



San Mateo County Employees' Retirement Association

June 30, 2019 Actuarial Valuation

Prepared by:

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September 17, 2019

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, 2020.

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- 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 the retirement system 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, 2019 and member contribution rates effective July 1, 2020 (including adjustments for specific bargaining units as communicated to us by SamCERA staff). 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 data 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.

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. The System 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:

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- (b) The System 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. 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 Mr. 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/nlo

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

Overview

This report presents the results of the June 30, 2019 actuarial valuation, including the Employer Statutory Contribution Rate calculated for the fiscal year beginning July 1, 2020 and the Funded Ratio of SamCERA. The following table summarizes these key results from the current and prior valuations.

	June 30, 2019	June 30, 2018
Employer Statutory Contribution Rate (all employers)	37.86%	33.67%
County Statutory Contribution Rate	38.06%	33.85%
Funded Ratio	85.8%	87.5%

Key findings and results from the valuation are summarized below.

- Investment Return Assumption:** At its July 2019 meeting, the Board of Retirement adopted an investment return assumption of 6.50% for the June 30, 2019 valuation, compared to 6.75% used in the June 30, 2018 valuation. The effect of this change was an increase in Unfunded Actuarial Accrued Liability (UAAL) of \$174 million, and an increase of 3.72% in the Statutory Contribution Rate effective July 1, 2020. In addition, member contribution rates for Plans 1 through 6 (except Plan 3) are revised (and increase) based on the updated investment return assumption. Member contribution rates are discussed in more detail below.
- Funding:** The Funded Ratio decreased from 87.5% to 85.8%, primarily due to the change in investment return assumption. On a market value basis, the Funded Ratio decreased from 88.0% to 86.5%.

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 \$50.7 million to the CSCA over the year ended June 30, 2019. These contributions increased the Funded Ratio by 0.9%. In total, the CSCA has an actuarial value of \$188.7 million and the DSCA has an actuarial value of \$1.9 million as of June 30, 2019. Without the CSCA and DSCA the Funded Ratio would be 82.3% as of June 30, 2019.

- 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 increased from 33.67% of pay (calculated in the 2018 valuation) to 37.86%. 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 increase of 4.19% of pay is comprised of an increase of 0.70% of pay in the Employer Normal Cost Rate and an increase of 3.49% of pay in the UAAL contribution rate and is primarily due to the change in the investment return assumption.

The CSCA provides an offset of 3.54% of pay (compared to 2.85% of pay in the prior valuation) to the County's Statutory Contribution Rate (SCR), resulting in a County-only SCR of 38.06% of pay. Without the recognition of the CSCA, the County SCR would be 41.60% of pay.

The DSCA provides an offset of 25.21% of pay (compared to 21.76% 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. As a result the SCR for SMCM&VCD is equal to the District's Normal Cost contribution of 12.58% of pay.

- **Investment Returns:** SamCERA's investment return on the market value of assets for the fiscal year 2018-2019 of 6.2% was less than the actuarial assumed rate for the prior year of 6.75%. Combined with the recognition of deferred investment losses from prior periods, the net result was a return on Valuation Assets of 5.6%, which is less than the assumed return. This actuarial loss on Valuation Assets caused an increase in the Statutory Contribution Rate of 0.77% of pay.
- **Member Contribution Rates:** We are recommending new member contribution rates for all plans. 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 change in the investment return assumption, we have calculated new member contribution rates for these plans effective July 1, 2020. Plan 7 member contribution rates are required to be equal to 50% of the Gross Normal Cost Rate calculated in the valuation. The recommended member contribution rates are higher for all plans. See Exhibit 1b for a summary of recommended member contribution rates. 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, 2020

	<u>Fiscal Year Beginning</u>		<u>Increase / (Decrease)</u>
	<u>July 1, 2020</u>	<u>July 1, 2019</u>	
Gross Normal Cost	23.73%	22.68%	1.05%
Member Contributions	(12.46)%	(12.11)%	(0.35)%
Employer Normal Cost	11.27%	10.57%	0.70%
UAAL Amortization	26.59%	23.10%	3.49%
Total Employer Rate	37.86%	33.67%	4.19%
County Contribution Rate	38.06%	33.85%	4.21%
Courts Contribution Rate	35.22%	31.03%	4.19%
SMCM&VCD Contribution Rate	12.58%	12.13%	0.45%

Notes:

- Detailed contribution rates by plan are shown in Section 6.*
- The Total Employer Statutory Contribution Rate of 37.86% 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, 2020

	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	7.14%	3.27%	3.00%	13.41%	12.11%	110.7%
	35	8.45%	3.87%	3.00%	15.32%	13.94%	109.9%
	45	10.05%	4.60%	3.00%	17.65%	16.18%	109.1%
Plan 2	25	7.14%	2.43%	3.00%	12.57%	11.96%	105.1%
	35	8.45%	2.88%	3.00%	14.33%	13.75%	104.2%
	45	10.05%	3.43%	3.00%	16.48%	15.96%	103.2%
Plan 4	25	6.90%	1.83%	3.00%	11.73%	11.17%	105.0%
	35	8.17%	2.16%	3.00%	13.33%	12.80%	104.2%
	45	9.66%	2.56%	3.00%	15.22%	14.76%	103.1%
Plan 5	25	6.00%	1.53%	0.00%	7.53%	7.01%	107.4%
	35	7.10%	1.81%	0.00%	8.91%	8.41%	106.0%
	45	8.42%	2.15%	0.00%	10.57%	10.12%	104.4%
Plan 7	All	7.53%	1.58%	0.00%	9.11%	8.61%	105.8%
SMCM&VCD Members							
Plan 1	25	7.14%	0.00%	0.00%	7.14%	6.69%	106.7%
	35	8.45%	0.00%	0.00%	8.45%	8.03%	105.2%
	45	10.05%	0.00%	0.00%	10.05%	9.68%	103.8%
Plan 2	25	7.14%	0.00%	0.00%	7.14%	6.69%	106.7%
	35	8.45%	0.00%	0.00%	8.45%	8.03%	105.2%
	45	10.05%	0.00%	0.00%	10.05%	9.68%	103.8%
Plan 4	25	6.90%	0.00%	0.00%	6.90%	6.47%	106.6%
	35	8.17%	0.00%	0.00%	8.17%	7.76%	105.3%
	45	9.66%	0.00%	0.00%	9.66%	9.31%	103.8%
Plan 7	All	7.64%	1.60%	0.00%	9.24%	9.04%	102.2%

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, 2020

	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	9.83%	4.71%	5.00%	19.54%	18.71%	104.4%
	35	11.44%	5.48%	5.00%	21.92%	21.18%	103.5%
	45	13.25%	6.35%	5.00%	24.60%	23.98%	102.6%
Plan 2	25	9.83%	5.05%	5.00%	19.88%	18.91%	105.1%
	35	11.44%	5.88%	5.00%	22.32%	21.42%	104.2%
	45	13.25%	6.81%	5.00%	25.06%	24.25%	103.3%
Plan 4	25	9.48%	3.69%	5.00%	18.17%	17.31%	105.0%
	35	11.03%	4.29%	5.00%	20.32%	19.51%	104.2%
	45	12.57%	4.89%	5.00%	22.46%	21.76%	103.2%
Plan 5	25	9.48%	3.39%	4.00%	16.87%	16.05%	105.1%
	35	11.03%	3.94%	4.00%	18.97%	18.20%	104.2%
	45	12.57%	4.49%	4.00%	21.06%	20.40%	103.2%
Plan 6	25	9.48%	3.08%	0.00%	12.56%	11.84%	106.1%
	35	11.03%	3.58%	0.00%	14.61%	13.96%	104.7%
	45	12.57%	4.08%	0.00%	16.65%	16.12%	103.3%
Plan 7	All	12.24%	3.04%	0.00%	15.28%	14.50%	105.4%
Probation Members							
Plan 1	25	9.83%	5.23%	3.50%	18.56%	17.70%	104.9%
	35	11.44%	6.09%	3.50%	21.03%	20.26%	103.8%
	45	13.25%	7.05%	3.50%	23.80%	23.16%	102.8%
Plan 2	25	9.83%	5.10%	3.50%	18.43%	17.53%	105.2%
	35	11.44%	5.94%	3.50%	20.88%	20.06%	104.1%
	45	13.25%	6.88%	3.50%	23.63%	22.92%	103.1%
Plan 4	25	9.48%	3.70%	3.50%	16.68%	15.82%	105.4%
	35	11.03%	4.30%	3.50%	18.83%	18.03%	104.4%
	45	12.57%	4.90%	3.50%	20.97%	20.28%	103.4%
Plan 5	25	9.48%	3.39%	3.50%	16.37%	15.54%	105.3%
	35	11.03%	3.94%	3.50%	18.47%	17.69%	104.4%
	45	12.57%	4.49%	3.50%	20.56%	19.89%	103.4%
Plan 6	25	9.48%	2.89%	0.00%	12.37%	11.66%	106.1%
	35	11.03%	3.36%	0.00%	14.39%	13.75%	104.6%
	45	12.57%	3.83%	0.00%	16.40%	15.87%	103.3%
Plan 7	All	11.87%	3.10%	0.00%	14.97%	14.11%	106.1%

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 a decrease in the Funded Ratio and an increase 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 2019 (2018 valuation)	33.67%	87.5%
Expected Year-to-Year Change	0.00%	2.6%
Assumption Changes	3.72%	-2.9%
Recognized Asset Gain / Loss		
From Current Year	0.66%	-0.8%
From Prior Years	0.11%	-0.1%
Retiree COLAs > Expected	0.36%	-0.3%
Salary and Payroll Increases > Assumed	0.25%	-0.8%
SCA Contribution Funding	-0.66%	0.9%
Increase in Plan 7 Membership	-0.09%	0.0%
Other Experience Changes	-0.16%	-0.3%
Total Change	4.19%	-1.7%
Calculated Rate for 2020 (2019 valuation)	37.86%	85.8%

Employer Statutory Contribution Rate

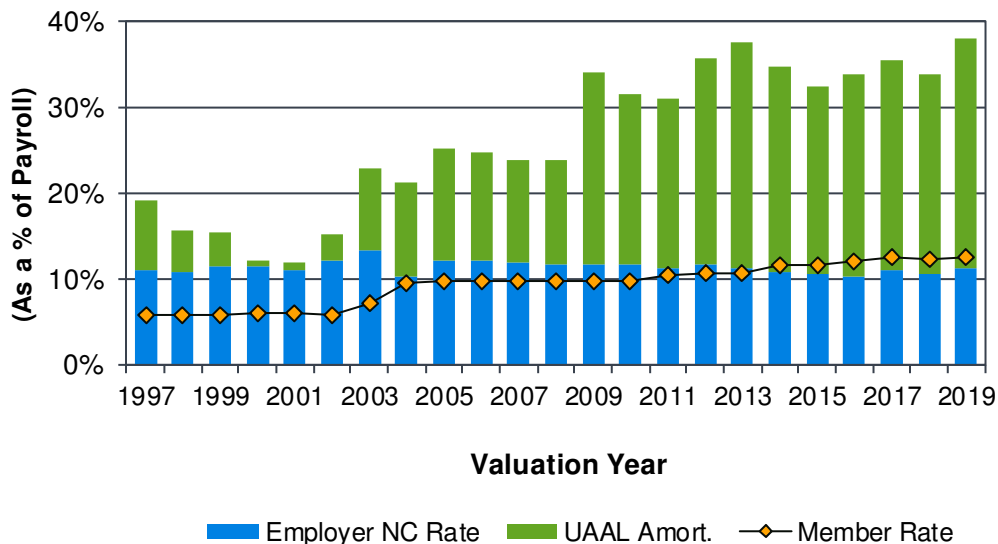
The Statutory Contribution Rate (SCR) for each plan is equal to the payment of the Employer Normal Cost rate plus a 15-year layered amortization of the UAAL (excluding the CSCA and DSCA) for each year beginning with the UAAL as of June 30, 2008. The UAAL rate for the County is reduced to reflect the CSCA, as is the UAAL rate for SMCM&VCD to reflect the DSCA. The SCR (blended average for all employers) is 37.86% for the fiscal year beginning July 1, 2020.

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 SCRs calculated are adequate to maintain the funding of the retirement system benefits 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.

Employer Statutory Contribution Rate

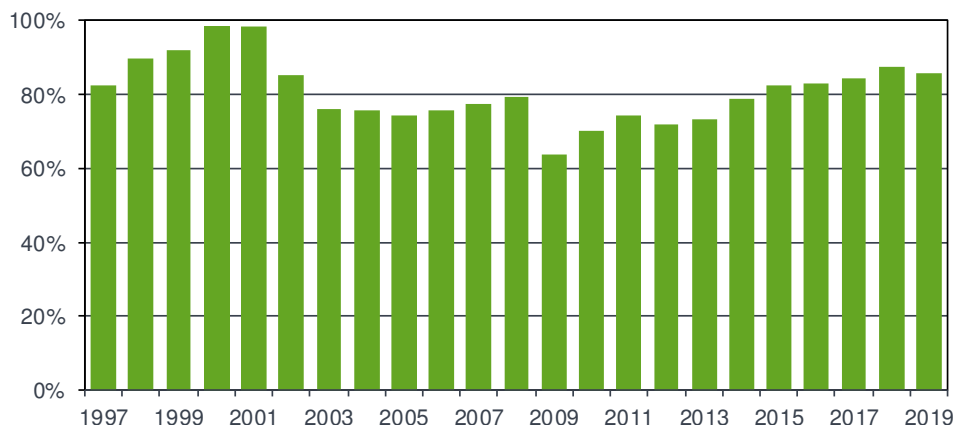


Funding Progress

Based on the 2018 valuation, the expected UAAL as of June 30, 2019 was \$640 million. The actual UAAL for the fiscal year ended June 30, 2019 is \$774 million. This difference is primarily due to the change in the investment return assumption.

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. SamCERA's Funded Ratio increased rapidly in the last half of the 1990s, reaching almost 100% in 2001. However, due primarily to asset losses from that time through 2009, the 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.

Historical Funded Ratios



Assets

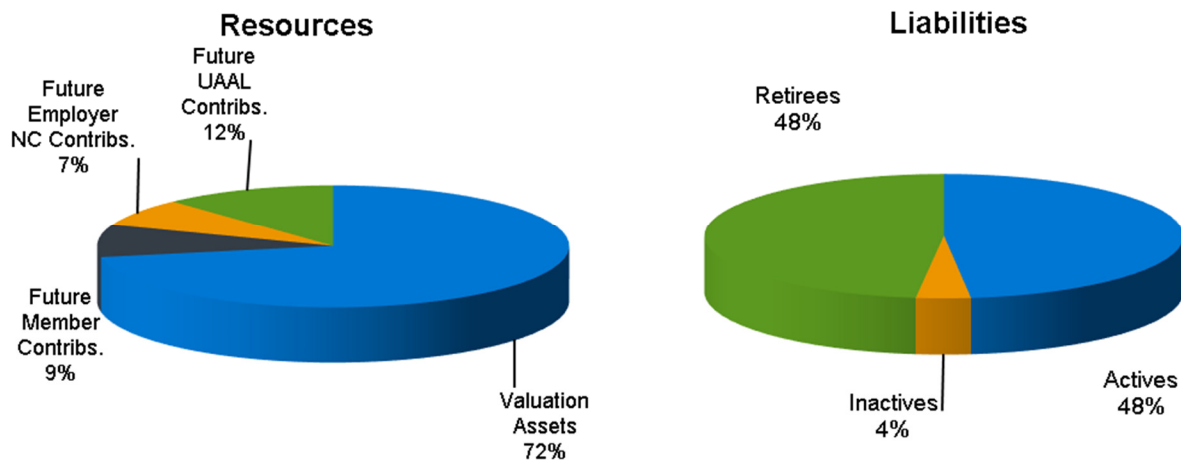
On a market value basis, for the fiscal year ended June 30, 2019, SamCERA earned 6.2% net of investment and administrative expenses. Note that this rate of return may differ from that calculated by SamCERA and shown in the CAFR based on the calculation method. For example, a time-weighted measure will take into account the timing of contributions and benefit payments.

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 net asset losses, the return on Actuarial Valuation Assets, at 5.6% net of expenses, was less than the assumed return of 6.75% (based on the prior valuation) for the fiscal year ended June 30, 2019.

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.

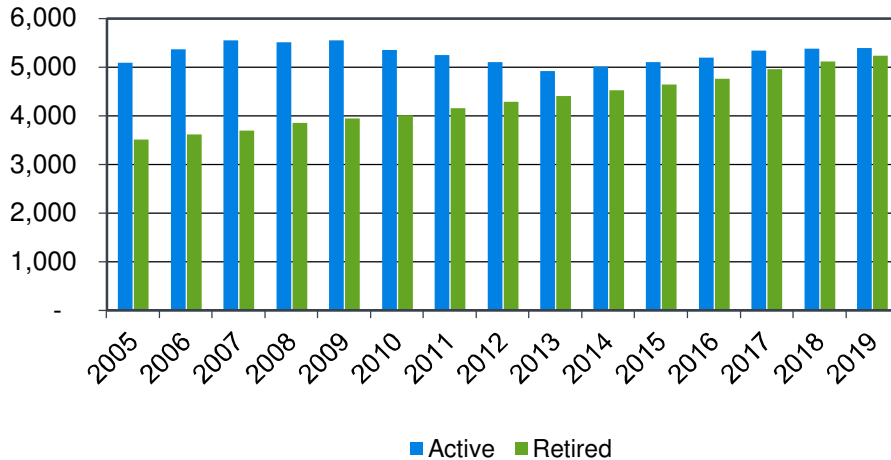


Member Information

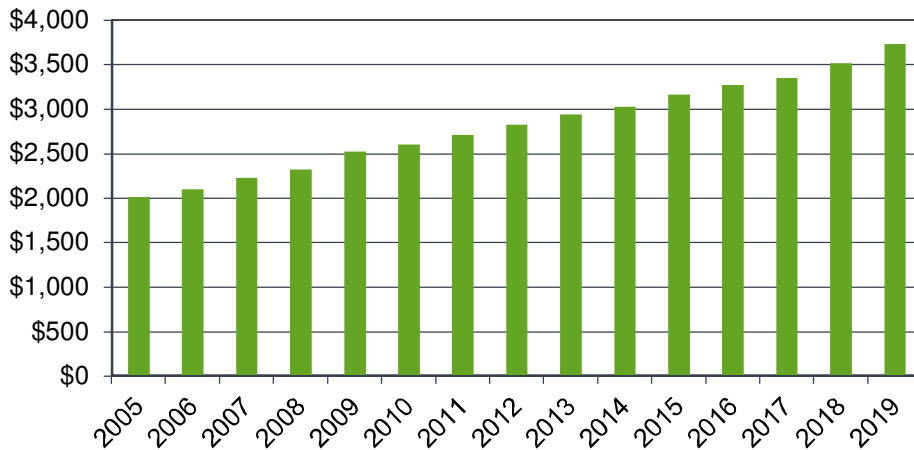
The number of active members included in the valuation increased from 5,367 in 2018 to 5,377 in 2019.

Retired member counts continue to increase steadily. For 2019, there were 5,225 retired members and beneficiaries with an average benefit of \$3,731 per month. This represents a 2.3% increase in count (up from 5,109 in 2018) and a 6.3% increase in the average monthly benefit (up from \$3,510 over the period).

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, 2018	5,367	1,666	4,002	472	635	12,142
New Members	463	26	-	1	35	525
Status Change:						
to Active	20	(16)	(4)	-	-	-
to Inactive	(206)	206	-	-	-	-
to Service Retirement	(196)	(62)	258	-	-	-
to Disabled Retirement	(9)	(2)	(15)	26	-	-
to Beneficiary	-	(1)	-	-	1	-
Refunds	(56)	(49)	-	-	-	(105)
Terminated non-vested	-	(1)	-	-	-	(1)
Deaths	(6)	-	(108)	(12)	(66)	(192)
As of June 30, 2019	5,377	1,767	4,133	487	605	12,369

Summary Valuation Results

Exhibit 2 presents a comparison of the key results from the June 30, 2019 and June 30, 2018 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, 2019	June 30, 2018	Relative Change
1. Total Membership			
A. Active Members	5,377	5,367	0.2 %
B. Retired Members & Beneficiaries	5,225	5,109	2.3%
C. Inactive Members	<u>1,767</u>	<u>1,666</u>	6.1%
D. Total	12,369	12,142	1.9 %
2. Pay Rate			
A. Annual Total (\$thousands)	\$ 572,516	\$ 541,473	5.7%
B. Monthly Average	8,873	8,407	5.5%
3. Average Monthly Benefit to Current Retirees and Beneficiaries			
A. Service Retirement	\$ 3,914	\$ 3,694	6.0%
B. Disability Retirement	3,741	3,588	4.3%
C. Surviving Spouse and Dependents	2,478	2,292	8.1%
D. Total Average	3,731	3,510	6.3%
4. Actuarial Accrued Liability (\$thousands)			
A. Active Members	\$ 2,090,884	\$ 1,937,722	7.9%
B. Retired Members	3,130,388	2,783,683	12.5%
C. Inactive Members	<u>238,706</u>	<u>249,130</u>	(4.2)%
D. Total	\$ 5,459,978	\$ 4,970,535	9.8%
5. Assets			
A. Market Value of Fund (\$thousands)	\$ 4,723,110	\$ 4,373,962	8.0%
B. Return on Market Value	6.2%	6.7%	
C. Actuarial Value (\$thousands)	\$ 4,685,502	\$ 4,351,502	7.7%
D. Return on Actuarial Value	5.6%	7.8%	
6. Unfunded Actuarial Accrued Liability or Surplus Funding (\$thousands)	\$ 774,476	\$ 619,033	25.1%
7. Statutory Employer Contribution Rate for all plans combined as a percent of total payroll			
A. Gross Normal Cost	23.73%	22.68%	4.6%
B. Member Contributions	<u>(12.46)%</u>	<u>(12.11)%</u>	2.9%
C. Employer Normal Cost	11.27%	10.57%	6.6%
D. UAAL Amortization	<u>26.59%</u>	<u>23.10%</u>	15.1%
E. Total Employer Rate	37.86%	33.67%	12.4%
8. Funded Ratio (5C / 4D)	85.8%	87.5%	(2.0)%
9. Results Based on Market Value (No Asset Smoothing) -- For Informational Purposes Only			
A. Total Employer Rate	37.23%	33.26%	11.9%
B. Funded Ratio (5A / 4D)	86.5%	88.0%	(1.7)%

2. Scope of the report

This report presents the actuarial valuation of the San Mateo County Employees' Retirement Association as of June 30, 2019. This valuation was requested by the Board. Section 31453 of the County Employees Retirement Law of 1937 (the '37 Act) 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, 2019.

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 CAFR.

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, 2019.
- 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
2000	\$ 1,381	\$ 49	\$ 1,272
2001	1,308	42	1,385
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

On June 30, 2019, the total market value of the fund was about \$4.72 billion. The actuarial value of the fund was determined to be \$4.73 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.

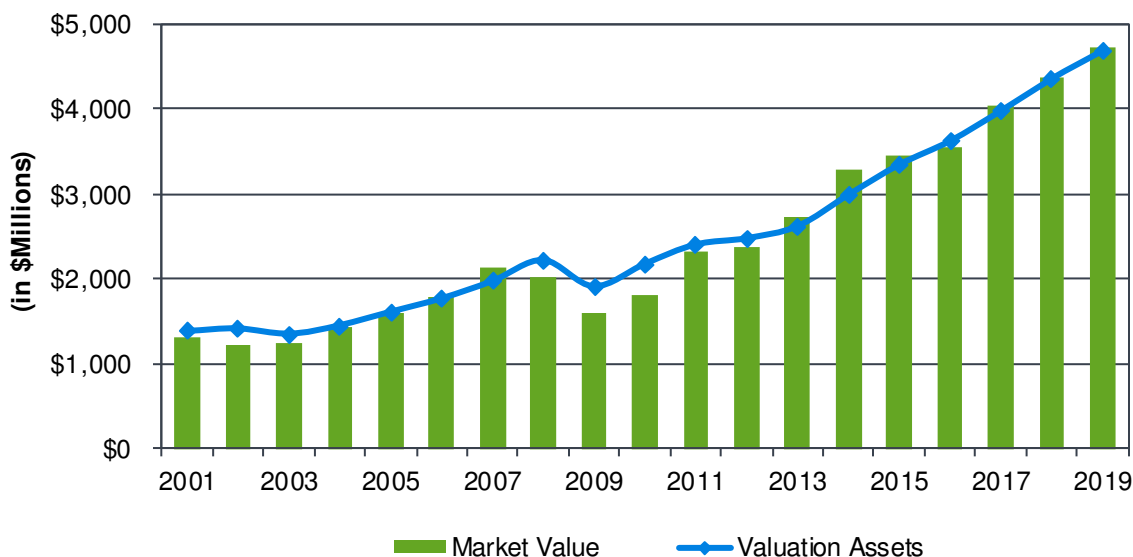
Beginning with the June 30, 2014 valuation, assets used to calculate the preliminary UAAL contribution rates exclude the value of the CSCA. The CSCA is used to adjust the County's Statutory Contribution Rate. Beginning with the June 30, 2016 valuation, assets used to calculate the preliminary UAAL contribution 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, 2019 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, 2019 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 on a system-wide basis.

Applicable Asset Values



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, 2019 and 2018

	2019	2018
Assets		
Cash and Cash Equivalents	\$ 33,102,412	\$ 53,125,429
Cash Management Overlay	48,011,505	12,984,127
Securities Lending Cash Collateral	403,093	1,486,415
Total Cash and Short-Term Investments	81,517,010	67,595,971
Receivables		
Contributions	10,300,002	9,422,510
Due from broker for investments sold	6,640,025	4,152,242
Investment Income	6,292,641	5,930,254
Securities Lending Income	12,614	10,453
Other receivables	95,566	95,057
Total Receivables	23,340,848	19,610,516
Prepaid Expense	11,669	7,669
Investments at Fair Value		
Fixed Income	999,477,347	892,923,149
Equity	1,847,846,613	1,809,329,959
Alternatives	579,774,460	514,972,248
Risk Parity	389,039,081	311,126,425
Inflation Hedge	809,138,278	761,393,517
Total Investments at Fair Value	4,625,275,779	4,289,745,298
Capital Assets	8,040,088	8,040,088
Fixed Assets	(2,060,891)	(1,236,535)
Total Assets	4,736,124,503	4,383,763,007
Liabilities		
Payables		
Investment management fees	2,213,009	1,663,178
Due to broker for investments purchased	9,060,929	5,408,607
Securities Lending Collateral due to borrowers	405,367	1,488,689
Other	1,335,263	1,241,019
Total Liabilities	13,014,568	9,801,493
Net position restricted for pensions	\$ 4,723,109,935	\$ 4,373,961,514

Exhibit 4
Statement of Changes in Plan Net Assets for the Fiscal Years Ended 2019 and 2018

	2019	2018
Additions		
Contributions		
Employer	\$ 194,830,054	\$ 179,626,584
Employer Supplemental Contribution	50,668,357	27,630,129
Member	67,695,627	64,204,278
Total Contributions	<u>313,194,038</u>	<u>271,460,991</u>
Investment Income/(Loss)		
Interest and dividends	71,800,374	45,060,738
Net appreciation/(depreciation) in Fair Value	242,168,364	275,224,883
	313,968,738	320,285,621
Less investment expense	42,376,557	40,210,092
Net Investment Income/(Loss)	<u>271,592,181</u>	<u>280,075,529</u>
Securities Lending Income		
Earnings	88,955	52,886
Rebates	13,108	8,141
Less: Securities Lending Expenses	(36,070)	(17,698)
Net Securities Lending Income	<u>65,993</u>	<u>43,329</u>
Other Additions	33,309	27,540
Total Additions	<u>584,885,521</u>	<u>551,607,389</u>
Deductions		
Member Benefits		
Service retirement allowances	196,874,097	179,880,342
Disability retirement allowances	25,211,881	23,872,145
Survivor, death and other benefits	1,528,066	976,386
Total Member Benefits	<u>223,614,044</u>	<u>204,728,873</u>
Member refunds	3,571,079	4,325,730
Administrative Expense	6,056,713	5,849,252
Information Technology Expense	2,495,264	1,444,010
Total Deductions	<u>235,737,100</u>	<u>216,347,865</u>
Net Increase	349,148,421	335,259,524
Net position restricted for pensions		
Beginning of Year	4,373,961,514	4,038,701,990
End of Year	<u>\$ 4,723,109,935</u>	<u>\$ 4,373,961,514</u>
Estimated Return, Net of Investment Expenses	6.2%	6.7%

Exhibit 5
Allocation of Assets by Accounting Reserve Amounts
as of June 30, 2019 and 2018

	2019	2018
Valuation Reserves		
1. Member Reserve	\$ 769,136,683	\$ 783,887,242
2. Employer Advance Reserve	1,086,126,550	957,022,725
3. Retiree Reserves	1,198,883,409	1,100,793,261
4. Cost of Living Adjustment Reserve	1,464,872,095	1,378,769,193
5. County / Courts Prepayment Accounts	-	-
6. County Supplemental Contributions Account Reserve	188,806,043	145,455,548
7. District Supplemental Contributions Account Reserve	1,864,243	1,929,236
Total Valuation Reserves	4,709,689,023	4,367,857,205
Non-Valuation Reserves		
1. Contingency Reserve	47,328,299	43,954,571
2. Undistributed Earnings / (Losses) Reserve	(24,074,932)	(16,288,265)
3. Other Specified Reserves	-	-
Total Non-Valuation Reserves	23,253,367	27,666,306
Market Stabilization Account	(9,832,455)	(21,561,997)
Total Reserves (Market Value of Assets)	\$ 4,723,109,935	\$ 4,373,961,514

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)
06/30/2019	\$ 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
06/30/2016	3,361,636,244	141,996,842	93,308,035	3,541,388,497	3.625%	123,696,090	131,063,446	7,367,356
12/31/2015	3,454,476,328	105,166,352	89,555,664	3,361,636,244	3.625%	126,551,502	(108,450,772)	(235,002,274)
06/30/2015	3,298,179,343	128,620,389	87,874,799	3,454,476,328	3.625%	121,532,366	115,551,395	(5,980,971)
12/31/2014	3,291,693,954	100,095,589	83,591,419	3,298,179,343	3.625%	120,689,532	(10,018,781)	(130,708,313)

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)
06/30/2019	\$ 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
06/30/2016	3,298,745,030	127,369,320	93,308,035	3,461,178,323	3.625%	121,239,221	128,372,008	7,132,787
12/31/2015	3,391,154,929	103,655,923	89,555,664	3,298,745,030	3.625%	124,233,287	(106,510,158)	(230,743,445)
06/30/2015	3,247,052,414	118,152,574	87,874,799	3,391,154,929	3.625%	119,420,390	113,824,740	(5,595,650)
12/31/2014	3,240,851,398	99,673,294	83,591,419	3,247,052,414	3.625%	118,831,181	(9,880,859)	(128,712,040)

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)
06/30/2019	\$ 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	0	0	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	0	0	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	0	0	82,353,954	3.500%	2,751,928	3,727,454	975,526
06/30/2016	61,353,822	19,538,000	4,910,478	78,626,500	3.625%	2,401,139	2,645,156	244,017
12/31/2015	63,321,399	0	0	61,353,822	3.625%	2,295,401	(1,967,577)	(4,262,978)
06/30/2015	51,126,929	10,467,815	0	63,321,399	3.625%	2,111,976	1,726,655	(385,321)
12/31/2014	50,842,556	422,295	0	51,126,929	3.625%	1,858,351	(137,922)	(1,996,273)

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

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)	
06/30/2019	\$ 1,995,181	\$ 0	\$ 192,548	\$ 1,864,243	3.375%	\$ 67,337	\$ 61,610	\$ (5,727)	
12/31/2018	1,947,081	0	0	1,995,181	3.375%	65,714	48,100	(17,614)	
06/30/2018	2,035,539	0	161,873	1,947,081	3.375%	68,699	73,415	4,716	
12/31/2017	1,956,896	0	0	2,035,539	3.375%	66,045	78,643	12,598	
06/30/2017	1,641,961	250,000	0	1,956,896	3.500%	57,469	64,935	7,466	
12/31/2016	1,583,674	0	0	1,641,961	3.500%	55,429	58,287	2,858	
06/30/2016	1,537,392	0	0	1,583,674	3.625%	55,730	46,282	(9,448)	
12/31/2015	0	1,510,429	0	1,537,392	3.625%	22,814	26,963	4,149	
06/30/2015	0	0	0	0	3.625%	0	0	0	
12/31/2014	0	0	0	0	3.625%	0	0	0	

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

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>
06/30/2019	\$ 342,546,233	\$ 125,031	x	90%	= \$ 112,528
12/31/2018	(371,528,532)	(12,290,569)	x	80%	= (9,832,455)
06/30/2018	(150,913,352)	0	x	70%	= 0
12/31/2017	138,304,954	0	x	60%	= 0
06/30/2017	128,335,662	0	x	50%	= 0
12/31/2016	44,366,795	0	x	40%	= 0
06/30/2016	7,367,356	0	x	30%	= 0
12/31/2015	(235,002,274)	0	x	20%	= 0
06/30/2015	(5,980,971)	0	x	10%	= 0
12/31/2014	(130,708,313)	0	x	0%	= 0
Total Gain / (Loss) Excluded =					\$ (9,719,927)

Development of Valuation Assets		
1. Market Value of Assets as of June 30, 2019		\$ 4,723,109,935
2. Preliminary Market Stabilization Reserve		<u>(9,719,927)</u>
3. Preliminary Actuarial Value of Assets (1) - (2)		4,732,829,862
4. Corridor Around Market Value		
a) Minimum = 80% of Market	\$ 3,778,487,948	
b) Maximum = 120% of Market	5,667,731,922	
c) Corridor Adjustment		0
5. Market Stabilization Reserve	(9,719,927)	
6. Gross Actuarial Valuation of Assets (3) - (4c)		\$ 4,732,829,862
7. Non-Valuation Reserves		
a) Contingency Reserve	47,328,299	
b) Undistributed Earnings / (Losses) Reserve	0	
c) Other Specified Reserves	<u>0</u>	
d) Total		47,328,299
8. Valuation Assets (6) - (7d)		\$ 4,685,501,563

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>
06/30/2019	\$ 331,582,592	\$ 0 x	90%	= \$ 0
12/31/2018	(359,622,065)	(12,290,569) x	80%	= (9,832,455)
06/30/2018	(146,680,275)	0 x	70%	= 0
12/31/2017	134,394,694	0 x	60%	= 0
06/30/2017	125,450,104	0 x	50%	= 0
12/31/2016	43,388,411	0 x	40%	= 0
06/30/2016	7,132,787	0 x	30%	= 0
12/31/2015	(230,743,445)	0 x	20%	= 0
06/30/2015	(5,595,650)	0 x	10%	= 0
12/31/2014	(128,712,040)	0 x	0%	= 0
Total Gain / (Loss) Excluded =				\$ (9,832,455)

Development of Valuation Assets	
1. Market Value of Assets as of June 30, 2019	\$ 4,532,439,649
2. Preliminary Market Stabilization Reserve	<u>(9,832,455)</u>
3. Preliminary Actuarial Value of Assets (1) - (2)	4,542,272,104
4. Corridor Around Market Value	
a) Minimum = 80% of Market	\$ 3,625,951,719
b) Maximum = 120% of Market	5,438,927,579
c) Corridor Adjustment	0
5. Market Stabilization Reserve	(9,832,455)
6. Gross Actuarial Valuation of Assets (3) - (4c)	\$ 4,542,272,104
7. Non-Valuation Reserves	
a) Contingency Reserve	47,328,299
b) Undistributed Earnings / (Losses) Reserve	0
c) Other Specified Reserves	<u>0</u>
d) Total	47,328,299
8. Valuation Assets (6) - (7d)	\$ 4,494,943,805

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

Development of Market Stabilization Reserve					
<u>Six-Month Period Ended</u>	<u>Investment Gain / (Loss) ¹</u>	<u>Adjusted Investment Gain / (Loss)</u>	<u>Percent Excluded</u>		<u>Adjusted Gain / (Loss) Excluded</u>
06/30/2019	\$ 10,969,368	\$ 130,238	x 90%	=	\$ 117,214
12/31/2018	(11,888,853)	0	x 80%	=	0
06/30/2018	(4,237,793)	0	x 70%	=	0
12/31/2017	3,897,662	0	x 60%	=	0
06/30/2017	2,878,092	0	x 50%	=	0
12/31/2016	975,526	0	x 40%	=	0
06/30/2016	244,017	0	x 30%	=	0
12/31/2015	(4,262,978)	0	x 20%	=	0
06/30/2015	(385,321)	0	x 10%	=	0
12/31/2014	(1,996,273)	0	x 0%	=	0
Total Gain / (Loss) Excluded =					\$ 117,214

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, 2019		\$ 188,806,043
2. Preliminary Market Stabilization Reserve		<u>117,214</u>
3. Preliminary Actuarial Value of Assets (1) - (2)		188,688,829
4. Corridor Around Market Value		
a) Minimum = 80% of Market	\$ 151,044,834	
b) Maximum = 120% of Market	226,567,252	
c) Corridor Adjustment		0
5. Market Stabilization Reserve	117,214	
6. Gross Actuarial Valuation of Assets (3) - (4c)		\$ 188,688,829
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)		\$ 188,688,829

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

Development of Market Stabilization Reserve					
<u>Six-Month Period Ended</u>	<u>Investment Gain / (Loss) ¹</u>	<u>Adjusted Investment Gain / (Loss)</u>	<u>Percent Excluded</u>		<u>Adjusted Gain / (Loss) Excluded</u>
06/30/2019	\$ (5,727)	\$ (5,207) x	90%	=	\$ (4,686)
12/31/2018	(17,614)	0 x	80%	=	0
06/30/2018	4,716	0 x	70%	=	0
12/31/2017	12,598	0 x	60%	=	0
06/30/2017	7,466	0 x	50%	=	0
12/31/2016	2,858	0 x	40%	=	0
06/30/2016	(9,448)	0 x	30%	=	0
12/31/2015	4,149	0 x	20%	=	0
06/30/2015	0	0 x	10%	=	0
12/31/2014	0	0 x	0%	=	0
Total Gain / (Loss) Excluded =					\$ (4,686)

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, 2019		\$ 1,864,243
2. Preliminary Market Stabilization Reserve		<u>(4,686)</u>
3. Preliminary Actuarial Value of Assets (1) - (2)		1,868,929
4. Corridor Around Market Value		
a) Minimum = 80% of Market	\$ 1,491,394	
b) Maximum = 120% of Market	2,237,092	
c) Corridor Adjustment		0
5. Market Stabilization Reserve	(4,686)	
6. Gross Actuarial Valuation of Assets (3) - (4c)		\$ 1,868,929
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)		\$ 1,868,929

Exhibit 8
Allocation of Valuation Assets

(Dollars in thousands)

	General	Safety	Probation	Total
1. Prior Year UAAL	\$ 538,745	\$ 171,816	\$ 55,790	\$ 766,351
2. Expected UAAL Contribution for Preceding Year	(100,810)	(32,745)	(9,351)	(142,906)
3. Expected Interest at 6.75%	33,019	10,510	3,455	46,984
4. Expected UAAL Based on Prior Year Assumptions	470,954	149,581	49,894	670,429
5. Percentage of Total Expected UAAL	70.25%	22.31%	7.44%	100.00%
6. Actual UAAL Based on Prior Year Assumptions				791,090
7. Actual AAL Based on Prior Year Assumptions	\$ 3,888,572	\$ 1,031,362	\$ 366,099	\$ 5,286,034
8. Allocated UAAL Based on Prior Year Assumptions	555,741	176,492	58,857	791,090
9. Valuation Assets (excluding SCA assets)	\$ 3,332,832	\$ 854,870	\$ 307,242	\$ 4,494,944
10. Actual UAAL excluding SCA Valuation Assets	\$ 683,331	\$ 209,863	\$ 71,840	\$ 965,034
11. Allocation of UAAL	70.81%	21.75%	7.44%	100.00%
12. Valuation Assets (CSCA)	\$ 133,611	\$ 41,040	\$ 14,038	\$ 188,689
13. Valuation Assets (DSCA)	\$ 1,869	\$ -	\$ -	\$ 1,869
14. Valuation Assets (Total)	\$ 3,468,312	\$ 895,910	\$ 321,280	\$ 4,685,502

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, 2019.

In an active 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, 2017. At its meeting on July 16, 2019, the Board adopted an investment return assumption of 6.50% and reaffirmed all other assumptions. These assumptions are shown in Appendix A. The assumptions will next be reviewed in detail in 2020 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, compares them to the resources available to meet them, and determines the amount of any difference, also 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, 2019

(Dollars in thousands)

Resources				
	General	Safety	Probation	Total
Valuation Assets (Actuarial)	\$ 3,468,312	\$ 895,910	\$ 321,280	\$ 4,685,502
Present Value of Future Member Contributions	425,596	101,946	33,728	561,270
Present Value of Future Employer Contributions to Fund:				
a) Normal Cost	349,247	96,857	36,389	482,493
b) Unfunded Actuarial Accrued Liability	547,851	168,823	57,802	774,476
Total Resources	\$ 4,791,006	\$ 1,263,536	\$ 449,199	\$ 6,503,741
Liabilities				
	General	Safety	Probation	Total
Present Value of Future Benefits				
1. Present Retired Members	\$ 2,183,721	\$ 732,794	\$ 213,873	\$ 3,130,388
2. Current Inactive Members	206,766	19,233	12,707	238,706
3. Current Active Members				
- Service Retirement	2,129,161	451,111	200,987	2,781,259
- Termination Benefits	108,028	13,424	4,252	125,704
- Death Benefits	31,275	9,490	3,017	43,782
- Disability Benefits	132,055	37,484	14,363	183,902
- Total Active	2,400,519	511,509	222,619	3,134,647
Total Actuarial Liabilities	\$ 4,791,006	\$ 1,263,536	\$ 449,199	\$ 6,503,741

Exhibit 9b
Actuarial Balance Sheet (excluding SCAs)
June 30, 2019

(Dollars in thousands)

Resources				
	General	Safety	Probation	Total
Valuation Assets (Actuarial)	\$ 3,332,832	\$ 854,870	\$ 307,242	\$ 4,494,944
Present Value of Future Member Contributions	425,596	101,946	33,728	561,270
Present Value of Future Employer Contributions to Fund:				
a) Normal Cost	349,247	96,857	36,389	482,493
b) Unfunded Actuarial Accrued Liability	683,331	209,863	71,840	965,034
Total Resources	\$ 4,791,006	\$ 1,263,536	\$ 449,199	\$ 6,503,741

Liabilities				
	General	Safety	Probation	Total
Present Value of Future Benefits				
1. Present Retired Members	\$ 2,183,721	\$ 732,794	\$ 213,873	\$ 3,130,388
2. Current Inactive Members	206,766	19,233	12,707	238,706
3. Current Active Members				
- Service Retirement	2,129,161	451,111	200,987	2,781,259
- Termination Benefits	108,028	13,424	4,252	125,704
- Death Benefits	31,275	9,490	3,017	43,782
- Disability Benefits	132,055	37,484	14,363	183,902
- Total Active	2,400,519	511,509	222,619	3,134,647
Total Actuarial Liabilities	\$ 4,791,006	\$ 1,263,536	\$ 449,199	\$ 6,503,741

Exhibit 9c
Analysis of Change in the Unfunded Actuarial Accrued Liability
June 30, 2019

(Dollars in thousands)

	Amount	As a Percent of June 30, 2019 Actuarial Accrued Liability
Unfunded Actuarial Accrued Liability - June 30, 2018	\$ 619,033.0	11.3%
Increase in UAAL due to new assumptions	173,944.1	3.2%
Interest Accrued	41,784.7	0.8%
Benefits Accrued (Normal Cost)	126,864.1	2.3%
<u>Contributions</u>		
Employer - Cash	\$ (201,298.2)	-3.7%
Member	(69,943.0)	-1.3%
CSCA and DCSA Contributions	<u>(50,668.4)</u>	-0.9%
Total	<u>(321,909.6)</u>	-5.9%
Expected Unfunded Actuarial Accrued Liability - June 30, 2019	\$ 639,716.3	11.7%
Sources of Change:		0.0%
(Gain) / Loss due to Investment Income	46,909.0	0.9%
<u>Liability (Gains) and Losses</u>		
Salary Increases Greater than Expected	\$ 50,471.9	0.9%
Active Member Experience (non salary)	16,380.3	0.3%
CPI Greater than Expected	21,748.7	0.4%
Mortality Experience	5,576.1	0.1%
All Other Experience	<u>(6,326.3)</u>	-0.1%
Total	<u>87,850.7</u>	1.6%
Total Changes	\$ 134,759.7	2.5%
Unfunded Actuarial Accrued Liability - June 30, 2019	\$ 774,476.0	14.2%

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, 2019 valuation to reflect the investment return assumption adopted in 2019. 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. 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%	45.78%
General 2	50%	34.10%
General 4	50%	26.47%
General 5	50%	25.50%
Safety 1	50%	47.93%
Safety 2	50%	51.38%
Safety 4	50%	38.90%
Safety 5	50%	35.73%
Safety 6	50%	32.47%
Probation 1	50%	53.21%
Probation 2	50%	51.93%
Probation 4	50%	38.99%
Probation 5	50%	35.73%
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 7.10% (Exhibit D-1). The General Plan 5 COLA load is 25.50% for a member COLA contribution of 1.81% ($7.10\% \times 25.50\%$) of pay. The basic plus COLA member contribution rate is 8.91% ($7.10\% + 1.81\%$).

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. Note that for small groups, the Normal Cost rate, and hence the member rate may change significantly from year-to-year. As the group becomes larger, this volatility should be reduced.

6. Employer Contributions

Contributions to SamCERA 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 2019 valuation is effective July 1, 2020, and the UAAL is amortized over the remaining 14 years.

The SCA (CSCA for the County and DSCA for the SMCM&VCD) UAAL offset amounts are calculated in a similar manner to the UAAL rate 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 and 12e show detailed information on how the SCA offsets are calculated using the same layered approach as used for UAAL amortizations.

Exhibit 10
Employer Statutory Contribution Rates – All Plans
For the 2020-2021 Fiscal Year

All Plans								
	Gross Normal Cost	Member Contributions	Employer Rates					Prior Year Total Contribution Rate
			Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate ⁽¹⁾	Total Contribution Rate	
<u>General</u>								
County	21.36%	(11.43)%	7.66%	2.27%	9.93%	22.18%	32.11%	28.54%
Courts	21.84%	(11.83)%	7.69%	2.32%	10.01%	25.21%	35.22%	31.03%
Total	21.38%	(11.45)%	7.66%	2.27%	9.93%	22.32%	32.25%	28.66%
SMCM&VCD	21.13%	(8.55)%	9.19%	3.39%	12.58%	0.00%	12.58%	12.13%
Safety	35.83%	(17.81)%	13.88%	4.14%	18.02%	50.87%	68.89%	61.66%
Probation	35.04%	(17.07)%	13.98%	3.99%	17.97%	42.55%	60.52%	49.83%
All Plans	23.73%	(12.46)%	8.70%	2.57%	11.27%	26.59%	37.86%	33.67%
County Only	23.81%	(12.49)%	8.73%	2.59%	11.32%	26.74%	38.06%	33.85%

¹ County UAAL Contribution Rate includes an aggregate offset of 3.54% of payroll to reflect the County Supplementary Contribution Account. Offsets vary by class of member as follows:
 - General member UAAL offset is 3.03% of payroll
 - Safety member UAAL offset is 6.13% of payroll
 - Probation member UAAL offset is 5.74% of payroll
 SMCM&VCD UAAL Contribution Rate includes an offset of 25.21% of payroll to reflect the District Supplementary Contribution Account.

Exhibit 10a
Employer Statutory Contribution Rates – General Members
For the 2020-2021 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⁾	Total Contribution Rate	
General Members								
<u>Plan 1</u>								
County	32.88%	(10.01)%	16.71%	6.16%	22.87%	22.18%	45.05%	33.32%
Courts	32.88%	(10.01)%	16.71%	6.16%	22.87%	25.21%	48.08%	35.76%
Total	32.88%	(10.01)%	16.71%	6.16%	22.87%	22.18%	45.05%	33.32%
<u>Plan 2</u>								
County	23.32%	(13.48)%	6.80%	3.04%	9.84%	22.18%	32.02%	28.24%
Courts	23.32%	(13.48)%	6.80%	3.04%	9.84%	25.21%	35.05%	30.68%
Total	23.32%	(13.48)%	6.80%	3.04%	9.84%	22.30%	32.14%	28.34%
<u>Plan 3</u>								
County	8.49%	0.00%	8.49%	0.00%	8.49%	22.18%	30.67%	27.15%
Courts	8.49%	0.00%	8.49%	0.00%	8.49%	25.21%	33.70%	29.59%
Total	8.49%	0.00%	8.49%	0.00%	8.49%	22.18%	30.67%	27.15%
<u>Plan 4</u>								
County	23.68%	(13.39)%	7.82%	2.47%	10.29%	22.18%	32.47%	28.78%
Courts	23.68%	(13.39)%	7.82%	2.47%	10.29%	25.21%	35.50%	31.22%
Total	23.68%	(13.39)%	7.82%	2.47%	10.29%	22.35%	32.64%	28.92%
<u>Plan 5</u>								
County	21.73%	(9.69)%	9.80%	2.24%	12.04%	22.18%	34.22%	30.66%
Courts	21.73%	(9.69)%	9.80%	2.24%	12.04%	25.21%	37.25%	33.10%
Total	21.73%	(9.69)%	9.80%	2.24%	12.04%	22.32%	34.36%	30.74%
<u>Plan 7</u>								
County	18.22%	(9.11)%	7.30%	1.81%	9.11%	22.18%	31.29%	27.92%
Courts	18.22%	(9.11)%	7.30%	1.81%	9.11%	25.21%	34.32%	30.36%
Total	18.22%	(9.11)%	7.30%	1.81%	9.11%	22.30%	31.41%	28.01%
<u>All Plans</u>								
County	21.36%	(11.43)%	7.66%	2.27%	9.93%	22.18%	32.11%	28.54%
Courts	21.84%	(11.83)%	7.69%	2.32%	10.01%	25.21%	35.22%	31.03%
Total	21.38%	(11.45)%	7.66%	2.27%	9.93%	22.32%	32.25%	28.66%

1. UAAL Contribution Rate includes an offset of 3.03% of payroll to reflect the County Supplementary Contribution Account, except for Courts.

Exhibit 10b
Employer Statutory Contribution Rates – SMCM&VCD Members
For the 2020-2021 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⁾	Total Contribution Rate	
Plan 1 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 2 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 4	22.74%	(8.13)%	10.30%	4.31%	14.61%	0.00%	14.61%	13.87%
Plan 7	18.48%	(9.24)%	7.38%	1.86%	9.24%	0.00%	9.24%	9.04%
All Plans	21.13%	(8.55)%	9.19%	3.39%	12.58%	0.00%	12.58%	12.13%

1. UAAL Contribution Rate includes an offset of 25.21% of payroll to reflect the District Supplementary Contribution Account, except for Courts.
2. 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 2020-2021 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⁾		
Plan 1 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 2	39.33%	(17.87)%	15.14%	6.32%	21.46%	50.87%	72.33%	64.47%
Plan 4	37.82%	(19.16)%	14.50%	4.16%	18.66%	50.87%	69.53%	62.05%
Plan 5	38.69%	(19.09)%	15.35%	4.25%	19.60%	50.87%	70.47%	62.84%
Plan 6 ⁽²⁾	N/A	N/A	N/A	N/A	NA	NA	NA	NA
Plan 7	30.56%	(15.28)%	11.96%	3.32%	15.28%	50.87%	66.15%	59.18%
All Plans	35.83%	(17.81)%	13.88%	4.14%	18.02%	50.87%	68.89%	61.66%

1. UAAL Contribution Rate includes an offset of 6.13% of payroll to reflect the County Supplementary Contribution Account.
2. 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 2020-2021 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⁾		
Plan 1 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 2	37.78%	(17.81)%	14.47%	5.50%	19.97%	42.55%	62.52%	51.78%
Plan 4	36.04%	(17.49)%	14.53%	4.02%	18.55%	42.55%	61.10%	50.13%
Plan 5	33.69%	(17.19)%	12.75%	3.75%	16.50%	42.55%	59.05%	48.11%
Plan 6 ⁽²⁾	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 7	29.94%	(14.97)%	11.69%	3.28%	14.97%	42.55%	57.52%	46.98%
All Plans	35.04%	(17.07)%	13.98%	3.99%	17.97%	42.55%	60.52%	49.83%

1. UAAL Contribution Rate includes an offset of 5.74% of payroll to reflect the County Supplementary Contribution Account.
2. 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	23.65%	2.91%	0.42%	5.90%	32.88%
General Plan 2	16.31%	2.10%	0.42%	4.49%	23.32%
General Plan 3	7.80%	0.00%	0.00%	0.69%	8.49%
General Plan 4	16.94%	2.20%	0.40%	4.14%	23.68%
General Plan 5	15.74%	2.40%	0.40%	3.19%	21.73%
General Plan 7	13.16%	2.19%	0.32%	2.55%	18.22%
General Total	15.33%	2.17%	0.37%	3.51%	21.38%
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	16.78%	2.25%	0.32%	3.39%	22.74%
SMCM&VCD Plan 7	13.48%	1.87%	0.43%	2.70%	18.48%
SMCM&VCD Total	15.53%	2.11%	0.36%	3.13%	21.13%
Safety Plan 1	N/A	N/A	N/A	N/A	N/A
Safety Plan 2	30.51%	4.02%	1.55%	3.25%	39.33%
Safety Plan 4	29.25%	4.26%	1.28%	3.03%	37.82%
Safety Plan 5	29.55%	5.30%	1.22%	2.62%	38.69%
Safety Plan 6	N/A	N/A	N/A	N/A	N/A
Safety Plan 7	22.96%	4.58%	1.10%	1.92%	30.56%
Safety Total	27.46%	4.46%	1.25%	2.66%	35.83%
Probation Plan 1	N/A	N/A	N/A	N/A	N/A
Probation Plan 2	29.89%	3.61%	1.25%	3.03%	37.78%
Probation Plan 4	28.27%	3.63%	1.11%	3.03%	36.04%
Probation Plan 5	26.33%	3.93%	1.01%	2.42%	33.69%
Probation Plan 6	N/A	N/A	N/A	N/A	N/A
Probation Plan 7	22.95%	3.92%	0.96%	2.11%	29.94%
Probation Total	27.41%	3.69%	1.09%	2.85%	35.04%
All Plans	17.33%	2.51%	0.51%	3.38%	23.73%

Exhibit 12a
UAAL Amortization Detail – General Members

(Dollars in Thousands)

Unfunded Actuarial Liability Amortization Detail							
Date Established	Description	Balance as of June 30, 2019	Interest on Balance	Amortization Payment on June 30, 2020	Balance as of June 30, 2020	Remaining Period as of June 30, 2020	July 1, 2020 Amortization Payment
June 30, 2008	Initial UAAL	\$ 190,775	\$ 12,400	\$ 53,618	\$ 149,558	3 Years	\$ 52,466
June 30, 2009	(Gain) / Loss	\$ 208,884	\$ 13,577	\$ 47,790	\$ 174,671	4 Years	\$ 46,716
June 30, 2010	(Gain) / Loss	\$ (85,195)	\$ (5,538)	\$ (16,526)	\$ (74,206)	5 Years	\$ (16,138)
June 30, 2011	(Gain) / Loss	\$ (27,474)	\$ (1,786)	\$ (4,647)	\$ (24,613)	6 Years	\$ (4,533)
June 30, 2012	(Gain) / Loss	\$ 89,893	\$ 5,843	\$ 13,534	\$ 82,202	7 Years	\$ 13,188
June 30, 2013	(Gain) / Loss	\$ 17,701	\$ 1,151	\$ 2,409	\$ 16,442	8 Years	\$ 2,345
June 30, 2014	(Gain) / Loss	\$ (38,794)	\$ (2,522)	\$ (4,833)	\$ (36,482)	9 Years	\$ (4,700)
June 30, 2015	(Gain) / Loss	\$ (29,709)	\$ (1,931)	\$ (3,422)	\$ (28,218)	10 Years	\$ (3,324)
June 30, 2016	(Gain) / Loss	\$ 96,320	\$ 6,261	\$ 10,341	\$ 92,240	11 Years	\$ 10,035
June 30, 2017	(Gain) / Loss	\$ 69,020	\$ 4,486	\$ 6,954	\$ 66,553	12 Years	\$ 6,742
June 30, 2018	(Gain) / Loss	\$ (21,908)	\$ (1,424)	\$ (2,084)	\$ (21,249)	13 Years	\$ (2,018)
June 30, 2019	(Gain) / Loss	\$ 213,819	\$ 13,898	\$ (299)	\$ 228,017	14 Years	\$ 20,421
Total Amortization Payment July 1, 2020:							\$ 121,200
Projected Payroll July 1, 2020:							\$ 480,843
UAAL as of June 30, 2019:		\$ 683,331	UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2020:				25.21%

Notes:

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

Exhibit 12b
UAAL Amortization Detail – Safety Members

(Dollars in Thousands)

Unfunded Actuarial Liability Amortization Detail							
Date Established	Description	Balance as of June 30, 2019	Interest on Balance	Amortization Payment on June 30, 2020	Balance as of June 30, 2020	Remaining Period as of June 30, 2020	July 1, 2020 Amortization Payment
June 30, 2008	Initial UAAL	\$ 69,619	\$ 4,525	\$ 19,567	\$ 54,578	3 Years	\$ 19,146
June 30, 2009	(Gain) / Loss	\$ 76,606	\$ 4,979	\$ 17,527	\$ 64,059	4 Years	\$ 17,133
June 30, 2010	(Gain) / Loss	\$ (31,869)	\$ (2,071)	\$ (6,182)	\$ (27,758)	5 Years	\$ (6,037)
June 30, 2011	(Gain) / Loss	\$ (12,743)	\$ (828)	\$ (2,155)	\$ (11,415)	6 Years	\$ (2,103)
June 30, 2012	(Gain) / Loss	\$ 26,726	\$ 1,737	\$ 4,024	\$ 24,440	7 Years	\$ 3,921
June 30, 2013	(Gain) / Loss	\$ 5,176	\$ 336	\$ 705	\$ 4,808	8 Years	\$ 686
June 30, 2014	(Gain) / Loss	\$ (15,609)	\$ (1,015)	\$ (1,945)	\$ (14,679)	9 Years	\$ (1,891)
June 30, 2015	(Gain) / Loss	\$ (8,274)	\$ (538)	\$ (953)	\$ (7,859)	10 Years	\$ (926)
June 30, 2016	(Gain) / Loss	\$ 25,969	\$ 1,688	\$ 2,788	\$ 24,869	11 Years	\$ 2,705
June 30, 2017	(Gain) / Loss	\$ 19,148	\$ 1,245	\$ 1,929	\$ 18,464	12 Years	\$ 1,870
June 30, 2018	(Gain) / Loss	\$ (5,322)	\$ (346)	\$ (506)	\$ (5,162)	13 Years	\$ (490)
June 30, 2019	(Gain) / Loss	\$ 60,435	\$ 3,928	\$ (294)	\$ 64,657	14 Years	<u>\$ 5,791</u>
Total Amortization Payment July 1, 2020:							\$ 39,806
Projected Payroll July 1, 2020:							<u>\$ 69,830</u>
UAAL as of June 30, 2019:		<u>\$ 209,863</u>	UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2020:				<u>57.00%</u>

Notes:

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

Exhibit 12c
UAAL Amortization Detail – Probation Members

(Dollars in Thousands)

Unfunded Actuarial Liability Amortization Detail							
Date Established	Description	Balance as of June 30, 2019	Interest on Balance	Amortization Payment on June 30, 2020	Balance as of June 30, 2020	Remaining Period as of June 30, 2020	July 1, 2020 Amortization Payment
June 30, 2008	Initial UAAL	\$ 17,443	\$ 1,134	\$ 4,902	\$ 13,675	3 Years	\$ 4,797
June 30, 2009	(Gain) / Loss	\$ 19,280	\$ 1,253	\$ 4,411	\$ 16,123	4 Years	\$ 4,312
June 30, 2010	(Gain) / Loss	\$ (7,778)	\$ (506)	\$ (1,509)	\$ (6,775)	5 Years	\$ (1,473)
June 30, 2011	(Gain) / Loss	\$ (2,923)	\$ (190)	\$ (494)	\$ (2,619)	6 Years	\$ (482)
June 30, 2012	(Gain) / Loss	\$ 9,012	\$ 586	\$ 1,357	\$ 8,241	7 Years	\$ 1,322
June 30, 2013	(Gain) / Loss	\$ 1,321	\$ 86	\$ 180	\$ 1,227	8 Years	\$ 175
June 30, 2014	(Gain) / Loss	\$ (3,155)	\$ (205)	\$ (393)	\$ (2,967)	9 Years	\$ (382)
June 30, 2015	(Gain) / Loss	\$ (2,231)	\$ (145)	\$ (257)	\$ (2,119)	10 Years	\$ (250)
June 30, 2016	(Gain) / Loss	\$ 10,624	\$ 691	\$ 1,141	\$ 10,174	11 Years	\$ 1,107
June 30, 2017	(Gain) / Loss	\$ 9,986	\$ 649	\$ 1,006	\$ 9,629	12 Years	\$ 975
June 30, 2018	(Gain) / Loss	\$ (1,795)	\$ (117)	\$ (171)	\$ (1,741)	13 Years	\$ (165)
June 30, 2019	(Gain) / Loss	\$ 22,056	\$ 1,434	\$ (1,001)	\$ 24,491	14 Years	\$ 2,193
Total Amortization Payment July 1, 2020:							\$ 12,129
Projected Payroll July 1, 2020:							\$ 25,119
UAAL as of June 30, 2019:		\$ 71,840	UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2020:				48.29%

Notes:

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

Exhibit 12d
Amortization Detail – County SCA Offsets
(Dollars in Thousands)

General Members							
Date Established	Description	Balance as of June 30, 2019	Interest on Balance	Amortization Payment on June 30, 2020	Balance as of June 30, 2020	Remaining Period as of June 30, 2020	July 1, 2020 Amortization Payment
June 30, 2014	Initial CSCA	\$ 32,914	\$ 2,139	\$ 4,101	\$ 30,953	9 Years	\$ 3,988
June 30, 2015	CSCA Addition	\$ 7,644	\$ 497	\$ 880	\$ 7,261	10 Years	\$ 855
June 30, 2016	CSCA Addition	\$ 14,152	\$ 920	\$ 1,519	\$ 13,552	11 Years	\$ 1,474
June 30, 2017	CSCA Addition	\$ 24,654	\$ 1,602	\$ 2,484	\$ 23,772	12 Years	\$ 2,408
June 30, 2018	CSCA Addition	\$ 21,013	\$ 1,366	\$ 1,998	\$ 20,380	13 Years	\$ 1,935
June 30, 2019	CSCA Addition	\$ 33,234	\$ 2,160	\$ -	\$ 35,394	14 Years	\$ 3,170
Total CSCA County Offset Payment July 1, 2020:							\$ 13,831
Projected County Payroll July 1, 2020:							\$ 456,996
CSCA Value as of June 30, 2019:		\$ 133,611		CSCA County Offset (as a % of Payroll) FYB July 1, 2020:			3.03%

Safety Members							
Date Established	Description	Balance as of June 30, 2019	Interest on Balance	Amortization Payment on June 30, 2020	Balance as of June 30, 2020	Remaining Period as of June 30, 2020	July 1, 2020 Amortization Payment
June 30, 2014	Initial CSCA	\$ 11,154	\$ 725	\$ 1,390	\$ 10,489	9 Years	\$ 1,351
June 30, 2015	CSCA Addition	\$ 2,593	\$ 169	\$ 299	\$ 2,463	10 Years	\$ 290
June 30, 2016	CSCA Addition	\$ 4,292	\$ 279	\$ 461	\$ 4,111	11 Years	\$ 447
June 30, 2017	CSCA Addition	\$ 7,440	\$ 484	\$ 750	\$ 7,174	12 Years	\$ 727
June 30, 2018	CSCA Addition	\$ 6,501	\$ 423	\$ 618	\$ 6,305	13 Years	\$ 599
June 30, 2019	CSCA Addition	\$ 9,060	\$ 589	\$ -	\$ 9,649	14 Years	\$ 864
Total CSCA County Offset Payment July 1, 2020:							\$ 4,278
Projected County Payroll July 1, 2020:							\$ 69,830
CSCA Value as of June 30, 2019:		\$ 41,040		CSCA County Offset (as a % of Payroll) FYB July 1, 2020:			6.13%

Probation Members							
Date Established	Description	Balance as of June 30, 2019	Interest on Balance	Amortization Payment on June 30, 2020	Balance as of June 30, 2020	Remaining Period as of June 30, 2020	July 1, 2020 Amortization Payment
June 30, 2014	Initial CSCA	\$ 3,033	\$ 197	\$ 378	\$ 2,853	9 Years	\$ 368
June 30, 2015	CSCA Addition	\$ 739	\$ 48	\$ 85	\$ 702	10 Years	\$ 83
June 30, 2016	CSCA Addition	\$ 1,497	\$ 97	\$ 161	\$ 1,434	11 Years	\$ 156
June 30, 2017	CSCA Addition	\$ 2,944	\$ 191	\$ 297	\$ 2,838	12 Years	\$ 287
June 30, 2018	CSCA Addition	\$ 2,192	\$ 142	\$ 209	\$ 2,126	13 Years	\$ 202
June 30, 2019	CSCA Addition	\$ 3,634	\$ 236	\$ -	\$ 3,870	14 Years	\$ 347
Total CSCA County Offset Payment July 1, 2020:							\$ 1,442
Projected County Payroll July 1, 2020:							\$ 25,119
CSCA Value as of June 30, 2019:		\$ 14,038		CSCA County Offset (as a % of Payroll) FYB July 1, 2020:			5.74%

Notes:

1. CSCA Offsets are based on a fixed schedule that increases by the payroll assumption each year.
2. The calculation of CSCA amounts are as of June 30, 2019; whereas, the contribution rates are effective as of July 1, 2020. The June 30, 2019 CSCA is adjusted to June 30, 2020 based on the July 1, 2019 contribution rates and June 30, 2019 valuation assumptions.

Exhibit 12e
Amortization Detail – District SCA Offsets

(Dollars in Thousands)

Preliminary Offset Calculations							
Date Established	Description	Balance as of June 30, 2019	Interest on Balance	Amortization Payment on June 30, 2020	Balance as of June 30, 2020	Remaining Period as of June 30, 2020	July 1, 2020 Amortization Payment
June 30, 2016	Initial DSCA	\$ 1,599	\$ 104	\$ 393	\$ 1,309	3 Years	\$ 459
June 30, 2017	DSCA Addition	\$ 263	\$ 17	\$ 65	\$ 215	3 Years	\$ 75
June 30, 2018	DSCA Addition	\$ 4	\$ 0	\$ 1	\$ 3	3 Years	\$ 1
June 30, 2019	DSCA Addition	\$ 4	\$ 0	\$ -	\$ 4	4 Years	\$ 1
Total DSCA Offset Payment July 1, 2020:							\$ 537
Projected District Payroll July 1, 2020:							\$ 2,023
DSCA Value as of June 30, 2019:		\$ 1,869		DSCA District Offset (as a % of Payroll) FYB July 1, 2020:			26.53%

Adjusted Offset Calculations							
Date Established	Description	Balance as of June 30, 2019	Interest on Balance	Amortization Payment on June 30, 2020	Balance as of June 30, 2020	Remaining Period as of June 30, 2020	July 1, 2020 Amortization Payment
June 30, 2016	Initial DSCA	\$ 1,599	\$ 104	\$ 393	\$ 1,309	3 Years	\$ 436
June 30, 2017	DSCA Addition	\$ 263	\$ 17	\$ 65	\$ 215	3 Years	\$ 72
June 30, 2018	DSCA Addition	\$ 4	\$ 0	\$ 1	\$ 3	3 Years	\$ 1
June 30, 2019	DSCA Addition	\$ 4	\$ 0	\$ -	\$ 4	4 Years	\$ 1
Total DSCA Offset Payment July 1, 2020:							\$ 510
Projected District Payroll July 1, 2020:							\$ 2,023
DSCA Value as of June 30, 2019:		\$ 1,869		DSCA District Offset (as a % of Payroll) FYB July 1, 2020:			25.21%

Notes:

1. DSCA Offsets are based on a fixed schedule that increases by the payroll assumption each year.
2. The calculation of DSCA amounts are as of June 30, 2019; whereas, the contribution rates are effective as of July 1, 2020. The June 30, 2019 DSCA is adjusted to June 30, 2020 based on the July 1, 2019 contribution rates and June 30, 2019 valuation assumptions.
3. The preliminary calculation of DSCA Offset results in a larger offset than the UAAL contribution rate payable by the District, and therefore 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 CAFR.

- 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 6.50%. GASB 67 and 68 calculations as of June 30, 2019 will use an investment return assumption of 6.67%, 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)

Actuarial Valuation Date	(a) Actuarial Value of Valuation Assets	(b) Actuarial Accrued Liabilities	(b-a) Unfunded Actuarial Accrued Liabilities (UAAL)	(a/b) Funded Ratio	(c) Covered Payroll	[(b-a)/c] UAAL as a Percentage of Covered Payroll
June 30, 2010	2,179,076	3,098,453	919,377	70.3%	434,295	211.69%
June 30, 2011	2,405,140	3,246,727	841,587	74.1%	427,041	197.07%
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%

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, 2010	2,179,076	449,355	1,745,146	903,952	100%	99%	0%
June 30, 2011	2,405,140	485,126	1,866,219	895,382	100%	100%	6%
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%

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
2010	10.05%	16.35%	26.40%	Same as County General			11.70%	16.35%	28.05%
2011	9.71%	16.41%	26.12%	8.70%	16.41%	25.11%	11.97%	16.41%	28.38%
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%

Statutory Contribution Rates									
Valuation Year	Safety Member			Probation Members (excluding Managers)			Probation Members (Managers)		
	Normal	UAAL	Total	Normal	UAAL	Total	Normal	UAAL	Total
2010	19.01%	44.50%	63.51%	19.85%	21.62%	41.47%	Same as Probation (ex Managers)		
2011	18.87%	41.75%	60.62%	19.50%	22.30%	41.80%	Same as Probation (ex Managers)		
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)		

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 Mosquito and Vector Control District 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				
	2019	2018	2017	2016	2015
Unfunded Liability as of July 1	\$ 619,033,000	\$ 743,133,000	\$ 737,570,000	\$ 702,236,000	\$ 803,855,000
Expected Change in UAAL	(153,261,000)	(109,756,000)	(110,404,000)	(96,454,000)	(76,018,000)
Salary (Gain) / Loss	50,472,000	10,401,000	27,685,000	24,707,000	39,129,000
Fewer Withdrawals than expected	0	0	0	0	0
Retiree COLA more / (less) than expected	21,749,000	12,203,000	7,050,000	(6,275,000)	3,648,000
Asset (Gain) / Loss	46,909,000	(42,796,000)	(28,286,000)	27,821,000	(74,068,000)
Change due to Assumption Changes	173,944,000	0	133,221,000	89,364,000	0
Miscellaneous Experience	15,630,000	5,848,000	(23,703,000)	(3,829,000)	5,690,000
Change Due to New Formula					
Unfunded Liability as of June 30	\$ 774,476,000	\$ 619,033,000	\$ 743,133,000	\$ 737,570,000	\$ 702,236,000

Exhibit 17
Summary of Significant Actuarial Statistics and Measures

	June 30th of		Relative
	2019	2018	Change
1. Active Members			
Number of Members	5,377	5,367	0.2 %
Average Age	45.1	45.1	-
Average Credited Service	10.4	10.6	(1.9)%
Covered Payroll (\$thousands)	\$ 554,734	\$ 535,938	3.5 %
Average Monthly Salary	\$ 8,873	\$ 8,407	5.5 %
2. Retired Members			
Number of Members			
Service Retirement	4,133	4,002	3.3 %
Disability Retirement	487	472	3.2 %
Beneficiaries	605	635	(4.7)%
Average Age	71.2	71.2	-
Actual Retiree Benefits Paid (\$thousands)	\$ 223,614	\$ 204,729	9.2 %
Average Monthly Pension	\$ 3,731	\$ 3,510	6.3 %
3. Number of Inactive Members			
	1,767	1,666	6.1 %
4. Assets			
Market Value of Fund (\$thousands)	\$ 4,723,110	\$ 4,373,962	8.0 %
Return on Market Value	6.2%	6.7%	
Valuation Assets (\$thousands)	\$ 4,685,502	\$ 4,351,502	7.7 %
Return on Valuation Assets	5.6%	7.8%	
5. Liability Values (\$thousands)			
Actuarial Accrued Liability	\$ 5,459,978	\$ 4,970,535	9.8 %
Unfunded Actuarial Accrued Liability	\$ 774,476	\$ 619,033	25.1%
Deferred Asset (Gains) / Losses	\$ 9,720	\$ 21,496	
6. Funded Ratio			
(based on valuation assets)	85.8%	87.5%	(2.0)%

Exhibit 18
Summary of SamCERA Membership

Plan	One	Two	Three	Four	Five	Six	Seven	Total
Retirees and beneficiaries currently receiving benefits:								
General	1,364	2,009	131	873	8	-	4	4,389
Safety	268	225	-	99	1	-	2	595
Probation	82	112	-	47	-	-	-	241
Subtotal	<u>1,714</u>	<u>2,346</u>	<u>131</u>	<u>1,019</u>	<u>9</u>	<u>-</u>	<u>6</u>	<u>5,225</u>
Inactive employees entitled to but not currently receiving benefits (Deferred):								
General	7	282	69	767	88	-	406	1,619
Safety	1	18	-	43	9	-	16	87
Probation	-	17	-	38	1	-	5	61
Subtotal	<u>8</u>	<u>317</u>	<u>69</u>	<u>848</u>	<u>98</u>	<u>-</u>	<u>427</u>	<u>1,767</u>
Current employees:								
Vested:								
General	5	488	55	1,842	164	-	284	2,838
Safety	-	42	-	219	41	-	29	331
Probation	-	15	-	163	7	-	12	197
Non-Vested:								
General	-	1	5	12	109	-	1,645	1,772
Safety	-	-	-	-	22	-	177	199
Probation	-	-	-	-	1	-	39	40
Subtotal	<u>5</u>	<u>546</u>	<u>60</u>	<u>2,236</u>	<u>344</u>	<u>-</u>	<u>2,186</u>	<u>5,377</u>
Total SamCERA Membership	1,727	3,209	260	4,103	451	-	2,619	12,369

Exhibit 19
Summary of Active Member Valuation Data

Valuation Date		Members	Annual Salary	Average Annual Salary	% Change Average Salary
2010	General	4,609	363,305,740	78,825	1.6%
	Safety	425	48,576,912	114,299	3.6%
	Probation	313	25,247,595	80,663	1.3%
	Total	5,347	437,130,248	81,752	1.8%
2011	General	4,494	355,876,715	79,189	0.5%
	Safety	446	52,073,940	116,758	2.2%
	Probation	305	24,591,392	80,628	0.0%
	Total	5,245	432,542,046	82,468	0.9%
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%

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, 2010	163	9,076	96	3,240	4,002	124,888	4.9	2,601
June 30, 2011 ⁽²⁾	209	12,703	64	2,916	4,147	134,675	7.8	2,706
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

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

2. Revised from June 30, 2011 valuation for corrections.

Exhibit 21
Average Salary and Active Counts by Employer

	2019	2018	2017	2016	2015
General Plan 1	\$9,793	\$10,121	\$11,305	\$9,945	\$9,235
General Plan 2	10,088	9,526	8,994	8,636	8,186
General Plan 3	7,872	7,462	7,484	7,173	6,747
General Plan 4	9,302	8,534	8,134	7,807	7,386
General Plan 5	10,180	9,672	8,980	8,485	7,735
General Plan 7	7,395	6,974	6,737	6,714	6,315
General Plan Total	8,622	8,128	7,869	7,694	7,351
Safety Plan 1	0	0	14,434	15,810	14,712
Safety Plan 2	14,197	13,607	13,528	12,505	11,545
Safety Plan 4	12,391	11,894	11,381	10,729	9,919
Safety Plan 5	11,708	11,349	10,544	9,940	9,145
Safety Plan 6	0	0	0	16,793	16,010
Safety Plan 7	9,030	8,747	8,356	7,538	6,701
Safety Plan Total	11,146	10,958	10,786	10,364	9,728
Probation Plan 1	0	0	7,722	7,261	7,038
Probation Plan 2	9,908	9,061	9,069	8,349	8,012
Probation Plan 4	9,103	8,714	8,270	7,454	7,267
Probation Plan 5	8,587	8,219	7,612	6,429	6,106
Probation Plan 6	0	0	7,347	6,259	5,739
Probation Plan 7	6,973	6,676	6,121	5,962	5,684
Probation Plan Total	8,678	8,379	8,061	7,391	7,216
Grand Total	8,873	8,407	8,154	7,933	7,567

Participating Employers and Active Members

	2019	2018	2017	2016	2015
<i>County of San Mateo</i>					
General Members	4,350	4,343	4,303	4,170	4,092
Safety Members	530	508	503	495	479
Probation Members	237	256	274	271	282
Total	5,117	5,107	5,080	4,936	4,853
<i>San Mateo County Mosquito and Vector Control District</i>					
General Members Total	20	21	20	20	20
<i>Courts</i>					
General Members Total	240	239	237	231	222
Total Active Membership	5,377	5,367	5,337	5,187	5,095

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.	\$ 134,631,065
Statutory Contribution \$	Expected Statutory Contribution paid at mid-year.	\$ 214,796,972
Asset Smoothing Ratio	Actuarial Value of Assets divided by Market Value of Assets	99.2%
Asset Volatility Ratio	Market Value of Assets divided by Payroll	8.3
Liability Volatility Ratio	Actuarial Accrued Liability divided by Payroll	9.6

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 8.3 and a Liability Volatility Ratio of 9.6.

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 6.5% 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 6.5% 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 8.3 asset volatility ratio, a 10% investment gain or loss relative to the assumed 6.50% investment return assumption (that is, an investment return of -3.5%, or of 16.5% investment return translates to a 7.80% 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 9.2% in the Funded Ratio (on a market value basis) from the current Funded Ratio of 86.5%.

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.

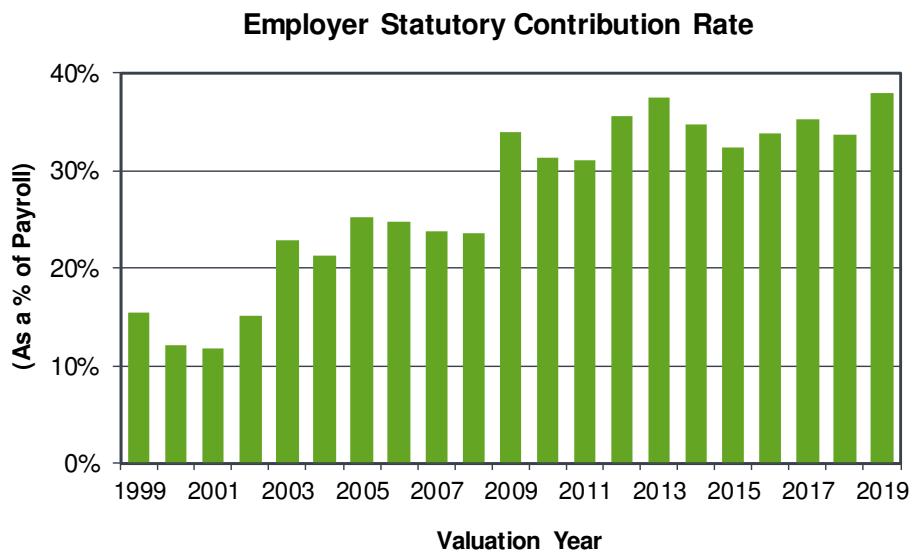
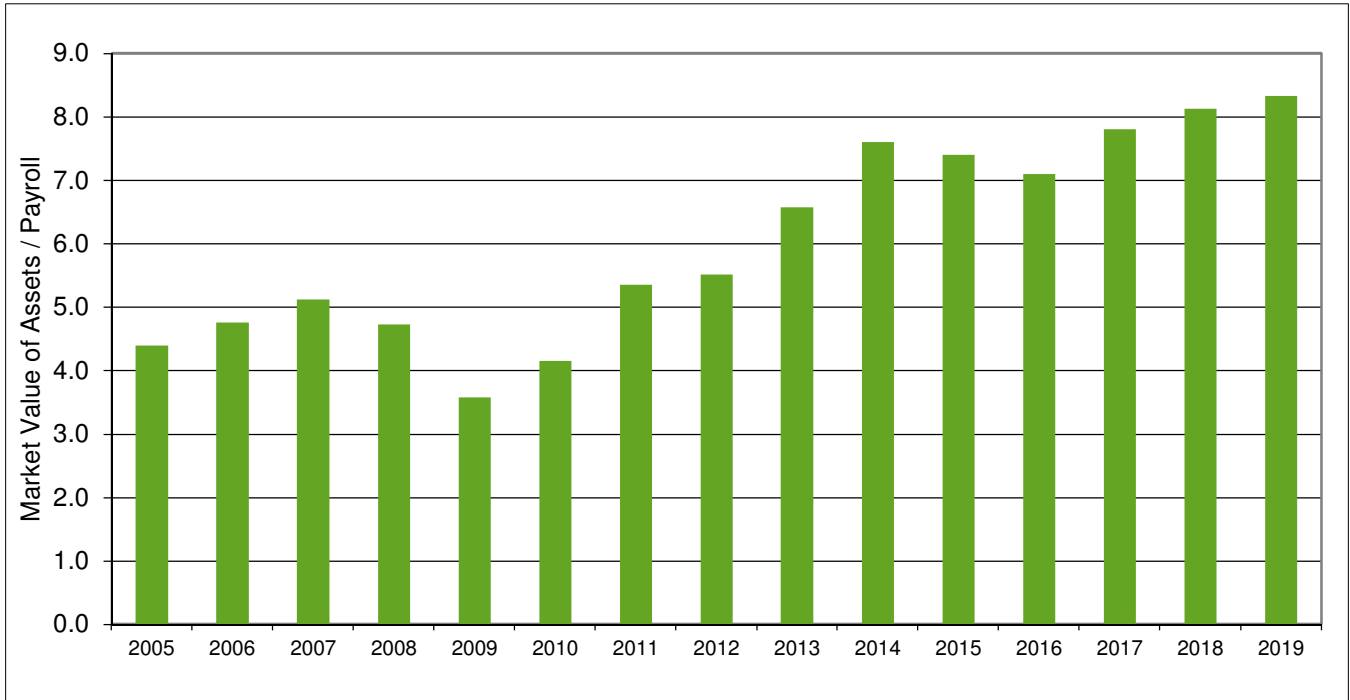
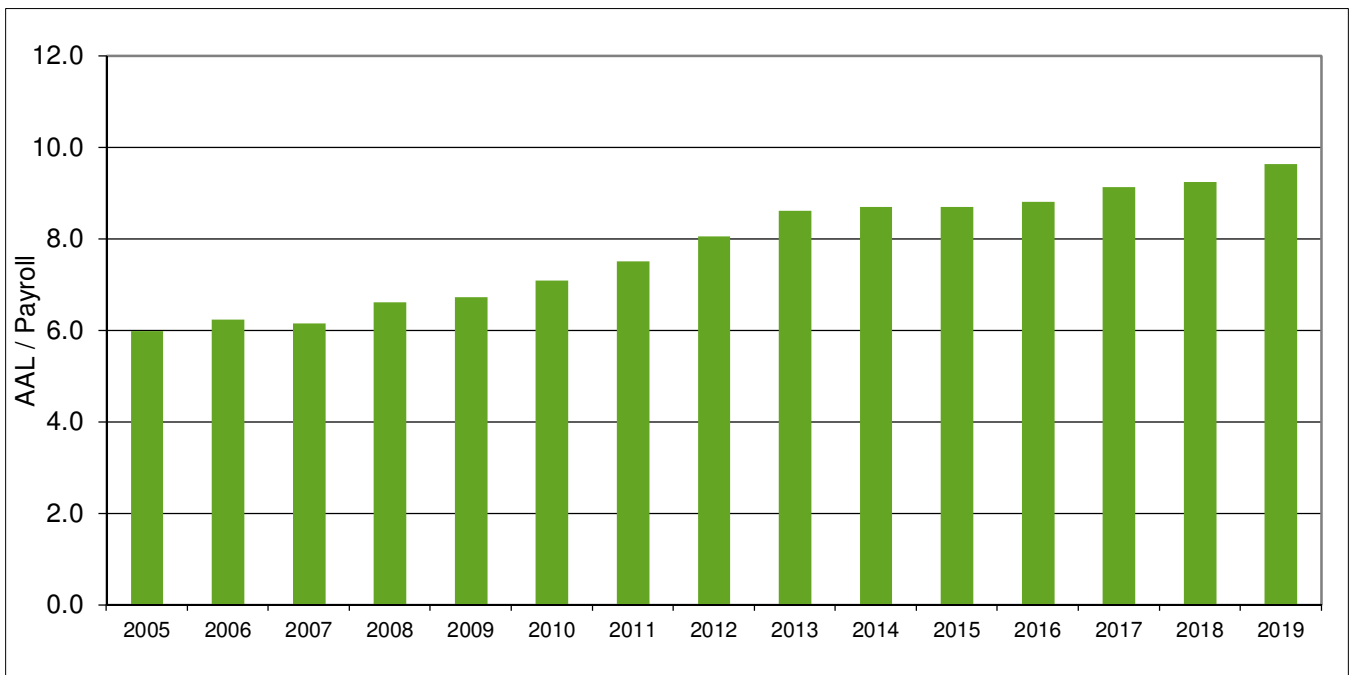


Exhibit 22
Asset and Liability Volatility Ratios
Asset Volatility Ratios



Liability Volatility Ratios



Appendix A Actuarial Procedures and Assumptions

The actuarial procedures and assumptions to be used in the valuation are described in this section. The demographic assumptions were reviewed and changed effective June 30, 2017 a result of the 2017 Investigation of Experience Study. At its meeting on July 16, 2019, the Board adopted an investment return assumption of 6.50% 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.

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

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

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

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

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

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

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).

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).

Beginning with the June 30, 2010 actuarial valuation, the San Mateo County Mosquito and Vector Control District adopted the same "enhanced" benefit formula that applies to Plan 1, 2, and 4 County General members and the same member rates currently being paid by County General members from those plans. However, because the Mosquito and Vector Control District does not participate in cost sharing on the member rates, it will have a separate normal cost rate and expected member contribution rate from the County General group.

The normal cost rate is calculated separately for County General and for the Mosquito and Vector Control District. These normal cost rates will differ from each other for two reasons:

1. The demographics within the two groups will vary (specifically, the groups will have different average entry ages), and
2. The expected refund of contributions, which is a component of the normal cost, will differ between the County and the Mosquito and Vector Control District, since the District does not participate in cost sharing on the member rates.

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. Future annual increases to the limit are assumed to occur based on the CPI inflation assumption.

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 6.50% compounded annually, net of both investment and administrative expenses. This rate was adopted effective June 30, 2019.

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 inflation (CPI) 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 6.50% compounded semi-annually (3.25% per six-month period) for an annualized rate of 6.61%. This rate was adopted effective June 30, 2019 for valuation purposes.

Future Salaries

The rates of annual salary increase assumed for the purpose of the valuation are illustrated in Table A-5. In addition to increases in salary due to promotions and longevity, this scale includes an assumed 3.00% per annum rate of increase in the general wage level of the membership.

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.

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 3.00% per year. Note that statutory provisions describe how to compute a member's offset amount at time of termination or retirement.

Retirement

The retirement rates vary by age and are shown by plan in Tables A-6 through A-1.

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, the member is assumed to retire immediately. For purposes of the valuation, immediate retirement is assumed at:

- Age 62 with 38 years of service (General, except Plan 3, Plan 5, and Plan 7)
- Age 65 with 41 years of service (General Plan 5)
- Age 67 with 40 years of service (General Plan 7)
- Any age with 33 years of service (Safety & Probation, except Plans 5, 6, and 7)
- 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)

Inactive 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, 2017.

Disability

The rates of disability used in the valuation are illustrated in Tables A-6 through A-11.

The disability rates were adopted effective June 30, 2017.

Mortality – Active Members

The rates of mortality used in the valuation are described in Table A-1 and illustrated in Tables A-6 through A-11.

These mortality rates were adopted effective June 30, 2017.

Other Employment Terminations

Tables A-6 to A-11 show, for all ages, the rates assumed in this valuation 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 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, 2017.

Probability of Refund

Table A-4 gives 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 retirement 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, 2017.

Mortality – Disabled Members

The rates of mortality used in the valuation are described in Table A-1 and illustrated in Table A-3.

These mortality rates were adopted effective June 30, 2017.

Mortality – Other than Disabled Members, and Beneficiaries

The rates of mortality for service retired members and members after termination that are used in the valuation are described in Table A-1 and illustrated in Table A-2.

Beneficiaries of retired and disabled members are assumed to be of the opposite sex and have the same mortality as service retired General members.

These mortality rates were adopted effective June 30, 2017.

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.

Valuation of Current Inactive 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

Thirty percent 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 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 3.77% annually for Safety members. This assumption was adopted effective June 30, 2017.

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 Plan 2 or Plan 4 (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

The following assumptions summarize the procedures used to compute member contribution rates based on entry age:

In general, 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 2039.
- 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 6.50%.
- C. Compensation is based on the salary paid in the year prior to attaining the retirement age.
Example: For a Plan 4 Member who enters at age 54 or earlier, compensation at retirement (age 55) will be the monthly average of the annual salary for age 54.
- D. For purposes of calculating the value of the member's future contribution, interest is assumed to be credited at 6.50% semiannually (3.25% for each six-month period) for a 6.61% annual rate.
- E. Member Rates are assumed to increase with entry age, except in Plan 7. 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.
- F. 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. The loads were determined based on 2019 information and are described in Section 5 of this report.

Table A-1
Summary of Valuation Assumptions as of June 30, 2019

Economic assumptions

A. General wage increases	3.00%
B. Investment earnings	6.50%
C. Growth in active membership	0.00%
D. CPI inflation assumption	2.50%

Demographic assumptions

A. Salary increases due to service	Table A-5
B. Retirement	Tables A-6 to A-11
C. Disability	Tables A-6 to A-11
D. Mortality for active members prior to termination	Tables A-6 to A-11

Basis – RP-2014 Employee Mortality Table for respective genders with MP-2014 Ultimate Projection Scale:

<u>Class of Members</u>	<u>Adjustment Factor</u>
General – Males	100%
General – Females	100%
Safety – Males	100%
Safety - Females	100%

E. Mortality for active members after termination and service retired members	Table A-2
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Basis – RP-2014 Healthy Annuitant Mortality Table for respective genders with MP-2014 Ultimate Projection Scale:

<u>Class of Members</u>	<u>Adjustment Factor</u>
General – Males	95%
General – Females	95%
Safety – Males	95%
Safety - Females	95%

Table A-1
Summary of Valuation Assumptions as of June 30, 2019
(continued)

F. Mortality among disabled members Table A-3

Basis – RP-2014 Healthy Annuitant and Disabled Mortality Table for respective genders, with MP-2014 Ultimate Projection Scale:

<u>Class of Members</u>	<u>Adjustment Factor</u>	<u>Minimum Blended Rate</u>
General – Males	95% for Healthy and 105% for Disabled	1.00%
General – Females	95% for Healthy and 105% for Disabled	0.50%

Basis – RP-2014 Healthy Annuitant Table for respective genders, with MP-2014 Ultimate Projection Scale:

<u>Class of Members</u>	<u>Adjustment Factor</u>	<u>Minimum Blended Rate</u>
Safety – Males	105%	1.00%
Safety – Females	105%	0.50%

G. Mortality for beneficiaries Table A-2

Basis – Beneficiaries are assumed to be of the opposite sex and have the same mortality as General members:

H. Other terminations of employment Tables A-6 to A-11

I. Refund of contributions on vested termination Table A-4

Table 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	0.093%	0.039%	0.093%	0.039%
25	0.111%	0.041%	0.111%	0.041%
30	0.103%	0.052%	0.103%	0.052%
35	0.120%	0.068%	0.120%	0.068%
40	0.144%	0.094%	0.144%	0.094%
45	0.223%	0.157%	0.223%	0.157%
50	0.386%	0.263%	0.386%	0.263%
55	0.545%	0.344%	0.545%	0.344%
60	0.738%	0.493%	0.738%	0.493%
65	1.046%	0.765%	1.046%	0.765%
70	1.593%	1.223%	1.593%	1.223%
75	2.548%	1.989%	2.548%	1.989%
80	4.249%	3.310%	4.249%	3.310%
85	7.362%	5.748%	7.362%	5.748%
90	12.911%	10.177%	12.911%	10.177%

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 2014. 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 2017 is 7.143% calculated as follows:

$$\begin{aligned}
 \text{Age 85 rate in 2017} &= \text{Age 85 rate in 2014 with 3 years improvement} \\
 &= 7.362\% \times (100.0\% - 1.0\%) \times (100.0\% - 1.0\%) \times (100.0\% - 1.0\%) \\
 &= 7.143\%
 \end{aligned}$$

Table A-3
Mortality for Members Retired for Disability

Age	General Male	General Female	Safety Male	Safety Female
20	1.000%	0.500%	1.000%	0.500%
25	1.000%	0.500%	1.000%	0.500%
30	1.000%	0.500%	1.000%	0.500%
35	1.000%	0.500%	1.000%	0.500%
40	1.000%	0.500%	1.000%	0.500%
45	1.006%	0.554%	1.000%	0.500%
50	1.264%	0.757%	1.000%	0.500%
55	1.499%	0.932%	1.000%	0.500%
60	1.766%	1.139%	1.000%	0.545%
65	2.187%	1.477%	1.156%	0.845%
70	2.915%	2.092%	1.761%	1.351%
75	4.124%	3.149%	2.817%	2.198%
80	6.147%	4.860%	4.696%	3.659%
85	9.629%	7.621%	8.137%	6.353%
90	15.538%	12.053%	14.270%	11.248%

Table 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	35%	35%
6	35%	35%
7	35%	35%
8	34%	33%
9	34%	31%
10	33%	29%
11	33%	27%
12	32%	25%
13	31%	22%
14	30%	19%
15	30%	16%
16	29%	13%
17	28%	10%
18	25%	8%
19	23%	6%
20	20%	0%
21	18%	0%
22	15%	0%
23	12%	0%
24	9%	0%
25	6%	0%
26	3%	0%
27	0%	0%
28	0%	0%
29	0%	0%
30 & Up	0%	0%

**Table 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%	4.00%	7.89%	7.12%
2	3.50%	3.00%	6.61%	6.09%
3	2.75%	2.50%	5.83%	5.58%
4	2.00%	2.00%	5.06%	5.06%
5	1.75%	1.75%	4.80%	4.80%
6	1.50%	1.50%	4.55%	4.55%
7	1.25%	1.25%	4.29%	4.29%
8	1.05%	1.05%	4.08%	4.08%
9	0.90%	0.90%	3.93%	3.93%
10	0.80%	0.80%	3.82%	3.82%
11	0.70%	0.75%	3.72%	3.77%
12	0.60%	0.75%	3.62%	3.77%
13	0.50%	0.75%	3.52%	3.77%
14	0.50%	0.75%	3.52%	3.77%
15	0.50%	0.75%	3.52%	3.77%
16	0.50%	0.75%	3.52%	3.77%
17	0.50%	0.75%	3.52%	3.77%
18	0.50%	0.75%	3.52%	3.77%
19	0.50%	0.75%	3.52%	3.77%
20 or More	0.50%	0.75%	3.52%	3.77%

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 Tables 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 table represents the detailed rates needed for each SamCERA plan by sex:

- A-6: General Plan 1, 2, 4, 5 & 7 Males
- A-7: General Plan 1, 2, 4, 5 & 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 & 7 Males
- A-11: Safety and Probation Plans 1, 2, 4, 5, 6 & 7 Females

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

Age	Plans 1, 2, 4 Service Retirement ⁽¹⁾	Plans 5 & 7 Service Retirement ⁽¹⁾	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.0000	0.0000	0.0004	0.0002	N/A	0.0003	0	0.1300
19	0.0000	0.0000	0.0004	0.0002	N/A	0.0004	1	0.1100
20	0.0000	0.0000	0.0004	0.0002	N/A	0.0004	2	0.0900
21	0.0000	0.0000	0.0004	0.0002	N/A	0.0004	3	0.0800
22	0.0000	0.0000	0.0004	0.0002	N/A	0.0005	4	0.0700
23	0.0000	0.0000	0.0004	0.0002	N/A	0.0005	5	0.0633
24	0.0000	0.0000	0.0004	0.0002	N/A	0.0005	6	0.0567
25	0.0000	0.0000	0.0004	0.0002	N/A	0.0005	7	0.0500
26	0.0000	0.0000	0.0004	0.0002	N/A	0.0005	8	0.0470
27	0.0000	0.0000	0.0004	0.0002	N/A	0.0004	9	0.0440
28	0.0000	0.0000	0.0005	0.0002	N/A	0.0004	10	0.0410
29	0.0000	0.0000	0.0005	0.0003	N/A	0.0004	11	0.0380
30	0.0000	0.0000	0.0006	0.0003	N/A	0.0005	12	0.0350
31	0.0000	0.0000	0.0006	0.0003	N/A	0.0005	13	0.0330
32	0.0000	0.0000	0.0006	0.0003	N/A	0.0005	14	0.0310
33	0.0000	0.0000	0.0007	0.0004	N/A	0.0005	15	0.0290
34	0.0000	0.0000	0.0008	0.0004	N/A	0.0005	16	0.0270
35	0.0000	0.0000	0.0008	0.0004	N/A	0.0005	17	0.0250
36	0.0000	0.0000	0.0008	0.0005	N/A	0.0005	18	0.0230
37	0.0000	0.0000	0.0009	0.0005	N/A	0.0006	19	0.0210
38	0.0000	0.0000	0.0010	0.0006	N/A	0.0006	20	0.0190
39	0.0000	0.0000	0.0011	0.0006	N/A	0.0006	21	0.0170
40	0.0000	0.0000	0.0012	0.0007	N/A	0.0006	22	0.0150
41	0.0000	0.0000	0.0013	0.0007	N/A	0.0007	23	0.0140
42	0.0000	0.0000	0.0014	0.0008	N/A	0.0007	24	0.0130
43	0.0000	0.0000	0.0015	0.0008	N/A	0.0008	25	0.0120
44	0.0000	0.0000	0.0016	0.0008	N/A	0.0009	26	0.0110
45	0.0000	0.0000	0.0017	0.0009	N/A	0.0010	27	0.0100
46	0.0000	0.0000	0.0018	0.0009	N/A	0.0011	28	0.0100
47	0.0000	0.0000	0.0019	0.0010	N/A	0.0012	29	0.0100
48	0.0000	0.0000	0.0020	0.0011	N/A	0.0014	30 & Above ⁽²⁾	0.0100
49	0.0000	0.0000	0.0020	0.0011	N/A	0.0015		
50	0.0300	0.0270	0.0021	0.0011	N/A	0.0017		
51	0.0300	0.0270	0.0021	0.0012	N/A	0.0019		
52	0.0300	0.0270	0.0022	0.0012	N/A	0.0021		
53	0.0300	0.0270	0.0023	0.0012	N/A	0.0023		
54	0.0500	0.0450	0.0023	0.0013	N/A	0.0025		
55	0.0600	0.0540	0.0023	0.0013	N/A	0.0028		
56	0.0600	0.0540	0.0024	0.0013	N/A	0.0031		
57	0.0750	0.0675	0.0025	0.0013	N/A	0.0034		
58	0.1200	0.1080	0.0027	0.0014	N/A	0.0038		
59	0.1200	0.1080	0.0028	0.0015	N/A	0.0042		
60	0.1500	0.1350	0.0029	0.0016	N/A	0.0047		
61	0.1750	0.1575	0.0031	0.0017	N/A	0.0052		
62	0.2500	0.2250	0.0033	0.0018	N/A	0.0059		
63	0.2000	0.1800	0.0033	0.0018	N/A	0.0066		
64	0.2200	0.1980	0.0033	0.0018	N/A	0.0074		
65	0.3500	0.3150	0.0033	0.0018	N/A	0.0083		
66	0.3500	0.3150	0.0033	0.0018	N/A	0.0092		
67	0.3500	0.4200	0.0033	0.0018	N/A	0.0102		
68	0.3000	0.3000	0.0033	0.0018	N/A	0.0113		
69	0.3000	0.3000	0.0033	0.0018	N/A	0.0125		
70	0.4000	0.4000	0.0033	0.0018	N/A	0.0139		
71	0.4000	0.4000	0.0033	0.0018	N/A	0.0154		
72	0.4000	0.4000	0.0033	0.0018	N/A	0.0170		
73	0.4000	0.4000	0.0033	0.0018	N/A	0.0189		
74	0.4000	0.4000	0.0033	0.0018	N/A	0.0209		
75	1.0000	1.0000	0.0000	0.0000	N/A	0.0232		

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

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

Age	Plans 1, 2, 4 Service Retirement ⁽¹⁾	Plans 5 & 7 Service Retirement ⁽¹⁾	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	0	0.1300
19	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	1	0.1100
20	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	2	0.0950
21	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	3	0.0800
22	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	4	0.0750
23	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	5	0.0700
24	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	6	0.0650
25	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	7	0.0600
26	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	8	0.0550
27	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	9	0.0500
28	0.0000	0.0000	0.0005	0.0003	N/A	0.0002	10	0.0450
29	0.0000	0.0000	0.0006	0.0003	N/A	0.0002	11	0.0400
30	0.0000	0.0000	0.0006	0.0003	N/A	0.0002	12	0.0350
31	0.0000	0.0000	0.0007	0.0004	N/A	0.0002	13	0.0340
32	0.0000	0.0000	0.0007	0.0004	N/A	0.0002	14	0.0330
33	0.0000	0.0000	0.0007	0.0004	N/A	0.0003	15	0.0320
34	0.0000	0.0000	0.0008	0.0004	N/A	0.0003	16	0.0310
35	0.0000	0.0000	0.0008	0.0005	N/A	0.0003	17	0.0300
36	0.0000	0.0000	0.0009	0.0005	N/A	0.0003	18	0.0270
37	0.0000	0.0000	0.0010	0.0005	N/A	0.0003	19	0.0240
38	0.0000	0.0000	0.0011	0.0006	N/A	0.0003	20	0.0210
39	0.0000	0.0000	0.0012	0.0007	N/A	0.0004	21	0.0180
40	0.0000	0.0000	0.0014	0.0007	N/A	0.0004	22	0.0150
41	0.0000	0.0000	0.0015	0.0008	N/A	0.0004	23	0.0140
42	0.0000	0.0000	0.0016	0.0009	N/A	0.0005	24	0.0130
43	0.0000	0.0000	0.0018	0.0010	N/A	0.0005	25	0.0120
44	0.0000	0.0000	0.0020	0.0011	N/A	0.0006	26	0.0110
45	0.0000	0.0000	0.0022	0.0012	N/A	0.0007	27	0.0100
46	0.0000	0.0000	0.0024	0.0013	N/A	0.0007	28	0.0100
47	0.0000	0.0000	0.0026	0.0014	N/A	0.0008	29	0.0100
48	0.0000	0.0000	0.0027	0.0015	N/A	0.0009	30 & Above ⁽²⁾	0.0100
49	0.0000	0.0000	0.0029	0.0015	N/A	0.0010		
50	0.0300	0.0270	0.0030	0.0016	N/A	0.0011		
51	0.0300	0.0270	0.0031	0.0017	N/A	0.0012		
52	0.0300	0.0270	0.0033	0.0018	N/A	0.0013		
53	0.0300	0.0270	0.0034	0.0019	N/A	0.0014		
54	0.0500	0.0450	0.0036	0.0020	N/A	0.0015		
55	0.0600	0.0540	0.0038	0.0021	N/A	0.0017		
56	0.0600	0.0540	0.0040	0.0022	N/A	0.0018		
57	0.0750	0.0675	0.0042	0.0023	N/A	0.0019		
58	0.1200	0.1080	0.0044	0.0024	N/A	0.0021		
59	0.1200	0.1080	0.0046	0.0025	N/A	0.0023		
60	0.1500	0.1350	0.0048	0.0026	N/A	0.0024		
61	0.1750	0.1575	0.0050	0.0027	N/A	0.0026		
62	0.2500	0.2250	0.0052	0.0028	N/A	0.0029		
63	0.2000	0.1800	0.0052	0.0028	N/A	0.0031		
64	0.2200	0.1980	0.0052	0.0028	N/A	0.0034		
65	0.3500	0.3150	0.0052	0.0028	N/A	0.0037		
66	0.3500	0.3150	0.0052	0.0028	N/A	0.0041		
67	0.3500	0.4200	0.0052	0.0028	N/A	0.0046		
68	0.3000	0.3000	0.0052	0.0028	N/A	0.0051		
69	0.3000	0.3000	0.0052	0.0028	N/A	0.0057		
70	0.4000	0.4000	0.0052	0.0028	N/A	0.0063		
71	0.4000	0.4000	0.0052	0.0028	N/A	0.0070		
72	0.4000	0.4000	0.0052	0.0028	N/A	0.0078		
73	0.4000	0.4000	0.0052	0.0028	N/A	0.0087		
74	0.4000	0.4000	0.0052	0.0028	N/A	0.0097		
75	1.0000	1.0000	0.0000	0.0000	N/A	0.0108		

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

Table 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	0.0000	N/A	N/A	N/A	0.0003	0	0.1300
19	0.0000	N/A	N/A	N/A	0.0004	1	0.1100
20	0.0000	N/A	N/A	N/A	0.0004	2	0.0900
21	0.0000	N/A	N/A	N/A	0.0004	3	0.0800
22	0.0000	N/A	N/A	N/A	0.0005	4	0.0700
23	0.0000	N/A	N/A	N/A	0.0005	5	0.0633
24	0.0000	N/A	N/A	N/A	0.0005	6	0.0567
25	0.0000	N/A	N/A	N/A	0.0005	7	0.0500
26	0.0000	N/A	N/A	N/A	0.0005	8	0.0470
27	0.0000	N/A	N/A	N/A	0.0004	9	0.0440
28	0.0000	N/A	N/A	N/A	0.0004	10	0.0410
29	0.0000	N/A	N/A	N/A	0.0004	11	0.0380
30	0.0000	N/A	N/A	N/A	0.0005	12	0.0350
31	0.0000	N/A	N/A	N/A	0.0005	13	0.0330
32	0.0000	N/A	N/A	N/A	0.0005	14	0.0310
33	0.0000	N/A	N/A	N/A	0.0005	15	0.0290
34	0.0000	N/A	N/A	N/A	0.0005	16	0.0270
35	0.0000	N/A	N/A	N/A	0.0005	17	0.0250
36	0.0000	N/A	N/A	N/A	0.0005	18	0.0230
37	0.0000	N/A	N/A	N/A	0.0006	19	0.0210
38	0.0000	N/A	N/A	N/A	0.0006	20	0.0190
39	0.0000	N/A	N/A	N/A	0.0006	21	0.0170
40	0.0000	N/A	N/A	N/A	0.0006	22	0.0150
41	0.0000	N/A	N/A	N/A	0.0007	23	0.0140
42	0.0000	N/A	N/A	N/A	0.0007	24	0.0130
43	0.0000	N/A	N/A	N/A	0.0008	25	0.0120
44	0.0000	N/A	N/A	N/A	0.0009	26	0.0110
45	0.0000	N/A	N/A	N/A	0.0010	27	0.0100
46	0.0000	N/A	N/A	N/A	0.0011	28	0.0100
47	0.0000	N/A	N/A	N/A	0.0012	29	0.0100
48	0.0000	N/A	N/A	N/A	0.0014	30 & Above	0.0100
49	0.0000	N/A	N/A	N/A	0.0015		
50	0.0000	N/A	N/A	N/A	0.0017		
51	0.0000	N/A	N/A	N/A	0.0019		
52	0.0000	N/A	N/A	N/A	0.0021		
53	0.0000	N/A	N/A	N/A	0.0023		
54	0.0000	N/A	N/A	N/A	0.0025		
55	0.0300	N/A	N/A	N/A	0.0028		
56	0.0300	N/A	N/A	N/A	0.0031		
57	0.0300	N/A	N/A	N/A	0.0034		
58	0.0300	N/A	N/A	N/A	0.0038		
59	0.0300	N/A	N/A	N/A	0.0042		
60	0.0300	N/A	N/A	N/A	0.0047		
61	0.0600	N/A	N/A	N/A	0.0052		
62	0.1500	N/A	N/A	N/A	0.0059		
63	0.1000	N/A	N/A	N/A	0.0066		
64	0.1500	N/A	N/A	N/A	0.0074		
65	0.3000	N/A	N/A	N/A	0.0083		
66	0.3000	N/A	N/A	N/A	0.0092		
67	0.3000	N/A	N/A	N/A	0.0102		
68	0.3000	N/A	N/A	N/A	0.0113		
69	0.3000	N/A	N/A	N/A	0.0125		
70	0.4000	N/A	N/A	N/A	0.0139		
71	0.4000	N/A	N/A	N/A	0.0154		
72	0.4000	N/A	N/A	N/A	0.0170		
73	0.4000	N/A	N/A	N/A	0.0189		
74	0.4000	N/A	N/A	N/A	0.0209		
75	1.0000	N/A	N/A	N/A	0.0232		

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

Age	Service Retirement	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.0000	N/A	N/A	N/A	0.0002	0	0.1300
19	0.0000	N/A	N/A	N/A	0.0002	1	0.1100
20	0.0000	N/A	N/A	N/A	0.0002	2	0.0950
21	0.0000	N/A	N/A	N/A	0.0002	3	0.0800
22	0.0000	N/A	N/A	N/A	0.0002	4	0.0750
23	0.0000	N/A	N/A	N/A	0.0002	5	0.0700
24	0.0000	N/A	N/A	N/A	0.0002	6	0.0650
25	0.0000	N/A	N/A	N/A	0.0002	7	0.0600
26	0.0000	N/A	N/A	N/A	0.0002	8	0.0550
27	0.0000	N/A	N/A	N/A	0.0002	9	0.0500
28	0.0000	N/A	N/A	N/A	0.0002	10	0.0450
29	0.0000	N/A	N/A	N/A	0.0002	11	0.0400
30	0.0000	N/A	N/A	N/A	0.0002	12	0.0350
31	0.0000	N/A	N/A	N/A	0.0002	13	0.0340
32	0.0000	N/A	N/A	N/A	0.0002	14	0.0330
33	0.0000	N/A	N/A	N/A	0.0003	15	0.0320
34	0.0000	N/A	N/A	N/A	0.0003	16	0.0310
35	0.0000	N/A	N/A	N/A	0.0003	17	0.0300
36	0.0000	N/A	N/A	N/A	0.0003	18	0.0270
37	0.0000	N/A	N/A	N/A	0.0003	19	0.0240
38	0.0000	N/A	N/A	N/A	0.0003	20	0.0210
39	0.0000	N/A	N/A	N/A	0.0004	21	0.0180
40	0.0000	N/A	N/A	N/A	0.0004	22	0.0150
41	0.0000	N/A	N/A	N/A	0.0004	23	0.0140
42	0.0000	N/A	N/A	N/A	0.0005	24	0.0130
43	0.0000	N/A	N/A	N/A	0.0005	25	0.0120
44	0.0000	N/A	N/A	N/A	0.0006	26	0.0110
45	0.0000	N/A	N/A	N/A	0.0007	27	0.0100
46	0.0000	N/A	N/A	N/A	0.0007	28	0.0100
47	0.0000	N/A	N/A	N/A	0.0008	29	0.0100
48	0.0000	N/A	N/A	N/A	0.0009	30 & Above	0.0100
49	0.0000	N/A	N/A	N/A	0.0010		
50	0.0000	N/A	N/A	N/A	0.0011		
51	0.0000	N/A	N/A	N/A	0.0012		
52	0.0000	N/A	N/A	N/A	0.0013		
53	0.0000	N/A	N/A	N/A	0.0014		
54	0.0000	N/A	N/A	N/A	0.0015		
55	0.0400	N/A	N/A	N/A	0.0017		
56	0.0400	N/A	N/A	N/A	0.0018		
57	0.0400	N/A	N/A	N/A	0.0019		
58	0.0400	N/A	N/A	N/A	0.0021		
59	0.0400	N/A	N/A	N/A	0.0023		
60	0.0400	N/A	N/A	N/A	0.0024		
61	0.0600	N/A	N/A	N/A	0.0026		
62	0.1500	N/A	N/A	N/A	0.0029		
63	0.1000	N/A	N/A	N/A	0.0031		
64	0.1500	N/A	N/A	N/A	0.0034		
65	0.3000	N/A	N/A	N/A	0.0037		
66	0.3000	N/A	N/A	N/A	0.0041		
67	0.3000	N/A	N/A	N/A	0.0046		
68	0.3000	N/A	N/A	N/A	0.0051		
69	0.3000	N/A	N/A	N/A	0.0057		
70	0.4000	N/A	N/A	N/A	0.0063		
71	0.4000	N/A	N/A	N/A	0.0070		
72	0.4000	N/A	N/A	N/A	0.0078		
73	0.4000	N/A	N/A	N/A	0.0087		
74	0.4000	N/A	N/A	N/A	0.0097		
75	1.0000	N/A	N/A	N/A	0.0108		

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

Age	Plans 1, 2, 4 Service Retirement ⁽¹⁾	Plans 5, 6, 7 Service Retirement ⁽²⁾	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.0000	0.0000	0.0015	0.0000	0.0010	0.0003	0	0.0700
19	0.0000	0.0000	0.0015	0.0000	0.0010	0.0004	1	0.0550
20	0.0000	0.0000	0.0015	0.0000	0.0010	0.0004	2	0.0450
21	0.0000	0.0000	0.0015	0.0000	0.0010	0.0004	3	0.0300
22	0.0000	0.0000	0.0015	0.0000	0.0010	0.0005	4	0.0250
23	0.0000	0.0000	0.0015	0.0000	0.0010	0.0005	5	0.0240
24	0.0000	0.0000	0.0015	0.0000	0.0010	0.0005	6	0.0230
25	0.0000	0.0000	0.0015	0.0000	0.0010	0.0005	7	0.0220
26	0.0000	0.0000	0.0015	0.0000	0.0010	0.0005	8	0.0201
27	0.0000	0.0000	0.0015	0.0000	0.0010	0.0004	9	0.0182
28	0.0000	0.0000	0.0016	0.0000	0.0010	0.0004	10	0.0163
29	0.0000	0.0000	0.0017	0.0000	0.0010	0.0004	11	0.0144
30	0.0000	0.0000	0.0018	0.0000	0.0010	0.0005	12	0.0125
31	0.0000	0.0000	0.0019	0.0000	0.0010	0.0005	13	0.0120
32	0.0000	0.0000	0.0020	0.0000	0.0010	0.0005	14	0.0115
33	0.0000	0.0000	0.0021	0.0000	0.0010	0.0005	15	0.0110
34	0.0000	0.0000	0.0022	0.0000	0.0010	0.0005	16	0.0105
35	0.0000	0.0000	0.0023	0.0000	0.0010	0.0005	17	0.0100
36	0.0000	0.0000	0.0024	0.0000	0.0010	0.0005	18	0.0080
37	0.0000	0.0000	0.0025	0.0000	0.0010	0.0006	19	0.0060
38	0.0000	0.0000	0.0026	0.0000	0.0010	0.0006	20 ⁽³⁾	0.0040
39	0.0000	0.0000	0.0027	0.0000	0.0010	0.0006	21 ⁽³⁾	0.0020
40	0.0000	0.0000	0.0028	0.0000	0.0010	0.0006	22 & Above ⁽³⁾	0.0000
41	0.0000	0.0000	0.0029	0.0000	0.0010	0.0007		
42	0.0000	0.0000	0.0030	0.0000	0.0010	0.0007		
43	0.0000	0.0000	0.0032	0.0000	0.0010	0.0008		
44	0.0000	0.0000	0.0035	0.0000	0.0010	0.0009		
45	0.0300	0.0000	0.0037	0.0000	0.0010	0.0010		
46	0.0300	0.0000	0.0040	0.0000	0.0010	0.0011		
47	0.0300	0.0000	0.0042	0.0000	0.0010	0.0012		
48	0.0500	0.0000	0.0048	0.0000	0.0010	0.0014		
49	0.0500	0.0000	0.0054	0.0000	0.0010	0.0015		
50	0.1500	0.0500	0.0077	0.0000	0.0010	0.0017		
51	0.1500	0.0500	0.0088	0.0000	0.0010	0.0019		
52	0.1500	0.0500	0.0100	0.0000	0.0010	0.0021		
53	0.2000	0.0500	0.0111	0.0000	0.0010	0.0023		
54	0.1300	0.1000	0.0122	0.0000	0.0010	0.0025		
55	0.2250	0.2750	0.0134	0.0000	0.0010	0.0028		
56	0.2250	0.2750	0.0145	0.0000	0.0010	0.0031		
57	0.1700	0.2750	0.0156	0.0000	0.0010	0.0034		
58	0.1700	0.2750	0.0139	0.0000	0.0010	0.0038		
59	0.2500	0.2750	0.0122	0.0000	0.0010	0.0042		
60	0.4000	0.4000	0.0106	0.0000	0.0010	0.0047		
61	0.4000	0.4000	0.0089	0.0000	0.0010	0.0052		
62	0.4000	0.4000	0.0072	0.0000	0.0010	0.0059		
63	0.4000	0.4000	0.0055	0.0000	0.0010	0.0066		
64	0.4000	0.4000	0.0038	0.0000	0.0010	0.0074		
65	1.0000	1.0000	0.0000	0.0000	0.0000	0.0000		

1. 100% probability of retirement is assumed with 33 or more years of service for Safety and Probation Plans 1, 2, and 4.
2. 100% probability of retirement is assumed at ages 55 and above with 33 or more years of service for Safety and Probation Plan 5, ages 55 and above with 38 or more years of service for Safety and Probation Plan 6, and ages 57 and above with 38 or more years of service for Safety and Probation Plan 7.
3. 0.00% probability of termination with 20 years of service and above for all Safety/Probation plans except Plan 7.

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

Age	Plans 1, 2, 4 Service Retirement ⁽¹⁾	Plans 5, 6, 7 Service Retirement ⁽²⁾	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.0000	0.0000	0.0015	0.0000	0.0010	0.0002	0	0.0700
19	0.0000	0.0000	0.0015	0.0000	0.0010	0.0002	1	0.0550
20	0.0000	0.0000	0.0015	0.0000	0.0010	0.0002	2	0.0450
21	0.0000	0.0000	0.0015	0.0000	0.0010	0.0002	3	0.0300
22	0.0000	0.0000	0.0015	0.0000	0.0010	0.0002	4	0.0250
23	0.0000	0.0000	0.0015	0.0000	0.0010	0.0002	5	0.0240
24	0.0000	0.0000	0.0015	0.0000	0.0010	0.0002	6	0.0230
25	0.0000	0.0000	0.0015	0.0000	0.0010	0.0002	7	0.0220
26	0.0000	0.0000	0.0015	0.0000	0.0010	0.0002	8	0.0201
27	0.0000	0.0000	0.0015	0.0000	0.0010	0.0002	9	0.0182
28	0.0000	0.0000	0.0016	0.0000	0.0010	0.0002	10	0.0163
29	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	11	0.0144
30	0.0000	0.0000	0.0018	0.0000	0.0010	0.0002	12	0.0125
31	0.0000	0.0000	0.0019	0.0000	0.0010	0.0002	13	0.0120
32	0.0000	0.0000	0.0020	0.0000	0.0010	0.0002	14	0.0115
33	0.0000	0.0000	0.0021	0.0000	0.0010	0.0003	15	0.0110
34	0.0000	0.0000	0.0022	0.0000	0.0010	0.0003	16	0.0105
35	0.0000	0.0000	0.0023	0.0000	0.0010	0.0003	17	0.0100
36	0.0000	0.0000	0.0024	0.0000	0.0010	0.0003	18	0.0080
37	0.0000	0.0000	0.0025	0.0000	0.0010	0.0003	19	0.0060
38	0.0000	0.0000	0.0026	0.0000	0.0010	0.0003	20 ⁽³⁾	0.0040
39	0.0000	0.0000	0.0027	0.0000	0.0010	0.0004	21 ⁽³⁾	0.0020
40	0.0000	0.0000	0.0028	0.0000	0.0010	0.0004	22 & Above ⁽³⁾	0.0000
41	0.0000	0.0000	0.0029	0.0000	0.0010	0.0004		
42	0.0000	0.0000	0.0030	0.0000	0.0010	0.0005		
43	0.0000	0.0000	0.0032	0.0000	0.0010	0.0005		
44	0.0000	0.0000	0.0035	0.0000	0.0010	0.0006		
45	0.0300	0.0000	0.0037	0.0000	0.0010	0.0007		
46	0.0300	0.0000	0.0040	0.0000	0.0010	0.0007		
47	0.0300	0.0000	0.0042	0.0000	0.0010	0.0008		
48	0.0500	0.0000	0.0048	0.0000	0.0010	0.0009		
49	0.0500	0.0000	0.0054	0.0000	0.0010	0.0010		
50	0.1500	0.0500	0.0077	0.0000	0.0010	0.0011		
51	0.1500	0.0500	0.0088	0.0000	0.0010	0.0012		
52	0.1500	0.0500	0.0100	0.0000	0.0010	0.0013		
53	0.2000	0.0500	0.0111	0.0000	0.0010	0.0014		
54	0.1300	0.1000	0.0122	0.0000	0.0010	0.0015		
55	0.2250	0.2750	0.0134	0.0000	0.0010	0.0017		
56	0.2250	0.2750	0.0145	0.0000	0.0010	0.0018		
57	0.1700	0.2750	0.0156	0.0000	0.0010	0.0019		
58	0.1700	0.2750	0.0139	0.0000	0.0010	0.0021		
59	0.2500	0.2750	0.0122	0.0000	0.0010	0.0023		
60	0.4000	0.4000	0.0106	0.0000	0.0010	0.0024		
61	0.4000	0.4000	0.0089	0.0000	0.0010	0.0026		
62	0.4000	0.4000	0.0072	0.0000	0.0010	0.0029		
63	0.4000	0.4000	0.0055	0.0000	0.0010	0.0031		
64	0.4000	0.4000	0.0038	0.0000	0.0010	0.0034		
65	1.0000	1.0000	0.0000	0.0000	0.0000	0.0000		

1. 100% probability of retirement is assumed with 33 or more years of service for Safety and Probation Plans 1, 2, and 4.
2. 100% probability of retirement is assumed at ages 55 and above with 33 or more years of service for Safety and Probation Plan 5, ages 55 and above with 38 or more years of service for Safety and Probation Plan 6, and ages 57 and above with 38 or more years of service for Safety and Probation Plan 7.
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, 2019. 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 Mosquito and Vector Control District 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: Deputy Sheriffs in Plans 1, 2, 4, and 5 contribute the following additional cost sharing rates based on age and service:

- | | |
|-----------------------------------|------|
| 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% |

Safety members (except Deputy Sheriffs) in Plans 1, 2, and 4 contribute an additional 5.0% cost sharing.

Safety members (except Deputy Sheriffs) in Plan 5 contribute an additional 4.0% cost sharing.

Safety members in Plan 6 and 7 do not participate in cost sharing.

Probation Members: Members of Plans 1, 2, 4, and 5 contribute an additional 3.5% for cost sharing.

Members of Plans 6 and 7 do not participate in cost sharing.

Interest Crediting: 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. (31591, 31700)

Employer Pick-Up: Effective with the first pay period in July 2016, no employer provides for employer pick-up contributions.

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.

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.

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

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

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

Eligibility:

All Plans Except 3:	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)
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

Eligibility:

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 (31870.2)
Members (and their beneficiaries) are limited to a maximum 5% cost-of-living increase.

Probation (31870.1)
Members (and their beneficiaries) are limited to a maximum 3% cost-of-living increase.

Plan 2: All members (31870.1)
Members (and their beneficiaries) are limited to a maximum 3% cost-of-living increase.

Plan 3: Plan 3 does not have a COLA. (31487)

Other Plans: All members (31870)
Members (and their beneficiaries) are limited to a maximum 2% cost-of-living increase.

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)

All other Plans do not have a COLA bank.

Other Plans: (31874.4)

Appendix C Valuation Data and Schedules

Data on SamCERA membership as of June 30, 2019 was supplied to us by SamCERA staff. On the following table, Exhibit C-1, we present a summary of SamCERA membership at June 30, 2019 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, 2019

	Total Number	Annual Salary	Average Age	Average Monthly Salary	Average Credited Service
General Members					
Plan 1	5	\$ 587,581	67.2	\$ 9,793	40.3
Plan 2	489	59,197,384	56.5	10,088	26.8
Plan 3	60	5,667,800	54.2	7,872	16.3
Plan 4	1,854	206,961,528	49.4	9,302	14.4
Plan 5	273	33,348,418	45.0	10,180	5.4
Plan 7	1,929	171,181,475	39.0	7,395	2.8
Total	4,610	\$ 476,944,186	45.6	\$ 8,622	10.4
Safety Members					
Plan 1	-	\$ -	-	\$ -	-
Plan 2	42	7,155,193	52.9	14,197	24.7
Plan 4	219	32,562,946	46.6	12,391	14.2
Plan 5	63	8,851,129	41.2	11,708	5.2
Plan 7	206	22,321,250	34.2	9,030	2.8
Total	530	\$ 70,890,519	41.6	\$ 11,146	9.5
Probation Members					
Plan 1	-	\$ -	-	\$ -	-
Plan 2	15	1,783,472	50.1	9,908	25.2
Plan 4	163	17,805,948	45.3	9,103	16.3
Plan 5	8	824,336	35.8	8,587	6.7
Plan 6	-	-	-	-	-
Plan 7	51	4,267,236	32.0	6,973	3.3
Total	237	\$ 24,680,991	42.4	\$ 8,678	13.7
Grand Total	5,377	\$ 572,515,696	45.1	\$ 8,873	10.4

Exhibit C-2
SamCERA Membership – Inactive Members as of June 30, 2019

	Deferred Vested Number	Deferred Vested Average Age	Contingent Vested Number	Contingent Vested Average Age
General Members				
Plan 1	7	64.0	-	-
Plan 2	231	56.1	51	55.9
Plan 3	69	57.6	-	-
Plan 4	566	46.2	201	48.4
Plan 5	23	42.7	65	43.1
Plan 7	20	36.3	386	39.1
Total	916	49.4	703	43.3
Safety Members				
Plan 1	1	68.0	-	-
Plan 2	9	50.9	9	54.0
Plan 4	27	46.1	16	49.2
Plan 5	2	48.0	7	40.3
Plan 7	1	30.0	15	38.1
Total	40	47.4	47	45.2
Probation Members				
Plan 1	-	-	-	-
Plan 2	8	52.4	9	50.2
Plan 4	29	43.1	9	47.7
Plan 5	-	-	1	39.0
Plan 6	-	-	-	-
Plan 7	-	-	5	33.8
Total	37	45.1	24	45.4
Grand Total	993	49.2	774	43.5

Exhibit C-3a
SamCERA Membership – Retired Members as of June 30, 2019

	Number	Average Age	Monthly Allowance	Average Monthly Benefit
General Members				
Plan 1	1,364	79.8	\$ 5,321,090	\$ 3,657
Plan 2	2,009	69.7	6,810,209	3,225
Plan 3	131	71.5	173,900	514
Plan 4	873	65.6	1,885,482	2,128
Plan 5	8	61.0	9,330	1,166
Plan 7	4	63.8	3,482	871
Total	4,389	72.0	\$ 14,203,492	\$ 3,236
Safety Members				
Plan 1	268	74.8	\$ 1,903,376	\$ 7,050
Plan 2	225	62.2	1,787,258	7,704
Plan 4	99	57.2	419,671	4,197
Plan 5	1	61.0	1,713	1,713
Plan 7	2	60.0	3,123	1,562
Total	595	67.0	\$ 4,115,142	\$ 6,916
Probation Members				
Plan 1	82	76.4	\$ 401,747	\$ 3,863
Plan 2	112	60.8	599,381	4,995
Plan 4	47	58.6	177,204	3,544
Total	241	65.7	\$ 1,178,331	\$ 4,889
Grand Total	5,225	71.2	\$ 19,496,965	\$ 3,731

Exhibit C-3b
SamCERA Membership – Retired Members as of June 30, 2019
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	3,530	\$ 12,055,628	\$ 3,109
	Disabled	358	1,086,615	2,937
	Beneficiaries	<u>501</u>	<u>1,061,248</u>	<u>1,912</u>
	Total	4,389	\$ 14,203,492	\$ 3,236
<i>Safety Plans:</i>				
	Healthy	385	\$ 3,051,400	\$ 7,824
	Disabled	114	677,648	5,842
	Beneficiaries	<u>96</u>	<u>386,094</u>	<u>3,900</u>
	Total	595	\$ 4,115,142	\$ 6,916
<i>Probation Plans:</i>				
	Healthy	218	\$ 1,068,729	\$ 4,587
	Disabled	15	57,584	3,839
	Beneficiaries	<u>8</u>	<u>52,018</u>	<u>2,001</u>
	Total	241	\$ 1,178,331	\$ 4,889
<i>Grand Totals</i>				
	Healthy	4,133	\$ 16,175,757	\$ 3,914
	Disabled	487	1,821,847	3,741
	Beneficiaries	<u>605</u>	<u>1,499,361</u>	<u>2,478</u>
	Total	5,225	\$ 19,496,965	\$ 3,731

Exhibit C-4
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2019 – 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	29	13	0	0	0	0	0	0	0	42
25-29	127	247	20	0	0	0	0	0	0	394
30-34	103	396	161	31	1	0	0	0	0	692
35-39	61	293	167	171	33	0	0	0	0	725
40-44	55	184	141	214	157	24	0	0	0	775
45-49	47	124	104	200	219	110	12	0	0	816
50-54	34	111	76	141	166	116	69	20	0	733
55-59	24	77	65	110	110	91	69	56	7	609
60-64	8	58	56	93	80	43	36	30	12	416
65 & Over	5	15	29	32	40	16	14	11	13	175
Total Count	493	1,518	819	992	806	400	200	117	32	5,377

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	68,597	72,933	-	-	-	-	-	-	-	69,939
25-29	75,368	85,687	102,232	-	-	-	-	-	-	83,201
30-34	83,748	90,733	104,177	96,941	76,625	-	-	-	-	93,079
35-39	89,853	94,380	113,644	109,499	97,080	-	-	-	-	102,126
40-44	87,394	96,119	112,260	114,085	117,315	111,321	-	-	-	108,162
45-49	91,801	101,560	126,940	115,926	113,461	116,592	104,792	-	-	113,022
50-54	90,559	99,698	126,120	120,319	120,074	120,538	117,143	126,102	-	116,255
55-59	105,158	91,569	112,508	114,091	108,638	123,068	113,268	135,532	87,622	112,653
60-64	91,042	99,646	130,338	116,216	105,118	124,975	118,304	115,693	111,736	114,108
65 & Over	97,713	122,564	117,780	122,070	113,973	132,918	113,714	106,693	146,504	120,027
Avg. Annual Compensation	84,400	93,354	115,310	114,474	113,396	120,448	115,034	126,122	120,586	106,475

Exhibit C-4a
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2019 – 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	20	9	0	0	0	0	0	0	0	29
25-29	101	186	10	0	0	0	0	0	0	297
30-34	91	342	132	23	1	0	0	0	0	589
35-39	55	268	143	128	29	0	0	0	0	623
40-44	52	175	121	180	113	14	0	0	0	655
45-49	46	120	79	164	167	74	11	0	0	661
50-54	29	99	65	132	141	87	56	17	0	626
55-59	23	72	53	107	105	83	65	54	7	569
60-64	8	58	48	86	75	41	36	29	12	393
65 & Over	5	13	29	30	37	16	14	11	13	168
Total Count	430	1,342	680	850	668	315	182	111	32	4,610

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	60,080	62,684	-	-	-	-	-	-	-	60,888
25-29	72,814	80,638	89,808	-	-	-	-	-	-	78,286
30-34	81,790	88,228	100,797	90,501	76,625	-	-	-	-	90,120
35-39	90,404	92,693	110,511	105,387	91,430	-	-	-	-	99,130
40-44	87,129	95,332	108,064	111,351	113,577	90,417	-	-	-	104,478
45-49	91,168	100,413	119,703	111,222	109,880	106,908	102,985	-	-	107,919
50-54	83,122	97,890	122,734	119,388	119,750	108,583	107,108	113,426	-	111,975
55-59	104,601	89,250	103,532	114,568	109,209	122,028	110,803	134,824	87,622	111,194
60-64	91,042	99,646	125,919	112,058	103,206	123,868	118,304	114,253	111,736	111,758
65 & Over	97,713	118,494	117,780	118,233	114,776	132,918	113,714	106,693	146,504	119,257
Avg. Annual Compensation	83,090	91,467	110,976	111,831	111,154	114,150	110,901	123,384	120,586	103,459

Exhibit C-4b
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2019 – 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	9	4	0	0	0	0	0	0	0	13
25-29	20	47	8	0	0	0	0	0	0	75
30-34	11	43	20	5	0	0	0	0	0	79
35-39	5	20	19	23	2	0	0	0	0	69
40-44	3	7	18	17	19	5	0	0	0	69
45-49	1	4	23	21	24	18	0	0	0	91
50-54	5	12	10	6	11	19	9	3	0	75
55-59	1	5	12	1	3	6	3	2	0	33
60-64	0	0	8	7	3	2	0	1	0	21
65 & Over	0	2	0	2	1	0	0	0	0	5
Total Count	55	144	118	82	63	50	12	6	0	530

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	87,523	95,994	-	-	-	-	-	-	-	90,130
25-29	89,241	107,505	120,563	-	-	-	-	-	-	104,028
30-34	100,071	111,841	128,601	128,742	-	-	-	-	-	115,515
35-39	86,864	119,928	141,226	141,094	172,968	-	-	-	-	131,989
40-44	91,981	119,162	142,025	150,511	142,363	170,736	-	-	-	141,794
45-49	120,929	135,943	150,752	156,695	151,893	156,014	-	-	-	152,486
50-54	133,690	114,617	145,840	146,109	134,784	173,342	175,283	197,934	-	151,018
55-59	117,978	124,955	152,153	124,522	91,796	141,582	161,758	154,650	-	139,775
60-64	-	-	156,853	167,301	138,723	147,682	-	157,447	-	156,900
65 & Over	-	149,016	-	179,633	132,608	-	-	-	-	157,981
Avg. Annual Compensation	96,199	113,337	142,225	149,631	142,906	162,005	171,902	176,758	-	133,756

Exhibit C-4c
Age & Service Distribution of Active Members by Count and Average Compensation
as of June 30, 2019 – 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
25-29	6	14	2	0	0	0	0	0	0	22
30-34	1	11	9	3	0	0	0	0	0	24
35-39	1	5	5	20	2	0	0	0	0	33
40-44	0	2	2	17	25	5	0	0	0	51
45-49	0	0	2	15	28	18	1	0	0	64
50-54	0	0	1	3	14	10	4	0	0	32
55-59	0	0	0	2	2	2	1	0	0	7
60-64	0	0	0	0	2	0	0	0	0	2
65 & Over	0	0	0	0	2	0	0	0	0	2
Total Count	8	32	21	60	75	35	6	0	0	237

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	72,120	79,515	91,028	-	-	-	-	-	-	78,545
30-34	82,399	86,095	99,477	93,311	-	-	-	-	-	91,861
35-39	74,473	82,607	98,436	99,484	103,123	-	-	-	-	96,231
40-44	-	84,308	98,229	106,604	115,173	110,437	-	-	-	109,977
45-49	-	-	138,938	110,285	101,881	116,981	124,667	-	-	109,611
50-54	-	-	149,016	109,700	111,775	124,217	126,814	-	-	118,512
55-59	-	-	-	83,342	103,898	110,698	128,046	-	-	103,418
60-64	-	-	-	-	126,411	-	-	-	-	126,411
65 & Over	-	-	-	-	89,807	-	-	-	-	89,807
Avg. Annual Compensation	73,699	82,560	104,423	103,866	108,577	117,755	126,662	-	-	104,139

Exhibit C-5
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2019 – All Plans Combined

Age	Retirement Year								Total Count	Average Monthly Benefit
	Pre-1984	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19		
Under 35	-	-	1	2	2	2	1	-	8	\$ 1,280
35-39	-	-	-	1	-	-	2	5	8	3,133
40-44	-	-	-	-	1	1	6	10	18	2,785
45-49	-	-	1	-	1	4	7	17	30	3,801
50-54	-	2	1	1	9	13	15	143	184	4,160
55-59	1	-	1	10	13	17	126	233	401	3,852
60-64	-	-	4	11	24	103	202	332	676	4,245
65-69	-	3	13	21	98	232	341	308	1,016	3,983
70-74	8	10	26	96	185	307	281	137	1,050	3,997
75-79	5	21	80	144	199	224	90	32	795	3,831
80-84	15	39	101	112	106	45	16	7	441	3,106
85-89	45	49	82	96	20	12	3	9	316	2,533
90-94	55	50	56	13	2	1	1	7	185	2,314
95-99	33	37	10	3	-	-	-	1	84	2,427
100 & Over	11	2	-	-	-	-	-	-	13	2,006
Total Count	173	213	376	510	660	961	1,091	1,241	5,225	
Avg Monthly Benefit	\$ 1,732	\$ 2,498	\$ 2,538	\$ 2,749	\$ 3,602	\$ 4,576	\$ 3,959	\$ 4,203		\$ 3,731

Exhibit C-5a
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2019 – General Plans Combined

Age	Retirement Year								Total Count	Average Monthly Benefit
	Pre-1984	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19		
Under 35	-	-	1	2	2	2	1	-	8	\$ 1,280
35-39	-	-	-	1	-	-	2	2	5	2,842
40-44	-	-	-	-	1	-	3	6	10	2,562
45-49	-	-	1	-	1	1	6	8	17	3,370
50-54	-	2	1	-	5	8	11	60	87	2,361
55-59	1	-	-	8	8	10	87	168	282	2,577
60-64	-	-	2	8	17	74	164	295	560	3,585
65-69	-	2	11	15	90	188	304	291	901	3,539
70-74	6	5	15	82	119	281	273	129	910	3,626
75-79	3	11	62	88	158	214	84	27	647	3,417
80-84	12	33	84	94	99	44	15	6	387	2,856
85-89	40	43	82	93	18	12	3	7	298	2,415
90-94	51	50	56	13	2	1	1	7	181	2,250
95-99	32	37	10	3	-	-	-	1	83	2,398
100 & Over	11	2	-	-	-	-	-	-	13	2,006
Total Count	156	185	325	407	520	835	954	1,007	4,389	
Avg Monthly Benefit	\$ 1,503	\$ 2,191	\$ 2,194	\$ 2,184	\$ 2,968	\$ 4,120	\$ 3,481	\$ 3,632		\$ 3,236

Exhibit C-5b
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2019 – Safety Plans Combined

Age	Retirement Year								Total Count	Average Monthly Benefit
	Pre-1984	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19		
Under 35	-	-	-	-	-	-	-	-	-	\$ -
35-39	-	-	-	-	-	-	-	3	3	3,617
40-44	-	-	-	-	-	1	2	2	5	3,047
45-49	-	-	-	-	-	3	1	3	7	4,581
50-54	-	-	-	1	3	4	3	44	55	6,287
55-59	-	-	1	2	5	7	26	42	83	7,276
60-64	-	-	2	3	4	23	24	29	85	8,305
65-69	-	1	2	6	7	35	26	16	93	7,759
70-74	2	5	10	11	57	15	2	7	109	6,886
75-79	2	10	17	41	23	3	4	4	104	6,070
80-84	3	6	13	9	1	1	-	1	34	6,092
85-89	5	6	-	-	-	-	-	1	12	5,418
90-94	4	-	-	-	-	-	-	-	4	5,224
95-99	1	-	-	-	-	-	-	-	1	4,836
100 & Over	-	-	-	-	-	-	-	-	-	-
Total Count	17	28	45	73	100	92	88	152	595	
Avg Monthly Benefit	\$ 3,838	\$ 4,530	\$ 4,953	\$ 5,341	\$ 6,867	\$ 8,599	\$ 8,150	\$ 7,337		\$ 6,916

Exhibit C-5c
Distribution of Retired Members by Age and Retirement Year
as of June 30, 2019 – Probation Plans Combined

Age	Retirement Year								Total Count	Average Monthly Benefit
	Pre-1984	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19		
Under 35	-	-	-	-	-	-	-	-	-	\$ -
35-39	-	-	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	1	2	3	3,094
45-49	-	-	-	-	-	-	-	6	6	4,113
50-54	-	-	-	-	1	1	1	39	42	5,100
55-59	-	-	-	-	-	-	13	23	36	5,952
60-64	-	-	-	-	3	6	14	8	31	5,024
65-69	-	-	-	-	1	9	11	1	22	6,196
70-74	-	-	1	3	9	11	6	1	31	4,740
75-79	-	-	1	15	18	7	2	1	44	4,624
80-84	-	-	4	9	6	-	1	-	20	2,883
85-89	-	-	-	3	2	-	-	1	6	2,629
90-94	-	-	-	-	-	-	-	-	-	-
95-99	-	-	-	-	-	-	-	-	-	-
100 & Over	-	-	-	-	-	-	-	-	-	-
Total Count	-	-	6	30	40	34	49	82	241	
Avg Monthly Benefit	\$ -	\$ -	\$ 3,014	\$ 4,102	\$ 3,680	\$ 4,886	\$ 5,736	\$ 5,400		\$ 4,889

Note: July 30, 2019 counts reflect the reclassification of some members with split benefits (service earned in more than one plan) as Probation members who were previously reported as General or Safety members. This change was for internal reporting purposes only and only affected the class the member was reported under; it did not impact the benefit amounts paid from the respective plans.

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 2020-2021 fiscal year, Plan 7 member contribution rates are:

- General Plan 7 members: 9.11%
- SMCM&VCD Plan 7 members: 9.24%
- Safety Plan 7 members: 15.28%
- Probation Plan 7 members: 14.97%

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	6.13%	5.92%	5.14%	9.11%	9.24%
17	6.24%	6.03%	5.23%	9.11%	9.24%
18	6.34%	6.13%	5.32%	9.11%	9.24%
19	6.45%	6.24%	5.41%	9.11%	9.24%
20	6.56%	6.34%	5.51%	9.11%	9.24%
21	6.68%	6.45%	5.60%	9.11%	9.24%
22	6.79%	6.56%	5.70%	9.11%	9.24%
23	6.91%	6.67%	5.80%	9.11%	9.24%
24	7.02%	6.79%	5.90%	9.11%	9.24%
25	7.14%	6.90%	6.00%	9.11%	9.24%
26	7.26%	7.02%	6.10%	9.11%	9.24%
27	7.39%	7.14%	6.20%	9.11%	9.24%
28	7.51%	7.26%	6.31%	9.11%	9.24%
29	7.64%	7.38%	6.42%	9.11%	9.24%
30	7.77%	7.51%	6.53%	9.11%	9.24%
31	7.90%	7.63%	6.64%	9.11%	9.24%
32	8.03%	7.76%	6.75%	9.11%	9.24%
33	8.17%	7.89%	6.86%	9.11%	9.24%
34	8.31%	8.03%	6.98%	9.11%	9.24%
35	8.45%	8.17%	7.10%	9.11%	9.24%
36	8.60%	8.31%	7.22%	9.11%	9.24%
37	8.74%	8.45%	7.34%	9.11%	9.24%
38	8.90%	8.60%	7.46%	9.11%	9.24%
39	9.05%	8.75%	7.59%	9.11%	9.24%
40	9.21%	8.90%	7.72%	9.11%	9.24%
41	9.38%	9.06%	7.85%	9.11%	9.24%
42	9.55%	9.21%	7.99%	9.11%	9.24%
43	9.72%	9.37%	8.13%	9.11%	9.24%
44	9.88%	9.51%	8.27%	9.11%	9.24%
45	10.05%	9.66%	8.42%	9.11%	9.24%
46	10.21%	9.80%	8.57%	9.11%	9.24%
47	10.36%	9.93%	8.71%	9.11%	9.24%
48	10.51%	10.04%	8.85%	9.11%	9.24%
49	10.65%	10.14%	9.00%	9.11%	9.24%
50	10.77%	10.21%	9.13%	9.11%	9.24%
51	10.88%	10.22%	9.26%	9.11%	9.24%
52	10.93%	10.22%	9.38%	9.11%	9.24%
53	10.93%	10.48%	9.49%	9.11%	9.24%
54	10.93%	10.81%	9.59%	9.11%	9.24%
55	10.93%	10.81%	9.65%	9.11%	9.24%
56	10.93%	10.81%	9.67%	9.11%	9.24%
57	10.93%	10.81%	9.67%	9.11%	9.24%
58	10.93%	10.81%	9.91%	9.11%	9.24%
59	10.93%	10.81%	10.22%	9.11%	9.24%
60	10.93%	10.81%	10.22%	9.11%	9.24%

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	8.59%	8.28%	15.28%	14.97%
17	8.72%	8.41%	15.28%	14.97%
18	8.85%	8.53%	15.28%	14.97%
19	8.99%	8.66%	15.28%	14.97%
20	9.12%	8.79%	15.28%	14.97%
21	9.26%	8.93%	15.28%	14.97%
22	9.40%	9.06%	15.28%	14.97%
23	9.54%	9.20%	15.28%	14.97%
24	9.69%	9.34%	15.28%	14.97%
25	9.83%	9.48%	15.28%	14.97%
26	9.98%	9.62%	15.28%	14.97%
27	10.13%	9.77%	15.28%	14.97%
28	10.29%	9.92%	15.28%	14.97%
29	10.44%	10.07%	15.28%	14.97%
30	10.60%	10.22%	15.28%	14.97%
31	10.76%	10.37%	15.28%	14.97%
32	10.92%	10.53%	15.28%	14.97%
33	11.09%	10.69%	15.28%	14.97%
34	11.26%	10.86%	15.28%	14.97%
35	11.44%	11.03%	15.28%	14.97%
36	11.62%	11.20%	15.28%	14.97%
37	11.81%	11.38%	15.28%	14.97%
38	12.00%	11.56%	15.28%	14.97%
39	12.20%	11.74%	15.28%	14.97%
40	12.40%	11.92%	15.28%	14.97%
41	12.59%	12.08%	15.28%	14.97%
42	12.78%	12.24%	15.28%	14.97%
43	12.95%	12.37%	15.28%	14.97%
44	13.11%	12.49%	15.28%	14.97%
45	13.25%	12.57%	15.28%	14.97%
46	13.37%	12.62%	15.28%	14.97%
47	13.45%	12.62%	15.28%	14.97%
48	13.48%	12.97%	15.28%	14.97%
49	13.48%	13.38%	15.28%	14.97%
50	13.48%	13.38%	15.28%	14.97%

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	2.81%	2.09%	1.57%	1.31%
17	2.86%	2.13%	1.60%	1.33%
18	2.90%	2.16%	1.62%	1.36%
19	2.95%	2.20%	1.65%	1.38%
20	3.00%	2.24%	1.68%	1.41%
21	3.06%	2.28%	1.71%	1.43%
22	3.11%	2.32%	1.74%	1.45%
23	3.16%	2.36%	1.77%	1.48%
24	3.21%	2.39%	1.80%	1.50%
25	3.27%	2.43%	1.83%	1.53%
26	3.32%	2.48%	1.86%	1.56%
27	3.38%	2.52%	1.89%	1.58%
28	3.44%	2.56%	1.92%	1.61%
29	3.50%	2.61%	1.95%	1.64%
30	3.56%	2.65%	1.99%	1.67%
31	3.62%	2.69%	2.02%	1.69%
32	3.68%	2.74%	2.05%	1.72%
33	3.74%	2.79%	2.09%	1.75%
34	3.80%	2.83%	2.13%	1.78%
35	3.87%	2.88%	2.16%	1.81%
36	3.94%	2.93%	2.20%	1.84%
37	4.00%	2.98%	2.24%	1.87%
38	4.07%	3.03%	2.28%	1.90%
39	4.14%	3.09%	2.32%	1.94%
40	4.22%	3.14%	2.36%	1.97%
41	4.29%	3.20%	2.40%	2.00%
42	4.37%	3.26%	2.44%	2.04%
43	4.45%	3.31%	2.48%	2.07%
44	4.52%	3.37%	2.52%	2.11%
45	4.60%	3.43%	2.56%	2.15%
46	4.67%	3.48%	2.59%	2.19%
47	4.74%	3.53%	2.63%	2.22%
48	4.81%	3.58%	2.66%	2.26%
49	4.88%	3.63%	2.68%	2.30%
50	4.93%	3.67%	2.70%	2.33%
51	4.98%	3.71%	2.71%	2.36%
52	5.00%	3.73%	2.71%	2.39%
53	5.00%	3.73%	2.77%	2.42%
54	5.00%	3.73%	2.86%	2.45%
55	5.00%	3.73%	2.86%	2.46%
56	5.00%	3.73%	2.86%	2.47%
57	5.00%	3.73%	2.86%	2.47%
58	5.00%	3.73%	2.86%	2.53%
59	5.00%	3.73%	2.86%	2.61%
60	5.00%	3.73%	2.86%	2.61%

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	4.12%	4.41%	3.22%	2.96%	2.69%
17	4.18%	4.48%	3.27%	3.00%	2.73%
18	4.24%	4.55%	3.32%	3.05%	2.77%
19	4.31%	4.62%	3.37%	3.09%	2.81%
20	4.37%	4.69%	3.42%	3.14%	2.85%
21	4.44%	4.76%	3.47%	3.19%	2.90%
22	4.51%	4.83%	3.52%	3.24%	2.94%
23	4.57%	4.90%	3.58%	3.29%	2.99%
24	4.64%	4.98%	3.63%	3.34%	3.03%
25	4.71%	5.05%	3.69%	3.39%	3.08%
26	4.78%	5.13%	3.74%	3.44%	3.12%
27	4.86%	5.20%	3.80%	3.49%	3.17%
28	4.93%	5.29%	3.86%	3.54%	3.22%
29	5.00%	5.36%	3.92%	3.60%	3.27%
30	5.08%	5.45%	3.98%	3.65%	3.32%
31	5.16%	5.53%	4.03%	3.71%	3.37%
32	5.23%	5.61%	4.10%	3.76%	3.42%
33	5.32%	5.70%	4.16%	3.82%	3.47%
34	5.40%	5.79%	4.22%	3.88%	3.53%
35	5.48%	5.88%	4.29%	3.94%	3.58%
36	5.57%	5.97%	4.36%	4.00%	3.64%
37	5.66%	6.07%	4.43%	4.07%	3.70%
38	5.75%	6.17%	4.50%	4.13%	3.75%
39	5.85%	6.27%	4.57%	4.19%	3.81%
40	5.94%	6.37%	4.64%	4.26%	3.87%
41	6.03%	6.47%	4.70%	4.32%	3.92%
42	6.13%	6.57%	4.76%	4.37%	3.97%
43	6.21%	6.65%	4.81%	4.42%	4.02%
44	6.28%	6.74%	4.86%	4.46%	4.06%
45	6.35%	6.81%	4.89%	4.49%	4.08%
46	6.41%	6.87%	4.91%	4.51%	4.10%
47	6.45%	6.91%	4.91%	4.51%	4.10%
48	6.46%	6.93%	5.05%	4.63%	4.21%
49	6.46%	6.93%	5.20%	4.78%	4.34%
50	6.46%	6.93%	5.20%	4.78%	4.34%

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	4.57%	4.46%	3.23%	2.96%	2.52%
17	4.64%	4.53%	3.28%	3.00%	2.56%
18	4.71%	4.60%	3.33%	3.05%	2.60%
19	4.78%	4.67%	3.38%	3.09%	2.64%
20	4.85%	4.74%	3.43%	3.14%	2.68%
21	4.93%	4.81%	3.48%	3.19%	2.72%
22	5.00%	4.88%	3.53%	3.24%	2.76%
23	5.08%	4.95%	3.59%	3.29%	2.80%
24	5.16%	5.03%	3.64%	3.34%	2.84%
25	5.23%	5.10%	3.70%	3.39%	2.89%
26	5.31%	5.18%	3.75%	3.44%	2.93%
27	5.39%	5.26%	3.81%	3.49%	2.97%
28	5.48%	5.34%	3.87%	3.54%	3.02%
29	5.56%	5.42%	3.93%	3.60%	3.07%
30	5.64%	5.50%	3.98%	3.65%	3.11%
31	5.73%	5.59%	4.04%	3.71%	3.16%
32	5.81%	5.67%	4.11%	3.76%	3.21%
33	5.90%	5.76%	4.17%	3.82%	3.25%
34	5.99%	5.85%	4.23%	3.88%	3.31%
35	6.09%	5.94%	4.30%	3.94%	3.36%
36	6.18%	6.03%	4.37%	4.00%	3.41%
37	6.28%	6.13%	4.44%	4.07%	3.46%
38	6.39%	6.23%	4.51%	4.13%	3.52%
39	6.49%	6.34%	4.58%	4.19%	3.57%
40	6.60%	6.44%	4.65%	4.26%	3.63%
41	6.70%	6.54%	4.71%	4.32%	3.68%
42	6.80%	6.64%	4.77%	4.37%	3.73%
43	6.89%	6.72%	4.82%	4.42%	3.77%
44	6.98%	6.81%	4.87%	4.46%	3.80%
45	7.05%	6.88%	4.90%	4.49%	3.83%
46	7.11%	6.94%	4.92%	4.51%	3.84%
47	7.16%	6.98%	4.92%	4.51%	3.84%
48	7.17%	7.00%	5.06%	4.63%	3.95%
49	7.17%	7.00%	5.22%	4.78%	4.07%
50	7.17%	7.00%	5.22%	4.78%	4.07%

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 the funded status of the system. 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.