



San Mateo County Employees' Retirement Association

June 30, 2021 Actuarial Valuation

Prepared by:

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September 20, 2021

Board of Retirement
San Mateo County Employees' Retirement Association
100 Marine Parkway, Suite 125
Redwood City, CA 94065-5208

Dear Members of the Board:

As requested, we have completed an actuarial valuation for the San Mateo County Employees' Retirement Association (SamCERA). The purpose of the valuation is to recommend the employer and member contribution rates for the fiscal year beginning July 1, 2022.

Actuarial Certification – Per SamCERA Consulting Contract

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices, including Actuarial Standards of Practice (ASOPs) Nos. 4, 27, and 35. In particular, it reflects the actuary's responsibility under Section 5.8 ("Actuary's Responsibility") of ASOP No. 4 (1993 Reformatted Edition) for assessing the implications of overall results, in terms of short-range and long-range benefit security and expected cost progression. Note that this section no longer exists in the current ASOP No. 4; however, Milliman will continue to assess the results pursuant to the prior section.

To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our best professional judgment, the assumptions and methodologies as adopted by the Board of Retirement, individually and in combination, are reasonably related to the experience of and the expectations for SamCERA, and will not, in and of themselves, expose SamCERA to "unsound financial risk." In this regard, we consider "unsound financial risk" to mean the following:

- A substantial likelihood that future required contribution rates as a percentage of payroll will be dramatically higher than the rates shown in this report, given the uncertainties of actuarial projections and assuming the full payment of all recommended contributions; or
- A substantial likelihood that SamCERA's assets will be insufficient to pay benefit payments when due, given the uncertainties of actuarial projections and assuming the full payment of all recommended contributions.

In preparing this report, we have complied with all quality assurance procedures detailed on page 26 of our October 22, 2018 proposal titled "Actuarial Consulting Services Proposal."

Actuarial Certification – Milliman

The major findings of the valuation are contained in this report. This report reflects the benefit provisions as of June 30, 2021 and member contribution rates effective July 1, 2022. In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by SamCERA staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for SamCERA have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of SamCERA and reasonable expectations) and which, in combination, offer a reasonable estimate of anticipated experience affecting SamCERA. Further, in our opinion, each actuarial assumption used is reasonably related to the experience of the Plan and to reasonable expectations, which, in combination, represent a reasonable estimate of anticipated experience for SamCERA. The valuation results were developed using models intended for valuations that use standard actuarial techniques.

This valuation report is only an estimate of SamCERA's financial condition as of a single date. It can neither predict SamCERA's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of benefits, only the timing of contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

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 (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Board of Retirement has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix A.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for SamCERA. The calculations in this report have been made on a basis consistent with our understanding of SamCERA's current funding requirements. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of SamCERA. SamCERA may place the final version of this report on its website. Milliman's "work" to create this report, to the extent that Milliman's work is not subject to disclosure under applicable public records laws, may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions:

- (a) SamCERA may provide a copy of Milliman's work, in its entirety, to its professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit SamCERA.
- (b) SamCERA may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are retirement actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsors. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices, which are consistent with the principles prescribed by the Actuarial Standards Board and the *Code of Professional Conduct and Qualification Standard for Actuaries Issuing Statements of Actuarial Opinion* in the United States, published by the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

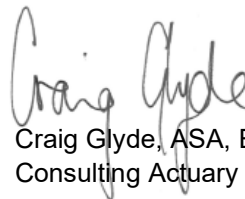
We would like to express our appreciation to Scott Hood, Chief Executive Officer of SamCERA, and to members of his staff, who gave substantial assistance in supplying the data on which this report is based.

We respectfully submit the following report and we look forward to discussing it with you.

Sincerely,

A handwritten signature in black ink that reads "Nick Collier".

Nick Collier, ASA, EA, MAAA
Consulting Actuary
NC/CG/dla

A handwritten signature in black ink that reads "Craig Glyde".

Craig Glyde, ASA, EA, MAAA
Consulting Actuary

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1. Summary of Findings

This report presents the results of the June 30, 2021 actuarial valuation, including the Employer Statutory Contribution Rate calculated for the fiscal year beginning July 1, 2022 and the Funded Ratio of SamCERA. The following table summarizes these key results from the current and prior valuations.

| | June 30, 2021 | June 30, 2020 |
|--|---------------|---------------|
| Employer Statutory Contribution Rate (all employers) | 38.33% | 38.91% |
| County Statutory Contribution Rate | 38.51% | 39.14% |
| Funded Ratio | 88.1% | 86.4% |

Key findings and results from the valuation are summarized below.

Investment Return

SamCERA's net investment return on the market value of assets of 23.5% for the fiscal year ended June 30, 2021 was greater than the assumed rate for the prior fiscal year of 6.5%.

Under the asset smoothing method, the strong investment return for the first six months of the fiscal year offset the entire unrecognized investment losses as of June 30, 2020. Combined with the strong investment return for the second six months of the fiscal year there is approximately \$438 million of unrecognized investment gains as of June 30, 2021 that will be recognized over the next five years.

The net result was a return on Valuation Assets of 8.2%, which is greater than the prior year assumed rate of 6.5%, and caused a decrease in the Statutory Contribution Rate (SCR) of 1.36% of pay and an increase of 1.4% in the Funded Ratio. Note that this impact is strictly due to the investment return, and other factors caused additional changes to the SCR and Funded Ratio, as described in this report.

Investment Return Assumption & Phase-In Approach

At the May 25, 2021 Board of Retirement meeting, the Board adopted an investment return assumption of 6.25% effective for the June 30, 2021 actuarial valuation. All other assumptions described in our report dated July 22, 2020 Investigation of Experience report were reaffirmed by the Board for use in this valuation.

The net effect of the assumption change was an increase in the Unfunded Actuarial Accrued Liability (UAAL) of approximately \$198 million effective June 30, 2021, a decrease in the Funded Ratio of 2.8%, and an aggregate increase in the employer contribution rate of 3.64% of payroll.

Based on direction from the Board we have recognized the impact of the increase in employer contribution rate due to the new assumptions in three equal installments beginning with the employer contribution rate effective July 1, 2022. Effective on that date one-third of the 3.64% increase (1.21%) will be included in the SCR, and two-thirds (2.43%) will be deferred. Effective July 1, 2023 another 1.21% will be included in the SCR (with 1.22% deferred), and the final 1.22% will be included in the SCR effective July 1, 2024. The impact of the assumption change was determined separately for each member class, with different recognitions for each class. These impacts by member class are shown in Section 6 of this report.

Member contribution rates for all plans (except the non-contributory Plan 3) changed as a result of the new assumptions, as described below.

Funding

The Funded Ratio increased from 86.4% to 88.1%, primarily due to investment returns greater than expected and employer contributions made to amortize the UAAL, which were partially offset by the impact of the investment return assumption change. On a market-value basis, the Funded Ratio increased from 82.6% to 96.1%, primarily due to the 23.5% net investment return over the period, compared to the assumed 6.5%.

The "Analysis of Change" section that follows later in Section 1 provides an analysis of the sources of change in the Funded Ratio since last year.

The assets used in the calculation of the Funded Ratio include the value of the County Supplementary Contribution Account (CSCA) and the District Supplementary Contribution Account (DSCA). Throughout this report we use the term SCA when referring to both of these accounts.

The County contributed \$39.7 million in excess of the SCR for the year ended June 30, 2021 which was credited to the CSCA. The District did not contribute to the DSCA over the year ended June 30, 2021. In total, the CSCA has an actuarial value of \$220.2 million and the DSCA has an actuarial value of \$1.1 million as of June 30, 2021. Without the CSCA and DSCA the Funded Ratio would be 84.6% as of June 30, 2021.

Employer Statutory Contribution Rate

The Statutory Contribution Rate (SCR) is comprised of the Employer Normal Cost rate and a separate component to amortize the UAAL. The SCR decreased by 0.58% of pay to 38.33% of pay, from 38.91% of pay (calculated in the prior valuation). The SCR is a weighted average of the statutory contribution rates for each individual SamCERA plan. The actual percent of payroll to be contributed by each employer varies by plan, as shown in Section 6 of this report.

The "Analysis of Change" section that follows later in Section 1 provides an analysis of the sources of change in the SCR since last year. In addition, the section "Projected Future Employer Contribution Rates" below shows a 10-year projection of the statutory employer contribution rate.

The CSCA provides an offset of 4.27% of pay (compared to 3.54% of pay in the prior valuation) to the County's SCR, resulting in a County-only SCR of 38.51% of pay. Without the recognition of the CSCA, the County SCR would be 42.78% of pay.

The DSCA provides an offset of 25.45% of pay (compared to 25.83% of pay in the prior valuation) for the San Mateo County Mosquito and Vector Control District (SMCM&VCD). The DSCA offset is not permitted to be larger than the UAAL contribution rate for the SMCM&VCD.

Member Contribution Rates

New member contribution rates are recommended for all contributory plans effective July 1, 2022 based on the new investment return assumption adopted by the Board. Member contribution rates for all plans except Plan 3 and Plan 7 vary based on a member's entry age to SamCERA and the underlying actuarial assumptions. Due to the changes in the investment return assumption, we have calculated new member contribution rates for these plans effective July 1, 2022. Plan 7 member contribution rates are required to be equal to 50% of the Gross Normal Cost Rate of the respective plans.

Exhibit 1b includes a summary of recommended member contribution rates. In general, there are increases for all contributory plans. Member contribution rates are discussed in Section 5 of this report, and a complete list of all member contribution rates is shown in Appendix D.

Summary of Contribution Rates

The following exhibits summarize our recommendations to the Board.

Exhibit 1a
Summary of Recommended Minimum Statutory Contribution Rates

Recommendation #1: Adopt new Statutory Contribution Rates for fiscal year beginning July 1, 2022

| | <u>Fiscal Year Beginning</u> | | <u>Increase / (Decrease)</u> |
|--|------------------------------|---------------------|----------------------------------|
| | <u>July 1, 2022</u> | <u>July 1, 2021</u> | |
| Gross Normal Cost | 24.04% | 23.11% | 0.93% |
| Member Contributions | (12.49)% | (12.21)% | (0.28)% |
| Employer Normal Cost | 11.55% | 10.90% | 0.65% |
| UAAL Amortization | 29.21% | 28.01% | 1.20% |
| Calculated Employer Rate | 40.76% | 38.91% | 1.85% |
| Deferred Recognition of 2021 Assumptions | (2.43)% | - | (2.43)% |
| Total Employer Rate | 38.33% | 38.91% | (0.58)% |
| County Contribution Rate | 38.51% | 39.14% | (0.63)% |
| Courts Contribution Rate | 35.73% | 35.85% | (0.12)% |
| SMCM&VCD Contribution Rate | 12.10% | 12.76% | (0.66)% |

Notes:

- Detailed contribution rates by plan are shown in Section 6.
- The Total Employer Statutory Contribution Rate of 38.33% is the aggregate rate for all employers.

Exhibit 1b
Summary of Recommended Member Contribution Rates

Recommendation #2: Adopt new member contribution rates for fiscal year beginning July 1, 2022

| | Entry Age | Recommended Rates | | | Total as a % of Pay | Current | Ratio (New/Curr) |
|---|-----------|-------------------|------------------|--------------|---------------------|---------------------|------------------|
| | | Basic | 50% COLA Sharing | Cost Sharing | | Total as a % of Pay | |
| General Members (not including SMCM&VCD) | | | | | | | |
| Plan 1 | 25 | 7.71% | 2.70% | 3.00% | 13.41% | 12.75% | 105.2% |
| | 35 | 9.00% | 3.15% | 3.00% | 15.15% | 14.54% | 104.2% |
| | 45 | 10.56% | 3.70% | 3.00% | 17.26% | 16.72% | 103.2% |
| Plan 2 | 25 | 7.71% | 2.73% | 3.00% | 13.44% | 12.71% | 105.7% |
| | 35 | 9.00% | 3.19% | 3.00% | 15.19% | 14.50% | 104.7% |
| | 45 | 10.56% | 3.74% | 3.00% | 17.30% | 16.67% | 103.8% |
| Plan 4 | 25 | 7.45% | 2.04% | 3.00% | 12.49% | 11.83% | 105.6% |
| | 35 | 8.69% | 2.38% | 3.00% | 14.07% | 13.44% | 104.6% |
| | 45 | 10.15% | 2.78% | 3.00% | 15.93% | 15.35% | 103.7% |
| Plan 5 | 25 | 6.51% | 1.77% | 0.00% | 8.28% | 7.57% | 109.3% |
| | 35 | 7.59% | 2.06% | 0.00% | 9.65% | 8.96% | 107.8% |
| | 45 | 8.88% | 2.41% | 0.00% | 11.29% | 10.63% | 106.2% |
| Plan 7 | All | 7.34% | 1.83% | 0.00% | 9.17% | 8.75% | 104.8% |
| SMCM&VCD Members | | | | | | | |
| Plan 1 | 25 | 7.71% | 0.00% | 0.00% | 7.71% | 7.22% | 106.8% |
| | 35 | 9.00% | 0.00% | 0.00% | 9.00% | 8.55% | 105.3% |
| | 45 | 10.56% | 0.00% | 0.00% | 10.56% | 10.16% | 103.9% |
| Plan 2 | 25 | 7.71% | 0.00% | 0.00% | 7.71% | 7.22% | 106.8% |
| | 35 | 9.00% | 0.00% | 0.00% | 9.00% | 8.55% | 105.3% |
| | 45 | 10.56% | 0.00% | 0.00% | 10.56% | 10.16% | 103.9% |
| Plan 4 | 25 | 7.45% | 0.00% | 0.00% | 7.45% | 6.98% | 106.7% |
| | 35 | 8.69% | 0.00% | 0.00% | 8.69% | 8.26% | 105.2% |
| | 45 | 10.15% | 0.00% | 0.00% | 10.15% | 9.77% | 103.9% |
| Plan 7 | All | 8.08% | 2.04% | 0.00% | 10.12% | 9.67% | 104.7% |

Notes:

1. All General members contribute 50% of the cost of COLA benefits except for all members of SMCM&VCD.
2. Plan 7 COLA share represents one-half of the cost of the COLA.
3. See Appendix B of this report for a full description of members COLA share. See Appendix D of this report for a full schedule of rates.

Exhibit 1b
Summary of Recommended Member Contribution Rates (continued)

Recommendation #2: Adopt new member contribution rates for fiscal year beginning July 1, 2022

| | Entry Age | Recommended Rates | | | Total as a % of Pay | Current | Ratio (New/Curr) |
|--------------------------|-----------|-------------------|------------------|--------------|---------------------|---------------------|------------------|
| | | Basic | 50% COLA Sharing | Cost Sharing | | Total as a % of Pay | |
| Safety Members | | | | | | | |
| Plan 1 | 25 | 10.70% | 5.13% | 5.00% | 20.83% | 19.93% | 104.5% |
| | 35 | 12.21% | 5.85% | 5.00% | 23.06% | 22.26% | 103.6% |
| | 45 | 13.96% | 6.69% | 5.00% | 25.65% | 24.99% | 102.7% |
| Plan 2 | 25 | 10.70% | 5.68% | 5.00% | 21.38% | 20.31% | 105.3% |
| | 35 | 12.21% | 6.49% | 5.00% | 23.70% | 22.71% | 104.3% |
| | 45 | 13.96% | 7.42% | 5.00% | 26.38% | 25.50% | 103.4% |
| Plan 4 | 25 | 10.31% | 4.29% | 5.00% | 19.60% | 18.52% | 105.8% |
| | 35 | 11.76% | 4.89% | 5.00% | 21.65% | 20.64% | 104.9% |
| | 45 | 13.22% | 5.50% | 5.00% | 23.72% | 22.80% | 104.0% |
| Plan 5 | 25 | 10.31% | 4.01% | 4.00% | 18.32% | 17.09% | 107.2% |
| | 35 | 11.76% | 4.57% | 4.00% | 20.33% | 19.14% | 106.2% |
| | 45 | 13.22% | 5.14% | 4.00% | 22.36% | 21.23% | 105.3% |
| Plan 6 | 25 | 10.31% | 3.35% | 0.00% | 13.66% | 12.88% | 106.1% |
| | 35 | 11.76% | 3.82% | 0.00% | 15.58% | 14.89% | 104.6% |
| | 45 | 13.22% | 4.29% | 0.00% | 17.51% | 16.94% | 103.4% |
| Plan 7 | All | 12.15% | 3.51% | 0.00% | 15.66% | 14.72% | 106.4% |
| Probation Members | | | | | | | |
| Plan 1 | 25 | 10.70% | 5.69% | 3.50% | 19.89% | 18.96% | 104.9% |
| | 35 | 12.21% | 6.50% | 3.50% | 22.21% | 21.38% | 103.9% |
| | 45 | 13.96% | 7.43% | 3.50% | 24.89% | 24.20% | 102.8% |
| Plan 2 | 25 | 10.70% | 5.75% | 3.50% | 19.95% | 18.96% | 105.2% |
| | 35 | 12.21% | 6.56% | 3.50% | 22.27% | 21.38% | 104.1% |
| | 45 | 13.96% | 7.50% | 3.50% | 24.96% | 24.20% | 103.1% |
| Plan 4 | 25 | 10.31% | 4.20% | 3.50% | 18.01% | 17.08% | 105.5% |
| | 35 | 11.76% | 4.79% | 3.50% | 20.05% | 19.20% | 104.4% |
| | 45 | 13.22% | 5.39% | 3.50% | 22.11% | 21.36% | 103.5% |
| Plan 5 | 25 | 10.31% | 3.78% | 3.50% | 17.59% | 16.62% | 105.9% |
| | 35 | 11.76% | 4.31% | 3.50% | 19.57% | 18.67% | 104.9% |
| | 45 | 13.22% | 4.85% | 3.50% | 21.57% | 20.76% | 103.9% |
| Plan 6 | 25 | 10.31% | 3.14% | 0.00% | 13.45% | 12.68% | 106.1% |
| | 35 | 11.76% | 3.58% | 0.00% | 15.34% | 14.66% | 104.6% |
| | 45 | 13.22% | 4.02% | 0.00% | 17.24% | 16.68% | 103.4% |
| Plan 7 | All | 12.18% | 3.56% | 0.00% | 15.74% | 14.85% | 106.0% |

Notes:

1. All Safety and Probation members contribute 50% of the cost of COLA benefits.
2. Plan 7 COLA share represents one-half of the cost of the COLA.
3. See Appendix B of this report for a full description of members COLA share. See Appendix D of this report for a full schedule of rates.
4. Safety member cost sharing shown is for all members who are not Deputy Sheriffs. Cost sharing varies for Deputy Sheriffs.

Analysis of changes since last year

A detailed analysis of the sources of changes in both the Statutory Contribution Rate and the Funded Ratio was performed. There were several factors that caused the changes, with the overall impact of these factors being an increase in the Funded Ratio and a decrease in the Statutory Contribution Rate from the prior valuation.

The following chart shows how the various factors affected the overall funding of SamCERA, as compared to the prior valuation.

| Sources of Change | Statutory Contribution Rate | Funded Ratio |
|--|-----------------------------|--------------|
| Calculated Rate for 2021 (2020 valuation) | 38.91% | 86.4% |
| Expected Year-to-Year Change | 0.00% | 2.5% |
| Assumption Changes | 3.64% | -2.8% |
| <u>Recognized Asset Gain / Loss</u> | | |
| From Current Year | -5.52% | 5.7% |
| From Prior Years | 4.16% | -4.3% |
| Combined Asset Gain / Loss | -1.36% | 1.4% |
| Payroll Increases different than assumed | 0.55% | -0.2% |
| Contributions different than assumed | 0.07% | 0.0% |
| SCA Contribution Funding | -0.69% | 0.6% |
| <u>Liability Gain / Loss</u> | | |
| Retiree COLA different than assumed | -0.40% | 0.4% |
| Changes in Plan 7 Membership | -0.12% | 0.0% |
| Other Experience Changes | 0.16% | -0.2% |
| Combined Liability Gain / Loss | -0.36% | 0.2% |
| Deferred Recognition of 2021 Assumptions | -2.43% | 0.0% |
| Total Change | -0.58% | 1.7% |
| Calculated Rate for 2022 (2021 valuation) | 38.33% | 88.1% |

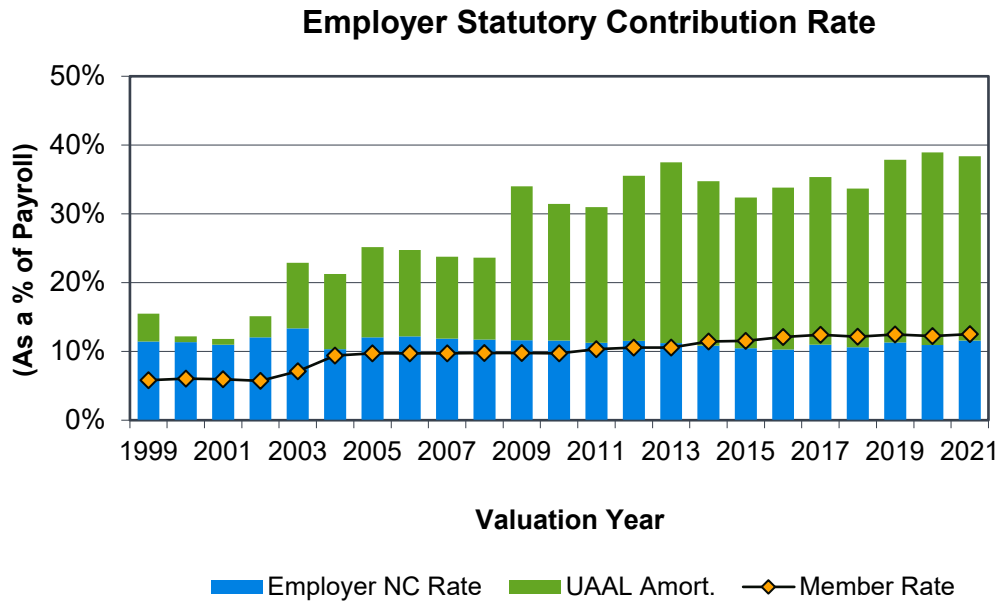
Employer Statutory Contribution Rate

The Statutory Contribution Rate (SCR) for each plan is equal to the payment of the Employer Normal Cost rate plus a 15-year layered amortization of the UAAL (excluding the CSCA and DSCA) for each year beginning with the UAAL as of June 30, 2008. The UAAL rate for the County is reduced to reflect the CSCA, as is the UAAL rate for SMCM&VCD to reflect the DSCA. The SCR (blended average for all employers) is 38.33% for the fiscal year beginning July 1, 2022.

It should be noted that these rates are a weighted average of each individual SamCERA plan. The actual percent of payroll to be contributed by each employer varies by plan. See Exhibit 10 for the SCR by classification and Exhibits 10a through 10d for the SCR by plan.

In our opinion, the SCR's calculated are adequate to maintain the funding of SamCERA based on the actuarial methods and assumptions shown in Appendix A of this report.

A historical perspective of the total SCR is shown in the following graph.



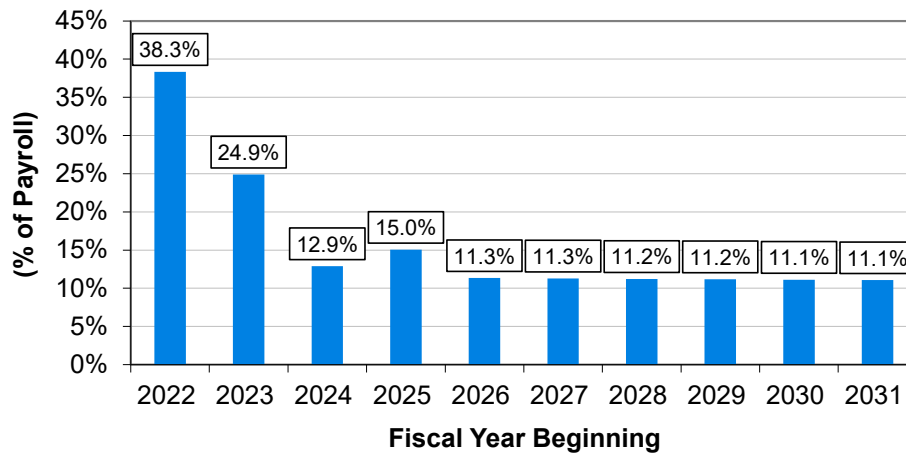
Projected Future Statutory Employer Contribution Rate

The statutory employer contribution rate beginning July 1, 2022 is 38.33% of payroll, which is a weighted average for all SamCERA plans. The actual percent of payroll to be contributed by the employers varies by plan as shown in Exhibit 10.

The new statutory employer contribution rate is effective for the fiscal year beginning July 1, 2022. Effective with the fiscal year beginning July 1, 2023, a large decrease is projected as the June 30, 2008 amortization layer is fully amortized and currently deferred investment gains are recognized. In future years there are increases and decreases as amortization layers “roll off.” Effective June 30, 2025 the Funded Ratio is projected to be greater than 100%. As a result, effective July 1, 2026 the projected employer contribution rate is equal to the Employer Normal Cost rate.

To illustrate these impacts, we have performed a 10-year projection of the employer contribution rate that assumes all actuarial assumptions are met, and reflects the projected recognition of the deferred investment gains as of June 30, 2021. This projection is shown in the graph below.

Projected Employer Contribution Rate⁽¹⁾



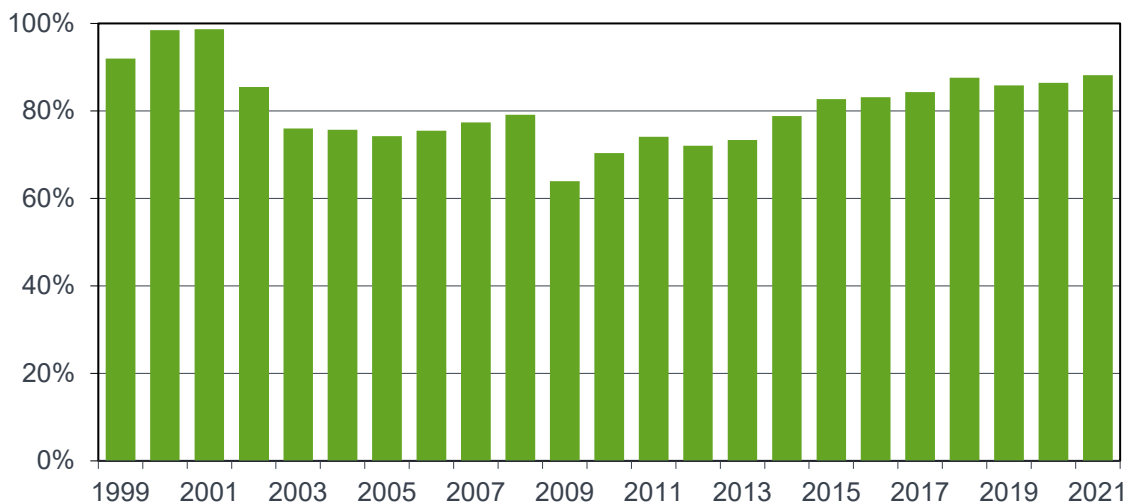
1. Projections assume that all actuarial assumptions are met after June 30, 2021, and reflect the scheduled recognition of investment gains currently being deferred. Actual results will vary.

Funding Progress

Based on the 2020 valuation, the expected UAAL as of June 30, 2021 was \$630 million. The actual UAAL for the fiscal year ended June 30, 2021 is \$738 million. This difference is due to a combination of factors, including: reducing the investment return assumption from 6.50% to 6.25% and reflecting investment returns greater than assumed.

The Funded Ratio compares the value of the Actuarial Value of Assets (net of certain non-valuation reserves) to the Actuarial Accrued Liability (AAL) for all SamCERA plans combined. Due primarily to investment returns less than assumed from 2001 through 2009, SamCERA's Funded Ratio decreased significantly over those years. In recent years, the Funded Ratio has improved, due primarily to better-than-assumed investment performance and strong funding by the employers.

Historical Funded Ratios



Assets

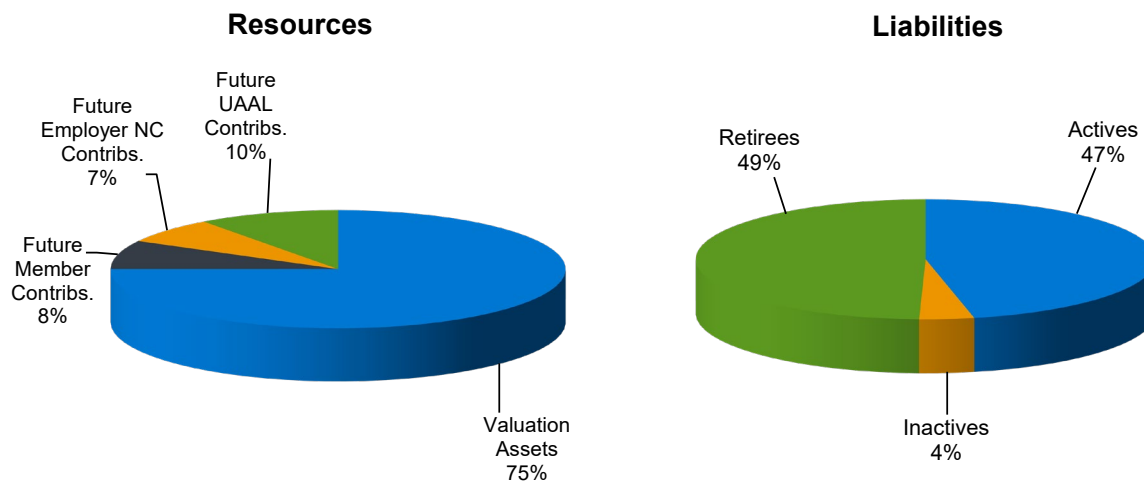
For the fiscal year ended June 30, 2021, SamCERA earned 23.5% on a market value basis net of investment and administrative expenses. Note that this rate of return may differ from that calculated by SamCERA and shown in the Annual Comprehensive Financial Report (ACFR) based on the calculation method.

SamCERA uses an asset-smoothing method in the calculation of the UAAL contribution. Under this method, the market value returns are smoothed over a five-year (10 six-month) period. Due to the recognition of current and deferred investment gains, the return on Actuarial Valuation Assets, at 8.2% net of expenses, was greater than the assumed return of 6.5% for the fiscal year ended June 30, 2021.

Actuarial Balance Sheet

One part of the valuation process is to compare the total Valuation Assets of SamCERA with its total liabilities for all plans. In this analysis, SamCERA's resources equal the actuarial assets plus the expected future contributions by both the employers and members. Liabilities reflect benefits already earned in the past and those expected to be earned in the future by current members. This relationship is shown in the following chart. The AAL is the total of these liabilities less expected future Normal Cost contributions.

Comparing the current and future resources to the current and future liabilities, we then determine the annual contribution amount for the coming fiscal year.

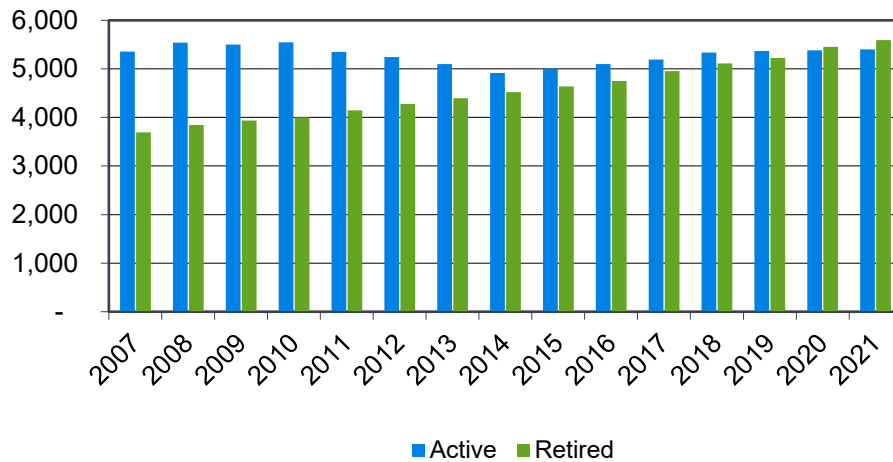


Member Information

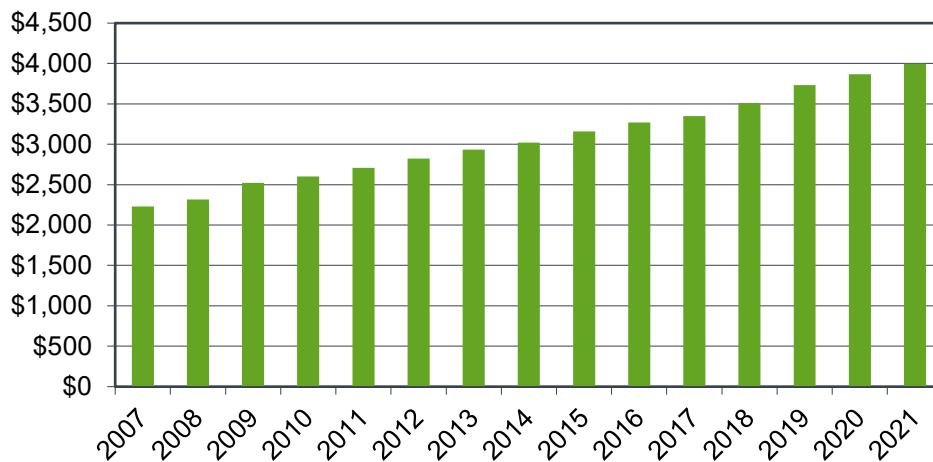
The number of active members included in the valuation decreased from 5,400 in 2020 to 5,356 in 2021.

Retired member counts continue to increase steadily. For 2021, there were 5,592 retired members and beneficiaries with an average benefit of \$3,995 per month. This represents a 2.5% increase in count (up from 5,454 in 2020) and a 3.4% increase in the average monthly benefit (up from \$3,865 over the period). There are also 1,986 members who are no longer actively employed or retired but are entitled to a future retirement benefit or a refund of member contributions.

Membership Count



Average Monthly Retirement Benefit



Analysis of Change in Member Population

The following table summarizes the year-to-year change in member population.

| | Active Members | Inactive Members | Service Retired Members | Disabled Retired Members | Beneficiaries in Pay | Total |
|----------------------------|----------------|------------------|-------------------------|--------------------------|----------------------|---------------|
| As of June 30, 2020 | 5,400 | 1,882 | 4,292 | 506 | 656 | 12,736 |
| New Members | 339 | 21 | 1 | - | 38 | 399 |
| Status Change: | | | | | | |
| to Active | 13 | (13) | - | - | - | - |
| to Inactive | (188) | 188 | - | - | - | - |
| to Service Retirement | (171) | (56) | 227 | - | - | - |
| to Disabled Retirement | (1) | (1) | (5) | 7 | - | - |
| to Beneficiary | - | (2) | - | - | 2 | - |
| Refunds | (30) | (28) | - | - | - | (58) |
| Terminated non-vested | (1) | (1) | - | - | - | (2) |
| Deaths | (5) | (4) | (94) | (14) | (24) | (141) |
| As of June 30, 2021 | 5,356 | 1,986 | 4,421 | 499 | 672 | 12,934 |

Summary Valuation Results

Exhibit 2 presents a comparison of the key results from the June 30, 2021 and June 30, 2020 valuations. More detail on each of these elements can be found in the following sections and exhibits of this report.

Exhibit 2
Summary of Significant Valuation Results

| | June 30, 2021 | June 30, 2020 | Relative Change |
|--|---------------|---------------|--------------------|
| 1. Total Membership | | | |
| A. Active Members | 5,356 | 5,400 | (0.8)% |
| B. Retired Members & Beneficiaries | 5,592 | 5,454 | 2.5% |
| C. Inactive Members | 1,986 | 1,882 | 5.5% |
| D. Total | 12,934 | 12,736 | 1.6 % |
| 2. Pay Rate | | | |
| A. Annual Total (\$thousands) | \$ 606,677 | \$ 594,573 | 2.0% |
| B. Monthly Average | 9,439 | 9,176 | 2.9% |
| 3. Average Monthly Benefit to Current Retirees and Beneficiaries | | | |
| A. Service Retirement | \$ 4,224 | \$ 4,078 | 3.6% |
| B. Disability Retirement | 4,027 | 3,892 | 3.5% |
| C. Surviving Spouse and Dependents | 2,467 | 2,449 | 0.7% |
| D. Total Average | 3,995 | 3,865 | 3.4% |
| 4. Actuarial Accrued Liability (\$thousands) | | | |
| A. Active Members | \$ 2,318,546 | \$ 2,176,840 | 6.5% |
| B. Retired Members | 3,626,835 | 3,354,864 | 8.1% |
| C. Inactive Members | 281,685 | 254,350 | 10.7% |
| D. Total | \$ 6,227,066 | \$ 5,786,054 | 7.6% |
| 5. Assets | | | |
| A. Market Value of Fund (\$thousands) | \$ 5,982,086 | \$ 4,780,502 | 25.1% |
| B. Return on Market Value | 23.5% | 0.9% | |
| C. Actuarial Value (\$thousands) | \$ 5,488,958 | \$ 4,998,316 | 9.8% |
| D. Return on Actuarial Value | 8.2% | 6.2% | |
| 6. Unfunded Actuarial Accrued Liability or Surplus Funding (\$thousands) | \$ 738,108 | \$ 787,738 | (6.3)% |
| 7. Statutory Employer Contribution Rate for all plans combined as a percent of total payroll | | | |
| A. Gross Normal Cost | 24.04% | 23.11% | 4.0% |
| B. Member Contributions | (12.49)% | (12.21)% | 2.3% |
| C. Employer Normal Cost | 11.55% | 10.90% | 6.0% |
| D. UAAL Amortization | 29.21% | 28.01% | 4.3% |
| E. Calculated Employer Contribution Rate | 40.76% | 38.91% | 4.8% |
| F. Deferred Recognition of 2021 Assumptions | (2.43)% | - | |
| G. Employer Rate with Phase-in | 38.33% | 38.91% | (1.5)% |
| 8. Funded Ratio (5C / 4D) | 88.1% | 86.4% | 2.0% |
| 9. Results Based on Market Value (No Asset Smoothing) -- For Informational Purposes Only | | | |
| A. Total Employer Rate | 30.57% | 42.46% | (28.0)% |
| B. Funded Ratio (5A / 4D) | 96.1% | 82.6% | 16.3% |

2. Scope of the report

This report presents the actuarial valuation of the San Mateo County Employees' Retirement Association as of June 30, 2021. This valuation is made in accordance to SamCERA's annual valuation cycle. Section 31453 of the County Employees Retirement Law of 1937 (the CERL) requires an actuarial valuation to be performed at least every three years for the purposes of setting contribution rates.

In reading our cover letter, please pay particular attention to the guidelines employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings depend. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date. On that date, the assets available for the payment of retirement benefits are appraised. These assets are compared with the accrued and future actuarial liabilities, which are generally well in excess of the actuarial assets. The purpose of the valuation is to determine what future contributions by the members and employers are needed to pay all expected future benefits not funded by the current assets.

A summary of the findings resulting from this valuation is presented in the previous section. The following sections of the report provide the details of the actuarial valuation.

Section 3 describes the assets and investment experience of SamCERA. The assets and investment income are presented in Exhibits 3-5. Exhibits 6-8 develop the Actuarial Value of Assets as of June 30, 2021.

Section 4 describes the benefit obligations of SamCERA. Exhibits 9a and 9b show the Actuarial Balance Sheet. Additional analysis on the change in UAAL is also provided in this section.

Sections 5 and 6 deal with the process for determining required contributions based on the relationship between the actuarial assets and the actuarial liabilities. Section 5 discusses the member contribution rates and Section 6 discusses the employer contributions needed to fund the benefits under the actuarial cost method in use.

Section 7 discloses supplemental information that may be included in SamCERA's ACFR.

Section 8 discusses risks that could potentially affect future valuation results.

This report includes several appendices:

- Appendix A A summary of the actuarial procedures and assumptions used to estimate liabilities and contributions.
- Appendix B A summary of the current benefit structure, as determined by the provisions of governing law as of June 30, 2021.
- Appendix C Schedules of valuation data classified by various categories of members by plan.
- Appendix D Member contribution rates by plan.
- Appendix E A glossary of actuarial terms used in this report.

3. Assets

This section of the report deals with the determination of assets used for funding purposes. A historical summary of SamCERA's assets is presented below:

| Year | All dollar amounts in millions | | |
|------|------------------------------------|----------------------------|---------------------|
| | Market Value of Total Assets | Actuarial Value | |
| | | Non Valuation Assets | Valuation Assets |
| 2002 | \$ 1,207 | \$ 32 | \$ 1,417 |
| 2003 | 1,233 | 34 | 1,354 |
| 2004 | 1,435 | 31 | 1,453 |
| 2005 | 1,599 | 0 | 1,616 |
| 2006 | 1,790 | 0 | 1,769 |
| 2007 | 2,132 | 0 | 1,977 |
| 2008 | 2,011 | 0 | 2,219 |
| 2009 | 1,591 | 0 | 1,910 |
| 2010 | 1,816 | 0 | 2,179 |
| 2011 | 2,318 | 0 | 2,405 |
| 2012 | 2,360 | 0 | 2,480 |
| 2013 | 2,728 | 0 | 2,619 |
| 2014 | 3,292 | 30 | 2,993 |
| 2015 | 3,454 | 33 | 3,344 |
| 2016 | 3,541 | 36 | 3,625 |
| 2017 | 4,039 | 40 | 3,977 |
| 2018 | 4,374 | 44 | 4,352 |
| 2019 | 4,723 | 48 | 4,686 |
| 2020 | 4,781 | 51 | 4,998 |
| 2021 | 5,982 | 55 | 5,489 |

On June 30, 2021, the total market value of the fund was about \$5.98 billion. The actuarial value of the fund was determined to be \$5.54 billion, including the non-valuation reserves.

Financial Exhibits

Exhibit 3 presents a Statement of Plan Net Assets and Exhibit 4 presents a Statement of Changes in Plan Net Assets.

Exhibit 5 describes the allocation of SamCERA's assets by the various reserve values determined for accounting purposes.

Exhibits 3-5 are taken from data furnished to us by SamCERA for its annual financial report. We have accepted these tables for use in this report without audit, but we have reviewed them for reasonableness and consistency with previous reports.

Actuarial Value of Assets

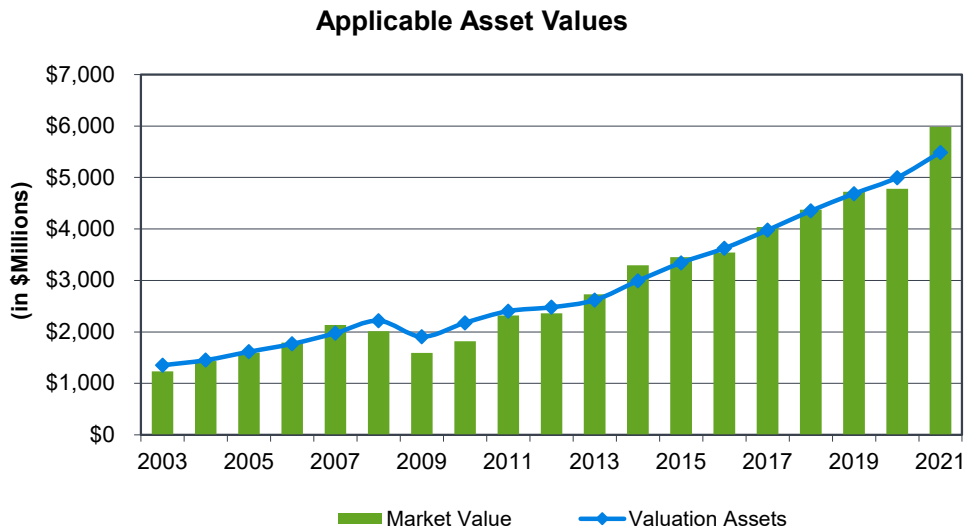
The actuarial value of assets is equal to the market value of assets with a five-year (10 six-month periods) recognition of the difference between expected and actual investment returns. Effective with the June 30, 2018 valuation, all deferred gains and losses were combined into a single amount that will be recognized over a five-year (10 six-month) period. Beginning with the six-month period immediately following the June 30, 2018 valuation, offsetting of current period gains or losses against prior period gains or losses will occur, as follows. First, to the extent there is a loss for the period, it shall be used to offset any unrecognized gains from prior periods in the order of oldest to most recent. Any remaining loss for the period is recognized over a five-year (10 six-month) period. Similarly, any gain for the period shall be offset against unrecognized losses from prior periods.

Beginning with the June 30, 2014 valuation, assets used to calculate the preliminary UAAL contribution rates exclude the value of the CSCA. The CSCA is used to adjust the County's Statutory Contribution Rate. Beginning with the June 30, 2016 valuation, assets used to calculate the preliminary UAAL contribution rates also exclude the value of the DSCA. The DSCA is used to adjust the SMCM&VCD's Statutory Contribution Rate. To adjust the Statutory Contribution Rate, we track the CSCA and DSCA assets separately.

The development of the June 30, 2021 actuarial value of assets is shown in Exhibits 6 and 7. Exhibits 6a and 7a show the development of the total actuarial value of assets. Exhibits 6b and 7b show the development excluding the Supplemental Contribution Account (SCA) assets. Exhibits 6c and 7c show the development of the actuarial value of assets for the CSCA. Exhibits 6d and 7d show the development of the actuarial value of assets for the DSCA.

The County and the SMCM&VCD each made their contributions for the year ended June 30, 2021 based on the SCR. Since the SCR reflected offsets due to the respective SCAs, each employer effectively used up an amount of the SCA equivalent to the offset. Therefore, we have shown this in the "Credits Used" column in Exhibits 6c and 6d.

The following graph shows a historical comparison of the total actuarial and market assets used for valuation purposes.



Valuation Assets

Valuation Assets are the actuarial value of the fund, less the value of any reserves which have been set aside for current liabilities and special benefits (if any) that are to be funded outside of the actuarially determined contribution rates.

Valuation Assets are allocated by classification (general, safety, and probation) as shown in Exhibit 8. This allocation is necessary because the UAAL contribution rates are determined separately by employer and class.

Allocation of Assets

In the calculation of the Statutory Contribution Rate, the Normal Cost Rate is determined separately for each plan. The UAAL portion of the rate is allocated proportionately to each classification. To determine the UAAL amount by classification, the actual UAAL is allocated in proportion to the expected UAAL after reflecting expected contributions from the prior year to pay down the UAAL. The allocation is done without consideration of the SCAs. Valuation Assets are equal to the AAL minus the UAAL for each classification. These calculations are shown in Exhibit 8.

CSCA valuation assets are allocated to each County member classification (General, Safety or Probation) in proportion to the actual UAAL excluding SCAs. These assets directly reduce the UAAL of each classification.

DSCA assets are allocated entirely to the SMCM&VCD general member classification.

Exhibit 3
Statement of Plan Net Assets as of June 30, 2021 and 2020

| | 2021 | 2020 |
|---|--------------------------------|--------------------------------|
| ASSETS | | |
| Cash and short-term investments: | | |
| Cash and cash equivalents | \$ 153,467,110 | \$ 107,989,686 |
| Cash management overlay | 64,054,219 | 54,095,321 |
| Securities lending cash collateral | 4,574,275 | 2,423,778 |
| Total cash and short-term investments | <u>222,095,604</u> | <u>164,508,785</u> |
| Receivables: | | |
| Contributions | 15,060,101 | 12,376,867 |
| Due from broker for investments sold | 48,257,671 | 78,103,219 |
| Investment income | 7,838,202 | 5,390,580 |
| Securities lending income | 3,029 | 2,752 |
| Other | 83,607 | 86,859 |
| Total receivables | <u>71,242,610</u> | <u>95,960,277</u> |
| Investments at fair value: | | |
| Public equity | 2,411,436,689 | 1,866,264,297 |
| Fixed income | 1,545,541,099 | 1,434,811,710 |
| Alternatives | 860,701,348 | 593,379,226 |
| Inflation hedge | 942,703,531 | 704,360,824 |
| Total investments at fair value | <u>5,760,382,667</u> | <u>4,598,816,057</u> |
| Capital assets | 8,324,720 | 8,108,286 |
| Less: accumulated depreciation | <u>(3,737,459)</u> | <u>(2,898,887)</u> |
| Capital assets, net of accumulated depreciation | <u>4,587,261</u> | <u>5,209,399</u> |
| Total assets | <u>6,058,308,142</u> | <u>4,864,494,518</u> |
| LIABILITIES | | |
| Investment management fees payable | 3,151,269 | 2,035,363 |
| Due to broker for investments purchased | 66,319,257 | 78,241,899 |
| Securities lending collateral due to borrowers | 4,574,275 | 2,423,778 |
| Other | 2,177,391 | 1,291,165 |
| Total liabilities | <u>76,222,192</u> | <u>83,992,205</u> |
| NET POSITION RESTRICTED FOR PENSIONS | <u>\$ 5,982,085,950</u> | <u>\$ 4,780,502,313</u> |

Exhibit 4
Statement of Changes in Plan Net Assets for the Fiscal Years Ended 2021 and 2020

| | 2021 | 2020 |
|---|--------------------------------|--------------------------------|
| ADDITIONS | | |
| Contributions: | | |
| Employer | \$ 225,302,472 | \$ 198,582,998 |
| Employer supplemental | 39,700,000 | - |
| Member | 73,966,484 | 70,630,765 |
| Total contributions | <u>338,968,956</u> | <u>269,213,763</u> |
| Investment income: | | |
| Interest and dividends | 87,240,822 | 76,762,516 |
| Net appreciation in fair value of investments | 1,110,924,843 | 5,173,433 |
| Total investment income | <u>1,198,165,665</u> | <u>81,935,949</u> |
| Less: investment expenses | (65,039,394) | (39,581,080) |
| Net investment income | <u>1,133,126,271</u> | <u>42,354,869</u> |
| Securities lending income: | | |
| Earnings | 12,916 | 35,620 |
| Rebates | 51,515 | 16,474 |
| Fees | (14,156) | (14,741) |
| Net securities lending income | <u>50,275</u> | <u>37,353</u> |
| Total additions | <u>1,472,145,502</u> | <u>311,605,985</u> |
| DEDUCTIONS | | |
| Benefits: | | |
| Service retirement benefits | 229,730,556 | 212,632,929 |
| Disability retirement benefits | 28,342,469 | 27,601,908 |
| Survivor, death and other benefits | 1,282,749 | 1,790,029 |
| Total benefits | <u>259,355,774</u> | <u>242,024,866</u> |
| Member refunds | 2,796,160 | 3,796,277 |
| Administrative expenses | 7,059,702 | 6,371,363 |
| Information technology expenses | 1,350,229 | 2,021,101 |
| Total deductions | <u>270,561,865</u> | <u>254,213,607</u> |
| Net increase | 1,201,583,637 | 57,392,378 |
| NET POSITION RESTRICTED FOR PENSIONS | | |
| Beginning of year | 4,780,502,313 | 4,723,109,935 |
| End of year | <u>\$ 5,982,085,950</u> | <u>\$ 4,780,502,313</u> |
| Estimated Return, Net of Investment Expenses | 23.5% | 0.9% |

Exhibit 5
Allocation of Assets by Accounting Reserve Amounts
as of June 30, 2021 and 2020

| | 2021 | 2020 |
|--|-------------------------|-------------------------|
| Valuation Reserves | | |
| 1. Member Reserve | \$ 895,744,573 | \$ 858,746,783 |
| 2. Employer Advance Reserve | 1,379,732,982 | 1,213,276,549 |
| 3. Retiree Reserves | 1,380,172,681 | 1,292,402,035 |
| 4. Cost of Living Adjustment Reserve | 1,642,623,638 | 1,552,804,970 |
| 5. County Supplemental Contributions Account Reserve | 236,971,881 | 174,529,290 |
| 6. District Supplemental Contributions Account Reserve | 1,109,806 | 1,519,451 |
| Total Valuation Reserves | 5,536,355,561 | 5,093,279,078 |
| Non-Valuation Reserves | | |
| 1. Contingency Reserve | 55,444,026 | 50,488,044 |
| 2. Undistributed Earnings / (Losses) Reserve | (30,609,675) | (105,190,095) |
| Total Non-Valuation Reserves | 24,834,351 | (54,702,051) |
| Market Stabilization Account | 420,896,038 | (258,074,714) |
| Total Reserves (Market Value of Assets) | \$ 5,982,085,950 | \$ 4,780,502,313 |

Note: These amounts were determined by SamCERA for accounting purposes.

Exhibit 6a
Five-Year Smoothing of Gains and Losses on Market Value (Total Assets) – History

| History of Unexpected Asset Gains and Losses | | | | | | | | |
|--|---|---------------|---------------------|-------------------------------------|------------------------------|--------------------|------------------|-----------------------------|
| Six-Month Period Ended | Market Value at Beginning of Period | Contributions | Benefit Payments | Market Value at End of Period | Assumed Rate of Return | Expected Return | Actual Return | Unexpected Gain / (Loss) |
| 06/30/2021 | \$ 5,604,786,769 | \$ 92,110,542 | \$ 133,842,465 | \$ 5,982,085,950 | 3.250% | \$ 181,730,879 | \$ 419,031,104 | \$ 237,300,225 |
| 12/31/2020 | 4,780,502,313 | 246,858,414 | 128,309,469 | 5,604,786,769 | 3.250% | 157,292,070 | 705,735,511 | 548,443,441 |
| 06/30/2020 | 4,950,278,117 | 141,276,359 | 126,289,581 | 4,780,502,313 | 3.250% | 162,104,000 | (184,762,582) | (346,866,582) |
| 12/31/2019 | 4,723,109,935 | 127,937,403 | 119,531,561 | 4,950,278,117 | 3.250% | 154,870,851 | 218,762,340 | 63,891,489 |
| 06/30/2019 | 4,251,567,361 | 102,883,854 | 116,505,474 | 4,723,109,935 | 3.375% | 142,617,961 | 485,164,194 | 342,546,233 |
| 12/31/2018 | 4,373,961,514 | 210,310,184 | 110,679,649 | 4,251,567,361 | 3.375% | 149,503,844 | (222,024,688) | (371,528,532) |
| 06/30/2018 | 4,337,368,899 | 146,901,128 | 106,950,260 | 4,373,961,514 | 3.375% | 147,555,099 | (3,358,253) | (150,913,352) |
| 12/31/2017 | 4,038,701,990 | 124,539,824 | 102,104,343 | 4,337,368,899 | 3.375% | 137,926,474 | 276,231,428 | 138,304,954 |
| 06/30/2017 | 3,721,598,964 | 154,997,828 | 98,037,329 | 4,038,701,990 | 3.500% | 131,806,865 | 260,142,527 | 128,335,662 |
| 12/31/2016 | 3,541,388,497 | 105,889,408 | 95,202,951 | 3,721,598,964 | 3.500% | 125,157,215 | 169,524,010 | 44,366,795 |

Exhibit 6b
Five-Year Smoothing of Gains and Losses on Market Value (excluding SCAs) – History

| History of Unexpected Asset Gains and Losses | | | | | | | | |
|--|---|-------------------------------------|---------------------|-------------------------------------|------------------------------|--------------------|------------------|-----------------------------|
| Six-Month Period Ended | Market Value at Beginning of Period | Contributions and SCA Credits | Benefit Payments | Market Value at End of Period | Assumed Rate of Return | Expected Return | Actual Return | Unexpected Gain / (Loss) |
| 06/30/2021 | \$ 5,403,232,963 | \$ 73,393,630 | \$ 133,842,465 | \$ 5,744,004,263 | 3.250% | \$ 174,078,088 | \$ 401,220,135 | \$ 227,142,047 |
| 12/31/2020 | 4,604,453,572 | 246,858,414 | 128,309,469 | 5,403,232,963 | 3.250% | 151,570,486 | 680,230,446 | 528,659,960 |
| 06/30/2020 | 4,750,877,586 | 157,364,783 | 126,289,581 | 4,604,453,572 | 3.250% | 155,623,482 | (177,499,216) | (333,122,698) |
| 12/31/2019 | 4,532,439,649 | 127,937,403 | 119,531,561 | 4,750,877,586 | 3.250% | 148,674,067 | 210,032,095 | 61,358,028 |
| 06/30/2019 | 4,114,925,851 | 64,852,245 | 116,505,474 | 4,532,439,649 | 3.375% | 137,584,435 | 469,167,027 | 331,582,592 |
| 12/31/2018 | 4,230,263,350 | 210,310,184 | 110,679,649 | 4,114,925,851 | 3.375% | 144,654,031 | (214,968,034) | (359,622,065) |
| 06/30/2018 | 4,212,378,467 | 128,178,746 | 106,950,260 | 4,230,263,350 | 3.375% | 143,336,672 | (3,343,603) | (146,680,275) |
| 12/31/2017 | 3,921,574,858 | 124,539,824 | 102,104,343 | 4,212,378,467 | 3.375% | 133,973,434 | 268,368,128 | 134,394,694 |
| 06/30/2017 | 3,637,603,049 | 127,692,026 | 98,037,329 | 3,921,574,858 | 3.500% | 128,867,008 | 254,317,112 | 125,450,104 |
| 12/31/2016 | 3,461,178,323 | 105,889,408 | 95,202,951 | 3,637,603,049 | 3.500% | 122,349,858 | 165,738,269 | 43,388,411 |

Exhibit 6c
Five-Year Smoothing of Gains and Losses on Market Value of CSCA – History

| History of Unexpected Asset Gains and Losses | | | | | | | | |
|--|--|---------------|-----------------|--------------------------------------|------------------------------|--------------------|------------------|-----------------------------|
| Six-Month Period Ended | Account Value at Beginning of Period | Contributions | Credits Used | Account Value at End of Period | Assumed Rate of Return | Expected Return | Actual Return | Unexpected Gain / (Loss) |
| 06/30/2021 | \$ 199,979,234 | \$ 39,700,000 | \$ 20,449,473 | \$ 236,971,881 | 3.250% | \$ 7,601,617 | \$ 17,742,120 | \$ 10,140,503 |
| 12/31/2020 | 174,529,290 | - | - | 199,979,234 | 3.250% | 5,672,202 | 25,449,944 | 19,777,742 |
| 06/30/2020 | 197,473,708 | - | 15,629,442 | 174,529,290 | 3.250% | 6,417,896 | (7,314,976) | (13,732,872) |
| 12/31/2019 | 188,806,043 | - | - | 197,473,708 | 3.250% | 6,136,196 | 8,667,665 | 2,531,469 |
| 06/30/2019 | 134,646,329 | 50,668,357 | 12,444,200 | 188,806,043 | 3.375% | 4,966,189 | 15,935,557 | 10,969,368 |
| 12/31/2018 | 141,751,083 | - | - | 134,646,329 | 3.375% | 4,784,099 | (7,104,754) | (11,888,853) |
| 06/30/2018 | 122,954,893 | 27,630,129 | 8,745,874 | 141,751,083 | 3.375% | 4,149,728 | (88,065) | (4,237,793) |
| 12/31/2017 | 115,170,236 | - | - | 122,954,893 | 3.375% | 3,886,995 | 7,784,657 | 3,897,662 |
| 06/30/2017 | 82,353,954 | 33,600,000 | 6,544,198 | 115,170,236 | 3.500% | 2,882,388 | 5,760,480 | 2,878,092 |
| 12/31/2016 | 78,626,500 | - | - | 82,353,954 | 3.500% | 2,751,928 | 3,727,454 | 975,526 |

Exhibit 6d
Five-Year Smoothing of Gains and Losses on Market Value of DCSA – History

| History of Unexpected Asset Gains and Losses | | | | | | | | | |
|--|--|---------------|-----------------|--------------------------------------|------------------------------|--------------------|------------------|-----------------------------|--|
| Six-Month Period Ended | Account Value at Beginning of Period | Contributions | Credits Used | Account Value at End of Period | Assumed Rate of Return | Expected Return | Actual Return | Unexpected Gain / (Loss) | |
| 06/30/2021 | \$ 1,574,572 | \$ - | \$ 533,615 | \$ 1,109,806 | 3.250% | \$ 51,174 | \$ 68,849 | \$ 17,675 | |
| 12/31/2020 | 1,519,451 | - | - | 1,574,572 | 3.250% | 49,382 | 55,121 | 5,739 | |
| 06/30/2020 | 1,926,823 | - | 458,982 | 1,519,451 | 3.250% | 62,622 | 51,610 | (11,012) | |
| 12/31/2019 | 1,864,243 | - | - | 1,926,823 | 3.250% | 60,588 | 62,580 | 1,992 | |
| 06/30/2019 | 1,995,181 | - | 192,548 | 1,864,243 | 3.375% | 67,337 | 61,610 | (5,727) | |
| 12/31/2018 | 1,947,081 | - | - | 1,995,181 | 3.375% | 65,714 | 48,100 | (17,614) | |
| 06/30/2018 | 2,035,539 | - | 161,873 | 1,947,081 | 3.375% | 68,699 | 73,415 | 4,716 | |
| 12/31/2017 | 1,956,896 | - | - | 2,035,539 | 3.375% | 66,045 | 78,643 | 12,598 | |
| 06/30/2017 | 1,641,961 | 250,000 | - | 1,956,896 | 3.500% | 57,469 | 64,935 | 7,466 | |
| 12/31/2016 | 1,583,674 | - | - | 1,641,961 | 3.500% | 55,429 | 58,287 | 2,858 | |

Exhibit 7a
Five-Year Smoothing – Development of Valuation Assets (Total Assets)

| Development of Market Stabilization Reserve | | | | | |
|--|-------------------------------------|--|---|-----------------------------|--|
| <u>Six-Month Period Ended</u> | <u>Investment Gain / (Loss)</u> | <u>Adjusted Investment Gain / (Loss)</u> | | <u>Percent Excluded</u> | <u>Adjusted Gain / (Loss) Excluded</u> |
| 06/30/2021 | \$ 237,300,225 | \$ 237,294,653 | x | 90% | = \$ 213,565,188 |
| 12/31/2020 | 548,443,441 | 280,147,663 | x | 80% | = 224,118,130 |
| 06/30/2020 | (346,866,582) | 0 | x | 70% | = 0 |
| 12/31/2019 | 63,891,489 | 0 | x | 60% | = 0 |
| 06/30/2019 | 342,546,233 | 0 | x | 50% | = 0 |
| 12/31/2018 | (371,528,532) | 0 | x | 40% | = 0 |
| 06/30/2018 | (150,913,352) | 0 | x | 30% | = 0 |
| 12/31/2017 | 138,304,954 | 0 | x | 20% | = 0 |
| 06/30/2017 | 128,335,662 | 0 | x | 10% | = 0 |
| 12/31/2016 | 44,366,795 | 0 | x | 0% | = 0 |
| Total Gain / (Loss) Excluded = | | | | | \$ 437,683,318 |

| Development of Valuation Assets | | |
|--|------------------|--------------------|
| 1. Market Value of Assets as of June 30, 2021 | | \$ 5,982,085,950 |
| 2. Preliminary Market Stabilization Reserve | | <u>437,683,318</u> |
| 3. Preliminary Actuarial Value of Assets (1) - (2) | | 5,544,402,632 |
| 4. Corridor Around Market Value | | |
| a) Minimum = 80% of Market | \$ 4,785,668,760 | |
| b) Maximum = 120% of Market | 7,178,503,140 | |
| c) Corridor Adjustment | | 0 |
| 5. Market Stabilization Reserve | 437,683,318 | |
| 6. Gross Actuarial Valuation of Assets (3) - (4c) | | \$ 5,544,402,632 |
| 7. Non-Valuation Reserves | | |
| a) Contingency Reserve | 55,444,026 | |
| b) Undistributed Earnings / (Losses) Reserve | 0 | |
| c) Other Specified Reserves | <u>0</u> | |
| d) Total | | 55,444,026 |
| 8. Valuation Assets (6) - (7d) | | \$ 5,488,958,606 |

**Exhibit 7b
 Five-Year Smoothing – Development of Valuation Assets (excluding SCAs)**

| Development of Market Stabilization Reserve | | | | | |
|--|-------------------------------------|--|---|-----------------------------|--|
| <u>Six-Month Period Ended</u> | <u>Investment Gain / (Loss)</u> | <u>Adjusted Investment Gain / (Loss)</u> | | <u>Percent Excluded</u> | <u>Adjusted Gain / (Loss) Excluded</u> |
| 06/30/2021 | \$ 227,142,047 | \$ 227,142,047 | x | 90% | = \$ 204,427,842 |
| 12/31/2020 | 528,659,960 | 270,585,245 | x | 80% | = 216,468,196 |
| 06/30/2020 | (333,122,698) | 0 | x | 70% | = 0 |
| 12/31/2019 | 61,358,028 | 0 | x | 60% | = 0 |
| 06/30/2019 | 331,582,592 | 0 | x | 50% | = 0 |
| 12/31/2018 | (359,622,065) | 0 | x | 40% | = 0 |
| 06/30/2018 | (146,680,275) | 0 | x | 30% | = 0 |
| 12/31/2017 | 134,394,694 | 0 | x | 20% | = 0 |
| 06/30/2017 | 125,450,104 | 0 | x | 10% | = 0 |
| 12/31/2016 | 43,388,411 | 0 | x | 0% | = 0 |
| Total Gain / (Loss) Excluded = | | | | | \$ 420,896,038 |

| Development of Valuation Assets | | |
|--|-------------------|--------------------|
| 1. Market Value of Assets as of June 30, 2021 | | \$ 5,744,004,263 |
| 2. Preliminary Market Stabilization Reserve | | <u>420,896,038</u> |
| 3. Preliminary Actuarial Value of Assets (1) - (2) | | 5,323,108,225 |
| 4. Corridor Around Market Value | | |
| a) Minimum = 80% of Market | \$ 4,595,203,410 | |
| b) Maximum = 120% of Market | 6,892,805,116 | |
| c) Corridor Adjustment | | 0 |
| 5. Market Stabilization Reserve | 420,896,038 | |
| 6. Gross Actuarial Valuation of Assets (3) - (4c) | | \$ 5,323,108,225 |
| 7. Non-Valuation Reserves | | |
| a) Contingency Reserve | 55,444,026 | |
| b) Undistributed Earnings / (Losses) Reserve | 0 | |
| c) Other Specified Reserves | 0 | |
| d) Total | <u>55,444,026</u> | 55,444,026 |
| 8. Valuation Assets (6) - (7d) | | \$ 5,267,664,199 |

**Exhibit 7c
 Five-Year Smoothing – Development of CSCA Assets**

| Development of Market Stabilization Reserve | | | | | |
|--|--|---|---|---------------------|---------------------------------------|
| Six-Month Period Ended | Investment Gain / (Loss) ¹ | Adjusted Investment Gain / (Loss) | | Percent Excluded | Adjusted Gain / (Loss) Excluded |
| 06/30/2021 | \$ 10,140,503 | \$ 10,140,503 | x | 90% | = \$ 9,126,453 |
| 12/31/2020 | 19,777,742 | 9,562,418 | x | 80% | = 7,649,934 |
| 06/30/2020 | (13,732,872) | 0 | x | 70% | = 0 |
| 12/31/2019 | 2,531,469 | 0 | x | 60% | = 0 |
| 06/30/2019 | 10,969,368 | 0 | x | 50% | = 0 |
| 12/31/2018 | (11,888,853) | 0 | x | 40% | = 0 |
| 06/30/2018 | (4,237,793) | 0 | x | 30% | = 0 |
| 12/31/2017 | 3,897,662 | 0 | x | 20% | = 0 |
| 06/30/2017 | 2,878,092 | 0 | x | 10% | = 0 |
| 12/31/2016 | 975,526 | 0 | x | 0% | = 0 |
| Total Gain / (Loss) Excluded = | | | | | \$ 16,776,387 |

1. Historical amounts were recalculated as of June 30, 2019 for consistency with Addenda #1 of the MOU regarding retirement system funding.

| Development of Valuation Assets | | |
|--|----------------|-------------------|
| 1. Market Value of Assets as of June 30, 2021 | | \$ 236,971,881 |
| 2. Preliminary Market Stabilization Reserve | | <u>16,776,387</u> |
| 3. Preliminary Actuarial Value of Assets (1) - (2) | | 220,195,494 |
| 4. Corridor Around Market Value | | |
| a) Minimum = 80% of Market | \$ 189,577,505 | |
| b) Maximum = 120% of Market | 284,366,257 | |
| c) Corridor Adjustment | | 0 |
| 5. Market Stabilization Reserve | 16,776,387 | |
| 6. Gross Actuarial Valuation of Assets (3) - (4c) | | \$ 220,195,494 |
| 7. Non-Valuation Reserves | | |
| a) Contingency Reserve | | 0 |
| b) Undistributed Earnings / (Losses) Reserve | | 0 |
| c) Other Specified Reserves | | <u>0</u> |
| d) Total | | 0 |
| 8. Valuation Assets (6) - (7d) | | \$ 220,195,494 |

**Exhibit 7d
 Five-Year Smoothing – Development of DCSA Assets**

Development of Market Stabilization Reserve

| Six-Month Period Ended | Investment Gain / (Loss) ¹ | Adjusted Investment Gain / (Loss) | Percent Excluded | Adjusted Gain / (Loss) Excluded |
|--------------------------------|--|---|---------------------|---------------------------------------|
| 06/30/2021 | \$ 17,675 | \$ 12,103 | x 90% | = \$ 10,893 |
| 12/31/2020 | 5,739 | 0 | x 80% | = 0 |
| 06/30/2020 | (11,012) | 0 | x 70% | = 0 |
| 12/31/2019 | 1,992 | 0 | x 60% | = 0 |
| 06/30/2019 | (5,727) | 0 | x 50% | = 0 |
| 12/31/2018 | (17,614) | 0 | x 40% | = 0 |
| 06/30/2018 | 4,716 | 0 | x 30% | = 0 |
| 12/31/2017 | 12,598 | 0 | x 20% | = 0 |
| 06/30/2017 | 7,466 | 0 | x 10% | = 0 |
| 12/31/2016 | 2,858 | 0 | x 0% | = 0 |
| Total Gain / (Loss) Excluded = | | | | \$ 10,893 |

1 Historical amounts were recalculated as of June 30, 2019 for consistency with the District's MOU regarding retirement system funding.

Development of Valuation Assets

| | | |
|--|------------|--------------|
| 1. Market Value of Assets as of June 30, 2021 | | \$ 1,109,806 |
| 2. Preliminary Market Stabilization Reserve | | 10,893 |
| 3. Preliminary Actuarial Value of Assets (1) - (2) | | 1,098,913 |
| 4. Corridor Around Market Value | | |
| a) Minimum = 80% of Market | \$ 887,845 | |
| b) Maximum = 120% of Market | 1,331,767 | |
| c) Corridor Adjustment | | 0 |
| 5. Market Stabilization Reserve | 10,893 | |
| 6. Gross Actuarial Valuation of Assets (3) - (4c) | | \$ 1,098,913 |
| 7. Non-Valuation Reserves | | |
| a) Contingency Reserve | | 0 |
| b) Undistributed Earnings / (Losses) Reserve | | 0 |
| c) Other Specified Reserves | | 0 |
| d) Total | | 0 |
| 8. Valuation Assets (6) - (7d) | | \$ 1,098,913 |

Exhibit 8
Allocation of Valuation Assets

(Dollars in thousands)

ALLOCATION OF VALUATION ASSETS

For the Year Ended June 30, 2021

(Dollars in thousands)

| | General | Safety | Probation | Total |
|---|---------------------|---------------------|-------------------|---------------------|
| 1. Prior Year UAAL | \$ 687,498 | \$ 208,641 | \$ 77,875 | \$ 974,014 |
| 2. Expected UAAL Contribution for Preceding Year | (123,709) | (39,784) | (11,940) | (175,433) |
| 3. Expected Interest at 6.50% | 40,730 | 12,289 | 4,680 | 57,699 |
| 4. Expected UAAL Based on Prior Year Assumptions | 604,519 | 181,146 | 70,615 | 856,280 |
| 5. Percentage of Total Expected UAAL | 70.60% | 21.15% | 8.25% | 100.00% |
| 6. Actual UAAL Based on Prior Year Assumptions | | | | 761,681 |
| 7. Actual AAL Based on Prior Year Assumptions | \$ 4,441,595 | \$ 1,159,173 | \$ 428,577 | \$ 6,029,345 |
| 8. Allocated UAAL Based on Prior Year Assumptions | 537,746 | 161,096 | 62,839 | 761,681 |
| 9. Valuation Assets (excluding SCA assets) | \$ 3,903,849 | \$ 998,077 | \$ 365,738 | \$ 5,267,664 |
| 10. Actual UAAL excluding SCA Valuation Assets | \$ 683,375 | \$ 198,389 | \$ 77,638 | \$ 959,402 |
| 11. Allocation of UAAL | 71.23% | 20.68% | 8.09% | 100.00% |
| 12. Valuation Assets (CSCA) | \$ 156,845 | \$ 45,536 | \$ 17,814 | \$ 220,195 |
| 13. Valuation Assets (DSCA) | \$ 1,099 | \$ - | \$ - | \$ 1,099 |
| 14. Valuation Assets (Total) | \$ 4,061,793 | \$ 1,043,613 | \$ 383,552 | \$ 5,488,958 |

4. Actuarial Liabilities

This section of the report focuses on the commitments of SamCERA for retirement benefits, which are referred to as its actuarial liabilities. All liabilities reflect the benefits effective through June 30, 2021.

In an active retirement system, the combined current and future actuarial liabilities will almost always exceed the actuarial assets. This difference has to be provided by future contributions. An actuarial valuation method sets out a schedule of future contributions that will deal with this difference in an orderly fashion. The determination of the level of future contributions needed is discussed in the next section.

The actuarial assumptions used to determine the liabilities are based on the results of our Investigation of Experience study for the period ended April 30, 2020. At its meeting on May 25, 2021, the Board adopted an investment return assumption of 6.25% and reaffirmed all other assumptions. These assumptions are shown in Appendix A. The assumptions will next be reviewed in detail in 2023 as part of the triennial investigation of experience study.

Actuarial Balance Sheet

The Actuarial Balance Sheet compares the Present Value of Future Benefits for retired, inactive and active members to the resources available to meet them. The amount of any difference is called the Unfunded Actuarial Accrued Liability (UAAL). For the purpose of the Actuarial Balance Sheet, SamCERA's resources are equal to the sum of:

- (a) Assets currently available to pay benefits and considered for funding purposes, the Valuation Assets,
- (b) The present value of future contributions expected to be made by current active members, and
- (c) The present value of future contributions expected to be made by the employer.

Exhibit 9a contains an analysis of the Present Value of Future Benefits compared to total Valuation Assets.

Exhibit 9b contains an analysis using the Valuation Assets excluding the SCA assets (sum of the CSCA and DSCA). These analyses are displayed by class of membership and by type of benefit.

Unfunded Actuarial Accrued Liability

The Actuarial Accrued Liability (AAL) represents the value of benefits earned as of the valuation date, and is one component of the Present Value of Future Benefits. The difference between the AAL and Valuation Assets is referred to as the Unfunded Actuarial Accrued Liability (UAAL).

Exhibit 9c provides an analysis of the change in the UAAL since the prior valuation date.

**Exhibit 9a
 Actuarial Balance Sheet (Total Assets)
 June 30, 2021**

(Dollars in thousands)

| Resources | | | | |
|---|---------------------|---------------------|-------------------|---------------------|
| | General | Safety | Probation | Total |
| Valuation Assets (Actuarial) | \$ 4,061,793 | \$ 1,043,613 | \$ 383,552 | \$ 5,488,958 |
| Present Value of Future Member Contributions | 453,251 | 97,177 | 28,416 | 578,844 |
| Present Value of Future Employer Contributions to Fund: | | | | |
| a) Normal Cost | 390,364 | 94,118 | 30,013 | 514,495 |
| b) Unfunded Actuarial Accrued Liability | 525,431 | 152,853 | 59,824 | 738,108 |
| Total Resources | \$ 5,430,839 | \$ 1,387,761 | \$ 501,805 | \$ 7,320,405 |

| Liabilities | | | | |
|------------------------------------|---------------------|---------------------|-------------------|---------------------|
| | General | Safety | Probation | Total |
| Present Value of Future Benefits | | | | |
| 1. Present Retired Members | \$ 2,516,478 | \$ 843,075 | \$ 267,282 | \$ 3,626,835 |
| 2. Current Inactive Members | 244,328 | 18,932 | 18,425 | 281,685 |
| 3. Current Active Members | | | | |
| - Service Retirement | 2,415,679 | 465,690 | 198,537 | 3,079,906 |
| - Termination Benefits | 116,935 | 14,846 | 3,785 | 135,566 |
| - Death Benefits | 25,042 | 3,561 | 1,005 | 29,608 |
| - Disability Benefits | 112,377 | 41,657 | 12,771 | 166,805 |
| - Total Active | 2,670,033 | 525,754 | 216,098 | 3,411,885 |
| Total Actuarial Liabilities | \$ 5,430,839 | \$ 1,387,761 | \$ 501,805 | \$ 7,320,405 |

Exhibit 9b
Actuarial Balance Sheet (excluding SCAs)
June 30, 2021

(Dollars in thousands)

| Resources | | | | |
|---|---------------------|---------------------|-------------------|---------------------|
| | General | Safety | Probation | Total |
| Valuation Assets (Actuarial) | \$ 3,903,849 | \$ 998,077 | \$ 365,738 | \$ 5,267,664 |
| Present Value of Future Member Contributions | 453,251 | 97,177 | 28,416 | 578,844 |
| Present Value of Future Employer Contributions to Fund: | | | | |
| a) Normal Cost | 390,364 | 94,118 | 30,013 | 514,495 |
| b) Unfunded Actuarial Accrued Liability | 683,375 | 198,389 | 77,638 | 959,402 |
| Total Resources | \$ 5,430,839 | \$ 1,387,761 | \$ 501,805 | \$ 7,320,405 |

| Liabilities | | | | |
|------------------------------------|---------------------|---------------------|-------------------|---------------------|
| | General | Safety | Probation | Total |
| Present Value of Future Benefits | | | | |
| 1. Present Retired Members | \$ 2,516,478 | \$ 843,075 | \$ 267,282 | \$ 3,626,835 |
| 2. Current Inactive Members | 244,328 | 18,932 | 18,425 | 281,685 |
| 3. Current Active Members | | | | |
| - Service Retirement | 2,415,679 | 465,690 | 198,537 | 3,079,906 |
| - Termination Benefits | 116,935 | 14,846 | 3,785 | 135,566 |
| - Death Benefits | 25,042 | 3,561 | 1,005 | 29,608 |
| - Disability Benefits | 112,377 | 41,657 | 12,771 | 166,805 |
| - Total Active | 2,670,033 | 525,754 | 216,098 | 3,411,885 |
| Total Actuarial Liabilities | \$ 5,430,839 | \$ 1,387,761 | \$ 501,805 | \$ 7,320,405 |

Exhibit 9c
Analysis of Change in the Unfunded Actuarial Accrued Liability
June 30, 2021

(Dollars in thousands)

| | Amount | As a Percent of June 30, 2021 Actuarial Accrued Liability |
|--|----------------------|--|
| Unfunded Actuarial Accrued Liability - June 30, 2020 | \$ 787,738.0 | 12.7% |
| Increase in UAAL due to new assumptions | 197,719.9 | 3.2% |
| Interest Accrued | 51,203.0 | 0.8% |
| Benefits Accrued (Normal Cost) | 139,671.4 | 2.2% |
| <u>Contributions</u> | | |
| Employers | \$ (232,509.5) | -3.7% |
| Members | (76,332.6) | -1.2% |
| CSCA and DCSA Contributions | <u>(39,700.0)</u> | -0.6% |
| Total | <u>(348,542.1)</u> | -5.6% |
| Expected Unfunded Actuarial Accrued Liability - June 30, 2021 | \$ 827,790.2 | 13.3% |
| Sources of Change: | | 0.0% |
| (Gain) / Loss due to Investment Income | (87,747.6) | -1.4% |
| <u>Liability (Gains) and Losses</u> | | |
| Salary Increases Greater than Expected | \$ 12,064.4 | 0.2% |
| Active Member Experience (non salary) | 3,320.9 | 0.1% |
| CPI Greater than Expected | (25,972.5) | -0.4% |
| Mortality Experience | 2,144.1 | 0.0% |
| All Other Experience | <u>6,508.5</u> | 0.1% |
| Total | <u>(1,934.6)</u> | 0.0% |
| Total Changes | \$ (89,682.2) | -1.4% |
| Unfunded Actuarial Accrued Liability - June 30, 2021 | \$ 738,108.0 | 11.9% |

5. Member Contributions

For SamCERA members in Plans 1-6, contributions are of three types: Basic contributions, Cost Sharing contributions, and COLA Cost Sharing contributions.

SamCERA members in Plan 7 pay contributions equal to one-half of the total Normal Cost rate for all members.

There are no member contributions under General Plan 3.

Basic Member Contributions

Basic contribution member rates for General members in Plans 1, 2 and 4 are defined in Section 31621.9 of the County Employees Retirement Law (CERL). General Plan 5 member rates are defined in Section 31621, and Probation and Safety member rates in Plans 1-6 are defined in Section 31639.25.

Basic member contributions are determined using the Entry Age Normal Cost Method and the following actuarial assumptions:

1. Expected rate of return on assets
2. Individual salary increase rate (wage growth + merit)
3. Mortality for members based on service retirement
4. No COLAs are assumed

The basic member contribution rates for Plans 1-6 were recalculated as of the June 30, 2021 valuation to reflect assumptions adopted by the Board of Retirement on May 25, 2021. The rates are shown in Appendix D.

Cost of Living Member Contributions

Members in Plans 1-6 (except Plan 3 and SMCM&VCD members) may share in the cost of the Cost of Living Adjustment (COLA) benefit by making additional contributions. The COLA level is described in detail in the Member Contributions section of Appendix B.

COLA member rates for Plans 1-6 are determined by calculating and applying a load factor to the basic member rates. New COLA load factors were calculated in the 2021 valuation to reflect the new investment return assumption. COLA load factors are determined for each class and plan of member separately, as shown in the following table:

| Plan | COLA Share | COLA Load |
|-------------|------------|-----------|
| General 1 | 50% | 35.00% |
| General 2 | 50% | 35.40% |
| General 4 | 50% | 27.38% |
| General 5 | 50% | 27.14% |
| Safety 1 | 50% | 47.93% |
| Safety 2 | 50% | 53.13% |
| Safety 4 | 50% | 41.58% |
| Safety 5 | 50% | 38.88% |
| Safety 6 | 50% | 32.47% |
| Probation 1 | 50% | 53.21% |
| Probation 2 | 50% | 53.70% |
| Probation 4 | 50% | 40.74% |
| Probation 5 | 50% | 36.69% |
| Probation 6 | 50% | 30.44% |

As an example, a member who enters General Plan 5 at age 35 has a basic member contribution rate of 7.59% (Exhibit D-1). The General Plan 5 COLA load is 27.14% for a member COLA contribution of 2.06% ($7.59\% \times 27.14\%$) of pay. The basic plus COLA member contribution rate is 9.65% ($7.59\% + 2.06\%$).

The COLA load for each plan is determined as follows: the present value of future normal costs with and without COLA provisions is calculated. The difference is multiplied by the COLA share percentage, and then divided by the present value of future basic only member contributions.

Cost Sharing Contributions

All Plan 1, 2, and 4 employees (except SMCM&VCD), as well as Plan 5 Safety and Probation employees, make additional cost-sharing contributions as shown in Appendix B. Plan 5 General employees, and all Plan 6 and 7 employees do not participate in cost-sharing. For valuation purposes, cost-sharing contributions are assumed to be permanent. The cost-sharing contributions are fixed and not impacted by changes in assumptions.

Member Contribution Rates (Plan 7)

Contributions for Plan 7 are defined in Section 7522.30 of the Government Code.

All employees of the same class who are members of Plan 7 shall contribute the same percentage of payroll. Such percentage will be 50% of the total Normal Cost rate for that class. The rates are recalculated annually.

6. Employer Contributions

Employer contribution rates are determined using the Entry Age Normal Cost Method. The portion of the actuarial present value of retirement benefits allocated to a valuation year by the Actuarial Cost Method is called the Normal Cost. These amounts are usually expressed as a percentage of payroll and called the Normal Cost Contribution Rate. Exhibit 11 shows the Normal Cost Rates by type of benefit and for each plan based on this valuation.

It should be noted that when we use the term "Gross Normal Cost rate," we are referring to the value of benefits earned by active members allocated to the valuation year. The Employer Normal Cost rate is the portion of the annual benefit that the employer is responsible for. This is simply the Gross Normal Cost rate less the contributions expected to be made by the members.

Statutory Contribution Rate

A summary of the total Statutory Contribution Rate for each classification, along with a comparison to the prior year's rates, can be found in Exhibit 10, with additional detail for each plan in Exhibits 10a through 10d. These results are expressed as a percentage of payroll. Note that SamCERA's UAAL is determined separately for each class. Thus, the employers fund the UAAL evenly as a percentage of pay over salaries for all members within a class.

The UAAL rate reflects a layered 15-year amortization beginning with the June 30, 2008 valuation. Gains and losses after that date are reflected over new 15-year periods starting with the valuation date. A one-year deferral in the implementation of the new rate is reflected. Therefore, the new employer contribution rate calculated in the 2021 valuation is effective July 1, 2022, and the UAAL is amortized over the remaining 14 years.

The impact on the Statutory Contribution Rate of the assumptions adopted effective June 30, 2021 will be recognized in three equal installments beginning with the July 1, 2022 Statutory Contribution Rate. The full impact will be phased-in effective with the July 1, 2024 Statutory Contribution Rate. The impact of the new assumptions used in the phase-in calculation was determined separately for each class.

The SCA (CSCA for the County and DSCA for the SMCM&VCD) UAAL offset amounts are calculated in a similar manner to the UAAL amortization described above. Effective with the June 30, 2018 valuation, the DSCA balance and subsequent UAAL layers are amortized over a period of five years. The total DSCA offset amount in a given year is limited to the SMCM&VCD UAAL rate, and the DSCA will be adjusted to reflect the actual offset (after reflecting the limitation, if any).

Exhibits 12a through 12c show detailed information on how the UAAL contribution rate is calculated using the layered method. The UAAL contribution rates are calculated prior to reflecting the SCAs.

Exhibits 12d through 12f show detailed information on how the CSCA offsets are calculated using the same layered approach as used for UAAL amortizations, and Exhibit 12g shows similar information on the DSCA offsets.

Exhibit 10
Employer Statutory Contribution Rates – All Plans
For the 2022-2023 Fiscal Year

| | All Plans | | | | | | | Prior Year Total Contribution Rate |
|-------------------------|-------------------------|-------------------------|-------------------------|------------------------|-------------------------|--|-------------------------------|---|
| | | | Employer Rates | | | | | |
| | Gross Normal Cost | Member Contributions | Basic Normal Cost | COLA Normal Cost | Total Normal Cost | UAAL Contribution Rate ⁽¹⁾⁽²⁾ | Total Contribution Rate | |
| <u>General</u> | | | | | | | | |
| County | 21.63% | (11.45)% | 7.90% | 2.28% | 10.18% | 21.84% | 32.02% | 32.79% |
| Courts | 21.97% | (11.69)% | 7.97% | 2.31% | 10.28% | 25.45% | 35.73% | 35.85% |
| Total | 21.67% | (11.46)% | 7.90% | 2.31% | 10.21% | 22.00% | 32.21% | 32.93% |
| SMCM&VCD ⁽³⁾ | 21.29% | (9.19)% | 8.93% | 3.17% | 12.10% | 0.00% | 12.10% | 12.76% |
| Safety | 37.20% | (18.36)% | 14.56% | 4.28% | 18.84% | 55.10% | 73.94% | 71.99% |
| Probation | 37.42% | (18.02)% | 15.03% | 4.37% | 19.40% | 50.12% | 69.52% | 65.98% |
| All Plans | 24.04% | (12.49)% | 8.94% | 2.61% | 11.55% | 26.78% | 38.33% | 38.91% |
| County Only | 24.12% | (12.54)% | 8.98% | 2.60% | 11.58% | 26.93% | 38.51% | 39.14% |

1. County UAAL Contribution Rate includes an aggregate offset of 4.27% of payroll to reflect the County Supplementary Contribution Account. Offsets vary by class of member as follows:

- General member UAAL offset is 3.61% of payroll
- Safety member UAAL offset is 7.53% of payroll
- Probation member UAAL offset is 8.43% of payroll

2. UAAL Contribution Rate includes an aggregate offset of 2.43% of payroll to reflect the deferred recognition of costs associated with assumption changes. Offsets vary by class of member as follows:

- General and SMCM&VCD member UAAL offset is 2.14% of payroll
- Safety member UAAL offset is 3.82% of payroll
- Probation member UAAL offset is 4.61% of payroll

3. SMCM&VCD UAAL Contribution Rate includes an offset of 25.45% of payroll to reflect the District Supplementary Contribution Account.

Exhibit 10a
Employer Statutory Contribution Rates – General Members
For the 2022-2023 Fiscal Year

| | Employer Rates | | | | | | | Prior Year Total Contribution Rate |
|------------------|-------------------------|-------------------------|-------------------------|------------------------|-------------------------|--|-------------------------------|---|
| | Gross Normal Cost | Member Contributions | Basic Normal Cost | COLA Normal Cost | Total Normal Cost | UAAL Contribution Rate ⁽¹⁾⁽²⁾ | Total Contribution Rate | |
| Plan 1 | | | | | | | | |
| County | 28.50% | (13.46)% | 10.62% | 4.42% | 15.04% | 21.84% | 36.88% | 35.07% |
| Courts | 28.50% | (13.46)% | 10.62% | 4.42% | 15.04% | 25.45% | 40.49% | 38.07% |
| Total | 28.50% | (13.46)% | 10.62% | 4.42% | 15.04% | 21.84% | 36.88% | 35.07% |
| Plan 2 | | | | | | | | |
| County | 24.82% | (14.32)% | 7.22% | 3.28% | 10.50% | 21.84% | 32.34% | 32.97% |
| Courts | 24.82% | (14.32)% | 7.22% | 3.28% | 10.50% | 25.45% | 35.95% | 35.97% |
| Total | 24.82% | (14.32)% | 7.22% | 3.28% | 10.50% | 21.97% | 32.47% | 33.09% |
| Plan 3 | | | | | | | | |
| County | 9.23% | 0.00% | 9.23% | 0.00% | 9.23% | 21.84% | 31.07% | 31.73% |
| Courts | 9.23% | 0.00% | 9.23% | 0.00% | 9.23% | 25.45% | 34.68% | 34.73% |
| Total | 9.23% | 0.00% | 9.23% | 0.00% | 9.23% | 21.93% | 31.16% | 31.80% |
| Plan 4 | | | | | | | | |
| County | 24.67% | (13.92)% | 8.15% | 2.60% | 10.75% | 21.84% | 32.59% | 33.21% |
| Courts | 24.67% | (13.92)% | 8.15% | 2.60% | 10.75% | 25.45% | 36.20% | 36.21% |
| Total | 24.67% | (13.92)% | 8.15% | 2.60% | 10.75% | 22.03% | 32.78% | 33.37% |
| Plan 5 | | | | | | | | |
| County | 22.91% | (9.89)% | 10.68% | 2.34% | 13.02% | 21.84% | 34.86% | 34.97% |
| Courts | 22.91% | (9.89)% | 10.68% | 2.34% | 13.02% | 25.45% | 38.47% | 37.97% |
| Total | 22.91% | (9.89)% | 10.68% | 2.34% | 13.02% | 22.02% | 35.04% | 35.12% |
| Plan 7 | | | | | | | | |
| County | 18.33% | (9.17)% | 7.34% | 1.82% | 9.16% | 21.84% | 31.00% | 31.96% |
| Courts | 18.33% | (9.17)% | 7.34% | 1.82% | 9.16% | 25.45% | 34.61% | 34.96% |
| Total | 18.33% | (9.17)% | 7.34% | 1.82% | 9.16% | 21.99% | 31.15% | 32.09% |
| All Plans | | | | | | | | |
| County | 21.63% | (11.45)% | 7.90% | 2.28% | 10.18% | 21.84% | 32.02% | 32.79% |
| Courts | 21.97% | (11.69)% | 7.97% | 2.31% | 10.28% | 25.45% | 35.73% | 35.85% |
| Total | 21.67% | (11.46)% | 7.90% | 2.31% | 10.21% | 22.00% | 32.21% | 32.93% |

1. UAAL Contribution Rate includes an offset of 3.61% of payroll to reflect the County Supplementary Contribution Account, except for Courts.
 2. UAAL Contribution Rate includes an offset of 2.14% of payroll to reflect the deferred recognition of costs associated with assumption changes.

**Exhibit 10b
 Employer Statutory Contribution Rates – SMCM&VCD Members
 For the 2022-2023 Fiscal Year**

| SMCM&VCD Members | | | | | | | | |
|-----------------------|-------------------------|-------------------------|-------------------------|------------------------|-------------------------|--|-------------------------------|---|
| | Employer Rates | | | | | | | Prior Year Total Contribution Rate |
| | Gross Normal Cost | Member Contributions | Basic Normal Cost | COLA Normal Cost | Total Normal Cost | UAAL Contribution Rate ⁽¹⁾⁽²⁾ | Total Contribution Rate | |
| Plan 1 ⁽³⁾ | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Plan 2 ⁽³⁾ | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Plan 4 | 22.56% | (8.07)% | 10.01% | 4.48% | 14.49% | 0.00% | 14.49% | 14.94% |
| Plan 7 | 20.23% | (10.12)% | 8.03% | 2.08% | 10.11% | 0.00% | 10.11% | 10.06% |
| All Plans | 21.29% | (9.19)% | 8.93% | 3.17% | 12.10% | 0.00% | 12.10% | 12.76% |

1. UAAL Contribution Rate includes an offset of 25.45% of payroll to reflect the District Supplementary Contribution Account.
2. UAAL Contribution Rate includes an offset of 2.14% of payroll to reflect the deferred recognition of costs associated with assumption changes.
3. There are currently no active Plan 1 or Plan 2 members. Employer rates will be developed in the future if needed.

**Exhibit 10c
 Employer Statutory Contribution Rates – Safety Members
 For the 2022-2023 Fiscal Year**

| Safety Members | | | | | | | | |
|-----------------------|-------------------|----------------------|-------------------|------------------|-------------------|--|-------------------------|------------------------------------|
| | Gross Normal Cost | Member Contributions | Employer Rates | | | | Total Contribution Rate | Prior Year Total Contribution Rate |
| | | | Basic Normal Cost | COLA Normal Cost | Total Normal Cost | UAAL Contribution Rate ⁽¹⁾⁽²⁾ | | |
| Plan 1 ⁽³⁾ | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Plan 2 | 44.17% | (22.19)% | 15.65% | 6.33% | 21.98% | 55.10% | 77.08% | 75.73% |
| Plan 4 | 40.61% | (20.01)% | 15.96% | 4.64% | 20.60% | 55.10% | 75.70% | 73.35% |
| Plan 5 | 39.68% | (18.92)% | 16.27% | 4.49% | 20.76% | 55.10% | 75.86% | 73.19% |
| Plan 6 ⁽³⁾ | N/A | N/A | N/A | N/A | NA | NA | NA | NA |
| Plan 7 | 31.31% | (15.66)% | 12.15% | 3.50% | 15.65% | 55.10% | 70.75% | 69.13% |
| All Plans | 37.20% | (18.36)% | 14.56% | 4.28% | 18.84% | 55.10% | 73.94% | 71.99% |

1. UAAL Contribution Rate includes an offset of 7.53% of payroll to reflect the County Supplementary Contribution Account.
 2. UAAL Contribution Rate includes an offset of 3.82% of payroll to reflect the deferred recognition of costs associated with assumption changes.
 3. There are currently no active Safety Plan 1 or Plan 6 members. Employer rates will be developed in the future if needed.

**Exhibit 10d
 Employer Statutory Contribution Rates – Probation Members
 For the 2022-2023 Fiscal Year**

| Probation Members | | | | | | | | |
|--------------------------|--------------------------|-----------------------------|--------------------------|-------------------------|--------------------------|---|--------------------------------|---|
| | Gross Normal Cost | Member Contributions | Employer Rates | | | | Total Contribution Rate | Prior Year Total Contribution Rate |
| | | | Basic Normal Cost | COLA Normal Cost | Total Normal Cost | UAAL Contribution Rate ⁽¹⁾⁽²⁾ | | |
| Plan 1 ⁽³⁾ | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Plan 2 | 42.12% | (20.16)% | 15.81% | 6.15% | 21.96% | 50.12% | 72.08% | 68.62% |
| Plan 4 | 39.10% | (18.62)% | 15.93% | 4.55% | 20.48% | 50.12% | 70.60% | 66.83% |
| Plan 5 | 35.98% | (18.08)% | 13.73% | 4.17% | 17.90% | 50.12% | 68.02% | 63.66% |
| Plan 6 ⁽³⁾ | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Plan 7 | 31.47% | (15.74)% | 12.17% | 3.56% | 15.73% | 50.12% | 65.85% | 62.53% |
| All Plans | 37.42% | (18.02)% | 15.03% | 4.37% | 19.40% | 50.12% | 69.52% | 65.98% |

1. UAAL Contribution Rate includes an offset of 8.43% of payroll to reflect the County Supplementary Contribution Account.
 2. UAAL Contribution Rate includes an offset of 4.61% of payroll to reflect the deferred recognition of costs associated with assumption changes.
 3. There are currently no active Probation Plan 1 or Plan 6 members. Employer rates will be developed in the future if needed.

Exhibit 11
Calculated Gross Normal Cost Rates

| All Plans | | | | | |
|---------------------------|--------------------|-----------------------|-----------------------------|----------------------|-------------------------|
| Plan | Normal Cost | | | | Total Gross Normal Cost |
| | Service Retirement | Disability Retirement | Death Benefits while Active | Termination Benefits | |
| General Plan 1 | 21.47% | 2.08% | 0.30% | 4.65% | 28.50% |
| General Plan 2 | 18.11% | 1.64% | 0.32% | 4.75% | 24.82% |
| General Plan 3 | 8.51% | 0.00% | 0.00% | 0.72% | 9.23% |
| General Plan 4 | 18.32% | 1.72% | 0.32% | 4.31% | 24.67% |
| General Plan 5 | 17.26% | 2.07% | 0.34% | 3.24% | 22.91% |
| General Plan 7 | 13.66% | 1.77% | 0.26% | 2.64% | 18.33% |
| General Total | 16.12% | 1.74% | 0.29% | 3.52% | 21.67% |
| SMCM&VCD Plan 1 | N/A | N/A | N/A | N/A | N/A |
| SMCM&VCD Plan 2 | N/A | N/A | N/A | N/A | N/A |
| SMCM&VCD Plan 4 | 16.98% | 1.56% | 0.27% | 3.75% | 22.56% |
| SMCM&VCD Plan 7 | 15.11% | 1.88% | 0.38% | 2.86% | 20.23% |
| SMCM&VCD Total | 15.96% | 1.73% | 0.33% | 3.27% | 21.29% |
| Safety Plan 1 | N/A | N/A | N/A | N/A | N/A |
| Safety Plan 2 | 34.47% | 5.14% | 0.49% | 4.07% | 44.17% |
| Safety Plan 4 | 31.62% | 4.99% | 0.43% | 3.57% | 40.61% |
| Safety Plan 5 | 29.75% | 6.44% | 0.43% | 3.06% | 39.68% |
| Safety Plan 6 | N/A | N/A | N/A | N/A | N/A |
| Safety Plan 7 | 23.06% | 5.41% | 0.35% | 2.49% | 31.31% |
| Safety Total | 28.32% | 5.36% | 0.40% | 3.12% | 37.20% |
| Probation Plan 1 | N/A | N/A | N/A | N/A | N/A |
| Probation Plan 2 | 34.13% | 3.93% | 0.36% | 3.70% | 42.12% |
| Probation Plan 4 | 31.25% | 3.98% | 0.35% | 3.52% | 39.10% |
| Probation Plan 5 | 28.11% | 4.54% | 0.33% | 3.00% | 35.98% |
| Probation Plan 6 | N/A | N/A | N/A | N/A | N/A |
| Probation Plan 7 | 23.95% | 4.55% | 0.31% | 2.66% | 31.47% |
| Probation Total | 29.64% | 4.12% | 0.34% | 3.32% | 37.42% |
| All Plans | 18.03% | 2.24% | 0.30% | 3.47% | 24.04% |

Exhibit 12a
UAAL Amortization Detail – General Members

(Dollars in Thousands)

| Unfunded Actuarial Liability Amortization Detail | | | | | | | |
|--|---------------|--------------------------------|---|---|--------------------------------|--|---|
| Date Established | Description | Balance as of June 30, 2021 | Interest on Balance | Amortization Payment on June 30, 2022 | Balance as of June 30, 2022 | Remaining Period as of June 30, 2022 | July 1, 2022 Amortization Payment |
| June 30, 2008 | Initial UAAL | \$ 104,402 | \$ 6,525 | \$ 56,462 | \$ 54,466 | 1 Year | \$ 55,388 |
| June 30, 2009 | (Gain) / Loss | \$ 137,162 | \$ 8,573 | \$ 50,274 | \$ 95,461 | 2 Years | \$ 49,292 |
| June 30, 2010 | (Gain) / Loss | \$ (62,150) | \$ (3,884) | \$ (17,367) | \$ (48,667) | 3 Years | \$ (17,012) |
| June 30, 2011 | (Gain) / Loss | \$ (21,471) | \$ (1,342) | \$ (4,879) | \$ (17,934) | 4 Years | \$ (4,774) |
| June 30, 2012 | (Gain) / Loss | \$ 73,751 | \$ 4,609 | \$ 14,193 | \$ 64,167 | 5 Years | \$ 13,874 |
| June 30, 2013 | (Gain) / Loss | \$ 15,057 | \$ 941 | \$ 2,524 | \$ 13,474 | 6 Years | \$ 2,465 |
| June 30, 2014 | (Gain) / Loss | \$ (33,937) | \$ (2,121) | \$ (5,058) | \$ (31,000) | 7 Years | \$ (4,934) |
| June 30, 2015 | (Gain) / Loss | \$ (26,576) | \$ (1,661) | \$ (3,577) | \$ (24,659) | 8 Years | \$ (3,486) |
| June 30, 2016 | (Gain) / Loss | \$ 87,740 | \$ 5,484 | \$ 10,799 | \$ 82,424 | 9 Years | \$ 10,512 |
| June 30, 2017 | (Gain) / Loss | \$ 63,827 | \$ 3,989 | \$ 7,255 | \$ 60,562 | 10 Years | \$ 7,055 |
| June 30, 2018 | (Gain) / Loss | \$ (20,519) | \$ (1,282) | \$ (2,172) | \$ (19,630) | 11 Years | \$ (2,110) |
| June 30, 2019 | (Gain) / Loss | \$ 221,479 | \$ 13,842 | \$ 21,976 | \$ 213,345 | 12 Years | \$ 21,326 |
| June 30, 2020 | (Gain) / Loss | \$ 64,114 | \$ 4,007 | \$ 5,999 | \$ 62,122 | 13 Years | \$ 5,816 |
| June 30, 2021 | (Gain) / Loss | \$ 80,496 | \$ 5,031 | \$ (3,570) | \$ 89,097 | 14 Years | \$ 7,858 |
| Total Amortization Payment July 1, 2022: | | | | | | | \$ 141,269 |
| Projected Payroll July 1, 2022: | | | | | | | \$ 511,982 |
| UAAL as of June 30, 2021: | | \$ 683,375 | UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2022: | | 27.59% | | |

Notes:

- Amortization Payments are based on a fixed schedule that increases by the payroll growth assumption each year.
- The calculation of UAAL is as of June 30, 2021; whereas, the contribution rates are effective as of July 1, 2022. The June 30, 2021 UAAL is adjusted to June 30, 2022 based on the July 1, 2021 contribution rates and June 30, 2021 valuation assumptions.
- (Gain)/Loss includes new assumptions adopted in each of the following valuations: 2011, 2012, 2014, 2016, 2017, 2019, 2020, and 2021.

Exhibit 12b
UAAL Amortization Detail – Safety Members

(Dollars in Thousands)

| Unfunded Actuarial Liability Amortization Detail | | | | | | | |
|--|---------------|-----------------------------|---|---------------------------------------|-----------------------------|--------------------------------------|-----------------------------------|
| Date Established | Description | Balance as of June 30, 2021 | Interest on Balance | Amortization Payment on June 30, 2022 | Balance as of June 30, 2022 | Remaining Period as of June 30, 2022 | July 1, 2022 Amortization Payment |
| June 30, 2008 | Initial UAAL | \$ 38,099 | \$ 2,381 | \$ 20,605 | \$ 19,876 | 1 Year | \$ 20,213 |
| June 30, 2009 | (Gain) / Loss | \$ 50,303 | \$ 3,144 | \$ 18,437 | \$ 35,009 | 2 Years | \$ 18,077 |
| June 30, 2010 | (Gain) / Loss | \$ (23,248) | \$ (1,453) | \$ (6,496) | \$ (18,205) | 3 Years | \$ (6,364) |
| June 30, 2011 | (Gain) / Loss | \$ (9,958) | \$ (622) | \$ (2,263) | \$ (8,318) | 4 Years | \$ (2,214) |
| June 30, 2012 | (Gain) / Loss | \$ 21,927 | \$ 1,370 | \$ 4,220 | \$ 19,078 | 5 Years | \$ 4,125 |
| June 30, 2013 | (Gain) / Loss | \$ 4,403 | \$ 275 | \$ 738 | \$ 3,940 | 6 Years | \$ 721 |
| June 30, 2014 | (Gain) / Loss | \$ (13,655) | \$ (853) | \$ (2,035) | \$ (12,473) | 7 Years | \$ (1,985) |
| June 30, 2015 | (Gain) / Loss | \$ (7,401) | \$ (463) | \$ (996) | \$ (6,867) | 8 Years | \$ (971) |
| June 30, 2016 | (Gain) / Loss | \$ 23,655 | \$ 1,478 | \$ 2,911 | \$ 22,222 | 9 Years | \$ 2,834 |
| June 30, 2017 | (Gain) / Loss | \$ 17,708 | \$ 1,107 | \$ 2,013 | \$ 16,802 | 10 Years | \$ 1,957 |
| June 30, 2018 | (Gain) / Loss | \$ (4,985) | \$ (312) | \$ (528) | \$ (4,769) | 11 Years | \$ (512) |
| June 30, 2019 | (Gain) / Loss | \$ 62,803 | \$ 3,925 | \$ 6,232 | \$ 60,496 | 12 Years | \$ 6,047 |
| June 30, 2020 | (Gain) / Loss | \$ 21,229 | \$ 1,327 | \$ 1,986 | \$ 20,569 | 13 Years | \$ 1,926 |
| June 30, 2021 | (Gain) / Loss | \$ 17,510 | \$ 1,094 | \$ (3,377) | \$ 21,981 | 14 Years | \$ 1,939 |
| Total Amortization Payment July 1, 2022: | | | | | | | \$ 45,792 |
| Projected Payroll July 1, 2022: | | | | | | | \$ 68,913 |
| UAAL as of June 30, 2021: | | \$ 198,389 | UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2022: | | | | 66.45% |

Notes:

- Amortization Payments are based on a fixed schedule that increases by the payroll growth assumption each year.
- The calculation of UAAL is as of June 30, 2021; whereas, the contribution rates are effective as of July 1, 2022. The June 30, 2021 UAAL is adjusted to June 30, 2022 based on the July 1, 2021 contribution rates and June 30, 2021 valuation assumptions.
- (Gain)/Loss includes new assumptions adopted in each of the following valuations: 2011, 2012, 2014, 2016, 2017, 2019, 2020, and 2021.

Exhibit 12c
UAAL Amortization Detail – Probation Members

(Dollars in Thousands)

| Unfunded Actuarial Liability Amortization Detail | | | | | | | |
|--|---------------|--------------------------------|---|---|--------------------------------|--|---|
| Date Established | Description | Balance as of June 30, 2021 | Interest on Balance | Amortization Payment on June 30, 2022 | Balance as of June 30, 2022 | Remaining Period as of June 30, 2022 | July 1, 2022 Amortization Payment |
| June 30, 2008 | Initial UAAL | \$ 9,546 | \$ 597 | \$ 5,162 | \$ 4,980 | 1 Year | \$ 5,064 |
| June 30, 2009 | (Gain) / Loss | \$ 12,660 | \$ 791 | \$ 4,640 | \$ 8,811 | 2 Years | \$ 4,550 |
| June 30, 2010 | (Gain) / Loss | \$ (5,674) | \$ (355) | \$ (1,586) | \$ (4,443) | 3 Years | \$ (1,553) |
| June 30, 2011 | (Gain) / Loss | \$ (2,284) | \$ (143) | \$ (519) | \$ (1,908) | 4 Years | \$ (508) |
| June 30, 2012 | (Gain) / Loss | \$ 7,394 | \$ 462 | \$ 1,423 | \$ 6,433 | 5 Years | \$ 1,391 |
| June 30, 2013 | (Gain) / Loss | \$ 1,124 | \$ 70 | \$ 188 | \$ 1,006 | 6 Years | \$ 184 |
| June 30, 2014 | (Gain) / Loss | \$ (2,760) | \$ (173) | \$ (411) | \$ (2,521) | 7 Years | \$ (401) |
| June 30, 2015 | (Gain) / Loss | \$ (1,996) | \$ (125) | \$ (269) | \$ (1,852) | 8 Years | \$ (262) |
| June 30, 2016 | (Gain) / Loss | \$ 9,678 | \$ 605 | \$ 1,191 | \$ 9,091 | 9 Years | \$ 1,159 |
| June 30, 2017 | (Gain) / Loss | \$ 9,235 | \$ 577 | \$ 1,050 | \$ 8,762 | 10 Years | \$ 1,021 |
| June 30, 2018 | (Gain) / Loss | \$ (1,681) | \$ (105) | \$ (178) | \$ (1,609) | 11 Years | \$ (173) |
| June 30, 2019 | (Gain) / Loss | \$ 23,788 | \$ 1,487 | \$ 2,360 | \$ 22,915 | 12 Years | \$ 2,291 |
| June 30, 2020 | (Gain) / Loss | \$ 11,689 | \$ 731 | \$ 1,094 | \$ 11,326 | 13 Years | \$ 1,060 |
| June 30, 2021 | (Gain) / Loss | \$ 6,920 | \$ 433 | \$ (1,732) | \$ 9,085 | 14 Years | \$ 801 |
| Total Amortization Payment July 1, 2022: | | | | | | | \$ 14,624 |
| Projected Payroll July 1, 2022: | | | | | | | \$ 23,153 |
| UAAL as of June 30, 2021: | | \$ 77,638 | UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2022: | | | | 63.16% |

Notes:

1. Amortization Payments are based on a fixed schedule that increases by the payroll growth assumption each year.
2. The calculation of UAAL is as of June 30, 2021; whereas, the contribution rates are effective as of July 1, 2022. The June 30, 2021 UAAL is adjusted to June 30, 2022 based on the July 1, 2021 contribution rates and June 30, 2021 valuation assumptions.
3. (Gain)/Loss includes new assumptions adopted in each of the following valuations: 2011, 2012, 2014, 2016, 2017, 2019, 2020, and 2021.

Exhibit 12d
CSCA Amortization Detail - General Members

(Dollars in Thousands)

| General Members | | | | | | | |
|--|-------------------|---|---------------------|---------------------------------------|-----------------------------|--------------------------------------|-----------------------------------|
| Date Established | Description | Balance as of June 30, 2021 | Interest on Balance | Amortization Payment on June 30, 2022 | Balance as of June 30, 2022 | Remaining Period as of June 30, 2022 | July 1, 2022 Amortization Payment |
| June 30, 2014 | Initial CSCA | \$ 28,794 | \$ 1,800 | \$ 4,292 | \$ 26,302 | 7 Years | \$ 4,186 |
| June 30, 2015 | CSCA Addition | \$ 6,838 | \$ 427 | \$ 920 | \$ 6,345 | 8 Years | \$ 897 |
| June 30, 2016 | CSCA Addition | \$ 12,891 | \$ 806 | \$ 1,587 | \$ 12,110 | 9 Years | \$ 1,544 |
| June 30, 2017 | CSCA Addition | \$ 22,799 | \$ 1,425 | \$ 2,591 | \$ 21,632 | 10 Years | \$ 2,520 |
| June 30, 2018 | CSCA Addition | \$ 19,680 | \$ 1,230 | \$ 2,083 | \$ 18,827 | 11 Years | \$ 2,023 |
| June 30, 2019 | CSCA Addition | \$ 34,379 | \$ 2,149 | \$ 3,411 | \$ 33,117 | 12 Years | \$ 3,310 |
| June 30, 2020 | CSCA Addition | \$ (979) | \$ (61) | \$ (92) | \$ (949) | 13 Years | \$ (89) |
| June 30, 2021 | CSCA Addition | \$ 32,443 | \$ 2,028 | \$ - | \$ 34,471 | 14 Years | \$ 3,177 |
| Total CSCA County Offset Payment July 1, 2022: | | | | | | | \$ 17,569 |
| Projected County Payroll July 1, 2022: | | | | | | | \$ 486,507 |
| CSCA Value as of June 30, 2021: | \$ 156,845 | CSCA County Offset (as a % of Payroll) FYB July 1, 2022: | | | | | 3.61% |

Notes:

- CSCA Offsets are based on a fixed schedule that increases by the payroll growth assumption each year.
- The calculation of CSCA amounts are as of June 30, 2021; whereas, the contribution rates are effective as of July 1, 2022. The June 30, 2021 CSCA is adjusted to June 30, 2022 based on the July 1, 2021 contribution rates and June 30, 2021 valuation assumptions.

Exhibit 12e
CSCA Amortization Detail - Safety Members

(Dollars in Thousands)

| Safety Members | | | | | | | |
|--|---------------|--------------------------------|------------------------|---|--------------------------------|--|---|
| Date Established | Description | Balance as of June 30, 2021 | Interest on Balance | Amortization Payment on June 30, 2022 | Balance as of June 30, 2022 | Remaining Period as of June 30, 2022 | July 1, 2022 Amortization Payment |
| June 30, 2014 | Initial CSCA | \$ 9,757 | \$ 610 | \$ 1,454 | \$ 8,913 | 7 Years | \$ 1,419 |
| June 30, 2015 | CSCA Addition | \$ 2,319 | \$ 145 | \$ 312 | \$ 2,152 | 8 Years | \$ 304 |
| June 30, 2016 | CSCA Addition | \$ 3,910 | \$ 244 | \$ 481 | \$ 3,673 | 9 Years | \$ 468 |
| June 30, 2017 | CSCA Addition | \$ 6,880 | \$ 430 | \$ 782 | \$ 6,528 | 10 Years | \$ 760 |
| June 30, 2018 | CSCA Addition | \$ 6,089 | \$ 381 | \$ 644 | \$ 5,825 | 11 Years | \$ 626 |
| June 30, 2019 | CSCA Addition | \$ 9,372 | \$ 586 | \$ 930 | \$ 9,028 | 12 Years | \$ 902 |
| June 30, 2020 | CSCA Addition | \$ (658) | \$ (41) | \$ (62) | \$ (638) | 13 Years | \$ (60) |
| June 30, 2021 | CSCA Addition | \$ 7,867 | \$ 492 | \$ - | \$ 8,358 | 14 Years | \$ 770 |
| Total CSCA County Offset Payment July 1, 2022: | | | | | | | \$ 5,191 |
| Projected County Payroll July 1, 2022: | | | | | | | \$ 68,913 |
| CSCA Value as of June 30, 2021: | | <u>\$ 45,536</u> | | CSCA County Offset (as a % of Payroll) FYB July 1, 2022: | | | <u>7.53%</u> |

Notes:

1. CSCA Offsets are based on a fixed schedule that increases by the payroll growth assumption each year.
2. The calculation of CSCA amounts are as of June 30, 2021; whereas, the contribution rates are effective as of July 1, 2022. The June 30, 2021 CSCA is adjusted to June 30, 2022 based on the July 1, 2021 contribution rates and June 30, 2021 valuation assumptions.

Exhibit 12f
CSCA Amortization Detail - Probation Members

(Dollars in Thousands)

| Probation Members | | | | | | | |
|--|---------------|-----------------------------|---------------------|---|-----------------------------|--------------------------------------|-----------------------------------|
| Date Established | Description | Balance as of June 30, 2021 | Interest on Balance | Amortization Payment on June 30, 2022 | Balance as of June 30, 2022 | Remaining Period as of June 30, 2022 | July 1, 2022 Amortization Payment |
| June 30, 2014 | Initial CSCA | \$ 2,654 | \$ 166 | \$ 395 | \$ 2,424 | 7 Years | \$ 386 |
| June 30, 2015 | CSCA Addition | \$ 661 | \$ 41 | \$ 89 | \$ 613 | 8 Years | \$ 87 |
| June 30, 2016 | CSCA Addition | \$ 1,364 | \$ 85 | \$ 168 | \$ 1,281 | 9 Years | \$ 163 |
| June 30, 2017 | CSCA Addition | \$ 2,722 | \$ 170 | \$ 309 | \$ 2,583 | 10 Years | \$ 301 |
| June 30, 2018 | CSCA Addition | \$ 2,053 | \$ 128 | \$ 217 | \$ 1,964 | 11 Years | \$ 211 |
| June 30, 2019 | CSCA Addition | \$ 3,759 | \$ 235 | \$ 373 | \$ 3,621 | 12 Years | \$ 362 |
| June 30, 2020 | CSCA Addition | \$ 1,020 | \$ 64 | \$ 95 | \$ 989 | 13 Years | \$ 93 |
| June 30, 2021 | CSCA Addition | \$ 3,582 | \$ 224 | \$ - | \$ 3,806 | 14 Years | \$ 351 |
| Total CSCA County Offset Payment July 1, 2022: | | | | | | | \$ 1,953 |
| Projected County Payroll July 1, 2022: | | | | | | | \$ 23,153 |
| CSCA Value as of June 30, 2021: | | \$ 17,814 | | CSCA County Offset (as a % of Payroll) FYB July 1, 2022: | | | 8.43% |

Notes:

- CSCA Offsets are based on a fixed schedule that increases by the payroll growth assumption each year.
- The calculation of CSCA amounts are as of June 30, 2021; whereas, the contribution rates are effective as of July 1, 2022. The June 30, 2021 CSCA is adjusted to June 30, 2022 based on the July 1, 2021 contribution rates and June 30, 2021 valuation assumptions.

**Exhibit 12g
 Amortization Detail – District SCA Offsets**

(Dollars in Thousands)

| Preliminary Offset Calculations | | | | | | | |
|--|---------------|-----------------------------|---|---------------------------------------|-----------------------------|--------------------------------------|-----------------------------------|
| Date Established | Description | Balance as of June 30, 2021 | Interest on Balance | Amortization Payment on June 30, 2022 | Balance as of June 30, 2022 | Remaining Period as of June 30, 2022 | July 1, 2022 Amortization Payment |
| June 30, 2016 | Initial DSCA | \$ 938 | \$ 59 | \$ 507 | \$ 489 | 1 Year | \$ 498 |
| June 30, 2017 | DSCA Addition | \$ 154 | \$ 10 | \$ 83 | \$ 80 | 1 Year | \$ 82 |
| June 30, 2018 | DSCA Addition | \$ 2 | \$ 0 | \$ 1 | \$ 1 | 1 Year | \$ 1 |
| June 30, 2019 | DSCA Addition | \$ 3 | \$ 0 | \$ 1 | \$ 2 | 2 Years | \$ 1 |
| June 30, 2020 | DSCA Addition | \$ 0 | \$ 0 | \$ 0 | \$ 0 | 3 Years | \$ 0 |
| June 30, 2021 | DSCA Addition | \$ 2 | \$ 0 | \$ - | \$ 2 | 4 Years | \$ 0 |
| Total DSCA Offset Payment July 1, 2022: | | | | | | | \$ 582 |
| Projected District Payroll July 1, 2022: | | | | | | | \$ 2,070 |
| DSCA Value as of June 30, 2021: | | \$ 1,099 | DSCA District Offset (as a % of Payroll) FYB July 1, 2022: | | | | 28.12% |

| Adjusted Offset Calculations | | | | | | | |
|--|---------------|-----------------------------|---|---------------------------------------|-----------------------------|--------------------------------------|-----------------------------------|
| Date Established | Description | Balance as of June 30, 2021 | Interest on Balance | Amortization Payment on June 30, 2022 | Balance as of June 30, 2022 | Remaining Period as of June 30, 2022 | July 1, 2022 Amortization Payment |
| June 30, 2016 | Initial DSCA | \$ 938 | \$ 59 | \$ 507 | \$ 489 | 1 Year | \$ 450 |
| June 30, 2017 | DSCA Addition | \$ 154 | \$ 10 | \$ 83 | \$ 80 | 1 Year | \$ 74 |
| June 30, 2018 | DSCA Addition | \$ 2 | \$ 0 | \$ 1 | \$ 1 | 1 Year | \$ 1 |
| June 30, 2019 | DSCA Addition | \$ 3 | \$ 0 | \$ 1 | \$ 2 | 2 Years | \$ 1 |
| June 30, 2020 | DSCA Addition | \$ 0 | \$ 0 | \$ 0 | \$ 0 | 3 Years | \$ 0 |
| June 30, 2021 | DSCA Addition | \$ 2 | \$ 0 | \$ - | \$ 2 | 4 Years | \$ 0 |
| Total DSCA Offset Payment July 1, 2022: | | | | | | | \$ 527 |
| Projected District Payroll July 1, 2022: | | | | | | | \$ 2,070 |
| DSCA Value as of June 30, 2021: | | \$ 1,099 | DSCA District Offset (as a % of Payroll) FYB July 1, 2022: | | | | 25.45% |

Notes:

1. DSCA Offsets are based on a fixed schedule that increases by the payroll growth assumption each year.
2. The calculation of DSCA amounts are as of June 30, 2021; whereas, the contribution rates are effective as of July 1, 2022. The June 30, 2021 DSCA is adjusted to June 30, 2022 based on the July 1, 2021 contribution rates and June 30, 2021 valuation assumptions.
3. If the preliminary calculation of DSCA Offset results in a larger offset than the UAAL contribution rate payable by the District, the offset must be limited to the adjusted offset to prevent a negative UAAL contribution rate.

7. Supplemental Information

We are providing several exhibits in this report for consistency with prior reports and as supporting information for inclusion in SamCERA's ACFR.

- Exhibit 13 – Schedule of Funding Progress
- Exhibit 14 – Solvency Test
- Exhibit 15 – History of Employer Contribution Rates
- Exhibit 16 – Actuarial Analysis of Financial Experience
- Exhibit 17 – Summary of Significant Actuarial Statistics and Measures
- Exhibit 18 – Summary of SamCERA Membership
- Exhibit 19 – Summary of Active Member Valuation Data
- Exhibit 20 – Summary of Demographic Activity of Retirees and Beneficiaries
- Exhibit 21 – Average Salary and Active Counts by Employer

The Governmental Accounting Standards Board (GASB) Statement No. 67 sets standards for defined benefit pension plan reporting and disclosures. The reporting requirements for GASB 67 include certain supplementary information that must be added to the financial statements. GASB Statement No. 68 specifies financial reporting for pension accounting by state and local governmental employers. We will provide information required for GASB 67 and GASB 68 in a separate report.

All liability calculations shown in this Section 7 are based on an investment return assumption of 6.25%. GASB 67 and 68 calculations as of June 30, 2021 will use an investment return assumption of 6.42%, as the investment return for GASB 67 and 68 is required to be gross of expected administrative expenses.

Exhibit 13
Schedule of Funding Progress

(Dollars in Thousands)

| <u>Actuarial Valuation Date</u> | <u>(a) Actuarial Value of Valuation Assets</u> | <u>(b) Actuarial Accrued Liabilities</u> | <u>(b-a) Unfunded Actuarial Accrued Liabilities (UAAL)</u> | <u>(a/b) Funded Ratio</u> | <u>(c) Covered Payroll</u> | <u>[(b-a)/c] UAAL as a Percentage of Covered Payroll</u> |
|-------------------------------------|--|--|--|-------------------------------|--------------------------------|--|
| June 30, 2012 | \$ 2,480,271 | \$ 3,442,553 | \$ 926,282 | 72.0% | \$ 418,916 | 229.71% |
| June 30, 2013 | 2,618,639 | 3,572,750 | 954,111 | 73.3% | 404,361 | 235.96% |
| June 30, 2014 | 2,993,187 | 3,797,042 | 803,855 | 78.8% | 416,274 | 193.11% |
| June 30, 2015 | 3,343,550 | 4,045,786 | 702,236 | 82.6% | 439,018 | 159.96% |
| June 30, 2016 | 3,624,726 | 4,362,296 | 737,570 | 83.1% | 472,385 | 156.14% |
| June 30, 2017 | 3,976,717 | 4,719,850 | 743,133 | 84.3% | 510,132 | 145.67% |
| June 30, 2018 | 4,351,502 | 4,970,535 | 619,033 | 87.5% | 535,938 | 115.50% |
| June 30, 2019 | 4,685,502 | 5,459,978 | 774,476 | 85.8% | 554,734 | 139.61% |
| June 30, 2020 | 4,998,316 | 5,786,054 | 787,738 | 86.4% | 593,295 | 132.77% |
| June 30, 2021 | 5,488,958 | 6,227,066 | 738,108 | 88.1% | 600,369 | 122.94% |

Note: The Covered Payroll amounts are consistent with the GASB 67/68 Disclosure report.

Exhibit 14
Solvency Test

(Dollars in Thousands)

| Actuarial Valuation Date | Valuation Assets | Actuarial Accrued Liabilities for | | | Portion of Actuarial Accrued Liabilities Covered by Assets | | |
|-----------------------------|---------------------|---------------------------------------|---|--|--|------|-----|
| | | Active Member Contributions (A) | Retirees and Beneficiaries ⁽¹⁾ (B) | Active Members (Employer Financed Portion) (C) | (A) | (B) | (C) |
| June 30, 2012 | \$ 2,480,271 | \$ 498,569 | \$ 2,022,791 | \$ 921,193 | 100% | 98% | 0% |
| June 30, 2013 | 2,618,639 | 534,276 | 2,157,590 | 880,884 | 100% | 97% | 0% |
| June 30, 2014 | 2,993,187 | 584,080 | 2,285,328 | 927,634 | 100% | 100% | 13% |
| June 30, 2015 | 3,343,550 | 628,287 | 2,451,544 | 965,955 | 100% | 100% | 27% |
| June 30, 2016 | 3,624,726 | 679,246 | 2,635,409 | 1,047,641 | 100% | 100% | 30% |
| June 30, 2017 | 3,976,717 | 735,102 | 2,811,651 | 1,173,097 | 100% | 100% | 37% |
| June 30, 2018 | 4,351,502 | 783,887 | 3,032,813 | 1,153,835 | 100% | 100% | 46% |
| June 30, 2019 | 4,685,502 | 769,137 | 3,369,094 | 1,321,747 | 100% | 100% | 41% |
| June 30, 2020 | 4,998,316 | 858,906 | 3,609,214 | 1,317,934 | 100% | 100% | 40% |
| June 30, 2021 | 5,488,958 | 895,745 | 3,908,520 | 1,422,801 | 100% | 100% | 48% |

1. Includes inactive members.

**Exhibit 15
 History of Employer Statutory Contribution Rates**

| Statutory Contribution Rates | | | | | | | | | |
|------------------------------|-----------------------------------|--------|--------|---------------------------------|--------|--------|----------------------------|--------|--------|
| Valuation Year | General Members (County & Courts) | | | General Members (Nurses & UAPD) | | | General Members (SMCM&VCD) | | |
| | Normal | UAAL | Total | Normal | UAAL | Total | Normal | UAAL | Total |
| 2012 | 9.98% | 20.17% | 30.15% | 8.96% | 20.17% | 29.13% | 11.68% | 20.17% | 31.85% |
| 2013 | 9.74% | 22.35% | 32.09% | 8.92% | 22.35% | 31.27% | 11.70% | 22.35% | 34.05% |
| 2014 | 10.12% | 20.27% | 30.39% | 9.14% | 20.21% | 29.35% | 11.72% | 21.16% | 32.88% |

| Statutory Contribution Rates | | | | | | | | | |
|------------------------------|--------------------------|--------|--------|--------------------------|--------|--------|----------------------------|--------|--------|
| Valuation Year | General Members (County) | | | General Members (Courts) | | | General Members (SMCM&VCD) | | |
| | Normal | UAAL | Total | Normal | UAAL | Total | Normal | UAAL | Total |
| 2015 | 8.67% | 18.37% | 27.04% | 9.04% | 19.54% | 28.58% | 11.75% | 19.54% | 31.29% |
| 2016 | 8.91% | 19.81% | 28.72% | 9.09% | 21.30% | 30.39% | 12.02% | 12.50% | 24.52% |
| 2017 | 9.58% | 20.55% | 30.13% | 9.65% | 22.58% | 32.23% | 12.32% | 12.37% | 24.69% |
| 2018 | 9.22% | 19.32% | 28.54% | 9.27% | 21.76% | 31.03% | 12.13% | 0.00% | 12.13% |
| 2019 | 9.93% | 22.18% | 32.11% | 10.01% | 25.21% | 35.22% | 12.58% | 0.00% | 12.58% |
| 2020 | 9.57% | 23.22% | 32.79% | 9.63% | 26.22% | 35.85% | 12.37% | 0.39% | 12.76% |
| 2021 | 10.18% | 21.84% | 32.02% | 10.28% | 25.45% | 35.73% | 12.10% | 0.00% | 12.10% |

| Statutory Contribution Rates | | | | | | | | | |
|------------------------------|---------------|--------|--------|--|--------|--------|---------------------------------|--------|--------|
| Valuation Year | Safety Member | | | Probation Members (excluding Managers) | | | Probation Members (Managers) | | |
| | Normal | UAAL | Total | Normal | UAAL | Total | Normal | UAAL | Total |
| 2012 | 19.05% | 48.51% | 67.56% | 19.99% | 26.71% | 46.70% | Same as Probation (ex Managers) | | |
| 2013 | 18.51% | 50.33% | 68.84% | 18.33% | 29.32% | 47.65% | 17.85% | 29.32% | 47.17% |
| 2014 | 18.99% | 46.48% | 65.47% | 18.92% | 28.09% | 47.01% | 18.79% | 28.09% | 46.88% |
| 2015 | 15.14% | 43.58% | 58.72% | 15.31% | 26.77% | 42.08% | 17.23% | 26.77% | 44.00% |
| 2016 | 16.31% | 44.25% | 60.56% | 15.94% | 31.72% | 47.66% | Same as Probation (ex Managers) | | |
| 2017 | 17.28% | 45.57% | 62.85% | 17.42% | 32.87% | 50.29% | Same as Probation (ex Managers) | | |
| 2018 | 16.98% | 44.68% | 61.66% | 16.95% | 32.88% | 49.83% | Same as Probation (ex Managers) | | |
| 2019 | 18.02% | 50.87% | 68.89% | 17.97% | 42.55% | 60.52% | Same as Probation (ex Managers) | | |
| 2020 | 17.57% | 54.42% | 71.99% | 18.30% | 47.68% | 65.98% | Same as Probation (ex Managers) | | |
| 2021 | 18.84% | 55.10% | 73.94% | 19.40% | 50.12% | 69.52% | Same as Probation (ex Managers) | | |

Notes:

1. Contribution rates shown are those calculated in the corresponding actuarial valuation. In some cases, actual contributions were higher.
2. Beginning with the 2010 actuarial valuation, the SMCM&VCD adopted the same benefit formula and member contribution rates as Plan 1, 2 & 4 General County members (excluding cost sharing and COLA sharing on member rates).
3. Beginning with the 2011 actuarial valuation, Plan 1, 2, and 4 members of the CNA contribute 25% of the cost of COLA, in addition to current member rates and cost sharing.
4. Beginning with the 2012 actuarial valuation, Plan 1, 2, and 4 Probation members (excluding Managers) contribute 25% of the cost of COLA, in addition to current member rates and cost sharing.
5. Beginning with the 2013 actuarial valuation, Plan 1, 2, and 4 members of the UAPD contribute 25% of the cost of COLA, in addition to current member rates and cost sharing. In 2011 and 2012 these members contributed the same as County General members.
6. Beginning with the 2015 actuarial valuation, Plan 1, 2, and 4 members of the UAPD and the CNA, and Probation members (Managers) contribute 50% of the cost of COLA, in addition to current member rates and cost sharing.
7. Effective with the first pay period after June 30, 2016 all members (except those with benefits negotiated under Court Interpreters and Board of Supervisors bargaining units, and SMCM&VCD members) contribute 50% of the cost of COLA, in addition to current member rates and cost sharing. Additionally, pick-up contributions are discontinued for members with benefits negotiated under the PDA bargaining unit.
8. Effective October 2016, all members (except those with benefits negotiated under Board of Supervisors bargaining unit, and SMCM&VCD members) contribute 50% of the cost of COLA, in addition to current member rates and cost sharing. This is reflected in 2016 values.
9. Effective July 1, 2018, the Board of Supervisors contribute 50% of the cost of COLA, in addition to current member rates and cost sharing. Additionally, pick-up contributions were eliminated.

Exhibit 16
Actuarial Analysis of Financial Experience

| Summary of (Gains) / Losses | Change In Liability | | | | |
|--|---------------------|----------------|----------------|----------------|----------------|
| | 2021 | 2020 | 2019 | 2018 | 2017 |
| Unfunded Liability as of July 1 | \$ 787,737,000 | \$ 774,476,000 | \$ 619,033,000 | \$ 743,133,000 | \$ 737,570,000 |
| Expected Change in UAAL | (157,668,000) | (85,527,000) | (153,261,000) | (109,756,000) | (110,404,000) |
| Salary (Gain) / Loss | 12,064,000 | 25,190,000 | 50,472,000 | 10,401,000 | 27,685,000 |
| Retiree COLA more / (less) than expected | (25,973,000) | 18,992,000 | 21,749,000 | 12,203,000 | 7,050,000 |
| Asset (Gain) / Loss | (87,748,000) | 15,884,000 | 46,909,000 | (42,796,000) | (28,286,000) |
| Change due to Assumption Changes | 197,720,000 | 11,593,000 | 173,944,000 | 0 | 133,221,000 |
| Miscellaneous Experience | 11,976,000 | 27,129,000 | 15,630,000 | 5,848,000 | (23,703,000) |
| Unfunded Liability as of June 30 | \$ 738,108,000 | \$ 787,737,000 | \$ 774,476,000 | \$ 619,033,000 | \$ 743,133,000 |

Exhibit 17
Summary of Significant Actuarial Statistics and Measures

| | June 30th of | | Relative |
|--|--------------|--------------|----------|
| | 2021 | 2020 | Change |
| 1. Active Members | | | |
| Number of Members | 5,356 | 5,400 | (0.8)% |
| Average Age | 45.1 | 45.0 | 0.2% |
| Average Credited Service | 10.5 | 10.3 | 1.8% |
| Covered Payroll (\$thousands) | \$ 600,369 | \$ 593,295 | 1.2 % |
| Average Monthly Salary | \$ 9,439 | \$ 9,176 | 2.9 % |
| 2. Retired Members | | | |
| Number of Members | | | |
| Service Retirement | 4,421 | 4,292 | 3.0 % |
| Disability Retirement | 499 | 506 | (1.4)% |
| Beneficiaries | 672 | 656 | 2.4 % |
| Average Age | 71.5 | 71.3 | 0.3 % |
| Actual Retiree Benefits Paid (\$thousands) | \$ 259,356 | \$ 242,025 | 7.2 % |
| Average Monthly Pension | \$ 3,995 | \$ 3,865 | 3.4 % |
| 3. Number of Inactive Members | | | |
| | 1,986 | 1,882 | 5.5 % |
| 4. Assets | | | |
| Market Value of Fund (\$thousands) | \$ 5,982,086 | \$ 4,780,502 | 25.1 % |
| Return on Market Value | 23.5% | 0.9% | |
| Valuation Assets (\$thousands) | \$ 5,488,958 | \$ 4,998,316 | 9.8 % |
| Return on Valuation Assets | 8.2% | 6.2% | |
| 5. Liability Values (\$thousands) | | | |
| Actuarial Accrued Liability | \$ 6,227,066 | \$ 5,786,054 | 7.6 % |
| Unfunded Actuarial Accrued Liability | \$ 738,108 | \$ 787,738 | (6.3)% |
| Deferred Asset (Gains) / Losses | \$ (437,683) | \$ 268,302 | |
| 6. Funded Ratio | | | |
| (based on valuation assets) | 88.1% | 86.4% | 2.0 % |

**Exhibit 18
 Summary of SamCERA Membership**

| Plan | One | Two | Three | Four | Five | Six | Seven | Total |
|--|--------------|--------------|--------------|--------------|-------------|------------|--------------|---------------|
| Retirees and beneficiaries currently receiving benefits: | | | | | | | | |
| General | 1,242 | 2,188 | 122 | 1,053 | 16 | - | 20 | 4,641 |
| Safety | 262 | 256 | - | 135 | 4 | - | 2 | 659 |
| Probation | 96 | 120 | - | 75 | - | - | 1 | 292 |
| Subtotal | <u>1,600</u> | <u>2,564</u> | <u>122</u> | <u>1,263</u> | <u>20</u> | <u>-</u> | <u>23</u> | <u>5,592</u> |
| Inactive employees entitled to but not currently receiving benefits (Deferred): | | | | | | | | |
| General | 7 | 227 | 68 | 772 | 108 | - | 642 | 1,824 |
| Safety | - | 9 | - | 41 | 12 | - | 32 | 94 |
| Probation | - | 16 | - | 41 | 1 | - | 10 | 68 |
| Subtotal | <u>7</u> | <u>252</u> | <u>68</u> | <u>854</u> | <u>121</u> | <u>-</u> | <u>684</u> | <u>1,986</u> |
| Current employees: | | | | | | | | |
| Vested: | | | | | | | | |
| General | 2 | 355 | 45 | 1,639 | 190 | - | 741 | 2,972 |
| Safety | - | 22 | - | 184 | 48 | - | 89 | 343 |
| Probation | - | 5 | - | 130 | 8 | - | 21 | 164 |
| Non-Vested: | | | | | | | | |
| General | - | 1 | 4 | 8 | 92 | - | 1,566 | 1,671 |
| Safety | - | - | - | 1 | 16 | - | 160 | 177 |
| Probation | - | - | - | - | - | - | 29 | 29 |
| Subtotal | <u>2</u> | <u>383</u> | <u>49</u> | <u>1,962</u> | <u>354</u> | <u>-</u> | <u>2,606</u> | <u>5,356</u> |
| Total SamCERA Membership | 1,609 | 3,199 | 239 | 4,079 | 495 | - | 3,313 | 12,934 |

Exhibit 19
Summary of Active Member Valuation Data

| Valuation Date | | Members | Annual Salary | Average Annual Salary | % Change Average Salary |
|----------------|-----------|---------|---------------|-----------------------|-------------------------|
| 2012 | General | 4,361 | \$351,965,689 | \$80,708 | 1.9% |
| | Safety | 435 | 51,129,267 | 117,539 | 0.7% |
| | Probation | 299 | 24,554,583 | 82,122 | 1.9% |
| | Total | 5,095 | 427,649,539 | 83,935 | 1.8% |
| 2013 | General | 4,173 | 338,595,633 | 81,140 | 2.5% |
| | Safety | 452 | 52,233,510 | 115,561 | -1.0% |
| | Probation | 292 | 23,722,165 | 81,240 | 0.8% |
| | Total | 4,917 | 414,551,308 | 84,310 | 2.2% |
| 2014 | General | 4,272 | 352,918,558 | 82,612 | 1.8% |
| | Safety | 452 | 52,974,475 | 117,200 | 1.4% |
| | Probation | 280 | 23,514,343 | 83,980 | 3.4% |
| | Total | 5,004 | 429,407,375 | 85,813 | 1.8% |
| 2015 | General | 4,334 | 382,303,295 | 88,210 | 6.8% |
| | Safety | 479 | 55,917,864 | 116,739 | -0.4% |
| | Probation | 282 | 24,418,977 | 86,592 | 3.1% |
| | Total | 5,095 | 462,640,136 | 90,803 | 5.8% |
| 2016 | General | 4,421 | 408,191,518 | 92,330 | 4.7% |
| | Safety | 495 | 61,564,028 | 124,372 | 6.5% |
| | Probation | 271 | 24,034,819 | 88,689 | 2.4% |
| | Total | 5,187 | 493,790,365 | 95,198 | 4.8% |
| 2017 | General | 4,560 | 430,613,886 | 94,433 | 2.3% |
| | Safety | 503 | 65,105,116 | 129,434 | 4.1% |
| | Probation | 274 | 26,503,623 | 96,729 | 9.1% |
| | Total | 5,337 | 522,222,625 | 97,849 | 2.8% |
| 2018 | General | 4,603 | 448,931,595 | 97,530 | 3.3% |
| | Safety | 508 | 66,799,289 | 131,495 | 1.6% |
| | Probation | 256 | 25,741,800 | 100,554 | 4.0% |
| | Total | 5,367 | 541,472,684 | 100,889 | 3.1% |
| 2019 | General | 4,610 | 476,944,186 | 103,459 | 6.1% |
| | Safety | 530 | 70,890,519 | 133,756 | 1.7% |
| | Probation | 237 | 24,680,991 | 104,139 | 3.6% |
| | Total | 5,377 | 572,515,696 | 106,475 | 5.5% |
| 2020 | General | 4,655 | 496,992,584 | 106,765 | 3.2% |
| | Safety | 522 | 72,724,015 | 139,318 | 4.2% |
| | Probation | 223 | 24,856,263 | 111,463 | 7.0% |
| | Total | 5,400 | 594,572,862 | 110,106 | 3.4% |
| 2021 | General | 4,643 | 511,069,950 | 110,073 | 3.1% |
| | Safety | 520 | 72,829,550 | 140,057 | 0.5% |
| | Probation | 193 | 22,777,092 | 118,016 | 5.9% |
| | Total | 5,356 | 606,676,591 | 113,270 | 2.9% |

Exhibit 20
Summary of Demographic Activity of Retirees and Beneficiaries

| Year Ended | Added to Rolls ⁽¹⁾ | | Removed from Rolls | | Rolls end of year | | % Increase in Payroll | Average Monthly Allowances |
|---------------|-------------------------------|--------------------------------------|--------------------|--------------------------------------|-------------------|--|--------------------------|----------------------------------|
| | No. | Annual Allowances in Thousands | No. | Annual Allowances in Thousands | No. | Total Retiree Payroll in Thousands | | |
| June 30, 2012 | 218 | \$ 14,379 | 90 | \$ 4,209 | 4,275 | \$ 144,845 | 7.6 % | \$ 2,823 |
| June 30, 2013 | 186 | 13,024 | 63 | 3,095 | 4,398 | 154,774 | 6.9 | 2,933 |
| June 30, 2014 | 203 | 12,474 | 83 | 3,479 | 4,518 | 163,769 | 5.8 | 3,021 |
| June 30, 2015 | 213 | 16,290 | 93 | 4,179 | 4,638 | 175,880 | 7.4 | 3,160 |
| June 30, 2016 | 233 | 15,347 | 123 | 5,030 | 4,748 | 186,197 | 5.9 | 3,268 |
| June 30, 2017 | 310 | 16,738 | 102 | 3,867 | 4,956 | 199,068 | 6.9 | 3,347 |
| June 30, 2018 | 315 | 21,360 | 162 | 5,242 | 5,109 | 215,186 | 8.1 | 3,510 |
| June 30, 2019 | 306 | 24,547 | 190 | 5,769 | 5,225 | 233,964 | 8.7 | 3,731 |
| June 30, 2020 | 362 | 23,862 | 133 | 4,862 | 5,454 | 252,963 | 8.1 | 3,865 |
| June 30, 2021 | 270 | 19,466 | 132 | 4,327 | 5,592 | 268,102 | 6.0 | 3,995 |

1. Amount added to rolls includes COLAs granted in year to continuing retirees and beneficiaries.

Exhibit 21
Average Salary and Active Counts by Employer

| | 2021 | 2020 | 2019 | 2018 | 2017 |
|----------------------|----------|----------|---------|----------|----------|
| General Plan 1 | \$18,022 | \$11,102 | \$9,793 | \$10,121 | \$11,305 |
| General Plan 2 | 10,957 | 10,665 | 10,088 | 9,526 | 8,994 |
| General Plan 3 | 8,623 | 8,221 | 7,872 | 7,462 | 7,484 |
| General Plan 4 | 10,087 | 9,671 | 9,302 | 8,534 | 8,134 |
| General Plan 5 | 11,092 | 10,635 | 10,180 | 9,672 | 8,980 |
| General Plan 7 | 8,014 | 7,726 | 7,395 | 6,974 | 6,737 |
| General Plan Total | 9,173 | 8,897 | 8,622 | 8,128 | 7,869 |
| Safety Plan 1 | 0 | 0 | 0 | 0 | 14,434 |
| Safety Plan 2 | 15,162 | 15,125 | 14,197 | 13,607 | 13,528 |
| Safety Plan 4 | 13,494 | 13,204 | 12,391 | 11,894 | 11,381 |
| Safety Plan 5 | 12,619 | 12,367 | 11,708 | 11,349 | 10,544 |
| Safety Plan 6 | 0 | 0 | 0 | 0 | 0 |
| Safety Plan 7 | 9,765 | 9,581 | 9,030 | 8,747 | 8,356 |
| Safety Plan Total | 11,671 | 11,610 | 11,146 | 10,958 | 10,786 |
| Probation Plan 1 | 0 | 0 | 0 | 0 | 7,722 |
| Probation Plan 2 | 10,641 | 10,174 | 9,908 | 9,061 | 9,069 |
| Probation Plan 4 | 10,359 | 9,827 | 9,103 | 8,714 | 8,270 |
| Probation Plan 5 | 9,911 | 9,343 | 8,587 | 8,219 | 7,612 |
| Probation Plan 6 | 0 | 0 | 0 | 0 | 7,347 |
| Probation Plan 7 | 8,378 | 7,598 | 6,973 | 6,676 | 6,121 |
| Probation Plan Total | 9,835 | 9,289 | 8,678 | 8,379 | 8,061 |
| Grand Total | 9,439 | 9,176 | 8,873 | 8,407 | 8,154 |

Participating Employers and Active Members

| | 2021 | 2020 | 2019 | 2018 | 2017 |
|--|-------|-------|-------|-------|-------|
| <i>County of San Mateo</i> | | | | | |
| General Members | 4,375 | 4,379 | 4,350 | 4,343 | 4,303 |
| Safety Members | 520 | 522 | 530 | 508 | 503 |
| Probation Members | 193 | 223 | 237 | 256 | 274 |
| Total | 5,088 | 5,124 | 5,117 | 5,107 | 5,080 |
| <i>San Mateo County Mosquito and Vector Control District</i> | | | | | |
| General Members Total | 19 | 20 | 20 | 21 | 20 |
| <i>Courts</i> | | | | | |
| General Members Total | 249 | 256 | 240 | 239 | 237 |
| Total Active Membership | 5,356 | 5,400 | 5,377 | 5,367 | 5,337 |

8. Risk Discussion

Overview

The results of any actuarial valuation are based on one set of reasonable assumptions. Although we believe the current assumptions provide a reasonable estimate of future expectations, it is almost certain that future experience will differ from the assumptions to some extent. It is therefore important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the Plan, or of the Plan's members.

Actuarial Standard of Practice No. 51 (ASOP 51) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

- Identify risks that may be significant to the Plan.
- Assess the risks identified as significant to the Plan. The assessment does not need to include numerical calculations.
- Disclose plan maturity measures and historical information that are significant to understanding the Plan's risks.

ASOP 51 states that if in the actuary's professional judgment, a more detailed assessment would be significantly beneficial in helping the individuals responsible for the Plan to understand the risks identified by the actuary, then the actuary should recommend that such an assessment be performed.

In addition, the California Actuarial Advisory Panel (CAAP) has adopted a set of model disclosure elements for actuarial valuation reports of public retirement systems in California. Most of these elements are included in other areas of this report. The remaining CAAP-recommended disclosures are as follows:

| Disclosure Element | Description | Value |
|----------------------------|---|----------------|
| Gross Normal Cost \$ | Normal Cost allocated to valuation year, paid at mid-year. | \$ 143,082,873 |
| Statutory Contribution \$ | Expected Statutory Contribution paid at mid-year. | \$ 228,135,047 |
| Asset Smoothing Ratio | Actuarial Value of Assets divided by Market Value of Assets | 91.8% |
| Asset Volatility Ratio | Market Value of Assets divided by Payroll | 10.1 |
| Liability Volatility Ratio | Actuarial Accrued Liability divided by Payroll | 10.5 |

This Section 8 uses the framework of ASOP 51 and the Asset and Liability Volatility Ratios shown above to communicate important information about: significant risks to the Plan, the Plan's maturity, and relevant historical plan data.

Factors Affecting Future Results

There are a number of factors that affect future valuation results. To the extent actual experience for these factors varies from the assumptions, this will likely cause either increases or decreases in the plan's future funding level and employer Statutory Contribution Rates (SCR). The factors that can have the most significant impact on SamCERA's valuation results are:

- Investment returns

To the extent that actual investment returns differ from the assumed investment return, the Plan's future assets, SCR, and funded status may differ significantly from those presented in this valuation. Additional discussion of the impact of variance of investment returns is included below.

- Compensation increases

Individual member retirement benefits are linked to that member's compensation. As such, assumptions need to be made as to a member's future compensation increases. Higher future compensation increases will generally result in larger retirement benefits, liabilities, SCRs, and a lower funded status. Conversely, lower compensation increases than assumed will generally result in smaller retirement benefits, liabilities, SCRs, and a higher funded status.

- Payroll variation

In the valuation, an assumption is made for the overall rate of payroll growth of SamCERA from year-to-year. To the extent that the overall rate of payroll growth is greater than assumed, the SCR may decrease since the Unfunded Actuarial Accrued Liability (UAAL) will be amortized over a larger payroll base. The opposite will occur if the overall rate of payroll growth is lower than assumed.

This effect often will offset somewhat with individual compensation increases, discussed above.

- Longevity and other demographic risks

The liabilities reported in this valuation have been calculated by assuming that members will follow specific patterns of demographic experience (e.g. mortality, retirement, termination, disability) as described in Appendix A. To the extent that actual demographic is different than are assumed to occur, future liabilities, SCRs, and funded status may differ from that presented in this valuation.

All of these assumptions are reviewed in detail during the triennial Investigation of Experience study, and are also reviewed annually during the valuation process. Changes in assumptions are generally recommended as part of the triennial Investigation of Experience if actual experience has been materially different than assumed or forecasts have been changed significantly. Additionally, changes may be recommended and discussed at each valuation if they are deemed to be appropriate at that time.

Asset and Liability Volatility Ratios

Asset and Liability Volatility Ratios are a measure of the level of assets (or liabilities) to payroll. In general, a higher ratio means that the SCR is more sensitive to changes in levels of assets or liabilities. Asset and Liability Volatility Ratios are shown in Exhibit 22.

As shown above, in the current valuation SamCERA has an Asset Volatility Ratio of 10.1 and a Liability Volatility Ratio of 10.5.

Discussion of Investment Return Risk

Of these factors, we believe the factor with the greatest potential risk to impact future valuation results for SamCERA is future investment returns. For example, if actual returns fall short of the current assumption of 6.25% per year, this

will cause an increase in the SCR and a decrease in the Funded Ratio, all other things being equal. Conversely, if actual returns exceed the current assumption of 6.25% per year, this will cause a decrease in the SCR and an increase in the Funded Ratio.

The magnitude of the increase or decrease in the SCR is affected by the maturity level, and specifically the asset volatility ratio. SamCERA has accumulated a significant amount of assets relative to its payroll and by several measures is considered a mature plan. Accumulating assets to pay for future benefit obligations is responsible funding, but it does mean changes in the investment markets can have a significant impact on the SCR.

In terms of the SCR, for SamCERA with an 10.1 asset volatility ratio, a 10% investment gain or loss relative to the assumed 6.25% investment return assumption (that is, an investment return of -3.75%, or of 16.25% investment return translates to a 9.3% of pay increase (or decrease) in the SCR, all other things being equal. Since SamCERA uses actuarial smoothing, the increase would not be immediate, but would occur gradually over five years and could potentially be offset, or further increased, by future investment gains or losses or other factors.

In terms of the Funded Ratio, this level of volatility would result in an increase or decrease of approximately 10.2% in the Funded Ratio (on a market-value basis) from the current Funded Ratio of 88.1%.

Over the last several years, the County has been able to reduce the year-to-year variation in its actual contribution rate by contributing at a rate that is higher than the SCR.

Historical Variation in Statutory Contribution Rate

One way to assess future risks is to look at historical measurements. The following graph shows how the SCR has varied over the last 20 years under various investment return and assumption environments.

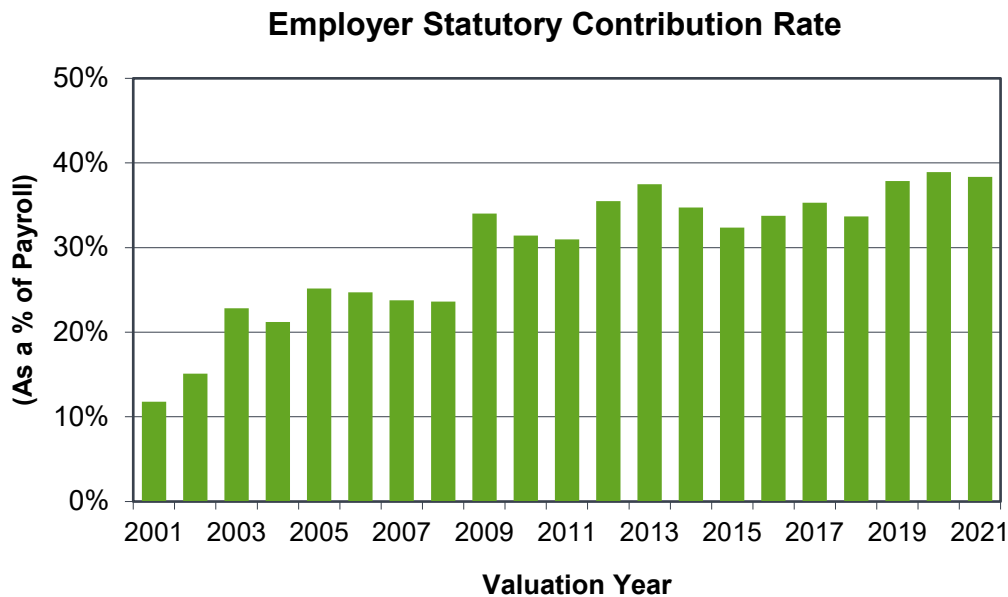
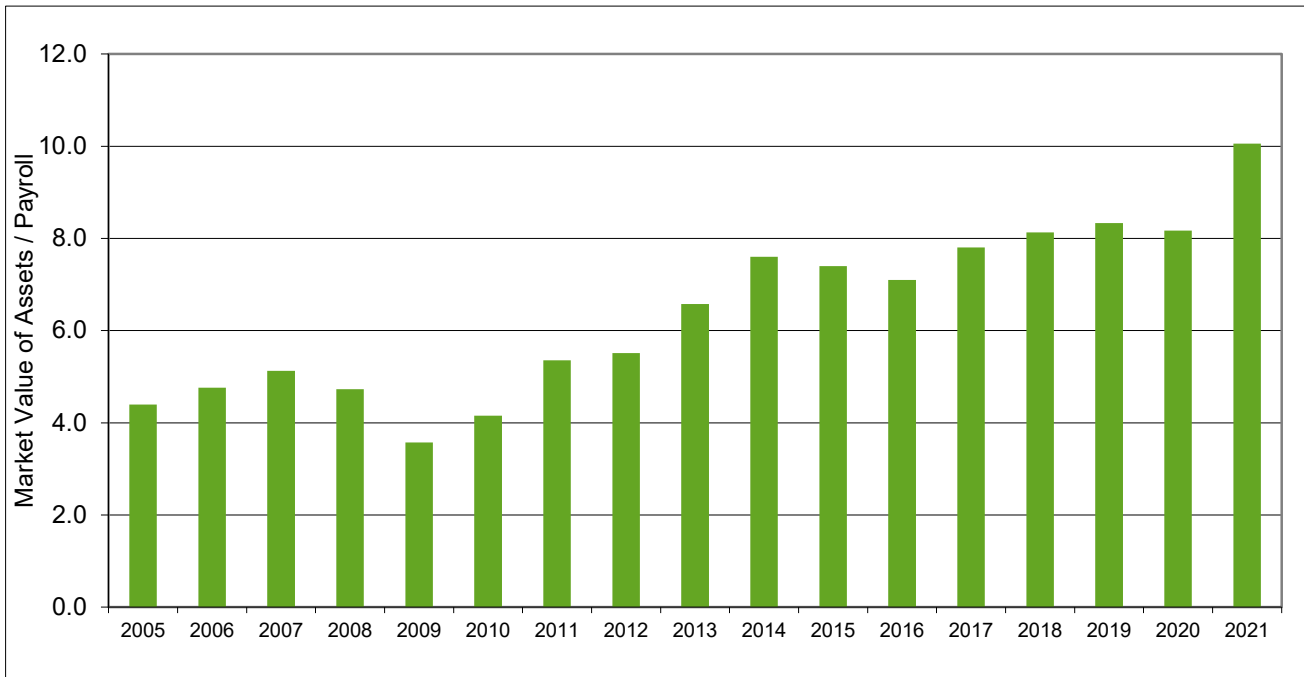
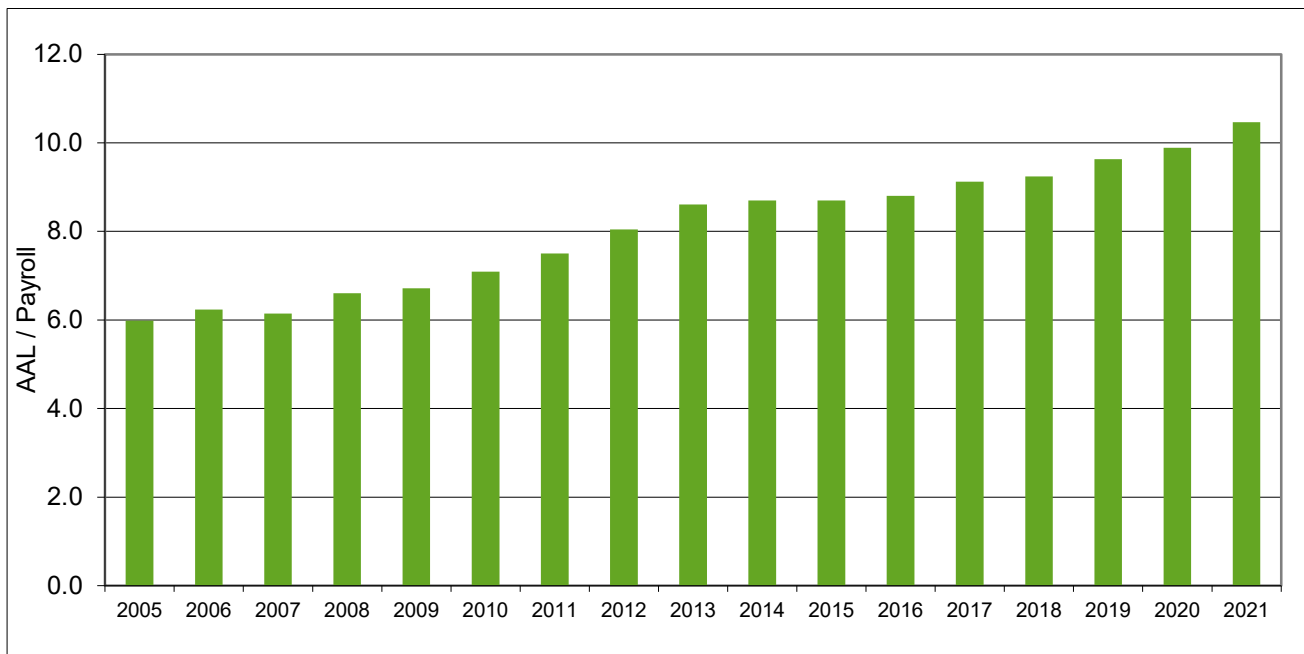


Exhibit 22
Asset and Liability Volatility Ratios

Asset Volatility Ratios



Liability Volatility Ratios



Appendix A Actuarial Procedures and Assumptions

The actuarial procedures and assumptions to be used in the June 30, 2021 valuation are described in this section. The assumptions were reviewed and changed effective June 30, 2020 as a result of the 2020 Investigation of Experience Study. At its meeting on May 25, 2021, the Board adopted an investment return assumption of 6.25% and reaffirmed all other assumptions.

The actuarial assumptions used in the valuations are intended to estimate the future experience of the members of SamCERA and of SamCERA itself in areas that affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of SamCERA's benefits.

Exhibit A-1 summarizes the assumptions. The mortality rates are taken from the sources listed.

Exhibits A-2 and A-3 show how members are expected to leave retired status due to death.

Exhibit A-4 presents the probability of refund of contributions upon termination of employment while vested.

Exhibit A-5 presents the expected annual percentage increase in salaries.

Exhibits A-6 to A-11 present the probabilities a member will leave employment for various reasons.

NOTE: Assumptions for Probation members are assumed to be the same as Safety members unless otherwise noted.

Actuarial Cost Method

The actuarial valuation is prepared using the entry age actuarial cost method (CERL 31453.5). Under the principles of this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit (until maximum retirement age).

For members who transferred from Plan 3 to another General plan, entry age is based on the transfer date.

The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the sum of (a) the actuarial value of the assets, and (b) the actuarial present value of future normal costs is called the Unfunded Actuarial Accrued Liability (UAAL). The UAAL as of June 30, 2008 is amortized as a level percentage of the projected salaries of present and future members of SamCERA over the remaining period from the valuation date to June 30, 2023. This is commonly referred to as a "closed amortization method". Actuarial gains and losses after the June 30, 2008 valuation are amortized over new closed 15-year periods from their respective valuation dates.

The SCA (CSCA for the County UAAL and DSCA for the SMCM&VCD) offset amounts are calculated using a similar closed amortization method to the UAAL rate described above. However, effective with the June 30, 2018 valuation, the DSCA balance is amortized over five years. All layers are re-amortized as of June 30, 2018, and any future layers are amortized over new five-year periods. The total DSCA offset amount in a given year is limited to the SMCM&VCD UAAL rate, and the DSCA will be adjusted to reflect the actual offset (after reflecting the limitation, if any).

Records and Data

The data used in this valuation consist of financial information and the age, service, and income records for active and inactive members and their survivors. All of the data were supplied by SamCERA and are accepted for valuation purposes without audit.

Replacement of Terminated Members

The ages and relative salaries at entry of future members are assumed to follow a new entrant distribution based on the pattern of current members. Under this assumption, the normal cost rates for active members will remain fairly stable in future years unless there are changes in the governing law, the actuarial assumptions or the pattern of the new entrants.

Growth in Membership

For benefit determination purposes, no growth in the membership of SamCERA is assumed. For funding purposes, if amortization is required, the total payroll of covered members is assumed to grow due to the combined effects of future wage increases of current active members and the replacement of the current active members by new employees. No growth in the total number of active members is assumed.

Internal Revenue Code Section 415 Limit

The Internal Revenue Code Section 415 maximum benefit limitations are not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement, except for Plan 7 members which cannot receive benefits in excess of the 415 limit. For Plan 7 members, the benefit levels, combined with the limited compensation are low enough that it is unlikely the 415 limit would apply.

Internal Revenue Code Section 401(a)(17)

The Internal Revenue Code Section 401(a)(17) maximum compensation limitation is not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

Government Code Section 7522.10

The maximum compensation limit under Government Code 7522.10 is reflected in the valuation for funding purposes. Any limitation is also reflected in a member's benefit after retirement.

Employer Contributions

The statutory employer contribution rate is set by the Retirement Board based on actuarial valuations.

Member Contributions

The member contribution rates vary by entry age (except for Plan 7) and are described in the law. Code references are shown in Appendix B of the valuation report. The methods and assumptions used are detailed later in this section.

The individual member rates by entry age, plan, and class are illustrated in Appendix D of the valuation report.

Valuation of Assets

The assets are valued using a modified five-year smoothed method based on the difference between the expected market value and the actual market value of the assets as of the end of each six-month period (12/31 and 6/30). The expected market value is the prior period's market value increased with the net increase in the cash flow of funds, all increased with interest during the period at the expected investment return rate assumption.

Effective June 30, 2018 all deferred gains and losses are combined into a single amount to be recognized over a five-year (10 six-month) period. Beginning with the six-month period immediately following the June 30, 2018 valuation, offsetting of current period gains or losses against prior period gains or losses will occur, as follows. First, to the extent there is a loss for the period, it shall be used to offset any unrecognized gains from prior periods in the order of oldest to most recent. Any remaining loss for the period is recognized over a five-year (10 six-month) period. Similarly, any gain for the period shall be offset against unrecognized losses from prior periods.

The gross preliminary Actuarial Value of Assets is equal to the Market Value of Assets less any of the remaining unrecognized differences. A 20% corridor is then applied, so that the gross Actuarial Value of Assets cannot be greater than 120% of the Market Value of Assets nor less than 80% of the Market Value of Assets. The Valuation Assets used in the calculation of the SCR are equal to the gross Actuarial Value of Assets less any non-valuation reserves.

Investment Earnings and Expenses

The future investment earnings of the assets of SamCERA are assumed to accrue at an annual rate of 6.25% compounded annually, net of both investment and administrative expenses. This rate was adopted effective June 30, 2021.

CPI Inflation

The CPI inflation assumption is used in the determination of assumptions for individual salary increases, overall wage growth, and postretirement benefit increases. The CPI inflation assumption is 2.50% per year.

Postretirement Benefit Increases

Postretirement increases are described in Appendix B. Assumed increases for valuation purposes are:

| | General | Safety | Probation |
|-------------------|---------|--------|-----------|
| Plan 1 | 2.50% | 2.50% | 2.50% |
| Plan 2 | 2.40% | 2.40% | 2.40% |
| Plan 3 | 0.00% | N/A | N/A |
| Plans 4, 5, and 7 | 1.90% | 1.90% | 1.90% |
| Plan 6 | N/A | 1.90% | 1.90% |

Assumed Plan 1 General and Safety COLAs are set at the CPI inflation assumption of 2.50% per year. Since Plan 2 does not have a COLA bank, it is expected that increases will be limited in some years. This reduces the overall expected rate and is reflected in a lower assumed increase.

Interest on Member Contributions

The annual credited interest rate on member contributions is assumed to be 6.25% compounded semi-annually (3.125% per six-month period) for an annualized rate of 6.35%. This rate was adopted effective June 30, 2021 for valuation purposes; the change in member crediting is effective July 1, 2022.

Individual Salary Increases

Salaries increases of individual members are assumed to include the following components: (1) a general wage growth assumption that applies to all members, and (2) an individual-specific increase due to promotion and longevity based on years of service.

The rates of annual salary increase due to promotion and longevity assumed for the purpose of the valuation are illustrated in Exhibit A-5. The general wage growth assumption is 3.00% per year. This includes a 2.50% CPI component, and a 0.50% productivity (or "real wage growth") component.

Increases are assumed to occur mid-year. The mid-year timing reflects that salary increases occur throughout the year, or on average mid-year.

SamCERA supplied two types of compensation data:

- 1) pensionable pay from the most recent bi-weekly pay period; and
- 2) pensionable pay from the prior year.

We annualized bi-weekly pay (by multiplying by 26) and then used the greater of the two amounts.

Growth in Payroll

The overall pensionable payroll of SamCERA active members is assumed to increase at 3.00% per annum.

PEPRA Compensation Limit

The PEPRA compensation limit is assumed to increase in line with the Consumer Prices Index for All Urban Consumers (CPI-U) U.S City Average. We assume that CPI-U will increase at the rate of 2.25% per year.

This assumption was adopted effective June 30, 2020.

Social Security Wage Base

Plan 3 members have their benefits offset by an assumed Social Security Benefit. For valuation funding purposes, we need to project the Social Security Benefit. We assume the current Social Security provisions will continue and the annual Wage Base will increase at the rate of 2.75% per year, based on the CPI-U and real wage growth assumptions. Note, statutory provisions describe how to compute a member's offset amount at time of termination or retirement.

This assumption was adopted effective June 30, 2020.

Retirement

Retirement rates vary by age and are shown by plan in Exhibits A-6 through A-11.

All General members who attain or who have attained age 75 and all Safety members who have attained age 65 are assumed to retire immediately. Additionally, if a member's benefit is equal to or greater than the 100% of compensation limit, they are also assumed to retire immediately. For purposes of the valuation, immediate retirement is assumed at:

- Age 62 with 38 years of service (General, Plans 1, 2, and 4)
- Age 65 with 41 years of service (General Plan 5)
- Age 67 with 40 years of service (General Plan 7)
- Age 50 with 33 years of service (Safety & Probation, Plans 1, 2, and 4)
- Age 55 with 33 years of service (Safety & Probation Plan 5)
- Age 55 with 38 years of service (Safety & Probation Plan 6)
- Age 57 with 38 years of service (Safety & Probation Plan 7)

Deferred vested members are assumed to retire at the later of current age and:

- Age 58 (General Members, except Plan 3 and Plan 7)
- Age 65 (General Plan 3 Members)
- Age 62 (General Plan 7 Members)
- Age 50 (Probation and Safety members)

The retirement rates were adopted effective June 30, 2020.

Disability

Rates of disability are illustrated in Exhibits A-6 through A-11.

The disability rates were adopted effective June 30, 2020.

Active Member Mortality

Rates of mortality from active service are illustrated in Exhibits A-6 through A-11. The mortality rates are based on the following mortality tables and mortality improvement scale.

| Class | Gender | |
|---------|--------|----------------------------------|
| General | Male | PubG-2010 (100%) Employee Male |
| General | Female | PubG-2010 (100%) Employee Female |
| Safety | Male | PubS-2010 (100%) Employee Male |
| Safety | Female | PubS-2010 (100%) Employee Female |

All mortality rates are projected with the MP-2014 Ultimate Projection Scale.

Safety members have an additional service-connected mortality rate of 0.01% per year.

These rates were adopted effective June 30, 2020.

Other Terminations of Employment

Exhibits A-6 to A-11 show, for all ages, the rates assumed for future termination from active service other than for death, disability or retirement. These rates do not apply to members eligible for service retirement.

Terminating employees may withdraw their contributions immediately upon termination of employment and forfeit the right to further benefits, or they may leave their contributions on deposit with SamCERA. Former contributing members whose contributions are on deposit may later elect to receive a refund, may return to work or may remain inactive until becoming eligible to receive a retirement benefit under either SamCERA or a reciprocal retirement system. All terminating members who are not eligible for vested benefits are assumed to withdraw their contributions immediately.

The rates of termination were adopted effective June 30, 2020.

Probability of Refund

Exhibit A-4 shows the assumed probabilities that vested members will withdraw their contributions and elect a refund immediately upon termination and the probability the remaining members will elect a deferred vested benefit. For Plan 3, 100% of members are assumed to elect a vested benefit. All non-vested members are assumed to elect a refund and withdraw their contributions.

The probability of refund assumptions were adopted effective June 30, 2020.

Probability of Eligible Survivor

For members not currently in pay status, 75% of all males and 55% of all females are assumed to have eligible survivors (spouses or qualified domestic partners). Survivors are assumed to be three years younger than male members and two years older than female members. Survivors are assumed to be of the opposite sex as the member. There is no explicit assumption for children's benefits. We believe the survivor benefits based on this assumption are sufficient to cover children's benefits as they occur.

PostRetirement Mortality – Other Than Disabled Members

Rates of mortality for retired members, except for those retired on account of disability, are illustrated in Exhibit A-2. Beneficiary mortality is assumed to be the same as for healthy members. Beneficiaries are assumed to be of the opposite sex and have the same mortality as General members. The mortality rates are based on the following mortality tables and mortality improvement scale.

| Class | Gender | |
|---------|--------|---|
| General | Male | PubG-2010 (100%) Healthy Retiree Male |
| General | Female | PubG-2010 (100%) Healthy Retiree Female |
| Safety | Male | PubS-2010 (100%) Healthy Retiree Male |
| Safety | Female | PubS-2010 (100%) Healthy Retiree Female |

All mortality rates are projected with the MP-2014 Ultimate Projection Scale.

The rates of retired mortality were adopted effective June 30, 2020.

PostRetirement Mortality – Disabled Members

Rates of mortality for members retired on account of disability are illustrated in Exhibit A-3. The mortality rates are based on the following mortality tables and mortality improvement scale.

| Class | Gender | |
|---------|--------|---|
| General | Male | PubG-2010 (100%*) Disabled Retiree Male |
| General | Female | PubG-2010 (100%*) Disabled Retiree Female |
| Safety | Male | PubS-2010 (100%) Disabled Retiree Male |
| Safety | Female | PubS-2010 (100%) Disabled Retiree Female |

**Disabled General mortality rates are 100% of the standard table at ages 85 and above; 60% at ages 65 and below; and graded from 60% to 100% at 2% per year between age 65 and age 85.*

All mortality rates are projected with the MP-2014 Ultimate Projection Scale.

The rates of mortality were adopted effective June 30, 2020.

Deferred Member Mortality

Rates of mortality for members after termination from employment and before retirement are the same as PostRetirement Mortality – Other Than Disabled Members.

Valuation of Current Deferred Members

Current non-vested members who have terminated active employment are assumed to take a refund of their contributions at the valuation date.

Current vested members who have terminated active employment are assumed to keep their accounts with SamCERA and retire as specified in this section. An adjustment for these individuals such that the greater of the Final Average Compensation and annualized bi-weekly pay limited to two times the Final Average Compensation is used.

Reciprocal Benefits

30% of future deferred vested General members and 40% of future deferred vested Safety members are assumed to immediately join a reciprocal agency. For future reciprocal members, salaries are assumed to

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increase at the same rate as if they had remained in active employment with SamCERA. For current deferred vested members, eligibility is based on the data supplied by SamCERA and future salaries are assumed to increase at 3.52% annually for General members and 3.88% annually for Safety members.

This assumption was adopted effective June 30, 2020.

Part-Time Employees

For valuation purposes, part-time employees are assumed to continue working the same number of hours in the future.

Adjustment to Plan 3 Normal Cost Rate

Plan 3 members are eligible to transfer to Plans 2, 4 or 5 (depending on entry date) after five years of service. We have adjusted the Plan 3 Normal Cost to account for this. The adjustment is equal to 50% of the difference between the unadjusted Plan 3 Normal Cost rate and the Plan 4 Normal Cost rate.

Member Contribution Rate Assumptions

In general, for all plans except Plan 3 and Plan 7, the member rate is determined by the present value of the future benefit (PVFB) payable at retirement age, divided by the present value of all future salaries payable between age at entry and retirement age. For these purposes, per the CERL:

- A. The annuity factor used for General members is based on a 33% / 67% blend of the male and female annuity factors using current valuation assumptions and no COLA. For Safety members it is based on a 75% / 25% blend of the male and female annuity factors using current valuation assumptions. The valuation mortality tables use a static projection to 2042.
- B. The annuity factor used in determining the present value of future benefits (PVFB) at entry age is equal to the life only annuity factor at 6.25%.
- C. Projected Final Average Compensation is based on annual salary in the year prior to the assumed retirement age (Plans 1 and 2), or average annual salary in the three years prior to the assumed retirement date (Plans 4, 5 and 6).
- D. Member Rates are assumed to increase with entry age. There are a few exceptions at the higher entry ages where the calculated rate is less than the previous entry age. In these cases the member contribution rate is adjusted so that it is no less than the value for the previous entry age.

Member rates for all Plans 1, 2, 4, 5, and 6 members are loaded to account for a 50% COLA share. The COLA loads are applied to the otherwise applicable basic member rates prior to the addition of any cost-sharing rates.

For Plan 7, the member contribution rate is equal to one-half of the aggregate Normal Cost of the respective plan.

Exhibit A-1
Summary of Valuation Assumptions as of June 30, 2021

Economic assumptions

| | |
|--------------------------------|-------|
| A. General wage increases | 3.00% |
| B. Investment earnings | 6.25% |
| C. Growth in active membership | 0.00% |
| D. CPI-U inflation assumption | 2.25% |
| E. CPI inflation assumption | 2.50% |

Demographic assumptions

| | |
|---|----------------------|
| A. Salary increases due to service | Exhibit A-5 |
| B. Retirement from active service | Exhibits A-6 to A-11 |
| C. Disability from active service | Exhibits A-6 to A-11 |
| D. Mortality for active members prior to termination | Exhibits A-6 to A-11 |
| E. Other terminations of employment | Exhibits A-6 to A-11 |
| F. Probability of refund of contributions upon vested termination | Exhibit A-4 |
| G. Mortality for active members after termination and service retired members | Exhibit A-2 |
| H. Mortality for members retired for disability | Exhibit A-3 |
| I. Mortality for beneficiaries | Exhibit A-2 |

Exhibit A-2
Mortality for Members Retired for Service ⁽¹⁾

| <u>Age</u> | <u>General Male</u> | <u>General Female</u> | <u>Safety Male</u> | <u>Safety Female</u> |
|------------|---------------------|-----------------------|--------------------|----------------------|
| 20 | 0.074% | 0.035% | 0.061% | 0.021% |
| 25 | 0.056% | 0.024% | 0.055% | 0.026% |
| 30 | 0.072% | 0.040% | 0.061% | 0.035% |
| 35 | 0.094% | 0.062% | 0.070% | 0.047% |
| 40 | 0.132% | 0.096% | 0.088% | 0.064% |
| 45 | 0.196% | 0.150% | 0.122% | 0.087% |
| 50 | 0.298% | 0.222% | 0.192% | 0.149% |
| 55 | 0.431% | 0.286% | 0.306% | 0.258% |
| 60 | 0.615% | 0.384% | 0.508% | 0.446% |
| 65 | 0.913% | 0.613% | 0.881% | 0.770% |
| 70 | 1.526% | 1.063% | 1.568% | 1.329% |
| 75 | 2.671% | 1.883% | 2.826% | 2.295% |
| 80 | 4.774% | 3.360% | 5.103% | 3.962% |
| 85 | 8.591% | 6.205% | 9.135% | 6.842% |
| 90 | 14.672% | 11.487% | 15.860% | 11.815% |

Annual Projected Mortality Improvement

| <u>Age</u> | <u>All Groups</u> |
|------------|-------------------|
| 65 & Less | 1.000% |
| 70 | 1.000% |
| 75 | 1.000% |
| 80 | 1.000% |
| 85 | 1.000% |
| 90 | 0.930% |
| 95 | 0.850% |
| 100 | 0.640% |
| 105 | 0.430% |
| 110 | 0.210% |
| 115 | 0.000% |

1. Mortality rates are those applicable for the fiscal year beginning in 2010. Annual projected improvements are assumed in the following years under the schedule shown. For example, the annual mortality rate for an 85-year old General male in fiscal year beginning in 2021 is 7.692% calculated as follows:

$$\begin{aligned}
 \text{Age 85 rate in 2021} &= \text{Age 85 rate in 2010 with 11 years improvement} \\
 &= 8.591\% \times (100.0\% - 1.0\%)^{(2021-2010)} \\
 &= 7.692\%
 \end{aligned}$$

Exhibit A-3
Mortality for Members Retired for Disability

| Age | General Male | General Female | Safety Male | Safety Female |
|------------|-------------------------|---------------------------|------------------------|--------------------------|
| 20 | 0.247% | 0.140% | 0.121% | 0.053% |
| 25 | 0.167% | 0.098% | 0.110% | 0.065% |
| 30 | 0.212% | 0.154% | 0.122% | 0.089% |
| 35 | 0.275% | 0.241% | 0.138% | 0.121% |
| 40 | 0.387% | 0.377% | 0.174% | 0.164% |
| 45 | 0.604% | 0.591% | 0.242% | 0.223% |
| 50 | 0.963% | 0.890% | 0.353% | 0.304% |
| 55 | 1.268% | 1.045% | 0.480% | 0.461% |
| 60 | 1.502% | 1.174% | 0.735% | 0.699% |
| 65 | 1.826% | 1.354% | 1.186% | 1.061% |
| 70 | 2.731% | 2.003% | 1.907% | 1.610% |
| 75 | 4.154% | 3.202% | 3.241% | 2.443% |
| 80 | 6.613% | 5.406% | 5.598% | 3.962% |
| 85 | 10.815% | 9.331% | 9.213% | 6.842% |
| 90 | 16.253% | 13.665% | 15.860% | 11.815% |

Exhibit A-4
Immediate Refund of Contributions upon Termination of Employment
(Excludes Plan 3)

| Years of Service | General | Safety |
|-----------------------------|----------------|---------------|
| 0 | 100% | 100% |
| 1 | 100% | 100% |
| 2 | 100% | 100% |
| 3 | 100% | 100% |
| 4 | 100% | 100% |
| 5 | 26% | 26% |
| 6 | 26% | 26% |
| 7 | 26% | 26% |
| 8 | 26% | 26% |
| 9 | 26% | 25% |
| 10 | 25% | 24% |
| 11 | 25% | 23% |
| 12 | 24% | 22% |
| 13 | 23% | 20% |
| 14 | 23% | 18% |
| 15 | 23% | 16% |
| 16 | 22% | 14% |
| 17 | 21% | 11% |
| 18 | 19% | 8% |
| 19 | 17% | 5% |
| 20 | 15% | 0% |
| 21 | 14% | 0% |
| 22 | 11% | 0% |
| 23 | 9% | 0% |
| 24 | 7% | 0% |
| 25 | 5% | 0% |
| 26 | 2% | 0% |
| 27 | 0% | 0% |
| 28 | 0% | 0% |
| 29 | 0% | 0% |
| 30 & Up | 0% | 0% |

**Exhibit A-5
 Annual Increase in Salary**

| Years of Service | Due to Promotion and Longevity | | Total Annual Increase ⁽¹⁾ | |
|------------------|--------------------------------|--------|--------------------------------------|--------|
| | General | Safety | General | Safety |
| <1 | 6.50% | 6.00% | 9.70% | 9.18% |
| 1 | 4.75% | 4.75% | 7.89% | 7.89% |
| 2 | 3.50% | 3.50% | 6.61% | 6.61% |
| 3 | 2.75% | 2.75% | 5.83% | 5.83% |
| 4 | 2.00% | 2.10% | 5.06% | 5.16% |
| 5 | 1.75% | 1.70% | 4.80% | 4.75% |
| 6 | 1.50% | 1.40% | 4.55% | 4.44% |
| 7 | 1.25% | 1.20% | 4.29% | 4.24% |
| 8 | 1.05% | 1.10% | 4.08% | 4.13% |
| 9 | 0.90% | 1.00% | 3.93% | 4.03% |
| 10 | 0.80% | 0.95% | 3.82% | 3.98% |
| 11 | 0.70% | 0.90% | 3.72% | 3.93% |
| 12 | 0.60% | 0.85% | 3.62% | 3.88% |
| 13 | 0.50% | 0.85% | 3.52% | 3.88% |
| 14 | 0.50% | 0.85% | 3.52% | 3.88% |
| 15 | 0.50% | 0.85% | 3.52% | 3.88% |
| 16 | 0.50% | 0.85% | 3.52% | 3.88% |
| 17 | 0.50% | 0.85% | 3.52% | 3.88% |
| 18 | 0.50% | 0.85% | 3.52% | 3.88% |
| 19 | 0.50% | 0.85% | 3.52% | 3.88% |
| 20 or More | 0.50% | 0.85% | 3.52% | 3.88% |

1. The total expected increase in salary is the increase due to promotion and longevity, adjusted for assumed 3.00% per annum increases in the general wage. The total result is compounded rather than additive.

Rates of Separation from Active Service Exhibits A-6 to A-11

A schedule of the probabilities of termination of employment due to the following causes can be found on the following pages:

| | |
|----------------------|--|
| Service Retirement: | Member retires after meeting age and service requirements for reasons other than disability. |
| Withdrawal: | Member terminates and elects a refund of member contributions, or a deferred retirement benefit. |
| Service Disability: | Member receives disability retirement; disability is service related. |
| Ordinary Disability: | Member receives disability retirement; disability is not service related. |
| Service Death: | Member dies before retirement; death is service related. |
| Ordinary Death: | Member dies before retirement; death is not service related. |

Each rate represents the probability that a member will separate from service at each age due to the particular cause. For example, a rate of 0.0300 for a member's service retirement at age 50 means we assume that 30 out of 1,000 members who are age 50 will retire at that age.

Each Exhibit represents the detailed rates needed for each SamCERA plan by sex:

- A-6: General Plans 1, 2, 4, 5, and 7 Males
- A-7: General Plans 1, 2, 4, 5, and 7 Females
- A-8: General Plan 3 Males
- A-9: General Plan 3 Females
- A-10: Safety and Probation Plans 1, 2, 4, 5, 6, and 7 Males
- A-11: Safety and Probation Plans 1, 2, 4, 5, 6, and 7 Females

Exhibit A-6
Rate of Separation from Active Service
General Plans 1, 2, 4, 5, and 7 – Male

| Age | Service Retirement ⁽¹⁾⁽²⁾ | | Service Disability | Ordinary Disability | Service Death | Ordinary Death | Years of Service | Other Terminations |
|-----|--------------------------------------|-------------|--------------------|---------------------|---------------|----------------|---------------------------|--------------------|
| | Plans 1, 2, 4 | Plans 5 & 7 | | | | | | |
| 18 | 0.00000 | 0.00000 | 0.00034 | 0.00018 | N/A | 0.00036 | 0 | 0.15000 |
| 19 | 0.00000 | 0.00000 | 0.00034 | 0.00018 | N/A | 0.00038 | 1 | 0.13000 |
| 20 | 0.00000 | 0.00000 | 0.00036 | 0.00020 | N/A | 0.00037 | 2 | 0.10500 |
| 21 | 0.00000 | 0.00000 | 0.00037 | 0.00020 | N/A | 0.00036 | 3 | 0.08500 |
| 22 | 0.00000 | 0.00000 | 0.00038 | 0.00020 | N/A | 0.00033 | 4 | 0.07500 |
| 23 | 0.00000 | 0.00000 | 0.00037 | 0.00020 | N/A | 0.00031 | 5 | 0.06700 |
| 24 | 0.00000 | 0.00000 | 0.00037 | 0.00020 | N/A | 0.00029 | 6 | 0.06000 |
| 25 | 0.00000 | 0.00000 | 0.00038 | 0.00020 | N/A | 0.00028 | 7 | 0.05400 |
| 26 | 0.00000 | 0.00000 | 0.00038 | 0.00020 | N/A | 0.00030 | 8 | 0.04900 |
| 27 | 0.00000 | 0.00000 | 0.00038 | 0.00020 | N/A | 0.00031 | 9 | 0.04400 |
| 28 | 0.00000 | 0.00000 | 0.00038 | 0.00020 | N/A | 0.00033 | 10 | 0.04100 |
| 29 | 0.00000 | 0.00000 | 0.00042 | 0.00023 | N/A | 0.00034 | 11 | 0.03800 |
| 30 | 0.00000 | 0.00000 | 0.00044 | 0.00024 | N/A | 0.00036 | 12 | 0.03500 |
| 31 | 0.00000 | 0.00000 | 0.00047 | 0.00026 | N/A | 0.00038 | 13 | 0.03300 |
| 32 | 0.00000 | 0.00000 | 0.00048 | 0.00026 | N/A | 0.00040 | 14 | 0.03100 |
| 33 | 0.00000 | 0.00000 | 0.00054 | 0.00029 | N/A | 0.00042 | 15 | 0.02900 |
| 34 | 0.00000 | 0.00000 | 0.00059 | 0.00031 | N/A | 0.00044 | 16 | 0.02700 |
| 35 | 0.00000 | 0.00000 | 0.00062 | 0.00033 | N/A | 0.00047 | 17 | 0.02500 |
| 36 | 0.00000 | 0.00000 | 0.00067 | 0.00036 | N/A | 0.00050 | 18 | 0.02300 |
| 37 | 0.00000 | 0.00000 | 0.00072 | 0.00039 | N/A | 0.00053 | 19 | 0.02100 |
| 38 | 0.00000 | 0.00000 | 0.00081 | 0.00044 | N/A | 0.00057 | 20 | 0.01900 |
| 39 | 0.00000 | 0.00000 | 0.00090 | 0.00048 | N/A | 0.00061 | 21 | 0.01700 |
| 40 | 0.00000 | 0.00000 | 0.00099 | 0.00054 | N/A | 0.00066 | 22 | 0.01500 |
| 41 | 0.00000 | 0.00000 | 0.00107 | 0.00058 | N/A | 0.00071 | 23 | 0.01400 |
| 42 | 0.00000 | 0.00000 | 0.00116 | 0.00063 | N/A | 0.00077 | 24 | 0.01300 |
| 43 | 0.00000 | 0.00000 | 0.00128 | 0.00069 | N/A | 0.00083 | 25 | 0.01200 |
| 44 | 0.00000 | 0.00000 | 0.00140 | 0.00076 | N/A | 0.00090 | 26 | 0.01100 |
| 45 | 0.00000 | 0.00000 | 0.00155 | 0.00083 | N/A | 0.00098 | 27 | 0.01000 |
| 46 | 0.00000 | 0.00000 | 0.00164 | 0.00089 | N/A | 0.00107 | 28 | 0.01000 |
| 47 | 0.00000 | 0.00000 | 0.00175 | 0.00094 | N/A | 0.00116 | 29 | 0.01000 |
| 48 | 0.00000 | 0.00000 | 0.00184 | 0.00099 | N/A | 0.00127 | 30 & Above ⁽³⁾ | 0.01000 |
| 49 | 0.00000 | 0.00000 | 0.00192 | 0.00103 | N/A | 0.00138 | | |
| 50 | 0.03000 | 0.02400 | 0.00202 | 0.00108 | N/A | 0.00149 | | |
| 51 | 0.03000 | 0.02400 | 0.00208 | 0.00112 | N/A | 0.00162 | | |
| 52 | 0.03000 | 0.02400 | 0.00217 | 0.00117 | N/A | 0.00175 | | |
| 53 | 0.04000 | 0.03200 | 0.00229 | 0.00123 | N/A | 0.00189 | | |
| 54 | 0.05000 | 0.04000 | 0.00240 | 0.00129 | N/A | 0.00203 | | |
| 55 | 0.10000 | 0.08000 | 0.00250 | 0.00135 | N/A | 0.00219 | | |
| 56 | 0.05000 | 0.04000 | 0.00263 | 0.00141 | N/A | 0.00236 | | |
| 57 | 0.07500 | 0.06000 | 0.00274 | 0.00148 | N/A | 0.00255 | | |
| 58 | 0.10000 | 0.08000 | 0.00288 | 0.00155 | N/A | 0.00275 | | |
| 59 | 0.15000 | 0.12000 | 0.00302 | 0.00162 | N/A | 0.00296 | | |
| 60 | 0.15000 | 0.12000 | 0.00313 | 0.00169 | N/A | 0.00319 | | |
| 61 | 0.20000 | 0.16000 | 0.00324 | 0.00175 | N/A | 0.00344 | | |
| 62 | 0.25000 | 0.20000 | 0.00337 | 0.00182 | N/A | 0.00371 | | |
| 63 | 0.22000 | 0.17600 | 0.00334 | 0.00180 | N/A | 0.00401 | | |
| 64 | 0.22000 | 0.17600 | 0.00329 | 0.00177 | N/A | 0.00433 | | |
| 65 | 0.30000 | 0.24000 | 0.00317 | 0.00171 | N/A | 0.00468 | | |
| 66 | 0.30000 | 0.24000 | 0.00313 | 0.00169 | N/A | 0.00506 | | |
| 67 | 0.30000 | 0.36000 | 0.00320 | 0.00172 | N/A | 0.00548 | | |
| 68 | 0.30000 | 0.30000 | 0.00329 | 0.00177 | N/A | 0.00594 | | |
| 69 | 0.30000 | 0.30000 | 0.00332 | 0.00179 | N/A | 0.00646 | | |
| 70 | 0.30000 | 0.30000 | 0.00307 | 0.00165 | N/A | 0.00703 | | |
| 71 | 0.30000 | 0.30000 | 0.00304 | 0.00163 | N/A | 0.00767 | | |
| 72 | 0.30000 | 0.30000 | 0.00326 | 0.00176 | N/A | 0.00837 | | |
| 73 | 0.30000 | 0.30000 | 0.00364 | 0.00196 | N/A | 0.00915 | | |
| 74 | 0.30000 | 0.30000 | 0.00390 | 0.00210 | N/A | 0.01001 | | |
| 75 | 1.00000 | 1.00000 | N/A | N/A | N/A | N/A | | |

1. 100% probability of retirement is assumed at ages 62 and above with 38 or more years of service (65/41 for Plan 5; 67/40 for Plan 7). Rates of retirement are 0.00% prior to age 52 for Plan 7.

2. Service retirement rates vary by years of service (75% of these rates are applicable at less than 20 years of service; 120% at 20 to 29 years of service; 160% at 30 or more years of service).

3. 0.00% probability of termination with 30 years of service and above for Plans 1, 2, 4, and 5.

Exhibit A-7
Rate of Separation from Active Service
General Plans 1, 2, 4, 5, and 7 – Female

| Age | Service Retirement ⁽¹⁾⁽²⁾ | | Service Disability | Ordinary Disability | Service Death | Ordinary Death | Years of Service | Other Terminations |
|-----|--------------------------------------|-------------|--------------------|---------------------|---------------|----------------|---------------------------|--------------------|
| | Plans 1, 2, 4 | Plans 5 & 7 | | | | | | |
| 18 | 0.00000 | 0.00000 | 0.00034 | 0.00018 | N/A | 0.00013 | 0 | 0.15000 |
| 19 | 0.00000 | 0.00000 | 0.00034 | 0.00018 | N/A | 0.00013 | 1 | 0.13000 |
| 20 | 0.00000 | 0.00000 | 0.00036 | 0.00020 | N/A | 0.00013 | 2 | 0.10500 |
| 21 | 0.00000 | 0.00000 | 0.00037 | 0.00020 | N/A | 0.00012 | 3 | 0.08500 |
| 22 | 0.00000 | 0.00000 | 0.00038 | 0.00020 | N/A | 0.00011 | 4 | 0.07500 |
| 23 | 0.00000 | 0.00000 | 0.00037 | 0.00020 | N/A | 0.00010 | 5 | 0.06700 |
| 24 | 0.00000 | 0.00000 | 0.00037 | 0.00020 | N/A | 0.00009 | 6 | 0.06000 |
| 25 | 0.00000 | 0.00000 | 0.00038 | 0.00020 | N/A | 0.00009 | 7 | 0.05400 |
| 26 | 0.00000 | 0.00000 | 0.00038 | 0.00020 | N/A | 0.00010 | 8 | 0.04900 |
| 27 | 0.00000 | 0.00000 | 0.00038 | 0.00020 | N/A | 0.00011 | 9 | 0.04400 |
| 28 | 0.00000 | 0.00000 | 0.00038 | 0.00020 | N/A | 0.00012 | 10 | 0.04100 |
| 29 | 0.00000 | 0.00000 | 0.00042 | 0.00023 | N/A | 0.00013 | 11 | 0.03800 |
| 30 | 0.00000 | 0.00000 | 0.00044 | 0.00024 | N/A | 0.00015 | 12 | 0.03500 |
| 31 | 0.00000 | 0.00000 | 0.00047 | 0.00026 | N/A | 0.00016 | 13 | 0.03300 |
| 32 | 0.00000 | 0.00000 | 0.00048 | 0.00026 | N/A | 0.00018 | 14 | 0.03100 |
| 33 | 0.00000 | 0.00000 | 0.00054 | 0.00029 | N/A | 0.00019 | 15 | 0.02900 |
| 34 | 0.00000 | 0.00000 | 0.00059 | 0.00031 | N/A | 0.00021 | 16 | 0.02700 |
| 35 | 0.00000 | 0.00000 | 0.00062 | 0.00033 | N/A | 0.00023 | 17 | 0.02500 |
| 36 | 0.00000 | 0.00000 | 0.00067 | 0.00036 | N/A | 0.00025 | 18 | 0.02300 |
| 37 | 0.00000 | 0.00000 | 0.00072 | 0.00039 | N/A | 0.00028 | 19 | 0.02100 |
| 38 | 0.00000 | 0.00000 | 0.00081 | 0.00044 | N/A | 0.00030 | 20 | 0.01900 |
| 39 | 0.00000 | 0.00000 | 0.00090 | 0.00048 | N/A | 0.00033 | 21 | 0.01700 |
| 40 | 0.00000 | 0.00000 | 0.00099 | 0.00054 | N/A | 0.00036 | 22 | 0.01500 |
| 41 | 0.00000 | 0.00000 | 0.00107 | 0.00058 | N/A | 0.00040 | 23 | 0.01400 |
| 42 | 0.00000 | 0.00000 | 0.00116 | 0.00063 | N/A | 0.00043 | 24 | 0.01300 |
| 43 | 0.00000 | 0.00000 | 0.00128 | 0.00069 | N/A | 0.00047 | 25 | 0.01200 |
| 44 | 0.00000 | 0.00000 | 0.00140 | 0.00076 | N/A | 0.00051 | 26 | 0.01100 |
| 45 | 0.00000 | 0.00000 | 0.00155 | 0.00083 | N/A | 0.00056 | 27 | 0.01000 |
| 46 | 0.00000 | 0.00000 | 0.00164 | 0.00089 | N/A | 0.00061 | 28 | 0.01000 |
| 47 | 0.00000 | 0.00000 | 0.00175 | 0.00094 | N/A | 0.00066 | 29 | 0.01000 |
| 48 | 0.00000 | 0.00000 | 0.00184 | 0.00099 | N/A | 0.00071 | 30 & Above ⁽³⁾ | 0.01000 |
| 49 | 0.00000 | 0.00000 | 0.00192 | 0.00103 | N/A | 0.00077 | | |
| 50 | 0.03000 | 0.02400 | 0.00202 | 0.00108 | N/A | 0.00083 | | |
| 51 | 0.03000 | 0.02400 | 0.00208 | 0.00112 | N/A | 0.00090 | | |
| 52 | 0.03000 | 0.02400 | 0.00217 | 0.00117 | N/A | 0.00097 | | |
| 53 | 0.04000 | 0.03200 | 0.00229 | 0.00123 | N/A | 0.00105 | | |
| 54 | 0.05000 | 0.04000 | 0.00240 | 0.00129 | N/A | 0.00113 | | |
| 55 | 0.10000 | 0.08000 | 0.00250 | 0.00135 | N/A | 0.00123 | | |
| 56 | 0.05000 | 0.04000 | 0.00263 | 0.00141 | N/A | 0.00133 | | |
| 57 | 0.07500 | 0.06000 | 0.00274 | 0.00148 | N/A | 0.00144 | | |
| 58 | 0.10000 | 0.08000 | 0.00288 | 0.00155 | N/A | 0.00156 | | |
| 59 | 0.15000 | 0.12000 | 0.00302 | 0.00162 | N/A | 0.00170 | | |
| 60 | 0.15000 | 0.12000 | 0.00313 | 0.00169 | N/A | 0.00186 | | |
| 61 | 0.20000 | 0.16000 | 0.00324 | 0.00175 | N/A | 0.00203 | | |
| 62 | 0.25000 | 0.20000 | 0.00337 | 0.00182 | N/A | 0.00222 | | |
| 63 | 0.22000 | 0.17600 | 0.00334 | 0.00180 | N/A | 0.00244 | | |
| 64 | 0.22000 | 0.17600 | 0.00329 | 0.00177 | N/A | 0.00269 | | |
| 65 | 0.30000 | 0.24000 | 0.00317 | 0.00171 | N/A | 0.00296 | | |
| 66 | 0.30000 | 0.24000 | 0.00313 | 0.00169 | N/A | 0.00327 | | |
| 67 | 0.30000 | 0.36000 | 0.00320 | 0.00172 | N/A | 0.00362 | | |
| 68 | 0.30000 | 0.30000 | 0.00329 | 0.00177 | N/A | 0.00400 | | |
| 69 | 0.30000 | 0.30000 | 0.00332 | 0.00179 | N/A | 0.00442 | | |
| 70 | 0.30000 | 0.30000 | 0.00307 | 0.00165 | N/A | 0.00489 | | |
| 71 | 0.30000 | 0.30000 | 0.00304 | 0.00163 | N/A | 0.00541 | | |
| 72 | 0.30000 | 0.30000 | 0.00326 | 0.00176 | N/A | 0.00598 | | |
| 73 | 0.30000 | 0.30000 | 0.00364 | 0.00196 | N/A | 0.00661 | | |
| 74 | 0.30000 | 0.30000 | 0.00390 | 0.00210 | N/A | 0.00731 | | |
| 75 | 1.00000 | 1.00000 | N/A | N/A | N/A | N/A | | |

1. 100% probability of retirement is assumed at ages 62 and above with 38 or more years of service (65/41 for Plan 5; 67/40 for Plan 7). Rates of retirement are 0.00% prior to age 52 for Plan 7.

2. Service retirement rates vary by years of service (75% of these rates are applicable at less than 20 years of service; 120% at 20 to 29 years of service; 160% at 30 or more years of service).

3. 0.00% probability of termination with 30 years of service and above for Plans 1, 2, 4, and 5.

Exhibit A-8
Rate of Separation from Active Service
General Plan 3 – Male

| Age | Service Retirement | Service Disability | Ordinary Disability | Service Death | Ordinary Death | Years of Service | Other Terminations |
|-----|--------------------|--------------------|---------------------|---------------|----------------|------------------|--------------------|
| 18 | 0.00000 | N/A | N/A | N/A | 0.00036 | 0 | 0.15000 |
| 19 | 0.00000 | N/A | N/A | N/A | 0.00038 | 1 | 0.13000 |
| 20 | 0.00000 | N/A | N/A | N/A | 0.00037 | 2 | 0.10500 |
| 21 | 0.00000 | N/A | N/A | N/A | 0.00036 | 3 | 0.08500 |
| 22 | 0.00000 | N/A | N/A | N/A | 0.00033 | 4 | 0.07500 |
| 23 | 0.00000 | N/A | N/A | N/A | 0.00031 | 5 | 0.06700 |
| 24 | 0.00000 | N/A | N/A | N/A | 0.00029 | 6 | 0.06000 |
| 25 | 0.00000 | N/A | N/A | N/A | 0.00028 | 7 | 0.05400 |
| 26 | 0.00000 | N/A | N/A | N/A | 0.00030 | 8 | 0.04900 |
| 27 | 0.00000 | N/A | N/A | N/A | 0.00031 | 9 | 0.04400 |
| 28 | 0.00000 | N/A | N/A | N/A | 0.00033 | 10 | 0.04100 |
| 29 | 0.00000 | N/A | N/A | N/A | 0.00034 | 11 | 0.03800 |
| 30 | 0.00000 | N/A | N/A | N/A | 0.00036 | 12 | 0.03500 |
| 31 | 0.00000 | N/A | N/A | N/A | 0.00038 | 13 | 0.03300 |
| 32 | 0.00000 | N/A | N/A | N/A | 0.00040 | 14 | 0.03100 |
| 33 | 0.00000 | N/A | N/A | N/A | 0.00042 | 15 | 0.02900 |
| 34 | 0.00000 | N/A | N/A | N/A | 0.00044 | 16 | 0.02700 |
| 35 | 0.00000 | N/A | N/A | N/A | 0.00047 | 17 | 0.02500 |
| 36 | 0.00000 | N/A | N/A | N/A | 0.00050 | 18 | 0.02300 |
| 37 | 0.00000 | N/A | N/A | N/A | 0.00053 | 19 | 0.02100 |
| 38 | 0.00000 | N/A | N/A | N/A | 0.00057 | 20 | 0.01900 |
| 39 | 0.00000 | N/A | N/A | N/A | 0.00061 | 21 | 0.01700 |
| 40 | 0.00000 | N/A | N/A | N/A | 0.00066 | 22 | 0.01500 |
| 41 | 0.00000 | N/A | N/A | N/A | 0.00071 | 23 | 0.01400 |
| 42 | 0.00000 | N/A | N/A | N/A | 0.00077 | 24 | 0.01300 |
| 43 | 0.00000 | N/A | N/A | N/A | 0.00083 | 25 | 0.01200 |
| 44 | 0.00000 | N/A | N/A | N/A | 0.00090 | 26 | 0.01100 |
| 45 | 0.00000 | N/A | N/A | N/A | 0.00098 | 27 | 0.01000 |
| 46 | 0.00000 | N/A | N/A | N/A | 0.00107 | 28 | 0.01000 |
| 47 | 0.00000 | N/A | N/A | N/A | 0.00116 | 29 | 0.01000 |
| 48 | 0.00000 | N/A | N/A | N/A | 0.00127 | 30 & Above | 0.01000 |
| 49 | 0.00000 | N/A | N/A | N/A | 0.00138 | | |
| 50 | 0.00000 | N/A | N/A | N/A | 0.00149 | | |
| 51 | 0.00000 | N/A | N/A | N/A | 0.00162 | | |
| 52 | 0.00000 | N/A | N/A | N/A | 0.00175 | | |
| 53 | 0.00000 | N/A | N/A | N/A | 0.00189 | | |
| 54 | 0.00000 | N/A | N/A | N/A | 0.00203 | | |
| 55 | 0.03000 | N/A | N/A | N/A | 0.00219 | | |
| 56 | 0.03000 | N/A | N/A | N/A | 0.00236 | | |
| 57 | 0.03000 | N/A | N/A | N/A | 0.00255 | | |
| 58 | 0.03000 | N/A | N/A | N/A | 0.00275 | | |
| 59 | 0.03000 | N/A | N/A | N/A | 0.00296 | | |
| 60 | 0.03000 | N/A | N/A | N/A | 0.00319 | | |
| 61 | 0.06000 | N/A | N/A | N/A | 0.00344 | | |
| 62 | 0.15000 | N/A | N/A | N/A | 0.00371 | | |
| 63 | 0.10000 | N/A | N/A | N/A | 0.00401 | | |
| 64 | 0.15000 | N/A | N/A | N/A | 0.00433 | | |
| 65 | 0.30000 | N/A | N/A | N/A | 0.00468 | | |
| 66 | 0.30000 | N/A | N/A | N/A | 0.00506 | | |
| 67 | 0.30000 | N/A | N/A | N/A | 0.00548 | | |
| 68 | 0.30000 | N/A | N/A | N/A | 0.00594 | | |
| 69 | 0.30000 | N/A | N/A | N/A | 0.00646 | | |
| 70 | 0.40000 | N/A | N/A | N/A | 0.00703 | | |
| 71 | 0.40000 | N/A | N/A | N/A | 0.00767 | | |
| 72 | 0.40000 | N/A | N/A | N/A | 0.00837 | | |
| 73 | 0.40000 | N/A | N/A | N/A | 0.00915 | | |
| 74 | 0.40000 | N/A | N/A | N/A | 0.01001 | | |
| 75 | 1.00000 | N/A | N/A | N/A | N/A | | |

Exhibit A-9
Rate of Separation from Active Service
General Plan 3 – Female

| <u>Age</u> | <u>Service Retirement</u> | <u>Service Disability</u> | <u>Ordinary Disability</u> | <u>Service Death</u> | <u>Ordinary Death</u> | <u>Years of Service</u> | <u>Other Terminations</u> |
|------------|---------------------------|---------------------------|----------------------------|----------------------|-----------------------|-------------------------|---------------------------|
| 18 | 0.0000 | N/A | N/A | N/A | 0.00013 | 0 | 0.15000 |
| 19 | 0.0000 | N/A | N/A | N/A | 0.00013 | 1 | 0.13000 |
| 20 | 0.0000 | N/A | N/A | N/A | 0.00013 | 2 | 0.10500 |
| 21 | 0.0000 | N/A | N/A | N/A | 0.00012 | 3 | 0.08500 |
| 22 | 0.0000 | N/A | N/A | N/A | 0.00011 | 4 | 0.07500 |
| 23 | 0.0000 | N/A | N/A | N/A | 0.00010 | 5 | 0.06700 |
| 24 | 0.0000 | N/A | N/A | N/A | 0.00009 | 6 | 0.06000 |
| 25 | 0.0000 | N/A | N/A | N/A | 0.00009 | 7 | 0.05400 |
| 26 | 0.0000 | N/A | N/A | N/A | 0.00010 | 8 | 0.04900 |
| 27 | 0.0000 | N/A | N/A | N/A | 0.00011 | 9 | 0.04400 |
| 28 | 0.0000 | N/A | N/A | N/A | 0.00012 | 10 | 0.04100 |
| 29 | 0.0000 | N/A | N/A | N/A | 0.00013 | 11 | 0.03800 |
| 30 | 0.0000 | N/A | N/A | N/A | 0.00015 | 12 | 0.03500 |
| 31 | 0.0000 | N/A | N/A | N/A | 0.00016 | 13 | 0.03300 |
| 32 | 0.0000 | N/A | N/A | N/A | 0.00018 | 14 | 0.03100 |
| 33 | 0.0000 | N/A | N/A | N/A | 0.00019 | 15 | 0.02900 |
| 34 | 0.0000 | N/A | N/A | N/A | 0.00021 | 16 | 0.02700 |
| 35 | 0.0000 | N/A | N/A | N/A | 0.00023 | 17 | 0.02500 |
| 36 | 0.0000 | N/A | N/A | N/A | 0.00025 | 18 | 0.02300 |
| 37 | 0.0000 | N/A | N/A | N/A | 0.00028 | 19 | 0.02100 |
| 38 | 0.0000 | N/A | N/A | N/A | 0.00030 | 20 | 0.01900 |
| 39 | 0.0000 | N/A | N/A | N/A | 0.00033 | 21 | 0.01700 |
| 40 | 0.0000 | N/A | N/A | N/A | 0.00036 | 22 | 0.01500 |
| 41 | 0.0000 | N/A | N/A | N/A | 0.00040 | 23 | 0.01400 |
| 42 | 0.0000 | N/A | N/A | N/A | 0.00043 | 24 | 0.01300 |
| 43 | 0.0000 | N/A | N/A | N/A | 0.00047 | 25 | 0.01200 |
| 44 | 0.0000 | N/A | N/A | N/A | 0.00051 | 26 | 0.01100 |
| 45 | 0.0000 | N/A | N/A | N/A | 0.00056 | 27 | 0.01000 |
| 46 | 0.0000 | N/A | N/A | N/A | 0.00061 | 28 | 0.01000 |
| 47 | 0.0000 | N/A | N/A | N/A | 0.00066 | 29 | 0.01000 |
| 48 | 0.0000 | N/A | N/A | N/A | 0.00071 | 30 & Above | 0.01000 |
| 49 | 0.0000 | N/A | N/A | N/A | 0.00077 | | |
| 50 | 0.0000 | N/A | N/A | N/A | 0.00083 | | |
| 51 | 0.0000 | N/A | N/A | N/A | 0.00090 | | |
| 52 | 0.0000 | N/A | N/A | N/A | 0.00097 | | |
| 53 | 0.0000 | N/A | N/A | N/A | 0.00105 | | |
| 54 | 0.0000 | N/A | N/A | N/A | 0.00113 | | |
| 55 | 0.0400 | N/A | N/A | N/A | 0.00123 | | |
| 56 | 0.0400 | N/A | N/A | N/A | 0.00133 | | |
| 57 | 0.0400 | N/A | N/A | N/A | 0.00144 | | |
| 58 | 0.0400 | N/A | N/A | N/A | 0.00156 | | |
| 59 | 0.0400 | N/A | N/A | N/A | 0.00170 | | |
| 60 | 0.0400 | N/A | N/A | N/A | 0.00186 | | |
| 61 | 0.0600 | N/A | N/A | N/A | 0.00203 | | |
| 62 | 0.1500 | N/A | N/A | N/A | 0.00222 | | |
| 63 | 0.1000 | N/A | N/A | N/A | 0.00244 | | |
| 64 | 0.1500 | N/A | N/A | N/A | 0.00269 | | |
| 65 | 0.3000 | N/A | N/A | N/A | 0.00296 | | |
| 66 | 0.3000 | N/A | N/A | N/A | 0.00327 | | |
| 67 | 0.3000 | N/A | N/A | N/A | 0.00362 | | |
| 68 | 0.3000 | N/A | N/A | N/A | 0.00400 | | |
| 69 | 0.3000 | N/A | N/A | N/A | 0.00442 | | |
| 70 | 0.4000 | N/A | N/A | N/A | 0.00489 | | |
| 71 | 0.4000 | N/A | N/A | N/A | 0.00541 | | |
| 72 | 0.4000 | N/A | N/A | N/A | 0.00598 | | |
| 73 | 0.4000 | N/A | N/A | N/A | 0.00661 | | |
| 74 | 0.4000 | N/A | N/A | N/A | 0.00731 | | |
| 75 | 1.0000 | N/A | N/A | N/A | N/A | | |

Exhibit A-10
Rate of Separation from Active Service
Safety & Probation Plans – Male

| Age | Service Retirement ⁽¹⁾⁽²⁾ | | Service Disability | Ordinary Disability | Service Death | Ordinary Death | Years of Service | Other Terminations |
|-----|--------------------------------------|---------------|--------------------|---------------------|---------------|----------------|---------------------------|--------------------|
| | Plans 1, 2, 4 | Plans 5, 6, 7 | | | | | | |
| 18 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00037 | 0 | 0.10000 |
| 19 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00040 | 1 | 0.08000 |
| 20 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00041 | 2 | 0.06000 |
| 21 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00041 | 3 | 0.04500 |
| 22 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00040 | 4 | 0.03500 |
| 23 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00039 | 5 | 0.03000 |
| 24 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00038 | 6 | 0.02600 |
| 25 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00037 | 7 | 0.02300 |
| 26 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00038 | 8 | 0.02100 |
| 27 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00039 | 9 | 0.01900 |
| 28 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00040 | 10 | 0.01700 |
| 29 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00041 | 11 | 0.01500 |
| 30 | 0.00000 | 0.00000 | 0.00170 | 0.00000 | 0.00010 | 0.00041 | 12 | 0.01350 |
| 31 | 0.00000 | 0.00000 | 0.00190 | 0.00000 | 0.00010 | 0.00042 | 13 | 0.01200 |
| 32 | 0.00000 | 0.00000 | 0.00210 | 0.00000 | 0.00010 | 0.00043 | 14 | 0.01100 |
| 33 | 0.00000 | 0.00000 | 0.00230 | 0.00000 | 0.00010 | 0.00044 | 15 | 0.01000 |
| 34 | 0.00000 | 0.00000 | 0.00250 | 0.00000 | 0.00010 | 0.00045 | 16 | 0.00900 |
| 35 | 0.00000 | 0.00000 | 0.00270 | 0.00000 | 0.00010 | 0.00047 | 17 | 0.00800 |
| 36 | 0.00000 | 0.00000 | 0.00290 | 0.00000 | 0.00010 | 0.00049 | 18 | 0.00700 |
| 37 | 0.00000 | 0.00000 | 0.00310 | 0.00000 | 0.00010 | 0.00050 | 19 | 0.00600 |
| 38 | 0.00000 | 0.00000 | 0.00330 | 0.00000 | 0.00010 | 0.00053 | 20 & Above ⁽³⁾ | 0.00500 |
| 39 | 0.00000 | 0.00000 | 0.00350 | 0.00000 | 0.00010 | 0.00056 | | |
| 40 | 0.00000 | 0.00000 | 0.00370 | 0.00000 | 0.00010 | 0.00059 | | |
| 41 | 0.00000 | 0.00000 | 0.00390 | 0.00000 | 0.00010 | 0.00062 | | |
| 42 | 0.00000 | 0.00000 | 0.00410 | 0.00000 | 0.00010 | 0.00067 | | |
| 43 | 0.00000 | 0.00000 | 0.00430 | 0.00000 | 0.00010 | 0.00071 | | |
| 44 | 0.00000 | 0.00000 | 0.00450 | 0.00000 | 0.00010 | 0.00076 | | |
| 45 | 0.05000 | 0.00000 | 0.00470 | 0.00000 | 0.00010 | 0.00082 | | |
| 46 | 0.05000 | 0.00000 | 0.00490 | 0.00000 | 0.00010 | 0.00088 | | |
| 47 | 0.05000 | 0.00000 | 0.00520 | 0.00000 | 0.00010 | 0.00095 | | |
| 48 | 0.05000 | 0.00000 | 0.00550 | 0.00000 | 0.00010 | 0.00102 | | |
| 49 | 0.11000 | 0.00000 | 0.00580 | 0.00000 | 0.00010 | 0.00111 | | |
| 50 | 0.22500 | 0.18000 | 0.00750 | 0.00000 | 0.00010 | 0.00120 | | |
| 51 | 0.16000 | 0.12800 | 0.00920 | 0.00000 | 0.00010 | 0.00129 | | |
| 52 | 0.16000 | 0.12800 | 0.01090 | 0.00000 | 0.00010 | 0.00140 | | |
| 53 | 0.22000 | 0.17600 | 0.01260 | 0.00000 | 0.00010 | 0.00151 | | |
| 54 | 0.22000 | 0.17600 | 0.01430 | 0.00000 | 0.00010 | 0.00162 | | |
| 55 | 0.25000 | 0.20000 | 0.01600 | 0.00000 | 0.00010 | 0.00175 | | |
| 56 | 0.25000 | 0.20000 | 0.01770 | 0.00000 | 0.00010 | 0.00190 | | |
| 57 | 0.25000 | 0.25000 | 0.01940 | 0.00000 | 0.00010 | 0.00205 | | |
| 58 | 0.25000 | 0.25000 | 0.02110 | 0.00000 | 0.00010 | 0.00223 | | |
| 59 | 0.25000 | 0.25000 | 0.02280 | 0.00000 | 0.00010 | 0.00243 | | |
| 60 | 0.40000 | 0.40000 | 0.02080 | 0.00000 | 0.00010 | 0.00264 | | |
| 61 | 0.40000 | 0.40000 | 0.01880 | 0.00000 | 0.00010 | 0.00288 | | |
| 62 | 0.40000 | 0.40000 | 0.01680 | 0.00000 | 0.00010 | 0.00315 | | |
| 63 | 0.40000 | 0.40000 | 0.01480 | 0.00000 | 0.00010 | 0.00344 | | |
| 64 | 0.40000 | 0.40000 | 0.01280 | 0.00000 | 0.00010 | 0.00375 | | |
| 65 | 1.00000 | 1.00000 | N/A | N/A | N/A | N/A | | |

1. 100% probability of retirement is assumed as follows:

- with 33 or more years of service for Safety and Probation Plans 1, 2, and 4.
- at ages 55 and above with 33 or more years of service for Safety and Probation Plan 5.
- at ages 55 and above with 38 or more years of service for Safety and Probation Plan 6.
- at ages 57 and above with 38 or more years of service for Safety and Probation Plan 7.

2. Service retirement rates vary by years of service (40% of these rates are applicable at less than 15 years of service; 90% at 15 to 19 years of service; 120% at 20 to 24 years of service; 170% at 25 or more years of service).

3. 0.00% probability of termination with 20 years of service and above for all Safety/Probation plans except Plan 7.

Exhibit A-11
Rate of Separation from Active Service
Safety & Probation Plans – Female

| Age | Service Retirement ⁽¹⁾⁽²⁾ | | Service Disability | Ordinary Disability | Service Death | Ordinary Death | Years of Service | Other Terminations |
|-----|--------------------------------------|---------------|--------------------|---------------------|---------------|----------------|---------------------------|--------------------|
| | Plans 1, 2, 4 | Plans 5, 6, 7 | | | | | | |
| 18 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00014 | 0 | 0.10000 |
| 19 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00015 | 1 | 0.08000 |
| 20 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00016 | 2 | 0.06000 |
| 21 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00017 | 3 | 0.04500 |
| 22 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00017 | 4 | 0.03500 |
| 23 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00018 | 5 | 0.03000 |
| 24 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00019 | 6 | 0.02600 |
| 25 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00020 | 7 | 0.02300 |
| 26 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00021 | 8 | 0.02100 |
| 27 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00022 | 9 | 0.01900 |
| 28 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00024 | 10 | 0.01700 |
| 29 | 0.00000 | 0.00000 | 0.00150 | 0.00000 | 0.00010 | 0.00025 | 11 | 0.01500 |
| 30 | 0.00000 | 0.00000 | 0.00170 | 0.00000 | 0.00010 | 0.00027 | 12 | 0.01350 |
| 31 | 0.00000 | 0.00000 | 0.00190 | 0.00000 | 0.00010 | 0.00028 | 13 | 0.01200 |
| 32 | 0.00000 | 0.00000 | 0.00210 | 0.00000 | 0.00010 | 0.00030 | 14 | 0.01100 |
| 33 | 0.00000 | 0.00000 | 0.00230 | 0.00000 | 0.00010 | 0.00032 | 15 | 0.01000 |
| 34 | 0.00000 | 0.00000 | 0.00250 | 0.00000 | 0.00010 | 0.00034 | 16 | 0.00900 |
| 35 | 0.00000 | 0.00000 | 0.00270 | 0.00000 | 0.00010 | 0.00036 | 17 | 0.00800 |
| 36 | 0.00000 | 0.00000 | 0.00290 | 0.00000 | 0.00010 | 0.00038 | 18 | 0.00700 |
| 37 | 0.00000 | 0.00000 | 0.00310 | 0.00000 | 0.00010 | 0.00041 | 19 | 0.00600 |
| 38 | 0.00000 | 0.00000 | 0.00330 | 0.00000 | 0.00010 | 0.00043 | 20 & Above ⁽³⁾ | 0.00500 |
| 39 | 0.00000 | 0.00000 | 0.00350 | 0.00000 | 0.00010 | 0.00046 | | |
| 40 | 0.00000 | 0.00000 | 0.00370 | 0.00000 | 0.00010 | 0.00049 | | |
| 41 | 0.00000 | 0.00000 | 0.00390 | 0.00000 | 0.00010 | 0.00052 | | |
| 42 | 0.00000 | 0.00000 | 0.00410 | 0.00000 | 0.00010 | 0.00056 | | |
| 43 | 0.00000 | 0.00000 | 0.00430 | 0.00000 | 0.00010 | 0.00059 | | |
| 44 | 0.00000 | 0.00000 | 0.00450 | 0.00000 | 0.00010 | 0.00063 | | |
| 45 | 0.05000 | 0.00000 | 0.00470 | 0.00000 | 0.00010 | 0.00067 | | |
| 46 | 0.05000 | 0.00000 | 0.00490 | 0.00000 | 0.00010 | 0.00071 | | |
| 47 | 0.05000 | 0.00000 | 0.00520 | 0.00000 | 0.00010 | 0.00076 | | |
| 48 | 0.05000 | 0.00000 | 0.00550 | 0.00000 | 0.00010 | 0.00080 | | |
| 49 | 0.11000 | 0.00000 | 0.00580 | 0.00000 | 0.00010 | 0.00085 | | |
| 50 | 0.22500 | 0.18000 | 0.00750 | 0.00000 | 0.00010 | 0.00091 | | |
| 51 | 0.16000 | 0.12800 | 0.00920 | 0.00000 | 0.00010 | 0.00097 | | |
| 52 | 0.16000 | 0.12800 | 0.01090 | 0.00000 | 0.00010 | 0.00103 | | |
| 53 | 0.22000 | 0.17600 | 0.01260 | 0.00000 | 0.00010 | 0.00109 | | |
| 54 | 0.22000 | 0.17600 | 0.01430 | 0.00000 | 0.00010 | 0.00116 | | |
| 55 | 0.25000 | 0.20000 | 0.01600 | 0.00000 | 0.00010 | 0.00123 | | |
| 56 | 0.25000 | 0.20000 | 0.01770 | 0.00000 | 0.00010 | 0.00131 | | |
| 57 | 0.25000 | 0.25000 | 0.01940 | 0.00000 | 0.00010 | 0.00140 | | |
| 58 | 0.25000 | 0.25000 | 0.02110 | 0.00000 | 0.00010 | 0.00148 | | |
| 59 | 0.25000 | 0.25000 | 0.02280 | 0.00000 | 0.00010 | 0.00158 | | |
| 60 | 0.40000 | 0.40000 | 0.02080 | 0.00000 | 0.00010 | 0.00168 | | |
| 61 | 0.40000 | 0.40000 | 0.01880 | 0.00000 | 0.00010 | 0.00178 | | |
| 62 | 0.40000 | 0.40000 | 0.01680 | 0.00000 | 0.00010 | 0.00190 | | |
| 63 | 0.40000 | 0.40000 | 0.01480 | 0.00000 | 0.00010 | 0.00202 | | |
| 64 | 0.40000 | 0.40000 | 0.01280 | 0.00000 | 0.00010 | 0.00215 | | |
| 65 | 1.00000 | 1.00000 | N/A | N/A | N/A | N/A | | |

1. 100% probability of retirement is assumed as follows:

- with 33 or more years of service for Safety and Probation Plans 1, 2, and 4.
- at ages 55 and above with 33 or more years of service for Safety and Probation Plan 5.
- at ages 55 and above with 38 or more years of service for Safety and Probation Plan 6.
- at ages 57 and above with 38 or more years of service for Safety and Probation Plan 7.

2. Service retirement rates vary by years of service (40% of these rates are applicable at less than 15 years of service; 90% at 15 to 19 years of service; 120% at 20 to 24 years of service; 170% at 25 or more years of service).

3. 0.00% probability of termination with 20 years of service and above for all Safety/Probation plans except Plan 7.

Appendix B Summary of Benefit Provisions

All actuarial calculations are based on our understanding of the statutes governing the SamCERA as contained in the County Employees Retirement Law (CERL) of 1937, with provisions adopted by the SamCERA Board, effective through June 30, 2021. The benefit and contribution provisions of this law are summarized briefly below, along with corresponding references to the Code Section. This summary does not attempt to cover all the detailed provisions of the law.

MEMBERSHIP IN RETIREMENT PLANS

The County has established 12 defined benefit plans based on a member's date of entry into SamCERA. Plans 1, 2, 4, 5, 6, and 7 are open to all members depending on their date of entry. Only General members are eligible for Plan 3. **Government Code Section**

Employees of the SMCM&VCD are eligible for participation in all General retirement plans, except for Plan 3.

- Plan 1:** Employees hired on or before July 5, 1980.
- Plan 2:** Employees hired after July 5, 1980 but on or before July 12, 1997.
- Plan 3:** General members hired on or before December 22, 2012 may have elected to participate in Plan 3. After five years of service, Plan 3 members can elect membership under the open eligible contributory plan. Members currently working in a contributory plan with Plan 3 service may purchase an upgrade of their Plan 3 service. (31496)
- Plan 4:** Employees hired after July 12, 1997 and before August 7, 2011 (General members, except Plan 5 transfers; see below); before July 10, 2011 (Probation members); and before January 8, 2012 (Safety members).
- Plan 5:** General members hired on or after August 7, 2011, and Deputy Sheriffs hired on or after January 8, 2012. Probation members hired on or after July 10, 2011 and Safety members (except Deputy Sheriffs) may elect this Plan. Members must be first hired before January 1, 2013 to be eligible to elect this Plan.
After 10 years of service, General Plan 5 members can elect to transfer to Plan 4 and must pay the total actuarial equivalent cost of the increase in past service benefits at the date of transfer.
- Plan 6:** Probation members hired on or after July 10, 2011 and Safety members (except Deputy Sheriffs) may elect this Plan. Members must be first hired before January 1, 2013 to be eligible to elect this Plan.
- Plan 7:** Employees first hired on or after January 1, 2013.

MEMBER CONTRIBUTIONS

Basic:

Plans 1, 2, 4, 5, and 6: Contributions are based on the entry age and class of each member and are required of all members. See section 5 for details on this calculation. Current member rates are shown in Appendix D.

Basic contributions cease when general members are credited with 30 years of service in a contributory plan provided they were members of SamCERA or a reciprocal system on March 7, 1973, and continuously thereafter. All safety members are eligible for the 30-year cessation of contributions. (31625.2, 31664.1)

Plan 7: Members contribute 50% of the aggregate Normal Cost rate for their Plan.

Plan 3: No member contributions are required under Plan 3.

Cost-of-Living:

Plans 1, 2, and 4: All members of Plans 1, 2 and 4 contribute 50% of the cost of COLA benefits in addition to other current member rates and cost sharing, except as described in the following paragraph.

Members of SMCM&VCD do not contribute towards the COLA benefit.

Plans 5 and 6: All members of Plans 5 and 6 contribute 50% of the cost of the COLA.

Plan 7: Members contribute 50% of the aggregate Normal Cost rate for their Plan.

Cost Sharing:

General Members: All members of Plans 1, 2, and 4 (except SMCM&VCD) contribute an additional 3.0% for cost sharing. (31678.2)

All other General members do not participate in cost sharing.

MEMBER CONTRIBUTIONS (Continued)

| | | | | | | | | | | | | |
|-----------------------------------|---|--------------------|------|------------------------|--|---------------------------------|------|-----------------------------------|------|----------------------------------|------|--|
| Safety Members: | <p>Deputy Sheriffs in Plans 1, 2, 4, and 5 contribute the following additional cost sharing rates based on age and service:</p> <table border="0" style="margin-left: 40px;"> <tr> <td style="padding-right: 20px;">If age 45 or older</td> <td style="text-align: right;">4.5%</td> </tr> <tr> <td colspan="2">If age is less than 45</td> </tr> <tr> <td style="padding-left: 20px;">▪ Service is less than 5 years:</td> <td style="text-align: right;">3.0%</td> </tr> <tr> <td style="padding-left: 20px;">▪ Service between 5 and 15 years:</td> <td style="text-align: right;">3.5%</td> </tr> <tr> <td style="padding-left: 20px;">▪ Service is more than 15 years:</td> <td style="text-align: right;">4.5%</td> </tr> </table> <p>Safety members (except Deputy Sheriffs) in Plans 1, 2, and 4 contribute an additional 5.0% cost sharing.</p> <p>Safety members (except Deputy Sheriffs) in Plan 5 contribute an additional 4.0% cost sharing.</p> <p>Safety members in Plan 6 and 7 do not participate in cost sharing.</p> | If age 45 or older | 4.5% | If age is less than 45 | | ▪ Service is less than 5 years: | 3.0% | ▪ Service between 5 and 15 years: | 3.5% | ▪ Service is more than 15 years: | 4.5% | |
| If age 45 or older | 4.5% | | | | | | | | | | | |
| If age is less than 45 | | | | | | | | | | | | |
| ▪ Service is less than 5 years: | 3.0% | | | | | | | | | | | |
| ▪ Service between 5 and 15 years: | 3.5% | | | | | | | | | | | |
| ▪ Service is more than 15 years: | 4.5% | | | | | | | | | | | |
| Probation Members: | <p>Members of Plans 1, 2, 4, and 5 contribute an additional 3.5% for cost sharing.</p> <p>Members of Plans 6 and 7 do not participate in cost sharing.</p> | | | | | | | | | | | |
| <u>Interest Crediting:</u> | <p>Interest is credited to contributions semiannually on June 30 and December 31 at an interest rate set by the Board of Retirement on amounts that have been on deposit for at least six months.</p> | (31591, 31700) | | | | | | | | | | |
| <u>Employer Pick-Up:</u> | <p>Effective with the first pay period in July 2016, no employer provides for employer pick-up contributions.</p> | | | | | | | | | | | |

EMPLOYER CONTRIBUTIONS

The employer (County, Courts, or District) contributes to the retirement fund a percent of the total compensation provided for all members based on an actuarial investigation, valuation and recommendation of the actuary. (31453, 31453.5, 31453.6, 31454 31581)

SERVICE RETIREMENT ALLOWANCE

Eligibility:

General Members: All members of Plans 1, 2, 4, and 5 are eligible to retire after meeting one of the following age and service requirements: (31672)

- Age 50 with 10 years of service*;
- Any age with 30 years of service; or
- Age 70 regardless of service.

Plan 3 members are eligible to retire at age 65 with 10 years of service. A reduced benefit is also payable at age 55 with 10 years of service. (31496)

Plan 7 members are eligible to retire at age 52 with 5 years of service.

** For part-time employees, age 50 is replaced with age 55.* (31672.1)

Safety and Probation Members: Members of all plans except Plan 7 are eligible to retire after meeting one of the following age and service requirements: (31663.25)

- Age 50 with 10 years of service;
- Any age with 20 years of service.

Plan 7 members are eligible to retire at age 50 with 5 years of service.

Final Average Compensation:

Plans 1 and 2: Monthly average of a member's highest 12 consecutive months of compensation. (31462.1)

All other Plans: Monthly average of a member's highest compensation during any three years. Years do not have to be consecutive, except for Plan 7. [31462, 31496.3(d)]

Compensation Limit:

All Plans, except Plan 7: The amount of compensation that is taken into account in computing benefits payable to any person who first becomes a member on or after July 1, 1996, shall not exceed the dollar limitations in Section 401(a)(17) of Title 26 of the US Code. (31671)

SERVICE RETIREMENT ALLOWANCE (Continued)

Plan 7: The amount of compensation taken into account shall not exceed the following applicable percentage of the Social Security Taxable Wage Base:

- 100% for a member covered by Social Security (County and Courts General members);
- 120% for a member not covered by Social Security (all other members).

The amount of compensation taken into account shall be adjusted based on changes in the Consumer Price Index for All Urban Consumers. Adjustments shall be effective annually on January 1.

Monthly Allowance:

| | | |
|------------------------------|---|---|
| Plans 1, 2, 4, and 5: | <p>General members: $1/60 \times \text{Final Average Compensation} \times \text{General age factor} \times \text{years of service.}$</p> <p>Safety & Probation members: $3\% \times \text{Final Average Compensation} \times \text{Safety age factor} \times \text{years of service.}$</p> | <p>(31676.14) – Plans 1, 2 & 4 (31676.1) – Plan 5 (31664.1) – Plans 1, 2 & 4 (31664.2) – Plan 5</p> |
| Plan 6: | <p>Safety & Probation members: $2\% \times \text{Final Average Compensation} \times \text{Safety age factor} \times \text{years of service.}$</p> | <p>(31664)</p> |
| Plan 7: | <p>General members: $2\% \times \text{Final Average Compensation} \times \text{General age factor} \times \text{years of service.}$</p> <p>Safety and Probation members: $2\% \times \text{Final Average Compensation} \times \text{Safety age factor} \times \text{years of service.}$</p> | <p>7522.20(a) 7522.25(d)</p> |
| Plan 3: | <p>General members: (a)+(b)-(c) where:</p> <p>(a) $2\% \times \text{Final Average Compensation} \times (\text{Years of Service, up to 35 years}),$ plus</p> <p>(b) $1\% \times \text{Final Average Compensation} \times \text{Years of Service in excess of 35}$ (up to 10 years)</p> <p>(c) $\text{Estimated Primary Insurance Amount (PIA)} \times \text{Years of Covered Service}$ (up to 35 years) divided by 35.</p> <p>The PIA is calculated based on certain assumptions specified by statute, and an assumed Social Security retirement age of 65.</p> <p>If retirement occurs prior to age 65, benefit amount is adjusted by an actuarial equivalent factor (see Sample Plan Age Factors).</p> | <p>(31496)</p> |

SERVICE RETIREMENT ALLOWANCE (Continued)

Percentage of Final Average Compensation at Sample Ages:

| Plan | Age 50 | Age 55 | Age 60 | Age 65 | |
|------------------------------|--------|--------|--------|--------|--------------|
| County General 1,2 & 4 | 1.475% | 1.948% | 2.440% | 2.611% | (31676.14) |
| SMCM&VCD* | 1.475% | 1.948% | 2.440% | 2.611% | (31676.14) |
| General Plan 3** | N/A | 0.780% | 1.220% | 2.000% | (31496) |
| General Plan 5 | 1.182% | 1.492% | 1.917% | 2.432% | (31676.1) |
| General Plan 7 | N/A | 1.300% | 1.800% | 2.300% | (7522.20(a)) |
| Safety/Probation 1,2, & 4 | 3.000% | 3.000% | 3.000% | 3.000% | (31664.1) |
| Safety/Probation Plan 5 | 2.290% | 3.000% | 3.000% | 3.000% | (31664.2) |
| Safety/Probation Plan 6 | 2.000% | 2.620% | 2.620% | 2.620% | (31664) |
| Safety/Probation Plan 7 | 2.000% | 2.500% | 2.700% | 2.700% | (7522.25(d)) |

* As of the June 30, 2010 actuarial valuation, SMCM&VCD has adopted the same benefit structure as County General.

** Prior to reduction for PIA benefit. Actual percentage will be less.

Maximum

Allowance: Allowance may not exceed 100% of Final Average Compensation.

All Plans

Except 3:

Plan 3: The sum of the normal retirement allowance and the estimated PIA cannot exceed 70% of Final Average Compensation for a member with 35 or less years of service, and cannot exceed 80% of Final Average Compensation if service exceeds 35 years. (31496)

SERVICE RETIREMENT ALLOWANCE (Continued)

Unmodified Retirement Allowance (Normal Form):

| | | |
|----------------------------|---|------------|
| All Plans Except 3: | Life Annuity payable to retired member with 60% continuance to an eligible survivor (or eligible children). | (31760.1) |
| Plan 3: | Life Annuity payable to retired member with 50% continuance to an eligible survivor (or eligible children). | (31497.71) |

Eligible survivor includes certain domestic partners. (31780.2)

Optional Retirement Allowance:

A member may elect to have the actuarial equivalent of the service or disability retirement allowance applied to a lesser retirement allowance during the retired member's life in order to provide an optional survivor allowance.

Option 1: Member's allowance is reduced to pay a cash refund of any unpaid annuity payments (up to the amount of the member's contributions at retirement) to the member's estate or to a beneficiary having an insurable interest in the life of the member. (31761)

Option 2: 100% of member's reduced allowance is payable to an eligible survivor or beneficiary having an insurable interest in the life of the member. (31762)

Option 3: 50% of member's reduced allowance is payable to an eligible survivor or beneficiary having an insurable interest in the life of the member. (31763)

Option 4: Other % of member's reduced allowance is payable to an eligible survivor or beneficiary(ies) having an insurable interest in the life of the member. (31764)

For Options 2, 3 or 4, the continuance will not be paid if the member revokes their election and names another beneficiary after retirement. (31782)

All Allowances: All allowances are made on a pro rata basis (based on the number of days in that month) if not in effect for the entire month of retirement. For deaths that occur mid-month, the full month's payment is made. (31600)

SERVICE-CONNECTED DISABILITY RETIREMENT ALLOWANCE

| | | |
|---------------------------------------|--|---|
| <u>Eligibility:</u> | | |
| All Plans | Any age or years of service; disability must result from occupational injury or disease, and member must be permanently incapacitated for the performance of duty. | (31720, 31720.5, 31720.6, 31720.7, 31720.9) |
| Except 3: | | |
| Plan 3: | Not available under Plan 3. | (31487) |
| <u>Monthly Allowance:</u> | Greater of (1) 50% of Final Average Compensation or (2) the service retirement allowance, if eligible to retire. | (31727.4) |
| <u>Normal Form Of Payment:</u> | Life Annuity with 100% continuance to a surviving spouse (or eligible children). | (31760, 31786) |

NONSERVICE-CONNECTED DISABILITY RETIREMENT ALLOWANCE

| | | |
|---------------------------------------|--|------------------|
| <u>Eligibility:</u> | | |
| All Plans Except 3: | Any age with five years of service and permanently incapacitated for the performance of duty. | (31720, 31836) |
| Plan 3: | Not available under Plan 3. | (31487) |
| <u>Monthly Allowance:</u> | The monthly allowance is equal to a service retirement allowance if the member is eligible to retire, otherwise allowance equals (a) or (b) where: | (31726, 31726.5) |
| General Members: | (a) 90% of 1/60th of Final Average Compensation x years of service, if member must rely on service in another retirement system in order to be eligible to retire, or allowance exceeds 1/3 of Final Average Compensation. | (31727(a)) |
| | (b) 90% of 1/60th of Final Average Compensation x years of service projected to age 65, not to exceed 1/3 of Final Average Compensation. | (31727(b)) |
| Safety Members: | 1/60 is replaced by 1/50 and age 65 is replaced by age 55 in (a) and (b) above. | (31727.2) |
| <u>Normal Form Of Payment:</u> | Life Annuity with 60% continuance to a surviving spouse (or eligible children). | (31760.1) |

SERVICE-CONNECTED DEATH BENEFITS

Eligibility

All Plans Except 3: Active members who die in service as a result of injury or disease arising out of and in the course of employment. (31787)

Plan 3: Not available under Plan 3. (31487)

Monthly Allowance: An annual death allowance is payable monthly to an eligible survivor (or eligible children) equal to 50% of the member's Final Average Compensation. (31787)

Optional Combined Benefit: (31781.3)

In lieu of the monthly allowance above, an eligible survivor may elect:

- (a) A lump sum equal to 1/12 of the compensation earned in the preceding 12 months x years of service (benefit not to exceed 50% of the 12 months' compensation), plus
- (b) A monthly payment equal to 50% of the member's Final Average Compensation, reduced by a monthly amount, which is the actuarial equivalent of (a) above based on the age of eligible survivor.

Death Benefit (Lump Sum): (31781)

The member's normal contributions and interest, plus 1/12 of the compensation earned in the preceding 12 months x years of service (benefit not to exceed 50% of the 12 months' compensation).

Additional Allowance for Children: (31787.5)

25% of death allowance (whether or not the monthly allowance or combined benefit is chosen) for one child, 40% for two children, and 50% for three or more children.

Additional Amount for Spouse of Safety Member: (31787.6)

An eligible survivor of a safety member is also entitled to receive a lump sum death benefit equal to 12 x monthly rate of compensation at the time of member's death in addition to all other benefits.

Note: For valuation purposes, an unmarried member is assumed to take the lump sum benefit. A married member is assumed to take the monthly allowance or the lump sum, whichever is more valuable.

NONSERVICE-CONNECTED DEATH BENEFITS

Eligibility:

All Plans Except 3: Active members who die while in service or while physically or mentally incapacitated for the performance of duty. (31780)

Plan 3: Not available under Plan 3.

Death Benefit (Lump Sum): (31781)

The member's normal contributions and interest, plus 1/12 of the Compensation earned in preceding 12 months x the number of completed years of service (benefit not to exceed 50% of the 12 months' compensation).

Optional Death Benefit:

In lieu of the lump sum death benefit, several optional death benefits are available to provide flexibility to survivors, as follows.

First Optional Death Benefit: (31781.1)

If a member who would have been entitled to a nonservice-connected disability retirement allowance dies prior to retirement as a result of such disability, the eligible survivor (or eligible children) may elect to receive an optional death allowance equal to 60% of the monthly retirement allowance to which the member would have been entitled as of the date of death.

Second Optional Death Benefit: (31781.2, 31765.2)

If a member dies prior to reaching the minimum retirement age but has 10 or more years of service, an eligible survivor (or eligible children) may elect to leave the amount of the death benefit on deposit until the earliest date the member could have retired and at that time receive the allowance provided for in 31765.2 (a 60% continuance).

Third Optional Death Benefit:

An eligible survivor of a member who dies after five years of service may elect a combined benefit equal to:

(a) A lump sum equal to 1/12 of the compensation earnable in the preceding 12 months x the number of completed years of service (benefit not to exceed 50% of the 12 months' compensation), plus (31781.3)

(b) A monthly payment equal to 60% of the monthly retirement allowance to which the member would have been entitled if the member retired or had been retired for a nonservice-connected disability as of the date of death, reduced by a monthly amount which is the actuarial equivalent of (a) above based on the age of the eligible survivor. (31781.1)

NONSERVICE-CONNECTED DEATH BENEFITS (Continued)

Fourth Optional Death Benefit:

If a member dies while eligible for a service retirement and the eligible survivor is designated as beneficiary, the spouse (or eligible children) may elect to receive 60% of the monthly retirement allowance to which the member would have been entitled as of the date of death. (31765.1)

Note for Third and Fourth Optional Death Benefits: In order to leave the eligible survivor the greatest benefit, the member is assumed to have retired for nonservice-connected disability, elected the Option 2 retirement allowance, and then died the next day.

Fifth Optional Death Benefit:

If a member dies while eligible for a service retirement and the eligible survivor is designated as beneficiary and survives the member by not less than 30 days the spouse (or eligible children) may elect to receive the same retirement allowance as the spouse would have received had the member retired on the date of death and selected Option 3. (31765)

Note: For valuation purposes, an unmarried member is assumed to take the lump sum benefit. A married member is assumed to receive an annuity or a lump sum, whichever is more valuable. The annuity is equal to the Option 2-100% Continuance calculation for the larger of either (1) a non-service connected disability benefit or (2) the member's earned service retirement benefit (if eligible).

DEFERRED RETIREMENT BENEFITS

Eligibility:

All Plans, except Plans 3 and 7: Age 50 with 10 years of membership. (31700)

Member contributions must be left on deposit (except Plan 3) and the member must have terminated with five years of service or entered a reciprocal agency. Members are eligible for service retirement when they would have reached eligibility if they would have remained in an active position.

Plan 3: Age 55 with 10 years of service. (31496)

Plan 7: General members:

Age 52 with 5 years of service.

Safety and Probation members:

Age 50 with 5 years of service.

All Plans: Member contributions must be left on deposit and the member must have terminated with 5 years of service or entered a reciprocal agency. Members (except for Plan 7) are eligible for service retirement when they would have reached eligibility if they would have remained in an active position.

Monthly Allowance:

All Plans Except 3: Same as service retirement allowance; payable any time after the member would have been eligible for service retirement. (31703, 31704, 31705)

If a terminated member dies before the effective date of the deferred retirement allowance, the member's accumulated contributions are paid to the estate or to the named beneficiary. (31702)

Plan 3: Same as service retirement allowance at normal retirement age 65 or in an actuarially equivalent reduced amount at early retirement, after age 55. (31496)

No benefit is paid for death while inactive.

COST-OF-LIVING INCREASES

| | | |
|---|---|---|
| Cost-of-living increases (or decreases) are applied to all retirement allowances (service and disability), optional death allowances, and annual death allowances effective April 1, based on changes in the Consumer Price Index (CPI) from the previous January 1 to the current January 1, to the nearest ½ of 1%. | | (31870, 31870.1, 31870.2, 31874.4) |
| Plan 1: | General & Safety Members (and their beneficiaries) are limited to a maximum 5% cost-of-living increase. | (31870.2) |
| | Probation Members (and their beneficiaries) are limited to a maximum 3% cost-of-living increase. | (31870.1) |
| Plan 2: | All members Members (and their beneficiaries) are limited to a maximum 3% cost-of-living increase. | (31870.1) |
| Plan 3: | Plan 3 does not have a COLA. | (31487) |
| Other Plans: | All members Members (and their beneficiaries) are limited to a maximum 2% cost-of-living increase. | (31870) |
| COLA Bank | | |
| Plan 1: | When the CPI exceeds the applicable percentage (3% or 5%), the difference between the actual CPI and the maximum cost-of-living increase given in any year is credited to the COLA Accumulation (COLA Bank). It may be used in future years to provide cost-of-living increases when the CPI falls below the applicable percentage. | (31870.1, 31870.2) |
| Other Plans: | All other Plans do not have a COLA bank. | (31874.4) |

Appendix C Valuation Data and Schedules

Data on SamCERA membership as of June 30, 2021 was supplied to us by SamCERA staff. On the following table, Exhibit C-1, we present a summary of SamCERA membership at June 30, 2021 for active members. Similar information is shown in Exhibit C-2 for inactive members and Exhibits C-3a and C-3b for retired members.

Note that salary amounts shown are annualized amounts based on the biweekly pay for the period prior to the valuation date. If the annualized amount was less than the total prior earnings, total prior year earnings were used.

Additional statistical data on both active and retired members is shown in the following tables.

Exhibit C-4: Age, Service, Compensation Distribution of Active Members

Exhibit C-5: Age, Retirement Year, Benefit Amount and Plan Distribution of Retired Members

Exhibits C-4 and C-5 are shown for all plans combined as well as for classification separately.

Exhibit C-1
SamCERA Membership – Active Members as of June 30, 2021

| | Total Number | Annual Salary | Average Age | Average Monthly Salary | Average Credited Service |
|--------------------------|-------------------------|-----------------------|------------------------|---------------------------------------|---|
| General Members | | | | | |
| Plan 1 | 2 | \$ 432,536 | 70.5 | \$ 18,022 | 44.3 |
| Plan 2 | 356 | 46,810,383 | 57.2 | 10,957 | 28.0 |
| Plan 3 | 49 | 5,070,273 | 54.8 | 8,623 | 17.0 |
| Plan 4 | 1,647 | 199,355,717 | 50.6 | 10,087 | 16.4 |
| Plan 5 | 282 | 37,536,490 | 46.8 | 11,092 | 6.5 |
| Plan 7 | 2,307 | 221,864,550 | 39.8 | 8,014 | 3.8 |
| Total | 4,643 | \$ 511,069,950 | 45.6 | \$ 9,173 | 10.4 |
| Safety Members | | | | | |
| Plan 1 | - | \$ - | - | \$ - | - |
| Plan 2 | 22 | 4,002,889 | 54.6 | 15,162 | 25.0 |
| Plan 4 | 185 | 29,956,622 | 47.6 | 13,494 | 16.1 |
| Plan 5 | 64 | 9,691,053 | 42.3 | 12,619 | 6.8 |
| Plan 7 | 249 | 29,178,986 | 35.1 | 9,765 | 3.9 |
| Total | 520 | \$ 72,829,550 | 41.3 | \$ 11,671 | 9.5 |
| Probation Members | | | | | |
| Plan 1 | - | \$ - | - | \$ - | - |
| Plan 2 | 5 | 638,459 | 51.2 | 10,641 | 26.2 |
| Plan 4 | 130 | 16,160,302 | 46.8 | 10,359 | 17.9 |
| Plan 5 | 8 | 951,452 | 37.8 | 9,911 | 8.7 |
| Plan 6 | - | - | - | - | - |
| Plan 7 | 50 | 5,026,879 | 34.6 | 8,378 | 4.8 |
| Total | 193 | \$ 22,777,092 | 43.4 | \$ 9,835 | 14.3 |
| Grand Total | 5,356 | \$ 606,676,591 | 45.1 | \$ 9,439 | 10.5 |

Exhibit C-2
SamCERA Membership – Inactive Members as of June 30, 2021

| | Deferred Vested Number | Deferred Vested Average Age | Contingent Vested Number | Contingent Vested Average Age |
|--------------------------|---------------------------------------|--|---|--|
| General Members | | | | |
| Plan 1 | 7 | 66.0 | - | - |
| Plan 2 | 184 | 57.3 | 43 | 57.2 |
| Plan 3 | 68 | 59.1 | - | - |
| Plan 4 | 594 | 47.6 | 178 | 49.4 |
| Plan 5 | 42 | 44.0 | 66 | 44.4 |
| Plan 7 | 68 | 40.5 | 574 | 39.6 |
| Total | 963 | 49.8 | 861 | 42.9 |
| Safety Members | | | | |
| Plan 1 | - | - | - | - |
| Plan 2 | 4 | 53.3 | 5 | 59.0 |
| Plan 4 | 27 | 45.0 | 14 | 51.0 |
| Plan 5 | 5 | 46.4 | 7 | 42.3 |
| Plan 7 | 6 | 32.2 | 26 | 35.6 |
| Total | 42 | 44.1 | 52 | 42.9 |
| Probation Members | | | | |
| Plan 1 | - | - | - | - |
| Plan 2 | 9 | 53.9 | 7 | 52.6 |
| Plan 4 | 32 | 44.8 | 9 | 49.7 |
| Plan 5 | - | - | 1 | 41.0 |
| Plan 6 | - | - | - | - |
| Plan 7 | 1 | 36 | 9 | 31.8 |
| Total | 42 | 46.6 | 26 | 43.9 |
| Grand Total | 1,047 | 49.4 | 939 | 42.9 |

Exhibit C-3a
SamCERA Membership – Retired Members as of June 30, 2021

| | Number | Average Age | Monthly Allowance | Average Monthly Benefit |
|--------------------------|---------------|--------------------|--------------------------|--------------------------------|
| General Members | | | | |
| Plan 1 | 1,242 | 80.8 | \$ 5,216,599 | \$ 3,928 |
| Plan 2 | 2,188 | 70.6 | 8,173,987 | 3,617 |
| Plan 3 | 122 | 72.6 | 196,408 | 549 |
| Plan 4 | 1,053 | 66.6 | 2,533,219 | 2,383 |
| Plan 5 | 16 | 60.3 | 28,748 | 1,597 |
| Plan 7 | 20 | 63.0 | 19,972 | 999 |
| Total | 4,641 | 72.4 | \$ 16,168,934 | \$ 3,484 |
| Safety Members | | | | |
| Plan 1 | 262 | 76.5 | \$ 1,940,719 | \$ 7,379 |
| Plan 2 | 256 | 63.0 | 2,143,851 | 8,277 |
| Plan 4 | 135 | 58.3 | 622,328 | 4,543 |
| Plan 5 | 4 | 56.3 | 9,094 | 2,273 |
| Plan 7 | 2 | 62.0 | 3,234 | 1,617 |
| Total | 659 | 67.4 | \$ 4,719,226 | \$ 7,161 |
| Probation Members | | | | |
| Plan 1 | 96 | 78.3 | \$ 414,559 | \$ 4,146 |
| Plan 2 | 120 | 62.2 | 694,203 | 5,299 |
| Plan 4 | 75 | 57.2 | 342,810 | 4,339 |
| Plan 7 | 1 | 57.0 | 2,084 | 2,084 |
| Total | 292 | 66.2 | \$ 1,453,655 | \$ 4,978 |
| Grand Total | 5,592 | 71.5 | \$ 22,341,816 | \$ 3,995 |

Exhibit C-3b
SamCERA Membership – Retired Members as of June 30, 2021
Subtotaled by Class and Retirement Type

| <u>Plan</u> | <u>Retirement Type</u> | <u>Number</u> | <u>Monthly Benefit</u> | <u>Average Monthly Benefit</u> |
|--------------------------------|------------------------|---------------|------------------------|--------------------------------|
| <i>General Plans:</i> | | | | |
| | Healthy | 3,738 | \$ 13,844,920 | \$ 3,378 |
| | Disabled | 363 | 1,170,087 | 3,145 |
| | Beneficiaries | 540 | 1,153,928 | 2,000 |
| | Total | <u>4,641</u> | <u>\$ 16,168,934</u> | <u>\$ 3,484</u> |
| <i>Safety Plans:</i> | | | | |
| | Healthy | 432 | \$ 3,525,611 | \$ 8,105 |
| | Disabled | 118 | 747,094 | 6,226 |
| | Beneficiaries | 109 | 446,521 | 4,059 |
| | Total | <u>659</u> | <u>\$ 4,719,226</u> | <u>\$ 7,161</u> |
| <i>Probation Plans:</i> | | | | |
| | Healthy | 251 | \$ 1,303,891 | \$ 4,939 |
| | Disabled | 18 | 92,194 | 4,390 |
| | Beneficiaries | 23 | 57,570 | 2,214 |
| | Total | <u>292</u> | <u>\$ 1,453,655</u> | <u>\$ 4,978</u> |
| <i>Grand Totals</i> | | | | |
| | Healthy | 4,421 | \$ 18,674,421 | \$ 4,224 |
| | Disabled | 499 | 2,009,375 | 4,027 |
| | Beneficiaries | 672 | 1,658,019 | 2,467 |
| | Total | <u>5,592</u> | <u>\$ 22,341,816</u> | <u>\$ 3,995</u> |

Exhibit C-4
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2021 – All Members

| Count | | | | | | | | | | |
|--------------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|---------|--------------------|
| Age | Years of Service | | | | | | | | | Total Count |
| | 0-1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35&Over | |
| Under 25 | 20 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| 25-29 | 101 | 252 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 383 |
| 30-34 | 82 | 372 | 209 | 18 | 0 | 0 | 0 | 0 | 0 | 681 |
| 35-39 | 52 | 295 | 288 | 106 | 41 | 2 | 0 | 0 | 0 | 784 |
| 40-44 | 35 | 189 | 187 | 158 | 145 | 36 | 0 | 0 | 0 | 750 |
| 45-49 | 14 | 148 | 140 | 135 | 202 | 143 | 20 | 0 | 0 | 802 |
| 50-54 | 16 | 110 | 110 | 125 | 155 | 160 | 60 | 13 | 1 | 750 |
| 55-59 | 10 | 79 | 91 | 88 | 88 | 112 | 52 | 51 | 11 | 582 |
| 60-64 | 9 | 52 | 66 | 63 | 74 | 65 | 34 | 28 | 6 | 397 |
| 65 & Over | 2 | 25 | 36 | 41 | 36 | 21 | 7 | 12 | 13 | 193 |
| Total Count | 341 | 1,536 | 1,157 | 734 | 741 | 539 | 173 | 104 | 31 | 5,356 |

| Compensation | | | | | | | | | | |
|---------------------------------|-------------------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------------------|
| Age | Years of Service | | | | | | | | | Average Comp. |
| | 0-1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35&Over | |
| Under 25 | \$65,288 | \$79,313 | - | - | - | - | - | - | - | \$71,063 |
| 25-29 | 84,305 | 89,964 | 104,487 | - | - | - | - | - | - | 89,609 |
| 30-34 | 87,970 | 95,888 | 109,953 | 120,227 | - | - | - | - | - | 99,895 |
| 35-39 | 92,795 | 102,747 | 110,811 | 118,402 | 115,173 | 89,502 | - | - | - | 107,782 |
| 40-44 | 87,952 | 103,006 | 114,871 | 126,807 | 121,341 | 113,996 | - | - | - | 114,348 |
| 45-49 | 90,584 | 104,975 | 118,421 | 123,810 | 134,903 | 126,599 | 124,333 | - | - | 122,118 |
| 50-54 | 98,096 | 101,916 | 122,316 | 133,445 | 121,404 | 135,346 | 127,991 | 136,734 | 104,697 | 123,934 |
| 55-59 | 77,176 | 106,111 | 109,661 | 123,799 | 118,833 | 118,805 | 132,602 | 131,495 | 119,675 | 118,057 |
| 60-64 | 105,074 | 98,108 | 102,456 | 133,738 | 119,313 | 120,865 | 139,234 | 134,100 | 116,063 | 118,653 |
| 65 & Over | 257,402 | 105,993 | 125,192 | 139,001 | 108,193 | 145,754 | 135,254 | 150,415 | 143,677 | 129,254 |
| Avg. Annual Compensation | \$87,999 | \$99,031 | \$113,043 | \$126,927 | \$123,571 | \$126,651 | \$131,457 | \$135,034 | \$128,558 | \$113,270 |

Exhibit C-4a
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2021 – General Members

| Count | | | | | | | | | | |
|--------------------|-------------------------|--------------|------------|------------|------------|------------|------------|------------|-----------|--------------------|
| Age | Years of Service | | | | | | | | | Total Count |
| | 0-1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35&Over | |
| Under 25 | 17 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 25-29 | 88 | 196 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 301 |
| 30-34 | 74 | 320 | 149 | 10 | 0 | 0 | 0 | 0 | 0 | 553 |
| 35-39 | 47 | 274 | 247 | 84 | 34 | 2 | 0 | 0 | 0 | 688 |
| 40-44 | 31 | 175 | 172 | 131 | 115 | 28 | 0 | 0 | 0 | 652 |
| 45-49 | 14 | 141 | 126 | 119 | 149 | 96 | 16 | 0 | 0 | 661 |
| 50-54 | 14 | 101 | 95 | 109 | 134 | 137 | 49 | 12 | 1 | 652 |
| 55-59 | 10 | 71 | 83 | 82 | 83 | 105 | 50 | 51 | 11 | 546 |
| 60-64 | 9 | 52 | 62 | 55 | 72 | 63 | 31 | 28 | 6 | 378 |
| 65 & Over | 2 | 24 | 35 | 38 | 32 | 21 | 7 | 12 | 13 | 184 |
| Total Count | 306 | 1,365 | 986 | 628 | 619 | 452 | 153 | 103 | 31 | 4,643 |

| Compensation | | | | | | | | | | |
|---------------------------------|-------------------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|
| Age | Years of Service | | | | | | | | | Average Comp. |
| | 0-1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35&Over | |
| Under 25 | \$60,036 | \$73,040 | - | - | - | - | - | - | - | \$65,145 |
| 25-29 | 82,578 | 85,127 | 93,212 | - | - | - | - | - | - | 84,839 |
| 30-34 | 86,926 | 92,935 | 103,445 | 110,212 | - | - | - | - | - | 95,275 |
| 35-39 | 92,671 | 101,724 | 107,249 | 113,126 | 108,688 | 89,502 | - | - | - | 104,790 |
| 40-44 | 86,036 | 101,781 | 112,284 | 124,551 | 114,400 | 102,961 | - | - | - | 110,654 |
| 45-49 | 90,584 | 103,811 | 115,432 | 121,439 | 132,333 | 117,834 | 120,881 | - | - | 117,799 |
| 50-54 | 93,153 | 99,542 | 117,163 | 129,776 | 116,739 | 129,793 | 116,687 | 124,539 | 104,697 | 118,674 |
| 55-59 | 77,176 | 103,894 | 106,544 | 120,600 | 119,619 | 117,349 | 130,687 | 131,495 | 119,675 | 116,644 |
| 60-64 | 105,074 | 98,108 | 100,095 | 125,426 | 118,735 | 120,061 | 137,819 | 134,100 | 116,063 | 116,370 |
| 65 & Over | 257,402 | 104,006 | 124,379 | 141,335 | 107,789 | 145,754 | 135,254 | 150,415 | 143,677 | 129,699 |
| Avg. Annual Compensation | \$86,756 | \$97,126 | \$109,410 | \$123,688 | \$119,771 | \$121,907 | \$126,832 | \$133,597 | \$128,558 | \$110,073 |

Exhibit C-4b
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2021 – Safety Members

| Count | | | | | | | | | | | |
|--------------------|-------------------------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------------|--------------------|--|
| Age | Years of Service | | | | | | | | | Total Count | |
| | 0-1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35&Over | | |
| Under 25 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 25-29 | 13 | 47 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 71 | |
| 30-34 | 8 | 39 | 49 | 6 | 0 | 0 | 0 | 0 | 0 | 102 | |
| 35-39 | 5 | 17 | 31 | 12 | 5 | 0 | 0 | 0 | 0 | 70 | |
| 40-44 | 4 | 13 | 13 | 16 | 10 | 6 | 0 | 0 | 0 | 62 | |
| 45-49 | 0 | 6 | 12 | 11 | 26 | 21 | 2 | 0 | 0 | 78 | |
| 50-54 | 2 | 8 | 13 | 14 | 13 | 14 | 8 | 1 | 0 | 73 | |
| 55-59 | 0 | 8 | 8 | 6 | 4 | 5 | 2 | 0 | 0 | 33 | |
| 60-64 | 0 | 0 | 4 | 8 | 2 | 2 | 3 | 0 | 0 | 19 | |
| 65 & Over | 0 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 6 | |
| Total Count | 35 | 142 | 142 | 76 | 61 | 48 | 15 | 1 | 0 | 520 | |

| Compensation | | | | | | | | | | | |
|---------------------------------|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|----------------------|--|
| Age | Years of Service | | | | | | | | | Average Comp. | |
| | 0-1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35&Over | | |
| Under 25 | \$95,051 | \$102,315 | - | - | - | - | - | - | - | \$98,683 | |
| 25-29 | 95,999 | 109,783 | 122,019 | - | - | - | - | - | - | 109,155 | |
| 30-34 | 97,620 | 119,725 | 129,661 | 139,040 | - | - | - | - | - | 123,901 | |
| 35-39 | 93,959 | 120,354 | 139,077 | 160,225 | 156,196 | - | - | - | - | 136,156 | |
| 40-44 | 102,800 | 121,033 | 149,851 | 152,459 | 188,629 | 154,122 | - | - | - | 148,114 | |
| 45-49 | - | 135,454 | 149,244 | 150,882 | 161,924 | 164,993 | 155,149 | - | - | 157,032 | |
| 50-54 | 132,692 | 134,403 | 159,406 | 167,381 | 168,722 | 181,388 | 194,165 | 283,073 | - | 168,841 | |
| 55-59 | - | 125,786 | 141,995 | 167,529 | 105,855 | 145,650 | 180,458 | - | - | 141,213 | |
| 60-64 | - | - | 139,047 | 190,887 | 140,118 | 146,177 | 153,857 | - | - | 164,076 | |
| 65 & Over | - | 153,671 | 153,671 | 109,435 | 148,630 | - | - | - | - | 130,713 | |
| Avg. Annual Compensation | \$98,871 | \$118,333 | \$138,479 | \$158,683 | \$162,672 | \$165,617 | \$179,073 | \$283,073 | - | \$140,057 | |

Exhibit C-4c
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2021 – Probation Members

| Count | | | | | | | | | | | |
|--------------------|-------------------------|-----|-----|-------|-------|-------|-------|-------|---------|--------------------|-----|
| Age | Years of Service | | | | | | | | | Total Count | |
| | 0-1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35&Over | | |
| Under 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25-29 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 30-34 | 0 | 13 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 35-39 | 0 | 4 | 10 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 26 |
| 40-44 | 0 | 1 | 2 | 11 | 20 | 2 | 0 | 0 | 0 | 0 | 36 |
| 45-49 | 0 | 1 | 2 | 5 | 27 | 26 | 2 | 0 | 0 | 0 | 63 |
| 50-54 | 0 | 1 | 2 | 2 | 8 | 9 | 3 | 0 | 0 | 0 | 25 |
| 55-59 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 3 |
| 60-64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 & Over | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total Count | 0 | 29 | 29 | 30 | 61 | 39 | 5 | 0 | 0 | 0 | 193 |

| Compensation | | | | | | | | | | | |
|---------------------------------|-------------------------|----------|-----------|-----------|-----------|-----------|-----------|-------|---------|----------------------|-----------|
| Age | Years of Service | | | | | | | | | Average Comp. | |
| | 0-1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35&Over | | |
| Under 25 | - | - | - | - | - | - | - | - | - | - | - |
| 25-29 | - | \$91,800 | \$103,894 | - | - | - | - | - | - | - | \$93,999 |
| 30-34 | - | 97,087 | 110,323 | 113,861 | - | - | - | - | - | - | 103,977 |
| 35-39 | - | 97,963 | 111,164 | 112,540 | 122,869 | - | - | - | - | - | 110,563 |
| 40-44 | - | 83,132 | 109,968 | 116,364 | 127,609 | 148,119 | - | - | - | - | 123,097 |
| 45-49 | - | 86,195 | 121,817 | 120,697 | 123,071 | 127,949 | 121,129 | - | - | - | 124,209 |
| 50-54 | - | 81,779 | 125,988 | 95,858 | 122,664 | 148,261 | 136,161 | - | - | - | 129,985 |
| 55-59 | - | - | - | - | 105,495 | 128,107 | - | - | - | - | 120,570 |
| 60-64 | - | - | - | - | - | - | - | - | - | - | - |
| 65 & Over | - | - | - | - | 99,024 | - | - | - | - | - | 99,024 |
| Avg. Annual Compensation | \$0 | \$94,182 | \$112,018 | \$114,278 | \$123,028 | \$133,679 | \$130,148 | - | - | - | \$118,016 |

Exhibit C-5
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021 – All Plans Combined

| Age | Retirement Year | | | | | | | | Total Count | Monthly Benefit |
|----------------------------|-----------------|----------|----------|----------|----------|----------|----------|----------|--------------|-----------------|
| | Pre-1990 | 1990-94 | 1995-99 | 2000-04 | 2005-09 | 2010-14 | 2015-19 | 2020-24 | | |
| Under 35 | - | - | - | - | - | 4 | 2 | - | 6 | \$ 1,268 |
| 35-39 | - | - | 1 | 1 | 1 | - | 1 | - | 4 | 2,372 |
| 40-44 | - | - | - | - | - | 5 | 14 | 2 | 21 | 3,589 |
| 45-49 | - | - | - | - | 8 | 8 | 17 | 8 | 41 | 3,861 |
| 50-54 | - | - | 1 | 6 | 7 | 11 | 100 | 71 | 196 | 4,812 |
| 55-59 | - | - | 7 | 7 | 20 | 63 | 239 | 89 | 425 | 4,361 |
| 60-64 | - | - | 9 | 16 | 49 | 187 | 309 | 133 | 703 | 4,457 |
| 65-69 | - | 3 | 14 | 62 | 172 | 295 | 399 | 72 | 1,017 | 4,210 |
| 70-74 | 3 | 14 | 68 | 149 | 280 | 345 | 220 | 28 | 1,107 | 4,168 |
| 75-79 | 7 | 31 | 121 | 186 | 297 | 166 | 73 | 14 | 895 | 4,224 |
| 80-84 | 20 | 84 | 117 | 153 | 90 | 49 | 33 | 12 | 558 | 3,234 |
| 85-89 | 39 | 55 | 100 | 51 | 27 | 24 | 17 | 6 | 319 | 2,997 |
| 90-94 | 56 | 52 | 45 | 8 | 6 | 11 | 12 | 4 | 194 | 2,370 |
| 95-99 | 41 | 13 | 15 | 5 | 4 | 2 | 5 | 1 | 86 | 2,462 |
| 100 & Over | 10 | 3 | 3 | 2 | - | 1 | 1 | - | 20 | 2,645 |
| Total Count | 176 | 255 | 501 | 646 | 961 | 1,171 | 1,442 | 440 | 5,592 | |
| Avg Monthly Benefit | \$ 2,335 | \$ 2,645 | \$ 2,797 | \$ 3,753 | \$ 4,650 | \$ 3,976 | \$ 4,204 | \$ 5,098 | | \$ 3,995 |

Exhibit C-5a
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021 – General Plans Combined

| Age | Retirement Year | | | | | | | | Total Count | Average Monthly Benefit |
|----------------------------|-----------------|----------|----------|----------|----------|----------|----------|----------|--------------|-------------------------|
| | Pre-1990 | 1990-94 | 1995-99 | 2000-04 | 2005-09 | 2010-14 | 2015-19 | 2020-24 | | |
| Under 35 | - | - | - | - | - | 4 | 2 | - | 6 | \$ 1,268 |
| 35-39 | - | - | 1 | 1 | 1 | - | - | - | 3 | 1,362 |
| 40-44 | - | - | - | - | - | 2 | 9 | 1 | 12 | 4,128 |
| 45-49 | - | - | - | - | 5 | 7 | 5 | 2 | 19 | 2,882 |
| 50-54 | - | - | - | 3 | 5 | 10 | 38 | 27 | 83 | 2,574 |
| 55-59 | - | - | 5 | 2 | 10 | 42 | 154 | 66 | 279 | 3,088 |
| 60-64 | - | - | 7 | 11 | 35 | 140 | 265 | 126 | 584 | 3,853 |
| 65-69 | - | 2 | 10 | 55 | 134 | 259 | 372 | 70 | 902 | 3,773 |
| 70-74 | 2 | 9 | 54 | 107 | 240 | 323 | 208 | 24 | 967 | 3,757 |
| 75-79 | 1 | 23 | 83 | 131 | 279 | 153 | 62 | 12 | 744 | 3,848 |
| 80-84 | 15 | 69 | 83 | 132 | 85 | 40 | 27 | 8 | 459 | 2,844 |
| 85-89 | 35 | 51 | 90 | 47 | 27 | 23 | 13 | 5 | 291 | 2,926 |
| 90-94 | 53 | 52 | 43 | 8 | 6 | 10 | 12 | 4 | 188 | 2,229 |
| 95-99 | 40 | 13 | 15 | 5 | 4 | 2 | 5 | 1 | 85 | 2,413 |
| 100 & Over | 10 | 3 | 2 | 2 | - | 1 | 1 | - | 19 | 2,517 |
| Total Count | 156 | 222 | 393 | 504 | 831 | 1,016 | 1,173 | 346 | 4,641 | |
| Avg Monthly Benefit | \$ 2,017 | \$ 2,331 | \$ 2,238 | \$ 3,086 | \$ 4,205 | \$ 3,501 | \$ 3,623 | \$ 4,627 | | \$ 3,484 |

Exhibit C-5b
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021 – Safety Plans Combined

| Age | Retirement Year | | | | | | | | Total Count | Average Monthly Benefit |
|----------------------------|-----------------|----------|----------|----------|----------|----------|----------|----------|-------------|-------------------------|
| | Pre-1990 | 1990-94 | 1995-99 | 2000-04 | 2005-09 | 2010-14 | 2015-19 | 2020-24 | | |
| Under 35 | - | - | - | - | - | - | - | - | - | \$ - |
| 35-39 | - | - | - | - | - | - | 1 | - | 1 | 5,402 |
| 40-44 | - | - | - | - | - | 2 | 4 | - | 6 | 2,830 |
| 45-49 | - | - | - | - | 3 | 1 | 5 | 2 | 11 | 4,801 |
| 50-54 | - | - | 1 | 3 | 2 | 1 | 33 | 26 | 66 | 6,817 |
| 55-59 | - | - | 2 | 4 | 9 | 13 | 55 | 14 | 97 | 7,223 |
| 60-64 | - | - | 2 | 3 | 12 | 35 | 33 | 5 | 90 | 8,064 |
| 65-69 | - | 1 | 4 | 6 | 29 | 21 | 24 | 2 | 87 | 8,166 |
| 70-74 | 1 | 5 | 11 | 38 | 26 | 15 | 11 | 4 | 111 | 7,612 |
| 75-79 | 6 | 7 | 29 | 38 | 9 | 7 | 8 | 1 | 105 | 6,791 |
| 80-84 | 5 | 11 | 24 | 9 | 2 | 5 | 5 | 4 | 65 | 5,782 |
| 85-89 | 4 | 2 | 3 | 1 | - | - | 2 | 1 | 13 | 5,658 |
| 90-94 | 3 | - | 1 | - | - | 1 | - | - | 5 | 7,671 |
| 95-99 | 1 | - | - | - | - | - | - | - | 1 | 6,570 |
| 100 & Over | - | - | 1 | - | - | - | - | - | 1 | 5,080 |
| Total Count | 20 | 26 | 78 | 102 | 92 | 101 | 181 | 59 | 659 | |
| Avg Monthly Benefit | \$ 4,818 | \$ 5,337 | \$ 5,265 | \$ 7,002 | \$ 8,827 | \$ 7,931 | \$ 7,264 | \$ 7,311 | | \$ 7,161 |

Exhibit C-5c
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2021 – Probation Plans Combined

| Age | Retirement Year | | | | | | | | Total Count | Average Monthly Benefit |
|----------------------------|-----------------|----------|----------|----------|----------|----------|----------|----------|-------------|-------------------------|
| | Pre-1990 | 1990-94 | 1995-99 | 2000-04 | 2005-09 | 2010-14 | 2015-19 | 2020-24 | | |
| Under 35 | - | - | - | - | - | - | - | - | - | \$ - |
| 35-39 | - | - | - | - | - | - | - | - | - | - |
| 40-44 | - | - | - | - | - | 1 | 1 | 1 | 3 | 2,951 |
| 45-49 | - | - | - | - | - | - | 7 | 4 | 11 | 4,611 |
| 50-54 | - | - | - | - | - | - | 29 | 18 | 47 | 5,949 |
| 55-59 | - | - | - | 1 | 1 | 8 | 30 | 9 | 49 | 5,947 |
| 60-64 | - | - | - | 2 | 2 | 12 | 11 | 2 | 29 | 5,444 |
| 65-69 | - | - | - | 1 | 9 | 15 | 3 | - | 28 | 6,001 |
| 70-74 | - | - | 3 | 4 | 14 | 7 | 1 | - | 29 | 4,698 |
| 75-79 | - | 1 | 9 | 17 | 9 | 6 | 3 | 1 | 46 | 4,446 |
| 80-84 | - | 4 | 10 | 12 | 3 | 4 | 1 | - | 34 | 3,626 |
| 85-89 | - | 2 | 7 | 3 | - | 1 | 2 | - | 15 | 2,061 |
| 90-94 | - | - | 1 | - | - | - | - | - | 1 | 2,246 |
| 95-99 | - | - | - | - | - | - | - | - | - | - |
| 100 & Over | - | - | - | - | - | - | - | - | - | - |
| Total Count | - | 7 | 30 | 40 | 38 | 54 | 88 | 35 | 292 | |
| Avg Monthly Benefit | \$ - | \$ 2,621 | \$ 3,699 | \$ 3,865 | \$ 4,268 | \$ 5,519 | \$ 5,668 | \$ 6,020 | | \$ 4,978 |

Appendix D Member Contribution Rates

This section illustrates the member basic contribution rates and COLA sharing contribution rates by entry age for Plans 1 through 6. For different COLA sharing percentages, the COLA contribution rates may be adjusted ratably, and should be rounded to two decimal places.

Member contribution rates for Plan 7 are not defined by entry age. Plan 7 members contribute 50% of the total Normal Cost rate. For the 2022-2023 fiscal year, Plan 7 member contribution rates are:

- General Plan 7 members: 9.17%
- SMCM&VCD Plan 7 members: 10.12%
- Safety Plan 7 members: 15.66%
- Probation Plan 7 members: 15.74%

Please refer to Appendix B for a detailed description of member contribution rates.

**Exhibit D-1
 General Member Contribution Rates (including SMCM&VCD)**

| Entry Age ⁽¹⁾ | Basic Member Rates | | | | |
|--------------------------|--------------------|--------|--------|---------|----------|
| | General & SMCM&VCD | | | General | SMCM&VCD |
| | Plans 1&2 | Plan 4 | Plan 5 | Plan 7 | Plan 7 |
| 16 | 6.71% | 6.49% | 5.66% | 9.17% | 10.12% |
| 17 | 6.82% | 6.59% | 5.75% | 9.17% | 10.12% |
| 18 | 6.92% | 6.69% | 5.84% | 9.17% | 10.12% |
| 19 | 7.03% | 6.80% | 5.93% | 9.17% | 10.12% |
| 20 | 7.14% | 6.90% | 6.03% | 9.17% | 10.12% |
| 21 | 7.25% | 7.01% | 6.12% | 9.17% | 10.12% |
| 22 | 7.36% | 7.12% | 6.22% | 9.17% | 10.12% |
| 23 | 7.48% | 7.23% | 6.31% | 9.17% | 10.12% |
| 24 | 7.59% | 7.34% | 6.41% | 9.17% | 10.12% |
| 25 | 7.71% | 7.45% | 6.51% | 9.17% | 10.12% |
| 26 | 7.83% | 7.57% | 6.61% | 9.17% | 10.12% |
| 27 | 7.95% | 7.68% | 6.72% | 9.17% | 10.12% |
| 28 | 8.07% | 7.80% | 6.82% | 9.17% | 10.12% |
| 29 | 8.20% | 7.92% | 6.92% | 9.17% | 10.12% |
| 30 | 8.33% | 8.05% | 7.03% | 9.17% | 10.12% |
| 31 | 8.46% | 8.17% | 7.14% | 9.17% | 10.12% |
| 32 | 8.59% | 8.30% | 7.25% | 9.17% | 10.12% |
| 33 | 8.72% | 8.43% | 7.36% | 9.17% | 10.12% |
| 34 | 8.86% | 8.56% | 7.48% | 9.17% | 10.12% |
| 35 | 9.00% | 8.69% | 7.59% | 9.17% | 10.12% |
| 36 | 9.14% | 8.83% | 7.71% | 9.17% | 10.12% |
| 37 | 9.28% | 8.97% | 7.83% | 9.17% | 10.12% |
| 38 | 9.43% | 9.12% | 7.95% | 9.17% | 10.12% |
| 39 | 9.59% | 9.26% | 8.08% | 9.17% | 10.12% |
| 40 | 9.74% | 9.41% | 8.20% | 9.17% | 10.12% |
| 41 | 9.91% | 9.57% | 8.33% | 9.17% | 10.12% |
| 42 | 10.07% | 9.72% | 8.46% | 9.17% | 10.12% |
| 43 | 10.24% | 9.86% | 8.60% | 9.17% | 10.12% |
| 44 | 10.40% | 10.01% | 8.74% | 9.17% | 10.12% |
| 45 | 10.56% | 10.15% | 8.88% | 9.17% | 10.12% |
| 46 | 10.71% | 10.28% | 9.03% | 9.17% | 10.12% |
| 47 | 10.86% | 10.40% | 9.17% | 9.17% | 10.12% |
| 48 | 11.00% | 10.51% | 9.31% | 9.17% | 10.12% |
| 49 | 11.13% | 10.60% | 9.44% | 9.17% | 10.12% |
| 50 | 11.25% | 10.66% | 9.58% | 9.17% | 10.12% |
| 51 | 11.34% | 10.66% | 9.70% | 9.17% | 10.12% |
| 52 | 11.39% | 10.66% | 9.81% | 9.17% | 10.12% |
| 53 | 11.39% | 10.91% | 9.92% | 9.17% | 10.12% |
| 54 | 11.39% | 11.23% | 10.00% | 9.17% | 10.12% |
| 55 | 11.39% | 11.23% | 10.06% | 9.17% | 10.12% |
| 56 | 11.39% | 11.23% | 10.06% | 9.17% | 10.12% |
| 57 | 11.39% | 11.23% | 10.06% | 9.17% | 10.12% |
| 58 | 11.39% | 11.23% | 10.29% | 9.17% | 10.12% |
| 59 | 11.39% | 11.23% | 10.60% | 9.17% | 10.12% |
| 60 | 11.39% | 11.23% | 10.60% | 9.17% | 10.12% |

1. For General and SMCM&VCD members entering after age 60, the rate equals the rate at age 60.

Exhibit D-2
Safety/Probation Member Contribution Rates

| Entry Age ⁽¹⁾ | Basic Member Rates | | | |
|--------------------------|--------------------|-------------|--------|-----------|
| | Safety & Probation | | Safety | Probation |
| | Plans 1&2 | Plans 4&5&6 | Plan 7 | Plan 7 |
| 16 | 9.52% | 9.17% | 15.66% | 15.74% |
| 17 | 9.65% | 9.29% | 15.66% | 15.74% |
| 18 | 9.77% | 9.41% | 15.66% | 15.74% |
| 19 | 9.90% | 9.54% | 15.66% | 15.74% |
| 20 | 10.03% | 9.66% | 15.66% | 15.74% |
| 21 | 10.16% | 9.79% | 15.66% | 15.74% |
| 22 | 10.29% | 9.91% | 15.66% | 15.74% |
| 23 | 10.43% | 10.04% | 15.66% | 15.74% |
| 24 | 10.56% | 10.18% | 15.66% | 15.74% |
| 25 | 10.70% | 10.31% | 15.66% | 15.74% |
| 26 | 10.84% | 10.44% | 15.66% | 15.74% |
| 27 | 10.98% | 10.58% | 15.66% | 15.74% |
| 28 | 11.13% | 10.72% | 15.66% | 15.74% |
| 29 | 11.27% | 10.86% | 15.66% | 15.74% |
| 30 | 11.42% | 11.00% | 15.66% | 15.74% |
| 31 | 11.57% | 11.15% | 15.66% | 15.74% |
| 32 | 11.73% | 11.30% | 15.66% | 15.74% |
| 33 | 11.89% | 11.45% | 15.66% | 15.74% |
| 34 | 12.05% | 11.60% | 15.66% | 15.74% |
| 35 | 12.21% | 11.76% | 15.66% | 15.74% |
| 36 | 12.38% | 11.92% | 15.66% | 15.74% |
| 37 | 12.56% | 12.09% | 15.66% | 15.74% |
| 38 | 12.73% | 12.25% | 15.66% | 15.74% |
| 39 | 12.92% | 12.42% | 15.66% | 15.74% |
| 40 | 13.10% | 12.59% | 15.66% | 15.74% |
| 41 | 13.28% | 12.75% | 15.66% | 15.74% |
| 42 | 13.47% | 12.91% | 15.66% | 15.74% |
| 43 | 13.65% | 13.04% | 15.66% | 15.74% |
| 44 | 13.82% | 13.15% | 15.66% | 15.74% |
| 45 | 13.96% | 13.22% | 15.66% | 15.74% |
| 46 | 14.07% | 13.23% | 15.66% | 15.74% |
| 47 | 14.12% | 13.23% | 15.66% | 15.74% |
| 48 | 14.12% | 13.53% | 15.66% | 15.74% |
| 49 | 14.12% | 13.94% | 15.66% | 15.74% |
| 50 | 14.12% | 13.94% | 15.66% | 15.74% |

1. For Safety and Probation members entering after age 50, the rate equals the rate at age 50.

Exhibit D-3
General Member Contribution Rates (except SMCM&VCD)

| Entry Age ⁽¹⁾ | 50% Member COLA Rates | | | |
|--------------------------|-----------------------|--------|--------|--------|
| | Plan 1 | Plan 2 | Plan 4 | Plan 5 |
| 16 | 2.35% | 2.38% | 1.78% | 1.54% |
| 17 | 2.39% | 2.41% | 1.80% | 1.56% |
| 18 | 2.42% | 2.45% | 1.83% | 1.58% |
| 19 | 2.46% | 2.49% | 1.86% | 1.61% |
| 20 | 2.50% | 2.53% | 1.89% | 1.64% |
| 21 | 2.54% | 2.57% | 1.92% | 1.66% |
| 22 | 2.58% | 2.61% | 1.95% | 1.69% |
| 23 | 2.62% | 2.65% | 1.98% | 1.71% |
| 24 | 2.66% | 2.69% | 2.01% | 1.74% |
| 25 | 2.70% | 2.73% | 2.04% | 1.77% |
| 26 | 2.74% | 2.77% | 2.07% | 1.79% |
| 27 | 2.78% | 2.81% | 2.10% | 1.82% |
| 28 | 2.82% | 2.86% | 2.14% | 1.85% |
| 29 | 2.87% | 2.90% | 2.17% | 1.88% |
| 30 | 2.92% | 2.95% | 2.20% | 1.91% |
| 31 | 2.96% | 2.99% | 2.24% | 1.94% |
| 32 | 3.01% | 3.04% | 2.27% | 1.97% |
| 33 | 3.05% | 3.09% | 2.31% | 2.00% |
| 34 | 3.10% | 3.14% | 2.34% | 2.03% |
| 35 | 3.15% | 3.19% | 2.38% | 2.06% |
| 36 | 3.20% | 3.24% | 2.42% | 2.09% |
| 37 | 3.25% | 3.29% | 2.46% | 2.13% |
| 38 | 3.30% | 3.34% | 2.50% | 2.16% |
| 39 | 3.36% | 3.39% | 2.54% | 2.19% |
| 40 | 3.41% | 3.45% | 2.58% | 2.23% |
| 41 | 3.47% | 3.51% | 2.62% | 2.26% |
| 42 | 3.52% | 3.56% | 2.66% | 2.30% |
| 43 | 3.58% | 3.62% | 2.70% | 2.33% |
| 44 | 3.64% | 3.68% | 2.74% | 2.37% |
| 45 | 3.70% | 3.74% | 2.78% | 2.41% |
| 46 | 3.75% | 3.79% | 2.81% | 2.45% |
| 47 | 3.80% | 3.84% | 2.85% | 2.49% |
| 48 | 3.85% | 3.89% | 2.88% | 2.53% |
| 49 | 3.90% | 3.94% | 2.90% | 2.56% |
| 50 | 3.94% | 3.98% | 2.92% | 2.60% |
| 51 | 3.97% | 4.01% | 2.92% | 2.63% |
| 52 | 3.99% | 4.03% | 2.92% | 2.66% |
| 53 | 3.99% | 4.03% | 2.99% | 2.69% |
| 54 | 3.99% | 4.03% | 3.07% | 2.71% |
| 55 | 3.99% | 4.03% | 3.07% | 2.73% |
| 56 | 3.99% | 4.03% | 3.07% | 2.73% |
| 57 | 3.99% | 4.03% | 3.07% | 2.73% |
| 58 | 3.99% | 4.03% | 3.07% | 2.79% |
| 59 | 3.99% | 4.03% | 3.07% | 2.88% |
| 60 | 3.99% | 4.03% | 3.07% | 2.88% |

1. For General and SMCM&VCD members entering after age 60, the rate equals the rate at age 60.

Exhibit D-4
Safety Member Contribution Rates

| Entry Age ⁽¹⁾ | 50% Member COLA Rates | | | | |
|--------------------------|-----------------------|--------|--------|--------|--------|
| | Plan 1 | Plan 2 | Plan 4 | Plan 5 | Plan 6 |
| 16 | 4.56% | 5.06% | 3.81% | 3.57% | 2.98% |
| 17 | 4.63% | 5.13% | 3.86% | 3.61% | 3.02% |
| 18 | 4.68% | 5.19% | 3.91% | 3.66% | 3.06% |
| 19 | 4.75% | 5.26% | 3.97% | 3.71% | 3.10% |
| 20 | 4.81% | 5.33% | 4.02% | 3.76% | 3.14% |
| 21 | 4.87% | 5.40% | 4.07% | 3.81% | 3.18% |
| 22 | 4.93% | 5.47% | 4.12% | 3.85% | 3.22% |
| 23 | 5.00% | 5.54% | 4.17% | 3.90% | 3.26% |
| 24 | 5.06% | 5.61% | 4.23% | 3.96% | 3.31% |
| 25 | 5.13% | 5.68% | 4.29% | 4.01% | 3.35% |
| 26 | 5.20% | 5.76% | 4.34% | 4.06% | 3.39% |
| 27 | 5.26% | 5.83% | 4.40% | 4.11% | 3.44% |
| 28 | 5.33% | 5.91% | 4.46% | 4.17% | 3.48% |
| 29 | 5.40% | 5.99% | 4.52% | 4.22% | 3.53% |
| 30 | 5.47% | 6.07% | 4.57% | 4.28% | 3.57% |
| 31 | 5.55% | 6.15% | 4.64% | 4.34% | 3.62% |
| 32 | 5.62% | 6.23% | 4.70% | 4.39% | 3.67% |
| 33 | 5.70% | 6.32% | 4.76% | 4.45% | 3.72% |
| 34 | 5.78% | 6.40% | 4.82% | 4.51% | 3.77% |
| 35 | 5.85% | 6.49% | 4.89% | 4.57% | 3.82% |
| 36 | 5.93% | 6.58% | 4.96% | 4.63% | 3.87% |
| 37 | 6.02% | 6.67% | 5.03% | 4.70% | 3.93% |
| 38 | 6.10% | 6.76% | 5.09% | 4.76% | 3.98% |
| 39 | 6.19% | 6.86% | 5.16% | 4.83% | 4.03% |
| 40 | 6.28% | 6.96% | 5.23% | 4.89% | 4.09% |
| 41 | 6.37% | 7.06% | 5.30% | 4.96% | 4.14% |
| 42 | 6.46% | 7.16% | 5.37% | 5.02% | 4.19% |
| 43 | 6.54% | 7.25% | 5.42% | 5.07% | 4.23% |
| 44 | 6.62% | 7.34% | 5.47% | 5.11% | 4.27% |
| 45 | 6.69% | 7.42% | 5.50% | 5.14% | 4.29% |
| 46 | 6.74% | 7.48% | 5.50% | 5.14% | 4.30% |
| 47 | 6.77% | 7.50% | 5.50% | 5.14% | 4.30% |
| 48 | 6.77% | 7.50% | 5.63% | 5.26% | 4.39% |
| 49 | 6.77% | 7.50% | 5.80% | 5.42% | 4.53% |
| 50 | 6.77% | 7.50% | 5.80% | 5.42% | 4.53% |

1. For Safety members entering after age 50, the rate equals the rate at age 50.

Exhibit D-5
Probation Member Contribution Rates

| Entry Age ⁽¹⁾ | 50% Member COLA Rates | | | | |
|--------------------------|-----------------------|--------|--------|--------|--------|
| | Plan 1 | Plan 2 | Plan 4 | Plan 5 | Plan 6 |
| 16 | 5.07% | 5.11% | 3.74% | 3.36% | 2.79% |
| 17 | 5.13% | 5.18% | 3.78% | 3.41% | 2.83% |
| 18 | 5.20% | 5.25% | 3.83% | 3.45% | 2.86% |
| 19 | 5.27% | 5.32% | 3.89% | 3.50% | 2.90% |
| 20 | 5.34% | 5.39% | 3.94% | 3.54% | 2.94% |
| 21 | 5.41% | 5.46% | 3.99% | 3.59% | 2.98% |
| 22 | 5.48% | 5.53% | 4.04% | 3.64% | 3.02% |
| 23 | 5.55% | 5.60% | 4.09% | 3.68% | 3.06% |
| 24 | 5.62% | 5.67% | 4.15% | 3.74% | 3.10% |
| 25 | 5.69% | 5.75% | 4.20% | 3.78% | 3.14% |
| 26 | 5.77% | 5.82% | 4.25% | 3.83% | 3.18% |
| 27 | 5.84% | 5.90% | 4.31% | 3.88% | 3.22% |
| 28 | 5.92% | 5.98% | 4.37% | 3.93% | 3.26% |
| 29 | 6.00% | 6.05% | 4.42% | 3.98% | 3.31% |
| 30 | 6.08% | 6.13% | 4.48% | 4.04% | 3.35% |
| 31 | 6.16% | 6.21% | 4.54% | 4.09% | 3.39% |
| 32 | 6.24% | 6.30% | 4.60% | 4.15% | 3.44% |
| 33 | 6.33% | 6.38% | 4.66% | 4.20% | 3.49% |
| 34 | 6.41% | 6.47% | 4.73% | 4.26% | 3.53% |
| 35 | 6.50% | 6.56% | 4.79% | 4.31% | 3.58% |
| 36 | 6.59% | 6.65% | 4.86% | 4.37% | 3.63% |
| 37 | 6.68% | 6.74% | 4.93% | 4.44% | 3.68% |
| 38 | 6.77% | 6.84% | 4.99% | 4.49% | 3.73% |
| 39 | 6.87% | 6.94% | 5.06% | 4.56% | 3.78% |
| 40 | 6.97% | 7.03% | 5.13% | 4.62% | 3.83% |
| 41 | 7.07% | 7.13% | 5.19% | 4.68% | 3.88% |
| 42 | 7.17% | 7.23% | 5.26% | 4.74% | 3.93% |
| 43 | 7.26% | 7.33% | 5.31% | 4.78% | 3.97% |
| 44 | 7.35% | 7.42% | 5.36% | 4.82% | 4.00% |
| 45 | 7.43% | 7.50% | 5.39% | 4.85% | 4.02% |
| 46 | 7.49% | 7.56% | 5.39% | 4.85% | 4.03% |
| 47 | 7.51% | 7.58% | 5.39% | 4.85% | 4.03% |
| 48 | 7.51% | 7.58% | 5.51% | 4.96% | 4.12% |
| 49 | 7.51% | 7.58% | 5.68% | 5.11% | 4.24% |
| 50 | 7.51% | 7.58% | 5.68% | 5.11% | 4.24% |

1. For Probation members entering after age 50, the rate equals the rate at age 50.

Appendix E Glossary

The following definitions include excerpts from a list adopted by the major actuarial organizations in the United States. In some cases, the definitions have been modified for specific applicability to SamCERA and include terms used exclusively by SamCERA. Defined terms are capitalized throughout this Appendix.

Accrued Benefit

The amount of an individual's benefit (whether or not vested) as of a specific date, determined in accordance with the terms of a pension plan and based on compensation and service to that date.

Actuarial Accrued Liability

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disability, and retirement; changes in compensation; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.

Actuarial Gain (Loss)

A measure of the difference between actual experience and that expected based on a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

Actuarial Present Value

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.

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 pension plan.

Actuarial Value of Assets

The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

COLA

Cost of living adjustments to benefit payments are made each April 1. See full description in Appendix B.

County Supplementary Contributions Account (CSCA) Reserve

This is a reserve for supplemental contributions from the County of San Mateo that are over and above the County's required statutory contribution rates.

District Supplementary Contributions Account (DSCA) Reserve

This is a reserve for supplemental contributions from the San Mateo County Mosquito and Vector Control District ("District") that are over and above the District's required statutory contribution rates.

Employer Reserve

The accumulation of employer contributions for future retirement benefit payments. Additions include contributions from employers and related earnings. Deductions include annuity payments to retired members and survivors, lump sum death benefit payments to member survivors, and supplemental disability payments.

Entry Age Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.

Funded Ratio

A measurement of funded status. The Funded Ratio is calculated by dividing the Valuation Assets by the Actuarial Accrued Liability. For example, a Funded Ratio of 90% indicates assets are 10% less than liabilities.

Member Reserve

The accumulation of member contributions. Additions include member contributions and related earnings. Deductions include annuity payments to retirees and refunds to members.

Non-Valuation Reserves

Reserves excluded from the calculation of contribution rates.

Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Plan Year

A 12-month period beginning July 1 and ending June 30.

Projected Benefits

Those pension plan benefit amounts which are 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 and past and anticipated future compensation and service credits.

Unfunded Actuarial Accrued Liability

The excess, if any, of the Actuarial Accrued Liability over the Actuarial Value of Assets.

Valuation Date

The date upon which the Normal Cost, Actuarial Accrued Liability, and Actuarial Value of Assets are determined. Generally, the Valuation Date will coincide with the ending of a Plan Year.

Valuation Reserves

All reserves excluding the Non-Valuation Reserves.