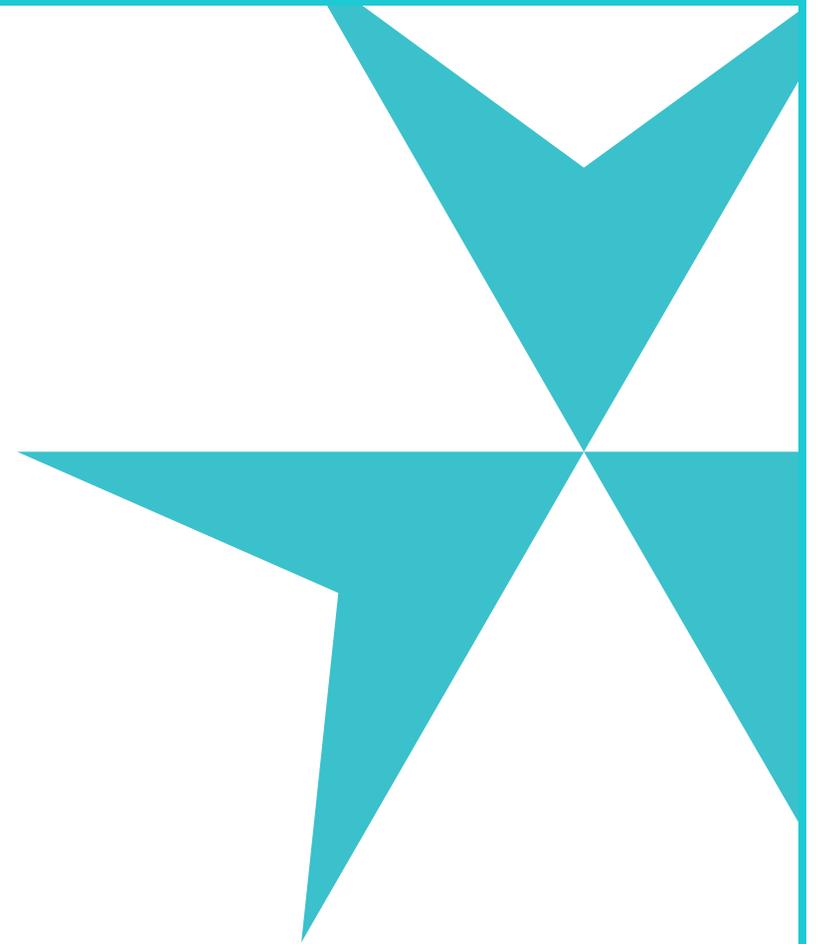


Sonoma County Employees' Retirement Association

Actuarial Valuation and Review

As of December 31, 2022



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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April 25, 2023

Board of Retirement
Sonoma County Employees' Retirement Association
433 Aviation Boulevard, Suite 100
Santa Rosa, CA 95403

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of December 31, 2022. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for fiscal year 2024-2025.

This report 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.

The actuarial calculations were directed under the supervision of Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Association.

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

Sincerely,
Segal

A handwritten signature in black ink, appearing to read "Paul Angelo", written over a horizontal line.

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

A handwritten signature in black ink, appearing to read "Andy Yeung", written over a horizontal line.

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

A handwritten signature in black ink, appearing to read "Todd Tauzer", written over a horizontal line.

Todd Tauzer, FSA, CERA, FCA, MAAA
Vice President & Actuary

OH/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 Sonoma County Employees' Retirement Association ("the Plan") as of December 31, 2022. The valuation was performed to determine whether the assets and contribution rates are sufficient to provide the prescribed benefits. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's accrued benefit obligations.

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 contribution requirements presented in this report are based on:

- The benefit provisions of the Plan, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of December 31, 2022, provided by the Retirement Association;
- The assets of the Plan as of December 31, 2022, provided by the Retirement Association;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board of Retirement for the December 31, 2022 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Board of Retirement for the December 31, 2022 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.

Section 1: Actuarial Valuation Summary

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 adopted by the Board on May 19, 2011 and last updated on March 23, 2023. Details of the funding policy are provided in *Section 4, Exhibit 1* starting on page 73.

A schedule of current amortization balances and payments may be found in *Section 3, Exhibit H* starting on page 58. A graphical projection of the Unfunded Actuarial Accrued Liability (UAAL) amortization balances and payments has been included in *Section 3, Exhibit I* starting on page 67.

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. Active members represented by some of the bargaining groups have agreed to pay additional employee Normal Cost contributions that are above those determined under the County Employees Retirement Law of 1937 (CERL), as permitted under the California Public Employees' Pension Reform Act of 2013 (CalPEPRA). As the specific amount of those higher contributions are dependent on the specific bargaining agreements, we have continued to include in this report only the minimum member contribution rates specified in the CERL. The final member rates adjusted to include the additional employee Normal Cost contributions will be provided separately, in side letters based on the terms of the bargaining agreements.
- Pgs. 36-37 2. The ratio of the Valuation Value of Assets to Actuarial Accrued Liabilities decreased from 92.9% to 92.4%. This ratio is one measure of funding status, and its history is a measure of funding progress. The funded ratio measured on a market value basis decreased from 101.8% to 88.5%. 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 or the amount of future contributions.
- Pg. 29 3. The Association's UAAL increased from \$244.5 million as of December 31, 2021 to \$271.6 million as of December 31, 2022. The increase in UAAL is primarily due to investment return (after "smoothing") lower than the 6.75% return assumption used in the December 31, 2021 valuation, offset to some extent by the County's additional UAAL contributions (\$3.8 million made on June 13, 2022, \$1.8 million made on June 30, 2022 and \$94,268 made on August 4, 2022)¹. A complete reconciliation of the Association's UAAL is provided in *Section 2, Subsection E*. A schedule of the current UAAL amortization amounts is provided in *Section 3, Exhibit H*, and a graphical projection of the UAAL amortization bases and payments is provided in *Section 3, Exhibit I*.
Pgs. 58-66
Pgs. 67-68
- Pg. 23 4. The actuarial loss from all sources is \$49.6 million, or 1.4% of actuarial accrued liability. The net experience loss from sources other than investment and contribution experience of \$11.3 million was 0.3% of the actuarial accrued liability. This net loss was primarily due to individual salary increases greater than expected.
- Pg. 31 5. The average employer contribution rate calculated in this valuation increased from 18.37% of payroll to 21.25% of payroll. This change was primarily due to the sunset of additional UAAL contributions for members covered under certain bargaining agreements (as further discussed on the following pages) as well as investment return (after "smoothing") lower than the 6.75% return assumption used in the December 31, 2021 valuation, offset to some degree by the County's additional UAAL contributions. A complete reconciliation of the Association's aggregate employer rate is provided in *Section 2, Subsection F*.
- Pg. 32 6. The average member contribution rate calculated in this valuation decreased from 12.12% to 10.11% of payroll. This change was primarily due to the sunset of additional UAAL contributions for members covered under certain bargaining agreements. A complete reconciliation of the Association's average member rate is provided in *Section 2, Subsection F*.

¹ These amounts when adjusted with interest at the assumed earnings rate of 6.75% total to \$5.8 million as of December 31, 2022. The County's additional UAAL contributions have been split between General and Safety and have been used to reduce the outstanding balance on the County's longest outstanding UAAL charge layer in each of the two membership groups (i.e., the layers established as of December 31, 2022).

Section 1: Actuarial Valuation Summary

- Pg. 24 7. The rate of return on the Market Value of Assets was -7.84% for the 2022 plan year. The return on the Actuarial Value of Assets was 5.50% for the same period after considering the recognition of prior years' investment gains and losses. This resulted in an actuarial loss when measured against the assumed rate of return of 6.75%. This actuarial investment loss increased the average employer contribution rate by 0.67% of payroll.
- Pg. 21 8. As indicated in *Section 2, Subsection B* of this report, the total unrecognized investment loss as of December 31, 2022 was \$141.5 million (as compared to an unrecognized gain of \$305.9 million in the December 31, 2021 valuation). This investment loss will be recognized in the determination of the Actuarial Value of Assets for funding purposes over the next few years, and will offset a portion of any investment gains that may occur after December 31, 2022. This implies that earning the assumed rate of investment return of 6.75% per year (net of expenses) on a market value basis will result in investment losses on the Actuarial Value of Assets in the next few years. Therefore, if the actual market return is equal to the assumed 6.75% rate and all other actuarial assumptions are met, the employer contribution requirements would generally increase over the next few years. The potential impact associated with the net deferred investment losses may be illustrated as follows:
- a. If the net deferred losses in this year's valuation were recognized immediately and entirely in the Actuarial Value of Assets, the funded ratio would decrease from 92.4% to 88.5%.
For comparison purposes, if all the net deferred gains in the December 31, 2021 valuation had been recognized immediately in the December 31, 2021 valuation, the funded ratio in last year's valuation would have increased from 92.9% to 101.8%.
 - b. If the net deferred losses in this year's valuation were recognized immediately and entirely in the Actuarial Value of Assets, the aggregate employer contribution rate would increase from 21.3% of payroll to 23.6% of payroll.
For comparison purposes, if all the net deferred gains in the December 31, 2021 valuation had been recognized immediately in the December 31, 2021 valuation, the aggregate employer contribution rate in last year's valuation would have decreased from 18.7% of payroll to 12.3% of payroll.
9. The actuarial valuation report as of December 31, 2022 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the actuarial cost of the plan, while increases will decrease the actuarial cost of the plan.
10. General-County and General-Court Plan A and Plan B members pay an additional UAAL contribution amount equal to 3.03% of payroll from July 1, 2004 to June 30, 2024.
Subsequent to the initial arrangement for such payments, the County negotiated that General Plan A members covered under the Salary Resolution, ESC, SCDPDAA, SCLEA, SCLEMA, and SCPDIA bargaining agreements will continue to pay the additional UAAL contribution until they end their employment with the County.¹

¹ Based on the payroll of all County General Plan A members, approximately 48% of the County General members by payroll are affected by the arrangement.

Section 1: Actuarial Valuation Summary

Effective July 1, 2024 (i.e., the effective date of the contribution rates which are determined based on this actuarial valuation as of December 31, 2022), the employer UAAL contribution rate has been increased to reflect those General-County and General-Court Plan A and Plan B members whose 3.03% additional UAAL contribution rate payment will expire in June 2024. However, in this report we have included a UAAL rate for the County that only approximately reflects that effect of this change on County contributions for the year. That rate was developed using the proportion of payrolls as of December 31, 2022 for those members who would continue or cease to make the 3.03% additional UAAL contribution rate as of that date. Similar to the discussion provided in item 1 above, we will expand the contribution side letters provided separately to include the actual UAAL contribution rates that will be applied to individual County Plan A member payrolls effective July 1, 2024.

11. Safety-County Plan A and Plan B members covered under the DSA and DSLEM bargaining agreements pay an additional UAAL contribution amount equal to 3.00% of payroll from February 1, 2005 through the last pay period in June 2023. Safety-County Plan A and Plan B members covered under the Salary Resolution, SCLEA and SCLEMA bargaining agreements pay an additional UAAL contribution amount equal to 3.00% of payroll through June 2024.

Subsequent to the initial arrangement for such payments, the County negotiated that Safety Plan A members covered under the Salary Resolution, DSA, DSLEM, SCLEA and SCLEMA bargaining agreements will continue to pay the additional UAAL contribution until they end their employment with the County.¹

Effective July 1, 2024 (i.e., the effective date of the contribution rates which are determined based on this actuarial valuation as of December 31, 2022), the employer UAAL contribution rate has been increased to reflect Safety-County Plan B members covered under the Salary Resolution, SCLEA and SCLEMA bargaining agreements whose 3.00% additional UAAL contribution rate payment will expire in June 2024. Similar to the discussion provided in item 1 above, we will expand the contribution side letters provided separately to include the actual UAAL contribution rate adjustments (that are expected to remain the same as those shown herein) that will be applied to individual County Plan A member payrolls effective July 1, 2024.

- Pg. 56
12. In this report, we have provided the amount of transfer that would be required to “true-up” the COLA and the Retired Member reserves so that the reserves after the “true-up” are equal to the present value of the COLA and retiree benefits for members currently receiving such benefits.
- Pg. 40
13. The Actuarial Standard of Practice No. 51 (ASOP 51) requires actuaries to identify risks that “may reasonably be anticipated to significantly affect the plan’s future financial condition”. Investment risk, asset/liability mismatch risk, interest rate risk, longevity and other demographic risks and contribution risk are also cited as examples in ASOP 51. The Standard does not require the actuary to evaluate the likelihood 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.

¹ Approximately 50% of all Safety members are affected by the arrangement.

Section 1: Actuarial Valuation Summary

The actuary's assessment can be qualitative or quantitative (e.g., based on numerical demonstrations). The actuary may use non-numerical methods for assessing risks that might take the form of commentary about potential adverse experience and the likely effect on future results. While the standard does not require that every valuation include a quantitative risk assessment, the actuary may recommend that a more detailed risk assessment be performed. When making that decision, the actuary will take into account such factors as the Plan's design, maturity, size, funded status, asset allocation, cash flow, possible insolvency and current market conditions.

A copy of the risk assessment report including the analysis recommended by Segal in consultation with SCERA staff will be provided in a separate stand-alone report.

14. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies contributions that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The funding policy adopted by the Board meets this standard.
15. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution under the Plan's funding policy and measuring the progress of that funding policy. The Net Pension Liability (NPL) and Pension Expense under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68, for inclusion in the plan and employer's financial statements as of December 31, 2022, 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 actuarially determined contribution in this valuation is expected to be used as the actuarially determined contribution (ADC) for GASB financial reporting after it is adjusted to reflect the additional employee normal cost and UAAL contributions described in items 1, 10 and 11 above.
16. It is important to note that this actuarial valuation is based on plan assets as of December 31, 2022. The plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after December 31, 2022 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

		December 31, 2022		December 31, 2021	
		Total Rate	Estimated Annual Dollar Amount ¹ \$(in '000s)	Total Rate	Estimated Annual Dollar Amount ¹ \$(in '000s)
Employer Contribution Rates:	• General Plan A – County	20.47%	\$30,275	18.23%	\$26,961
	• General Plan A – Court	38.01%	2,519	33.65%	2,230
	• General Plan A – Sonoma Valley Fire District	18.43%	20	17.96%	20
	• General Plan B – County	16.52%	29,570	12.74%	22,804
	• General Plan B – Court	31.96%	2,134	27.67%	1,848
	• General Plan B – Sonoma Valley Fire District	12.26%	25	11.86%	24
	• Safety Plan A – County	33.05%	14,692	32.44%	14,423
	• Safety Plan A – Sonoma Valley Fire District	38.65%	1,733	38.42%	1,723
	• Safety Plan B – County	26.95%	8,293	22.93%	7,057
	• Safety Plan B – Sonoma Valley Fire District	22.37%	684	22.13%	676
	All Categories Combined	21.25%	\$89,944	18.37%	\$77,766
Average Member Contribution Rates:²	• General Plan A – County ³ – Without UAAL Sunset	12.82%	\$9,442	12.82%	\$18,960
	• General Plan A – County ³ – With UAAL Sunset	9.79%	7,211	N/A	N/A
	• General Plan A – Court ³	10.09%	669	13.12% ⁴	870
	• General Plan A – Sonoma Valley Fire District ³	11.57%	12	11.57%	12
	• General Plan B – County	7.74%	13,854	10.71%	19,170
	• General Plan B – Court	7.74%	517	10.71%	715
	• General Plan B – Sonoma Valley Fire District	7.74%	16	7.68%	16
	• Safety Plan A – County ³	13.37%	5,944	13.37%	5,944
	• Safety Plan A – Sonoma Valley Fire District ³	11.70%	525	11.70% ⁵	525
	• Safety Plan B – County – Without UAAL Sunset	N/A	N/A	16.27%	2,568
	• Safety Plan B – County – With UAAL Sunset	13.64%	4,198	13.27%	2,094
	• Safety Plan B – Sonoma Valley Fire District	13.87%	424	14.00%	428
		All Categories Combined	10.11%	\$42,812	12.12%

¹ Based on December 31, 2022 projected compensation.

² Includes an additional UAAL contribution rate of 3.03% and 3.00% of payroll for General (County and Court) and Safety-County members, respectively, covered under certain bargaining agreements.

³ The average entry age for each membership group is as follows:

Membership Group	Average Entry Age	Membership Group	Average Entry Age
General Plan A – County	35	Safety – County	29
General Plan A – Court	35	Safety – Sonoma Valley Fire District	35
General Plan A – Sonoma Valley Fire District	43		

⁴ This is the contribution rate calculated in the December 31, 2021 valuation but using an average entry age of 35, reflecting the demographics as of December 31, 2022. In the December 31, 2021 valuation, the average entry age was 34 and the corresponding rate at that age was 12.93%.

⁵ This is the contribution rate calculated in the December 31, 2021 valuation but using an average entry age of 35, reflecting the demographics as of December 31, 2022. In the December 31, 2021 valuation, the average entry age was 36 and the corresponding rate at that age was 11.90%.

Section 1: Actuarial Valuation Summary

Summary of Key Valuation Results (continued)

		December 31, 2022 \$(in '000s)	December 31, 2021 \$(in '000s)
Actuarial Accrued Liability as of December 31:	• Retired members and beneficiaries	\$2,240,651	\$2,144,203
	• Inactive vested members ¹	143,295	130,186
	• Active members	<u>1,198,820</u>	<u>1,185,662</u>
	• Total Actuarial Accrued Liability	\$3,582,766	\$3,460,051
	• Normal Cost for plan year beginning December 31	\$89,072	\$86,414
Assets as of December 31:	• Market Value of Assets (MVA)	\$3,169,632	\$3,521,361
	• Actuarial Value of Assets (AVA)	3,311,174	3,215,505
	• Actuarial Value of Assets as a percentage of Market Value of Assets	104.47%	91.31%
	• Valuation Value of Assets (VVA) ²	\$3,311,174	\$3,215,505
Funded status as of December 31:	• Unfunded Actuarial Accrued Liability on Market Value of Assets basis	\$413,134	\$(61,310)
	• Funded percentage on MVA basis	88.47%	101.77%
	• Unfunded Actuarial Accrued Liability on Valuation Value of Assets basis	\$271,592	\$244,546
	• Funded percentage on VVA basis	92.42%	92.93%
	• Amortization period ³	20 Years	20 Years
Key assumptions:	• Net investment return	6.75%	6.75%
	• Price inflation	2.50%	2.50%
	• Payroll growth increase	3.00%	3.00%

¹ Includes inactive members due a refund of member contributions.

² Excludes non-valuation reserves.

³ New UAAL established on each valuation after December 31, 2007 is amortized over separate 20-year declining period.

Section 1: Actuarial Valuation Summary

Summary of Key Valuation Results (continued)

		December 31, 2022	December 31, 2021	Change From Prior Year
Demographic data as of December 31:	Active Members:			
	• Number of members	4,103	4,066	0.9%
	• Average age	45.1	45.2	-0.1
	• Average service	9.4	9.7	-0.3
	• Total projected compensation	\$423,271,414	\$408,278,337	3.7%
	• Average projected compensation	\$103,161	\$100,413	2.7%
	Retired Members and Beneficiaries:			
	• Number of members:			
	– Service retired	4,301	4,169	3.2%
	– Disability retired	660	652	1.2%
	– Beneficiaries	666	657	1.4%
	– Total	5,627	5,478	2.7%
	• Average age	69.9	69.6	0.3
	• Average monthly benefit	\$3,057	\$2,991	2.2%
	Inactive Vested Members:			
	• Number of members ¹	1,688	1,569	7.6%
	• Average age	45.0	45.1	-0.1
	Total Members:	11,418	11,113	2.7%

¹ Includes inactive members due a refund of member contributions.

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:

Plan Provisions	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant Information	An actuarial valuation for a plan is based on data provided to the actuary by the Association. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Financial Information	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 year-to-year changes in the Market Value of Assets in determining the contribution requirements.
Actuarial Assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments (if any). The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results that does not mean that the previous assumptions were unreasonable.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Deterministic cost projections are based on a proprietary forecasting model. 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, Segal did not perform an analysis of the potential range of financial measures, except where otherwise noted.

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.¹

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.

¹ SCERA 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: 2013 – 2022

Year Ended December 31	Active Members	Inactive Vested Members ¹	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2013	3,833	918	4,394	5,312	1.39	1.15
2014	3,922	975	4,506	5,481	1.40	1.15
2015	4,071	1,047	4,653	5,700	1.40	1.14
2016	4,112	1,112	4,812	5,924	1.44	1.17
2017	4,110	1,181	4,936	6,117	1.49	1.20
2018	4,021	1,295	5,096	6,391	1.59	1.27
2019	4,040	1,395	5,250	6,645	1.64	1.30
2020	4,090	1,445	5,347	6,792	1.66	1.31
2021	4,066	1,569	5,478	7,047	1.73	1.35
2022	4,103	1,688	5,627	7,315	1.78	1.37

¹ Includes inactive members due a refund of member contributions.

Section 2: Actuarial Valuation Results

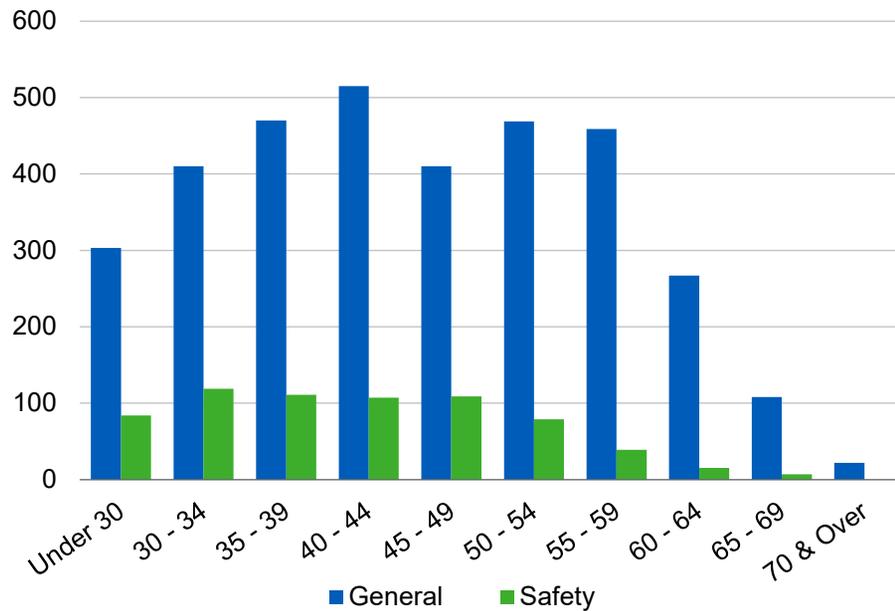
Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 4,103 active members with an average age of 45.1, average years of service of 9.4 years and average compensation of \$103,161. The 4,066 active members in the prior valuation had an average age of 45.2, average service of 9.7 years and average compensation of \$100,413.

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

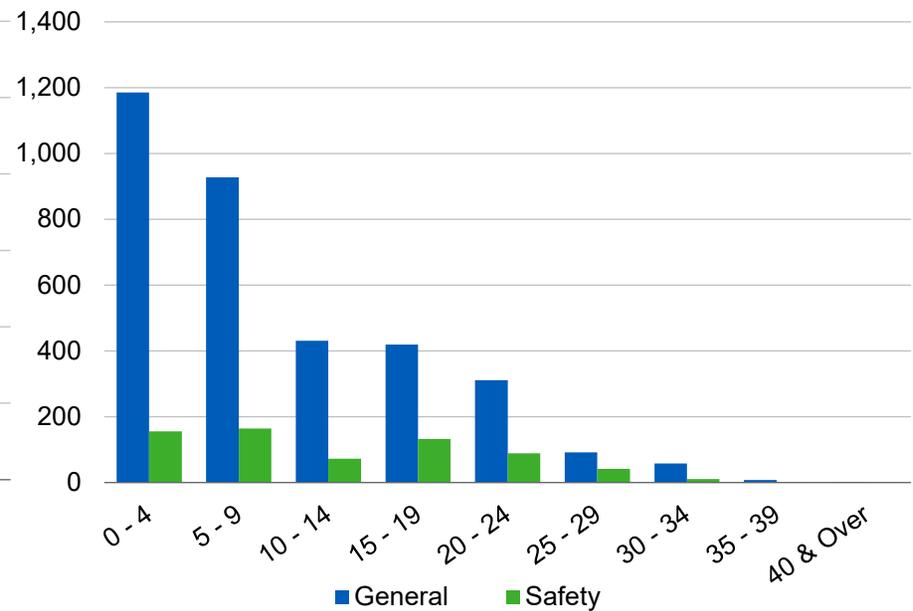
Distribution of Active Members as of December 31, 2022

Actives by Age



Average age	45.1
Prior year average age	45.2
Difference	-0.1

Actives by Years of Service



Average years of service	9.4
Prior year average years of service	9.7
Difference	-0.3

Inactive Members

In this year's valuation, there were 1,688 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 1,569 in the prior valuation.

Section 2: Actuarial Valuation Results

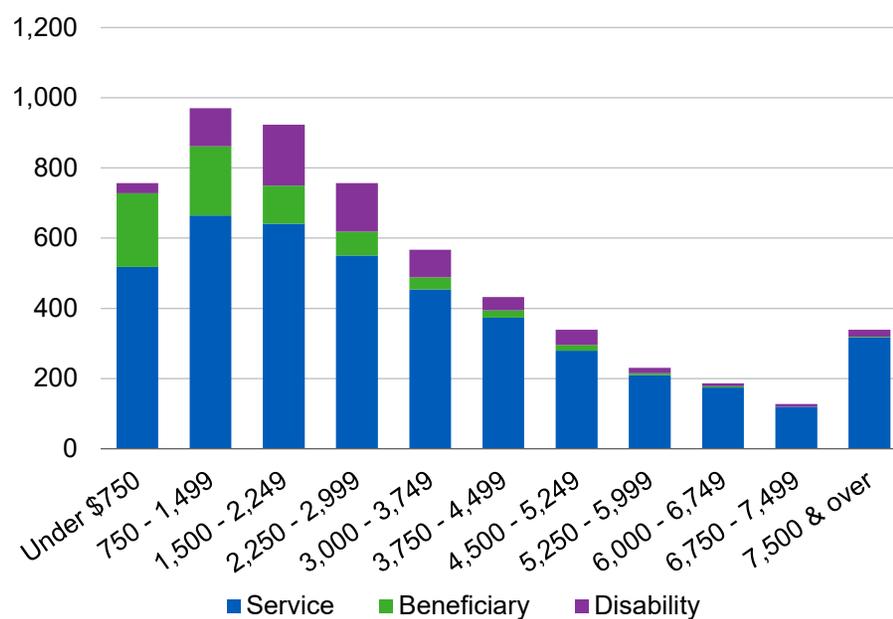
Retired Members and Beneficiaries

As of December 31, 2022, 4,961 retired members and 666 beneficiaries were receiving total benefits of \$17,198,571 per month. For comparison, in the previous valuation, there were 4,821 retired members and 657 beneficiaries receiving total benefits of \$16,384,835 per month.

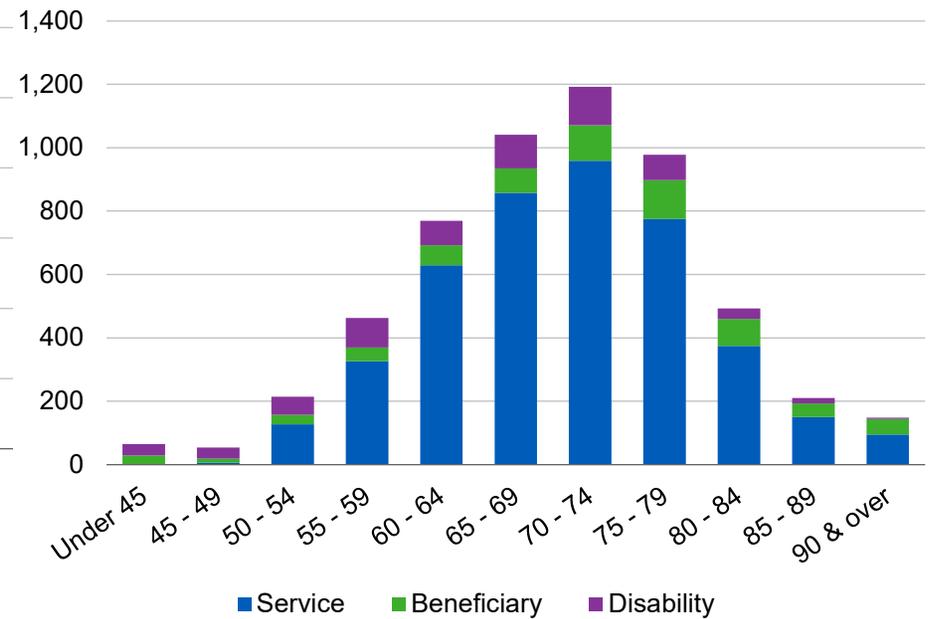
As of December 31, 2022, the average monthly benefit for retired members and beneficiaries is \$3,057, compared to \$2,991 in the previous valuation. The average age for retired members and beneficiaries is 69.9 in the current valuation, compared with 69.6 in the prior valuation.

Distribution of Retired Members and Beneficiaries as of December 31, 2022

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: 2013 – 2022

Year Ended December 31	Active Members			Retired Members and Beneficiaries		
	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2013	3,833	46.0	9.9	4,394	67.5	\$2,601
2014	3,922	46.0	9.8	4,506	67.8	2,645
2015	4,071	45.7	9.6	4,653	68.0	2,691
2016	4,112	45.5	9.4	4,812	68.2	2,747
2017	4,110	45.5	9.6	4,936	68.5	2,799
2018	4,021	45.5	9.7	5,096	68.7	2,855
2019	4,040	45.3	9.6	5,250	68.9	2,899
2020	4,090	45.3	9.7	5,347	69.3	2,943
2021	4,066	45.2	9.7	5,478	69.6	2,991
2022	4,103	45.1	9.4	5,627	69.9	3,057

Section 2: Actuarial Valuation Results

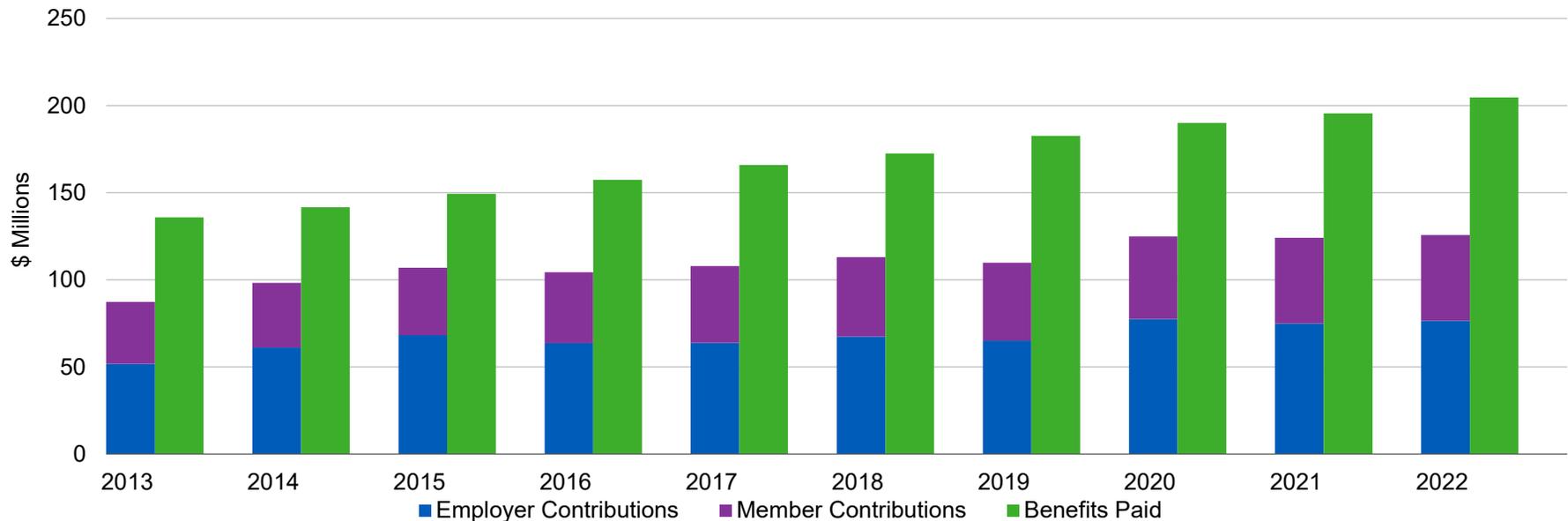
B. Financial Information

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 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 Contributions¹ Made with Benefits for Years Ended December 31, 2013 – 2022



¹ Employer contributions for 2015, 2020, 2021 and 2022 include additional UAAL contributions made by the County in the amount of \$3.6 million, \$6.7 million, \$1.8 million and \$5.6 million, respectively.

Section 2: Actuarial Valuation Results

Determination of Actuarial Value of Assets for Year Ended December 31, 2022

1 Market Value of Assets						\$3,169,632,135
		Expected	Actual	Original	Percent	Unrecognized
2	Calculation of unrecognized return	Return¹	Return¹	Amount	Deferred	Amount
a	Year ended December 31, 2018	\$183,114,885	\$(107,078,494)	\$(290,193,379)	0%	\$0
b	Year ended December 31, 2019	184,037,382	415,559,292	231,521,910	20%	46,304,382
c	Year ended December 31, 2020	194,401,533	225,039,562	30,638,029	40%	12,255,212
d	Year ended December 31, 2021	206,108,804	522,238,156	316,129,352	60%	189,677,611
e	Year ended December 31, 2022	214,384,067	(272,839,914)	(487,223,981)	80%	<u>(389,779,185)</u>
f	Total unrecognized return ²					\$(141,541,980)
3 Actuarial Value of Assets 1 – 2f						\$3,311,174,115
4	Ratio of Actuarial Value to Market Value					104.5%
5	Non-valuation reserves and other adjustments:					
a	Interest Fluctuation Reserve					\$0
b	Undistributed Reserve					0
c	Negative Contingency Reserve (Before Any Transfers)					(602,423,093)
d	Transfer to True-Up Reserves					4,386,617
e	Negative Contingency Reserve (After Transfers) 5c + 5d					<u>(598,036,476)</u>
f	Subtotal 5a + 5b + greater of 5e or zero					\$0
6 Valuation Value of Assets 3 – 5f						\$3,311,174,115

¹ Beginning January 1, 2022, the actual return on a market value basis is calculated net of administrative and investment expenses. Prior to this date, the actual return on a market value basis was calculated on a net of investment expenses basis by taking the difference between the end of year and beginning of year Market Value of Assets and adjusting that difference for the non-investment cash flows. Those cash flows included contributions received, benefit payments and administrative expenses made during the last calendar year. The amount subject to smoothing was determined as the actual market return earned during the last calendar year that was in excess/below the expected return on the Valuation Value of Assets. In developing the expected return on the Valuation Value of Assets, we have made a similar change in the treatment of the administrative expense beginning January 1, 2022. In developing the expected return on the Valuation Value of Assets, we have made a similar change in the treatment of the administrative expense beginning January 1, 2022.

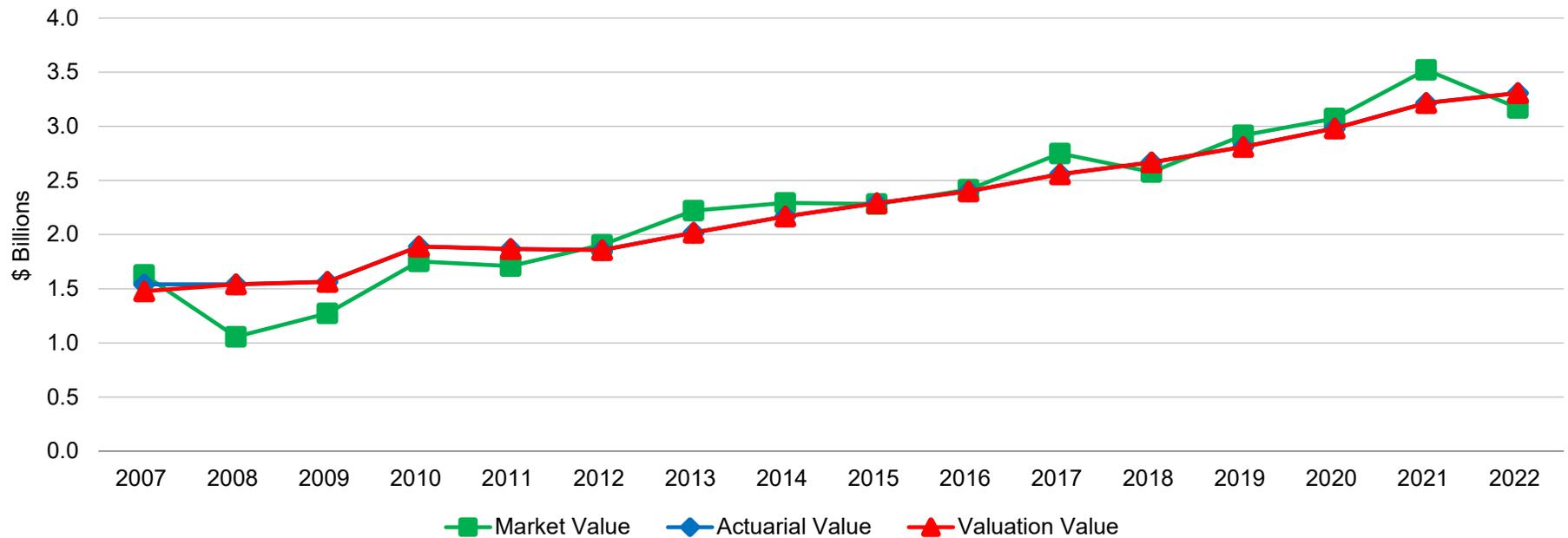
² Deferred return as of December 31, 2022 recognized in each of the next four years:

(a)	Amount recognized on December 31, 2023	\$18,213,062
(b)	Amount recognized on December 31, 2024	(28,091,320)
(c)	Amount recognized on December 31, 2025	(34,218,926)
(d)	Amount recognized on December 31, 2026	(97,444,796)
(e)	Total unrecognized return as of December 31, 2022	\$(141,541,980)

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 December 31, 2007 – 2022



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 be consistent with the current 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 total loss is \$49.6 million, which includes \$39.8 million from investment losses, a loss of \$4.3 million from contribution experience, a gain of \$5.8 million from the County's additional UAAL contributions, and \$11.3 million in losses from all other sources. The net experience variation from individual sources other than investments and contributions was 0.3% 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 December 31, 2022

1	Net loss from investments ¹	\$(39,826,000)
2	Net loss from contribution experience	(4,298,000)
3	Net gain from County's additional UAAL contributions ²	5,795,000
4	Net loss from other experience ³	<u>(11,298,000)</u>
5	Net experience loss: 1 + 2 + 3 + 4	\$(49,627,000)

¹ Details on next page.

² Includes interest at the assumed earnings rate of 6.75% on the County's total additional UAAL contributions of \$5,596,268 from the respective payment dates to December 31, 2022.

³ See *Section 2, Subsection E* for further details. Does not include the effect of plan, method, or assumption changes, if any.

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 -7.84% for the year ended December 31, 2022.

For valuation purposes, the assumed rate of return on the Valuation Value of Assets is 6.75%. The actual rate of return on a valuation basis for the 2022 plan year was 5.50%. Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended December 31, 2022 with regard to its investments.

Investment Experience for Year Ended December 31, 2022

	Market Value	Actuarial Value	Valuation Value
1 Net investment income ¹	\$(272,839,914)	\$174,558,453	\$174,558,453
2 Average value of assets	\$3,481,916,637	\$3,176,060,250	\$3,176,060,250
3 Rate of return: 1 ÷ 2	(7.84%)	5.50%	5.50%
4 Assumed rate of return	6.75%	6.75%	6.75%
5 Expected investment income: 2 x 4	\$235,029,373	\$214,384,067	\$214,384,067
6 Actuarial gain/(loss): 1 - 5	\$(507,869,287)	\$(39,825,614)	\$(39,825,614)

¹ Net of administrative and investment expenses.

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: 2013 – 2022

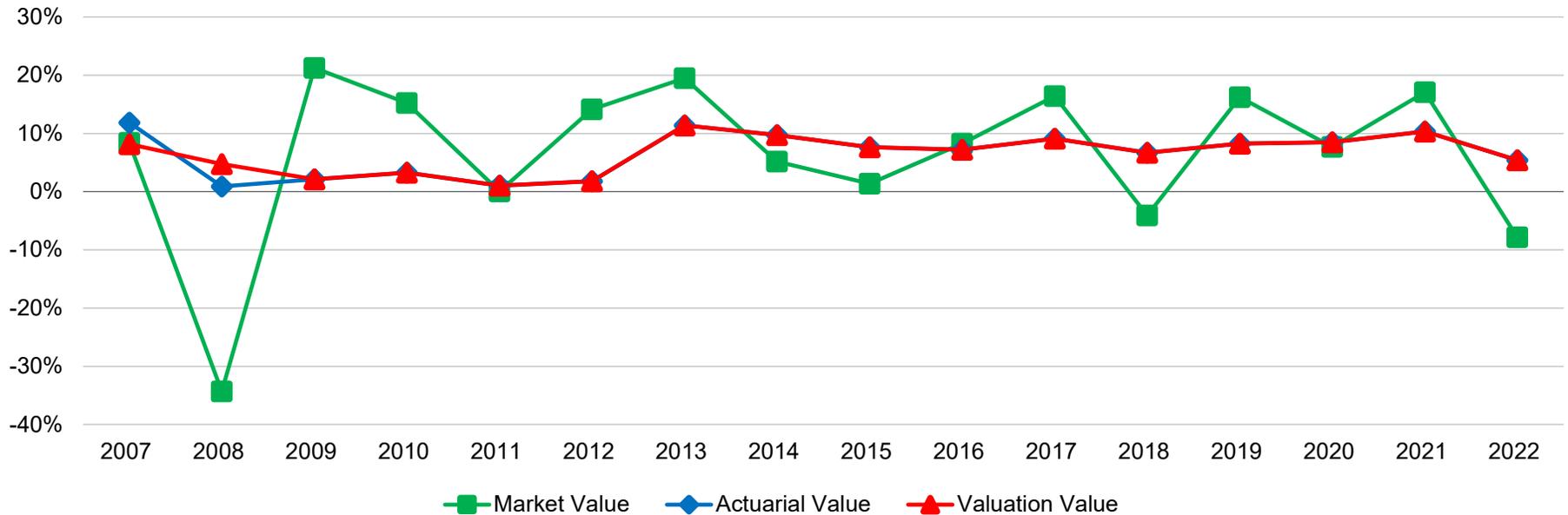
Year Ended December 31	Market Value Investment Return ¹		Actuarial Value Investment Return ¹		Valuation Value Investment Return ¹	
	Amount	Percent	Amount	Percent	Amount	Percent
2013	\$366,462,000	19.49%	\$208,550,000	11.38%	\$208,550,000	11.38%
2014	114,072,000	5.18%	193,799,000	9.71%	193,799,000	9.71%
2015	31,063,000	1.37%	164,257,000	7.65%	164,257,000	7.65%
2016	185,730,000	8.23%	163,144,000	7.21%	163,144,000	7.21%
2017	391,179,000	16.40%	216,094,000	9.12%	216,094,000	9.12%
2018	(110,661,000)	(4.07%)	169,616,000	6.71%	169,616,000	6.71%
2019	412,013,000	16.21%	216,879,000	8.24%	216,879,000	8.24%
2020	222,007,000	7.70%	235,617,000	8.48%	235,617,000	8.48%
2021	519,183,000	17.09%	305,314,000	10.36%	305,314,000	10.36%
2022	(272,840,000)	(7.84%)	174,558,000	5.50%	174,558,000	5.50%
Most recent five-year geometric average return		5.32%	7.85%		7.85%	
Most recent ten-year geometric average return		7.60%	8.42%		8.42%	

¹ 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 December 31, 2007 – 2022



Section 2: Actuarial Valuation Results

Contributions

Contributions for the year ended December 31, 2022 totaled \$120.2 million, compared to the projected amount of \$124.3 million. This resulted in a loss of \$4.3 million for the year, when adjusted for timing. In addition, the County made additional UAAL contributions of \$3.75 million on June 13, 2022, \$1.75 million on June 30, 2022 and \$0.09 million on August 4, 2022. These amounts, when adjusted for timing, resulted in a gain of \$5.8 million.

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), and
- salary increases (greater or smaller than projected).

The net loss from this other experience for the year ended December 31, 2022 amounted to \$11.3 million, which is 0.3% of the actuarial accrued liability. This loss was mainly due to larger than expected individual salary increases for actives. 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

Actuarial Assumptions

There are no assumption changes reflected in this report.

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

Plan Provisions

There are no plan changes reflected in this report.

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

Section 2: Actuarial Valuation Results

E. Development of Unfunded Actuarial Accrued Liability

Development for Year Ended December 31, 2022

1	Unfunded actuarial accrued liability at beginning of year	\$244,546,000
2	Normal cost at middle of year	86,414,000
3	Expected employer and member contributions	(124,348,000)
4	Interest	<u>15,353,000</u>
5	Expected unfunded actuarial accrued liability at end of year	\$221,965,000
6	Changes due to:	
	a) Investment return less than expected (after asset smoothing)	\$39,826,000
	b) Actual contributions less than expected ¹	4,298,000
	c) Individual salary increases greater than expected	12,509,000
	d) Additional County UAAL contributions ²	(5,795,000)
	e) Other experience loss	(1,211,000)
	Total changes	<u>\$49,627,000</u>
7	Unfunded actuarial accrued liability at end of year	\$271,592,000

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

¹ Includes impact of 18-month delay in rate implementation, phase-in (if any) of the impact of the changes in actuarial assumptions on the employer contribution rate and difference between actual and expected Normal Cost and UAAL contributions due to actual payroll different than expected during 2022.

² Includes interest at the assumed earnings rate of 6.75% on the County’s total additional UAAL contributions of \$5,596,268 from the respective payment dates to December 31, 2022.

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 December 31, 2022, the average recommended employer contribution is 21.25% of compensation.

The Board sets the funding policy used to calculate the recommended contribution based on layered amortization periods. See *Section 4, Exhibit 1* for further details on the funding policy.

The contribution requirement as of December 31, 2022 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 (if any).

Average Recommended Employer Contribution for Year Ended December 31

	2022		2021	
	Amount \$(in '000s)	% of Projected Compensation	Amount \$(in '000s)	% of Projected Compensation
1 Total normal cost	\$89,072	21.04%	\$86,414	21.17%
2 Expected member normal cost contributions	<u>(38,229)</u>	<u>(9.03%)</u>	<u>(36,358)</u>	<u>(8.91%)</u>
3 Employer normal cost: 1 + 2	\$50,843	12.01%	\$50,056	12.26%
4 Actuarial accrued liability	3,582,766		3,460,051	
5 Valuation Value of Assets	<u>3,311,174</u>		<u>3,215,505</u>	
6 Unfunded actuarial accrued liability (UAAL): 4 – 5	\$271,592		\$244,546	
7 Payment on UAAL	\$42,606	10.07%	\$37,934	9.29%
8 Expected member contributions on UAAL ¹	<u>(3,505)</u>	<u>(0.83%)</u>	<u>(11,684)</u>	<u>(2.86%)</u>
9 Employer payment on UAAL: 7 + 8	\$39,101	9.24%	\$26,250	6.43%
10 Projected compensation	\$423,272		\$408,279	
11 Total average recommended employer contribution: 3 + 9	\$89,944	21.25%	\$76,306	18.69%

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

¹ Expected member contributions on the Unfunded Actuarial Accrued Liability have been adjusted for refundability.

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 December 31, 2021 to December 31, 2022

	Contribution Rate	Estimated Annual Dollar Amount ¹ \$(in '000s)
Average Recommended Employer Contribution as of December 31, 2021	18.37%	\$77,766
1 Effect of investment return less than expected (after asset smoothing)	0.67%	2,836
2 Effect of actual contributions less than expected ²	0.07%	296
3 Effect of individual salary increases higher than expected	0.21%	889
4 Effect of amortizing prior year's UAAL over a larger than expected projected total payroll	(0.06%)	(254)
5 Effect of changes in member demographics on Normal Cost	0.04%	169
6 Effect of additional County UAAL contributions	(0.10%)	(413)
7 Effect of employee UAAL contributions that sunset in June 2024	2.10%	8,889
8 Effect of other gains	<u>(0.05%)</u>	<u>(234)</u>
Total change	2.88%	\$12,178
Average Recommended Employer Contribution as of December 31, 2022	21.25%	\$89,944

¹ Based on December 31, 2022 projected compensation.

² Includes impact of 18-month delay in rate implementation, phase-in (if any) of the impact of the changes in actuarial assumptions on the employer contribution rate and difference between actual and expected Normal Cost and UAAL contributions due to actual payroll during 2022 different than expected.

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 December 31, 2021 to December 31, 2022

	General Plan A – County – Without Sunset ¹	General Plan A – County – With Sunset ¹	General Plan A – Court ¹	General Plan A – SVFD	Safety Plan A – County ²	Safety Plan A – SVFD
Average Recommended Member Contribution as of December 31, 2021³	12.82%	12.82%	13.12%	11.57%	13.37%	11.70%
1 Effect of changes in member demographics	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2 Effect of employee UAAL contributions that sunset in June 2024	<u>0.00%</u>	<u>(3.03%)</u>	<u>(3.03%)</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>
Average Recommended Member Contribution as of December 31, 2022⁴	12.82%	9.79%	10.09%	11.57%	13.37%	11.70%

	General Plan B – County ¹	General Plan B – Court ²	General Plan B – SVFD	Safety Plan B – County – Without Sunset ²	Safety Plan B – County – With Sunset	Safety Plan B – SVFD	Total
Average Recommended Member Contribution as of December 31, 2021	10.71%	10.71%	7.68%	16.27%	13.27%	14.00%	12.12%
1 Effect of changes in member demographics	0.06%	0.06%	0.06%	0.37%	0.37%	(0.13%)	0.05%
2 Effect of employee UAAL contributions that sunset in June 2024	<u>(3.03%)</u>	<u>(3.03%)</u>	<u>0.00%</u>	<u>(3.00%)</u>	<u>0.00%</u>	<u>0.00%</u>	<u>(2.06%)</u>
Average Recommended Member Contribution as of December 31, 2022	7.74%	7.74%	7.74%	13.64%	13.64%	13.87%	10.11%

¹ Rates include an additional UAAL contribution rate of 3.03% of payroll, payable in accordance with bargaining unit agreements.

² Rates include an additional UAAL contribution rate of 3.00% of payroll, payable in accordance with bargaining unit agreements.

³ The above rates are based on average entry age. The weighted average member contribution rates as of December 31, 2021 are 12.53%, 12.70%, 11.76%, 12.79% and 10.03% for General-County, General-Court, General-Sonoma Valley Fire District, Safety-County and Safety-Sonoma Valley Fire District, respectively.

⁴ The above rates are based on average entry age. The weighted average member contribution rates as of December 31, 2022 are 10.93%, 9.91%, 12.04%, 12.75% and 10.04% for General-County, General-Court, General-Sonoma Valley Fire District, Safety-County and Safety-Sonoma Valley Fire District, respectively.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate

	December 31, 2022 Actuarial Valuation		December 31, 2021 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount ¹ \$(in '000s)	Contribution Rate	Estimated Annual Dollar Amount ¹ \$(in '000s)
General Plan A – County Members				
Normal Cost	13.15%	\$19,448	13.17%	\$19,478
UAAL	<u>7.32%</u>	<u>10,827</u>	<u>5.06%</u>	<u>7,483</u>
Total Contribution	20.47%	\$30,275	18.23%	\$26,961
General Plan A – Court Members				
Normal Cost	13.79%	\$914	13.66%	\$905
UAAL	<u>24.22%</u>	<u>1,605</u>	<u>19.99%</u>	<u>1,325</u>
Total Contribution	38.01%	\$2,519	33.65%	\$2,230
General Plan A – Sonoma Valley Fire District Members				
Normal Cost	13.91%	\$15	13.78%	\$15
UAAL	<u>4.52%</u>	<u>5</u>	<u>4.18%</u>	<u>5</u>
Total Contribution	18.43%	\$20	17.96%	\$20
General Plan B – County Members				
Normal Cost	7.74%	\$13,854	7.68%	\$13,747
UAAL	<u>8.78%</u>	<u>15,716</u>	<u>5.06%</u>	<u>9,057</u>
Total Contribution	16.52%	\$29,570	12.74%	\$22,804
General Plan B – Court Members				
Normal Cost	7.74%	\$517	7.68%	\$513
UAAL	<u>24.22%</u>	<u>1,617</u>	<u>19.99%</u>	<u>1,335</u>
Total Contribution	31.96%	\$2,134	27.67%	\$1,848
General Plan B – Sonoma Valley Fire District Members				
Normal Cost	7.74%	\$16	7.68%	\$16
UAAL	<u>4.52%</u>	<u>9</u>	<u>4.18%</u>	<u>8</u>
Total Contribution	12.26%	\$25	11.86%	\$24

¹ Amounts are based on December 31, 2022 projected compensation as shown on the next page.

Section 2: Actuarial Valuation Results

Recommended Employer Contribution Rate (continued)

	December 31, 2022 Actuarial Valuation		December 31, 2021 Actuarial Valuation	
	Contribution Rate	Estimated Annual Dollar Amount ¹ \$(in '000s)	Contribution Rate	Estimated Annual Dollar Amount ¹ \$(in '000s)
Safety Plan A – County Members				
Normal Cost	22.73%	\$10,105	22.78%	\$10,128
UAAL	10.32%	4,587	9.66%	4,295
Total Contribution	33.05%	\$14,692	32.44%	\$14,423
Safety Plan A – Sonoma Valley Fire District Members				
Normal Cost	30.15%	\$1,352	30.29%	\$1,358
UAAL	8.50%	381	8.13%	365
Total Contribution	38.65%	\$1,733	38.42%	\$1,723
Safety Plan B – County Members				
Normal Cost	13.64%	\$4,198	13.27%	\$4,084
UAAL	13.31%	4,095	9.66%	2,973
Total Contribution	26.95%	\$8,293	22.93%	\$7,057
Safety Plan B – Sonoma Valley Fire District Members				
Normal Cost	13.87%	\$424	14.00%	\$428
UAAL	8.50%	260	8.13%	248
Total Contribution	22.37%	\$684	22.13%	\$676
All Categories Combined				
Normal Cost	12.01%	\$50,843	11.97%	\$50,672
UAAL	9.24%	39,101	6.40%	27,094
Total Contribution	21.25%	\$89,944	18.37%	\$77,766

¹ Amounts are based on December 31, 2022 projected compensation \$(in '000s):

General Plan A – County	\$147,893	General Plan B – County	\$178,994	Safety Plan A – County	\$44,458	Safety Plan B – County	\$30,774
General Plan A – Court	6,628	General Plan B – Court	6,677	Safety Plan A – SVFD	4,484	Safety Plan B – SVFD	3,054
General Plan A – SVFD	108	General Plan B – SVFD	202	Total			\$423,272

Section 2: Actuarial Valuation Results

Breakdown of Total Normal Cost for Each Type of Benefit

Normal Cost	Elements of Normal Cost for Plan A Members			
	All General	Safety – County	Safety – SVFD	Total
Service retirements	84%	58%	60%	75%
Vested termination and ordinary withdrawals	11%	7%	3%	10%
Non-service and service connected disability	4%	35%	37%	14%
Non-service and service connected death	<u>1%</u>	<u>0%</u>	<u>0%</u>	<u>1%</u>
Total employer plus employee Normal Cost	100%	100%	100%	100%

Normal Cost	Elements of Normal Cost for Plan B Members			
	All General	Safety – County	Safety – SVFD	Total
Service retirements	83%	48%	49%	74%
Vested termination and ordinary withdrawals	10%	7%	7%	10%
Non-service and service connected disability	6%	44%	43%	15%
Non-service and service connected death	<u>1%</u>	<u>1%</u>	<u>1%</u>	<u>1%</u>
Total employer plus employee Normal Cost	100%	100%	100%	100%

Section 2: Actuarial Valuation Results

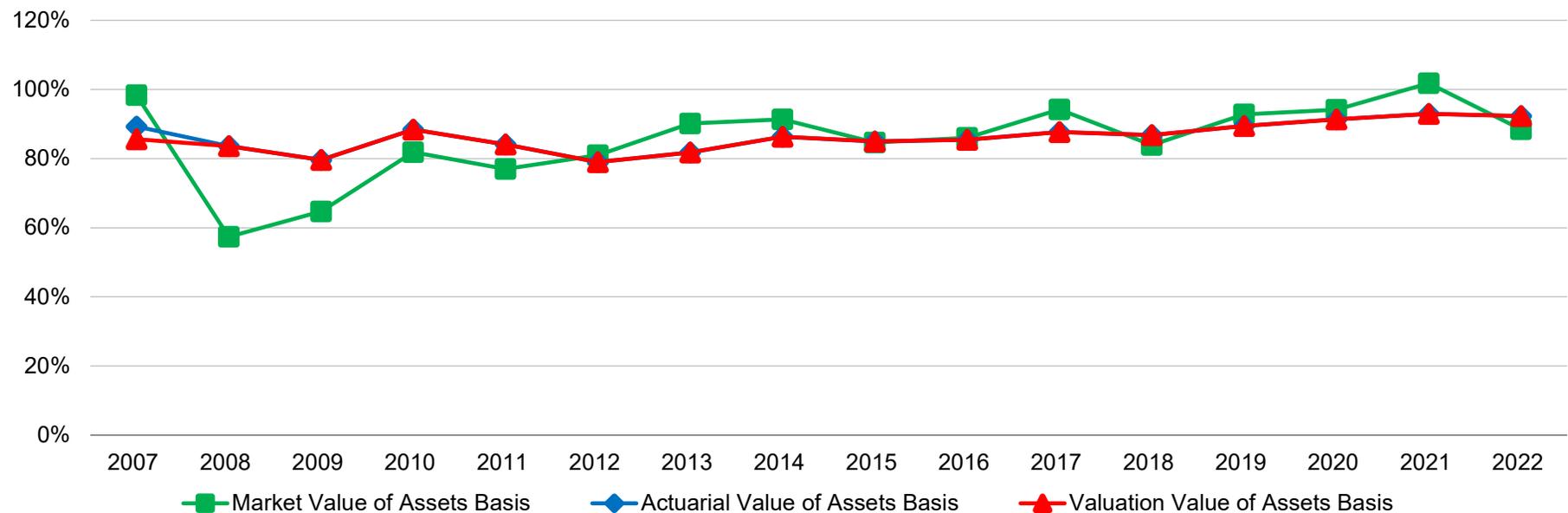
G. Funded Status

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 December 31, 2007 – 2022



Section 2: Actuarial Valuation Results

Schedule of Funding Progress for Years Ended December 31, 2013 – 2022

Actuarial Valuation Date as of December 31	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)
2013	\$2,016,781,000	\$2,466,224,000	\$449,443,000	81.8%	\$329,896,000	136.2%
2014	2,167,210,000	2,510,253,000	343,043,000	86.3%	324,418,000	105.7%
2015	2,289,057,000	2,694,979,000	405,922,000	84.9%	339,518,000	119.6%
2016	2,399,171,000	2,807,398,000	408,227,000	85.5%	356,129,000	114.6%
2017	2,557,299,000	2,916,856,000	359,557,000	87.7%	369,751,000	97.2%
2018	2,667,345,000	3,072,077,000	404,732,000	86.8%	378,159,000	107.0%
2019	2,811,292,000	3,143,323,000	332,031,000	89.4%	378,159,000	87.8%
2020	2,981,688,000	3,264,403,000	282,715,000	91.3%	400,564,000	70.6%
2021	3,215,505,000	3,460,051,000	244,546,000	92.9%	408,279,000	59.9%
2022	3,311,174,000	3,582,766,000	271,592,000	92.4%	423,272,000	64.2%

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 for Year Ended December 31, 2022

	Basic \$(in '000s)	COLA \$(in '000s)	Total \$(in '000s)
Actuarial present value of future benefits			
• Present value of benefits for retired members and beneficiaries	\$2,215,297	\$25,354	\$2,240,651
• Present value of benefits for inactive vested members	143,295	0	143,295
• Present value of benefits for active members	<u>1,828,877</u>	<u>0</u>	<u>1,828,877</u>
Total actuarial present value of future benefits	\$4,187,469	\$25,354	\$4,212,823
Current and future assets			
• Total Valuation Value of Assets	\$3,285,820	\$25,354	\$3,311,174
• Present value of future contributions by members ¹	299,248	0	299,248
• Present value of future employer contributions for:			
• Entry age normal cost	330,809	0	330,809
• Unfunded actuarial accrued liability	<u>271,592</u>	<u>0</u>	<u>271,592</u>
Total of current and future assets	\$4,187,469	\$25,354	\$4,212,823

¹ Before reflecting supplemental contributions payable by certain members for the UAAL.

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 since it is based on the current level of assets.

The current AVR is about 7.5. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 7.5% of one-year's payroll. Since actuarial gains and losses are amortized over 20 years, there would be a 0.5% 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 8.5, but is 7.7 for General compared to 11.8 for Safety. This means, for example, that most assumption changes will have a greater impact on employer contribution rates for Safety than for General.

Volatility Ratios for Years Ended December 31, 2013 – 2022

Year Ended December 31	Asset Volatility Ratio			Liability Volatility Ratio		
	General	Safety	Total	General	Safety	Total
2013	6.4	7.8	6.7	7.2	8.6	7.5
2014	6.7	8.5	7.1	7.4	9.2	7.7
2015	6.3	8.5	6.7	7.4	10.1	7.9
2016	6.3	8.8	6.8	7.3	10.2	7.9
2017	6.9	9.5	7.4	7.3	10.1	7.9
2018	6.3	8.8	6.8	7.6	10.4	8.1
2019	7.1	10.3	7.7	7.7	10.9	8.3
2020	7.1	10.0	7.7	7.5	10.5	8.1
2021	7.9	11.7	8.6	7.7	11.5	8.5
2022	6.8	10.4	7.5	7.7	11.8	8.5

Section 2: Actuarial Valuation Results

J. Risk Assessment

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

This report does not contain a detailed analysis of the potential range of future measurements, but does include a concise discussion of some of the primary risks that may affect the Plan's future financial condition. We recommend a more detailed assessment of the risks to provide the Board with a better understanding of the risks inherent in the Plan that can inform both financial preparation and future decision making. This assessment would enable us to work with the Board to highlight and illustrate particular risks or potential future outcomes they may be interested in discussing and could include scenario testing, sensitivity testing, stress testing and stochastic modeling. As noted in the valuation highlights section of this report the results of our more detailed risk assessment will be provided in a separate stand-alone report. We will include within that report investment return scenarios that demonstrate the effects of short-term market volatility on funded status and contribution rates, which may aid in illustrating the effect on the plan of market volatility that can result from events such as COVID-19.

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,

Section 2: Actuarial Valuation Results

however investment experience can still have a sizable impact. As discussed in *Section 2, Subsection I, Volatility Ratios*, on page 39, a 1% asset gain or loss (relative to the assumed investment return) translates to about 7.5% of one-year's payroll. Since actuarial gains and losses are amortized over 20 years, there would be a 0.5% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The year-by-year market value rate of return over the last 10 years has ranged from a low of -7.84% to a high of 19.49%.

- 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. 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 employer has 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 has increased from 81.8% to 92.4%. This is primarily due to contributions made to amortize the UAAL (i.e., amortizing each gain/loss layer of UAAL over 20 years) and average investment returns over recent years higher than the assumption on a smoothed basis. For a more detailed history see *Section 2, Subsection G, Funded Status* starting on page 36.

Section 2: Actuarial Valuation Results

- The geometric average investment return on the Actuarial Value of Assets over the last 10 years was 8.42%. This includes a high of 11.38% return and a low of 5.50%. The average over the last 5 years was 7.85%. For more details see the Investment Return table in *Section 2, Subsection C* on page 25.
- Beyond investment experience, the primary source of new UAAL was the strengthening of assumptions through multiple assumption changes. For example, the assumption changes in 2015 added \$94 million in unfunded liability. The assumption changes in 2018 changed the discount rate from 7.25% to 7.00% (as well as various other changes) adding \$32 million in unfunded liability. The assumption changes in 2021 changed the discount rate from 7.00% to 6.75% (as well as various other changes) adding \$97 million in unfunded liability. For more details on unfunded liability changes see *Section 3, Exhibit H, Table of Amortization Bases* starting on page 58. A graphical representation of historical changes in UAAL by source will be included in the stand-alone risk assessment report.
- The plan's funding policy effectively deals with these unfunded liabilities over time. This can be seen most clearly in the *Section 3, Exhibit I, Projection of UAAL Balances and Payments* provided on pages 67 and 68.

Maturity Measures

In the last 10 years the ratio of members in pay status to active participants has increased from 1.15 to 1.37. 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 16.

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities. Over the past year, benefits paid were \$78.9 million more than contributions received. Plans with high levels of negative cash flows may have a need for a larger allocation to income generating assets, which can create a drag on investment return. However, the plan currently has a relatively low level of negative cash flow and is relatively well funded (at a 92.4% funded ratio). For more details on historical cash flows see the Comparison of Contributions Made with Benefits in *Section 2, Subsection B* on page 20.

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 39.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage

Total Plan

Category	Year Ended December 31		Change From Prior Year
	2022	2021	
Active members in valuation:			
• Number	4,103	4,066	0.9%
• Average age	45.1	45.2	-0.1
• Average years of service	9.4	9.7	-0.3
• Total projected compensation	\$423,271,414	\$408,278,337	3.7%
• Average projected compensation	\$103,161	\$100,413	2.7%
• Account balances	\$515,788,576	\$517,031,134	-0.2%
• Total active vested members	2,769	2,818	-1.7%
Inactive vested members:			
• Number ¹	1,688	1,569	7.6%
• Average age	45.0	45.1	-0.1
Retired members:			
• Number in pay status	4,301	4,169	3.2%
• Average age	70.5	70.2	0.3
• Average monthly benefit	\$3,333	\$3,271	1.9%
Disabled members:			
• Number in pay status	660	652	1.2%
• Average age	64.7	64.7	0.0
• Average monthly benefit	\$2,771	\$2,690	3.0%
Beneficiaries:			
• Number in pay status	666	657	1.4%
• Average age	71.4	70.9	0.5
• Average monthly benefit	\$1,554	\$1,509	3.0%

¹ Includes inactive members due a refund of member contributions.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

General Plan A

Category	Year Ended December 31		Change From Prior Year
	2022	2021	
Active members in valuation:			
• Number	1,391	1,538	-9.6%
• Average age	51.7	51.3	0.4
• Average years of service	16.4	16.0	0.4
• Total projected compensation	\$154,628,843	\$163,156,672	-5.2%
• Average projected compensation	\$111,164	\$106,084	4.8%
• Account balances	\$315,224,744	\$330,258,284	-4.6%
• Total active vested members	1,376	1,526	-9.8%
Inactive vested members:			
• Number ¹	693	700	-1.0%
• Average age	50.0	49.6	0.4
Retired members:²			
• Number in pay status	3,620	3,528	2.6%
• Average age	71.4	71.1	0.3
• Average monthly benefit	\$3,130	\$3,054	2.5%
Disabled members:²			
• Number in pay status	309	318	-2.8%
• Average age	69.4	68.7	0.7
• Average monthly benefit	\$1,903	\$1,896	0.4%
Beneficiaries:³			
• Number in pay status	520	515	1.0%
• Average age	72.9	72.6	0.3
• Average monthly benefit	\$1,443	\$1,396	3.4%

¹ Includes inactive members due a refund of member contributions.

² Out of the 3,929 retired and disabled members, there are 860 members who are receiving benefits under the Pre-Plan A provisions, with an average age of 79.9 and an average benefit of \$1,534.

³ Out of the 520 beneficiaries, there are 115 beneficiaries who are receiving benefits under the Pre-Plan A provisions, with an average age of 77.4 and an average benefit of \$1,091. However, we note that 364 General Plan A beneficiaries are missing a date of retirement in the valuation data and therefore we are unable to determine their Pre-Plan A status.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

General Plan B

Category	Year Ended December 31		Change From Prior Year
	2022	2021	
Active members in valuation:			
• Number	2,042	1,847	10.6%
• Average age	41.7	41.6	0.1
• Average years of service	4.2	4.1	0.1
• Total projected compensation	\$185,872,576	\$163,823,990	13.5%
• Average projected compensation	\$91,025	\$88,697	2.6%
• Account balances	\$76,938,429	\$64,608,183	19.1%
• Total active vested members	879	772	13.9%
Inactive vested members:			
• Number ¹	726	622	16.7%
• Average age	41.8	41.5	0.3
Retired members:			
• Number in pay status	73	49	49.0%
• Average age	66.4	66.7	-0.3
• Average monthly benefit	\$1,077	\$1,003	7.4%
Disabled members:			
• Number in pay status	5	4	25.0%
• Average age	60.6	60.8	-0.2
• Average monthly benefit	\$2,238	\$2,133	4.9%
Beneficiaries:			
• Number in pay status	2	1	100.0%
• Average age	55.6	60.6	-5.0
• Average monthly benefit	\$502	\$623	-19.4%

¹ Includes inactive members due a refund of member contributions.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Safety Plan A

Category	Year Ended December 31		Change From Prior Year
	2022	2021	
Active members in valuation:			
• Number	365	398	-8.3%
• Average age	46.4	45.9	0.5
• Average years of service	16.4	15.7	0.7
• Total projected compensation	\$48,942,094	\$50,813,490	-3.7%
• Average projected compensation	\$134,088	\$127,672	5.0%
• Account balances	\$104,531,046	\$106,191,960	-1.6%
• Total active vested members	361	390	-7.4%
Inactive vested members:			
• Number ¹	162	162	0.0%
• Average age	46.4	45.8	0.6
Retired members:²			
• Number in pay status	604	588	2.7%
• Average age	65.9	65.4	0.5
• Average monthly benefit	\$4,834	\$4,778	1.2%
Disabled members:²			
• Number in pay status	334	325	2.8%
• Average age	61.3	61.1	0.2
• Average monthly benefit	\$3,534	\$3,466	2.0%
Beneficiaries:³			
• Number in pay status	144	141	2.1%
• Average age	66.1	64.6	1.5
• Average monthly benefit	\$1,969	\$1,930	2.0%

¹ Includes inactive members due a refund of member contributions.

² Out of the 938 retired and disabled members, there are 337 members who are receiving benefits under the Pre-Plan A provisions, with an average age of 71.8 and an average benefit of \$3,117.

³ Out of the 144 beneficiaries, there are 33 beneficiaries who are receiving benefits under the Pre-Plan A provisions, with an average age of 75.2 and an average benefit of \$2,155. However, we note that 99 Safety Plan A beneficiaries are missing a date of retirement in the valuation data and therefore we are unable to determine their Pre-Plan A status.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage (continued)

Safety Plan B

Category	Year Ended December 31		Change From Prior Year
	2022	2021	
Active members in valuation:			
• Number	305	283	7.8%
• Average age	35.6	35.2	0.4
• Average years of service	4.4	4.1	0.3
• Total projected compensation	\$33,827,901	\$30,484,185	11.0%
• Average projected compensation	\$110,911	\$107,718	3.0%
• Account balances	\$19,094,357	\$15,972,707	19.5%
• Total active vested members	153	130	17.7%
Inactive vested members:			
• Number ¹	107	85	25.9%
• Average age	32.8	32.2	0.6
Retired members:			
• Number in pay status	4	4	0.0%
• Average age	63.3	62.3	1.0
• Average monthly benefit	\$1,357	\$1,357	0.0%
Disabled members:			
• Number in pay status	12	5	140.0%
• Average age	42.5	44.6	-2.1
• Average monthly benefit	\$4,088	\$3,207	27.5%
Beneficiaries:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit	N/A	N/A	N/A

¹ Includes inactive members due a refund of member contributions.

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2022 by Age, Years of Service, and Average Projected Compensation

Total Plan

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	80	80	—	—	—	—	—	—	—	—
	\$76,297	\$76,297	—	—	—	—	—	—	—	—
25 – 29	307	271	36	—	—	—	—	—	—	—
	\$82,017	\$80,720	\$91,783	—	—	—	—	—	—	—
30 – 34	529	303	199	27	—	—	—	—	—	—
	\$94,798	\$87,315	\$103,888	\$111,787	—	—	—	—	—	—
35 – 39	581	187	249	106	39	—	—	—	—	—
	\$101,360	\$90,729	\$101,319	\$114,854	\$115,922	—	—	—	—	—
40 – 44	622	156	170	116	155	25	—	—	—	—
	\$105,663	\$90,568	\$99,307	\$111,981	\$122,119	\$111,738	—	—	—	—
45 – 49	519	90	115	70	119	107	18	—	—	—
	\$111,100	\$92,803	\$106,129	\$102,980	\$116,982	\$127,595	\$128,972	—	—	—
50 – 54	548	97	89	66	109	115	53	19	—	—
	\$111,093	\$99,427	\$103,579	\$109,813	\$112,546	\$115,725	\$127,813	\$127,273	—	—
55 – 59	498	85	104	61	73	87	46	37	5	—
	\$109,271	\$94,613	\$101,464	\$113,525	\$102,745	\$113,283	\$131,582	\$132,262	\$118,994	—
60 – 64	282	49	79	38	43	48	12	9	4	—
	\$106,313	\$91,847	\$107,318	\$114,390	\$100,280	\$112,886	\$104,093	\$138,402	\$107,409	—
65 – 69	115	18	43	16	12	15	4	4	—	3
	\$103,369	\$100,147	\$101,686	\$94,966	\$113,995	\$103,381	\$121,424	\$98,832	—	\$131,058
70 & over	22	5	7	4	2	3	1	—	—	—
	\$109,252	\$108,700	\$121,430	\$103,990	\$63,969	\$114,767	\$121,834	—	—	—
Total	4,103	1,341	1,091	504	552	400	134	69	9	3
	\$103,161	\$88,304	\$102,442	\$110,806	\$114,033	\$117,309	\$126,903	\$129,751	\$113,845	\$131,058

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2022 by Age, Years of Service, and Average Projected Compensation (continued)

General Plan A

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	18	—	4	14	—	—	—	—	—	—
	\$103,126	—	\$119,214	\$98,529	—	—	—	—	—	—
35 – 39	98	2	11	71	14	—	—	—	—	—
	\$105,974	\$92,698	\$105,868	\$108,869	\$93,272	—	—	—	—	—
40 – 44	222	3	14	94	94	17	—	—	—	—
	\$111,211	\$97,751	\$100,091	\$111,527	\$114,687	\$101,782	—	—	—	—
45 – 49	229	1	12	62	91	58	5	—	—	—
	\$109,137	\$76,944	\$115,091	\$102,899	\$111,910	\$111,936	\$95,690	—	—	—
50 – 54	308	4	12	60	94	93	31	14	—	—
	\$111,966	\$144,970	\$111,294	\$110,258	\$110,173	\$112,066	\$116,705	\$111,316	—	—
55 – 59	301	4	13	57	69	80	40	33	5	—
	\$113,734	\$153,955	\$95,401	\$112,260	\$101,987	\$111,601	\$132,772	\$124,485	\$118,994	—
60 – 64	153	1	13	31	42	45	11	7	3	—
	\$112,394	\$227,794	\$114,499	\$122,678	\$100,909	\$111,328	\$105,382	\$138,988	\$98,983	—
65 – 69	52	—	4	12	11	15	4	4	—	2
	\$107,355	—	\$112,706	\$97,915	\$115,155	\$103,381	\$121,424	\$98,832	—	\$129,111
70 & over	10	—	1	3	2	3	1	—	—	—
	\$120,765	—	\$262,020	\$117,188	\$63,969	\$114,767	\$121,834	—	—	—
Total	1,391	15	84	404	417	311	92	58	8	2
	\$111,164	\$131,939	\$109,534	\$109,694	\$108,624	\$110,861	\$121,456	\$121,287	\$111,490	\$129,111

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2022 by Age, Years of Service, and Average Projected Compensation (continued)

General Plan B

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	56	56	—	—	—	—	—	—	—	—
	\$69,595	\$69,595	—	—	—	—	—	—	—	—
25 – 29	247	225	22	—	—	—	—	—	—	—
	\$77,347	\$77,311	\$77,715	—	—	—	—	—	—	—
30 – 34	392	261	130	1	—	—	—	—	—	—
	\$87,835	\$84,190	\$95,115	\$92,868	—	—	—	—	—	—
35 – 39	372	175	192	5	—	—	—	—	—	—
	\$93,827	\$89,315	\$97,668	\$104,267	—	—	—	—	—	—
40 – 44	293	145	144	4	—	—	—	—	—	—
	\$94,334	\$89,282	\$98,694	\$120,500	—	—	—	—	—	—
45 – 49	181	81	96	4	—	—	—	—	—	—
	\$98,201	\$91,135	\$104,239	\$96,371	—	—	—	—	—	—
50 – 54	161	85	72	3	1	—	—	—	—	—
	\$97,284	\$94,395	\$101,039	\$95,301	\$78,444	—	—	—	—	—
55 – 59	158	74	83	1	—	—	—	—	—	—
	\$94,083	\$88,243	\$99,086	\$110,945	—	—	—	—	—	—
60 – 64	114	47	61	5	1	—	—	—	—	—
	\$96,010	\$88,810	\$103,962	\$71,112	\$73,868	—	—	—	—	—
65 – 69	56	16	37	3	—	—	—	—	—	—
	\$97,360	\$100,242	\$98,842	\$63,710	—	—	—	—	—	—
70 & over	12	5	6	1	—	—	—	—	—	—
	\$99,657	\$108,700	\$97,999	\$64,396	—	—	—	—	—	—
Total	2,042	1,170	843	27	2	—	—	—	—	—
	\$91,025	\$85,555	\$98,614	\$92,208	\$76,156	—	—	—	—	—

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2022 by Age, Years of Service, and Average Projected Compensation (continued)

Safety Plan A

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	18	1	5	12	—	—	—	—	—	—
	\$128,390	\$103,841	\$132,243	\$128,830	—	—	—	—	—	—
35 – 39	54	—	—	29	25	—	—	—	—	—
	\$129,625	—	—	\$130,503	\$128,606	—	—	—	—	—
40 – 44	89	1	1	18	61	8	—	—	—	—
	\$129,488	\$148,913	\$140,341	\$112,457	\$133,571	\$132,894	—	—	—	—
45 – 49	98	1	3	4	28	49	13	—	—	—
	\$139,881	\$146,246	\$126,077	\$110,842	\$133,468	\$146,130	\$141,773	—	—	—
50 – 54	67	—	1	3	14	22	22	5	—	—
	\$137,505	—	\$131,557	\$115,422	\$130,914	\$131,192	\$143,465	\$171,954	—	—
55 – 59	25	—	1	3	4	7	6	4	—	—
	\$138,758	—	\$135,301	\$138,411	\$115,820	\$132,503	\$123,649	\$196,428	—	—
60 – 64	11	1	1	2	—	3	1	2	1	—
	\$120,651	\$98,649	\$136,205	\$94,129	—	\$136,252	\$89,905	\$136,351	\$132,687	—
65 – 69	3	—	—	1	1	—	—	—	—	1
	\$129,845	—	—	\$153,349	\$101,235	—	—	—	—	\$134,951
70 & over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	365	4	12	72	133	89	42	11	1	1
	\$134,088	\$124,413	\$131,904	\$123,629	\$131,559	\$139,843	\$138,835	\$174,380	\$132,687	\$134,951

Section 3: Supplemental Information

Exhibit B: Members in Active Service as of December 31, 2022 by Age, Years of Service, and Average Projected Compensation (continued)

Safety Plan B

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	24	24	—	—	—	—	—	—	—	—
	\$91,934	\$91,934	—	—	—	—	—	—	—	—
25 – 29	60	46	14	—	—	—	—	—	—	—
	\$101,241	\$97,392	\$113,889	—	—	—	—	—	—	—
30 – 34	101	41	60	—	—	—	—	—	—	—
	\$114,352	\$106,803	\$119,511	—	—	—	—	—	—	—
35 – 39	57	10	46	1	—	—	—	—	—	—
	\$115,810	\$115,077	\$115,467	\$138,894	—	—	—	—	—	—
40 – 44	18	7	11	—	—	—	—	—	—	—
	\$103,835	\$105,777	\$102,600	—	—	—	—	—	—	—
45 – 49	11	7	4	—	—	—	—	—	—	—
	\$107,790	\$106,735	\$109,635	—	—	—	—	—	—	—
50 – 54	12	8	4	—	—	—	—	—	—	—
	\$126,469	\$130,123	\$119,161	—	—	—	—	—	—	—
55 – 59	14	7	7	—	—	—	—	—	—	—
	\$132,063	\$128,046	\$136,081	—	—	—	—	—	—	—
60 – 64	4	—	4	—	—	—	—	—	—	—
	\$127,933	—	\$127,933	—	—	—	—	—	—	—
65 – 69	4	2	2	—	—	—	—	—	—	—
	\$115,832	\$99,389	\$132,275	—	—	—	—	—	—	—
70 & over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	305	152	152	1	—	—	—	—	—	—
	\$110,911	\$104,209	\$117,429	\$138,894	—	—	—	—	—	—

Section 3: Supplemental Information

Exhibit C: Reconciliation of Member Data

	Active Members	Inactive Vested Members ¹	Retired Members	Disabled Members	Beneficiaries	Total
Number as of December 31, 2021	4,066	1,569	4,169	652	657	11,113
• New members	449	42	N/A	N/A	39	530
• Terminations – with vested rights	(195)	195	N/A	N/A	N/A	0
• Contribution refunds	(49)	(50)	N/A	N/A	N/A	(99)
• Retirements	(163)	(47)	210	N/A	N/A	0
• New disabilities	(19)	(2)	(4)	25	N/A	0
• Return to work	19	(18)	(1)	0	N/A	0
• Died with or without beneficiary	(5)	(1)	(73)	(17)	(28)	(124)
• Data adjustments	0	0	0	0	(2)	(2)
Number as of December 31, 2022	4,103	1,688	4,301	660	666	11,418

¹ Includes inactive members due a refund of member contributions.

Section 3: Supplemental Information

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

	Year Ended December 31, 2022	Year Ended December 31, 2021
Net assets at market value at the beginning of the year	\$3,521,361,225	\$3,073,675,135
Contribution income:		
• Employer contributions	\$76,562,193	\$74,952,763
• Member contributions	<u>49,224,211</u>	<u>49,056,580</u>
<i>Net contribution income</i>	<i>\$125,786,404</i>	<i>\$124,009,343</i>
Investment income:		
• Interest, dividends and other income	\$48,694,722	\$49,398,053
• Asset appreciation	(292,657,321)	496,115,372
• Less investment and administrative fees	<u>(28,877,315)</u>	<u>(26,330,370)</u>
<i>Net investment income</i>	<i>\$(272,839,914)</i>	<i>\$519,183,054</i>
Total income available for benefits	\$(147,053,510)	\$643,192,397
Less benefit payments:		
• Service retirement and disability benefits	\$(201,711,431)	\$(193,130,193)
• Member refunds	<u>(2,964,149)</u>	<u>(2,376,114)</u>
<i>Net benefit payments</i>	<i>\$(204,675,580)</i>	<i>\$(195,506,307)</i>
Change in net assets at market value	\$(351,729,090)	\$447,686,090
Net assets at market value at the end of the year	\$3,169,632,135	\$3,521,361,225

Note: Results may be slightly off due to rounding.

Section 3: Supplemental Information

Exhibit E: Summary Statement of Plan Assets

	December 31, 2022	December 31, 2021
<i>Cash equivalents</i>	\$137,301,513	\$186,728,741
Accounts receivable:		
• Securities sold	\$62,778,784	\$62,980,398
• Accrued interest and dividends	5,204,380	5,575,657
• Employer contributions	2,780,883	2,848,516
• Other receivable	<u>71,444</u>	<u>77,069</u>
<i>Total accounts receivable</i>	\$70,835,491	\$71,481,640
Investments:		
• Domestic and international stocks	\$1,777,547,909	\$2,134,077,958
• Domestic and international bonds	535,544,459	582,702,626
• Real assets	801,126,326	664,599,081
• Securities lending collateral	87,575,126	6,360,651
• Miscellaneous	<u>27,184,760</u>	<u>45,769,641</u>
<i>Total investments at market value</i>	\$3,228,978,580	\$3,433,509,957
<i>Other assets</i>	<u>1,806,379</u>	<u>1,892,500</u>
Total assets	\$3,438,921,963	\$3,693,612,838
Accounts payable:		
• Accounts payable and other liabilities	\$(181,714,702)	\$(165,890,962)
• Securities lending liability	(87,575,126)	(6,360,651)
Total accounts payable	<u>\$(269,289,828)</u>	<u>\$(172,251,613)</u>
Net assets at market value	\$3,169,632,135	\$3,521,361,225
Net assets at actuarial value	\$3,311,174,115	\$3,215,504,838
Net assets at valuation value	\$3,311,174,115	\$3,215,504,838

Note: Results may be slightly off due to rounding.

Section 3: Supplemental Information

Exhibit F: Summary of Reported Reserve Information as of December 31, 2022

	Before True-Up	After True-Up	Transfer Amount
Member reserves¹			
• General	\$471,958,703	\$471,958,703	\$0
• Safety	138,635,382	138,635,382	0
Employer reserves¹			
• General	792,186,809	783,841,381	(8,345,428)
• Safety	277,871,683	274,124,125	(3,747,558)
Retired member reserves¹			
• General	1,579,804,572	1,588,150,000	8,345,428
• Safety	623,399,442	627,147,000	3,747,558
• COLA	26,124,570	25,354,000	(770,570)
Negative contingency reserve ¹	<u>(602,423,093)</u>	<u>(598,036,476)</u>	<u>4,386,617</u>
Total valuation reserve¹	\$3,307,558,068	\$3,311,174,115	\$3,616,047
Undistributed reserve ²	\$0	\$0	\$0
Interest fluctuation reserve ²	0	0	0
Market stabilization reserve ²	<u>(137,925,933)</u>	<u>(141,541,980)</u>	<u>(3,616,047)</u>
Net market value	\$3,169,632,135	\$3,169,632,135	\$0

Note: Results may be slightly off due to rounding.

There is a growth in the balance of the Negative Contingency Reserve from \$(527.6) million in the last valuation to \$(598.0) million in the current valuation. The negative balance in that reserve represents the cumulative shortfall in interest required to credit all the valuation reserves at the assumed rate of investment return since the date the interest crediting shortfall has been tracked by SCERA. The balance in that reserve would generally become less negative when actual smoothed earnings during the year are in excess of the amount required to credit interest to the total valuation reserve as if the amount in the Negative Contingency Reserve were in the plan assets.

¹ Included in development of Valuation Value of Assets.

² Not included in development of Valuation Value of Assets.

Section 3: Supplemental Information

Exhibit G: Development of the Fund through December 31, 2022

Year Ended December 31	Employer Contributions	Member Contributions	Net Investment Return ¹	Benefit Payments	Market Value of Assets at Year-End	Valuation Value of Assets at Year-End	Valuation Value as a Percent of Market Value
2013	\$51,852,499	\$35,491,526	\$366,462,205	\$135,960,456	\$2,222,772,738	\$2,016,780,822	90.7%
2014	61,179,319	37,126,072	114,071,949	141,675,383	2,293,474,695	2,167,210,096	94.5%
2015	68,239,981	38,713,777	31,063,205	149,364,229	2,282,127,429	2,289,056,790	100.3%
2016	63,639,564	40,782,605	185,729,857	157,451,746	2,414,827,709	2,399,170,737	99.4%
2017	63,821,713	44,160,995	391,178,577	165,948,548	2,748,040,446	2,557,299,032	93.1%
2018	67,425,348	45,566,881	-110,661,410	172,562,274	2,577,808,991	2,667,344,838	103.5%
2019	65,155,347	44,658,390	412,013,127	182,746,330	2,916,889,525	2,811,291,726	96.4%
2020	77,506,384	47,364,262	222,007,222	190,092,258	3,073,675,135	2,981,687,518	97.0%
2021	74,952,763	49,056,580	519,183,054	195,506,307	3,521,361,225	3,215,504,838	91.3%
2022	76,562,193	49,224,211	-272,839,914	204,675,580	3,169,632,135	3,311,174,115	104.5%

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

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases

General

Type	Date Established	Initial Amount \$(in '000s)	Initial Period	Outstanding Balance ¹ \$(in '000s)	Years Remaining	Annual Payment ² \$(in '000s)
Restart amortization - County	December 31, 2007	\$123,396	21	\$21,540	6	\$4,059
Restart amortization - Court	December 31, 2007	8,599	21	5,334	6	1,005
Cash Allowance - County	December 31, 2007 ³	55,982	20	8,734	5	1,941
Actuarial loss - County	December 31, 2008	44,591	20	7,871	6	1,483
Actuarial loss - Court	December 31, 2008	3,107	20	1,949	6	367
Early Retirement Option - County	December 31, 2009 ³	1,448	20	281	7	46
Actuarial loss - County	December 31, 2009	45,691	20	8,874	7	1,458
Actuarial loss - Court	December 31, 2009	2,859	20	1,974	7	324
Actuarial loss - SVFD	December 31, 2009	13	20	9	7	1
Assumption changes - County	December 31, 2009	10,990	20	2,134	7	351
Assumption changes - Court	December 31, 2009	688	20	475	7	78
Assumption changes - SVFD	December 31, 2009	3	20	3	7	0
Actuarial loss - County	December 31, 2010	48,235	20	35,527	8	5,196
Actuarial loss - Court	December 31, 2010	3,044	20	2,265	8	331
Actuarial loss - SVFD	December 31, 2010	14	20	10	8	1
Assumption changes - County	December 31, 2010	37,393	20	27,541	8	4,028
Assumption changes - Court	December 31, 2010	2,360	20	1,756	8	257
Assumption changes - SVFD	December 31, 2010	11	20	8	8	1
Actuarial loss - County	December 31, 2011	74,087	20	57,959	9	7,665
Actuarial loss - Court	December 31, 2011	4,760	20	3,762	9	497
Actuarial loss - SVFD	December 31, 2011	23	20	18	9	2

¹ The outstanding balance for all County bases established on or before December 31, 2009 have been adjusted to reflect \$289.3 million in proceeds from issuance of Pension Obligation Bonds by the County in 2010. The outstanding balance for all County bases established on or before December 31, 2015 have been adjusted to reflect \$3.7 million from an additional UAAL contribution by the County in 2015. The total amount allocated to reduce the General bases was \$2.8 million.

² Before adjustments for supplemental contributions paid by certain employees to reduce the employer's UAAL.

³ Payment is only made by the County and not by the Court or Sonoma Valley Fire District because the programs were only available to County employees.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

General (continued)

Type	Date Established	Initial Amount \$(in '000s)	Initial Period	Outstanding Balance ¹ \$(in '000s)	Years Remaining	Annual Payment ² \$(in '000s)
Actuarial loss - County	December 31, 2012	\$71,616	20	\$58,781	10	\$7,115
Actuarial loss - Court	December 31, 2012	4,188	20	3,474	10	421
Actuarial loss - SVFD	December 31, 2012	99	20	84	10	10
Assumption changes - County	December 31, 2012	64,345	20	52,812	10	6,393
Assumption changes - Court	December 31, 2012	3,763	20	3,119	10	378
Assumption changes - SVFD	December 31, 2012	89	20	74	10	9
Compensation earnable change - County	December 31, 2012	(8,157)	20	(6,695)	10	(810)
Compensation earnable change - Court	December 31, 2012	(477)	20	(395)	10	(48)
Compensation earnable change - SVFD	December 31, 2012	(11)	20	(10)	10	(1)
Cashout change - County	December 31, 2012	(20,626)	20	(16,930)	10	(2,049)
Actuarial gain - County	December 31, 2013	(35,260)	20	(30,134)	11	(3,372)
Actuarial gain - Court	December 31, 2013	(1,884)	20	(1,625)	11	(182)
Actuarial gain - SVFD	December 31, 2013	(38)	20	(33)	11	(4)
Actuarial gain - County	December 31, 2014	(71,508)	20	(63,109)	12	(6,582)
Actuarial gain - Court	December 31, 2014	(3,657)	20	(3,260)	12	(340)
Actuarial gain - SVFD	December 31, 2014	(84)	20	(74)	12	(8)
Actuarial gain - County	December 31, 2015	(15,879)	20	(14,372)	13	(1,407)
Actuarial gain - Court	December 31, 2015	(830)	20	(759)	13	(74)
Actuarial gain - SVFD	December 31, 2015	(18)	20	(18)	13	(2)
Assumption changes - County	December 31, 2015	57,580	20	52,122	13	5,102
Assumption changes - Court	December 31, 2015	3,009	20	2,753	13	269
Assumption changes - SVFD	December 31, 2015	64	20	59	13	6
Actuarial loss - County	December 31, 2016	7,303	20	6,836	14	632
Actuarial loss - Court	December 31, 2016	364	20	342	14	32
Actuarial loss - SVFD	December 31, 2016	8	20	8	14	1

¹ The outstanding balance for all County bases established on or before December 31, 2015 have been adjusted to reflect \$3.7 million from an additional UAAL contribution by the County in 2015. The total amount allocated to reduce the General bases was \$2.8 million.

² Before adjustments for supplemental contributions paid by certain employees to reduce the employer's UAAL.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

General (continued)

Type	Date Established	Initial Amount \$(in '000s)	Initial Period	Outstanding Balance ¹ \$(in '000s)	Years Remaining	Annual Payment ² \$(in '000s)
Actuarial gain - County	December 31, 2017	\$(26,381)	20	\$(25,150)	15	\$(2,205)
Actuarial gain - Court	December 31, 2017	(1,236)	20	(1,179)	15	(103)
Actuarial gain - SVFD	December 31, 2017	(37)	20	(36)	15	(3)
Actuarial loss - County	December 31, 2018	21,856	20	18,605	16	1,554
Actuarial loss - Court	December 31, 2018	987	20	955	16	80
Actuarial loss - SVFD	December 31, 2018	31	20	31	16	3
Assumption changes - County	December 31, 2018	24,241	20	20,636	16	1,724
Assumption changes - Court	December 31, 2018	1,094	20	1,057	16	88
Assumption changes - SVFD	December 31, 2018	34	20	33	16	3
Actuarial gain - County	December 31, 2019	(39,086)	20	(38,262)	17	(3,057)
Actuarial gain - Court	December 31, 2019	(1,831)	20	(1,793)	17	(143)
Actuarial gain - SVFD	December 31, 2019	(58)	20	(57)	17	(5)
Actuarial gain - County	December 31, 2020	(16,589)	20	(16,390)	18	(1,257)
Actuarial gain - Court	December 31, 2020	(738)	20	(729)	18	(56)
Actuarial gain - SVFD	December 31, 2020	(19)	20	(19)	18	(1)
Actuarial gain - County	December 31, 2021	(83,485)	20	(82,993)	19	(6,125)
Actuarial gain - Court	December 31, 2021	(3,490)	20	(3,469)	19	(256)
Actuarial gain - SVFD	December 31, 2021	(77)	20	(77)	19	(6)
Assumption changes - County	December 31, 2021	57,549	20	55,772	19	4,116
Assumption changes - Court	December 31, 2021	2,405	20	2,391	19	176
Assumption changes - SVFD	December 31, 2021	53	20	53	19	4

¹ The outstanding balance for County bases established on December 31, 2018 have been adjusted to reflect \$7.1 million from additional UAAL contributions by the County in 2020. The total amount allocated to reduce the General bases was \$5.4 million. The outstanding balance for the County's assumption change base established on December 31, 2021 has been adjusted to reflect \$1.9 million from additional UAAL contributions by the County in 2021. The total amount allocated to reduce the General base was \$1.45 million.

² Before adjustments for supplemental contributions paid by certain employees to reduce the employer's UAAL.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

General (continued)

Type	Date Established	Initial Amount \$(in '000s)	Initial Period	Outstanding Balance ¹ \$(in '000s)	Years Remaining	Annual Payment ² \$(in '000s)
Actuarial loss - County	December 31, 2022	\$42,213	20	\$38,081	20	\$2,712
Actuarial loss - Court	December 31, 2022	1,718	20	1,718	20	122
Actuarial loss - SVFD	December 31, 2022	40	20	40	20	3
Subtotal				\$200,292		\$31,948

¹ The outstanding balance for the County's actuarial loss base established on December 31, 2022 has been adjusted to reflect \$5.8 million from additional UAAL contributions by the County in 2022. The total amount allocated to reduce the General bases was \$4.1 million.

² Before adjustments for supplemental contributions paid by certain employees to reduce the employer's UAAL.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

Safety – County

Type	Date Established	Initial Amount \$(in '000s)	Initial Period	Outstanding Balance ¹ \$(in '000s)	Years Remaining	Annual Payment ² \$(in '000s)
Restart amortization	December 31, 2007	\$43,504	21	\$7,605	6	\$1,433
Cash Allowance	December 31, 2007 ³	14,693	20	2,296	5	510
Actuarial loss	December 31, 2008	7,603	20	1,345	6	253
Actuarial loss	December 31, 2009	28,643	20	5,569	7	915
Assumption changes	December 31, 2009	7,337	20	1,427	7	235
Actuarial loss	December 31, 2010	14,765	20	10,890	8	1,593
Assumption changes	December 31, 2010	14,376	20	10,603	8	1,551
Actuarial loss	December 31, 2011	24,746	20	19,386	9	2,564
Actuarial loss	December 31, 2012	26,012	20	21,378	10	2,588
Assumption changes	December 31, 2012	12,268	20	10,081	10	1,220
Compensation earnable change	December 31, 2012	(2,613)	20	(2,147)	10	(260)
Cashout change	December 31, 2012	(11,987)	20	(9,851)	10	(1,192)
Actuarial gain	December 31, 2013	(6,051)	20	(5,178)	11	(579)
Actuarial gain	December 31, 2014	(26,652)	20	(23,553)	12	(2,457)
Actuarial gain	December 31, 2015	(5,153)	20	(4,671)	13	(457)
Assumption changes	December 31, 2015	31,096	20	28,186	13	2,759
Actuarial loss	December 31, 2016	2,293	20	2,146	14	198
Actuarial gain	December 31, 2017	(10,655)	20	(10,157)	15	(890)

¹ The outstanding balance and original balance for all bases established on or before December 31, 2009 have been adjusted to reflect \$289.3 million in proceeds from issuance of Pension Obligation Bonds by the County in 2010. The outstanding balance for all bases established on or before December 31, 2015 have been adjusted to reflect \$3.7 million from an additional UAAL contribution by the County in 2015. The total amount allocated to reduce the Safety bases was \$0.9 million.

² Before adjustments for supplemental contributions paid by certain employees to reduce the employer's UAAL.

³ Payment is only made by the County and not by Sonoma Valley Fire District because the program was only available to County employees.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

Safety – County (continued)

Type	Date Established	Initial Amount \$(in '000s)	Initial Period	Outstanding Balance ¹ \$(in '000s)	Years Remaining	Annual Payment ² \$(in '000s)
Actuarial loss	December 31, 2018	\$2,079	20	\$1,591	16	\$133
Assumption changes	December 31, 2018	6,032	20	4,616	16	386
Actuarial gain	December 31, 2019	(15,693)	20	(15,362)	17	(1,227)
Actuarial gain	December 31, 2020	(7,099)	20	(7,014)	18	(538)
Actuarial gain	December 31, 2021	(24,324)	20	(24,181)	19	(1,785)
Assumption changes	December 31, 2021	33,701	20	33,078	19	2,441
Actuarial loss	December 31, 2022	10,408	20	<u>8,745</u>	20	<u>623</u>
Subtotal				\$66,828		\$10,017

¹ The outstanding balance for County bases established on December 31, 2018 have been adjusted to reflect \$7.1 million from additional UAAL contributions by the County in 2020. The total amount allocated to reduce the Safety bases was \$1.7 million. The outstanding balance for the County's assumption change base established on December 31, 2021 has been adjusted to reflect \$1.9 million from additional UAAL contributions by the County in 2021. The total amount allocated to reduce the Safety base was \$0.43 million. The outstanding balance for the County's actuarial loss base established on December 31, 2022 has been adjusted to reflect \$5.8 million from additional UAAL contributions by the County in 2022. The total amount allocated to reduce the Safety base was \$1.7 million.

² Before adjustments for supplemental contributions paid by certain employees to reduce the employer's UAAL.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

Safety – Sonoma Valley Fire District

Type	Date Established	Initial Amount \$(in '000s)	Initial Period	Outstanding Balance \$(in '000s)	Years Remaining	Annual Payment \$(in '000s)
Restart amortization	December 31, 2007	\$1,852	21	\$1,149	6	\$217
Actuarial loss	December 31, 2008	169	20	106	6	20
Actuarial loss	December 31, 2009	678	20	468	7	77
Assumption changes	December 31, 2009	174	20	120	7	20
Actuarial loss	December 31, 2010	344	20	257	8	38
Assumption changes	December 31, 2010	335	20	249	8	36
Actuarial loss	December 31, 2011	639	20	504	9	67
Actuarial loss	December 31, 2012	1,444	20	1,197	10	145
Assumption changes	December 31, 2012	681	20	565	10	68
Compensation earnable change	December 31, 2012	(145)	20	(120)	10	(15)
Actuarial gain	December 31, 2013	(333)	20	(287)	11	(32)
Actuarial gain	December 31, 2014	(1,524)	20	(1,359)	12	(142)
Actuarial gain	December 31, 2015	(321)	20	(295)	13	(29)
Assumption changes	December 31, 2015	1,937	20	1,772	13	173
Actuarial loss	December 31, 2016	141	20	132	14	12
Actuarial gain	December 31, 2017	(683)	20	(652)	15	(57)
Actuarial loss	December 31, 2018	137	20	133	16	11
Assumption changes	December 31, 2018	397	20	384	16	32
Actuarial gain	December 31, 2019	(1,155)	20	(1,131)	17	(90)
Actuarial gain	December 31, 2020	(617)	20	(610)	18	(47)
Actuarial gain	December 31, 2021	(2,208)	20	(2,195)	19	(162)
Assumption changes	December 31, 2021	3,060	20	3,042	19	225
Actuarial loss	December 31, 2022	1,043	20	<u>1,043</u>	20	<u>74</u>
Subtotal				\$4,472		\$641

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

Total Plan

Type	Date Established	Initial Amount \$(in '000s)	Initial Period	Outstanding Balance ¹ \$(in '000s)	Years Remaining	Annual Payment ² \$(in '000s)
Restart amortization	December 31, 2007	\$177,351	21	\$35,628	6	\$6,714
Cash Allowance	December 31, 2007	70,675	20	11,030	5	2,451
Actuarial loss	December 31, 2008	55,470	20	11,271	6	2,123
Early Retirement Option	December 31, 2009	1,448	20	281	7	46
Actuarial loss	December 31, 2009	77,884	20	16,894	7	2,775
Assumption changes	December 31, 2009	19,192	20	4,159	7	684
Actuarial loss	December 31, 2010	66,402	20	48,949	8	7,159
Assumption changes	December 31, 2010	54,475	20	40,157	8	5,873
Actuarial loss	December 31, 2011	104,255	20	81,629	9	10,795
Actuarial loss	December 31, 2012	103,359	20	84,914	10	10,279
Assumption changes	December 31, 2012	81,146	20	66,651	10	8,068
Compensation earnable change	December 31, 2012	(11,403)	20	(9,367)	10	(1,134)
Cashout change	December 31, 2012	(32,613)	20	(26,781)	10	(3,241)
Actuarial gain	December 31, 2013	(43,566)	20	(37,257)	11	(4,169)
Actuarial gain	December 31, 2014	(103,425)	20	(91,355)	12	(9,529)
Actuarial gain	December 31, 2015	(22,201)	20	(20,115)	13	(1,969)
Assumption changes	December 31, 2015	93,686	20	84,892	13	8,309
Actuarial loss	December 31, 2016	10,109	20	9,464	14	875
Actuarial gain	December 31, 2017	(38,992)	20	(37,174)	15	(3,258)
Actuarial loss	December 31, 2018	25,090	20	21,315	16	1,781
Assumption changes	December 31, 2018	31,798	20	26,726	16	2,233

¹ The outstanding balance for all County bases established on or before December 31, 2009 have been adjusted to reflect \$289.3 million in proceeds from issuance of Pension Obligation Bonds by the County in 2010. The outstanding balance for all County bases established on or before December 31, 2015 have been adjusted to reflect \$3.7 million from an additional UAAL contribution by the County in 2015. The outstanding balance for County bases established on December 31, 2018 have been adjusted to reflect \$7.1 million from additional UAAL contributions by the County in 2020.

² Before adjustments for supplemental contributions paid by certain employees to reduce the employer's UAAL.

Section 3: Supplemental Information

Exhibit H: Table of Amortization Bases (continued)

Total Plan (continued)

Type	Date Established	Initial Amount \$(in '000s)	Initial Period	Outstanding Balance ¹ \$(in '000s)	Years Remaining	Annual Payment ² \$(in '000s)
Actuarial gain	December 31, 2019	\$(57,823)	20	\$(56,605)	17	\$(4,522)
Actuarial gain	December 31, 2020	(25,062)	20	(24,762)	18	(1,899)
Actuarial gain	December 31, 2021	(113,584)	20	(112,915)	19	(8,334)
Assumption changes	December 31, 2021	96,768	20	94,336	19	6,962
Actuarial loss	December 31, 2022	53,664	20	<u>49,627</u>	20	<u>3,534</u>
Total				\$271,592		\$42,606

Note: The equivalent single amortization period is about 7 years.

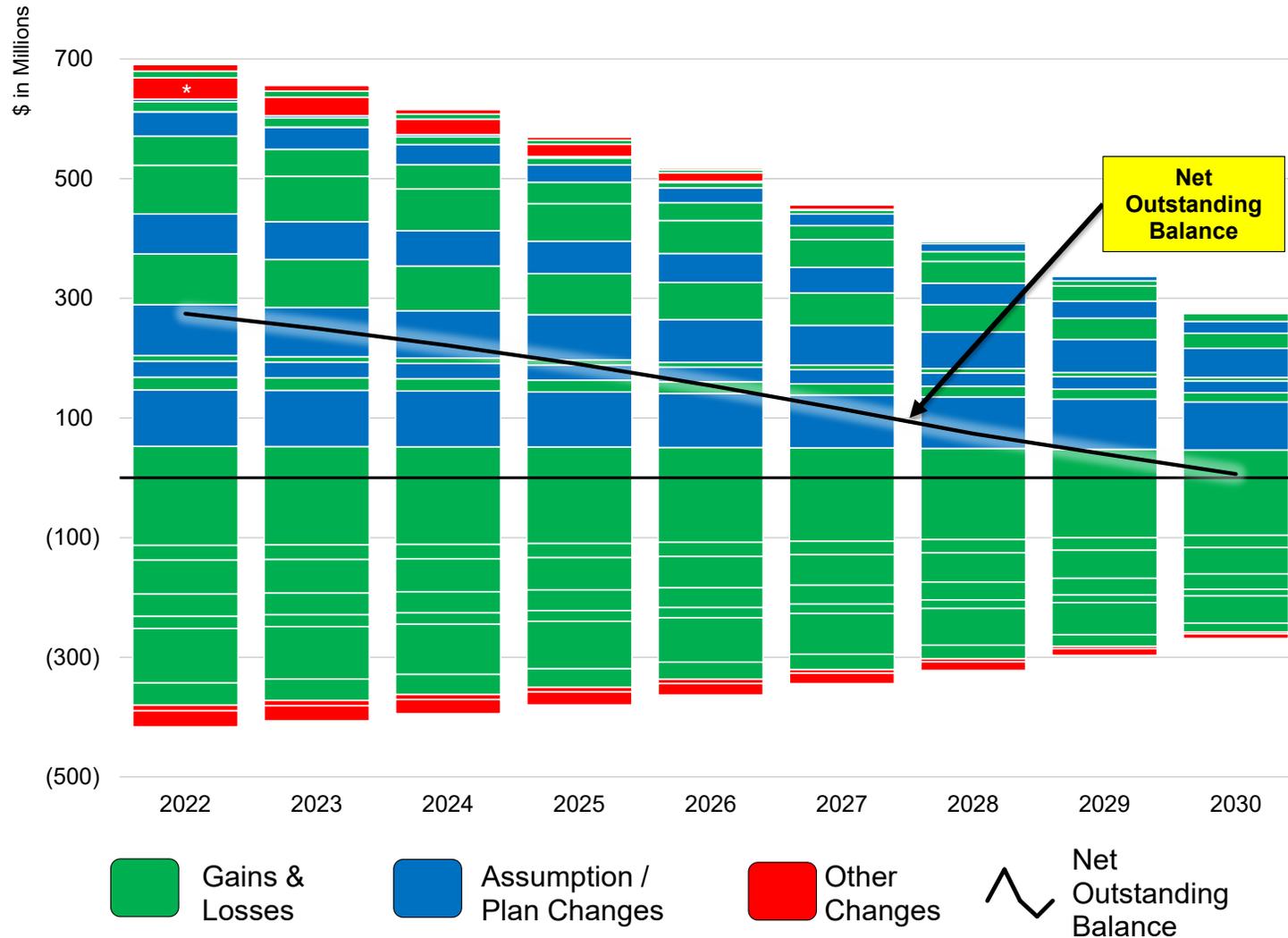
¹ The outstanding balance for the County's assumption change bases established on December 31, 2021 have been adjusted to reflect \$1.9 million from additional UAAL contributions by the County in 2021. The outstanding balance for the County's actuarial loss bases established on December 31, 2022 have been adjusted to reflect \$5.8 million from additional UAAL contributions by the County in 2022.

² Before adjustments for supplemental contributions paid by certain employees to reduce the employer's UAAL.

Section 3: Supplemental Information

Exhibit I: Projection of UAAL Balances and Payments

Outstanding Balance of \$272 Million in Net UAAL as of December 31, 2022

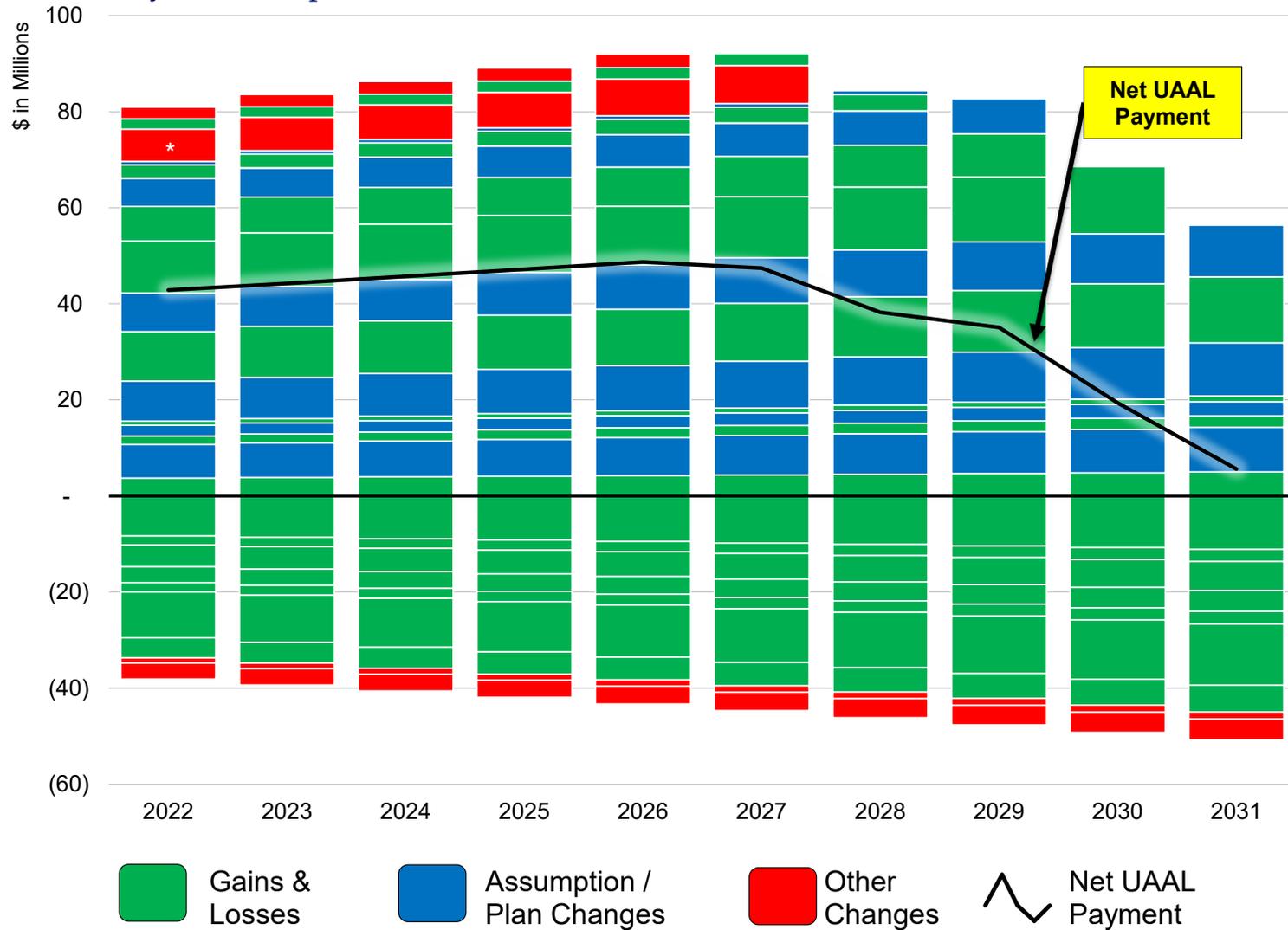


* Restart amortization, established December 31, 2007

Section 3: Supplemental Information

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

Annual Payments Required to Amortize \$272 Million in Net UAAL as of December 31, 2022



* Restart amortization, established December 31, 2007

Section 3: Supplemental Information

Exhibit J: Definition of Pension Terms

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

Actuarial Accrued Liability for Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Pensioners and Beneficiaries:	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.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial Gain or Loss:	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. 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.
Actuarially Equivalent:	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	<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, withdrawal, 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

Actuarial Present Value of Future Plan Benefits:	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future 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.
Actuarial Valuation:	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. 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).
Actuarial Value of Assets (AVA):	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.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.
Actuarially Determined Contribution (ADC):	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.
Amortization Method:	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the 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 annual payroll growth rate assumption.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Section 3: Supplemental Information

Assumptions or Actuarial Assumptions:	<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>Withdrawal 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>
Closed Amortization Period:	<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>
Decrements:	<p>Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.</p>
Defined Benefit Plan:	<p>A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.</p>
Defined Contribution Plan:	<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>
Employer Normal Cost:	<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>
Experience Study:	<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>
Funded Ratio:	<p>The ratio of the Actuarial Value of Assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the AVA.</p>
Investment Return:	<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

Normal Cost:	The portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of 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.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in 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.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Actuarial 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.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.
Valuation Value of Assets (VVA):	The Actuarial Value of Assets reduced by the value of non-valuation reserves.

Section 4: Actuarial Valuation Basis

Exhibit 1: Actuarial Assumptions and Methods

Rationale for Assumptions

The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the January 1, 2018 through December 31, 2020 Actuarial Experience Study dated October 15, 2021. Unless otherwise noted, all actuarial assumptions and methods shown below apply to all members. These assumptions were adopted by the Board.

Economic Assumptions

Net Investment Return:	6.75%; net of administrative and investment expenses. Based on the Actuarial Experience Study referenced above, expected administrative and investment expenses represent about 0.70% of the Actuarial Value of Assets.
Consumer Price Index (CPI or Inflation):	Increase of 2.50% per year.
Cost-of-Living Adjustments (COLA):	Not applicable.
Employee Contribution Crediting Rate:	Assumed inflation rate of 2.50% as an estimate of the 10-Year Treasury rate; credited semi-annually.
Payroll Growth:	Inflation of 2.50% per year plus “across the board” salary increases of 0.50% per year, used to amortize the Unfunded Actuarial Accrued Liability as a level percentage of payroll.
Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:	Increase of 2.50% per year from the valuation date.
Increase in Section 7522.10 Compensation Limit:	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	5.00	7.50
1 – 2	5.50	7.50
2 – 3	4.50	5.00
3 – 4	3.50	4.50
4 – 5	2.50	3.50
5 – 6	2.00	1.75
6 – 7	1.50	1.50
7 – 8	1.25	1.25
8 – 9	1.25	1.25
9 – 10	1.25	1.25
10 – 11	1.00	1.25
11 – 12	1.00	1.25
12 – 13	0.75	1.25
13 – 14	0.75	1.00
14 – 15	0.75	1.00
15 & Over	0.55	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) increased 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) decreased 5% for males and decreased 10% for 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) decreased 5% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020

Beneficiary

- **All Beneficiaries:** Pub-2010 Contingent Survivor Amount-Weighted Above Median Mortality Table (separate tables for males and females) increased 5% for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2020

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

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), decreased 5% for males, 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), decreased 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2020

Age	Rate (%)			
	General		Safety	
	Male	Female	Male	Female
20	0.03	0.01	0.04	0.01
25	0.02	0.01	0.03	0.02
30	0.03	0.01	0.03	0.02
35	0.04	0.02	0.04	0.03
40	0.05	0.03	0.05	0.04
45	0.08	0.05	0.07	0.06
50	0.12	0.08	0.10	0.08
55	0.18	0.11	0.14	0.11
60	0.26	0.17	0.22	0.14
65	0.38	0.27	0.34	0.20
70	0.58	0.44	0.63	0.39

Note that generational projections beyond the base year (2010) are not reflected in the above mortality rates. All pre-retirement deaths are assumed to be non-service connected.

Mortality Rates for Member Contributions:

- **General Members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) increased 5% for females, projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP 2020, weighted 33.33% male and 66.67% 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 75% male and 25% female

Section 4: Actuarial Valuation Basis

Disability Incidence:

Age	Rate (%)	
	General	Safety
20	0.05	0.10
25	0.05	0.16
30	0.05	0.68
35	0.05	1.30
40	0.14	1.50
45	0.20	2.10
50	0.23	2.50
55	0.28	2.80
60	0.30	3.00
65	0.30	0.00
70	0.00	0.00

55% of General disabilities are assumed to be service connected disabilities. The other 45% are assumed to be non-service connected disabilities.

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

Section 4: Actuarial Valuation Basis

Withdrawal:

Less Than Five Years of Service

Years of Service	Rate (%)	
	General	Safety
Less than 1	5.75	3.00
1 – 2	2.75	2.40
2 – 3	2.50	1.40
3 – 4	2.50	1.40
4 – 5	1.75	1.40

Five or More Years of Service

Age	Rate (%)	
	General	Safety
20	1.25	1.00
25	1.25	1.00
30	1.10	0.85
35	0.70	0.54
40	0.44	0.25
45	0.37	0.09
50	0.32	0.02
55	0.18	0.00
60	0.04	0.00
65	0.00	0.00
70	0.00	0.00

No withdrawal is assumed after a member is first assumed to retire.

Section 4: Actuarial Valuation Basis

Vested Termination:

Less Than Five Years of Service

Years of Service	Rate (%)	
	General	Safety
Less than 1	8.00	7.50
1 – 2	6.00	6.00
2 – 3	5.50	4.00
3 – 4	4.50	4.00
4 – 5	4.00	4.00

Five or More Years of Service

Age	Rate (%)	
	General	Safety
20	4.00	3.75
25	4.00	3.75
30	4.00	3.00
35	3.40	2.20
40	3.00	1.40
45	2.55	0.85
50	2.25	0.30
55	2.25	0.00
60	2.25	0.00
65	2.25	0.00
70	0.00	0.00

No vested termination is assumed after a member is first assumed to retire.

Section 4: Actuarial Valuation Basis

Retirement Rates:

Age	Rate (%)					
	General			Safety		
	Plan A Less than 30 Years	Plan A 30 or More Years	Plan B	Plan A Less than 30 Years	Plan A 30 or More Years	Plan B
46	0.0	0.0	0.0	2.0	0.0	0.0
47	0.0	0.0	0.0	2.0	0.0	0.0
48	0.0	0.0	0.0	6.0	6.0	0.0
49	0.0	0.0	0.0	15.0	15.0	0.0
50	5.0	10.0	0.0	18.0	18.0	5.0
51	3.5	10.0	0.0	14.0	16.0	5.0
52	4.5	10.0	3.5	12.0	18.0	4.5
53	5.0	15.0	1.0	14.0	25.0	4.5
54	5.5	20.0	2.0	16.0	50.0	7.5
55	10.0	20.0	2.5	18.0	50.0	16.5
56	8.5	20.0	3.5	25.0	50.0	15.0
57	8.5	20.0	4.5	20.0	50.0	12.0
58	10.0	25.0	5.0	20.0	50.0	16.0
59	18.0	40.0	7.5	20.0	75.0	16.0
60	21.0	40.0	8.0	50.0	75.0	50.0
61	21.0	40.0	12.0	50.0	75.0	50.0
62	27.0	45.0	15.0	50.0	75.0	50.0
63	27.0	45.0	20.0	50.0	75.0	50.0
64	27.0	45.0	25.0	50.0	75.0	50.0
65	32.0	45.0	25.0	100.0	100.0	100.0
66	40.0	45.0	25.0	100.0	100.0	100.0
67	40.0	45.0	25.0	100.0	100.0	100.0
68	40.0	50.0	25.0	100.0	100.0	100.0
69	50.0	50.0	25.0	100.0	100.0	100.0
70	100.0	100.0	100.0	100.0	100.0	100.0

Section 4: Actuarial Valuation Basis

Retirement Age and Benefit for Deferred Vested Members:	<p>For current and future deferred vested members without reciprocity, retirement age assumptions are as follows:</p> <p>General Retirement Age: 58 Safety Retirement Age: 52</p> <p>For current and future deferred vested members with reciprocity, retirement age assumptions are as follows:</p> <p>General Retirement Age: 60 Safety Retirement Age: 55</p> <p>General and Safety deferred vested members who terminate with less than five years of service and are not vested are assumed to retire at age 70 if they decide to leave their contributions on deposit.</p> <p>25% of future General and 35% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 3.55% and 4.00% compensation increases per annum are assumed for General and Safety, respectively.</p>
Future Benefit Accruals:	1.0 year of service per year of employment.
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Inclusion of Deferred Vested Members:	All deferred vested members are included in the valuation.
Definition of Active Members:	First day of employment.
Form of Payment:	All active and inactive members are assumed to elect the unmodified option at retirement.
Percent Married:	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.
Age and Gender of Spouse:	For all active and inactive members, male members are assumed to have a female spouse who is 3 years younger than the member and female members are assumed to have a male spouse who is 2 years older than the member.

Section 4: Actuarial Valuation Basis

Cashouts:	<p>The following assumptions for a one-time compensation increase at retirement from vacation, sick leave and holiday cashouts are used:</p> <p><i>Plan A County Members terminated prior to June 1, 2014:</i></p> <table><tr><td>General Members</td><td>4.00%</td></tr><tr><td>Safety Members</td><td>6.00%</td></tr></table> <p>The following assumptions for a one-time compensation increase at retirement from vacation and holiday cashouts are used:</p> <p><i>General Plan A Court Members:</i></p> <table><tr><td>General Members</td><td>3.25%</td></tr></table> <p><i>Plan A SVFD Members:</i></p> <table><tr><td>General Members</td><td>2.00%</td></tr><tr><td>Safety Members</td><td>2.50%</td></tr></table>	General Members	4.00%	Safety Members	6.00%	General Members	3.25%	General Members	2.00%	Safety Members	2.50%
General Members	4.00%										
Safety Members	6.00%										
General Members	3.25%										
General Members	2.00%										
Safety Members	2.50%										

Actuarial Funding Policy

Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is the age on the valuation date minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation.
Actuarial Value of Assets:	Market Value of Assets less unrecognized returns in each of the last five years. Unrecognized returns are equal to the difference between the actual market return and the expected return on the valuation value and are recognized over a five-year period.
Valuation Value of Assets:	The Actuarial Value of Assets reduced by the value of the non-valuation reserves.
Amortization Policy:	<p>The outstanding balance of the December 31, 2007 UAAL as well as any new UAAL established on each subsequent valuation after December 31, 2007 is amortized over separate 20-year declining periods.</p> <p>The UAAL established as a result of including as pensionable salary a cash allowance of \$3.45 per hour for General-County and Safety-County members is amortized over a 20-year declining period with 5 years remaining as of December 31, 2022.</p>

Section 4: Actuarial Valuation Basis

Cost Sharing Method:

Effective with the December 31, 2007 valuation, a separate Normal Cost rate is calculated for Safety Plan A-County and Safety Plan A-SVFD, based on their respective active member demographics. Likewise, a separate Normal Cost rate has been calculated for Safety Plan B for each of the two employers upon the implementation of that Plan effective January 1, 2013. Any new Safety UAAL for Plan A and Plan B is pooled and then allocated between Safety-County and Safety-SVFD, based on the proportions of their payroll to the total Safety payroll.

Effective with the restatement of the December 31, 2012 contribution rates to reflect the elimination of vacation, sick leave and holiday cashouts for General-County, a separate Normal Cost rate is calculated for General Plan A-County. The Normal Cost rate for General Plan A-Court and General Plan A-SVFD is developed on a pooled basis. Effective with the December 31, 2015 valuation, the Normal Cost rate for General Plan A-SVFD is further adjusted relative to the Normal Cost rate for General Plan A-Court to reflect the different cashouts at the two employers. However, a pooled Normal Cost rate has been calculated for General-Plan B for all three employers upon the implementation of that Plan effective January 1, 2013. Any new General UAAL for Plan A and Plan B is pooled and then allocated between General-County, General-Court and General-SVFD based on the proportions of their payroll to the total General payroll.

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 determined 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 payroll growth rate assumption.

The recommended employer contributions are provided in *Section 2, Subsection F*.

Section 4: Actuarial Valuation Basis

Member Contributions:

Normal Cost

Plan A Members

Articles 6 and 6.8 of the CERL define the methodology to be used in the calculation of member basic contribution rates for General Plan A members and Safety Plan A members, respectively. The basic contribution rate is determined so that the accumulation of a member's basic contributions made in a given year until a certain age will be sufficient to fund an annuity at that age that is equal to 1/100 of Final Average Compensation for General and Safety members. That age is 55 for General members and 50 for Safety members. It is assumed that contributions are made annually at the same rate, starting at entry age. Accumulation includes semi-annual crediting of interest at one-half of the assumed investment earning rate. Active members represented by some of the bargaining groups have agreed to pay additional employee normal cost contributions that are above those determined under the CERL as permitted under CalPEPRA. As the specific amount of those higher contributions are dependent on the specific bargaining agreements, we have continued to include only the minimum member contribution rates in this report. The final member rates adjusted to include the additional employee normal cost contributions will be provided in side letters based on the terms of the bargaining agreements.

Plan B Members

Pursuant to Section 7522.30(a) of the Government Code, CalPEPRA members are required to contribute at least 50% of the Normal Cost rate. We have assumed that exactly 50% of the Normal Cost would be paid by the CalPEPRA members. Also of note is that based on our recommendation, SCERA has decided to use the discretion made available by AB1380 to no longer round the member's contribution rate to the nearest ¼% as previously required by CalPEPRA.

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

Contribution to the Unfunded Actuarial Accrued Liability (UAAL)

General-County and General-Court members (excluding Sonoma Valley Fire District) pay an additional UAAL contribution amount equal to 3.03% of payroll for a 20-year period from July 1, 2004 to June 30, 2024. Safety-County members (excluding Sonoma Valley Fire District) pay an additional UAAL contribution amount equal to 3.00% of payroll from February 1, 2005 through the last pay period in June 2023. These rates are subtracted from the employer's UAAL rates, after adjustment for refundability.

Subsequent to the initial arrangements, the County negotiated the Salary Resolution, ESC, DSA, DSLEM, SCDPPA, SCLEA, SCLEMA and SCPDIA bargaining agreements to state that Plan A members covered under those groups will continue to pay the applicable additional UAAL contribution, as stated above, until they end their employment with the County.

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.

Plan A 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.

Plan A contribution rates determined in this valuation have not been reduced for the Section 415 limitations. Actual limitations will result in gains as they occur.

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.

Plan Year:	January 1 through December 31
Membership Eligibility:	All permanent employees of the County of Sonoma or participating district, scheduled to work at least 50% of a full-time position are eligible to become a member of the Retirement Association.
<i>Plan A</i>	All General and Safety members with membership dates before January 1, 2013.
<i>Plan B</i>	All General and Safety members with membership dates on or after January 1, 2013, without reciprocity eligibility.
Final Compensation for Benefit Determination:	
<i>Plan A</i>	Highest consecutive one year of compensation earnable (§31462.1)(FAC1).
<i>Plan B</i>	Highest consecutive three years of pensionable compensation (§7522.10(c), §7522.32 and §7522.34)(FAC3).
Compensation Limit:	
<i>Plan A</i>	For members with membership dates on or after July 1, 1996, compensation earnable is limited by Internal Revenue Code Section 401(a)(17). The limit for 2023 is \$330,000. The limit is indexed for inflation on an annual basis.
<i>Plan B</i>	Pensionable compensation is limited to \$146,042 for 2023 for an employer that is enrolled in Social Security. For an employer that is not enrolled in Social Security, the maximum amount for 2023 is 120% of \$146,042, or \$175,250. (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2023. (reference: Section 7522.10(d)).
Service:	Years of service (Yrs) are generally based on a member's employment during a period of time for which deductions are made from their compensation.

Section 4: Actuarial Valuation Basis

Service Retirement Eligibility:

General

Plan A

Age 50 with 10 years of service credit, or age 70 regardless of service credit, or after 30 years of service credit regardless of age (§31672).

Plan B

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

Safety

Plan A

Age 50 with 10 years of service credit, or age 70 regardless of service credit, or after 20 years of service credit regardless of age (§31663.25).

Plan B

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

Section 4: Actuarial Valuation Basis

Benefit Formula:

*General Plan A – County
 (§31676.17)*

Retirement Age

Benefit Formula

50

2.00% x (FAC1 – \$1,400) x Yrs

55

2.50% x (FAC1 – \$1,400) x Yrs

60 and over

3.00% x (FAC1 – \$1,400) x Yrs

General Plan A – Court (§31676.17)

Retirement Age

Benefit Formula

50

2.00% x (FAC1 – \$1,400) x Yrs

55

2.50% x (FAC1 – \$1,400) x Yrs

60 and over

3.00% x (FAC1 – \$1,400) x Yrs

*General Plan A – Sonoma Valley
 Fire District (§31676.17)*

Retirement Age

Benefit Formula

50

2.00% x FAC1 x Yrs

55

2.50% x FAC1 x Yrs

60 and over

3.00% x FAC1 x Yrs

General Plan B (§7522.20(a))

Retirement Age

Benefit Formula

52

1.00% x FAC3 x Yrs

55

1.30% x FAC3 x Yrs

60

1.80% x FAC3 x Yrs

62

2.00% x FAC3 x Yrs

65

2.30% x FAC3 x Yrs

67 and over

2.50% x FAC3 x Yrs

Safety Plan A – County (§31664.1)

Retirement Age

Benefit Formula

50 and over

3.00% x (FAC1 – \$1,400) x Yrs

*Safety Plan A – Sonoma Valley Fire
 District (§31664.1)*

Retirement Age

Benefit Formula

50 and over

3.00% x FAC1 x Yrs

Safety Plan B (§7522.25(d))

Retirement Age

Benefit Formula

50

2.00% x FAC3 x Yrs

55

2.50% x FAC3 x Yrs

57 and over

2.70% x FAC3 x Yrs

Section 4: Actuarial Valuation Basis

Maximum Benefit:	
<i>Plan A</i>	100% of Final Average Compensation (§31676.17, §31664.1).
<i>Plan B</i>	None.
Non-Service Connected Disability:	
<i>General Plan A Members</i>	
<i>Eligibility</i>	Five years of service (§31720).
<i>Benefit Formula</i>	1.8% of Final Average Compensation per year of service. If the benefit does not exceed one-third of Final Average Compensation, the service is projected to 62, but the total projected benefit cannot be more than one-third of Final Average Compensation (§31727.1). The Service Retirement benefit is payable, if greater.
<i>Safety Plan A Members</i>	
<i>Eligibility</i>	Five years of service (§31720).
<i>Benefit Formula</i>	1.8% of Final Average Compensation per year of service. If the benefit does not exceed one-third of Final Average Compensation, the service is projected to 55, but the total projected benefit cannot be more than one-third of Final Average Compensation (§31727.2). The Service Retirement benefit is payable, if greater.
<i>All Plan B Members</i>	
<i>Eligibility</i>	Five years of service (§31720).
<i>Benefit Formula</i>	1.5% of Final Average Compensation per year of service. If the benefit does not exceed one-third of Final Average Compensation, the service is projected to 65, but the total projected benefit cannot be more than one-third of Final Average Compensation (§31727.3). The Service Retirement benefit is payable, if greater.
Service Connected Disability:	
<i>All Members</i>	
<i>Eligibility</i>	No age or service requirements (§31720).
<i>Benefit Formula</i>	50% of the Final Average Compensation or 100% of Service Retirement benefit, if larger (§31727.4).

Section 4: Actuarial Valuation Basis

Pre-Retirement Death:	
<i>All Members</i>	
<i>Eligibility</i>	None.
<i>Basic lump sum benefit</i>	Refund of employee contributions with interest, plus one month's compensation for each year of service, to a maximum of six months' compensation (§37181).
<i>Service Connected Death</i>	50% of Final Compensation or 100% of Service Retirement benefit, if greater, payable to spouse or registered domestic partner (§31787).
<i>Vested Members</i>	
<i>Eligibility</i>	Five years of service.
<i>Basic benefit</i>	60% of the greater of Service Retirement or Non-Service Connected Disability benefit payable to surviving eligible spouse or registered domestic partner (§31765.1, §31781.1), in lieu of the basic lump sum benefit above.
<i>Service Connected Death</i>	50% of Final Compensation or 100% of Service Retirement benefit, if greater, payable to spouse or registered domestic partner (§31787).
Death After Retirement:	
<i>All Members</i>	
<i>Service Retirement or Non Service Connected Disability Retirement</i>	Unless another option was selected at retirement, 60% of member's unmodified allowance continued to eligible spouse or registered domestic partner (§31760.1).
<i>Service Connected Disability Retirement</i>	Unless another option was selected at retirement, 100% of member's unmodified allowance continued to eligible spouse or registered domestic partner (§31786).
Withdrawal Benefits:	
<i>Less than Five Years of Service</i>	Refund of accumulated employee contributions with interest, or benefit at age 70 (§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, eligible for retirement benefits at any time after eligible to retire (§31700).

Section 4: Actuarial Valuation Basis

Member Contributions:	Please refer to <i>Section 4, Exhibit 3</i> for specific rates.
<i>General Plan A</i>	Entry-age based rates that provide for an annuity at age 55 equal to 1/100 of FAC1. (\$31621.8)
<i>General Plan B</i>	50% of the total Normal Cost rate.
<i>Safety Plan A</i>	Entry-age based rates that provide for an annuity at age 50 equal to 1/100 of FAC1. (\$31639.25)
<i>Safety Plan B</i>	50% of the total Normal Cost rate.
Additional Contributions	
<i>General – County & Courts</i>	An additional UAAL contribution amount equal to 3.03% of payroll will be paid from July 1, 2004 to June 30, 2024.
<i>Safety – County</i>	An additional UAAL contribution amount equal to 3.00% of payroll will be paid from February 1, 2005 through the last pay period in June 2023.
<i>Subsequent Arrangements</i>	Subsequent to the initial arrangement, the County negotiated the Salary Resolution, ESC, DSA, DSLEM, SCDPPA, SCLEA, SCLEMA and SCPDIA bargaining agreements to state that General and Safety Plan A members covered under those groups will continue to pay the additional UAAL contribution until they end their employment with the County.
Other Information:	Safety Plan A members with 30 or more years of service are exempt from paying member contributions. The same applies for General Plan A members hired on or before March 7, 1973. This exemption does not apply to the additional UAAL contributions, which will be continued to be paid in accordance with the details above.
Changes in Plan Provisions:	There have been no changes in plan provisions since the prior valuation.

Section 4: Actuarial Valuation Basis

Exhibit 3: Member Contribution Rates

Comparison of Total Member Rate¹ from December 31, 2022 (New) and December 31, 2021 (Current) Valuations:

General Plan A – County ²			
Entry Age	Current	New	Change
25	8.13%	8.13%	0.00%
35	9.79%	9.79%	0.00%
45	11.75%	11.75%	0.00%

Safety Plan A – County ³			
Entry Age	Current	New	Change
25	9.74%	9.74%	0.00%
35	11.43%	11.43%	0.00%
45	13.50%	13.50%	0.00%

General Plan A – Court			
Entry Age	Current	New	Change
25	8.39%	8.39%	0.00%
35	10.09%	10.09%	0.00%
45	12.09%	12.09%	0.00%

Safety Plan A – SVFD			
Entry Age	Current	New	Change
25	9.98%	9.98%	0.00%
35	11.70%	11.70%	0.00%
45	13.76%	13.76%	0.00%

General Plan A – SVFD			
Entry Age	Current	New	Change
25	8.29%	8.29%	0.00%
35	9.97%	9.97%	0.00%
45	11.96%	11.96%	0.00%

Safety Plan B – County			
Entry Age	Current	New	Change
Any ⁴	13.27%	13.64%	0.37%

General Plan B			
Entry Age	Current	New	Change
Any ⁴	7.68%	7.74%	0.06%

Safety Plan B – SVFD			
Entry Age	Current	New	Change
Any ⁴	14.00%	13.87%	-0.13%

¹ For Plan A integrated members, contributions for the first \$350 of monthly payroll are based on 2/3 of the above rates.

² Rates exclude an additional UAAL contribution rate of 3.03% of payroll for County members only. The additional UAAL contribution rate is payable in accordance with bargaining agreements that vary by bargaining unit.

³ Rates exclude an additional UAAL contribution rate of 3.00% of payroll for County members only.

⁴ Plan B member rates are independent of entry age.

Section 4: Actuarial Valuation Basis

Exhibit 3: Member Contribution Rates (continued)

General Members' Contribution Rates Based on the December 31, 2022 Actuarial Valuation
(as a % of monthly payroll)

Entry Age	General – Plan A				
	County		Court		SVFD
	First \$350 ¹	Over \$350	First \$350 ¹	Over \$350	All Eligible Pay
16	4.59%	6.89%	4.74%	7.11%	7.02%
17	4.68%	7.02%	4.83%	7.24%	7.15%
18	4.77%	7.15%	4.92%	7.38%	7.29%
19	4.85%	7.28%	5.01%	7.51%	7.43%
20	4.95%	7.42%	5.10%	7.66%	7.56%
21	5.04%	7.56%	5.20%	7.80%	7.70%
22	5.13%	7.70%	5.30%	7.94%	7.85%
23	5.23%	7.84%	5.39%	8.09%	7.99%
24	5.32%	7.99%	5.49%	8.24%	8.14%
25	5.42%	8.13%	5.60%	8.39%	8.29%
26	5.52%	8.29%	5.70%	8.55%	8.45%
27	5.63%	8.44%	5.80%	8.71%	8.60%
28	5.73%	8.60%	5.91%	8.87%	8.76%
29	5.84%	8.75%	6.02%	9.03%	8.93%
30	5.95%	8.92%	6.13%	9.20%	9.09%
31	6.06%	9.08%	6.25%	9.37%	9.26%
32	6.17%	9.25%	6.36%	9.54%	9.43%
33	6.28%	9.43%	6.48%	9.72%	9.61%
34	6.40%	9.60%	6.60%	9.90%	9.79%
35	6.52%	9.79%	6.73%	10.09%	9.97%
36	6.65%	9.97%	6.86%	10.28%	10.16%
37	6.78%	10.17%	6.99%	10.48%	10.36%
38	6.91%	10.36%	7.12%	10.68%	10.56%
39	7.05%	10.57%	7.26%	10.89%	10.77%

¹ For integrated members only.

Section 4: Actuarial Valuation Basis

Exhibit 3: Member Contribution Rates (continued)

General – Plan A (continued)					
Entry Age	County		Court		SVFD
	First \$350 ¹	Over \$350	First \$350 ¹	Over \$350	All Eligible Pay
40	7.17%	10.76%	7.39%	11.09%	10.96%
41	7.31%	10.96%	7.53%	11.30%	11.17%
42	7.45%	11.17%	7.67%	11.51%	11.38%
43	7.57%	11.36%	7.80%	11.70%	11.57%
44	7.71%	11.56%	7.94%	11.91%	11.77%
45	7.83%	11.75%	8.06%	12.09%	11.96%
46	7.96%	11.94%	8.19%	12.29%	12.16%
47	8.11%	12.16%	8.34%	12.50%	12.37%
48	8.24%	12.36%	8.47%	12.71%	12.58%
49	8.36%	12.54%	8.59%	12.88%	12.75%
50	8.46%	12.69%	8.68%	13.01%	12.89%
51	8.50%	12.75%	8.71%	13.06%	12.94%
52	8.49%	12.73%	8.67%	13.00%	12.90%
53	8.41%	12.62%	8.55%	12.82%	12.75%
54 & Over	8.37%	12.55%	8.37%	12.55%	12.55%

Interest: 6.75% per annum

COLA: 0.00%

Mortality: See *Section 4, Exhibit 1*

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

Note: The above rates exclude an additional UAAL contribution rate of 3.03% of payroll for County members. The additional UAAL contribution rate is payable in accordance with bargaining agreements that vary by bargaining unit.

¹ For integrated members only.

Section 4: Actuarial Valuation Basis

Exhibit 3: Member Contribution Rates (continued)

General Members' Contribution Rates Based on the December 31, 2022 Actuarial Valuation
(as a % of monthly payroll)

General – Plan B	
Entry Age	All Eligible Pay ¹
All Members	7.74%

Interest: 6.75% per annum

COLA: 0.00%

Mortality: See *Section 4, Exhibit 1*

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

¹ It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the maximum compensation that can be taken into account for 2023 is equal to \$146,042; for an employer that is not enrolled in Social Security, the maximum amount is \$175,250 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2023 (reference: Section 7522.10(d)).

Section 4: Actuarial Valuation Basis

Exhibit 3: Member Contribution Rates (continued)

Safety Members' Contribution Rates Based on the December 31, 2022 Actuarial Valuation
(as a % of monthly payroll)

Entry Age	Safety – Plan A		
	County		SVFD
	First \$350 ¹	Over \$350	All Eligible Pay
16	5.65%	8.47%	8.68%
17	5.74%	8.61%	8.82%
18	5.83%	8.74%	8.95%
19	5.92%	8.88%	9.09%
20	6.01%	9.01%	9.23%
21	6.10%	9.16%	9.38%
22	6.20%	9.30%	9.52%
23	6.30%	9.44%	9.67%
24	6.39%	9.59%	9.82%
25	6.49%	9.74%	9.98%
26	6.60%	9.89%	10.13%
27	6.70%	10.05%	10.29%
28	6.80%	10.21%	10.45%
29	6.91%	10.37%	10.62%
30	7.02%	10.53%	10.79%
31	7.14%	10.70%	10.96%
32	7.25%	10.88%	11.14%
33	7.37%	11.06%	11.32%
34	7.49%	11.24%	11.51%
35	7.62%	11.43%	11.70%
36	7.75%	11.63%	11.90%
37	7.87%	11.81%	12.09%
38	8.00%	12.00%	12.27%
39	8.13%	12.20%	12.47%

¹ For integrated members only.

Section 4: Actuarial Valuation Basis

Exhibit 3: Member Contribution Rates (continued)

Entry Age	Safety – Plan A (continued)		
	County		SVFD
	First \$350 ¹	Over \$350	All Eligible Pay
40	8.27%	12.41%	12.69%
41	8.42%	12.63%	12.91%
42	8.59%	12.88%	13.16%
43	8.76%	13.13%	13.41%
44	8.93%	13.40%	13.67%
45	9.00%	13.50%	13.76%
46	9.01%	13.52%	13.77%
47	9.01%	13.52%	13.74%
48	8.86%	13.29%	13.45%
49 & Over	8.71%	13.06%	13.06%

Interest: 6.75% per annum

COLA: 0.00%

Mortality: See *Section 4, Exhibit 1*

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

Note: The above rates exclude an additional UAAL contribution rate of 3.00% of payroll for County members.

¹ For integrated members only.

Section 4: Actuarial Valuation Basis

Exhibit 3: Member Contribution Rates (continued)

Safety Members' Contribution Rates Based on the December 31, 2022 Actuarial Valuation
(as a % of monthly payroll)

Safety – Plan B			
County		SVFD	
Entry Age	All Eligible Pay ¹	Entry Age	All Eligible Pay ¹
All Members	13.64%	All Members	13.87%

Interest: 6.75% per annum

COLA: 0.00%

Mortality: See *Section 4, Exhibit 1*

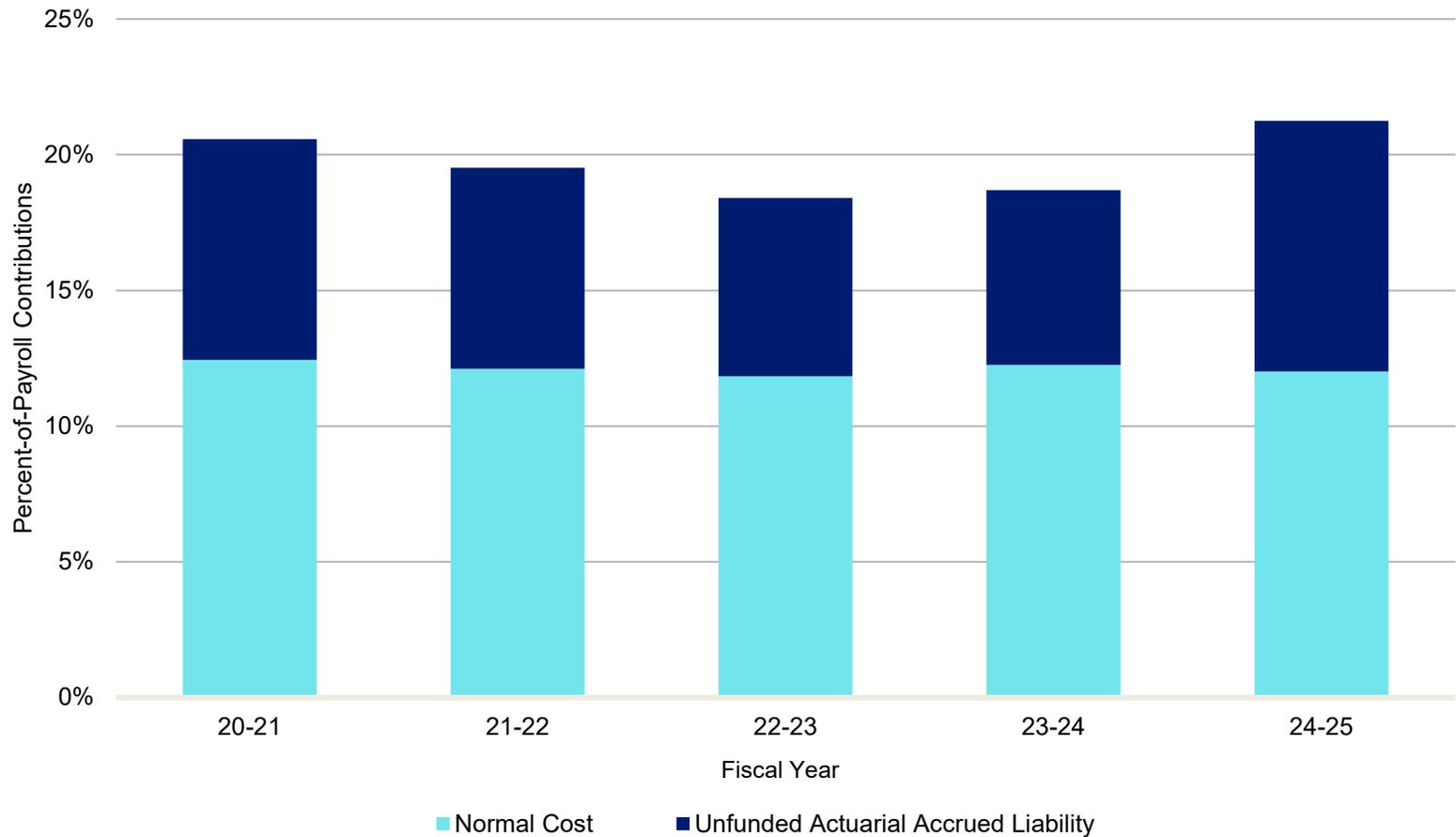
Salary Increase: Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)

¹ It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the maximum compensation that can be taken into account for 2023 is equal to \$146,042; for an employer that is not enrolled in Social Security, the maximum amount is \$175,250 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2023 (reference: Section 7522.10(d)).

Section 4: Actuarial Valuation Basis

Exhibit 4: Average Employer Contribution Rates

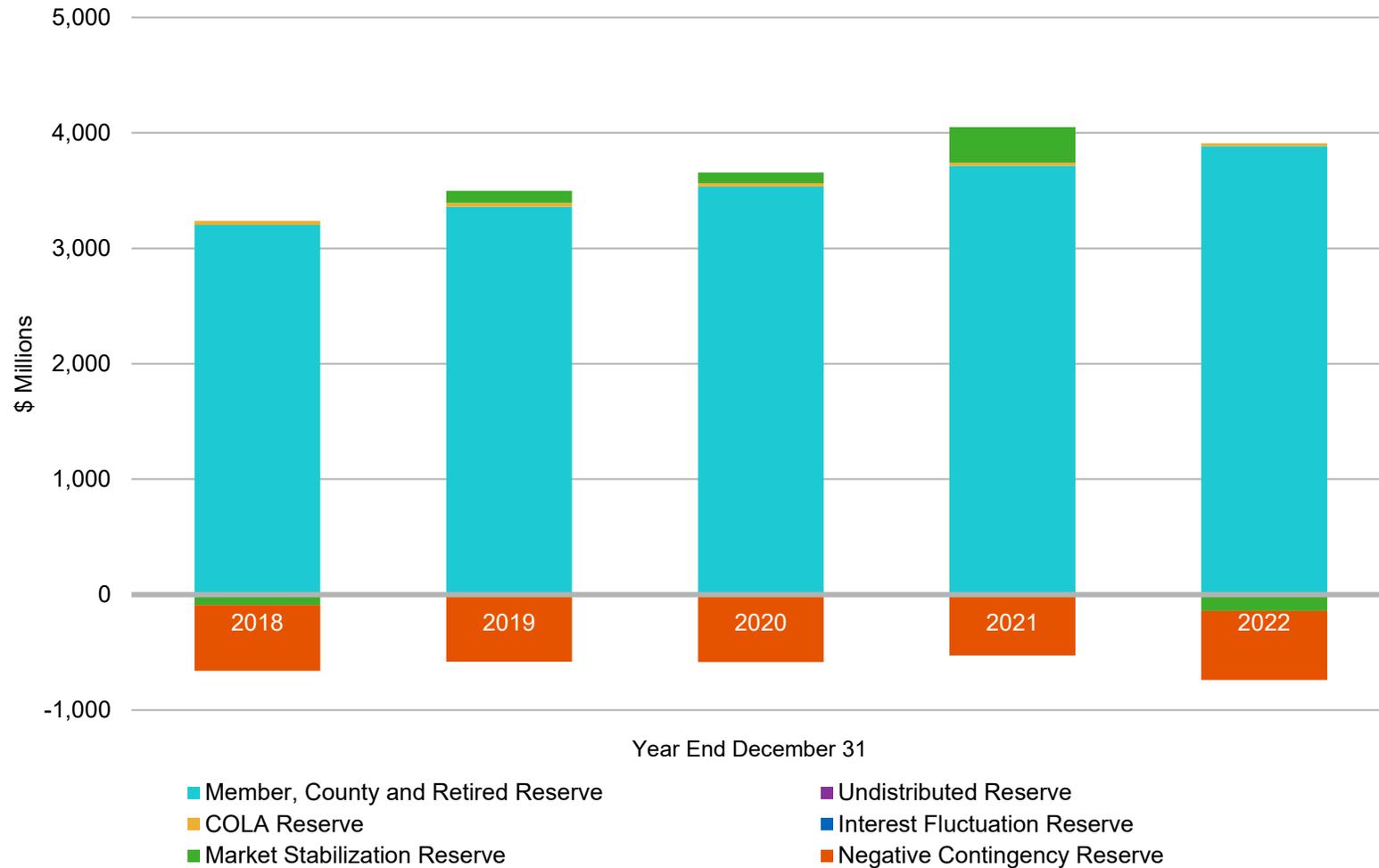
The following chart displays the historical and future average employer contribution rates, broken down by normal cost and unfunded actuarial accrued liability. These rates have not been adjusted for any contribution rate phase-in (if applicable).



Section 4: Actuarial Valuation Basis

Exhibit 5: Reserves

The following chart displays the 5-year historical reserves balance after “true-up”.



Section 4: Actuarial Valuation Basis

Exhibit 6: Schedule of Employer Contributions

Plan Year Ended December 31	Annual Required Contributions	Actual Contributions	Percentage Contributed
2013	\$51,852,000 ¹	\$51,852,000	100.0% ¹
2014	61,179,000 ²	61,179,000	100.0% ²
2015	64,687,000	68,240,000	105.5%
2016	63,640,000	63,640,000	100.0%
2017	63,822,000	63,822,000	100.0%
2018	67,425,000	67,425,000	100.0%
2019	65,155,000	65,155,000	100.0%
2020	70,784,000	77,506,000	109.5%
2021	73,142,000	74,953,000	102.5%
2022	70,965,925	76,562,193	107.9%

Note: Reference to GASB is under the old Statements 25 and 27.

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¹ Determined using an amortization period of about 27 years (an amortization period of up to 30 years was allowed by GASB).

² Determined using an amortization period of about 28 years (an amortization period of up to 30 years was allowed by GASB).