Sonoma County Employees' Retirement Association

Actuarial Valuation and Review

As of December 31, 2021

Segal

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April 29, 2022

Board of Retirement
Sonoma County Employees' Retirement Association
433 Aviation Boulevard, Suite 100
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Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of December 31, 2021. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for fiscal year 2023-2024.

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

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

Andy Yeung, ASA, MAAA, FCA, EA
Vice President and 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, 2021. 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, 2021, provided by the Retirement Association;
- The assets of the Plan as of December 31, 2021, provided by the Retirement Association;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board of Retirement for the December 31, 2021 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Board of Retirement for the December 31, 2021 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 February 20, 2020. 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 59. 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, 2023 through June 30, 2024.

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 in side letters based on the terms of the bargaining agreements.

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2. The results of this valuation reflect changes in the economic and demographic assumptions as recommended by Segal and adopted by the Board for the December 31, 2021 valuation. These changes, which included reductions in assumed net investment return and price inflation, were documented in our Actuarial Experience Study and are also outlined in *Section 4, Exhibit 1* of this report. These assumption changes increased the UAAL by $96.8 million and resulted in an increase in the average employer rate of 2.38% of payroll and an increase in the aggregate member rate of 0.53% of payroll. Out of the 2.38% of payroll increase in average employer rate, 0.69% is an increase in the Normal Cost rate and 1.69% is an increase in the UAAL rate.

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3. The ratio of the Valuation Value of Assets to Actuarial Accrued Liabilities increased from 91.3% to 92.9%. 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 increased from 94.2% to 101.8%. 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.

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4. The Association's UAAL decreased from $282.7 million as of December 31, 2020 to $244.5 million as of December 31, 2021. The decrease in UAAL is primarily due to investment return (after "smoothing") higher than the 7.00% return assumption used in the December 31, 2020 valuation as well as the County's additional UAAL contributions ($1.7 million made on June 30, 2021 and $85.2 thousand made on August 11, 2021)[1] offset to some extent by the increase in UAAL as a result of the assumption changes. 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*. A graphical projection of the UAAL amortization bases and payments is provided in *Section 3, Exhibit I*.

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5. The actuarial gain from all sources is $115.5 million, or 3.3% of actuarial accrued liability. The net experience gain from sources other than investment and contribution experience of $12.5 million was 0.4% of the actuarial accrued liability. This net gain was primarily due to individual salary increases lower than expected.

[1] These amounts when adjusted with interest at the assumed earnings rate of 7.0% total to $1.9 million as of December 31, 2021. 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, 2021 for the assumption changes).

Section 1: Actuarial Valuation Summary

Pg. 32 6. The average employer contribution rate calculated in this valuation increased from 18.11% of payroll to 18.69% of payroll. This change was due to: (i) the change in actuarial assumptions offset to some degree by, (ii) investment return (after "smoothing") higher than the 7.00% return assumption used in the December 31, 2021 valuation. A complete reconciliation of the Association's aggregate employer rate is provided in *Section 2, Subsection F*.

Pg. 33 7. The average member contribution rate calculated in this valuation increased from 11.73% to 12.19% of payroll. This change was due to the assumption changes and demographic changes offset to some degree by the sunset of additional UAAL contributions for members covered under certain bargaining agreements, as further discussed on the following page. A complete reconciliation of the Association's average member rate is provided in *Section 2, Subsection F*.

Pg. 25 8. The rate of return on the Market Value of Assets was 17.09% for the 2021 plan year. The return on the Actuarial Value of Assets was 10.36% for the same period after considering the recognition of prior years' investment gains and losses. This resulted in an actuarial gain when measured against the assumed rate of return of 7.00%. This actuarial investment gain decreased the average employer contribution rate by 1.73% of payroll.

Pg. 22 9. As indicated in *Section 2, Subsection B* of this report, the total unrecognized investment gain as of December 31, 2021 was $305.9 million (as compared to an unrecognized gain of $92.0 million in the December 31, 2020 valuation). This investment gain 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 losses that may occur after December 31, 2021. 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 gains 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 decrease over the next few years. The potential impact associated with the net deferred investment gains may be illustrated as follows:

   a. If the net deferred gains in this year's valuation were recognized immediately and entirely in the Actuarial Value of Assets, the funded ratio would increase from 92.9% to 101.8%.

      For comparison purposes, if all the net deferred gains in the December 31, 2020 valuation had been recognized immediately in the December 31, 2020 valuation, the funded ratio in last year's valuation would have increased from 91.3% to 94.2%.

   b. If the net deferred gains in this year's valuation were recognized immediately and entirely in the Actuarial Value of Assets, the aggregate employer contribution rate would decrease from 18.7% of payroll to 12.3%[1] of payroll, which is equal to the aggregate employer normal cost contribution rate.

      For comparison purposes, if all the net deferred gains in the December 31, 2020 valuation had been recognized immediately in the December 31, 2020 valuation, the aggregate employer contribution rate in last year's valuation would have decreased from 18.4% of payroll to 16.8% of payroll.

[1] For purposes of this illustration, we have not reflected the amount of additional UAAL contributions (if any) that may be made by the employees belonging to the bargaining units which have agreed to pay such contributions.

10. The actuarial valuation report as of December 31, 2021 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.

11. 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, the County negotiated that 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]

    Effective July 1, 2024 (i.e., the contribution rate which will be determined based on the actuarial valuation as of December 31, 2022), the employer UAAL contribution rate will increase to reflect those General-County and General-Court Plan A and Plan B members whose 3.03% additional UAAL contribution rate will expire in June 2024.

12. 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[2].

    Subsequent to the initial arrangement, the County negotiated that 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.[3]

    Effective with the first pay period in July 2023 (i.e., the contribution rate which is determined based on this actuarial valuation as of December 31, 2021), the employer UAAL contribution rate has increased to reflect Safety-County Plan B members covered under the DSA and DSLEM bargaining agreements whose 3.00% additional UAAL contribution rate will expire in June 2023.

    Effective with the first pay period in July 2024 (i.e., the contribution rate which will be determined based on the actuarial valuation as of December 31, 2022), the employer UAAL contribution rate will increase to reflect Safety-County Plan B members covered under the Salary Resolution, SCLEA and SCLEMA bargaining agreements whose 3.00% additional UAAL contribution rate will expire in June 2024.

[1] Approximately 17% of the General members are affected by the arrangement.
[2] In prior valuations it was assumed that all Safety-County members whose additional UAAL contributions that are expected to sunset would do so in the last pay period in June 2023. Shortly before the finalization of this valuation, we were informed that only members covered under DSA and DSLEM would sunset in June 2023, and all other Safety-County members would sunset in June 2024. The liabilities contained throughout this report do not reflect the value of the potential refund of the additional 3.00% UAAL contributions made by Plan B members under SCELA, SCLEMA & Salary Resolution for the 2023-2024 year, and the value of which would not have a material impact on this report.
[3] Approximately 54% of the Safety members are affected by the arrangement.

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13. 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.

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14. The Actuarial Standards Board approved Actuarial Standard of Practice No. 51 (ASOP 51) regarding risk assessment, which was first effective with SCERA's December 31, 2018 actuarial valuation. 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.

    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.

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

16. 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, 2021, 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 contributions described in item 1 above.

Section 1: Actuarial Valuation Summary

17. It is important to note that this actuarial valuation is based on plan assets as of December 31, 2021. Due to the COVID-19 pandemic, market conditions have changed significantly since the onset of the Public Health Emergency. 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, 2021. While it is impossible to determine how the pandemic will affect market conditions and other demographic experience of the plan in future valuations, Segal is available to prepare projections of potential outcomes upon request.

Summary of Key Valuation Results

		December 31, 2021 Total Rate	December 31, 2021 Estimated Annual Dollar Amount[1] ($ in '000s)	December 31, 2020 Total Rate	December 31, 2020 Estimated Annual Dollar Amount[1] ($ in '000s)
Employer Contribution Rates:	• General Plan A – County	18.23%	$28,425	18.24%	$28,440
	• General Plan A – Court	33.65%	2,400	32.21%	2,298
	• General Plan A – Sonoma Valley Fire District	17.96%	18	16.61%	16
	• General Plan B – County	12.74%	20,087	13.08%	20,623
	• General Plan B – Court	27.67%	1,653	26.52%	1,584
	• General Plan B – Sonoma Valley Fire District	11.86%	22	10.80%	20
	• Safety Plan A – County	32.44%	15,139	28.75%	13,417
	• Safety Plan A – Sonoma Valley Fire District	38.42%	1,593	35.22%	1,460
	• Safety Plan B – County	22.93%	6,389	20.05%	5,587
	• Safety Plan B – Sonoma Valley Fire District	22.13%	580	20.11%	527
	All Categories Combined	**18.69%**	**$76,306**	**18.11%**	**$73,972**
Average Member Contribution Rates:[2]	• General Plan A – County[3]	12.82%	$19,989	12.20%	$19,022
	• General Plan A – Court[3]	12.93%	922	12.35%	881
	• General Plan A – Sonoma Valley Fire District[3]	11.57%	12	10.82%[4]	11
	• General Plan B – County	10.71%	16,886	10.43%	16,445
	• General Plan B – Court	10.71%	639	10.43%	623
	• General Plan B – Sonoma Valley Fire District	7.68%	14	7.40%	14
	• Safety Plan A – County[3]	13.37%	6,240	12.60%[5]	5,880
	• Safety Plan A – Sonoma Valley Fire District[3]	11.90%	493	11.17%[6]	463
	• Safety Plan B – County – Without UAAL Sunset	16.27%	2,839	15.18%	4,230
	• Safety Plan B – County – With UAAL Sunset	13.27%	1,382	N/A	N/A
	• Safety Plan B – Sonoma Valley Fire District	14.00%	367	12.94%	339
	All Categories Combined	**12.19%**	**$49,783**	**11.73%**	**$47,908**

[1] Based on December 31, 2021 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.
[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	34	Safety – Sonoma Valley Fire District	36
General Plan A – Sonoma Valley Fire District	43		

[4] This is the contribution rate calculated in the December 31, 2020 valuation but using an average entry age of 43, reflecting the demographics as of December 31, 2021. In the December 31, 2020 valuation, the average entry age was 49 and the corresponding rate at that age was 12.06%.
[5] This is the contribution rate calculated in the December 31, 2020 valuation but using an average entry age of 29, reflecting the demographics as of December 31, 2021. In the December 31, 2020 valuation, the average entry age was 30 and the corresponding rate at that age was 12.77%.
[6] This is the contribution rate calculated in the December 31, 2020 valuation but using an average entry age of 36, reflecting the demographics as of December 31, 2021. In the December 31, 2020 valuation, the average entry age was 35 and the corresponding rate at that age was 10.99%.

Summary of Key Valuation Results (continued)

		December 31, 2021 ($ in '000s)	December 31, 2020 ($ in '000s)
Actuarial Accrued Liability as of December 31:	• Retired members and beneficiaries	$2,144,203	$2,016,270
	• Inactive vested members[1]	130,186	119,365
	• Active members	1,185,662	1,128,768
	• Total Actuarial Accrued Liability	$3,460,051	$3,264,403
	• Normal Cost for plan year beginning December 31	$86,414	$82,225
Assets as of December 31:	• Market Value of Assets (MVA)	$3,521,361	$3,073,675
	• Actuarial Value of Assets (AVA)	3,215,505	2,981,688
	• Actuarial Value of Assets as a percentage of Market Value of Assets	91.31%	97.01%
	• Valuation Value of Assets (VVA)[2]	3,215,505	2,981,688
Funded status as of December 31:	• Unfunded Actuarial Accrued Liability on Market Value of Assets basis	($61,310)	$190,728
	• Funded percentage on MVA basis	101.77%	94.16%
	• Unfunded Actuarial Accrued Liability on Valuation Value of Assets basis	$244,546	$282,715
	• Funded percentage on VVA basis	92.93%	91.34%
	• Amortization period[3]	20 Years	20 Years
Key assumptions:	• Net investment return	6.75%	7.00%
	• Price inflation	2.50%	2.75%
	• Payroll growth increase	3.00%	3.25%

[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.

Summary of Key Valuation Results (continued)

		December 31, 2021	December 31, 2020	Change From Prior Year
Demographic data as of December 31:	**Active Members:**			
	• Number of members	4,066	4,090	-0.6%
	• Average age	45.2	45.3	-0.1
	• Average service	9.7	9.7	0.0
	• Total projected compensation	$408,278,337	$400,561,892	1.9%
	• Average projected compensation	$100,413	$97,937	2.5%
	Retired Members and Beneficiaries:			
	• Number of members:			
	– Service retired	4,169	4,054	2.8%
	– Disability retired	652	645	1.1%
	– Beneficiaries	657	648	1.4%
	– Total	5,478	5,347	2.4%
	• Average age	69.6	69.3	0.3
	• Average monthly benefit	$2,991	$2,943	1.6%
	Inactive Vested Members:			
	• Number of members[1]	1,569	1,445	8.6%
	• Average age	45.1	45.3	-0.2
	Total Members:	11,113	10,882	2.1%

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

Important Information About Actuarial Valuations

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

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

Plan of benefits	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 data	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.
Assets	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. 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 of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan. Future contribution requirements may differ from those determined in the valuation because of: • Differences between actual experience and anticipated experience; • Changes in actuarial assumptions or methods; • Changes in statutory provisions; and • Differences between the contribution rates determined by the valuation and those adopted by the Board.[1]
Some actuarial results in this report are not rounded, but that does not imply precision.
If the Association is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Association should look to their other advisors for expertise in these areas.

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: 2012 – 2021

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
2012	3,620	876	4,258	5,134	1.42	1.18
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

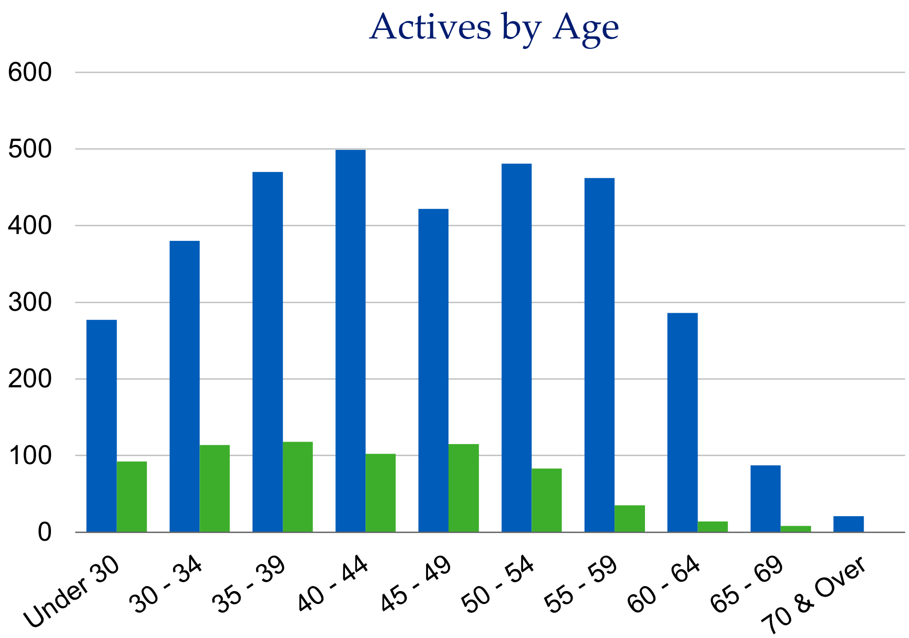
[1] Includes inactive members due a refund of member contributions.

Active Members

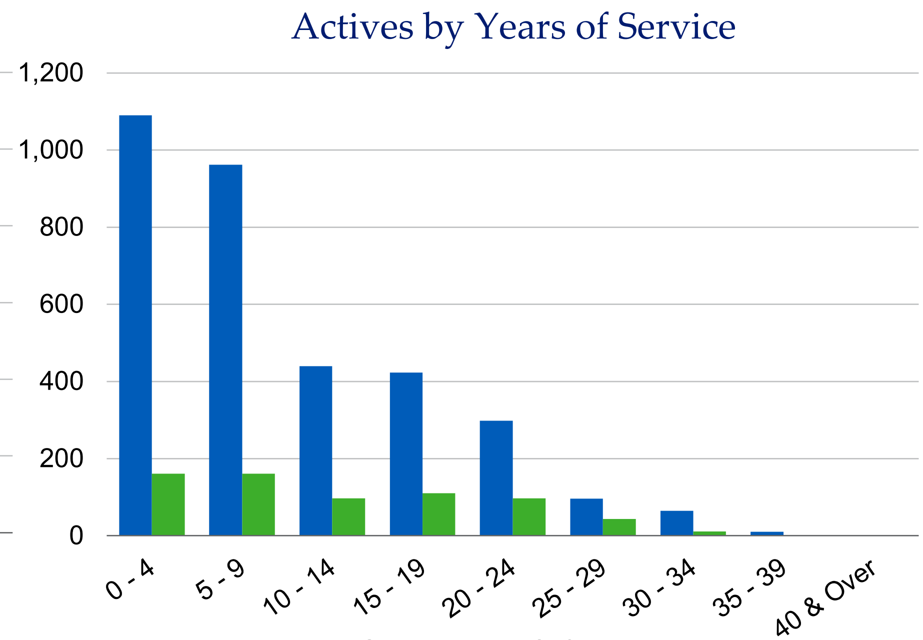
Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 4,066 active members with an average age of 45.2, average years of service of 9.7 years and average compensation of $100,413. The 4,090 active members in the prior valuation had an average age of 45.3, average service of 9.7 years and average compensation of $97,937.

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

Distribution of Active Members as of December 31, 2021



Average age	45.2
Prior year average age	45.3
Difference	-0.1



Average years of service	9.7
Prior year average years of service	9.7
Difference	0.0

Inactive Members

In this year's valuation, there were 1,569 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 1,445 in the prior valuation.

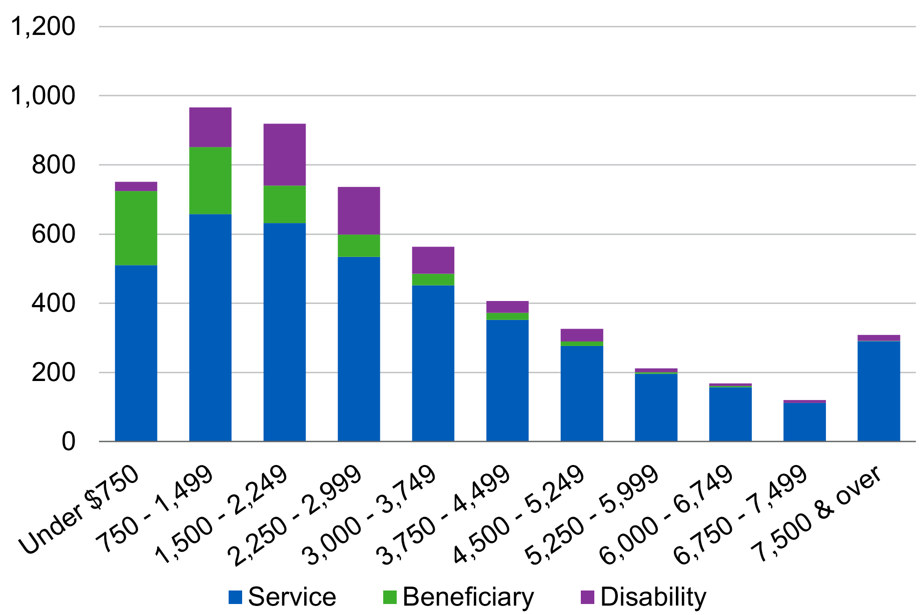
Retired Members and Beneficiaries

As of December 31, 2021, 4,821 retired members and 657 beneficiaries were receiving total monthly benefits of $16,384,835. For comparison, in the previous valuation, there were 4,699 retired members and 648 beneficiaries receiving monthly benefits of $15,734,741.

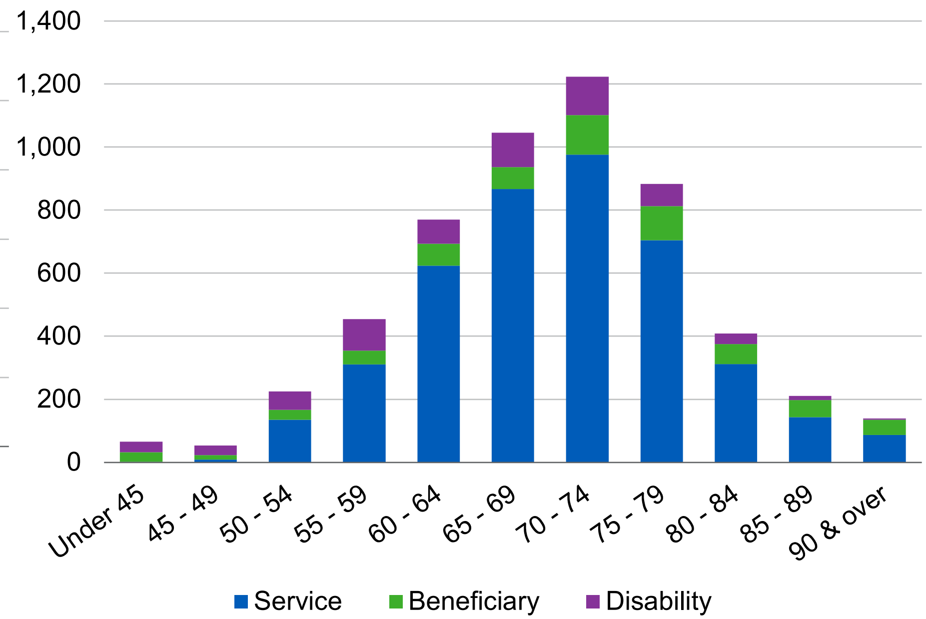
As of December 31, 2021, the average monthly benefit for retired members and beneficiaries is $2,991, compared to $2,943 in the previous valuation. The average age for retired members and beneficiaries is 69.6 in the current valuation, compared with 69.3 in the prior valuation.

Distribution of Retired Members and Beneficiaries as of December 31, 2021

Retired Members and Beneficiaries
by Type and Monthly Amount



Retired Members and Beneficiaries
by Type and Age



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: 2012 – 2021

	Active Members			Retired Members and Beneficiaries		
Year Ended December 31	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2012	3,620	46.1	10.2	4,258	67.0	$2,565
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

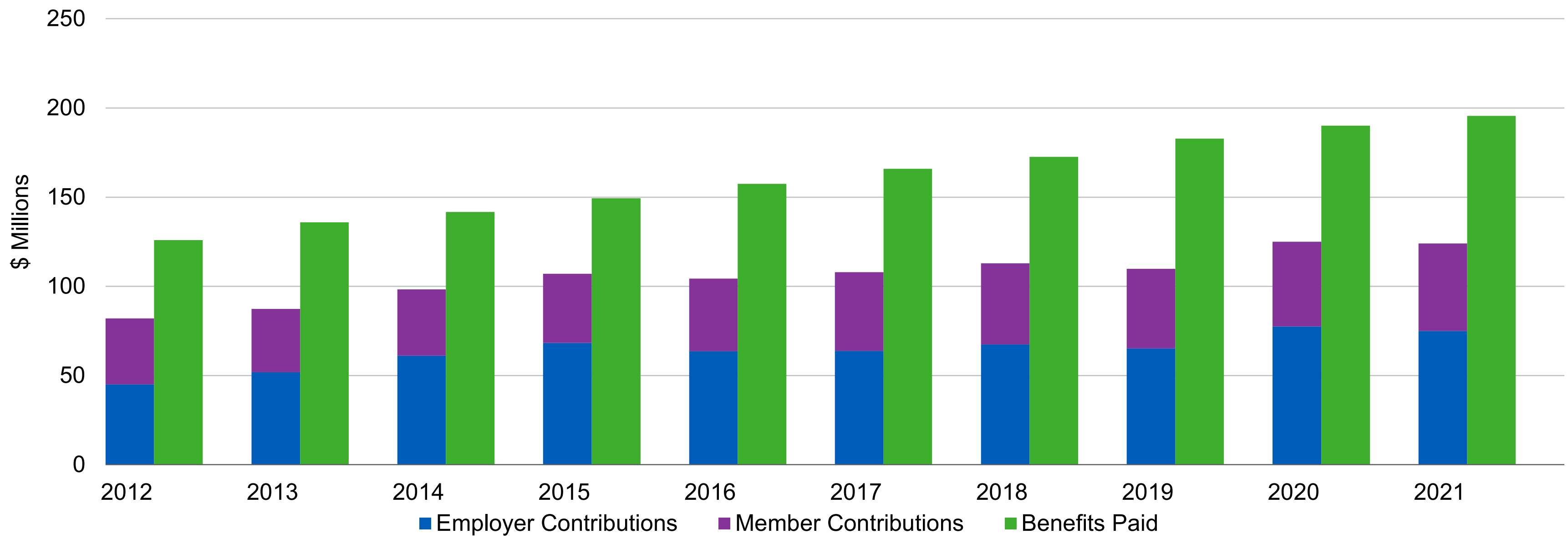
B. Financial Information

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 Contributions[1] Made with Benefits for Years Ended December 31, 2012 – 2021



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

Determination of Actuarial Value of Assets for Year Ended December 31, 2021

		Expected Return[1]	Actual Return[1]	Original Amount	Percent Deferred	Unrecognized Amount
1	**Market Value of Assets**					**$3,521,361,225**
2	Calculation of unrecognized return					
a	Year ended December 31, 2017	$171,703,340	$394,910,340	$223,207,000	0%	$0
b	Year ended December 31, 2018	183,114,885	(107,078,494)	(290,193,379)	20%	(58,038,676)
c	Year ended December 31, 2019	184,037,382	415,559,292	231,521,910	40%	92,608,764
d	Year ended December 31, 2020	194,401,533	225,039,562	30,638,029	60%	18,382,817
e	Year ended December 31, 2021	206,108,804	522,238,156	316,129,352	80%	252,903,482
f	Total unrecognized return[2]					$305,856,387
3	**Actuarial Value of Assets 1 – 2f**					**$3,215,504,838**
4	Ratio of Actuarial Value to Market Value					91.3%
5	Non-valuation reserves and other adjustments:					
a	Interest Fluctuation Reserve					$0
b	Undistributed Reserve					0
c	Negative Contingency Reserve (Before Any Transfers)					(527,631,913)
d	Transfer to True-Up Reserves					67,153
e	Negative Contingency Reserve (After Transfers) **5c + 5d**					(527,564,760)
f	Subtotal **5a + 5b + greater of 5e or zero**					$0
6	**Valuation Value of Assets 3 – 5f**					**$3,215,504,838**

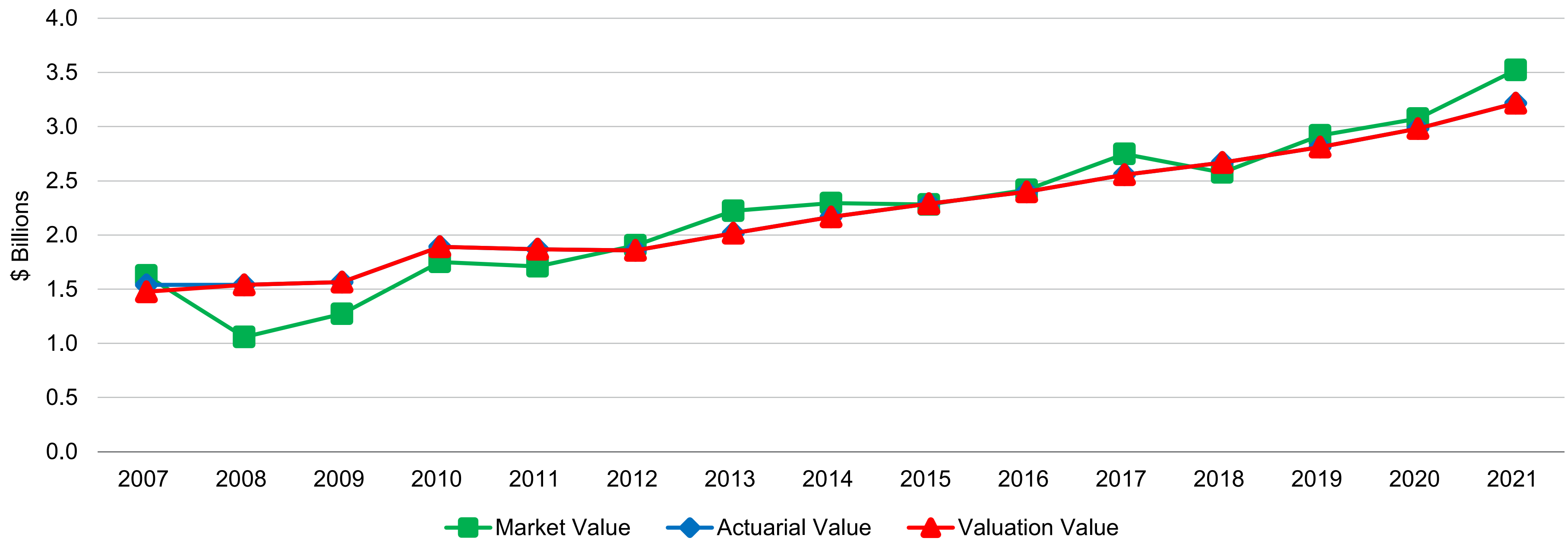
[1] The actual return on a market value basis is calculated on a net of investment expenses basis by taking the difference between the end of year and beginning of year Market Value of Assets and adjusting that difference for the non-investment cash flows. Those cash flows include contributions received, benefit payments and administrative expenses made during the last calendar year. The amount subject to smoothing is 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.

[2] Deferred return as of December 31, 2021 recognized in each of the next four years:

(a)	Amount recognized on December 31, 2022	$57,619,183
(b)	Amount recognized on December 31, 2023	115,657,858
(c)	Amount recognized on December 31, 2024	69,353,476
(d)	Amount recognized on December 31, 2025	63,255,870
(e)	Total unrecognized return as of December 31, 2021	$305,856,387

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 – 2021



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 changes in actuarial assumptions reflected in this valuation.

The total gain is $115.5 million, which includes $99.1 million from investment gains, a gain of $1.9 million from contribution experience, a gain of $1.9 million from the County's additional UAAL contributions, and $12.5 million in gains from all other sources. The net experience variation from individual sources other than investments and contributions was 0.4% 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, 2021

1	Net gain from investments[1]	$99,099,000
2	Net gain from contribution experience	1,976,000
3	Net gain from County's additional UAAL contributions[2]	1,873,000
4	Net gain from other experience[3]	12,509,000
5	**Net experience gain: 1 + 2 + 3 +4**	**$115,457,000**

[1] Details on next page.
[2] Includes interest at the assumed earnings rate of 7.0% on the County's total additional UAAL contributions of $1,810,579 from the respective payment dates to December 31, 2021.
[3] See *Section 2, Subsection E* for further details. Does not include the effect of plan, method, or assumption changes, if any.

Investment Experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan's investment policy. The rate of return on the Market Value of Assets was 17.09% for the year ended December 31, 2021.

For valuation purposes, the assumed rate of return on the Valuation Value of Assets is 7.00%. The actual rate of return on a valuation basis for the 2021 plan year was 10.36%. Since the actual return for the year was greater than the assumed return, the Plan experienced an actuarial gain during the year ended December 31, 2021 with regard to its investments.

Investment Experience for Year Ended December 31, 2021

		Market Value	Actuarial Value	Valuation Value
1	Net investment income[1]	$519,183,054	$305,314,284	$305,314,284
2	Average value of assets	$3,037,926,653	$2,945,939,036	$2,945,939,036
3	Rate of return: **1 ÷ 2**	17.09%	10.36%	10.36%
4	Assumed rate of return	7.00%	7.00%	7.00%
5	Expected investment income: **2 x 4**	$212,654,866	$206,215,733	$206,215,733
6	**Actuarial gain/(loss): 1 - 5**	**$306,528,188**	**$99,098,551**	**$99,098,551**

[1] Net of administrative and investment expenses.

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: 2012 – 2021

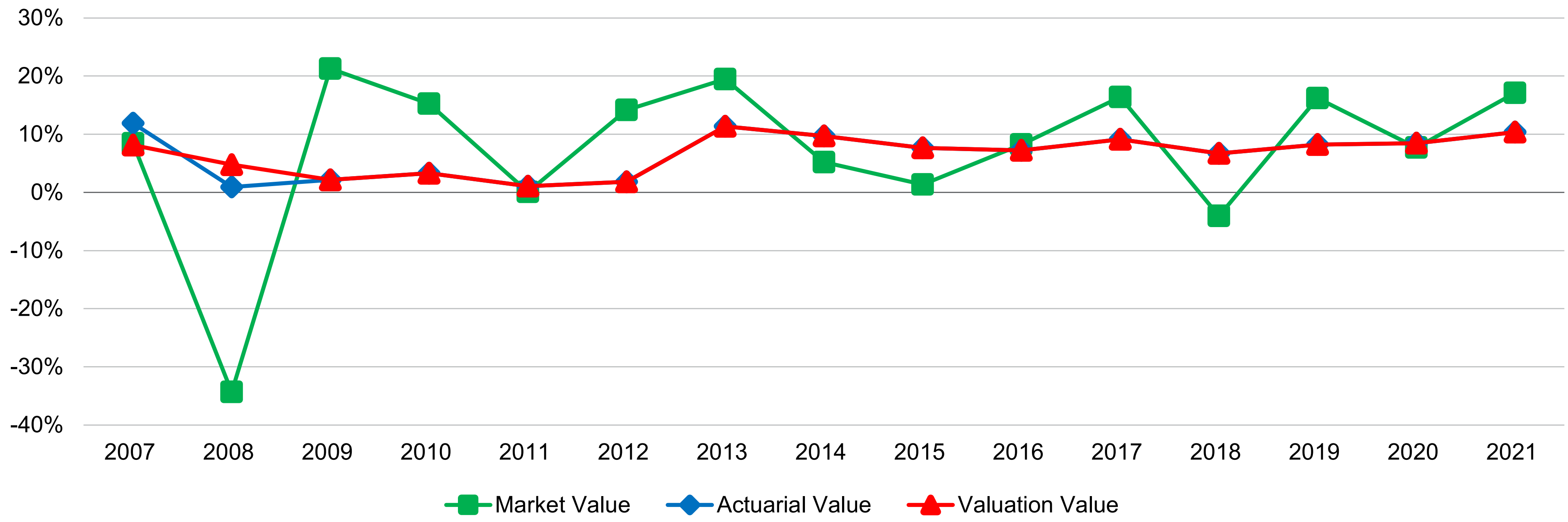
Year Ended December 31	Market Value Investment Return[1]		Actuarial Value Investment Return[1]		Valuation Value Investment Return[1]	
	Amount	**Percent**	**Amount**	**Percent**	**Amount**	**Percent**
2012	$239,065,000	14.16%	$33,652,000	1.82%	$33,652,000	1.82%
2013	366,462,000	19.49%	208,550,000	11.38%	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%
Most recent five-year geometric average return		**10.35%**		**8.58%**		**8.58%**
Most recent ten-year geometric average return		**9.92%**		**8.04%**		**8.04%**

[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 – 2021



Contributions

Contributions for the year ended December 31, 2021 totaled $122.2 million, compared to the projected amount of $120.3 million. This resulted in a gain of $2.0 million for the year, when adjusted for timing. In addition, the County made an additional UAAL contribution of $1.73 million on June 30, 2021 and an additional UAAL contribution of $0.09 million on August 11, 2021. These amounts, when adjusted for timing, resulted in a gain of $1.9 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 gain from this other experience for the year ended December 31, 2021 amounted to $12.5 million, which is 0.4% of the actuarial accrued liability. This gain was mainly due to smaller than expected individual salary increases for actives. See *Section 2, Subsection E* for a detailed development of the unfunded actuarial accrued liability

D. Other Changes in the Actuarial Accrued Liability

Actuarial Assumptions

The assumption changes reflected in this report were based on the January 1, 2018 through December 31, 2020 Actuarial Experience Study report dated October 15, 2021.

- This change increased the Actuarial Accrued Liability by about $96.8 million (or a 2.9% increase) and increased the total Normal Cost by 1.22% of payroll (an increase of about 5.97%). The average employer contribution rate increase as a result of the assumption changes was 2.38% of payroll. The average employee contribution rate increase as a result of the assumption changes was 0.53% of payroll.

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*.

E. Development of Unfunded Actuarial Accrued Liability

Development for Year Ended December 31, 2021

1	**Unfunded actuarial accrued liability at beginning of year**		**$282,715,000**
2	Normal cost at middle of year		82,225,000
3	Expected employer and member contributions		(120,291,000)
4	Interest		18,586,000
5	Expected unfunded actuarial accrued liability at end of year		$263,235,000
6	Changes due to:		
	a) Investment return greater than expected (after asset smoothing)	$(99,099,000)	
	b) Actual contributions greater than expected[1]	(1,976,000)	
	c) Individual salary increases less than expected	(5,243,000)	
	d) Decrease due to County's additional UAAL contributions[2]	(1,873,000)	
	e) Other experience gain	(7,266,000)	
	f) Change in actuarial assumptions	96,768,000	
	Total changes		$(18,689,000)
7	**Unfunded actuarial accrued liability at end of year**		**$244,546,000**

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

[1] Includes impact of 18-month delay in rate implementation, phase-in of the impact of the changes in actuarial assumptions on the employer contribution rate (if any) and difference between Normal Cost and UAAL contributions due to actual payroll different than expected during 2021.
[2] Includes interest at the assumed earnings rate of 7.0% on the County's total additional UAAL contributions of $1,810,579 from the respective payment dates to December 31, 2021.

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, 2021, the average recommended employer contribution is 18.69% 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, 2021 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.

Average Recommended Employer Contribution for Year Ended December 31

		2021		2020	
		Amount ($ in '000s)	**% of Projected Compensation**	**Amount ($ in '000s)**	**% of Projected Compensation**
1	Total normal cost	$86,414	21.17%	$82,225	20.52%
2	Expected member normal cost contributions	(36,358)	(8.91%)	(34,785)	(8.68%)
3	Employer normal cost: **1 + 2**	$50,056	12.26%	$47,440	11.84%
4	Actuarial accrued liability	3,460,051		3,264,403	
5	Valuation Value of Assets	3,215,505		2,981,688	
6	Unfunded actuarial accrued liability (UAAL): **4 – 5**	$244,546		$282,715	
7	Payment on UAAL	$37,934	9.29%	$38,066	9.50%
8	Expected member contributions on UAAL[1]	(11,684)	(2.86%)	(11,743)	(2.93%)
9	Employer payment on UAAL: **7 + 8**	$26,250	6.43%	$26,323	6.57%
10	Projected compensation	$408,279		$400,564	
11	**Total average recommended employer contribution: 3 + 9**	**$76,306**	**18.69%**	**$73,763**	**18.41%**

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.

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, 2020 to December 31, 2021

	Contribution Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
Average Recommended Employer Contribution as of December 31, 2020	**18.11%**	**$73,972**
• Effect of investment return greater than expected (after asset smoothing)	(1.73%)	(7,063)
• Effect of actual contributions greater than expected[2]	(0.03%)	(122)
• Effect of individual salary increases less than expected	(0.09%)	(367)
• Effect of amortizing prior year's UAAL over a smaller than expected projected total payroll	0.11%	449
• Effect of changes in member demographics on Normal Cost	(0.01%)	(41)
• Effect of County's additional UAAL contributions	(0.03%)	(133)
• Effect of employee UAAL contributions that sunset in June 2023	0.08%	327
• Effect of other gains	(0.10%)	(433)
• Effect of changes in actuarial assumptions	2.38%	9,717
Total change	**0.58%**	**$2,334**
Average Recommended Employer Contribution as of December 31, 2021	**18.69%**	**$76,306**

[1] Based on December 31, 2021 projected compensation.
[2] Includes impact of 18-month delay in rate implementation, phase-in of the impact of the changes in actuarial assumptions on the employer contribution rate (if any) and difference between Normal Cost and UAAL contributions due to actual payroll during 2021 different than expected.

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, 2020 to December 31, 2021

	General Plan A - County[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, 2020[3]	**12.20%**	**12.35%**	**10.82%**	**12.60%**	**11.17%**
• Effect of changes in member demographics	0.00%	0.00%	0.00%	0.00%	0.00%
• Effect of employee UAAL contributions that sunset in June 2023	0.00%	0.00%	0.00%	0.00%	0.00%
• Effect of changes in actuarial assumptions	0.62%	0.58%	0.75%	0.77%	0.73%
Average Recommended Member Contribution as of December 31, 2021[4]	**12.82%**	**12.93%**	**11.57%**	**13.37%**	**11.90%**

	General Plan B - County[1]	General Plan B - Court[1]	General Plan B - SVFD	Safety Plan B – County – Without Sunset[2]	Safety Plan B – County – With Sunset[2]	Safety Plan B - SVFD	Total
Average Recommended Member Contribution as of December 31, 2020	**10.43%**	**10.43%**	**7.40%**	**15.18%**	**15.18%**	**12.94%**	**11.73%**
• Effect of changes in member demographics	(0.03%)	(0.03%)	(0.03%)	0.18%	0.18%	0.08%	0.01%
• Effect of employee UAAL contributions that sunset in June 2023	0.00%	0.00%	0.00%	0.00%	(3.00%)	0.00%	(0.08%)
• Effect of changes in actuarial assumptions	0.31%	0.31%	0.31%	0.91%	0.91%	0.98%	0.53%
Average Recommended Member Contribution as of December 31, 2021	**10.71%**	**10.71%**	**7.68%**	**16.27%**	**13.27%**	**14.00%**	**12.19%**

[1] Rates include an additional UAAL contribution rate of 3.03% of payroll.
[2] Rates include an additional UAAL contribution rate of 3.00% of payroll.
[3] The above rates are based on average entry age reflecting the demographics as of December 31, 2021. The weighted average member contribution rates as of December 31, 2020 are 11.99%, 12.19%, 11.49%, 12.16% and 8.72% 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, 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.

Recommended Employer Contribution Rate

	December 31, 2021 Actuarial Valuation		December 31, 2020 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	13.17%	$20,535	12.56%	$19,584
UAAL	5.06%	7,890	5.68%	8,856
Total Contribution	**18.23%**	**$28,425**	**18.24%**	**$28,440**
General Plan A – Court Members				
Normal Cost	13.66%	$974	13.09%	$934
UAAL	19.99%	1,426	19.12%	1,364
Total Contribution	**33.65%**	**$2,400**	**32.21%**	**$2,298**
General Plan A – Sonoma Valley Fire District Members				
Normal Cost	13.78%	$14	13.21%	$13
UAAL	4.18%	4	3.40%	3
Total Contribution	**17.96%**	**$18**	**16.61%**	**$16**
General Plan B – County Members				
Normal Cost	7.68%	$12,109	7.40%	$11,667
UAAL	5.06%	7,978	5.68%	8,956
Total Contribution	**12.74%**	**$20,087**	**13.08%**	**$20,623**
General Plan B – Court Members				
Normal Cost	7.68%	$459	7.40%	$442
UAAL	19.99%	1,194	19.12%	1,142
Total Contribution	**27.67%**	**$1,653**	**26.52%**	**$1,584**
General Plan B – Sonoma Valley Fire District Members				
Normal Cost	7.68%	$14	7.40%	$14
UAAL	4.18%	8	3.40%	6
Total Contribution	**11.86%**	**$22**	**10.80%**	**$20**

[1] Amounts are based on December 31, 2021 projected compensation as shown on the next page.

Recommended Employer Contribution Rate (continued)

	December 31, 2021 Actuarial Valuation		December 31, 2020 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	22.78%	$10,631	20.88%	$9,744
UAAL	9.66%	4,508	7.87%	3,673
Total Contribution	**32.44%**	**$15,139**	**28.75%**	**$13,417**
Safety Plan A – Sonoma Valley Fire District Members				
Normal Cost	30.29%	$1,256	28.05%	$1,163
UAAL	8.13%	337	7.17%	297
Total Contribution	**38.42%**	**$1,593**	**35.22%**	**$1,460**
Safety Plan B – County Members				
Normal Cost	13.27%	$3,697	12.18%	$3,394
UAAL	9.66%	2,692	7.87%	2,193
Total Contribution	**22.93%**	**$6,389**	**20.05%**	**$5,587**
Safety Plan B – Sonoma Valley Fire District Members				
Normal Cost	14.00%	$367	12.94%	$339
UAAL	8.13%	213	7.17%	188
Total Contribution	**22.13%**	**$580**	**20.11%**	**$527**
All Categories Combined				
Normal Cost	12.26%	$50,056	11.58%	$47,294
UAAL	6.43%	26,250	6.53%	26,678
Total Contribution	**18.69%**	**$76,306**	**18.11%**	**$73,972**

[1] Amounts are based on December 31, 2021 projected compensation ($ in '000s):

General Plan A – County	$155,922	General Plan B – County	$157,668	Safety Plan A – County	$46,668	Safety Plan B – County	$27,863
General Plan A – Court	7,133	General Plan B – Court	5,971	Safety Plan A – SVFD	4,146	Safety Plan B – SVFD	2,621
General Plan A – SVFD	102	General Plan B – SVFD	185			Total	$408,279

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	1%	0%	0%	1%
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%	50%	74%
Vested termination and ordinary withdrawals	10%	7%	6%	10%
Non-service and service connected disability	6%	44%	43%	15%
Non-service and service connected death	1%	1%	1%	1%
Total employer plus employee Normal Cost	**100%**	**100%**	**100%**	**100%**

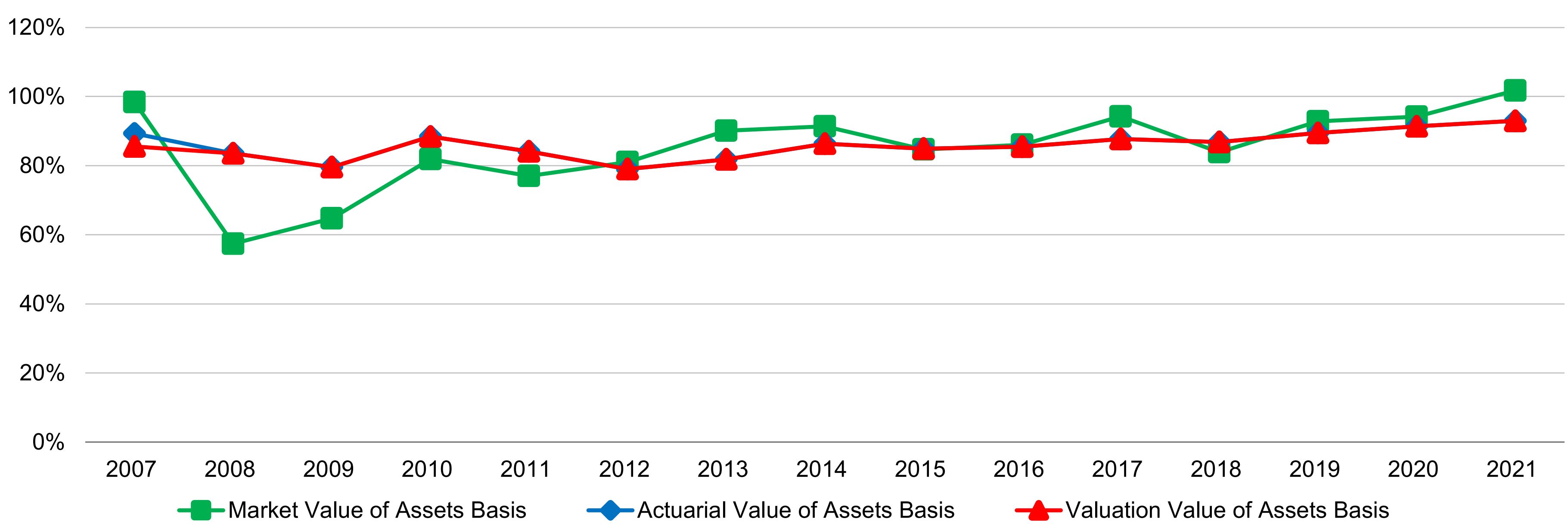
G. Funded Status

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 – 2021



Schedule of Funding Progress for Years Ended December 31, 2012 – 2021

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)
2012	$1,856,847,000	$2,351,087,000	$494,240,000	79.0%	$302,764,000	163.2%
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%

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, 2021

	Basic ($ in '000s)	COLA ($ in '000s)	Total ($ in '000s)
Actuarial present value of future benefits			
• Present value of benefits for retired members and beneficiaries	$2,116,286	$27,917	$2,144,203
• Present value of benefits for inactive vested members	130,186	0	130,186
• Present value of benefits for active members	1,794,664	0	1,794,664
Total actuarial present value of future benefits	**$4,041,136**	**$27,917**	**$4,069,053**
Current and future assets			
• Total Valuation Value of Assets	$3,187,588	$27,917	$3,215,505
• Present value of future contributions by members[1]	284,315	0	284,315
• Present value of future employer contributions for:			
• Entry age normal cost	324,687	0	324,687
• Unfunded actuarial accrued liability	244,546	0	244,546
Total of current and future assets	**$4,041,136**	**$27,917**	**$4,069,053**

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

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 8.6. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 8.6% of one-year's payroll. Since actuarial gains and losses are amortized over 20 years, there would be a 0.6% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the actuarial accrued liability divided by 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 11.5 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, 2012 – 2021

Year Ended December 31	Asset Volatility Ratio			Liability Volatility Ratio		
	General	Safety	Total	General	Safety	Total
2012	6.0	7.2	6.3	7.6	8.8	7.9
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

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, however investment experience can still have a sizable impact. As discussed in *Section 2, Subsection I, Volatility Ratios*, on page 40, a 1% asset gain or loss (relative to the assumed investment return) translates to about 8.6% of one-year's payroll. Since actuarial gains and losses are amortized over 20 years, there would be a 0.6% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The year-by-year market value rate of return over the last 10 years has ranged from a low of -4.07% 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 79.0% to 92.9%. 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 37.

- The geometric average investment return on the Actuarial Value of Assets over the last 10 years was 8.04%. This includes a high of 11.38% return and a low of 1.82%. The average over the last 5 years was 8.58%. For more details see the Investment Return table in *Section 2, Subsection C* on page 26.
- 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 59. 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 1.18 to 1.35. 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 17.

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 $71.5 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 92.9% funded ratio). For more details on historical cash flows see the Comparison of Contributions Made with Benefits in *Section 2, Subsection B* on page 21.

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 40.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage

Total Plan

Category	Year Ended December 31 2021	2020	Change From Prior Year
Active members in valuation:			
• Number	4,066	4,090	-0.6%
• Average age	45.2	45.3	-0.1
• Average years of service	9.7	9.7	0.0
• Total projected compensation	$408,278,337	$400,561,892	1.9%
• Average projected compensation	$100,413	$97,937	2.5%
• Account balances	$517,031,134	$519,003,169	-0.4%
• Total active vested members	2,818	2,784	1.2%
Inactive vested members:			
• Number[1]	1,569	1,445	8.6%
• Average age	45.1	45.3	-0.2
Retired members:			
• Number in pay status	4,169	4,054	2.8%
• Average age	70.2	70.0	0.2
• Average monthly benefit	$3,271	$3,226	1.4%
Disabled members:			
• Number in pay status	652	645	1.1%
• Average age	64.7	64.0	0.7
• Average monthly benefit	$2,690	$2,639	1.9%
Beneficiaries:			
• Number in pay status	657	648	1.4%
• Average age	70.9	70.5	0.4
• Average monthly benefit	$1,509	$1,473	2.4%

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

Exhibit A: Table of Plan Coverage (continued)

General Plan A

Category	Year Ended December 31 2021	Year Ended December 31 2020	Change From Prior Year
Active members in valuation:			
• Number	1,538	1,663	-7.5%
• Average age	51.3	50.8	0.5
• Average years of service	16.0	15.3	0.7
• Total projected compensation	$163,156,672	$170,982,328	-4.6%
• Average projected compensation	$106,084	$102,816	3.2%
• Account balances	$330,258,284	$340,401,747	-3.0%
• Total active vested members	1,526	1,649	-7.5%
Inactive vested members:			
• Number[1]	700	712	-1.7%
• Average age	49.6	49.4	0.2
Retired members:[2]			
• Number in pay status	3,528	3,474	1.6%
• Average age	71.1	70.7	0.4
• Average monthly benefit	$3,054	$3,001	1.8%
Disabled members:[2]			
• Number in pay status	318	319	-0.3%
• Average age	68.7	68.0	0.7
• Average monthly benefit	$1,896	$1,865	1.7%
Beneficiaries:[3]			
• Number in pay status	515	515	0.0%
• Average age	72.6	72.4	0.2
• Average monthly benefit	$1,396	$1,360	2.6%

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

[2] Out of the 3,846 retired and disabled members, there are 902 members who are receiving benefits under the Pre-Plan A provisions, with an average age of 79.2 and an average benefit of $1,538.

[3] Out of the 515 beneficiaries, there are 128 beneficiaries who are receiving benefits under the Pre-Plan A provisions, with an average age of 77.6 and an average benefit of $1,085. However, we note that 346 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.

Exhibit A: Table of Plan Coverage (continued)

General Plan B

Category	Year Ended December 31 2021	Year Ended December 31 2020	Change From Prior Year
Active members in valuation:			
• Number	1,847	1,705	8.3%
• Average age	41.6	41.6	0.0
• Average years of service	4.1	3.7	0.4
• Total projected compensation	$163,823,990	$147,160,639	11.3%
• Average projected compensation	$88,697	$86,311	2.8%
• Account balances	$64,608,183	$53,770,371	20.2%
• Total active vested members	772	615	25.5%
Inactive vested members:			
• Number[1]	622	505	23.2%
• Average age	41.5	41.3	0.2
Retired members:			
• Number in pay status	49	26	88.5%
• Average age	66.7	67.9	-1.2
• Average monthly benefit	$1,003	$988	1.5%
Disabled members:			
• Number in pay status	4	4	0.0%
• Average age	60.8	59.8	1.0
• Average monthly benefit	$2,133	$2,133	0.0%
Beneficiaries:			
• Number in pay status	1	1	0.0%
• Average age	60.6	59.6	1.0
• Average monthly benefit	$623	$623	0.0%

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

Exhibit A: Table of Plan Coverage (continued)

Safety Plan A

Category	Year Ended December 31 2021	Year Ended December 31 2020	Change From Prior Year
Active members in valuation:			
• Number	398	440	-9.5%
• Average age	45.9	45.7	0.2
• Average years of service	15.7	15.3	0.4
• Total projected compensation	$50,813,490	$53,622,309	-5.2%
• Average projected compensation	$127,672	$121,869	4.8%
• Account balances	$106,191,960	$112,158,247	-5.3%
• Total active vested members	390	430	-9.3%
Inactive vested members:			
• Number[1]	162	165	-1.8%
• Average age	45.8	45.2	0.6
Retired members:[2]			
• Number in pay status	588	553	6.3%
• Average age	65.4	65.4	0.0
• Average monthly benefit	$4,778	$4,746	0.7%
Disabled members:[2]			
• Number in pay status	325	318	2.2%
• Average age	61.1	60.3	0.8
• Average monthly benefit	$3,466	$3,417	1.4%
Beneficiaries:[3]			
• Number in pay status	141	132	6.8%
• Average age	64.6	63.2	1.4
• Average monthly benefit	$1,930	$1,922	0.4%

1 Includes inactive members due a refund of member contributions.

2 Out of the 913 retired and disabled members, there are 346 members who are receiving benefits under the Pre-Plan A provisions, with an average age of 71.1 and an average benefit of $3,124.

3 Out of the 141 beneficiaries, there are 33 beneficiaries who are receiving benefits under the Pre-Plan A provisions, with an average age of 74.2 and an average benefit of $2,155. However, we note that 96 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.

Exhibit A: Table of Plan Coverage (continued)

Safety Plan B

Category	Year Ended December 31: 2021	Year Ended December 31: 2020	Change From Prior Year
Active members in valuation:			
• Number	283	282	0.4%
• Average age	35.2	34.1	1.1
• Average years of service	4.1	3.5	0.6
• Total projected compensation	$30,484,185	$28,796,616	5.9%
• Average projected compensation	$107,718	$102,116	5.5%
• Account balances	$15,972,707	$12,672,804	26.0%
• Total active vested members	130	90	44.4%
Inactive vested members:			
• Number[1]	85	63	34.9%
• Average age	32.2	32.4	-0.2
Retired members:			
• Number in pay status	4	1	300.0%
• Average age	62.3	66.9	-4.6
• Average monthly benefit	$1,357	$1,179	15.1%
Disabled members:			
• Number in pay status	5	4	25.0%
• Average age	44.6	45.3	-0.7
• Average monthly benefit	$3,207	$3,073	4.4%
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.

Exhibit B: Members in Active Service as of December 31, 2021 by Age, Years of Service, and Average Projected Compensation

Total Plan

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	59	59	—	—	—	—	—	—	—	—
	$69,611	$69,611	—	—	—	—	—	—	—	—
25 – 29	310	272	38	—	—	—	—	—	—	—
	$81,744	$79,610	$97,018	—	—	—	—	—	—	—
30 – 34	494	274	199	21	—	—	—	—	—	—
	$94,008	$88,266	$100,725	$105,263	—	—	—	—	—	—
35 – 39	588	191	248	108	41	—	—	—	—	—
	$98,412	$88,359	$98,571	$109,746	$114,434	—	—	—	—	—
40 – 44	601	141	162	145	130	23	—	—	—	—
	$101,962	$87,697	$97,860	$110,040	$112,447	$108,102	—	—	—	—
45 – 49	537	98	111	78	114	118	17	1	—	—
	$107,672	$94,414	$101,484	$100,845	$113,432	$119,016	$138,536	$106,618	—	—
50 – 54	564	86	116	75	97	118	53	19	—	—
	$105,282	$95,583	$97,066	$97,452	$108,348	$110,343	$128,109	$119,499	—	—
55 – 59	497	60	114	60	84	83	47	44	5	—
	$107,985	$94,651	$104,105	$108,233	$102,474	$112,310	$124,110	$120,283	$114,523	—
60 – 64	300	52	92	35	52	40	17	8	3	1
	$102,201	$91,337	$101,197	$113,091	$97,641	$109,109	$113,013	$106,255	$95,255	$143,779
65 – 69	95	15	33	14	11	12	4	4	1	1
	$100,393	$97,870	$98,910	$116,326	$101,349	$88,933	$82,967	$106,928	$105,613	$129,452
70 & over	21	3	10	1	4	1	1	—	1	—
	$103,815	$91,115	$111,543	$197,689	$68,180	$139,796	$117,442	—	$63,699	—
Total	**4,066**	**1,251**	**1,123**	**537**	**533**	**395**	**139**	**76**	**10**	**2**
	$100,413	**$86,995**	**$99,833**	**$107,024**	**$108,487**	**$112,516**	**$124,810**	**$117,728**	**$102,769**	**$136,616**

Exhibit B: Members in Active Service as of December 31, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

General Plan A

		Years of Service								
Age	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	30	2	15	13	—	—	—	—	—	—
	$97,662	$107,969	$100,826	$92,424	—	—	—	—	—	—
35 – 39	128	1	42	64	21	—	—	—	—	—
	$103,435	$67,830	$107,501	$103,511	$96,764	—	—	—	—	—
40 – 44	237	1	30	111	84	11	—	—	—	—
	$105,762	$142,753	$100,232	$108,773	$105,421	$89,702	—	—	—	—
45 – 49	250	2	24	67	87	66	4	—	—	—
	$105,742	$72,316	$110,735	$99,562	$108,887	$106,447	$116,004	—	—	—
50 – 54	331	2	33	69	85	96	29	17	—	—
	$104,693	$173,837	$96,660	$96,953	$105,300	$106,690	$116,321	$109,422	—	—
55 – 59	333	2	36	55	80	75	43	37	5	—
	$110,530	$114,520	$109,678	$109,319	$102,069	$110,994	$123,332	$114,883	$114,523	—
60 – 64	169	1	23	31	50	37	15	8	3	1
	$106,714	$91,466	$107,597	$115,395	$98,158	$107,526	$115,019	$106,255	$95,255	$143,779
65 – 69	49	1	5	12	11	12	4	3	1	—
	$97,727	$57,799	$107,203	$104,745	$101,349	$88,933	$82,967	$106,113	$105,613	—
70 & over	11	—	3	1	4	1	1	—	1	—
	$109,332	—	$137,104	$197,689	$68,180	$139,796	$117,442	—	$63,699	—
Total	**1,538**	**12**	**211**	**423**	**422**	**298**	**96**	**65**	**10**	**1**
	$106,084	**$108,094**	**$105,461**	**$104,740**	**$103,725**	**$106,592**	**$117,867**	**$111,988**	**$102,769**	**$143,779**

Exhibit B: Members in Active Service as of December 31, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

General Plan B

		Years of Service								
Age	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	46	46	—	—	—	—	—	—	—	—
	$63,544	$63,544	—	—	—	—	—	—	—	—
25 – 29	231	212	19	—	—	—	—	—	—	—
	$75,422	$74,483	$85,897	—	—	—	—	—	—	—
30 – 34	350	229	121	—	—	—	—	—	—	—
	$87,172	$84,216	$92,768	—	—	—	—	—	—	—
35 – 39	342	176	163	3	—	—	—	—	—	—
	$89,865	$86,789	$93,117	$93,608	—	—	—	—	—	—
40 – 44	262	134	123	5	—	—	—	—	—	—
	$91,669	$86,437	$96,931	$102,451	—	—	—	—	—	—
45 – 49	172	88	82	2	—	—	—	—	—	—
	$95,367	$93,167	$98,110	$79,732	—	—	—	—	—	—
50 – 54	150	72	76	2	—	—	—	—	—	—
	$91,665	$87,825	$95,430	$86,831	—	—	—	—	—	—
55 – 59	129	56	71	2	—	—	—	—	—	—
	$95,703	$92,609	$98,635	$78,239	—	—	—	—	—	—
60 – 64	117	50	63	3	1	—	—	—	—	—
	$94,346	$91,398	$97,222	$90,424	$72,323	—	—	—	—	—
65 – 69	38	12	26	—	—	—	—	—	—	—
	$97,433	$101,588	$95,515	—	—	—	—	—	—	—
70 & over	10	3	7	—	—	—	—	—	—	—
	$97,746	$91,115	$100,588	—	—	—	—	—	—	—
Total	**1,847**	**1,078**	**751**	**17**	**1**	**—**	**—**	**—**	**—**	**—**
	$88,697	**$84,069**	**$95,301**	**$91,409**	**$72,323**	**—**	**—**	**—**	**—**	**—**

Exhibit B: Members in Active Service as of December 31, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Safety Plan A

		Years of Service								
Age	**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	22	2	12	8	—	—	—	—	—	—
	$120,834	$99,022	$120,942	$126,124	—	—	—	—	—	—
35 – 39	70	1	9	40	20	—	—	—	—	—
	$124,534	$139,992	$122,058	$120,477	$132,988	—	—	—	—	—
40 – 44	90	2	1	29	46	12	—	—	—	—
	$122,485	$145,578	$100,456	$116,196	$125,277	$124,969	—	—	—	—
45 – 49	107	2	3	9	27	52	13	1	—	—
	$132,438	$159,985	$113,612	$115,092	$128,079	$134,968	$145,469	$106,618	—	—
50 – 54	68	—	4	4	12	22	24	2	—	—
	$133,397	—	$115,313	$111,370	$129,938	$126,284	$142,353	$205,154	—	—
55 – 59	26	—	—	3	4	8	4	7	—	—
	$128,309	—	—	$108,314	$110,558	$124,651	$132,468	$148,827	—	—
60 – 64	10	1	2	1	1	3	2	—	—	—
	$111,615	$88,163	$119,694	$109,651	$97,103	$128,633	$97,974	—	—	—
65 – 69	5	—	1	2	—	—	—	1	—	1
	$144,018	—	$109,651	$185,808	—	—	—	$109,370	—	$129,452
70 & over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**398**	**8**	**32**	**96**	**110**	**97**	**43**	**11**	**—**	**1**
	$127,672	**$129,666**	**$118,794**	**$119,638**	**$127,084**	**$130,715**	**$140,311**	**$151,644**	**—**	**$129,452**

Exhibit B: Members in Active Service as of December 31, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Safety Plan B

Age	Total	Years of Service 0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	13	13	—	—	—	—	—	—	—	—
	$91,078	$91,078	—	—	—	—	—	—	—	—
25 – 29	79	60	19	—	—	—	—	—	—	—
	$100,229	$97,724	$108,139	—	—	—	—	—	—	—
30 – 34	92	41	51	—	—	—	—	—	—	—
	$112,404	$109,402	$114,817	—	—	—	—	—	—	—
35 – 39	48	13	34	1	—	—	—	—	—	—
	$107,826	$107,214	$107,470	$127,884	—	—	—	—	—	—
40 – 44	12	4	8	—	—	—	—	—	—	—
	$97,681	$87,186	$102,928	—	—	—	—	—	—	—
45 – 49	8	6	2	—	—	—	—	—	—	—
	$101,313	$98,211	$110,621	—	—	—	—	—	—	—
50 – 54	15	12	3	—	—	—	—	—	—	—
	$127,002	$129,089	$118,658	—	—	—	—	—	—	—
55 – 59	9	2	7	—	—	—	—	—	—	—
	$131,153	$131,943	$130,928	—	—	—	—	—	—	—
60 – 64	4	—	4	—	—	—	—	—	—	—
	$117,746	—	$117,746	—	—	—	—	—	—	—
65 – 69	3	2	1	—	—	—	—	—	—	—
	$108,725	$95,601	$134,974	—	—	—	—	—	—	—
70 & over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**283**	**153**	**129**	**1**	**—**	**—**	**—**	**—**	**—**	**—**
	$107,718	**$103,718**	**$112,305**	**$127,884**	**—**	**—**	**—**	**—**	**—**	**—**

Exhibit C: Reconciliation of Member Data

	Active Members	Inactive Vested Members[1]	Retired Members	Disabled Members	Beneficiaries	Total
Number as of December 31, 2020	**4,090**	**1,445**	**4,054**	**645**	**648**	**10,882**
• New members	356	50	N/A	N/A	38	444
• Terminations – with vested rights	(181)	181	N/A	N/A	N/A	0
• Contribution refunds	(49)	(37)	N/A	N/A	N/A	(86)
• Retirements	(159)	(44)	203	N/A	N/A	0
• New disabilities	(9)	(2)	(3)	14	N/A	0
• Return to work	23	(23)	0	0	N/A	0
• Died with or without beneficiary	(5)	(1)	(85)	(7)	(25)	(123)
• Data adjustments	0	0	0	0	(4)	(4)
Number as of December 31, 2021	**4,066**	**1,569**	**4,169**	**652**	**657**	**11,113**

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

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

	Year Ended December 31, 2021		Year Ended December 31, 2020	
Net assets at market value at the beginning of the year		**$3,073,675,135**		**$2,916,889,525**
Contribution income:				
• Employer contributions	$74,952,763		$77,506,384	
• Member contributions	49,056,580		47,364,262	
Net contribution income		*$124,009,343*		*$124,870,646*
Investment income:				
• Interest, dividends and other income	$49,398,053		$51,077,034	
• Asset appreciation	496,115,372		191,740,060	
• Less investment and administrative fees	(26,330,370)		(20,809,873)	
Net investment income		*$519,183,054*		*$222,007,221*
Total income available for benefits		**$643,192,397**		**$346,877,867**
Less benefit payments:				
• Service retirement and disability benefits	$(193,130,193)		$(185,981,610)	
• Member refunds	(2,376,114)		(4,110,648)	
Net benefit payments		*$(195,506,307)*		*$(190,092,258)*
Change in net assets at market value		**$447,686,090**		**$156,785,610**
Net assets at market value at the end of the year		**$3,521,361,225**		**$3,073,675,135**

Note: Results may be slightly off due to rounding.

Exhibit E: Summary Statement of Plan Assets

	December 31, 2021		December 31, 2020	
Cash equivalents		*$186,728,741*		*$141,308,416*
Accounts receivable:				
• Securities sold	$62,980,398		$69,601,946	
• Accrued interest and dividends	5,575,657		5,034,396	
• Employer contributions	2,848,516		2,702,744	
• Other receivable	77,069		68,986	
Total accounts receivable		*$71,481,640*		*$77,408,072*
Investments:				
• Domestic and international stocks	$2,134,077,958		$1,756,669,704	
• Domestic and international bonds	582,702,626		420,124,980	
• Real assets	664,599,081		553,860,434	
• Securities lending collateral	6,360,651		81,407,453	
• Miscellaneous	45,769,641		289,228,111	
Total investments at market value		*$3,433,509,957*		*$3,101,290,681*
Other assets		*1,892,500*		*1,979,052*
Total assets		**$3,693,612,838**		**$3,321,986,221**
Accounts payable:				
• Accounts payable and other liabilities	$(165,890,962)		$(166,903,634)	
• Securities lending liability	(6,360,651)		(81,407,453)	
Total accounts payable		**$(172,251,613)**		**$(248,311,087)**
Net assets at market value		**$3,521,361,225**		**$3,073,675,135**
Net assets at actuarial value		**$3,215,504,838**		**$2,981,687,518**
Net assets at valuation value		**$3,215,504,838**		**$2,981,687,518**

Note: Results may be slightly off due to rounding.

Exhibit F: Summary of Reported Reserve Information as of December 31, 2021

	Before True-Up	After True-Up	Transfer Amount
Member reserves[1]			
• General	$465,070,962	$465,070,962	$0
• Safety	135,925,089	135,925,089	0
Employer reserves[1]			
• General	771,038,513	741,154,427	(29,884,086)
• Safety	281,233,317	256,715,120	(24,518,197)
Retired member reserves[1]			
• General	1,487,605,914	1,517,490,000	29,884,086
• Safety	574,278,803	598,797,000	24,518,197
• COLA	27,984,151	27,917,000	(67,151)
Negative contingency reserve[1]	(527,631,913)	(527,564,760)	67,153
Total valuation reserve[1]	**$3,215,504,836**	**$3,215,504,838**	**$2**
Undistributed reserve[2]	$0	$0	$0
Interest fluctuation reserve[2]	0	0	0
Market stabilization reserve[2]	305,856,389	305,856,387	(2)
Net market value	**$3,521,361,225**	**$3,521,361,225**	**$0**

Note: Results may be slightly off due to rounding.

There is a reduction in the balance of the Negative Contingency Reserve from ($583.0) million in the last valuation to ($527.6) 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.

Exhibit G: Development of the Fund through December 31, 2021

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
2012	$45,078,748	$36,963,228	$239,064,594	$125,964,399	$1,904,926,964	$1,856,847,434	97.5%
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%

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

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	$23,982	7	$3,941
Restart amortization - Court	December 31, 2007	8,599	21	5,939	7	976
Cash Allowance - County	December 31, 2007[3]	55,982	20	10,001	6	1,885
Actuarial loss - County	December 31, 2008	44,591	20	8,763	7	1,440
Actuarial loss - Court	December 31, 2008	3,107	20	2,170	7	357
Early Retirement Option - County	December 31, 2009[3]	1,448	20	307	8	45
Actuarial loss - County	December 31, 2009	45,691	20	9,680	8	1,416
Actuarial loss - Court	December 31, 2009	2,859	20	2,153	8	315
Actuarial loss - SVFD	December 31, 2009	13	20	10	8	1
Assumption changes - County	December 31, 2009	10,990	20	2,328	8	341
Assumption changes - Court	December 31, 2009	688	20	518	8	76
Assumption changes - SVFD	December 31, 2009	3	20	3	8	0
Actuarial loss - County	December 31, 2010	48,235	20	38,151	9	5,045
Actuarial loss - Court	December 31, 2010	3,044	20	2,432	9	322
Actuarial loss - SVFD	December 31, 2010	14	20	11	9	1
Assumption changes - County	December 31, 2010	37,393	20	29,575	9	3,911
Assumption changes - Court	December 31, 2010	2,360	20	1,886	9	249
Assumption changes - SVFD	December 31, 2010	11	20	9	9	1
Actuarial loss - County	December 31, 2011	74,087	20	61,477	10	7,441
Actuarial loss - Court	December 31, 2011	4,760	20	3,990	10	483
Actuarial loss - SVFD	December 31, 2011	23	20	19	10	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.

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	$61,732	11	$6,908
Actuarial loss - Court	December 31, 2012	4,188	20	3,648	11	408
Actuarial loss - SVFD	December 31, 2012	99	20	88	11	10
Assumption changes - County	December 31, 2012	64,345	20	55,464	11	6,206
Assumption changes - Court	December 31, 2012	3,763	20	3,276	11	367
Assumption changes - SVFD	December 31, 2012	89	20	78	11	9
Compensation earnable change - County	December 31, 2012	(8,157)	20	(7,031)	11	(787)
Compensation earnable change - Court	December 31, 2012	(477)	20	(415)	11	(46)
Compensation earnable change - SVFD	December 31, 2012	(11)	20	(11)	11	(1)
Cashout change - County	December 31, 2012	(20,626)	20	(17,780)	11	(1,990)
Actuarial gain - County	December 31, 2013	(35,260)	20	(31,389)	12	(3,274)
Actuarial gain - Court	December 31, 2013	(1,884)	20	(1,693)	12	(177)
Actuarial gain - SVFD	December 31, 2013	(38)	20	(34)	12	(4)
Actuarial gain - County	December 31, 2014	(71,508)	20	(65,287)	13	(6,390)
Actuarial gain - Court	December 31, 2014	(3,657)	20	(3,373)	13	(330)
Actuarial gain - SVFD	December 31, 2014	(84)	20	(77)	13	(8)
Actuarial gain - County	December 31, 2015	(15,879)	20	(14,782)	14	(1,366)
Actuarial gain - Court	December 31, 2015	(830)	20	(781)	14	(72)
Actuarial gain - SVFD	December 31, 2015	(18)	20	(18)	14	(2)
Assumption changes - County	December 31, 2015	57,580	20	53,607	14	4,953
Assumption changes - Court	December 31, 2015	3,009	20	2,831	14	262
Assumption changes - SVFD	December 31, 2015	64	20	61	14	6
Actuarial loss - County	December 31, 2016	7,303	20	6,996	15	613
Actuarial loss - Court	December 31, 2016	364	20	350	15	31
Actuarial loss - SVFD	December 31, 2016	8	20	8	15	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.

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	$(25,626)	16	$(2,140)
Actuarial gain - Court	December 31, 2017	(1,236)	20	(1,201)	16	(100)
Actuarial gain - SVFD	December 31, 2017	(37)	20	(37)	16	(3)
Actuarial loss - County	December 31, 2018	21,856	20	18,885	17	1,509
Actuarial loss - Court	December 31, 2018	987	20	969	17	77
Actuarial loss - SVFD	December 31, 2018	31	20	31	17	2
Assumption changes - County	December 31, 2018	24,241	20	20,946	17	1,673
Assumption changes - Court	December 31, 2018	1,094	20	1,073	17	86
Assumption changes - SVFD	December 31, 2018	34	20	34	17	3
Actuarial gain - County	December 31, 2019	(39,086)	20	(38,707)	18	(2,968)
Actuarial gain - Court	December 31, 2019	(1,831)	20	(1,814)	18	(139)
Actuarial gain - SVFD	December 31, 2019	(58)	20	(58)	18	(4)
Actuarial gain - County	December 31, 2020	(16,589)	20	(16,531)	19	(1,220)
Actuarial gain - Court	December 31, 2020	(738)	20	(735)	19	(54)
Actuarial gain - SVFD	December 31, 2020	(19)	20	(19)	19	(1)
Actuarial gain - County	December 31, 2021	(83,485)	20	(83,485)	20	(5,947)
Actuarial gain - Court	December 31, 2021	(3,490)	20	(3,490)	20	(249)
Actuarial gain - SVFD	December 31, 2021	(77)	20	(77)	20	(5)
Assumption changes - County	December 31, 2021	57,549	20	56,103	20	3,996
Assumption changes - Court	December 31, 2021	2,405	20	2,405	20	171
Assumption changes - SVFD	December 31, 2021	53	20	53	20	4
Subtotal				**$177,591**		**$28,266**

[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.

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	$8,467	7	$1,391
Cash Allowance	December 31, 2007[3]	14,693	20	2,629	6	495
Actuarial loss	December 31, 2008	7,603	20	1,497	7	246
Actuarial loss	December 31, 2009	28,643	20	6,075	8	889
Assumption changes	December 31, 2009	7,337	20	1,557	8	228
Actuarial loss	December 31, 2010	14,765	20	11,694	9	1,546
Assumption changes	December 31, 2010	14,376	20	11,386	9	1,506
Actuarial loss	December 31, 2011	24,746	20	20,563	10	2,489
Actuarial loss	December 31, 2012	26,012	20	22,451	11	2,512
Assumption changes	December 31, 2012	12,268	20	10,587	11	1,185
Compensation earnable change	December 31, 2012	(2,613)	20	(2,255)	11	(252)
Cashout change	December 31, 2012	(11,987)	20	(10,346)	11	(1,158)
Actuarial gain	December 31, 2013	(6,051)	20	(5,394)	12	(563)
Actuarial gain	December 31, 2014	(26,652)	20	(24,366)	13	(2,385)
Actuarial gain	December 31, 2015	(5,153)	20	(4,804)	14	(444)
Assumption changes	December 31, 2015	31,096	20	28,989	14	2,679
Actuarial loss	December 31, 2016	2,293	20	2,196	15	192
Actuarial gain	December 31, 2017	(10,655)	20	(10,349)	16	(864)

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.

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	$1,615	17	$129
Assumption changes	December 31, 2018	6,032	20	4,685	17	374
Actuarial gain	December 31, 2019	(15,693)	20	(15,541)	18	(1,192)
Actuarial gain	December 31, 2020	(7,099)	20	(7,074)	19	(522)
Actuarial gain	December 31, 2021	(24,324)	20	(24,324)	20	(1,733)
Assumption changes	December 31, 2021	33,701	20	33,274	20	2,370
Subtotal				**$63,212**		**$9,118**

[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.

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

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	$1,279	7	$210
Actuarial loss	December 31, 2008	169	20	118	7	19
Actuarial loss	December 31, 2009	678	20	510	8	75
Assumption changes	December 31, 2009	174	20	131	8	19
Actuarial loss	December 31, 2010	344	20	276	9	36
Assumption changes	December 31, 2010	335	20	267	9	35
Actuarial loss	December 31, 2011	639	20	535	10	65
Actuarial loss	December 31, 2012	1,444	20	1,257	11	141
Assumption changes	December 31, 2012	681	20	593	11	66
Compensation earnable change	December 31, 2012	(145)	20	(126)	11	(14)
Actuarial gain	December 31, 2013	(333)	20	(299)	12	(31)
Actuarial gain	December 31, 2014	(1,524)	20	(1,406)	13	(138)
Actuarial gain	December 31, 2015	(321)	20	(303)	14	(28)
Assumption changes	December 31, 2015	1,937	20	1,822	14	168
Actuarial loss	December 31, 2016	141	20	135	15	12
Actuarial gain	December 31, 2017	(683)	20	(664)	16	(55)
Actuarial loss	December 31, 2018	137	20	135	17	11
Assumption changes	December 31, 2018	397	20	390	17	31
Actuarial gain	December 31, 2019	(1,155)	20	(1,144)	18	(88)
Actuarial gain	December 31, 2020	(617)	20	(615)	19	(45)
Actuarial gain	December 31, 2021	(2,208)	20	(2,208)	20	(157)
Assumption changes	December 31, 2021	3,060	20	3,060	20	218
Subtotal				**$3,743**		**$550**

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	$39,667	7	$6,518
Cash Allowance	December 31, 2007	70,675	20	12,630	6	2,380
Actuarial loss	December 31, 2008	55,470	20	12,548	7	2,062
Early Retirement Option	December 31, 2009	1,448	20	307	8	45
Actuarial loss	December 31, 2009	77,884	20	18,428	8	2,696
Assumption changes	December 31, 2009	19,192	20	4,537	8	664
Actuarial loss	December 31, 2010	66,402	20	52,564	9	6,950
Assumption changes	December 31, 2010	54,475	20	43,123	9	5,702
Actuarial loss	December 31, 2011	104,255	20	86,584	10	10,480
Actuarial loss	December 31, 2012	103,359	20	89,176	11	9,979
Assumption changes	December 31, 2012	81,146	20	69,998	11	7,833
Compensation earnable change	December 31, 2012	(11,403)	20	(9,838)	11	(1,100)
Cashout change	December 31, 2012	(32,613)	20	(28,126)	11	(3,148)
Actuarial gain	December 31, 2013	(43,566)	20	(38,809)	12	(4,049)
Actuarial gain	December 31, 2014	(103,425)	20	(94,509)	13	(9,251)
Actuarial gain	December 31, 2015	(22,201)	20	(20,688)	14	(1,912)
Assumption changes	December 31, 2015	93,686	20	87,310	14	8,068
Actuarial loss	December 31, 2016	10,109	20	9,685	15	849
Actuarial gain	December 31, 2017	(38,992)	20	(37,877)	16	(3,162)
Actuarial loss	December 31, 2018	25,090	20	21,635	17	1,728
Assumption changes	December 31, 2018	31,798	20	27,128	17	2,167

[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.

Exhibit H: Table of Amortization Bases (continued)

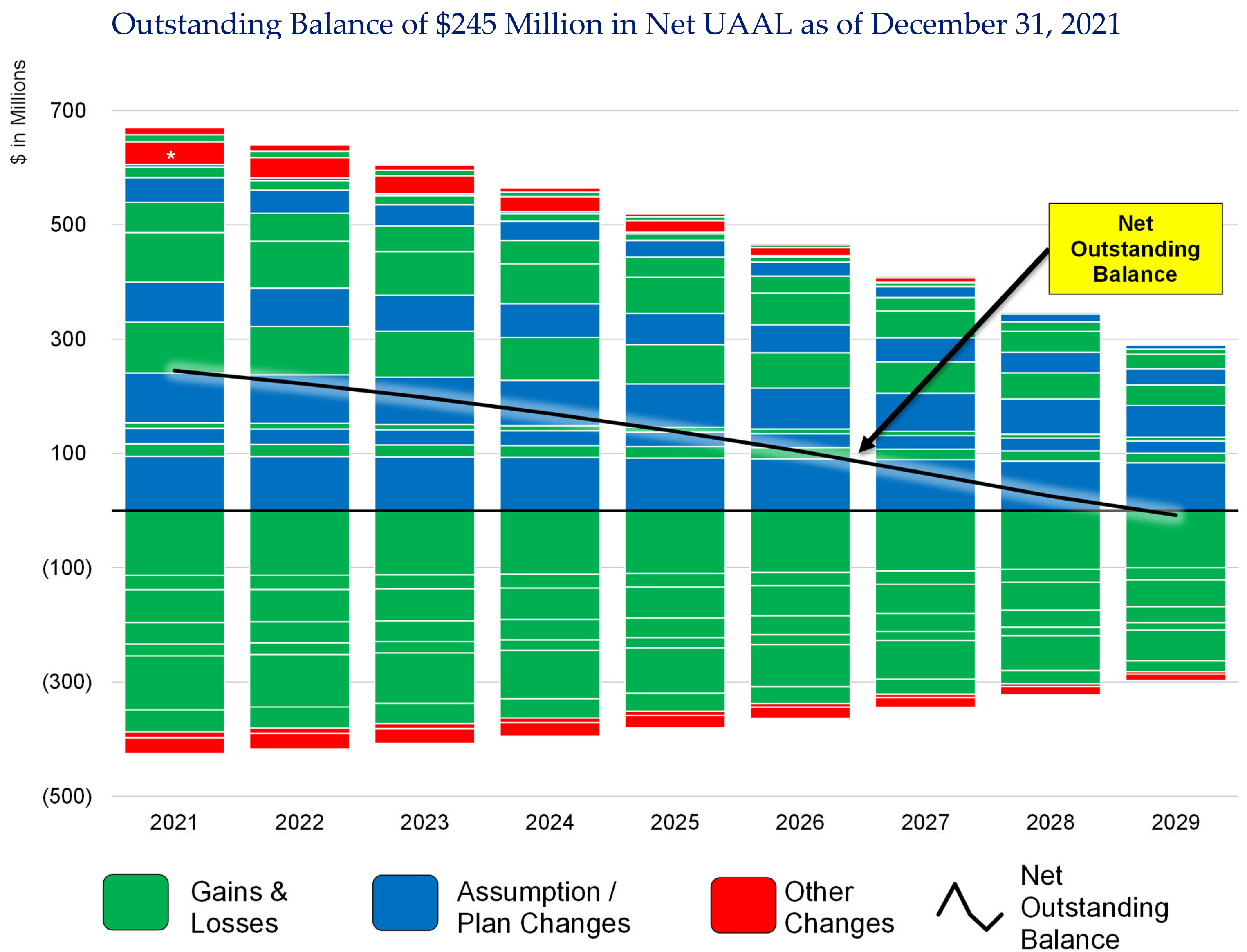
Total Plan (continued)

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	$(57,264)	18	$(4,391)
Actuarial gain	December 31, 2020	(25,062)	20	(24,974)	19	(1,842)
Actuarial gain	December 31, 2021	(113,584)	20	(113,584)	20	(8,091)
Assumption changes	December 31, 2021	96,768	20	94,895	20	6,759
Total				**$244,546**		**$37,934**

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

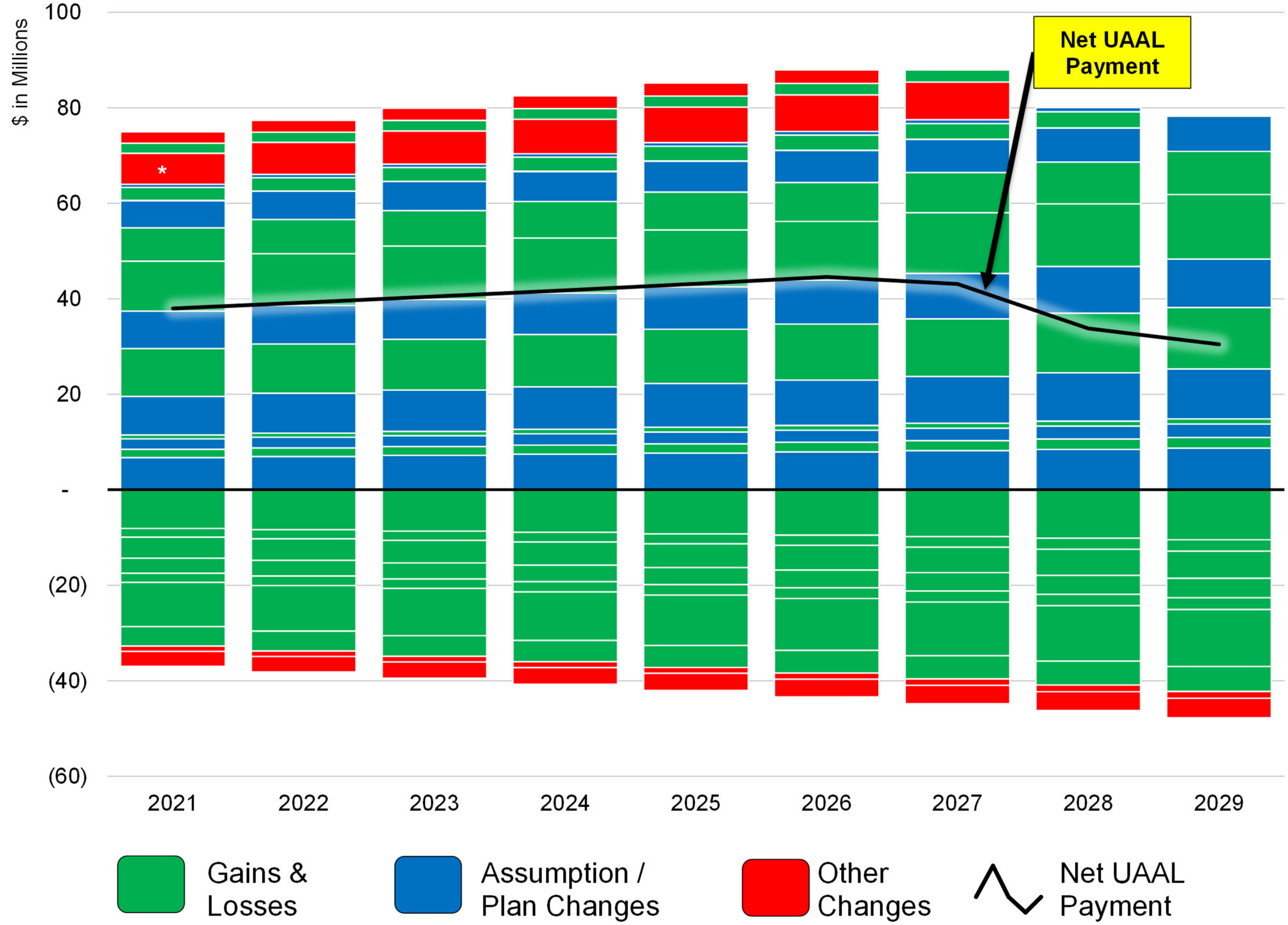
Exhibit I: Projection of UAAL Balances and Payments



** Restart amortization, established December 31, 2007*

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

Annual Payments Required to Amortize $245 Million in Net UAAL as of December 31, 2021



** Restart amortization, established December 31, 2007*

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):	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: Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

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.

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the Fund is calculated, including: Investment return - the rate of investment yield that the Fund will earn over the long-term future; Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates; Retirement rates - the rate or probability of retirement at a given age or service; Disability rates - the probability of disability retirement at a given age; Withdrawal rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; Salary increase rates - the rates of salary increase due to inflation and productivity growth.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 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.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the 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.
Funded Ratio:	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.
Investment Return:	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.

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.
Employee Contribution Crediting Rate:	Assumed inflation rate of 2.50% as an estimate of the 10-Year Treasury rate; credited semi-annually.
Consumer Price Index:	Not applicable.
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.

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	Rate (%) 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

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

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

	Rate (%)			
	General		Safety	
Age	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

Disability Incidence:

Age	Rate (%) General	Rate (%) 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.

Withdrawal:

Less Than Five Years of Service

Years of Service	Rate (%) General	Rate (%) 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	Rate (%) 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.

Vested Termination:

Less Than Five Years of Service

Years of Service	Rate (%) General	Rate (%) 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	Rate (%) 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.

Retirement Rates:

	Rate (%)					
	General			Safety		
Age	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:	For current and future deferred vested members without reciprocity, retirement age assumptions are as follows: General Retirement Age: 58 Safety Retirement Age: 52 For current and future deferred vested members with reciprocity, retirement age assumptions are as follows: General Retirement Age: 60 Safety Retirement Age: 55 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. 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.
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.

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

Changes in Actuarial Assumptions

The following assumptions have been changed since the prior valuation. Previously, these assumptions were as follows:

Net Investment Return:	7.00%; net of administrative and investment expenses.
Employee Contribution Crediting Rate:	Assumed inflation rate of 2.75% as an estimate of the 10-Year Treasury rate; credited semi-annually.
Payroll Growth:	Inflation of 2.75% 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 2.75% per year from the valuation date.
Increase in Section 7522.10 Compensation Limit:	Increase of 2.75% per year from the valuation date.

Changes in Actuarial Assumptions (continued)

The following assumptions have been changed since the prior valuation. Previously, these assumptions were as follows:

Salary Increases:

The annual rate of compensation increase includes:

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

Years of Service	Rate (%) General	Rate (%) Safety
Less than 1	5.50	7.50
1 – 2	5.00	7.00
2 – 3	4.50	5.00
3 – 4	3.50	4.00
4 – 5	2.50	3.50
5 – 6	1.50	1.50
6 – 7	1.25	1.25
7 – 8	1.00	1.25
8 – 9	0.95	1.25
9 – 10	0.90	1.25
10 – 11	0.85	1.25
11 – 12	0.80	1.25
12 – 13	0.75	1.25
13 – 14	0.75	1.00
14 – 15	0.75	1.00
15 & Over	0.50	0.75

Post-Retirement Mortality Rates:

Healthy

- **General and Safety Members and All Beneficiaries:** Headcount-Weighted RP-2014 Healthy Annuitant Table times 94% for males and 102% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017.

Disabled

- **General and Safety Members:** Headcount-Weighted RP-2014 Disabled Retiree Table times 91% for males and 93% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017.

The RP-2014 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.

Changes in Actuarial Assumptions (continued)

The following assumptions have been changed since the prior valuation. Previously, these assumptions were as follows:

Pre-Retirement Mortality Rates:

- **General and Safety Members:** Headcount-Weighted RP-2014 Employee Table times 93% for males and 95% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017.

	Rate (%)[1]			
	General		Safety	
Age	Male	Female	Male	Female
20	0.05	0.02	0.05	0.02
25	0.06	0.02	0.06	0.02
30	0.06	0.03	0.06	0.03
35	0.06	0.03	0.06	0.03
40	0.07	0.05	0.07	0.05
45	0.11	0.08	0.11	0.08
50	0.19	0.13	0.19	0.13
55	0.32	0.20	0.32	0.20
60	0.53	0.29	0.53	0.29
65	0.91	0.42	0.91	0.42

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

[1] Generational projections beyond the base year (2014) are not reflected in the above mortality rates.

Mortality Rates for Member Contributions:

- **General Members:** Headcount-Weighted RP-2014 Healthy Annuitant Table times 94% for males and 102% for females, projected 20 years with the two-dimensional scale MP-2017, weighted 33.33% male and 66.67% female.
- **Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Table times 94% for males and 102% for females, projected 20 years with the two-dimensional scale MP-2017, weighted 75% male and 25% female.

Changes in Actuarial Assumptions (continued)

The following assumptions have been changed since the prior valuation. Previously, these assumptions were as follows:

Disability Incidence:

	Rate (%)	
Age	**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	0.23	2.10
50	0.31	2.50
55	0.38	2.80
60	0.43	3.00
65	0.60	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.

95% of Safety disabilities are assumed to be service connected disabilities. The other 5% are assumed to be non-service connected disabilities.

Changes in Actuarial Assumptions (continued)

The following assumptions have been changed since the prior valuation. Previously, these assumptions were as follows:

Withdrawal:

Less Than Five Years of Service

Years of Service	Rate (%) General	Rate (%) Safety
Less than 1	6.00	3.50
1 – 2	3.00	2.40
2 – 3	2.50	1.60
3 – 4	2.50	1.60
4 – 5	2.00	1.60

Five or More Years of Service

Age	Rate (%) General	Rate (%) Safety
20	1.50	1.60
25	1.50	1.60
30	1.38	1.24
35	0.97	0.64
40	0.54	0.25
45	0.37	0.09
50	0.32	0.02
55	0.24	0.00
60	0.14	0.00
65	0.04	0.00
70	0.00	0.00

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

Changes in Actuarial Assumptions (continued)

The following assumptions have been changed since the prior valuation. Previously, these assumptions were as follows:

Vested Termination:

Less Than Five Years of Service

Years of Service	Rate (%) General	Rate (%) Safety
Less than 1	7.00	6.50
1 – 2	6.00	5.00
2 – 3	4.50	4.00
3 – 4	3.50	4.00
4 – 5	3.50	4.00

Five or More Years of Service

Age	Rate (%) General	Rate (%) Safety
20	3.50	4.00
25	3.50	4.00
30	3.50	3.40
35	3.20	2.40
40	2.70	1.40
45	2.20	0.85
50	2.00	0.30
55	2.00	0.00
60	2.00	0.00
65	1.40	0.00
70	0.00	0.00

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

Changes in Actuarial Assumptions (continued)

The following assumptions have been changed since the prior valuation. Previously, these assumptions were as follows:

Retirement Rates:

	Rate (%)					
	General			Safety		
Age	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
48	0.0	0.0	0.0	5.0	5.0	0.0
49	0.0	0.0	0.0	5.0	5.0	0.0
50	6.0	10.0	0.0	18.0	18.0	5.0
51	6.0	10.0	0.0	16.0	16.0	5.0
52	6.0	10.0	3.5	12.0	18.0	4.5
53	6.0	15.0	1.0	14.0	25.0	4.5
54	7.0	20.0	2.0	22.0	50.0	7.5
55	10.0	25.0	2.5	25.0	75.0	16.5
56	8.0	25.0	3.5	30.0	75.0	15.0
57	8.0	30.0	4.5	20.0	75.0	12.0
58	12.0	30.0	5.0	20.0	75.0	16.0
59	20.0	40.0	7.5	20.0	75.0	16.0
60	25.0	40.0	8.5	75.0	100.0	75.0
61	25.0	45.0	9.5	75.0	100.0	75.0
62	30.0	45.0	14.5	75.0	100.0	75.0
63	30.0	45.0	16.5	75.0	100.0	75.0
64	30.0	45.0	19.0	75.0	100.0	75.0
65	30.0	45.0	24.0	100.0	100.0	100.0
66	40.0	45.0	20.0	100.0	100.0	100.0
67	40.0	50.0	20.0	100.0	100.0	100.0
68	40.0	50.0	20.0	100.0	100.0	100.0
69	50.0	80.0	20.0	100.0	100.0	100.0
70	100.0	100.0	100.0	100.0	100.0	100.0

Changes in Actuarial Assumptions (continued)

The following assumptions have been changed since the prior valuation. Previously, these assumptions were as follows:

Retirement Age and Benefit for Deferred Vested Members:	General Retirement Age: 58 Safety Retirement Age: 53 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. 25% of future General and 40% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 3.75% and 4.00% compensation increases per annum are assumed for General and Safety, respectively.
Age and Gender of Spouse:	For all active and inactive members, male members are assumed to have a female spouse who is 4 years younger than the member and female members are assumed to have a male spouse who is 2 years older than the member.
Cashouts:	The following assumptions for a one-time compensation increase at retirement from vacation, sick leave and holiday cashouts are used: *Plan A County Members terminated prior to June 1, 2014:* General Members 4.00% Safety Members 6.00% The following assumptions for a one-time compensation increase at retirement from vacation and holiday cashouts are used: *General Plan A Court Members:* General Members 3.75% *Plan A SVFD Members:* General Members 2.00% Safety Members 3.00%

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.

Section 4: Actuarial Valuation Basis

Valuation Value of Assets:	The Actuarial Value of Assets reduced by the value of the non-valuation reserves.
Amortization Policy:	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. 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 6 years remaining as of December 31, 2021.
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*.
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 and ESC, DSA, DSLEM, SCDPPA, SCLEA and SCLEMA 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.

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 $245,000 for 2022. 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.

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.
Plan A	All General and Safety members with membership dates before January 1, 2013.
Plan B	All General and Safety members with membership dates on or after January 1, 2013, without reciprocity eligibility.
Final Compensation for Benefit Determination:	
Plan A	Highest consecutive one year of compensation earnable (§31462.1)(FAC1).
Plan B	Highest consecutive three years of pensionable compensation (§7522.10(c), §7522.32 and §7522.34)(FAC3).
Compensation Limit:	
Plan A	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 2022 is $305,000. The limit is indexed for inflation on an annual basis.
Plan B	Pensionable compensation is limited to $134,974 for 2022 for an employer that is enrolled in Social Security. For an employer that is not enrolled in Social Security, the maximum amount for 2022 is 120% of $134,974, or $161,969. (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2022. (reference: Section 7522.10(d)).
Service:	Years of service (Yrs) are generally based on a member's employment during a period of time for which deductions are made from their compensation.

Service Retirement Eligibility:	
General	
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.

Benefit Formula:

	Retirement Age	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:	
Plan A	100% of Final Average Compensation (§31676.17, §31664.1).
Plan B	None.
Non-Service Connected Disability:	
General Plan A Members	
Eligibility	Five years of service (§31720).
Benefit Formula	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.
Safety Plan A Members	
Eligibility	Five years of service (§31720).
Benefit Formula	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.
All Plan B Members	
Eligibility	Five years of service (§31720).
Benefit Formula	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). The Service Retirement benefit is payable, if greater.
Service Connected Disability:	
All Members	
Eligibility	No age or service requirements (§31720).
Benefit Formula	50% of the Final Average Compensation or 100% of Service Retirement benefit, if larger (§31727.4).

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

Member Contributions:	Please refer to *Section 4, Exhibit 3* for specific rates.
General Plan A	Entry-age based rates that provide for an annuity at age 55 equal to 1/100 of FAC1. (§31621.8)
General Plan B	50% of the total Normal Cost rate.
Safety Plan A	Entry-age based rates that provide for an annuity at age 50 equal to 1/100 of FAC1. (§31639.25)
Safety Plan B	50% of the total Normal Cost rate.
Additional Contributions	
General – County & Courts	An additional UAAL contribution amount equal to 3.03% of payroll will be paid from July 1, 2004 to June 30, 2024. Subsequent to the initial arrangement, the County negotiated the Salary Resolution and ESC bargaining agreements to state that Plan A members covered under those groups will continue to pay the additional UAAL contribution until they end their employment with the County.
Safety – County	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. Subsequent to the initial arrangement, the County negotiated the Salary Resolution, DSA, DSLEM, SCDPPA, SCLEA and SCLEMA bargaining agreements to state that 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.

Exhibit 3: Member Contribution Rates

Comparison of Total Member Rate[1] from December 31, 2021 (New) and December 31, 2020 (Current) Valuations:

General Plan A – County[2]

Entry Age	Current	New	Change
25	7.61%	8.13%	**0.52%**
35	9.17%	9.79%	**0.62%**
45	11.02%	11.75%	**0.73%**

Safety Plan A – County[3]

Entry Age	Current	New	Change
25	8.96%	9.74%	**0.78%**
35	10.69%	11.43%	**0.74%**
45	12.59%	13.50%	**0.91%**

General Plan A – Court[2]

Entry Age	Current	New	Change
25	7.89%	8.39%	**0.50%**
35	9.50%	10.09%	**0.59%**
45	11.39%	12.09%	**0.70%**

Safety Plan A – SVFD

Entry Age	Current	New	Change
25	9.22%	9.98%	**0.76%**
35	10.99%	11.70%	**0.71%**
45	12.89%	13.76%	**0.87%**

General Plan A – SVFD

Entry Age	Current	New	Change
25	7.76%	8.29%	**0.53%**
35	9.34%	9.97%	**0.63%**
45	11.22%	11.96%	**0.74%**

Safety Plan B – County[3]

Entry Age	Current	New	Change
Any[4]	12.18%	13.27%	**1.09%**

General Plan B

Entry Age	Current	New	Change
Any[4]	7.40%	7.68%	**0.28%**

Safety Plan B – SVFD

Entry Age	Current	New	Change
Any[4]	12.94%	14.00%	**1.06%**

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 and Court 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. The additional UAAL contribution rate is payable in accordance with bargaining agreements that vary by bargaining unit.
4 Plan B member rates are independent of entry age.

Exhibit 3: Member Contribution Rates (continued)

General Members' Contribution Rates Based on the December 31, 2021 Actuarial Valuation (as a % of monthly payroll)

General – Plan A					
	County		Court		SVFD
Entry Age	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.

Exhibit 3: Member Contribution Rates (continued)

General – Plan A (continued)

	County		Court		SVFD
Entry Age	**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 and Court members. The additional UAAL contribution rate is payable in accordance with bargaining agreements that vary by bargaining unit.

[1] For integrated members only.

Exhibit 3: Member Contribution Rates (continued)

General Members' Contribution Rates Based on the December 31, 2021 Actuarial Valuation (as a % of monthly payroll)

General – Plan B	
Entry Age	**All Eligible Pay[1]**
All Members	7.68%

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 and Court members. The additional UAAL contribution rate is payable in accordance with bargaining agreements that vary by bargaining unit.

[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 2022 is equal to $134,974; for an employer that is not enrolled in Social Security, the maximum amount is $161,969 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2022 (reference: Section 7522.10(d)).

Exhibit 3: Member Contribution Rates (continued)

Safety Members' Contribution Rates Based on the December 31, 2021 Actuarial Valuation
(as a % of monthly payroll)

	Safety – Plan A		
	County		SVFD
Entry Age	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.

Exhibit 3: Member Contribution Rates (continued)

Safety – Plan A (continued)			
	County		SVFD
Entry Age	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. The additional UAAL contribution rate is payable in accordance with bargaining agreements that vary by bargaining unit.

[1] For integrated members only.

Exhibit 3: Member Contribution Rates (continued)

Safety Members' Contribution Rates Based on the December 31, 2021 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	13.27%	All Members	14.00%

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. The additional UAAL contribution rate is payable in accordance with bargaining agreements that vary by bargaining unit.

[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 2022 is equal to $134,974; for an employer that is not enrolled in Social Security, the maximum amount is $161,969 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2022 (reference: Section 7522.10(d)).

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).

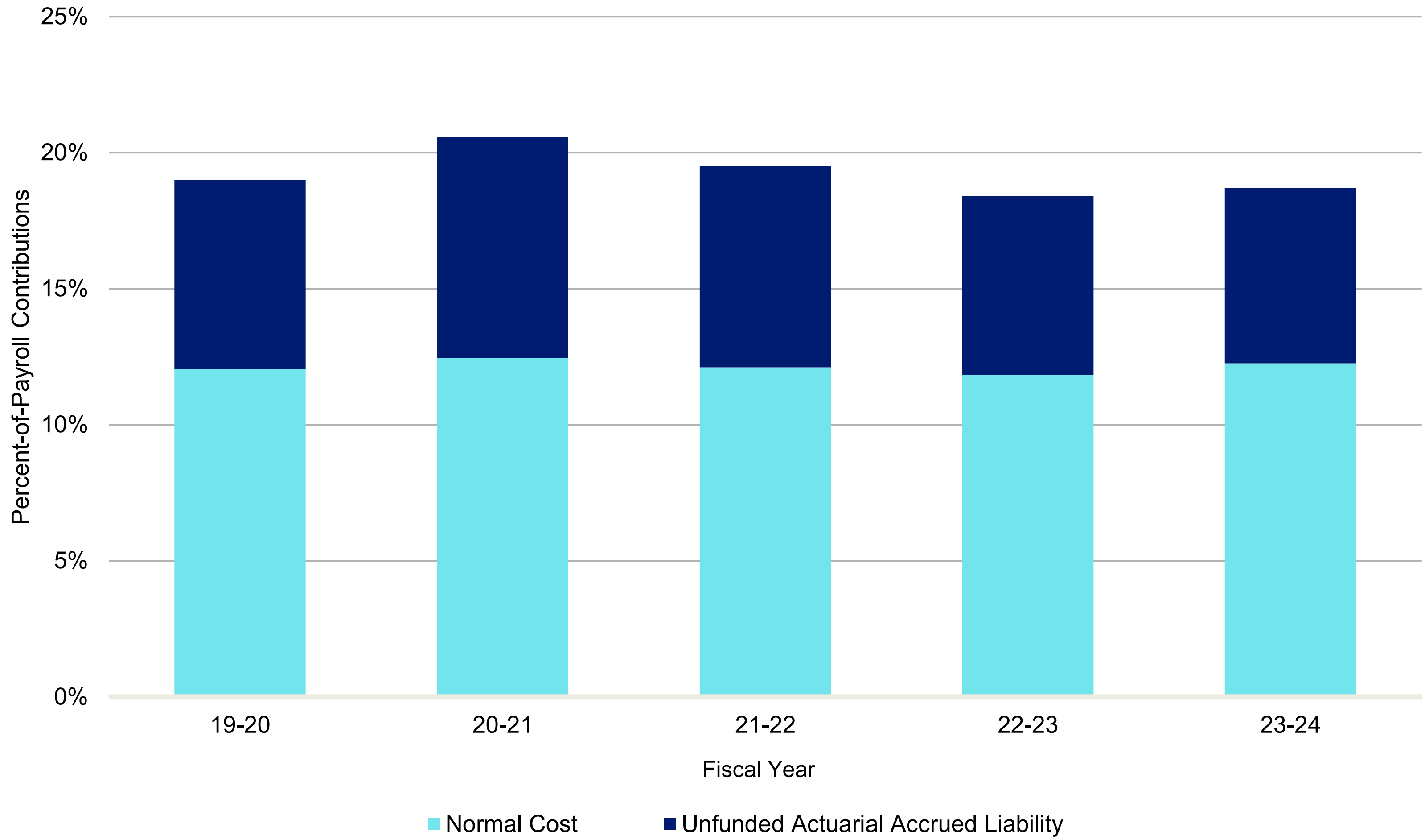


Exhibit 5: Reserves

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

Exhibit 6: Schedule of Employer Contributions

Plan Year Ended December 31	Annual Required Contributions	Actual Contributions	Percentage Contributed
2012	$45,079,000 [1]	$45,079,000	100.0%[1]
2013	51,852,000 [2]	51,852,000	100.0%[2]
2014	61,179,000 [3]	61,179,000	100.0%[3]
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%

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

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[1] Determined using an amortization period of about 26 years (an amortization period of up to 30 years was allowed by GASB).
[2] Determined using an amortization period of about 27 years (an amortization period of up to 30 years was allowed by GASB).
[3] Determined using an amortization period of about 28 years (an amortization period of up to 30 years was allowed by GASB).