

**Santa Barbara County  
Employees' Retirement System**

**Experience Analysis**

**Produced by [Cheiron](#)**

**November 8, 2013**

## TABLE OF CONTENTS

<b>Letter of Transmittal</b>	<b>i</b>
<b>Section I: Executive Summary</b>	<b>1</b>
Purpose.....	1
Summary of Economic Assumption Analysis .....	1
Summary of Demographic Assumption Analysis.....	2
Cost of Economic and Demographic Assumption Changes .....	2
<b>Section II: Economic Assumptions</b>	<b>3</b>
Introduction.....	3
Inflation.....	3
Investment Return .....	5
Administrative Expenses.....	7
Payroll Growth.....	7
COLA Growth.....	8
<b>Section III: Demographic Assumptions</b>	<b>9</b>
Merit Salary Increases.....	9
Rates of Retirement.....	11
Mortality Rates.....	16
Disability Rates .....	20
Termination Rates .....	22
Refund Rates and Reciprocity.....	25
Family Composition.....	27
<b>Section IV: Proposed Assumptions</b>	<b>28</b>
<b>Section V: Methodology</b>	<b>35</b>
Purposes of the Experience Study.....	35
Scope of Report.....	35
Importance of Reliable Assumptions .....	36
Methodology (Economic Assumptions) .....	36
Methodology (Demographic Assumptions).....	37

## LETTER OF TRANSMITTAL

November 8, 2013

Retirement Board of Santa Barbara  
County Employees' Retirement System  
3916 State Street, Suite 210  
Santa Barbara, CA 93105

Dear Members of the Board:

At your request, we have completed an experience analysis of the assumptions used in the valuations of the Santa Barbara County Employees' Retirement System (SBCERS). The economic assumptions studied were the investment return, administrative expenses and wage, payroll and COLA inflation. The demographic analysis compares assumed versus actual experience for the three-year period from July 1, 2010 through June 30, 2013.

This report presents the results of our analysis as well as recommendations for the assumptions to be used in performing the July 1, 2013 actuarial valuation. In preparing our report, we relied without audit, on information (some oral and some written) supplied by SBCERS. This information includes, but is not limited to, the plan provisions, employee data, and financial information.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Cheiron's experience study was prepared exclusively for the Retirement Board of Santa Barbara County Employees' Retirement System for a specific and limited purpose. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Cheiron's work product (other than the Fund's auditor, attorney, third party administrator or other professional when providing professional services to the fund or any governmental agency to which this certification is required to be submitted by law or regulation) who desires professional guidance should not rely upon Cheiron's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

We are available to answer any questions about the contents of this report or the process used in our analysis.



Retirement Board Santa Barbara County  
Employees' Retirement System  
November 8, 2013  
Page ii

Sincerely,  
Cheiron

A handwritten signature in blue ink, appearing to read "Robert T. McCrory".

Robert T. McCrory, FSA, EA, MAAA  
Principal Consulting Actuary

A handwritten signature in blue ink, appearing to read "Graham A. Schmidt".

Graham A. Schmidt, ASA, MAAA  
Consulting Actuary

SECTION I - EXECUTIVE SUMMARY

**EXECUTIVE SUMMARY**

**PURPOSE**

Actuarial assumptions (economic and demographic) are intended to be long-term in nature, and should be both individually reasonable and consistent in the aggregate. The purpose of this experience analysis is to evaluate whether or not the current assumptions adequately reflect the long-term expectations for the Santa Barbara County Employees' Retirement System (SBCERS), and if not, then recommend any adjustments that might be needed. It is important to note that frequent and significant changes in the actuarial assumptions from year-to-year are not typically implemented, unless there are known fundamental changes in expectations of the economy, or with respect to SBCERS's membership or assets, that would warrant such frequent or significant change.

The plan's economic assumptions were reviewed. The economic assumptions include the assumed rates of inflation, COLA increases, investment return, active payroll growth and administrative expense assumptions.

The Plan's demographic experience – observed rates of retirement, withdrawal, termination, disability, and death, as well as other assumptions – is compared with the experience expected under the actuarial assumptions currently used to determine Plan liabilities and cost, and revised assumptions are recommended as appropriate.

**SUMMARY OF ECONOMIC ASSUMPTION ANALYSIS**

The specific economic assumptions analyzed in this report are wage inflation, investment return, administrative expense assumptions, payroll growth, and COLA growth. These assumptions have a significant impact on the contribution rates in the short-term and the risk of negative outcomes in the long-term.

A review of the Plan's economic assumptions based on the allocation of Plan assets and the history of the financial markets indicates that the current economic assumptions of a nominal 7.75% annual rate of return and a 3.25% annual rate of inflation should be lowered to 7.50% and 3.00% respectively.

We have performed additional analyses based on the future expectations of the Plan's investment consultant, as well as other investment consultants. We have also reviewed market expectations for inflation as revealed in the Inflation Curve published by the Federal Reserve Bank of Cleveland, and we are familiar with the economic assumptions being adopted by pension plans nationwide.

This evidence further strengthens our belief that the Retirement Board should reduce the assumed inflation rate from 3.25% to 3.00%, and retain a 4.50% real return assumption, resulting in a reduction of the nominal return assumption from 7.75% to 7.50%. Accordingly, we are recommending a reduction in the payroll growth assumption from 3.75% to 3.50%, and a revised rate of expected COLA growth (2.75%), which is derived from simulations of the future level of inflation and is below the 3% COLA cap.

We are also recommending that SBCERS include an additional cost item for expected annual administrative expenses in the actuarial cost calculation. In addition to providing a more transparent approach for determining plan costs, this change also has the benefit of bringing the determination of Plan liabilities in line with new GASB accounting standards.

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION I - EXECUTIVE SUMMARY

**SUMMARY OF DEMOGRAPHIC ASSUMPTION ANALYSIS**

The specific demographic assumptions analyzed in this report are merit salary increases, retirement rates, mortality rates, disability rates, termination rates, refund rates, reciprocity percentage and family composition. The details of the analysis for each of these assumptions are provided later in the report, but the most significant recommended changes are for disability, termination and mortality rates.

We are proposing minor reductions to retirement rates for General females and Safety Plan 4 members, a reduction in most disability rates and increases or decrease in termination rates depending on the years of service a member.

Mortality rates and the tools used to analyze them have continued to improve. As such, we are recommending changes to the mortality assumptions. We are proposing to continue using the Retired Pensioner (RP) 2000 Tables, published by the Society of Actuaries, but to move from using Projection Scale AA to a static date toward using Projection Scale BB with generational mortality. This change is discussed in further detail in Section III.

**COST OF ECONOMIC AND DEMOGRAPHIC ASSUMPTION CHANGES**

The table on the next page summarizes the estimated cost impact of the recommended changes to economic and demographic assumptions.

<b>Employer Contribution Rate Increase Recommended Assumption Changes</b>	
<b>Assumption</b>	<b>Total</b>
Employer Contribution Rate as of July 1, 2012 before Study	38.30%
Termination Rates	-0.17%
Disability Rates	-0.22%
Retirement Rates	-0.04%
Family Composition	-0.13%
Mortality Rates	-0.54%
Economic Assumptions	+1.39% <sup>1</sup>
Total	+0.29%
Employer Contribution Rate as of July 1, 2012 after Study <sup>2</sup>	38.59%

The body of this report provides additional detail and support for our conclusions and recommendations.

<sup>1</sup> Assumes cost of Administrative expenses split between Employees and Employers based on current ratio.

<sup>2</sup> Does not include impact of changes to Employee contribution rates as a result of assumption changes.

SECTION II - ECONOMIC ASSUMPTIONS

**ECONOMIC ASSUMPTIONS**

**INTRODUCTION**

Economic assumptions utilized in the development of actuarial liabilities and costs for a defined benefit plan include:

- The inflation assumption;
- The real investment return assumption;
- The real growth in pay relative to inflation; and
- COLA increases relative to inflation.

While we look to the past for indications of future economic behavior, we must also consider how the future may be expected to be different. In order to reflect the long-term nature of defined benefit plan funding in the development of these economic assumptions, it is appropriate to focus on long term trends.

**INFLATION**

While historical trends are not entirely indicative of the future, they do serve as a useful guide in the determination of assumptions. However, there are elements of the future economic environment that may differ from the past due to structural changes. An important and fundamental case in point is the rate of inflation, which underlies each of the three elements of economic assumptions listed above.

Chart II-1 on the next page shows the average rate of inflation over 30-year periods, with the earliest such period ending in 1955 and the latest ending in 2012. We note in the chart that inflation seemed to be increasing steadily until the 1990's when it leveled off and began to decrease. Examination of Chart II-1 may lead to the conclusion that there is a potential for inflation to be quite high, exceeding 4% to 5% annually.

However, there are a number of reasons to believe that future inflation levels will not be as high as Chart II-1 would seem to suggest.

- An important reason for the high rate of inflation in the averages above is the nine-year period 1973-81 when inflation averaged 9.2% per year.
- The years 1973-81 featured unprecedented levels of household formation. The demand for new houses, cars, office space and equipment caused by the maturation of the post-war baby boom may have largely been responsible for the inflation during these years. Since 1983, increases have been in the range 0.1% to 4.6% with one exception (6.1% in 1990), producing a compounded average of 2.90% per year.
- The population of the United States is aging, which implies a greater likelihood of low inflation in the future. This has been observed in other countries with aging populations, such as Japan.
- Currently, the Federal Open Market Committee has policies in place to control inflation, making future levels more likely to remain relatively low.

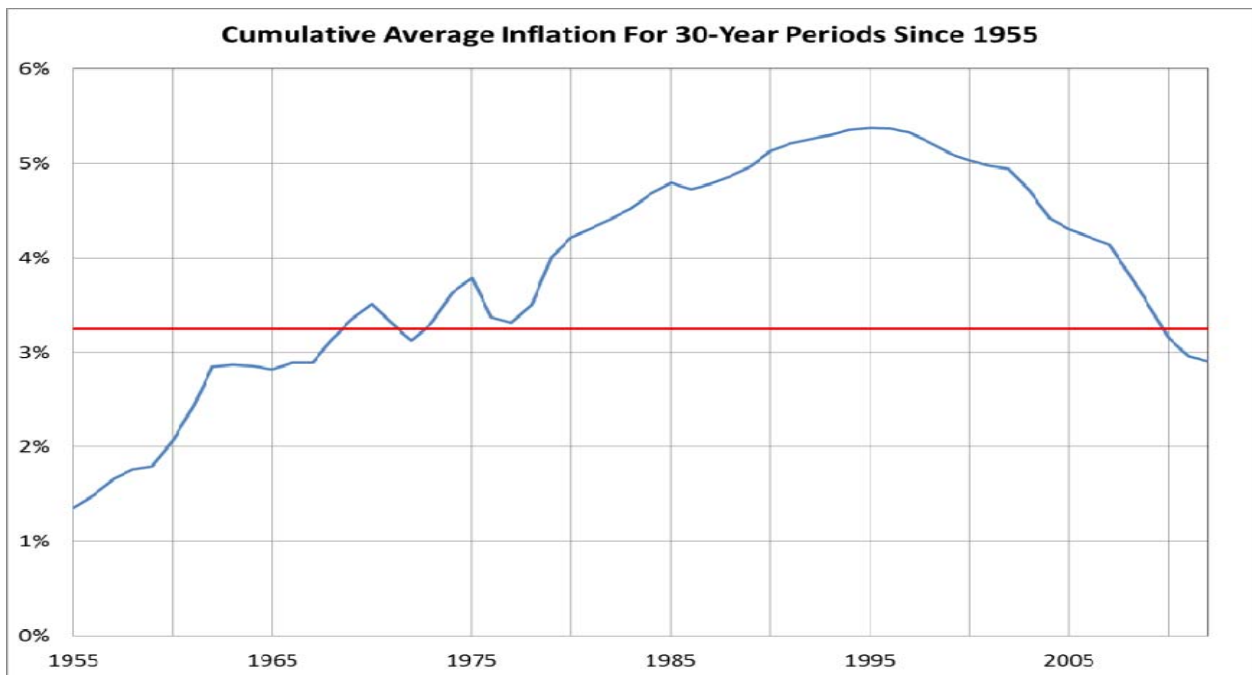
SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION II - ECONOMIC ASSUMPTIONS

- The Survey of Professional Forecasters, a quarterly publication of the Research Department of the Philadelphia Reserve Bank, indicates that national inflation levels are expected to be 2.30% on average over the next ten years.
- Financial markets offer evidence of what investors expect inflation to be in future years. Various securities, such as Treasury inflation-protected securities (TIPS), provide the necessary data for these analyses. As an example, a recent publication by the Federal Reserve Bank of Cleveland attempts to incorporate some of this market data. It contained the 30-year projection of expected inflation rates shown in Chart II-2.
- Meketa, the investment consultant retained by SBCERS, bases their capital market assumptions on an assumption that average inflation over the next 20 years will be 2.80%.

**Chart II-1: Average Past Inflation**



An assumption of below 3% may appear to match well with current market and professional expectations. However, the predictions of future inflation by experts are not unanimous. Some commentators note that the large current and expected future deficits increase the likelihood of higher levels of inflation in the future. Also, historical data shows that periods of higher inflation can and do occur.

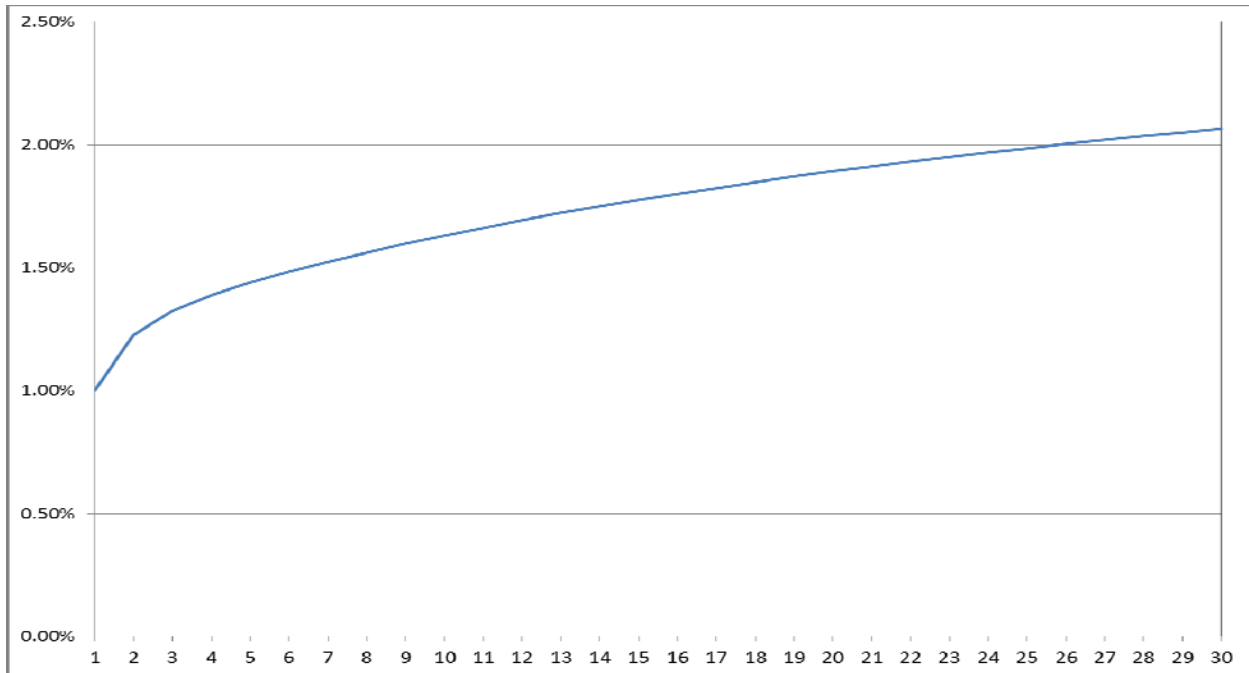


SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION II - ECONOMIC ASSUMPTIONS

Chart II-2: Expected Inflation



(Source: Cleveland Federal Reserve website. As of July 1, 2013)

A change from the current 3.25% assumption to an assumption below 3.0% would represent a larger change than may be advisable in one step. Therefore, we recommend reducing the inflation assumption from 3.25% to 3.0%, a moderate but still significant reduction. If, at the time of the next experience study, the markets and forecasters continue to indicate lower expectations of future inflation, further reductions in the assumption could be considered.

**INVESTMENT RETURN**

The investment return assumption depends on the anticipated average level of inflation and the anticipated average *real rate of return*. The real rate of return is the investment return in excess of underlying inflation. The expected average real rate of return is heavily dependent on asset mix.

In Chart II-3 on the next page, we have simulated the return derived using SBCERS's actual target allocation as stated in the SBCERS Investment Policy Statement approved April 24, 2013. The simulated returns are derived using the following algorithm:

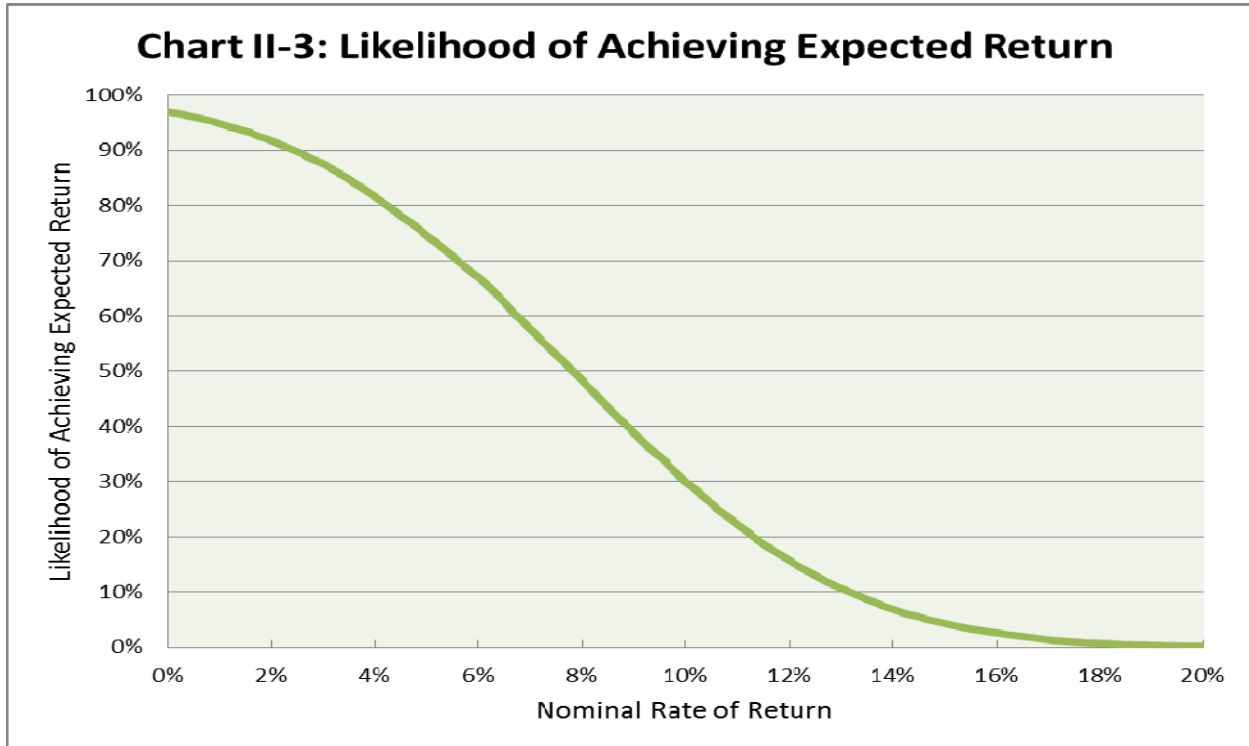
1. The expected returns, standard deviation and correlation matrix for each asset class were gathered from two sources: An investment consultant active in other '37 Act systems and from the consensus estimates prepared by CalPERS. These independent data sources were used to provide a return estimate separate from that provided by the SBCERS investment consultant.

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION II - ECONOMIC ASSUMPTIONS

2. The expected returns for each class were modified to adjust for the difference in the inflation assumption used by the independent investment consultant (2.4%) and the proposed inflation assumption used for actuarial purposes (3.0%).
3. 10,000 simulation trials for repeated ten year periods were run, and the mean geometric return was computed for each of the ten year periods.



4. Given the distribution of returns, we have created Chart II-3 above that shows the likelihood of the geometric mean return for a specific trial exceeding a specified nominal return assumption over a ten year period.

The mean return from this simulation was 7.8%, for a real return of 4.8%. Note that the curve crosses the 50% likelihood threshold right around this point, meaning that chances are about even that a 7.8% return will be achieved over a ten year period. However, also note that while investment expenses have been subtracted from the simulated returns, administrative expenses have not. Therefore, as discussed below, administrative expenses must be handled as a separate line item.

To obtain another data point we simulated the return of the SBCERS asset allocation using the capital market assumptions adopted by CalPERS. The mean compound return, after adjusting for the differing inflation assumptions, was 7.1%, a real return rate of 4.1%, well below the 4.8% discussed above.

Such differences in expected future returns are neither new nor alarming and, in fact, are expected. However, the combined results of the simulations from the two sets of independent

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION II - ECONOMIC ASSUMPTIONS

assumptions – those from the investment consultant and from CalPERS – suggest that an assumed return rate below the current level of 7.75% is now appropriate.

Accordingly, we recommend a nominal annual return assumption of 7.50%, representing a reduction of 0.25% in the return assumption, with the exception that the return assumption is no longer expected to be net of administrative expenses as described below.

**ADMINISTRATIVE EXPENSES**

The returns discussed above are expected to be net of investment expenses; administrative expenses are not addressed. According to Article 31580.2 of the '37 Act, administrative expenses (excluding certain technology expenses) may not exceed 0.21% of the *accrued liabilities* of the retirement system. Over the past three years, administrative expenses have averaged about 0.2% of the *average assets* of the retirement system.

Changes to the GASB accounting statements require that the discount rate for accounting purposes will be determined net of investment, but not administrative, expenses in future years; a separate line item for administrative expenses will be included in the determination of pension expense.

Accordingly, we recommend that SBCERS begin to include an additional cost item for expected annual administrative expenses in the actuarial cost calculation. For the valuation as of July 1, 2013, we recommend an assumption of \$4.25 million, based on an analysis of administrative expense items that have been paid out of Plan assets over the past three years. This represents a cost of approximately 1.4% of payroll. Counsel has recommended that the members should be charged a portion of the administrative expenses equal to the percentage of the overall contributions paid by the members.

**PAYROLL GROWTH**

Components of the payroll growth assumptions are:

- Inflation, and
- Payroll growth above inflation that is not offset by salary reductions from replacement of terminating employees with new entrants.

Such increases are often attributed to productivity gains. Other factors contributing to non-inflationary base salary increases include growth in the active workforce, bargaining pressures, competition among local employers, and workforce demographic issues.

The inflationary component is the assumed CPI, with a recommended rate of 3.0%. In general we recommend that long range gains due to productivity, the collective bargaining process or other pressures should be assumed to be zero or minimal. While productivity tends to increase in many sectors of the economy, any long-term assumption of salary growth beyond inflation carries with it an assumed improvement in *relative* standard of living.

It is acceptable to assume some additional level of base payroll increase beyond general inflation. Potential reasons contributing to the increase may include the presence of strong union representation in the collective bargaining process, competition in hiring among other similar

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION II - ECONOMIC ASSUMPTIONS

employers, and regional factors – such as the local inflation index exceeding the national average, as has proven the case in parts of California.

Cheiron recommends maintaining the current non-inflationary base payroll growth assumption of 0.50% annually. Therefore, the annual expected increase in base payroll would be 3.50%, reduced from 3.75% in the most recent valuation. This increase will be applied to all continuing active members, and to starting pay for new entrants when projections of future populations are required. This increase will also be used in the calculation of the unfunded liability amortization payment as a level percentage of payroll.

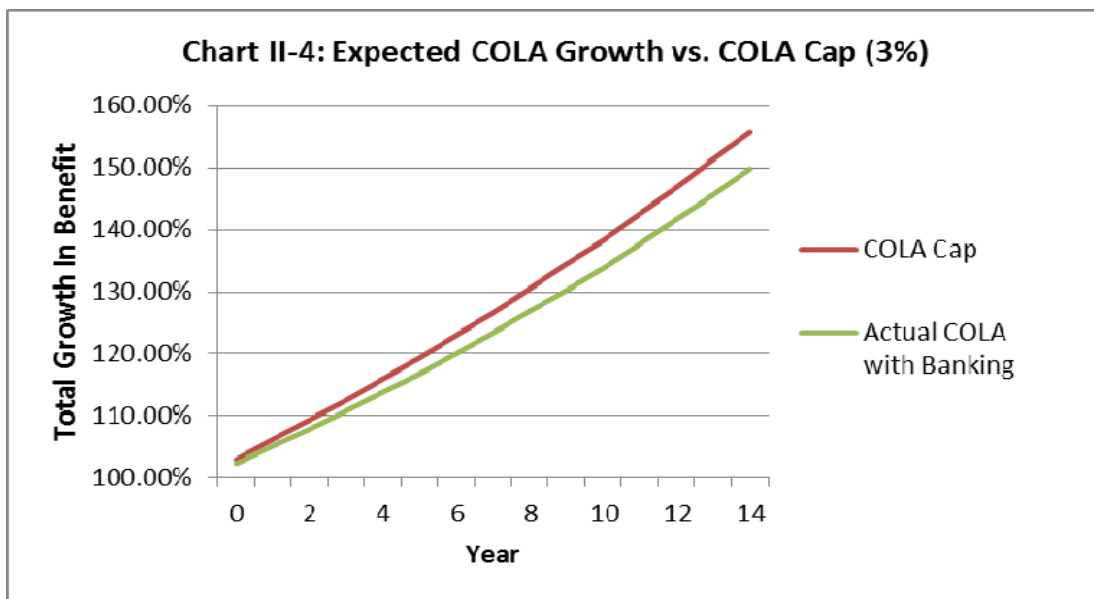
**COLA GROWTH**

The members of SBCERS are eligible to receive automatic Cost of Living Adjustments (COLAs), based on the growth in the Bay Area Consumer Price Index (CPI) and reflecting a 3% cap on the annual COLA increase. Any increase in the CPI above the 3% maximum increase can be banked for future years in which the change in the CPI is below 3%.

It is necessary to determine an assumed rate of COLA growth, reflecting both inflation (i.e. the growth in the CPI) and the interaction of the CPI with the 3% COLA cap.

We have produced statistical simulations of inflation, similar to our modeling of the investment return assumption, and then modeled how the COLA maxima and the banking process interact with the changes in CPI.

Chart II-4 below demonstrates how the expected growth in the COLA is expected to be below the cap, even if the expected increase in the CPI (3.0% based on our earlier recommendation) is higher than the cap itself (3.0% in this example). This is because if there is not a significant bank already in existence (such as in the early years of retirement) and there are years in which inflation is below the cap, this shortfall will not be made up in future years.



Based on a 3.0% recommended inflation assumption, we recommend an assumed COLA growth rate of 2.75% per year.

SECTION III – DEMOGRAPHIC ASSUMPTIONS

**DEMOGRAPHIC ASSUMPTIONS**

**MERIT SALARY INCREASES**

Salary increases consist of three components: Increases due to cost of living maintenance (inflation), increases related to non-inflationary pressures on base pay (such as productivity increases), and increases in individual pay due to merit, promotion, and longevity. Increases due to cost of living and non-inflationary base pay factors were addressed in an earlier section of this report.

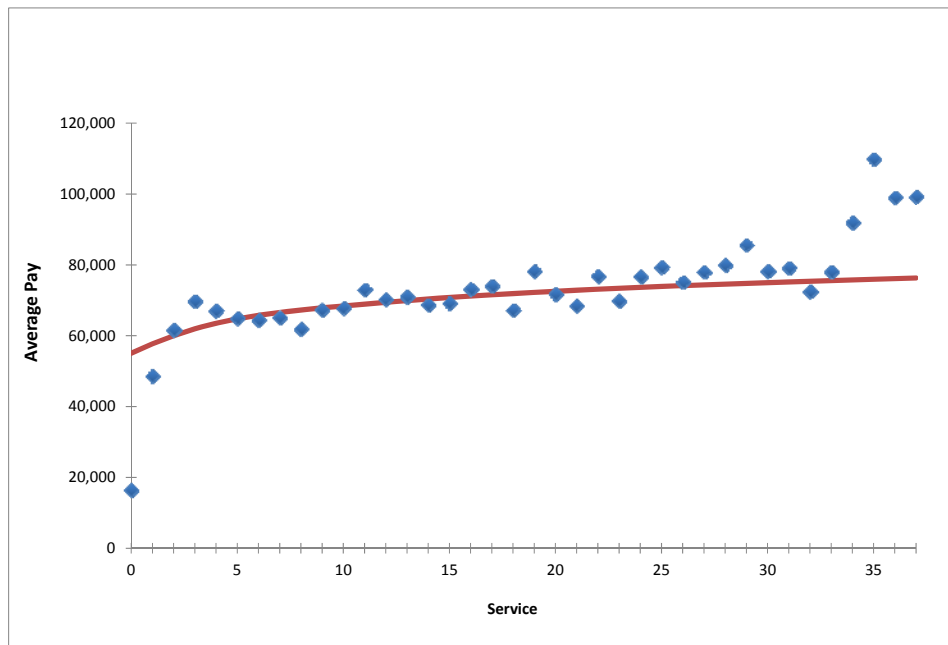
Charts III-1 and III-2 on the following pages compare the current pay patterns for General and Safety members compared to the current pay data. Only increases due to merit (promotion and longevity) are considered here. In the graphs, the average pay of the active members of SBCERS as of July 1, 2013 is plotted against service. A curve is then fitted to the average pay data, and this curve is used to determine a pay increase due to merit.

This is a *transverse* study of longevity and promotion pay increases: Salaries are examined at one point in time (the valuation date), as opposed to being observed over a number of years (a *longitudinal* study). For a more detailed description of this type of study and its advantages, see the Methodology section at the end of this report.

Chart III-1 below shows the average pay by years of service under the current assumption (red line) compared to the actual experience (blue dots) for General employees.

**Chart III-1**

**SBCERS General Employees  
Average Pay by Years of Service**



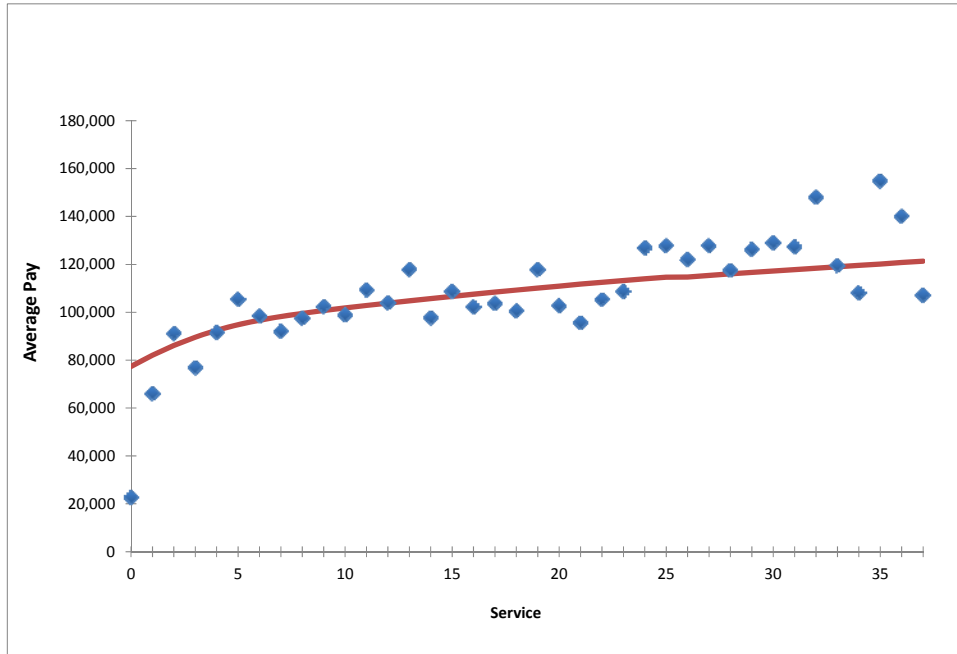
SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

Chart III-2 below shows the average pay by years of service under the current assumption (red line) compared to the actual experience (blue dots) for Safety employees.

**Chart III-2**  
**SBCERS Safety Employees**  
**Average Pay by Years of Service**



Since the actual pay data is in close accord with the assumed rates of merit increase for both General and Safety employees, no change to the assumed rates is recommended.

**SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

**EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013**

**SECTION III – DEMOGRAPHIC ASSUMPTIONS**

**RATES OF RETIREMENT**

In this section, we develop our analysis of rates of retirement. For each membership group studied, we determined the ratio of the actual number of retirements at each age compared to the expected number of retirements. If the assumption is perfect, this ratio will be 100%. In addition, we calculated the 90% confidence interval, which represents the range within which the true retirement rate falls with 90% confidence.

We generally propose assumption changes when the current assumption is outside the 90% confidence interval of the observed experience. However, adjustments are made to account for differences between future expectations and historical experience, to account for the past experience represented by the current assumption, and to maintain a neutral to slight conservative bias in the selection of the assumption.

Normal Retirement assumptions for General employees in Plan 2 start at age 55 with 10 years of service. Normal Retirement assumptions for General employees in all other plans start at age 50 with 5 years of service and 10 years of elapsed time since membership or at any age with 30 years of service or at age 70.

Normal Retirement assumptions for Safety employees start at age 50 with 5 years of service and 10 years of elapsed time since membership or at any age with 20 years of service. Once a SBCERS General employee reaches age 75 and a SBCERS Safety employee reaches age 65, we assume 100% probability of retirement.

Chart III-3 on the next page shows a graphical comparison of the actual, current and proposed rates of retirement for General male members, along with the 90% confidence interval, and Table III-3 shows the more detail on these calculations, including actual to expected ratios.

The data shows actual retirement rates fairly close to the expected rates under the current assumption. The recommendation is to not change this assumption, and as a result there is only a single line shown in Chart III-3 for the current and proposed assumptions.

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

Chart III-3

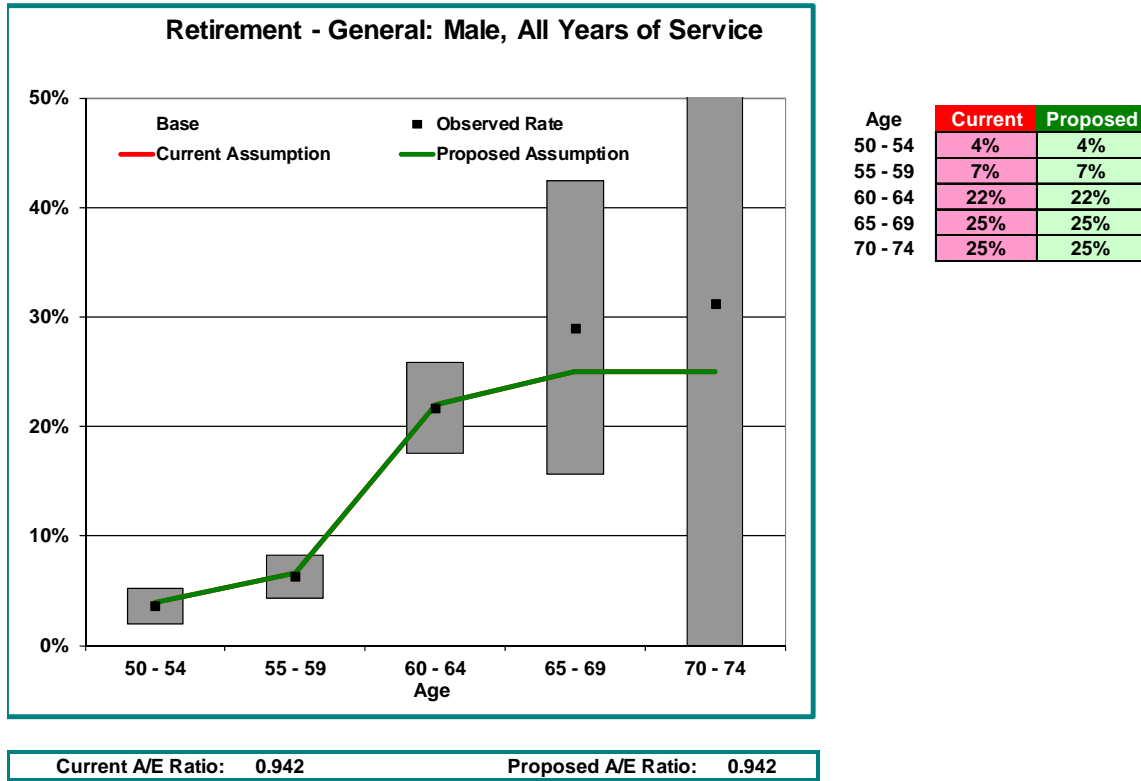


Table III-3

Retirement - General: Male, All Years of Service							
Age	Exposures	Total Actual Retirements	Actual Rates	Current Expected Retirements	Proposed Expected Retirements	Current A/E Ratio	Proposed A/E Ratio
45 - 49	3	0	0.00%	0.1	0.1	0%	0%
50 - 54	358	13	3.63%	14.0	14.0	93%	93%
55 - 59	430	27	6.28%	28.5	28.5	95%	95%
60 - 64	267	58	21.72%	58.7	58.7	99%	99%
65 - 69	31	9	29.03%	7.8	7.8	116%	116%
70 - 74	16	5	31.25%	4.0	4.0	125%	125%
75	7	1	14.29%	7.0	7.0	14%	14%
<b>Subtotal</b>	<b>1,112</b>	<b>113</b>	<b>10.16%</b>	<b>120.0</b>	<b>120.0</b>	<b>94%</b>	<b>94%</b>



SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

Chart III-4 shows a graphical comparison of the actual, current and proposed rates of retirement for General female members, along with the 90% confidence interval, and Table III-4 shows the more detail on these calculations, including actual to expected ratios.

The retirement rates experienced for General female members are slightly lower than expected under the current assumption. The recommended assumptions slightly decrease the assumed rates of retirement for female General members of all ages and increase the A/E ratio from 0.805 to 0.848.

Chart III-4

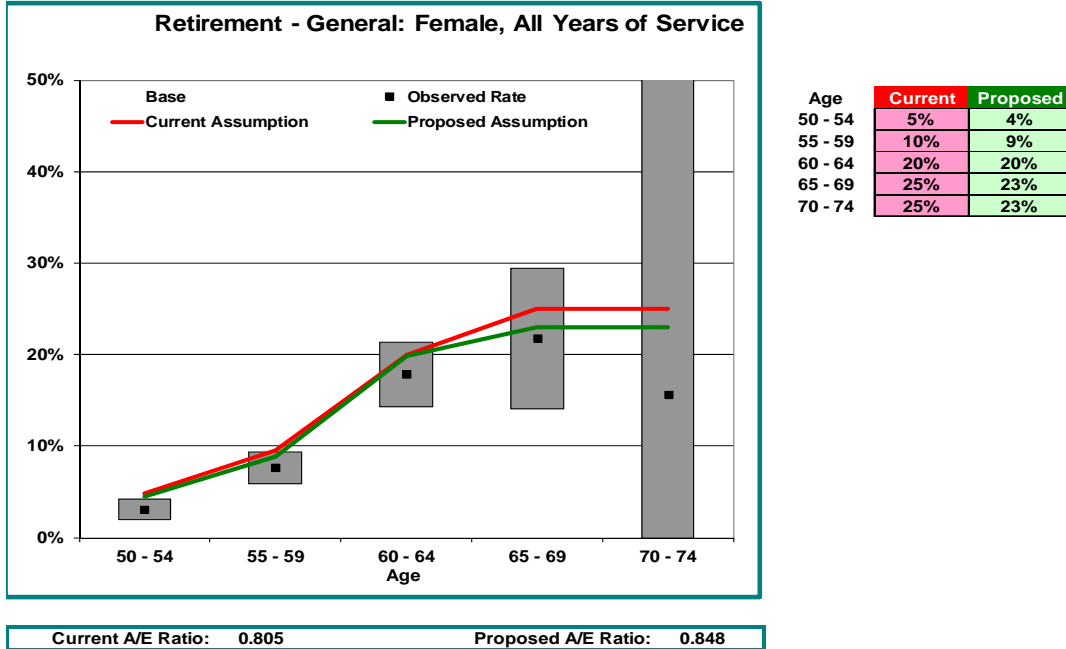


Table III-4

Retirement - General: Female, All Years of Service							
Age	Exposures	Total Actual Retirements	Actual Rates	Current Expected Retirements	Proposed Expected Retirements	Current A/E Ratio	Proposed A/E Ratio
50 - 54	651	20	3.07%	31.3	29.0	64%	69%
55 - 59	640	49	7.66%	61.1	56.8	80%	86%
60 - 64	314	56	17.83%	62.7	62.3	89%	90%
65 - 69	78	17	21.79%	19.5	17.9	87%	95%
70 - 74	32	5	15.63%	8.0	7.4	63%	68%
75	0	0		0.0	0.0		
<b>Subtotal</b>	<b>1,715</b>	<b>147</b>	<b>8.57%</b>	<b>182.5</b>	<b>173.4</b>	<b>81%</b>	<b>85%</b>

Chart III-5 on the next page shows a graphical comparison of the actual, current and proposed rates of retirement for Safety members in Plan 4, along with the 90% confidence interval, and Table III-5 shows the more detail on these calculations, including actual to expected ratios.

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

The retirement rates experienced for Safety Plan 4 members are slightly lower than expected under the current assumption. The recommended assumptions slightly decrease the assumed rates of retirement for all ages and increase the A/E ratio from 0.813 to 0.869.

Chart III-5

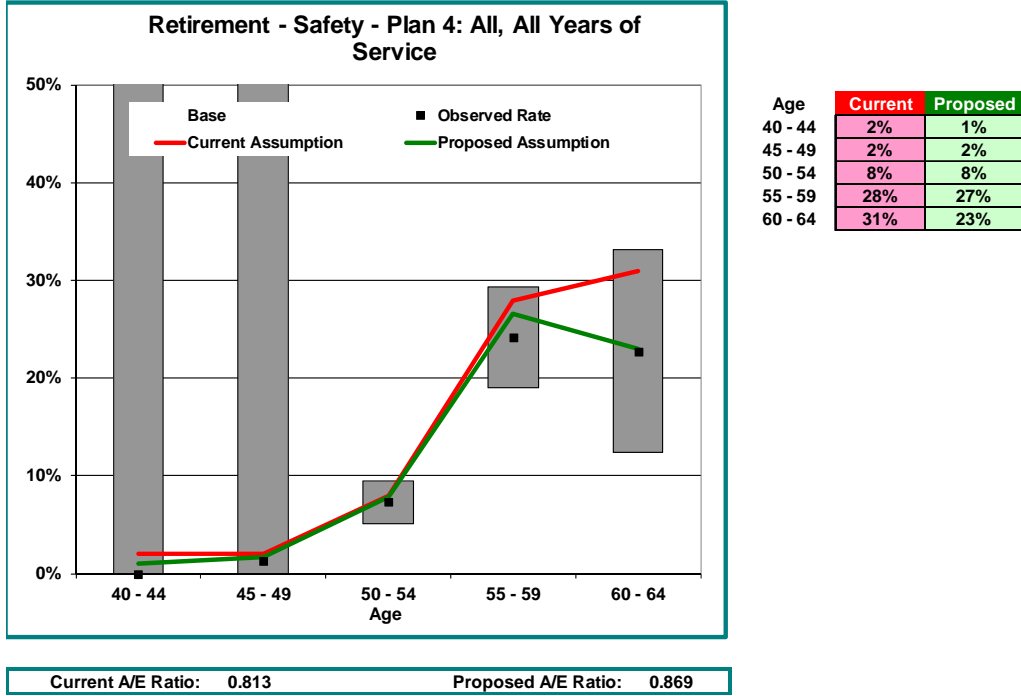


Table III-5

Age	Exposures	Total Actual Retirements	Actual Rates	Current Expected Retirements	Proposed Expected Retirements	Current A/E Ratio	Proposed A/E Ratio
40 - 44	22	0	0.00%	0.4	0.2	0%	0%
45 - 49	151	2	1.32%	3.0	2.5	66%	81%
50 - 54	383	28	7.31%	30.6	30.1	92%	93%
55 - 59	186	45	24.19%	51.9	49.5	87%	91%
60 - 64	44	10	22.73%	13.6	10.1	74%	99%
65	10	4	40.00%	10.0	10.0	40%	40%
<b>Subtotal</b>	<b>796</b>	<b>89</b>	<b>11.18%</b>	<b>109.5</b>	<b>102.4</b>	<b>81%</b>	<b>87%</b>

Chart III-6 on the next page shows a graphical comparison of the actual, current and proposed rates of retirement for Safety members in Plan 6, along with the 90% confidence interval, and Table III-6 shows the more detail on these calculations, including actual to expected ratios.

The retirement rates experienced for Safety Plan 6 members differ from those expected under the current assumptions. The recommended assumptions slightly increase the assumed rates at

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

certain ages and decrease the assumed rates of retirement for all other ages and increase the A/E ratio from 0.947 to 0.964.

Chart III-6



Table III-6

Retirement - Safety - Plan 6: All, All Years of Service							
Age	Exposures	Total Actual Retirements	Actual Rates	Current Expected Retirements	Proposed Expected Retirements	Current A/E Ratio	Proposed A/E Ratio
40 - 44	98	1	1.02%	2.0	1.0	51%	102%
45 - 49	251	16	6.37%	14.7	15.8	109%	101%
50 - 54	255	52	20.39%	39.2	46.3	133%	112%
55 - 59	107	23	21.50%	29.6	25.3	78%	91%
60 - 64	47	6	12.77%	14.3	9.4	42%	64%
65	9	5	55.56%	9.0	9.0	56%	56%
<b>Subtotal</b>	<b>767</b>	<b>103</b>	<b>13.43%</b>	<b>108.7</b>	<b>106.8</b>	<b>95%</b>	<b>96%</b>

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

**MORTALITY RATES**

Mortality assumptions are developed separately for active employees, healthy annuitants, and disabled annuitants. Within each of these groups, mortality rates are developed separately for males and females. Unlike most of the other demographic assumptions that rely exclusively on the experience of the plan, for mortality, standard mortality tables are used with standard modifications so that the aggregate experience matches the plan's experience.

We generally propose assumption changes when the A/E ratio for the current assumption is less than 100% for active employees or less than 110% for annuitants. However, for this Study we are recommending a change in this approach going forward, where the proposed assumptions are intended to track closely to actual experience (i.e. an A/E ratio close to 100%, but with a ratio slightly less than 100% still being reasonable). However, as described below, this new approach also includes an expectation that the mortality assumptions will automatically become more conservative each year.

We also generally try to recommend the same or a related table for active employees and healthy annuitants, which has been the current practice for SBCERS. In addition, we recommend continuing the current practice of using the same assumptions for General and Safety members, as the experience for the Safety members is quite limited.

In the prior study, SBCERS adopted the following assumptions:

Healthy active members, retirees and beneficiaries	RP 2000 Combined Healthy mortality projected to 2010 with Scale AA, setback two years for males and four years for females
Disabled members	RP 2000 Combined Healthy mortality projected to 2010 with Scale AA

Since the prior study, the Society of Actuaries' Retirement Plans Experience Committee (RPEC) has released a new mortality improvement scale, Scale BB. The mortality improvements included in the currently used projection scale - Scale AA - were found to produce some unsatisfactory results in projecting mortality. Scale BB reflects more up-to-date data, approximately 20 years more current than that used in the development of Scale AA, and it was reviewed against a significant amount of data drawn from California public plan experience. It also represents the Society of Actuaries' most advanced actuarial methodology in incorporating mortality improvement trends with actual recent mortality rates.

Scale BB was designed with the intent of being applied to calendar year 2000 mortality on a generational basis. The effect of this is to build in an automatic expectation of future improvements in mortality. This is a different approach from building in a margin for conservatism in the current rates to account for the expectation that the same rates will be applied in future years, when mortality experience has improved.

**SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

**EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013**

**SECTION III – DEMOGRAPHIC ASSUMPTIONS**

Recent changes to Actuarial Standards of Practice suggest that using generational mortality is a preferable approach, as it allows for an explicit declaration of the amount of future mortality improvement included in the assumptions. Finally, SBCERS's experience over the past three years matches extremely closely with using the latest mortality tables (RP2000 Combined Healthy) in conjunction with the most recent projection scale (Scale BB) under a generational approach. As such, we are recommending the following assumptions:

Healthy active members, retirees and beneficiaries	RP 2000 Combined Healthy Generational Mortality with Scale BB
Disabled members	RP 2000 Combined Healthy Generational Mortality with Scale BB, set forward five years for males and females

As shown in Table III-7 and Table III-8 on the following pages, our proposed mortality rates for healthy annuitants are slightly higher than current experience. We are comfortable with having the ratio of active to expected deaths slightly less than 100%, since as described above, the use of generational mortality assumptions will automatically result in mortality assumptions that become more conservative over time.

Our proposed Disabled mortality rates, shown in Table III-9 and Table III-10 on the following pages are slightly lower than current experience. Given the lack of recent experience, we feel comfortable with being a little more conservative with this assumption.

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013  
SECTION III – DEMOGRAPHIC ASSUMPTIONS

**Table III-7**

<b>Healthy Annuitant - All Plans: Male</b>							
Age	Exposures	Total Actual Deaths	Actual Rates	Current Expected Deaths	Proposed Expected Deaths	Current A/E Ratio	Proposed A/E Ratio
37.5 - 46.5	6	0	0.00%	0.0	0.0	0%	0%
47.5 - 56.5	335	0	0.00%	0.7	1.1	0%	0%
57.5 - 66.5	1,518	10	0.66%	9.7	13.0	103%	77%
67.5 - 76.5	1,372	28	2.04%	24.1	29.1	116%	96%
77.5 - 86.5	663	42	6.33%	36.7	42.3	115%	99%
87.5 - 96.5	248	40	16.13%	36.8	41.2	109%	97%
97.5 - 106.5	9	3	33.33%	2.5	2.7	121%	112%
<b>TOTAL</b>	<b>4,151</b>	<b>123</b>	<b>2.96%</b>	<b>110.5</b>	<b>129.2</b>	<b>111%</b>	<b>95%</b>

**Table III-8**

<b>Healthy Annuitant - All Plans: Female</b>							
Age	Exposures	Total Actual Deaths	Actual Rates	Current Expected Deaths	Proposed Expected Deaths	Current A/E Ratio	Proposed A/E Ratio
27.5 - 36.5	6	0	0.00%	0.0	0.0	0%	0%
37.5 - 46.5	14	0	0.00%	0.0	0.0	0%	0%
47.5 - 56.5	418	1	0.24%	0.6	1.0	168%	103%
57.5 - 66.5	1,595	3	0.19%	6.5	10.2	46%	30%
67.5 - 76.5	1,410	25	1.77%	17.0	23.9	147%	105%
77.5 - 86.5	1,009	41	4.06%	34.7	48.8	118%	84%
87.5 - 96.5	458	66	14.41%	40.2	55.4	164%	119%
97.5 - 106.5	36	9	25.00%	6.7	7.9	135%	114%
<b>TOTAL</b>	<b>4,946</b>	<b>145</b>	<b>2.93%</b>	<b>105.7</b>	<b>147.1</b>	<b>137%</b>	<b>99%</b>

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

Table III-9

<b>Disabled Annuitant - All Plans: Male</b>							
Age	Exposures	Total Actual Deaths	Actual Rates	Current Expected Deaths	Proposed Expected Deaths	Current A/E Ratio	Proposed A/E Ratio
27.5 - 36.5	5	0	0.00%	0.0	0.0	0%	0%
37.5 - 46.5	9	0	0.00%	0.0	0.0	0%	0%
47.5 - 56.5	51	3	5.88%	0.2	0.3	1852%	1058%
57.5 - 66.5	155	2	1.29%	1.5	2.4	133%	84%
67.5 - 76.5	153	5	3.27%	4.0	5.7	126%	88%
77.5 - 86.5	48	5	10.42%	3.6	5.1	139%	98%
87.5 - 96.5	16	4	25.00%	2.9	3.7	140%	109%
97.5 - 106.5	0	0		0.0	0.0		
<b>TOTAL</b>	<b>437</b>	<b>19</b>	<b>4.35%</b>	<b>12.1</b>	<b>17.1</b>	<b>157%</b>	<b>111%</b>

Table III-10

<b>Disabled Annuitant - All Plans: Female</b>							
Age	Exposures	Total Actual Deaths	Actual Rates	Current Expected Deaths	Proposed Expected Deaths	Current A/E Ratio	Proposed A/E Ratio
27.5 - 36.5	0	0		0.0	0.0		
37.5 - 46.5	20	0	0.00%	0.0	0.0	0%	0%
47.5 - 56.5	86	0	0.00%	0.2	0.3	0%	0%
57.5 - 66.5	112	1	0.89%	0.7	1.1	141%	88%
67.5 - 76.5	58	3	5.17%	1.2	1.7	258%	179%
77.5 - 86.5	22	1	4.55%	1.1	1.5	95%	65%
87.5 - 96.5	2	0	0.00%	0.4	0.5	0%	0%
97.5 - 106.5	4	2	50.00%	0.9	1.0	220%	191%
<b>TOTAL</b>	<b>304</b>	<b>7</b>	<b>2.30%</b>	<b>4.4</b>	<b>6.2</b>	<b>158%</b>	<b>112%</b>

**SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

**EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013**

**SECTION III – DEMOGRAPHIC ASSUMPTIONS**

**DISABILITY RATES**

This section analyzes the incidence of disability by the age of the employee. We determined the ratio of the actual number of disabilities at each age compared to the expected number of disabilities. If the assumption is perfect, this ratio will be 100%. However, adjustments are made to account for differences between future expectations and historical experience, to account for the past experience represented by the current assumption, and to maintain a neutral to slight conservative bias in the selection of the assumption.

As shown in Table III-11 and Table III-12 on the following pages, the incidence of disability for all groups except Safety members between age 33 and 37, is lower than the current assumptions, and we have recommended reducing General and Safety assumptions. Applying the proposed assumptions yields a proposed actual to expected ratio (A/E ratio) of 34% for General and 81% for Safety.

We recognize that the proposed A/E ratios – particularly for the General members - are still significantly below 100%. However, the disability rates were also reduced significantly at the time of the last experience study, and the incidence of disability is quite low, which means that a small number of additional disabilities could change the A/E ratios significantly.

We have continued to assume that if a member is vested, 40% of General disabilities and 90% of Safety disabilities are service-related.

**Table III-11**

<b>Disability - General: All Years of Service</b>							
<b>Age</b>	<b>Exposures</b>	<b>Total Actual Disabilities</b>	<b>Actual Rates</b>	<b>Current Expected Disabilities</b>	<b>Proposed Expected Disabilities</b>	<b>Current A/E Ratio</b>	<b>Proposed A/E Ratio</b>
18 - 22	8	0	0.00%	0.0	0.0	0%	0%
23 - 27	358	0	0.00%	0.0	0.0	0%	0%
28 - 32	969	0	0.00%	0.1	0.1	0%	0%
33 - 37	992	0	0.00%	0.1	0.1	0%	0%
38 - 42	1,285	0	0.00%	0.3	0.2	0%	0%
43 - 47	1,349	0	0.00%	1.5	0.7	0%	0%
48 - 52	1,565	1	0.06%	3.4	1.7	29%	59%
53 - 57	1,610	1	0.06%	5.2	2.6	19%	39%
58 - 62	1,135	1	0.09%	4.7	2.3	21%	43%
63 - 67	374	0	0.00%	1.6	0.8	0%	0%
68 - 72	80	0	0.00%	0.3	0.2	0%	0%
73 - 77	19	0	0.00%	0.1	0.0	0%	0%
<b>TOTAL</b>	<b>9,744</b>	<b>3</b>	<b>0.03%</b>	<b>17.2</b>	<b>8.7</b>	<b>17%</b>	<b>34%</b>



SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

Table III-12

<b>Disability - Safety: All Years of Service</b>							
<b>Age</b>	<b>Exposures</b>	<b>Total Actual Disabilities</b>	<b>Actual Rates</b>	<b>Current Expected Disabilities</b>	<b>Proposed Expected Disabilities</b>	<b>Current A/E Ratio</b>	<b>Proposed A/E Ratio</b>
18 - 22	2	0	0.00%	0.0	0.0	0%	0%
23 - 27	93	0	0.00%	0.1	0.0	0%	0%
28 - 32	363	0	0.00%	0.5	0.2	0%	0%
33 - 37	433	1	0.23%	0.8	0.4	130%	255%
38 - 42	553	0	0.00%	1.3	0.7	0%	0%
43 - 47	453	0	0.00%	1.4	0.7	0%	0%
48 - 52	396	2	0.51%	2.1	1.3	93%	150%
53 - 57	294	2	0.68%	2.2	2.0	89%	98%
58 - 62	89	0	0.00%	0.7	0.6	0%	0%
63 - 67	36	0	0.00%	0.2	0.2	0%	0%
<b>TOTAL</b>	<b>2,712</b>	<b>5</b>	<b>0.18%</b>	<b>9.2</b>	<b>6.2</b>	<b>54%</b>	<b>81%</b>

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

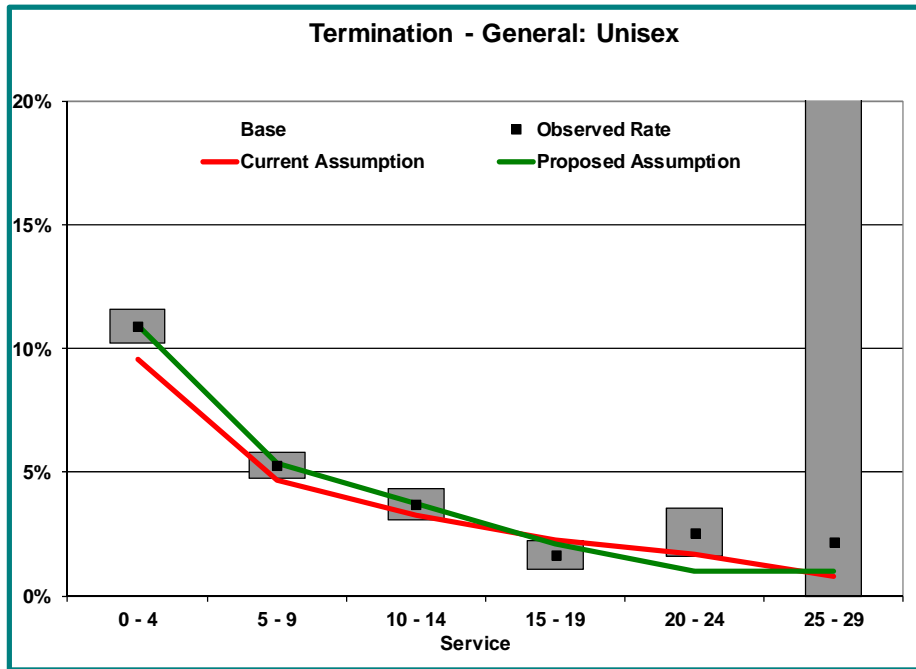
TERMINATION RATES

Rates of termination from active employment have a significant impact on the cost of the plan. For this assumption, we have included analyses for the last six years of experience (from 2007-2013), rather than reviewing the information over the past three years. This allows us to formulate a larger, more robust dataset, and will also reduce the impact of any unusual termination experience which may have happened over the past few years.

We analyzed the experience and recommend continuing the practice of applying separate rates across all years of employment. Over the past six years we have found that the termination experience for males and females has been similar, so we suggest using unisex assumptions.

The tables and charts below show the actual experience (over the past six years) compared to the current and recommended assumptions. Termination rates for General members were higher than expected over all years of service, except for service between 15 and 19. We have suggested changes to the rates that lower the A/E ratio for General members from 113.3% to 100.1%.

Chart III-13



Service	Current	Proposed
0 - 4	9.56%	10.94%
5 - 9	4.67%	5.36%
10 - 14	3.27%	3.74%
15 - 19	2.25%	2.12%
20 - 24	1.68%	1.00%
25 - 29	0.76%	1.00%

Current A/E Ratio: 1.133      Recommended A/E Ratio: 1.001

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

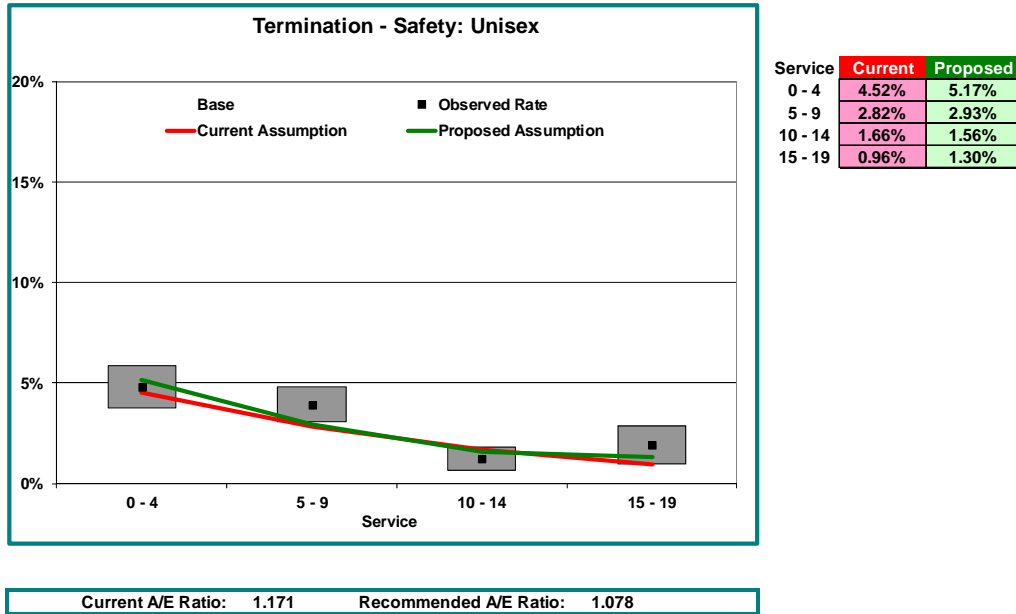
SECTION III – DEMOGRAPHIC ASSUMPTIONS

Table III-13

Termination - General: Unisex							
Service	Exposures	Total Actual Terminations	Actual Rates	Current Expected Terminations	Proposed Expected Terminations	Current A/E Ratio	Proposed A/E Ratio
0 - 4	5,422	591	10.90%	518.1	592.9	114%	100%
5 - 9	4,863	257	5.28%	227.0	260.4	113%	99%
10 - 14	2,512	93	3.70%	82.1	93.9	113%	99%
15 - 19	1,278	21	1.64%	28.7	27.1	73%	78%
20 - 24	702	18	2.56%	11.8	7.0	153%	256%
25 - 29	230	5	2.17%	1.8	2.3	285%	217%
<b>TOTAL</b>	<b>15,007</b>	<b>985</b>	<b>6.56%</b>	<b>869.6</b>	<b>983.7</b>	<b>113%</b>	<b>100%</b>

Termination rates for Safety members were close to the expected rates. We have recommended adjusting the rates slightly which decreases the A/E ratio from 117.1% to 107.8%.

Chart III-14



SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

Table III-14

<b>Termination - Safety: Unisex</b>							
<b>Service</b>	<b>Exposures</b>	<b>Total Actual Terminations</b>	<b>Actual Rates</b>	<b>Current Expected Terminations</b>	<b>Proposed Expected Terminations</b>	<b>Current A/E Ratio</b>	<b>Proposed A/E Ratio</b>
0 - 4	1,126	54	4.80%	50.9	58.2	106%	93%
5 - 9	1,374	54	3.93%	38.8	40.3	139%	134%
10 - 14	1,057	13	1.23%	17.6	16.5	74%	79%
15 - 19	571	11	1.93%	5.5	7.4	201%	148%
<b>TOTAL</b>	<b>4,128</b>	<b>132</b>	<b>3.20%</b>	<b>112.7</b>	<b>122.4</b>	<b>117%</b>	<b>108%</b>

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

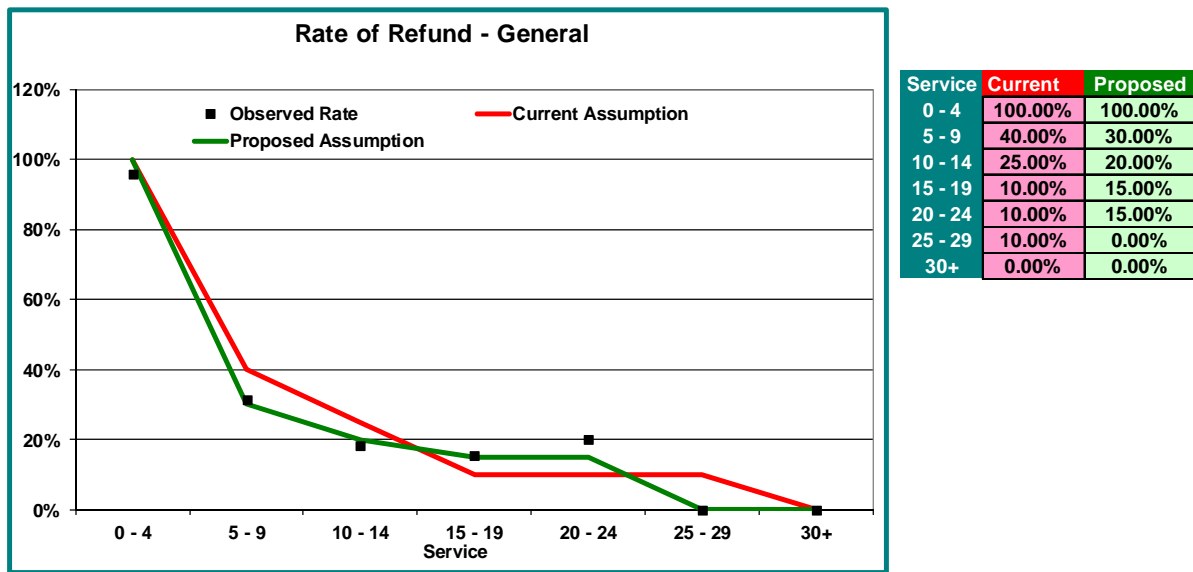
**REFUND RATES AND RECIPROCITY**

When a vested member terminates employment, they have the option of receiving a refund of contributions with interest or a deferred annuity. If an employee terminates employment and works for a reciprocal employer, the employee's retirement benefit is ultimately based on the employee's service with SBCERS and Final Compensation based on employment with any reciprocal employer.

Chart III-15 and Chart III-16 on the next page show the results of our analysis of withdrawals for General and Safety. We are recommending the rates of Withdrawal for vested General members be increased for years of service between 15 and 25 and lowered for all other years of service. We recommend increasing the rates of Withdrawal for all vested Safety members.

The current assumption is that 50% of General and Safety non-withdrawal terminating employees work for reciprocal employers and receive salary increases equal to the payroll growth assumption. We propose maintaining this reciprocity assumption based on recent experience.

**Chart III-15**

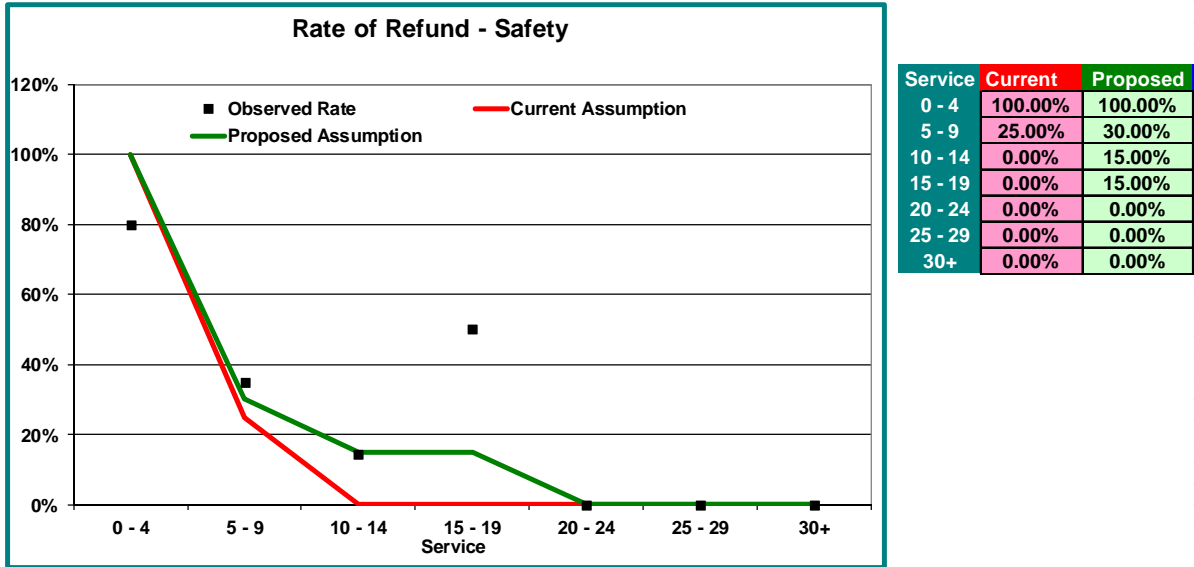


SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION III – DEMOGRAPHIC ASSUMPTIONS

Chart III-16



**SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

**EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013**

**SECTION III – DEMOGRAPHIC ASSUMPTIONS**

**FAMILY COMPOSITION**

Members who are married at the time of retirement are entitled to an unreduced 50% joint and survivor annuity. An analysis of all retired members showed that 76% of males are married and 50% of females are married. 72% of male and 52% of female members that retired in the last three years are married.

The current assumption is that 80% of male and 55% of female service retirees and disabilities have an eligible spouse. We recommend decreasing the assumption for males to 75% and maintaining the current assumption for females.

An analysis of all retired members showed that males are three years older than their spouses and female members are two years younger than their spouses.

The current assumption is that all males are three years older than their spouses. We recommend decreasing the assumption for female members to assume that they are two years younger than their spouse and maintaining the current assumption for male member.

**PROPOSED ASSUMPTIONS**

**1. Rate of Return**

Assets are assumed to earn 7.50% net of investment expenses.

**2. Administrative Expenses**

Administrative expenses are assumed to be \$4.25 million for the next year, to be split between employees and employers.

**3. Cost of Living**

The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 3.00% per year.

**4. Post Retirement COLA**

Benefits are assumed to increase after retirement at the rate of 2.75% per year.

**5. Family Composition**

Percentage married for all active members who retire, become disabled or die during active service is shown in the following Table IV-2. Male members are assumed to be three years older than their spouses and female members are assumed to be two years younger than their spouses.

<b>Percentage Married</b>	
<b>Gender</b>	<b>Percentage</b>
Males	75%
Females	55%



SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION IV – PROPOSED ASSUMPTIONS

**6. Increases in Pay**

Wage inflation component: 3.50%

Additional longevity and promotion component:

<b>Longevity and Promotion Increases</b>		
<b>Service</b>	<b>General</b>	<b>Safety</b>
0	4.75%	6.00%
1	4.00%	5.00%
2	3.25%	4.00%
3	2.50%	3.25%
4	2.00%	2.50%
5	1.50%	2.00%
6	1.25%	1.60%
7	1.00%	1.30%
8	0.90%	1.20%
9	0.80%	1.10%
10	0.78%	1.00%
11	0.75%	0.95%
12	0.70%	0.92%
13	0.65%	0.89%
14	0.60%	0.87%
15	0.55%	0.85%
16	0.50%	0.82%
17	0.48%	0.80%
18	0.46%	0.77%
19	0.44%	0.74%
20	0.42%	0.72%
21	0.40%	0.69%
22	0.38%	0.67%
23	0.36%	0.64%
24	0.34%	0.62%
25	0.32%	0.06%
26	0.30%	0.57%
27	0.28%	0.54%
28	0.26%	0.52%
29	0.25%	0.50%
30+	0.25%	0.50%

**SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

**EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013**

**SECTION IV – PROPOSED ASSUMPTIONS**

**7. Rates of Termination**

Sample rates of termination are show in the following Table below.

<b>Rates of Termination</b>		
<b>Service</b>	<b>General</b>	<b>Safety</b>
0	20.00%	9.00%
1	12.00%	9.00%
2	10.00%	3.50%
3	7.50%	3.50%
4	7.00%	3.50%
5	6.00%	3.50%
6	5.50%	3.00%
7	5.00%	2.70%
8	5.00%	2.70%
9	4.50%	2.70%
10	4.50%	2.00%
11	4.00%	1.50%
12	3.50%	1.50%
13	3.00%	1.30%
14	3.00%	1.30%
15	2.50%	1.30%
16	2.00%	1.30%
17	2.00%	1.30%
18	2.00%	1.30%
19	2.00%	1.30%
20	1.00%	0.00%
21	1.00%	
22	1.00%	
23	1.00%	
24	1.00%	
25	1.00%	
26	1.00%	
27	1.00%	
28	1.00%	
29	1.00%	
30	0.00%	

\* Termination rates do not apply once a member is eligible for retirement

SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013

SECTION IV – PROPOSED ASSUMPTIONS

**8. Withdrawal**

Rates of withdrawal apply to active Members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future Plan benefits.

<b>Rates of Withdrawal</b>		
<b>Service</b>	<b>General</b>	<b>Safety</b>
0	100.00%	100.00%
1	100.00%	100.00%
2	100.00%	100.00%
3	100.00%	100.00%
4	100.00%	100.00%
5	30.00%	30.00%
6	30.00%	30.00%
7	30.00%	30.00%
8	30.00%	30.00%
9	30.00%	30.00%
10	20.00%	15.00%
11	20.00%	15.00%
12	20.00%	15.00%
13	20.00%	15.00%
14	20.00%	15.00%
15	15.00%	15.00%
16	15.00%	15.00%
17	15.00%	15.00%
18	15.00%	15.00%
19	15.00%	15.00%
20	15.00%	0.00%
21	15.00%	0.00%
22	15.00%	0.00%
23	15.00%	0.00%
24	15.00%	0.00%
25	0.00%	0.00%
26	0.00%	0.00%
27	0.00%	0.00%
28	0.00%	0.00%
29	0.00%	0.00%
30	0.00%	0.00%

**9. Reciprocal Transfers**

50% of vested terminated General and Safety Members that leave their member contributions on deposit with the Plan are assumed to be reciprocal.

**SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

**EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013**

**SECTION IV – PROPOSED ASSUMPTIONS**

**Rates of Disability**

Disability rates of active participants are shown below.

Rates of Disability				
Age	General Years of Service		Safety Years of Service	
	Less than 5	5 or More	Less than 5	5 or More
29 or less	0.004%	0.010%	0.045%	0.050%
30	0.004%	0.010%	0.072%	0.080%
31	0.004%	0.010%	0.072%	0.080%
32	0.004%	0.010%	0.072%	0.080%
33	0.004%	0.010%	0.072%	0.080%
34	0.004%	0.010%	0.072%	0.080%
35	0.004%	0.010%	0.090%	0.100%
36	0.004%	0.010%	0.090%	0.100%
37	0.004%	0.010%	0.090%	0.100%
38	0.004%	0.010%	0.090%	0.100%
39	0.004%	0.010%	0.090%	0.100%
40	0.004%	0.010%	0.117%	0.130%
41	0.008%	0.020%	0.117%	0.130%
42	0.012%	0.030%	0.117%	0.130%
43	0.016%	0.040%	0.117%	0.130%
44	0.020%	0.050%	0.117%	0.130%
45	0.024%	0.060%	0.135%	0.150%
46	0.028%	0.070%	0.162%	0.180%
47	0.032%	0.080%	0.180%	0.200%
48	0.036%	0.090%	0.225%	0.250%
49	0.040%	0.100%	0.225%	0.250%
50	0.048%	0.120%	0.252%	0.280%
51	0.052%	0.130%	0.270%	0.300%
52	0.056%	0.140%	0.630%	0.700%
53	0.060%	0.150%	0.630%	0.700%
54	0.064%	0.160%	0.630%	0.700%
55	0.068%	0.170%	0.630%	0.700%
56	0.072%	0.180%	0.630%	0.700%
57	0.076%	0.190%	0.630%	0.700%
58	0.080%	0.200%	0.630%	0.700%
59	0.084%	0.210%	0.630%	0.700%
60	0.088%	0.220%	0.630%	0.700%
61	0.092%	0.230%	0.630%	0.700%
62	0.092%	0.230%	0.630%	0.700%
63	0.092%	0.230%	0.630%	0.700%
64	0.092%	0.230%	0.630%	0.700%
65	0.092%	0.230%	0.000%	0.000%
66	0.092%	0.230%		
67	0.092%	0.230%		
68	0.092%	0.230%		
69	0.092%	0.230%		
70	0.092%	0.230%		
71	0.092%	0.230%		
72	0.092%	0.230%		
73	0.092%	0.230%		
74	0.092%	0.230%		
75	0.000%	0.000%		

40% of General disabilities and 90% of Safety disabilities where the member has five or more years of service are assumed to be service-related.

**10. Rates of Mortality for Healthy Lives**

Mortality rates for actives, retirees, beneficiaries, terminated vested and reciprocals are based on the sex distinct Retired Pensioner (RP) 2000 Combined Healthy Tables, published by the Society of Actuaries, with Generational improvement using Projection Scale BB.

**11. Rates of Mortality for Retired Disabled Lives**

Mortality rates for disabled retirees are based on the sex distinct Retired Pensioner (RP) 2000 Tables Combined Healthy Tables, published by the Society of Actuaries, with Generational improvement using Projection Scale BB, set forward five years for males and females.

**SANTA BARBARA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

**EXPERIENCE ANALYSIS JULY 1, 2010 THROUGH JUNE 30, 2013**

**SECTION IV – PROPOSED ASSUMPTIONS**

**Rates of Retirement**

Rates of retirement are based on age according to the following below.

<b>Rates of Retirement</b>				
<b>Age</b>	<b>General</b>		<b>Safety</b>	
	<b>Male</b>	<b>Female</b>	<b>Plan 4</b>	<b>Plan 6</b>
<34	0.00%	0.00%	0.00%	0.00%
35	0.00%	0.00%	1.00%	1.00%
36	0.00%	0.00%	1.00%	1.00%
37	0.00%	0.00%	1.00%	1.00%
38	0.00%	0.00%	1.00%	1.00%
39	0.00%	0.00%	1.00%	1.00%
40	3.00%	4.00%	1.00%	1.00%
41	3.00%	4.00%	1.00%	1.00%
42	3.00%	4.00%	1.00%	1.00%
43	3.00%	4.00%	1.00%	1.00%
44	3.00%	4.00%	1.00%	1.00%
45	3.00%	4.00%	1.00%	1.00%
46	3.00%	4.00%	1.00%	2.00%
47	3.00%	4.00%	1.00%	5.00%
48	3.00%	4.00%	1.00%	5.00%
49	3.00%	4.00%	3.00%	17.00%
50	3.00%	4.00%	4.00%	23.00%
51	4.00%	4.00%	4.00%	14.00%
52	4.00%	4.00%	4.00%	14.00%
53	4.00%	4.00%	5.00%	14.00%
54	4.00%	6.00%	22.00%	28.00%
55	4.00%	7.00%	33.00%	31.00%
56	6.00%	8.00%	23.00%	20.00%
57	6.00%	9.00%	23.00%	20.00%
58	6.00%	9.00%	23.00%	20.00%
59	12.00%	12.00%	23.00%	20.00%
60	15.00%	13.00%	23.00%	20.00%
61	25.00%	23.00%	23.00%	20.00%
62	25.00%	23.00%	23.00%	20.00%
63	25.00%	23.00%	23.00%	20.00%
64	25.00%	23.00%	23.00%	20.00%
65	25.00%	23.00%	100.00%	100.00%
66	25.00%	23.00%		
67	25.00%	23.00%		
68	25.00%	23.00%		
69	25.00%	23.00%		
70	25.00%	23.00%		
71	25.00%	23.00%		
72	25.00%	23.00%		
73	25.00%	23.00%		
74	25.00%	23.00%		
75	100.00%	100.00%		

## **METHODOLOGY**

### **PURPOSES OF THE EXPERIENCE STUDY**

The first goal of this Experience Study is to review the recent past demographic experience of the Plan. We seek to understand the behavior of the participating members so that we can recommend actuarial assumptions concerning future demographic experience.

The second goal of this Study is to recommend economic assumptions to be used in computing liabilities and costs. These economic assumptions include the expected rate of return on Plan assets and the anticipated rate of increase in the Consumer Price Index (CPI). These assumptions are determined based on the investment strategy adopted by the Plan and on the past behavior of the capital markets and the CPI, and on future expectations.

Once adopted, the assumptions recommended by this Study will be used to determine future liabilities and costs and for purposes of evaluating prospective changes in benefits, eligibility conditions, and other aspects of the Plan's operations.

### **SCOPE OF REPORT**

Demographic assumptions relate to all behavioral characteristics of the group. Behavioral characteristics do not include the assumptions concerning future inflation, the real rates of return of the investments in the trust fund, or the anticipated growth in the underlying payroll of the members.

Demographic assumptions include the following:

- Probability of retirement from active service,
- Probability of termination of employment prior to retirement (with the member receiving a deferred vested benefit or receiving a contribution refund),
- Probability of disability among active employees (either occupational or total and permanent),
- Probability of deferred vested members working for a reciprocal employer,
- Family composition, and
- Rates of mortality among active, retired, disabled members and their beneficiaries.

In addition, demographic assumptions include the merit (longevity and promotion) component of individual pay increases. This does not include the inflationary element in pay increases. For example, if inflation is 3.2% and the employee receives a 4.7% pay increase, 1.5% of this increase is deemed "merit".

Economic assumptions include the rate of increase in the cost of living (inflation), which is a part of the overall pay increase assumption discussed above. In addition, a crucial economic assumption is the real rate of return on plan assets -- the return on assets above the rate of inflation.

### IMPORTANCE OF RELIABLE ASSUMPTIONS

The liabilities and costs calculated in actuarial valuations and cost studies are based on a projection of future conditions. The actuary makes assumptions concerning the rates of retirement, withdrawal, termination, disability, and death among plan members. In addition, the actuary must project future earnings on plan assets, inflation, and growth in the pay of active members.

The actuary sets his assumptions based on past experience and future expectations. In setting demographic assumptions, such as rates of retirement, the past experience of the covered group of employees is often the best predictor of future behavior. When establishing economic assumptions, such as the expected return on plan assets, the historical behavior of the investment markets can serve as a guide.

Actuarial funding methods are designed so that, if the actuarial assumptions are met, plan costs will generally be a predictable percentage of member pay from year to year. If actual economic or demographic experience varies from our assumptions, plan costs will rise or fall accordingly. Therefore, it is worth the effort to make our best estimate of future conditions so that the plan costs computed by the actuary will be as stable and predictable as possible.

### METHODOLOGY (ECONOMIC ASSUMPTIONS)

The Plan's economic assumptions are critically important in computing actuarial liabilities and costs. A careful determination of these assumptions requires an analysis of the past performance of the capital markets and the Plan's future investment outlook.

To this end, we proceed as follows:

- Based on a detailed analysis of recent past history and reasonable expectations for the future, a long term projection of the rate of inflation is determined.
- Based on the Plans' investment strategy and rates of return on various asset classes (provided by the investment consultant) the long term *real* rate of return on assets is simulated. This is the return on assets in excess of inflation.
- The projected rate of inflation is combined with the assumption concerning merit pay increases to project future members' pay.
- The rate of inflation is combined with the estimated real return on assets to determine the overall return on assets.

Any estimate of future inflation and asset returns is difficult. Over time, there will be actuarial gains and losses as experience deviates from our assumptions. As past and recent capital market experience has shown, these gains and losses can have a substantial impact on cost volatility.



### METHODOLOGY (DEMOGRAPHIC ASSUMPTIONS)

One goal of this Study is to compute the probability of death, disability, retirement, withdrawal, or termination leading to a vested benefit at each age for active members and the probability of death at each age for inactive members.

To this end, we proceed as follows:

- We count the number of members leaving for each cause during the term of the Study. This is the number of decrements.
- We count the number of members who could have left for each cause during the Study. This is the exposure.
- When the exposure is sufficient, we divide the number of decrements by the exposure at each combination of age and service for an employee group to determine the probability of leaving due to the cause in question.
- Where feasible, experience has been examined separately by gender. In some cases, experience has been combined when male and female experience is similar or when there is insufficient data to produce reliable rates by sex.

A unique challenge is presented by members who are on Active Leave as of the date of each annual valuation. These members have an uncertain status each year, since some will have applications for retirement or disability that are pending. For purposes of this Study, these members are included in the total exposures and are recognized as a decrement based on the final resolution of their status when their applications for disability or retirement have been fully adjudicated.

When there is insufficient exposure to derive statistically reliable rates by age and service, we may combine exposures and decrements for groups of ages and service. Alternatively, we may compare the total number of actual decrements with the total number of decrements predicted by a standard actuarial table, and adopt a table that predicts decrements, in total, reasonably close to those that have been observed.

Where the rate of decrement is low and the underlying causes of the decrement in question are not expected to change significantly with time we may combine the most recent experience with data from prior experience studies.

For the study of the merit (longevity and promotion) components of individual pay increases, we generally choose to use a *transverse* study. A reliable way to assess average increases in pay due to merit is to analyze average pay versus service for the current active members of a plan. With a homogeneous group of any size at all, the pattern of promotions and longevity increases during the career of an average employee is clearly visible in this analysis. This is a transverse study of longevity and promotion pay increases: The data is taken as of a particular point in time.

*Longitudinal* studies, which use changes in pay collected over several years, are often unreliable when used on a stand-alone basis due to the effects of inflation, collective bargaining, and management decisions during the term of the study.