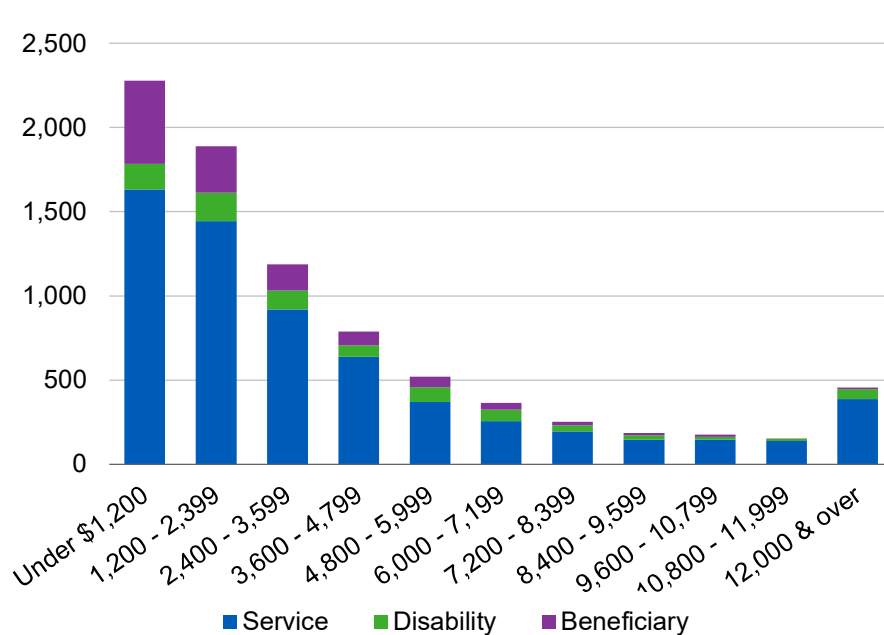
### Retired Members and Beneficiaries

As of June 30, 2023, 7,087 retired members and 1,170 beneficiaries were receiving total monthly benefits of \$31,028,363. For comparison, in the previous valuation, there were 6,868 retired members and 1,139 beneficiaries receiving total monthly benefits of \$29,249,724. These monthly benefits exclude any benefits for vested fixed supplemental and non-vested supplemental benefit amounts.

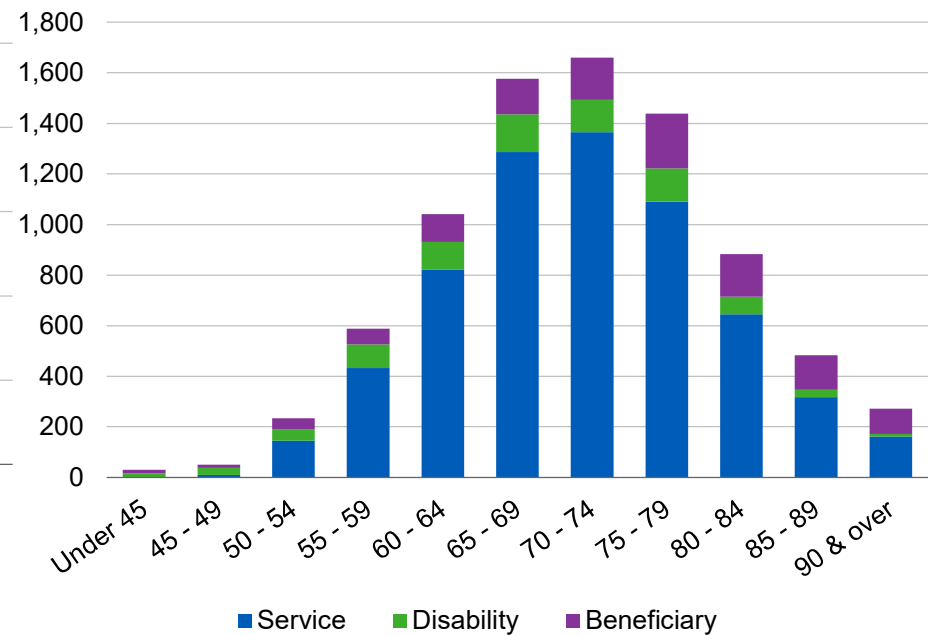
As of June 30, 2023, the average monthly benefit for retired members and beneficiaries is \$3,758, compared to \$3,653 in the previous valuation. The average age for retired members and beneficiaries is 71.3 in the current valuation, compared with 71.1 in the prior valuation.

#### Distribution of Retired Members and Beneficiaries as of June 30, 2023

Retired Members and Beneficiaries  
by Type and Monthly Amount



Retired Members and Beneficiaries  
by Type and Age



## Section 2: Actuarial Valuation Results

### Historical Plan Population

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

#### Member Data Statistics: 2014 – 2023

Year Ended June 30	Active Members			Retired Members and Beneficiaries		
	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2014	8,210	45.3	11.2	6,121	69.4	\$2,897
2015	8,299	45.2	11.2	6,338	69.6	2,936
2016	8,509	45.0	11.2	6,539	69.8	3,024
2017	8,636	45.0	11.2	6,766	70.2	3,108
2018	8,611	44.9	11.3	7,038	70.3	3,230
2019	8,696	44.9	11.3	7,280	70.5	3,329
2020	8,644	44.9	11.4	7,521	70.7	3,423
2021	8,491	45.0	11.6	7,751	70.9	3,512
2022	9,077	44.5	10.8	8,007	71.1	3,653
2023	9,384	44.2	10.5	8,257	71.3	3,758

## Section 2: Actuarial Valuation Results

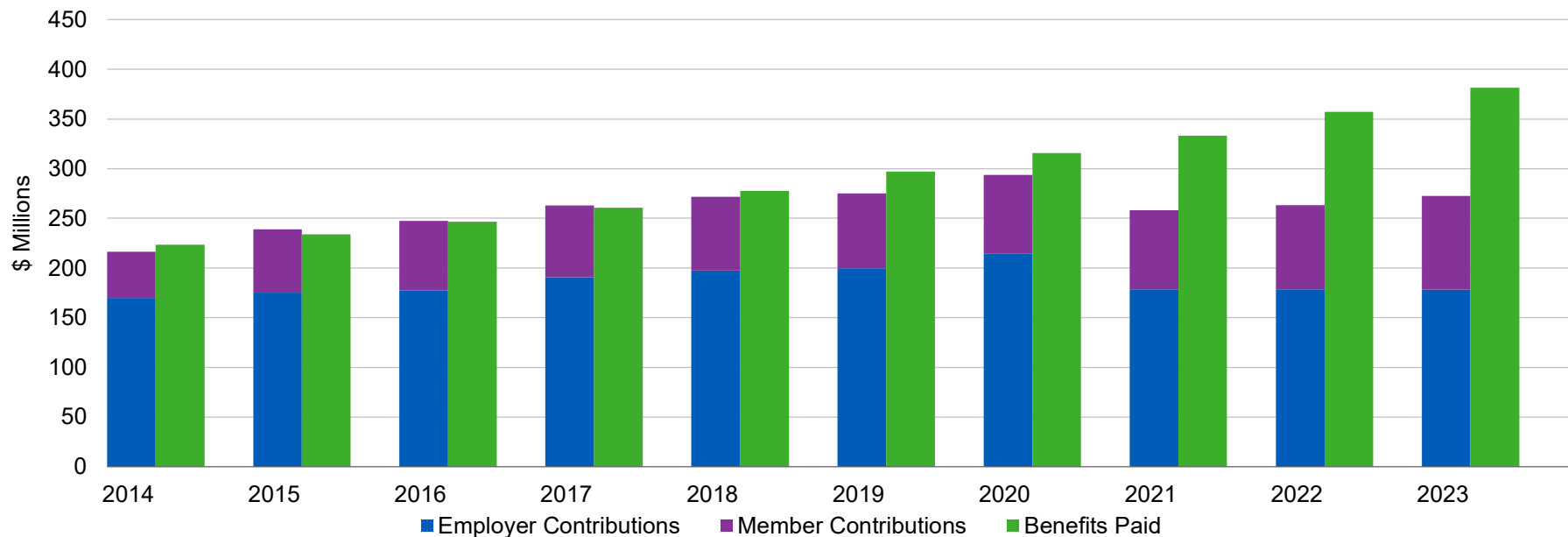
### B. Financial Information

Retirement plan funding anticipates that, over the long term, both contributions and investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments. 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 June 30, 2014 – 2023



## Section 2: Actuarial Valuation Results

### Determination of Actuarial Value of Assets for Year Ended June 30, 2023

<b>1 Market Value of Assets</b>						<b>\$7,578,237,848</b>
<b>2</b>		<b>Actual Return</b>	<b>Expected Return</b>	<b>Investment Gain/Loss</b>	<b>Percent Deferred</b>	<b>Unrecognized Amount<sup>1</sup></b>
a.	Six months ended June 30, 2018	\$38,736,481	\$200,860,519	\$(162,124,038)	0%	\$0
b.	Six months ended December 31, 2018	(247,595,921)	201,992,652	(449,588,573)	0	0
c.	Six months ended June 30, 2019	608,522,342	192,294,765	416,227,577	10	41,622,758
d.	Six months ended December 31, 2019	363,251,754	207,517,685	155,734,069	20	31,146,814
e.	Six months ended June 30, 2020	(161,966,237)	220,290,552	(382,256,789)	30	(114,677,037)
f.	Six months ended December 31, 2020	963,486,000	213,744,479	749,741,521	40	299,896,608
g.	Six months ended June 30, 2021	877,898,342	247,317,215	630,581,127	50	315,290,563
h.	Six months ended December 31, 2021	443,525,133	277,610,478	165,914,655	60	99,548,793
i.	Six months ended June 30, 2022	(1,006,035,394)	291,989,759	(1,298,025,153)	70	(908,617,607)
j.	Six months ended December 31, 2022	59,053,538	244,852,200	(185,798,662)	80	(148,638,929)
k.	Six months ended June 30, 2023	602,682,492	245,014,538	357,667,954	90	<u>321,901,159</u>
l.	Total unrecognized return <sup>2</sup>					\$(62,526,878)
<b>3 Actuarial Value of Assets 1 - 2l</b>						<b>\$7,640,764,726</b>
<b>4</b>	Actuarial Value of Assets as a percentage of Market Value of Assets <b>3 / 1</b>					100.8%
<b>5</b>	Non-valuation reserves:					
a.	Non-vested Supplemental Benefit					\$59,768
b.	Statutory Contingency					<u>0</u>
c.	Subtotal					\$59,768
<b>6 Valuation Value of Assets 3 – 5c</b>						<b>\$7,640,704,958</b>

Note: Results may be slightly off due to rounding

<sup>1</sup> Recognition at 10% per six-month period over 5 years.

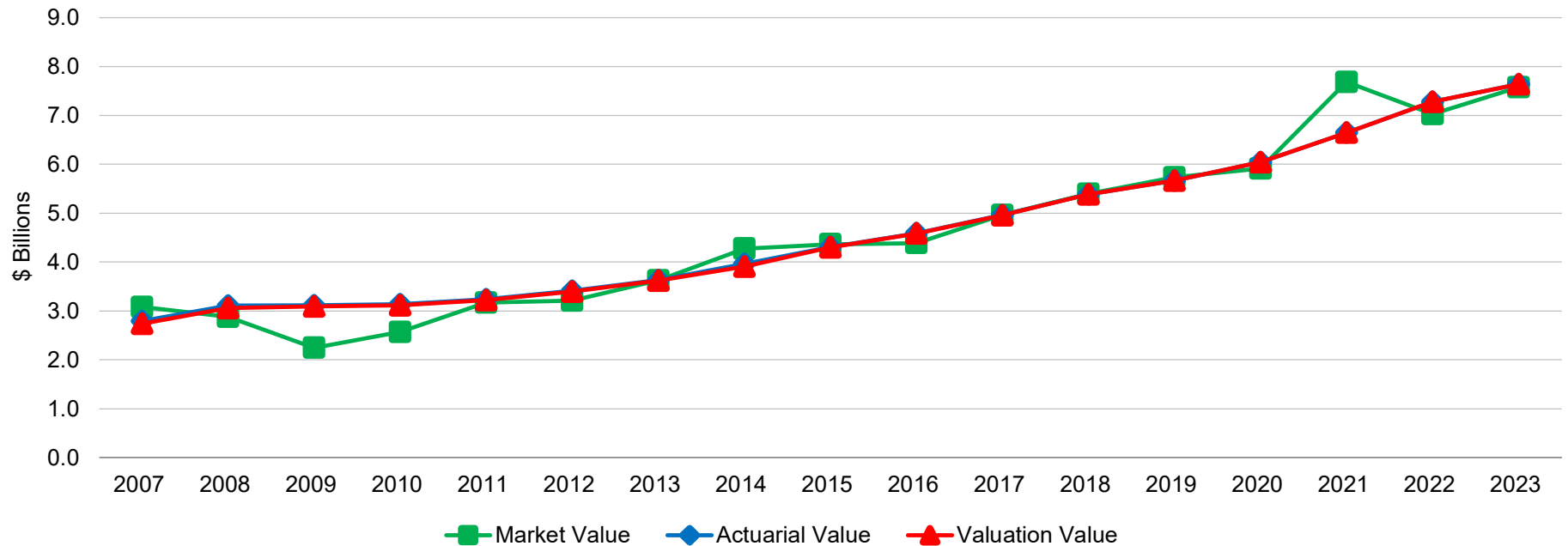
<sup>2</sup> Deferred return as of June 30, 2023 recognized in each of the next five years:

a.	Amount recognized on June 30, 2024	\$80,334,502
b.	Amount recognized on June 30, 2025	45,790,610
c.	Amount recognized on June 30, 2026	(128,990,128)
d.	Amount recognized on June 30, 2027	(95,428,657)
e.	Amount recognized on June 30, 2028	<u>35,766,795</u>
f.	Subtotal	\$(62,526,878)

## Section 2: Actuarial Valuation Results

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 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.

Market Value, Actuarial Value, and Valuation Value of Assets as of June 30, 2007 – 2023





## Section 2: Actuarial Valuation Results

### Allocation of Valuation Value of Assets as of June 30, 2023

	Allocated Assets for Funding			
	General Tier 1	General Tier 2	Safety	Total
<b>1</b> Allocated Assets as of Beginning of Plan Year	<b>\$232,537,221</b>	<b>\$3,721,705,149</b>	<b>\$3,325,363,470</b>	<b>\$7,279,605,840</b>
<b>2</b> Member Contributions	143,049	60,402,887	30,536,113	91,082,049
<b>3</b> Member Buybacks	43,744	1,458,635	511,309	2,013,688
<b>4</b> Employer Pick-up Contributions Credited to Member Account	16,498	861,798	0	878,296
<b>5</b> Employer Contributions	419,389	113,496,579	64,616,384	178,532,352
<b>6</b> Refunds of Member Contributions and Death Benefits Paid	285,796	7,479,525	928,806	8,694,127
<b>7</b> Retiree Benefit Payments Excluding Non-vested Supplemental Payments	<u>81,470,546</u>	<u>138,557,018</u>	<u>152,612,660</u>	<u>372,640,224</u>
<b>8</b> Subtotal (Items 1 + 2 + 3 + 4 + 5 – 6 – 7)	\$151,403,559	\$3,751,888,505	\$3,267,485,810	\$7,170,777,874
<b>9</b> Weighted Average Fund Balance: Item 1 + ½ of (Items 2, 3, 4, 5) – ½ of (Items 6, 7)	191,970,390	3,736,796,827	3,296,424,640	7,225,191,857
<b>10</b> Earnings Allocated in Proportion to Item 9	<u>12,485,770</u>	<u>243,041,579</u>	<u>214,399,735</u>	<u>469,927,084</u>
<b>11</b> Valuation Value of Assets (Items 8 + 10)	<b>\$163,889,329</b>	<b>\$3,994,930,084</b>	<b>\$3,481,885,545</b>	<b>\$7,640,704,958</b>

Note: Results may not total due to rounding.

## Section 2: Actuarial Valuation Results

### 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. There are no changes in actuarial assumptions reflected in this valuation.

The net total loss is \$73.2 million, which includes \$35.8 million from investment losses, a gain of \$22.5 million from contribution experience and \$59.9 million in losses from all other sources. The net experience variation from individual sources other than investments and contributions was 0.8% of the Actuarial Accrued Liability. A discussion of the major components of the actuarial experience is on the following pages.

#### Actuarial Experience for Year Ended June 30, 2023

<b>1</b>	Net loss from investments <sup>1</sup>	\$35,836,000
<b>2</b>	Net gain from contribution experience	(22,465,000)
<b>3</b>	Net loss from other experience <sup>2</sup>	<u>59,850,000</u>
<b>4</b>	<b>Net experience loss: 1 + 2 + 3</b>	<b>\$73,221,000</b>

<sup>1</sup> Details on next page.

<sup>2</sup> See *Section 2, Subsection E* for further details. Does not include the effect of plan or assumption changes, if any, but does include the effect of two minor technical actuarial refinements discussed on page 8.

## Section 2: Actuarial Valuation Results

### 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. The rate of return on the Market Value of Assets was 9.49% for the year ended June 30, 2023.

For valuation purposes, the assumed rate of return on the Valuation Value of Assets is 7.00%. The actual rate of return on a valuation basis for the 2022-2023 plan year was 6.50%. Because the actual return for the year was less than the assumed return, the plan experienced an actuarial loss during the year ended June 30, 2023 with regard to its investments.

#### Investment Experience for Year Ended June 30, 2023

	Market Value	Actuarial Value	Valuation Value
<b>1</b> Net investment income	\$661,736,030	\$469,927,084	\$469,927,084
<b>2</b> Average value of assets	6,970,917,105	7,225,252,929	7,225,191,857
<b>3</b> Rate of return: <b>1 ÷ 2</b>	9.49%	6.50%	6.50%
<b>4</b> Assumed rate of return	7.00%	7.00%	7.00%
<b>5</b> Expected investment income: <b>2 x 4</b>	\$487,964,197	\$505,767,705	\$505,763,430
<b>6</b> Actuarial gain/(loss): <b>1 - 5</b>	<b>\$173,771,833</b>	<b>\$(35,840,621)</b>	<b>\$(35,836,346)</b>

## Section 2: Actuarial Valuation Results

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial and valuation basis compared to the actual market value investment return for the last ten years, including averages over select time periods.

### Investment Return – Market Value, Actuarial Value and Valuation Value: 2014 – 2023

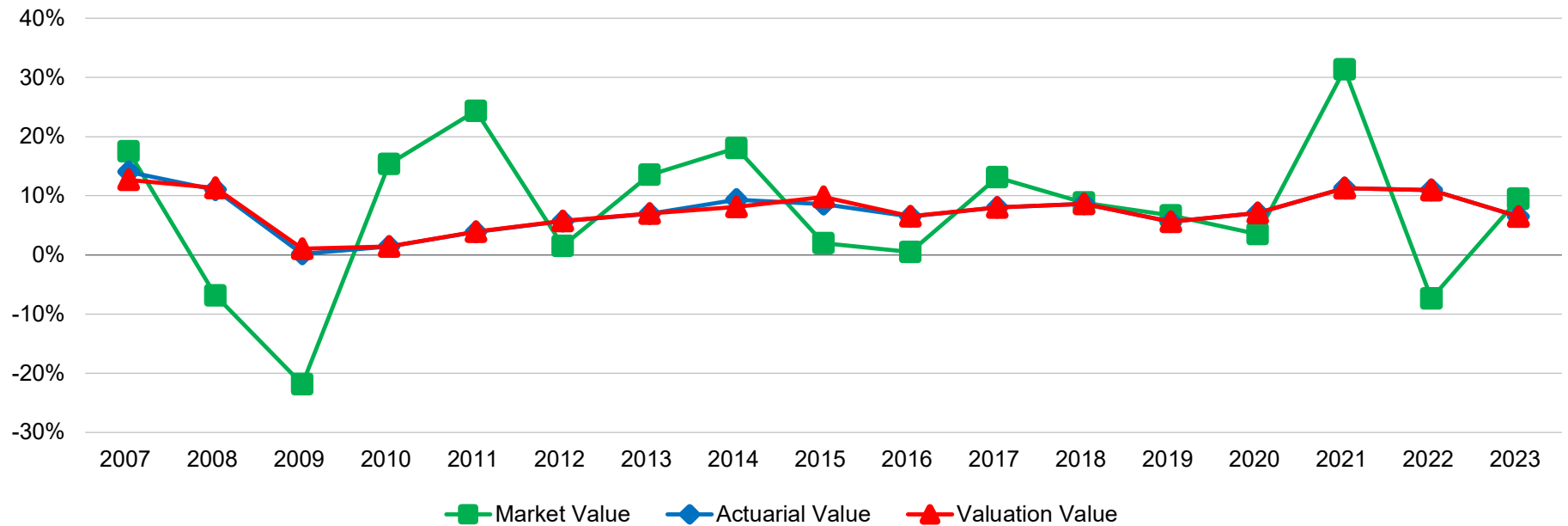
Year Ended June 30	Market Value Investment Return <sup>1</sup>		Actuarial Value Investment Return <sup>1</sup>		Valuation Value Investment Return <sup>1</sup>	
	Amount	Percent	Amount	Percent	Amount	Percent
2014	\$654,535,161	18.06%	\$338,343,729	9.32%	\$294,307,214	8.13%
2015	84,826,216	1.98%	341,233,326	8.60%	384,442,119	9.82%
2016	21,265,100	0.49%	280,531,179	6.51%	280,531,179	6.52%
2017	575,001,597	13.10%	368,806,019	8.03%	368,806,019	8.04%
2018	438,207,040	8.83%	427,484,168	8.62%	427,484,169	8.62%
2019	360,926,420	6.70%	301,492,986	5.61%	301,492,986	5.61%
2020	201,285,517	3.52%	401,285,288	7.10%	401,285,287	7.10%
2021	1,841,384,342	31.33%	678,799,332	11.30%	678,799,332	11.30%
2022	(562,510,261)	(7.37%)	725,160,862	10.99%	725,160,862	10.99%
2023	661,736,030	9.49%	469,927,084	6.50%	469,927,084	6.50%
<b>Most recent five-year geometric average return</b>		<b>8.03%</b>	<b>8.27%</b>		<b>8.27%</b>	
<b>Most recent ten-year geometric average return</b>		<b>8.16%</b>	<b>8.24%</b>		<b>8.25%</b>	

<sup>1</sup> Net of administrative and investment expenses.

## Section 2: Actuarial Valuation Results

Section 2, Subsection B described the actuarial asset valuation method that gradually recognizes fluctuations in the market value rate of return. The goal of this is to stabilize the actuarial rate of return and to produce more level pension plan costs.

Market, Actuarial and Valuation Rates of Return for Years Ended June 30, 2007 – 2023



## Section 2: Actuarial Valuation Results

### Contributions

Contributions for the year ended June 30, 2023 totaled \$272.5 million, compared to the projected amount of \$250.8 million. This resulted in a gain of \$22.5 million from contribution experience for the year, when adjusted for timing.

### Non-Investment 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:

- the extent of turnover among participants,
- retirement experience (earlier or later than projected),
- mortality (more or fewer deaths than projected),
- the number of disability retirements (more or fewer than projected),
- salary increases (greater or smaller than projected), and
- cost-of-living adjustments (COLAs) higher or lower than anticipated.

The net loss from this other experience for the year ended June 30, 2023 amounted to \$59.9 million, which is 0.8% of the Actuarial Accrued Liability. See *Section 2, Subsection E* for a detailed development of the Unfunded Actuarial Accrued Liability.

## Section 2: Actuarial Valuation Results

### D. Other Changes in the Actuarial Accrued Liability

The Actuarial Accrued Liability as of June 30, 2023 is \$7.9 billion, an increase of \$0.4 billion, or 5.1%, from the Actuarial Accrued Liability as of the prior valuation date. The liability is expected to grow each year with Normal Cost and interest, and to decline due to benefit payments made. Additional fluctuations can occur due to actual experience that differs from expected (as discussed in the previous subsection).

This valuation reflects two minor actuarial refinements as follows:

- a. applying beginning of year timing of decrements for exiting from active membership status in calculating the normal cost rate; and
- b. aligning projected salary in current life and replacement life when calculating normal cost rates for active members.

The refinements resulted in a one-time net decrease of 0.18% in the average employer rate and a one-time net increase of 0.07% in the average member contribution rate.<sup>1</sup>

### Actuarial Assumptions and Methods

There were no changes in actuarial assumptions or methods since the prior valuation.

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

### Plan Provisions

A fixed 2% COLA for General Tier 2 future service earned effective July 1, 2023 has been adopted for active members in the California Nurses Association (CNA). This plan provision change increased the UAAL by \$3.0 million. The average employer contribution rate increase as a result of this plan provision change was 0.10% of payroll and the average member contribution rate increase was 0.24% of payroll.<sup>2</sup>

Note that this valuation report shows the General COLA UAAL contribution rates on a combined basis for all General Tiers that have a COLA, and the General Tier 2 COLA Normal Cost contribution rates on a combined basis for Service Employees International Union (SEIU) and CNA. Segal will provide a stand-alone letter that calculates the separate contribution rates to be payable for each of the General Tiers at a later date.

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

<sup>1</sup> There was an increase in the average member contribution rate when the rates are composited on salaries after applying beginning of year decrements even though the individual member contribution rates decreased for most of the groups as a result of this refinement.

<sup>2</sup> The plan provision change only affects the member contribution rate for CNA members. The increase for CNA members was 2.63% of payroll.

## Section 2: Actuarial Valuation Results

### E. Development of Unfunded Actuarial Accrued Liability

Development for Year Ended June 30, 2023 (\$ in '000s)

<b>1</b>	<b>Unfunded Actuarial Accrued Liability at beginning of year</b>	<b>\$211,721</b>
<b>2</b>	Total Normal Cost at middle of year	180,302
<b>3</b>	Expected employer and member contributions	(250,789)
<b>4</b>	Interest	<u>12,615</u>
<b>5</b>	Expected Unfunded Actuarial Accrued Liability	\$153,849
<b>6</b>	Changes due to:	
	<b>a.</b> Investment return less than expected (after “smoothing”)	\$35,836
	<b>b.</b> Actual contributions greater than expected	(22,465)
	<b>c.</b> COLA increases greater than expected	13,416
	<b>d.</b> Individual salary increases greater than expected	69,530
	<b>e.</b> Other experience gains <sup>1</sup>	(23,096)
	<b>f.</b> Fixed 2% COLA for General Tier 2 future service for CNA members	<u>3,026</u>
	Total changes	<u>\$76,247</u>
<b>7</b>	<b>Unfunded Actuarial Accrued Liability at end of year</b>	<b>\$230,096</b>

Note: The sum of items 6c through 6e equals the “Net loss from other experience” shown in *Section 2, Subsection C*.

<sup>1</sup> Other differences in actual versus expected experience including (but not limited to) retirement, mortality, disability, termination and in-service redemption experience. This also includes the effect of two minor technical actuarial refinements discussed on the prior page that reduced the UAAL by \$19.3 million.



## Section 2: Actuarial Valuation Results

### 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 June 30, 2023, the average recommended employer contribution is 18.56% of compensation.

The Board sets the funding policy used to calculate the recommended contribution based on layered 15-year amortization periods for gains or losses and plan amendments (20-year periods for changes in actuarial assumptions or methods) 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 15 years (20 years for changes in actuarial assumptions or methods). As shown in the graphical projection of the UAAL amortization balances and payments found in *Section 3, Exhibit 1*, before taking into consideration the deferred investment gains/losses that will be recognized in the next several valuations, the UAAL of the Plan is expected to be fully amortized by 2041, assuming all assumptions are realized and contribution are made in accordance with the funding policy.

The contribution requirement as of June 30, 2023 is based on the data previously described, the actuarial assumptions and Plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

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, 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.

## Section 2: Actuarial Valuation Results

### Average Recommended Employer Contribution for Year Ended June 30

All Tiers Combined	2023		2022	
	Amount (\$ in '000s)	% of Projected Compensation	Amount (\$ in '000s)	% of Projected Compensation
<b>1</b> Total Normal Cost	\$196,440	20.88%	\$180,302	20.65%
<b>2</b> Expected member Normal Cost contributions	<u>101,212</u>	<u>10.76%</u>	<u>91,577</u>	<u>10.49%</u>
<b>3</b> Employer Normal Cost: <b>1 - 2</b>	\$95,228	10.12%	\$88,725	10.16%
<b>4</b> Actuarial Accrued Liability	7,870,801		7,491,327	
<b>5</b> Valuation Value of Assets	<u>7,640,705</u>		<u>7,279,606</u>	
<b>6</b> Unfunded Actuarial Accrued Liability (UAAL): <b>4 - 5</b>	\$230,096		\$211,721	
<b>7</b> Payment on UAAL	<u>\$79,381</u>	<u>8.44%</u>	<u>\$70,487</u>	<u>8.07%</u>
<b>8</b> Total average recommended employer contribution: <b>3 + 7</b>	\$174,609	18.56%	\$159,212	18.23%
<b>9 Projected compensation</b>	<b>\$941,042</b>		<b>\$873,043</b>	

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

## Section 2: Actuarial Valuation Results

### Reconciliation of Average Recommended Employer Contribution Rate

The chart below details the changes in the average recommended employer contribution rate from the prior valuation to the current year's valuation.

#### Reconciliation from June 30, 2022 to June 30, 2023

	Contribution Rate	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)
<b>1 Average Recommended Employer Contribution as of June 30, 2022</b>	<b>18.23%</b>	<b>\$159,212</b>
2 Effect of investment return less expected (after "smoothing")	0.34%	\$3,200
3 Effect of actual contributions greater than expected	(0.21%)	(1,976)
4 Effect of COLA increases greater than expected	0.13%	1,223
5 Effect of individual salary increases greater than expected	0.66%	6,211
6 Effect of amortizing prior year's UAAL over a larger than expected projected total payroll	(0.36%)	(3,388)
7 Effect of changes in demographics of members amongst tiers on Normal Cost	(0.11%)	(1,035)
8 Effect of other experience gains <sup>2</sup>	(0.22%)	10,221
9 Effect of fixed 2% COLA for General Tier 2 future service for CNA members	<u>0.10%</u>	<u>941</u>
10 Total change	0.33%	\$15,397
<b>11 Average Recommended Employer Contribution as of June 30, 2023</b>	<b>18.56%</b>	<b>\$174,609</b>

<sup>1</sup> Based on projected compensation for each year.

<sup>2</sup> Other differences in actual versus expected experience including (but not limited to) retirement, mortality, disability, termination and in-service redemption experience. Estimated annual dollar cost also reflects change in payroll from prior valuation. This also includes the impact of the effect of two minor technical actuarial refinements discussed as detailed on page 31 that reduced the employer contribution rate by 0.18% of payroll.

## Section 2: Actuarial Valuation Results

### Reconciliation of Average Recommended Member Contribution Rate

The chart below details the changes in the average recommended member contribution rate from the prior valuation to the current year's valuation.

#### Reconciliation from June 30, 2022 to June 30, 2023

	Contribution Rate <sup>1</sup>	Estimated Annual Dollar Amount <sup>2</sup> (\$ in '000s)
<b>1 Average Recommended Member Contribution as of June 30, 2022</b>	<b>10.49%</b>	<b>\$91,577</b>
<b>2</b> Effect of changes in member demographics amongst tiers, including the technical actuarial refinements <sup>3</sup>	0.03%	7,376
<b>3</b> Effect of fixed 2% COLA for General Tier 2 future service for CNA members	<u>0.24%</u>	<u>2,259</u>
<b>4</b> Total change	0.27%	\$9,635
<b>5 Average Recommended Member Contribution as of June 30, 2023</b>	<b>10.76%</b>	<b>\$101,212</b>

<sup>1</sup> Average member contribution rates are after reflecting the impact of the cessation of member contribution after 30 years of service for non-PEPRA tiers.

<sup>2</sup> Based on projected compensation for each year.

<sup>3</sup> Estimated annual dollar cost also reflects change in payroll from prior valuation.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rate

	June 30, 2023 Actuarial Valuation Recommended Rates for FY 2024-25				June 30, 2022 Actuarial Valuation Recommended Rates for FY 2023-24			
	Basic	COLA	Total	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)	Basic	COLA	Total	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)
<b>General Tier 1 Members</b>								
Normal Cost <sup>2</sup>	8.90%	2.95%	11.85%	\$162	10.00%	3.13%	13.13%	\$230
UAAL <sup>3</sup>	<u>3.31%</u>	<u>5.14%</u>	<u>8.45%</u>	<u>116</u>	<u>3.19%</u>	<u>6.32%</u>	<u>9.51%</u>	<u>167</u>
<b>Total Contributions</b>	<b>12.21%</b>	<b>8.09%</b>	<b>20.30%</b>	<b>\$278</b>	<b>13.19%</b>	<b>9.45%</b>	<b>22.64%</b>	<b>\$397</b>
<b>General Tier 2 Members</b>								
Normal Cost	7.70%	0.00%	7.70%	\$12,913	7.72%	0.00%	7.72%	\$15,248
UAAL <sup>3</sup>	<u>3.31%</u>	<u>0.00%</u>	<u>3.31%</u>	<u>5,551</u>	<u>3.19%</u>	<u>0.00%</u>	<u>3.19%</u>	<u>6,301</u>
<b>Total Contributions</b>	<b>11.01%</b>	<b>0.00%</b>	<b>11.01%</b>	<b>\$18,464</b>	<b>10.91%</b>	<b>0.00%</b>	<b>10.91%</b>	<b>\$21,549</b>
<b>General PEPRA Tier 2 Members</b>								
Normal Cost	7.74%	0.00%	7.74%	\$8,645	7.73%	0.00%	7.73%	\$9,970
UAAL <sup>3</sup>	<u>3.31%</u>	<u>0.00%</u>	<u>3.31%</u>	<u>3,697</u>	<u>3.19%</u>	<u>0.00%</u>	<u>3.19%</u>	<u>4,114</u>
<b>Total Contributions</b>	<b>11.05%</b>	<b>0.00%</b>	<b>11.05%</b>	<b>\$12,342</b>	<b>10.92%</b>	<b>0.00%</b>	<b>10.92%</b>	<b>\$14,084</b>
<b>General Tier 2 Members w/ COLA</b>								
Normal Cost <sup>4,5</sup>	7.70%	0.74%	8.44%	\$17,311	7.72%	0.68%	8.40%	\$15,050
UAAL <sup>3,6</sup>	<u>3.31%</u>	<u>5.14%</u>	<u>8.45%</u>	<u>17,332</u>	<u>3.19%</u>	<u>6.32%</u>	<u>9.51%</u>	<u>17,038</u>
<b>Total Contributions</b>	<b>11.01%</b>	<b>5.88%</b>	<b>16.89%</b>	<b>\$34,643</b>	<b>10.91%</b>	<b>7.00%</b>	<b>17.91%</b>	<b>\$32,088</b>
<b>General PEPRA Tier 2 Members w/ COLA</b>								
Normal Cost <sup>4,5</sup>	7.74%	0.65%	8.39%	\$20,842	7.73%	0.60%	8.33%	\$14,093
UAAL <sup>3,6</sup>	<u>3.31%</u>	<u>5.14%</u>	<u>8.45%</u>	<u>20,991</u>	<u>3.19%</u>	<u>6.32%</u>	<u>9.51%</u>	<u>16,090</u>
<b>Total Contributions</b>	<b>11.05%</b>	<b>5.79%</b>	<b>16.84%</b>	<b>\$41,833</b>	<b>10.92%</b>	<b>6.92%</b>	<b>17.84%</b>	<b>\$30,183</b>
<b>All General Members<sup>7</sup></b>								
Normal Cost	7.72%	0.43%	8.15%	\$59,873	7.73%	0.34%	8.07%	\$54,591
UAAL	<u>3.31%</u>	<u>3.18%</u>	<u>6.49%</u>	<u>47,687</u>	<u>3.19%</u>	<u>3.27%</u>	<u>6.46%</u>	<u>43,710</u>
<b>Total Contributions</b>	<b>11.03%</b>	<b>3.61%</b>	<b>14.64%</b>	<b>\$107,560</b>	<b>10.92%</b>	<b>3.61%</b>	<b>14.53%</b>	<b>\$98,301</b>

Note: Applicable footnotes are shown on next page.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rate (continued)

	June 30, 2023 Actuarial Valuation Recommended Rates for FY 2024-25				June 30, 2022 Actuarial Valuation Recommended Rates for FY 2023-24			
	Basic	COLA	Total	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)	Basic	COLA	Total	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)
<b>Safety Members</b>								
Normal Cost <sup>8</sup>	12.75%	5.03%	17.78%	\$24,752	13.01%	5.10%	18.11%	\$25,893
UAAL	39.32%	(23.99%)	15.33%	21,341	38.87%	(25.24%)	13.63%	19,488
<b>Total Contributions</b>	<b>52.07%</b>	<b>(18.96%)</b>	<b>33.11%</b>	<b>\$46,093</b>	<b>51.88%</b>	<b>(20.14%)</b>	<b>31.74%</b>	<b>\$45,381</b>
<b>Safety PEPRA Members</b>								
Normal Cost	11.26%	4.44%	15.70%	\$10,603	11.05%	4.36%	15.41%	\$8,241
UAAL	39.32%	(23.99%)	15.33%	10,353	38.87%	(25.24%)	13.63%	7,289
<b>Total Contributions</b>	<b>50.58%</b>	<b>(19.55%)</b>	<b>31.03%</b>	<b>\$20,956</b>	<b>49.92%</b>	<b>(20.88%)</b>	<b>29.04%</b>	<b>\$15,530</b>
<b>All Safety Members<sup>7</sup></b>								
Normal Cost	12.26%	4.84%	17.10%	\$35,355	12.48%	4.89%	17.37%	\$34,134
UAAL	39.32%	(23.99%)	15.33%	31,694	38.87%	(25.24%)	13.63%	26,777
<b>Total Contributions</b>	<b>51.58%</b>	<b>(19.15%)</b>	<b>32.43%</b>	<b>\$67,049</b>	<b>51.35%</b>	<b>(20.35%)</b>	<b>31.00%</b>	<b>\$60,911</b>
<b>All Categories Combined<sup>7</sup></b>								
Normal Cost	8.72%	1.40%	10.12%	\$95,228	8.80%	1.36%	10.16%	\$88,725
UAAL	11.22%	(2.78%)	8.44%	79,381	11.22%	(3.15%)	8.07%	70,487
<b>Total Contributions</b>	<b>19.94%</b>	<b>(1.38%)</b>	<b>18.56%</b>	<b>\$174,609</b>	<b>20.02%</b>	<b>(1.79%)</b>	<b>18.23%</b>	<b>\$159,212</b>

<sup>1</sup> Based on projected compensation for each year shown on next page.

<sup>2</sup> The total General Tier 1 employer rate has been adjusted by 0.01% and 0.46% for June 30, 2023 and June 30, 2022, respectively, to account for the cost associated with the cessation of member contributions after 30 years of service.

<sup>3</sup> Basic UAAL rates have been calculated on a combined basis for all General Tiers. COLA UAAL rates have been calculated on a combined basis for all General Tiers that have a COLA (excludes General Tier 2 without COLA and General PEPRA Tier 2 without COLA). Segal will provide a stand-alone letter that calculates the separate COLA UAAL contribution rates to be payable for each of the General Tiers at a later date.

<sup>4</sup> COLA Normal Cost rates have been calculated on a combined basis for SEIU and CNA. Segal will provide a stand-alone letter that calculates the separate COLA Normal Cost contribution rates to be payable for SEIU and CNA at a later date.

<sup>5</sup> Reflects General Tier 2 member COLA contribution rate of 2.63% based on current bargaining agreements.

<sup>6</sup> Includes 0.32% and 0.33% in COLA UAAL costs for June 30, 2023 and June 30, 2022, respectively, attributed to the first two years of service accrued for the fixed 2% COLA pursuant to Government Code 31627. Note these rates are calculated as a percentage of SEIU only payroll.

<sup>7</sup> These aggregated rates are provided for informational purposes only as we understand that the tier specific rates will be implemented.

<sup>8</sup> The total Safety employer rate has been adjusted by 1.01% and 1.42% for June 30, 2023 and June 30, 2022, respectively, to account for the cost associated with the cessation of member contributions after 30 years of service.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rate (continued)

The projected compensation that is used to estimate the annual dollar amount shown on the prior pages as of June 30, 2023 and June 30, 2022 are as follows:

	June 30, 2023 Projected Compensation (\$ in '000s)	June 30, 2022 Projected Compensation (\$ in '000s)
General Tier 1	\$1,369	\$1,753
General Tier 2 <sup>1</sup>	167,702	197,508
General PEPRA Tier 2 <sup>1</sup>	111,697	128,975
General Tier 2 w/ COLA <sup>1</sup>	205,107	179,161
General PEPRA Tier 2 w/ COLA <sup>1</sup>	248,418	169,188
Safety	139,212	142,978
Safety PEPRA	<u>67,537</u>	<u>53,480</u>
<b>Total</b>	<b>\$941,042</b>	<b>\$873,043</b>

<sup>1</sup> The projected compensation for CNA members is included in General Tier 2 w/ COLA and General PEPRA Tier 2 w/ COLA as of June 30, 2023. Previously, the projected compensation for these members was included in General Tier 2 and General PEPRA Tier 2.

## Section 2: Actuarial Valuation Results

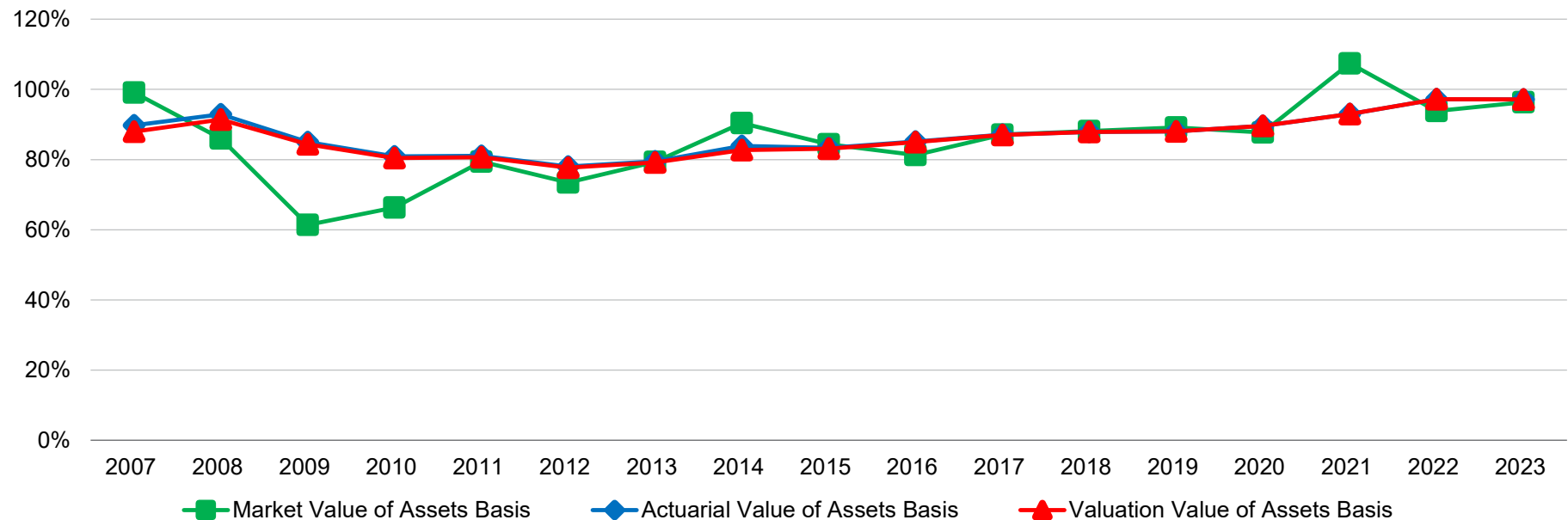
### G. Funded Status

A commonly reported piece of information regarding the plan's financial status is the funded ratio. These ratios compare the Market, Actuarial 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 chart below depicts a history of the funded ratio for the plan. The chart on the next page shows the plan's schedule of funding progress for the last ten years.

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, Actuarial, or Valuation Value of Assets is used.

Funded Ratio for Years Ended June 30, 2007 – 2023





## Section 2: Actuarial Valuation Results

### Schedule of Funding Progress for Years Ended June 30, 2014 – 2023

Actuarial Valuation Date as of June 30	Valuation Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (%) (a) / (b)	Projected Covered Payroll (c)	UAAL as a Percentage of Projected Covered Payroll (%) [(b) - (a)] / (c)
2014	\$3,910,801,000	\$4,731,016,000	\$820,215,000	82.66%	\$648,257,000	126.53%
2015	4,302,330,000	5,178,157,000	875,827,000	83.09%	678,705,000	129.04%
2016	4,585,713,000	5,398,756,000	813,043,000	84.94%	706,000,000	115.16%
2017	4,959,070,000	5,703,396,000	744,326,000	86.95%	744,917,000	99.92%
2018	5,382,777,000	6,129,758,000	746,981,000	87.81%	760,815,000	98.18%
2019	5,664,526,000	6,439,388,000	774,862,000	87.97%	785,403,000	98.66%
2020	6,044,036,000	6,747,772,000	703,736,000	89.57%	803,381,000	87.60%
2021	6,648,154,000	7,154,885,000	506,731,000	92.92%	817,636,000	61.98%
2022	7,279,606,000	7,491,327,000	211,721,000	97.17%	873,043,000	24.25%
2023	7,640,705,000	7,870,801,000	230,096,000	97.08%	941,042,000	24.45%

## Section 2: Actuarial Valuation Results

### 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 participants 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 Actuarial Present Value of Future Benefits of the plan.

Second, this Actuarial Present Value of Future Benefits 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

	Year Ended	
	June 30, 2023 (\$ in '000s)	June 30, 2022 (\$ in '000s)
Actuarial Present Value of Future Benefits		
• Present value of benefits for retired members and beneficiaries	\$4,640,127	\$4,399,379
• Present value of benefits for inactive vested members <sup>1</sup>	250,638	234,807
• Present value of benefits for active members	<u>4,645,077</u>	<u>4,358,054</u>
<b>Total Actuarial Present Value of Future Benefits</b>	<b>\$9,535,842</b>	<b>\$8,992,240</b>
Current and future assets		
• Total Valuation Value of Assets	\$7,640,705	\$7,279,606
• Present value of future contributions by members	852,021	759,225
• Present value of future employer contributions for:		
– Entry age Normal Cost	813,020	741,688
– Unfunded Actuarial Accrued Liability	<u>230,096</u>	<u>211,721</u>
<b>Total of current and future assets</b>	<b>\$9,535,842</b>	<b>\$8,992,240</b>

<sup>1</sup> Includes inactive members with member contributions on deposit.

## Section 2: Actuarial Valuation Results

### I. 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 payroll, 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 because it is based on the current level of assets.

The current AVR is about 8.1. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 8.1% of one year's payroll. Because actuarial gains and losses are amortized over 15 years, there would be a 0.7% 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 payroll, 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.

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 8.4, but is 5.9 for General compared to 17.1 for Safety. This means, for example, that assumption changes will have a greater impact on employer contribution rates for Safety than for General.

#### Volatility Ratios for Years Ended 2014 – 2023

Year Ended June 30	Asset Volatility Ratio			Liability Volatility Ratio		
	General	Safety	Total	General	Safety	Total
2014	4.9	11.5	6.6	5.4	12.9	7.3
2015	4.8	11.4	6.4	5.6	13.8	7.6
2016	4.5	11.7	6.2	5.5	14.5	7.6
2017	4.8	12.7	6.7	5.5	14.6	7.7
2018	5.1	13.6	7.1	5.9	15.2	8.1
2019	5.2	14.1	7.3	5.9	15.5	8.2
2020	5.2	14.3	7.4	6.1	15.9	8.4
2021	6.7	18.3	9.4	6.4	16.4	8.8
2022	5.6	16.3	8.0	6.1	17.1	8.6
2023	5.6	16.7	8.1	5.9	17.1	8.4

## Section 2: Actuarial Valuation Results

### J. Risk Assessment

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. A more detailed assessment of the risks tailored to specific interests or concerns of the Board would provide the Board with a better understanding of the inherent risks 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.

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 1, Volatility Ratios*, on page 43, a 1% asset gain or loss (relative to the assumed investment return) translates to about 8.1% of one-year's payroll. Because actuarial gains

## Section 2: Actuarial Valuation Results

and losses are amortized over 15 years, there would be a 0.7% of payroll decrease/(increase) in the required contribution for each 1% asset gain or loss.

The single year market value rate of return over the last 10 years has ranged from a low of -7.37% to a high of 31.33%.

- 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 June 30, 2021 valuation, the Board has adopted benefit weighted mortality tables with the 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 ten years:

- The funded percentage on the Valuation Value of Assets basis has increased from 82.7% to 97.1%. This is primarily due to contributions made to amortize the UAAL (i.e., amortizing each layer of UAAL over 15 years as a level percentage of pay). For a more detailed history see *Section 2, Subsection G, Funded Status* starting on page 40.
- The geometric average investment return on the Valuation Value of Assets over the last 10 years was 8.25%. This includes a high of an 11.30% return and a low of 5.61%. The average over the last 5 years was 8.27%. For more details see the Investment Return table in *Section 2, Subsection C* on page 28.

## Section 2: Actuarial Valuation Results

- The primary source of new UAAL was the strengthening of assumptions through multiple assumption changes. For example, the assumption changes in 2015 reduced the discount rate from 7.75% to 7.50% and updated mortality tables, adding \$218 million in unfunded liability. The assumption changes in 2018 reduced the discount rate from 7.50% to 7.25% and again updated mortality tables, adding \$149 million in unfunded liability. The assumption changes in 2021 reduced the discount rate from 7.25% to 7.00% and again updated mortality tables, adding \$115 million in unfunded liability. For more details on the unfunded liability changes see *Section 3, Exhibit H, Table of Amortization Bases* starting on page 70.
- 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 74 and 75.

### Maturity Measures

In the last 10 years the ratio of members in pay status to active participants has increased from 0.75 to 0.88. An increased ratio indicates that the plan has grown in maturity over time. This is to be expected, but is also informative to understanding plan sensitivity to particular risks. For more details see *Section 2, Subsection A, Member Data* on page 18.

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. For the prior year, benefits paid were \$109 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, this plan is relatively well funded with a funded ratio of 97.1%. For more details on historical cash flows see the Comparison of Contributions with Benefits in *Section 2, Subsection B, Financial Information* on page 22.

A further discussion of plan maturity measures and how they relate to changes in assets and liabilities is included in *Section 2, Subsection I, Volatility Ratios* on page 43.

### Low-Default-Risk Obligation Measure (LDRM)

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 (LDRM) when performing a funding valuation. The LDRM presented in this report is calculated using the same methodology and assumptions used to determine the Actuarial Accrued Liability (AAL) used for funding, except for the discount rate. The LDRM 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."

## Section 2: Actuarial Valuation Results

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 June of the measurement period, by The Bond Buyer, is 3.65% for use effective June 30, 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 public pension plan liabilities. The LDROM is not used to determine a plan's funded status or Actuarially Determined Contribution Rate. The plan's expected return on assets, currently 7.00%, is used for these calculations.

As of June 30, 2023, the LDROM for the Plan is \$12.4 billion. The difference between the plan's AAL of \$7.9 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 participant 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.

# Section 3: Supplemental Information

## Exhibit A: Table of Plan Coverage

### Total Plan

Category	Year Ended June 30		Change From Prior Year
	2023	2022	
<b>Active members in valuation:</b>			
• Number	9,384	9,077	3.4%
• Average age	44.2	44.5	-0.3
• Average years of service	10.5	10.8	-0.3
• Total projected compensation <sup>1</sup>	\$941,042,109	\$873,042,611	7.8%
• Average projected compensation	\$100,282	\$96,182	4.3%
• Account balances	\$828,051,431	\$777,642,396	6.5%
• Total active vested members	5,952	5,986	-0.6%
<b>Inactive vested members:<sup>2</sup></b>			
• Number	4,085	3,812	7.2%
• Average age	45.6	45.7	-0.1
<b>Retired members:</b>			
• Number in pay status	6,278	6,067	3.5%
• Average age	71.3	71.2	0.1
• Average monthly benefit <sup>3</sup>	\$3,927	\$3,823	2.7%
<b>Disabled members:</b>			
• Number in pay status	809	801	1.0%
• Average age	67.8	67.5	0.3
• Average monthly benefit <sup>3</sup>	\$4,500	\$4,347	3.5%
<b>Beneficiaries:</b>			
• Number in pay status	1,170	1,139	2.7%
• Average age	74.1	73.6	0.5
• Average monthly benefit <sup>3</sup>	\$2,340	\$2,258	3.6%

<sup>1</sup> Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and “across the board” salary increases.

<sup>2</sup> Includes inactive members with member contributions on deposit.

<sup>3</sup> Excludes vested fixed supplemental benefit amount.



## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### General Tier 1

Category	Year Ended June 30		Change From Prior Year
	2023	2022	
<b>Active members in valuation:</b>			
• Number	6	8	-25.0%
• Average age	68.3	68.7	-0.4
• Average years of service	37.5	33.7	3.8
• Total projected compensation <sup>1</sup>	\$1,369,456	\$1,753,044	-21.9%
• Average projected compensation	\$228,243	\$219,130	4.2%
• Account balances	\$2,318,471	\$2,969,258	-21.9%
• Total active vested members	6	8	-25.0%
<b>Inactive vested members:<sup>2</sup></b>			
• Number	33	35	-5.7%
• Average age	49.0	48.3	0.7
<b>Retired members:</b>			
• Number in pay status	1,050	1,117	-6.0%
• Average age	79.1	78.6	0.5
• Average monthly benefit <sup>3</sup>	\$5,219	\$4,944	5.5%
<b>Disabled members:</b>			
• Number in pay status	67	67	0.0%
• Average age	76.7	75.7	1.0
• Average monthly benefit <sup>3</sup>	\$3,314	\$3,217	3.0%
<b>Beneficiaries:</b>			
• Number in pay status	328	329	-0.3%
• Average age	81.2	80.5	0.7
• Average monthly benefit <sup>3</sup>	\$2,385	\$2,324	2.6%

<sup>1</sup> Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and “across the board” salary increases.

<sup>2</sup> Includes inactive members with member contributions on deposit.

<sup>3</sup> Excludes vested fixed supplemental benefit amount.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### General Tier 2

Category	Year Ended June 30		Change From Prior Year
	2023	2022	
<b>Active members in valuation:<sup>1</sup></b>			
• Number	1,151	1,439	-20.0%
• Average age	51.9	51.7	0.2
• Average years of service	19.7	18.2	1.5
• Total projected compensation <sup>2</sup>	\$167,701,403	\$197,507,386	-15.1%
• Average projected compensation	\$145,701	\$137,253	6.2%
• Account balances	\$173,982,369	\$192,349,163	-9.5%
• Total active vested members	1,143	1,413	-19.1%
<b>Inactive vested members:<sup>3</sup></b>			
• Number	857	871	-1.6%
• Average age	53.1	52.8	0.3
<b>Retired members:</b>			
• Number in pay status	2,249	2,159	4.2%
• Average age	70.9	70.6	0.3
• Average monthly benefit <sup>4</sup>	\$2,590	\$2,489	4.1%
<b>Disabled members:</b>			
• Number in pay status	222	224	-0.9%
• Average age	69.7	68.9	0.8
• Average monthly benefit <sup>4</sup>	\$1,613	\$1,594	1.2%
<b>Beneficiaries:</b>			
• Number in pay status	322	313	2.9%
• Average age	73.7	73.2	0.5
• Average monthly benefit <sup>4</sup>	\$1,132	\$1,074	5.4%

<sup>1</sup> As of June 30, 2023, 233 CNA active members were reclassified from General Tier 2 to General Tier 2 w/ COLA.

<sup>2</sup> Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and “across the board” salary increases.

<sup>3</sup> Includes inactive members with member contributions on deposit.

<sup>4</sup> Excludes vested fixed supplemental benefit amount.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### General Tier 2 w/ COLA

Category	Year Ended June 30		Change From Prior Year
	2023	2022	
<b>Active members in valuation:<sup>1</sup></b>			
• Number	2,050	2,022	1.4%
• Average age	51.8	51.1	0.7
• Average years of service	17.8	17.4	0.4
• Total projected compensation <sup>2</sup>	\$205,107,544	\$179,161,361	14.5%
• Average projected compensation	\$100,052	\$88,606	12.9%
• Account balances	\$256,050,149	\$229,794,749	11.4%
• Total active vested members	2,000	1,986	0.7%
<b>Inactive vested members:<sup>3</sup></b>			
• Number	1,042	1,058	-1.5%
• Average age	49.8	49.1	0.7
<b>Retired members:</b>			
• Number in pay status	1,890	1,785	5.9%
• Average age	69.8	69.4	0.4
• Average monthly benefit <sup>4</sup>	\$2,158	\$2,083	3.6%
<b>Disabled members:</b>			
• Number in pay status	95	90	5.6%
• Average age	65.3	64.6	0.7
• Average monthly benefit <sup>4</sup>	\$1,717	\$1,639	4.8%
<b>Beneficiaries:</b>			
• Number in pay status	152	145	4.8%
• Average age	70.1	69.0	1.1
• Average monthly benefit <sup>4</sup>	\$1,140	\$1,125	1.3%

<sup>1</sup> As of June 30, 2023, 233 CNA active members were reclassified from General Tier 2 to General Tier 2 w/ COLA.

<sup>2</sup> Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and “across the board” salary increases.

<sup>3</sup> Includes inactive members with member contributions on deposit.

<sup>4</sup> Excludes vested fixed supplemental benefit amount.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### General PEPRA Tier 1

Category	Year Ended June 30		Change From Prior Year
	2023	2022	
<b>Active members in valuation:</b>			
• Number	0	0	N/A
• Average age	N/A	N/A	N/A
• Average years of service	N/A	N/A	N/A
• Total projected compensation <sup>1</sup>	N/A	N/A	N/A
• Average projected compensation	N/A	N/A	N/A
• Account balances	N/A	N/A	N/A
• Total active vested members	0	0	N/A
<b>Inactive vested members:<sup>2</sup></b>			
• Number	2	2	0.0%
• Average age	48.0	47.0	1.0
<b>Retired members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>3</sup>	N/A	N/A	N/A
<b>Disabled members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>3</sup>	N/A	N/A	N/A
<b>Beneficiaries:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>3</sup>	N/A	N/A	N/A

<sup>1</sup> Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and “across the board” salary increases.

<sup>2</sup> Includes inactive members with member contributions on deposit.

<sup>3</sup> Excludes vested fixed supplemental benefit amount.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### General PEPRA Tier 2

Category	Year Ended June 30		Change From Prior Year
	2023	2022	
<b>Active members in valuation:<sup>1</sup></b>			
• Number	1,091	1,368	-20.2%
• Average age	42.6	41.8	0.8
• Average years of service	4.5	3.7	0.8
• Total projected compensation <sup>2</sup>	\$111,697,421	\$128,974,513	-13.4%
• Average projected compensation	\$102,381	\$94,280	8.6%
• Account balances	\$33,084,501	\$32,193,738	2.8%
• Total active vested members	492	480	2.5%
<b>Inactive vested members:<sup>3</sup></b>			
• Number	594	476	24.8%
• Average age	41.5	41.6	-0.1
<b>Retired members:</b>			
• Number in pay status	25	18	38.9%
• Average age	68.3	67.5	0.8
• Average monthly benefit <sup>4</sup>	\$855	\$936	-8.7%
<b>Disabled members:</b>			
• Number in pay status	1	0	N/A
• Average age	56.7	N/A	N/A
• Average monthly benefit <sup>4</sup>	\$3,661	N/A	N/A
<b>Beneficiaries:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>4</sup>	N/A	N/A	N/A

<sup>1</sup> As of June 30, 2023, 478 CNA active members were reclassified from General PEPRA Tier 2 to General PEPRA Tier 2 w/ COLA.

<sup>2</sup> Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and "across the board" salary increases.

<sup>3</sup> Includes inactive members with member contributions on deposit.

<sup>4</sup> Excludes vested fixed supplemental benefit amount.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### General PEPRA Tier 2 w/COLA

Category	Year Ended June 30		Change From Prior Year
	2023	2022	
<b>Active members in valuation:<sup>1</sup></b>			
• Number	3,530	2,739	28.9%
• Average age	39.4	39.0	0.4
• Average years of service	3.7	3.5	0.2
• Total projected compensation <sup>2</sup>	\$248,418,042	\$169,188,462	46.8%
• Average projected compensation	\$70,373	\$61,770	13.9%
• Account balances	\$78,218,560	\$53,552,808	46.1%
• Total active vested members	1,127	911	23.7%
<b>Inactive vested members:<sup>3</sup></b>			
• Number	1,146	961	19.3%
• Average age	39.5	39.3	0.2
<b>Retired members:</b>			
• Number in pay status	45	29	55.2%
• Average age	66.7	66.6	0.1
• Average monthly benefit <sup>4</sup>	\$733	\$703	4.3%
<b>Disabled members:</b>			
• Number in pay status	1	0	N/A
• Average age	59.0	N/A	N/A
• Average monthly benefit <sup>4</sup>	\$1,181	N/A	N/A
<b>Beneficiaries:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>4</sup>	N/A	N/A	N/A

<sup>1</sup> As of June 30, 2023, 478 CNA active members were reclassified from General PEPRA Tier 2 to General PEPRA Tier 2 w/ COLA.

<sup>2</sup> Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and “across the board” salary increases.

<sup>3</sup> Includes inactive members with member contributions on deposit.

<sup>4</sup> Excludes vested fixed supplemental benefit amount.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

Category	Year Ended June 30		Change From Prior Year
	2023	2022	
<b>Safety</b>			
<b>Active members in valuation:</b>			
• Number	880	952	-7.6%
• Average age	46.6	46.1	0.5
• Average years of service	20.4	19.8	0.6
• Total projected compensation <sup>1</sup>	\$139,211,711	\$142,977,595	-2.6%
• Average projected compensation	\$158,195	\$150,187	5.3%
• Account balances	\$246,353,990	\$237,740,212	3.6%
• Total active vested members	876	947	-7.5%
<b>Inactive vested members:<sup>2</sup></b>			
• Number	262	279	-6.1%
• Average age	46.1	45.8	0.3
<b>Retired members:</b>			
• Number in pay status	1,014	956	6.1%
• Average age	67.2	67.2	0.0
• Average monthly benefit <sup>3</sup>	\$9,078	\$8,932	1.6%
<b>Disabled members:</b>			
• Number in pay status	423	420	0.7%
• Average age	66.0	66.0	0.0
• Average monthly benefit <sup>3</sup>	\$6,837	\$6,577	4.0%
<b>Beneficiaries:</b>			
• Number in pay status	368	352	4.5%
• Average age	69.7	69.4	0.3
• Average monthly benefit <sup>3</sup>	\$3,851	\$3,717	3.6%

<sup>1</sup> Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and “across the board” salary increases.

<sup>2</sup> Includes inactive members with member contributions on deposit.

<sup>3</sup> Excludes vested fixed supplemental benefit amount.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### Safety PEPRA

Category	Year Ended June 30		Change From Prior Year
	2023	2022	
<b>Active members in valuation:</b>			
• Number	676	549	23.1%
• Average age	32.7	32.6	0.1
• Average years of service	4.5	4.5	0.0
• Total projected compensation <sup>1</sup>	\$67,536,531	\$53,480,251	26.3%
• Average projected compensation	\$99,906	\$97,414	2.6%
• Account balances	\$38,043,389	\$29,042,468	31.0%
• Total active vested members	308	241	27.8%
<b>Inactive vested members:<sup>2</sup></b>			
• Number	149	130	14.6%
• Average age	33.4	32.4	1.0
<b>Retired members:</b>			
• Number in pay status	5	3	66.7%
• Average age	60.7	61.3	-0.6
• Average monthly benefit <sup>3</sup>	\$1,865	\$1,380	35.1%
<b>Disabled members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>3</sup>	N/A	N/A	N/A
<b>Beneficiaries:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>3</sup>	N/A	N/A	N/A

<sup>1</sup> Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and “across the board” salary increases.

<sup>2</sup> Includes inactive members with member contributions on deposit.

<sup>3</sup> Excludes vested fixed supplemental benefit amount.



## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2023 by Age, Years of Service, and Average Projected Compensation

#### Total Plan

Age	Total	Years of Service								
		0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	219	217	2	—	—	—	—	—	—	—
	\$58,069	\$57,572	\$112,040	—	—	—	—	—	—	—
25 – 29	767	690	77	—	—	—	—	—	—	—
	\$70,180	\$67,767	\$91,803	—	—	—	—	—	—	—
30 – 34	1,341	831	441	69	—	—	—	—	—	—
	\$81,796	\$74,106	\$90,384	\$119,514	—	—	—	—	—	—
35 – 39	1,432	601	464	266	100	1	—	—	—	—
	\$93,924	\$79,077	\$92,680	\$119,939	\$119,245	\$142,248	—	—	—	—
40 – 44	1,343	422	302	236	294	88	1	—	—	—
	\$106,237	\$82,980	\$93,995	\$126,702	\$127,668	\$132,709	\$158,480	—	—	—
45 – 49	1,201	285	215	166	223	262	49	1	—	—
	\$112,499	\$86,661	\$96,434	\$118,222	\$124,635	\$132,633	\$149,928	\$164,780	—	—
50 – 54	1,210	218	187	137	201	247	166	52	2	—
	\$119,890	\$89,095	\$98,061	\$116,358	\$125,229	\$138,389	\$146,068	\$144,627	\$122,058	—
55 – 59	926	177	123	110	158	161	98	83	16	—
	\$113,964	\$89,498	\$98,113	\$119,201	\$113,677	\$126,919	\$139,653	\$120,879	\$149,738	—
60 – 64	674	117	113	76	123	106	52	45	31	11
	\$108,314	\$95,223	\$98,221	\$109,802	\$112,431	\$110,855	\$124,109	\$109,491	\$124,258	\$146,019
65 – 69	214	37	47	34	29	23	16	18	6	4
	\$107,915	\$91,794	\$98,188	\$107,888	\$107,383	\$99,632	\$131,075	\$147,959	\$115,089	\$139,438
70 & over	57	9	16	7	8	9	2	1	4	1
	\$102,233	\$100,740	\$91,042	\$96,762	\$100,800	\$118,910	\$79,851	\$143,194	\$134,441	\$69,358
<b>Total</b>	<b>9,384</b>	<b>3,604</b>	<b>1,987</b>	<b>1,101</b>	<b>1,136</b>	<b>897</b>	<b>384</b>	<b>200</b>	<b>59</b>	<b>16</b>
	<b>\$100,282</b>	<b>\$77,354</b>	<b>\$94,037</b>	<b>\$119,364</b>	<b>\$121,597</b>	<b>\$129,653</b>	<b>\$141,013</b>	<b>\$127,259</b>	<b>\$130,851</b>	<b>\$139,582</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2023 by Age, Years of Service, and Average Projected Compensation (continued)

#### General Tier 1

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	—	—	—	—	—	—	—	—	—	—
25 – 29	—	—	—	—	—	—	—	—	—	—
30 – 34	—	—	—	—	—	—	—	—	—	—
35 – 39	—	—	—	—	—	—	—	—	—	—
40 – 44	—	—	—	—	—	—	—	—	—	—
45 – 49	—	—	—	—	—	—	—	—	—	—
50 – 54	—	—	—	—	—	—	—	—	—	—
55 – 59	1	—	—	—	—	—	1	—	—	—
60 – 64	\$369,462	—	—	—	—	—	\$369,462	—	—	—
65 – 69	4	—	—	—	—	1	1	—	—	2
70 & over	\$232,659	—	—	—	—	\$304,623	\$294,861	—	—	\$165,576
	\$69,358	—	—	—	—	—	—	—	—	\$69,358
<b>Total</b>	<b>6</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>1</b>	<b>2</b>	<b>—</b>	<b>—</b>	<b>3</b>
	<b>\$228,243</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>\$304,623</b>	<b>\$332,162</b>	<b>—</b>	<b>—</b>	<b>\$133,503</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2023 by Age, Years of Service, and Average Projected Compensation (continued)

#### General Tier 2

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	—	—	—	—	—	—	—	—	—	—
25 – 29	—	—	—	—	—	—	—	—	—	—
30 – 34	12	—	—	12	—	—	—	—	—	—
	\$125,742	—	—	\$125,742	—	—	—	—	—	—
35 – 39	79	4	7	55	13	—	—	—	—	—
	\$134,584	\$156,993	\$125,478	\$136,090	\$126,217	—	—	—	—	—
40 – 44	175	7	18	59	67	24	—	—	—	—
	\$142,507	\$155,051	\$145,416	\$150,515	\$138,212	\$128,973	—	—	—	—
45 – 49	201	18	12	36	63	61	11	—	—	—
	\$143,001	\$162,451	\$164,417	\$146,733	\$144,733	\$132,328	\$124,868	—	—	—
50 – 54	264	8	11	38	70	87	40	10	—	—
	\$145,059	\$193,685	\$151,622	\$131,098	\$147,600	\$144,892	\$144,688	\$137,128	—	—
55 – 59	214	4	8	37	46	43	40	27	9	—
	\$155,277	\$210,934	\$165,960	\$156,746	\$139,398	\$164,167	\$170,859	\$134,604	\$146,446	—
60 – 64	148	1	6	19	39	31	17	16	14	5
	\$147,217	\$247,254	\$189,272	\$136,061	\$146,848	\$131,336	\$166,686	\$136,279	\$156,850	\$162,297
65 – 69	44	2	3	11	8	3	4	10	2	1
	\$150,074	\$194,247	\$124,771	\$138,003	\$140,952	\$139,385	\$132,565	\$174,218	\$174,357	\$155,469
70 & over	14	—	1	3	2	4	1	1	2	—
	\$140,175	—	\$195,507	\$99,887	\$130,801	\$162,436	\$99,492	\$143,194	\$156,626	—
<b>Total</b>	<b>1,151</b>	<b>44</b>	<b>66</b>	<b>270</b>	<b>308</b>	<b>253</b>	<b>113</b>	<b>64</b>	<b>27</b>	<b>6</b>
	<b>\$145,701</b>	<b>\$174,237</b>	<b>\$154,088</b>	<b>\$142,003</b>	<b>\$142,467</b>	<b>\$142,179</b>	<b>\$154,503</b>	<b>\$141,741</b>	<b>\$154,662</b>	<b>\$161,159</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2023 by Age, Years of Service, and Average Projected Compensation (continued)

#### General Tier 2 w/COLA

Age	Total	Years of Service								
		0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	—	—	—	—	—	—	—	—	—	—
25 – 29	—	—	—	—	—	—	—	—	—	—
30 – 34	20	—	6	14	—	—	—	—	—	—
	\$90,373	—	\$110,810	\$81,615	—	—	—	—	—	—
35 – 39	201	6	35	119	41	—	—	—	—	—
	\$98,216	\$111,608	\$105,681	\$99,751	\$85,430	—	—	—	—	—
40 – 44	310	13	36	123	109	29	—	—	—	—
	\$102,730	\$103,810	\$94,920	\$107,912	\$99,676	\$101,444	—	—	—	—
45 – 49	348	16	22	96	111	93	10	—	—	—
	\$100,148	\$84,159	\$91,770	\$104,539	\$103,552	\$97,136	\$92,232	—	—	—
50 – 54	368	10	17	85	114	82	45	14	1	—
	\$103,266	\$81,072	\$91,020	\$110,379	\$107,612	\$102,010	\$96,993	\$85,437	\$68,188	—
55 – 59	385	14	11	67	108	94	45	43	3	—
	\$100,000	\$99,485	\$108,656	\$98,403	\$101,402	\$100,851	\$98,584	\$97,498	\$86,278	—
60 – 64	314	8	18	53	83	71	33	28	16	4
	\$97,563	\$92,158	\$98,095	\$102,253	\$94,912	\$98,059	\$101,474	\$94,191	\$92,851	\$100,239
65 – 69	86	3	2	20	20	18	11	7	4	1
	\$94,678	\$74,845	\$121,149	\$93,995	\$94,122	\$82,086	\$115,643	\$107,227	\$85,455	\$71,132
70 & over	18	—	1	3	6	5	1	—	2	—
	\$87,879	—	\$79,331	\$84,173	\$90,800	\$84,089	\$60,211	—	\$112,257	—
<b>Total</b>	<b>2,050</b>	<b>70</b>	<b>148</b>	<b>580</b>	<b>592</b>	<b>392</b>	<b>145</b>	<b>92</b>	<b>26</b>	<b>5</b>
	<b>\$100,052</b>	<b>\$93,300</b>	<b>\$98,849</b>	<b>\$103,188</b>	<b>\$100,314</b>	<b>\$98,675</b>	<b>\$99,339</b>	<b>\$95,396</b>	<b>\$91,499</b>	<b>\$94,417</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2023 by Age, Years of Service, and Average Projected Compensation (continued)

#### General PEPRA Tier 2

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	37	37	—	—	—	—	—	—	—	—
	\$59,538	\$59,538	—	—	—	—	—	—	—	—
25 – 29	111	99	12	—	—	—	—	—	—	—
	\$75,646	\$75,672	\$75,431	—	—	—	—	—	—	—
30 – 34	199	122	75	2	—	—	—	—	—	—
	\$92,442	\$91,622	\$93,694	\$95,474	—	—	—	—	—	—
35 – 39	191	100	88	3	—	—	—	—	—	—
	\$104,727	\$105,326	\$104,193	\$100,416	—	—	—	—	—	—
40 – 44	142	85	54	3	—	—	—	—	—	—
	\$113,955	\$116,099	\$109,079	\$140,977	—	—	—	—	—	—
45 – 49	108	52	52	4	—	—	—	—	—	—
	\$112,395	\$119,027	\$104,863	\$124,109	—	—	—	—	—	—
50 – 54	101	47	51	3	—	—	—	—	—	—
	\$109,978	\$109,683	\$111,457	\$89,455	—	—	—	—	—	—
55 – 59	94	48	43	3	—	—	—	—	—	—
	\$112,996	\$114,967	\$108,489	\$146,042	—	—	—	—	—	—
60 – 64	69	35	33	1	—	—	—	—	—	—
	\$121,306	\$127,355	\$116,448	\$69,938	—	—	—	—	—	—
65 – 69	28	11	15	2	—	—	—	—	—	—
	\$110,794	\$111,963	\$112,176	\$93,996	—	—	—	—	—	—
70 & over	11	4	7	—	—	—	—	—	—	—
	\$107,006	\$119,670	\$99,770	—	—	—	—	—	—	—
<b>Total</b>	<b>1,091</b>	<b>640</b>	<b>430</b>	<b>21</b>	—	—	—	—	—	—
	<b>\$102,381</b>	<b>\$100,475</b>	<b>\$104,692</b>	<b>\$113,142</b>	—	—	—	—	—	—

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2023 by Age, Years of Service, and Average Projected Compensation (continued)

#### General PEPRA Tier 2 w/COLA

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	120	120	—	—	—	—	—	—	—	—
	\$49,442	\$49,442	—	—	—	—	—	—	—	—
25 – 29	475	451	24	—	—	—	—	—	—	—
	\$61,322	\$61,089	\$65,701	—	—	—	—	—	—	—
30 – 34	834	595	231	8	—	—	—	—	—	—
	\$69,170	\$67,261	\$74,032	\$70,758	—	—	—	—	—	—
35 – 39	711	446	258	7	—	—	—	—	—	—
	\$73,314	\$69,934	\$78,409	\$100,920	—	—	—	—	—	—
40 – 44	477	298	170	9	—	—	—	—	—	—
	\$73,775	\$69,572	\$79,499	\$104,812	—	—	—	—	—	—
45 – 49	317	191	116	10	—	—	—	—	—	—
	\$73,670	\$69,391	\$80,779	\$72,927	—	—	—	—	—	—
50 – 54	242	140	98	4	—	—	—	—	—	—
	\$76,771	\$73,392	\$81,403	\$81,583	—	—	—	—	—	—
55 – 59	165	104	59	2	—	—	—	—	—	—
	\$72,317	\$69,041	\$77,575	\$87,573	—	—	—	—	—	—
60 – 64	128	71	54	3	—	—	—	—	—	—
	\$75,426	\$75,865	\$74,031	\$90,141	—	—	—	—	—	—
65 – 69	48	21	26	1	—	—	—	—	—	—
	\$79,099	\$73,893	\$83,181	\$82,282	—	—	—	—	—	—
70 & over	13	5	7	1	—	—	—	—	—	—
	\$79,737	\$85,597	\$69,063	\$125,155	—	—	—	—	—	—
<b>Total</b>	<b>3,530</b>	<b>2,442</b>	<b>1,043</b>	<b>45</b>	—	—	—	—	—	—
	<b>\$70,373</b>	<b>\$66,954</b>	<b>\$77,652</b>	<b>\$87,210</b>	—	—	—	—	—	—

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2023 by Age, Years of Service, and Average Projected Compensation (continued)

#### Safety

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	—	—	—	—	—	—	—	—	—	—
25 – 29	—	—	—	—	—	—	—	—	—	—
30 – 34	33	3	1	29	—	—	—	—	—	—
	\$148,825	\$147,960	\$171,776	\$148,123	—	—	—	—	—	—
35 – 39	133	6	5	75	46	1	—	—	—	—
	\$143,596	\$131,978	\$141,519	\$142,341	\$147,413	\$142,248	—	—	—	—
40 – 44	199	3	2	40	118	35	1	—	—	—
	\$151,110	\$149,059	\$155,354	\$152,592	\$147,540	\$161,176	\$158,480	—	—	—
45 – 49	216	2	8	20	49	108	28	1	—	—
	\$161,121	\$177,621	\$165,674	\$154,044	\$146,552	\$163,373	\$180,378	\$164,780	—	—
50 – 54	223	4	7	7	17	78	81	28	1	—
	\$169,341	\$142,561	\$171,831	\$140,355	\$151,255	\$169,382	\$174,014	\$176,900	\$175,929	—
55 – 59	59	—	1	1	4	24	12	13	4	—
	\$166,434	—	\$150,206	\$106,156	\$149,309	\$162,286	\$170,492	\$169,712	\$204,740	—
60 – 64	14	2	1	—	1	4	2	1	1	2
	\$170,060	\$156,372	\$181,929	—	\$224,291	\$179,245	\$135,685	\$109,272	\$170,495	\$196,882
65 – 69	3	—	—	—	1	1	—	1	—	—
	\$121,914	—	—	—	\$104,050	\$91,197	—	\$170,495	—	—
70 & over	—	—	—	—	—	—	—	—	—	—
<b>Total</b>	<b>880</b>	<b>20</b>	<b>25</b>	<b>172</b>	<b>236</b>	<b>251</b>	<b>124</b>	<b>44</b>	<b>6</b>	<b>2</b>
	<b>\$158,195</b>	<b>\$146,057</b>	<b>\$162,017</b>	<b>\$146,769</b>	<b>\$147,748</b>	<b>\$164,711</b>	<b>\$174,367</b>	<b>\$172,818</b>	<b>\$194,230</b>	<b>\$196,882</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2023 by Age, Years of Service, and Average Projected Compensation (continued)

#### Safety PEPRA

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	62	60	2	—	—	—	—	—	—	—
	\$73,891	\$72,619	\$112,040	—	—	—	—	—	—	—
25 – 29	181	140	41	—	—	—	—	—	—	—
	\$90,073	\$83,689	\$111,874	—	—	—	—	—	—	—
30 – 34	243	111	128	4	—	—	—	—	—	—
	\$104,430	\$89,546	\$116,363	\$135,598	—	—	—	—	—	—
35 – 39	117	39	71	7	—	—	—	—	—	—
	\$110,240	\$95,197	\$117,186	\$123,594	—	—	—	—	—	—
40 – 44	40	16	22	2	—	—	—	—	—	—
	\$111,220	\$95,907	\$119,824	\$139,074	—	—	—	—	—	—
45 – 49	11	6	5	—	—	—	—	—	—	—
	\$111,086	\$104,876	\$118,539	—	—	—	—	—	—	—
50 – 54	12	9	3	—	—	—	—	—	—	—
	\$109,991	\$118,032	\$85,868	—	—	—	—	—	—	—
55 – 59	8	7	1	—	—	—	—	—	—	—
	\$132,358	\$129,427	\$152,870	—	—	—	—	—	—	—
60 – 64	1	—	1	—	—	—	—	—	—	—
	\$175,250	—	\$175,250	—	—	—	—	—	—	—
65 – 69	1	—	1	—	—	—	—	—	—	—
	\$152,870	—	\$152,870	—	—	—	—	—	—	—
70 & over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
<b>Total</b>	<b>676</b>	<b>388</b>	<b>275</b>	<b>13</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
	<b>\$99,906</b>	<b>\$87,263</b>	<b>\$116,338</b>	<b>\$129,669</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>



## Section 3: Supplemental Information

### Exhibit C: Reconciliation of Member Data

	Active Members	Inactive Vested Members <sup>1</sup>	Retired Members	Disabled Members	Beneficiaries	Total
<b>Number as of June 30, 2022</b>	<b>9,077</b>	<b>3,812</b>	<b>6,067</b>	<b>801</b>	<b>1,139</b>	<b>20,896</b>
• New members	1,088	116	0	0	82	1,286
• Terminations – with vested rights	(438)	438	0	0	0	0
• Contribution refunds	(123)	(98)	0	0	0	(221)
• Retirements	(253)	(109)	362	0	0	0
• New disabilities	(15)	(4)	(8)	27	0	0
• Return to work	60	(60)	0	0	0	0
• Died with or without beneficiary	(12)	(8)	(143)	(18)	(51)	(232)
• Data adjustments	<u>0</u>	<u>(2)</u>	<u>0</u>	<u>(1)</u>	<u>(0)</u>	<u>(3)</u>
<b>Number as of June 30, 2023</b>	<b>9,384</b>	<b>4,085</b>	<b>6,278</b>	<b>809</b>	<b>1,170</b>	<b>21,726</b>

<sup>1</sup> Includes inactive members with member contributions on deposit.

## Section 3: Supplemental Information

### Exhibit D: Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended June 30, 2023	Year Ended June 30, 2022
<b>Net assets at market value at the beginning of the year</b>	<b>\$7,025,332,391</b>	<b>\$7,681,553,297</b>
<b>Contribution income:</b>		
• Employer contributions	\$178,532,352	\$178,688,292
• Member contributions	<u>93,974,033</u>	<u>84,698,789</u>
Net contribution income	\$272,506,385	\$263,387,082
<b>Investment income:</b>		
• Interest, dividends, asset appreciation and other income	\$717,852,770	\$(518,289,941)
• Less investment and administrative fees	(53,692,010)	(41,285,688)
• Less other expenses	<u>(2,424,730)</u>	<u>(2,934,633)</u>
Net investment income	<u>\$661,736,030</u>	<u>\$(562,510,261)</u>
<b>Total income available for benefits</b>	<b>\$934,242,415</b>	<b>\$(299,123,179)</b>
<b>Less benefit payments:</b>		
• Benefits paid	\$(372,642,831)	\$(350,243,601)
• Member refunds	<u>(8,694,127)</u>	<u>(6,854,126)</u>
Net benefit payments	<u>\$(381,336,958)</u>	<u>\$(357,097,727)</u>
<b>Change in net assets at market value</b>	<b>\$552,905,457</b>	<b>\$(656,220,906)</b>
<b>Net assets at market value at the end of the year</b>	<b>\$7,578,237,848</b>	<b>\$7,025,332,391</b>

Note: Results may not total due to rounding.

## Section 3: Supplemental Information

### Exhibit E: Summary Statement of Plan Assets

	June 30, 2023	June 30, 2022
Cash equivalents	\$150,194,748	\$138,439,567
Cash collateral on loaned securities	56,543,781	107,023,385
Capital assets, net of accumulated depreciation and amortization	7,832,454	9,593,215
<b>Accounts receivable:</b>		
• Member and employer contributions	\$4,174,625	\$3,545,026
• Accrued interest and dividends	4,988,657	3,891,979
• Securities sold	11,886,317	5,411,584
• All other	<u>210,692</u>	<u>12,909</u>
Total accounts receivable	\$21,260,292	\$12,861,498
<b>Investments:</b>		
• Equities	\$5,292,586,940	\$4,656,896,435
• Fixed income	1,240,938,850	1,166,300,685
• Others	<u>892,556,771</u>	<u>1,073,818,964</u>
Total investments at market value	<u>\$7,426,082,560</u>	<u>\$6,897,016,084</u>
Total assets	\$7,661,913,835	\$7,164,933,749
<b>Liabilities:</b>		
• Collateral held for loaned securities	\$(56,543,781)	\$(107,023,385)
• Security purchases	(18,259,991)	(23,879,374)
• Account payable	(7,405,974)	(6,980,666)
• Others	<u>(1,466,240)</u>	<u>(1,717,934)</u>
Total liabilities	\$(83,675,986)	\$(139,601,359)
<b>Net assets at market value</b>	<b>\$7,578,237,848</b>	<b>\$7,025,332,391</b>
<b>Net assets at actuarial value</b>	<b>\$7,640,764,726</b>	<b>\$7,279,668,215</b>
<b>Net assets at valuation value</b>	<b>\$7,640,704,958</b>	<b>\$7,279,605,840</b>

Note: Results may not total due to rounding.

## Section 3: Supplemental Information

### Exhibit F: Summary of Reported Reserve Information

	June 30, 2023	June 30, 2022
<b>Used in Development of Valuation Value of Assets:</b>		
• Member contributions reserve	\$947,972,132	\$888,173,867
• Employer advance reserve	4,175,176,136	3,906,019,694
• Offset: Interest crediting shortfall tracking account (Contra reserve)	(1,337,601,703)	(1,193,831,910)
• Retiree reserve	3,685,528,043	3,510,987,095
• Supplemental death benefit reserve	18,594,756	18,010,323
• Vested fixed supplemental (\$108.44) reserve	151,035,594	150,246,771
• Undistributed earnings	<u>0</u>	<u>0</u>
Subtotal: Valuation Value of Assets	\$7,640,704,958	\$7,279,605,840
<b>Not Used in Development of Valuation Value of Assets:</b>		
• Non-vested supplemental (\$27.50) reserve	\$59,768	\$62,375
• Contingency reserve	<u>0</u>	<u>0</u>
Subtotal	\$59,768	\$62,375
Subtotal: Actuarial Value of Assets	\$7,640,764,726	\$7,279,668,215
• Market stabilization reserve	<u>(62,526,878)</u>	<u>(254,335,824)</u>
<b>Total: Gross Market Value of Assets</b>	<b>\$7,578,237,848</b>	<b>\$7,025,332,391</b>

Note: Results may not total due to rounding.

## Section 3: Supplemental Information

### Exhibit G: Development of the Fund through June 30, 2023

Year Ended June 30	Employer Contributions	Member Contributions	Net Investment Return <sup>1</sup>	Benefit Payments	Market Value of Assets at Year-End	Valuation Value of Assets at Year-End	Valuation Value as a Percent of Market Value
2014	\$169,703,083	\$46,674,443	\$654,535,161	\$223,532,290	\$4,274,885,864	\$3,910,800,797	91.48%
2015	175,099,550	63,678,770	84,826,217	233,695,213	4,364,795,188	4,302,330,424	98.57%
2016	177,709,688	69,469,771	21,265,100	246,403,038	4,386,836,709	4,585,712,958	104.53%
2017	190,759,001	72,394,542	575,001,597	260,745,073	4,964,246,776	4,959,070,151	99.90%
2018	197,682,857	74,044,246	438,207,040	277,718,396	5,396,462,523	5,382,777,075	99.75%
2019	199,932,498	75,157,256	360,926,420	297,118,538	5,735,360,159	5,664,526,062	98.76%
2020	214,587,909	79,242,637	201,285,517	315,624,151	5,914,852,070	6,044,035,808	102.18%
2021	178,662,058	79,620,088	1,841,384,342	332,965,261	7,681,553,297	6,648,153,534	86.55%
2022	178,688,292	84,698,789	(562,510,261)	357,097,727	7,025,332,391	7,279,605,840	103.62%
2023	178,532,352	93,974,033	661,736,030	381,336,958	7,578,237,848	7,640,704,958	100.82%

Note: Results may not total due to rounding.

<sup>1</sup> On a market basis, net of investment fees, administrative expenses and other expenses.

## Section 3: Supplemental Information

### Exhibit H: Table of Amortization Bases

#### General Tier 1

Type	Date Established	Initial Amount (\$ in '000s)	Initial Period	Outstanding Balance (\$ in '000s)	Years Remaining	Annual Payment (\$ in '000s)
Actuarial loss	June 30, 2006	\$7,048	15	\$297	1 <sup>1</sup>	\$308
Assumption change	June 30, 2006	41,538	15	1,745	1 <sup>1</sup>	1,810
Actuarial gain	June 30, 2007	(19,901)	15	(1,575)	1 <sup>1</sup>	(1,634)
Actuarial gain	June 30, 2008	(18,128)	15	(2,029)	1 <sup>1</sup>	(2,105)
Actuarial loss	June 30, 2009	55,190	15	7,764	1	8,053
Assumption change	June 30, 2009	18,574	15	2,612	1	2,709
Actuarial loss	June 30, 2010	50,018	15	13,258	2	7,007
Actuarial loss	June 30, 2011	36,225	15	13,579	3	4,875
Actuarial loss	June 30, 2012	29,865	15	14,065	4	3,858
Demographic assumption change	June 30, 2012	38,104	20	30,111	9	4,022
Economic assumption change	June 30, 2012	19,517	20	15,414	9	2,059
Actuarial loss	June 30, 2013	31,670	15	17,614	5	3,938
Actuarial loss	June 30, 2014	16,119	15	11,435	9 <sup>1</sup>	1,527
Actuarial loss	June 30, 2015	8,457	15	6,292	9 <sup>1</sup>	840
Assumption change	June 30, 2015	47,959	20	42,711	12	4,513
Actuarial loss	June 30, 2016	45,451	15	34,301	8	5,063
Actuarial loss	June 30, 2017	53,640	15	43,227	9	5,774
Actuarial loss	June 30, 2018	51,584	15	43,828	10	5,364
Assumption change	June 30, 2018	3,972	20	3,793	15	338
Actuarial loss	June 30, 2019	80,777	15	71,843	11	8,137
Actuarial loss	June 30, 2020	71,845	15	66,328	12	7,009
Actuarial loss	June 30, 2021	51,026	15	48,568	13	4,821
Assumption change	June 30, 2021	(170)	20	(158)	18	(12)
Actuarial loss	June 30, 2022	78,621	15	76,898	14	7,213
Actuarial loss	June 30, 2023	88,299	15	88,299	15	7,865
<b>Subtotal</b>				<b>\$650,220</b>		<b>\$93,352</b>

<sup>1</sup> Reflects the adjustment to UAAL amortization periods made in 2020.

## Section 3: Supplemental Information

### Exhibit H: Table of Amortization Bases (continued)

#### General Tier 2

Type	Date Established	Initial Amount (\$ in '000s)	Initial Period	Outstanding Balance (\$ in '000s)	Years Remaining	Annual Payment (\$ in '000s)
Actuarial gain	June 30, 2006	\$(9,108)	15	\$(382)	1 <sup>1</sup>	\$(396)
Assumption change	June 30, 2006	19,085	15	802	1 <sup>1</sup>	832
Plan provision change	June 30, 2006	14,731	15	618	1 <sup>1</sup>	641
Actuarial gain	June 30, 2007	(39,508)	15	(3,127)	1 <sup>1</sup>	(3,244)
Actuarial gain	June 30, 2008	(34,794)	15	(3,892)	1 <sup>1</sup>	(4,037)
Actuarial loss	June 30, 2009	71,253	15	10,021	1	10,394
Assumption change	June 30, 2009	22,696	15	3,190	1	3,309
Actuarial loss	June 30, 2010	47,615	15	12,625	2	6,672
Actuarial gain	June 30, 2011	(6,949)	15	(2,608)	3	(936)
Actuarial gain	June 30, 2012	(18,106)	15	(8,527)	4	(2,339)
Demographic assumption change	June 30, 2012	29,420	20	23,233	9	3,103
Economic assumption change	June 30, 2012	32,874	20	25,986	9	3,471
Actuarial gain	June 30, 2013	(23,823)	15	(13,265)	5	(2,965)
Actuarial gain	June 30, 2014	(49,125)	15	(34,853)	9 <sup>1</sup>	(4,656)
Actuarial gain	June 30, 2015	(62,406)	15	(46,512)	9 <sup>1</sup>	(6,213)
Assumption change	June 30, 2015	50,090	20	44,612	12	4,714
Actuarial gain	June 30, 2016	(28,842)	15	(21,774)	8	(3,214)
Actuarial gain	June 30, 2017	(41,622)	15	(33,550)	9	(4,482)
Actuarial gain	June 30, 2018	(86,831)	15	(73,788)	10	(9,031)
Assumption change	June 30, 2018	111,232	20	106,024	15	9,444
Actuarial gain	June 30, 2019	(8,940)	15	(7,948)	11	(900)
Actuarial gain	June 30, 2020	(62,406)	15	(57,624)	12	(6,089)
Actuarial gain	June 30, 2021	(184,009)	15	(175,172)	13	(17,389)
Assumption change	June 30, 2021	89,334	20	88,210	18	6,892
Actuarial gain	June 30, 2022	(262,350)	15	(256,609)	14	(24,070)
Actuarial gain	June 30, 2023	(61,190)	15	(61,190)	15	(5,451)
Plan provision change	June 30, 2023	3,026	15	3,026	15	270
<b>Subtotal</b>				<b>\$(482,474)</b>		<b>\$(45,670)</b>

<sup>1</sup> Reflects the adjustment to UAAL amortization periods made in 2020.

## Section 3: Supplemental Information

### Exhibit H: Table of Amortization Bases (continued)

Type	Date Established	Safety		Outstanding Balance (\$ in '000s)	Years Remaining	Annual Payment (\$ in '000s)
		Initial Amount (\$ in '000s)	Initial Period			
Actuarial loss	June 30, 2006	\$3,418	15	143	1 <sup>1</sup>	148
Assumption change	June 30, 2006	42,167	15	1,772	1 <sup>1</sup>	1,838
Actuarial gain	June 30, 2007	(37,489)	15	(2,966)	1 <sup>1</sup>	(3,077)
Actuarial gain	June 30, 2008	(22,443)	15	(2,510)	1 <sup>1</sup>	(2,604)
Actuarial loss	June 30, 2009	78,157	15	10,993	1	11,403
Assumption change	June 30, 2009	49,982	15	7,031	1	7,293
Actuarial loss	June 30, 2010	108,448	15	28,756	2	15,198
Actuarial loss	June 30, 2011	8,879	15	3,331	3	1,196
Actuarial gain	June 30, 2012	(7,501)	15	(3,526)	4	(967)
Demographic assumption change	June 30, 2012	55,513	20	43,867	9	5,860
Economic assumption change	June 30, 2012	51,887	20	40,976	9	5,473
Actuarial loss	June 30, 2013	7,588	15	4,230	5	946
Actuarial gain	June 30, 2014	(54,478)	15	(38,647)	9 <sup>1</sup>	(5,162)
Actuarial gain	June 30, 2015	(55,657)	15	(41,484)	9 <sup>1</sup>	(5,541)
Assumption change	June 30, 2015	119,953	20	106,818	12	11,288
Actuarial gain	June 30, 2016	(17,062)	15	(12,883)	8	(1,901)
Actuarial gain	June 30, 2017	(9,288)	15	(7,480)	9	(999)
Actuarial gain	June 30, 2018	(29,088)	15	(24,717)	10	(3,025)
Assumption change	June 30, 2018	33,306	20	31,741	15	2,827
Actuarial loss	June 30, 2019	48,977	15	43,560	11	4,934
Actuarial gain	June 30, 2020	(26,527)	15	(24,494)	12	(2,588)
Actuarial gain	June 30, 2021	(125,962)	15	(119,911)	13	(11,904)
Assumption change	June 30, 2021	25,639	20	25,312	18	1,978
Actuarial gain	June 30, 2022	(54,877)	15	(53,674)	14	(5,035)
Actuarial loss	June 30, 2023	46,112	15	46,112	15	4,107
<b>Subtotal</b>				<b>\$62,350</b>		<b>\$31,686</b>

<sup>1</sup> Reflects the adjustment to UAAL amortization periods made in 2020.



## Section 3: Supplemental Information

### Exhibit H: Table of Amortization Bases (continued)

#### Total VCERA

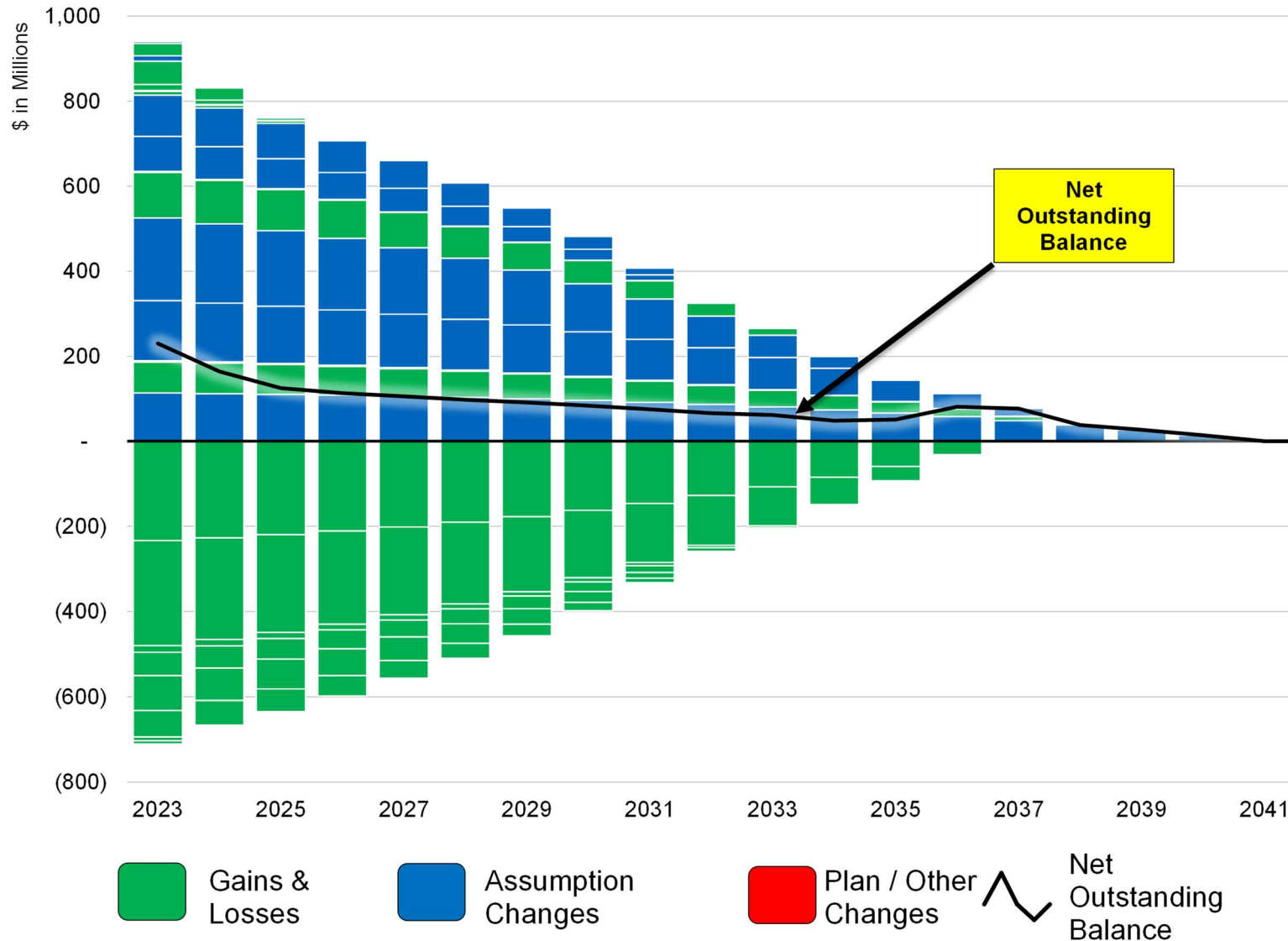
Type	Date Established	Initial Amount (\$ in '000s)	Initial Period	Outstanding Balance (\$ in '000s)	Years Remaining	Annual Payment (\$ in '000s)
Actuarial loss	June 30, 2006	\$1,358	15	58	1 <sup>1</sup>	60
Assumption change	June 30, 2006	102,790	15	4,319	1 <sup>1</sup>	4,480
Plan provision change	June 30, 2006	14,731	15	618	1 <sup>1</sup>	641
Actuarial gain	June 30, 2007	(96,898)	15	(7,668)	1 <sup>1</sup>	(7,955)
Actuarial gain	June 30, 2008	(75,365)	15	(8,431)	1 <sup>1</sup>	(8,746)
Actuarial loss	June 30, 2009	204,600	15	28,778	1	29,850
Assumption change	June 30, 2009	91,252	15	12,833	1	13,311
Actuarial loss	June 30, 2010	206,081	15	54,639	2	28,877
Actuarial loss	June 30, 2011	38,155	15	14,302	3	5,135
Actuarial loss	June 30, 2012	4,258	15	2,012	4	552
Demographic assumption change	June 30, 2012	123,037	20	97,211	9	12,985
Economic assumption change	June 30, 2012	104,278	20	82,376	9	11,003
Actuarial loss	June 30, 2013	15,435	15	8,579	5	1,919
Actuarial gain	June 30, 2014	(87,484)	15	(62,065)	9 <sup>1</sup>	(8,291)
Actuarial gain	June 30, 2015	(109,606)	15	(81,704)	9 <sup>1</sup>	(10,914)
Assumption change	June 30, 2015	218,002	20	194,141	12	20,515
Actuarial gain	June 30, 2016	(453)	15	(356)	8	(52)
Actuarial loss	June 30, 2017	2,730	15	2,197	9	293
Actuarial gain	June 30, 2018	(64,335)	15	(54,677)	10	(6,692)
Assumption change	June 30, 2018	148,510	20	141,558	15	12,609
Actuarial loss	June 30, 2019	120,814	15	107,455	11	12,171
Actuarial gain	June 30, 2020	(17,088)	15	(15,790)	12	(1,668)
Actuarial gain	June 30, 2021	(258,945)	15	(246,515)	13	(24,472)
Assumption change	June 30, 2021	114,803	20	113,364	18	8,858
Actuarial gain	June 30, 2022	(238,606)	15	(233,385)	14	(21,892)
Actuarial loss	June 30, 2023	73,221	15	73,221	15	6,521
Plan provision change	June 30, 2023	3,026	15	3,026	15	270
<b>Total</b>				<b>\$230,096</b>		<b>\$79,368</b>

<sup>1</sup> Reflects the adjustment to UAAL amortization periods made in 2020.

## Section 3: Supplemental Information

### Exhibit I: Projection of UAAL Balances and Payments

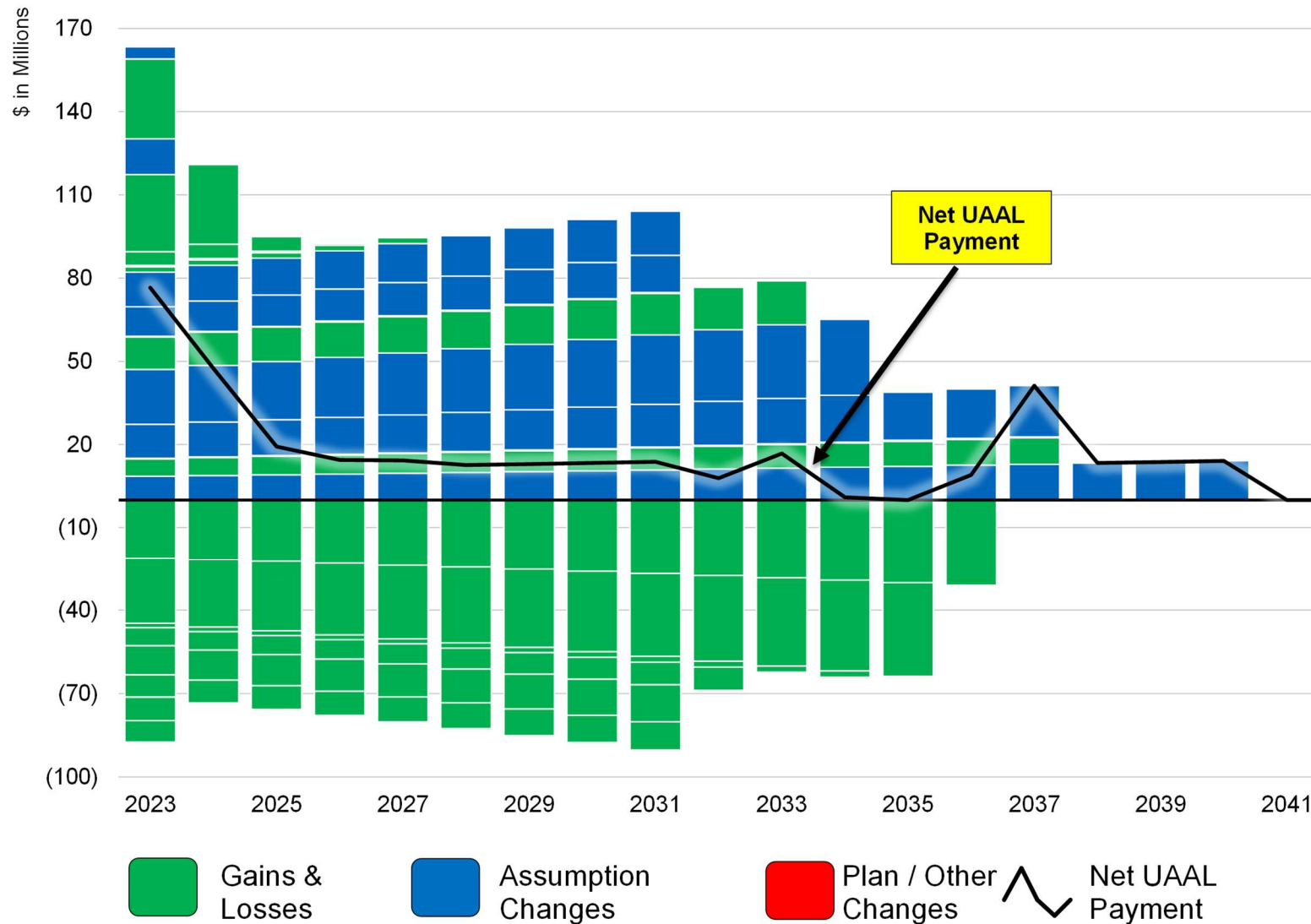
Outstanding Balance of \$230 Million in Net UAAL as of June 30, 2023



## Section 3: Supplemental Information

### Exhibit I: Projection of UAAL Balances and Payments (continued)

Annual Payments Required to Amortize \$230 Million in Net UAAL as of June 30, 2023



## Section 3: Supplemental Information

### Exhibit J: Definition of Pension Terms

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

<b>Actuarial Accrued Liability for Actives:</b>	The equivalent of the accumulated Normal Costs allocated to the years before the valuation date.
<b>Actuarial Accrued Liability for Pensioners and Beneficiaries:</b>	The single-sum value of lifetime benefits to existing pensioners 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.
<b>Actuarial Cost Method:</b>	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.
<b>Actuarial Gain or Loss:</b>	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 in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.
<b>Actuarially Equivalent:</b>	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
<b>Actuarial Present Value (APV):</b>	<p>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:</p> <p>Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)</p> <p>Multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination, etc.) on which the payment is conditioned, and</p> <p>Discounted according to an assumed rate (or rates) of return to reflect the time value of money.</p>

## Section 3: Supplemental Information

<b>Actuarial Present Value of Future Plan Benefits:</b>	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 Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund 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.
<b>Actuarial Valuation:</b>	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. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability (NPL).
<b>Actuarial Value of Assets (AVA):</b>	The value of the Fund'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 ADC.
<b>Actuarially Determined:</b>	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.
<b>Actuarially Determined Contribution (ADC):</b>	The employer's periodic required 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.
<b>Amortization Method:</b>	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 UAAL. 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 UAAL. 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.
<b>Amortization Payment:</b>	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the UAAL.

## Section 3: Supplemental Information

<b>Assumptions or Actuarial Assumptions:</b>	<p>The estimates upon which the cost of the Fund is calculated, including:</p> <p><u>Investment return</u> - the rate of investment yield that the Fund will earn over the long-term future;</p> <p><u>Mortality rates</u> - the death rates of employees and pensioners; life expectancy is based on these rates;</p> <p><u>Retirement rates</u> - the rate or probability of retirement at a given age or service;</p> <p><u>Disability rates</u> - the probability of disability retirement at a given age;</p> <p><u>Termination rates</u> - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement;</p> <p><u>Salary increase rates</u> - the rates of salary increase due to inflation and productivity growth.</p>
<b>Closed Amortization Period:</b>	<p>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 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.</p>
<b>Decrements:</b>	<p>Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.</p>
<b>Defined Benefit Plan:</b>	<p>A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.</p>
<b>Defined Contribution Plan:</b>	<p>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.</p>
<b>Employer Normal Cost:</b>	<p>The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.</p>
<b>Experience Study:</b>	<p>A periodic review and analysis of the actual experience of the Fund 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 as deemed appropriate by the Actuary.</p>
<b>Funded Ratio:</b>	<p>The ratio of the Valuation Value of Assets (VVA) to the Actuarial Accrued Liability (AAL). Plans sometimes calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the VVA.</p>
<b>Investment Return:</b>	<p>The rate of earnings of the Fund 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.</p>

## Section 3: Supplemental Information

<b>Normal Cost:</b>	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.
<b>Open Amortization Period:</b>	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 determining the Amortization Period each year. In theory, if an Open Amortization Period with level percentage of payroll is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never decrease, but will become smaller each year, in relation to covered payroll, if the actuarial assumptions are realized.
<b>Unfunded Actuarial Accrued Liability:</b>	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.
<b>Valuation Date or Actuarial Valuation Date:</b>	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.
<b>Valuation Value of Assets:</b>	The Actuarial Value of Assets reduced by the value of non-valuation reserves.

# Section 4: Actuarial Valuation Basis

## Exhibit 1: Actuarial Assumptions and Methods

<b>Rationale for Assumptions:</b>	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2017 through June 30, 2020 Actuarial Experience Study dated June 3, 2021. Unless otherwise noted, all actuarial assumptions and methods shown below apply to members for all tiers. These assumptions were adopted by the Board.
<b><u>Economic Assumptions</u></b>	
<b>Net Investment Return:</b>	7.00%; net of investment and administrative expenses. Based on the Actuarial Experience Study reference above, expected investment expenses represent about 0.15% of the Actuarial Value of Assets.
<b>Member Contribution Crediting Rate:</b>	2.50% (actual increase is based on projected long term ten-year Treasury rate).
<b>Inflation:</b>	Increase of 2.50% per year.
<b>Cost of Living Adjustments (COLA):</b>	Retiree COLA increases of 2.75% are subject to a 3.00% maximum change per year for both PEPRA and Non-PEPRA General Tier 1 and both PEPRA and Non-PEPRA Safety. For both PEPRA and non-PEPRA General Tier 2, SEIU members receive a fixed 2% cost-of-living adjustment, not subject to changes in the CPI that applies to future service after March 2003 (members represented by CNA receive a fixed 2% COLA that applies to future service after July 2023).
<b>Payroll Growth:</b>	Inflation of 2.50% per year plus “across the board” real salary increases of 0.50% per year, used to amortize the UAAL as a level percentage of payroll.
<b>Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:</b>	Increase of 2.50% per year from the valuation date.
<b>Increase in Section 7522.10 Compensation Limit:</b>	Increase of 2.50% per year from the valuation date.



## Section 4: Actuarial Valuation Basis

### Salary Increases:

The annual rate of compensation increase includes: inflation at 2.50%, plus “across the board” salary increases of 0.50% per year, plus the following merit and promotion increases:

Years of Service	Rate (%)	
	General	Safety
Less than 1	7.00	9.00
1 – 2	5.25	6.25
2 – 3	4.00	4.75
3 – 4	3.50	4.50
4 – 5	3.00	4.25
5 – 6	2.75	4.00
6 – 7	2.50	2.75
7 – 8	2.25	1.75
8 – 9	2.00	1.50
9 – 10	1.75	1.25
10 – 11	1.50	1.20
11 – 12	1.40	1.15
12 – 13	1.30	1.10
13 – 14	1.20	1.05
14 – 15	1.10	1.00
15 – 16	1.00	1.00
16 – 17	0.95	1.00
17 – 18	0.90	1.00
18 – 19	0.85	1.00
19 – 20	0.80	1.00
20 & Over	0.75	1.00

## Section 4: Actuarial Valuation Basis

### Demographic Assumptions:

#### Post-Retirement Mortality Rates:

##### *Healthy*

- **General Members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020.
- **Safety Members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2020.

##### *Disabled*

- **General Members:** Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2020.
- **Safety Members:** Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2020.

##### *All Beneficiaries*

- Pub-2010 General Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020.

The Pub-2010 mortality tables and adjustments as shown above reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

## Section 4: Actuarial Valuation Basis

### Pre-Retirement Mortality Rates:

**General Members:** Pub-2010 General Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2020.

**Safety Members:** Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2020.

Age	Rate (%)			
	General <sup>1</sup>		Safety <sup>1</sup>	
	Male	Female	Male	Female
20	0.04	0.01	0.04	0.02
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
70	0.61	0.44	0.66	0.39

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

<sup>1</sup> Generational projections beyond the base year (2010) are not reflected in the above mortality rates.

### Mortality Rates for Member Contributions:

**General Members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5% for females, projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2020, weighted one-third male and two-thirds female.

**Safety Members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2020, weighted 80% male and 20% female.

## Section 4: Actuarial Valuation Basis

### Disability Incidence:

Age	Rate (%)	
	General	Safety
20	0.01	0.03
25	0.01	0.06
30	0.02	0.24
35	0.04	0.38
40	0.08	0.52
45	0.12	0.84
50	0.19	1.12
55	0.24	2.52
60	0.31	5.86
65	0.41	0.00
70	0.45	0.00

30% of General disabilities are assumed to be service connected (duty) disabilities and the other 70% are assumed to be non-service connected (ordinary) disabilities.

90% of Safety disabilities are assumed to be service connected (duty) disabilities and the other 10% are assumed to be non-service connected (ordinary) disabilities.

## Section 4: Actuarial Valuation Basis

### Termination:

Years of Service	Rate (%)	
	General	Safety
Less than 1	13.50	10.00
1 – 2	9.50	5.50
2 – 3	8.50	5.25
3 – 4	6.75	4.50
4 – 5	5.50	4.25
5 – 6	5.00	2.50
6 – 7	4.00	2.25
7 – 8	3.50	2.00
8 – 9	3.50	1.80
9 – 10	3.50	1.60
10 – 11	3.50	1.50
11 – 12	3.25	1.40
12 – 13	3.25	1.20
13 – 14	3.00	1.10
14 – 15	2.75	1.00
15 – 16	2.75	0.95
16 – 17	2.50	0.85
17 – 18	2.50	0.75
18 – 19	2.00	0.50
19 – 20	1.75	0.50
20 & Over	1.75	0.50

The greater of a refund of member contributions and a deferred annuity is valued when a member terminates. No termination is assumed after a member is first assumed to retire.

## Section 4: Actuarial Valuation Basis

### Retirement Rates:

Age	General Tier 1 and 2		Safety Non-PEPRA		General PEPRA Tier 1 and 2	Safety PEPRA
	Less than 30 Years of Service	30 or More Years of Service	Less than 30 Years of Service	30 or More Years of Service		
Under 50	0.00	50.00	1.50	1.50	0.00	0.00
50	2.00	2.00	2.00	2.00	0.00	4.00
51	2.25	2.25	1.75	1.75	0.00	1.75
52	2.75	2.75	2.25	2.25	1.50	3.25
53	3.00	3.00	3.25	3.25	1.50	5.50
54	3.25	4.00	15.00	20.00	2.00	16.00
55	4.50	5.00	20.00	37.00	4.00	20.00
56	5.25	6.00	20.00	25.00	4.75	20.00
57	5.50	7.00	22.00	30.00	5.25	20.00
58	6.00	9.00	22.00	33.00	5.50	18.00
59	8.00	9.50	22.00	35.00	6.50	25.00
60	10.50	14.00	35.00	35.00	9.00	30.00
61	13.00	20.00	35.00	45.00	11.00	30.00
62	22.00	30.00	35.00	45.00	20.00	35.00
63	18.00	25.00	35.00	45.00	18.00	35.00
64	18.00	25.00	35.00	45.00	16.00	35.00
65	30.00	45.00	100.00	100.00	20.00	100.00
66	35.00	50.00	100.00	100.00	30.00	100.00
67	35.00	47.50	100.00	100.00	35.00	100.00
68	27.50	47.50	100.00	100.00	25.00	100.00
69	25.00	25.00	100.00	100.00	35.00	100.00
70	25.00	25.00	100.00	100.00	55.00	100.00
71	25.00	25.00	100.00	100.00	55.00	100.00
72	25.00	25.00	100.00	100.00	55.00	100.00
73	25.00	25.00	100.00	100.00	55.00	100.00
74	25.00	25.00	100.00	100.00	55.00	100.00
75	100.00	100.00	100.00	100.00	100.00	100.00

## Section 4: Actuarial Valuation Basis

<b>Retirement Age and Benefit for Deferred Vested Members:</b>	Future current and future deferred vested members, retirement age assumptions are as follows:										
	<b><u>General Retirement Age</u></b>										
	Reciprocal members: 60										
	Other members: 60										
	<b><u>Safety Retirement Age</u></b>										
	Reciprocal members: 55										
	Other members: 52										
	Future deferred vested 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. 45% of future General and 60% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 3.75% and 4.00% compensation increases are assumed per annum for General and Safety, respectively.										
<b>Future Benefit Accruals:</b>	1.0 year of service per year of employment.										
<b>Unknown Data for Members:</b>	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.										
<b>Definition of Active Members:</b>	All active members of VCERA as of the valuation date.										
<b>Form of Payment:</b>	All active and inactive members are assumed to elect the unmodified option at retirement.										
<b>Percent Married:</b>	For all active and inactive members, 70% of male members and 55% of female members are assumed to be married at pre-retirement death or retirement. There is no explicit assumption for children's benefits.										
<b>Age and Gender of Spouse:</b>	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.										
<b>In-Service Redemptions:</b>	<p>The following assumptions for in-service redemptions pay as a percentage of final average compensation are used:</p> <table data-bbox="726 1138 1094 1312"> <tr> <td>General Tier 1:</td> <td>8.00%</td> </tr> <tr> <td>General Tier 2:</td> <td>3.50%</td> </tr> <tr> <td>Safety:</td> <td>6.50%</td> </tr> <tr> <td>General PEPRA:</td> <td>0.00%</td> </tr> <tr> <td>Safety PEPRA:</td> <td>0.00%</td> </tr> </table> <p>For determining the cost of the basic benefit (i.e., non-COLA component), the cost of this pay element is currently recognized in the valuation as an employer only cost and does not affect member contribution rates.</p>	General Tier 1:	8.00%	General Tier 2:	3.50%	Safety:	6.50%	General PEPRA:	0.00%	Safety PEPRA:	0.00%
General Tier 1:	8.00%										
General Tier 2:	3.50%										
Safety:	6.50%										
General PEPRA:	0.00%										
Safety PEPRA:	0.00%										

## Section 4: Actuarial Valuation Basis

<b>Average Entry Age for Member Contribution Rates:</b>	For non-PEPRA members hired after November 1974 who are not contributing fifty percent of Normal Cost, they will pay a contribution corresponding to a General and Safety member hired at entry age 35 and 27, respectively.
<b><u>Actuarial Funding Policy</u></b>	
<b>Actuarial Cost Method:</b>	Entry Age Actuarial Cost Method. Entry Age is the age on the valuation date minus the lesser of years of employment or years of benefit 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 (i.e., “replacement life within a tier”).
<b>Actuarial Value of Assets:</b>	Market Value of Assets (MVA) less unrecognized returns in each of the last ten semi-annual accounting periods. Unrecognized returns are equal to the difference between the actual market return and the expected return on the market value, and are recognized annually over a five-year period.
<b>Valuation Value of Assets:</b>	Actuarial Value of Assets, reduced by the value of the non-vested supplemental benefit reserve and statutory contingency reserve.



## Section 4: Actuarial Valuation Basis

### Amortization Policy:

The UAAL as of June 30, 2011 shall continue to be amortized over separate 15-year period amortization layers based on the valuations during which each separate layer was previously established.

Any new UAAL as a result of actuarial gains or losses identified in the annual valuation as of June 30 will be amortized over a period of 15 years.

Any new UAAL as a result of change in actuarial assumptions or methods will be amortized over a period of 20 years.

Unless an alternative amortization period is recommended by the Actuary and accepted by the Board based on the results of an actuarial analysis:

- With the exception noted below, the increase in UAAL as a result of any plan amendments will be amortized over a period of 15 years.
- The increase in UAAL resulting from a temporary retirement incentive, including the impact of benefits resulting from additional service permitted in Section 31641.04 of the 1937 CERL (Golden Handshake), will be funded over a period of up to 5 years.

The UAAL will be amortized over “closed” amortization periods so that the amortization period for each layer decreases by one year with each actuarial valuation.

The UAAL will be amortized as a level percentage of payroll so that the amortization amount in each year during the amortization period shall be expected to be a level percentage of covered payroll, taking into consideration the current assumption for general payroll increase (i.e., wage inflation).

If an overfunding or “surplus” exists (i.e., the VVA exceeds the AAL, so that the total of all UAAL amortization layers becomes negative), any prior UAAL amortization layers will be considered fully amortized, and any subsequent UAAL will be amortized as the first of a new series of amortization layers, using the above amortization periods.

If the surplus exceeds 20% of the AAL per Section 7522.52 of the Government Code, then the amount of surplus in excess of 20% of the AAL (and any subsequent surpluses in excess of that amount) will be amortized over an “open” amortization period of 30 years, but only if the other conditions of Section 7522.52 have also been met. If those conditions are not met, then the surplus will not be amortized and the full Normal Cost will be contributed.

These amortization policy components will generally apply separately to each of VCERA’s UAAL cost groups with the exception that the conditions of Section 7522.52 apply to the total plan. Basic UAAL contribution rates have been calculated on a combined basis for all General Tiers. COLA UAAL contribution rates have been calculated on a combined basis for all General Tiers that have a COLA.

In April 2020, the Board directed Segal to adjust the remaining amortization periods for certain amortization layers in order to minimize the contribution rate tail volatility associated with the UAAL layers that were first established in 2006, 2007 and 2008, and in 2014 and 2015. Effective with the 2020 actuarial valuation the remaining amortization periods for the 2006, 2007, and 2008 UAAL amortization layers were set to 4 years and those for the 2014 and 2015 UAAL actuarial gain/loss amortization layers were set to 12 years.

## Section 4: Actuarial Valuation Basis

### Other Actuarial Methods

#### **Employer Contributions:**

Employer contributions consist of two components:

##### *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 Unfunded Actuarial Accrued Liability (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 on the previous page.

The recommended employer contributions shown in *Section 2, Subsection F* are calculated based on a 50/50 sharing of Normal Cost for non-PEPRA Tiers. For purposes of these calculations, we have been previously directed by VCERA to assume that the cessation of member contributions after 30 years of service for non-PEPRA members continues per the County Employees Retirement Law (CERL) and that the cost associated with this provision is to be paid for by employers.

The employer contributions shown in *Section 4, Exhibit 4* are calculated under the prior method (i.e., without 50/50 sharing of Normal Cost for non-PEPRA tiers).

## Section 4: Actuarial Valuation Basis

### **Member Contributions:**

The member contribution rates for all members are provided in *Section 4, Exhibit 3*, which are calculated based on a 50/50 sharing of Normal Cost.

Member contributions accumulate with interest at the lesser of the assumed investment earning rate or the rate on ten-year U.S. Treasury notes. Any difference between the assumed investment earning rate and the actual interest crediting rate will be credited to the County Advance reserve. Please note that in calculating the basic member rate, we follow the Board's past practice and have not included any in-service pay redemptions that may potentially increase a member's final average compensation and hence retirement benefit.

The member rates provided in the report are the full rate before reflecting any employer pickup. General Tier 2 members eligible for the fixed 2% cost-of-living benefit contribute a negotiated 2.63% of compensation per year towards the cost of that benefit that is reflected in this report.

### **Non-PEPRA Members (Prior Methodology)**

The member contributions shown in *Section 4, Exhibit 5* are calculated under the prior method (i.e., without 50/50 sharing of Normal Cost for non-PEPRA tiers). The basic member 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 1/120 of Final Average Compensation for General members and 1/100 of Final Average Compensation for Safety members. That age is 55 for General Tier 1 members, 60 for General Tier 2 members and 50 for Safety members. It is assumed that contributions are made annually at the same rate, starting at entry age. In addition to their basic contributions, General Tier 1 and Safety members pay one-half of the total Normal Cost necessary to fund their cost-of-living benefits.

### **PEPRA Members**

Pursuant to Section 7522.30(a) of the Government Code, members under PEPRA tiers are required to contribute at least 50% of the Normal Cost. In addition, there are certain additional requirements that would have to be met such as requiring the new employees to pay the contribution rate of "similarly situated employees", if it is greater. (reference: Section 7522.30(c)). We further understand that different rules may have to be applied for collectively bargained employees, non-represented, managerial or other supervisory employees. (reference: Section 7522.30(e)). In preparing the Normal Cost rates in this report, we have assumed that exactly 50% of the Normal Cost would be paid by the new members and we have taken into account in this valuation only the requirements of Section 7522.30(c), but not the requirements of Section 7522.30(e). The only exception to this is that we have also shown the PEPRA Tier 2 with COLA contribution rates including the member COLA contribution rate of 2.63% of compensation based on current bargaining agreements.

Also of note is that based on our discussions with VCERA, we have used the discretion made available by AB1380 to not round the PEPRA member's contribution rates to the nearest one quarter of one percent as was previously required by PEPRA.

### **Tier 2 COLA Procedures**

This benefit has been valued consistent with the methodologies described in our October 9, 2006 report entitled "Funding Policies and Procedures for General Tier 2 COLA Benefit".

## Section 4: Actuarial Valuation Basis

### **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. 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-PEPRA 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 actuarial gains as they occur.

### **Changed Actuarial Assumptions and Methods:**

There have been no changes in actuarial assumptions or methods since the last valuation.

## Section 4: Actuarial Valuation Basis

### 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.

<b>Plan Year:</b>	July 1 through June 30
<b>Membership Eligibility:</b>	All regular employees of the County of Ventura or contracting district, scheduled to work 64 or more hours biweekly, are eligible to become a member of the plan subject to classification below:
<i>General Tier 1</i>	All General members with membership dates before June 30, 1979, plus Deputy Sheriff trainees and certain executive management with membership dates before January 1, 2013.
<i>General Tier 2</i>	All General members with membership dates on or after June 30, 1979 and before January 1, 2013, except as noted above for General Tier 1.
<i>General PEPRA Tier 1</i>	Deputy Sheriff trainees with membership dates on or after January 1, 2013 and before April 17, 2014.
<i>General PEPRA Tier 2</i>	All General members with membership dates on or after January 1, 2013, except as noted above for General PEPRA Tier 1.
<i>Safety</i>	All Safety members with membership dates before January 1, 2013.
<i>Safety PEPRA</i>	All Safety members with membership dates on or after January 1, 2013.
<b>Final Compensation for Benefit Determination:</b>	
<i>General Tier 1 and Safety</i>	Highest consecutive twelve months of compensation earnable (§31462.1) (FAS1).
<i>General Tier 2</i>	Highest consecutive thirty-six months of compensation earnable (§31462) (FAS3).
<i>General PEPRA Tier 1, General PEPRA Tier 2 and Safety PEPRA</i>	Highest consecutive thirty-six months of pensionable compensation (§7522.10(c), §7522.32 and §7522.34) (FAS3).
<b>Compensation Limit:</b>	
<i>General Tier 1, General Tier 2 and Safety</i>	For members with membership dates on or after July 1, 1996, Compensation Earnable is limited to Internal Revenue Code Section 401(a)(17). The limit as of July 1, 2023 is \$330,000. The limit is indexed for inflation on an annual basis.
<i>General PEPRA Tier 1, General PEPRA Tier 2 and Safety PEPRA</i>	Pensionable Compensation is limited to \$146,042 for 2023 (\$175,250, if not enrolled in Social Security). The limit is indexed for inflation on an annual basis.
<b>Service:</b>	Years of service. (Yrs).

## Section 4: Actuarial Valuation Basis

### Service Retirement Eligibility:

<i>General</i>	Age 50 with 10 years of service, or age 70 regardless of service, or after 30 years regardless of age (§31672).
<i>Safety</i>	Age 50 with 10 years of service, or age 70 regardless of service, or after 20 years regardless of age (§31663.25).
<i>General PEPRA</i>	Age 52 with 5 years of service (§7522.20(a)) or age 70 regardless of service (§31672.3).
<i>Safety PEPRA</i>	Age 50 with 5 years of service (§7522.25(d)) or age 70 regardless of service (§31672.3).

### Benefit Formula:

<i>General Tier 1 (§31676.11)</i>	<b>Retirement Age</b>	<b>Benefit Formula</b>
	50	1.24% x (FAS1 – \$1,400) x Yrs
	55	1.67% x (FAS1 – \$1,400) x Yrs
	60	2.18% x (FAS1 – \$1,400) x Yrs
	62	2.35% x (FAS1 – \$1,400) x Yrs
	65 and over	2.61% x (FAS1 – \$1,400) x Yrs
<i>General Tier 2 (§31676.1)</i>	<b>Retirement Age</b>	<b>Benefit Formula</b>
	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
<i>General PEPRA Tier 1 and General PEPRA Tier 2 (§7522.20(a))</i>	<b>Retirement Age</b>	<b>Benefit Formula</b>
	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

## Section 4: Actuarial Valuation Basis

<b>Benefit Formula (continued)</b>		
<i>Safety (§31664)</i>	<b>Retirement Age</b>	<b>Benefit Formula</b>
	50	2.00% x FAS1 x Yrs
	55 and over	2.62% x FAS1 x Yrs
<i>Safety PEPRA (§7522.25(d))</i>	<b>Retirement Age</b>	<b>Benefit Formula</b>
	50	2.00% x FAS3 x Yrs
	55	2.50% x FAS3 x Yrs
	57 and over	2.70% x FAS3 x Yrs
<b>Maximum Benefit:</b>		
<i>General Tier 1, General Tier 2 and Safety</i>	100% of Highest Average Compensation (§31676.1, §31664.11, §31664).	
<i>General PEPRA Tier 1, General PEPRA Tier 2 and Safety PEPRA</i>	There is no final compensation limit on the maximum retirement benefit.	
<b>Ordinary Disability:</b>		
<i>General</i>		
<i>Eligibility</i>	Five years of service (§31720).	
<i>Benefit</i>	1.5% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 65, but the total benefit cannot be more than one-third of Final Compensation (§31727). For all members, 100% of the Service Retirement benefit will be paid, if greater.	
<i>Safety</i>		
<i>Eligibility</i>	Five years of service (§31720).	
<i>Benefit</i>	1.8% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 55, but the total benefit cannot be more than one-third of Final Compensation (§31727.2). For all members, 100% of the Service Retirement benefit will be paid, if greater.	
<b>Line-of-Duty Disability:</b>		
<i>Eligibility</i>	No age or service requirements (§31720).	
<i>Benefit</i>	50% of the Final Compensation or 100% of Service Retirement benefit, if greater (§31727.4).	

## Section 4: Actuarial Valuation Basis

### Pre-Retirement Death:

#### All Members

<i>Eligibility</i>	None.
<i>Basic lump sum benefit</i>	Refund of member contributions with interest, plus one month's compensation for each year of service, to a maximum of six months' compensation (§31781).
<i>Line-of-Duty Death</i>	50% of Final Compensation or 100% of Service Retirement benefit, if greater, payable to spouse or minor children (§31787).  An additional lump sum payment of one-year of compensation is paid if Line-of-Duty death for Safety member (§31787.6).

#### Vested Members

<i>Eligibility</i>	Five years of service.
<i>Basic benefit</i>	60% of the greater of Service Retirement or Ordinary Disability Retirement benefit payable to surviving eligible spouse or eligible children (§31765.1, §31781.1), in lieu of the basic lump sum benefit above (§31781).  An additional lump sum payment of one-year of compensation is paid if Line-of-Duty death for Safety member (§31787.6).

### Death After Retirement:

#### All Members

<i>Service Retirement or Ordinary Disability Retirement</i>	Unless another option was selected at retirement, 60% of member's unmodified allowance continued to eligible spouse (§31760.1). An eligible spouse is a surviving spouse who was married to the member one year prior to the effective retirement date or at least two years prior to the date of death and has attained age 55 on or prior to the date of death (§31760.2, §31785.1).
<i>Line-of-Duty Disability</i>	Unless another option was selected at retirement, 100% of member's unmodified allowance continued to eligible spouse (§31786). An eligible spouse is a surviving spouse who was married to the member one year prior to the effective retirement date or at least two years prior to the date of death and has attained age 55 on or prior to the date of death (§31786.1).
<i>Additional Death Benefit</i>	A lump sum benefit of \$5,000 lump sum benefit payable to member's beneficiary (§31789.3).

### Withdrawal Benefits:

<i>Less than Five Years of Service</i>	Refund of accumulated member contributions with interest (§31628). A member may also elect to leave contributions on deposit in the retirement fund (§31629.5).
<i>Five or More Years of Service</i>	If contributions left on deposit, a member is entitled to earned benefits commencing at any time after eligible to retire (§31700). Service for eligibility includes service credited as an employee of a reciprocal system.



## Section 4: Actuarial Valuation Basis

<b>Post-retirement Cost-of-Living Benefits:</b>	
<i>General Tier 1, Safety, General PEPRA Tier 1 and Safety PEPRA</i>	Future changes based on changes to the Consumer Price Index to a maximum of 3% per year, excess “banked” (\$31870.1).
<i>General Tier 2 and General PEPRA Tier 2</i>	Members represented by SEIU receive a fixed 2% cost-of-living adjustment, not subject to changes in the CPI that applies to future service after March 2003 (members represented by CNA receive a fixed 2% COLA that applies to future service after July 2023). This benefit has been valued consistent with the methodologies described in our October 9, 2006 report entitled “Funding Policies and Procedures for General Tier II COLA Benefit”.
<b>Supplemental Benefit:</b>	A supplemental benefit in the amount of \$108.44 per month is paid to retirees and their survivors.
<b>Member Contributions:</b>	
<i>General Tier 1, Safety and Safety PEPRA</i>	Provide for 50% of total Normal Cost.
<i>General Tier 2 and General PEPRA Tier 2</i>	Provide for 50% of total basic Normal Cost. In addition, for General Tier 2 with COLA members, the current member COLA contribution rate of 2.63% of compensation has been reflected.
<b>Other Information:</b>	For Non-PEPRA members hired after November 1974, they will pay a contribution corresponding to a General and Safety member hired at entry age 35 and 27, respectively. Safety Non-PEPRA members with 30 or more years of service are exempt from paying member contributions. The same applies for Non-General PEPRA members hired on or before March 7, 1973.
<b>Plan Provisions Not Valued:</b>	
	The Board of Retirement has approved a non-vested supplemental benefit. This benefit is funded from Undistributed Excess Earnings, paid from a reserve that is not included in the Valuation Value of Assets and is subject at all times to the availability of funds.  The non-vested supplemental benefit of \$27.50 per month paid to retirees and their survivors terminated upon issuance of the June 2019 payment. This was due to the depletion of the funds in this reserve.
<b>Changed Plan Provisions:</b>	Effective with this valuation, members represented by CNA receive a fixed 2% COLA that applies to future service after July 2023.

Note: The summary of major plan provisions is designed to outline principal plan benefits as interpreted for purposes of the actuarial valuation. 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.

## Section 4: Actuarial Valuation Basis

### Exhibit 3: Member Contribution Rates

#### 50/50 Sharing of Normal Cost for Non-PEPRA Tiers

	Basic		COLA		Total	
	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
General Tier 1	5.97%	8.95%	1.97%	2.96%	7.94%	11.91%
General Tier 2	5.19%	7.79%	0.00%	0.00%	5.19%	7.79%
General Tier 2 w/ COLA <sup>1</sup>	5.19%	7.79%	2.63%	2.63%	7.82%	10.42%
Safety	12.03%	12.03%	4.74%	4.74%	16.77%	16.77%

<sup>1</sup> General Tier 2 members with COLA are required to pay COLA contributions of 2.63% of compensation based on current bargaining agreements.

## Section 4: Actuarial Valuation Basis

### Exhibit 3: Member Contribution Rates (continued)

#### Member Contribution Rates for PEPRRA Members

	<b>Basic</b>	<b>COLA</b>	<b>Total</b>
General Tier 2	7.74%	0.00%	7.74%
General Tier 2 w/ COLA <sup>1</sup>	7.74%	2.63%	10.37%
Safety	11.26%	4.44%	15.70%

<sup>1</sup> General Tier 2 members with COLA are required to pay COLA contributions of 2.63% of compensation based on current bargaining agreements.

## Section 4: Actuarial Valuation Basis

### Exhibit 4: Employer Contribution Rates Under the CERL Statutory Formula, without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers

	June 30, 2023 Actuarial Valuation Recommended Rates for FY 2024-25				June 30, 2022 Actuarial Valuation Recommended Rates for FY 2023-24			
	Basic	COLA	Total	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)	Basic	COLA	Total	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)
<b>General Tier 1 Members</b>								
Normal Cost	9.77%	3.04%	12.81%	\$175	11.47%	3.36%	14.83%	\$260
UAAL <sup>2</sup>	3.31%	5.14%	8.45%	116	3.19%	6.32%	9.51%	167
<b>Total Contributions</b>	<b>13.08%</b>	<b>8.18%</b>	<b>21.26%</b>	<b>\$291</b>	<b>14.66%</b>	<b>9.68%</b>	<b>24.34%</b>	<b>\$427</b>
<b>General Tier 2 Members</b>								
Normal Cost	8.74%	0.00%	8.74%	\$14,657	8.79%	0.00%	8.79%	\$17,361
UAAL <sup>2</sup>	3.31%	0.00%	3.31%	5,551	3.19%	0.00%	3.19%	6,301
<b>Total Contributions</b>	<b>12.05%</b>	<b>0.00%</b>	<b>12.05%</b>	<b>\$20,208</b>	<b>11.98%</b>	<b>0.00%</b>	<b>11.98%</b>	<b>\$23,662</b>
<b>General PEPRA Tier 2 Members</b>								
Normal Cost	7.74%	0.00%	7.74%	\$8,645	7.73%	0.00%	7.73%	\$9,970
UAAL <sup>2</sup>	3.31%	0.00%	3.31%	3,697	3.19%	0.00%	3.19%	4,114
<b>Total Contributions</b>	<b>11.05%</b>	<b>0.00%</b>	<b>11.05%</b>	<b>\$12,342</b>	<b>10.92%</b>	<b>0.00%</b>	<b>10.92%</b>	<b>\$14,084</b>
<b>General Tier 2 Members w/ COLA</b>								
Normal Cost <sup>3,4</sup>	8.74%	0.74%	9.48%	\$19,444	8.79%	0.68%	9.47%	\$16,967
UAAL <sup>2,5</sup>	3.31%	5.14%	8.45%	17,332	3.19%	6.32%	9.51%	17,038
<b>Total Contributions</b>	<b>12.05%</b>	<b>5.88%</b>	<b>17.93%</b>	<b>\$36,776</b>	<b>11.98%</b>	<b>7.00%</b>	<b>18.98%</b>	<b>\$34,005</b>
<b>General PEPRA Tier 2 Members w/ COLA</b>								
Normal Cost <sup>3,4</sup>	7.74%	0.65%	8.39%	\$20,842	7.73%	0.60%	8.33%	\$14,093
UAAL <sup>2,5</sup>	3.31%	5.14%	8.45%	20,991	3.19%	6.32%	9.51%	16,090
<b>Total Contributions</b>	<b>11.05%</b>	<b>5.79%</b>	<b>16.84%</b>	<b>\$41,833</b>	<b>10.92%</b>	<b>6.92%</b>	<b>17.84%</b>	<b>\$30,183</b>
<b>All General Members<sup>6</sup></b>								
Normal Cost	8.25%	0.43%	8.68%	\$63,763	8.33%	0.34%	8.67%	\$58,651
UAAL	3.31%	3.18%	6.49%	47,687	3.19%	3.27%	6.46%	43,710
<b>Total Contributions</b>	<b>11.56%</b>	<b>3.61%</b>	<b>15.17%</b>	<b>\$111,450</b>	<b>11.52%</b>	<b>3.61%</b>	<b>15.13%</b>	<b>\$102,361</b>

Note: Applicable footnotes are shown on next page.

## Section 4: Actuarial Valuation Basis

### Exhibit 4: Employer Contribution Rates Under the CERL Statutory Formula, without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

	June 30, 2023 Actuarial Valuation Recommended Rates for FY 2024-25				June 30, 2022 Actuarial Valuation Recommended Rates for FY 2023-24			
	Basic	COLA	Total	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)	Basic	COLA	Total	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)
<b>Safety Members</b>								
Normal Cost	15.01%	4.43%	19.44%	\$27,063	15.17%	4.48%	19.65%	\$28,095
UAAL	39.32%	(23.99%)	15.33%	21,341	38.87%	(25.24%)	13.63%	19,488
<b>Total Contributions</b>	<b>54.33%</b>	<b>(19.56%)</b>	<b>34.77%</b>	<b>\$48,404</b>	<b>54.04%</b>	<b>(20.76%)</b>	<b>33.28%</b>	<b>\$47,583</b>
<b>Safety PEPRA Members</b>								
Normal Cost	11.26%	4.44%	15.70%	\$10,603	11.05%	4.36%	15.41%	\$8,241
UAAL	39.32%	(23.99%)	15.33%	10,353	38.87%	(25.24%)	13.63%	7,289
<b>Total Contributions</b>	<b>50.58%</b>	<b>(19.55%)</b>	<b>31.03%</b>	<b>\$20,956</b>	<b>49.92%</b>	<b>(20.88%)</b>	<b>29.04%</b>	<b>\$15,530</b>
<b>All Safety Members<sup>6</sup></b>								
Normal Cost	13.79%	4.43%	18.22%	\$37,666	14.05%	4.45%	18.50%	\$36,336
UAAL	39.32%	(23.99%)	15.33%	31,694	38.87%	(25.24%)	13.63%	26,777
<b>Total Contributions</b>	<b>53.11%</b>	<b>(19.56%)</b>	<b>33.55%</b>	<b>\$69,360</b>	<b>52.92%</b>	<b>(20.79%)</b>	<b>32.13%</b>	<b>\$63,113</b>
<b>All Categories Combined<sup>6</sup></b>								
Normal Cost	9.47%	1.31%	10.78%	\$101,429	9.62%	1.26%	10.88%	\$94,987
UAAL	11.22%	(2.78%)	8.44%	79,381	11.22%	(3.15%)	8.07%	70,487
<b>Total Contributions</b>	<b>20.69%</b>	<b>(1.47%)</b>	<b>19.22%</b>	<b>\$180,810</b>	<b>20.84%</b>	<b>(1.89%)</b>	<b>18.95%</b>	<b>\$165,474</b>

<sup>1</sup> Based on projected compensation for each year shown on page 39.

<sup>2</sup> Basic UAAL rates have been calculated on a combined basis for all General Tiers. COLA UAAL rates have been calculated on a combined basis for all General Tiers that have a COLA (excludes General Tier 2 without COLA and General PEPRA Tier 2 without COLA). Segal will provide a stand-alone letter that calculates the separate COLA UAAL contribution rates to be payable for each of the General Tiers at a later date.

<sup>3</sup> COLA Normal Cost rates have been calculated on a combined basis for SEIU and CNA. Segal will provide a stand-alone letter that calculates the separate COLA Normal Cost contribution rates to be payable for SEIU and CNA at a later date.

<sup>4</sup> Reflects General Tier 2 member COLA contribution rate of 2.63% based on current bargaining agreements.

<sup>5</sup> Includes 0.32% and 0.33% in COLA UAAL costs for June 30, 2023 and June 30, 2022, respectively, attributed to the first two years of service accrued for the fixed 2% COLA pursuant to Government Code 31627. Note these rates are calculated as a percentage of SEIU only payroll.

<sup>6</sup> These aggregated rates are provided for informational purposes only as we understand that the tier specific rates will be implemented.

## Section 4: Actuarial Valuation Basis

### Exhibit 5: Member Contribution Rates Under the CERL Statutory Formula, without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers

#### General Tier 1

Entry Age	Basic		COLA		Total	
	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
16	3.76%	5.64%	1.32%	1.99%	5.08%	7.63%
17	3.83%	5.74%	1.35%	2.03%	5.18%	7.77%
18	3.90%	5.86%	1.38%	2.07%	5.28%	7.93%
19	3.98%	5.97%	1.41%	2.11%	5.39%	8.08%
20	4.06%	6.08%	1.43%	2.15%	5.49%	8.23%
21	4.13%	6.20%	1.46%	2.19%	5.59%	8.39%
22	4.21%	6.32%	1.49%	2.23%	5.70%	8.55%
23	4.29%	6.44%	1.52%	2.28%	5.81%	8.72%
24	4.38%	6.57%	1.54%	2.32%	5.92%	8.89%
25	4.46%	6.69%	1.57%	2.36%	6.03%	9.05%
26	4.55%	6.82%	1.60%	2.41%	6.15%	9.23%
27	4.63%	6.95%	1.64%	2.46%	6.27%	9.41%
28	4.72%	7.09%	1.67%	2.50%	6.39%	9.59%
29	4.82%	7.22%	1.70%	2.55%	6.52%	9.77%
30	4.91%	7.36%	1.73%	2.60%	6.64%	9.96%
31	5.01%	7.51%	1.76%	2.65%	6.77%	10.16%
32	5.10%	7.66%	1.80%	2.70%	6.90%	10.36%
33	5.21%	7.81%	1.84%	2.76%	7.05%	10.57%
34	5.31%	7.96%	1.87%	2.81%	7.18%	10.77%
35	5.41%	8.12%	1.92%	2.87%	7.33%	10.99%
36	5.52%	8.28%	1.95%	2.92%	7.47%	11.20%
37	5.63%	8.44%	1.98%	2.98%	7.61%	11.42%
38	5.73%	8.60%	2.03%	3.04%	7.76%	11.64%

## Section 4: Actuarial Valuation Basis

### Exhibit 5: Member Contribution Rates Under the CERL Statutory Formula, without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

#### General Tier 1 (continued)

Entry Age	Basic		COLA		Total	
	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
39	5.84%	8.76%	2.06%	3.09%	7.90%	11.85%
40	5.95%	8.92%	2.10%	3.15%	8.05%	12.07%
41	6.05%	9.08%	2.14%	3.21%	8.19%	12.29%
42	6.16%	9.24%	2.17%	3.26%	8.33%	12.50%
43	6.26%	9.40%	2.22%	3.32%	8.48%	12.72%
44	6.37%	9.56%	2.25%	3.37%	8.62%	12.93%
45	6.47%	9.70%	2.28%	3.43%	8.75%	13.13%
46	6.56%	9.83%	2.31%	3.47%	8.87%	13.30%
47	6.64%	9.95%	2.34%	3.52%	8.98%	13.47%
48	6.71%	10.06%	2.36%	3.55%	9.07%	13.61%
49	6.77%	10.16%	2.40%	3.59%	9.17%	13.75%
50	6.83%	10.25%	2.42%	3.62%	9.25%	13.87%
51	6.88%	10.32%	2.42%	3.64%	9.30%	13.96%
52	6.91%	10.36%	2.44%	3.66%	9.35%	14.02%
53	6.88%	10.33%	2.44%	3.65%	9.32%	13.98%
54 & Over	6.79%	10.19%	2.40%	3.60%	9.19%	13.79%

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: 35.32%

Note: All members hired after November 1974, will pay a contribution corresponding to entry age 35. These rates are determined before any pickups by the employer.

## Section 4: Actuarial Valuation Basis

### Exhibit 5: Member Contribution Rates Under the CERL Statutory Formula, without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

#### General Tier 2

Entry Age	Basic		COLA		Total	
	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
16	3.12%	4.68%	0.00%	0.00%	3.12%	4.68%
17	3.18%	4.77%	0.00%	0.00%	3.18%	4.77%
18	3.24%	4.86%	0.00%	0.00%	3.24%	4.86%
19	3.30%	4.96%	0.00%	0.00%	3.30%	4.96%
20	3.37%	5.05%	0.00%	0.00%	3.37%	5.05%
21	3.43%	5.15%	0.00%	0.00%	3.43%	5.15%
22	3.50%	5.25%	0.00%	0.00%	3.50%	5.25%
23	3.57%	5.35%	0.00%	0.00%	3.57%	5.35%
24	3.64%	5.46%	0.00%	0.00%	3.64%	5.46%
25	3.71%	5.56%	0.00%	0.00%	3.71%	5.56%
26	3.78%	5.67%	0.00%	0.00%	3.78%	5.67%
27	3.85%	5.78%	0.00%	0.00%	3.85%	5.78%
28	3.93%	5.89%	0.00%	0.00%	3.93%	5.89%
29	4.00%	6.00%	0.00%	0.00%	4.00%	6.00%
30	4.08%	6.12%	0.00%	0.00%	4.08%	6.12%
31	4.16%	6.23%	0.00%	0.00%	4.16%	6.23%
32	4.24%	6.35%	0.00%	0.00%	4.24%	6.35%
33	4.32%	6.48%	0.00%	0.00%	4.32%	6.48%
34	4.40%	6.60%	0.00%	0.00%	4.40%	6.60%
35	4.49%	6.73%	0.00%	0.00%	4.49%	6.73%
36	4.58%	6.86%	0.00%	0.00%	4.58%	6.86%
37	4.67%	7.00%	0.00%	0.00%	4.67%	7.00%
38	4.76%	7.14%	0.00%	0.00%	4.76%	7.14%
39	4.85%	7.28%	0.00%	0.00%	4.85%	7.28%
40	4.94%	7.42%	0.00%	0.00%	4.94%	7.42%



## Section 4: Actuarial Valuation Basis

### Exhibit 5: Member Contribution Rates Under the CERL Statutory Formula, without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

General Tier 2 (continued)

Entry Age	Basic		COLA		Total	
	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
41	5.04%	7.56%	0.00%	0.00%	5.04%	7.56%
42	5.13%	7.70%	0.00%	0.00%	5.13%	7.70%
43	5.23%	7.84%	0.00%	0.00%	5.23%	7.84%
44	5.32%	7.98%	0.00%	0.00%	5.32%	7.98%
45	5.41%	8.12%	0.00%	0.00%	5.41%	8.12%
46	5.50%	8.26%	0.00%	0.00%	5.50%	8.26%
47	5.59%	8.39%	0.00%	0.00%	5.59%	8.39%
48	5.68%	8.52%	0.00%	0.00%	5.68%	8.52%
49	5.76%	8.65%	0.00%	0.00%	5.76%	8.65%
50	5.84%	8.76%	0.00%	0.00%	5.84%	8.76%
51	5.90%	8.86%	0.00%	0.00%	5.90%	8.86%
52	5.96%	8.94%	0.00%	0.00%	5.96%	8.94%
53	6.01%	9.02%	0.00%	0.00%	6.01%	9.02%
54	6.06%	9.08%	0.00%	0.00%	6.06%	9.08%
55	6.08%	9.12%	0.00%	0.00%	6.08%	9.12%
56	6.08%	9.12%	0.00%	0.00%	6.08%	9.12%
57	6.03%	9.05%	0.00%	0.00%	6.03%	9.05%
58	6.23%	9.34%	0.00%	0.00%	6.23%	9.34%
59 & Over	6.44%	9.66%	0.00%	0.00%	6.44%	9.66%

Interest: 7.00% per annum

COLA: Members represented by SEIU and CNA contribute a negotiated 2.63% for a fixed 2% COLA pursuant to Government Code 31627.

Mortality: See Section 4, Exhibit 1

Salary Increase: Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See Section 4, Exhibit 1)

Note: All members hired after November 1974, will pay a contribution corresponding to entry age 35. These rates are determined before any pickups by the employer.

## Section 4: Actuarial Valuation Basis

### Exhibit 5: Member Contribution Rates Under the CERL Statutory Formula, without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

Safety			
Entry Age	Basic	COLA	Total
16	7.96%	4.46%	12.42%
17	8.10%	4.53%	12.63%
18	8.24%	4.61%	12.85%
19	8.39%	4.69%	13.08%
20	8.53%	4.77%	13.30%
21	8.68%	4.85%	13.53%
22	8.83%	4.94%	13.77%
23	8.98%	5.02%	14.00%
24	9.14%	5.11%	14.25%
25	9.30%	5.20%	14.50%
26	9.46%	5.29%	14.75%
27	9.63%	5.39%	15.02%
28	9.80%	5.48%	15.28%
29	9.97%	5.58%	15.55%
30	10.15%	5.68%	15.83%
31	10.33%	5.78%	16.11%
32	10.52%	5.89%	16.41%
33	10.72%	6.00%	16.72%
34	10.92%	6.11%	17.03%
35	11.13%	6.23%	17.36%
36	11.35%	6.35%	17.70%

## Section 4: Actuarial Valuation Basis

### Exhibit 5: Member Contribution Rates Under the CERL Statutory Formula, without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

#### Safety (continued)

Entry Age	Basic	COLA	Total
37	11.57%	6.47%	18.04%
38	11.80%	6.60%	18.40%
39	12.04%	6.73%	18.77%
40	12.29%	6.87%	19.16%
41	12.54%	7.01%	19.55%
42	12.79%	7.15%	19.94%
43	12.95%	7.24%	20.19%
44	12.99%	7.27%	20.26%
45	13.02%	7.28%	20.30%
46	13.04%	7.30%	20.34%
47	13.07%	7.31%	20.38%
48	12.99%	7.27%	20.26%
49 & Over	12.70%	7.10%	19.80%

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:	55.94%

Note: All members hired after November 1974, will pay a contribution corresponding to entry age 27. These rates are determined before any pickups by the employer.

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