



# San Mateo County Employees' Retirement Association

## June 30, 2016 Actuarial Valuation

Prepared by:

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September 19, 2016

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, 2017.

#### **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 14 of our November 28, 2005 proposal titled "Response for Request for Actuarial Services."

This work product was prepared solely for SamCERA for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

### **Actuarial Certification – Milliman**

The major findings of the valuation are contained in this report. This report reflects the benefit provisions as of June 30, 2016 and member contribution rates effective July 1, 2017 (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. We will next be reviewing the assumptions in 2017 as part of our triennial investigation.

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.

This work product was prepared solely for SamCERA for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

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 pension 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.

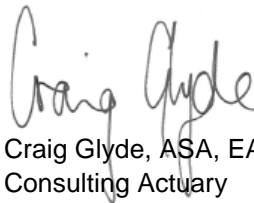
We would like to express our appreciation to Mr. Scott Hood, Chief Executive Officer of SamCERA, and to members of his staff, who gave substantial assistance in supplying the data on which this report is based.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Collier".

Nick Collier, ASA, EA, MAAA  
Consulting Actuary  
NJC/CJG/nlo

A handwritten signature in black ink, appearing to read "Craig Glyde".

Craig Glyde, ASA, EA, MAAA  
Consulting Actuary

## Table of Contents

		Page
<b>Section 1</b>	<b>Summary of the Findings</b> .....	<b>1</b>
Exhibit 1a	Summary of Recommended Minimum Statutory Contribution Rates .....	4
Exhibit 1b	Summary of Recommended Member Contribution Rates .....	5
Exhibit 2	Summary of Significant Valuation Results .....	13
<b>Section 2</b>	<b>Scope of the Report</b> .....	<b>15</b>
<b>Section 3</b>	<b>Assets</b> .....	<b>17</b>
Exhibit 3	Statement of Plan Net Assets .....	20
Exhibit 4	Statement of Changes in Plan Net Assets .....	21
Exhibit 5	Allocation of Assets by Accounting Reserve Amounts .....	22
Exhibit 6a	Five-Year Smoothing of Gains and Losses on Market Value (Total Assets) – History .....	23
Exhibit 6b	Five-Year Smoothing of Gains and Losses on Market Value (excluding SCAs) – History .....	24
Exhibit 6c	Five-Year Smoothing of Gains and Losses on Market Value of CSCA – History .....	25
Exhibit 6d	Five-Year Smoothing of Gains and Losses on Market Value of DCSA – History .....	26
Exhibit 7a	Five-Year Smoothing – Development of Valuation Assets (Total Assets) .....	27
Exhibit 7b	Five-Year Smoothing – Development of Valuation Assets (excluding SCAs) .....	28
Exhibit 7c	Five-Year Smoothing – Development of CSCA Assets .....	29
Exhibit 7d	Five-Year Smoothing – Development of DCSA Assets .....	30
Exhibit 8	Allocation of Valuation Assets .....	31
<b>Section 4</b>	<b>Actuarial Liabilities</b> .....	<b>33</b>
Exhibit 9a	Actuarial Balance Sheet (Total Assets) .....	34
Exhibit 9b	Actuarial Balance Sheet (excluding SCAs) .....	35
<b>Section 5</b>	<b>Member Contributions</b> .....	<b>39</b>
<b>Section 6</b>	<b>Employer Contributions</b> .....	<b>43</b>
Exhibit 10	Employer Statutory Contribution Rates – All Plans .....	45
Exhibit 10a	Employer Statutory Contribution Rates – General Members .....	46
Exhibit 10b	Employer Statutory Contribution Rates – SMCM&VCD Members .....	47
Exhibit 10c	Employer Statutory Contribution Rates – Safety Members .....	48
Exhibit 10d	Employer Statutory Contribution Rates – Probation Members .....	49
Exhibit 11	Calculated Gross Normal Cost Rates .....	50
Exhibit 12a	Amortization Detail – General Members: UAAL and SCA Offsets .....	51
Exhibit 12b	Amortization Detail – Safety Members: UAAL and County CSCA Offsets .....	52
Exhibit 12c	Amortization Detail – Probation Members: UAAL and County CSCA Offsets .....	53
<b>Section 7</b>	<b>Information for Comprehensive Annual Financial Report (CAFR)</b> .....	<b>55</b>
Exhibit 13	Schedule of Funding Progress .....	56
Exhibit 14	Solvency Test .....	57
Exhibit 15	History of Employer Statutory Contribution Rates .....	58
Exhibit 16	Actuarial Analysis of Financial Experience .....	59
Exhibit 17	Summary of Significant Actuarial Statistics and Measures .....	60
Exhibit 18	Summary of SamCERA Membership .....	61
Exhibit 19	Summary of Active Member Valuation Data .....	62
Exhibit 20	Summary of Demographic Activity of Retirees and Beneficiaries .....	63
Exhibit 21	Average Salary and Active Counts by Employer .....	64
Exhibit 22	Summary of Retired and Inactive Benefits .....	65

**Appendices**

<b>Appendix A:</b>	<b>Actuarial Procedures and Assumptions.....</b>	<b>A-1</b>
<b>Appendix B:</b>	<b>Summary of Benefit Provisions.....</b>	<b>B-1</b>
<b>Appendix C:</b>	<b>Valuation Data and Schedules.....</b>	<b>C-1</b>
<b>Appendix D:</b>	<b>Member Contribution Rates.....</b>	<b>D-1</b>
<b>Appendix E:</b>	<b>Glossary.....</b>	<b>E-1</b>

## Section 1 Summary of the Findings



### Overview

### 2016 Valuation Results

	June 30, 2016	June 30, 2015
Employer Statutory Contribution Rate <sup>(1)(2)</sup>	33.77%	31.96%
Funded Ratio	83.1%	82.6%

(1) The June 30, 2015 Statutory Contribution Rate shown above reflects changes in member rates negotiated subsequent to the 2015 valuation report. The 2015 Statutory Contribution Rate calculated in the 2015 valuation report was 32.35%.

(2) Weighted average Statutory Contribution Rate for only the County as of June 30, 2016 is 33.91% of pay.

This report presents the results of the June 30, 2016 actuarial valuation. Several key points are summarized as follows:

- Funding:** The Funded Ratio increased from 82.6% to 83.1%. This increase was primarily due to employer contributions to amortize the UAAL and was offset somewhat by the increase in the UAAL due to revised economic assumptions described below. On a market value basis, the funded ratio decreased from 85.4% to 81.2% due primarily to an investment return of 0.7%. Investment returns are discussed in more detail below.

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 \$19.5 million to the CSCA over the year ended June 30, 2016. These contributions resulted in an increase in the funded ratio of 0.5%. In total, the CSCA has an actuarial value of \$85.1 million as of June 30, 2016. The SMCM&VCD contributed \$1.5 million to DSCA over the year ended June 30, 2016. Without the CSCA and DSCA (\$1.6 million), the funded ratio would be 81.1% as of June 30, 2016.

- Employer Contribution Rates:** The Employer Normal Cost rate decreased from 10.42% (calculated in the 2015 valuation report) to 10.25% of pay. The decrease is primarily because of negotiated increases in some member's contribution rates (discussed below) and a larger portion of the active population being Plan 7 members. There is a partially offsetting increase due to revised economic assumptions. Rates will vary slightly from year to year as the average entry age of the membership changes and as a greater proportion of members enter Plan 7.

The employer's contribution rate to finance the UAAL increased from 21.93% to 23.52% of pay. This increase is largely driven by the recently adopted economic assumptions which include a lower expectation for future investment returns. Additionally, the recognition of investment losses from the current year also caused an increase in the UAAL rate. Additionally, a decrease of 0.35% occurred due to the amortization of contributions made by the County over the fiscal year that are allocated to the CSCA. These contributions totaled approximately \$19.5 million. The overall result is an increase in the Statutory Contribution Rate from the prior valuation report of 1.42% (from 32.35% to 33.77% of payroll).

**Overview  
 (continued)**

The County's contribution rate to finance the UAAL increased from 22.04% to 23.64% of pay. The County's UAAL contribution rate before consideration of the CSCA is 25.37% of pay. The CSCA provides an offset of 1.73% of pay (compared to 1.37% of pay in the prior year). The DSCA provides an offset of 8.80% of pay for the San Mateo County Mosquito and Vector Control District (SMCM&VCD).

- **Investment Returns:** SamCERA's investment return on the market value of assets for the prior year of 0.7% (as provided by SamCERA) was less than the actuarial assumed rate of 7.25% for the prior year. Combined with the recognition of a small net investment gain from prior years, the net result was a return on the actuarial value of valuation assets of 6.4%, which is lower than the assumed return. This actuarial loss on valuation assets caused an increase in the Statutory Contribution Rate.

Note that currently a net asset loss of \$120.0 million is being deferred. This is because the asset-smoothing method has not yet recognized a portion of the net asset losses from December 31, 2011 to June 30, 2016. These deferred losses will be reflected in future valuations.

- **Negotiated Member Contribution Rates:** As a result of bargaining by the County since the June 30, 2015 valuation report was issued, new member COLA share contribution rates for most members of Plans 1, 2, and 4 are effective with the first pay period in July 2016. All of these members now contribute 50% of the cost of COLA benefits in addition to other member rates and cost sharing, except Board of Supervisors and Court Interpreters hired before August 7, 2011, and members of the San Mateo County Mosquito and Vector Control District (SMCM&VCD). Additionally, the County no longer "picks-up" any member contributions. See Appendix B for additional information about member contributions.

Due to timing, these changes were not reflected in the June 30, 2015 valuation. The net effect of these changes is a reduction in the Statutory Contribution Rate of approximately 0.39% for the fiscal year 2016-2017.

- **Economic Assumptions:** At its meeting on June 7, 2016 the Board adopted new economic assumptions effective June 30, 2016, as summarized in the following table. We include the June 30, 2015 assumptions for comparison.

	June 30, 2016	June 30, 2015
Investment earnings	7.00%	7.25%
General wage increases	3.25%	3.50%
CPI inflation assumption	2.75%	3.00%

The net effect of these assumptions changes was an increase in Unfunded Actuarial Accrued Liability (UAAL) of approximately \$89 million and a decrease in the funded ratio of 1.8%. In addition, Normal Cost increased by approximately 2.35% of payroll.

Basic member rates and member COLA rates for all plans (except General Plan 1) have also increased due to the new economic assumptions. See Exhibit 1b for details. A complete list of all member basic rates and COLA rates is shown in Appendix D.



**Comparison with  
Prior Year**

Note that for comparison purposes, except where noted, the prior year employer Statutory Contribution Rates shown in this report reflects all bargained COLA and cost sharing arrangements negotiated subsequent to the June 30, 2015 actuarial valuation.

**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, 2017**

	Fiscal Year Beginning		Increase / (Decrease)
	July 1, 2017	July 1, 2016	
Gross Normal Cost	22.31%	21.95%	0.36%
Member Contributions	(12.06)%	(11.92)%	(0.14)%
Employer Normal Cost	10.25%	10.03%	0.22%
UAAL Amortization	23.52%	21.93%	1.59%
Total Employer Rate	33.77%	31.96%	1.81%

Notes:

1. Detailed contribution rates by plan are shown in Section 6.
2. The Total Employer Rate for July 1, 2016 reflects all valuation addendums subsequent to the 2015 valuation. The Total Employer Rate calculated in the 2015 valuation is 32.35% of pay.
3. The Total Employer Rate of 33.77% is the aggregate rate for all employers. For the fiscal year beginning July 1, 2017, employer rates by employer are as follows:
  - a. The County contribution rate is 33.91% of pay.
  - b. The Courts contribution rate is 30.44% of pay.
  - c. The SMCM&VCD contribution rate is 24.52% of pay.

Exhibit 1b Summary of Recommended Member Contribution Rates

**Recommendation #2: Adopt new member contribution rates for fiscal year beginning July 1, 2017**

	Entry Age	Recommended Rates			Total as a % of Pay <sup>(2)</sup>	Current	Ratio (New/Curr)
		Basic	50% COLA Sharing <sup>(1)</sup>	Cost Sharing <sup>(4)</sup>		Total as a % of Pay <sup>(2/3)</sup>	
<b>General Members (not including SMCM&amp;VCD)</b>							
Plan 1	25	6.49%	2.30%	3.00%	11.79%	11.82%	99.8%
	35	7.78%	2.76%	3.00%	13.54%	13.58%	99.7%
	45	9.36%	3.32%	3.00%	15.68%	15.71%	99.8%
Plan 2	25	6.49%	2.23%	3.00%	11.72%	11.47%	102.2%
	35	7.78%	2.67%	3.00%	13.45%	13.16%	102.2%
	45	9.36%	3.21%	3.00%	15.57%	15.20%	102.4%
Plan 4	25	6.26%	1.47%	3.00%	10.73%	10.50%	102.2%
	35	7.50%	1.76%	3.00%	12.26%	11.99%	102.2%
	45	8.98%	2.11%	3.00%	14.09%	13.75%	102.4%
Plan 5	25	5.37%	1.22%	0.00%	6.59%	6.40%	102.9%
	35	6.45%	1.46%	0.00%	7.91%	7.68%	103.0%
	45	7.74%	1.76%	0.00%	9.50%	9.22%	103.0%
Plan 7	All	6.83%	1.31%	0.00%	8.14%	7.91%	102.9%
<b>SMCM&amp;VCD Members</b>							
Plan 1	25	6.49%	0.00%	0.00%	6.49%	6.34%	102.4%
	35	7.78%	0.00%	0.00%	7.78%	7.60%	102.4%
	45	9.36%	0.00%	0.00%	9.36%	9.13%	102.5%
Plan 2	25	6.49%	0.00%	0.00%	6.49%	6.34%	102.4%
	35	7.78%	0.00%	0.00%	7.78%	7.60%	102.4%
	45	9.36%	0.00%	0.00%	9.36%	9.13%	102.5%
Plan 4	25	6.26%	0.00%	0.00%	6.26%	6.10%	102.6%
	35	7.50%	0.00%	0.00%	7.50%	7.31%	102.6%
	45	8.98%	0.00%	0.00%	8.98%	8.74%	102.7%
Plan 5	25	5.37%	0.00%	0.00%	5.37%	5.24%	102.5%
	35	6.45%	0.00%	0.00%	6.45%	6.29%	102.5%
	45	7.74%	0.00%	0.00%	7.74%	7.55%	102.5%
Plan 7	All	6.84%	1.31%	0.00%	8.15%	7.35%	110.9%

1. All General members (not including SMCM&VCD) contribute 50% of the cost of COLA benefits except for members of the Board of Supervisors or Court Interpreters whose most recent hire date is before August 7, 2011. All Safety and Probation members contribute 50% of the cost of COLA benefits. Plan 7 COLA share represents one-half of the normal cost of the COLA. 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.

2. Total rates include COLA sharing.

3. Current rates are those effective in the first pay period in July 2016.

4. Safety member cost sharing is for all members who are not Deputy Sheriffs. Cost sharing varies for Deputy Sheriffs as follows:

- 3.0% if employee is less than 45 and has less than 5 years of service.
- 3.5% if employee is less than 45 and has between 5 and 15 years of service.
- 4.5% if employee is older than 45 or has at least 15 years of service.

5. For Probation members, current rates are for PDA members only. Probation Managers currently pay the same rates as Safety members. Recommended rates for Probation members include both PDA and Probation Managers.

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

**Recommendation #2: Adopt new member contribution rates for fiscal year beginning July 1, 2017**

	Entry Age	Recommended Rates			Total as a % of Pay <sup>(2)</sup>	Current	Ratio (New/Curr)
		Basic	50% COLA Sharing <sup>(1)</sup>	Cost Sharing <sup>(4)</sup>		Total as a % of Pay <sup>(2)(3)</sup>	
<b>Safety Members<sup>(5)</sup></b>							
Plan 1	25	8.84%	5.62%	5.00%	19.46%	18.62%	104.5%
	35	10.62%	6.75%	5.00%	22.37%	21.35%	104.8%
	45	12.51%	7.96%	5.00%	25.47%	24.26%	105.0%
Plan 2	25	8.84%	5.42%	5.00%	19.26%	18.62%	103.4%
	35	10.62%	6.51%	5.00%	22.13%	21.35%	103.7%
	45	12.51%	7.67%	5.00%	25.18%	24.26%	103.8%
Plan 4	25	8.52%	2.98%	5.00%	16.50%	16.11%	102.4%
	35	10.24%	3.58%	5.00%	18.82%	18.33%	102.7%
	45	11.85%	4.14%	5.00%	20.99%	20.43%	102.7%
Plan 5	25	8.52%	2.67%	4.00%	15.19%	14.84%	102.4%
	35	10.24%	3.21%	4.00%	17.45%	17.01%	102.6%
	45	11.85%	3.72%	4.00%	19.57%	19.06%	102.7%
Plan 6	25	8.52%	2.44%	0.00%	10.96%	10.62%	103.2%
	35	10.24%	2.94%	0.00%	13.18%	12.75%	103.3%
	45	11.85%	3.40%	0.00%	15.25%	14.76%	103.3%
Plan 7	All	11.32%	2.58%	0.00%	13.90%	13.59%	102.3%
<b>Probation Members<sup>(5)</sup></b>							
Plan 1	25	8.84%	5.44%	3.50%	17.78%	16.78%	106.0%
	35	10.62%	6.54%	3.50%	20.66%	19.44%	106.3%
	45	12.51%	7.70%	3.50%	23.71%	22.27%	106.5%
Plan 2	25	8.84%	5.25%	3.50%	17.59%	16.78%	104.8%
	35	10.62%	6.30%	3.50%	20.42%	19.44%	105.0%
	45	12.51%	7.42%	3.50%	23.43%	22.27%	105.2%
Plan 4	25	8.52%	2.97%	3.50%	14.99%	14.55%	103.0%
	35	10.24%	3.57%	3.50%	17.31%	16.76%	103.3%
	45	11.85%	4.13%	3.50%	19.48%	18.85%	103.3%
Plan 5	25	8.52%	2.65%	3.50%	14.67%	14.35%	102.2%
	35	10.24%	3.18%	3.50%	16.92%	16.53%	102.4%
	45	11.85%	3.68%	3.50%	19.03%	18.58%	102.4%
Plan 6	25	8.52%	2.35%	0.00%	10.87%	10.50%	103.6%
	35	10.24%	2.83%	0.00%	13.07%	12.60%	103.7%
	45	11.85%	3.27%	0.00%	15.12%	14.59%	103.7%
Plan 7	All	10.78%	2.60%	0.00%	13.38%	12.91%	103.6%

1. All General members (not including SMCM&VCD) contribute 50% of the cost of COLA benefits except for members of the Board of Supervisors or Court Interpreters whose most recent hire date is before August 7, 2011. All Safety and Probation members contribute 50% of the cost of COLA benefits. Plan 7 COLA share represents one-half of the normal cost of the COLA. 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.

2. Total rates include COLA sharing.

3. Current rates are those effective in the first pay period in July 2016.

4. Safety member cost sharing is for all members who are not Deputy Sheriffs. Cost sharing varies for Deputy Sheriffs as follows:

- 3.0% if employee is less than 45 and has less than 5 years of service.
- 3.5% if employee is less than 45 and has between 5 and 15 years of service.
- 4.5% if employee is older than 45 or has at least 15 years of service.

5. For Probation members, current rates are for PDA members only. Probation Managers currently pay the same rates as Safety members. Recommended rates for Probation members include both PDA and Probation Managers.

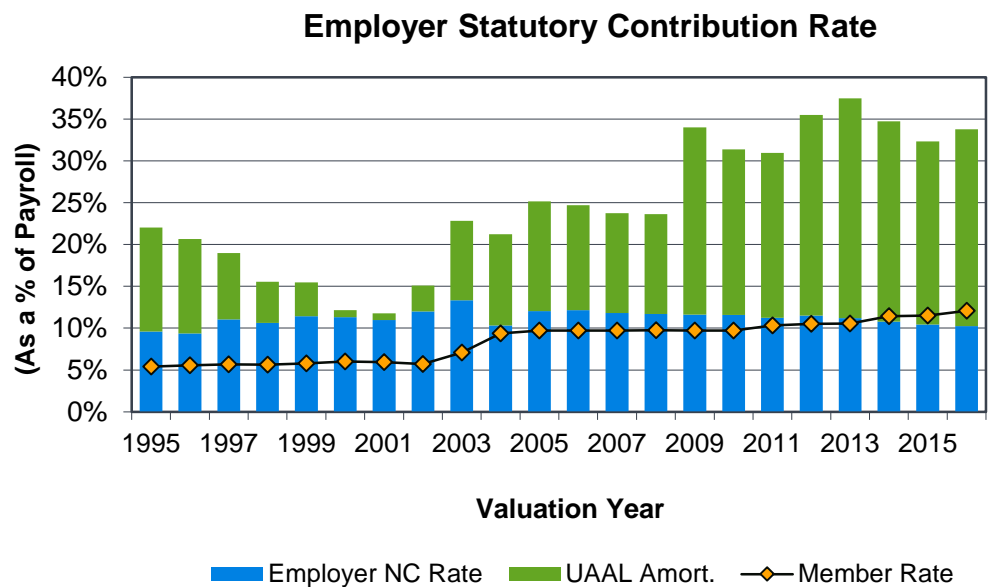
**Employer Contribution Rate**

The Statutory Contribution Rate 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 SMCM&VCD to reflect the DSCA. The Statutory Contribution Rate (blended average for all employers) is 33.77% for the fiscal year beginning July 1, 2017, 33.91% for the County, 30.44% for Courts, and 24.52% for SMCM&VCD.

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

In our opinion, the contribution rates 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 Statutory Contribution Rate is shown in the following graph.



**Comparison with Last Year**

A detailed analysis of the sources of the changes in both the employer contribution rates and the Funded Ratio was performed. There were several factors that influenced the Funded Ratio and the employer contribution rate, with the overall impact of these additional factors being an increase in the Funded Ratio and a decrease in the employer rates from the last valuation.

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

Sources of Change	Statutory Contribution Rate	Funded Ratio
<b>Calculated Rate for 2016 (2015 valuation)</b>	<b>32.35%</b>	<b>82.6%</b>
Changes due to new member rates effective 2016	-0.39%	0.0%
<b>Estimated Aggregate Rate for 2016</b>	<b>31.96%</b>	<b>82.6%</b>
Expected Year-to-Year Change	0.00%	2.7%
Assumption Changes	2.35%	-1.8%
Recognized Asset Gain/Loss		
From Current Year	0.88%	-1.0%
From Prior Years	-0.35%	0.4%
Retiree COLAs Less than Expected	-0.12%	0.1%
Salary Increase > Assumed	-0.03%	-0.5%
Contributions > Assumed	-0.17%	0.0%
SCA Contribution Funding	-0.35%	0.5%
Increased Member Rates	-0.17%	0.0%
Increase in Plan 7 Membership	-0.09%	0.0%
Other Experience Changes	-0.14%	0.1%
<b>Total Change</b>	<b>1.81%</b>	<b>0.5%</b>
<b>Calculated rate for 2017 (2016 valuation)</b>	<b>33.77%</b>	<b>83.1%</b>

**Funding Progress**

Based on the 2015 valuation, the expected UAAL as of June 30, 2016 was \$606 million. The actual UAAL for the fiscal year ending June 30, 2016 is \$738 million. This difference was primarily caused by the adoption of new economic assumptions (\$89 million) and the recognition of asset losses (\$28 million). Other factors, such as salary increases greater than assumed and CPI increases less than assumed contributed to an increase in the UAAL of \$15 million. These factors are shown in detail at the end of Section 4.

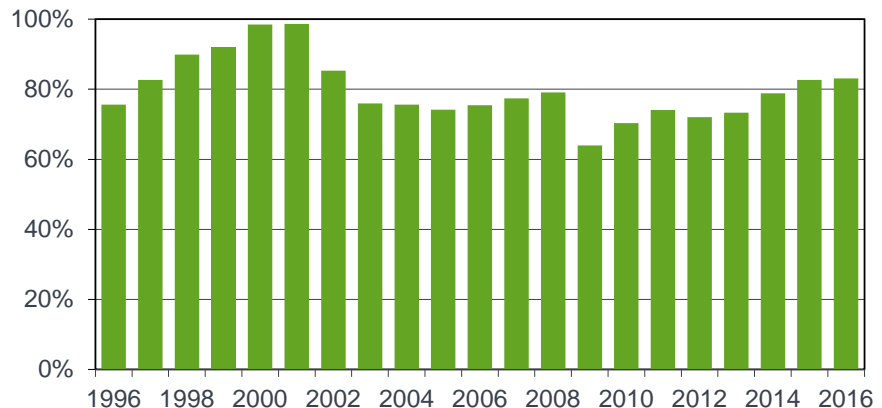
**Funding Progress  
 (continued)**

One measure of the funding adequacy of the system is the Funded Ratio, which 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. Currently, the Funded Ratio is 83.1%; that is, the valuation assets of \$3,625 million are about 17% less than the actuarial accrued liabilities of \$4,362 million. Note that if the market value of assets was used, the Funded Ratio would be 81.2%.

(All dollar amounts in millions)

	Market Value of Total Assets	Actuarial Value		Actuarial Accrued Liability	Funded Ratio
		Valuation	Non-Valuation		
2007	\$2,132	\$1,977	\$0	\$2,555	77.4%
2008	2,011	2,219	0	2,806	79.1
2009	1,591	1,910	0	2,988	63.9
2010	1,816	2,179	0	3,098	70.3
2011	2,318	2,405	0	3,247	74.1
2012	2,360	2,480	0	3,443	72.0
2013	2,728	2,619	0	3,573	73.3
2014	3,292	2,993	30	3,797	78.8
2015	3,454	3,344	34	4,046	82.6
2016	3,541	3,625	36	4,362	83.1

**Historical Funded Ratios**



**Assets**

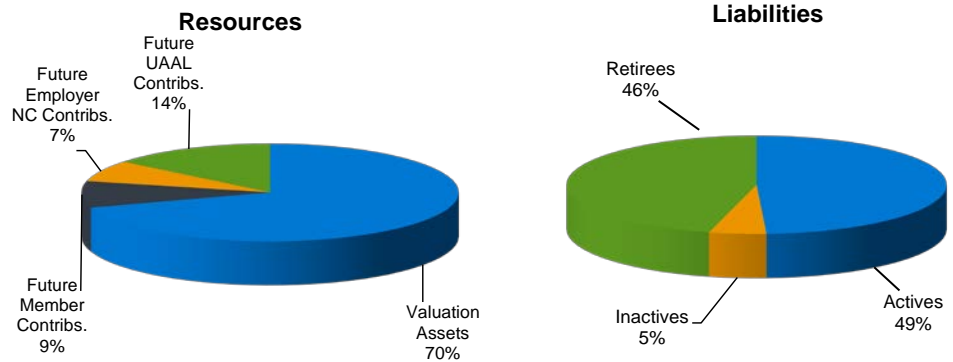
For the fiscal year ending June 30, 2016, SamCERA earned 0.7% net of investment expenses on its market assets. This figure was provided by SamCERA and will be shown in the 2016 CAFR.

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 period (10 six-month periods). Due to the recognition of deferred prior year asset gains, the return on actuarial valuation assets, at 6.4% net of expenses, was less than the assumed return of 7.25% for the prior year.

**Actuarial Balance Sheet**

The first step in 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.



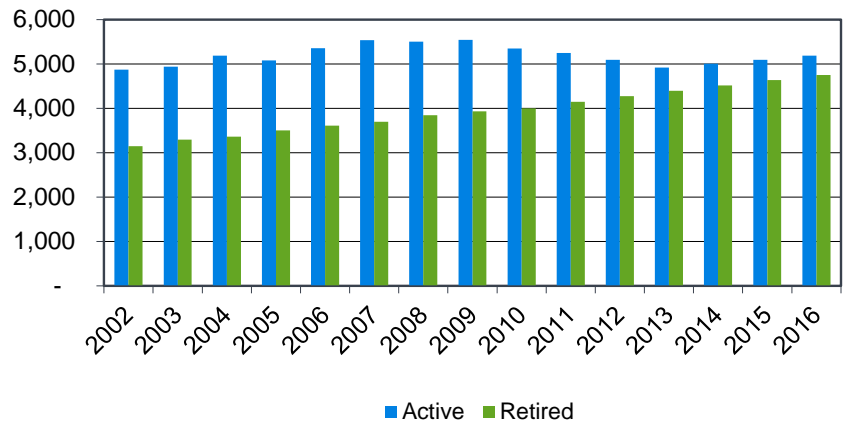


**Member Information**

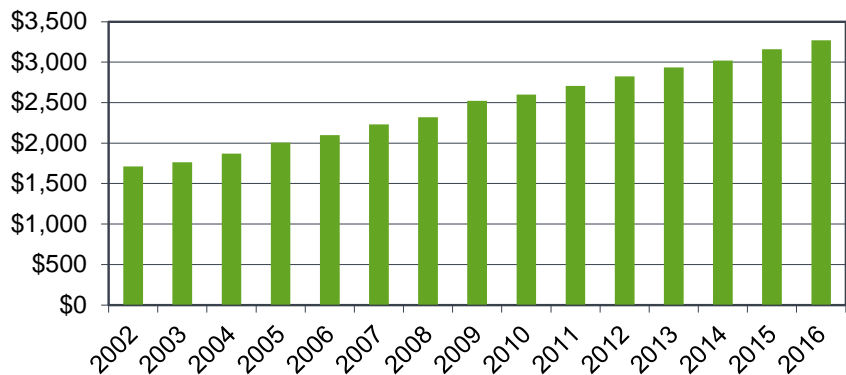
The number of active members included in the valuation increased by 1.8% from 5,095 in 2015 to 5,187 in 2016.

Retired member counts and average retirement benefit amounts continue to increase steadily. For 2016, there were 4,748 retired members and beneficiaries with an average benefit of \$3,268 per month. This represents a 2.4% increase in count (up from 4,638 in 2015) and a 3.4% increase in the average monthly benefit (up from \$3,160 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
<b>As of June 30, 2015</b>	<b>5,095</b>	<b>1,384</b>	<b>3,628</b>	<b>442</b>	<b>568</b>	<b>11,117</b>
New Members	561	34	0	0	43	638
Status change to active	90	(90)	0	0	0	0
Status change to inactive	(280)	280	0	0	0	0
Refunds	(128)	(21)	0	0	0	(149)
Service Retirements	(141)	(87)	228	0	0	0
Disabled Retirements	(8)	(9)	(4)	21	0	0
Deaths	(2)	(4)	(107)	(9)	(65)	(187)
Data adjustments	0	(1)	4	0	(1)	2
<b>As of June 30, 2016</b>	<b>5,187</b>	<b>1,486</b>	<b>3,749</b>	<b>454</b>	<b>545</b>	<b>11,421</b>

**Summary Valuation Results**

The following Exhibit 2 presents a comparison of the key results from the June 30, 2016 and June 30, 2015 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, 2016	June 30, 2015	Relative Change
1. Total Membership			
A. Active Members	5,187	5,095	1.8 %
B. Retired Members & Beneficiaries	4,748	4,638	2.4%
C. Inactive Members	1,486	1,384	7.4%
D. Total	11,421	11,117	2.7 %
2. Pay Rate			
A. Annual Total (\$thousands)	\$ 493,790	\$ 462,640	6.7%
B. Monthly Average	\$ 7,933	\$ 7,567	4.8%
3. Average Monthly Benefit to Current Retirees and Beneficiaries			
A. Service Retirement	\$ 3,382	\$ 3,294	2.7%
B. Disability Retirement	\$ 3,420	\$ 3,301	3.6%
C. Surviving Spouse and Dependents	\$ 2,356	\$ 2,197	7.2%
D. Total	\$ 3,268	\$ 3,160	3.4%
4. Actuarial Accrued Liability (\$thousands)			
A. Active Members	\$ 1,726,887	\$ 1,594,242	8.3%
B. Retired Members	\$ 2,383,274	\$ 2,231,057	6.8%
C. Inactive Members	\$ 252,135	\$ 220,487	14.4%
D. Total	\$ 4,362,296	\$ 4,045,786	7.8%
5. Assets			
A. Market Value of Fund (\$thousands)	\$ 3,541,388	\$ 3,454,476	2.5%
B. Return on Market Value	0.7%	3.5%	
C. Actuarial Value (\$thousands)	\$ 3,624,726	\$ 3,343,550	8.4%
D. Return on Actuarial Value	6.4%	9.7%	
6. Unfunded Actuarial Accrued Liability or Surplus Funding (\$thousands)	\$ 737,570	\$ 702,236	5.0%
7. Statutory Employer Contribution Rate for all plans combined as a percent of total payroll			
A. Gross Normal Cost	22.31%	21.95%	1.6%
B. Member Contributions	(12.06)%	(11.92)%	1.2%
C. Employer Normal Cost	10.25%	10.03%	2.2%
D. UAAL Amortization	23.52%	21.93%	7.3%
E. Total Employer Rate	33.77%	31.96%	5.7%
8. Funded Ratio (5C / 4D)	83.1%	82.6%	0.5%
9. Results Based on Market Value (No Asset Smoothing) -- For Informational Purposes Only			
A. Total Employer Rate	35.40%	30.04%	17.8%
B. Funded Ratio (5A / 4D)	81.2%	85.4%	(4.9)%

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## Section 2 Scope of the Report



This report presents the actuarial valuation of the San Mateo County Employees' Retirement Association as of June 30, 2016. 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.

A summary of the findings resulting from this valuation is presented in the previous section. 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, 2016.

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.

Section 5 discusses the member contribution rates.

Section 6 discusses the employer contributions needed to fund the benefits under the actuarial cost method in use.

Section 7 discloses information to 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 on June 30, 2016.
- 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.

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### Section 3 Assets



In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date which, for this valuation, is June 30, 2016. 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.

This section of the report deals with the determination of assets used for funding purposes. In the next section, the actuarial liabilities will be discussed. Sections 5 and 6 deal with the process for determining required contributions based on the relationship between the actuarial assets and the actuarial liabilities.

A historical summary of SamCERA's assets is presented below:

	All dollar amounts in millions		
	Market Value of Total <u>Assets</u>	Actuarial Value	
		Non- Valuation <u>Assets</u>	Valuation <u>Assets</u>
2000	\$ 1,381	\$ 49	\$ 1,271
2001	1,308	51	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	34	3,344
2016	3,541	36	3,625

On June 30, 2016, the total market value of the fund was about \$3.54 billion. The actuarial value of the fund was determined to be \$3.66 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 Asset Method**

The actuarial asset method computes the expected market value of assets based on the prior year's market value of assets, the actual cash flow of contributions and benefit payments, and the assumed investment rate of return. For the current valuation, the assumed rate of return on the prior year's assets is 7.25%, net of all expenses. The difference between the actual market value and the computed expected market value is smoothed or recognized over a five-year period.

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 San Mateo County Mosquito and Vector Control District's Statutory Contribution Rate. To adjust the Statutory Contribution Rates we track CSCA and DSCA assets separately.

**Actuarial Value of Assets**

The development of the June 30, 2016 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.

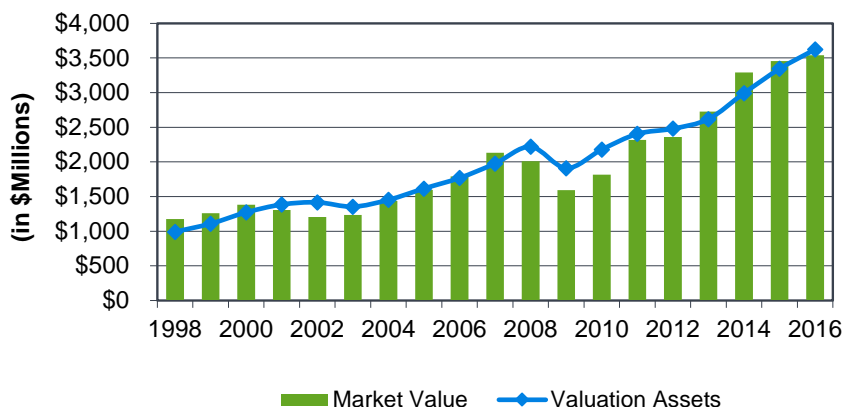
The County made their contribution for the year ended June 30, 2016 based on the SCR. Since the SCR reflected an offset due to the CSCA, the County effectively used up an amount of the CSCA equivalent to the offset. Therefore, we have shown this in the "Credits Used" column in Exhibit 6c.



**Actuarial Value of Assets (continued)**

There are still portions of investment gains and losses that have not yet been recognized by the asset smoothing method, including the current year loss. The result is a market value of assets that is lower than the actuarial value. The following graph shows a historical comparison of the total actuarial and market assets used for valuation purposes on a system-wide basis.

**Applicable Valuation Assets**



**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.

**Allocation of Assets**

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 class and plan.

In the calculation of the Statutory Contribution Rate, the Normal Cost 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 assets are allocated to each classification in proportion to the actual UAAL (without consideration of the SCAs). These assets directly reduce the UAAL of each classification.

DSCA assets are allocated entirely to the general member classification.

**Exhibit 3 Statement of Plan Net Assets  
 as of June 30, 2015 and 2016**

	2016	2015
<b>Assets</b>		
Cash and Cash Equivalents	\$ 130,111,362	\$ 51,162,210
Cash Management Overlay	26,249,148	26,273,301
Securities Lending Cash Collateral	88,363,269	99,386,577
<b>Total Cash and Short-Term Investments</b>	<b>244,723,779</b>	<b>176,822,088</b>
Receivables		
Contributions	7,812,557	6,151,530
Due from broker for investments sold	9,809,813	14,438,182
Investment Income	4,886,171	6,433,608
Securities Lending Income	26,788	37,582
Other receivables	100,028	112,810
<b>Total Receivables</b>	<b>22,635,357</b>	<b>27,173,712</b>
Prepaid Expense	7,669	7,669
Investments at Fair Value		
Fixed Income	610,607,729	665,402,082
Equity	1,723,373,856	1,797,854,657
Alternatives	404,376,940	332,946,526
Risk Parity	280,336,352	265,103,721
Inflation Hedge	349,680,120	311,941,279
<b>Total Investments at Fair Value</b>	<b>3,368,374,997</b>	<b>3,373,248,265</b>
Capital Assets Net of Depreciation	5,162,123	3,206,047
<b>Total Assets</b>	<b>3,640,903,925</b>	<b>3,580,457,781</b>
<b>Liabilities</b>		
Payables		
Investment management fees	1,807,507	2,042,596
Due to broker for investments purchased	7,582,018	21,246,436
Securities Lending due to borrowers	88,363,269	99,386,577
Other	1,762,634	3,305,844
<b>Total Liabilities</b>	<b>99,515,428</b>	<b>125,981,453</b>
<b>Net Assets Held in Trust for Pension Benefits</b>	<b>\$ 3,541,388,497</b>	<b>\$ 3,454,476,328</b>

**Exhibit 4 Statement of Changes in Plan Net Assets  
 for the Years Ended June 30, 2015 and 2016**

	2016	2015
<b>Additions</b>		
Contributions		
Employer	\$ 191,094,488	\$ 180,704,280
Employee	56,068,706	48,011,698
Total Contributions	<u>247,163,194</u>	<u>228,715,978</u>
Investment Income/(Loss)		
Interest and dividends	36,703,717	44,433,648
Net appreciation/(depreciation) in Fair Value	22,197,249	99,877,102
	<u>58,900,966</u>	<u>144,310,750</u>
Less investment expense	34,789,209	32,990,697
Net Investment Income/(Loss)	<u>24,111,757</u>	<u>111,320,053</u>
Securities Lending Income		
Earnings	423,019	184,442
Less: expenses	(78,186)	212,304
Fees	(67,054)	(87,101)
Net Securities Lending Income	<u>277,779</u>	<u>309,645</u>
Other Additions	4,910,228	338
<b>Total Additions</b>	<b><u>276,462,958</u></b>	<b><u>340,346,014</u></b>
<b>Deductions</b>		
Member Benefits		
Service retirement allowances	157,513,099	147,266,945
Disability retirement allowances	21,090,529	20,038,671
Survivor, death and other benefits	893,633	803,591
Total Member Benefits	<u>179,497,261</u>	<u>168,109,207</u>
Refunds of members' contributions	3,366,437	3,357,011
Administrative Expense	5,961,802	5,349,796
Information Technology Expense	714,347	628,909
Other Expense	10,942	118,717
<b>Total Deductions</b>	<b><u>189,550,789</u></b>	<b><u>177,563,640</u></b>
Net Increase	86,912,169	162,782,374
Net Assets Held in Trust for Pension Benefits:		
Beginning of Year	3,454,476,328	3,291,693,954
<b>End of Year</b>	<b><u>\$ 3,541,388,497</u></b>	<b><u>\$ 3,454,476,328</u></b>
Estimated Return, Net of Investment Expenses	0.7%	3.5%

**Exhibit 5 Allocation of Assets by Accounting Reserve Amounts  
 as of June 30, 2015 and 2016**

	2016	2015
<b>Valuation Reserves</b>		
1. Member Reserve	\$ 679,245,500	\$ 628,286,936
2. Employer Advance Reserve	751,265,520	650,940,470
3. Retiree Reserves	966,121,612	925,996,889
4. Cost of Living Adjustment Reserve	1,213,653,694	1,119,746,850
5. County Supplemental Contributions Account Reserve	85,235,512	65,480,696
6. District Supplemental Contributions Account Reserve	1,593,122	-
<b>Total Valuation Reserves</b>	<b>\$ 3,697,114,960</b>	<b>\$ 3,390,451,841</b>
<b>Non-Valuation Reserves</b>		
1. Contingency Reserve	\$ 36,613,393	\$ 33,773,232
2. Undistributed Earnings / Losses Reserve	(72,299,960)	(46,905,378)
3. Other Specified Reserves	-	-
<b>Total Non-Valuation Reserves</b>	<b>\$ (35,686,567)</b>	<b>\$ (13,132,146)</b>
<b>Market Stabilization Account</b>	<b>\$ (120,039,896)</b>	<b>\$ 77,156,633</b>
<b>Total Reserves (Market Value of Assets)</b>	<b>\$ 3,541,388,497</b>	<b>\$ 3,454,476,328</b>

*Note: These amounts were determined by SamCERA for accounting purposes. We have made minor rounding adjustments to these numbers.*

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)
06/30/2016	\$ 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)
06/30/2014	3,049,944,702	153,384,050	82,787,545	3,291,693,954	3.750%	116,347,099	171,152,747	54,805,648
12/31/2013	2,727,825,332	96,087,010	79,768,567	3,049,944,702	3.750%	103,671,361	305,800,927	202,129,566
06/30/2013	2,558,508,635	99,631,258	78,520,689	2,727,825,332	3.750%	97,496,612	148,206,128	50,709,516
12/31/2012	2,360,303,654	100,084,854	76,494,734	2,558,508,635	3.750%	89,983,040	174,614,861	84,631,821
06/30/2012	2,280,940,966	28,676,113	73,157,072	2,360,303,654	3.875%	87,461,531	123,843,647	36,382,116
12/31/2011	2,317,775,829	171,960,784	69,678,010	2,280,940,966	3.875%	91,600,467	(139,117,637)	(230,718,104)



This work product was prepared solely for SamCERA for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

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 Credits from SCAs	Benefit Payments	Market Value at End of Period	Assumed Rate of Return	Expected Return	Actual Return	Unexpected Gain / (Loss)
06/30/2016	\$ 3,292,244,481	\$ 127,369,320	\$ 93,308,035	\$ 3,454,559,863	3.625%	\$ 121,003,576	\$ 128,254,097	\$ 7,250,521
12/31/2015	3,388,995,632	103,655,923	89,555,664	3,292,244,481	3.625%	124,155,013	(110,851,410)	(235,006,423)
06/30/2015	3,245,056,141	118,152,574	87,874,799	3,388,995,632	3.625%	119,348,025	113,661,716	(5,686,309)
12/31/2014	3,240,851,398	99,673,294	83,591,419	3,245,056,141	3.625%	118,831,181	(11,877,132)	(130,708,313)
06/30/2014	3,049,944,702	103,384,050	82,787,545	3,240,851,398	3.750%	115,878,349	170,310,191	54,431,842
12/31/2013	2,727,825,332	96,087,010	79,768,567	3,049,944,702	3.750%	103,671,361	305,800,927	202,129,566
06/30/2013	2,558,508,635	99,631,258	78,520,689	2,727,825,332	3.750%	97,496,612	148,206,128	50,709,516
12/31/2012	2,360,303,654	100,084,854	76,494,734	2,558,508,635	3.750%	89,983,040	174,614,861	84,631,821
06/30/2012	2,280,940,966	28,676,113	73,157,072	2,360,303,654	3.875%	87,461,531	123,843,647	36,382,116
12/31/2011	2,317,775,829	171,960,784	69,678,010	2,280,940,966	3.875%	91,600,467	(139,117,637)	(230,718,104)



This work product was prepared solely for SamCERA for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

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	Market Value at Beginning of Period	Contributions	Credits Used	Market Value at End of Period	Assumed Rate of Return	Expected Return	Actual Return	Unexpected Gain / (Loss)
06/30/2016	\$ 67,854,371	\$ 19,538,000	\$ 4,910,478	\$ 85,235,512	3.625%	\$ 2,636,784	\$ 2,753,619	\$ 116,835
12/31/2015	65,480,696	0	0	67,854,371	3.625%	2,373,675	2,373,675	0
06/30/2015	53,123,202	10,467,815	0	65,480,696	3.625%	2,184,341	1,889,679	(294,662)
12/31/2014	50,842,556	422,295	0	53,123,202	3.625%	1,858,351	1,858,351	0
06/30/2014	0	50,000,000	0	50,842,556	3.750%	468,750	842,556	373,806

Note: The CSCA was opened on May 29, 2014.

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	Market Value at Beginning of Period	Contributions	Credits Used	Market Value at End of Period	Assumed Rate of Return	Expected Return	Actual Return	Unexpected Gain / (Loss)	
06/30/2016	\$ 1,537,392	\$ 0	\$ 0	\$ 1,593,122	3.625%	\$ 55,730	\$ 55,730	\$ 0	
12/31/2015	0	1,510,429	0	1,537,392	3.625%	22,814	26,963	4,149	

Note: The DSCA was opened on October 29, 2015.



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

**Development of Market Stabilization Reserve**

Six-Month Period Ended	Percent Excluded	Phase-Out of Gain / (Loss)		Gain / (Loss) Excluded
			Unexpected Gain / (Loss)	
06/30/2016	90%	x	\$ 7,367,356	= \$ 6,630,620
12/31/2015	80%	x	(235,002,274)	= (188,001,819)
06/30/2015	70%	x	(5,980,971)	= (4,186,680)
12/31/2014	60%	x	(130,708,313)	= (78,424,988)
06/30/2014	50%	x	54,805,648	= 27,402,824
12/31/2013	40%	x	202,129,566	= 80,851,826
06/30/2013	30%	x	50,709,516	= 15,212,855
12/31/2012	20%	x	84,631,821	= 16,926,364
06/30/2012	10%	x	36,382,116	= 3,638,212
12/31/2011	0%	x	(230,718,104)	= (0)
Total Gain / (Loss) Excluded = Market Stabilization Reserve				= \$ (119,950,785)

**Development of Valuation Assets**

1. Market Value of Assets as of June 30, 2016	\$ 3,541,388,497
2. Preliminary Market Stabilization Reserve	<u>(119,950,785)</u>
3. Preliminary Actuarial Value of Assets (1) - (2)	3,661,339,282
4. Corridor Around Market Value	
a) Minimum = 80% of Market	\$ 2,833,110,798
b) Maximum = 120% of Market	4,249,666,196
c) Corridor Adjustment	0
5. Market Stabilization Reserve	(119,950,785)
6. Gross Actuarial Valuation of Assets (3) - (4c)	\$ 3,661,339,282
7. Non-Valuation Reserves	
a) Contingency Reserve	36,613,393
b) Undistributed Earnings / Losses Reserve	0
c) Other Specified Reserves	<u>0</u>
d) Total	36,613,393
8. Valuation Assets (6) - (7d)	\$ 3,624,725,889

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

**Development of Market Stabilization Reserve**

Six-Month Period Ended	Percent Excluded	Phase-Out of Gain / (Loss)		
			Unexpected Gain / (Loss)	Gain / (Loss) Excluded
06/30/2016	90%	x	\$ 7,250,521	= \$ 6,525,469
12/31/2015	80%	x	(235,006,423)	= (188,005,138)
06/30/2015	70%	x	(5,686,309)	= (3,980,416)
12/31/2014	60%	x	(130,708,313)	= (78,424,988)
06/30/2014	50%	x	54,431,842	= 27,215,921
12/31/2013	40%	x	202,129,566	= 80,851,826
06/30/2013	30%	x	50,709,516	= 15,212,855
12/31/2012	20%	x	84,631,821	= 16,926,364
06/30/2012	10%	x	36,382,116	= 3,638,212
12/31/2011	0%	x	(230,718,104)	= (0)
Total Gain / (Loss) Excluded = Market Stabilization Reserve				= \$ (120,039,896)

**Development of Valuation Assets**

1. Market Value of Assets as of June 30, 2016		\$ 3,454,559,863
2. Preliminary Market Stabilization Reserve		(120,039,896)
3. Preliminary Actuarial Value of Assets (1) - (2)		3,574,599,759
4. Corridor Around Market Value		
a) Minimum = 80% of Market	\$ 2,763,647,890	
b) Maximum = 120% of Market	4,145,471,836	
c) Corridor Adjustment		0
5. Market Stabilization Reserve	(120,039,896)	
6. Gross Actuarial Valuation of Assets (3) - (4c)		\$ 3,574,599,759
7. Non-Valuation Reserves		
a) Contingency Reserve	36,613,393	
b) Undistributed Earnings / Losses Reserve	0	
c) Other Specified Reserves	0	
d) Total		36,613,393
8. Valuation Assets (6) - (7d)		\$ 3,537,986,366

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

**Development of Market Stabilization Reserve**

Six-Month Period Ended	Percent Excluded	Phase-Out of Gain / (Loss)		Gain / (Loss) Excluded
		x	Unexpected Gain / (Loss) <sup>(1)</sup>	
06/30/2016	90%	x	\$ 116,835	= \$ 105,152
12/31/2015	80%	x	0	= 0
06/30/2015	70%	x	(294,662)	= (206,263)
12/31/2014	60%	x	0	= 0
06/30/2014	50%	x	373,806	= 186,903
12/31/2013	40%	x	0	= 0
06/30/2013	30%	x	0	= 0
12/31/2012	20%	x	0	= 0
06/30/2012	10%	x	0	= 0
12/31/2011	0%	x	0	= 0
Total Gain / (Loss) Excluded = Market Stabilization Reserve				= \$ 85,791

**Development of Valuation Assets**

1. Market Value of Assets as of June 30, 2016	\$	85,235,512
2. Preliminary Market Stabilization Reserve		85,791
3. Preliminary Actuarial Value of Assets (1) - (2)		85,149,721
4. Corridor Around Market Value		
a) Minimum = 80% of Market	\$	68,188,410
b) Maximum = 120% of Market		102,282,614
c) Corridor Adjustment		0
5. Market Stabilization Reserve		85,791
6. Gross Actuarial Valuation of Assets (3) - (4c)	\$	85,149,721
7. Non-Valuation Reserves		
a) Contingency Reserve		0
b) Undistributed Earnings / Losses Reserve		0
c) Other Specified Reserves		0
d) Total		0
8. Valuation Assets (6) - (7d)	\$	85,149,721

1. Based on the MOU, prepayments earn the assumed rate of return so there is no gain or loss on prepayments. Lump sum payments may cause a gain or loss.

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

**Development of Market Stabilization Reserve**

Six-Month Period Ended	Percent Excluded	Phase-Out of Gain / (Loss)		
			Unexpected Gain / (Loss)	Gain / (Loss) Excluded
06/30/2016	90%	x	\$ 0	= \$ 0
12/31/2015	80%	x	4,149	= 3,319
06/30/2015	70%	x	0	= 0
12/31/2014	60%	x	0	= 0
06/30/2014	50%	x	0	= 0
12/31/2013	40%	x	0	= 0
06/30/2013	30%	x	0	= 0
12/31/2012	20%	x	0	= 0
06/30/2012	10%	x	0	= 0
12/31/2011	0%	x	0	= 0
Total Gain / (Loss) Excluded = Market Stabilization Reserve				= \$ 3,319

**Development of Valuation Assets**

1. Market Value of Assets as of June 30, 2016	\$	1,593,122
2. Preliminary Market Stabilization Reserve		<u>3,319</u>
3. Preliminary Actuarial Value of Assets (1) - (2)		1,589,803
4. Corridor Around Market Value		
a) Minimum = 80% of Market	\$	1,274,498
b) Maximum = 120% of Market		1,911,746
c) Corridor Adjustment		0
5. Market Stabilization Reserve		3,319
6. Gross Actuarial Valuation of Assets (3) - (4c)	\$	1,589,803
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)	\$	1,589,803

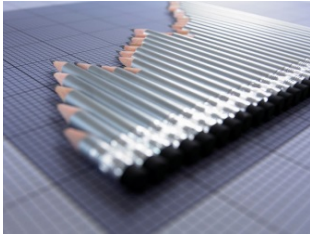
**Exhibit 8 Allocation of Valuation Assets**

(Dollars in Thousands)

	General	Safety	Probation	Total
1. Prior Year UAAL	\$ 536,176	\$ 181,719	\$ 49,825	\$ 767,720
2. Expected UAAL Contribution for Preceding Year	(81,667)	(27,591)	(7,268)	(116,526)
3. Expected Interest at 7.25%	35,964	12,192	3,353	51,509
4. Expected UAAL Based on Prior Year Assumptions	490,473	166,320	45,910	702,703
5. Percentage of Total Expected UAAL	69.80%	23.67%	6.53%	100.00%
6. Actual UAAL Based on Prior Year Assumptions				734,945
7. Actual AAL Based on Prior Year Assumptions	\$ 3,145,740	\$ 846,600	\$ 280,591	\$ 4,272,931
8. Allocated UAAL Based on Prior Year Assumptions	512,992	173,961	47,992	734,945
<b>9. Valuation Assets (excluding SCA assets)</b>	<b>\$ 2,632,748</b>	<b>\$ 672,639</b>	<b>\$ 232,599</b>	<b>\$ 3,537,986</b>
10. Actual UAAL excluding SCA Valuation Assets	\$ 577,836	\$ 190,984	\$ 55,490	\$ 824,310
11. Allocation of UAAL	70.10%	23.17%	6.73%	100.00%
<b>12. Valuation Assets (CSCA)</b>	<b>\$ 59,690</b>	<b>\$ 19,729</b>	<b>\$ 5,731</b>	<b>\$ 85,150</b>
<b>13. Valuation Assets (DSCA)</b>	<b>\$ 1,590</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,590</b>
<b>14. Valuation Assets (Total)</b>	<b>\$ 2,694,028</b>	<b>\$ 692,368</b>	<b>\$ 238,330</b>	<b>\$ 3,624,726</b>

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## Section 4 Actuarial Liabilities



In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of SamCERA's assets as of the valuation date, June 30, 2016. In this section, the discussion will focus on the commitments of SamCERA for retirement benefits, which are referred to as its actuarial liabilities.

In an active system, the combined current and future actuarial liabilities will almost always exceed the actuarial assets. This is usually expected in all but a fully closed down fund, where no further contributions of any sort are anticipated. This deficiency has to be provided by future contributions. An actuarial valuation method sets out a schedule of future contributions that will deal with this deficiency in an orderly fashion. The determination of the level of future contributions needed is discussed in the next section.

### Actuarial Balance Sheet – Liabilities

First, we need to determine the amount of the deficiency. We compare the Actuarial Value of the Valuation Assets to the Actuarial Liabilities. The difference is the amount that needs to be funded by the member and employer contributions in the future. Both the current and future assets (contributions) are compared to the actuarial liabilities in the Actuarial Balance Sheet.

Exhibit 9a contains an analysis of the actuarial present value of all future benefits for retired, inactive and active members and compares these with the 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.

The actuarial liabilities include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes measures of both benefits already earned and future benefits to be earned. For all members, active and inactive, the value extends over the rest of their lives and for the lives of any surviving beneficiaries. All liabilities reflect the benefits effective through June 30, 2016.

The actuarial demographic assumptions used to determine the liabilities are based on the results of our Investigation of Experience study for the period ending April 30, 2014. At its meeting on June 7, 2016, the Board reaffirmed these assumptions. At that meeting, new economic assumptions were adopted for use in the 2016 valuation. These assumptions are shown in Appendix A. The assumptions will next be reviewed in detail in 2017 as part of the triennial investigation.

**Exhibit 9a Actuarial Balance Sheet (Total Assets)**  
**June 30, 2016**  
 (Dollars in Thousands)

<b>Resources</b>				
	<b>General</b>	<b>Safety</b>	<b>Probation</b>	<b>Total</b>
Valuation Assets (Actuarial)	\$ 2,694,028	\$ 692,368	\$ 238,330	\$ 3,624,726
Present Value of Future Member Contributions	346,523	77,513	30,720	454,756
Present Value of Future Employer Contributions to Fund:				
a) Normal Cost	263,206	72,536	31,253	366,995
b) Unfunded Actuarial Accrued Liability	516,556	171,255	49,759	737,570
<b>Total Resources</b>	<b>\$ 3,820,313</b>	<b>\$ 1,013,672</b>	<b>\$ 350,062</b>	<b>\$ 5,184,047</b>
<b>Liabilities</b>				
	<b>General</b>	<b>Safety</b>	<b>Probation</b>	<b>Total</b>
Present Value of Future Benefits				
1. Present Retired Members	\$ 1,704,513	\$ 544,369	\$ 134,392	\$ 2,383,274
2. Current Inactive Members	207,962	22,370	21,803	252,135
3. Current Active Members				
- Service Retirement	1,695,871	403,475	175,403	2,274,749
- Disability Retirement	100,895	24,524	10,739	136,158
- Death Benefits	27,565	8,439	3,394	39,398
- Deferred Retirement Benefit	56,116	8,511	3,848	68,475
- Refund of Member Contributions	27,391	1,984	483	29,858
- Total Active	1,907,838	446,933	193,867	2,548,638
<b>Total Actuarial Liabilities</b>	<b>\$ 3,820,313</b>	<b>\$ 1,013,672</b>	<b>\$ 350,062</b>	<b>\$ 5,184,047</b>



**Exhibit 9b Actuarial Balance Sheet (excluding SCAs)**  
**June 30, 2016**  
 (Dollars in Thousands)

<b>Resources</b>				
	<b>General</b>	<b>Safety</b>	<b>Probation</b>	<b>Total</b>
Valuation Assets (Actuarial)	\$ 2,632,748	\$ 672,639	\$ 232,599	\$ 3,537,986
Present Value of Future Member Contributions	346,523	77,513	30,720	454,756
Present Value of Future Employer Contributions to Fund:				
a) Normal Cost	263,206	72,536	31,253	366,995
b) Unfunded Actuarial Accrued Liability	577,836	190,984	55,490	824,310
<b>Total Resources</b>	<b>\$ 3,820,313</b>	<b>\$ 1,013,672</b>	<b>\$ 350,062</b>	<b>\$ 5,184,047</b>

<b>Liabilities</b>				
	<b>General</b>	<b>Safety</b>	<b>Probation</b>	<b>Total</b>
Present Value of Future Benefits				
1. Present Retired Members	\$ 1,704,513	\$ 544,369	\$ 134,392	\$ 2,383,274
2. Current Inactive Members	207,962	22,370	21,803	252,135
3. Current Active Members				
- Service Retirement	1,695,871	403,475	175,403	2,274,749
- Disability Retirement	100,895	24,524	10,739	136,158
- Death Benefits	27,565	8,439	3,394	39,398
- Deferred Retirement Benefit	56,116	8,511	3,848	68,475
- Refund of Member Contributions	27,391	1,984	483	29,858
- Total Active	1,907,838	446,933	193,867	2,548,638
<b>Total Actuarial Liabilities</b>	<b>\$ 3,820,313</b>	<b>\$ 1,013,672</b>	<b>\$ 350,062</b>	<b>\$ 5,184,047</b>

**Actuarial Balance Sheet – Resources**

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.

**Actuarial Cost Method**

The Actuarial Balance sheet determines the amount of future contributions that are needed, but the method used to determine the incidence of when those future contributions are yet to be made in future years is called the "actuarial cost method." For this valuation, the entry age actuarial cost method has been used. Under this method – or essentially any actuarial cost method – the contributions required to meet the difference between current assets and current actuarial liabilities are allocated each year between two elements:

- A Normal Cost amount; and
- Whatever amount is left over, which is used to amortize what is called the UAAL.

**Normal Cost**

The two items described above, the Normal Cost and UAAL, are the keys to understanding the actuarial cost method.

The Normal Cost is the theoretical contribution rate that is projected to meet the ongoing costs of a group of average new employees. Suppose that a group of new employees was covered under a separate fund from which all benefits and to which all contributions and associated investment returns were paid. Under the entry age actuarial cost method, the Normal Cost contribution rate maintains the funding of benefits as a level percentage of pay. If experience follows the actuarial assumptions precisely, the fund would be completely liquidated when the last payment to the last survivor of the group was made.

By applying the Normal Cost contribution rate to the present value of salaries expected to be paid in the future, we determine the present value of future Normal Cost contributions. Future contributions are expected to be made by both the members and the employer. The basic member contribution rates are determined based upon requirements established in the '37 Act and the actuarial assumptions. Members may also make additional contributions as part of a cost sharing or COLA cost sharing arrangements. Based on these member contribution rates, we determine the present value of future member contributions. We subtract that value from the total future Normal Cost contributions expected, based on the entry age cost method. The remaining difference is the employer's portion of the future Normal Cost contributions.

**Actuarial Accrued Liability**

The difference between the present value of all future obligations and the present value of the future Normal Cost contributions is referred to as the "Actuarial Accrued Liability." The AAL is then compared to the value of assets available to fund benefits, and the difference is referred to as the UAAL. The results for SamCERA for all plans (and including all valuation assets) are summarized below:

(Dollars in millions)	2016	2015	Percent Change
A. Actuarial present value of all future benefits for contributing members, former contributing members, and their survivors	\$ 5,184	\$ 4,818	7.6%
B. Actuarial present value of total future Normal Costs for current members	<u>822</u>	<u>772</u>	6.5%
C. Actuarial accrued liability [A-B]	\$ 4,362	\$ 4,046	7.8%
D. Valuation Assets	<u>3,625</u>	<u>3,344</u>	8.4%
E. UAAL or Surplus Funding [C-D] *	\$ 738	\$ 702	5.1%
F. Funded Ratio [D/C]	83.1%	82.6%	0.6 %

\* Note that line E may include a rounding adjustment item.

**Unfunded Actuarial Accrued Liability/ Surplus Funding**

The portion allocated to service already rendered or accrued is called the Actuarial Accrued Liability. The difference between the Actuarial Accrued Liability and the Valuation Assets is called the Unfunded Actuarial Accrued Liability (UAAL). If a UAAL amount exists, it usually results from prior years' benefit or assumption changes and the net effect of accumulated gains and losses. If the employer had always contributed the current Normal Cost, if there were no prior benefit or assumption changes and if actual experience exactly matched the actuarial assumptions, the present value of all future Normal Cost contributions would be sufficient to fund all benefits and there would be no UAAL.

Exhibits 9a and 9b show how the UAAL was derived for each classification. Exhibit 9a includes all valuation assets, and exhibit 9b excludes the SCA. In the Actuarial Balance sheet, the total actuarial accrued liability for all future benefits must be equal to the current and future assets.

**Funding Adequacy**

A key consideration in determining the adequacy of the funding of SamCERA is how the UAAL is being funded. Under the current funding method, the June 30, 2008 UAAL is amortized over a fixed period ending June 30, 2023. Changes in the UAAL in years following June 30, 2008 are being amortized separately over new 15-year periods from the valuation date at which the difference is calculated, including the change in UAAL as of June 30, 2016.

**Analysis of Change  
 in UAAL**

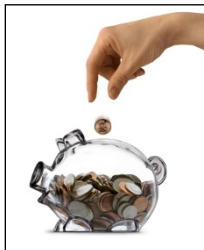
The UAAL, at any date after establishment of a system, is affected by any actuarial gains or losses arising when the actual experience of the system varies from the experience anticipated by the actuarial assumptions used in the valuations. To the extent actual experience, as it develops, differs from that expected according to the assumptions used, so also will the emerging costs differ from the estimated costs.

The 2016 actuarial valuation reflects an increase in the system-wide UAAL of \$35.4 million for the fiscal year just ended.

<b>Unfunded Actuarial Accrued Liability - June 30, 2015</b>	<b>\$ 702.2</b>
Expected Increase / (Decrease) *	(96.4)
<b>Expected UAAL - June 30, 2016</b>	<b>\$ 605.8</b>
Asset (Gains) and Losses	27.8
Retiree COLA Greater / (Less) than Expected	(6.3)
Salary Increases Greater / (Less) than Expected	24.7
Assumption Changes	89.4
Other Liability (Gain) / Loss	(3.8)
<b>Total Changes</b>	<b>131.8</b>
<b>Actual UAAL - June 30, 2016</b>	<b>\$ 737.6</b>

\* Based on actual contributions.

## Section 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.

Basic contributions for Plans 1-6 are defined in the following sections of the County Employees' Retirement Law:

### Basic Contributions (Plans 1-6)

Plan	Code Section	Contribution Provides Average Annuity of
General Plans 1, 2 & 4	31621.9	1/120 <sup>th</sup> of FAC at age 55
General Plan 5	31621	1/120 <sup>th</sup> of FAC at age 60
Probation & Safety	31639.25	1/100 <sup>th</sup> of FAC at age 50

*FAC = Final Average Compensation*

There are no member contributions under General Plan 3.

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, 2016 valuation to reflect the investment return and wage growth assumptions adopted in 2016. The rates are shown in Appendix D.

### Cost-Sharing Contributions (Plans 1-5)

In addition to the basic rate, Plan 1, 2, and 4 General employees (excluding SMCM&VCD), as well as Plan 5 Safety and Probation employees, make additional cost-sharing contributions as shown in Appendix B. Plan 6 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.

**Cost-of-Living Contributions (Plans 1-6)**

Depending on which plan and bargaining unit they belong to, members may share in the cost of the COLA by making additional contributions (COLA contributions). The COLA level is described in detail in the Member Contributions section of Appendix B.

COLA member rates 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%	35.45%
General 2	50%	34.32%
General 4	50%	23.46%
General 5	50%	22.69%
Safety 1	50%	63.59%
Safety 2	50%	61.28%
Safety 4	50%	34.95%
Safety 5	50%	31.39%
Safety 6	50%	28.67%
Probation 1	50%	61.59%
Probation 2	50%	59.35%
Probation 4	50%	34.85%
Probation 5	50%	31.07%
Probation 6	50%	27.63%

*Example:*

*A member who enters General Plan 5 at age 35 has a basic member contribution rate of 6.45% (Exhibit D-1). The General Plan 5 COLA load is 22.69% for a member COLA contribution of 1.46% (6.45% x 22.69%) of pay. The basic plus COLA member contribution rate is 7.91% (6.45% + 1.46%).*

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.

**Member Contribution Rates – Pick-up (Plans 1-6)**

Effective July 1, 2016 no employer pick-up contributions are valued.

**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.

Effective July 1, 2017, Plan 7 member rates are as follows:

- General members: 8.14% (increased from 7.91%)
- SMCM&VCD members: 8.15% (increased from 7.35%)
- Safety members: 13.90% (increased from 13.59%)
- Probation members: 13.38% (increased from 12.91%)

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## Section 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.

Note that in the following exhibits “SMCM&VCD” refers to the San Mateo County Mosquito and Vector Control District.

### 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 2016 valuation is effective July 1, 2017, and the UAAL is amortized over the remaining 14 years.

The SCA (CSCA for the County UAAL and DSCA for the SMCM&VCD) offset amounts are calculated in a similar manner to the UAAL rate described above.

Exhibits 12a through 12c show detailed information on how the UAAL contribution rate and SCA offsets are calculated using the layered method. The UAAL contribution rates are calculated excluding the SCAs.

**Statutory Contribution Rate**  
(continued)

The total Statutory Contribution Rate was 31.96% for the fiscal year beginning July 1, 2016 after reflecting all bargained COLA and cost sharing arrangements (as compared to 32.35% calculated in the 2015 actuarial valuation). For the fiscal year beginning in 2017, the Statutory Contribution Rate based on this report increased to 33.77%. This is equal to the aggregate Employer Normal Cost contribution rate of 10.25% based on Milliman's 2016 valuation, plus appropriate amounts to amortize the UAAL according to the funding policy, over layered 15-year closed periods.

**Statutory Contribution Rate**  
(all values as a % of Payroll)

Employer Normal Cost	10.25%
Total Amortization of UAAL	<u>23.52%</u>
Total Employer Contribution	33.77%

**Changes in the Normal Cost Rate**

The change in the calculated gross Normal Cost rates from year-to-year is generally due to two factors. The two factors are:

- 1. Assumption Changes:** Effective July 1, 2016 the investment earnings assumption was changed to 7.00% from 7.25%, the CPI inflation was changed to 2.75% from 3.00%, and the general wage growth assumption was changed to 3.25% from 3.50%. These changes increased the Normal Cost rate.
- 2. Experience:** Normal experience from year-to-year, reflecting differences in both the weighting between membership groups and in their characteristics, as well as on what was assumed to occur during the past fiscal year and what actually occurred, particularly with respect to salary increases and turnover experience. Based on current system benefit provisions, the aggregate Normal Cost rate is expected to decrease as a greater number of members are covered by Plan 7, instead of the more expensive older plans. However, the change will be fairly gradual.

**Exhibit 10      Employer Statutory Contribution Rates – All Plans  
 For the 2017-2018 Fiscal Year**

All Plans								
	Gross Normal Cost	Member Contributions	Employer Rates					Prior Year Total Contribution Rate <sup>(2)</sup>
			Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate <sup>(1)</sup>	Total Contribution Rate	
<u>General Members</u>								
County	19.99%	(11.08)%	6.81%	2.10%	8.91%	19.81%	28.72%	27.04%
Courts	20.99%	(11.85)%	6.80%	2.34%	9.14%	21.30%	30.44%	28.58%
<b>Total</b>	20.05%	(11.12)%	6.81%	2.12%	8.93%	19.89%	28.82%	27.15%
SMCM&VCD Members	19.84%	(7.82)%	8.83%	3.19%	12.02%	12.50%	24.52%	31.29%
Safety Members	33.33%	(17.02)%	12.52%	3.79%	16.31%	44.25%	60.56%	58.72%
Probation Members	31.90%	(15.96)%	12.46%	3.48%	15.94%	31.72%	47.66%	42.42%
All Plans	22.31%	(12.06)%	7.81%	2.44%	10.25%	23.52%	33.77%	31.96%
County Only	22.36%	(12.09)%	7.83%	2.44%	10.27%	23.64%	33.91%	32.08%

1. County UAAL Contribution Rate includes an aggregate offset of 1.73% of payroll to reflect the County Supplementary Contribution Account. Offsets vary by class of member as follows:  
 - General member UAAL offset is 1.49% of payroll  
 - Safety member UAAL offset is 3.05% of payroll  
 - Probation member UAAL offset is 2.27% of payroll

SMCM&VCD UAAL Contribution Rate includes an offset of 8.80% of payroll to reflect the District Supplementary Contribution Account.

2. The Prior Year Total Contribution Rate reflects the valuation addendums that were issued subsequent to the valuation report.

**Exhibit 10a Employer Statutory Contribution Rates – General Members  
 For the 2017-2018 Fiscal Year**

General Members								
	Employer Rates							Prior Year Total Contribution Rate <sup>(2)</sup>
	Gross Normal Cost	Member Contributions	Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate <sup>(1)</sup>	Total Contribution Rate	
<b>Plan 1</b>								
County (50%) <sup>(3)</sup>	21.90%	(12.97)%	5.94%	2.99%	8.93%	19.81%	28.74%	27.83%
Courts (50%) <sup>(3)</sup>	21.90%	(12.66)%	5.42%	3.82%	9.24%	21.30%	30.54%	29.28%
<b>Total</b>	21.90%	(12.94)%	5.90%	3.06%	8.96%	19.94%	28.90%	28.06%
<b>Plan 2</b>								
County (50%) <sup>(3)</sup>	21.92%	(12.97)%	5.99%	2.96%	8.95%	19.81%	28.76%	27.06%
Courts (50%) <sup>(3)</sup>	21.92%	(12.64)%	5.49%	3.79%	9.28%	21.30%	30.58%	28.55%
<b>Total</b>	21.92%	(12.96)%	5.97%	2.99%	8.96%	19.88%	28.84%	27.25%
<b>Plan 3</b>								
County	7.65%	0.00%	7.65%	0.00%	7.65%	19.81%	27.46%	25.78%
Courts	7.65%	0.00%	7.65%	0.00%	7.65%	21.30%	28.95%	26.95%
<b>Total</b>	7.65%	0.00%	7.65%	0.00%	7.65%	19.83%	27.48%	25.79%
<b>Plan 4</b>								
County (0%) <sup>(3)</sup>	27.27%	(12.58)%	10.33%	4.36%	14.69%	19.81%	34.51%	29.26%
County (50%) <sup>(3)</sup>	21.56%	(12.50)%	6.95%	2.11%	9.06%	19.81%	28.88%	27.12%
Courts (0%) <sup>(3)</sup>	27.65%	(12.24)%	10.91%	4.50%	15.41%	21.30%	36.71%	29.85%
Courts (50%) <sup>(3)</sup>	21.63%	(12.58)%	6.94%	2.11%	9.05%	21.30%	30.35%	28.14%
<b>Total</b>	21.59%	(12.50)%	6.96%	2.13%	9.09%	19.85%	28.94%	27.31%
<b>Plan 5</b>								
County	19.14%	(8.69)%	8.56%	1.86%	10.45%	19.81%	30.26%	28.27%
Courts	19.14%	(10.04)%	8.56%	1.86%	9.10%	21.30%	30.40%	28.00%
<b>Total</b>	19.14%	(8.72)%	8.56%	1.86%	10.42%	19.85%	30.27%	28.27%
<b>Plan 7</b>								
County	16.27%	(8.14)%	6.49%	1.64%	8.13%	19.81%	27.94%	26.28%
Courts	16.27%	(8.14)%	6.49%	1.64%	8.13%	21.30%	29.43%	27.45%
<b>Total</b>	16.27%	(8.14)%	6.49%	1.64%	8.13%	19.86%	27.99%	26.30%
<b>All Plans</b>								
County	19.99%	(11.08)%	6.81%	2.10%	8.91%	19.81%	28.72%	27.04%
Courts	20.99%	(11.85)%	6.80%	2.34%	9.14%	21.30%	30.44%	28.58%
<b>Total</b>	20.05%	(11.12)%	6.81%	2.12%	8.93%	19.89%	28.82%	27.15%

1. UAAL Contribution Rate includes an offset of 1.49% of payroll to reflect the County Supplementary Contribution Account, except for Courts.  
 2. The Prior Year Total Contribution Rate reflects the valuation addendums that were issued subsequent to the valuation report.  
 3. Bargaining units that have negotiated for members of Plans 1, 2, and 4 to pay a specific share of the cost of COLA are grouped together for purposes of this exhibit. The percentage of total COLA cost paid by member is shown in parenthesis.

**Exhibit 10b      Employer Statutory Contribution Rates – SMCM&VCD Members  
 For the 2017-2018 Fiscal Year**

	SMCM&VCD Members							Prior Year Total Contribution Rate
	Employer Rates							
	Gross Normal Cost	Member Contributions	Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate <sup>(1)</sup>	Total Contribution Rate	
Plan 1 <sup>(2)</sup>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 2 <sup>(2)</sup>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plan 4	20.83%	(7.72)%	9.50%	3.61%	13.11%	12.50%	25.61%	31.95%
Plan 7	16.29%	(8.15)%	6.46%	1.68%	8.14%	12.50%	20.64%	26.89%
All Plans	19.84%	(7.82)%	8.83%	3.19%	12.02%	12.50%	24.52%	31.29%

1. UAAL Contribution Rate includes an offset of 8.80% of payroll to reflect the District Supplementary Contribution Account, except for Courts.  
 2. Employer rates will be developed as applicable.

**Exhibit 10c      Employer Statutory Contribution Rates – Safety Members  
 For the 2017-2018 Fiscal Year**

Safety Members								
	Employer Rates							Prior Year Total Contribution Rate <sup>(2)</sup>
	Gross Normal Cost	Member Contributions	Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate <sup>(1)</sup>	Total Contribution Rate	
Plan 1	44.21%	(4.83)%	28.28%	11.10%	39.38%	44.25%	83.63%	62.81%
Plan 2	35.53%	(18.75)%	12.05%	4.73%	16.78%	44.25%	61.03%	59.52%
Plan 4	33.55%	(17.31)%	12.81%	3.43%	16.24%	44.25%	60.49%	57.10%
Plan 5	34.41%	(17.01)%	13.89%	3.51%	17.40%	44.25%	61.65%	60.12%
Plan 6	34.53%	(14.97)%	16.02%	3.54%	19.56%	44.25%	63.81%	62.60%
Plan 7	27.80%	(13.90)%	10.93%	2.97%	13.90%	44.25%	58.15%	57.17%
All Plans	33.33%	(17.02)%	12.52%	3.79%	16.31%	44.25%	60.56%	58.72%

1. UAAL Contribution Rate includes an offset of 3.05% of payroll to reflect the County Supplementary Contribution Account.

2. The Prior Year Total Contribution Rate reflects the valuation addendums that were issued subsequent to the valuation report.

**Exhibit 10d      Employer Statutory Contribution Rates – Probation Members  
 For the 2017-2018 Fiscal Year**

Probation Members								
	Gross Normal Cost	Member Contributions	Employer Rates					Prior Year Total Contribution Rate <sup>(2)</sup>
			Basic Normal Cost	COLA Normal Cost	Total Normal Cost	UAAL Contribution Rate <sup>(1)</sup>	Total Contribution Rate	
Plan 1	36.14%	(3.50)%	15.00%	17.64%	32.64%	31.72%	64.36%	57.82%
Plan 2	34.94%	(17.12)%	13.05%	4.77%	17.82%	31.72%	49.54%	43.61%
Plan 4	31.92%	(16.01)%	12.60%	3.31%	15.91%	31.72%	47.63%	42.35%
Plan 5	30.40%	(16.05)%	11.24%	3.11%	14.35%	31.72%	46.07%	42.42%
Plan 6	25.59%	(11.69)%	11.23%	2.67%	13.90%	31.72%	45.62%	42.24%
Plan 7	26.76%	(13.38)%	10.61%	2.77%	13.38%	31.72%	45.10%	39.68%
All Plans	31.90%	(15.96)%	12.46%	3.48%	15.94%	31.72%	47.66%	42.42%

1. UAAL Contribution Rate includes an offset of 2.27% of payroll to reflect the County Supplementary Contribution Account.

2. The Prior Year Total Contribution Rate reflects the valuation addendums that were issued subsequent to the valuation report.

Exhibit 11 Calculated Gross Normal Cost Rates

All Plans						
Plan	Normal Cost					Total Gross Normal Cost
	Service Retirement	Disability Retirement	Death while Active	Termination (No Refund)	Termination (Refund)	
General Plan 1	15.59%	1.69%	0.45%	2.13%	2.04%	<b>21.90%</b>
General Plan 2	15.65%	1.86%	0.43%	1.99%	1.99%	<b>21.92%</b>
General Plan 3	7.07%	0.00%	0.00%	0.58%	0.00%	<b>7.65%</b>
General Plan 4	15.67%	1.93%	0.41%	1.68%	1.90%	<b>21.59%</b>
General Plan 5	14.05%	2.07%	0.36%	1.31%	1.35%	<b>19.14%</b>
General Plan 7	11.90%	1.88%	0.32%	0.91%	1.26%	<b>16.27%</b>
<b>General Total</b>	14.57%	1.88%	0.38%	1.52%	1.70%	<b>20.05%</b>
SMCM&VCD Plan 1	N/A	N/A	N/A	N/A	N/A	<b>N/A</b>
SMCM&VCD Plan 2	N/A	N/A	N/A	N/A	N/A	<b>N/A</b>
SMCM&VCD Plan 4	15.68%	1.99%	0.38%	1.60%	1.18%	<b>20.83%</b>
SMCM&VCD Plan 7	12.19%	1.42%	0.44%	0.98%	1.26%	<b>16.29%</b>
<b>SMCM&amp;VCD Total</b>	14.92%	1.86%	0.39%	1.47%	1.20%	<b>19.84%</b>
Safety Plan 1	34.17%	4.41%	1.85%	2.54%	1.24%	<b>44.21%</b>
Safety Plan 2	27.46%	3.54%	1.49%	2.04%	1.00%	<b>35.53%</b>
Safety Plan 4	26.04%	3.55%	1.24%	1.78%	0.94%	<b>33.55%</b>
Safety Plan 5	26.61%	4.26%	1.21%	1.33%	1.00%	<b>34.41%</b>
Safety Plan 6	27.18%	4.55%	1.14%	0.83%	0.83%	<b>34.53%</b>
Safety Plan 7	21.11%	3.83%	1.14%	0.97%	0.75%	<b>27.80%</b>
<b>Safety Total</b>	25.77%	3.67%	1.28%	1.68%	0.93%	<b>33.33%</b>
Probation Plan 1	28.08%	3.63%	1.38%	2.11%	0.94%	<b>36.14%</b>
Probation Plan 2	27.15%	3.51%	1.33%	2.04%	0.91%	<b>34.94%</b>
Probation Plan 4	24.90%	3.16%	1.14%	1.86%	0.86%	<b>31.92%</b>
Probation Plan 5	23.73%	3.37%	1.09%	1.37%	0.84%	<b>30.40%</b>
Probation Plan 6	19.22%	3.14%	1.27%	1.36%	0.60%	<b>25.59%</b>
Probation Plan 7	20.53%	3.40%	1.07%	1.07%	0.69%	<b>26.76%</b>
<b>Probation Total</b>	24.88%	3.25%	1.17%	1.81%	0.85%	<b>31.96%</b>
<b>All Plans</b>	16.49%	2.17%	0.53%	1.55%	1.56%	<b>22.31%</b>



**Exhibit 12a Amortization Detail – General Members: UAAL and SCA Offsets**  
 (Dollars in Thousands)

Unfunded Actuarial Liability Amortization Detail							
Date Established	Description <sup>4</sup>	Balance as of June 30, 2016	Interest on Balance	Amort. Payment on June 30, 2017 <sup>1</sup>	Balance as of June 30, 2017 <sup>2</sup>	Remaining Period as of June 30, 2017	July 1, 2017 Amortization Payment
June 30, 2008	Initial UAAL	\$ 289,492	\$ 20,264	\$ 49,227	\$ 260,529	6 Years	\$ 48,311
June 30, 2009	(Gain) / Loss	\$ 289,872	\$ 20,291	\$ 43,870	\$ 266,293	7 Years	\$ 43,054
June 30, 2010	(Gain) / Loss	\$ (110,867)	\$ (7,761)	\$ (15,169)	\$ (103,459)	8 Years	\$ (14,887)
June 30, 2011	(Gain) / Loss	\$ (34,060)	\$ (2,384)	\$ (4,265)	\$ (32,179)	9 Years	\$ (4,186)
June 30, 2012	(Gain) / Loss	\$ 107,292	\$ 7,510	\$ 12,420	\$ 102,383	10 Years	\$ 12,189
June 30, 2013	(Gain) / Loss	\$ 20,493	\$ 1,434	\$ 2,211	\$ 19,716	11 Years	\$ 2,170
June 30, 2014	(Gain) / Loss	\$ (43,802)	\$ (3,066)	\$ (4,435)	\$ (42,434)	12 Years	\$ (4,352)
June 30, 2015	(Gain) / Loss	\$ (32,851)	\$ (2,300)	\$ (3,139)	\$ (32,012)	13 Years	\$ (3,081)
June 30, 2016	(Gain) / Loss	\$ 92,266	\$ 6,459	\$ (3,754) <sup>3</sup>	\$ 102,479	14 Years	\$ 9,313
Total Amortization Payment July 1, 2017:							\$ 88,532
Projected Payroll July 1, 2017:							\$ 415,582
UAAL as of June 30, 2016:		<u>\$ 577,836</u>	UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2017:				<u>21.30%</u>

County Supplementary Contribution Account Amortization Detail							
Date Established	Description	Balance as of June 30, 2016	Interest on Balance	Offset to SCR on June 30, 2017 <sup>1</sup>	Balance as of June 30, 2017 <sup>2</sup>	Remaining Period as of June 30, 2017	July 1, 2017 Amortization Payment
June 30, 2014	Initial CSCA	\$ 37,165	\$ 2,602	\$ 3,763	\$ 36,004	12 Years	\$ 3,694
June 30, 2015	CSCA Addition	\$ 8,453	\$ 592	\$ 808	\$ 8,237	13 Years	\$ 793
June 30, 2016	CSCA Addition	\$ 14,072	\$ 985	\$ -	\$ 15,057	14 Years	\$ 1,368
Total CSCA County Offset Payment July 1, 2017:							\$ 5,855
Projected County Payroll July 1, 2017:							\$ 394,264
CSCA Value as of June 30, 2016:		<u>\$ 59,690</u>	CSCA County Offset (as a % of Payroll) FYB July 1, 2017:				<u>1.49%</u>

District Supplementary Contribution Account Amortization Detail							
Date Established	Description	Balance as of June 30, 2016	Interest on Balance	Offset to SCR on June 30, 2017 <sup>1</sup>	Balance as of June 30, 2017 <sup>2</sup>	Remaining Period as of June 30, 2017	July 1, 2017 Amortization Payment
June 30, 2016	Initial DSCA	\$ 1,590	\$ 111	\$ -	\$ 1,701	14 Years	\$ 155
Total DSCA County Offset Payment July 1, 2017:							\$ 155
Projected District Payroll July 1, 2017:							\$ 1,757
DSCA Value as of June 30, 2016:		<u>\$ 1,590</u>	DSCA County Offset (as a % of Payroll) FYB July 1, 2017:				<u>8.80%</u>

- Amortization Payments and CSCA Offsets are based on a fixed schedule that increases by the payroll assumption each year.
- The calculation of UAAL and SCAs are as of June 30, 2016; whereas, the contribution rates are not effective until July 1, 2017. Therefore, the UAAL and SCAs are adjusted to June 30, 2017 in the calculation of contribution rates.
- The amortization of UAAL does not begin until July 1, 2017; however, the UAAL amount is adjusted based on the July 1, 2016 contribution rate.
- (Gain)/Loss includes the following:
  - new assumptions adopted effective June 30, 2011 based on the Investigation of Experience report
  - new economic assumptions effective June 30, 2012
  - new assumptions adopted effective June 30, 2014 based on the Investigation of Experience report
  - new economic assumptions effective June 30, 2016

**Exhibit 12b Amortization Detail – Safety Members: UAAL and County CSCA Offsets**  
 (Dollars in Thousands)

Unfunded Actuarial Liability Amortization Detail							
Date Established	Description <sup>4</sup>	Balance as of June 30, 2016	Interest on Balance	Amort. Payment on June 30, 2017 <sup>1</sup>	Balance as of June 30, 2017 <sup>2</sup>	Remaining Period as of June 30, 2017	July 1, 2017 Amortization Payment
June 30, 2008	Initial UAAL	\$ 105,642	\$ 7,395	\$ 17,964	\$ 95,073	6 Years	\$ 17,628
June 30, 2009	(Gain) / Loss	\$ 106,307	\$ 7,441	\$ 16,089	\$ 97,659	7 Years	\$ 15,789
June 30, 2010	(Gain) / Loss	\$ (41,472)	\$ (2,903)	\$ (5,674)	\$ (38,701)	8 Years	\$ (5,569)
June 30, 2011	(Gain) / Loss	\$ (15,797)	\$ (1,106)	\$ (1,978)	\$ (14,925)	9 Years	\$ (1,942)
June 30, 2012	(Gain) / Loss	\$ 31,900	\$ 2,233	\$ 3,693	\$ 30,440	10 Years	\$ 3,625
June 30, 2013	(Gain) / Loss	\$ 5,992	\$ 419	\$ 646	\$ 5,765	11 Years	\$ 635
June 30, 2014	(Gain) / Loss	\$ (17,625)	\$ (1,234)	\$ (1,784)	\$ (17,075)	12 Years	\$ (1,752)
June 30, 2015	(Gain) / Loss	\$ (9,149)	\$ (640)	\$ (874)	\$ (8,915)	13 Years	\$ (858)
June 30, 2016	(Gain) / Loss	\$ 25,186	\$ 1,763	\$ (680) <sup>3</sup>	\$ 27,629	14 Years	\$ 2,511
Total Amortization Payment July 1, 2017:							\$ 30,067
Projected Payroll July 1, 2017:							\$ 63,563
UAAL as of June 30, 2016:		<u>\$ 190,984</u>	UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2017:		<u>47.30%</u>		

County Supplementary Contribution Account Amortization Detail							
Date Established	Description	Balance as of June 30, 2016	Interest on Balance	Offset to SCR on June 30, 2017 <sup>1</sup>	Balance as of June 30, 2017 <sup>2</sup>	Remaining Period as of June 30, 2017	July 1, 2017 Amortization Payment
June 30, 2014	Initial CSCA	\$ 12,594	\$ 882	\$ 1,275	\$ 12,201	12 Years	\$ 1,252
June 30, 2015	CSCA Addition	\$ 2,867	\$ 201	\$ 274	\$ 2,794	13 Years	\$ 269
June 30, 2016	CSCA Addition	\$ 4,268	\$ 299	\$ -	\$ 4,567	14 Years	\$ 415
Total CSCA County Offset Payment July 1, 2017:							\$ 1,936
Projected County Payroll July 1, 2017:							\$ 63,563
CSCA Value as of June 30, 2016:		<u>\$ 19,729</u>	CSCA County Offset (as a % of Payroll) FYB July 1, 2017:		<u>3.05%</u>		

1. Amortization Payments and CSCA Offsets are based on a fixed schedule that increases by the payroll assumption each year.
2. The calculation of UAAL and CSCA are as of June 30, 2016; whereas, the contribution rates are not effective until July 1, 2017. Therefore, the UAAL and CSCA are adjusted to June 30, 2017 in the calculation of contribution rates.
3. The amortization of UAAL does not begin until July 1, 2017; however, the UAAL amount is adjusted based on the July 1, 2016 contribution rate.
4. (Gain)/Loss includes the following:
  - new assumptions adopted effective June 30, 2011 based on the Investigation of Experience report
  - new economic assumptions effective June 30, 2012
  - new assumptions adopted effective June 30, 2014 based on the Investigation of Experience report
  - new economic assumptions effective June 30, 2016

**Exhibit 12c Amortization Detail – Probation Members: UAAL and County CSCA Offsets**  
 (Dollars in Thousands)

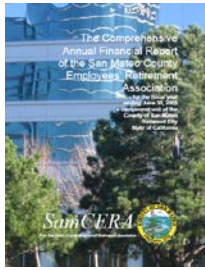
Unfunded Actuarial Liability Amortization Detail							
Date Established	Description <sup>(4)</sup>	Balance as of June 30, 2016	Interest on Balance	Amort. Payment on June 30, 2017 <sup>1</sup>	Balance as of June 30, 2017 <sup>2</sup>	Remaining Period as of June 30, 2017	July 1, 2017 Amortization Payment
June 30, 2008	Initial UAAL	\$ 26,469	\$ 1,853	\$ 4,501	\$ 23,821	6 Years	\$ 4,417
June 30, 2009	(Gain) / Loss	\$ 26,756	\$ 1,873	\$ 4,049	\$ 24,579	7 Years	\$ 3,974
June 30, 2010	(Gain) / Loss	\$ (10,122)	\$ (709)	\$ (1,385)	\$ (9,447)	8 Years	\$ (1,359)
June 30, 2011	(Gain) / Loss	\$ (3,624)	\$ (254)	\$ (454)	\$ (3,424)	9 Years	\$ (445)
June 30, 2012	(Gain) / Loss	\$ 10,757	\$ 753	\$ 1,245	\$ 10,265	10 Years	\$ 1,222
June 30, 2013	(Gain) / Loss	\$ 1,530	\$ 107	\$ 165	\$ 1,472	11 Years	\$ 162
June 30, 2014	(Gain) / Loss	\$ (3,563)	\$ (249)	\$ (361)	\$ (3,451)	12 Years	\$ (354)
June 30, 2015	(Gain) / Loss	\$ (2,468)	\$ (173)	\$ (236)	\$ (2,405)	13 Years	\$ (231)
June 30, 2016	(Gain) / Loss	\$ 9,756	\$ 683	\$ (864) <sup>3</sup>	\$ 11,304	14 Years	\$ 1,027
Total Amortization Payment July 1, 2017:							\$ 8,412
Projected Payroll July 1, 2017:							\$ 24,747
<b>UAAL as of June 30, 2016:</b>		<b>\$ 55,490</b>		<b>UAAL Contribution Rate (as a % of Payroll) FYB July 1, 2017:</b>			<b>33.99%</b>

County Supplementary Contribution Account Amortization Detail							
Date Established	Description	Balance as of June 30, 2016	Interest on Balance	Offset to SCR on June 30, 2017 <sup>1</sup>	Balance as of June 30, 2017 <sup>2</sup>	Remaining Period as of June 30, 2017	July 1, 2017 Amortization Payment
June 30, 2014	Initial CSCA	\$ 3,425	\$ 240	\$ 347	\$ 3,318	12 Years	\$ 340
June 30, 2015	CSCA Addition	\$ 817	\$ 57	\$ 78	\$ 796	13 Years	\$ 77
June 30, 2016	CSCA Addition	\$ 1,489	\$ 104	\$ -	\$ 1,593	14 Years	\$ 145
Total CSCA County Offset Payment July 1, 2017:							\$ 562
Projected County Payroll July 1, 2017:							\$ 24,747
<b>CSCA Value as of June 30, 2016:</b>		<b>\$ 5,731</b>		<b>CSCA County Offset (as a % of Payroll) FYB July 1, 2017:</b>			<b>2.27%</b>

1. Amortization Payments and CSCA Offsets are based on a fixed schedule that increases by the payroll assumption each year.
2. The calculation of UAAL and CSCA are as of June 30, 2016; whereas, the contribution rates are not effective until July 1, 2017. Therefore, the UAAL and CSCA are adjusted to June 30, 2017 in the calculation of contribution rates.
3. The amortization of UAAL does not begin until July 1, 2017; however, the UAAL amount is adjusted based on the July 1, 2016 contribution rate.
4. (Gain)/Loss includes the following:
  - new assumptions adopted effective June 30, 2011 based on the Investigation of Experience report
  - new economic assumptions effective June 30, 2012
  - new assumptions adopted effective June 30, 2014 based on the Investigation of Experience report
  - new economic assumptions effective June 30, 2016

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## Section 7 Information for Comprehensive Annual Financial Report (CAFR)



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 No. 67 and GASB No. 68 in a separate report.

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

For more detailed information on the valuation data, see Appendix C.

- 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
- Exhibit 22 – Summary of Retired and Inactive Benefits

### Additional CAAP Disclosure

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.	\$ 110,634,764
Statutory Contribution \$	Expected Statutory Contribution paid at mid-year.	\$ 167,464,634
Asset Smoothing Ratio	Actuarial Value of Assets divided by Market Value of Assets	102.4%
Asset Volatility Ratio	Market Value of Assets divided by Payroll	7.1
Liability Volatility Ratio	Actuarial Accrued Liability divided by Payroll	8.8

**Exhibit 13 Schedule of Funding Progress**  
 (Dollars in Thousands)

<u>Actuarial Valuation Date</u>	<u>(a) Actuarial Value of Valuation Assets</u>	<u>(b) Actuarial Accrued Liabilities</u>	<u>(b-a) Unfunded Actuarial Accrued Liabilities (UAAL)</u>	<u>(a/b) Funded Ratio</u>	<u>(c) Covered Payroll</u>	<u>[(b-a)/c] UAAL as a Percentage of Covered Payroll</u>
June 30, 2007	\$ 1,976,731	\$ 2,555,504	\$ 578,773	77.4%	\$ 407,912	141.92%
June 30, 2008	2,218,937	2,806,222	587,285	79.1%	416,243	141.09%
June 30, 2009	1,909,679	2,987,712	1,078,033	63.9%	436,424	247.02%
June 30, 2010	2,179,076	3,098,453	919,377	70.3%	428,559	214.53%
June 30, 2011	2,405,140	3,246,727	841,587	74.1%	424,061	198.46%
June 30, 2012	2,480,271	3,442,553	926,282	72.0%	419,779	229.24%
June 30, 2013	2,618,639	3,572,750	954,111	73.3%	406,921	234.47%
June 30, 2014	2,993,187	3,797,042	803,855	78.8%	422,022	190.48%
June 30, 2015	3,343,550	4,045,786	702,236	82.6%	454,683	154.45%
June 30, 2016	3,624,726	4,362,296	737,570	83.1%	485,297	151.98%

**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 <sup>(1)</sup> (B)	Active Members (Employer Financed Portion) (C)	(A)	(B)	(C)
June 30, 2007	\$ 1,976,731	\$ 359,484	\$ 1,348,013	\$ 848,007	100%	100%	32%
June 30, 2008	2,218,937	385,300	1,550,875	870,047	100%	100%	32%
June 30, 2009	1,909,679	412,147	1,670,547	905,018	100%	90%	0%
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%

1. Includes inactive members.

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

Statutory Contribution Rates <sup>(1)</sup>									
Valuation Year	General Members (County & Courts)			General Members (Nurses & UAPD) <sup>(3)</sup>			General Members (SMCM&VCD) <sup>(2)</sup>		
	Normal	UAAL	Total	Normal	UAAL	Total	Normal	UAAL	Total
2007	10.19%	9.46%	19.65%	Same as County General			8.50%	7.76%	16.26%
2008	10.16%	9.81%	19.97%	Same as County General			8.55%	8.04%	16.59%
2009	10.11%	18.40%	28.51%	Same as County General			8.25%	15.09%	23.34%
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 <sup>(1)</sup>									
Valuation Year	General Members (County) <sup>(5)</sup>			General Members (Courts) <sup>(5)</sup>			General Members (SMCM&VCD) <sup>(2)</sup>		
	Normal	UAAL	Total	Normal	UAAL	Total	Normal	UAAL	Total
2015 <sup>(7)</sup>	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%	9.14%	21.30%	30.44%	12.02%	12.50%	24.52%

Statutory Contribution Rates <sup>(1)</sup>									
Valuation Year	Safety Member			Probation Members (excluding Managers) <sup>(4)</sup>			Probation Members (Managers) <sup>(6)</sup>		
	Normal	UAAL	Total	Normal	UAAL	Total	Normal	UAAL	Total
2007	19.94%	29.32%	49.26%	20.83%	14.06%	34.89%	Same as Probation (ex Managers)		
2008	19.32%	27.31%	46.63%	20.05%	12.81%	32.86%	Same as Probation (ex Managers)		
2009	19.21%	51.83%	71.04%	19.92%	23.84%	43.76%	Same as Probation (ex Managers)		
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 <sup>(7)</sup>	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)		

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 and 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 California Nurses Association contribute 25% of the cost of COLA, in addition to current member rates and cost sharing.  
Beginning with the 2013 actuarial valuation, Plan 1, 2, and 4 members of the Union of American Physicians and Dentists 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.
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 2015 actuarial valuation, Plan 1, 2, and 4 members of the Union of American Physicians and Dentists or the California Nurses Association contribute 50% of the cost of COLA, in addition to current member rates and cost sharing. As a result of having similar COLA share to other County groups, those members have been aggregated with all County groups.
6. Beginning with the 2015 actuarial valuation, 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 Probation and Detention Association bargaining unit. Contribution rates for the 2015 valuation year reflect these changes.



**Exhibit 16 Actuarial Analysis of Financial Experience**

Summary of (Gains) / Losses	Change In Liability				
	2016	2015	2014	2013	2012
Unfunded Liability as of July 1	\$ 702,236,000	\$ 803,855,000	\$ 954,111,000	\$ 962,282,000	\$ 841,587,000
Expected Change in UAAL	(96,454,000)	(76,018,000)	(88,525,000)	(34,535,000)	(39,621,000)
Salary (Gain) / Loss	24,707,000	39,129,000	(15,884,000)	(59,411,000)	(45,526,000)
Fewer Withdrawals than expected	0	0	0	0	0
Retiree COLA more / (less) than expected	(6,275,000)	3,648,000	(15,603,000)	(8,606,000)	(11,756,000)
Asset (Gain) / Loss	27,821,000	(74,068,000)	(88,035,000)	93,999,000	171,268,000
Change due to Assumption Changes	89,364,000	0	59,345,000	0	36,443,000
Miscellaneous Experience	(3,829,000)	5,690,000	(1,554,000)	382,000	9,887,000
Change Due to New Formula					
Unfunded Liability as of June 30	\$ 737,570,000	\$ 702,236,000	\$ 803,855,000	\$ 954,111,000	\$ 962,282,000



**Exhibit 17 Summary of Significant Actuarial Statistics and Measures**

	June 30th of		Relative Change
	2016	2015	
1. Active Members			
Number of Members	5,187	5,095	1.8 %
Average Age	45.4	45.5	(0.2)%
Average Credited Service	10.8	11.0	(1.8)%
Total Active Payroll (\$thousands)	\$ 493,790	\$ 462,640	6.7 %
Average Monthly Salary	\$ 7,933	\$ 7,567	4.8 %
2. Retired Members			
Number of Members			
Service Retirement	3,749	3,628	3.3 %
Disability Retirement	454	442	2.7 %
Beneficiaries	545	568	(4.0)%
Average Age	71.0	71.3	(0.4)%
Actual Retiree Benefits Paid (\$thousands)	\$ 179,497	\$ 168,109	6.8 %
Average Monthly Pension	\$ 3,268	\$ 3,160	3.4 %
3. Number of Inactive Members	1,486	1,384	7.4 %
4. Assets			
Market Value of Fund (\$thousands)	\$ 3,541,388	\$ 3,454,476	2.5 %
Return on Market Value	0.7%	3.5%	
Valuation Assets (\$thousands)	\$ 3,624,726	\$ 3,343,550	8.4 %
Return on Valuation Assets	6.4%	9.7%	
5. Liability Values (\$thousands)			
Actuarial Accrued Liability	\$ 4,362,296	\$ 4,045,786	7.8 %
Unfunded Actuarial Accrued Liability	\$ 737,570	\$ 702,236	5.0%
Deferred Asset (Gains) / Losses	\$ 119,951	\$ (77,153)	
6. Funded Ratio (based on valuation assets)	83.1%	82.6%	0.5 %

Exhibit 18 Summary of SamCERA Membership

Plan	One	Two	Three	Four	Five	Six	Seven	Total
<b>Retirees and beneficiaries currently receiving benefits:</b>								
General	1,612	1,783	143	561	1	-	-	4,100
Safety	266	167	-	50	-	-	-	483
Probation	68	77	-	20	-	-	-	165
Subtotal	1,946	2,027	143	631	1	-	-	4,748
<b>Inactive employees entitled to but not currently receiving benefits (Deferred):</b>								
General	11	371	108	769	35	-	74	1,368
Safety	1	19	-	41	6	-	2	69
Probation	-	11	-	38	-	-	-	49
Subtotal	12	401	108	848	41	-	76	1,486
<b>Current employees:</b>								
<b>Vested:</b>								
General	16	702	74	2,124	10	-	6	2,932
Safety	3	81	-	253	-	-	1	338
Probation	1	41	-	189	1	-	-	232
<b>Non-Vested:</b>								
General	-	2	17	57	274	-	1,139	1,489
Safety	-	-	-	8	54	1	94	157
Probation	-	-	-	1	8	1	29	39
Subtotal	20	826	91	2,632	347	2	1,269	5,187
<b>Total SamCERA Membership</b>	1,978	3,254	342	4,111	389	2	1,345	11,421

**Exhibit 19 Summary of Active Member Valuation Data**

Valuation Date	Members	Annual Salary	Average Annual Salary	% Change Average Salary	
2007	General	4,767	\$346,319,017	\$72,649	7.1%
	Safety	443	\$45,386,411	\$102,452	5.9%
	Probation	329	\$24,364,268	\$74,056	5.3%
	Total	5,539	\$416,069,696	\$75,116	6.9%
2008	General	4,743	\$353,518,525	\$74,535	2.6%
	Safety	432	\$46,326,906	\$107,238	4.7%
	Probation	325	\$24,741,003	\$76,126	2.8%
	Total	5,500	\$424,586,434	\$77,198	2.8%
2009	General	4,777	\$370,760,830	\$77,614	4.1%
	Safety	436	\$48,120,081	\$110,367	2.9%
	Probation	330	\$26,270,802	\$79,608	4.6%
	Total	5,543	\$445,151,713	\$80,309	4.0%
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%

**Exhibit 20 Summary of Demographic Activity of Retirees and Beneficiaries**

Year Ended	Added to Rolls <sup>(1)</sup>		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, 2007	155	\$ N/A	74	\$ N/A	3,694	\$ 98,790	8.6	\$ 2,229
June 30, 2008	218	N/A	70	N/A	3,842	109,616	11.0	2,378
June 30, 2009	159	12,717	66	3,281	3,935	119,052	8.6	2,521
June 30, 2010	163	9,076	96	3,240	4,002	124,888	4.9	2,601
June 30, 2011	<sup>(2)</sup> 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

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**

	2016	2015	2014	2013	2012
General Plan 1	\$9,945	\$9,235	\$8,617	\$8,104	\$7,843
General Plan 2	\$8,636	\$8,186	\$7,584	\$7,355	\$7,340
General Plan 3	\$7,173	\$6,747	\$6,300	\$6,254	\$6,138
General Plan 4	\$7,807	\$7,386	\$6,873	\$6,662	\$6,580
General Plan 5	\$8,485	\$7,735	\$6,912	\$6,418	\$5,799
General Plan 7	\$6,714	\$6,315	\$5,721	\$5,433	N/A
General Plan Total	\$7,694	\$7,351	\$6,884	\$6,762	\$6,726
Safety Plan 1	\$15,810	\$14,712	\$14,091	\$13,185	\$12,624
Safety Plan 2	\$12,505	\$11,545	\$11,191	\$10,935	\$10,892
Safety Plan 4	\$10,729	\$9,919	\$9,581	\$9,402	\$9,351
Safety Plan 5	\$9,940	\$9,145	\$8,958	\$8,699	\$9,667
Safety Plan 6	\$16,793	\$16,010	\$14,381	\$12,374	N/A
Safety Plan 7	\$7,538	\$6,701	\$7,011	\$6,695	N/A
Safety Plan Total	\$10,364	\$9,728	\$9,767	\$9,630	\$9,795
Probation Plan 1	\$7,261	\$7,038	\$6,874	\$6,618	\$6,618
Probation Plan 2	\$8,349	\$8,012	\$7,699	\$7,445	\$7,454
Probation Plan 4	\$7,454	\$7,267	\$6,922	\$6,622	\$6,686
Probation Plan 5	\$6,429	\$6,106	\$5,916	\$5,242	\$4,949
Probation Plan 6	\$6,259	\$5,739	\$5,216	\$4,808	\$5,239
Probation Plan 7	\$5,962	\$5,684	\$5,807	\$7,742	\$5,239
Probation Plan Total	\$7,391	\$7,216	\$6,998	\$6,770	\$6,844
Grand Total	\$7,933	\$7,567	\$7,151	\$7,026	\$6,995

**Participating Employers and Active Members**

	2016	2015	2014	2013	2012
<i>County of San Mateo</i>					
General Members	4,170	4,092	4,014	3,906	4,078
Safety Members	495	479	452	452	435
Probation Members	271	282	280	292	299
Total	4,936	4,853	4,746	4,650	4,812
<i>San Mateo County Mosquito and Vector Control District</i>					
General Members Total	20	20	19	18	15
<i>Courts</i>					
General Members Total	231	222	239	249	268
<b>Total Active Membership</b>	<b>5,187</b>	<b>5,095</b>	<b>5,004</b>	<b>4,917</b>	<b>5,095</b>

**Exhibit 22 Summary of Retired and Inactive Benefits**

<b>Retired Members</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>
<b>Service Retirement</b>					
Number	3,749	3,628	3,525	3,446	3,355
Annual Allowance					
Basic Only	\$ 119,212,000	\$ 112,557,000	\$ 105,556,000	\$ 100,411,000	\$ 94,234,000
COLA	32,949,000	30,835,000	28,027,000	26,594,000	24,748,000
Total	152,161,000	143,392,000	133,583,000	127,005,000	118,982,000
Average Monthly Payment	3,382	3,294	3,158	3,071	2,955
<b>Disability Retirement</b>					
Number	454	442	428	393	374
Annual Allowance					
Basic Only	\$ 14,040,000	\$ 13,303,000	\$ 12,508,000	\$ 10,733,000	\$ 9,909,000
COLA	4,590,000	4,208,000	3,800,000	3,564,000	3,225,000
Total	18,630,000	17,511,000	16,308,000	14,297,000	13,134,000
Average Monthly Payment	3,420	3,301	3,175	3,032	2,927
<b>Beneficiaries</b>					
Number	545	568	565	559	546
Annual Allowance					
Basic Only	\$ 8,944,000	\$ 8,610,000	\$ 7,986,000	\$ 7,668,000	\$ 7,235,000
COLA	6,462,000	6,367,000	5,892,000	5,804,000	5,494,000
Total	15,406,000	14,977,000	13,878,000	13,472,000	12,729,000
Average Monthly Payment	2,356	2,197	2,047	2,008	1,943
<b>Total Retired Members</b>					
Number	4,748	4,638	4,518	4,398	4,275
Annual Allowance					
Basic Only	\$ 142,196,000	\$ 134,470,000	\$ 126,050,000	\$ 118,812,000	\$ 111,378,000
COLA	44,001,000	41,410,000	37,719,000	35,962,000	33,467,000
Total	186,197,000	175,880,000	163,769,000	154,774,000	144,845,000
Average Monthly Payment	3,268	3,160	3,021	2,933	2,823
<b>Inactive Members</b>					
	1,486	1,384	1,304	1,306	1,212

## 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, 2014 as a result of the 2014 Investigation of Experience Study. At its meeting on June 7, 2016, the Board reaffirmed these demographic assumptions for use in the 2016 valuation. At that meeting, new economic assumptions were adopted for use in the 2016 valuation.

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 noted.**



## Actuarial Cost Method

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

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

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

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.

<b>Growth in Membership</b>	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.
<b>Internal Revenue Code Section 415 Limit</b>	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.
<b>Internal Revenue Code Section 401(a)(17)</b>	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.
<b>Government Code Section 7522.10</b>	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.
<b>Employer Contributions</b>	The employer contribution rate is set by the Retirement Board based on actuarial valuations.
<b>Member Contributions</b>	<p>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.</p> <p>The individual member rates by entry age, plan, and class are illustrated in Appendix D of the valuation report.</p>
<b>Valuation of Assets</b>	The assets are valued using a five-year smoothed method based on the difference between the expected market value and the actual market value of the assets as of the valuation date. The expected market value is the prior year's market value increased with the net increase in the cash flow of funds, all increased with interest during the past fiscal year at the expected investment return rate assumption.
<b>Investment Earnings and Expenses</b>	The future investment earnings of the assets of SamCERA are assumed to accrue at an annual rate of 7.00% compounded annually, net of both investment and administrative expenses. This rate was adopted effective June 30, 2016.

**Postretirement Benefit Increases**

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

	General	Safety	Probation
Plan 1	2.75%	2.75%	2.75%
Plan 2	2.65%	2.65%	2.65%
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 2.75% 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 7.00% compounded semi-annually for an annualized rate of 7.12%. This rate was adopted effective June 30, 2016 for valuation purposes, although the change in the member crediting rate is not effective until July 1, 2017.

**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 3.25% 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 2.75% per year. Note, 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-11.

All General members who attain or who have attained age 70 and all Safety members who have attained age 60 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 55 (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 June 30, 2014.

## Disability

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

The disability rates were adopted June 30, 2014.

## Mortality – Other Than Disabled Members

The same postretirement mortality rates are used in the valuation for active members, members retired for service, and beneficiaries. These rates are illustrated in Table A-2. Beneficiary mortality is assumed to be the same as for healthy members. Beneficiaries are assumed to be of the opposite sex and have the same mortality as General members.

*General Males* RP-2000 Healthy Combined Mortality Table for Males with adjustment for White Collar workers. Ages are set back three years.

*Safety Males* Same as General.

*General Females* RP-2000 Healthy Combined Mortality Table for Females with adjustment for White Collar workers. Ages are set back three years.

*Safety Females* Same as General.

The rates of retired mortality were adopted June 30, 2011 and re-adopted June 30, 2014.

**Mortality – Disabled Members**

For disabled members, the mortality rates used in the valuation are illustrated in Table A-3.

*General Males* Average of RP-2000 Healthy Combined Mortality Table for Males with adjustment for White Collar workers and the RP-2000 Disabled Annuitant Mortality Table for Males, both set back three years.

*Safety Males* RP-2000 Healthy Combined Mortality Table for Males with adjustment for White Collar workers (minimum is 1.0%).

*General Females* Average of RP-2000 Healthy Combined Mortality Table for Females with adjustment for White Collar workers and the RP-2000 Disabled Annuitant Mortality Table for Females, both set back three years.

*Safety Females* RP-2000 Healthy Combined Mortality Table for Females with adjustment for White Collar workers (minimum is 0.4%).

The rates of mortality were adopted June 30, 2011 and re-adopted June 30, 2014.

**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 June 30, 2011 and re-adopted June 30, 2014.

**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 June 30, 2011 and re-adopted June 30, 2014.

**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.

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 is made to the salary data provided for these individuals, as it is our understanding that the salary data may not be complete in many cases. The adjustment is based on the average pay for all members of the active group divided by average pay for the deferred group. The average pay for the active group is based on the average pay over the last five-year period using the information supplied in the CAFR.

**Reciprocal Benefits**

35% of future inactive General members and 45% of future inactive 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 inactive members, eligibility is based on the data supplied by SamCERA and future salaries are assumed to increase at 3.77% annually.

**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 adjusted Plan 3 Normal Cost rate is 50% of the unadjusted Plan 3 Normal Cost rate and 50% of 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 an 83% / 17% blend of the male and female annuity factors using current valuation assumptions.
- 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 7.00%.
- C. The Final 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, the Final 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 7.00% semiannually (7.12% annual rate).

**Member Contribution  
Rate Assumptions  
(continued)**

- 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 members are loaded to account for a 50% COLA share. The only exception is for Plans 1, 2, and 4 members of the Board of Supervisors and Court Interpreters bargaining units with a most recent hire date before August 7, 2011. The COLA loads are applied to the otherwise applicable basic member rates prior to the addition of and cost-sharing rates. The loads were determined based on 2016 information and applied as follows:

General Plan 1:	35.45%
General Plan 2:	34.32%
General Plan 4:	23.46%
General Plan 5:	22.69%

Safety Plan 1:	63.59%
Safety Plan 2:	61.28%
Safety Plan 4:	34.95%
Safety Plan 5:	31.39%
Safety Plan 6:	28.67%

Probation Plan 1:	61.59%
Probation Plan 2:	59.35%
Probation Plan 4:	34.85%
Probation Plan 5:	31.07%
Probation Plan 6:	27.63%

**Table A-1 Summary of Valuation Assumptions as of June 30, 2016**

I.	Economic assumptions	
A.	General wage increases	3.25%
B.	Investment earnings	7.00%
C.	Growth in active membership	0.00%
D.	CPI inflation assumption	2.75%
II.	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-2000 Employees Table with age adjustments:

<u>Class of Members</u>	<u>Age Adjustment</u>
General – Males	-3 years
General – Females	-3 years
Safety – Males	-3 years
Safety – Females	-3 years

E.	Mortality for active members after termination and service retired members*	Table A-2
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Basis – RP-2000 Healthy Combined Mortality Table with adjustment for White Collar workers:

<u>Class of Members</u>	<u>Age Adjustment</u>
General – Males	-3 years
General – Females	-3 years
Safety – Males	-3 years
Safety – Females	-3 years

\* The current mortality assumptions contain a margin to account for expected future mortality improvement. Refer to the 2014 Investigation of Experience report for details.



**Table A-1 Summary of Valuation Assumptions as of June 30, 2016  
 (continued)**

F. Mortality among disabled members\*

Table A-3

Basis – Average of RP-2000 Healthy Combined Mortality Table with adjustment for White Collar workers and RP-2000 Disabled Annuitant Mortality Table:

<u>Class of Members</u>	<u>Age Adjustment</u>	<u>Minimum Rate</u>
General – Males	-3 years	None
General – Females	-3 years	None

Basis – RP-2000 Healthy Combined Mortality Table with adjustment for White Collar workers:

<u>Class of Members</u>	<u>Age Adjustment</u>	<u>Minimum Rate</u>
Safety – Males	none	1.00%
Safety – Females	none	0.40%

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

*\* The current mortality assumptions contain a margin to account for expected future mortality improvement. Refer to the 2014 Investigation of Experience report for details.*

Table A-2 Mortality for Members Retired for Service

<b>Age</b>	<b>General Male</b>	<b>General Female</b>	<b>Safety Male</b>	<b>Safety Female</b>
20	0.030%	0.018%	0.030%	0.018%
25	0.037%	0.019%	0.037%	0.019%
30	0.038%	0.022%	0.038%	0.022%
35	0.043%	0.036%	0.043%	0.036%
40	0.071%	0.053%	0.071%	0.053%
45	0.103%	0.076%	0.103%	0.076%
50	0.158%	0.123%	0.158%	0.123%
55	0.250%	0.192%	0.250%	0.192%
60	0.409%	0.332%	0.409%	0.332%
65	0.731%	0.599%	0.731%	0.599%
70	1.404%	1.094%	1.404%	1.094%
75	2.387%	1.878%	2.387%	1.878%
80	4.236%	3.155%	4.236%	3.155%
85	7.493%	5.337%	7.493%	5.337%
90	13.019%	9.248%	13.019%	9.248%

Table A-3 Mortality for Members Retired for Disability

Age	General Male	General Female	Safety Male	Safety Female
20	1.144%	0.382%	1.000%	0.400%
25	1.147%	0.382%	1.000%	0.400%
30	1.148%	0.384%	1.000%	0.400%
35	1.150%	0.391%	1.000%	0.400%
40	1.164%	0.399%	1.000%	0.400%
45	1.180%	0.411%	1.000%	0.400%
50	1.335%	0.509%	1.000%	0.400%
55	1.703%	0.769%	1.000%	0.400%
60	2.106%	1.099%	1.000%	0.468%
65	2.615%	1.503%	1.106%	0.865%
70	3.424%	2.114%	1.928%	1.519%
75	4.664%	3.082%	3.363%	2.572%
80	6.725%	4.555%	5.941%	4.308%
85	9.840%	6.783%	10.467%	7.419%
90	14.271%	10.350%	17.827%	12.615%

**Table A-4 Immediate Refund of Contributions Upon Termination of Employment  
 (Excludes Plan 3)**

<b>Years of Service</b>	<b>General</b>	<b>Safety</b>
0	100%	100%
1	100%	100%
2	100%	100%
3	100%	100%
4	100%	100%
5	45%	35%
6	45%	35%
7	45%	35%
8	44%	34%
9	43%	33%
10	42%	32%
11	41%	31%
12	40%	30%
13	38%	25%
14	36%	20%
15	34%	15%
16	32%	10%
17	30%	5%
18	27%	4%
19	24%	3%
20	21%	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	6.00%	9.44%
1	4.00%	7.38%
2	3.00%	6.35%
3	2.50%	5.83%
4	2.00%	5.31%
5	1.75%	5.06%
6	1.50%	4.80%
7	1.25%	4.54%
8	1.05%	4.33%
9	0.90%	4.18%
10	0.80%	4.08%
11	0.70%	3.97%
12	0.60%	3.87%
13	0.50%	3.77%
14	0.50%	3.77%
15	0.50%	3.77%
16	0.50%	3.77%
17	0.50%	3.77%
18	0.50%	3.77%
19	0.50%	3.77%
20 or More	0.50%	3.77%

\* The total expected increase in salary is the increase due to promotions and longevity, adjusted for an assumed 3.25% per annum increase in the general wage level of the membership. The total result is compounded rather than additive.

**Appendix A 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:

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

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

Age	Service Retirement*	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.0000	0.0004	0.0003	N/A	0.0003	0	0.1300
19	0.0000	0.0004	0.0003	N/A	0.0003	1	0.1100
20	0.0000	0.0004	0.0003	N/A	0.0003	2	0.0900
21	0.0000	0.0004	0.0003	N/A	0.0003	3	0.0800
22	0.0000	0.0004	0.0003	N/A	0.0003	4	0.0700
23	0.0000	0.0004	0.0003	N/A	0.0003	5	0.0633
24	0.0000	0.0004	0.0003	N/A	0.0004	6	0.0567
25	0.0000	0.0004	0.0003	N/A	0.0004	7	0.0500
26	0.0000	0.0004	0.0003	N/A	0.0004	8	0.0470
27	0.0000	0.0004	0.0003	N/A	0.0004	9	0.0440
28	0.0000	0.0004	0.0003	N/A	0.0004	10	0.0410
29	0.0000	0.0005	0.0003	N/A	0.0004	11	0.0380
30	0.0000	0.0005	0.0004	N/A	0.0004	12	0.0350
31	0.0000	0.0005	0.0004	N/A	0.0004	13	0.0330
32	0.0000	0.0006	0.0004	N/A	0.0004	14	0.0310
33	0.0000	0.0007	0.0004	N/A	0.0004	15	0.0290
34	0.0000	0.0007	0.0005	N/A	0.0005	16	0.0270
35	0.0000	0.0007	0.0005	N/A	0.0006	17	0.0250
36	0.0000	0.0008	0.0005	N/A	0.0006	18	0.0230
37	0.0000	0.0009	0.0006	N/A	0.0007	19	0.0210
38	0.0000	0.0010	0.0006	N/A	0.0008	20	0.0190
39	0.0000	0.0010	0.0007	N/A	0.0008	21	0.0170
40	0.0000	0.0011	0.0008	N/A	0.0009	22	0.0150
41	0.0000	0.0012	0.0008	N/A	0.0010	23	0.0140
42	0.0000	0.0013	0.0009	N/A	0.0010	24	0.0130
43	0.0000	0.0014	0.0009	N/A	0.0011	25	0.0120
44	0.0000	0.0014	0.0010	N/A	0.0011	26	0.0110
45	0.0000	0.0016	0.0010	N/A	0.0012	27	0.0100
46	0.0000	0.0016	0.0011	N/A	0.0013	28	0.0100
47	0.0000	0.0017	0.0012	N/A	0.0014	29	0.0100
48	0.0000	0.0018	0.0012	N/A	0.0015	30 & Above	0.0000
49	0.0000	0.0019	0.0012	N/A	0.0016		
50	0.0500	0.0019	0.0013	N/A	0.0017		
51	0.0450	0.0020	0.0013	N/A	0.0019		
52	0.0450	0.0020	0.0013	N/A	0.0020		
53	0.0500	0.0021	0.0014	N/A	0.0021		
54	0.0500	0.0022	0.0014	N/A	0.0023		
55	0.0600	0.0022	0.0014	N/A	0.0024		
56	0.0600	0.0022	0.0015	N/A	0.0026		
57	0.0800	0.0023	0.0015	N/A	0.0028		
58	0.1200	0.0025	0.0016	N/A	0.0030		
59	0.1200	0.0026	0.0017	N/A	0.0033		
60	0.1500	0.0027	0.0018	N/A	0.0036		
61	0.2250	0.0029	0.0019	N/A	0.0040		
62	0.2750	0.0030	0.0020	N/A	0.0044		
63	0.2500	0.0030	0.0020	N/A	0.0049		
64	0.2500	0.0030	0.0020	N/A	0.0054		
65	0.2500	0.0030	0.0020	N/A	0.0059		
66	0.3750	0.0030	0.0020	N/A	0.0065		
67	0.3500	0.0030	0.0020	N/A	0.0070		
68	0.2750	0.0030	0.0020	N/A	0.0076		
69	0.3250	0.0030	0.0020	N/A	0.0081		
70	1.0000	0.0000	0.0000	N/A	0.0000		

\* 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).

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

Age	Service Retirement*	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.0000	0.0004	0.0003	N/A	0.0002	0	0.1200
19	0.0000	0.0004	0.0003	N/A	0.0002	1	0.1000
20	0.0000	0.0004	0.0003	N/A	0.0002	2	0.0850
21	0.0000	0.0004	0.0003	N/A	0.0002	3	0.0750
22	0.0000	0.0004	0.0003	N/A	0.0002	4	0.0700
23	0.0000	0.0004	0.0003	N/A	0.0002	5	0.0633
24	0.0000	0.0004	0.0003	N/A	0.0002	6	0.0567
25	0.0000	0.0004	0.0003	N/A	0.0002	7	0.0500
26	0.0000	0.0004	0.0003	N/A	0.0002	8	0.0455
27	0.0000	0.0004	0.0003	N/A	0.0002	9	0.0410
28	0.0000	0.0004	0.0003	N/A	0.0002	10	0.0365
29	0.0000	0.0004	0.0003	N/A	0.0002	11	0.0320
30	0.0000	0.0004	0.0003	N/A	0.0002	12	0.0275
31	0.0000	0.0004	0.0003	N/A	0.0002	13	0.0270
32	0.0000	0.0005	0.0003	N/A	0.0002	14	0.0265
33	0.0000	0.0005	0.0003	N/A	0.0003	15	0.0260
34	0.0000	0.0005	0.0004	N/A	0.0003	16	0.0255
35	0.0000	0.0006	0.0004	N/A	0.0003	17	0.0250
36	0.0000	0.0007	0.0004	N/A	0.0004	18	0.0230
37	0.0000	0.0007	0.0005	N/A	0.0004	19	0.0210
38	0.0000	0.0007	0.0005	N/A	0.0005	20	0.0190
39	0.0000	0.0008	0.0005	N/A	0.0005	21	0.0170
40	0.0000	0.0008	0.0006	N/A	0.0006	22	0.0150
41	0.0000	0.0009	0.0006	N/A	0.0006	23	0.0140
42	0.0000	0.0009	0.0006	N/A	0.0006	24	0.0130
43	0.0000	0.0011	0.0007	N/A	0.0007	25	0.0120
44	0.0000	0.0011	0.0008	N/A	0.0008	26	0.0110
45	0.0000	0.0013	0.0008	N/A	0.0009	27	0.0100
46	0.0000	0.0014	0.0009	N/A	0.0009	28	0.0100
47	0.0000	0.0015	0.0010	N/A	0.0010	29	0.0100
48	0.0000	0.0020	0.0013	N/A	0.0011	30 & Above	0.0000
49	0.0000	0.0025	0.0016	N/A	0.0012		
50	0.0400	0.0029	0.0020	N/A	0.0013		
51	0.0400	0.0034	0.0023	N/A	0.0014		
52	0.0400	0.0039	0.0026	N/A	0.0016		
53	0.0400	0.0041	0.0027	N/A	0.0017		
54	0.0500	0.0043	0.0028	N/A	0.0018		
55	0.0600	0.0044	0.0030	N/A	0.0020		
56	0.0600	0.0046	0.0031	N/A	0.0021		
57	0.0800	0.0048	0.0032	N/A	0.0023		
58	0.1200	0.0048	0.0032	N/A	0.0025		
59	0.1200	0.0048	0.0032	N/A	0.0028		
60	0.1500	0.0048	0.0032	N/A	0.0030		
61	0.2000	0.0048	0.0032	N/A	0.0033		
62	0.2750	0.0048	0.0032	N/A	0.0036		
63	0.2250	0.0048	0.0032	N/A	0.0039		
64	0.3000	0.0048	0.0032	N/A	0.0043		
65	0.3000	0.0048	0.0032	N/A	0.0047		
66	0.4000	0.0048	0.0032	N/A	0.0050		
67	0.4000	0.0048	0.0032	N/A	0.0054		
68	0.3000	0.0048	0.0032	N/A	0.0058		
69	0.3500	0.0048	0.0032	N/A	0.0062		
70	1.0000	0.0000	0.0000	N/A	0.0000		

\* 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).



**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	0.0003	1	0.1100
20	0.0000	N/A	N/A	N/A	0.0003	2	0.0900
21	0.0000	N/A	N/A	N/A	0.0003	3	0.0800
22	0.0000	N/A	N/A	N/A	0.0003	4	0.0700
23	0.0000	N/A	N/A	N/A	0.0003	5	0.0633
24	0.0000	N/A	N/A	N/A	0.0004	6	0.0567
25	0.0000	N/A	N/A	N/A	0.0004	7	0.0500
26	0.0000	N/A	N/A	N/A	0.0004	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	0.0004	12	0.0350
31	0.0000	N/A	N/A	N/A	0.0004	13	0.0330
32	0.0000	N/A	N/A	N/A	0.0004	14	0.0310
33	0.0000	N/A	N/A	N/A	0.0004	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	0.0006	17	0.0250
36	0.0000	N/A	N/A	N/A	0.0006	18	0.0230
37	0.0000	N/A	N/A	N/A	0.0007	19	0.0210
38	0.0000	N/A	N/A	N/A	0.0008	20	0.0190
39	0.0000	N/A	N/A	N/A	0.0008	21	0.0170
40	0.0000	N/A	N/A	N/A	0.0009	22	0.0150
41	0.0000	N/A	N/A	N/A	0.0010	23	0.0140
42	0.0000	N/A	N/A	N/A	0.0010	24	0.0130
43	0.0000	N/A	N/A	N/A	0.0011	25	0.0120
44	0.0000	N/A	N/A	N/A	0.0011	26	0.0110
45	0.0000	N/A	N/A	N/A	0.0012	27	0.0100
46	0.0000	N/A	N/A	N/A	0.0013	28	0.0100
47	0.0000	N/A	N/A	N/A	0.0014	29	0.0100
48	0.0000	N/A	N/A	N/A	0.0015	30 & Above	0.0100
49	0.0000	N/A	N/A	N/A	0.0016		
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	0.0020		
53	0.0000	N/A	N/A	N/A	0.0021		
54	0.0000	N/A	N/A	N/A	0.0023		
55	0.0300	N/A	N/A	N/A	0.0024		
56	0.0300	N/A	N/A	N/A	0.0026		
57	0.0300	N/A	N/A	N/A	0.0028		
58	0.0300	N/A	N/A	N/A	0.0030		
59	0.0300	N/A	N/A	N/A	0.0033		
60	0.0300	N/A	N/A	N/A	0.0036		
61	0.0600	N/A	N/A	N/A	0.0040		
62	0.1500	N/A	N/A	N/A	0.0044		
63	0.1000	N/A	N/A	N/A	0.0049		
64	0.1500	N/A	N/A	N/A	0.0054		
65	0.3000	N/A	N/A	N/A	0.0059		
66	0.3000	N/A	N/A	N/A	0.0065		
67	0.3000	N/A	N/A	N/A	0.0070		
68	0.3000	N/A	N/A	N/A	0.0076		
69	0.3000	N/A	N/A	N/A	0.0081		
70	1.0000	N/A	N/A	N/A	0.0000		

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**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	0.1200
19	0.0000	N/A	N/A	N/A	0.0002	1	0.1000
20	0.0000	N/A	N/A	N/A	0.0002	2	0.0850
21	0.0000	N/A	N/A	N/A	0.0002	3	0.0750
22	0.0000	N/A	N/A	N/A	0.0002	4	0.0700
23	0.0000	N/A	N/A	N/A	0.0002	5	0.0633
24	0.0000	N/A	N/A	N/A	0.0002	6	0.0567
25	0.0000	N/A	N/A	N/A	0.0002	7	0.0500
26	0.0000	N/A	N/A	N/A	0.0002	8	0.0455
27	0.0000	N/A	N/A	N/A	0.0002	9	0.0410
28	0.0000	N/A	N/A	N/A	0.0002	10	0.0365
29	0.0000	N/A	N/A	N/A	0.0002	11	0.0320
30	0.0000	N/A	N/A	N/A	0.0002	12	0.0275
31	0.0000	N/A	N/A	N/A	0.0002	13	0.0270
32	0.0000	N/A	N/A	N/A	0.0002	14	0.0265
33	0.0000	N/A	N/A	N/A	0.0003	15	0.0260
34	0.0000	N/A	N/A	N/A	0.0003	16	0.0255
35	0.0000	N/A	N/A	N/A	0.0003	17	0.0250
36	0.0000	N/A	N/A	N/A	0.0004	18	0.0230
37	0.0000	N/A	N/A	N/A	0.0004	19	0.0210
38	0.0000	N/A	N/A	N/A	0.0005	20	0.0190
39	0.0000	N/A	N/A	N/A	0.0005	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	0.0006	23	0.0140
42	0.0000	N/A	N/A	N/A	0.0006	24	0.0130
43	0.0000	N/A	N/A	N/A	0.0007	25	0.0120
44	0.0000	N/A	N/A	N/A	0.0008	26	0.0110
45	0.0000	N/A	N/A	N/A	0.0009	27	0.0100
46	0.0000	N/A	N/A	N/A	0.0009	28	0.0100
47	0.0000	N/A	N/A	N/A	0.0010	29	0.0100
48	0.0000	N/A	N/A	N/A	0.0011	30 & Above	0.0100
49	0.0000	N/A	N/A	N/A	0.0012		
50	0.0000	N/A	N/A	N/A	0.0013		
51	0.0000	N/A	N/A	N/A	0.0014		
52	0.0000	N/A	N/A	N/A	0.0016		
53	0.0000	N/A	N/A	N/A	0.0017		
54	0.0000	N/A	N/A	N/A	0.0018		
55	0.0400	N/A	N/A	N/A	0.0020		
56	0.0400	N/A	N/A	N/A	0.0021		
57	0.0400	N/A	N/A	N/A	0.0023		
58	0.0400	N/A	N/A	N/A	0.0025		
59	0.0400	N/A	N/A	N/A	0.0028		
60	0.0400	N/A	N/A	N/A	0.0030		
61	0.0600	N/A	N/A	N/A	0.0033		
62	0.1500	N/A	N/A	N/A	0.0036		
63	0.1000	N/A	N/A	N/A	0.0039		
64	0.1500	N/A	N/A	N/A	0.0043		
65	0.3000	N/A	N/A	N/A	0.0047		
66	0.3000	N/A	N/A	N/A	0.0050		
67	0.3000	N/A	N/A	N/A	0.0054		
68	0.3000	N/A	N/A	N/A	0.0058		
69	0.3000	N/A	N/A	N/A	0.0062		
70	1.0000	N/A	N/A	N/A	0.0000		

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

Age	Plans 1, 2, 4 Service Retirement*	Plans 5, 6, 7 Service Retirement**	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.0000	0.0000	0.0017	0.0000	0.0010	0.0003	0	0.0700
19	0.0000	0.0000	0.0017	0.0000	0.0010	0.0003	1	0.0650
20	0.0000	0.0000	0.0017	0.0000	0.0010	0.0003	2	0.0450
21	0.0000	0.0000	0.0017	0.0000	0.0010	0.0003	3	0.0300
22	0.0000	0.0000	0.0017	0.0000	0.0010	0.0003	4	0.0250
23	0.0000	0.0000	0.0017	0.0000	0.0010	0.0003	5	0.0233
24	0.0000	0.0000	0.0017	0.0000	0.0010	0.0004	6	0.0217
25	0.0000	0.0000	0.0017	0.0000	0.0010	0.0004	7	0.0200
26	0.0000	0.0000	0.0017	0.0000	0.0010	0.0004	8	0.0185
27	0.0000	0.0000	0.0017	0.0000	0.0010	0.0004	9	0.0170
28	0.0000	0.0000	0.0018	0.0000	0.0010	0.0004	10	0.0155
29	0.0000	0.0000	0.0019	0.0000	0.0010	0.0004	11	0.0140
30	0.0000	0.0000	0.0020	0.0000	0.0010	0.0004	12	0.0125
31	0.0000	0.0000	0.0021	0.0000	0.0010	0.0004	13	0.0120
32	0.0000	0.0000	0.0022	0.0000	0.0010	0.0004	14	0.0115
33	0.0000	0.0000	0.0023	0.0000	0.0010	0.0004	15	0.0110
34	0.0000	0.0000	0.0024	0.0000	0.0010	0.0005	16	0.0105
35	0.0000	0.0000	0.0025	0.0000	0.0010	0.0006	17	0.0100
36	0.0000	0.0000	0.0026	0.0000	0.0010	0.0006	18	0.0080
37	0.0000	0.0000	0.0028	0.0000	0.0010	0.0007	19	0.0060
38	0.0000	0.0000	0.0029	0.0000	0.0010	0.0008	20 & Above	0.0000
39	0.0000	0.0000	0.0030	0.0000	0.0010	0.0008		
40	0.0000	0.0000	0.0031	0.0000	0.0010	0.0009		
41	0.0000	0.0000	0.0032	0.0000	0.0010	0.0010		
42	0.0000	0.0000	0.0033	0.0000	0.0010	0.0010		
43	0.0000	0.0000	0.0034	0.0000	0.0010	0.0011		
44	0.0000	0.0000	0.0036	0.0000	0.0010	0.0011		
45	0.0000	0.0000	0.0037	0.0000	0.0010	0.0012		
46	0.0000	0.0000	0.0039	0.0000	0.0010	0.0013		
47	0.0000	0.0000	0.0040	0.0000	0.0010	0.0014		
48	0.0000	0.0000	0.0046	0.0000	0.0010	0.0015		
49	0.0000	0.0000	0.0052	0.0000	0.0010	0.0016		
50	0.1500	0.0500	0.0058	0.0000	0.0010	0.0017		
51	0.1250	0.0500	0.0064	0.0000	0.0010	0.0019		
52	0.1500	0.0500	0.0070	0.0000	0.0010	0.0020		
53	0.2000	0.0500	0.0082	0.0000	0.0010	0.0021		
54	0.1300	0.1000	0.0095	0.0000	0.0010	0.0023		
55	0.2750	0.2750	0.0107	0.0000	0.0010	0.0024		
56	0.2500	0.2750	0.0120	0.0000	0.0010	0.0026		
57	0.1700	0.2750	0.0132	0.0000	0.0010	0.0028		
58	0.2000	0.2750	0.0119	0.0000	0.0010	0.0030		
59	0.2500	0.2750	0.0106	0.0000	0.0010	0.0033		
60	1.0000	1.0000	0.0000	0.0000	0.0000	0.0000		

\* 100% probability of retirement is assumed at ages 50 and above with 33 or more years of service for Safety and Probation Plans 1, 2, and 4.

\*\* 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.

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

Age	Plans 1, 2, 4 Service Retirement*	Plans 5, 6, 7 Service Retirement**	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	0	0.0700
19	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	1	0.0650
20	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	2	0.0450
21	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	3	0.0300
22	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	4	0.0250
23	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	5	0.0233
24	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	6	0.0217
25	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	7	0.0200
26	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	8	0.0185
27	0.0000	0.0000	0.0017	0.0000	0.0010	0.0002	9	0.0170
28	0.0000	0.0000	0.0018	0.0000	0.0010	0.0002	10	0.0155
29	0.0000	0.0000	0.0019	0.0000	0.0010	0.0002	11	0.0140
30	0.0000	0.0000	0.0020	0.0000	0.0010	0.0002	12	0.0125
31	0.0000	0.0000	0.0021	0.0000	0.0010	0.0002	13	0.0120
32	0.0000	0.0000	0.0022	0.0000	0.0010	0.0002	14	0.0115
33	0.0000	0.0000	0.0023	0.0000	0.0010	0.0003	15	0.0110
34	0.0000	0.0000	0.0024	0.0000	0.0010	0.0003	16	0.0105
35	0.0000	0.0000	0.0025	0.0000	0.0010	0.0003	17	0.0100
36	0.0000	0.0000	0.0026	0.0000	0.0010	0.0004	18	0.0080
37	0.0000	0.0000	0.0028	0.0000	0.0010	0.0004	19	0.0060
38	0.0000	0.0000	0.0029	0.0000	0.0010	0.0005	20 & Above	0.0000
39	0.0000	0.0000	0.0030	0.0000	0.0010	0.0005		
40	0.0000	0.0000	0.0031	0.0000	0.0010	0.0006		
41	0.0000	0.0000	0.0032	0.0000	0.0010	0.0006		
42	0.0000	0.0000	0.0033	0.0000	0.0010	0.0006		
43	0.0000	0.0000	0.0034	0.0000	0.0010	0.0007		
44	0.0000	0.0000	0.0036	0.0000	0.0010	0.0008		
45	0.0000	0.0000	0.0037	0.0000	0.0010	0.0009		
46	0.0000	0.0000	0.0039	0.0000	0.0010	0.0009		
47	0.0000	0.0000	0.0040	0.0000	0.0010	0.0010		
48	0.0000	0.0000	0.0046	0.0000	0.0010	0.0011		
49	0.0000	0.0000	0.0052	0.0000	0.0010	0.0012		
50	0.1500	0.0500	0.0058	0.0000	0.0010	0.0013		
51	0.1250	0.0500	0.0064	0.0000	0.0010	0.0014		
52	0.1500	0.0500	0.0070	0.0000	0.0010	0.0016		
53	0.2000	0.0500	0.0082	0.0000	0.0010	0.0017		
54	0.1300	0.1000	0.0095	0.0000	0.0010	0.0018		
55	0.2750	0.2750	0.0107	0.0000	0.0010	0.0020		
56	0.2500	0.2750	0.0120	0.0000	0.0010	0.0021		
57	0.1700	0.2750	0.0132	0.0000	0.0010	0.0023		
58	0.2000	0.2750	0.0119	0.0000	0.0010	0.0025		
59	0.2500	0.2750	0.0106	0.0000	0.0010	0.0028		
60	1.0000	1.0000	0.0000	0.0000	0.0000	0.0000		

\* 100% probability of retirement is assumed at ages 50 and above with 33 or more years of service.

\*\* 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.

## 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, 2016. 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) hired on or after January 8, 2012 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) hired on or after January 8, 2012 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.

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. This provision does not apply to cost-sharing 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:** Effective with the first pay period in July 2016, 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 with retirement benefits negotiated under Board of Supervisors or Court Interpreters, and whose most recent hire date is before August 7, 2011, 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)**

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

**EMPLOYER CONTRIBUTIONS**

<p>The employer (County 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.</p>	<p>(31453, 31453.5, 31453.6, 31454 31581)</p>
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**SERVICE RETIREMENT ALLOWANCE**

<b><u>Eligibility:</u></b>		
<b>General Members:</b>	<p>All members of Plans 1, 2, 4, and 5 are eligible to retire after meeting one of the following age and service requirements:</p> <ul style="list-style-type: none"> <li>• Age 50 with 10 years of service*;</li> <li>• Any age with 30 years of service; or</li> <li>• Age 70 regardless of service.</li> </ul> <p>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.</p> <p>Plan 7 members are eligible to retire at age 52 with 5 years of service.</p>	<p>(31672)</p> <p>(31496)</p>

**SERVICE RETIREMENT ALLOWANCE (Continued)**

**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. (31672.1)

*\* For part-time employees, age 50 is replaced with age 55.*

**Final 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)

**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:** (31676.14)  
 $1/60 \times \text{Final Compensation} \times \text{General age factor} \times \text{years of service.}$  (31676.1)

**Safety & Probation members:** (31664.1)  
 $3\% \times \text{Final Compensation} \times \text{Safety age factor} \times \text{years of service.}$  (31664.2)

**Plan 6:** **Safety & Probation members:** (31664)  
 $2\% \times \text{Final Compensation} \times \text{Safety age factor} \times \text{years of service.}$

**Plan 7:** **General members:**  
 $2\% \times \text{Final Compensation} \times \text{General age factor} \times \text{years of service.}$

**Safety and Probation members:**  
 $2\% \times \text{Final Compensation} \times \text{Safety age factor} \times \text{years of service.}$



**SERVICE RETIREMENT ALLOWANCE (Continued)**

**Plan 3:**                    **General members: (a)+(b)-(c) where:**                    (31496)  
 (a) 2% x Final Compensation x (Years of Service, (up to 35 years), plus  
 (b) 1% x Final 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).

**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%	
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%	

\* 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.

**SERVICE RETIREMENT ALLOWANCE (Continued)**

**Maximum Allowance:**

**All Plans** Allowance may not exceed 100% of final compensation.

**Except 3:**

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

**Unmodified Retirement Allowance (Normal Form):**

**All Plans** Life Annuity payable to retired member with 60% continuance to an eligible survivor (or eligible children). (31760.1)

**Except 3:**

**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**

<b><u>Eligibility:</u></b>		
<b>All Plans</b>	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)
<b>Except 3:</b>		
<b>Plan 3:</b>	Not available under Plan 3.	(31487)
<b><u>Monthly Allowance:</u></b>	Greater of (1) 50% of final compensation, and (2) the service retirement allowance, if eligible to retire.	(31727.4)
<b><u>Normal Form Of Payment:</u></b>	Life Annuity with 100% continuance to a surviving spouse (or eligible children).	(31760, 31786)

**RECIPROCAL SERVICE-CONNECTED DISABILITY ALLOWANCE**

<b><u>Eligibility:</u></b>		
<b>All Plans</b>	Any member regardless of age or years of service who leaves their accumulated contributions on deposit and receives a disability retirement allowance from CalPERS or another '37 Act system. The member must be eligible for a reciprocal benefit and the disability must be service-connected.	(31837)
<b>Except 3:</b>		
<b>Plan 3:</b>	Not available under Plan 3.	
<b><u>Monthly Allowance:</u></b>	Same as nonservice-connected disability, but in no case shall the allowance be greater than if all service was with one entity.	(31837, 31838.5)
<b><u>Normal Form of Payment:</u></b>	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)

**Monthly Allowance:** 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 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 compensation. (31727(a))

(b) 90% of 1/60th of Final Compensation x years of service projected to age 65, not to exceed 1/3 of Final 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)

**Normal Form Of Payment:** 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 Compensation. (31787)

**SERVICE-CONNECTED DEATH BENEFITS** (Continued)

**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 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 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)

**Other Plans:** All other Plans do not have a COLA bank. (31874.4)

## Appendix C Valuation Data and Schedules



Data on SamCERA membership as of June 30, 2016 was supplied to us by SamCERA staff. On the following table, Exhibit C-1, we present a summary of SamCERA membership at June 30, 2016 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, 2016**

	<b>Total Number</b>	<b>Annual Salary</b>	<b>Average Age</b>	<b>Average Monthly Salary</b>	<b>Average Credited Service</b>
<b>General Members</b>					
Plan 1	16	\$ 1,909,376	63.6	\$ 9,945	34.3
Plan 2	704	72,953,586	55.4	8,636	24.7
Plan 3	91	7,832,951	48.5	7,173	13.5
Plan 4	2,181	204,326,268	47.6	7,807	11.6
Plan 5	284	28,918,398	42.0	8,485	3.1
Plan 7	1,145	92,250,939	37.1	6,714	1.4
<b>Total</b>	<b>4,421</b>	<b>\$ 408,191,518</b>	<b>45.8</b>	<b>\$ 7,694</b>	<b>10.6</b>
<b>Safety Members</b>					
Plan 1	3	\$ 569,152	63.0	\$ 15,810	34.7
Plan 2	81	12,154,742	52.6	12,505	23.9
Plan 4	261	33,604,569	44.9	10,729	11.7
Plan 5	54	6,440,798	39.6	9,940	3.0
Plan 6	1	201,520	46.0	16,793	3.6
Plan 7	95	8,593,246	32.7	7,538	1.6
<b>Total</b>	<b>495</b>	<b>\$ 61,564,028</b>	<b>43.4</b>	<b>\$ 10,364</b>	<b>10.9</b>
<b>Probation Members</b>					
Plan 1	1	\$ 87,135	65.0	\$ 7,261	33.8
Plan 2	41	4,107,945	49.4	8,349	22.5
Plan 4	190	16,995,548	43.1	7,454	13.5
Plan 5	9	694,317	34.4	6,429	3.7
Plan 6	1	75,107	33.0	6,259	3.9
Plan 7	29	2,074,767	31.7	5,962	1.6
<b>Total</b>	<b>271</b>	<b>\$ 24,034,819</b>	<b>42.6</b>	<b>\$ 7,391</b>	<b>13.3</b>
<b>Grand Total</b>	<b>5,187</b>	<b>\$ 493,790,365</b>	<b>45.4</b>	<b>\$ 7,933</b>	<b>10.8</b>

Exhibit C-2 SamCERA Membership – Inactive Members as of June 30, 2016

	Number	Average Age
<b>General Members</b>		
Plan 1	11	62.3
Plan 2	371	53.6
Plan 3	108	52.8
Plan 4	769	45.4
Plan 5	35	39.8
Plan 7	74	38.2
Total	1,368	47.8
<b>Safety Members</b>		
Plan 1	1	65.0
Plan 2	19	49.9
Plan 4	41	45.5
Plan 5	6	33.3
Plan 7	2	28.5
Total	69	45.4
<b>Probation Members</b>		
Plan 1	-	-
Plan 2	11	47.4
Plan 4	38	42.3
Plan 5	-	-
Plan 6	-	-
Total	49	43.4
<b>Grand Total</b>	<b>1,486</b>	<b>47.5</b>

Exhibit C-3a SamCERA Membership – Retired Members as of June 30, 2016

	Number	Average Age	Monthly Allowance	Average Monthly Benefit
<b>General Members</b>				
Plan 1	1,612	78.7	\$ 5,314,552	\$ 3,297
Plan 2	1,783	68.4	4,992,055	2,800
Plan 3	143	69.9	132,816	929
Plan 4	561	64.2	1,095,184	1,952
Plan 5	1	61.0	128	128
<b>Total</b>	<b>4,100</b>	<b>71.9</b>	<b>\$ 11,534,735</b>	<b>\$ 2,813</b>
<b>Safety Members</b>				
Plan 1	266	73.0	\$ 1,810,916	\$ 6,808
Plan 2	167	60.7	1,190,403	7,128
Plan 4	50	56.8	190,887	3,818
<b>Total</b>	<b>483</b>	<b>67.1</b>	<b>\$ 3,192,205</b>	<b>\$ 6,609</b>
<b>Probation Members</b>				
Plan 1	68	72.8	\$ 369,565	\$ 5,435
Plan 2	77	60.5	364,763	4,737
Plan 4	20	63.0	55,177	2,759
<b>Total</b>	<b>165</b>	<b>65.9</b>	<b>\$ 789,505</b>	<b>\$ 4,785</b>
<b>Grand Total</b>	<b>4,748</b>	<b>71.2</b>	<b>\$ 15,516,445</b>	<b>\$ 3,268</b>

**Exhibit C-3b SamCERA Membership – Retired Members as of June 30, 2016  
 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>
<b>General Plans:</b>				
	Healthy	3,293	\$ 9,689,896	\$ 2,943
	Disabled	342	923,655	2,701
	Beneficiaries	465	921,184	1,981
	Total	4,100	\$ 11,534,735	\$ 2,813
<b>Safety Plans:</b>				
	Healthy	306	\$ 2,272,188	\$ 7,425
	Disabled	104	595,549	5,726
	Beneficiaries	73	324,469	4,445
	Total	483	\$ 3,192,205	\$ 6,609
<b>Probation Plans:</b>				
	Healthy	150	\$ 717,995	\$ 4,787
	Disabled	8	33,313	4,164
	Beneficiaries	7	38,196	5,457
	Total	165	\$ 789,505	\$ 4,785
<b>Grand Totals</b>				
	Healthy	3,749	\$ 12,680,080	\$ 3,382
	Disabled	454	1,552,516	3,420
	Beneficiaries	545	1,283,850	2,356
	Total	4,748	\$ 15,516,445	\$ 3,268

**Exhibit C-4 Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2016**  
**All Members**

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	36	15	0	0	0	0	0	0	0	51
25-29	126	201	23	0	0	0	0	0	0	350
30-34	128	310	131	44	2	0	0	0	0	615
35-39	72	180	194	175	39	1	0	0	0	661
40-44	50	137	162	244	164	20	0	0	0	777
45-49	62	94	146	185	208	82	22	1	0	800
50-54	45	78	102	118	162	90	90	24	0	709
55-59	14	75	97	114	125	72	90	44	9	640
60-64	12	32	77	84	65	40	46	32	14	402
65 & Over	5	13	42	41	25	17	16	11	12	182
<b>Total Count</b>	<b>550</b>	<b>1,135</b>	<b>974</b>	<b>1,005</b>	<b>790</b>	<b>322</b>	<b>264</b>	<b>112</b>	<b>35</b>	<b>5,187</b>

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	64,149	63,410	-	-	-	-	-	-	-	63,932
25-29	67,519	78,183	79,985	-	-	-	-	-	-	74,462
30-34	76,400	83,308	88,274	78,088	74,283	-	-	-	-	82,525
35-39	88,905	93,237	99,169	90,297	87,587	112,688	-	-	-	93,424
40-44	75,001	94,911	97,837	100,183	97,436	94,053	-	-	-	96,406
45-49	89,525	116,270	103,243	97,913	105,985	108,219	116,427	86,835	-	104,043
50-54	80,447	91,392	98,531	96,134	97,933	107,064	109,948	97,662	-	98,565
55-59	84,787	99,929	104,687	93,710	96,603	107,729	111,050	112,454	109,737	102,002
60-64	105,254	101,897	100,779	94,821	96,527	101,494	109,945	101,139	119,976	100,886
65 & Over	89,505	126,315	100,330	92,170	100,414	99,478	91,474	92,960	110,796	99,449
<b>Avg. Annual Compensation</b>	<b>77,846</b>	<b>90,513</b>	<b>98,300</b>	<b>95,092</b>	<b>99,132</b>	<b>105,624</b>	<b>109,743</b>	<b>103,908</b>	<b>114,196</b>	<b>95,198</b>



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**Exhibit C-4a Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2016**  
**General Members**

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	26	15	0	0	0	0	0	0	0	41
25-29	109	151	16	0	0	0	0	0	0	276
30-34	120	274	105	38	2	0	0	0	0	539
35-39	70	163	160	138	31	1	0	0	0	563
40-44	50	120	144	189	101	16	0	0	0	620
45-49	56	81	129	150	146	54	15	1	0	632
50-54	42	70	94	106	130	74	75	22	0	613
55-59	14	66	82	109	117	65	84	39	8	584
60-64	12	32	70	78	64	38	41	31	14	380
65 & Over	5	13	41	38	25	16	15	10	10	173
<b>Total Count</b>	504	985	841	846	616	264	230	103	32	4,421

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	59,728	63,410	-	-	-	-	-	-	-	61,075
25-29	65,325	75,157	70,592	-	-	-	-	-	-	71,010
30-34	75,587	82,571	83,991	73,856	74,283	-	-	-	-	80,647
35-39	88,958	92,668	97,930	86,614	80,133	112,688	-	-	-	91,563
40-44	75,001	92,780	96,506	98,280	90,664	88,941	-	-	-	93,444
45-49	86,912	113,780	100,435	94,151	101,062	96,995	99,017	86,835	-	99,251
50-54	77,458	88,860	95,037	95,667	93,828	98,919	102,815	94,444	-	94,379
55-59	84,787	97,040	98,127	93,025	95,646	105,108	108,651	106,837	106,807	99,226
60-64	105,254	101,897	96,752	93,600	96,084	100,605	104,095	99,003	119,976	98,911
65 & Over	89,505	126,315	99,896	91,237	100,414	98,236	87,953	93,542	102,989	98,376
<b>Avg. Annual Compensation</b>	76,862	89,245	95,503	92,795	95,118	99,698	103,957	100,347	111,375	92,330



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**Exhibit C-4b Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2016**  
**Safety Members**

<b>Count</b>	<b>Years of Service</b>										<b>Total Count</b>
	<b>Age</b>	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	
Under 25	8	0	0	0	0	0	0	0	0	0	8
25-29	14	38	5	0	0	0	0	0	0	0	57
30-34	7	26	16	4	0	0	0	0	0	0	53
35-39	1	13	20	13	6	0	0	0	0	0	53
40-44	0	15	13	23	27	2	0	0	0	0	80
45-49	5	11	15	21	33	16	5	0	0	0	106
50-54	3	7	8	6	19	12	9	1	0	0	65
55-59	0	9	15	3	4	6	6	4	1	0	48
60-64	0	0	7	4	1	1	4	1	0	0	18
65 & Over	0	0	1	2	0	1	1	0	2	0	7
<b>Total Count</b>	38	119	100	76	90	38	25	6	3	0	495

<b>Compensation</b>	<b>Years of Service</b>										<b>Average Comp.</b>
	<b>Age</b>	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35&Over	
Under 25	79,282	-	-	-	-	-	-	-	-	-	79,282
25-29	85,582	93,249	110,708	-	-	-	-	-	-	-	92,897
30-34	92,581	95,917	121,364	116,788	-	-	-	-	-	-	104,734
35-39	113,393	106,788	123,787	133,203	125,752	-	-	-	-	-	121,954
40-44	-	114,782	116,060	135,010	128,025	131,885	-	-	-	-	125,702
45-49	121,950	128,916	130,984	130,457	138,608	152,201	175,780	-	-	-	137,928
50-54	122,294	119,402	139,584	116,752	125,256	155,174	166,556	115,121	-	-	136,553
55-59	-	121,116	140,552	127,595	115,618	138,205	144,632	165,530	133,177	-	136,164
60-64	-	-	141,042	127,767	124,896	123,286	178,423	167,382	-	-	145,979
65 & Over	-	-	118,147	111,361	-	119,346	144,298	-	149,831	-	129,168
<b>Avg. Annual Compensation</b>	93,960	104,968	127,750	129,746	130,583	148,235	164,147	157,437	144,279	-	124,372



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**Exhibit C-4c Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2016**  
**Probation Members**

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	2	0	0	0	0	0	0	0	0	2
25-29	3	12	2	0	0	0	0	0	0	17
30-34	1	10	10	2	0	0	0	0	0	23
35-39	1	4	14	24	2	0	0	0	0	45
40-44	0	2	5	32	36	2	0	0	0	77
45-49	1	2	2	14	29	12	2	0	0	62
50-54	0	1	0	6	13	4	6	1	0	31
55-59	0	0	0	2	4	1	0	1	0	8
60-64	0	0	0	2	0	1	1	0	0	4
65 & Over	0	0	0	1	0	0	0	1	0	2
<b>Total Count</b>	8	31	33	83	84	20	9	3	0	271

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	61,098	-	-	-	-	-	-	-	-	61,098
25-29	62,965	68,545	78,315	-	-	-	-	-	-	68,710
30-34	60,761	70,736	80,301	81,099	-	-	-	-	-	75,362
35-39	60,761	72,346	78,167	88,234	88,622	-	-	-	-	83,097
40-44	-	73,737	88,785	86,396	93,494	97,124	-	-	-	89,820
45-49	73,751	147,555	76,313	89,397	93,647	100,082	98,623	-	-	94,952
50-54	-	72,540	-	83,766	99,050	113,409	114,210	151,006	-	101,699
55-59	-	-	-	80,235	105,556	95,280	-	119,234	-	99,651
60-64	-	-	-	76,549	-	113,480	75,893	-	-	85,618
65 & Over	-	-	-	89,232	-	-	-	87,135	-	88,184
<b>Avg. Annual Compensation</b>	63,296	75,303	80,319	86,764	94,865	102,881	106,489	119,125	-	88,689



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**Exhibit C-5 Distribution of Retired Members by Age and Retirement Year as of June 30, 2016  
 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	-	-	3	2	2	-	1	9	\$ 1,518
35-39	-	-	-	-	-	-	5	1	6	3,747
40-44	-	-	1	-	2	5	8	2	18	3,378
45-49	-	1	-	1	5	7	9	9	32	3,004
50-54	-	1	2	8	8	17	60	60	156	3,370
55-59	1	-	1	12	17	51	188	75	345	3,250
60-64	-	2	10	14	62	179	291	106	664	3,723
65-69	5	8	23	66	162	299	344	84	991	3,723
70-74	6	17	47	133	208	320	160	21	912	3,736
75-79	9	34	125	145	171	92	31	3	610	2,862
80-84	44	53	94	123	60	20	4	2	400	2,562
85-89	75	70	106	49	9	2	1	-	312	2,235
90-94	80	87	30	7	1	2	-	-	207	2,213
95-99	57	19	4	-	-	-	-	-	80	2,164
100 & Over	6	-	-	-	-	-	-	-	6	1,321
<b>Total Count</b>	<b>284</b>	<b>292</b>	<b>443</b>	<b>561</b>	<b>707</b>	<b>996</b>	<b>1,101</b>	<b>364</b>	<b>4,748</b>	
<b>Avg Monthly Benefit</b>	<b>\$ 1,783</b>	<b>\$ 2,303</b>	<b>\$ 2,338</b>	<b>\$ 2,534</b>	<b>\$ 3,270</b>	<b>\$ 4,164</b>	<b>\$ 3,676</b>	<b>\$ 3,777</b>		<b>\$ 3,268</b>



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**Exhibit C-5a Distribution of Retired Members by Age and Retirement Year as of June 30, 2016  
 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	-	-	3	2	2	-	-	8	\$ 1,093
35-39	-	-	-	-	-	-	3	1	4	2,888
40-44	-	-	1	-	2	3	7	1	14	2,737
45-49	-	1	-	-	3	5	8	4	21	2,535
50-54	-	1	1	6	4	10	41	30	93	1,859
55-59	1	-	1	11	12	37	145	62	269	2,179
60-64	-	1	7	12	55	142	256	101	574	3,180
65-69	4	4	15	56	122	264	324	81	870	3,276
70-74	3	10	35	89	155	302	153	19	766	3,357
75-79	5	24	102	114	153	90	26	3	517	2,423
80-84	39	48	90	120	56	20	4	2	379	2,431
85-89	69	67	105	48	9	2	1	-	301	2,142
90-94	74	86	30	7	1	2	-	-	200	2,136
95-99	55	19	4	-	-	-	-	-	78	2,092
100 & Over	6	-	-	-	-	-	-	-	6	1,321
<b>Total Count</b>	257	261	391	466	574	879	968	304	<b>4,100</b>	
<b>Avg Monthly Benefit</b>	\$ 1,579	\$ 2,110	\$ 2,002	\$ 1,978	\$ 2,622	\$ 3,690	\$ 3,212	\$ 3,343		\$ 2,813



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**Exhibit C-5b Distribution of Retired Members by Age and Retirement Year as of June 30, 2016  
 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	-	-	-	-	-	-	-	1	1	\$ 4,917
35-39	-	-	-	-	-	-	1	-	1	8,230
40-44	-	-	-	-	-	2	1	1	4	5,619
45-49	-	-	-	1	2	2	1	-	6	3,428
50-54	-	-	1	2	3	7	11	20	44	5,890
55-59	-	-	-	1	3	11	32	8	55	8,000
60-64	-	1	3	2	6	29	19	5	65	7,973
65-69	1	4	8	8	37	25	14	3	100	7,251
70-74	3	7	12	34	38	8	3	2	107	6,029
75-79	4	10	21	23	6	1	2	-	67	5,724
80-84	5	5	4	-	-	-	-	-	14	5,256
85-89	6	3	1	-	-	-	-	-	10	5,051
90-94	6	1	-	-	-	-	-	-	7	4,404
95-99	2	-	-	-	-	-	-	-	2	4,971
100 & Over	-	-	-	-	-	-	-	-	-	-
<b>Total Count</b>	27	31	50	71	95	85	84	40	<b>483</b>	
<b>Avg Monthly Benefit</b>	\$ 3,720	\$ 3,926	\$ 4,715	\$ 5,378	\$ 7,004	\$ 8,782	\$ 8,093	\$ 6,520		\$ 6,609



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**Exhibit C-5c Distribution of Retired Members by Age and Retirement Year as of June 30, 2016  
 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	-	-	-	-	-	-	1	-	1	2,700
40-44	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	5	5	4,464
50-54	-	-	-	-	1	-	8	10	19	4,931
55-59	-	-	-	-	2	3	11	5	21	4,533
60-64	-	-	-	-	1	8	16	-	25	5,151
65-69	-	-	-	2	3	10	6	-	21	5,455
70-74	-	-	-	10	15	10	4	-	39	4,900
75-79	-	-	2	8	12	1	3	-	26	4,212
80-84	-	-	-	3	4	-	-	-	7	4,242
85-89	-	-	-	1	-	-	-	-	1	1,966
90-94	-	-	-	-	-	-	-	-	-	-
95-99	-	-	-	-	-	-	-	-	-	-
100 & Over	-	-	-	-	-	-	-	-	-	-
<b>Total Count</b>	-	-	2	24	38	32	49	20	<b>165</b>	
<b>Avg Monthly Benefit</b>	\$ -	\$ -	\$ 8,641	\$ 4,922	\$ 3,721	\$ 4,901	\$ 5,267	\$ 4,889		\$ 4,785



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## 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 2017-2018 fiscal year, Plan 7 member contribution rates are:

- General Plan 7 members: 8.14%
- SMCM&VCD Plan 7 members: 8.15%
- Safety Plan 7 members: 13.90%
- Probation Plan 7 members: 13.38%

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 <sup>(1)</sup>	Basic Member Rates				
	General & SMCM&VCD			General	SMCM&VCD
	Plans 1&2	Plan 4	Plan 5	Plan 7	Plan 7
16	5.50%	5.30%	4.54%	8.14%	8.15%
17	5.60%	5.40%	4.63%	8.14%	8.15%
18	5.71%	5.50%	4.71%	8.14%	8.15%
19	5.81%	5.60%	4.80%	8.14%	8.15%
20	5.92%	5.71%	4.89%	8.14%	8.15%
21	6.03%	5.82%	4.99%	8.14%	8.15%
22	6.14%	5.92%	5.08%	8.14%	8.15%
23	6.26%	6.03%	5.17%	8.14%	8.15%
24	6.37%	6.14%	5.27%	8.14%	8.15%
25	6.49%	6.26%	5.37%	8.14%	8.15%
26	6.61%	6.37%	5.47%	8.14%	8.15%
27	6.73%	6.49%	5.57%	8.14%	8.15%
28	6.85%	6.61%	5.67%	8.14%	8.15%
29	6.98%	6.73%	5.78%	8.14%	8.15%
30	7.11%	6.85%	5.89%	8.14%	8.15%
31	7.24%	6.98%	5.99%	8.14%	8.15%
32	7.37%	7.11%	6.10%	8.14%	8.15%
33	7.50%	7.24%	6.22%	8.14%	8.15%
34	7.64%	7.37%	6.33%	8.14%	8.15%
35	7.78%	7.50%	6.45%	8.14%	8.15%
36	7.93%	7.64%	6.56%	8.14%	8.15%
37	8.07%	7.78%	6.68%	8.14%	8.15%
38	8.22%	7.93%	6.81%	8.14%	8.15%
39	8.38%	8.08%	6.93%	8.14%	8.15%
40	8.54%	8.23%	7.06%	8.14%	8.15%
41	8.70%	8.38%	7.19%	8.14%	8.15%
42	8.87%	8.54%	7.32%	8.14%	8.15%
43	9.03%	8.69%	7.46%	8.14%	8.15%
44	9.20%	8.83%	7.60%	8.14%	8.15%
45	9.36%	8.98%	7.74%	8.14%	8.15%
46	9.52%	9.11%	7.89%	8.14%	8.15%
47	9.67%	9.24%	8.03%	8.14%	8.15%
48	9.81%	9.35%	8.17%	8.14%	8.15%
49	9.94%	9.45%	8.31%	8.14%	8.15%
50	10.06%	9.53%	8.44%	8.14%	8.15%
51	10.16%	9.57%	8.57%	8.14%	8.15%
52	10.24%	9.57%	8.69%	8.14%	8.15%
53	10.27%	9.87%	8.80%	8.14%	8.15%
54	10.27%	10.21%	8.89%	8.14%	8.15%
55	10.27%	10.21%	8.96%	8.14%	8.15%
56	10.27%	10.21%	9.00%	8.14%	8.15%
57	10.27%	10.21%	9.00%	8.14%	8.15%
58	10.27%	10.21%	9.29%	8.14%	8.15%
59	10.27%	10.21%	9.60%	8.14%	8.15%
60	10.27%	10.21%	9.60%	8.14%	8.15%

1. For General and SMCM&VCD members (except plan 5 members) entering after age 55, the rate equals the rate at age 55. For General and SMCM&VCD plan 5 members entering after age 60, the rate equals the rate at age 60.



Exhibit D-2 Safety/Probation Member Contribution Rates

Entry Age <sup>(1)</sup>	Basic Member Rates			
	Safety & Probation		Safety	Probation
	Plans 1&2	Plans 4&5&6	Plan 7	Plan 7
16	7.50%	7.23%	13.90%	13.38%
17	7.64%	7.37%	13.90%	13.38%
18	7.78%	7.50%	13.90%	13.38%
19	7.93%	7.64%	13.90%	13.38%
20	8.07%	7.78%	13.90%	13.38%
21	8.22%	7.93%	13.90%	13.38%
22	8.37%	8.07%	13.90%	13.38%
23	8.52%	8.22%	13.90%	13.38%
24	8.68%	8.37%	13.90%	13.38%
25	8.84%	8.52%	13.90%	13.38%
26	9.00%	8.68%	13.90%	13.38%
27	9.17%	8.84%	13.90%	13.38%
28	9.33%	9.00%	13.90%	13.38%
29	9.50%	9.16%	13.90%	13.38%
30	9.68%	9.33%	13.90%	13.38%
31	9.86%	9.50%	13.90%	13.38%
32	10.04%	9.68%	13.90%	13.38%
33	10.23%	9.86%	13.90%	13.38%
34	10.42%	10.05%	13.90%	13.38%
35	10.62%	10.24%	13.90%	13.38%
36	10.82%	10.43%	13.90%	13.38%
37	11.03%	10.62%	13.90%	13.38%
38	11.23%	10.80%	13.90%	13.38%
39	11.44%	10.99%	13.90%	13.38%
40	11.64%	11.16%	13.90%	13.38%
41	11.84%	11.33%	13.90%	13.38%
42	12.03%	11.49%	13.90%	13.38%
43	12.20%	11.63%	13.90%	13.38%
44	12.36%	11.75%	13.90%	13.38%
45	12.51%	11.85%	13.90%	13.38%
46	12.64%	11.90%	13.90%	13.38%
47	12.73%	11.90%	13.90%	13.38%
48	12.77%	12.28%	13.90%	13.38%
49	12.77%	12.69%	13.90%	13.38%
50	12.77%	12.69%	13.90%	13.38%

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 (including SMCM&VCD)

Entry Age <sup>(1)</sup>	50% Member COLA Rates			
	Plan 1	Plan 2	Plan 4	Plan 5
16	1.95%	1.89%	1.24%	1.03%
17	1.99%	1.92%	1.27%	1.05%
18	2.02%	1.96%	1.29%	1.07%
19	2.06%	1.99%	1.31%	1.09%
20	2.10%	2.03%	1.34%	1.11%
21	2.14%	2.07%	1.37%	1.13%
22	2.18%	2.11%	1.39%	1.15%
23	2.22%	2.15%	1.41%	1.17%
24	2.26%	2.19%	1.44%	1.20%
25	2.30%	2.23%	1.47%	1.22%
26	2.34%	2.27%	1.49%	1.24%
27	2.39%	2.31%	1.52%	1.26%
28	2.43%	2.35%	1.55%	1.29%
29	2.47%	2.40%	1.58%	1.31%
30	2.52%	2.44%	1.61%	1.34%
31	2.57%	2.48%	1.64%	1.36%
32	2.61%	2.53%	1.67%	1.38%
33	2.66%	2.57%	1.70%	1.41%
34	2.71%	2.62%	1.73%	1.44%
35	2.76%	2.67%	1.76%	1.46%
36	2.81%	2.72%	1.79%	1.49%
37	2.86%	2.77%	1.83%	1.52%
38	2.91%	2.82%	1.86%	1.55%
39	2.97%	2.88%	1.90%	1.57%
40	3.03%	2.93%	1.93%	1.60%
41	3.08%	2.99%	1.97%	1.63%
42	3.14%	3.04%	2.00%	1.66%
43	3.20%	3.10%	2.04%	1.69%
44	3.26%	3.16%	2.07%	1.72%
45	3.32%	3.21%	2.11%	1.76%
46	3.37%	3.27%	2.14%	1.79%
47	3.43%	3.32%	2.17%	1.82%
48	3.48%	3.37%	2.19%	1.85%
49	3.52%	3.41%	2.22%	1.89%
50	3.57%	3.45%	2.24%	1.92%
51	3.60%	3.49%	2.25%	1.94%
52	3.63%	3.51%	2.25%	1.97%
53	3.64%	3.52%	2.32%	2.00%
54	3.64%	3.52%	2.40%	2.02%
55	3.64%	3.52%	2.40%	2.03%
56	3.64%	3.52%	2.40%	2.04%
57	3.64%	3.52%	2.40%	2.04%
58	3.64%	3.52%	2.40%	2.11%
59	3.64%	3.52%	2.40%	2.18%
60	3.64%	3.52%	2.40%	2.18%

1. For County General members (except plan 5 members) entering after age 55, the rate equals the rate at age 55. For County General plan 5 members entering after age 60, the rate equals the rate at age 60.

Exhibit D-4 Safety Member Contribution Rates

Entry Age <sup>(1)</sup>	50% Member COLA Rates				
	Plan 1	Plan 2	Plan 4	Plan 5	Plan 6
16	4.77%	4.60%	2.53%	2.27%	2.07%
17	4.86%	4.68%	2.58%	2.31%	2.11%
18	4.95%	4.77%	2.62%	2.35%	2.15%
19	5.04%	4.86%	2.67%	2.40%	2.19%
20	5.13%	4.95%	2.72%	2.44%	2.23%
21	5.23%	5.04%	2.77%	2.49%	2.27%
22	5.32%	5.13%	2.82%	2.53%	2.31%
23	5.42%	5.22%	2.87%	2.58%	2.36%
24	5.52%	5.32%	2.93%	2.63%	2.40%
25	5.62%	5.42%	2.98%	2.67%	2.44%
26	5.72%	5.52%	3.03%	2.72%	2.49%
27	5.83%	5.62%	3.09%	2.77%	2.53%
28	5.93%	5.72%	3.15%	2.83%	2.58%
29	6.04%	5.82%	3.20%	2.88%	2.63%
30	6.16%	5.93%	3.26%	2.93%	2.67%
31	6.27%	6.04%	3.32%	2.98%	2.72%
32	6.38%	6.15%	3.38%	3.04%	2.78%
33	6.51%	6.27%	3.45%	3.10%	2.83%
34	6.63%	6.39%	3.51%	3.15%	2.88%
35	6.75%	6.51%	3.58%	3.21%	2.94%
36	6.88%	6.63%	3.65%	3.27%	2.99%
37	7.01%	6.76%	3.71%	3.33%	3.04%
38	7.14%	6.88%	3.77%	3.39%	3.10%
39	7.27%	7.01%	3.84%	3.45%	3.15%
40	7.40%	7.13%	3.90%	3.50%	3.20%
41	7.53%	7.26%	3.96%	3.56%	3.25%
42	7.65%	7.37%	4.02%	3.61%	3.29%
43	7.76%	7.48%	4.06%	3.65%	3.33%
44	7.86%	7.57%	4.11%	3.69%	3.37%
45	7.96%	7.67%	4.14%	3.72%	3.40%
46	8.04%	7.75%	4.16%	3.74%	3.41%
47	8.10%	7.80%	4.16%	3.74%	3.41%
48	8.12%	7.83%	4.29%	3.85%	3.52%
49	8.12%	7.83%	4.44%	3.98%	3.64%
50	8.12%	7.83%	4.44%	3.98%	3.64%

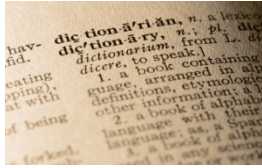
1. For Safety members entering after age 50, the rate equals the rate at age 50.

Exhibit D-6 Probation Member Contribution Rates

Entry Age <sup>(1)</sup>	50% Member COLA Rates				
	Plan 1	Plan 2	Plan 4	Plan 5	Plan 6
16	4.62%	4.45%	2.52%	2.25%	2.00%
17	4.71%	4.53%	2.57%	2.29%	2.04%
18	4.79%	4.62%	2.61%	2.33%	2.07%
19	4.88%	4.71%	2.66%	2.37%	2.11%
20	4.97%	4.79%	2.71%	2.42%	2.15%
21	5.06%	4.88%	2.76%	2.46%	2.19%
22	5.16%	4.97%	2.81%	2.51%	2.23%
23	5.25%	5.06%	2.86%	2.55%	2.27%
24	5.35%	5.15%	2.92%	2.60%	2.31%
25	5.44%	5.25%	2.97%	2.65%	2.35%
26	5.54%	5.34%	3.02%	2.70%	2.40%
27	5.65%	5.44%	3.08%	2.75%	2.44%
28	5.75%	5.54%	3.14%	2.80%	2.49%
29	5.85%	5.64%	3.19%	2.85%	2.53%
30	5.96%	5.75%	3.25%	2.90%	2.58%
31	6.07%	5.85%	3.31%	2.95%	2.62%
32	6.18%	5.96%	3.37%	3.01%	2.67%
33	6.30%	6.07%	3.44%	3.06%	2.72%
34	6.42%	6.18%	3.50%	3.12%	2.78%
35	6.54%	6.30%	3.57%	3.18%	2.83%
36	6.66%	6.42%	3.63%	3.24%	2.88%
37	6.79%	6.55%	3.70%	3.30%	2.93%
38	6.92%	6.67%	3.76%	3.36%	2.98%
39	7.05%	6.79%	3.83%	3.41%	3.04%
40	7.17%	6.91%	3.89%	3.47%	3.08%
41	7.29%	7.03%	3.95%	3.52%	3.13%
42	7.41%	7.14%	4.00%	3.57%	3.17%
43	7.51%	7.24%	4.05%	3.61%	3.21%
44	7.61%	7.34%	4.09%	3.65%	3.25%
45	7.70%	7.42%	4.13%	3.68%	3.27%
46	7.78%	7.50%	4.15%	3.70%	3.29%
47	7.84%	7.56%	4.15%	3.70%	3.29%
48	7.87%	7.58%	4.28%	3.82%	3.39%
49	7.87%	7.58%	4.42%	3.94%	3.51%
50	7.87%	7.58%	4.42%	3.94%	3.51%

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.

<b>District Supplementary Contributions Account (DSCA) Reserve</b>	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.
<b>Employer Reserve</b>	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.
<b>Entry Age Actuarial Cost Method</b>	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.
<b>Funded Ratio</b>	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.
<b>Member Reserve</b>	The accumulation of member contributions. Additions include member contributions and related earnings. Deductions include annuity payments to retirees and refunds to members.
<b>Non-Valuation Reserves</b>	Reserves excluded from the calculation of contribution rates.
<b>Normal Cost</b>	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.
<b>Plan Year</b>	A 12-month period beginning July 1 and ending June 30.
<b>Projected Benefits</b>	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.
<b>Unfunded Actuarial Accrued Liability</b>	The excess, if any, of the Actuarial Accrued Liability over the Actuarial Value of Assets.
<b>Valuation Date</b>	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.
<b>Valuation Reserves</b>	All reserves excluding the Non-Valuation Reserves.