Sacramento County Employees' Retirement System

Actuarial Valuation and Review

As of June 30, 2021

Segal

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November 9, 2021

Board of Retirement
Sacramento County Employees' Retirement System
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Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2021. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for fiscal year 2022-2023.

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 System. The census information and financial information on which our calculations were based was prepared by the staff of the System. That assistance is gratefully acknowledged.

The actuarial calculations were directed under the supervision of Andy Yeung, ASA, MAAA, FCA and 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 System.

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

Sincerely,

Segal

Paul Angelo, FSA, EA, MAAA, FCA Senior Vice President and Actuary	Andy Yeung, ASA, EA, MAAA, FCA Vice President and Actuary	Molly Calcagno, ASA, EA, MAAA Actuary

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Section 1: Actuarial Valuation Summary

Purpose and Basis

This report was prepared by Segal to present a valuation of the Sacramento County Employees' Retirement System ("SCERS" or "the System") as of June 30, 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 current plan assets to cover the estimated cost of settling the System'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 System, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2021, provided by SCERS;
- The assets of the System as of June 30, 2021, provided by SCERS;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc.; 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 System's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions to evaluate the System's liabilities and future contribution requirements. Our calculations are based upon member data and financial information provided to us by the

System'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 System'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 June 19, 2013 and affirmed by the Board on February 21, 2018. Details of the funding policy are provided in *Section 4, Exhibit 1* on pages 93 and 94.

A schedule of current amortization balances and payments may be found in *Section 3, Exhibit H* on pages 75 through 77. A graphical projection of the Unfunded Actuarial Accrued Liability (UAAL) amortization balances and payments has been included in *Section 3, Exhibit I* on pages 78 and 79.

The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2022 through June 30, 2023.

Valuation Highlights

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1. The Board adopted a two-year phase-in of the cost impact of the changes in actuarial assumptions calculated in the June 30, 2020 valuation on the employer's UAAL rate only. The employer should be aware that their contributions for 2022-2023 (that are established in this valuation) have increased again due to the further recognition of the cost impact of these changes in actuarial assumptions. In this report, we have shown the rates for 2021-2022 (determined in the June 30, 2020 valuation) both before and after the phase-in.

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2. The funded ratio (the ratio of the Actuarial Value of Assets to Actuarial Accrued Liability) is 82.1%, compared to the prior year funded ratio of 80.6%. 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 is 94.4%, compared to 78.6% as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the System's benefit obligation or the need for, or the amount of, future contributions.

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3. The System's UAAL decreased from $2,464 million as of June 30, 2020 to $2,380 million as of June 30, 2021. A reconciliation of the System'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 has been provided in *Section 3, Exhibit I*.

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4. The net actuarial loss from investment and contribution experience is $59.7 million, or 0.45% of Actuarial Accrued Liability. This loss is primarily due to the one-year lag in the implementation of the contribution rates and the lower than expected increase in total payroll used to pay the UAAL contributions for the year. The net experience gain from sources other than investment and contribution experience was $101.3 million, or 0.76% of the Actuarial Accrued Liability. This gain was primarily due to lower than expected cost-of-living adjustment (COLA) increases for retirees and beneficiaries and lower than expected individual salary increases during 2020-2021.

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5. The aggregate employer rate increased from 31.10% of payroll as determined in the June 30, 2020 valuation (after the first year of phase-in) to 32.04% of payroll as determined in the June 30, 2021 valuation (after the second and final year of phase-in and adjustments for actual experience during 2020-2021). The reasons for this change in contribution rate are: recognizing another one-half of the phase-in of the cost impact of the changes in actuarial assumptions on the employer's UAAL rate, lower than expected contributions, higher UAAL rate due to lower than expected increase in total payroll, and other losses, offset to some degree by lower than expected COLA increases for retirees and beneficiaries and lower than expected individual salary increases during 2020-2021. A reconciliation of the System's aggregate employer rate is provided in *Section 2, Subsection F*.

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6. The aggregate member rate calculated in this valuation has decreased from 12.25% of payroll to 12.20% of payroll. Upon the completion of the June 30, 2020 valuation and during the review of the Interest Crediting and Unallocated Earnings Policy, the Board acted to cap the COLA offset used to set the COLA rates for legacy members at the level determined in the June 30, 2020 valuation, even if favorable actuarial experience would allow for bigger offset. The decrease in member rate is due to changes in member

demographics, offset somewhat by an increase in rates for the legacy members due to a reduction in the COLA offset. A reconciliation of the System's aggregate member rate is provided in *Section 2, Subsection F*.

7. As of June 30, 2021, about 45% of active members are enrolled in the CalPEPRA tiers. As a result of the implementation of the CalPEPRA tiers, the aggregate Normal Cost rate is lower by about 1.3% of payroll compared to what the aggregate Normal Cost rate would have been if all active members were enrolled in the legacy tiers.

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8. The rate of return on the Market Value of Assets was 27.37% for the July 1, 2020 to June 30, 2021 plan year. The rate of return on the smoothed Actuarial Value of Assets was 8.36%, after deferring recognition of most of the most recent investment gain and also in recognition of prior years' investment gains and losses. While this is greater than the 6.75% assumed in the valuation as of June 30, 2020, that excess return was used to build up the Contingency Reserve to $324.2 million as of June 30, 2021, following the Board's Interest Crediting and Unallocated Earnings Policy. As a result, the return on the Valuation Value of Assets was 6.72% for the same period, which resulted in a slight actuarial loss when measured against the assumed rate of return of 6.75%. This actuarial investment loss increased the average employer contribution rate by 0.02% of payroll.

   As part of the review of the assumed long-term rate of return on investments and other assumptions in the next triennial experience study scheduled before the June 30, 2023 valuation, we will examine the low fixed income interest rate environment and evolving expectations of future investment returns for various asset classes. This will allow us to assist the Board as they continue to monitor anticipated investment returns relative to the assumed long-term rate of return on investments of 6.75%.

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9. As indicated in *Section 2, Subsection B*, the total net unrecognized investment gain as of June 30, 2021 is $1,634.6 million (as compared to a net unrecognized investment loss of $250.4 million as of June 30, 2020). This net investment gain will be recognized in the determination of the Actuarial Value of Assets for funding purposes over the next six years. That means that if the System earns the assumed rate of investment return of 6.75% per year on a **market value** basis, there will be net investment gains on the Actuarial Value of Assets in the next few years. Therefore, if the actual market return is equal to the assumed rate of 6.75% and all the other actuarial assumptions are met, the net employer contribution requirements would decrease in the next few years.

   The unrecognized investment gains represent about 13.0% of the Market Value of Assets. Unless offset by future investment losses or other unfavorable experience, the recognition of the $1,634.6 million in past market gains is expected to have an impact on the System's future funded ratio and the aggregate employer contributions. This potential impact may be illustrated as follows:

   a. If the deferred gains were recognized immediately in the Actuarial Value of Assets, the funded percentage would increase from 82.1% to 94.4%.

      For comparison purposes, if all the deferred losses in the June 30, 2020 valuation had been recognized immediately in the June 30, 2020 valuation, the funded percentage would have decreased from 80.6% to 78.6%.

   b. If the deferred gains were recognized immediately in the Actuarial Value of Assets, the aggregate employer contribution rate would decrease from 32.04% of payroll to 21.3% of payroll.

For comparison purposes, if all the deferred losses in the June 30, 2020 valuation had been recognized immediately in the June 30, 2020 valuation, the aggregate employer contribution rate would have increased from 31.42% of payroll to 33.1% of payroll. Note that both of these rates are calculated with the two-year phase-in of the UAAL rate impact from the assumption changes.

10. The $324.2 million in the Contingency Reserve as of June 30, 2021 is available to supplement shortfall when crediting interest to the valuation reserve accounts in future valuations under the Board's Interest Crediting Policy. If that amount were applied in the June 30, 2021 valuation, the aggregate employer contribution rate would have decreased by about 2.1% of payroll.

11. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2021. Due to the COVID-19 pandemic, market conditions have changed significantly since the onset of the Public Health Emergency. The System's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after June 30, 2021. While it is impossible to determine how the pandemic will continue to affect market conditions and other demographic experience of the System in future valuations, Segal is available to prepare projections of potential outcomes upon request.

12. On July 30, 2020, the California Supreme Court issued a decision in the Alameda County Deputy Sheriffs' Assn. et al. v. Alameda County Employees' Retirement Assn. litigation that clarified what should be considered compensation earnable for legacy members and pensionable compensation for CalPEPRA members. It should be noted that neither the June 30, 2021 assets provided by SCERS nor the liabilities we calculated using the membership data provided by SCERS reflect the financial impact of the Supreme Court decision. This is based on our understanding that as of August 2021, when the membership and other information was provided to us for this valuation, SCERS had not finalized any adjustments as of June 30, 2021.

13. Rio Linda Elverta Recreation and Parks District became a participating employer effective October 1, 2017. Employees are enrolled in Miscellaneous Tier 5, regardless of any reciprocity with other retirement systems. Besides paying the Normal Cost rate, the employer is only responsible for its share of the UAAL rate based only on actuarial experience that occurred on or after July 1, 2017.

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

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

Because the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the System. Following the completion of the June 30, 2020 valuation, we prepared a stand-alone Risk Assessment report dated March 1, 2021 by using membership and financial information as provided in the actuarial valuation as of June 30, 2020. That report includes various projections (both deterministic and stochastic) of future results under different investment return scenarios together with the assumptions adopted for the June 30, 2020 valuation.

A copy of the stand-alone risk assessment report associated with this June 30, 2021 valuation, including the quantitative analyses recommended by Segal in consultation with SCERS staff, will be available in the first quarter of 2022. In the interim, we have included a brief discussion of key risks that may affect the System in *Section 2, Subsection J*.

15. Segal strongly recommends an actuarial funding policy that targets 100% funding of the Actuarial Accrued Liability. General, this implies payments that are ultimately at least enough to cover Normal Cost, interest on the UAAL and the principal balance. The funding policy adopted by the Board meets this standard.
16. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution (ADC) under the System'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 June 30, 2021, will be provided separately. The accounting disclosures will utilize different methodologies from those employed in the funding valuation, as required by GASB. However, the ADC in this valuation is expected to be used as the ADC for GASB financial reporting.

Summary of Key Valuation Results

		June 30, 2021		June 30, 2020 (After Phase-In)	
		Total Rate	Estimated Annual Dollar Amount[1] ($ in '000s)	Total Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
Employer Contribution Rates:	• Miscellaneous Tier 1	25.60%	$462	24.60%	$444
	• Miscellaneous Tier 2	22.41%	578	21.64%	558
	• Miscellaneous Tier 3	25.73%	125,854	24.97%	122,155
	• Miscellaneous Tier 4	24.48%	7,829	23.65%	7,563
	• Miscellaneous Tier 5	23.82%	75,205	22.98%	72,545
	• Safety Tier 1	72.96%[2]	3,869	66.07%	3,504
	• Safety Tier 2	58.70%	80,541	57.35%	78,688
	• Safety Tier 3	57.47%	8,924	56.01%	8,697
	• Safety Tier 4	52.37%	43,334	51.10%	42,283
	All Categories Combined	**32.04%**	**$346,596**	**31.10%**	**$336,437**
Aggregate Member Contribution Rates:	**All Categories Combined**	**12.20%**	**$131,999**	**12.25%**	**$132,540**
		Total Rate[3]	Per Member Annual Dollar Amount[4]	Total Rate[2]	Per Member Annual Dollar Amount[3]
Individual Member Contribution Rates:[5]	• Miscellaneous Tier 1	7.06%	$6,609	6.75%	$6,318
	• Miscellaneous Tier 2	4.16%	3,295	4.16%	3,295
	• Miscellaneous Tier 3	6.00%	5,376	6.01%	5,387
	• Miscellaneous Tier 4	8.99%	8,667	8.99%	8,668
	• Miscellaneous Tier 5	10.02%	6,696	10.01%	6,689
	• Safety Tier 1	19.82%[2]	32,571	18.86%	31,002
	• Safety Tier 2	16.06%	22,416	16.04%	22,389
	• Safety Tier 3	15.55%	19,743	15.52%	19,704
	• Safety Tier 4	15.05%	13,914	15.11%	13,970

1 Based on June 30, 2021 projected annual compensation.
2 There is an increase in the employer and member rate for Safety Tier 1 primarily as a result of changes in member demographics.
3 Based on single full-rates payable by members who enter on or after January 1, 1975.
4 Based on June 30, 2021 average projected annual compensation for members in each respective tier.
5 Before reflecting members in legacy tiers agreeing to contribute an additional portion of the Normal Cost.

Summary of Key Valuation Results (continued)

		June 30, 2021 ($ in '000s)	June 30, 2020 ($ in '000s)
Actuarial Accrued Liability as of June 30:	• Retired members and beneficiaries	$7,840,601	$7,455,984
	• Inactive vested members[1]	459,267	401,957
	• Active members	4,671,916	4,680,298
	• Non-valuation reserves and designations	337,922	155,416
	• Total Actuarial Accrued Liability[2]	13,309,706	12,693,655
	• Normal Cost for plan year beginning June 30	273,149	274,029
Assets as of June 30:	• Market Value of Assets (MVA)	$12,564,149	$9,979,379
	• Actuarial Value of Assets (AVA)[2]	10,929,549	10,229,760
Funded status as of June 30:	• Unfunded Actuarial Accrued Liability on Market Value of Assets basis	$745,557	$2,714,276
	• Funded percentage on MVA basis	94.4%	78.6%
	• Unfunded Actuarial Accrued Liability on Actuarial Value of Assets basis	$2,380,157	$2,463,894
	• Funded percentage on AVA basis	82.1%	80.6%
Key assumptions:	• Net investment return	6.75%	6.75%
	• Price inflation	2.75%	2.75%
	• Payroll growth	3.00%	3.00%

Note: Results may not total due to rounding.

[1] Includes inactive members due a refund of member contributions.
[2] Includes non-valuation reserves and designations.

Summary of Key Valuation Results (continued)

		June 30, 2021	June 30, 2020	Change From Prior Year
Demographic data as of June 30:	**Active Members:**			
	• Number of members	12,500	12,650	-1.2%
	• Average age	45.6	45.7	-0.1
	• Average service	11.8	11.9	-0.1
	• Total projected compensation	$1,081,963,421	$1,070,512,488	1.1%
	• Average projected compensation	$86,557	$84,625	2.3%
	Retired Members and Beneficiaries:			
	• Number of members:			
	– Service retired	10,599	10,313	2.8%
	– Disability retired	704	699	0.7%
	– Beneficiaries	1,748	1,720	1.6%
	– Total	13,051	12,732	2.5%
	• Average age	70.2	70.1	0.1
	• Average monthly benefit	$3,768	$3,658	3.0%
	Inactive Vested Members:			
	• Number of members[1]	4,054	3,791	6.9%
	• Average age	47.1	46.9	0.2
	Total Members:	29,605	29,173	1.5%

[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 System. 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 System. The System 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, termination, 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. 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 System. 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; and • Changes in statutory provisions.
Some actuarial results in this report are not rounded, but that does not imply precision.
If the System 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 System 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 System, it is not a fiduciary in its capacity as actuaries and consultants with respect to the System.

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

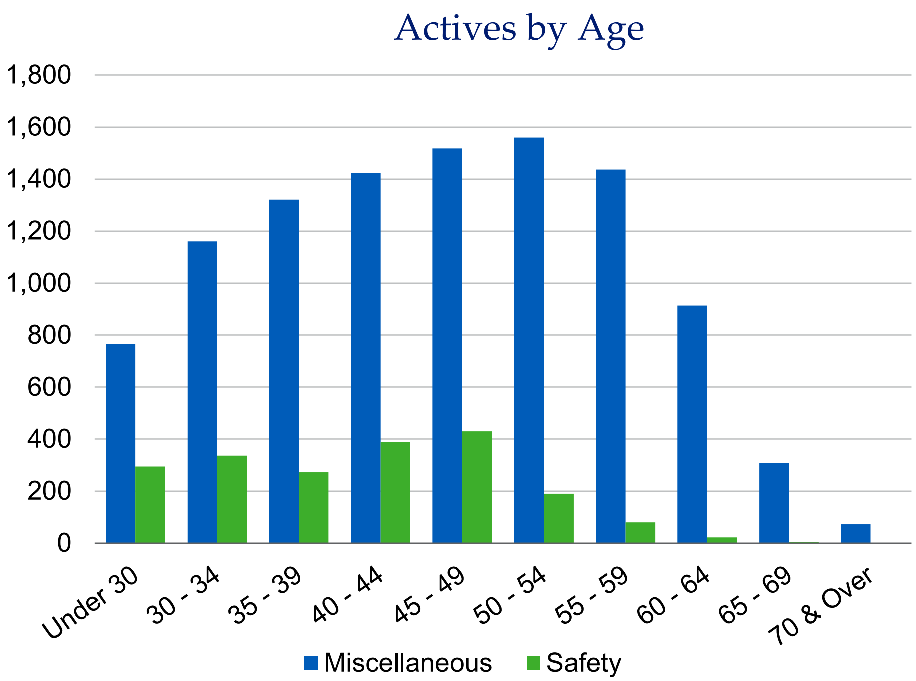
Year Ended June 30	Active Members	Inactive Vested Members[1]	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2012	12,155	2,851	9,239	12,090	0.99	0.76
2013	12,026	3,249	9,634	12,883	1.07	0.80
2014	12,049	3,201	10,049	13,250	1.10	0.83
2015	12,072	3,261	10,541	13,802	1.14	0.87
2016	12,393	3,301	10,960	14,261	1.15	0.88
2017	12,587	3,425	11,396	14,821	1.18	0.91
2018	12,677	3,509	11,883	15,392	1.21	0.94
2019	12,678	3,602	12,381	15,983	1.26	0.98
2020	12,650	3,791	12,732	16,523	1.31	1.01
2021	12,500	4,054	13,051	17,105	1.37	1.04

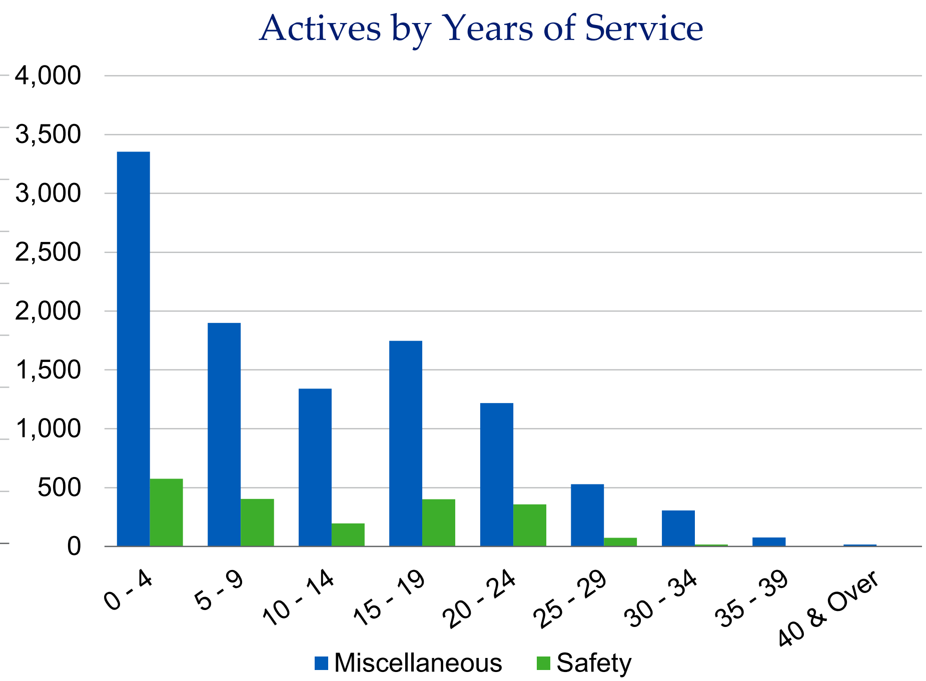
[1] Includes inactive members due a refund of member contributions.

Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 12,500 active members with an average age of 45.6, average years of service of 11.8 years and average compensation of $86,557. The 12,650 active members in the prior valuation had an average age of 45.7, average service of 11.9 years and average compensation of $84,625.

Distribution of Active Members as of June 30, 2021





Average age	45.6
Prior year average age	45.7
Difference	-0.1

Average years of service	11.8
Prior year average years of service	11.9
Difference	-0.1

Inactive Members

In this year's valuation, there were 4,054 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 3,791 in the prior valuation.

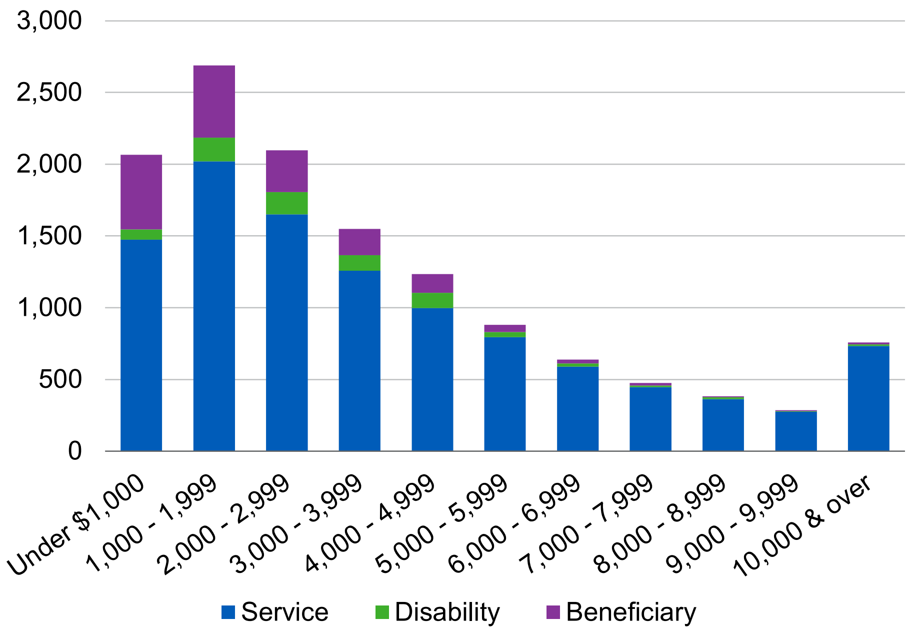
Retired Members and Beneficiaries

As of June 30, 2021, 11,303 retired members and 1,748 beneficiaries were receiving total monthly benefits of $49,169,850. For comparison, in the previous valuation, there were 11,012 retired members and 1,720 beneficiaries receiving monthly benefits of $46,579,173.

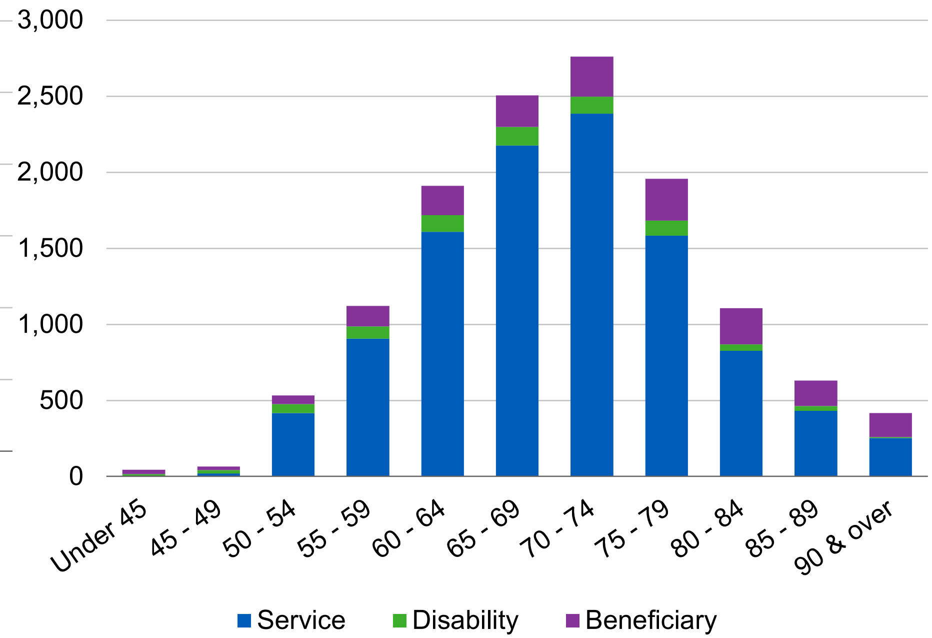
As of June 30, 2021, the average monthly benefit for retired members and beneficiaries is $3,768, compared to $3,658 in the previous valuation. The average age for retired members and beneficiaries is 70.2 in the current valuation, compared with 70.1 in the prior valuation.

Distribution of Retired Members and Beneficiaries as of June 30, 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 June 30	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2012	12,155	46.8	12.6	9,239	68.8	$2,780
2013	12,026	47.0	12.9	9,634	69.0	2,865
2014	12,049	46.9	12.8	10,049	69.1	2,950
2015	12,072	46.7	12.7	10,541	69.2	3,072
2016	12,393	46.3	12.4	10,960	69.4	3,156
2017	12,587	46.0	12.1	11,396	69.5	3,260
2018	12,677	45.7	11.9	11,883	69.6	3,381
2019	12,678	45.7	11.9	12,381	69.8	3,521
2020	12,650	45.7	11.9	12,732	70.1	3,658
2021	12,500	45.6	11.8	13,051	70.2	3,768

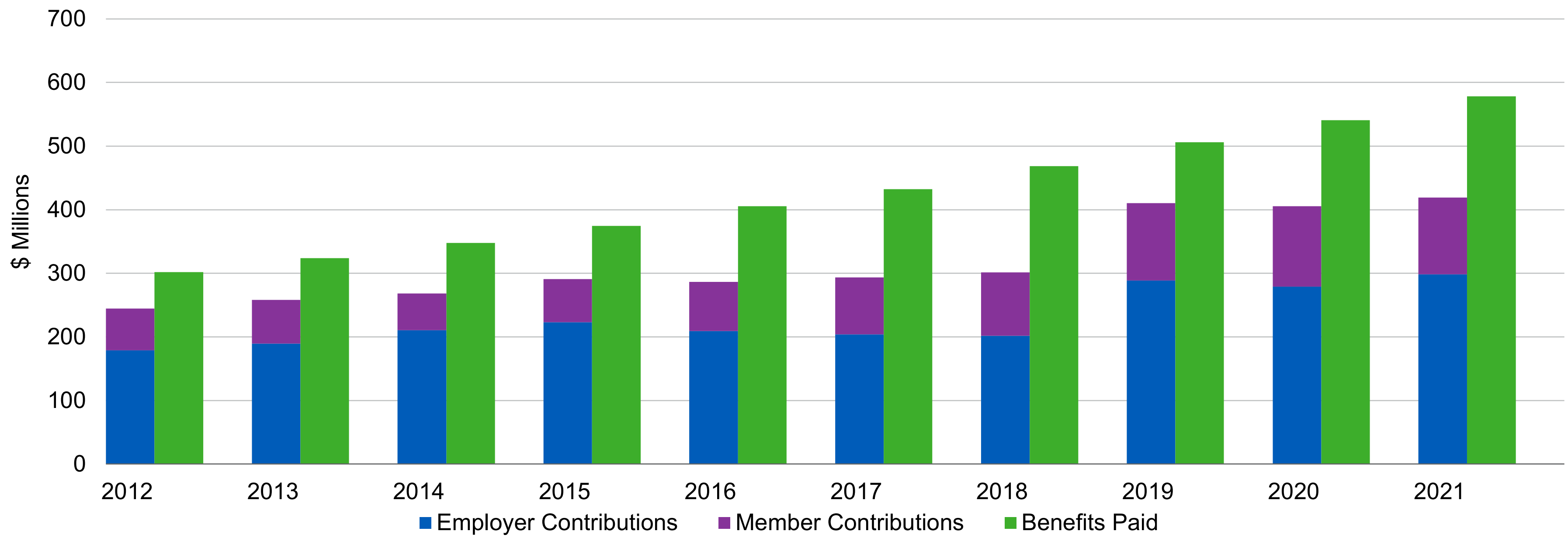
B. Financial Information

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 Made with Benefits for Years Ended June 30, 2012 – 2021



Determination of Actuarial Value of Assets for Year Ended June 30, 2021

		Expected Return	Actual Return	Original Amount	Percent Deferred	Unrecognized Amount
1	**Market Value of Assets**					**$12,564,149,000**
2	Calculation of unrecognized return					
a.	Year ended June 30, 2016	$592,506,256	$(78,760,809)	$(671,267,065)	14.3%	$(95,895,295)
b.	Year ended June 30, 2017	576,748,382	1,042,009,164	465,260,782	28.6%	132,931,652
c.	Year ended June 30, 2018	600,381,878	834,483,764	234,101,886	42.9%	100,329,380
d.	Year ended June 30, 2019	649,300,474	665,185,884	15,885,410	57.1%	9,077,377
e.	Year ended June 30, 2020	690,394,213	292,913,229	(397,480,984)	71.4%	(283,914,989)
f.	Year ended June 30, 2021	676,831,490	2,744,248,606	2,067,417,116	85.7%	1,772,071,814
g.	Total unrecognized return[1]					$1,634,599,939
3	**Preliminary Actuarial Value of Assets 1 – 2g**					**$10,929,549,061**
4	Adjustment to be within 30% corridor					**0**
5	**Final Actuarial Value of Assets 3 + 4**					**$10,929,549,061**
6	Actuarial Value of Assets as a percentage of Market Value of Assets					87.0%
7	Non-valuation reserves and designations:					
a.	Contingency Reserve					$324,177,378
b.	Other Non-Valuation Reserves					0
c.	Subtotal					$324,177,378
8	**Preliminary Valuation Value of Assets 5 – 7c**					**$10,605,371,683**
9	Adjustment to Preliminary Valuation Value of Assets					
a.	Balance of transfer to offset member COLA rate[2, 3]					$13,745,000
10	**Final Valuation Value of Assets 8 – 9a**					**$10,591,626,683**

[1] Deferred return as of June 30, 2021 recognized in each of the next six years:

a.	Amount recognized on June 30, 2022	$244,845,306	d.	Amount recognized on June 30, 2025	$240,831,649
b.	Amount recognized on June 30, 2023	340,740,601	e.	Amount recognized on June 30, 2026	238,562,306
c.	Amount recognized on June 30, 2024	274,274,774	f.	Amount recognized on June 30, 2027	295,345,303
			g.	Total unrecognized return as of June 30, 2021	$1,634,599,939

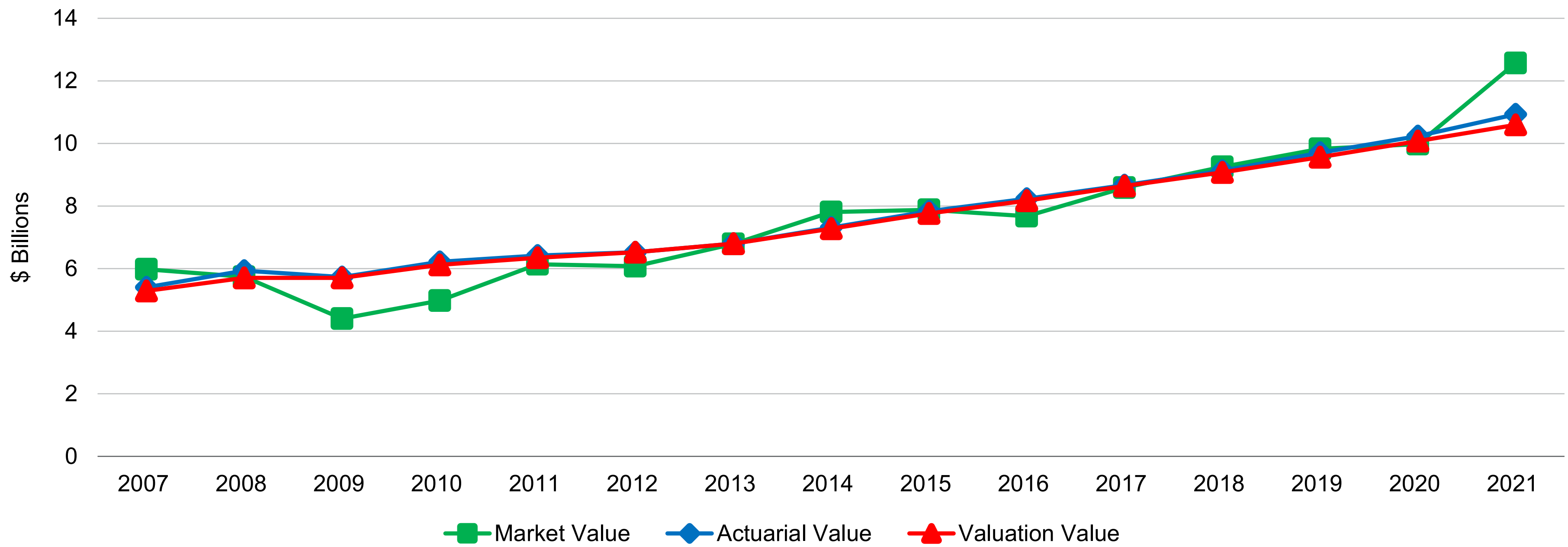
[2] This amount has been applied in this valuation to offset the legacy members' COLA contribution rates over their expected remaining active working career of 8.44 years. There is a reduction in the aggregate member rate of 0.18% when expressed as a percent of payroll for all members in this valuation.

[3] Of this amount, about $690,000 may be reverted to the employer reserves to reduce the UAAL after all members in the corresponding legacy tiers have separated employment.

Section 2: Actuarial Valuation Results

The Market Value, Actuarial Value and Valuation Value of Assets are representations of the System'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 System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the Unfunded Actuarial Accrued Liability is an important element in determining the contribution requirement.

Market Value, Actuarial Value, and Valuation Value of Assets as of June 30, 2007 – 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 return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years. There are no changes in actuarial assumptions reflected in this valuation.

The total gain is $41.7 million, which includes $2.9 million from investment losses, a loss of $56.8 million from contribution experience and $101.3 million in gains from all other sources. The net experience variation from individual sources other than investments and contributions was 0.8% of the Actuarial Accrued Liability. A discussion of the major components of the actuarial experience is on the following pages.

Actuarial Experience for Year Ended June 30, 2021

1	Net loss from investments[1]	$(2,883,000)
2	Net loss from contribution experience	(56,794,000)
3	Net gain from other experience[2]	101,348,000
4	**Net experience gain: 1 + 2 + 3**	**$41,671,000**

[1] Details on next page.
[2] See *Section 2, Subsection E* for further details. Does not include the effect of plan 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 System's investment policy. The rate of return on the Market Value of Assets was 27.37% for the year ended June 30, 2021.

The rate of return on the smoothed Actuarial Value of Assets was 8.36%, which is greater than the 6.75% assumed in the valuation as of June 30, 2020. However, that excess return was used to build up the Contingency Reserve, following the Board's Interest Crediting and Unallocated Earnings Policy. As shown on page 21, the balance in that Reserve was $324.2 million as of June 30, 2021.

As a result, the actual rate of return on a valuation basis for the 2020-2021 plan year was 6.72%. Because the actual return for the year was less than the assumed return, the System experienced an actuarial loss during the year ended June 30, 2021 with regard to its investments.

Investment Experience for Year Ended June 30, 2021

		Market Value	Actuarial Value	Valuation Value
1	Net investment income	$2,744,249,000	$859,268,000	$680,345,000
2	Average value of assets	10,027,133,000	10,277,514,000	10,121,895,000
3	Rate of return: **1 ÷ 2**	27.37%	8.36%	6.72%
4	Assumed rate of return	6.75%	6.75%	6.75%
5	Expected investment income: **2 x 4**	$676,832,000	$693,732,000	$683,228,000
6	**Actuarial gain/(loss): 1 - 5**	**$2,067,417,000**	**$165,536,000**	**$(2,883,000)**

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.

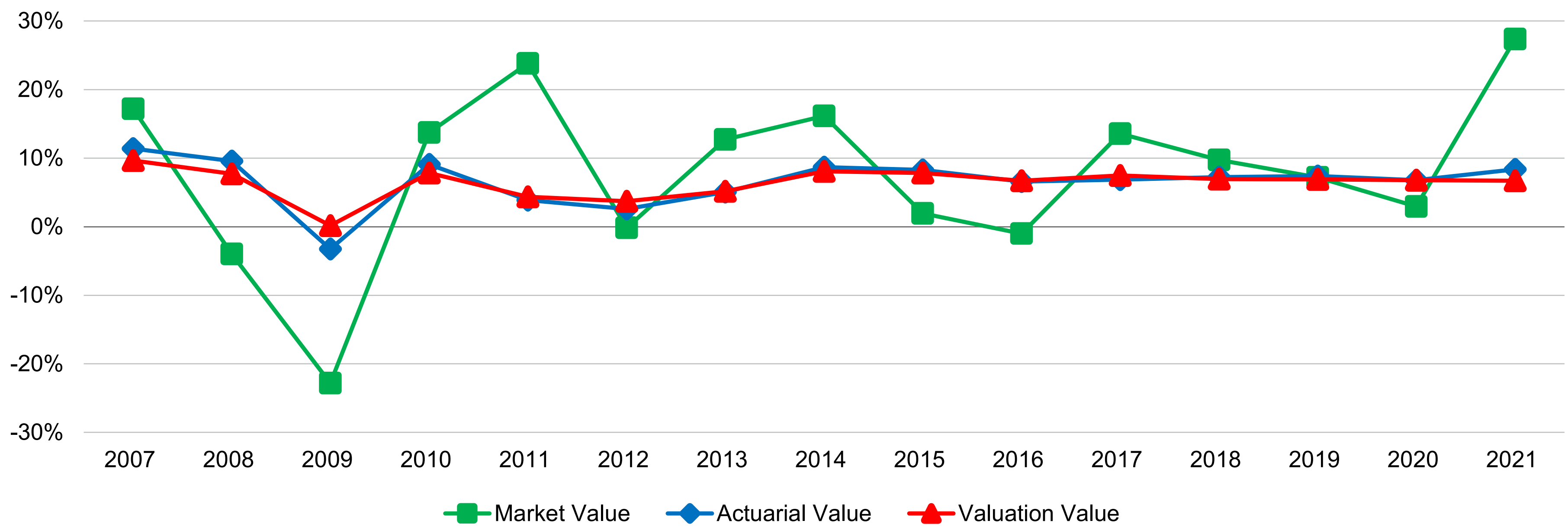
Investment Return – Market Value, Actuarial Value and Valuation Value: 2012 – 2021

	Market Value Investment Return		Actuarial Value Investment Return		Valuation Value Investment Return	
Year Ended June 30	**Amount**	**Percent**	**Amount**	**Percent**	**Amount**	**Percent**
2012	$(9,702,000)	(0.16%)	$166,087,000	2.57%	$238,467,000	3.73%
2013	779,729,000	12.73%	333,523,000	5.07%	341,373,000	5.19%
2014	1,101,488,000	16.13%	594,718,000	8.70%	551,884,000	8.06%
2015	152,368,000	1.94%	609,387,000	8.28%	572,950,000	7.82%
2016	(78,761,000)	(1.00%)	516,765,000	6.57%	521,978,000	6.70%
2017	1,042,009,000	13.55%	567,473,000	6.88%	610,522,000	7.46%
2018	834,484,000	9.73%	624,550,000	7.21%	598,171,000	6.93%
2019	665,186,000	7.17%	675,738,000	7.39%	628,142,000	6.91%
2020	292,913,000	2.97%	661,676,000	6.79%	652,027,000	6.79%
2021	2,744,249,000	27.37%	859,268,000	8.36%	680,345,000	6.72%
Most recent five-year geometric average return		**11.86%**		**7.33%**		**6.96%**
Most recent ten-year geometric average return		**8.73%**		**6.77%**		**6.62%**

Section 2: Actuarial Valuation Results

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

Market, Actuarial and Valuation Rates of Return for Years Ended June 30, 2007 – 2021



Contributions

Contributions for the year ended June 30, 2021 totaled $413.1 million (excluding $5.8 million in net receivable and actual contributions made by a withdrawn employer required to pay off its unfunded liability), compared to the projected amount of $476.4 million. This resulted in a loss of $56.8 million for the year, when adjusted for timing. These exclude any contributions for withdrawn employers, if any.

Non-Investment Experience

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

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

The net gain from this other experience for the year ended June 30, 2021 amounted to $101.3 million, which is 0.8% of the Actuarial Accrued Liability. See *Section 2, Subsection E* for a detailed development of the Unfunded Actuarial Accrued Liability.

D. Other Changes in the Actuarial Accrued Liability

The Actuarial Accrued Liability as of June 30, 2021 is $13.3 billion, an increase of $0.6 billion, or 4.9%, from the Actuarial Accrued Liability as of the prior valuation date. The liability is expected to grow each year with Normal Cost and interest, and to decline due to benefit payments made. Additional fluctuations can occur due to actual experience that differs from expected (as discussed in the previous subsection).

Actuarial Assumptions and Methods

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

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

Plan Provisions

There were no changes in plan provisions since the prior valuation.

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

E. Development of Unfunded Actuarial Accrued Liability

Development for Year Ended June 30, 2021

1	**Unfunded Actuarial Accrued Liability at beginning of year**		**$2,463,894,000**
2	Total Normal Cost at middle of year		274,029,000
3	Expected employer and member contributions[1]		(476,391,000)
4	Interest		160,296,000
5	Expected Unfunded Actuarial Accrued Liability at end of year		$2,421,828,000
6	Changes due to:		
	a. Investment return less than expected (after “smoothing”)[2]	$2,883,000	
	b. Actual contributions less than expected[1, 3]	56,794,000	
	c. Individual salary increases lower than expected	(35,891,000)	
	d. COLA increases lower than expected	(51,764,000)	
	e. Other experience gains	(13,693,000)	
	Total changes		$(41,671,000)
7	**Unfunded Actuarial Accrued Liability at end of year**		**$2,380,157,000**

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

[1] Contribution from Sacramento Metropolitan Fire District is excluded from both the expected and the actual contributions.
[2] While the rate of return on the smoothed Actuarial Value of Assets is greater than the 6.75% assumed in the valuation as of June 30, 2020, that excess return was used to build up the Contingency Reserve to $324.2 million as of June 30, 2021, following the Board’s Interest Crediting and Unallocated Earnings Policy.
[3] Due to the phase-in of the cost impact of the changes in actuarial assumptions calculated in the June 30, 2020 valuation, the one-year lag in implementation of the contribution rates, and the lower than expected increase in total payroll used to pay the UAAL contributions for the year.

F. Recommended Contribution

The recommended contribution is equal to the employer Normal Cost payment and a payment on the Unfunded Actuarial Accrued Liability. As of June 30, 2021, the average recommended employer contribution is 32.04% 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 June 30, 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 June 30

		2021		2020	
		Amount ($ in '000s)	**% of Projected Compensation**	**Amount ($ in '000s)**	**% of Projected Compensation**
1	Total Normal Cost	$273,149	25.25%	$274,029	25.60%
2	Expected member Normal Cost contributions	(131,999)	(12.20%)	(132,208)	(12.35%)
3	Employer Normal Cost: 1 + 2	$141,150	13.05%	$141,821	13.25%
4	Actuarial Accrued Liability[1]	12,971,784		12,538,239	
5	Valuation Value of Assets[1]	10,591,627		10,074,345	
6	Unfunded Actuarial Accrued Liability: 4 - 5	$2,380,157		$2,463,894	
7	Payment on Unfunded Actuarial Accrued Liability	$205,446	18.99%	$194,486[2]	18.17%[2]
8	Total average recommended employer contribution: 3 + 7	$346,596	32.04%	$336,307[2]	31.42%[2]
9	Projected compensation	$1,081,961		$1,070,512	

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

[1] Excludes non-valuation reserves and designations.
[2] After reflecting two-year phase-in.

Reconciliation of Average Recommended Employer Contribution Rate

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

Reconciliation from June 30, 2020 to June 30, 2021

		Contribution Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
1	**Average Recommended Employer Contribution as of June 30, 2020 (After Reflecting Two-Year Phase-In)**	**31.10%**	**$336,437**
2	Effect of phase-in of employer's UAAL contribution rate impact due to changes in actuarial assumptions over two years	0.73%	7,980
3	**Average Recommended Employer Contribution as of June 30, 2020 (Before Reflecting Two-Year Phase-In)**	**31.83%**	**$344,417**
4	Effect of investment return less than expected (after "smoothing")[2]	0.02%	216
5	Effect of actual contributions less than expected[3]	0.37%	4,003
6	Effect of individual salary increases lower than expected	(0.24%)	(2,597)
7	Effect of increase in UAAL rate from lower than expected increase in total payroll	0.36%	3,895
8	Effect of COLA increases lower than expected	(0.34%)	(3,679)
9	Effect of other losses	0.04%	341
10	Total change	0.21%	$2,179
11	**Average Recommended Employer Contribution as of June 30, 2021**	**32.04%**	**$346,596**

[1] Based on June 30, 2021 projected compensation.
[2] While the rate of return on the smoothed Actuarial Value of Assets is greater than the 6.75% assumed in the valuation as of June 30, 2020, that excess return was used to build up the Contingency Reserve to $324.2 million as of June 30, 2021, following the Board's Interest Crediting and Unallocated Earnings Policy.
[3] Due to the phase-in of the cost impact of the changes in actuarial assumptions calculated in the June 30, 2020 valuation, the one-year lag in implementation of the contribution rates, and the lower than expected increase in total payroll used to pay the UAAL contributions for the year.

Reconciliation of Average Recommended Member Contribution Rate

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

Reconciliation from June 30, 2020 to June 30, 2021

		Contribution Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
1	**Average Recommended Member Contribution as of June 30, 2020**	**12.25%**	**$132,540**
2	Effect of changes in active member demographics	(0.08%)	(866)
3	Effect of reduction in COLA offset for legacy members	0.03%	325
4	Total change	(0.05%)	(541)
5	**Average Recommended Member Contribution as of June 30, 2021**	**12.20%**	**$131,999**

[1] Based on June 30, 2021 projected compensation.

Recommended Employer Contribution Rate

	June 30, 2021 Actuarial Valuation		June 30, 2020 Actuarial Valuation	
County Only[1]	**Contribution Rate**	**Estimated Annual Dollar Amount**[2] **($ in '000s)**	**Contribution Rate**	**Estimated Annual Dollar Amount**[2] **($ in '000s)**
Miscellaneous – Tier 1 Members				
Normal Cost	11.96%	$203	11.80%	$200
UAAL	13.41%	228	13.40%	227
Total Contribution	**25.37%**	**$431**	**25.20%**	**$427**
Total Contribution after 2-year Phase-In			**24.38%**	**$413**
Miscellaneous – Tier 2 Members				
Normal Cost	8.29%	$175	8.29%	$175
UAAL	13.41%	283	13.40%	283
Total Contribution	**21.70%**	**$458**	**21.69%**	**$458**
Total Contribution after 2-year Phase-In			**20.87%**	**$441**
Miscellaneous – Tier 3 Members				
Normal Cost	11.42%	$49,443	11.49%	$49,746
UAAL	13.41%	58,058	13.40%	58,015
Total Contribution	**24.83%**	**$107,501**	**24.89%**	**$107,761**
Total Contribution after 2-year Phase-In			**24.07%**	**$104,211**
Miscellaneous – Tier 4 Members				
Normal Cost	11.07%	$3,540	11.07%	$3,540
UAAL	13.41%	4,289	13.40%	4,285
Total Contribution	**24.48%**	**$7,829**	**24.47%**	**$7,825**
Total Contribution after 2-year Phase-In			**23.65%**	**$7,563**

[1] Includes elected officials (Board of Supervisors, Sheriff, District Attorney and Assessor).
[2] Based on June 30, 2021 projected annual payroll, see page 39.

Recommended Employer Contribution Rate (continued)

	June 30, 2021 Actuarial Valuation		June 30, 2020 Actuarial Valuation	
County Only[1] (continued)	**Contribution Rate**	**Estimated Annual Dollar Amount[2] ($ in '000s)**	**Contribution Rate**	**Estimated Annual Dollar Amount[2] ($ in '000s)**
Miscellaneous – Tier 5 Members				
Normal Cost	10.02%	$28,723	10.01%	$28,694
UAAL	13.41%	38,440	13.40%	38,412
Total Contribution	**23.43%**	**$67,163**	**23.41%**	**$67,106**
Total Contribution after 2-year Phase-In			**22.59%**	**$64,755**
All Miscellaneous County Categories Combined				
Normal Cost	10.87%	$82,084	10.90%	$82,355
UAAL	13.41%	101,298	13.40%	101,222
Total Contribution	**24.28%**	**$183,382**	**24.30%**	**$183,577**
Total Contribution after 2-year Phase-In			**23.48%**	**$177,383**
Safety – Tier 1 Members				
Normal Cost	35.64%[3]	$1,890	30.08%	$1,595
UAAL	37.32%	1,979	36.44%	1,933
Total Contribution	**72.96%**	**$3,869**	**66.52%**	**$3,528**
Total Contribution after 2-year Phase-In			**66.07%**	**$3,504**
Safety – Tier 2 Members				
Normal Cost	21.38%	$29,335	21.36%	$29,307
UAAL	37.32%	51,206	36.44%	49,998
Total Contribution	**58.70%**	**$80,541**	**57.80%**	**$79,305**
Total Contribution after 2-year Phase-In			**57.35%**	**$78,688**

1 Includes elected officials (Board of Supervisors, Sheriff, District Attorney and Assessor).
2 Based on June 30, 2021 projected annual payroll, see page 39.
3 There is an increase in the normal cost rate paid by the employer for those employees with over 30 years of service.

Recommended Employer Contribution Rate (continued)

County Only[1] (continued)	June 30, 2021 Actuarial Valuation Contribution Rate	June 30, 2021 Actuarial Valuation Estimated Annual Dollar Amount[2] ($ in '000s)	June 30, 2020 Actuarial Valuation Contribution Rate	June 30, 2020 Actuarial Valuation Estimated Annual Dollar Amount[2] ($ in '000s)
Safety – Tier 3 Members				
Normal Cost	20.15%	$3,129	20.02%	$3,108
UAAL	37.32%	5,795	36.44%	5,659
Total Contribution	**57.47%**	**$8,924**	**56.46%**	**$8,767**
Total Contribution after 2-year Phase-In			**56.01%**	**$8,697**
Safety – Tier 4 Members				
Normal Cost	15.05%	$12,453	15.11%	$12,503
UAAL	37.32%	30,881	36.44%	30,153
Total Contribution	**52.37%**	**$43,334**	**51.55%**	**$42,656**
Total Contribution after 2-year Phase-In			**51.10%**	**$42,283**
All Safety County Categories Combined				
Normal Cost	19.44%	$46,807	19.32%	$46,513
UAAL	37.32%	89,861	36.44%	87,743
Total Contribution	**56.76%**	**$136,668**	**55.76%**	**$134,256**
Total Contribution after 2-year Phase-In			**55.31%**	**$133,172**
All County Categories Combined				
Normal Cost	12.94%	$128,891	12.93%	$128,868
UAAL	19.19%	191,159	18.97%	188,965
Total Contribution	**32.13%**	**$320,050**	**31.90%**	**$317,833**
Total Contribution after 2-year Phase-In			**31.17%**	**$310,555**

[1] Includes elected officials (Board of Supervisors, Sheriff, District Attorney and Assessor).
[2] Based on June 30, 2021 projected annual payroll, see page 39.

Recommended Employer Contribution Rate (continued)

Superior Court Only	June 30, 2021 Actuarial Valuation Contribution Rate	June 30, 2021 Actuarial Valuation Estimated Annual Dollar Amount[1] ($ in '000s)	June 30, 2020 Actuarial Valuation Contribution Rate	June 30, 2020 Actuarial Valuation Estimated Annual Dollar Amount[1] ($ in '000s)
Miscellaneous – Tier 1 Members				
Normal Cost	15.73%	$17	15.66%	$17
UAAL	13.37%	14	13.36%	14
Total Contribution	**29.10%**	**$31**	**29.02%**	**$31**
Total Contribution after 2-year Phase-In			**28.20%**	**$31**
Miscellaneous – Tier 2 Members				
Normal Cost	12.41%	$58	12.41%	$58
UAAL	13.37%	62	13.36%	62
Total Contribution	**25.78%**	**$120**	**25.77%**	**$120**
Total Contribution after 2-year Phase-In			**24.95%**	**$117**
Miscellaneous – Tier 3 Members				
Normal Cost	16.55%	$5,997	16.67%	$6,040
UAAL	13.37%	4,844	13.36%	4,841
Total Contribution	**29.92%**	**$10,841**	**30.03%**	**$10,881**
Total Contribution after 2-year Phase-In			**29.21%**	**$10,584**
Miscellaneous – Tier 5 Members				
Normal Cost	10.02%	$1,311	10.01%	$1,309
UAAL	13.37%	1,749	13.36%	1,747
Total Contribution	**23.39%**	**$3,060**	**23.37%**	**$3,056**
Total Contribution after 2-year Phase-In			**22.55%**	**$2,949**

[1] Based on June 30, 2021 projected annual payroll, see page 39.

Recommended Employer Contribution Rate (continued)

	June 30, 2021 Actuarial Valuation		June 30, 2020 Actuarial Valuation	
Superior Court Only (continued)	**Contribution Rate**	**Estimated Annual Dollar Amount[1] ($ in '000s)**	**Contribution Rate**	**Estimated Annual Dollar Amount[1] ($ in '000s)**
All Superior Court Categories Combined				
Normal Cost	14.80%	$7,383	14.88%	$7,424
UAAL	13.37%	6,669	13.36%	6,664
Total Contribution	**28.17%**	**$14,052**	**28.24%**	**$14,088**
Total Contribution after 2-year Phase-In			**27.42%**	**$13,681**

[1] Based on June 30, 2021 projected annual payroll, see page 39.

Recommended Employer Contribution Rate (continued)

	June 30, 2021 Actuarial Valuation		June 30, 2020 Actuarial Valuation	
District Only	**Contribution Rate**	**Estimated Annual Dollar Amount[1] ($ in '000s)**	**Contribution Rate**	**Estimated Annual Dollar Amount[1] ($ in '000s)**
Miscellaneous – Tier 3 Members				
Normal Cost	16.43%	$3,278	16.54%	$3,300
UAAL[3]	21.22%	4,234	21.17%	4,224
Total Contribution	**37.65%**	**$7,512**	**37.71%**	**$7,524**
Total Contribution after 2-year Phase-In			**36.89%**	**$7,360**
Miscellaneous – Tier 5 Members				
Normal Cost	10.02%	$1,598	10.01%	$1,596
UAAL[3]	21.22%	3,384	21.17%	3,376
Total Contribution	**31.24%**	**$4,982**	**31.18%**	**$4,972**
Total Contribution after 2-year Phase-In			**30.36%**	**$4,841**
All District Categories Combined				
Normal Cost	13.58%	$4,876	13.64%	$4,896
UAAL[3]	21.22%	7,618	21.17%	7,600
Total Contribution	**34.80%**	**$12,494**	**34.81%**	**$12,496**
Total Contribution after 2-year Phase-In			**33.99%**	**$12,201**
All County and District Categories Combined				
Normal Cost	13.05%	$141,150	13.05%	$141,188
UAAL	18.99%	205,446	18.78%	203,229
Total Contribution	**32.04%**	**$346,596**	**31.83%**	**$344,417**
Total Contribution after 2-year Phase-In			**31.10%**	**$336,437**

[1] Based on June 30, 2021 projected annual payroll, see page 39.

Recommended Employer Contribution Rate (continued)

The following June 30, 2021 projected annual payroll is used in developing employer contribution rates on the six previous pages:

	($ in '000s)			
	County[1]	Superior Court	District	Total
Miscellaneous Tier 1	$1,697	$108	$0	$1,805
Miscellaneous Tier 2	2,112	467	0	2,579
Miscellaneous Tier 3	432,949	36,233	19,952	489,134
Miscellaneous Tier 4	31,980	0	0	31,980
Miscellaneous Tier 5	286,653	13,079	15,945	315,677
Subtotal	**$755,391**	**$49,887**	**$35,897**	**$841,175**
Safety Tier 1	$5,304	$0	$0	$5,304
Safety Tier 2	137,207	0	0	137,207
Safety Tier 3	15,529	0	0	15,529
Safety Tier 4	82,746	0	0	82,746
Subtotal	**$240,786**	**$0**	**$0**	**$240,786**
Total	**$996,177**	**$49,887**	**$35,897**	**$1,081,961**

[1] Includes elected officials (Board of Supervisors, Sheriff, District Attorney and Assessor).

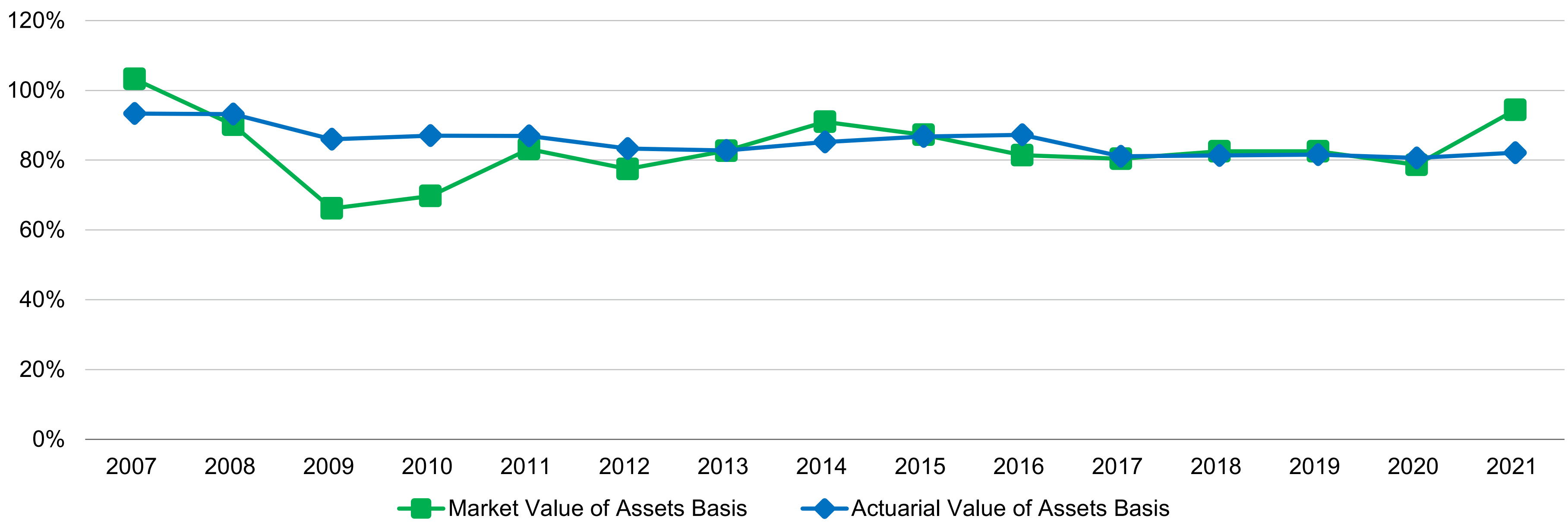
G. Funded Status

A commonly reported piece of information regarding the System's financial status is the funded ratio. These ratios compare the Market and Actuarial Value of Assets to the Actuarial Accrued Liability of the System. 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 System. The chart on the next page shows the System'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 System's benefit obligations. As the chart below shows, the measures are different depending on whether the Market or Actuarial Value of Assets is used.

Funded Ratio for Years Ended June 30, 2007 – 2021



Section 2: Actuarial Valuation Results

Schedule of Funding Progress for Years Ended June 30, 2012 – 2021

Actuarial Valuation Date as of June 30	Actuarial Value of Assets[1] (a)	Actuarial Accrued Liability (AAL)[1] (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (%) (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll (%) [(b) - (a)] / (c)
2012	$6,529,895,000	$7,838,223,000	$1,308,328,000	83.3%	$875,672,000	149.4%
2013	6,797,757,000	8,210,980,000	1,413,223,000	82.8	877,657,000	161.0
2014	7,312,993,000	8,580,928,000	1,267,935,000	85.2	879,999,000	144.1
2015	7,838,825,000	9,028,679,000	1,189,854,000	86.8	897,341,000	132.6
2016	8,236,402,000	9,436,090,000	1,199,688,000	87.3	938,555,000	127.8
2017	8,665,226,000	10,680,998,000	2,015,772,000	81.1	980,359,000	205.6
2018	9,123,004,000	11,213,263,000	2,090,259,000	81.4	1,007,815,000	207.4
2019	9,703,313,000	11,895,520,000	2,192,207,000	81.6	1,038,341,000	211.1
2020	10,229,760,000	12,693,655,000	2,463,894,000	80.6	1,070,512,000	230.2
2021	10,929,549,000	13,309,706,000	2,380,157,000	82.1	1,081,961,000	220.0

Note: Results may not total due to rounding.

[1] Includes contingency reserve and other non-valuation reserves.

H. Actuarial Balance Sheet

An overview of the System'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 System 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 System.

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 System, 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 June 30, 2021 ($ in '000s)

	Basic	COLA	Total
Actuarial Present Value of Future Benefits			
• Present value of benefits for retired members and beneficiaries	$4,996,284	$2,844,317	$7,840,601
• Present value of benefits for inactive vested members	372,241	87,026	459,267
• Present value of benefits for active members	5,554,809	1,363,176	6,917,985
• Non-valuation reserves	0	0	0
• Contingency reserve	324,177	0	324,177
Total Actuarial Present Value of Future Benefits	**$11,247,511**	**$4,294,519**	**$15,542,030**
Current and future assets			
• Total Valuation Value of Assets (VVA)	$7,076,612	$3,515,015	$10,591,627
• Present value of future contributions by members	709,563	210,733	920,296
• Present value of future employer contributions for:			
– Entry age Normal Cost	1,094,127	217,901	1,312,028
– Unfunded Actuarial Accrued Liability	2,043,032	337,125	2,380,157
• Balance of transfer to offset member COLA rate[1]	0	13,745	13,745
• Contingency reserve	324,177	0	324,177
Total of current and future assets	**$11,247,511**	**$4,294,519**	**$15,542,030**

Note: Results may not total due to rounding.

[1] Of this amount, about $690,000 may be reverted to the employer reserves to reduce the UAAL after all members in the corresponding legacy tiers have separated employment.

I. Volatility Ratios

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

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

The current AVR is about 11.6. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 11.6% of one-year's payroll. Because actuarial gains and losses are amortized over 20 years, there would be a 0.8% 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 LVR is about 12.3 but is 10.0 for Miscellaneous compared to 20.3 for Safety. This means that assumption changes will have a greater impact on employer contribution rates for Safety than Miscellaneous.

The chart on the next page shows how the asset and liability volatility ratios have varied over time.

Volatility Ratios for Years Ended 2012 – 2021

Year Ended June 30	Asset Volatility Ratio			Liability Volatility Ratio		
	Miscellaneous	**Safety**	**Total**	**Miscellaneous**	**Safety**	**Total**
2012	5.8	11.0	6.9	7.5	14.5	9.0
2013	6.6	11.7	7.7	7.9	14.6	9.4
2014	7.6	13.2	8.9	8.1	15.2	9.8
2015	7.5	13.0	8.8	8.4	15.8	10.1
2016	7.0	12.2	8.2	8.4	15.7	10.1
2017	7.4	13.5	8.8	8.9	17.8	10.9
2018	7.8	14.0	9.2	9.1	18.0	11.1
2019	8.0	14.6	9.5	9.4	18.6	11.5
2020	7.8	14.4	9.3	9.6	18.9	11.7
2021	9.7	18.4	11.6	10.0	20.3	12.3

J. Risk Assessment

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

Following the completion of the June 30, 2020 valuation, we prepared a stand-alone risk assessment report dated March 1, 2021 by using membership and financial information as provided in the actuarial valuation as of June 30, 2020. That report includes various projections (both deterministic and stochastic) of future results under different investment return scenarios together with the assumptions adopted for the June 30, 2020 valuation. A copy of the stand-alone risk assessment report associated with this June 30, 2021 valuation, including the additional analyses recommended by Segal in consultation with SCERS staff will be available in the first quarter of 2022. While this section does not contain a detailed analysis of the potential range of future measurements, it does include a concise discussion of some of the primary risks that may affect the System's future financial condition.

This section provides descriptions and basic assessments of the primary risks that are likely to have an ongoing influence on the System'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 System 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 System, 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 43, a

1% asset gain or loss (relative to the assumed investment return) translates to about 11.6% of one-year's payroll. Because actuarial gains and losses are amortized over 20 years, there would be a 0.8% of payroll decrease/(increase) in the required contribution for each 1% asset gain or loss.

The single year market value rate of return over the last 10 years has ranged from a low of -1.00% to a high of 27.37%.

- 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 System (public experience tables) that are weighted by benefit levels, and by using generational mortality projections. Effective with the June 30, 2020 valuation, the Board has adopted benefit weighted mortality tables with the generational mortality projections.

- Other Risks

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

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

Evaluation of Historical Trends

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

- The funded percentage on the Actuarial Value of Assets basis has decreased from 83.3% to 82.1%. For a more detailed history see *Section 2, Subsection G, Funded Status* starting on page 40.
- The average geometric investment return on the Actuarial Value of Assets over the last 10 years was 6.77%. This includes a high single-year return of 8.70% and a low of 2.57%. The average over the last 5 years 7.33%. For more details see the *Investment Return* table in *Section 2, Subsection C* on page 25.

- The primary source of new UAAL was the strengthening of assumptions through multiple assumption changes. For example, the assumption changes in 2020 changed the discount rate from 7.00% to 6.75% and updated mortality tables, adding $216 million in unfunded liability. The assumption changes in 2017 changed the discount rate from 7.50% to 7.00% and updated mortality tables, adding $824 million in unfunded liability. For more details on the unfunded liability changes see *Section 3, Exhibit H, Table of Amortization Bases* starting on page 75.
- The System's funding policy effectively deals with these unfunded liabilities over time. This can be seen most clearly in *Section 3, Exhibit I, Projection of UAAL Balances and Payments* provided on pages 78 and 79.

Maturity Measures

In the last 10 years the ratio of members in pay status to active participants has increased from 0.76 to 1.04. An increased ratio indicates that the System has grown in maturity over time. This is to be expected, but is also informative for understanding plan sensitivity to particular risks. For more details see *Section 2, Subsection A, Member Data* on page 16.

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the System's asset allocation is aligned to meet emerging pension liabilities. For the prior year benefits paid were $159.5 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, this plan currently has relatively low levels of negative cash flows. For more details on historical cash flows see the Comparison of Contributions with Benefits in *Section 2, Subsection B, Financial Information* on page 20.

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

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage

Total Plan

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	12,500	12,650	-1.2%
• Average age	45.6	45.7	-0.1
• Average years of service	11.8	11.9	-0.1
• Total projected compensation[1]	$1,081,963,421	$1,070,512,488	1.1%
• Average projected compensation	$86,557	$84,625	2.3%
• Account balances	$909,339,540	$875,807,482	3.8%
• Total active vested members	8,582	8,531	0.6%
Inactive vested members:			
• Number[2]	4,054	3,791	6.9%
• Average age	47.1	46.9	0.2
Retired members:			
• Number in pay status	10,599	10,313	2.8%
• Average age	70.0	69.9	0.1
• Average monthly benefit	$4,071	$3,956	2.9%
Disabled members:			
• Number in pay status	704	699	0.7%
• Average age	66.8	66.9	-0.1
• Average monthly benefit	$3,158	$3,072	2.8%
Beneficiaries:			
• Number in pay status	1,748	1,720	1.6%
• Average age	72.9	72.6	0.3
• Average monthly benefit	$2,172	$2,112	2.8%

[1] Projected compensation for the June 30, 2021 valuation was calculated by increasing the annualized compensation earned during 2020-2021 by 3.00%.
[2] Includes inactive members due a refund of member contributions.

Exhibit A: Table of Plan Coverage (continued)

Miscellaneous Tier 1

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	19	26	-26.9%
• Average age	65.0	64.0	1.0
• Average years of service	37.8	37.3	0.5
• Total projected compensation[1]	$1,805,375	$2,368,911	-23.8%
• Average projected compensation	$95,020	$91,112	4.3%
• Account balances	$3,814,243	$5,140,344	-25.8%
• Total active vested members	19	26	-26.9%
Inactive vested members:			
• Number[2]	20	23	-13.0%
• Average age	71.2	69.5	1.7
Retired members:			
• Number in pay status	2,412	2,535	-4.9%
• Average age	77.4	76.9	0.5
• Average monthly benefit	$4,301	$4,173	3.1%
Disabled members:			
• Number in pay status	116	122	-4.9%
• Average age	78.0	77.5	0.5
• Average monthly benefit	$2,647	$2,629	0.7%
Beneficiaries:			
• Number in pay status	716	725	-1.2%
• Average age	79.6	79.2	0.4
• Average monthly benefit	$2,217	$2,131	4.0%

[1] Projected compensation for the June 30, 2021 valuation was calculated by increasing the annualized compensation earned during 2020-2021 by 3.00%.
[2] Includes inactive members due a refund of member contributions.

Exhibit A: Table of Plan Coverage (continued)

Miscellaneous Tier 2

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	32	39	-17.9%
• Average age	57.7	57.4	0.3
• Average years of service	29.7	28.9	0.8
• Total projected compensation[1]	$2,579,082	$3,021,707	-14.6%
• Average projected compensation	$80,596	$77,480	4.0%
• Account balances	$3,439,961	$3,921,535	-12.3%
• Total active vested members	32	39	-17.9%
Inactive vested members:			
• Number[2]	92	105	-12.4%
• Average age	60.4	59.2	1.2
Retired members:			
• Number in pay status	393	386	1.8%
• Average age	70.2	70.0	0.2
• Average monthly benefit	$1,273	$1,224	4.0%
Disabled members:			
• Number in pay status	24	25	-4.0%
• Average age	69.9	68.6	1.3
• Average monthly benefit	$942	$938	0.4%
Beneficiaries:			
• Number in pay status	58	56	3.6%
• Average age	72.8	72.9	-0.1
• Average monthly benefit	$769	$720	6.8%

[1] Projected compensation for the June 30, 2021 valuation was calculated by increasing the annualized compensation earned during 2020-2021 by 3.00%.
[2] Includes inactive members due a refund of member contributions.

Exhibit A: Table of Plan Coverage (continued)

Miscellaneous Tier 3

Category	Year Ended June 30: 2021	Year Ended June 30: 2020	Change From Prior Year
Active members in valuation:			
• Number	5,377	5,824	-7.7%
• Average age	52.3	51.8	0.5
• Average years of service	19.0	18.3	0.7
• Total projected compensation[1]	$489,133,985	$511,162,242	-4.3%
• Average projected compensation	$90,968	$87,768	3.6%
• Account balances	$502,686,933	$499,405,652	0.7%
• Total active vested members	5,338	5,778	-7.6%
Inactive vested members:			
• Number[2]	2,274	2,244	1.3%
• Average age	50.9	50.0	0.9
Retired members:			
• Number in pay status	5,731	5,447	5.2%
• Average age	68.6	68.2	0.4
• Average monthly benefit	$2,988	$2,868	4.2%
Disabled members:			
• Number in pay status	300	294	2.0%
• Average age	64.8	64.8	0.0
• Average monthly benefit	$2,037	$1,971	3.3%
Beneficiaries:			
• Number in pay status	532	510	4.3%
• Average age	67.7	67.0	0.7
• Average monthly benefit	$1,332	$1,267	5.1%

[1] Projected compensation for the June 30, 2021 valuation was calculated by increasing the annualized compensation earned during 2020-2021 by 3.00%.
[2] Includes inactive members due a refund of member contributions.

Exhibit A: Table of Plan Coverage (continued)

Miscellaneous Tier 4

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	327	331	-1.2%
• Average age	45.9	45.2	0.7
• Average years of service	7.4	6.7	0.7
• Total projected compensation[1]	$31,980,100	$30,900,021	3.5%
• Average projected compensation	$97,798	$93,354	4.8%
• Account balances	$17,562,102	$15,041,637	16.8%
• Total active vested members	269	255	5.5%
Inactive vested members:			
• Number[2]	124	113	9.7%
• Average age	44.9	43.5	1.4
Retired members:			
• Number in pay status	13	9	44.4%
• Average age	64.4	63.2	1.2
• Average monthly benefit	$1,187	$1,076	10.3%
Disabled members:			
• Number in pay status	—	—	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit	N/A	N/A	N/A
Beneficiaries:			
• Number in pay status	1	—	N/A
• Average age	57.7	N/A	N/A
• Average monthly benefit	$846	N/A	N/A

[1] Projected compensation for the June 30, 2021 valuation was calculated by increasing the annualized compensation earned during 2020-2021 by 3.00%.
[2] Includes inactive members due a refund of member contributions.

Exhibit A: Table of Plan Coverage (continued)

Miscellaneous Tier 5

Category	Year Ended June 30: 2021	Year Ended June 30: 2020	Change From Prior Year
Active members in valuation:			
• Number	4,724	4,345	8.7%
• Average age	39.9	39.6	0.3
• Average years of service	3.7	3.3	0.4
• Total projected compensation[1]	$315,677,466	$279,116,158	13.1%
• Average projected compensation	$66,824	$64,238	4.0%
• Account balances	$97,702,544	$75,302,957	29.7%
• Total active vested members	1,478	952	55.3%
Inactive vested members:			
• Number[2]	1,122	895	25.4%
• Average age	39.2	38.8	0.4
Retired members:			
• Number in pay status	28	15	86.7%
• Average age	66.7	65.4	1.3
• Average monthly benefit	$892	$969	-7.9%
Disabled members:			
• Number in pay status	2	—	N/A
• Average age	48.5	N/A	N/A
• Average monthly benefit	$1,346	N/A	N/A
Beneficiaries:			
• Number in pay status	1	—	N/A
• Average age	40.0	N/A	N/A
• Average monthly benefit	$603	N/A	N/A

[1] Projected compensation for the June 30, 2021 valuation was calculated by increasing the annualized compensation earned during 2020-2021 by 3.00%.
[2] Includes inactive members due a refund of member contributions.

Exhibit A: Table of Plan Coverage (continued)

Safety Tier 1

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	32	61	-47.5%
• Average age	54.1	52.8	1.3
• Average years of service	26.1	25.7	0.4
• Total projected compensation[1]	$5,304,257	$9,904,369	-46.4%
• Average projected compensation	$165,758	$162,367	2.1%
• Account balances	$10,589,554	$19,123,515	-44.6%
• Total active vested members	32	61	-47.5%
Inactive vested members:			
• Number[2]	19	25	-24.0%
• Average age	54.0	53.6	0.4
Retired members:			
• Number in pay status	1,365	1,357	0.6%
• Average age	67.0	66.5	0.5
• Average monthly benefit	$8,224	$8,066	2.0%
Disabled members:			
• Number in pay status	180	185	-2.7%
• Average age	68.0	67.7	0.3
• Average monthly benefit	$5,353	$5,229	2.4%
Beneficiaries:			
• Number in pay status	366	365	0.3%
• Average age	70.6	70.0	0.6
• Average monthly benefit	$3,514	$3,456	1.7%

[1] Projected compensation for the June 30, 2021 valuation was calculated by increasing the annualized compensation earned during 2020-2021 by 3.00%.
[2] Includes inactive members due a refund of member contributions.

Exhibit A: Table of Plan Coverage (continued)

Safety Tier 2

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	973	1,076	-9.6%
• Average age	46.2	45.8	0.4
• Average years of service	19.0	18.4	0.6
• Total projected compensation[1]	$137,207,366	$145,253,595	-5.5%
• Average projected compensation	$141,015	$134,994	4.5%
• Account balances	$212,443,582	$210,154,259	1.1%
• Total active vested members	973	1,074	-9.4%
Inactive vested members:			
• Number[2]	321	324	-0.9%
• Average age	45.4	44.7	0.7
Retired members:			
• Number in pay status	649	560	15.9%
• Average age	61.4	61.8	-0.4
• Average monthly benefit	$5,966	$5,622	6.1%
Disabled members:			
• Number in pay status	80	72	11.1%
• Average age	54.9	54.9	0.0
• Average monthly benefit	$3,871	$3,508	10.3%
Beneficiaries:			
• Number in pay status	72	63	14.3%
• Average age	58.5	57.5	1.0
• Average monthly benefit	$2,233	$2,155	3.6%

[1] Projected compensation for the June 30, 2021 valuation was calculated by increasing the annualized compensation earned during 2020-2021 by 3.00%.
[2] Includes inactive members due a refund of member contributions.

Exhibit A: Table of Plan Coverage (continued)

Safety Tier 3

Category	Year Ended June 30		Change From Prior Year
	2021	2020	
Active members in valuation:			
• Number	121	120	0.8%
• Average age	42.0	41.3	0.7
• Average years of service	9.2	8.3	0.9
• Total projected compensation[1]	$15,529,425	$14,792,107	5.0%
• Average projected compensation	$128,342	$123,268	4.1%
• Account balances	$15,367,160	$12,673,777	21.3%
• Total active vested members	104	96	8.3%
Inactive vested members:			
• Number[2]	13	12	8.3%
• Average age	43.6	40.5	3.1
Retired members:			
• Number in pay status	—	—	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit	N/A	N/A	N/A
Disabled members:			
• Number in pay status	1	1	0.0%
• Average age	43.1	42.1	1.0
• Average monthly benefit	$3,314	$3,249	2.0%
Beneficiaries:			
• Number in pay status	—	—	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit	N/A	N/A	N/A

1 Projected compensation for the June 30, 2021 valuation was calculated by increasing the annualized compensation earned during 2020-2021 by 3.00%.
2 Includes inactive members due a refund of member contributions.

Exhibit A: Table of Plan Coverage (continued)

Safety Tier 4

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	895	828	8.1%
• Average age	34.2	33.9	0.3
• Average years of service	4.3	3.7	0.6
• Total projected compensation[1]	$82,746,366	$73,993,377	11.8%
• Average projected compensation	$92,454	$89,364	3.5%
• Account balances	$45,733,461	$35,043,805	30.5%
• Total active vested members	337	250	34.8%
Inactive vested members:			
• Number[2]	69	50	38.0%
• Average age	35.9	34.2	1.7
Retired members:			
• Number in pay status	8	4	100.0%
• Average age	62.1	63.3	-1.2
• Average monthly benefit	$1,598	$1,740	-8.2%
Disabled members:			
• Number in pay status	1	—	N/A
• Average age	53.7	N/A	N/A
• Average monthly benefit	$3,509	N/A	N/A
Beneficiaries:			
• Number in pay status	2	1	100.0%
• Average age	29.3	28.4	0.9
• Average monthly benefit	$4,394	$3,558	23.5%

[1] Projected compensation for the June 30, 2021 valuation was calculated by increasing the annualized compensation earned during 2020-2021 by 3.00%.
[2] Includes inactive members due a refund of member contributions.

Exhibit B: Members in Active Service as of June 30, 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	139	138	1	—	—	—	—	—	—	—
	$56,507	$56,562	$48,914	—	—	—	—	—	—	—
25 – 29	922	812	110	—	—	—	—	—	—	—
	$67,434	$65,979	$78,178	—	—	—	—	—	—	—
30 – 34	1,497	955	510	29	3	—	—	—	—	—
	$73,168	$66,325	$85,268	$85,601	$74,619	—	—	—	—	—
35 – 39	1,594	669	507	262	148	8	—	—	—	—
	$82,008	$69,563	$83,489	$98,323	$102,981	$106,580	—	—	—	—
40 – 44	1,813	427	351	380	496	157	2	—	—	—
	$91,240	$69,836	$86,627	$94,784	$104,688	$107,780	$163,584	—	—	—
45 – 49	1,948	331	273	266	539	470	66	3	—	—
	$98,217	$71,104	$80,884	$93,735	$103,177	$117,112	$146,179	$158,015	—	—
50 – 54	1,749	262	212	239	384	401	188	60	3	—
	$94,527	$73,237	$80,576	$91,118	$95,080	$106,537	$114,550	$101,834	$134,053	—
55 – 59	1,516	197	176	175	300	281	200	159	24	4
	$91,133	$70,371	$81,250	$85,690	$91,366	$93,807	$110,725	$103,092	$98,926	$79,665
60 – 64	936	94	117	116	191	188	111	79	35	5
	$85,289	$69,352	$82,653	$85,451	$81,426	$84,340	$97,171	$99,884	$89,676	$101,035
65 – 69	312	33	35	57	68	60	27	16	10	6
	$81,038	$73,860	$79,296	$87,973	$75,311	$82,750	$86,593	$76,615	$86,640	$90,028
70 & over	74	10	9	10	21	10	7	4	3	—
	$85,624	$58,206	$68,958	$98,524	$86,924	$107,312	$106,654	$76,425	$65,813	—
Total	**12,500**	**3,928**	**2,301**	**1,534**	**2,150**	**1,575**	**601**	**321**	**75**	**15**
	$86,557	**$68,025**	**$83,181**	**$92,490**	**$97,406**	**$103,995**	**$112,356**	**$100,929**	**$93,052**	**$90,933**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Miscellaneous Tier 1

		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	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
35 – 39	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
40 – 44	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
45 – 49	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
50 – 54	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
55 – 59	2	—	—	—	—	—	—	—	—	2
	$72,352	—	—	—	—	—	—	—	—	$72,352
60 – 64	8	—	—	—	—	—	1	1	2	4
	$92,530	—	—	—	—	—	$54,069	$87,012	$97,661	$100,960
65 – 69	8	—	—	—	—	—	1	1	1	5
	$89,882	—	—	—	—	—	$127,837	$69,328	$54,179	$93,543
70 & over	1	—	—	—	1	—	—	—	—	—
	$201,370	—	—	—	$201,370	—	—	—	—	—
Total	**19**	**—**	**—**	**—**	**1**	**—**	**2**	**2**	**3**	**11**
	$95,020	**—**	**—**	**—**	**$201,370**	**—**	**$90,953**	**$78,171**	**$83,167**	**$92,387**

Exhibit B: Members in Active Service as of June 30, 2021
by Age, Years of Service, and Average Projected Compensation (continued)

Miscellaneous Tier 2

		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	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
35 – 39	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
40 – 44	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
45 – 49	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
50 – 54	10	—	—	—	—	—	5	5	—	—
	$71,789	—	—	—	—	—	$68,359	$75,218	—	—
55 – 59	13	—	—	—	1	2	4	4	2	—
	$89,202	—	—	—	$29,669	$91,628	$109,159	$88,470	$78,093	—
60 – 64	7	—	—	—	—	—	—	5	2	—
	$86,217	—	—	—	—	—	—	$88,332	$80,930	—
65 – 69	2	—	—	—	1	—	—	1	—	—
	$49,028	—	—	—	$32,440	—	—	$65,615	—	—
70 & over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**32**	**—**	**—**	**—**	**2**	**2**	**9**	**15**	**4**	**—**
	$80,596	**—**	**—**	**—**	**$31,054**	**$91,628**	**$86,492**	**$82,483**	**$79,511**	**—**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Miscellaneous Tier 3

		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	33	4	6	21	2	—	—	—	—	—
	$64,213	$41,635	$73,058	$66,815	$55,520	—	—	—	—	—
35 – 39	338	9	33	196	93	7	—	—	—	—
	$85,736	$83,713	$77,769	$89,331	$79,844	$103,511	—	—	—	—
40 – 44	771	8	42	314	313	94	—	—	—	—
	$87,504	$92,044	$90,945	$88,591	$88,351	$79,126	—	—	—	—
45 – 49	981	4	24	232	425	266	29	1	—	—
	$93,685	$65,580	$88,638	$90,108	$94,171	$95,239	$108,301	$114,024	—	—
50 – 54	1,145	5	31	216	350	330	158	52	3	—
	$95,124	$86,571	$80,874	$89,281	$90,522	$98,400	$108,519	$95,955	$134,053	—
55 – 59	1,103	4	29	166	283	262	187	148	22	2
	$94,051	$88,289	$91,851	$83,723	$88,881	$91,287	$108,474	$101,864	$100,820	$86,977
60 – 64	715	4	18	107	190	184	110	70	31	1
	$86,453	$59,533	$82,521	$82,167	$81,103	$83,736	$97,562	$98,103	$89,726	$101,336
65 – 69	235	1	5	53	66	60	26	14	9	1
	$81,546	$281,005	$64,350	$84,227	$74,936	$82,750	$85,007	$77,921	$90,247	$72,453
70 & over	56	1	2	10	20	9	7	4	3	—
	$89,871	$116,292	$63,715	$98,524	$81,202	$103,339	$106,654	$76,425	$65,813	—
Total	**5,377**	**40**	**190**	**1,315**	**1,742**	**1,212**	**517**	**289**	**68**	**4**
	$90,968	**$83,502**	**$84,511**	**$87,497**	**$88,420**	**$91,739**	**$104,952**	**$98,420**	**$94,285**	**$86,936**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Miscellaneous Tier 4

		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	29	2	27	—	—	—	—	—	—	—
	$90,106	$126,108	$87,439	—	—	—	—	—	—	—
35 – 39	79	17	59	3	—	—	—	—	—	—
	$96,949	$107,940	$93,646	$99,612	—	—	—	—	—	—
40 – 44	67	14	47	4	1	1	—	—	—	—
	$99,357	$96,851	$100,299	$92,372	$123,805	$93,678	—	—	—	—
45 – 49	56	9	45	2	—	—	—	—	—	—
	$103,293	$142,110	$97,307	$63,314	—	—	—	—	—	—
50 – 54	31	6	24	—	—	1	—	—	—	—
	$103,092	$136,743	$95,770	—	—	$76,904	—	—	—	—
55 – 59	32	8	23	1	—	—	—	—	—	—
	$96,265	$100,016	$96,915	$51,295	—	—	—	—	—	—
60 – 64	25	2	22	1	—	—	—	—	—	—
	$88,862	$111,581	$86,772	$89,402	—	—	—	—	—	—
65 – 69	7	—	7	—	—	—	—	—	—	—
	$96,366	—	$96,366	—	—	—	—	—	—	—
70 & over	1	—	1	—	—	—	—	—	—	—
	$94,300	—	$94,300	—	—	—	—	—	—	—
Total	**327**	**58**	**255**	**11**	**1**	**2**	**—**	**—**	**—**	**—**
	$97,798	**$113,204**	**$94,840**	**$85,059**	**$123,805**	**$85,291**	**—**	**—**	**—**	**—**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Miscellaneous Tier 5

		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	98	97	1	—	—	—	—	—	—	—
	$45,416	$45,380	$48,914	—	—	—	—	—	—	—
25 – 29	668	601	67	—	—	—	—	—	—	—
	$59,565	$59,088	$63,847	—	—	—	—	—	—	—
30 – 34	1,098	782	315	1	—	—	—	—	—	—
	$65,999	$61,948	$75,881	$121,529	—	—	—	—	—	—
35 – 39	904	579	324	1	—	—	—	—	—	—
	$69,474	$66,059	$75,404	$125,731	—	—	—	—	—	—
40 – 44	586	372	212	1	1	—	—	—	—	—
	$69,924	$66,100	$76,773	$65,114	$45,505	—	—	—	—	—
45 – 49	481	298	181	1	—	1	—	—	—	—
	$69,069	$67,477	$71,828	$64,504	—	$48,753	—	—	—	—
50 – 54	373	227	142	4	—	—	—	—	—	—
	$69,539	$67,917	$72,910	$41,937	—	—	—	—	—	—
55 – 59	286	173	111	1	1	—	—	—	—	—
	$68,774	$66,644	$72,170	$80,533	$48,614	—	—	—	—	—
60 – 64	159	85	72	2	—	—	—	—	—	—
	$72,463	$68,217	$77,857	$58,727	—	—	—	—	—	—
65 – 69	56	32	22	2	—	—	—	—	—	—
	$70,961	$67,386	$74,363	$90,735	—	—	—	—	—	—
70 & over	15	9	6	—	—	—	—	—	—	—
	$57,644	$51,752	$66,482	—	—	—	—	—	—	—
Total	**4,724**	**3,255**	**1,453**	**13**	**2**	**1**	**—**	**—**	**—**	**—**
	$66,824	**$63,493**	**$74,289**	**$71,083**	**$47,060**	**$48,753**	**—**	**—**	**—**	**—**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Safety Tier 1

		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	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
35 – 39	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
40 – 44	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
45 – 49	8	—	—	—	—	3	5	—	—	—
	$157,595	—	—	—	—	$109,865	$186,232	—	—	—
50 – 54	12	—	—	1	2	2	5	2	—	—
	$175,376	—	—	$143,069	$175,416	$111,893	$163,235	$285,327	—	—
55 – 59	8	—	—	—	1	1	3	3	—	—
	$162,619	—	—	—	$218,383	$74,870	$172,230	$163,670	—	—
60 – 64	3	—	—	—	—	—	—	3	—	—
	$164,987	—	—	—	—	—	—	$164,987	—	—
65 – 69	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
70 & over	1	—	—	—	—	1	—	—	—	—
	$143,069	—	—	—	—	$143,069	—	—	—	—
Total	**32**	**—**	**—**	**1**	**3**	**7**	**13**	**8**	**—**	**—**
	$165,758	**—**	**—**	**$143,069**	**$189,738**	**$110,189**	**$174,156**	**$194,578**	**—**	**—**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Safety Tier 2

		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	4	—	—	3	1	—	—	—	—	—
	$136,591	—	—	$144,515	$112,818	—	—	—	—	—
35 – 39	108	—	6	49	53	—	—	—	—	—
	$135,055	—	$115,585	$128,856	$142,990	—	—	—	—	—
40 – 44	298	—	3	54	177	62	2	—	—	—
	$136,411	—	$112,847	$128,680	$133,594	$151,449	$163,584	—	—	—
45 – 49	374	—	2	28	112	198	32	2	—	—
	$144,598	—	$110,053	$124,687	$136,937	$146,946	$174,247	$180,011	—	—
50 – 54	129	—	1	9	30	68	20	1	—	—
	$146,834	—	$166,241	$128,410	$142,200	$146,303	$161,573	$173,647	—	—
55 – 59	47	—	1	7	14	16	6	3	—	—
	$138,133	—	$75,984	$138,000	$139,980	$136,517	$151,160	$133,106	—	—
60 – 64	9	—	—	4	1	4	—	—	—	—
	$139,593	—	—	$166,234	$142,764	$112,160	—	—	—	—
65 – 69	4	—	1	2	1	—	—	—	—	—
	$163,740	—	$143,069	$184,484	$142,922	—	—	—	—	—
70 & over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**973**	**—**	**14**	**156**	**389**	**348**	**60**	**6**	**—**	**—**
	$141,015	**—**	**$116,961**	**$130,404**	**$136,725**	**$146,743**	**$167,358**	**$155,498**	**—**	**—**

Exhibit B: Members in Active Service as of June 30, 2021
by Age, Years of Service, and Average Projected Compensation (continued)

Safety Tier 3

		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	19	1	14	4	—	—	—	—	—	—
	$125,497	$97,941	$125,875	$131,062	—	—	—	—	—	—
35 – 39	35	5	19	9	2	—	—	—	—	—
	$124,544	$122,782	$125,936	$123,911	$118,566	—	—	—	—	—
40 – 44	32	5	20	5	2	—	—	—	—	—
	$125,725	$124,012	$129,566	$122,386	$99,942	—	—	—	—	—
45 – 49	15	4	7	1	1	2	—	—	—	—
	$139,189	$120,886	$151,634	$152,995	$154,463	$117,697	—	—	—	—
50 – 54	14	2	5	6	1	—	—	—	—	—
	$138,962	$116,206	$170,910	$122,422	$123,974	—	—	—	—	—
55 – 59	3	—	2	—	—	—	—	1	—	—
	$91,972	—	$102,225	—	—	—	—	$71,467	—	—
60 – 64	3	—	2	1	—	—	—	—	—	—
	$151,181	—	$156,329	$140,885	—	—	—	—	—	—
65 – 69	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
70 & over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**121**	**17**	**69**	**26**	**6**	**2**	**—**	**1**	**—**	**—**
	$128,342	**$120,463**	**$133,036**	**$126,146**	**$119,242**	**$117,697**	**—**	**$71,467**	**—**	**—**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Safety Tier 4

		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	41	41	—	—	—	—	—	—	—	—
	$83,017	$83,017	—	—	—	—	—	—	—	—
25 – 29	254	211	43	—	—	—	—	—	—	—
	$88,130	$85,607	$100,507	—	—	—	—	—	—	—
30 – 34	314	166	148	—	—	—	—	—	—	—
	$93,641	$86,631	$101,503	—	—	—	—	—	—	—
35 – 39	130	59	66	4	—	1	—	—	—	—
	$94,868	$86,215	$101,820	$99,499	—	$128,059	—	—	—	—
40 – 44	59	28	27	2	2	—	—	—	—	—
	$95,708	$89,954	$98,766	$102,650	$128,059	—	—	—	—	—
45 – 49	33	16	14	2	1	—	—	—	—	—
	$90,513	$87,657	$92,347	$96,639	$98,300	—	—	—	—	—
50 – 54	35	22	9	3	1	—	—	—	—	—
	$101,908	$103,878	$100,283	$97,186	$87,362	—	—	—	—	—
55 – 59	22	12	10	—	—	—	—	—	—	—
	$104,379	$98,360	$111,602	—	—	—	—	—	—	—
60 – 64	7	3	3	1	—	—	—	—	—	—
	$103,538	$86,450	$119,225	$107,741	—	—	—	—	—	—
65 – 69	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
70 & over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**895**	**558**	**320**	**12**	**4**	**1**	**—**	**—**	**—**	**—**
	$92,454	**$87,062**	**$101,251**	**$99,656**	**$110,445**	**$128,059**	**—**	**—**	**—**	**—**

Exhibit C: Reconciliation of Member Data

	Active Members	Inactive Vested Members[1]	Retired Members	Disabled Members	Beneficiaries	Total
Number as of June 30, 2020	**12,650**	**3,791**	**10,313**	**699**	**1,720**	**29,173**
• New members	825	71	0	0	107	1,003
• Terminations – with vested rights	(440)	440	0	0	0	0
• Contribution refunds	(100)	(79)	0	0	0	(179)
• Retirements	(451)	(116)	567	0	0	0
• New disabilities	(13)	(7)	(13)	33	0	0
• Return to work	35	(33)	(2)	0	0	0
• Died with or without beneficiary	(6)	(5)	(266)	(28)	(86)	(391)
• Data adjustments[2]	0	(8)	0	0	7	(1)
Number as of June 30, 2021	**12,500**	**4,054**	**10,599**	**704**	**1,748**	**29,605**

[1] Includes inactive members due a refund of member contributions.
[2] Includes 8 deferred alternate payees as of June 30, 2020 in pay status as of June 30, 2021.

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

	Year Ended June 30, 2021		Year Ended June 30, 2020	
Net assets at market value at the beginning of the year		**$9,979,379,000**		**$9,821,694,000**
Contribution income:				
• Employer contributions	$298,345,000		$279,169,000	
• Member contributions	120,597,000		126,354,000	
Net contribution income		$418,942,000		$405,523,000
Investment income:				
• Interest, dividends and other income	$225,536,000		$194,766,000	
• Asset appreciation	2,744,928,000		178,055,000	
• Less investment and administrative fees	(226,220,000)		(79,908,000)	
Net investment income		$2,744,244,000		$292,913,000
Other income:		$5,000[1]		$0
Total income available for benefits		**$3,163,191,000**		**$698,436,000**
Less benefit payments:				
• Benefits paid	$(575,329,000)		$(537,698,000)	
• Withdrawal of contributions	(3,092,000)		(3,053,000)	
Net benefit payments		$(578,421,000)		$(540,751,000)
Change in net assets at market value		**$2,584,770,000**		**$157,685,000**
Net assets at market value at the end of the year		**$12,564,149,000**		**$9,979,379,000**

Note: Results may not total due to rounding.

[1] From miscellaneous income and federal tax credit.

Exhibit E: Summary Statement of Plan Assets

	June 30, 2021		June 30, 2020	
Cash equivalents		$433,392,000		$420,429,000
Accounts receivable:				
• Accrued investment income	$19,121,000		$17,275,000	
• Employer and member contributions	48,602,000		52,131,000	
• Investment sales and other	187,380,000		92,254,000	
Total accounts receivable		$255,103,000		$161,660,000
Investments:				
• Equities	$7,103,291,000		$5,296,523,000	
• Absolute return	1,084,545,000		885,205,000	
• Fixed income investments	2,363,034,000		1,961,218,000	
• Real assets	1,795,894,000		1,430,080,000	
• Securities lending collateral	400,356,000		215,183,000	
Total investments at market value		$12,747,120,000		$9,788,209,000
Other assets		$14,287,000		$11,006,000
Total assets		$13,449,902,000		$10,381,304,000
Accounts payable:				
• Accounts payable and other liabilities	$(32,548,000)		$(12,568,000)	
• Investment trades and warrants payable	(460,883,000)		(178,258,000)	
• Securities lending liability	(392,322,000)		(211,099,000)	
Total accounts payable		$(885,753,000)		$(401,925,000)
Net assets at market value		**$12,564,149,000**		**$9,979,379,000**
Net assets at actuarial value		**$10,929,549,000**		**$10,229,760,000**
Net assets at valuation value		**$10,591,627,000**		**$10,074,345,000**

Note: Results may not total due to rounding.

Exhibit F: Summary of Reported Reserve Information as of June 30, 2021

	Reserves
Included in Valuation Value of Assets	
• Employee Reserve	$1,010,356,074
• Employer Reserve	3,108,859,781
• Retiree Reserve	6,467,553,617
• Death Benefit Reserve	18,602,212
Subtotal: Preliminary Valuation Value of Assets[1]	**$10,605,371,683**
Not Included in Valuation Value of Assets	
• Contingency Reserve	324,177,378
Subtotal: Actuarial Value of Assets	**$10,929,549,061**
• Market Stabilization Reserve	1,634,599,939
Total Market Value of Assets	**$12,564,149,000**

Note: Results may not total due to rounding.

[1] Please note that the Final Valuation Value of Assets (i.e. $10,591,626,683) as shown on page 21 is calculated by taking the Preliminary Valuation Value of Assets and adjusting for the balance of transfer to offset member COLA rate.

Exhibit F: Summary of Reported Reserve Information as of June 30, 2021 (continued)

Change in Reserves

	Balance at June 30, 2020	Interest Credit	Contributions	Benefits	Transfers	Balance at June 30, 2021
Employee Reserve	$984,496,733	$5,720,349	$120,597,235	$(3,092,179)	$(97,366,064)	$1,010,356,074
Employer Reserve	3,093,045,209	216,270,716	298,345,070	(231,803)	(498,569,411)	3,108,859,781
Retiree Reserve	5,990,123,651	455,752,197	0	(574,257,706)	595,935,475	6,467,553,617
Death Benefit Reserve	18,111,617	1,329,818	0	(839,223)	0	18,602,212
Subtotal	**$10,085,777,210**	**$679,073,080**	**$418,942,305**	**$(578,420,911)**	**$0**	**$10,605,371,683**
Contingency Reserve	143,982,952	180,194,426	0	0	0	324,177,378
Total Allocated Reserves	**$10,229,760,162**	**$859,267,506**	**$418,942,305**	**$(578,420,911)**	**$0**	**$10,929,549,062**
Market Stabilization Reserve	(250,381,162)	1,884,981,100	0	0	0	1,634,599,938
Net Market Value of Assets	**$9,979,379,000**	**$2,744,248,606**	**$418,942,305**	**$(578,420,911)**	**$0**	**$12,564,149,000**

Note: Results may not total due to rounding.

Exhibit F: Summary of Reported Reserve Information as of June 30, 2021 (continued)

	Per Interest Crediting and Unallocated Earnings Policy
Earnings from June 30, 2020 to June 30, 2021	$2,744,248,606
Contingency Reserve[1]	(180,194,426)
Subtotal:	**$2,564,054,180**
Amounts Credited for:	
Market Stabilization Reserve	$(1,884,981,100)
Regular Interest Crediting	(679,073,080)
Subtotal	**$(2,564,054,180)**
Net Unallocated Earnings	**$0**
Amount Credited Under Unallocated Earnings Policy for:	
Contingency Reserve[1]	$0
Board Provided Supplemental Benefits	0
Amount Over Reserved Benefits	0
Employer Reserves	0
Member Future COLA Contribution Offset	0
Subtotal	**$0**
Remaining Unallocated Earnings	**$0**

[1] As a result of interest crediting, $180,194,426 was added to the Contingency Reserve on June 30, 2021. As there was a balance of $143,982,952 in the Contingency Reserve as of June 30, 2020, the balance in that reserve as of June 30, 2021 after adding the $180,194,426 is $324,177,378.

Exhibit G: Development of the Fund through June 30, 2021

Year Ended June 30	Employer Contributions	Member Contributions	Net Investment Return[1]	Benefit Payments	Market Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Market Value
2012	$179,098,000	$65,690,000	$(9,703,000)	$301,804,000	$6,073,926,000	$6,529,895,000	107.5%
2013	189,664,000	68,243,000	779,730,000	323,567,000	6,787,995,000	6,797,757,000	100.1%
2014	210,503,000	57,635,000	1,101,487,000	347,620,000	7,810,001,000	7,312,993,000	93.6%
2015	222,959,000	68,143,000	152,368,000	374,657,000	7,878,814,000	7,838,825,000	99.5%
2016	209,020,000	77,494,000	(78,761,000)	405,702,000	7,680,865,000	8,236,402,000	107.2%
2017	203,928,000	89,489,000	1,042,009,000	432,066,000	8,584,225,000	8,665,226,000	100.9%
2018	201,631,000	99,906,000	834,484,000	468,309,000	9,251,937,000	9,123,004,000	98.6%
2019	288,581,000	121,843,000	665,186,000	505,853,000	9,821,694,000	9,703,313,000	98.8%
2020	279,168,000	126,354,000	292,913,000	540,751,000	9,979,379,000	10,229,760,000	102.5%
2021	298,345,000	120,597,000	2,744,249,000	578,421,000	12,564,149,000	10,929,549,000	87.0%

Note: Market value of assets at year-end calculated by taking previous year's market value and adjusting for cash flows may not total due to rounding.

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

Exhibit H: Table of Amortization Bases

Miscellaneous

Type	Date Established	Initial Amount ($ in ‘000s)	Initial Period	Outstanding Balance ($ in ‘000s)	Years Remaining	Annual Payment ($ in ‘000s)
Restart amortization[1]	June 30, 2012	$814,400	23	$773,407	14	$71,461
Actuarial loss[1]	June 30, 2013	34,060	20	30,362	12	3,167
Actuarial gain[1]	June 30, 2014	(125,182)	20	(114,783)	13	(11,235)
Assumption changes[1]	June 30, 2014	(46,607)	20	(42,735)	13	(4,183)
Actuarial gain[1]	June 30, 2015	(73,919)	20	(69,315)	14	(6,405)
Withdrawn employers[2]	June 30, 2015	2,989	20	2,803	14	259
Actuarial loss[1]	June 30, 2016	12,986	20	12,392	15	1,086
Actuarial loss[1]	June 30, 2017	12,571	20	12,153	16	1,015
Assumption changes[1]	June 30, 2017	466,874	20	451,342	16	37,699
Actuarial loss[1,3]	June 30, 2018	6,060	20	5,933	17	474
Actuarial loss[4]	June 30, 2018	39,429	20	38,598	17	3,084
Actuarial loss[1,3]	June 30, 2019	6,060	20	5,987	18	459
Actuarial loss[4]	June 30, 2019	51,548	20	50,928	18	3,905
Actuarial loss[1,3]	June 30, 2020	4,997	20	4,968	19	367
Actuarial loss[4]	June 30, 2020	24,469	20	24,325	19	1,795
Assumption changes[4]	June 30, 2020	187,738	20	186,631	19	13,774
Actuarial loss[1,3]	June 30, 2021	60,008	20	60,008	20	4,274
Actuarial gain[4]	June 30, 2021	(77,842)	20	(77,842)	20	(5,545)
Subtotal				**$1,355,162**		**$115,451**

Note: Results may not total due to rounding.

[1] These amounts are spread over the payroll for all Miscellaneous employers excluding Rio Linda Elverta Recreation and Parks District.
[2] This amount reflects the net withdrawal liability for the Library Authority and Air Quality Districts and is spread over the payroll for Miscellaneous County only. See page 94 for more details.
[3] These amounts are due to deferred investment losses that were established prior to July 1, 2017. The total amount of those losses for Miscellaneous and Safety combined is $9,275,175 for both June 30, 2018 and June 30, 2019, $7,648,231 for June 30, 2020, and $91,838,760 for June 30, 2021.
[4] These amounts are spread over the payroll for all Miscellaneous employers including Rio Linda Elverta Recreation and Parks District.

Exhibit H: Table of Amortization Bases (continued)

Safety

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment ($ in '000s)
Restart amortization	June 30, 2012	$493,928	23	$469,065	14	$43,341
Actuarial loss	June 30, 2013	53,174	20	47,400	12	4,944
Actuarial gain	June 30, 2014	(40,247)	20	(36,903)	13	(3,612)
Assumption changes	June 30, 2014	62,388	20	57,205	13	5,599
Actuarial gain	June 30, 2015	(8,318)	20	(7,800)	14	(721)
Actuarial gain	June 30, 2016	(1,139)	20	(1,087)	15	(95)
Actuarial gain	June 30, 2017	(14,836)	20	(14,343)	16	(1,198)
Assumption changes	June 30, 2017	356,837	20	344,966	16	28,814
Actuarial loss	June 30, 2018	44,898	20	43,952	17	3,511
Actuarial loss	June 30, 2019	65,096	20	64,312	18	4,931
Actuarial loss	June 30, 2020	54,193	20	53,873	19	3,976
Assumption changes	June 30, 2020	28,359	20	28,192	19	2,081
Actuarial gain	June 30, 2021	(23,837)	20	(23,837)	20	(1,698)
Subtotal				**$1,024,995**		**$89,873**

Note: Results may not total due to rounding.

Exhibit H: Table of Amortization Bases (continued)

Miscellaneous and Safety Combined

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment ($ in '000s)
Restart amortization	June 30, 2012	$1,308,328	23	$1,242,472	14	$114,802
Actuarial loss	June 30, 2013	87,234	20	77,762	12	8,111
Actuarial gain	June 30, 2014	(165,429)	20	(151,686)	13	(14,847)
Assumption changes	June 30, 2014	15,781	20	14,470	13	1,416
Actuarial gain	June 30, 2015	(82,237)	20	(77,115)	14	(7,126)
Withdrawn employers	June 30, 2015	2,989	20	2,803	14	259
Actuarial loss	June 30, 2016	11,847	20	11,305	15	991
Actuarial gain	June 30, 2017	(2,265)	20	(2,190)	16	(183)
Assumption changes	June 30, 2017	823,711	20	796,308	16	66,513
Actuarial loss	June 30, 2018	90,387	20	88,483	17	7,069
Actuarial loss	June 30, 2019	122,704	20	121,227	18	9,295
Actuarial loss	June 30, 2020	83,659	20	83,166	19	6,138
Assumption changes	June 30, 2020	216,097	20	214,823	19	15,855
Actuarial gain	June 30, 2021	(41,671)	20	(41,671)	20	(2,969)
Total				**$2,380,157**		**$205,324**

Note: Results may not total due to rounding.

Exhibit I: Projection of UAAL Balances and Payments

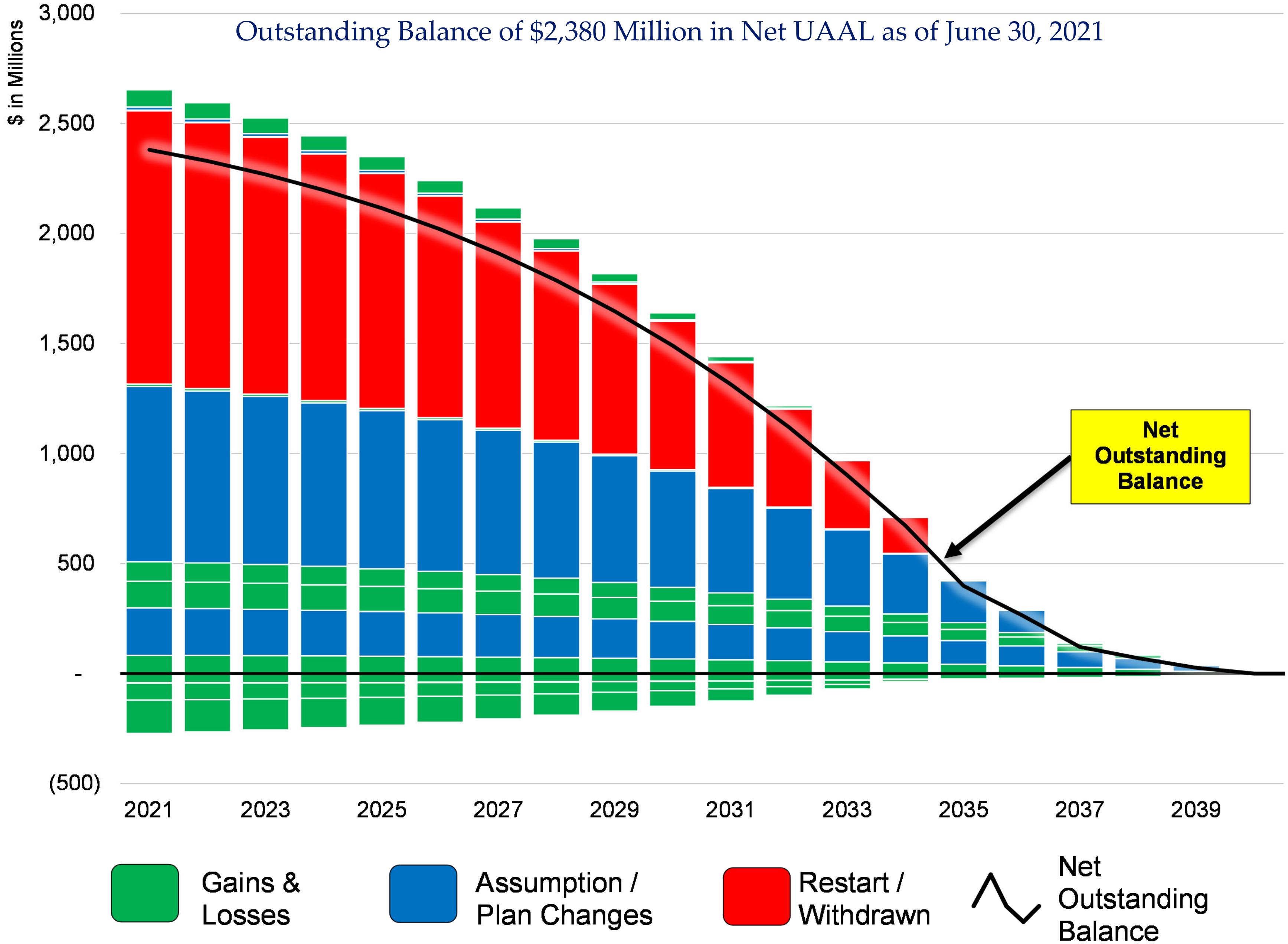


Exhibit I: Projection of UAAL Balances and Payments (continued)

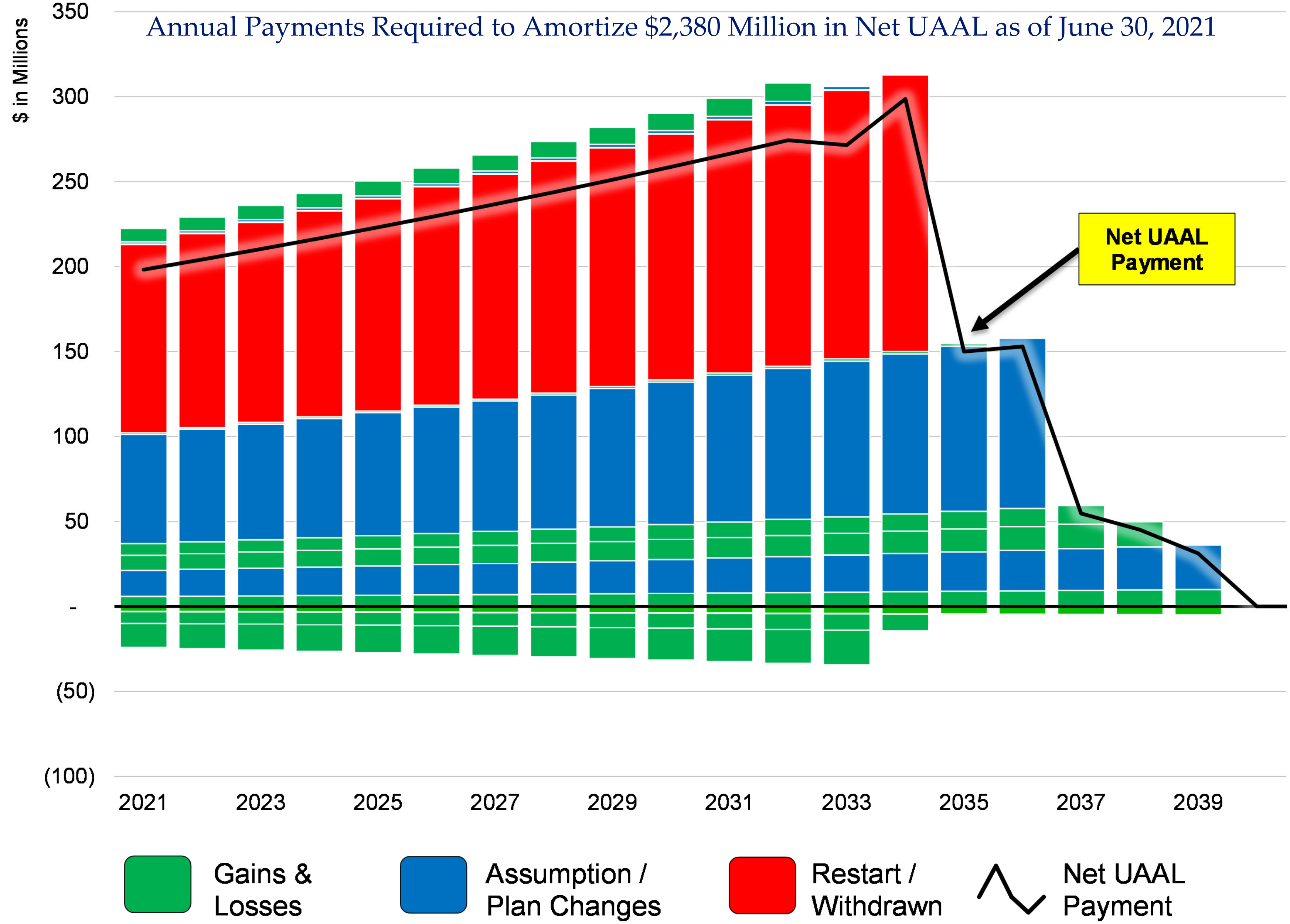


Exhibit J: Definition of Pension Terms

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:	Actuarial Present 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. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected.
Actuarially Equivalent:	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (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, termination, 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 and the Net Pension Liability (NPL).
Actuarial Value of Assets (AVA):	The value of the System's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the Actuarially Determined Contribution.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the 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 System's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
Amortization Method:	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is intended to pay off the Unfunded Actuarial Accrued Liability.

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the System is calculated, including: Investment return - the rate of investment yield that the System will earn over the long-term future; Mortality rates - the rate or probability of death at a given age for employees and pensioners; Retirement rates - the rate or probability of retirement at a given age or service; Disability rates - the rate or probability of disability retirement at a given age; Termination rates - the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; Salary increase rates - the rates of salary increase due to inflation, real wage growth and merit and promotion increases.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula 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 System 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 Future Benefits allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of the Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of member contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in each future year in determining the Amortization Period.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Valuation Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus or an Overfunded Actuarial Accrued Liability.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.
Valuation Value of Assets:	The Actuarial Value of Assets reduced by the value of non-valuation reserves.

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 July 1, 2016 through June 30, 2019 Actuarial Experience Study report dated May 11, 2020. Unless otherwise noted, all actuarial assumptions and methods shown below apply to all tiers. 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 reference above, expected administrative and investment expenses represent about 0.75% of the Actuarial Value of Assets.
Employee Contribution Crediting Rate:[1]	2.75% (assumed rate of inflation), compounded semi-annually.
Consumer Price Index:	Increase of 2.75% per year. Miscellaneous and Safety Tier 1 benefits are assumed to increase at 2.75% per year. Miscellaneous Tier 3, Tier 4 and Tier 5 and Safety Tier 2, Tier 3 and Tier 4 benefits are assumed to increase at 2.00% per year. Miscellaneous Tier 2 receive no COLA increases.
Payroll Growth:	Inflation of 2.75% per year plus "across the board" salary increases of 0.25% per year, used to amortize the Unfunded Actuarial Accrued Liability as a level percentage of payroll.
Increase in Section 7522.10 Compensation Limit:	Increase of 2.75% per year from the valuation date.

[1] Current policy is to credit the member contribution account with interest up to the current 5-year Treasury rate, if such earnings are available. However, the difference in earnings between the 5-year Treasury rate and the target crediting rate will be applied to the other valuation reserves so that the overall valuation reserve target crediting rate is maintained at 6.75%.

Salary Increases:

The annual rate of compensation increase includes: inflation at 2.75%, plus "across the board" salary increases of 0.25% per year, plus the following merit and promotion increases:

Merit and Promotion Increases

Years of Service	Rate (%) Miscellaneous	Rate (%) Safety
Less than 1	5.00	7.50
1 – 2	5.00	6.50
2 – 3	5.00	6.25
3 – 4	5.00	5.50
4 – 5	4.00	5.00
5 – 6	3.00	4.25
6 – 7	2.50	4.00
7 – 8	2.25	3.50
8 – 9	2.00	3.25
9 – 10	1.80	3.00
10 – 11	1.70	2.50
11 – 12	1.60	2.50
12 – 13	1.50	2.50
13 – 14	1.45	2.50
14 – 15	1.35	2.50
15 & Over	1.25	2.50

Demographic Assumptions:	
Post-Retirement Mortality Rates:	*Healthy* • **Miscellaneous Members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10%, projected generationally with the two-dimensional mortality improvement scale MP-2019. • **Safety Members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates decreased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2019. *Disabled* • **Miscellaneous Members:** Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019. • **Safety Members:** Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019. *Beneficiaries* • Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019. The Pub-2010 mortality tables and adjustments as shown above reasonably reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

Pre-Retirement Mortality Rates:	• **Miscellaneous Members:** Pub-2010 General Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019. • **Safety Members:** Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019

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

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

Miscellaneous pre-retirement deaths are assumed to be non-duty.

For Safety, 50% of pre-retirement deaths are assumed to be non-duty and the rest are assumed to be duty.

Mortality Rates for Member Contributions:	• **Miscellaneous Members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10%, projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 40% male and 60% female. • **Safety Members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates decreased by 5% for males, projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 75% male and 25% female.

Assumptions for Optional Form of Benefits:	• **Miscellaneous Service Retirees:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10%, projected generationally with the two-dimensional mortality improvement scale MP-2019 weighted 40% male and 60% female. • **Safety Service Retirees:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates decreased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2019 weighted 75% male and 25% female. • **Miscellaneous Disabled Retirees:** Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019 weighted 40% male and 60% female. • **Safety Disabled Retirees:** Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019 weighted 75% male and 25% female. • **All Miscellaneous Beneficiaries:** Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019 weighted 60% male and 40% female. • **All Safety Beneficiaries:** Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019 weighted 25% male and 75% female. • Note that for optional form of benefits, a 6.75% per annum interest rate with a 0.00% COLA is used.

Disability Incidence:

	Rate (%)	
Age	**Miscellaneous**	**Safety**
20	0.000	0.050
25	0.006	0.050
30	0.016	0.080
35	0.044	0.220
40	0.084	0.360
45	0.160	0.460
50	0.230	0.680
55	0.310	0.920
60	0.410	1.120
65	0.630	0.000

40% of Miscellaneous disabilities are assumed to be duty disabilities. The other 60% are assumed to be non-duty disabilities.

90% of Safety disabilities are assumed to be duty disabilities. The other 10% are assumed to be non-duty disabilities.

Termination:

Less Than Five Years of Service

Years of Service	Rate (%) Miscellaneous	Rate (%) Safety
Less than 1	13.00	5.00
1 – 2	8.00	4.50
2 – 3	6.50	4.00
3 – 4	5.50	2.50
4 – 5	5.25	2.50

55% of the Miscellaneous terminated members and 50% of the Safety terminated members with less than five years of service are assumed to choose a refund of contributions. The other 45% and 50% of Miscellaneous and Safety terminated members, respectively, are assumed to choose a deferred vested benefit.

Five or More Years of Service

Age	Rate (%) Miscellaneous	Rate (%) Safety
20	5.25	2.00
25	5.25	2.00
30	5.10	2.00
35	4.40	1.55
40	3.40	1.10
45	2.70	1.00
50	2.44	1.00
55	2.34	1.00
60	2.24	1.00
65	1.48	0.00

30% of the Miscellaneous terminated members and 15% of the Safety terminated members with 5 or more years of service are assumed to choose a refund of contributions. The other 70% and 85% of Miscellaneous and Safety terminated members are assumed to choose a deferred vested benefit.

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

Retirement Rates:

	Rate (%)				
		Miscellaneous Tiers 2 & 3			
Age	Miscellaneous Tier 1	Less Than 30 Years of Service	30 or More Years of Service	Miscellaneous Tier 4	Miscellaneous Tier 5
50	6.00	2.50	2.50	2.50	0.00
51	4.50	1.75	1.75	1.75	0.00
52	4.50	2.00	2.00	2.00	4.00
53	4.50	2.50	2.50	1.75	1.25
54	5.50	3.00	3.00	2.25	1.75
55	12.00	4.00	8.00	3.00	2.50
56	18.00	5.00	10.00	4.50	4.00
57	18.00	8.00	16.00	6.50	6.00
58	18.00	9.00	18.00	7.00	6.50
59	20.00	9.00	18.00	7.00	6.50
60	28.00	9.00	18.00	7.50	7.00
61	35.00	15.00	30.00	12.00	11.00
62	35.00	18.00	18.00	13.00	12.00
63	35.00	18.00	18.00	12.00	11.00
64	35.00	20.00	20.00	13.00	13.00
65	35.00	35.00	35.00	25.00	24.00
66	40.00	35.00	35.00	18.00	18.00
67	40.00	35.00	35.00	18.00	18.00
68	50.00	35.00	35.00	21.00	21.00
69	60.00	35.00	35.00	23.00	23.00
70 & Over	100.00	100.00	100.00	100.00	100.00

These retirement rates only apply to members who are eligible to retire at the age shown.

Retirement Rates (continued):

Age	Rate (%) Safety Tiers 1 & 2: Less Than 25 Years of Service	Rate (%) Safety Tiers 1 & 2: 25 or More Years of Service	Safety Tier 3	Safety Tier 4
45	2.50	2.50	1.50	0.00
46	2.50	2.50	1.50	0.00
47	2.50	2.50	1.50	0.00
48	2.50	2.50	1.50	0.00
49	10.00	10.00	4.00	0.00
50	18.00	36.00	10.00	15.00
51	15.00	30.00	12.00	10.50
52	18.00	36.00	14.00	12.00
53	16.00	32.00	16.00	14.00
54	18.00	27.00	18.00	15.50
55	18.00	27.00	50.00	40.00
56	20.00	30.00	25.00	25.00
57	20.00	30.00	25.00	25.00
58	20.00	30.00	25.00	25.00
59	30.00	30.00	30.00	25.00
60	45.00	45.00	45.00	45.00
61	55.00	55.00	55.00	55.00
62	70.00	70.00	70.00	70.00
63	70.00	70.00	70.00	70.00
64	70.00	70.00	70.00	70.00
65 & Over	100.00	100.00	100.00	100.00

These retirement rates only apply to members who are eligible to retire at the age shown.

Retirement Age and Benefit for Deferred Vested Members:

Miscellaneous Retirement Age: 59

Safety Retirement Age: 52

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

30% of future Miscellaneous and 40% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 4.25% and 5.50% compensation increases are assumed per annum for Miscellaneous and Safety, respectively.

Future Benefit Accruals:

1.0 year of service per year for the full-time employees. Continuation of current partial service accrual for part-time employees.

Section 4: Actuarial Valuation Basis

Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Definition of Active Members:	All active members of SCERS as of the valuation date.
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, 80% 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.
Service from Unused Sick Leave Conversion:	The following assumptions for service converted from unused sick leave as a percentage of service at retirement are used:

	Service Retirement	Disability Retirement
Miscellaneous	1.50%	0.25%
Safety	2.25%	0.25%

Pursuant to Section 31641.01, the cost of this benefit will be charged only to employers and will not affect member contribution rates.

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 (MVA) less unrecognized returns in each of the last seven years. Unrecognized returns are equal to the difference between the actual market return and the expected return on the market value, and are recognized over a seven-year period. The Actuarial Value of Assets (AVA) is limited by a 30% corridor; the AVA cannot be less than 70% of MVA, nor greater than 130% of MVA.
Valuation Value of Assets:	The Actuarial Value of Assets reduced by the value of the non-valuation reserves and designations.

Section 4: Actuarial Valuation Basis

Amortization Policy:	The balance of the UAAL as of June 30, 2012 shall be amortized separately from any future changes in UAAL over a period of 23 years from June 30, 2012. Any new UAAL as a result of actuarial gains or losses identified in the annual valuation as of June 30 will be amortized over a period of 20 years. Any new UAAL as a result of change in actuarial assumptions or methods will be amortized over a period of 20 years. The change in UAAL as a result of any plan amendments will be amortized over a period of 15 years and the change in UAAL resulting from retirement incentive programs will be amortized over a period of up to 5 years.
Other Actuarial Methods	
Employer Contributions:	Employer contributions consist of two components: *Normal Cost* The annual contribution rate that, if paid annually from a member's first year of membership through the year of retirement, would accumulate to the amount necessary to fully fund the member's retirement-related benefits. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution rate is expressed as a level percentage of the member's compensation. *Contribution to the Unfunded Actuarial Accrued Liability (UAAL)* The annual contribution rate that, if paid annually over the UAAL amortization period, would accumulate to the amount necessary to fully fund the UAAL. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution (or rate credit in the case of a negative UAAL) is calculated to remain as a level percentage of future active member payroll (including payroll for new members as they enter the System) assuming a constant number of active members. In order to remain as a level percentage of payroll, amortization payments (credits) are scheduled to increase at the annual rate of 3.00% (i.e., 2.75% inflation plus 0.25% across-the-board salary increase). Starting with the June 30, 2015 valuation, we have added to the Miscellaneous employer UAAL rate for the County an amount to reflect the net withdrawal liability for the Library Authority and Air Quality Districts when they terminated their affiliation with the County and became special districts. The amortization policy is described above. The recommended employer contributions are provided in *Section 2, Subsection F.* Employer Normal Cost and UAAL contribution rates are calculated assuming payments made at the end of every pay period.

Section 4: Actuarial Valuation Basis

Member Contributions:	*Miscellaneous Tiers 1, 2, 3 & 4 and Safety Tiers 1, 2, & 3* Articles 6 and 6.8 of the 1937 Act define the methodology to be used in the calculation of member basic contribution rates for Miscellaneous members and Safety members, respectively, in the legacy tiers. The basic contribution rate is determined as that percentage of compensation which if paid annually from a member's first year of membership through the prescribed retirement age would accumulate to the amount necessary to fund a prescribed annuity. The annuity is equal to: • 1/240 of Final Average Salary per year of service at age 55 for current Miscellaneous Tier 1, Tier 2 and Tier 3 members • 1/120 of Final Average Salary per year of service at age 60 for current Miscellaneous Tier 4 members • 1/100 of Final Average Salary per year of service at age 50 for current Safety Tier 1, Tier 2 and Tier 3 members In addition to their basic contributions, members in the legacy tiers pay one-half of the total Normal Cost necessary to fund their cost-of-living benefits. The cost to provide the cost-of-living benefits is offset somewhat by the balance available in an account maintained in the valuation to offset member's COLA rates in the legacy tiers. Accumulation includes semi-annual crediting of interest at one-half of the United States 5-year Treasury rate for the last business day of the interest crediting period. For members paying half rates prior to the June 30, 2015 valuation, their rates should be exactly one-half of the rates described above. Note that effective with the June 30, 2015 valuation, all members are reported as paying at least full-rate. Starting in 2014-2015, most County members in the legacy tiers agreed to contribute either 1/3, 1/4, or 1/5 of the difference between the employee's then current Normal Cost and 50% of the total Normal Cost rate. Those members agreed to contribute an additional 1/3, 1/4, or 1/5 of the difference in the Normal Cost rate in 2015-2016, 2016-2017 and 2017-2018. For Rep Unit 26 Miscellaneous members, the member rates they started to contribute in 2015-2016 were 1% of payroll higher than the rates they paid in 2014-2015. In developing their rates for 2016-2017, we added an additional 2% of payroll to the rates for 2015-2016. For Orangevale Recreation and Park District members, the member rates they started to contribute in 2015-2016 were 1/2 of the difference between the employee's then current Normal Cost and 50% of the total Normal Cost rate. Those members agreed to contribute an additional 1/2 of the difference in the Normal Cost rate in 2016-2017. For Rep Unit 16 Miscellaneous members, the member rates effective January 1, 2018 are 1/2 of the difference between the employee's then current Normal Cost and 50% of the total Normal Cost rate. Those members have agreed to contribute an additional 1/4 of the difference in the Normal Cost rate in 2018-2019 and 2019-2020.

Member Contributions (continued):	For Rep Unit 25 Miscellaneous members, the member rates effective January 1, 2018 are 2% of payroll higher than the employees' then current Normal Cost. These members have agreed to contribute an additional 2% of payroll in 2018-2019 and to contribute 50% of the total Normal Cost rate in 2019-2020. Effective in 2019-2020, all of the above members who have previously agreed to contribute a higher Normal Cost rate are paying 50% of the total Normal Cost rate. *Miscellaneous Tier 5 and Safety Tier 4* Pursuant to Section 7522.30(a) of the Government Code, Miscellaneous Tier 5 and Safety Tier 4 members are required to contribute at least 50% of the Normal Cost rate. In addition, there are certain additional requirements that would have to be met such as requiring the new employees to pay the contribution rate of "similarly situated employees", if it is greater. (reference: Section 7522.30(c)). We further understand that different rules may have to be applied for collectively bargained employees, non-represented, managerial or other supervisory employees. (reference: Section 7522.30(e)). In preparing the Normal Cost rates in this report, we have assumed that exactly 50% of the Normal Cost would be paid by the new members and we have taken into account in this valuation only the requirements of Section 7522.30(c), but not requirements of Section 7522.30(e). The member contribution rates for all members are provided in *Section 4, Exhibit 3*. Member contributions are assumed to be made at the end of every pay period.
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 $230,000 for 2021. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions. Non-CalPEPRA benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m). Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard. Contribution rates determined in this valuation have not been reduced for the Section 415 limitations. However, it is anticipated that PEPRA members will not be limited in the future due to the PEPRA compensation limit applied in the determination of their benefit. Actual limitations will result in gains as they occur.
Change in Actuarial Assumptions and Methods:	There have been no changes in actuarial assumptions or methods since the last valuation.

Exhibit 2: Summary of Plan Provisions

This exhibit summarizes the major provisions of the System 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:	July 1 through June 30
Membership Eligibility:	Membership with SCERS usually begins with the employment by the County or member District as a permanent full-time or part-time employee as provided in the County Salary Resolution or the District's Salary Resolution.
Miscellaneous Tier 1	All Miscellaneous members hired prior to September 27, 1981.
Miscellaneous Tier 2 & Tier 3	All Miscellaneous members hired on or after September 27, 1981. Membership into Tier 2 or Tier 3 is determined by date of hire and by bargaining unit.
Miscellaneous Tier 4	All Miscellaneous members hired on or after January 1, 2012 as adopted by the County. Membership into Tier 4 is determined by date of hire.
Miscellaneous Tier 5	All Miscellaneous members hired on or after January 1, 2013.
Safety Tier 1 & Tier 2	Membership into Tier 1 or Tier 2 for Safety employee is determined by date of hire and by bargaining unit.
Safety Tier 3	All Safety members hired on or after January 1, 2012 as adopted by the County. Membership into Tier 3 is determined by date of hire.
Safety Tier 4	All Safety members hired on or after January 1, 2013.
Final Compensation for Benefit Determination:	
Miscellaneous and Safety Tier 1	Highest consecutive 1 year (12 months) of compensation earnable (§31462.1) (FAS1).
Miscellaneous Tier 2, Tier 3, & Tier 4 and Safety Tier 2 & Tier 3	Highest consecutive 3 years (36 months) of compensation earnable. (§31462) (FAS3).
Miscellaneous Tier 5 and Safety Tier 4	Highest consecutive 3 years (36 months) of pensionable compensation. (§7522.10(c), §7522.32 and §7522.34) (FAS3).
Service:	Years of service (Yrs).

Section 4: Actuarial Valuation Basis

Service Retirement Eligibility:		
Miscellaneous		
Tiers 1, 2, 3 & 4	Age 50 with 10 years of service, or age 70 regardless of service, or after 30 years regardless of age (§31672).	
Tier 5	Age 52 with 5 years of service (§7522.20(a)) or age 70 regardless of service (§31672.3).	
Safety		
Tiers 1, 2 & 3	Age 50 with 10 years of service, or age 70 regardless of service, or after 20 years of Safety service regardless of age (§31663.25).	
Tier 4	Age 50 with 5 years of service (§7522.25(d)) or age 70 regardless of service (§31672.3).	
Benefit Formula:		
Miscellaneous Tier 1 (§31676.14)	**Retirement Age**	**Benefit Formula**
	50	(1.48% x FAS1 – 1/3 x 1.48% x $350 x 12) x Yrs
	55	(1.95% x FAS1 – 1/3 x 1.95% x $350 x 12) x Yrs
	60	(2.44% x FAS1 – 1/3 x 2.44% x $350 x 12) x Yrs
	62 & Over	(2.61% x FAS1 – 1/3 x 2.61% x $350 x 12) x Yrs
Miscellaneous Tier 2 & Tier 3 (§31676.14)	**Retirement Age**	**Benefit Formula**
	50	(1.48% x FAS3 – 1/3 x 1.48% x $350 x 12) x Yrs
	55	(1.95% x FAS3 – 1/3 x 1.95% x $350 x 12) x Yrs
	60	(2.44% x FAS3 – 1/3 x 2.44% x $350 x 12) x Yrs
	62 & Over	(2.61% x FAS3 – 1/3 x 2.61% x $350 x 12) x Yrs
Miscellaneous Tier 4 (§31676.1)	**Retirement Age**	**Benefit Formula**
	50	(1.18% x FAS3 – 1/3 x 1.18% x $350 x 12) x Yrs
	55	(1.49% x FAS3 – 1/3 x 1.49% x $350 x 12) x Yrs
	60	(1.92% x FAS3 – 1/3 x 1.92% x $350 x 12) x Yrs
	62	(2.09% x FAS3 – 1/3 x 2.09% x $350 x 12) x Yrs
	65 & Over	(2.43% x FAS3 – 1/3 x 2.43% x $350 x 12) x Yrs

Benefit Formula: (continued)		
Miscellaneous Tier 5 (§7522.20(a))	**Retirement Age**	**Benefit Formula**
	52	1.00% x FAS3 x Yrs
	55	1.30% x FAS3 x Yrs
	60	1.80% x FAS3 x Yrs
	62	2.00% x FAS3 x Yrs
	65	2.30% x FAS3 x Yrs
	67 & Over	2.50% x FAS3 x Yrs
Safety Tier 1 (§31664.1)	**Retirement Age**	**Benefit Formula**
	50 & Over	(3.00% x FAS1 – 1/3 x 3.00% x $350 x 12) x Yrs
Safety Tier 2 (§31664.1)	**Retirement Age**	**Benefit Formula**
	50 & Over	(3.00% x FAS3 – 1/3 x 3.00% x $350 x 12) x Yrs
Safety Tier 3 (§31664.2)	**Retirement Age**	**Benefit Formula**
	50	(2.29% x FAS3 – 1/3 x 2.29% x $350 x 12) x Yrs
	55 & Over	(3.00% x FAS3 – 1/3 x 3.00% x $350 x 12) x Yrs
Safety Tier 4 (§7522.25(d))	**Retirement Age**	**Benefit Formula**
	50	2.00% x FAS3 x Yrs
	55	2.50% x FAS3 x Yrs
	57 & Over	2.70% x FAS3 x Yrs

Maximum Benefit:	
Miscellaneous Tier 1, Tier 2, Tier 3 & Tier 4 and Safety Tier 1, Tier 2 and Tier 3	100% of Highest Average Compensation (§31676.14, §31676.1, §31664.1, §31664.2).
Miscellaneous Tier 5 and Safety Tier 4	None.
Additional Benefit Information:	For Miscellaneous members of the following Districts, benefits accrued before June 29, 2003 will continue to be calculated using §31676.1. • Fair Oaks Cemetery District • Galt Amo Cemetery District

Non-Duty Disability:	
Miscellaneous Tier 1 and Safety Tier 1	
Eligibility	Five years of service (§31720).
Benefit Formula	1.5% per year of service for Miscellaneous Tier 1 and 1.8% per year of service for Safety Tier 1. If the benefit does not exceed one-third of Final Compensation, the service is projected to 65 for Miscellaneous Tier 1 and 55 for Safety Tier 1, but the total projected benefit cannot be more than one-third of Final Compensation (§31727 and §31727.2). The Service Retirement benefit is payable, if greater.
Miscellaneous Tier 2, Tier 3, Tier 4, & Tier 5 and Safety Tier 2, Tier 3 & Tier 4	
Eligibility	Five years of service (§31720).
Benefit Formula	20% of Final Compensation for the first five years of service plus 2% for each year of additional service for a maximum of 40% of Final Compensation (§31727.7). The Service Retirement benefit is payable, if greater.
Line-of-Duty Disability:	
All Members	
Eligibility	No age or service requirements (§31720).
Benefit Formula	50% of the Final Compensation or 100% of Service Retirement benefit, if greater (§31727.4).

Pre-Retirement Death:	
All Members	
Eligibility	No age or service requirements.
Basic lump sum benefit	Refund of employee contributions with interest, plus one month's compensation for each year of service, to a maximum of six month's compensation (§31781).
Death in Line-of-Duty	50% of Final Compensation or 100% of Service Retirement benefit, if greater, payable to spouse or minor children (§31787).
Vested Members	
Eligibility	Five years of service.
Basic benefit	60% of the greater of Service Retirement or Non-Duty Disability Retirement benefit payable to surviving eligible spouse (§31765.1, §31781.1), in lieu of the basic lump sum benefit above.
Death in Line-of-Duty	50% of Final compensation or 100% of Service Retirement benefit, if greater, payable to spouse or minor children (§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 continues to eligible spouse (§31760.1) and an additional $4,000 lump sum benefit is payable to member's beneficiary (§31789.3). An eligible spouse is a surviving spouse who was married to the member at least one year prior to the date of retirement (§31760.1).
Line-of-Duty Disability	Unless another option was selected at retirement, 100% of member's allowance continued to eligible spouse (§31786) and an additional $4,000 lump sum benefit is payable to member's beneficiary (§31789.3). An eligible spouse is a surviving spouse who was married to the member at least one year prior to the date of retirement (§31760.1).
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).

Section 4: Actuarial Valuation Basis

Post-Retirement Cost-of-Living Benefits:	
Miscellaneous Tier 1 and Safety Tier 1	Annual adjustment based on Consumer Price Index to a maximum of 4% per year; excess "banked" (§31874.2).
Miscellaneous Tier 2	None.
Miscellaneous Tier 3, Tier 4 & Tier 5 and Safety Tier 2, Tier 3 & Tier 4	Annual adjustment based on Consumer Price Index to a maximum of 2% per year; excess "banked" (§31870).
Member Contributions:	Please refer to *Section 4, Exhibit 3* for specific rates.
Miscellaneous Tier 1	
Basic	Entry-age based rates that provide for an annuity at age 55 equal to 1/240 of FAS1 (§31621.3).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.
Miscellaneous Tier 2	
Basic	Entry-age based rates that provide for an annuity at age 55 equal to 1/240 of FAS3 (§31621.3).
Cost-of-Living	None.
Miscellaneous Tier 3	
Basic	Entry-age based rates that provide for an annuity at age 55 equal to 1/240 of FAS3 (§31621.3).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.
Miscellaneous Tier 4	
Basic	Entry-age based rates that provide for an annuity at age 60 equal to 1/120 of FAS3 (§31621).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.
Miscellaneous Tier 5	50% of the total Normal Cost rate.
Safety Tier 1, Tier 2 & Tier 3	
Basic	Entry-age based rates that provide for an annuity at age 50 equal to 1/100 of FAS1 (FAS3 for Tier 2 and Tier 3). (§31639.25).
Cost-of-Living	Entry-age based rates that provide for one-half of future Cost-of-Living costs.
Safety Tier 4	50% of the total Normal Cost rate.

Member Contributions (continued):

Notes

- The above rates are known as full rates. For members paying half rates prior to the June 30, 2015 valuation, their rates should be one-half of the rates provided in this report. Note that effective with the June 30, 2015 valuation, all members are reported as paying at least full-rate. In addition, for members entering the System on or after January 1, 1975, they pay a rate based on a single entry age (§31621.11 and §31639.26).
- Starting in 2014-2015, most County members in the legacy tiers agreed to contribute either 1/3, 1/4, or 1/5 of the difference between the employee's then current Normal Cost and 50% of the total Normal Cost rate. Those members agreed to contribute an additional 1/3, 1/4, or 1/5 of the difference in the Normal Cost rate in 2015-2016, 2016-2017 and 2017-2018.
- For Rep Unit 26 Miscellaneous members, the member rates they started to contribute in 2015-2016 were 1% of payroll higher than the rates they paid in 2014-2015. In developing their rates for 2016-2017, we added an additional 2% of payroll to the rates for 2015-2016.
- For Orangevale Recreation and Park District members, the member rates they started to contribute in 2015-2016 were 1/2 of the difference between the employee's then current Normal Cost and 50% of the total Normal Cost rate. Those members agreed to contribute an additional 1/2 of the difference in the Normal Cost rate in 2016-2017.
- For Rep Unit 16 Miscellaneous members, the member rates effective January 1, 2018 are 1/2 of the difference between the employee's then current Normal Cost and 50% of the total Normal Cost rate. Those members have agreed to contribute an additional 1/4 of the difference in the Normal Cost rate in 2018-2019 and 2019-2020.
- For Rep Unit 25 Miscellaneous members, the member rates effective January 1, 2018 are 2% of payroll higher than the employees' then current Normal Cost. These members have agreed to contribute an additional 2% of payroll in 2018-2019 and to contribute 50% of the total Normal Cost rate in 2019-2020.
- Effective in 2019-2020, all of the above members who have previously agreed to contribute a higher Normal Cost rate are paying 50% of the total Normal Cost rate.

Section 4: Actuarial Valuation Basis

Other Information:	Safety Tier 1, Tier 2 & Tier 3 members with 30 or more years of service are exempt from paying member contributions. The same applies for Miscellaneous members hired on or before March 7, 1973.
Changes in Plan Provisions:	There have been no changes in plan provisions since the last valuation.

Note: The summary of major plan provisions is designed to outline principal plan benefits as interpreted for purposes of the actuarial valuation. If the System should find the plan summary not in accordance with the actual provisions, the System should alert the actuary so they can both be sure the proper provisions are valued.

Exhibit 3: Member Contribution Rates

Comparison of Member Rate[1] from the June 30, 2020 and June 30, 2021 Valuations

Contribution rates for most Miscellaneous County members and all Safety County members in the legacy tiers who have agreed to contribute an additional Normal Cost before and after the gross-up for the integration with Social Security can be found in *Section 4, Exhibit 6*.

	June 30, 2021			June 30, 2020			
Miscellaneous	**Basic**	**COLA**	**Total**	**Basic**	**COLA**	**Total**	**Increase / (Decrease) in Rate**
Tier 1	4.34%	2.72%	7.06%	4.34%	2.41%	6.75%	0.31%
Tier 2	4.16%	0.00%	4.16%	4.16%	0.00%	4.16%	0.00%
Tier 3	4.16%	1.84%	6.00%	4.16%	1.85%	6.01%	-0.01%
Tier 4	7.30%	1.69%	8.99%	7.30%	1.69%	8.99%	0.00%
Tier 5	8.25%	1.77%	10.02%	8.24%	1.77%	10.01%	0.01%

	June 30, 2021			June 30, 2020			
Safety	**Basic**	**COLA**	**Total**	**Basic**	**COLA**	**Total**	**Increase / (Decrease) in Rate**
Tier 1	12.10%	7.72%	19.82%[2]	12.10%	6.76%	18.86%	0.96%
Tier 2	11.48%	4.58%	16.06%	11.48%	4.56%	16.04%	0.02%
Tier 3	11.48%	4.07%	15.55%	11.48%	4.04%	15.52%	0.03%
Tier 4	11.78%	3.27%	15.05%	11.83%	3.28%	15.11%	-0.06%

[1] Members who enter on or after 1/1/1975 contribute as indicated above and all others contribute the rate at their respective entry ages.
[2] There is an increase in the member rate for Safety Tier 1 primarily as a result of changes in member demographics as the number of active members in that Tier shrunk by about one-half during 2020-2021.

Exhibit 3: Member Contribution Rates (continued)

Miscellaneous Tier 1 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation
(as a % of monthly payroll)

	Basic		COLA		Total	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350
16	2.20%	3.30%	1.38%	2.07%	3.58%	5.37%
17	2.23%	3.35%	1.40%	2.10%	3.63%	5.45%
18	2.27%	3.40%	1.42%	2.13%	3.69%	5.53%
19	2.29%	3.44%	1.44%	2.16%	3.73%	5.60%
20	2.33%	3.49%	1.46%	2.19%	3.79%	5.68%
21	2.36%	3.54%	1.48%	2.22%	3.84%	5.76%
22	2.39%	3.59%	1.50%	2.25%	3.89%	5.84%
23	2.43%	3.65%	1.53%	2.29%	3.96%	5.94%
24	2.47%	3.70%	1.55%	2.32%	4.02%	6.02%
25	2.50%	3.75%	1.57%	2.35%	4.07%	6.10%
26	2.53%	3.80%	1.59%	2.38%	4.12%	6.18%
27	2.57%	3.86%	1.61%	2.42%	4.18%	6.28%
28	2.61%	3.91%	1.63%	2.45%	4.24%	6.36%
29	2.65%	3.97%	1.66%	2.49%	4.31%	6.46%
30	2.69%	4.03%	1.68%	2.52%	4.37%	6.55%
31	2.73%	4.09%	1.71%	2.56%	4.44%	6.65%
32	2.77%	4.15%	1.73%	2.60%	4.50%	6.75%
33	2.81%	4.21%	1.76%	2.64%	4.57%	6.85%
34	2.85%	4.27%	1.79%	2.68%	4.64%	6.95%
35	2.89%	4.34%	1.81%	2.72%	4.70%	7.06%
36	2.93%	4.40%	1.84%	2.76%	4.77%	7.16%
37	2.98%	4.47%	1.87%	2.80%	4.85%	7.27%
38	3.03%	4.54%	1.89%	2.84%	4.92%	7.38%
39	3.08%	4.62%	1.93%	2.89%	5.01%	7.51%
40	3.13%	4.69%	1.96%	2.94%	5.09%	7.63%

Exhibit 3: Member Contribution Rates (continued)

Miscellaneous Tier 1 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation (as a % of monthly payroll)

	Basic		COLA		Total	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350
41	3.17%	4.76%	1.99%	2.98%	5.16%	7.74%
42	3.22%	4.83%	2.02%	3.03%	5.24%	7.86%
43	3.27%	4.90%	2.05%	3.07%	5.32%	7.97%
44	3.31%	4.97%	2.07%	3.11%	5.38%	8.08%
45	3.37%	5.05%	2.11%	3.16%	5.48%	8.21%
46	3.41%	5.12%	2.14%	3.21%	5.55%	8.33%
47	3.45%	5.18%	2.17%	3.25%	5.62%	8.43%
48	3.49%	5.24%	2.19%	3.28%	5.68%	8.52%
49	3.53%	5.29%	2.21%	3.31%	5.74%	8.60%
50	3.53%	5.30%	2.21%	3.32%	5.74%	8.62%
51	3.51%	5.27%	2.20%	3.30%	5.71%	8.57%
52	3.49%	5.24%	2.19%	3.28%	5.68%	8.52%
53	3.47%	5.21%	2.17%	3.26%	5.64%	8.47%
54	3.45%	5.18%	2.17%	3.25%	5.62%	8.43%
55	3.45%	5.18%	2.17%	3.25%	5.62%	8.43%
56	3.45%	5.18%	2.17%	3.25%	5.62%	8.43%
57	3.45%	5.18%	2.17%	3.25%	5.62%	8.43%
58	3.45%	5.18%	2.17%	3.25%	5.62%	8.43%
59 & Over	3.45%	5.18%	2.17%	3.25%	5.62%	8.43%

Note: Members who enter prior to 1/1/1975 contribute on the basis of their actual entry age and all others contribute based on the basis of a single entry age of 35.

Interest:	6.75% per annum
COLA:	2.75%
Mortality:	See *Section 4, Exhibit 1*
Salary Increase:	Inflation (2.75%) + Across-the-Board Increase (0.25%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor:	62.65%[1]
Non-Refundability Factor:	100.00%

[1] There is no COLA offset available. The reserve carried by the Board to reduce part of the COLA contributions is projected to be fully exhausted by June 30, 2022.

Exhibit 3: Member Contribution Rates (continued)

Miscellaneous Tier 2 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation (as a % of monthly payroll)

	Basic		COLA		Total	
Entry Age	**First $350**	**Over $350**	**First $350**	**Over $350**	**First $350**	**Over $350**
35	2.77%	4.16%	0.00%	0.00%	2.77%	4.16%

Note: Members who enter on or after 1/1/1975 contribute on the basis of a single entry age of 35.

Interest: 6.75% per annum
COLA: 0.00%
Mortality: See *Section 4, Exhibit 1*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.25%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor: 0.00%
Non-Refundability Factor: 100.00%

Miscellaneous Tier 3 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation (as a % of monthly payroll)

	Basic		COLA		Total	
Entry Age	**First $350**	**Over $350**	**First $350**	**Over $350**	**First $350**	**Over $350**
35	2.77%	4.16%	1.23%	1.84%	4.00%	6.00%

Note: Members who enter on or after 1/1/1975 contribute on the basis of a single entry age of 35.

Interest: 6.75% per annum
COLA: 2.00%
Mortality: See *Section 4, Exhibit 1*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.25%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor: 44.28%[1]
Non-Refundability Factor: 99.37%

[1] Factor has been adjusted to reflect a reserve carried by the Board to reduce part of the COLA contributions.

Exhibit 3: Member Contribution Rates (continued)

Miscellaneous Tier 4 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation (as a % of monthly payroll)

	Basic		COLA		Total	
Entry Age	**First $350**	**Over $350**	**First $350**	**Over $350**	**First $350**	**Over $350**
35	4.87%	7.30%	1.13%	1.69%	6.00%	8.99%

Note: Members who enter on or after 1/1/1975 contribute on the basis of a single entry age of 35.

Interest: 6.75% per annum
COLA: 2.00%
Mortality: See *Section 4, Exhibit 1*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.25%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor: 23.16%[1]
Non-Refundability Factor: 98.24%

[1] Factor has been adjusted to reflect a reserve carried by the Board to reduce part of the COLA contributions.

Miscellaneous Tier 5 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation (as a % of monthly payroll)

	All Eligible Pay[1]		
	Basic	**COLA**	**Total**
All Members	8.25%	1.77%	10.02%

[1] It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the compensation that can be taken into account for 2021 is equal to $128,059 (reference: Section 7522.10). This amount should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2021 (reference: Section 7522.10(d)).

Interest: 6.75% per annum
COLA: 2.00%
Mortality: See *Section 4, Exhibit 1*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.25%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor: 21.45%
Non-Refundability Factor: 96.07%

Exhibit 3: Member Contribution Rates (continued)

Safety Tier 1 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation
(as a % of monthly payroll)

	Basic		COLA		Total	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350
18	7.44%	11.16%	4.75%	7.12%	12.19%	18.28%
19	7.49%	11.24%	4.78%	7.17%	12.27%	18.41%
20	7.55%	11.32%	4.81%	7.22%	12.36%	18.54%
21	7.60%	11.40%	4.85%	7.27%	12.45%	18.67%
22	7.65%	11.48%	4.88%	7.32%	12.53%	18.80%
23	7.71%	11.56%	4.91%	7.37%	12.62%	18.93%
24	7.77%	11.65%	4.95%	7.43%	12.72%	19.08%
25	7.82%	11.73%	4.99%	7.48%	12.81%	19.21%
26	7.88%	11.82%	5.03%	7.54%	12.91%	19.36%
27	7.94%	11.91%	5.07%	7.60%	13.01%	19.51%
28	8.00%	12.00%	5.10%	7.65%	13.10%	19.65%
29	8.07%	12.10%	5.15%	7.72%	13.22%	19.82%
30	8.13%	12.19%	5.18%	7.77%	13.31%	19.96%
31	8.19%	12.29%	5.23%	7.84%	13.42%	20.13%
32	8.27%	12.40%	5.27%	7.91%	13.54%	20.31%
33	8.34%	12.51%	5.32%	7.98%	13.66%	20.49%
34	8.41%	12.62%	5.37%	8.05%	13.78%	20.67%
35	8.49%	12.74%	5.42%	8.13%	13.91%	20.87%
36	8.57%	12.86%	5.47%	8.20%	14.04%	21.06%
37	8.67%	13.00%	5.53%	8.29%	14.20%	21.29%

Exhibit 3: Member Contribution Rates (continued)

Safety Tier 1 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation (as a % of monthly payroll)

	Basic		COLA		Total	
Entry Age	**First $350**	**Over $350**	**First $350**	**Over $350**	**First $350**	**Over $350**
38	8.77%	13.15%	5.59%	8.39%	14.36%	21.54%
39	8.87%	13.31%	5.66%	8.49%	14.53%	21.80%
40	8.95%	13.42%	5.71%	8.56%	14.66%	21.98%
41	9.02%	13.53%	5.75%	8.63%	14.77%	22.16%
42	9.08%	13.62%	5.79%	8.69%	14.87%	22.31%
43	9.11%	13.66%	5.81%	8.71%	14.92%	22.37%
44	9.13%	13.70%	5.83%	8.74%	14.96%	22.44%
45	9.11%	13.67%	5.81%	8.72%	14.92%	22.39%
46	9.07%	13.60%	5.78%	8.67%	14.85%	22.27%
47	8.97%	13.46%	5.72%	8.58%	14.69%	22.04%
48	8.87%	13.31%	5.66%	8.49%	14.53%	21.80%
49 & Over	8.73%	13.09%	5.57%	8.35%	14.30%	21.44%

Note: Members who enter prior to 1/1/1975 contribute on the basis of their actual entry age and all others contribute based on the basis of a single entry age of 29.

Interest: 6.75% per annum
COLA: 2.75%
Mortality: See *Section 4, Exhibit 1*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.25%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor: 63.78%[1]
Non-Refundability Factor: 100.00%

[1] Factor has been adjusted to reflect a reserve carried by the Board to reduce part of the COLA contributions.

Exhibit 3: Member Contribution Rates (continued)

Safety 2 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation (as a % of monthly payroll)

	Basic		COLA		Total	
Entry Age	**First $350**	**Over $350**	**First $350**	**Over $350**	**First $350**	**Over $350**
29	7.65%	11.48%	3.05%	4.58%	10.70%	16.06%

Note: Members who enter on or after 1/1/1975 contribute on the basis of a single entry age of 29.

Interest: 6.75% per annum
COLA: 2.75%
Mortality: See *Section 4, Exhibit 1*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.25%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor: 39.86%[1]
Non-Refundability Factor: 99.88%

[1] Factor has been adjusted to reflect a reserve carried by the Board to reduce part of the COLA contributions.

Safety Tier 3 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation (as a % of monthly payroll)

	Basic		COLA		Total	
Entry Age	**First $350**	**Over $350**	**First $350**	**Over $350**	**First $350**	**Over $350**
29	7.65%	11.48%	2.71%	4.07%	10.36%	15.55%

Note: Members who enter on or after 1/1/1975 contribute on the basis of a single entry age of 29.

Interest: 6.75% per annum
COLA: 2.75%
Mortality: See *Section 4, Exhibit 1*
Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.25%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor: 35.48%[1]
Non-Refundability Factor: 99.59%

[1] Factor has been adjusted to reflect a reserve carried by the Board to reduce part of the COLA contributions.

Exhibit 3: Member Contribution Rates (continued)

Safety Tier 4 Members' Contribution Rates Based on the June 30, 2021 Actuarial Valuation (as a % of monthly payroll)

	All Eligible Pay[1]		
	Basic	COLA	Total
All Members	11.78%	3.27%	15.05%

[1] It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the compensation that can be taken into account for 2021 is equal to $128,059 (reference: Section 7522.10). This amount should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2021 (reference: Section 7522.10(d)).

Interest:	6.75% per annum
COLA:	2.75%
Mortality:	See *Section 4, Exhibit 1*
Salary Increase:	Inflation (2.75%) + Across-the-Board Increase (0.25%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor:	27.76%
Non-Refundability Factor:	98.80%

Exhibit 4: Calculation of Additional District Rate as of June 30, 2021 for Certain District Employers

Additional contributions were made by the County to buy down the County and Superior Court UAAL contribution rate through the issuance of Pension Obligation Bonds (POB). As the other district employers did not participate in the POBs, their rates as calculated in this report have been increased to reflect that they did not buy down their UAAL rates and for other adjustments (Districts with All Service Improvements vs. Future Service Improvements, Rio Linda Elverta becoming a participating employer effective October 1, 2017, two-year phase-in of cost impact of actuarial assumptions). The POB rate adjustment has been calculated as follows:

The Calculation of the Additional District Rate as Of June 30, 2021

June 30, 2020 POB Balance	$30,532,368
Additional Rate in June 30, 2020 Valuation	7.72%
June 30, 2020 Projected District Payroll[1]	$34,688,000
June 30, 2021 POB Balance[2]	$29,825,010
14-Year Amortization	0.092398
June 30, 2021 Projected District Payroll[1]	$35,402,000
Additional Rate in June 30, 2021 Valuation[3]	7.78%

[1] Excluding the payroll for Rio Linda Elverta Recreation and Parks District.
[2] Equal to $30,532,368* 1.0675 – 7.72% * $34,688,000 * (1+0.0675/2).
[3] Equal to $29,825,010 * 0.092398 / $35,402,000.

Exhibit 5: Detailed District Rates as of June 30, 2021

Special Districts with All Service Improvement Only

	Member Paying Full Rate (% of Payroll)			Member Paying 50:50 Rate (% of Payroll)		
	Tier 1[1]	Tier 3[1]	Tier 5	Tier 1[2]	Tier 3[2]	Tier 5[3]
Normal Cost	N/A	16.55%	N/A	N/A	11.42%	10.02%
UAAL	N/A	21.52%	N/A	N/A	21.52%	21.52%
Total	N/A	38.07%	N/A	N/A	32.94%	31.54%

Special Districts with Future Service Improvement Only[4]

	Member Paying Full Rate (% of Payroll)			Member Paying 50:50 Rate (% of Payroll)		
	Tier 1	Tier 3	Tier 5	Tier 1	Tier 3	Tier 5
Normal Cost	N/A	16.55%	N/A	N/A	N/A	10.02%
UAAL	N/A	17.88%	N/A	N/A	N/A	17.88%
Total	N/A	34.43%	N/A	N/A	N/A	27.90%

Rio Linda Elverta Recreation and Parks District

	Member Paying Full Rate (% of Payroll)			Member Paying 50:50 Rate (% of Payroll)		
	Tier 1	Tier 3	Tier 5	Tier 1	Tier 3	Tier 5
Normal Cost	N/A	N/A	N/A	N/A	N/A	10.02%
UAAL	N/A	N/A	N/A	N/A	N/A	2.02%
Total	N/A	N/A	N/A	N/A	N/A	12.04%

1 Includes Carmichael Recreation and Park District, Elk Grove Cosumnes Cemetery District, Mission Oaks Recreation and Park District, Sacramento Employment and Training Agency (S.E.T.A.), and Sunrise Recreation and Park District.
2 Includes Orangevale Recreation and Park District only.
3 Includes all the employers referenced in footnotes 1 and 2.
4 Includes Fair Oaks Cemetery District and Galt-Arno Cemetery District.

Exhibit 6: Normal Cost Rates with Additional Member Contributions under Cost Sharing Arrangements

The Normal Cost rates adjusted for the additional member contributions are developed in the following steps:

- Step A: Calculate the Normal Cost rates for the employer and the member assuming that no members contribute an additional portion of the Normal Cost.
- Step B: Calculate the Normal Cost rates for the employer and the member assuming that members pay exactly one-half of the total Normal Cost rate. In this step, we have adjusted the employer rate to account for the cost associated with the cessation of member contributions for Miscellaneous members hired on or before March 7, 1973 and after 30 years of service and for Safety Tier 1, Tier 2 and Tier 3 members after 30 years of service
- Step C: Gross up the member Normal Cost rates developed in Step B for the integration with Social Security

These steps are outlined in the following pages.

Exhibit 6: Normal Cost Rates with Additional Member Contributions under Cost Sharing Arrangements (continued)

Step A: Normal Cost (Prior to any Additional Normal Cost Contributions by the Member)

Total Normal Cost Contribution Rates (Employer and Member Normal Cost Rates)

Miscellaneous

	Member Paying Full Rate (% of Payroll)			
	Tier 1[1]	**Tier 2**	**Tier 3**	**Tier 4**
Employer	15.73%	12.41%	16.55%	12.85%
Member	7.06%	4.16%	6.00%	8.99%
Member COLA Buydown	0.00%[2]	0.00%	0.26%	0.26%
Total	**22.79%**	**16.57%**	**22.81%**	**22.10%**

Safety

	Member Paying Full Rate (% of Payroll)		
	Tier 1[1]	**Tier 2**	**Tier 3**
Employer	32.62%	26.09%	24.26%
Member	19.82%	16.06%	15.55%
Member COLA Buydown	3.32%	0.29%	0.29%
Total	**55.76%**	**42.44%**	**40.10%**

Note: Member rates shown are for annual salary in excess of $4,200 (or monthly salary of $350). For annual salary less than $4,200 (or monthly salary of $350), the rates are equal to 2/3 of the rates shown. Also, the member COLA buydown is a non-cash contribution item.

[1] These are the single entry age rates at age 35 and 29 for Miscellaneous and Safety, respectively.
[2] There is no COLA offset available. The reserve carried by the Board to reduce part of the COLA contributions is projected to be fully exhausted by June 30, 2022.

Exhibit 6: Normal Cost Rates with Additional Member Contributions under Cost Sharing Arrangements (continued)

Step B: Normal Cost (Assuming Exactly 50:50 Payment by the Employer and the Member) – Before Gross-up for the Integration with Social Security

Total Normal Cost Contribution Rates (Employer and Member Normal Cost Rates)

Miscellaneous

	Member Paying 50:50 Rate (% of Payroll)			
	Tier 1	**Tier 2**	**Tier 3**	**Tier 4**
Employer	11.96%[1]	8.29%	11.42%	11.07%
Member[5]	11.40%	8.29%	11.16%	10.81%
Member COLA Buydown	0.00%	0.00%	0.26%	0.26%
Total	**23.36%**	**16.58%**	**22.84%**	**22.14%**

Safety

	Member Paying 50:50 Rate (% of Payroll)		
	Tier 1	**Tier 2**	**Tier 3**
Employer	35.64%[2]	21.38%[3]	20.15%[4]
Member[5]	24.56%	20.93%	19.77%
Member COLA Buydown	3.32%	0.29%	0.29%
Total	**63.52%**	**42.60%**	**40.21%**

Note: Member rates shown are for annual salary in excess of $4,200 (or monthly salary of $350). For annual salary less than $4,200 (or monthly salary of $350), the rates are equal to 2/3 of the rates shown. Also, the member COLA buydown is a non-cash contribution item.

1 The employer rate has been adjusted by 0.56% of payroll to account for the cost associated with the cessation of member contributions for those members hired on or before March 7, 1973 and after 30 years of service.
2 The employer rate has been adjusted by 7.76% of payroll to account for the cost associated with the cessation of member contributions after 30 years of service.
3 The employer rate has been adjusted by 0.16% of payroll to account for the cost associated with the cessation of member contributions after 30 years of service.
4 The employer rate has been adjusted by 0.09% of payroll to account for the cost associated with the cessation of member contributions after 30 years of service.
5 The member rates have not been grossed up for the rate on the first $4,200 in annual salary being less (by one-third) when compared to the 50:50 total Normal Cost rate. Please see the following page for the rates after the gross-up.

Exhibit 6: Normal Cost Rates with Additional Member Contributions under Cost Sharing Arrangements (continued)

Step C: Normal Cost (Assuming Exactly 50:50 Payment by the Employer and the Member) – After Gross-up for the Integration with Social Security

Total Normal Cost Contribution Rates (Employer and Member Normal Cost Rates)

Miscellaneous

	Member Paying 50:50 Rate (% of Payroll)			
	Tier 1	**Tier 2**	**Tier 3**	**Tier 4**
Employer	11.96%[1]	8.29%	11.42%	11.07%
Member[5]	11.57%	8.44%	11.33%	10.97%
Member COLA Buydown	0.00%	0.00%	0.26%	0.26%
Total	**23.53%**	**16.73%**	**23.01%**	**22.30%**

Safety

	Member Paying 50:50 Rate (% of Payroll)		
	Tier 1	**Tier 2**	**Tier 3**
Employer	35.64%[2]	21.38%[3]	20.15%[4]
Member[5]	24.77%	21.14%	19.99%
Member COLA Buydown	3.32%	0.29%	0.29%
Total	**63.73%**	**42.81%**	**40.43%**

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1 The employer rate has been adjusted by 0.56% of payroll to account for the cost associated with the cessation of member contributions for those members hired on or before March 7, 1973 and after 30 years of service.
2 The employer rate has been adjusted by 7.76% of payroll to account for the cost associated with the cessation of member contributions after 30 years of service.
3 The employer rate has been adjusted by 0.16% of payroll to account for the cost associated with the cessation of member contributions after 30 years of service.
4 The employer rate has been adjusted by 0.09% of payroll to account for the cost associated with the cessation of member contributions after 30 years of service.
5 The member rates have been grossed up for the rate on the first $4,200 in annual salary being less (by one-third) when compared to the 50:50 total Normal Cost rate.