San Mateo County Employees' Retirement Association

Investigation of Experience
July 1, 2011 – April 30, 2014

July 21, 2014

By

Nick J. Collier

Associate, Society of Actuaries
Enrolled Actuary
Member, American Academy of Actuaries

and

Craig J. Glyde

Associate, Society of Actuaries
Enrolled Actuary
Member, American Academy of Actuaries

1301 Fifth Avenue
Suite 3800
Seattle, WA 98101-2605
USA

Tel +1 206 624 7940
Fax +1 206 623 3485

milliman.com

July 21, 2014

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

Dear Members of the Board:

It is a pleasure to submit this report of our investigation of the experience of the San Mateo County Employees' Retirement Association for the period July 1, 2011 through April 30, 2014. The results of this investigation are the basis for the actuarial assumptions and methods to be used in the actuarial valuation to be performed as of June 30, 2014.

The purpose of this report is to communicate the results of our review of the actuarial methods and the economic and demographic assumptions to be used in the completion of the upcoming valuation. Several of our recommendations represent changes from the prior methods or assumptions and are designed to better anticipate the emerging experience of SamCERA.

We have provided financial information showing the estimated impact of the recommended assumptions, if they had been reflected in the June 30, 2013 actuarial valuation. We believe the recommended assumptions provide a reasonable estimate of anticipated experience affecting SamCERA. Nevertheless, the emerging costs will vary from those presented in this report to the extent that actual experience differs from that projected by the actuarial assumptions. Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as the following:

- Plan experience differing from the actuarial assumptions,
- Future changes in the actuarial assumptions,
- Increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as potential additional contribution requirements due to changes in the plan's funded status), and
- Changes in the plan provisions or accounting standards.

Due to the scope of this assignment, we did not perform an analysis of the potential range of such measurements.

In preparing this report, we relied without audit on information (some oral and some in writing) supplied by SamCERA's staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. In our examination, after discussion with SamCERA and certain adjustments, we have found the data to be reasonably consistent and comparable with data used for other purposes. Since the experience study results are

dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our determinations might need to be revised.

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

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

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

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

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

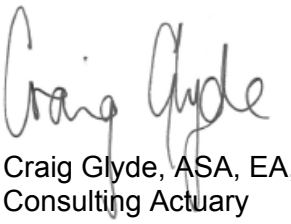
On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

We would like to acknowledge the help in the preparation of the data for this investigation given by the SamCERA staff. We look forward to our discussions and the opportunity to respond to your questions and comments at your next meeting.

We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Nick J. Collier, ASA, EA, MAAA
Consulting Actuary



Craig Glyde, ASA, EA, MAAA
Consulting Actuary

NJC/CJG/fyb

San Mateo County Employees' Retirement Association
Investigation of Experience (2011-2014)

Table of Contents

San Mateo County Employees' Retirement Association
Investigation of Experience (2011-2014)

Section 1: Executive Summary

Overview

Any actuarial valuation is based on certain underlying assumptions. Determining the adequacy of the contribution rate is highly dependent on the assumptions that the actuary uses to project the future benefit payments and then to discount the value of future benefits to determine the present values. Thus, the assumptions are critical in assisting the system in adequately pre-funding for the benefits prior to retirement.

To assess the reasonableness of the assumptions used in the valuation, they should be studied regularly. This process is called an investigation of experience (or experience study).

Summary of Results

This section describes the key findings of this investigation of experience of the San Mateo County Employees' Retirement Association (SamCERA) for the period July 1, 2011 through April 30, 2014. We are recommending several changes to the demographic assumptions. Although the demographic changes are relatively minor, reflecting these changes will have some immediate financial impact, as discussed at the end of this section. We previously recommended economic assumptions that were adopted at the June 2014 Board of retirement meeting. We will refer to our recommended assumptions, including the recently adopted economic assumptions, as the "proposed" assumptions.

The table on the following page shows a summary of our recommendations for all assumptions and methods studied.

Assumption	Recommendation
Inflation	Decrease by 0.25% (previously adopted)
Investment Return	Decrease by 0.25% (previously adopted)
General Wage Growth	Decrease by 0.25% (previously adopted)
Payroll Increase Assumption	Decrease by 0.25% (previously adopted)
Funding Method	No Change
Merit Salary Scale	No Change
Death while Active	No Change
Retirement	Small Changes
Disability	Increase rates
Termination	No Change
Probability of Refund	No Change
Mortality	No Change
Prob. Elig. Survivor	Decrease probability for males
Reciprocity	No Change

Summary (continued)

If adopted, the new assumptions would result in an increase in the County contribution rate and a decrease in the Funded Ratio calculated in the next valuation, as compared to the current assumptions. Almost all of the expected increase would be due to the new economic assumptions which were recently adopted. A further discussion is included in the Financial Impact section at the end of the Executive Summary.

Economic Assumptions

Section 2 discusses the economic assumptions: price inflation, general wage growth (includes price inflation and productivity) and the investment return assumption. As with virtually all actuarial assumptions, there is not one right answer; however, we do believe there is evidence that the lower investment return assumption recently adopted by the Board is appropriate for SamCERA. The set of economic assumptions we are recommending be used for the next valuation include a reduction in the investment return assumption to 7.25%, as well as a 0.25% reduction in the price and wage inflation.

The most compelling reason to lower the investment return assumption is the lower expectation for future investment returns. There is only about a 45% probability that the currently scheduled 7.50% assumption is achieved over the next 10 years. Note that these probabilities are based on an average of a number of investment consultants' capital market assumptions, which predict an expected return based on SamCERA's asset allocation of approximately 7.00% over a 10-year time horizon. SamCERA's investment consultant (SIS) predicts a slightly higher return of 7.30% (7.50% prior to netting out administrative expenses).

The investment return assumption used in the prior valuation still falls in the best-estimate range under the current actuarial standards of practice; however, since our analysis shows there is less than a 50% probability that a 7.50% investment return (net of administrative and investment expenses) will be achieved over the next 10 years, we recommend that the investment return assumption be lowered to 7.25%. It should also be noted that a new actuarial standard of practice relating to economic assumptions will be applicable for SamCERA's June 30, 2015 actuarial valuation. This standard includes a more restrictive range for a reasonable assumption that 7.50% may not meet.

As detailed in Section 2, the expectation is for lower price inflation in both the short and long term. In particular, there has been a sustained period of low inflation: 2.4% average increase over the 20-years ending in 2013. Looking forward, there is a continued expectation of low price inflation, as evidenced by the capital market assumptions used by investment consultants and the current (July 2014) implied inflation expectation of approximately 2.4% based on the difference in yield between 30-year TIPS and a regular 30-year treasury bond.

Economic Assumptions (continued)

The recommended price inflation assumption is 3.00% (down from 3.25% in the prior valuation). The recently adopted economic assumptions also include a corresponding reduction in the wage inflation assumption to 3.50%, as there is a high correlation between price and wage inflation.

We are not recommending a change to the assumed cost-of-living adjustment (COLA) for retiree benefits, except for Plan 1 General and Safety members where the COLA assumption is equal to the inflation assumption, and would therefore be reduced by 0.25%.

Actuarial Methods and Miscellaneous Assumptions

Section 3 discusses the actuarial methods and other miscellaneous assumptions used in the valuation and administration of the system.

We are recommending minor changes in this area as follows:

- The assumptions for probability of eligible survivor, and age difference between member and survivor should be slightly revised.
- A change to the member contribution rates should be made to reflect the recently adopted economic assumptions. The impact of this is discussed later in this section.
- A change to the factors used for determining optional benefits and service purchase costs, as well as the Plan 3 early retirement age factors, should be considered to reflect the recently adopted economic assumptions.

Demographic Assumptions

Sections 4-9 discuss the demographic assumptions. Unlike the economic assumptions, which are more global in nature, the demographic assumptions are based heavily on recent SamCERA experience. Demographic assumptions are used to predict future member behavior (e.g., when will a member retire? How long will the member live?).

Based on the results of this study, we are recommending changes to the retirement assumption – minor changes to service retirement and somewhat larger changes to disability retirement.

From a cost perspective, the most significant demographic change that we are recommending is the increase in the disability rates, although the impact is still expected to be relatively minor. The financial impact is discussed at the end of this section.

Demographic Assumptions (continued)

When reviewing the sections on demographic assumptions, please note the following:

- Our analysis uses the Actual-to-Expected (A/E) ratio to measure how well the current assumptions fit actual experience. For example, if the service retirement A/E is 80%, it indicates that there were 20% fewer service retirements than expected, and that we should consider decreasing the assumption. By decreasing the expected rates, this results in a higher ratio, in this case closer to 100%.
- Due to scheduling considerations, the data provided to us by SamCERA was as of April 30, 2014. This was necessary to complete both the experience investigation and the valuation in time for inclusion in the Comprehensive Annual Financial Report (CAFR). Thus, the study period was two years and 10 months instead of the three years implied by the "triennial" description. We do not believe this two-month difference has a material impact on the results.
- When we refer to "Safety" members in this report, we are including both Safety and Probation members.
- When we refer to the "proposed" assumptions, these are the assumptions that we are recommending. These include the recently adopted economic assumptions. The current assumptions are also referred to as the "expected" assumptions.
- For many of the assumptions, we show detailed graphs of our analysis showing the actual experience for the study (blue bar), the actual experience from the prior study (green bar), the current assumption (red line), and the new proposed assumptions.

The recommended rates are shown in detail in Appendix A.

Individual Salary Increases due to Promotion and Longevity (Merit)

Section 4 discusses the individual salary increases due to promotion and longevity – the merit component of salaries. Overall, the results of our last two salary studies show increases somewhat lower than what the current rates predicted. We are not recommending any changes to this assumption. See Section 4 for more details on this analysis.

Mortality

The mortality assumption is used to predict the life expectancy of both members currently in pay status (referred to as retired mortality) and those expected to receive a benefit in the future (referred to as active mortality). Due to a lack of statistically significant experience data for deaths from active status, the assumptions for active mortality are set to be consistent with the assumptions for retired mortality.

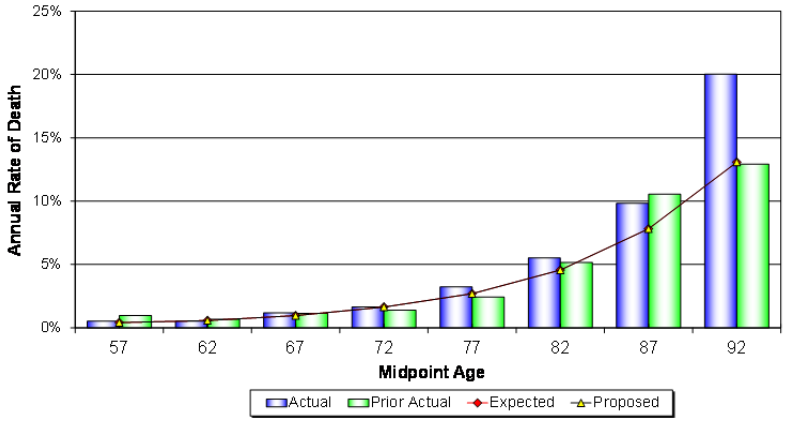
Mortality (continued)

Overall, the actual number of deaths for the current group of retirees (both service and disabled) was greater than that predicted by the assumptions. This is indicated by an actual-to-expected (A/E) ratio of 127%. That is, there were 27% more deaths than the current assumptions would have predicted.

Generally, an A/E ratio of 127% would lead us to recommend a change in the assumption. In this case, the change would be to recommend a mortality table that assumes higher rates of mortality. However, this experience is contrary to the wider experience of mortality trends in recent years, and the widely held belief that these trends (and mortality improvements) will continue. We also believe that some margin should be built into mortality assumptions to account for the trend of increasing life expectancies.

For these reasons, we believe that this period's experience may not be reflective a long-term trend in mortality rates, and we recommend no change to the mortality assumption at this time. However, we will be monitoring this closely and will consider it again at the next investigation of experience in 2017.

The following graph shows rates of mortality in current and prior study periods, as well as the expected rates of mortality for all service and disabled retirees. The expected rates are represented by the yellow line. Since we are not recommending a change in the rates, the yellow and red lines are the same. Note that the blue bars (actual rates from the current) study tend to be taller than the green bars (actual rates from the prior study). This indicates that there was generally an increase in the mortality rates since the prior study.



Under the current assumptions, the Actual-to-Expected (A/E) ratio is 130% for all service retirees, indicating that there were more deaths than predicted. The A/E ratio for disabled retirees is 100%, indicating that there was exactly the expected number of deaths. Further analysis is shown in Section 5 of this report.

Mortality (continued)

For active mortality (the probability of death while actively employed), we are recommending no change to the current assumption. The current assumption uses a standard mortality table for active employees, with adjustments similar to those made to the mortality for SamCERA's retired members.

Service Retirement

Overall, the actual number of service retirements was less than what the assumptions predicted for both General members and Safety/Probation members. The following chart shows the results for all members eligible for retirement.

Service Retirements					
Class	**Actual**	**Expected**	**Act / Exp**	**Proposed**	**Act / Prop**
General	366	405	90%	404	91%
Safety	41	52	79%	48	85%
Total	407	457	89%	452	90%

Retirement and termination rates may be influenced by recessionary economic environments. While we do believe that some of the reduction in retirement rates may be due in part to a longer-term trend, it is likely that these rates are being temporarily influenced by the recent recession. We are therefore recommending only minor changes to more closely match the assumption to the incidence of service retirement at specific ages. Further analysis is shown in Section 6 of this report.

Disability Retirement

Overall, the actual number of disability retirements was greater in total than the assumptions predicted. It is our understanding that this is primarily related to the reduced time for the processing of disabled retirements. The following chart shows the results for General and Safety disability retirements.

Disability Retirements					
Class	**Actual**	**Expected**	**Act / Exp**	**Proposed**	**Act / Prop**
General	55	30	183%	45	122%
Safety	11	8	138%	10	110%
Total	66	38	174%	55	120%

As indicated by the increased number of expected disabilities under the proposed rates (55 proposed versus 38 expected under the current assumptions), we are recommending higher rates of disability retirement for General and Safety members. Further analysis is shown in Section 7 of this report.

Termination

The actual number of terminations for both General and Safety/Probation members was higher than the assumptions predicted. The following chart shows the results for the two groups.

Termination			
Class	**Actual**	**Expected**	**Act / Exp**
General	733	555	132%
Safety	43	41	105%
Total	776	596	130%

During the study period, a private entity took over a county long-term care facility. This resulted in approximately 200 County employees going to work for the private entity, and therefore showing up as terminations in this study. This is likely the cause of the actual terminations exceeding the expected number. We believe the current rates are appropriate and are recommending no change to the assumption. Further analysis is shown in Section 8 of this report.

Probability of Refund upon Vested Termination

The actual number of refunds for vested members at termination was slightly lower than expected for General members, and slightly higher than expected for Safety members.

Probability of Refund			
Group	**Actual**	**Expected**	**Act / Exp**
General Male/Female	149	167	89%
Safety Male/Female	10	9	111%

We are recommending no change to the rates of refund. Further analysis is shown in Section 9 of this report.

Financial Impact of the Recommended Assumptions

The following exhibit shows the expected financial impact the proposed changes would have on SamCERA's funding. Note that the proposed changes would increase the expected County contribution rate and decrease the Funded Ratio of the system, primarily due to the recently adopted economic assumptions.

The financial impact was evaluated by performing additional valuations with the June 30, 2013 valuation data and reflecting the proposed assumption changes. The actual financial impact will vary somewhat for the June 30, 2014 valuation due to year-to-year changes in the member population. In particular, although the estimated total contribution rate based on the June 30, 2013 valuation with the proposed assumptions is greater than 38.00% (the rate the County is currently committed to pay over the next several years under the Memorandum of Understanding), the projected rate for the June 30, 2014 valuation would still be expected to be less than 38.00% with the new assumptions due to the scheduled recognition of deferred asset gains under the smoothing method.

	Actuarial Accrued Liability	Employer Normal Cost Rate	UAAL Rate	Total Emp. Contribution Rate
June 30, 2013 Valuation	**$ 3,572,750**	**11.19%**	**26.28%**	**37.47%**
Demographic Assumptions				
Rates of Service Retirement	$ (1,803)	-0.02%	-0.04%	-0.06%
Eligible survivor assumptions	$ (1,579)	-0.03%	-0.04%	-0.07%
Rates of Disability Retirement	$ (740)	0.23%	0.00%	0.23%
Subtotal Demographic Change	$ (4,122)	0.18%	-0.08%	0.10%
June 30, 2013 Valuation with Changes	**$ 3,568,628**	**11.37%**	**26.20%**	**37.57%**
Proposed Economic Changes				
7.25% Interest, 3.00% CPI	$ 63,467	0.45%	1.50%	1.95%
Combined Change (Demographic + Econ.)	$ 59,345	0.63%	1.42%	2.05%
June 30, 2013 Valuation with Changes	**$ 3,632,095**	**11.82%**	**27.70%**	**39.52%**

Impact of the Recommended Assumptions on Member Contribution Rates

If adopted, the recommended assumptions would result in an increase in the member contribution rates. The following are sample member rates for entry age 35 based on the 2013 valuation, but using the recommended assumptions for 2014.

Sample Changes in Member Basic Rates due to Proposed Economic Assumption Changes (Based on June 30, 2013 Actuarial Valuation*)

	Entry Age	Current	Proposed	Increase
General Members - County				
Plans 1 & 2	35	7.42%	7.60%	0.18%
Plan 4	35	7.12%	7.31%	0.19%
Plan 5	35	6.14%	6.29%	0.15%
Plan 7	35	7.58%	7.93%	0.35%
PDA Members (Reflects Employer Pick-up)				
Plans 1 & 2	35	8.08%	8.28%	0.20%
Plans 4, 5 & 6	35	7.75%	7.96%	0.21%
Plan 7	35	13.78%	14.31%	0.53%
Probation Managers				
Plans 1 & 2	35	10.09%	10.35%	0.26%
Plans 4, 5 & 6	35	9.68%	9.95%	0.27%
Plan 7	35	13.78%	14.31%	0.53%
Safety Members				
Plans 1 & 2	35	10.09%	10.35%	0.26%
Plans 4, 5 & 6	35	9.68%	9.95%	0.27%
Plan 7	35	14.28%	14.82%	0.54%

** Final FYB 2015 member rates will be determined based on the June 30, 2014 valuation.*

We show basic member rates for Plans other than Plan 7 due to the complications of various cost share and COLA share member rate permutations. Plan 7 rates are sample total member rates. The final member rates will be determined with the 2014 valuation.

Revised Assumptions and Methods

Appendix A illustrates the Summary of Actuarial Assumptions as it will appear in the June 30, 2014 valuation report if all recommended assumptions and methods are adopted. Proposed changes in assumptions are highlighted in yellow.

This page intentionally left blank.

Section 2: Economic Assumptions

Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, provides guidance to actuaries giving advice on selecting economic assumptions for measuring obligations under defined benefit plans. Because no one knows what the future holds, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a mixture of past experience, future expectations, and professional judgment. The actuary should consider a number of factors, including the purpose and nature of the measurement, and appropriate recent and long-term historical economic data. However, the standard explicitly advises the actuary not to give undue weight to recent experience.

Recognizing that there is not one "right answer", the current standard calls for the actuary to develop a best estimate range for each economic assumption, and then recommend a specific point within that range. Each economic assumption should individually satisfy this standard. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with every other economic assumption over the measurement period.

In our opinion, the economic assumptions recommended in this report have been developed in accordance with ASOP No. 27. The following table shows our recommendations.

It should be noted that there are recent revisions to ASOP 27 that will be effective for the June 30, 2015 valuation and later. These revisions will impact how an actuary determines a reasonable assumption. In particular, the current standard allows for the selection of an assumption that falls within the best-estimate range; whereas, the new standard narrows this to be reasonable only if it has no significant bias (i.e., it is neither significantly optimistic nor pessimistic). The standard does allow for a provision for adverse deviation. Ultimately, we believe that an assumption that was on the high end of the best-estimate range that satisfies the current standard would no longer be reasonable under the new standard.

Economic Assumptions (continued)

We have not directly reflected any revisions that will be effective with the new standard, but we believe that the recently adopted economic assumptions would satisfy both the current and new actuarial standard for the selection of economic assumptions. This section will discuss the economic assumptions. In brief, they are as follows (changes shown in bold):

Economic Assumption	Current Assumption (Annual Rate)	Proposed (Annual Rate)
Consumer Price Inflation	3.25%	**3.00%**
Investment Return[(1)]	7.50%	**7.25%**
Wage Growth (includes inflation and productivity)	3.75%	**3.50%**
Real Wage Inflation (wage growth less price inflation)	0.50%	0.50%
Payroll Growth	Assumed to be the same as Wage Growth	

(1) Net of administration and investment expenses.

1. Price Inflation

Use in the Valuation

When we refer to inflation in this report, we are referring to price inflation. The inflation assumption has an indirect impact on the results of the actuarial valuation through the development of the assumptions for investment return, general wage increases, and the payroll increase assumption. It also has a direct impact on the valuation results as it will be used to determine the expected future COLA payments.

The long-term relationship between inflation and investment return has long been recognized by economists. The basic principle is that the investors demand a "real return" – the excess of actual investment returns over inflation. If inflation rates are expected to be high, investors will demand investment returns that are also expected to be high enough to exceed inflation, while lower inflation rates will result in lower demanded expected investment returns, at least in the long run.

The 2013 valuation assumption for inflation was 3.25% per year. In the recently adopted economic assumptions, the inflation assumption was lowered to 3.00%

Historical Perspective

The data for inflation shown below is based on the national Consumer Price Index, US City Average, All Urban Consumers (CPI-U) as published by the Bureau of Labor Statistics. The data for periods ending in December of each year is documented in Exhibit 1 at the end of this section.

Although economic activities in general and inflation in particular, do not lend themselves to prediction on the basis of historical analysis, historical patterns and long term trends are a factor to be considered in developing the inflation assumption.

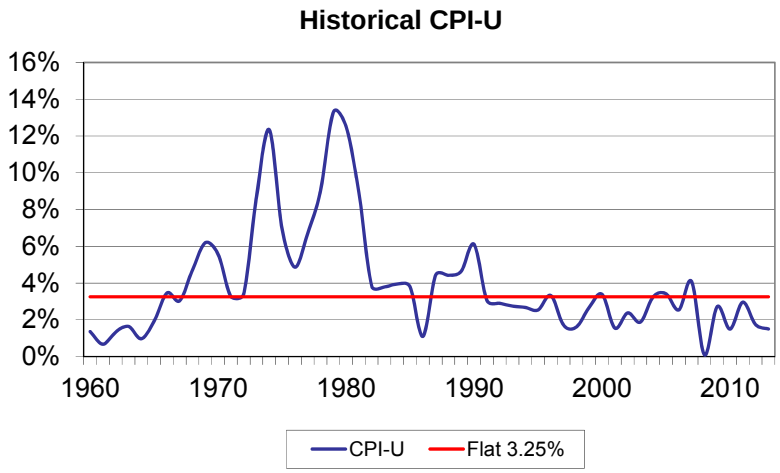
There are numerous ways to review historical data, with significantly differing results. The tables below show the compounded annual inflation rate for various 10-year periods, and for the 75-year period ended in December 2013.

Decade	CPI Increase
2004-2013	2.4%
1994-2003	2.4%
1984-1993	3.7%
1974-1983	8.2%
1964-1973	4.1%
Prior 75 Years	
1939-2013	3.8%

These are national statistics. For comparison, the average CPI increase for the Bay Area has been 4.0% for the same 75-year period.

Historical Perspective (Continued)

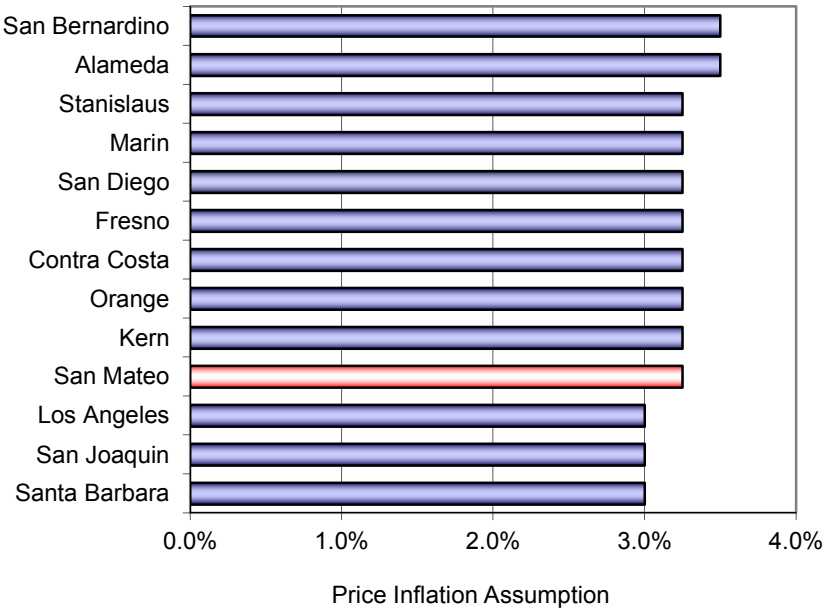
The following graph shows historical national CPI increases. Note that the actual CPI increase has been consistently below 3.25% since 1991.



Peer System Comparison

According to the *Public Fund Survey* (a survey of approximately 100 statewide systems), the average inflation assumption for statewide systems has been steadily declining. As of the most recent study, the two most common assumptions are 3.00% and 3.50%.

Looking at other selected '37 Act systems, the current (2013 valuation) inflation assumption is in the mainstream.



Forecasts of Inflation

Since the U.S. Treasury started issuing inflation indexed bonds, it is possible to determine the approximate rate of inflation anticipated by the financial markets by comparing the yields on inflation indexed bonds with traditional fixed government bonds. Current market prices as of July 2014 suggest investors expect inflation to be about 2.4% over the next 30 years. This rate is close to the amount forecast by Strategic Investment Solutions (SIS), SamCERA's investment consultant, 2.3%. It should be noted that SIS' forecast is for approximately 10 years.

Many economists have been forecasting inflation lower than the prior valuation assumption of 3.25% for several years. Economists are generally considering shorter time periods (10 years or less) than may be appropriate for a pension valuation. To find an economic forecast with a time frame long enough to suit our purposes, we looked at the expected increase in the CPI by the Office of the Chief Actuary for the Social Security Administration. In the 2013 Trustees Report, the projected average annual increase in the CPI over the next 75 years under the intermediate cost assumptions was 2.80%. The reasonable range was stated as 1.80% to 3.80%.

Best Estimate Range and Recommendation

The consumer price inflation assumption impacts SamCERA's funding as it is used to project the COLA payments. It is also used as a component of both the investment return assumption and the wage growth assumptions. We believe that the current assumption of 3.25% per year is on the higher end of the best estimate range. Given the future expectations of inflation, we recommended lowering the assumption to 3.00% which was adopted in June.

Consumer Price Inflation	
2013 Valuation Assumption	3.25%
Best Estimate Range	2.00% – 3.50%
Recommended Assumption	3.00%

San Mateo County Employees' Retirement Association
Investigation of Experience (2011-2014)

Exhibit 2-1 US City Average, All Urban Consumers (CPI-U) - December

December of:	Index	Increase	December of:	Index	Increase
1928	**17.1**				
1929	17.2	0.6%	**1974**	51.9	12.3%
1930	16.1	-6.4	**1975**	55.5	6.9
1931	14.6	-9.3	**1976**	58.2	4.9
1932	13.1	-10.3	**1977**	62.1	6.7
1933	13.2	0.8	**1978**	67.7	9.0
1934	13.4	1.5	**1979**	76.7	13.3
1935	13.8	3.0	**1980**	86.3	12.5
1936	14.0	1.4	**1981**	94.0	8.9
1937	14.4	2.9	**1982**	97.6	3.8
1938	14.0	-2.8	**1983**	101.3	3.8
1939	14.0	0.0	**1984**	105.3	3.9
1940	14.1	0.7	**1985**	109.3	3.8
1941	15.5	9.9	**1986**	110.5	1.1
1942	16.9	9.0	**1987**	115.4	4.4
1943	17.4	3.0	**1988**	120.5	4.4
1944	17.8	2.3	**1989**	126.1	4.6
1945	18.2	2.2	**1990**	133.8	6.1
1946	21.5	18.1	**1991**	137.9	3.1
1947	23.4	8.8	**1992**	141.9	2.9
1948	24.1	3.0	**1993**	145.8	2.7
1949	23.6	-2.1	**1994**	149.7	2.7
1950	25.0	5.9	**1995**	153.5	2.5
1951	26.5	6.0	**1996**	158.6	3.3
1952	26.7	0.8	**1997**	161.3	1.7
1953	26.9	0.7	**1998**	163.9	1.6
1954	26.7	-0.7	**1999**	168.3	2.7
1955	26.8	0.4	**2000**	174.0	3.4
1956	27.6	3.0	**2001**	176.7	1.6
1957	28.4	2.9	**2002**	180.9	2.4
1958	28.9	1.8	**2003**	184.3	1.9
1959	29.4	1.7	**2004**	190.3	3.3
1960	29.8	1.4	**2005**	196.8	3.4
1961	30.0	0.7	**2006**	201.8	2.5
1962	30.4	1.3	**2007**	210.0	4.1
1963	30.9	1.6	**2008**	210.2	0.1
1964	31.2	1.0	**2009**	215.9	2.7
1965	31.8	1.9	**2010**	219.2	1.5
1966	32.9	3.5	**2011**	225.7	3.0
1967	33.9	3.0	**2012**	229.6	1.7
1968	35.5	4.7	**2013**	233.0	1.5
1969	37.7	6.2			
1970	39.8	5.6			
1971	41.1	3.3			
1972	42.5	3.4			
1973	46.2	8.7			

2. Wage Growth

Use in the Valuation

Estimates of future salaries are based on two types of assumptions: 1) general wage increase and 2) merit increase. Rates of increase in the general wage level of the membership are directly related to inflation, while individual salary increases due to promotion and longevity occur even in the absence of inflation. The promotion and longevity assumptions, referred to as the merit scale, will be reviewed with the other demographic assumptions.

The current and recently adopted assumption is for 0.50% wage growth above the inflation assumption.

Historical Perspective

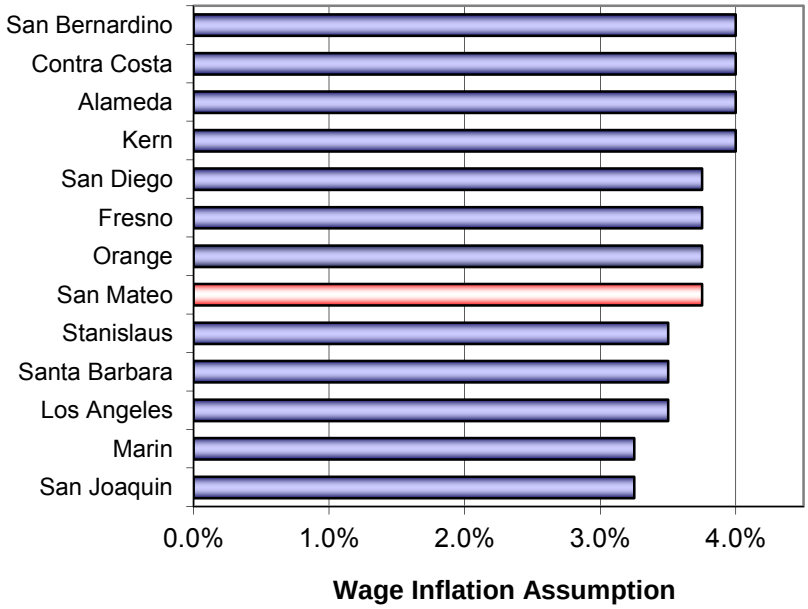
We have used statistics from the Social Security Administration on the National Average Wage back to 1951. For years prior to 1951, we studied the Total Private Nonagricultural Wages as published in *Historical Statistics of the U.S., Colonial Times to 1970*.

There are numerous ways to review this data. For consistency with our observations of other indices, the table below shows the compounded annual rates of wage growth for various 10-year periods and for the 75-year period ended in 2013. The excess of wage growth over price inflation represents "productivity" (or the increase in the standard of living, also called the real wage inflation rate).

Decade	Wage Growth	CPI Increase	Real Wage Inflation
2004-2013	2.9%	2.4%	0.5%
1994-2003	3.9%	2.4%	1.5%
1984-1993	4.3%	3.7%	0.6%
1974-1983	7.2%	8.2%	-1.0%
1964-1973	5.6%	4.1%	1.5%
Prior 75 Years			
1939-2013	5.2%	3.8%	1.4%

Peer System Comparison

Looking at other selected ’37 Act systems, the current (2013 valuation) wage growth assumption is in the mainstream.



Forecasts of Future Wages

Wage inflation has been projected by the Office of the Chief Actuary of the Social Security Administration. In the 2013 Trustees Report, the long-term annual increase in the National Average Wage is estimated to be 1.1% higher than the Social Security intermediate inflation assumption of 2.8% per year. The range of the assumed real wage growth in the 2013 Trustees Report was from 0.6% to 1.7% per year.

Reasonable Range and Recommendation

We believe that a range between 0.00% and 1.25% is reasonable for the actuarial valuation. We recommend that the long-term assumed real wage inflation rate remain at 0.50% per year. Note that over the last 50 years, real wage inflation has averaged 0.60% per year.

Real Wage Inflation Rate	
2013 Valuation Assumption	0.50%
Best Estimate Range	0.00% – 1.25%
Recommended Assumption	0.50%

The wage growth assumption is the total of the consumer price inflation assumption and the real wage inflation rate. If the real wage inflation assumption remains 0.50% and the price inflation is set at 3.00%, this would result in a total wage growth assumption of 3.50%.

Payroll Increase Assumption

In addition to setting salary assumptions for individual members, the aggregate payroll of SamCERA is expected to increase, without accounting for the possibility of an increase in membership (our current and recommended assumption is that no growth in membership will occur).

The 2013 valuation payroll increase assumption is equal to the general wage growth assumption of 3.75%. It is our general recommendation to continue to set these two assumptions to be equal, unless there is a specific circumstance that would call for an alternative assumption. Under the recently adopted economic assumptions, the payroll increase assumption was decreased to 3.50%.

Growth in Membership

We propose continuing the assumption that no future growth in membership will occur. This assumption affects the Unfunded Actuarial Accrued Liability (UAAL) amortization payment rate. With no assumed growth in membership, future salaries are assumed to grow due to wage growth increases. If increases should occur because of additional members, there will be a larger pool of salaries over which to spread the UAAL, if any, resulting in an actuarial gain. This current assumption is consistent with GASB parameters.

It should be noted that membership growth could be affected by the County's "Agile" pilot program, which fills some positions with employees who would not participate and SamCERA. To the extent this occurs, membership growth may be negative. In the short-term, this is likely to be offset by employees added at the new jail, but the impact of the Agile program on membership should be monitored going forward.

3. Investment Return

Use in the Valuation

The investment return assumption is one of the primary determinants in the calculation of the expected cost of the System's benefits, providing a discount of the future benefit payments that reflects the time value of money. This assumption has a direct impact on the calculation of liabilities, normal costs, member contribution rates, and the factors for optional forms of benefits. The 2013 valuation investment return assumption for SamCERA was 7.50% per year, net of administrative and investment-related expenses.

Method to Determine Best-Estimate Range for Investment Return

To determine the best estimate range for the investment return assumption, we have used the average capital market assumptions of a number of investment consultants and the target asset allocation adopted by the SamCERA Board. SamCERA's target asset allocation is summarized in the following chart:

Asset Class	Target Allocation
US Large Cap Equity	24.0%
US Small Cap Equity	6.0%
Developed International Equity	15.0%
Emerging Market Equity	5.0%
US Core Fixed Income	10.0%
Developed International Fixed Income	3.0%
High Yield Debt	3.0%
Emerging Market Debt	2.0%
TIPS	2.0%
Private Equity	7.0%
Absolute Return / Hedge Funds	4.0%
Commodities	3.0%
Infrastructure	2.0%
Real Estate	6.0%
Risk Parity	8.0%
	100.0%

Method to Determine Best-Estimate Range for Investment Return (continued)

Actuarial Standard of Practice No. 27, "Selection of Economic Assumptions for Measuring Pension Obligations." The Standard defines the Best-Estimate Range as "the narrowest range within which the actuary reasonably anticipates that the actual results, compounded over the measurement period, are more likely than not to fall."

By assuming the portfolio is re-balanced annually and that annual returns are lognormally distributed and independent from year to year, we can develop expected percentiles for the long-term distribution of annualized returns based on an average of the expectations of the investment consultants.

Using properties of the lognormal distribution, we calculate the 25th and 75th percentiles of the long-term total return distribution. This becomes our best-estimate range because 50% of the outcomes are expected to fall within this range and it is centered about the median.

Capital Market Assumptions

As previously noted, the capital market assumptions used in our analysis were the average of the capital market assumptions used by several investment consultants (SIS, Cliffwater, JP Morgan, Callan, RV Kuhns, Wurts, NEPC, and Milliman). The average expectations for investment return and standard deviation of investment return is summarized in the following chart:

Asset Class	Expected Return	Standard Deviation
US Large Cap Equity	8.3%	16.8%
US Small Cap Equity	9.0%	20.9%
Developed International Equity	9.2%	19.2%
Emerging Market Equity	11.9%	27.5%
US Core Fixed Income	3.9%	5.1%
Developed International Fixed Income	3.3%	8.9%
High Yield Debt	6.0%	11.1%
Emerging Market Debt	6.5%	11.8%
TIPS	3.8%	6.0%
Private Equity	12.1%	27.1%
Absolute Return / Hedge Funds	6.3%	8.9%
Commodities	6.1%	20.0%
Infrastructure	8.6%	21.1%
Real Estate	7.4%	14.3%
Risk Parity	8.6%	13.7%

Administrative and Investment-Related Expenses

The investment return used for the valuation is assumed to be net of all administrative and investment-related expenses. The following table shows the ratio of expenses to the SamCERA Plan assets over the last 10 fiscal years ending June 30. The expense ratio is calculated as the applicable expense amount divided by the ending asset balance at fair market value.

		Investment		Administrative	
Year Ended	Market Assets	Expense	Expense Ratio	Expense	Expense Ratio
2004	$1,233.3	$4.2	0.34%	$1.9	0.15%
2005	$1,579.5	$7.3	0.46	$2.2	0.14
2006	$1,799.0	$8.5	0.47	$2.1	0.12
2007	$2,131.6	$10.7	0.50	$2.6	0.12
2008	$2,010.7	$10.9	0.54	$3.2	0.16
2009	$1,565.6	$11.1	0.71	$3.3	0.21
2010	$1,753.2	$8.9	0.51	$3.4	0.19
2011	$2,271.1	$16.6	0.73	$3.6	0.16
2012	$2,323.6	$20.9	0.90	$5.0	0.22
2013	$2,702.5	$21.9	0.81	$4.9	0.18

(all amounts shown in $ millions)

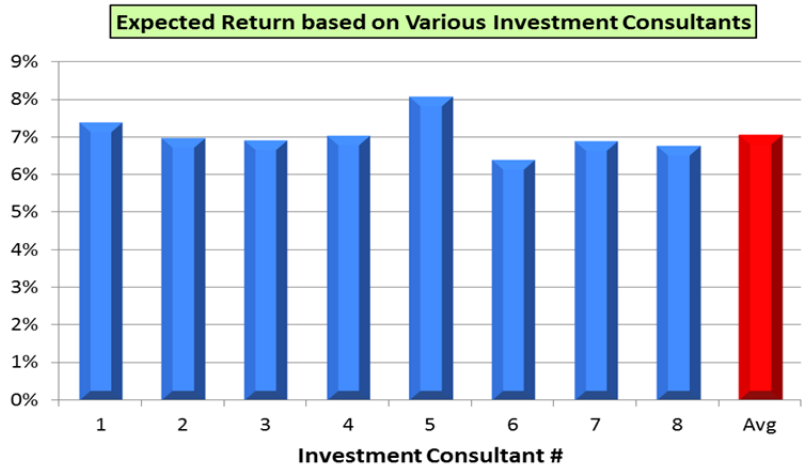
For purposes of our analysis of the investment return assumption, we have assumed that investment expenses are 0.0%, because our understanding is that the capital market assumptions have effectively already been adjusted to account for most investment expenses. For administrative expenses, we assume an ongoing expense of 0.20% of market assets.

The expense assumption does not have a direct impact on the actuarial valuation results, but it does provide a measure of gross return on investments that will be needed to meet the actuarial assumption used for the valuation. For example, under the new investment return assumption of 7.25%, SamCERA needs to earn a gross return (after adjustment for investment expenses) on its assets of 7.45% in order to net the 7.25% for funding purposes.

Method to Determine Best-Estimate Range for Investment Return (continued)

The capital market assumptions were combined with the target asset allocation policy to generate expected rates of return which were then reduced for estimated administrative expenses of 0.20%.

A comparison of the expected returns (net of administrative and investment expenses), based on SamCERA's target asset allocation and the capital market assumptions of other investment consultants, is shown below.



As shown above in the capital market assumptions section, the expected rate of return is subject to significant year-to-year volatility as measured by the standard deviation. Volatility over time will lower the mean rate of return but diversification by asset class will reduce the volatility and narrow the range of expected total returns for the entire portfolio. The results are summarized below:

Expected Investment Return
(after reflecting administrative and investment expenses)

Horizon	Percentile Results for Nominal Rate of Return				
In Years	95th	75th	50th	25th	5th
1	-11.8%	-1.1%	7.0%	15.9%	29.9%
5	-1.8%	3.3%	7.0%	10.9%	16.7%
10	0.7%	4.4%	7.0%	9.8%	13.8%
20	2.5%	5.2%	7.0%	9.0%	11.8%
30	**3.3%**	**5.5%**	**7.0%**	**8.6%**	**10.9%**

Method to Determine Best-Estimate Range for Investment Return (continued)

Based on our application of lognormal return distributions to the average capital market assumptions, the geometric mean return is 7.0%. However, due to the volatility associated with the asset allocation, the range of probable outcomes is quite large. For example, in the first year there is a 5% chance the rate of return will be less than -11.8% and a 5% chance it will be greater than 29.9%. As the time horizon lengthens, the range of the cumulative average results narrows. Note that these are net returns, after adjusting for investment expenses.

Over a 30-year time horizon, we estimate there is a 25% chance the nominal rate of return will be less than 5.5% and a 25% chance the return will be greater than 8.6% (bold numbers on the bottom line in the table above). Therefore, we can say the return is just as likely to be within the range from 5.5% to 8.6% as not.

Based upon the analysis discussed above, we conclude that the best-estimate range based on the capital market assumptions described is the expected average annual rates of return between the 25th and 75th percentile projected out 30 years of 5.5% to 8.6%.

Best Estimate Range and Recommendations Based on Current Market Expectations

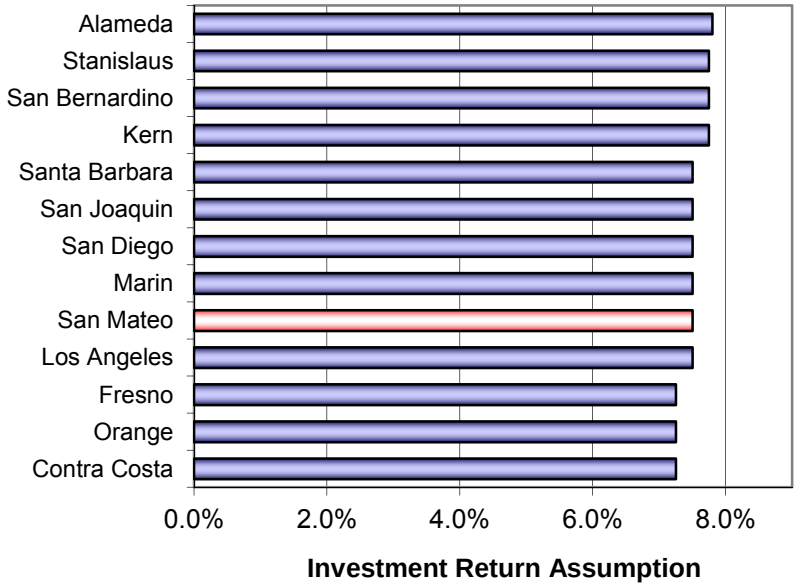
Based upon the analysis discussed above, there is a 46% chance that the net return will be 7.25% or more over a 30-year period. In other words, a net return of 7.25% is at the 46th percentile for a 30-year investment horizon. Similarly, there is a 41% chance that the net return will be 7.50% or more over a 30-year period.

Based on the above, we recommended lowering the investment return assumption to 7.25%, which was adopted by the Board. This is also consistent with our earlier recommendation to lower the inflation assumption from 3.25% to 3.00%.

Peer System Comparison

According to the *Public Fund Survey*, the average investment return assumption for statewide systems has been slowly declining. As of the most recent study, the average rate is just about 7.9%

Looking at other selected '37 Act systems, SamCERA's current assumption (2013 valuation) of 7.50% is the most common.



Excess Earnings

Section 31592.2 of the 1937 Act provides the Retirement Board with the authority to set aside surplus earnings of the retirement fund which are in excess of the total interest credited to reserves, provided this surplus exceeds 1.00% of the total assets of the retirement system.

If the Board determines that the fund should share excess earnings with members when times are good, but the fund is not able to collect additional revenue when investment returns lag expectations, there will be a reduction in the investment return available to fund SamCERA's regular pension benefits. Thus, if the Board adopts a policy, either formal or informal, to use excess earnings for anything other than the regular pension benefits, we would consider the impact on the investment return assumption and possibly recommend a reduction. As of this time, we are not recommending any adjustment.

Other Factors for Board Consideration

Since economic assumptions are subjective in nature, it is our recommendation that the Board be fully comfortable with the implications of the economic assumptions, particularly with the investment return assumption. There is "actuarial risk" associated with the economic assumptions, just as there is an investment risk associated with a given portfolio mix.

Actuarial assumptions are used to measure and budget future costs. Changing assumptions will not change the actual cost of future benefits. Aggressive assumptions anticipate good future experience ahead of time and factor it into budget estimates. Conservative assumptions, on the other hand, tend to recognize good experience only after it happens.

The choice of assumptions depends on a system's risk tolerance. The final determination on whether or not a set of assumptions is either conservative or aggressive will only be borne out by future experience.

All other things being equal, a lower investment return assumption provides stronger funding, and a higher investment return assumption results in weaker funding. Therefore, in our opinion, systems that are already funding at a low level (e.g., a rolling 30-year amortization of the UAAL) should consider incorporating conservatism in their investment return assumption. SamCERA has a strong contribution policy (15-year layered amortization of the UAAL), so we believe it is not as important to include a level of conservatism in the investment return assumption, although it should still be considered.

The investment return assumption also impacts member contribution rates, as well as the costs of service purchases and other optional forms of payment. Therefore, although the investment return assumption does not directly impact the ultimate cost of benefits, it does impact the split between the employers and the members.

Conclusion

Based on the capital market assumptions, we find there is only about a 41% probability that the current (2013 valuation) investment return assumption of 7.50% will be met over the long term. Therefore, we believe the recent reduction in the investment return assumption to 7.25%, when combined with SamCERA's strong contribution policy (discussed above), is a reasonable long-term investment return assumption.

Investment Return (net of investment expenses)	
2013 Valuation Assumption	7.50%
Best Estimate Range	5.5% – 8.6%
Recommended Assumption	7.25%

This page intentionally left blank.

Section 3: Actuarial Methods and Miscellaneous Assumptions

Valuation Methods

As part of the triennial investigation, we have reviewed the valuation methods and other issues related to the actuarial assumptions.

- **Cost Method:** The actuarial valuation is prepared using the entry age actuarial cost method (CERL 31453.5). We believe that this cost method is appropriate for SamCERA's valuation. It is also the cost method that will be required for GASB Statements 67 and 68. We recommend no change.
- **Funding Method (amortization of UAAL):** The current method uses a 15-year closed period layered approach. This method is consistent with guidelines published by the California Actuarial Advisory Panel (CAAP). We recommend no change.
- **Valuation of Assets:** We believe that the current asset valuation method which smoothes gains and losses over five years (actually 10 six-month periods) and includes an 80% to 120% corridor is appropriate for SamCERA's valuation. A five-year smoothing period is used by a majority of large public retirement systems. This method is also consistent with guidelines published by CAAP. We recommend no change.
- **Adjustment to Plan 3 Normal Cost Rate:** The current method increases the Plan 3 Normal Cost rate to account for Plan 3 members being eligible to transfer to Plan 2, Plan 4 or Plan 5 (depending on entry date) after five years of service. Under this method, the Plan 3 Normal Cost rate is 50% of the unadjusted Plan 3 Normal Cost rate and 50% of the Plan 4 Normal Cost rate. We believe this method continues to be appropriate and recommend no change.
- **Plan 3 Retirement Age Factors:** Plan 3 retirement age factors are intended to provide an early retirement benefit that is the actuarial equivalent of an age 65 benefit. Specifically, CERL 31497.3(f) states: "The ERA (early retirement age) factors set forth in this subdivision shall be used until adjusted by the board in accordance with the interest and mortality tables adopted by the board." Since the interest rate has changed, we recommend the Board consider adopting new ERA factors to reflect the lower interest rate. The expected impact would be a small increase in the ERA factors, resulting in slightly larger future benefits than under the current factors.

Valuation Methods (continued)

Miscellaneous Assumptions

- **Reciprocity:** Members who terminate may go to work for a reciprocal employer. This can result in an increase in the member's final compensation used in the calculation of their SamCERA benefit. We currently assume that 35% of future General terminated vested members and 45% of future Safety terminated vested members retire with a reciprocal employer. We reviewed this assumption and are not recommending a change. The results of the study are as follows:

Probability of Reciprocal Employer					
Class	All Terms >= 5 Years	Recip.	Actual	Expected	Proposed
General	668	205	31%	35%	35%
Safety	64	27	42%	45%	45%

- **Probability of Eligible Survivor:** Eligible surviving beneficiaries (spouses or qualified domestic partners of members) generally receive a 60% continuance of the member's benefit (100% continuance for service-connected disabilities and 50% for Plan 3 members). The valuation assumes a certain percentage of members will have an eligible survivor at retirement. We studied this assumption and are recommending a change to the probability of an eligible survivor for males. The results of the study are as follows:

Retirees with Eligible Survivor					
Gender	Actual	Expected	Act / Exp	Proposed	Act / Pro
Male	70%	80%	88%	75%	93%
Female	52%	55%	95%	55%	95%

- **Survivor age difference:** We are also recommending a change to the assumption of the age difference between members and their eligible survivors. The current assumption is that survivors are three years younger than male members and three years older than female members. Based on our analysis of survivor data, we recommend that the assumption for survivors of female members is changed so that the survivor is assumed to be two years older than the member to match actual experience. We recommend no change to the assumption for survivors of male members.

Non-Valuation Methods

- **Operating Tables:** We recommend the operating tables be updated to reflect the new economic assumptions.

- **Member Contribution Rates:** The proposed changes to the investment return assumption will impact the basic member contribution rates. New member rates will need to be calculated during the June 30, 2014 actuarial valuation. Additionally, the Cost-of-Living portion of the member rates will be updated at that time. A sample of the estimated impact to member rates due of these proposed changes is shown in the chart below.

Sample Changes in Member Basic Rates due to Proposed Economic Assumption Changes (Based on June 30, 2013 Actuarial Valuation*)

	Entry Age	Current	Proposed	Increase
General Members - County				
Plans 1 & 2	35	7.42%	7.60%	0.18%
Plan 4	35	7.12%	7.31%	0.19%
Plan 5	35	6.14%	6.29%	0.15%
Plan 7	35	7.58%	7.93%	0.35%
PDA Members (Reflects Employer Pick-up)				
Plans 1 & 2	35	8.08%	8.28%	0.20%
Plans 4, 5 & 6	35	7.75%	7.96%	0.21%
Plan 7	35	13.78%	14.31%	0.53%
Probation Managers				
Plans 1 & 2	35	10.09%	10.35%	0.26%
Plans 4, 5 & 6	35	9.68%	9.95%	0.27%
Plan 7	35	13.78%	14.31%	0.53%
Safety Members				
Plans 1 & 2	35	10.09%	10.35%	0.26%
Plans 4, 5 & 6	35	9.68%	9.95%	0.27%
Plan 7	35	14.28%	14.82%	0.54%

** Final FYB 2015 member rates will be determined based on the June 30, 2014 valuation.*

We show basic member rates for Plans other than Plan 7 due to the complications of various cost share and COLA share member rate permutations. Plan 7 rates are sample total member rates. The final member rates will be determined with the 2014 valuation.

- **Implementation:** For the Plan 3 ERA factors, the operating tables and the member contribution rates, we recommend the implementation date be July 1, 2015.

This page intentionally left blank.

Section 4: Salary Increases Due to Promotion and Longevity (Merit)

Estimates of future salaries are based on assumptions for two types of increases:

1) Increases in each individual's salary due to promotion or longevity, which occur even in the absence of inflation (merit increases); and
2) Increases in the general wage level of the membership, which are directly related to inflation and increases in productivity.

Results

In Section 2 we discuss the second of these rates, the general wage inflation, which is 3.50% under the proposed assumptions.

Exhibit 4-1 shows the actual merit increases, plus the general wage growth assumption, over the period July 1, 2011-June 30, 2013. Increases were higher earlier in a member's career (lower service) and then decreased over time, consistent with the current assumptions. Overall, the actual increases were less than predicted by the current assumptions.

Note that this period is slightly shorter than the period over which all other assumptions were studied. We felt that studying salary increases for a partial final year (ending April 30, 2014) would result in a less accurate analysis of salary increase patterns over the study period.

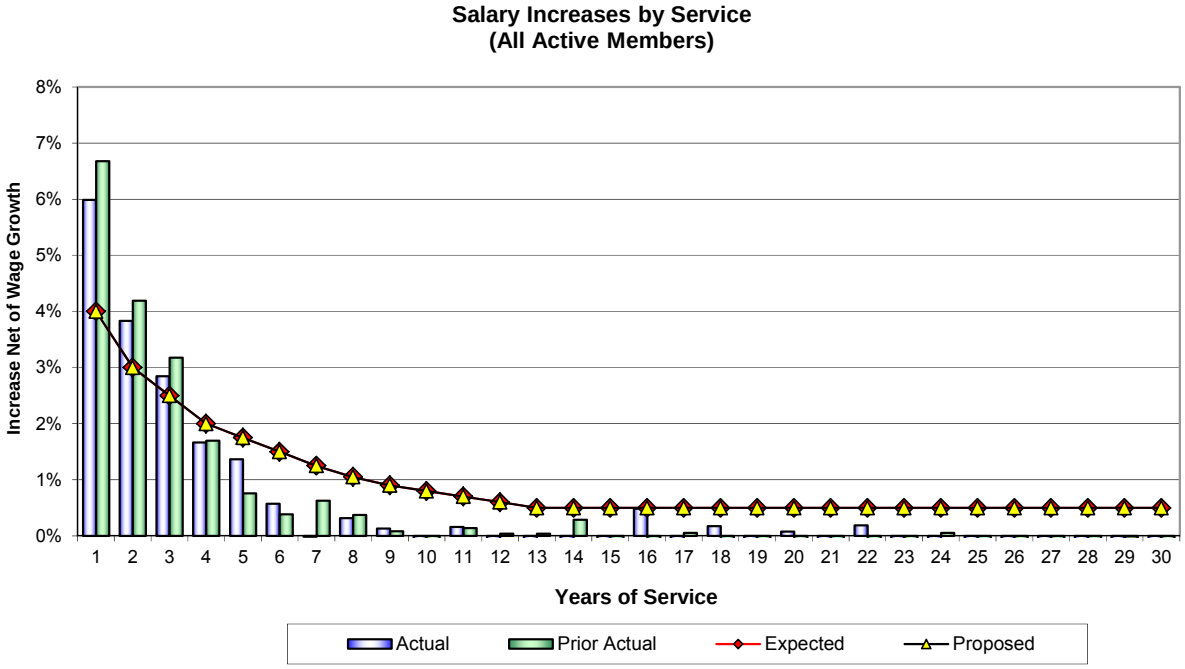
We also studied the merit patterns of Safety and General members separately, as we have seen differences between the two groups in other systems. There were some differences for SamCERA; in particular, the merit increases for Safety members generally exceeded the assumption after 10 years of service. We discussed this with SamCERA staff, and they were not aware of factors that would cause this difference. We will continue to monitor this in future studies.

Recommendation

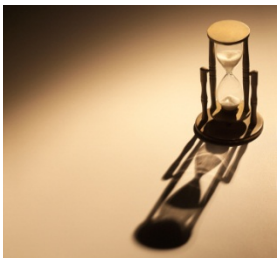
Based on the results of this, and the prior two experience studies, we are not recommending a change in the merit component of the salary increase assumptions.

Exhibit 4-1 Total Annual Rates of Increase in Salary Due to Merit and Longevity

(Excluding the General Wage Growth Assumption)



Section 5: Mortality



Results

In this section we look at the results of the study of actual and expected death rates of retired members. We studied rates of mortality among healthy and disabled retired members. Valuation mortality is a critical assumption, since, if members live longer than expected, we will be understating the true cost of the future plan obligations.

Overall, we found there were more deaths than the current rates predicted: 325 actual to 256 expected for a total ratio of 127%. We generally like to see some margin for future improvements in mortality (i.e., actual number greater than expected by about 15% or so).

Generally, an A/E ratio of 127% would lead us to recommend a change in the assumption. In this case, the change would be to recommend a mortality table that assumes higher rates of mortality. However, this experience is contrary to the wider experience of mortality trends in recent years, and the widely held belief that these trends (and mortality improvements) will continue. We also believe that some margin should be built into mortality assumptions to account for the trend of increasing life expectancies.

For these reasons, we believe that this period's experience may not be reflective a long term trend in mortality rates, and we recommend no change to the mortality assumption at this time. However, we will be monitoring this closely and will consider it again at the next investigation of experience in 2017.

The following is a comparison of the actual-to-expected deaths of retired members by class and gender for the study period.

Results (continued)

Retiree Mortality

Service Retirement

Group	Deaths Actual	Deaths Expected	Deaths Proposed	Actual to Expected	Actual to Proposed
General Male	94	77	77	122%	122%
General Female	189	141	141	134%	134%
Safety Male	16	13	13	123%	123%
Safety Female	2	1	1	200%	200%
Total Svc Ret	**301**	**232**	**232**	**130%**	**130%**

Disability Retirement

Group	Deaths Actual	Deaths Expected	Deaths Proposed	Actual to Expected	Actual to Proposed
General Male	6	8	8	75%	75%
General Female	15	12	12	125%	125%
Safety Male	2	3	3	67%	67%
Safety Female	1	1	1	100%	100%
Total Dis Ret	**24**	**24**	**24**	**100%**	**100%**
Grand Total	**325**	**256**	**256**	**127%**	**127%**

Results are shown graphically on the following pages. Note that analysis of Safety females is not shown in graph form due to the small number of actual and expected deaths.

Recommendation

We are recommending no changes to the retired mortality assumption.

Exhibit 5-1 Mortality for Service Retirees General Males

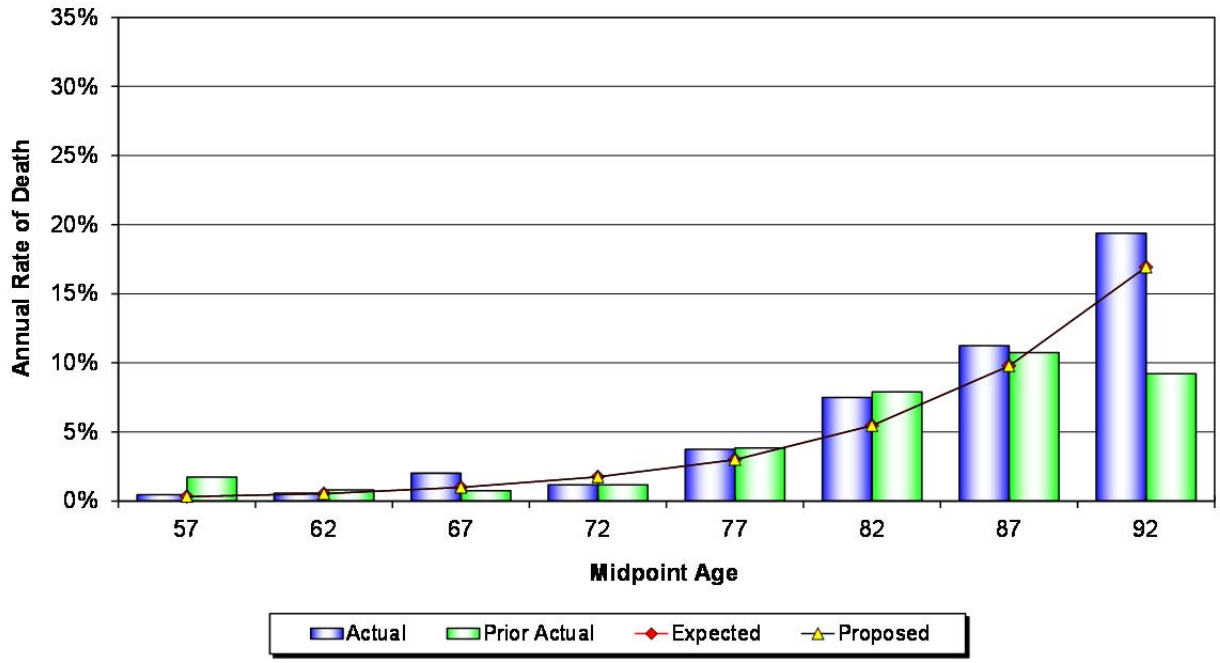


Exhibit 5-2 Mortality for Service Retirees General Females

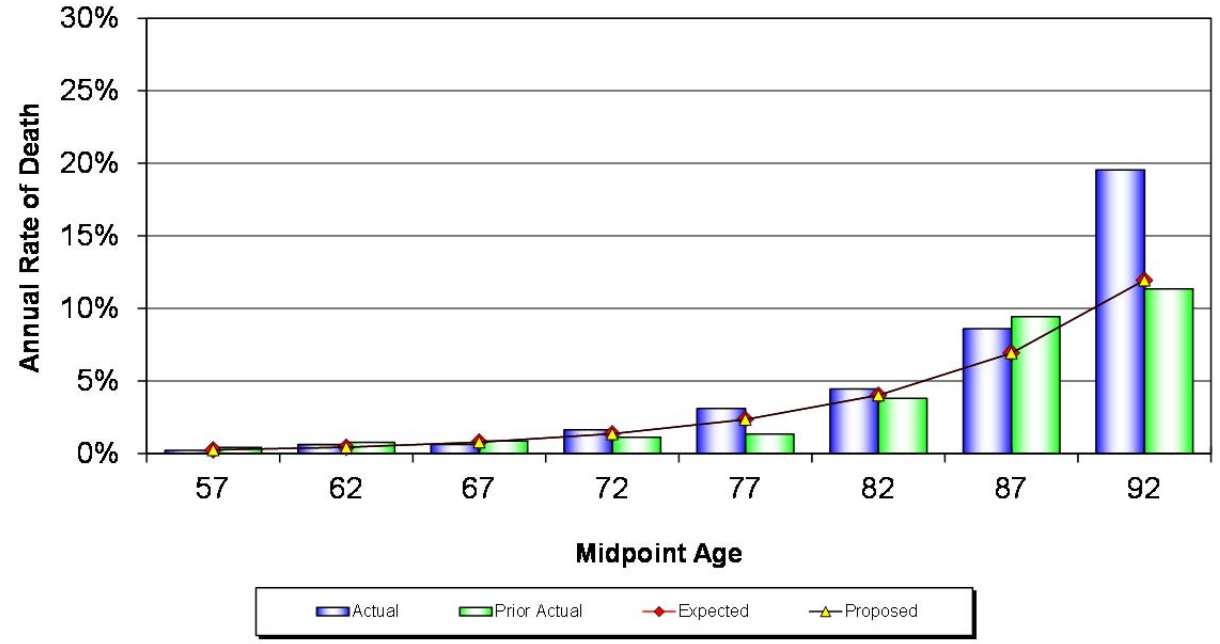


Exhibit 5-3 Mortality for Service Retirees
Safety Males

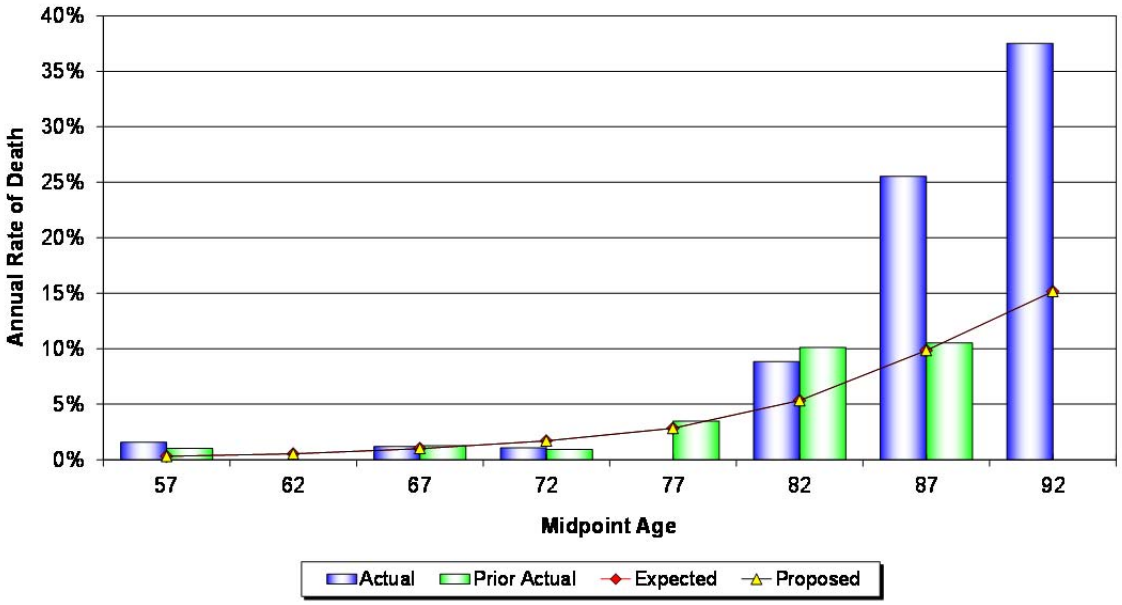


Exhibit 5-4 Mortality for Disabled Retirees
General Males

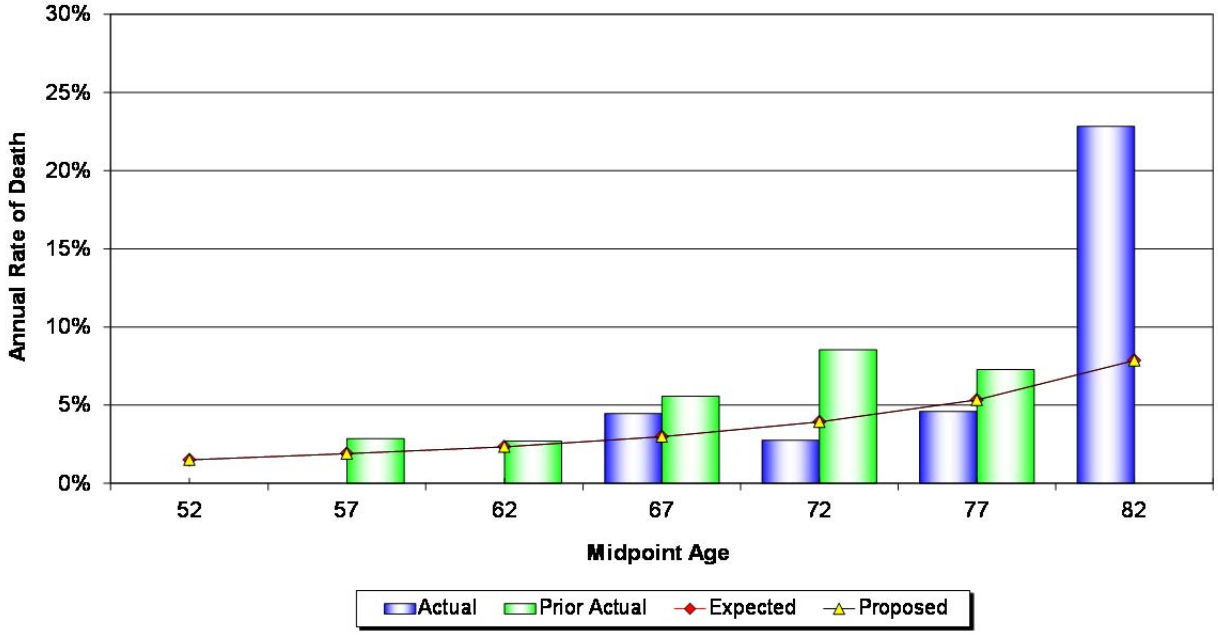


Exhibit 5-5 Mortality for Disabled Retirees General Females

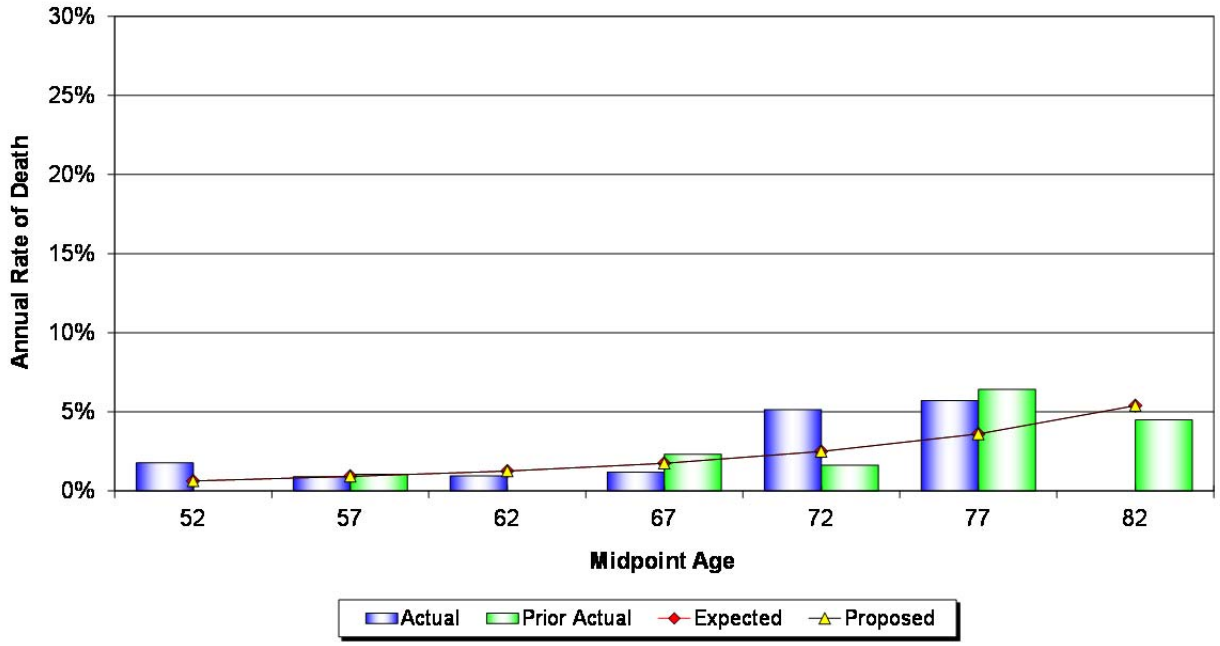
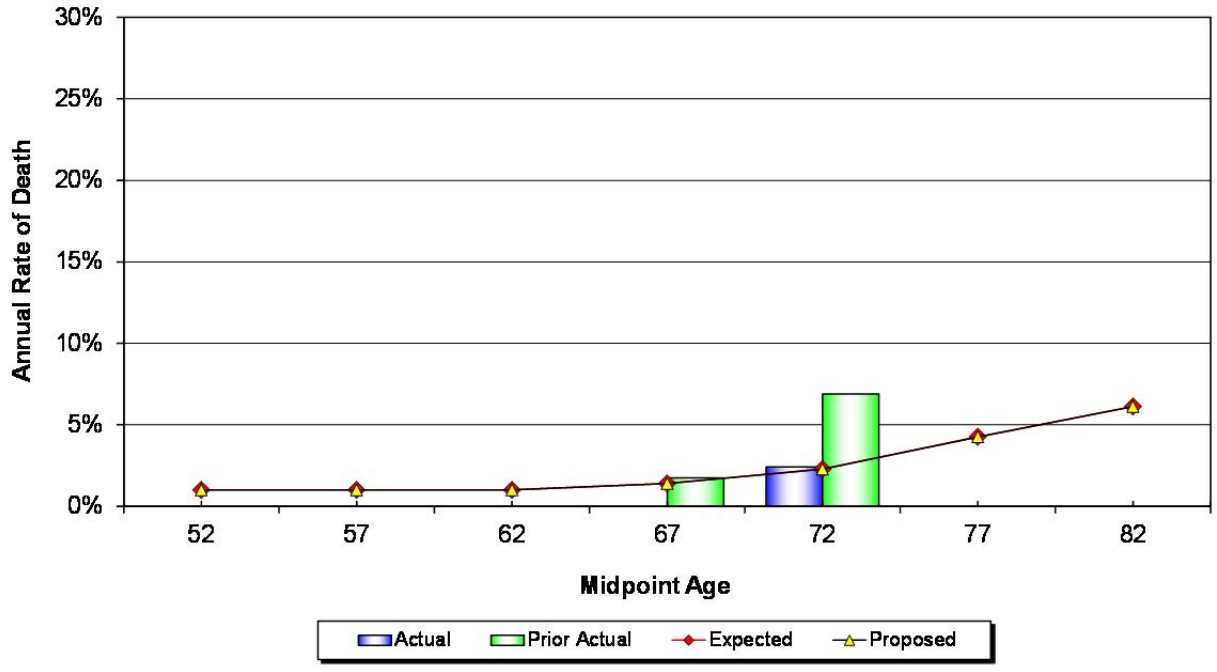


Exhibit 5-6 Mortality for Disabled Retirees Safety Males



This page intentionally left blank.

Section 6: Service Retirements

Exhibits 6-1 through 6-3 show the actual and expected rates of service retirement. Our analysis of rates of service retirement was by attained age.

Exhibits 6-1 through 6-3 study retirements for the following groups:

- Exhibit 6-1: General Members – Males
- Exhibit 6-2: General Members – Females
- Exhibit 6-3: Safety/Probation Members – Males and Females

Results

For General and Safety/Probation members, the total actual retirements from active service were less than the assumptions predicted.

As shown below, the total number of retirements (407) was only 89% of the total number expected (457).

Service Retirements			
Class	**Actual**	**Expected**	**Act / Exp**
General	366	405	90%
Safety	41	52	79%
Total	407	457	89%

Recommendation

We have seen a slight long-term downward trend in retirement rates among public systems. During the prior Investigation of Experience study SamCERA experienced significantly lower rates of retirement and termination than expected. We discussed in the prior report how this was likely partially a result of the recessionary economic environment during that study period. In this study we see rates of service retirement higher than during the prior study period and closer to the assumptions.

Accordingly, we recommend only slightly revised service retirement rates for General and Safety/Probation members. With these revisions, the proposed retirement rates more closely follow the age pattern of actual retirements.

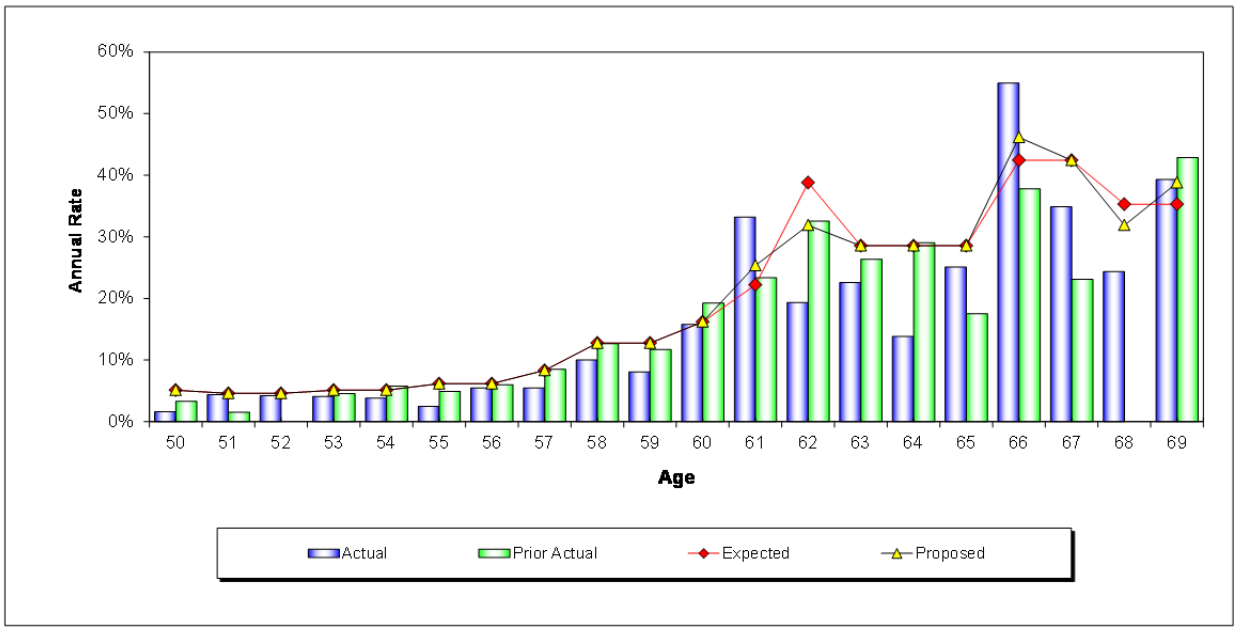
Recommendation (continued)

A comparison of the actual and expected retirements under the recommended assumptions is shown in the table below.

Service Retirements -- Proposed			
Class	**Actual**	**Proposed**	**Act / Prop**
General	366	404	91%
Safety	41	48	85%
Total	407	452	90%

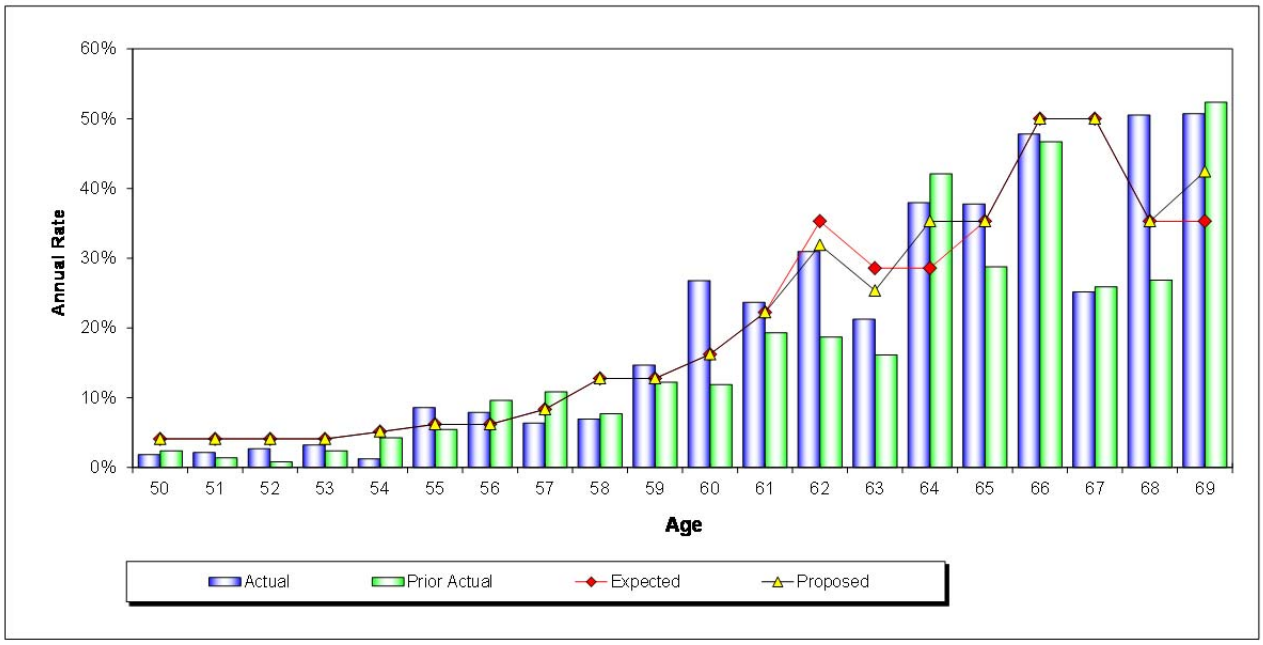
There were not enough Plan 3 service retirements to perform a statistically meaningful study; therefore we are recommending no change to these rates.

Exhibit 6-1 Retirement Rates
General Males



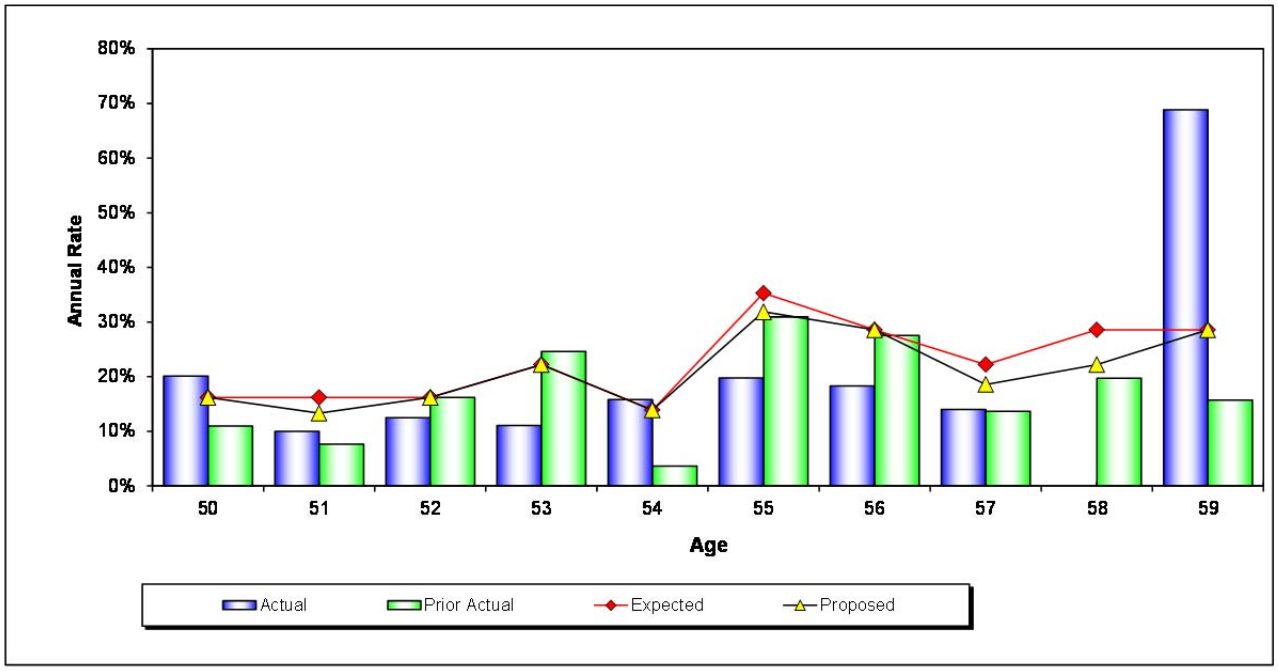
Ages 50-69	Expected	Actual	Proposed
Total Count	**141**	**113**	**140**
Actual / Expected	**80%**		**81%**

Exhibit 6-2 Retirement Rates
General Females



Ages 50-69	Expected	Actual	Proposed
Total Count	**264**	**253**	**264**
Actual / Expected	**96%**		**96%**

Exhibit 6-3 Retirement Rates
Safety Males/Females



Ages 50-59	Expected	Actual	Proposed
Total Count	**52**	**41**	**48**
Actual / Expected	**79%**		**85%**

This page intentionally left blank.

Section 7: Disability Retirement

Results

SamCERA allows a member to start receiving benefits prior to eligibility for service retirement if they become disabled. There are two types of disability:

- Nonservice-Connected Disability: This is available to a disabled member only if he has satisfied the vesting requirement.
- Service-Connected Disability: This is available only to members who are disabled for the performance of duty. There is no service requirement, and the service-connected disability benefit generally pays a larger benefit than nonservice-connected disability.

We have found that in many systems, including SamCERA, there is generally at least a six-month lag between the actual occurrence of a disability retirement and the subsequent approval and reporting of that same retirement. To account for this, we studied the period July 1, 2010 to June 30, 2013.

The total adjusted number of disability retirements (service-connected and nonservice-connected combined) was greater than expected for General members (55 actual versus 30 expected). There were 11 actual Safety disabilities, compared to eight expected disabilities.

Disability Retirements			
Class	**Actual**	**Expected**	**Act / Exp**
General	55	30	183%
Safety	11	8	138%
Total	66	38	174%

Results – Comparison of Service and Ordinary Disability

The total disability rates are split between ordinary and service disability in accordance with the approximate relative number of each reported in the experience data for General and Safety members. The proportions of disabilities attributable to each cause in the study period are shown in the following chart.

Split between Service and Non-Service Connected Disability					
Class	**Svc**	**Non-Svc**	**Total**	**Svc/Total**	**Exp Svc %**
General	35	20	55	64%	60%
Safety	10	1	11	91%	100%

Recommendation

We are recommending increasing the rates of disability retirement for General and Safety/Probation members.

We recommend continuing to use a 60%/40% split between service-connected and nonservice-connected disabilities for General members, and an assumption of 100% service-connected disability for Safety/Probation members.

Disability Retirements					
Class	**Actual**	**Expected**	**Act / Exp**	**Proposed**	**Act / Prop**
General	55	30	183%	45	122%
Safety	11	8	138%	10	110%
Total	66	38	174%	55	120%

Section 8: Other Terminations of Employment

This section of the report summarizes the results of our study of terminations of employment for reasons other than death, service retirement, or disability. Rates of termination vary by years of service – the greater the years of service, the less likely a member is to terminate employment.

The current assumptions also vary by gender for General members, with females having a slightly higher probability of terminating than males.

Results

Overall, the actual number of terminations was higher than expected for both General and Safety members.

Termination -- General Members			
Gender	**Actual**	**Expected**	**Act / Exp**
Male	225	181	124%
Female	508	374	136%
Total	733	555	132%

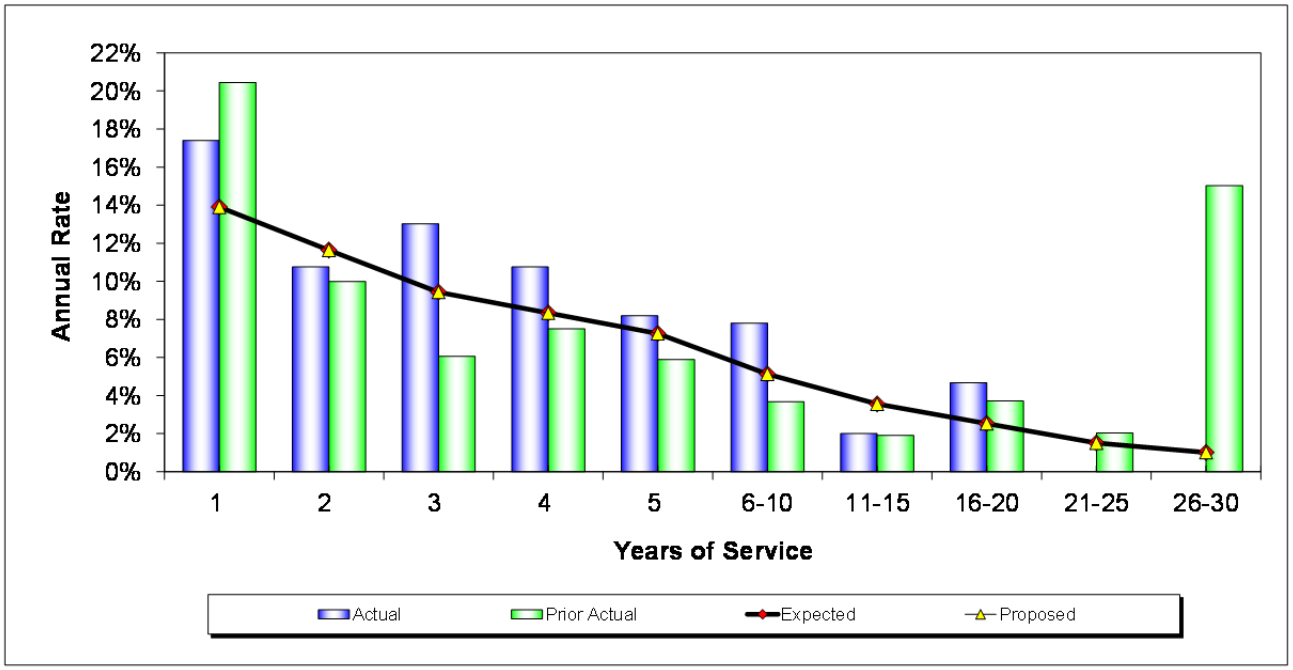
Termination - Safety Members			
Gender	**Actual**	**Expected**	**Act / Exp**
Male/Female	43	41	105%

Recommendation

As mentioned in the prior Investigation of Experience report, we believe the recessionary economic environment resulted in lower rates of termination during that period. We believe that the improving economic environment may be leading to higher rates of termination in the current period as some members who would have left employment if not for the recession have now done so. As such, we believe the current termination study results are also likely influenced by the recession, albeit in the opposite manner. We therefore reviewed the experience over the current and prior study periods in formulating a recommendation for our termination assumption and observed that, on average, the current rates are appropriate over the entire period.

Accordingly, we are recommending no changes to the rates of termination. We will continue to monitor this carefully over the next study period and consider the experience again at the next triennial study.

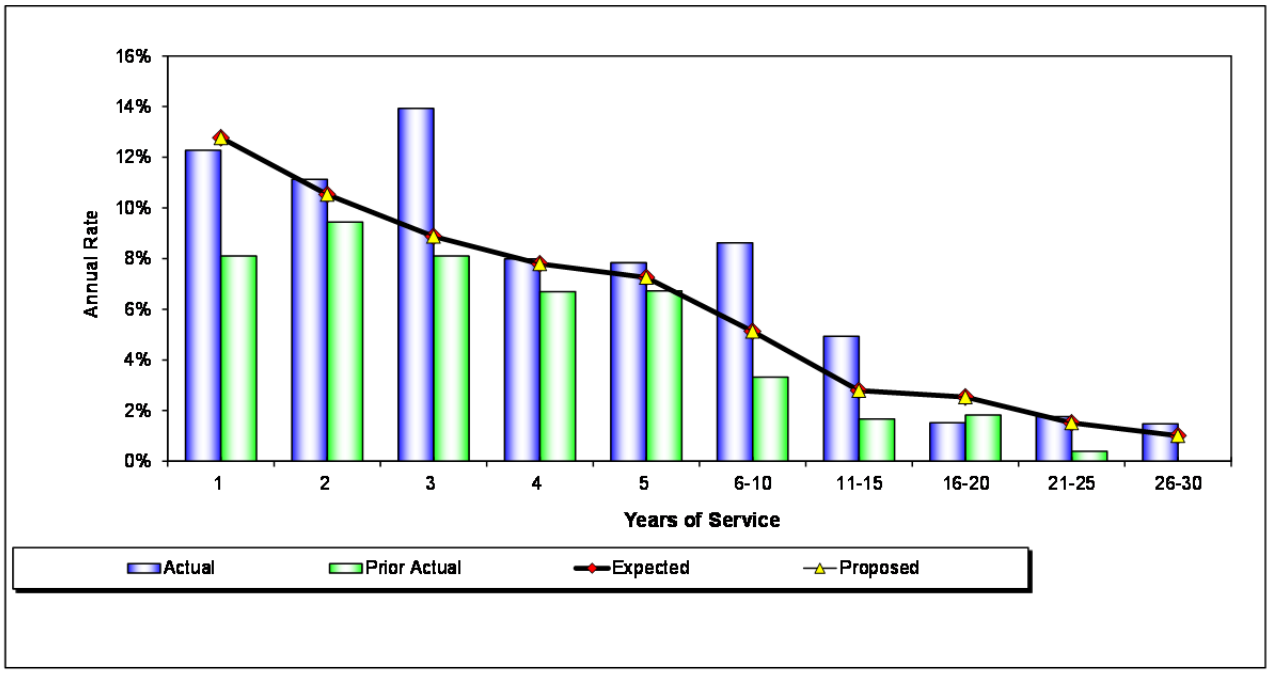
Exhibit 8-1 Termination by Years of Service* – General Males



	2011 - 2014 Data		
	Expected	Actual	Proposed
Total Count	181	225	181
Actual / Expected	124%		124%

**Excludes retirement-eligible members.*

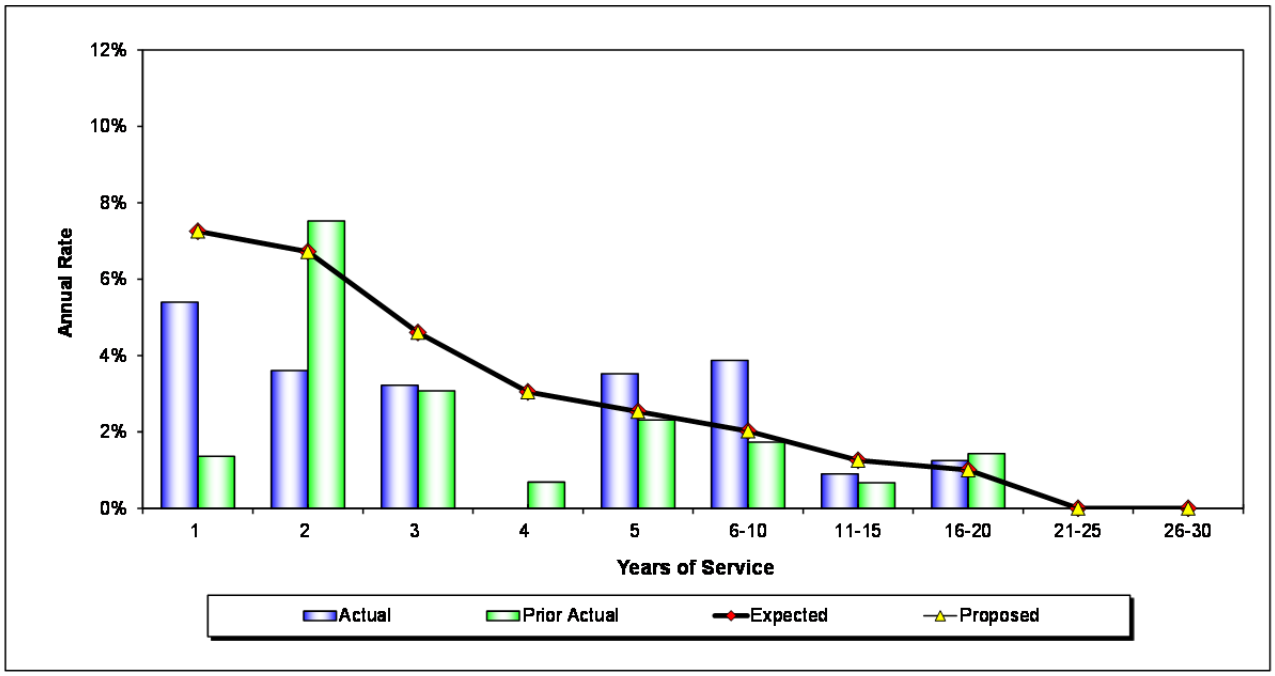
Exhibit 8-2 Termination by Years of Service* – General Females



	2011 - 2014 Data		
	Expected	Actual	Proposed
Total Count	374	508	374
Actual / Expected	136%		136%

**Excludes retirement-eligible members.*

Exhibit 8-3 Termination by Years of Service* – Safety



	2011 - 2014 Data		
	Expected	Actual	Proposed
Total Count	41	43	41
Actual / Expected	105%		105%

**Excludes retirement-eligible members.*

Section 9: Probability of Refund Upon Vested Termination

This section of the report deals with the rates at which employees elect a refund of their contributions upon termination of service. It only considers vested members who are not yet eligible for service retirement. Under the current assumptions, members who terminate with fewer years of service have a greater probability of electing to withdraw their contributions. All non-vested members are assumed to take a refund at termination.

Results

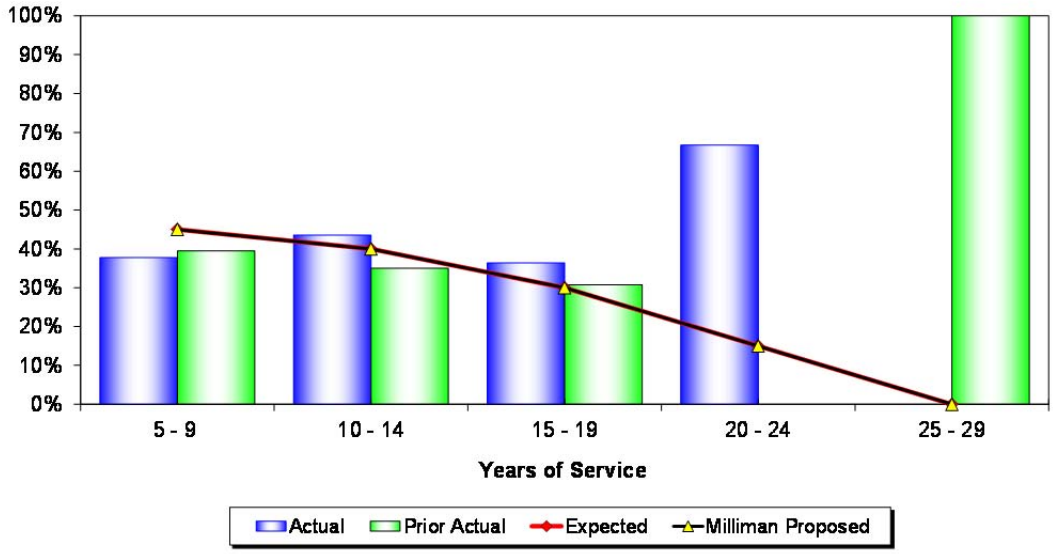
Exhibit 9-1 summarizes the results of our study. The results are generally consistent with the assumptions.

Probability of Refund					
Class	**Actual**	**Expected**	**Act / Exp**	**Proposed**	**Act / Prop**
General	149	167	89%	167	89%
Safety	10	9	111%	9	111%
Total	159	176	90%	176	90%

Recommendation

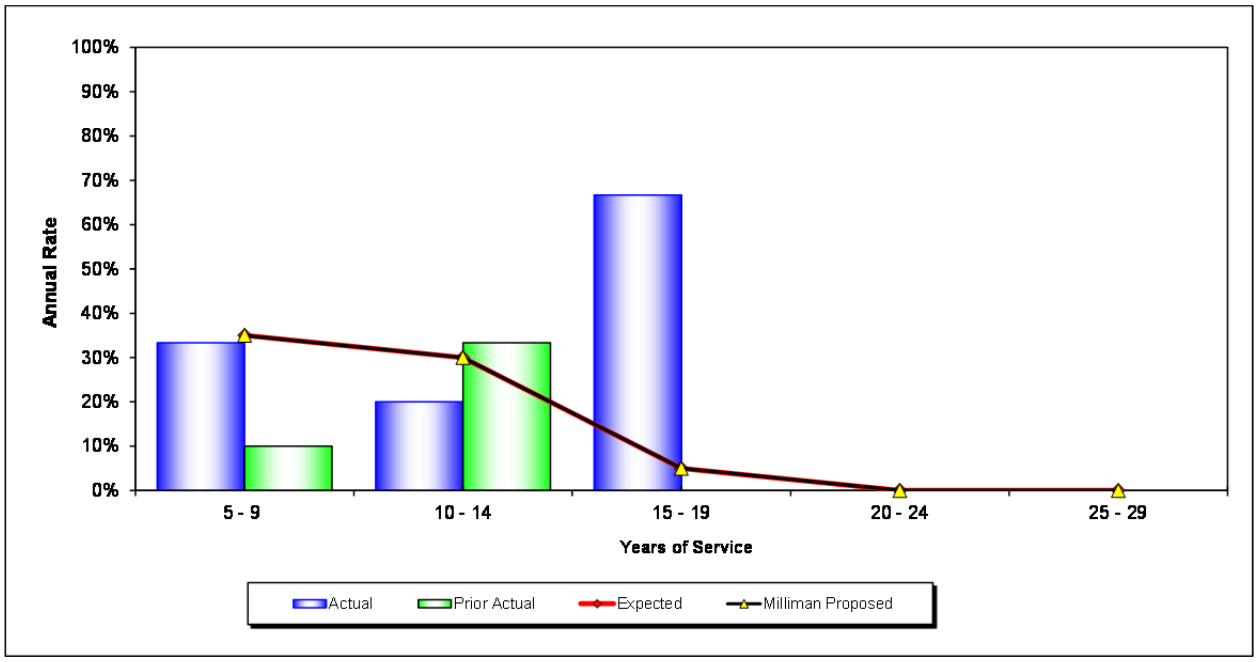
Based on the experience, we are recommending no change to the rates at which members withdraw their contributions from SamCERA.

Exhibit 9-1 Probability of Refund upon Vested Termination – General



	2011 - 2014 Data		
	Expected	Actual	Proposed
Total Count	167	149	167
Actual / Expected	89%		89%

Exhibit 9-2 Probability of Refund upon Vested Termination – Safety



	2011 - 2014 Data		
	Expected	Actual	Proposed
Total Count	9	10	9
Actual / Expected	111%		111%

This page intentionally left blank.

Appendix A: Actuarial Procedures and Assumptions

The actuarial procedures and assumptions to be used in the June 30, 2014 valuation are described in this section. The assumptions were reviewed and changed as a result of the 2014 Investigation of Experience Study. Assumptions that have been changed, or are recommended to be changed, since the June 30, 2013 valuation are highlighted in yellow in the section that follows.

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 & 4 County General members and the same member rates currently being paid by County General members from those plans. However, because the Mosquito and Vector Control District does not participate in cost sharing on the member rates, it will have a separate normal cost rate and expected member contribution rate from the County General group.

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

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

Records and Data	The data used in this valuation consist of financial information and the age, service, and income records for active and inactive members and their survivors. All of the data were supplied by SamCERA and are accepted for valuation purposes without audit.
Replacement of Terminated Members	The ages and relative salaries at entry of future members are assumed to follow a new entrant distribution based on the pattern of current members. Under this assumption, the normal cost rates for active members will remain fairly stable in future years unless there are changes in the governing law, the actuarial assumptions or the pattern of the new entrants.
Growth in Membership	For benefit determination purposes, no growth in the membership of SamCERA is assumed. For funding purposes, if amortization is required, the total payroll of covered members is assumed to grow due to the combined effects of future wage increases of current active members and the replacement of the current active members by new employees. No growth in the total number of active members is assumed.
Internal Revenue Code Section 415 Limit	The Internal Revenue Code Section 415 maximum benefit limitations are not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.
Internal Revenue Code Section 401(a)(17)	The Internal Revenue Code Section 401(a)(17) maximum compensation limitation is not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.
Employer Contributions	The employer contribution rate is set by the Retirement Board based on actuarial valuations.
Member Contributions	The member contribution rates vary by entry age (except for Plan 7) and are described in the law. Code references are shown in Appendix B of the valuation report. The methods and assumptions used are detailed later in this section. The individual member rates by entry age, plan, and class are illustrated in Appendix D of the valuation report.
Valuation of Assets	The assets are valued using a 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.

Investment Earnings and Expenses

The future investment earnings of the assets of SamCERA are assumed to accrue at an annual rate of 7.25% compounded annually, net of both investment and administrative expenses. This rate was adopted effective June 30, 2014.

Postretirement Benefit Increases

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

	General	Safety	Probation
Plan 1	3.00%	3.00%	2.90%
Plan 2	2.65%	2.65%	2.65%
Plan 3	0.00%	N/A	N/A
Plans 4, 5 & 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 3.00% 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 7.25% compounded semi-annually for an annualized rate of 7.38%. This rate was adopted effective June 30, 2014 for valuation purposes, although the change in member crediting was not effective until July 1, 2015.

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 3.50% per annum rate of increase in the general wage level of the membership.

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

SamCERA supplied two types of compensation data: 1) pensionable pay from the most recent bi-weekly pay period; and 2) pensionable pay from the prior year. We annualized bi-weekly pay (by multiplying by 26) and then used the greater of the two amounts.

Social Security Wage Base

Plan 3 members have their benefits offset by an assumed Social Security Benefit. For valuation funding purposes, we need to project the Social Security Benefit. We assume the current Social Security provisions will continue and the annual Wage Base will increase at the rate of 3.00% per year. Note, 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, they are also assumed to retire immediately. For purposes of the valuation, immediate retirement is assumed at:

- Age 62 with 38 years of service (General, except Plan 3 and Plan 7)
- Age 67 with 40 years of service (General Plan 7)
- Any age with 33 years of service (Safety & Probation, except Plans 5 and 6)
- Age 55 with 33 years of service (Safety & Probation Plan 5)
- Age 55 with 38 years of service (Safety & Probation Plan 6)
- Age 57 with 38 years of service (Safety & Probation Plan 7)

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

- Age 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.

Disablement

The rates of disablement 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 1.0%).

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 vested benefit. For Plan 3, 100% of members are assumed to elect a vested benefit. All non-vested members are assumed to elect a refund and withdraw their contributions.

The probability of refund assumptions were adopted 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 Deferred 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 deferred vested General members and 45% of future deferred vested Safety members are assumed to immediately join a reciprocal agency. For future reciprocal members, salaries are assumed to increase at the same rate as if they had remained in active employment with SamCERA. For current deferred vested members, eligibility is based on the data supplied by SamCERA and future salaries are assumed to increase at 4.02% annually.

Part-Time Employees

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

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 7.25%.

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 7.25% semiannually (7.38% annual rate).

E. Member Rates are assumed to increase with entry age, except in Plan 7. There are a few exceptions at the higher entry ages where the calculated rate is less than the previous entry age. In these cases the member contribution rate is adjusted so that it is no less than the value for the previous entry age.

F. Member Rates for members of the California Nurses Association, members of the Union of American Physicians and Dentists and members of the Probation and Detention Association in Plans 1, 2, and 4 are loaded to account for a 25% COLA share. The COLA loads are applied to the otherwise applicable basic member rates, prior to the addition of cost-sharing. The loads were determined based on 2012 information and were applied as follows:

   Plan 1 General members: 20.87% load
   Plan 2 General members: 16.40% load
   Plan 4 General members: 11.18% load

   Plan 1 Probation members: 31.29% load
   Plan 2 Probation members: 31.29% load
   Plan 4 Probation members: 20.39% load

Member Contribution Rate Assumptions (continued)

G. General members rehired on or after August 7, 2011, Safety members rehired on or after January 8, 2012 and Probation members rehired on or after July 10, 2011 in Plans 1, 2, and 4 are loaded to account for a 50% COLA share. The COLA loads are applied to the otherwise applicable basic member rates, prior to the addition of cost-sharing. The loads were determined based on 2012 information and were applied as follows:

Plan 1 General members: 41.75% load
Plan 2 General members: 32.79% load
Plan 4 General members: 22.36% load

Plan 1 Safety members: 62.54% load
Plan 2 Safety members: 50.00% load
Plan 4 Safety members: 32.81% load

Plan 1 Probation members: 62.57% load
Plan 2 Probation members: 62.57% load
Plan 4 Probation members: 40.78% load

H. Member rates for members in Plans 5 and 6 are loaded to account for 50% COLA share. The COLA loads are applied to the otherwise applicable basic member rates, prior to the addition of cost-sharing where applicable. The loads were determined based on 2012 information and were applied as follows:

Plan 5 General members: 21.30% load

Plan 5 Probation members: 37.02% load
Plan 6 Probation members: 33.36% load

Plan 5 Safety members: 30.07% load
Plan 6 Safety members: 26.88% load

San Mateo County Employees' Retirement Association

Table A-1: Summary of Valuation Assumptions as of June 30, 2014

I.	Economic assumptions	
	A. General wage increases	3.50%
	B. Investment earnings	7.25%
	C. Growth in active membership	0.00%
	D. CPI inflation assumption	3.00%
II.	Demographic assumptions	
	A. Salary increases due to service	Table A-5
	B. Retirement	Tables A-6 to A-11
	C. Disablement	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:

Class of Members	Age Adjustment
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

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

Class of Members	Age Adjustment
General – Males	-3 years
General – Females	-3 years
Safety – Males	-3 years
Safety – Females	-3 years

Table A-1: Summary of Valuation Assumptions as of June 30, 2014 (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:

Class of Members	Age Adjustment	Minimum Rate
General – Males	-3 years	None
General – Females	-3 years	None

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

Class of Members	Age Adjustment	Minimum Rate
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

San Mateo County Employees' Retirement Association

Table A-2: Mortality for Members Retired for Service

Age	General Male	General Female	Safety Male	Safety Female
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%

San Mateo County Employees' Retirement Association

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%

San Mateo County Employees' Retirement Association

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

Years of Service	General	Safety
0	100%	100%
1	100%	100%
2	100%	100%
3	100%	100%
4	100%	100%
5	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%

San Mateo County Employees' Retirement Association

Table A-5: Annual Increase in Salary

Years of Service	Due to Promotion and Longevity	Total Annual Increase*
<1	6.00%	9.71%
1	4.00%	7.64%
2	3.00%	6.61%
3	2.50%	6.09%
4	2.00%	5.57%
5	1.75%	5.31%
6	1.50%	5.05%
7	1.25%	4.79%
8	1.05%	4.59%
9	0.90%	4.43%
10	0.80%	4.33%
11	0.70%	4.22%
12	0.60%	4.12%
13	0.50%	4.02%
14	0.50%	4.02%
15	0.50%	4.02%
16	0.50%	4.02%
17	0.50%	4.02%
18	0.50%	4.02%
19	0.50%	4.02%
20 or More	0.50%	4.02%

** The total expected increase in salary is the increase due to promotions and longevity, adjusted for an assumed 3.50% per annum increase in the general wage level of the membership. The total result is compounded rather than additive.*

San Mateo County Employees' Retirement Association

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

San Mateo County Employees' Retirement Association

Table A-6: Rate of Separation From Active Service General Plans 1, 2, 4, 5 & 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 (67/40 for Plan 7).*

San Mateo County Employees' Retirement Association

Table A-7: Rate of Separation From Active Service General Plans 1, 2, 4, 5 & 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 (67/40 for Plan 7).*

San Mateo County Employees' Retirement Association

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		

San Mateo County Employees' Retirement Association

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		

San Mateo County Employees' Retirement Association

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, and at ages 55 and above with 38 or more years of service for Safety and Probation Plan 6 (57/38 for Plan 7).*

San Mateo County Employees' Retirement Association

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, and at ages 55 and above with 38 or more years of service for Safety and Probation Plan 6 (57/38 for Plan 7).*