

**Santa Barbara County Employees'
Retirement System**

2010 INVESTIGATION OF EXPERIENCE

For the period July 1, 2007 to June 30, 2010



By

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Board of Retirement
Santa Barbara County Employees' Retirement System
3916 State Street, Suite 210
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Dear Members of the Board:

It is a pleasure to submit this report of our investigation of the experience of the Santa Barbara County Employees' Retirement System (SBCERS) for the period July 1, 2007 through June 30, 2010. 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, 2010.

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 June 30, 2010 valuation. Several of our recommendations represent changes from the prior methods or assumptions and are designed to better anticipate the emerging experience of SBCERS.

An earlier version of this report was discussed with the Board and tentatively adopted at its October 27, 2010 meeting. Questions were raised at the meeting regarding the retirement rates in view of the recent Early Retirement Incentive Program granted by the County, the sick leave credits at retirement, the disability data and the participation rates in the health plan. We reviewed each of those assumptions and made slight changes as indicated in this final version of the 2010 Experience Study. We prepared the July 1, 2010 actuarial valuation on the basis of the assumptions reported in this report.

The valuation assumptions are used to analyze the funding status of the system, for determining the employer and member contribution rates, for disclosing employer liabilities on financial statements, and for analyzing the fiscal impact of any proposed benefit changes.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by SBCERS staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. In our examination of these data, we have found them 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 calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

This work product was prepared solely for SBCERS. It may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this report have been made on a basis consistent with the results of our June 30, 2009 valuation report and the plan provisions described in those reports and of GASB Statements No. 25 and 27, 43 and 45. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report.

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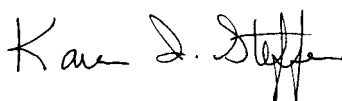
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The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

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 which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions, and supporting Recommendations of the American Academy of Actuaries.

We would like to acknowledge the help in the preparation of the data for this investigation given by the SBCERS staff.

Respectfully submitted,

A handwritten signature in black ink that reads "Karen I. Steffen".

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**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

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Santa Barbara County Employees' Retirement System Investigation of Experience (2007-2010)

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 these 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).

Changes since Draft Report

On October 20, 2010, a draft Investigation of Experience report was issued. Since that draft, a number of items have been revised.

1. Per the discussion with the Retirement Board at its October 27, 2010 meeting, the retirement decrement assumptions were reviewed to better reflect the impact of the Early Retirement Incentive Program (ERIP). It is believed that the ERIP resulted in additional retirements over the past year for members ages 60 and above than would have occurred without the program. As a result of this review, the assumptions were lowered for both General males and females ages 60 and above. We have also removed the assumption that all members retire when eligible to receive a benefit equal to the limit of 100% of compensation.
2. As was discussed at the October 27 Retirement Board meeting, there were small discrepancies in the number of people granted disability benefits during the study period. Because disability retirements are often granted retroactively, there can be difficulty in determining how many disabilities were actually granted in a study period. As a result of conversations with staff, we are now including five more General disabilities and two fewer Safety disabilities. We are recommending higher General disability assumptions than we were recommending at the time of the draft report. Note that the recommended disability assumptions are still lower than the assumptions used in previous valuations.

Changes since Draft Report (continued)

3. At its October 27 meeting, the Retirement Board requested that Milliman study more years of experience for determining the amount of sick leave credit that people had at the time of retirement. Over the past five years of history, the sick leave service credit upon retirement has been equal to 1.34% of the other service credit. This compares to a recommendation of 1.35% at the time of our draft report. In previous valuations, no load for sick leave service was applied.
4. At its October 27 meeting, the Board asked Milliman to reconsider its assumption for health plan participation. When we reviewed the selection of health plan coverage on a service-weighted basis, we found that those who chose the \$15 subsidy had approximately 70% of the total service. This figure has declined in recent years from approximately 75% two years ago. The Board indicated that it felt that future declines are also likely. For this reason, we are now recommending that 65% of future retirees will elect to participate in an employer health plan.

Summary of Results

This section describes the key findings of this investigation of experience of the Santa Barbara County Employees' Retirement System for the period July 1, 2007 through June 30, 2010. Normally the study is performed every three years. We are recommending several changes to both the demographic and economic assumptions. We will refer to our recommended assumptions as the "proposed" assumptions.

Note that in addition to these recommended changes, we have shown an alternative investment return assumption, as discussed later in this report. We would describe the current investment return assumption of 8.16% as overly aggressive, given the current expectations for capital markets and inflation. We feel that our proposed assumption of 7.25% better matches the current environment. At its October 27 meeting, the Board elected to adopt a 7.75% investment return assumption for use in the 2010 and 2011 valuations, with a 7.50% assumption for the 2012 valuation.

**Summary of Results
(continued)**

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

Assumption	Recommendation
Inflation	Reduce from 3.50% to 3.00% (Alternative 3.25%)
Investment Return	Reduce from 8.16% to 7.25% (Alternatives 7.50% or 7.75%)
Wage Growth	0.50% Real Growth above Inflation (No Change)
Funding Method	No Change
Merit Salary Scale	No Change
Retirement	Update Rates for General and Safety
Disability	Reduce Rates
Termination	Update Rates for General and Safety
Probability of Refund	Update Rates for General and Safety
Mortality	Reduce Rates for Healthy Females (increase life expectancies). Update Tables for Male and Disabled.
Prob. Elig. Survivor	Increase for Females
Reciprocity	No Change
Deferral Age for Vested Terminated	Increase for General and Safety Plan 4
Sick Leave Service Credit	Reflect increased service
Interest Credit for Member Contributions	Reduce Rate
Health Plan Participation	Reduce from 75% to 65%

The impact on the contribution rates and funded ratio is discussed further in the Financial Impact section at the end of the Executive Summary.

Economic Assumptions

In Section 3, we discuss the economic assumptions: price inflation, general wage growth (includes price inflation and productivity) and the investment return assumption. We have recommended that the Board decrease both the inflation assumption and the investment return assumption. We recommend maintaining the assumption for real general wage growth. However, because we recommend a decrease in the inflation assumption, maintaining the real wage growth assumption means decreasing the assumption for total wage growth.

As discussed in Section 3, inflation has historically averaged less than the current 3.50% assumption and this is particularly true for recent history. In addition, forecasts for inflation in the future are much lower. The capital market assumptions of investment consultants and the rates implied by the market for Treasury Inflation-Protected Securities imply inflation rates even lower than the recommended change to 3.0%.

In Section 3, we provide a lengthy discussion of the investment return assumption and our reasons for recommending the use of a lower assumption.

Demographic Assumptions

In Section 4 through 10, we discuss the demographic assumptions. Unlike the economic assumptions which are more global in nature, these assumptions are based heavily on recent SBCERS experience. Demographic assumptions are used to project future member behavior (e.g., when will a member retire? How long will the member live?).

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 120%, it indicates that there were 20% more service retirements than expected, and that we should consider increasing the assumption. By increasing the expected rates, this results in a lower ratio (closer to 100%).
- When we refer to the “proposed” assumptions, these are the assumptions that we are recommending. 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 (yellow line).
- The recommended rates are shown in detail in Appendix A.

Individual Salary Increases due to Promotion and Longevity (Merit)

In Section 5, we discuss the individual salary increases due to promotion and longevity – the merit component of salaries.

The pattern and level of increases were not radically different from those currently assumed. We also know that the past three years may have been an unusual period for salary increases due to the difficult economy. After considering these factors, we do not feel that there is sufficient evidence to make a change in the assumption and are not recommending any changes.

Mortality

The retired mortality assumption is used to predict the life expectancy of both members currently in pay status and those expected to receive a benefit in the future.

Overall, the actual number of deaths for the current group of retirees (both service and disabled) was reasonably close to the assumptions. This is indicated by an actual-to-expected (A/E) ratio of 94%. That is, there were 6% fewer deaths than the current assumptions would have predicted.

We are recommending a significant reduction in the mortality rates for female service retirees and beneficiaries to reflect that people are living longer. We are recommending a projection of the mortality table to 2010 and also recommending an increase in the offset used to adjust the table to the experience of SBCERS. The reduced rates are represented by the fact that the yellow lines for the proposed rates are lower than the red lines for the current rates in the charts for healthy females in Section 6.

We have also recommended changes to the disability mortality assumption as well as the assumption for healthy males. These assumption changes reflect a projection of the 2000 tables to 2010. The resulting rates for these groups are not significantly different than they were in the prior assumptions. This can be seen by the fact that the yellow lines for the proposed rates are very close to the red lines for the current rates.

Under the current assumptions, the Actual-to-Expected (A/E) ratio is 94% for all service and disability retirees combined, indicating that there were slightly fewer deaths than predicted. Under the revised assumptions, the A/E ratio is 106%, providing some margin for future improvements in mortality. Further analysis is shown in Section 6 of this report.

For active mortality (the probability of death while actively employed), we are recommending using the same mortality tables for active employees as those used for the mortality for SBCERS' retired members.

Service Retirement

Overall, the actual number of service retirements was more than the assumptions predicted for Safety members and General males. For General females, the actual number of service retirements was less than expected. The following chart shows the results for all members eligible for retirement.

Service Retirements					
Class	Actual	Expected	Act / Exp	Proposed	Act / Prop
General Males	150	137	109%	132	114%
General Females	240	255	94%	224	107%
Safety Plan 4	53	41	129%	52	102%
Safety Plan 6	65	44	148%	59	110%
Total	508	477	106%	467	109%

We are recommending increased rates of retirement for Safety members and adjustments to the pattern of retirement for General members. Further analysis is shown in Section 7 of this report.

Because of the Early Retirement Incentive Program, it is believed that there were more retirements for people aged 60 or older than there would have been without the program. For that reason, we are recommending rates lower than the actual experience for those ages.

Disability Retirement

Overall, the actual number of disability retirements was significantly lower than the assumptions predicted for all categories. The following chart shows the results for General and Safety disability retirements.

Disability Retirement					
Group	Actual	Expected	Act / Exp	Proposed	Act / Prop
General	15	29	52%	18	83%
Safety	3	15	20%	9	33%
Total	18	44	41%	27	67%

As indicated by the decreased number of expected disabilities under the proposed rates (27 proposed versus 44 expected under the current assumptions), we are recommending lower rates of disability retirement in all categories. Further analysis is shown in Section 8 of this report.

Termination

The actual number of terminations for both General and Safety members was a little lower than the assumptions predicted.

Termination					
Class	Actual	Expected	Act / Exp	Proposed	Act / Prop
General Males	157	166	95%	153	103%
General Females	365	372	98%	361	101%
Safety	69	75	92%	71	97%
Total	591	613	96%	585	101%

We are recommending higher rates of termination for members with little service. However, we are generally recommending lower rates of termination for people with more than 2 years of service. The new assumptions better reflect the experience over the previous three years. Further analysis is shown in Section 9 of this report.

Probability of Refund upon Vested Termination

The actual number of refunds for vested members at termination was less than the assumptions predicted for both General and Safety members.

Probability of Refund					
Class	Actual	Expected	Act / Exp	Proposed	Act / Prop
General Male	114	127	90%	127	90%
General Female	289	314	92%	310	93%
Safety	40	50	80%	45	89%
Total	443	491	90%	482	92%

We are recommending changes in the rates of refund for both General and Safety members. Further analysis is shown in Section 10 of this report.

Financial Impact of the Recommended Assumptions

The exhibits on the following pages show the expected financial impact the proposed changes would have on SBCERS' contribution rates and Funded Ratio. Note that the proposed changes would increase the expected employer contribution rate and decrease the Funded Ratio of the system. All dollar amounts are in thousands.

The financial impact was evaluated by performing additional valuations with the June 30, 2009 valuation data and reflecting the proposed demographic assumption changes. We have also showed the results using the economic assumptions that the Board adopted at its October 27, 2010 meeting. In our draft report for the Investigation of Experience, we showed results at alternative economic assumptions in order to assist the Board in understanding the sensitivity of the results to changes in the economic assumptions. The actual financial impact will vary somewhat from the June 30, 2009 valuation due to year-to-year changes in the member population.

Total				
	Actuarial Accrued Liability	Employer Normal Cost Rate	UAAL Rate	Total Employer Contribution Rate
June 30, 2009 Actuarial Valuation	\$ 2,263,862	14.21%	14.67%	28.88%
Funded Ratio	75.3%			
Recommended Demographic Changes				
Disability, Termination Rates & Refund %	\$ (5,271)	0.48%	-0.13%	0.35%
Post-Retirement Mortality	56,593	0.32%	1.49%	1.81%
Rates of Retirement	16,902	0.35%	0.43%	0.78%
Deferred Retirement Age, Probability of Marriage, Interest Crediting Rate	(6,862)	-0.13%	-0.18%	-0.31%
Sick Leave Service Credit	(5,038)	0.29%	-0.13%	0.16%
Total Demographic Changes	\$ 56,324	1.31%	1.48%	2.79%
Adopted Economic Changes				
Investment Return = 7.75%	\$ 114,317	1.15%	2.81%	3.96%
Revised June 30, 2009 Actuarial Valuation	\$ 2,434,503	16.67%	18.96%	35.63%
Percentage increase compared to valuation	7.54%	17.31%	29.24%	23.37%
Funded Ratio	70.1%			

APCD				
	Actuarial Accrued Liability	Employer Normal Cost Rate	UAAL Rate	Total Employer Contribution Rate
June 30, 2009 Actuarial Valuation	\$ 30,861	13.33%	16.54%	29.87%
Funded Ratio	73.7%			
Recommended Demographic Changes				
Disability, Termination Rates & Refund %	\$ (160)	0.47%	-0.32%	0.15%
Post-Retirement Mortality	593	0.26%	1.21%	1.47%
Rates of Retirement	187	0.13%	0.38%	0.51%
Deferred Retirement Age, Probability of Marriage, Interest Crediting Rate	(186)	-0.17%	-0.38%	-0.55%
Sick Leave Service Credit	213	0.17%	0.43%	0.60%
Total Demographic Changes	\$ 648	0.86%	1.32%	2.18%
Adopted Economic Changes				
Investment Return = 7.75%	\$ 1,580	1.16%	3.00%	4.16%
Revised June 30, 2009 Actuarial Valuation	\$ 33,088	15.35%	20.86%	36.21%
Percentage increase compared to valuation	7.22%	15.15%	26.12%	21.23%
Funded Ratio	68.7%			

General				
	<u>Actuarial Accrued Liability</u>	<u>Employer Normal Cost Rate</u>	<u>UAAL Rate</u>	<u>Total Employer Contribution Rate</u>
June 30, 2009 Actuarial Valuation	\$ 1,362,168	11.87%	13.44%	25.31%
Funded Ratio	72.7%			
Recommended Demographic Changes				
Disability, Termination Rates & Refund %	\$ (4,162)	0.48%	-0.15%	0.33%
Post-Retirement Mortality	42,088	0.35%	1.52%	1.87%
Rates of Retirement	4,373	0.18%	0.15%	0.33%
Deferred Retirement Age, Probability of Marriage, Interest Crediting Rate	(5,516)	-0.14%	-0.20%	-0.34%
Sick Leave Service Credit	(1,773)	0.26%	-0.06%	0.20%
Total Demographic Changes	\$ 35,009	1.13%	1.26%	2.39%
Adopted Economic Changes				
Investment Return = 7.75%	\$ 66,902	0.97%	2.24%	3.21%
Revised June 30, 2009 Actuarial Valuation	\$ 1,464,079	13.97%	16.94%	30.91%
Percentage increase compared to valuation	7.48%	17.69%	26.04%	22.13%
Funded Ratio	67.6%			

Safety				
	<u>Actuarial Accrued Liability</u>	<u>Employer Normal Cost Rate</u>	<u>UAAL Rate</u>	<u>Total Employer Contribution Rate</u>
June 30, 2009 Actuarial Valuation	\$ 870,833	20.87%	18.07%	38.94%
Funded Ratio	79.6%			
Recommended Demographic Changes				
Disability, Termination Rates & Refund %	\$ (949)	0.43%	-0.09%	0.34%
Post-Retirement Mortality	13,912	0.27%	1.41%	1.68%
Rates of Retirement	12,342	0.77%	1.25%	2.02%
Deferred Retirement Age, Probability of Marriage, Interest Crediting Rate	(1,160)	-0.07%	-0.11%	-0.18%
Sick Leave Service Credit	(3,478)	0.41%	-0.36%	0.05%
Total Demographic Changes	\$ 20,667	1.81%	2.10%	3.91%
Adopted Economic Changes				
Investment Return = 7.75%	\$ 45,835	1.68%	4.40%	6.08%
Revised June 30, 2009 Actuarial Valuation	\$ 937,335	24.36%	24.57%	48.93%
Percentage increase compared to valuation	7.64%	16.72%	35.97%	25.65%
Funded Ratio	73.9%			

Impact of the Recommended Assumptions on Member Contribution Rates

The changes in mortality, the wage increases and the investment return assumption would all result in increases to the member contribution rates. The employee contribution rates vary by entry age. The following are sample rates for entry age 35:

Sample Changes in Member Contribution Rates				
	<u>Entry Age</u>	<u>Current</u>	<u>Proposed</u>	<u>Increase</u>
General 5A	35	3.36%	3.60%	0.24%
General 5B	35	6.71%	7.20%	0.49%
General 5C	35	3.22%	3.46%	0.24%
APCD 1	35	3.96%	4.22%	0.26%
APCD 2	35	7.92%	8.45%	0.53%
Safety 4A & 6A	35	6.08%	6.48%	0.40%
Safety 4B	35	12.15%	12.96%	0.81%
Safety 4C & 6B	35	5.80%	6.20%	0.40%

Revised Assumptions and Methods

Appendix A illustrates the Summary of Actuarial Assumptions as it will appear in the June 30, 2010 valuation report, if all recommended assumptions and methods are adopted. Proposed changes in assumptions are highlighted in yellow.

Santa Barbara County Employees' Retirement System Investigation of Experience (2007-2010)

Section 2: Introduction



Funding and Valuation Principles

Just as certain investment choices have an associated "investment risk," choices in actuarial assumptions have an associated "actuarial risk." Our responsibility is to consider the impact our work will have on current and future stakeholders in SBCERS.

Determining the adequacy of the current contribution rates is dependent on the assumptions we use to project the future benefit payments and then to discount the value of future benefits to determine the present values. Thus, it is important that the Board understand the sensitivity of the actuarial calculations to the underlying assumptions.

- If actual experience shows that the assumptions overestimated the true cost of the plan, decisions for change may be inappropriately made based on the current higher cost levels. This may also result in an overstatement of costs today and the longer term impact will not be realized until many years in the future when costs may need to be lowered due to the current overstatement.
- If actual experience shows that the assumptions underestimated the true costs, decisions for change may be inappropriately made based on the lower current cost levels. This may result in an unexpected need to increase costs in the future and may lead to budgeting difficulties.
- The valuation only presents the costs as of one date. Further analysis illustrating the potential volatility of the cost results may be needed to fully appreciate the "actuarial risk" associated with actuarial assumptions.

The actuarial assumptions do not directly impact the true cost of the base plan benefits, however, they do impact how the financing and pre-funding of those retirement benefits take place before the true costs can be determined.

The setting of the actuarial assumption for investment return could have an effect on the investment managers' investment strategies. If a higher, more aggressive assumption is used, there may be a tendency to stretch the investment risk to meet the assumption. SBCERS should evaluate its risk tolerance for investment decisions independent of the actuarial assumption rate. The actuarial assumption is based on the investment policy.

Funding and Valuation Principles (continued)

The actuarial assumptions are for the long term. It is expected that there will be years in which the actual investment return exceeds the actuarial assumption, and there will be years when the actual experience does not meet the assumed rate. It is the expected long-term rate that is used to project and finance the retirement benefits.

Recognition should be made that a higher investment return assumption will tend to lower required contributions in the short term, while a lower investment return assumption will tend to require higher contributions. In the public environment, any move back from a higher return assumption to a lower return assumption could result in higher contribution rates. Using a slightly lower assumption, or more conservative rate, gives a greater assurance of having actuarial experience gains in the future, whereas using a slightly higher assumption, or more aggressive rate, implies a willingness to assume a greater “actuarial risk” of future experience losses.

The question that needs to be asked in the public sector is: How great an actuarial risk is the Board willing to accept in the actuarial assumptions? If actuarial experience gains materialize, SBCERS’ funded status will be better than expected. If actuarial experience losses materialize, what legal or other restrictions are applicable? The plan is subject to the ‘37 Act minimum funding requirements which are to pay at least the normal cost rate and an amortization of any Unfunded Actuarial Accrued Liability (UAAL) amount over no more than 30 years, as determined by the valuation.

The actuarial assumptions are usually divided into two groups: economic and demographic. The economic assumptions must not only reflect SBCERS’ actual experience but also give even greater consideration to the long-term expectation of future economic growth for the nation, as well as the global economy. By long term, we are looking at time periods up to 75 years – a much longer time frame than investment managers or economists will likely be discussing with you.

The non-economic, or demographic assumptions, are based on SBCERS’ actual experience, adjusted to reflect trends and historical experience. Thus, the economic assumptions are much more subjective than the demographic assumptions, and the demographic assumptions are much more dependent on the results of the experience studies.

Overview

This report presents the results of an investigation of the recent actuarial experience of SBCERS. We will refer to this investigation as an experience study.

Throughout this report, we refer to "expected" and "proposed" actuarial assumptions. The "expected" assumptions are those used for the June 30, 2009 actuarial valuation. They may also be referred to as the "current" assumptions. These assumptions and methods were adopted by the Board based on the 2007 Experience Study. The "proposed" or "recommended" assumptions are those we recommend for use in the valuation as of June 30, 2010 and for subsequent valuations until further changes are made.

The choice of economic assumptions (investment return, general wage growth and payroll increase) is discussed in Section 3 of this report. These assumptions are generally chosen on the basis of the actuary's expectations as to the effect of future economic conditions on the operation of SBCERS. However, the setting of these assumptions is much more subjective than in setting and recommending the demographic assumptions.

Sections 4 through 10 of this report will show the results of our study of demographic assumptions and will be discussed with the Board on October 27, 2010. The Board will most likely rely on our analysis of these assumptions as they are much more deterministic than the economic assumptions. The exhibits are detailed comparisons between actual and expected terminations on both the current and proposed bases. Each Exhibit is identified by a number and a letter corresponding to the section of the report. For example, Exhibit 7-1 is referred to in Section 7, retirement rates. If the data is too sparse, no graph is provided. This occurs for disabilities and death while active.

For each type of assumption, graphs show the actual, the expected and proposed rates, usually by a combination of sex, years of service and age group. The exhibits also show the total numbers of actual and expected terminations. Ratios larger than 100% on the current basis indicate that the rates may need to be raised; ratios smaller than 100% indicate that rates may need to be lowered.

Overview (continued)

For each exhibit, the actual decrement rates are shown as bar graphs on either a quinquennial-age basis, a years-of-service basis, or, in the case of retirement rates, on an age-by-age basis. The current rates – the "expected" rates – used in the June 30, 2009 actuarial valuation, are shown as well as the new proposed assumptions as line graphs. Therefore, the assumption changes we are proposing are illustrated by the difference between the two lines in each exhibit. Note that in cases where no change is being proposed, only the expected rate line is shown.

SBCERS' members are covered by several different levels of benefits based on their employment class: General, APCD and Safety members. In addition members within each class are covered by different plans. General has Plans 2, 5A, 5B, and 5C; APCD has Plans 1 & 2; Safety members are now split into Plans 4A, 4B, 4C, 6A, and 6B. For purposes of studying the demographic experience, it is generally assumed that the patterns of employment changes can be studied in three groups: General male and female, and a Safety group. Due to the smaller size of each Plan's coverage, it is impractical to study results by Plan even though there could be some variation based on the different benefit provisions. We do assume separate retirement rates for Safety Plans 4 and 6, as the benefit provisions are sufficiently different to expect different retirement behavior patterns.

Our Philosophy

Similar to an actuarial valuation, the calculation of actual and expected experience is a fairly mechanical process. From one actuary to another, you would expect to see very little difference. However, the setting of assumptions is a different story, as it is more art than science. In this report, we recommend new assumptions. To help you understand our thought process, here is a brief summary of our philosophy:

- **Don't overreact:** When we see significant changes in experience, we generally do not adjust our rates to reflect the entire difference. We will generally recommend rates somewhere between the old rates and the new experience. If the experience during the next study shows the same result, we will probably recognize this trend at that point. On the other hand, if the experience returns closer to its prior level, we will not have overreacted, minimizing volatility in the member and employer contribution rates.

Our Philosophy (continued)

- **Anticipate Trends:** If there is an identified trend that is expected to continue, we believe that this should be recognized. An example of this is the retiree mortality assumption. It is an established trend that people are continuing to live longer; therefore, we prefer to build in a margin to reflect future decreases in mortality rates. The use of a margin is in lieu of using generational mortality assumptions. Some public plans have started to use these assumptions which vary mortality risks based on birth with younger members having longer expected life spans. To accomplish a similar financial result we prefer to set the expected retired mortality at about 110% of the current mortality being experienced by current retirees. This extra margin approximates the cost of having active members potentially live longer than current retired members.
- **Simplify:** In this report we describe what factor affects each assumption. In general, we attempt to identify which factors are significant and eliminate the ones that do not improve accuracy.

Actuarial Standard of Practice No. 27

The Actuarial Standards Board has adopted Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*. This standard provides guidance to actuaries giving advice on selecting economic assumptions for measuring obligations under defined benefit plans, such as SBCERS. ASOP No. 27 is effective for any valuation with a measurement date on or after July 15, 1997.

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 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 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.

Actuarial Standard of Practice No. 27 (continued)

After completing the selection process, the actuary should review the set of economic assumptions for consistency. This may require the actuary to use the same inflation component in each of the economic assumptions selected. However, if a change occurs in one assumption, the actuary needs to consider if the change would modify other economic assumptions as well.

An actuary's best-estimate range with respect to a particular measurement of pension obligations may change from time to time due to changing conditions or emerging plan experiences. The actuary may change assumptions frequently in certain situations, even if the best-estimate range has not changed materially, and less frequently in other situations. Even if assumptions are not changed, the actuary needs to be satisfied that each of the economic assumptions selected for a particular measurement complies with the new Actuarial Standard of Practice No. 27.

This report will address the relevant types of economic assumptions used in the actuarial valuation to determine the obligations of SBCERS. Based on our review and this study, we believe the current investment return is too high and is no longer in the best estimate range. We are also recommending decreases in the assumptions for inflation and the general wage increase (includes price inflation and productivity) and payroll assumptions. The Board should consider and discuss the range of reasonableness appropriate for each assumption. The current investment return assumption no longer fits within this range. In our opinion, the proposed economic assumptions have been developed in accordance with ASOP No. 27.

Actuarial Standard of Practice No. 35: Selection of Demographic Assumptions

Actuarial Standard of Practice No. 35 (ASOP 35) governs the selection of demographic and other non-economic assumptions for measuring pension obligations. This standard is effective for any measurement date occurring after September 15, 2001. ASOP 35 states that the actuary should use professional judgment to estimate possible future outcomes based on past experience and future expectations, and select assumptions based upon application of that professional judgment. The actuary should select reasonable demographic assumptions in light of the particular characteristics of the defined benefit plan that is the subject of the measurement. A reasonable assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

ASOP 35 Steps

The actuary should follow these steps in selecting the demographic assumptions:

1. Identify the types of assumptions. Types of demographic assumptions include but are not limited to retirement, mortality, termination of employment, disability, election of optional forms of payment, administrative expenses, family composition, and treatment of missing or incomplete data. The actuary should consider the purpose and nature of the measurement, the materiality of each assumption, and the characteristics of the covered group in determining which types of assumptions should be incorporated into the actuarial model.
2. Consider the relevant assumption universe. The relevant assumption universe includes experience studies or published tables based on the experience of other representative populations, the experience of the plan sponsor, the effects of plan design, and general trends.
3. Consider the assumption format. The assumption format includes whether assumptions are based on parameters such as gender, age, service or calendar year. The actuary should consider the impact the format may have on the results, the availability of relevant information, the potential to model anticipated plan experience, and the size of the covered population.
4. Select the Specific Assumptions. In selecting an assumption the actuary should consider the potential impact of future plan design as well as the factors listed above.
5. Evaluate the Reasonableness of the Selected Assumption. The assumption should be expected to appropriately model the contingency being measured. The assumption should not be anticipated to produce significant actuarial gains or losses.

ASOP 35 General Considerations and Application

Each individual demographic assumption should satisfy the criteria of ASOP 35. In selecting demographic assumptions the actuary should also consider: the internal consistency between the assumptions, materiality, cost effectiveness, and the combined effect of all assumptions. At each measurement date the actuary should consider whether the selected assumptions continue to be reasonable, but the actuary is not required to do a complete assumption study at each measurement date. In our opinion, the demographic assumptions recommended in this report have been developed in accordance with ASOP 35.

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This work product was prepared solely for SBCERS. It may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

Santa Barbara County Employees' Retirement System Investigation of Experience (2007-2010)

Section 3: 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 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, ASOP No. 27 explicitly advises the actuary not to give undue weight to recent experience.

Recognizing that there is not one “right answer,” the 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.

Economic Assumptions (continued)

This section will discuss the economic assumptions. In brief, they are as follows (changes are shown in bold). At its October 27, 2010 meeting, the Retirement Board adopted Alternative 3 for use in the 2010 and 2011 pension valuations, with Alternative 2 for the 2012 valuation. The Board did not select an assumption for the OPEB valuation at that time.

Economic Assumption	Current Assumption (Annual Rate)	Recommended (Annual Rate)	Alternative 1 (Annual Rate)	Alternative 2 (Annual Rate)	Alternative 3 (Annual Rate)
Consumer Price Inflation	3.50%	3.00%	3.00%	3.25%	3.00%
Wage Growth (includes inflation and productivity)	4.00%	3.50%	3.50%	3.75%	3.75%
Real Wage Inflation (wage growth, less price inflation)	0.50%	0.50%	0.50%	0.50%	0.50%
Investment Return - Pension (net of expenses)	8.16%	7.25%	7.50%	7.50%	7.75%
Real Investment Return - Pension (investment return, less price inflation)	4.66%	4.25%	4.50%	4.25%	4.50%
Investment Return – OPEB	4.50%	3.75%	3.75%	4.00%	4.00%
Real Investment Return – OPEB (investment return, less price inflation)	1.00%	0.75%	0.75%	0.75%	0.75%

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 expected investment returns that are also high enough to exceed inflation, while lower inflation rates will result in lower demanded expected investment returns, at least in the long run.

The current assumption for inflation is 3.50% per year.

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 based solely on historical analysis, historical patterns and long-term trends are a factor to be considered in developing the inflation assumption.

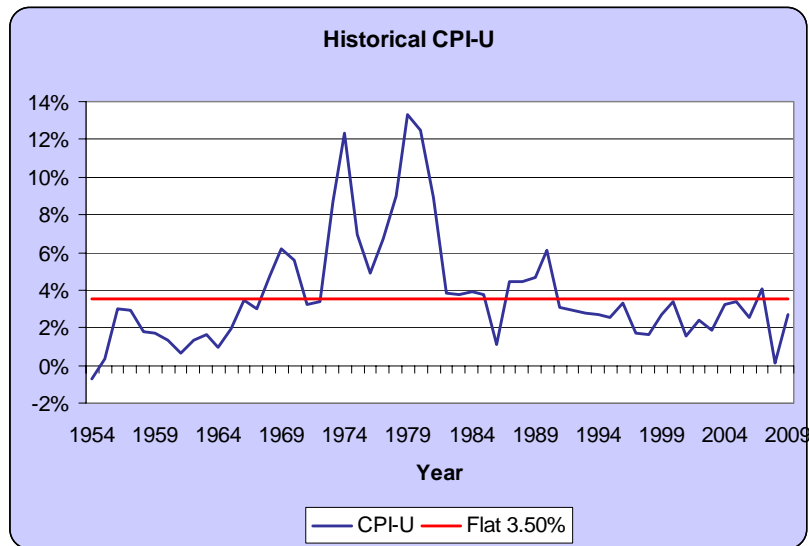
There are numerous ways to review historical data, with significantly differing results. The table below shows the compounded annual inflation rate for various 10-year periods, and for the longer 80-year period, ended in December 2009.

Decade	CPI Increase
2000-2009	2.5%
1990-1999	2.9%
1980-1989	5.1%
1970-1979	7.4%
1960-1969	2.5%
Prior 80 Years	
1930-2009	3.2%

These are national statistics. For comparison, the average CPI increase for the Los Angeles-Riverside-Orange County area has also been 3.2% for the same 80-year period.

Historical Perspective (Continued)

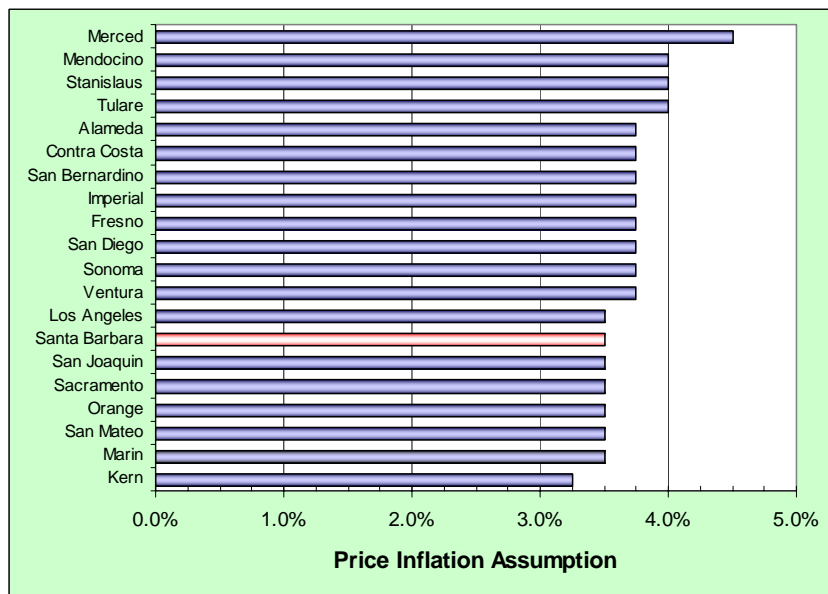
The following graph shows historical national CPI increases. Note that the actual CPI increase has been less than 3.50% for nearly every year in the past two decades.



Peer System Comparison

According to the *Public Fund Survey* (a survey of 126 large public pension systems), the average inflation assumption for statewide systems has been steadily declining. As of the most recent study, the average rate is approximately 3.50%. The most common assumptions were 3.00% and 3.50%.

Looking only at other '37 Act systems, here is how the current assumption compares to those used by other systems. As you can see, nearly all of the '37 Act systems use inflation assumptions between 3.50% and 4.00%. We gathered this information from online public sources, as of July 2010.



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 the end of July 2010 suggest investors expect inflation to be about 1.82% over the next 10 years and 2.16% over the next 30 years.

Pension Consulting Alliance (PCA), SBCERS' investment consultant, forecasts 2.75% inflation over its investment horizon. This was revised downward in September from an assumption of 3.00%. Milliman investment consultants also forecast 2.75% inflation.

Many forecasters have been anticipating inflation lower than the current assumption of 3.50% for several years. These forecasts are often considered 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 (SSA). In the 2010 Trustees Report the projected ultimate annual increase in the CPI over the next 75 years under the intermediate cost assumption was 2.80%. The low cost assumption was 1.80% and the high cost assumption was 3.80%. Note that the intermediate assumption has remained at 2.8% since 2001.

Under the intermediate cost assumption, the SSA assumes a 2.0% increase for 2010 and then a decrease to 1.7% for 2011. The annual change in the CPI is assumed to gradually increase to the ultimate annual increase of 2.8% for 2014 and later.

Some forecasters anticipate higher inflation in the long term as it is believed that the large government debt will eventually lead to higher inflation.

**Best Estimate
Range and
Recommendation**

The consumer price inflation assumption impacts SBCERS' funding as it is used to project the COLA payments. It is also used to determine both the investment return assumption and the wage growth assumptions. We believe that the current assumption of 3.50% per year is at the high end of the reasonable range.

As seen above, long-term historical averages for inflation are approximately 3.2%. Other '37 Act systems are using assumptions between 3.50% and 4.00%. Forecasts from investment advisors and the Social Security administration imply an assumption of approximately 2.75%. Finally, the Treasury Inflation-Protected Securities (TIPS) markets imply rates lower than those forecasts.

Given the future expectations of inflation, the Board should consider lowering the assumption as recommended. We recommend an adjustment to 3.00%, but present 3.25% as an alternative assumption. At its October 27, 2010 meeting, the Board adopted an assumption of 3.25%.

Consumer Price Inflation	
Current Assumption	3.50%
Best Estimate Range	2.00% - 3.50%
Recommended Assumption	3.00%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 3-1:

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

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

2. Wage Growth

Use in the Valuation

Estimates of future salaries are based on two types of assumptions: 1) merit increase and 2) general wage 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 assumption is for 0.50% wage growth above the inflation assumption.

Historical Perspective

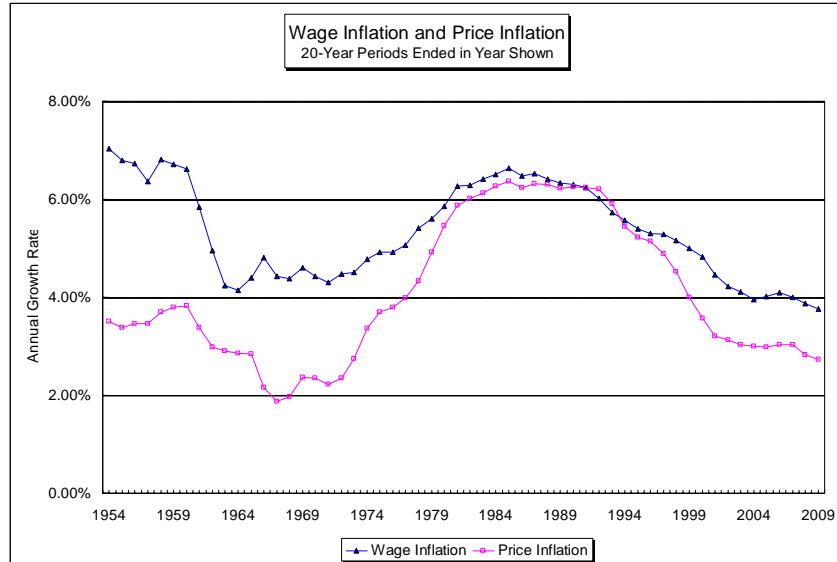
We have used statistics from the Social Security Administration on the National Average Wage back to 1951. For years prior to 1951, we studied the Total Private Nonagricultural Wages as published in *Historical Statistics of the U.S., Colonial Times to 1970*.

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 longer 80-year period, ended in 2009. 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
2000-2009	3.3%	2.5%	0.8%
1990-1999	4.2%	2.9%	1.3%
1980-1989	5.8%	5.1%	0.7%
1970-1979	6.9%	7.4%	-0.5%
1960-1969	4.3%	2.5%	1.8%
Prior 80 Years			
1930-2009	4.7%	3.2%	1.5%

**Historical
Perspective
(continued)**

The following chart can also be used to study patterns in wage growth compared to CPI increases. The chart displays the annualized rates of growth in prices and wages for each 20-year period through 2009. These wage statistics reflect the general wage growth, including inflation and productivity gains, but excluding pay increases due to an individual's promotion. The average over a 20-year period helps eliminate the effect of short-term influences and focuses instead on the long-term trends that affect the future actuarial experience of SBCERS.



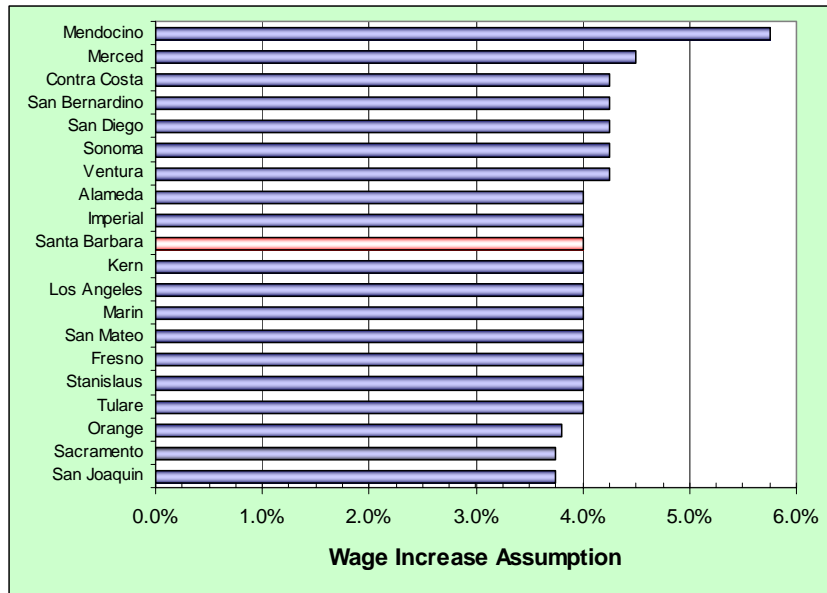
The excess of wage growth over price inflation represents the increase in the standard of living, also called the real wage inflation rate.

According to data from the U.S. Department of Commerce, Bureau of Economic Analysis, wages as a share of national income has been relatively constant for the last 80 years. If this trend continues, the increases in productivity will cause real wages to increase.

Peer System Comparison

The *Public Fund Survey* does not report the average wage growth assumption. Based on our experience with other systems, we believe the average for this group would be close to the SBCERS' assumption of 4.0%.

Looking at other selected '37 Act systems, the current wage growth assumption is in the mainstream. We gathered this information from online public sources, as of July 2010.



Forecasts of Future Wages

Wage inflation has been projected by the Office of the Chief Actuary of the Social Security Administration. In the 2010 Trustees Report, the long-term annual increase in the National Average Wage is estimated to be 1.2% higher than the long-term intermediate inflation assumption of 2.8% per year. The range of the assumed real wage growth in the 2009 Trustees Report was from 0.6% to 1.8% per year.

**Reasonable
Range and
Recommendation**

We believe that a range between 0.25% and 1.50% is reasonable for the actuarial valuation. The historical information implies that long-term real wage growth is higher than the current assumption of 0.50%. However, we feel that current expectations for public sector employers within the state of California are for lower future salary increases. These expectations lead us to recommend that the assumption for the real wage inflation rate not be increased at this time.

Real Wage Inflation Rate	
Current Assumption	0.50%
Best Estimate Range	0.25% - 1.50%
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 is maintained at 0.50% and the price inflation assumption is lowered to 3.25%, this would result in the total wage growth assumption decreasing to 3.75%.

**Payroll Increase
Assumption**

In addition to setting salary assumptions for individual members, the aggregate payroll of SBCERS 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 is assumed).

The current payroll increase assumption is equal to the general wage growth assumption of 4.00%. 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. We are recommending that the payroll increase assumption decrease along with the general wage growth assumption.

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 current investment return assumption for SBCERS is 8.16% per year, net of administrative and investment-related expenses.

Method to Determine Best-Estimate Range for Investment Return

We have determined the best-estimate range for the investment return assumption based upon a model developed by Milliman's investment practice. As input to this model, we have used Milliman's assumptions for capital markets and the target asset allocation adopted by the SBCERS Board. We also used the capital market assumptions of PCA, the Board's investment advisor.

SBCERS' target asset allocation is summarized in the following chart:

Asset Class	Target Allocation
Domestic Equity	37%
Fixed Income	32
International Equity	18
Real Estate	4
Real Return	4
Private Equity	3
Cash	2

The real return asset class consists of a 2% allocation to hedge fund of funds and a 2% allocation to TIPS. The domestic equity allocation includes a 2% allocation to defensive-covered calls.

This model is used to provide the range of assumptions appropriate for compliance with 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.

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

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 mean.

Capital Market Assumptions

Milliman’s investment practice has developed capital market assumptions for various asset classes as of June 30, 2010. PCA, SBCERS’ investment consultant, has done the same for 2010. In addition, we have seen expectations for a number of other investment advisors and they are similar as far as lowering expected returns for at least the next 10 years.

Here is a summary of the expected long-term nominal arithmetic market returns by Milliman’s investment practice and PCA.

	Domestic Equity	International Equity	Fixed Income	Real Estate	Real Return	Private Equity	Cash	Price Inflation
PCA	9.25%	9.75%	3.00%	7.25%	7.00%	12.50%	3.00%	2.75%
Milliman	9.00%	9.48%	4.85%	7.26%	6.45%	12.19%	3.21%	2.75%

Note that both Milliman’s investment practice and PCA assume price inflation of 2.75%. Our recommended assumption for this valuation is 3.00%.

The capital market assumptions were combined with the target asset allocation policy to generate expected real rates of returns (total return less assumed inflation) which were then combined with the recommended inflation assumption of 3.00%. The real rate of return is subject to significant year-to-year volatility as measured by the standard deviation. Volatility over time will lower the mean real rate of return but diversification by asset class will reduce the volatility and narrow the range of expected total returns for the entire portfolio.

Capital Market Assumptions (continued)

The results based upon Milliman’s assumptions are summarized as follows:

Expected Investment Return with 3.00% Inflation
(after investment expenses, but prior to administrative expenses)

Horizon In Years	Percentile Results for Nominal Rate of Return				
	5th	25th	50th	75th	95th
1	-10.33%	-0.38%	7.19%	15.33%	28.14%
5	-1.03%	3.74%	7.19%	10.76%	16.10%
10	1.31%	4.74%	7.19%	9.70%	13.41%
20	3.00%	5.45%	7.19%	8.96%	11.55%
50	4.52%	6.09%	7.19%	8.30%	9.93%

The geometric mean return is 7.19%. This implies a real return (net of inflation) of 4.19%. 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 -10.33% and a 5% chance it will be greater than 28.14%. As the time horizon lengthens the range of the cumulative average results narrows. Note that these are after investment expenses, but prior to adjusting for administrative expenses.

Over a 50-year time horizon, we estimate there is a 25% chance the nominal rate of return will be less than 6.09% and a 25% chance the return will be greater than 8.30% (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 6.09% to 8.30% as not.

We also used the model with the capital market assumptions from PCA, but substituting the 3.00% inflation assumption in place of the 2.75% assumption from PCA’s assumptions. This produced a median return of 6.98% compared to our result of 7.19% above.

The range of results using PCA’s assumptions is summarized as follows:

Expected Investment Return with 3.00% Inflation
PCA Capital Market Assumptions
(after investment expenses, but prior to administrative expenses)

Horizon In Years	Percentile Results for Nominal Rate of Return				
	5th	25th	50th	75th	95th
1	-10.46%	-0.55%	6.98%	15.09%	27.83%
5	-1.20%	3.55%	6.98%	10.53%	15.85%
10	1.13%	4.54%	6.98%	9.48%	13.18%
20	2.81%	5.25%	6.98%	8.74%	11.33%
50	4.32%	5.88%	6.98%	8.09%	9.71%

Investment and Administrative Expenses

The investment return used for the valuation is assumed to be net of all investment and administrative expenses. The following table shows the ratio of investment and administrative expenses to the fair market value of SBCERS assets over the last seven fiscal years ending June 30. Administrative expenses include actuarial, legal, and other administrative expenses. The expense ratio is calculated as the total expense divided by the average asset balance at the beginning and end of the year.

(\$ million) Year	Market Assets	Investment		Administrative		Expense Ratio
		Expense	Ratio	Expense	Ratio	
2009	\$ 1,421.519	\$ 4.754	0.30%	\$ 3.901	0.25%	0.54%
2008	1,762.949	5.076	0.28%	3.604	0.20%	0.48%
2007	1,891.061	5.330	0.30%	2.859	0.16%	0.47%
2006	1,628.958	4.474	0.29%	2.465	0.16%	0.45%
2005	1,476.158	4.396	0.31%	1.842	0.13%	0.44%
2004	1,346.619	3.772	0.30%	1.990	0.16%	0.46%
2003	1,169.417	3.248	0.28%	1.525	0.13%	0.41%

The ratio of expenses to market assets has been fairly stable over the past decade, although it has increased over the past two years, in part due to the significant asset decline. This amount 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, if the investment return assumption is set equal to 8.16%, then SBCERS would need to earn a higher gross return on its assets in order to net the 8.16% for funding purposes.

Actively managed funds have much higher fees than passively managed (indexed) funds. Over the long run, it is reasonable to assume that investors will only pay active management fees if their active managers outperform their passive benchmarks by at least the difference between their active fee and the comparable fee for an index fund. Otherwise, the investor has the option to use an index fund. So, we think it is reasonable for modeling purposes to assume that long-term average returns net of active investment management fees can be approximated by returns on indexed investments net of their fees.

**Best Estimate Range
and
Recommendations
Based on Current
Market Expectations**

Based on the ASOP No. 27 guidelines, we conclude that the reasonable range is the expected real rates of return between the 25th and 75th percentile projected out 50 years, plus the assumed inflation rate, less expenses.

The Real Rate of Return listed below is net of investment expenses. Based upon our model, the recommended inflation assumption, and assuming 0.20% for administrative expenses, we have the following results:

Components of Return	Percentile Returns		
	25th	50th	75th
Real Rate of Return	3.09%	4.19%	5.30%
Assumed Inflation	3.00%	3.00%	3.00%
Administrative Expenses	-0.20%	-0.20%	-0.20%
Net Investment Return	5.89%	6.99%	8.10%

Based upon this model, there is a 24% chance that the net return will meet the current 8.16% assumption or more over a 50-year period. In other words, the expectation is that at least 76% of the time the System will have investment return losses. In addition, the current 8.16% no longer falls within the best estimate range.

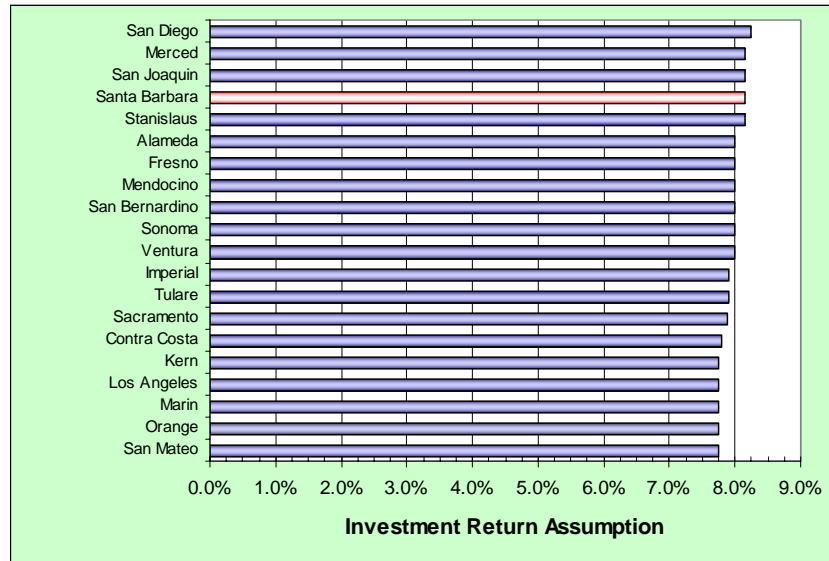
Based upon this model, there is a 44% chance that the net return will meet a 7.25% assumption or more over a 50-year investment horizon. This assumption is just above the median and thus is slightly aggressive and allows no measure of conservatism.

It should be noted that this analysis is based on a 3.00% inflation assumption. As discussed earlier, alternative inflation assumptions may be reasonable. If the inflation assumption were different, that would impact the analysis above.

Peer System Comparison

According to the *Public Fund Survey*, the average investment return assumption for statewide systems has been slowly declining. Based upon the most recent available data, the average assumption is 7.98%. The most common assumption is 8.00%.

Looking at other '37 Act systems, SBCERS' current assumption is somewhat high, as most of the return assumptions are bunched tightly between 7.75% and 8.00%. We gathered this information from online public sources, as of July 2010.



Excess Earnings

Section 31592.2 of the '37 Act provides the Board with the authority to set aside earnings of the retirement fund during any year in excess of the total interest credited to contributions when such surplus exceeds 1% of the total assets of the fund.

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 is a cost to SBCERS. A plan that pays excess earnings benefits must find some way to recognize an obligation for those benefits. An excess earnings policy would result in increased payments made by SBCERS to members over the long term. If these potential future benefits are not recognized in setting the investment return assumption or in determining SBCERS' future benefit payments, the liabilities will be understated.

Excess Earnings (continued)

The Board has adopted a policy that will not allow excess earnings to be set aside until the plan has a funded ratio of 100% and has set aside a 5% Contingency Reserve. Due to this policy and the System's current funded status, we do not feel that an adjustment must be made to the investment return assumption at this time. However, if there is a change in the policy that increases the likelihood that excess earnings will be distributed, or the funded status significantly improves over the next three years, the investment return assumption should be reviewed and account for excess earnings during the next experience study analysis.

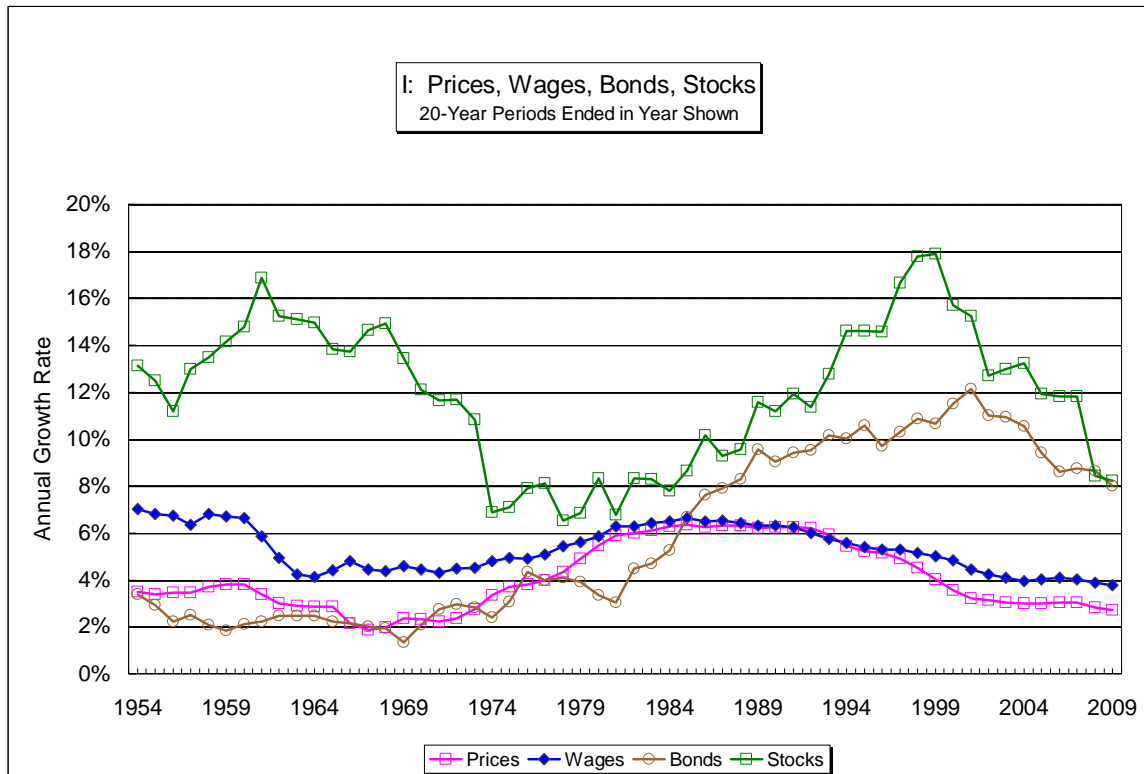
Historical Data

A portfolio of 65% domestic equities and 35% corporate bonds (an approximation of SBCERS' portfolio) rebalanced at the beginning of each year, would have earned an annualized rate of return of 8.9% over the last 84 years. Of course, past performance does not guarantee future results. Current expectations for market returns are significantly lower than that as bond yields are at historic lows and expectations for stocks are low by historical standards.

Looking at the longer term historical data may help the Board decide that it is the appropriate time to adjust the investment return assumption. In the long run, broader economic forces will control the experience of SBCERS in the area of general wage growth and investment returns. Inflation will drive wages, and investment yields will be governed by national and international markets. Accordingly, our analysis of the economic assumptions tends to focus more on national economic statistics rather than the actual historical experience of SBCERS itself.

**Historical Data
(continued)**

The following chart can be used to study patterns in investment returns. The chart displays the annualized rates of return in stocks and bonds for each 20-year period through 2009. The average over a 20-year period helps eliminate the effect of short-term influences and focuses instead on the long-term trends.



**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 an “actuarial risk” associated with the economic assumptions the same 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 afterwards.

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

**Other Factors for
Board Consideration
(continued)**

The current investment return assumption of 8.16% is overly aggressive since it is not even within the best estimate range. Over the next 50 years, our analysis indicates that there is only a 24% probability that the current assumption will be met.

Although member reserves and other accounting reserves are credited interest every six months, we do not think the six-month compounding should impact the expected investment returns used for our actuarial discount rate.

Conclusion

Using the capital market assumptions of Milliman and PCA, the expected administrative expenses, and the proposed inflation assumption of 3.00%, the current assumption of 8.16% appears overly aggressive.

We believe that a 7.25% investment return is a more reasonable long-term assumption. The assumption of 7.25% drops the current assumption for real returns net of inflation from 4.66% (8.16% - 3.50%) to 4.25% (7.25% - 3.00%) and reflects the current asset allocation.

Based on portfolio analysis and the proposed inflation assumption, an investment return assumption between 6.75% and 7.00% seems most reasonable. This is a decline of more than 1.00% from what appeared most reasonable based upon the portfolio analysis at the time of our previous experience study just three years ago in 2007.

Based upon our philosophy for experience studies, when we see large differences in the experience or portfolio analysis, we generally do not adjust our rates to reflect the entire difference. We generally recommend rates between the old rates and the new expectations. If the expectations remain the same at the time of the next study, we would recommend recognizing the trend at that point. On the other hand, if the portfolio analysis returns closer to the prior level, we will not have overreacted, thus minimizing the volatility in the member and employer contribution rates.

When funding a pension plan, a long-term view should be taken. The same is true of the assumptions. There is always going to be volatility, but radical changes in assumptions should not be made without compelling reason. At its October 27 meeting, the Board elected to adopt a 7.75% assumption for use in the 2010 and 2011 valuations and a 7.50% assumption for the 2012 valuation. The more aggressive the assumption, the greater the likelihood that the assumption will not be met.

**Conclusion
(continued)**

As discussed in the inflation section, we are recommending a change in the inflation assumption to 3.00%, with an alternative of 3.25%. At its October 27, 2010 meeting, the Board adopted a 3.25% assumption for inflation. Although this lowered the assumption for the second consecutive experience study, most economists and investment advisors forecast price increases lower than the proposed 3.00% or the adopted 3.25%. If such low inflation is experienced over time, then it is likely SBCERS' investment return will be lower than the proposed assumption of 7.25%.

The recommendations below reflect an inflation assumption of 3.00%. With the Board's adopted inflation of 3.25%, we feel it is appropriate to consider alternative assumptions 0.25% higher.

Investment Return (net of expenses)	
Current Assumption	8.16%
Best Estimate Range	6.00% - 8.00%
Recommended Assumption	7.25%
Alternative Assumption	7.50%

4. Contribution Rate Implications of Changes in Economic Assumptions

Financial Impact of Assumption Changes

In most retirement systems with variable contribution rates, such as SBCERS, the greatest factor contributing to the volatility in the contribution rates is the return on investments. If in the future, the investment returns are less than the actuarial assumptions, there will be increases in the employer contribution rate, all else being equal.

The base member contribution rates are determined based on the '37 Act statutes and the actuarial assumptions for investment return, wage growth, and mortality. The lower the investment return assumption, the higher the member contribution rates, all else being equal. Any experience gain or loss based upon actual investment returns will not have an impact on the member contribution rates, but will impact the employer contribution rates.

Alternative Assumptions

In order to assist the Board in understanding the sensitivity to changes in the investment return assumption and other economic assumptions, we valued the June 30, 2009 valuation results using four different sets of economic assumptions.

The "real rate of investment return" was discussed earlier and is the difference between the investment return assumption and the assumption for the CPI inflation rate. As mentioned above, our recommendation for the real rate of investment return is 4.25%. If the Board feels that assumption reflects too large of a shift from the current assumption, a real rate of investment return of 4.50% could be considered.

Our recommended CPI inflation rate assumption is 3.00%. The economic forecasts of Milliman investment consultants, PCA, and the Social Security Administration all suggest inflation assumptions slightly less than 3.00%. Yields on Treasury Inflation Protected Securities also suggest lower inflation. However, historical averages and peer group comparisons suggest that higher inflation assumptions can be considered.

In addition, when we see significant changes in experience, we may moderate the proposed changes and minimize volatility in the member and employer contribution rates. For this reason, we have two additional alternative sets of assumptions with an inflation assumption of 3.25%.

Alternative Assumptions (continued)

In our draft Investigation of Experience report, we presented the results of the June 30, 2009 valuation under four alternative scenarios. We showed inflation at 3.00% and at 3.25%. We showed real investment returns net of inflation at both 4.25% and 4.50%.

In all economic scenarios, we assumed that real wages (net of inflation) would grow at 0.5%. This matches the current assumption.

In assisting the Board with the final decision, we discussed the following points:

- With a 3.0% inflation assumption, there is only a 24% chance the current investment return assumption of 8.16% will be met and it falls just outside the best estimate range.
- The actuarial discount rate assumes all expenses have been paid, so the gross return before expenses needs to be about 0.50% higher.
- The 2007 study produced a best estimate range for the investment return of 7.1% to 9.5%.
- For now it is assumed no future Excess Earnings benefits are payable, but if the System's funded status improves, an estimate of future diversion of investment returns should be considered when adopting the investment return assumption.
- The economic assumptions are subjective and the Board can adopt changes at any time between the triennial studies. Changes in demographic assumptions are more objective and need to be based on an actuarial investigation which is scheduled to occur only every three years.
- The employers as well as the entire country are recovering from a recession and revenues are greatly reduced. Lowering the economic assumptions as indicated puts additional financial stress on the employers at a time it is difficult to manage.
- We advise the Board to take all issues into consideration and caution them to avoid making their final decisions based *solely* on the financial impact.

5. Investment Return - OPEB

Use in the Valuation

The investment return assumption is one of the primary determinants in the calculation of the expected cost of the Other (than pension) Postemployment Benefits (OPEB), 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 and normal costs.

The current investment return assumption for SBCERS is 4.50% per year, net of administrative and investment-related expenses. This assumption is composed of our current 3.50% assumption for inflation, along with a real return assumption of 1.00%.

Method to Determine Best-Estimate Range for Investment Return

The investment return assumption (discount rate) is based on the expected rate of return for the 401(h) account, which is invested in the Treasurer's pool. The investment return assumption should be the estimated long-term investment yield on the investments that are expected to be used to finance the payment of OPEB benefits.

We have determined the best-estimate range for the investment return assumption based upon a model developed by Milliman's investment practice. As input to this model, we have used Milliman's assumptions for capital markets and the actual allocation of the Treasurer's pool as of June 30, 2009. The Treasurer's pool is invested entirely in fixed income instruments with maturity less than five years. The assumptions we develop reflect a long-term assumption for these short-term investments.

This model is used to provide the range of assumptions appropriate for compliance with 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.

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 mean.

Capital Market Assumptions

Milliman's investment practice has developed capital market assumptions for various asset classes as of June 30, 2010. The investment practice provided separate assumptions based upon the maturity.

The capital market assumptions were combined with the target asset allocation policy to generate expected real rates of returns (total return less assumed inflation) which were then combined with the recommended inflation assumption of 3.00%.

The results based upon Milliman's assumptions are summarized as follows:

Expected Investment Return with 3.00% Inflation (after expenses)

Horizon In Years	Percentile Results for Nominal Rate of Return				
	5th	25th	50th	75th	95th
1	0.97%	2.50%	3.59%	4.68%	6.28%
5	2.41%	3.10%	3.59%	4.08%	4.78%
10	2.75%	3.24%	3.59%	3.93%	4.43%
20	3.00%	3.34%	3.59%	3.83%	4.18%
50	3.21%	3.43%	3.59%	3.74%	3.96%

Conclusion

Using Milliman's capital market assumptions and the proposed inflation assumption of 3.00%, the current assumption of 4.50% appears very aggressive and well beyond the best estimate range.

We believe that a 3.75% investment return is a more reasonable long-term assumption given a 3.00% inflation assumption and that 4.00% is appropriate given a 3.25% inflation assumption. The assumption drops the current assumption for returns net of inflation from 1.00% (4.50% - 3.50%) to 0.75% (4.00% - 3.25%).

Based on portfolio analysis and the proposed 3% inflation assumption, an investment return assumption between 3.50% and 3.75% seems most reasonable. This is a decline of a full 0.75% from what appeared most reasonable based upon the portfolio analysis as of June 30, 2009 and the previous inflation assumption.

Based upon our philosophy for experience studies, when we see large differences in the experience or portfolio analysis, we generally do not adjust our rates to reflect the entire difference, thus minimizing the volatility in the Annual Required Contribution. There is always going to be volatility, but radical changes in assumptions should not be made without compelling reason.

**Conclusion
(continued)**

As discussed in the inflation section, we are recommending a change in the inflation assumption to 3.00%, with an alternative of 3.25%. Although we are recommending lowering the inflation assumption for the second consecutive experience study, most economists and investment advisors forecast price increases lower than the proposed 3.00%. If such low inflation is experienced over time, then it is likely SBCERS' investment return will be lower than the proposed assumption.

The recommendations below reflect an inflation assumption of 3.00%. With the Board's adopted inflation of 3.25%, we feel it is appropriate to consider alternative assumptions 0.25% higher. This means the Board should adopt a return of 4.00% for the 2010 and 2011 OPEB valuation work.

Investment Return (net of expenses)	
Current Assumption	4.50%
Best Estimate Range	3.50% - 3.75%
Recommended Assumption	3.75%

Santa Barbara County Employees' Retirement System Investigation of Experience (2007-2010)

Section 4: Actuarial Methods and Other Miscellaneous Assumptions



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

Valuation Methods

- **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 SBCERS' valuation. We recommend no change.
- **Funding Method (amortization of UAAL):** The UAAL due to all sources is amortized over a rolling 17-year period. This policy began with the June 30, 2009 actuarial valuation. We recommend no change.
- **Valuation of Assets:** We believe that the current asset valuation method which smoothes gains and losses over five years is appropriate for SBCERS' valuation. There is a corridor to ensure that the actuarial value of assets does not deviated from market value by more than 20% of the market value of assets. We recommend no change.

Other 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 the SBCERS benefit. The current assumption is that 50% of future terminated vested members retire with a reciprocal employer. We reviewed this assumption and saw that slightly more than 50% of terminated vested employees are working for a reciprocal employer. We are recommending no change to the assumption of 50%.

Other Miscellaneous Assumptions (continued)

- **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). As part of our valuation, we assume that a certain percentage of members will have an eligible survivor at retirement. We studied this assumption and are recommending increasing the percentage of female active members married at retirement from 50% to 55%. The results of the study are as follows:

Retirees with Eligible Survivor					
Gender	Actual	Expected	Proposed	Act / Exp	Act / Prop
Male	81%	80%	80%	101%	101%
Female	55%	50%	55%	110%	100%

- **Beneficiary Age and Sex:** To determine the value of a member's retirement or death benefit, we must estimate the value of the portion payable to the surviving eligible beneficiary. Since the value of the survivor's benefit is dependent upon his/her age, we must estimate that age. Based upon a study we did of SBCERS retiree data, we found that the average husband is nearly three years older than his wife. For this reason, we feel that the current assumption that males are three years older should be continued.

Since the majority of eligible survivors are expected to be the opposite sex of the members, we will continue to assume that the survivor's sex is the opposite of the member.

- **Deferred Retirement Age for Vested Termination:** We recommend continued use of age 50 for Safety Plan 6 members and age 65 for General Plan 2 members, as these are the age at which they are first entitled to the full benefits. Based upon the experience of the past three years, we recommend delaying the deferral age for General Plan 5 and APCD members from age 56 to age 58. We recommend delaying commencement for Safety Plan 4 members from age 52 to age 54.
- **Unisex Mortality Assumptions:** Unisex mortality assumptions are required for determination of the member contribution rates as well as the conversion factors for optional forms of benefit.

We are recommending changes in the retired and disabled mortality assumptions. If these changes are adopted, the unisex mortality assumptions will need to be updated to reflect the altered life expectancies.

Other Miscellaneous Assumptions (continued)

We recommend the following tables be used for unisex mortality:

General Healthy Members	RP-2000 Combined Healthy Male, Projected to 2010, set back 4 years
Safety Healthy Members	RP-2000 Combined Healthy Male, Projected to 2010, set back 3 years
Beneficiaries	RP-2000 Combined Healthy Female, Projected to 2010, set back 2 years
General Disabled Members	RP-2000 Combined Healthy Male, Projected to 2010, set back 1 year
Safety Disabled Members	RP-2000 Combined Healthy Male, Projected to 2010, no adjustment

- **Sick Leave Service Credits:** Upon retirement, members are entitled to turn their sick leave balances into service credit for retirement benefits. Members are limited to one year of service credit. Over the past five years of history, the sick leave service credit upon retirement has been equal to 1.34% of the other service credit upon retirement. For this reason, we propose to apply a 1.34% load at retirement for sick leave service credit. Previously, no such load was applied.
- **Crediting Interest to Member Accounts:** Beginning on June 30, 2008, the Board of Retirement established a policy of crediting interest to member accounts equivalent to the yield of the Five-Year Treasury note as of the last business day of the interest crediting period. Over the long-term, we expect these yields to be approximately 1.00% higher than inflation. For this reason, we propose an assumption of 4.25% for the crediting of interest to member accounts based upon the Board's adopted assumption of 3.25% inflation.
- **Health Plan Participation:** For the Post Employment Benefits Other than Pensions (OPEB) valuation, we need to make an assumption regarding how many future retirees will select a monthly subsidy for employer health plan benefits of \$15 per year of service and how many will select the \$4 cash benefit. Based upon current retiree data, we recommend decreasing the assumption for those taking the health subsidy from 75% to 65%.

Other Miscellaneous Assumptions (continued)

Approximately 57% of retirees currently choose the \$15 subsidy. However, those with long service are significantly more likely to choose the \$15 option than those with short service. When we reviewed the selection of health plan coverage on a service-weighted basis, we found that those who chose the \$15 subsidy had approximately 70% of the total service. This figure has declined in recent years from approximately 75% two years ago. At its October 27 meeting, the Board indicated that it believed that future declines are also likely. For this reason, we are recommending that 65% of future retirees will elect to participate in an employer health plan

- **Member Contribution Rates:** The proposed changes to the retired mortality assumptions and the investment return assumptions will impact the member contribution rates. The member contribution rates vary by entry age and by plan. A sample of the changes to the member rates if the new rates are adopted follows: A complete summary of the member contribution rates can be found in Appendix B.

Sample Changes in Member Contribution Rates				
	<u>Entry Age</u>	<u>Current</u>	<u>Proposed</u>	<u>Increase</u>
General 5A	35	3.36%	3.60%	0.24%
General 5B	35	6.71%	7.20%	0.49%
General 5C	35	3.22%	3.46%	0.24%
APCD 1	35	3.96%	4.22%	0.26%
APCD 2	35	7.92%	8.45%	0.53%
Safety 4A & 6A	35	6.08%	6.48%	0.40%
Safety 4B	35	12.15%	12.96%	0.81%
Safety 4C & 6B	35	5.80%	6.20%	0.40%

Santa Barbara County Employees' Retirement System Investigation of Experience (2007-2010)

Section 5: Salary Increases Due to Promotion and Longevity (Merit)



Results

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.

In Section 3, we recommend that the second of these rates, the real general wage inflation, remain at 0.50%. Because we are recommending a lower inflation assumption, the total general wage inflation assumption will be correspondingly lower.

Exhibit 5-1 shows the annual merit increases, net of the general wage growth assumption, over the period July 1, 2006 – June 30, 2010. 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 generally lower than the predictions made by the current assumptions.

Recommendation

As mentioned above and displayed in the charts below, the actual increases over the past two years have been a bit lower than would be predicted based upon the current assumptions.

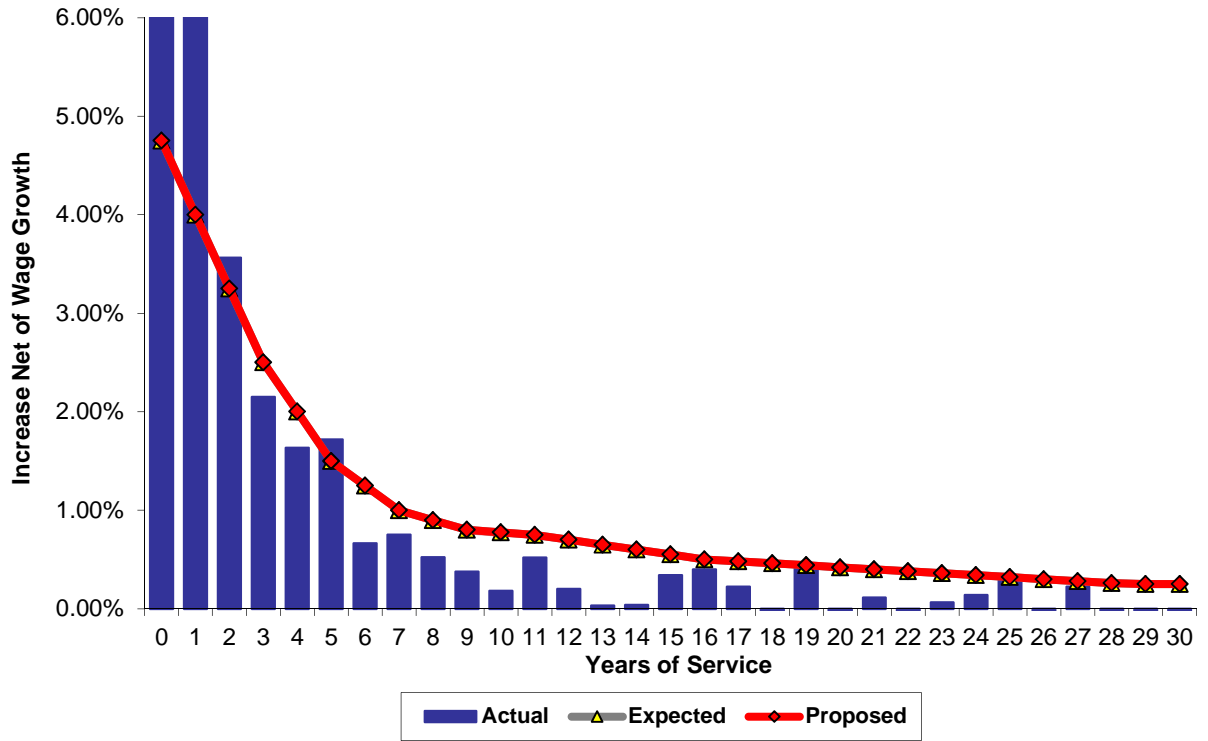
However, the pattern and level of increases were not radically different from those assumed. In addition, we are aware that this period included some unusual pay patterns due to the economic downturn.

After considering these factors, we do not feel that there is sufficient evidence to make a change in the assumption and are not recommending any changes.

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Exhibit 5-1:

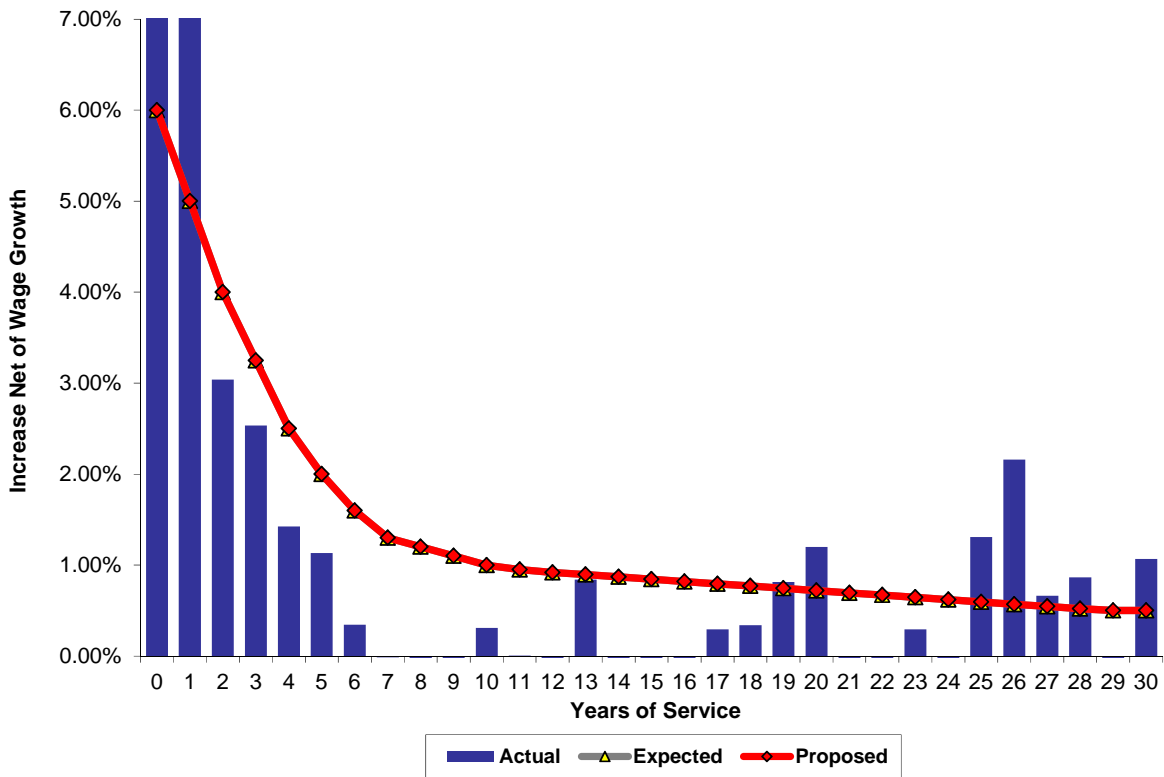
**General Plans All Members
Merit Salary Increase by Service**



**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 5-2:

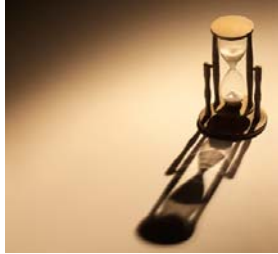
**Safety Plans All Members
Merit Salary Increase by Service**



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**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Section 6: 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 fewer deaths than the current rates predicted: 170 actual to 180 expected for a total ratio of 94%. We generally like to see some margin for future improvements in mortality (i.e., actual number greater than expected by about 5% or more).

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

Retiree Mortality					
<i>Service Retirement</i>					
Group	Deaths			Actual to Expected	Actual to Proposed
	Actual	Expected	Proposed		
General Male	78	73	73	107%	107%
General Female	62	76	58	82%	107%
Safety Male	14	15	15	93%	93%
Safety Female	-	1	1	0%	0%
Total Svc Ret	154	165	147	93%	105%
<i>Disability Retirement</i>					
Group	Deaths			Actual to Expected	Actual to Proposed
	Actual	Expected	Proposed		
General Male	8	6	6	133%	133%
General Female	5	4	3 *	125%	167%
Safety Male	3	5	4	60%	75%
Safety Female	-	-	-	NA	NA
Total Dis Ret	16	15	13	107%	123%
Grand Total	170	180	160	94%	106%

* Rounding makes change look more severe than it really is.
Calculated Expected = 3.6. Calculated Proposed = 3.46.

Results (continued)

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.

Note that all beneficiaries are not included with the study. We assume that the mortality for beneficiaries matches that of the members for the same sex and age.

Recommendation

The current rates are based upon the RP-2000 Mortality Table as the base table for all groups, but adjusted to be lower than these rates (an age set back) to recognize SBCERS' experience.

We are recommending a change to the RP-2000 Mortality Table projected to 2010 using Projection Scale AA as the base table, since it is a more current table. As before, the tables are adjusted backward as necessary to recognize SBCERS' experience.

Note that the actual deaths for females were significantly lower than expected. Meanwhile, the actual deaths for males were somewhat higher than expected. We like to have a margin for future improvements, so we prefer to see the actual deaths greater than those expected by the mortality assumptions.

We are recommending significant decreases in mortality for female members and beneficiaries. The rates for males are largely unchanged. The reduced rates for healthy females are represented by the fact that the yellow lines for the proposed rates are significantly lower than the red lines for the current rates in the charts.

We continue to recommend using the same rate for General service retirements, Safety service retirements, and beneficiaries with distinctions made only for the person's sex and age. We did not see significant discrepancies between the mortality experience between the Safety and General groups.

The sample size for disabled mortality is fairly small for this group. We recommend the use of the RP-2000 Mortality Table projected to 2010, but with no setback for the disabled population. This assumption results in a reasonable margin for future improvements based upon recent experience.

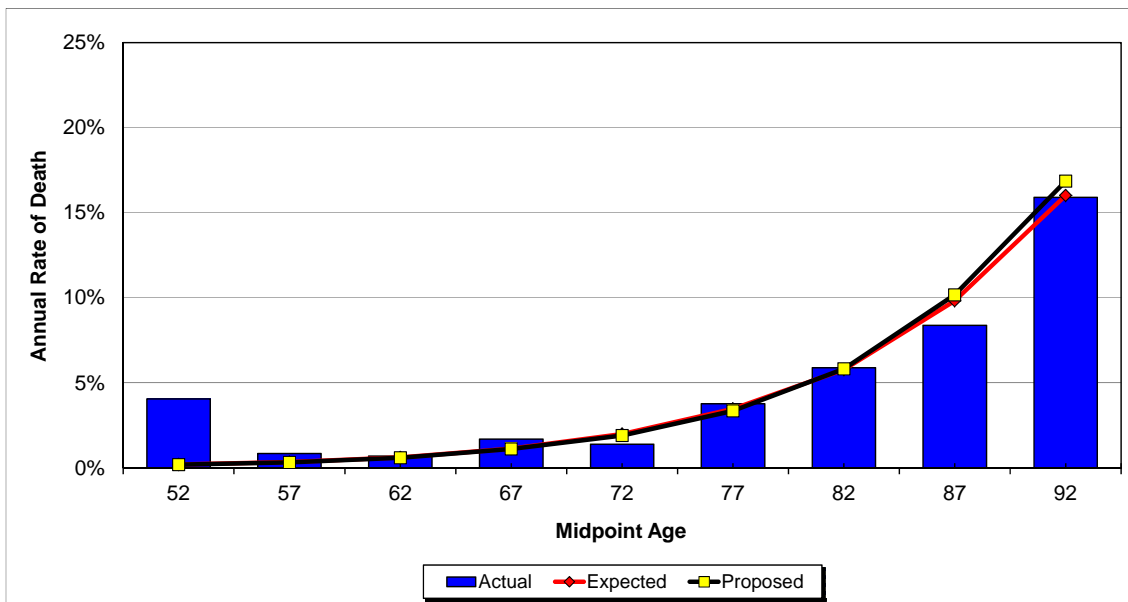
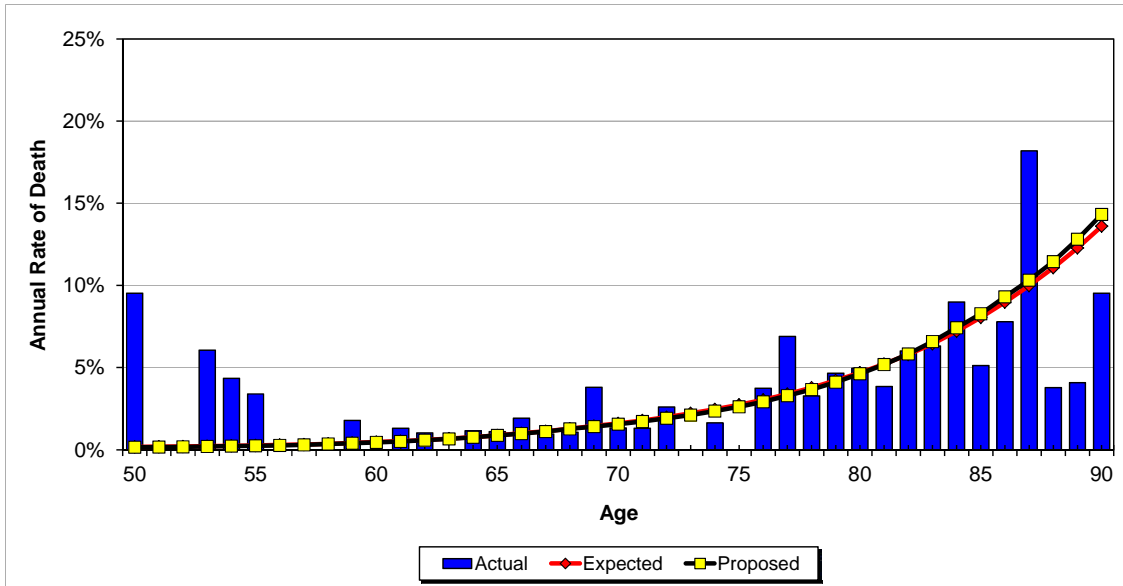
For active mortality (the probability of death while actively employed), we are recommending using a projected mortality table, with adjustments identical to those made to the mortality for SBCERS' retired members. There was not enough experience for service-related death to perform a valid statistical analysis for active members' death while in service. There was one such death in the period. We are recommending retaining the current assumption for service-related deaths to use 0.01% for Safety members and 0% for General members.

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 6-1:

**Mortality Rates Mortality of Service Retirees
General – Male**

(July 1, 2007 through June 30, 2010)



	Expected	Actual	Proposed
Total Count	73	78	73
Actual / Expected		107%	107%

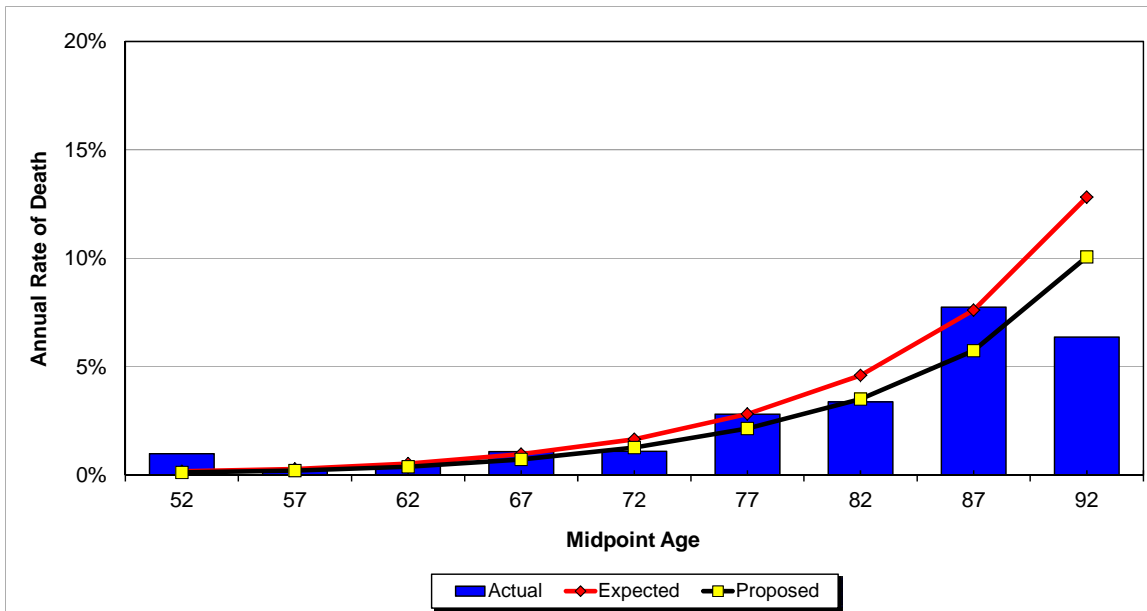
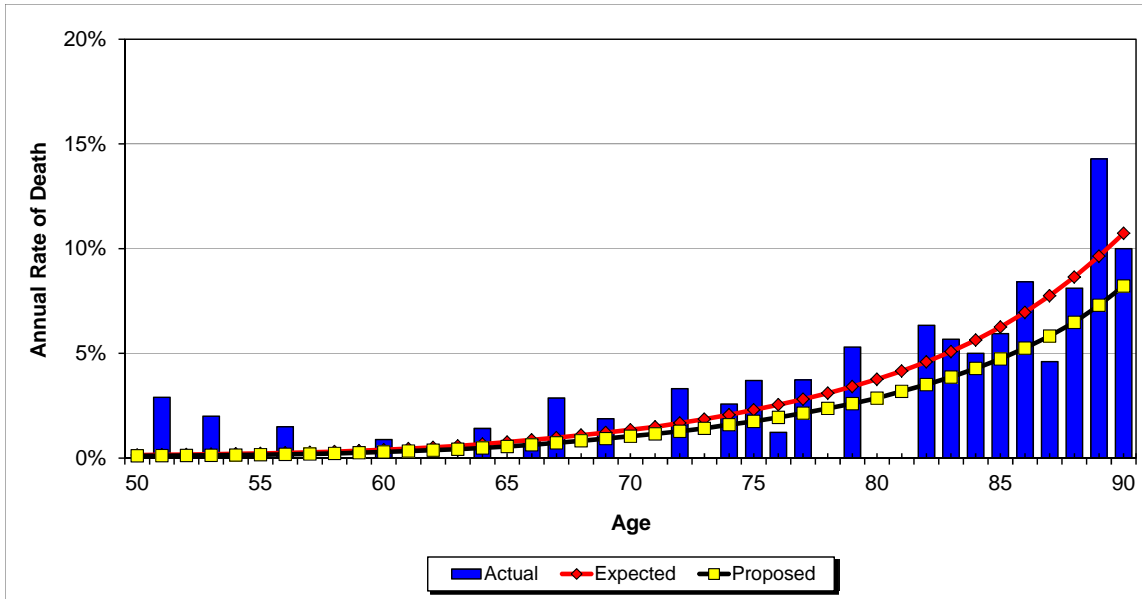
Expected Mortality = RP2000M Combined, 3 year set back.
Proposed Mortality = RP2000M Combined Projected to 2010, 2 year set back.

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 6-2:

**Mortality Rates: Mortality of Service Retirees
General – Female**

(July 1, 2007 through June 30, 2010)



	Expected	Actual	Proposed
Total Count	76	62	58
Actual / Expected	82%		107%

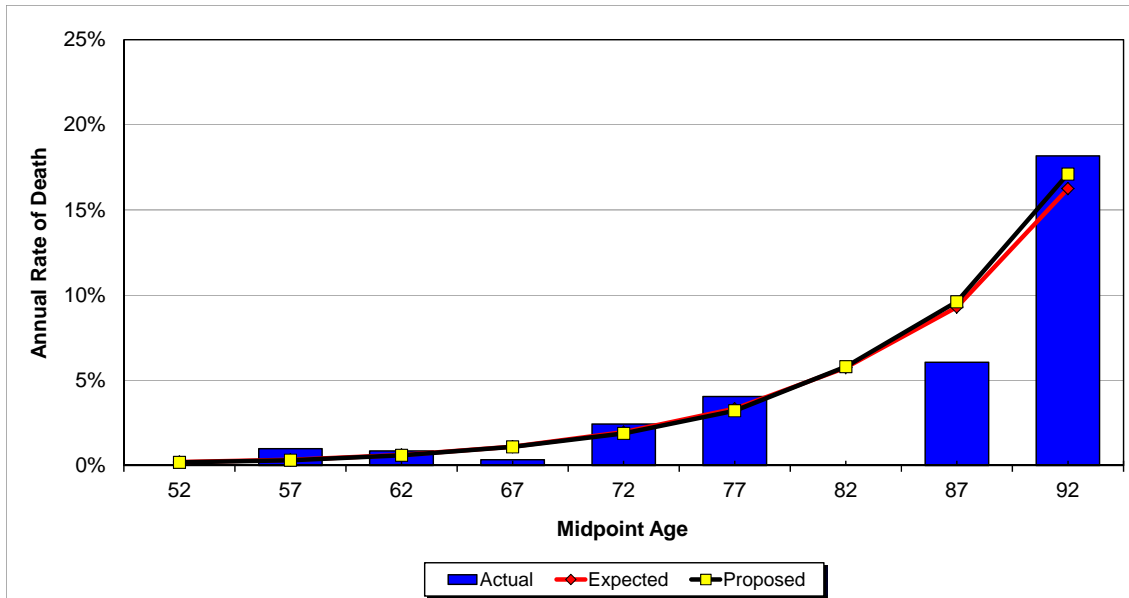
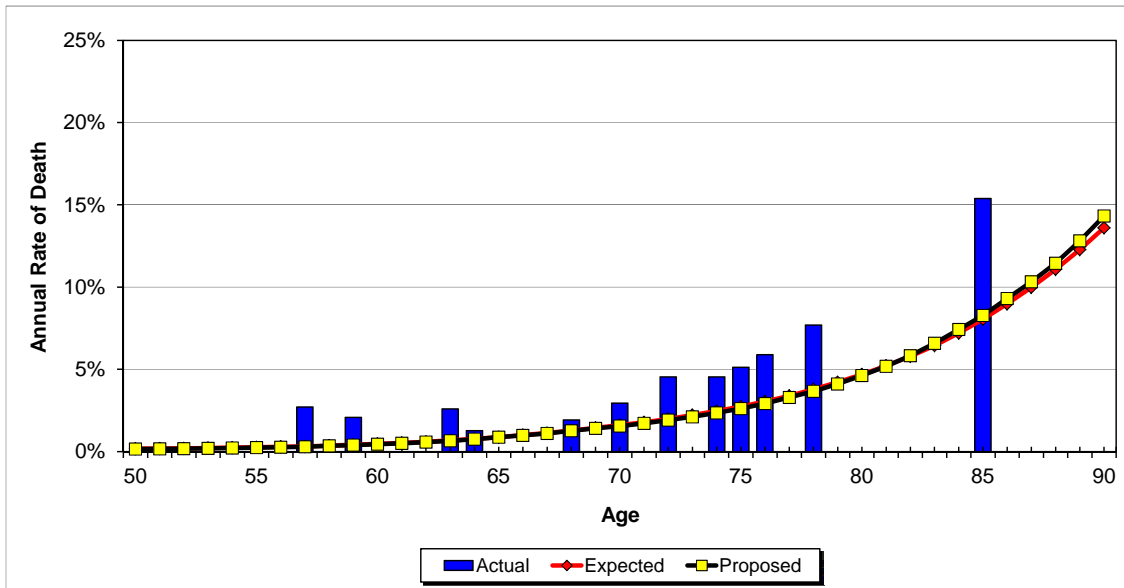
Expected Mortality = RP2000F Combined, 2 year set back.
Proposed Mortality = RP2000F Combined Projected to 2010, 4 year set back.

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 6-3:

**Mortality Rates: Mortality of Service Retirees
Safety – Male**

(July 1, 2007 through June 30, 2010)



	Expected	Actual	Proposed
Total Count	15	14	15
Actual / Expected	93%		93%

Expected Mortality = RP2000M Combined, 3 year set back.

Proposed Mortality = RP2000M Combined Projected to 2010, 2 year set back.



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Santa Barbara County Employees' Retirement System Investigation of Experience (2007-2010)

Section 7: Service Retirements



Exhibits 7-1 through 7-4 show the actual and expected rates of service retirement. Our analysis of rates of service retirement was by attained age.

Exhibits 7-1 through 7-4 study retirements for the following groups:

- Exhibit 7-1: General Members – Males
- Exhibit 7-2: General Members – Females
- Exhibit 7-3: Safety Members – Plan 4
- Exhibit 7-4a: Safety Members – Plan 6 (All Three Years)
- Exhibit 7-4b: Safety Members – Plan 6 (Last Two Years Only)

Results

For General members in total, the actual number of service retirements (390) was very close to the number predicted by the previous assumptions (392). There were more male retirements than expected, but fewer female retirements. The age-based pattern of retirement predicted by the assumptions also differed a bit from actual experience.

For Safety (male and female) members, the total actual retirements from active service were significantly higher than anticipated. This was particularly true for Safety Plan 6. The patterns of retirement by age for Safety are illustrated in Exhibits 7-3, 7-4a and 7-4b.

Note that for Safety Plan 6, there were far more retirements than the assumptions predicted in the first year of the study. We believe that there was an acceleration of retirements in the first year due to the fact that the Plan 6 level of benefits was new. We believe that the retirement rates over the last two years of the study period are more predictive of future retirement rates. For this reason, we studied the last two years separately and display the patterns of retirement in those two years in Exhibit 7-4b.

Service Retirements			
Class	Actual	Expected	Act / Exp
General Male	150	137	109%
General Female	240	255	94%
Safety Plan 4	53	41	129%
Safety Plan 6	65	44	148%
Total	508	477	106%

**Results
(continued)**

There were 128 retirements under the Early Retirement Incentive Program (ERIP). It is reasonable to assume that the ERIP resulted in additional retirements over the past year for members ages 60 and above than would have occurred without the program. We reviewed the retirement ages of each ERIP participant and reviewed the actual retirement rates both including and excluding those members. Thus, our recommended rates do not give full recognition to the actual experience during the past year. We also noticed that the retirement patterns for males and females were quite similar for ages 61 and older.

Recommendation

We are recommending changes to the retirement patterns for General male and female members. We are recommending the rates of retirement be increased at some ages and decreased at other ages for General members to more accurately reflect the observed age-based pattern of retirement for these members. For ages 60 and older, we are recommending rates that tend to be lower than the actual experience for the study period. That is because it is believed that the ERIP resulted in more retirements than otherwise would have occurred.

We are recommending the rates of retirement be increased for Safety members. This is the first time that an experience study has been done for Safety Plan 6 and, as might be expected, the rates of retirement are higher at ages below 55 for Safety Plan 6 than Safety Plan 4 as the superior benefits enable members to retire at younger ages. As mentioned above, we believe the experience for the last two years of the study period is more predictive of future experience than the experience of the first year. Thus, our proposed assumptions more closely match Exhibit 7-4b than Exhibit 7-4a.

For those who are age 55 and older, the retirement age factors for Safety Plan 4 and Safety Plan 6 are the same. For this reason, we use the same assumptions for those plans at older ages.

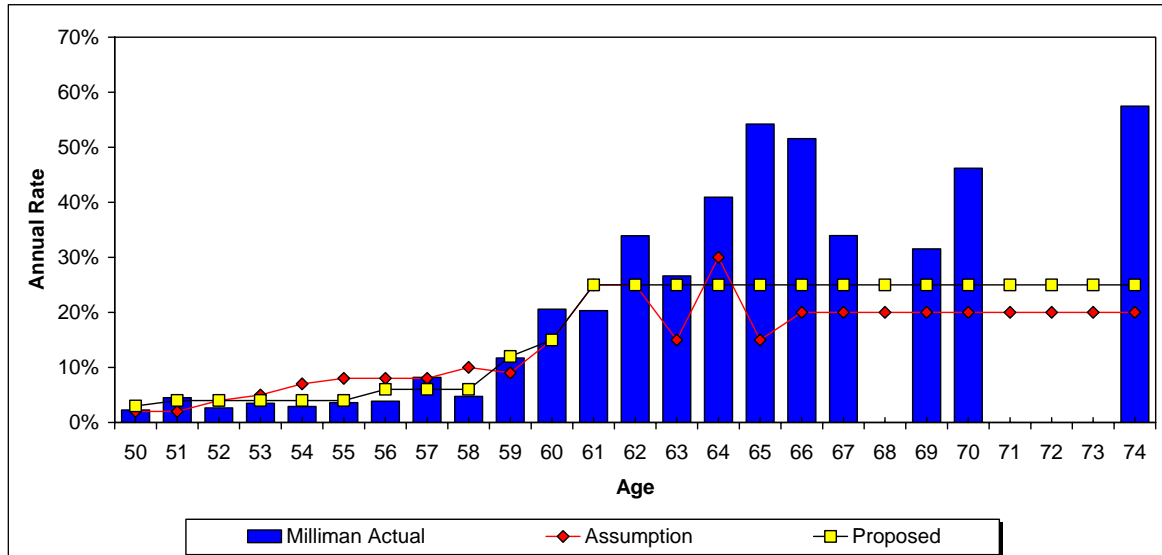
A comparison of the actual and expected retirements under the recommended assumptions for General and Safety members is shown in the table below.

Service Retirements -- Proposed			
Class	Actual	Proposed	Act / Prop
General Male	150	132	114%
General Female	240	224	107%
Safety Plan 4	53	52	102%
Safety Plan 6	65	59	110%
Total	508	467	109%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 7-1:

**Service Retirement
General – Males**



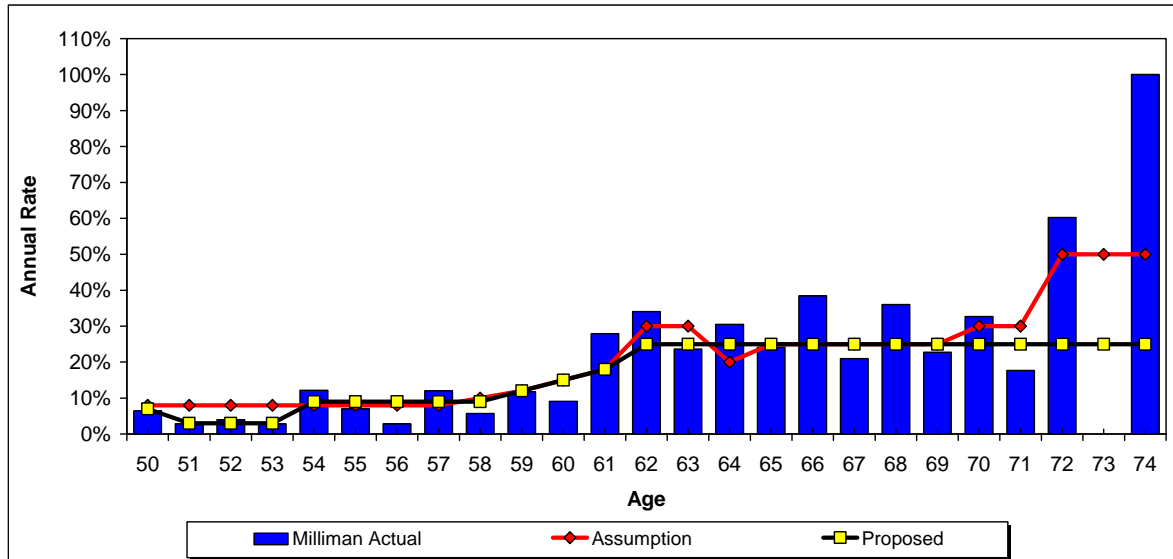
	Retirement Ages Between 50 and 70		
	Expected	Actual	Proposed
Total Count	133	148	127
Actual / Expected		111%	117%

All Ages	Expected	Actual	Proposed
Total Count	137	150	132
Actual / Expected		109%	114%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 7-2:

**Service Retirement
General – Females**



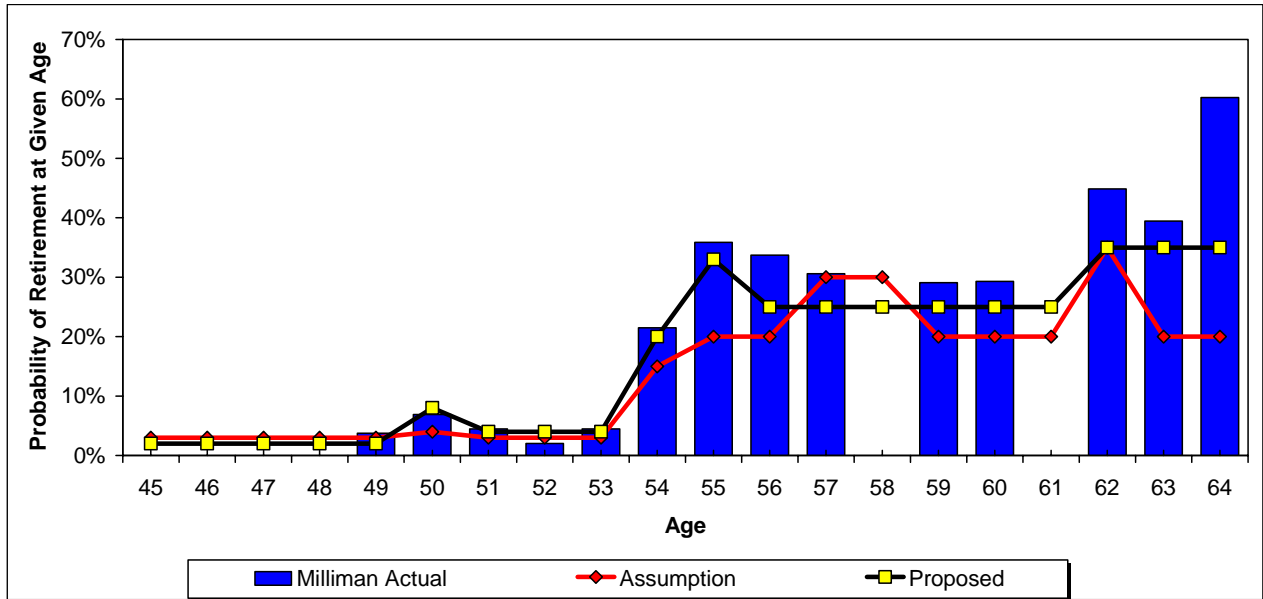
	Retirement Ages Between 50 and 70		
	Expected	Actual	Proposed
Total Count	250	235	219
Actual / Expected	94%		107%

All Ages	Expected	Actual	Proposed
Total Count	255	240	224
Actual / Expected	94%		107%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 7-3:

**Service Retirement
Safety Plan 4**



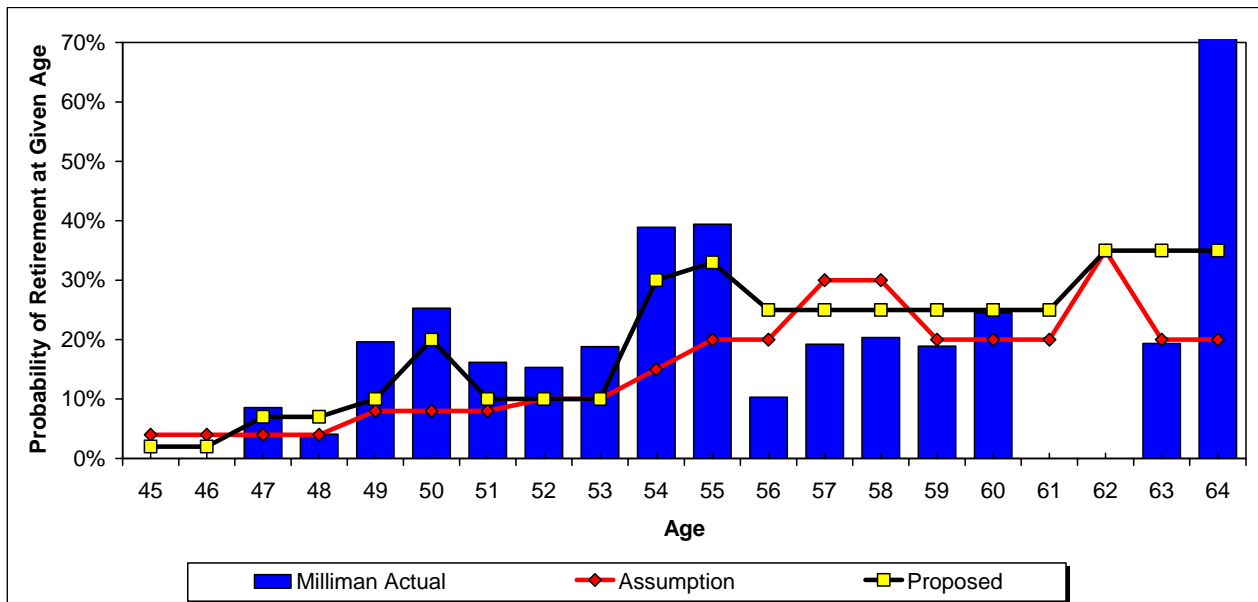
	Retirement Ages Below 60		
	Expected	Actual	Proposed
Total Count	35	45	45
Actual / Expected	129%		100%

All Ages	Expected	Actual	Proposed
Total Count	41	53	52
Actual / Expected	129%		102%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 7-4a:

**Service Retirement
Safety Plan 6 – All Three Years**



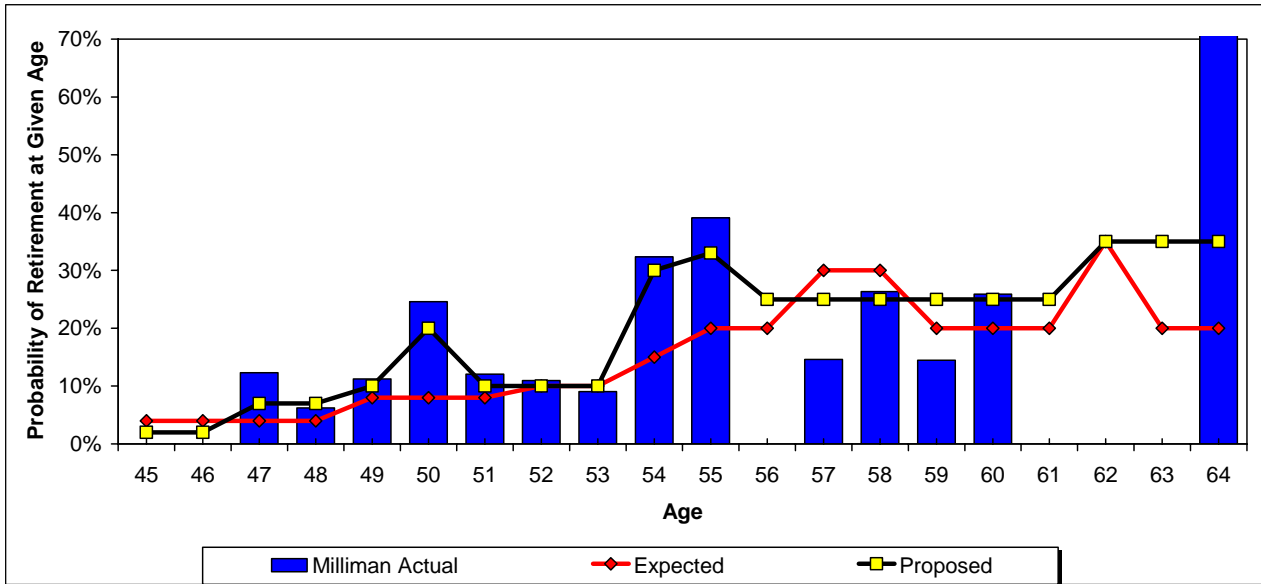
	Retirement Ages Below 60		
	Expected	Actual	Proposed
Total Count	37	60	49
Actual / Expected	162%		122%

All Ages	Expected	Actual	Proposed
Total Count	44	65	59
Actual / Expected	148%		110%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 7-4b:

**Service Retirement
Safety Plan 6 – Last Two Years Only**



	Retirement Ages Below 60		
	Expected	Actual	Proposed
Total Count	25	33	33
Actual / Expected	132%		100%

All Ages	Expected	Actual	Proposed
Total Count	30	36	40
Actual / Expected	120%		90%

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**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Section 8: Disability Retirement



Results

SBCERS allows members 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.

The total adjusted number of disability retirements (service-connected and nonservice-connected combined) was significantly lower than expected for all members.

Disability Retirement			
Group	Actual	Expected	Act / Exp
General	15	29	52%
Safety	3	15	20%
Total	18	44	41%

**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 Ordinary Disability				
Class	Svc	Ordinary	Total	Svc/Total
General	6	9	10	60%
Safety	3	0	3	100%

Recommendation

We are recommending lowering the rates of disability retirement for all members. We recommend an assumption that 40% of General members who become disabled receive a service connected disability. We recommend an assumption that 90% of Safety members who become disabled receive a service connected disability.

Disability Retirement			
Group	Actual	Proposed	Act / Prop
General	15	18	83%
Safety	3	9	33%
Total	18	27	67%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Section 9: 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.

Overall, the actual number of terminations was slightly lower than expected for General male, General female and Safety members.

Results

Termination -- All Years of Service			
Group	Actual	Expected	Act / Exp
General Male	157	166	95%
General Female	365	372	98%
Safety	69	75	92%
Total	591	613	96%

Recommendation

We have recommended increasing the termination assumptions for those with less than two years of service, while slightly decreasing the termination assumptions for those with more than two years of service. These assumption changes better reflect the experience of the past three years.

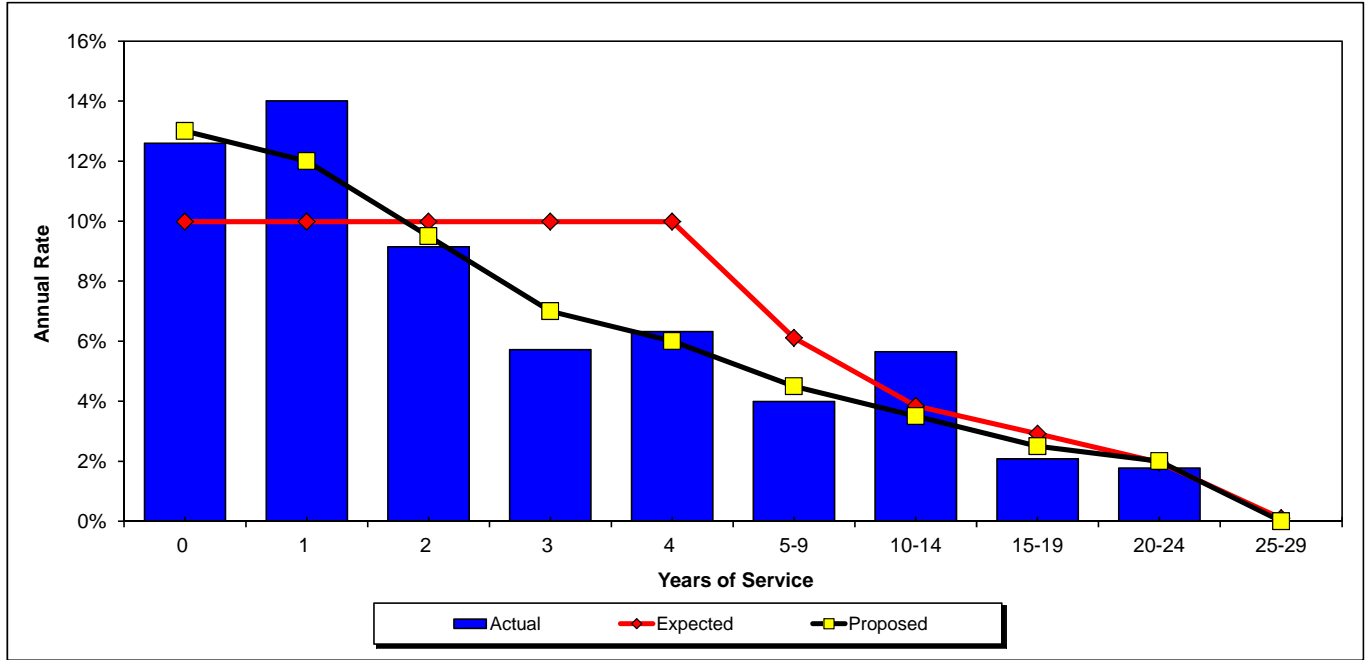
The results of the study are shown in Exhibits 9-1 through 9-3. A summary of the revised results under the recommended assumptions is shown in the following table.

Termination			
Class	Actual	Proposed	Act / Exp
General Males	157	153	103%
General Females	365	361	101%
Safety	69	71	97%
Total	591	585	101%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 9-1:

**Total Withdrawal by Years of Service
General Plans – Male**

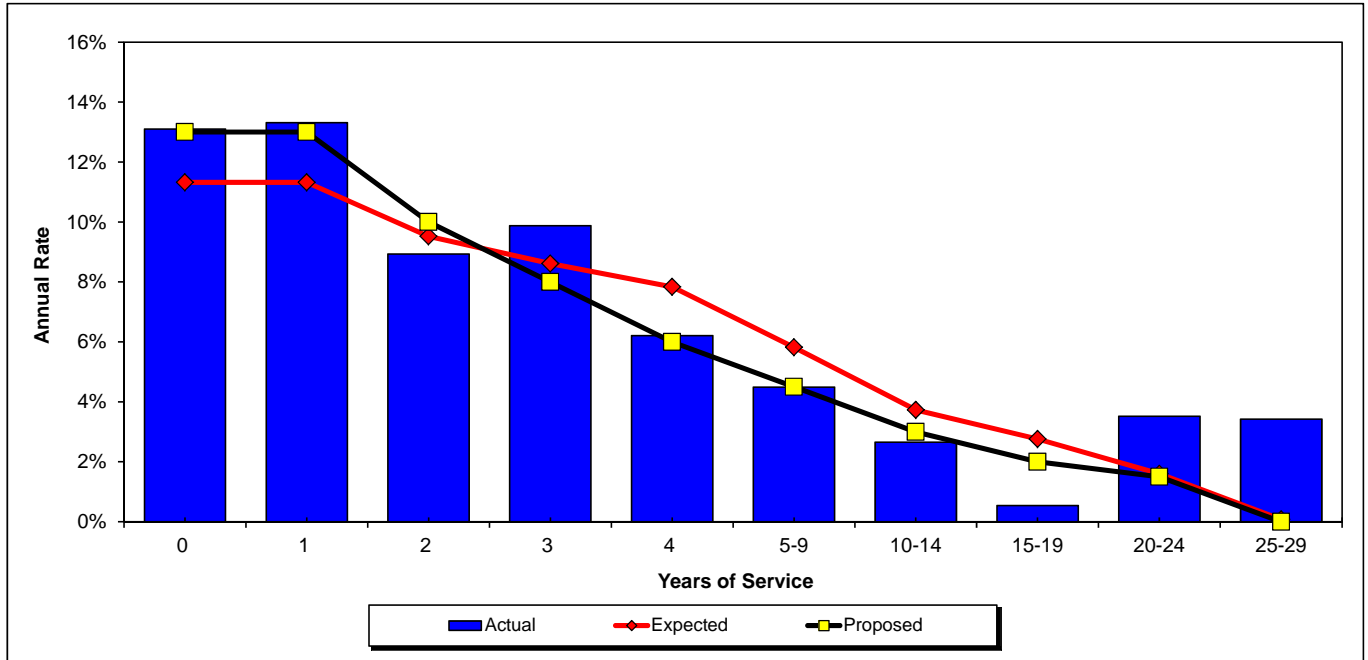


	Expected	Actual	Proposed
Total Count	166	157	153
Actual / Expected	95%		103%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 9-2:

**Total Withdrawal by Years of Service
General Plans – Female**

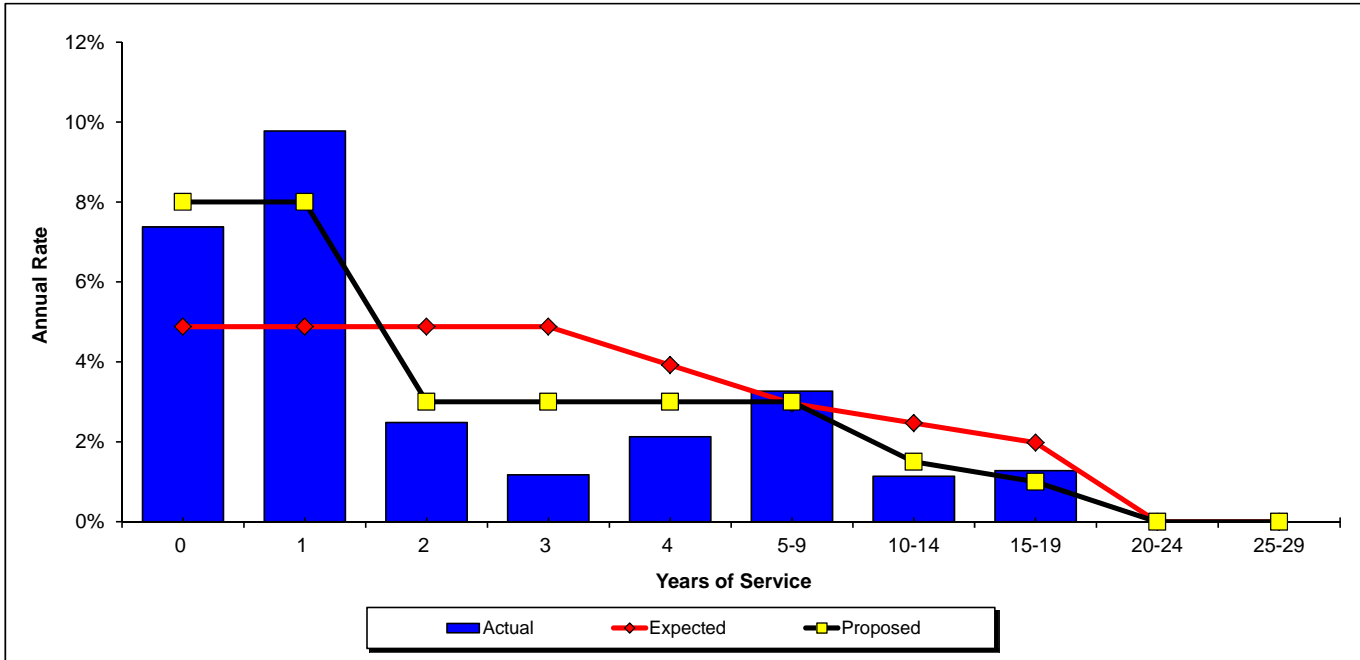


	Expected	Actual	Proposed
Total Count	372	365	361
Actual / Expected	98%		101%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 9-3:

**Total Terminations by Years of Service
Safety Plans – Male and Female**



	Expected	Actual	Proposed
Total Count	75	69	71
Actual / Expected	92%		97%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Section 10: 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. We only consider 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.

Results

Exhibits 10-1 through 10-3 summarize the results of our study. The results are consistent with our assumptions in that members have a higher likelihood of electing a refund at lower years of service; however, the actual total number of refunds was lower than the assumptions predicted for both General and Safety members.

Probability of Refund			
Group	Actual	Expected	Act / Exp
General Male	114	127	90%
General Female	289	314	92%
Safety	40	50	80%
Total	443	491	90%

Note that for General members, there are very few terminations with 20 or more years of service prior to eligibility for retirement. For Safety members, there are none, since Safety members are eligible to retire with 20 years of service.

Recommendation

We recommend that all nonvested members be assumed to take a refund at termination.

Based on the experience, we generally recommend a decrease in the assumed rates at which both General and Safety members withdraw their contributions from SBCERS. However, for General members with more than ten years of service, we propose increases in the assumed rate of withdrawal of contributions based upon the experience of the past three years.

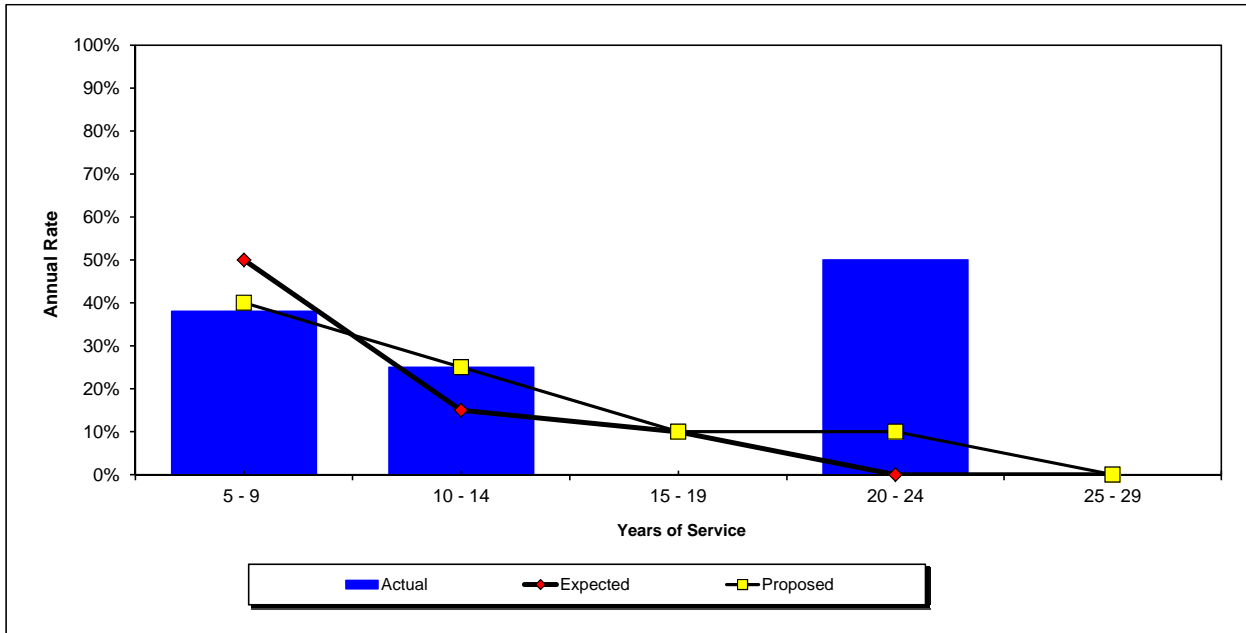
A summary of the revised results under the recommended assumptions is shown in the following table.

Probability of Refund			
Group	Actual	Proposed	Act / Prop
General Male	114	127	90%
General Female	289	310	93%
Safety	40	45	89%
Total	443	482	92%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 10-1:

**Probability of Refund Upon Vested Termination
General Plans – Male**



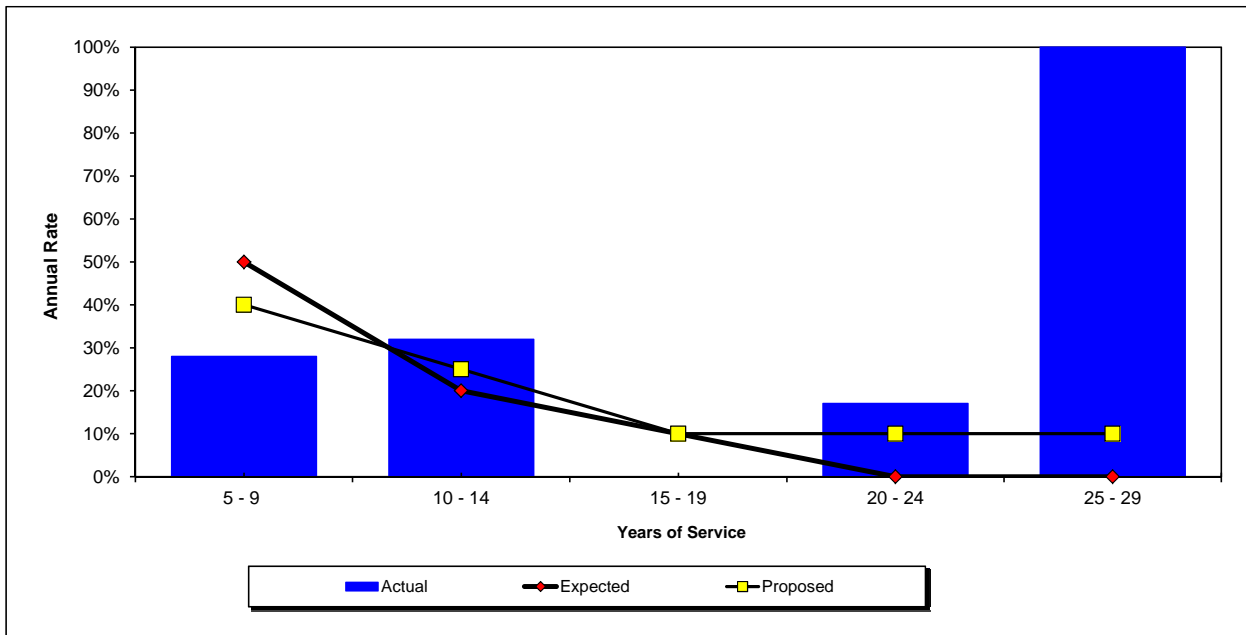
	2007 - 2010 Data		
	Expected	Actual	Proposed
Total Count	127	114	127
Actual / Expected	90%		90%

Note that there was only one refund for people with 20 or more years of service.

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 10-2:

**Probability of Refund Upon Vested Termination
General Plans – Female**



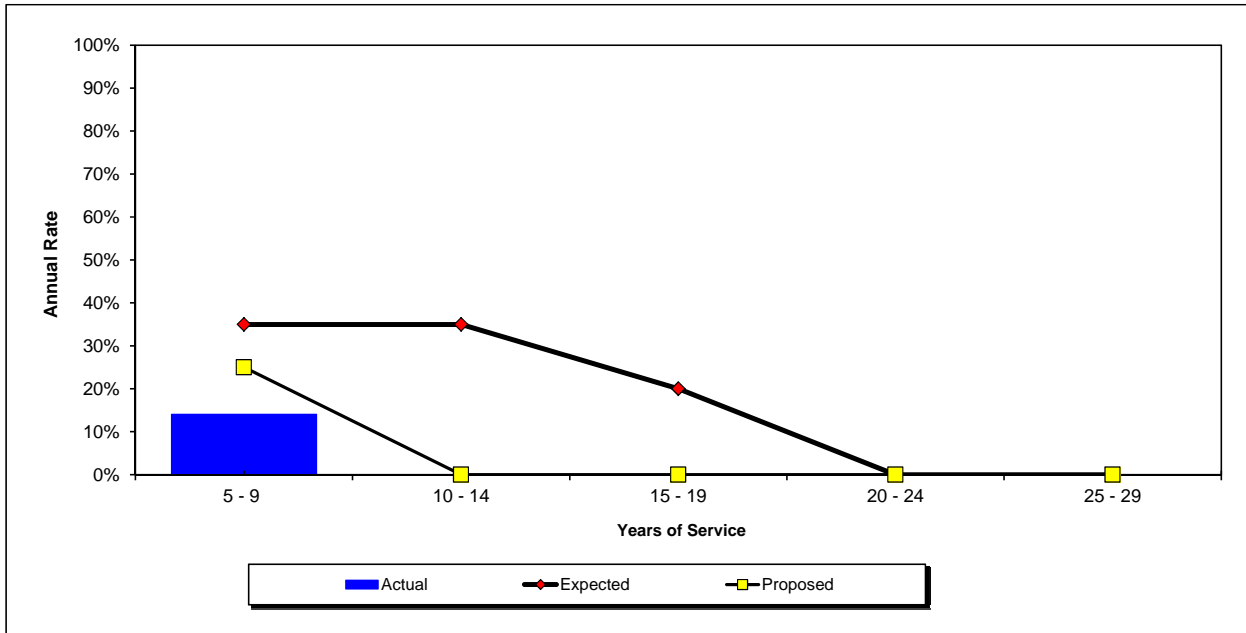
	2007 - 2010 Data		
	Expected	Actual	Proposed
Total Count	314	289	310
Actual / Expected	92%		93%

Note that there were only two refunds for people with 25 or more years of service.

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Exhibit 10-3:

**Probability of Refund Upon Vested Termination
Safety Plans – Unisex**



	2007 - 2010 Data		
	Expected	Actual	Proposed
Total Count	50	40	45
Actual / Expected	80%		88%

Santa Barbara County Employees' Retirement System Investigation of Experience (2007-2010)

Appendix A: Actuarial Procedures and Assumptions



The actuarial procedures and assumptions proposed in this investigation of experience are described in this section. If our recommendations were adopted, these assumptions would be used in the June 30, 2010 actuarial valuation. The method used to amortize the UAAL changed as of the 2009 valuation.

The actuarial assumptions used in the valuations are intended to estimate the future experience of the members of SBCERS and of SBCERS 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 SBCERS' 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.

Tables A-5 and A-6 present the expected annual percentage increase in salaries.

Tables A-7 to A-12 were developed from the experience as measured by the 2010 Investigation of Experience Study. The rates are the probabilities a member will leave the system for various reasons.

Note: Parts of the text have been shaded in yellow to indicate that they are subject to change before being used for the 2010 valuation. This Appendix is shown for illustrative purposes only.

**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 between plans, entry age is based on original entry into the system.

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 (or Surplus Funding) is amortized as a percentage of the projected salaries of present and future members of SBCERS. The UAAL is amortized over an "open/rolling" 17-year period. Effective with the June 30, 2009 valuation, each year, the entire UAAL is amortized over a constant 17-year period. The amortization factor does not change from year to year unless the discount rate or salary assumption is changed.

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 SBCERS 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 SBCERS 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 County and other employers' contribution rates are set by the Retirement Board based on actuarial valuations.

The employer contribution rates consist of both normal cost rates and UAAL rates. Both the normal cost rates and the UAAL rates are broken into pieces for the "Basic" rate and the COLA rate. The Basic rate is for the benefits without cost-of-living adjustments. For each class, the Basic UAAL contribution rate was determined by multiplying the total UAAL rate by the portion of the total AAL attributable to basic benefits.

**Member
Contributions**

The member contribution rates vary by entry age and are described in the law. Code references and a description of the rates are shown in Section 5 of the 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 B.

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. The expected market-value, with five-year smoothing valuation basis for all assets was adopted effective June 30, 2002.

**Investment Earnings
and Expenses**

The future investment earnings of the assets of SBCERS are assumed to accrue at an annual rate of 7.75% compounded annually, net of both investment and administrative expenses. This rate was adopted effective June 30, 2010.

**Postretirement
Benefit Increases**

Postretirement increases are assumed for the valuation in accordance with the benefits provided as described in Appendix B of the June 30, 2009 valuation report. These adjustments are assumed payable each year in the future as they are less than the expected increase in the Consumer Price Index of 3.25% per year. This rate was adopted effective June 30, 2010.

Interest on Member Contributions

The annual credited interest rate on member contributions is assumed to be 4.25% compounded annually. This rate was adopted effective June 30, 2010. As of June 30, 2008, the credited interest rate each six-month period is the semi-annual yield of the 5-year Treasury note as of the last business day of the interest crediting period.

Future Salaries

The rates of annual salary increase assumed for the purpose of the valuation are illustrated in Table A-5 and A-6. In addition to increases in salary due to promotions and longevity, this scale includes an assumed 3.75% per annum rate of increase in the general wage level of the membership. These rates were adopted effective June 30, 2010.

Social Security Wage Base

General Plan 2 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 3.75% per year. Note, statutory provisions describe exactly how to compute the offset for purposes of determining a member's offset amount at time of termination or retirement.

Retirement

After members attain age 50 (55 for General Plan 2 members) and have 10 years of service, they may retire with a benefit commencing immediately. All members except General Plan 2 members, may also retire regardless of age after 20 years of service for safety members and after 30 years of service for general members. The retirement rates vary by age and are shown by plan in Tables A-7 to A-12.

All General members who attain or who have attained age 75 in active service and all Safety members who have attained age 65 in active service are assumed to retire immediately.

All deferred vested members are assumed to retire at the later of age at termination or age 58 for General members and age 54 for Safety members, except for General Plan 2, who are assumed to retire at 65 and Safety Plan 6 who are assumed to retire at age 50.

**Retirement
(continued)**

The assumptions regarding termination of employment, early retirement, and unreduced service retirement are treated as a single set of decrements in regards to a particular member. For example, a general member hired at age 30 has a probability to withdraw from SBCERS due to death, disability or *other termination of employment* until age 50. After age 50, the member could still withdraw due to death, disability or *retirement*. Thus, in no year during the member's projected employment would they be eligible for both a probability of other termination of employment and a probability of retirement.

These rates were adopted effective June 30, 2010.

Disability

The rates of disability used in the valuation are also illustrated in Tables A-7 to A-12. These rates were revised June 30, 2010.

**Sick Leave Service
Credit Upon
Retirement**

Upon retirement, members are entitled to turn their sick leave balances into service credit for retirement benefits. Members are limited to one year of service credit. We apply a 1.34% load to the expected years of service at retirement for sick leave service credit.

**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 assumption as healthy members. Beneficiaries are assumed to be of the opposite sex, and have the same mortality as General members. These rates were adopted effective June 30, 2010.

Males: General members: RP-2000 Combined Mortality Table for Males projected to 2010 using scale AA, with ages set back two years.

Safety members: RP-2000 Combined Mortality Table for Males projected to 2010 using scale AA, with ages set back two years.

Females: General members: RP-2000 Combined Mortality Table for Females projected to 2010 using scale AA, with ages set back four years.

Safety members: RP-2000 Combined Mortality Table for Females projected to 2010 using scale AA, with ages set back four years.

Mortality – Disabled Members

For disabled members, the mortality rates used in the valuation rates are illustrated in Table A-3. These rates were adopted effective June 30, 2010.

Males: General members: RP-2000 Combined Mortality Table for Males projected to 2010 using scale AA, with no age adjustment.

Safety members: RP-2000 Combined Mortality Table for Males projected to 2010 using scale AA, with no age adjustment.

Females: General members: RP-2000 Combined Mortality Table for Females projected to 2010 using scale AA, with no age adjustment.

Safety members: RP-2000 Combined Mortality Table for Females projected to 2010 using scale AA, with no age adjustment.

Other Employment Terminations

Tables A-7 to A-12 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. These rates were adopted effective June 30, 2010.

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 SBCERS. 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 SBCERS or a reciprocal retirement system.

All terminating members are assumed not to be rehired by SBCERS. Table A-4 gives the assumed probabilities that terminated members will elect a refund of contributions immediately upon termination. All other terminating members are assumed to leave their contributions on deposit. Fifty percent (50%) of members who leave their contributions on deposit are assumed to take employment at a reciprocal agency.

**Other Employment
Terminations
(continued)**

Former members with contributions on deposit are assumed to receive a retirement benefit commencing at the following ages:

General Plan 5 Members	Age 58
General Plan 2 Members	Age 65
Safety Plan 4 Members	Age 54
Safety Plan 6 Members	Age 50
APCD Members	Age 58

Reciprocal members are assumed to remain with the reciprocal agency until retirement, and receive annual salary increases of:

General & APCD Members	4.00%
Safety Members	4.25%

These rates and assumptions were adopted effective June 30, 2010.

**Probability of Eligible
Survivor**

For members not currently in pay status, 80% 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 three 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.

**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, the:

- A. Annuity factor used for General and Safety members is based on using a unisex mortality assumption. For these purposes, as well as determining option factors, the unisex mortality assumption is:

General Healthy Members:	RP-2000 Combined Healthy Male projected to 2010 using scale AA, set back 4 years.
Safety Healthy Members:	RP-2000 Combined Healthy Male projected to 2010 using scale AA, set back 3 years.
Beneficiaries:	RP-2000 Combined Healthy Female projected to 2010 using scale AA, set back 2 years.
General Disabled Members:	RP-2000 Combined Healthy Male projected to 2010 using scale AA, set back 1 year.
Safety Disabled Members:	RP-2000 Combined Healthy Male projected to 2010 using scale AA, no adjustment.

- 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 7.75%.
- C. The Final Compensation is based on the salary paid in the year prior to attaining the retirement age.
Example: For a General Plan 5 member who enters at age 59 or earlier, the Final Compensation at retirement (age 60) will be the monthly average of the annual salaries during age 59.
- D. Member Rates are assumed to increase with entry age.

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Table A-1: Summary of Valuation Assumptions as of June 30, 2010

I.	Economic assumptions	
	A. General wage increases	3.75%
	B. Investment earnings	7.75%
	C. Growth in membership	0.00
	D. Postretirement benefit increases (varies by plan)	Plan COLA not greater than CPI assumption.
	E. CPI inflation assumption	3.25%
II.	Demographic assumptions	
	A. Salary increases due to service	Tables A-5 to A-6
	B. Retirement	Tables A-7 to A-12
	C. Disability	Tables A-7 to A-12
	D. Mortality for active members after termination and service retired members.	Table A-2
	Basis – RP-2000 Healthy Combined Mortality Table for respective sexes for general members projected to 2010 using scale AA, as adjusted:	
	<u>Class of Members</u>	<u>Age Adjustment</u>
	General – males	-2 years
	General – females	-4 years
	Safety – males	-2 years
	Safety – females	-4 years
E.	Mortality among disabled members	Table A-3
	Basis – RP-2000 Healthy Combined Mortality Table projected to 2010 using scale AA, as adjusted:	
	General - males	0 years
	General - females	0 years
	Safety - males	0 years
	Safety - females	0 years
F.	Mortality for beneficiaries.	Table A-2
	Basis – Beneficiaries are assumed to have the same mortality as a general member of the opposite sex who has taken a service retirement.	
G.	Other terminations of employment	Tables A-7 to A-12
H.	Refund of contributions on vested termination	Table A-4

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Table A-2: Mortality for Members Retired for Service

Age	Safety Male	Safety Female	General Male	General Female
20	0.026%	0.015%	0.026%	0.015%
25	0.032%	0.016%	0.032%	0.016%
30	0.037%	0.019%	0.037%	0.019%
35	0.060%	0.028%	0.060%	0.028%
40	0.091%	0.046%	0.091%	0.046%
45	0.116%	0.067%	0.116%	0.067%
50	0.158%	0.103%	0.158%	0.103%
55	0.238%	0.158%	0.238%	0.158%
60	0.449%	0.291%	0.449%	0.291%
65	0.870%	0.553%	0.870%	0.553%
70	1.552%	1.042%	1.552%	1.042%
75	2.612%	1.749%	2.612%	1.749%
80	4.620%	2.858%	4.620%	2.858%
85	8.279%	4.734%	8.279%	4.734%
90	14.323%	8.215%	14.323%	8.215%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

Table A-3: Mortality for Members Retired for Disability

Age	Safety Male	Safety Female	General Male	General Female
20	0.028%	0.016%	0.028%	0.016%
25	0.034%	0.018%	0.034%	0.018%
30	0.042%	0.024%	0.042%	0.024%
35	0.074%	0.043%	0.074%	0.043%
40	0.100%	0.061%	0.100%	0.061%
45	0.132%	0.096%	0.132%	0.096%
50	0.178%	0.141%	0.178%	0.141%
55	0.299%	0.251%	0.299%	0.251%
60	0.574%	0.481%	0.574%	0.481%
65	1.106%	0.923%	1.106%	0.923%
70	1.909%	1.592%	1.909%	1.592%
75	3.286%	2.594%	3.286%	2.594%
80	5.821%	4.277%	5.821%	4.277%
85	10.324%	7.292%	10.324%	7.292%
90	17.620%	12.778%	17.620%	12.778%

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Table A-4: Immediate Refund of Contributions Upon Termination of Employment

Years of Service	General Male	General Female	Safety
0	100%	100%	100%
1	100%	100%	100%
2	100%	100%	100%
3	100%	100%	100%
4	100%	100%	100%
5	40%	40%	25%
6	40%	40%	25%
7	40%	40%	25%
8	40%	40%	25%
9	40%	40%	25%
10	25%	25%	0%
11	25%	25%	0%
12	25%	25%	0%
13	25%	25%	0%
14	25%	25%	0%
15	10%	10%	0%
16	10%	10%	0%
17	10%	10%	0%
18	10%	10%	0%
19	10%	10%	0%
20	10%	10%	0%
21	10%	10%	0%
22	10%	10%	0%
23	10%	10%	0%
24	10%	10%	0%
25	0%	10%	0%
26	0%	10%	0%
27	0%	10%	0%
28	0%	10%	0%
29	0%	10%	0%
30 & Up	0%	0%	0%

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

**Table A-5: Annual Increase in Salary
General**

Years of Service	Due to Promotion and Longevity	Total Annual Increase*
<1	4.75%	8.68%
1	4.00%	7.90%
2	3.25%	7.12%
3	2.50%	6.34%
4	2.00%	5.83%
5	1.50%	5.31%
6	1.25%	5.05%
7	1.00%	4.79%
8	0.90%	4.68%
9	0.80%	4.58%
10	0.78%	4.55%
11	0.75%	4.53%
12	0.70%	4.48%
13	0.65%	4.42%
14	0.60%	4.37%
15	0.55%	4.32%
16	0.50%	4.27%
17	0.48%	4.25%
18	0.46%	4.23%
19	0.44%	4.21%
20	0.42%	4.19%
21	0.40%	4.16%
22	0.38%	4.14%
23	0.36%	4.12%
24	0.34%	4.10%
25	0.32%	4.08%
26	0.30%	4.06%
27	0.28%	4.04%
28	0.26%	4.02%
29	0.25%	4.01%
30 or More	0.25%	4.01%

** The total expected increase in salary is the increase due to promotions and longevity, adjusted for an assumed 3.75% per annum increase in the general wage level of the membership. The total result is compounded rather than additive.*

**Santa Barbara County Employees' Retirement System
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**Table A-6: Annual Increase in Salary
Safety**

<u>Years of Service</u>	<u>Due to Promotion and Longevity</u>	<u>Total Annual Increase*</u>
<1	6.00%	9.97%
1	5.00%	8.94%
2	4.00%	7.90%
3	3.25%	7.12%
4	2.50%	6.34%
5	2.00%	5.83%
6	1.60%	5.41%
7	1.30%	5.10%
8	1.20%	4.99%
9	1.10%	4.89%
10	1.00%	4.79%
11	0.95%	4.74%
12	0.92%	4.70%
13	0.89%	4.68%
14	0.87%	4.65%
15	0.85%	4.63%
16	0.82%	4.60%
17	0.80%	4.57%
18	0.77%	4.55%
19	0.74%	4.52%
20	0.72%	4.50%
21	0.69%	4.47%
22	0.67%	4.45%
23	0.64%	4.42%
24	0.62%	4.39%
25	0.59%	4.37%
26	0.57%	4.34%
27	0.54%	4.32%
28	0.52%	4.29%
29	0.50%	4.27%
30 or More	0.50%	4.27%

** The total expected increase in salary is the increase due to promotions and longevity, adjusted for an assumed 3.75% per annum increase in the general wage level of the membership. The total result is compounded rather than additive.*

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

**Table A-7: Rate of Separation From Active Service For General Members
All Plans – Male**

<u>Age</u>	<u>Service Retirement</u>	<u>Service Disability</u>	<u>Ordinary Disability</u>	<u>Death</u>	<u>Years of Service</u>	<u>Other Terminations</u>
18	0.0000	0.00003	0.00005	0.00023	0	0.1300
19	0.0000	0.00003	0.00005	0.00025	1	0.1200
20	0.0000	0.00003	0.00005	0.00026	2	0.0950
21	0.0000	0.00003	0.00005	0.00027	3	0.0700
22	0.0000	0.00003	0.00005	0.00028	4	0.0600
23	0.0000	0.00003	0.00005	0.00030	5	0.0550
24	0.0000	0.00003	0.00005	0.00031	6	0.0500
25	0.0000	0.00003	0.00005	0.00032	7	0.0450
26	0.0000	0.00003	0.00005	0.00033	8	0.0430
27	0.0000	0.00003	0.00005	0.00034	9	0.0410
28	0.0000	0.00003	0.00005	0.00036	10	0.0390
29	0.0000	0.00003	0.00005	0.00036	11	0.0370
30	0.0000	0.00003	0.00005	0.00037	12	0.0350
31	0.0000	0.00003	0.00005	0.00039	13	0.0330
32	0.0000	0.00003	0.00005	0.00042	14	0.0310
33	0.0000	0.00003	0.00005	0.00047	15	0.0290
34	0.0000	0.00003	0.00005	0.00053	16	0.0270
35	0.0000	0.00003	0.00005	0.00060	17	0.0250
36	0.0000	0.00003	0.00005	0.00067	18	0.0240
37	0.0000	0.00003	0.00005	0.00074	19	0.0230
38	0.0000	0.00003	0.00005	0.00080	20	0.0220
39	0.0000	0.00003	0.00005	0.00086	21	0.0210
40	0.0300	0.00006	0.00009	0.00091	22	0.0200
41	0.0300	0.00015	0.00022	0.00095	23	0.0160
42	0.0300	0.00023	0.00035	0.00100	24	0.0120
43	0.0300	0.00032	0.00048	0.00104	25	0.0080
44	0.0300	0.00041	0.00061	0.00110	26	0.0040
45	0.0300	0.00050	0.00074	0.00116	27	0.0000
46	0.0300	0.00058	0.00087	0.00124	28	0.0000
47	0.0300	0.00067	0.00100	0.00132	29	0.0000
48	0.0300	0.00076	0.00113	0.00140	30 & Above	0.0000
49	0.0300	0.00084	0.00126	0.00149		
50	0.0300	0.00093	0.00140	0.00158		
51	0.0400	0.00102	0.00153	0.00168		
52	0.0400	0.00110	0.00166	0.00178		
53	0.0400	0.00119	0.00179	0.00202		
54	0.0400	0.00128	0.00192	0.00218		
55	0.0400	0.00137	0.00205	0.00238		
56	0.0600	0.00145	0.00218	0.00261		
57	0.0600	0.00154	0.00231	0.00299		
58	0.0600	0.00163	0.00244	0.00350		
59	0.1200	0.00171	0.00257	0.00395		
60	0.1500	0.00180	0.00270	0.00449		
61	0.2500	0.00180	0.00270	0.00506		
62	0.2500	0.00180	0.00270	0.00574		
63	0.2500	0.00180	0.00270	0.00660		
64	0.2500	0.00180	0.00270	0.00753		
65	0.2500	0.00180	0.00270	0.00870		
66	0.2500	0.00180	0.00270	0.00980		
67	0.2500	0.00180	0.00270	0.01106		
68	0.2500	0.00180	0.00270	0.01264		
69	0.2500	0.00180	0.00270	0.01410		
70	0.2500	0.00180	0.00270	0.01552		
71	0.2500	0.00180	0.00270	0.01720		
72	0.2500	0.00180	0.00270	0.01909		
73	0.2500	0.00180	0.00270	0.02112		
74	0.2500	0.00180	0.00270	0.02345		
75	1.0000	0.00000	0.00000	0.00000		

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

**Table A-8: Rate of Separation From Active Service For General Members
All Plans – Female**

<u>Age</u>	<u>Service Retirement</u>	<u>Service Disability</u>	<u>Ordinary Disability</u>	<u>Death</u>	<u>Years of Service</u>	<u>Other Terminations</u>
18	0.0000	0.00003	0.00005	0.00014	0	0.1300
19	0.0000	0.00003	0.00005	0.00014	1	0.1300
20	0.0000	0.00003	0.00005	0.00015	2	0.1000
21	0.0000	0.00003	0.00005	0.00016	3	0.0800
22	0.0000	0.00003	0.00005	0.00016	4	0.0600
23	0.0000	0.00003	0.00005	0.00016	5	0.0550
24	0.0000	0.00003	0.00005	0.00016	6	0.0483
25	0.0000	0.00003	0.00005	0.00016	7	0.0450
26	0.0000	0.00003	0.00005	0.00016	8	0.0420
27	0.0000	0.00003	0.00005	0.00017	9	0.0390
28	0.0000	0.00003	0.00005	0.00017	10	0.0360
29	0.0000	0.00003	0.00005	0.00018	11	0.0330
30	0.0000	0.00003	0.00005	0.00019	12	0.0300
31	0.0000	0.00003	0.00005	0.00020	13	0.0280
32	0.0000	0.00003	0.00005	0.00021	14	0.0260
33	0.0000	0.00003	0.00005	0.00022	15	0.0240
34	0.0000	0.00003	0.00005	0.00024	16	0.0220
35	0.0000	0.00003	0.00005	0.00028	17	0.0200
36	0.0000	0.00003	0.00005	0.00032	18	0.0190
37	0.0000	0.00003	0.00005	0.00036	19	0.0180
38	0.0000	0.00003	0.00005	0.00039	20	0.0170
39	0.0000	0.00003	0.00005	0.00043	21	0.0160
40	0.0700	0.00006	0.00009	0.00046	22	0.0150
41	0.0700	0.00015	0.00022	0.00049	23	0.0140
42	0.0700	0.00023	0.00035	0.00052	24	0.0130
43	0.0700	0.00032	0.00048	0.00056	25	0.0120
44	0.0700	0.00041	0.00061	0.00061	26	0.0110
45	0.0700	0.00050	0.00074	0.00067	27	0.0100
46	0.0700	0.00058	0.00087	0.00073	28	0.0067
47	0.0700	0.00067	0.00100	0.00081	29	0.0033
48	0.0700	0.00076	0.00113	0.00088	30 & Above	0.0000
49	0.0700	0.00084	0.00126	0.00096		
50	0.0700	0.00093	0.00140	0.00103		
51	0.0300	0.00102	0.00153	0.00111		
52	0.0300	0.00110	0.00166	0.00120		
53	0.0300	0.00119	0.00179	0.00129		
54	0.0900	0.00128	0.00192	0.00141		
55	0.0900	0.00137	0.00205	0.00158		
56	0.0900	0.00145	0.00218	0.00175		
57	0.0900	0.00154	0.00231	0.00196		
58	0.0900	0.00163	0.00244	0.00219		
59	0.1200	0.00171	0.00257	0.00251		
60	0.1500	0.00180	0.00270	0.00291		
61	0.1800	0.00180	0.00270	0.00331		
62	0.2500	0.00180	0.00270	0.00373		
63	0.2500	0.00180	0.00270	0.00422		
64	0.2500	0.00180	0.00270	0.00481		
65	0.2500	0.00180	0.00270	0.00553		
66	0.2500	0.00180	0.00270	0.00633		
67	0.2500	0.00180	0.00270	0.00727		
68	0.2500	0.00180	0.00270	0.00820		
69	0.2500	0.00180	0.00270	0.00923		
70	0.2500	0.00180	0.00270	0.01042		
71	0.2500	0.00180	0.00270	0.01157		
72	0.2500	0.00180	0.00270	0.01279		
73	0.2500	0.00180	0.00270	0.01413		
74	0.2500	0.00180	0.00270	0.01592		
75	1.0000	0.00000	0.00000	0.00000		

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

**Table A-9: Rate of Separation From Active Service For Safety Members
Plan 4 – Male**

<u>Age</u>	<u>Service Retirement</u>	<u>Service Disability</u>	<u>Ordinary Disability</u>	<u>Service Death</u>	<u>Ordinary Death</u>	<u>Years of Service</u>	<u>Other Terminations</u>
18	0.0000	0.00090	0.00010	0.00010	0.00023	0	0.0800
19	0.0000	0.00090	0.00010	0.00010	0.00025	1	0.0800
20	0.0000	0.00090	0.00010	0.00010	0.00026	2	0.0300
21	0.0000	0.00090	0.00010	0.00010	0.00027	3	0.0300
22	0.0000	0.00090	0.00010	0.00010	0.00028	4	0.0300
23	0.0000	0.00090	0.00010	0.00010	0.00030	5	0.0300
24	0.0000	0.00090	0.00010	0.00010	0.00031	6	0.0300
25	0.0000	0.00090	0.00010	0.00010	0.00032	7	0.0300
26	0.0000	0.00090	0.00010	0.00010	0.00033	8	0.0270
27	0.0000	0.00090	0.00010	0.00010	0.00034	9	0.0240
28	0.0000	0.00090	0.00010	0.00010	0.00036	10	0.0210
29	0.0000	0.00090	0.00010	0.00010	0.00036	11	0.0180
30	0.0200	0.00135	0.00015	0.00010	0.00037	12	0.0150
31	0.0200	0.00135	0.00015	0.00010	0.00039	13	0.0140
32	0.0200	0.00135	0.00015	0.00010	0.00042	14	0.0130
33	0.0200	0.00135	0.00015	0.00010	0.00047	15	0.0120
34	0.0200	0.00135	0.00015	0.00010	0.00053	16	0.0110
35	0.0200	0.00180	0.00020	0.00010	0.00060	17	0.0100
36	0.0200	0.00180	0.00020	0.00010	0.00067	18	0.0080
37	0.0200	0.00180	0.00020	0.00010	0.00074	19	0.0060
38	0.0200	0.00180	0.00020	0.00010	0.00080	20 & Above	0.0000
39	0.0200	0.00180	0.00020	0.00010	0.00086		
40	0.0200	0.00225	0.00025	0.00010	0.00091		
41	0.0200	0.00225	0.00025	0.00010	0.00095		
42	0.0200	0.00225	0.00025	0.00010	0.00100		
43	0.0200	0.00225	0.00025	0.00010	0.00104		
44	0.0200	0.00225	0.00025	0.00010	0.00110		
45	0.0200	0.00270	0.00030	0.00010	0.00116		
46	0.0200	0.00315	0.00035	0.00010	0.00124		
47	0.0200	0.00360	0.00040	0.00010	0.00132		
48	0.0200	0.00405	0.00045	0.00010	0.00140		
49	0.0200	0.00450	0.00050	0.00010	0.00149		
50	0.0800	0.00495	0.00055	0.00010	0.00158		
51	0.0400	0.00540	0.00060	0.00010	0.00168		
52	0.0400	0.00585	0.00065	0.00010	0.00178		
53	0.0400	0.00630	0.00070	0.00010	0.00202		
54	0.2000	0.00675	0.00075	0.00010	0.00218		
55	0.3300	0.00720	0.00080	0.00010	0.00238		
56	0.2500	0.00720	0.00080	0.00010	0.00261		
57	0.2500	0.00720	0.00080	0.00010	0.00299		
58	0.2500	0.00720	0.00080	0.00010	0.00350		
59	0.2500	0.00720	0.00080	0.00010	0.00395		
60	0.2500	0.00720	0.00080	0.00010	0.00449		
61	0.2500	0.00720	0.00080	0.00010	0.00506		
62	0.3500	0.00720	0.00080	0.00010	0.00574		
63	0.3500	0.00720	0.00080	0.00010	0.00660		
64	0.3500	0.00720	0.00080	0.00010	0.00753		
65	1.0000	0.00000	0.00000	0.00000	0.00000		

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

**Table A-10: Rate of Separation From Active Service For Safety Members
Plan 4 – Female**

<u>Age</u>	<u>Service Retirement</u>	<u>Service Disability</u>	<u>Ordinary Disability</u>	<u>Service Death</u>	<u>Ordinary Death</u>	<u>Years of Service</u>	<u>Other Terminations</u>
18	0.0000	0.00090	0.00010	0.00010	0.00014	0	0.0800
19	0.0000	0.00090	0.00010	0.00010	0.00014	1	0.0800
20	0.0000	0.00090	0.00010	0.00010	0.00015	2	0.0300
21	0.0000	0.00090	0.00010	0.00010	0.00016	3	0.0300
22	0.0000	0.00090	0.00010	0.00010	0.00016	4	0.0300
23	0.0000	0.00090	0.00010	0.00010	0.00016	5	0.0300
24	0.0000	0.00090	0.00010	0.00010	0.00016	6	0.0300
25	0.0000	0.00090	0.00010	0.00010	0.00016	7	0.0300
26	0.0000	0.00090	0.00010	0.00010	0.00016	8	0.0270
27	0.0000	0.00090	0.00010	0.00010	0.00017	9	0.0240
28	0.0000	0.00090	0.00010	0.00010	0.00017	10	0.0210
29	0.0000	0.00090	0.00010	0.00010	0.00018	11	0.0180
30	0.0200	0.00135	0.00015	0.00010	0.00019	12	0.0150
31	0.0200	0.00135	0.00015	0.00010	0.00020	13	0.0140
32	0.0200	0.00135	0.00015	0.00010	0.00021	14	0.0130
33	0.0200	0.00135	0.00015	0.00010	0.00022	15	0.0120
34	0.0200	0.00135	0.00015	0.00010	0.00024	16	0.0110
35	0.0200	0.00180	0.00020	0.00010	0.00028	17	0.0100
36	0.0200	0.00180	0.00020	0.00010	0.00032	18	0.0080
37	0.0200	0.00180	0.00020	0.00010	0.00036	19	0.0060
38	0.0200	0.00180	0.00020	0.00010	0.00039	20 & Above	0.0000
39	0.0200	0.00180	0.00020	0.00010	0.00043		
40	0.0200	0.00225	0.00025	0.00010	0.00046		
41	0.0200	0.00225	0.00025	0.00010	0.00049		
42	0.0200	0.00225	0.00025	0.00010	0.00052		
43	0.0200	0.00225	0.00025	0.00010	0.00056		
44	0.0200	0.00225	0.00025	0.00010	0.00061		
45	0.0200	0.00270	0.00030	0.00010	0.00067		
46	0.0200	0.00315	0.00035	0.00010	0.00073		
47	0.0200	0.00360	0.00040	0.00010	0.00081		
48	0.0200	0.00405	0.00045	0.00010	0.00088		
49	0.0200	0.00450	0.00050	0.00010	0.00096		
50	0.0800	0.00495	0.00055	0.00010	0.00103		
51	0.0400	0.00540	0.00060	0.00010	0.00111		
52	0.0400	0.00585	0.00065	0.00010	0.00120		
53	0.0400	0.00630	0.00070	0.00010	0.00129		
54	0.2000	0.00675	0.00075	0.00010	0.00141		
55	0.3300	0.00720	0.00080	0.00010	0.00158		
56	0.2500	0.00720	0.00080	0.00010	0.00175		
57	0.2500	0.00720	0.00080	0.00010	0.00196		
58	0.2500	0.00720	0.00080	0.00010	0.00219		
59	0.2500	0.00720	0.00080	0.00010	0.00251		
60	0.2500	0.00720	0.00080	0.00010	0.00291		
61	0.2500	0.00720	0.00080	0.00010	0.00331		
62	0.3500	0.00720	0.00080	0.00010	0.00373		
63	0.3500	0.00720	0.00080	0.00010	0.00422		
64	0.3500	0.00720	0.00080	0.00010	0.00481		
65	1.0000	0.00000	0.00000	0.00000	0.00000		

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

**Table A-11: Rate of Separation From Active Service For Safety Members
Plan 6 – Male**

Age	Service Retirement	Service Disability	Ordinary Disability	Service Death	Ordinary Death	Years of Service	Other Terminations
18	0.0000	0.00090	0.00010	0.00010	0.00023	0	0.0800
19	0.0000	0.00090	0.00010	0.00010	0.00025	1	0.0800
20	0.0000	0.00090	0.00010	0.00010	0.00026	2	0.0300
21	0.0000	0.00090	0.00010	0.00010	0.00027	3	0.0300
22	0.0000	0.00090	0.00010	0.00010	0.00028	4	0.0300
23	0.0000	0.00090	0.00010	0.00010	0.00030	5	0.0300
24	0.0000	0.00090	0.00010	0.00010	0.00031	6	0.0300
25	0.0000	0.00090	0.00010	0.00010	0.00032	7	0.0300
26	0.0000	0.00090	0.00010	0.00010	0.00033	8	0.0270
27	0.0000	0.00090	0.00010	0.00010	0.00034	9	0.0240
28	0.0000	0.00090	0.00010	0.00010	0.00036	10	0.0210
29	0.0000	0.00090	0.00010	0.00010	0.00036	11	0.0180
30	0.0200	0.00135	0.00015	0.00010	0.00037	12	0.0150
31	0.0200	0.00135	0.00015	0.00010	0.00039	13	0.0140
32	0.0200	0.00135	0.00015	0.00010	0.00042	14	0.0130
33	0.0200	0.00135	0.00015	0.00010	0.00047	15	0.0120
34	0.0200	0.00135	0.00015	0.00010	0.00053	16	0.0110
35	0.0200	0.00180	0.00020	0.00010	0.00060	17	0.0100
36	0.0200	0.00180	0.00020	0.00010	0.00067	18	0.0080
37	0.0200	0.00180	0.00020	0.00010	0.00074	19	0.0060
38	0.0200	0.00180	0.00020	0.00010	0.00080	20 & Above	0.0000
39	0.0200	0.00180	0.00020	0.00010	0.00086		
40	0.0200	0.00225	0.00025	0.00010	0.00091		
41	0.0200	0.00225	0.00025	0.00010	0.00095		
42	0.0200	0.00225	0.00025	0.00010	0.00100		
43	0.0200	0.00225	0.00025	0.00010	0.00104		
44	0.0200	0.00225	0.00025	0.00010	0.00110		
45	0.0200	0.00270	0.00030	0.00010	0.00116		
46	0.0200	0.00315	0.00035	0.00010	0.00124		
47	0.0700	0.00360	0.00040	0.00010	0.00132		
48	0.0700	0.00405	0.00045	0.00010	0.00140		
49	0.1000	0.00450	0.00050	0.00010	0.00149		
50	0.2000	0.00495	0.00055	0.00010	0.00158		
51	0.1000	0.00540	0.00060	0.00010	0.00168		
52	0.1000	0.00585	0.00065	0.00010	0.00178		
53	0.1000	0.00630	0.00070	0.00010	0.00202		
54	0.3000	0.00675	0.00075	0.00010	0.00218		
55	0.3300	0.00720	0.00080	0.00010	0.00238		
56	0.2500	0.00720	0.00080	0.00010	0.00261		
57	0.2500	0.00720	0.00080	0.00010	0.00299		
58	0.2500	0.00720	0.00080	0.00010	0.00350		
59	0.2500	0.00720	0.00080	0.00010	0.00395		
60	0.2500	0.00720	0.00080	0.00010	0.00449		
61	0.2500	0.00720	0.00080	0.00010	0.00506		
62	0.3500	0.00720	0.00080	0.00010	0.00574		
63	0.3500	0.00720	0.00080	0.00010	0.00660		
64	0.3500	0.00720	0.00080	0.00010	0.00753		
65	1.0000	0.00000	0.00000	0.00000	0.00000		

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

**Table A-12: Rate of Separation From Active Service For Safety Members
Plan 6 – Female**

<u>Age</u>	<u>Service Retirement</u>	<u>Service Disability</u>	<u>Ordinary Disability</u>	<u>Service Death</u>	<u>Ordinary Death</u>	<u>Years of Service</u>	<u>Other Terminations</u>
18	0.0000	0.00090	0.00010	0.00010	0.00014	0	0.0800
19	0.0000	0.00090	0.00010	0.00010	0.00014	1	0.0800
20	0.0000	0.00090	0.00010	0.00010	0.00015	2	0.0300
21	0.0000	0.00090	0.00010	0.00010	0.00016	3	0.0300
22	0.0000	0.00090	0.00010	0.00010	0.00016	4	0.0300
23	0.0000	0.00090	0.00010	0.00010	0.00016	5	0.0300
24	0.0000	0.00090	0.00010	0.00010	0.00016	6	0.0300
25	0.0000	0.00090	0.00010	0.00010	0.00016	7	0.0300
26	0.0000	0.00090	0.00010	0.00010	0.00016	8	0.0270
27	0.0000	0.00090	0.00010	0.00010	0.00017	9	0.0240
28	0.0000	0.00090	0.00010	0.00010	0.00017	10	0.0210
29	0.0000	0.00090	0.00010	0.00010	0.00018	11	0.0180
30	0.0200	0.00135	0.00015	0.00010	0.00019	12	0.0150
31	0.0200	0.00135	0.00015	0.00010	0.00020	13	0.0140
32	0.0200	0.00135	0.00015	0.00010	0.00021	14	0.0130
33	0.0200	0.00135	0.00015	0.00010	0.00022	15	0.0120
34	0.0200	0.00135	0.00015	0.00010	0.00024	16	0.0110
35	0.0200	0.00180	0.00020	0.00010	0.00028	17	0.0100
36	0.0200	0.00180	0.00020	0.00010	0.00032	18	0.0080
37	0.0200	0.00180	0.00020	0.00010	0.00036	19	0.0060
38	0.0200	0.00180	0.00020	0.00010	0.00039	20 & Above	0.0000
39	0.0200	0.00180	0.00020	0.00010	0.00043		
40	0.0200	0.00225	0.00025	0.00010	0.00046		
41	0.0200	0.00225	0.00025	0.00010	0.00049		
42	0.0200	0.00225	0.00025	0.00010	0.00052		
43	0.0200	0.00225	0.00025	0.00010	0.00056		
44	0.0200	0.00225	0.00025	0.00010	0.00061		
45	0.0200	0.00270	0.00030	0.00010	0.00067		
46	0.0200	0.00315	0.00035	0.00010	0.00073		
47	0.0700	0.00360	0.00040	0.00010	0.00081		
48	0.0700	0.00405	0.00045	0.00010	0.00088		
49	0.1000	0.00450	0.00050	0.00010	0.00096		
50	0.2000	0.00495	0.00055	0.00010	0.00103		
51	0.1000	0.00540	0.00060	0.00010	0.00111		
52	0.1000	0.00585	0.00065	0.00010	0.00120		
53	0.1000	0.00630	0.00070	0.00010	0.00129		
54	0.3000	0.00675	0.00075	0.00010	0.00141		
55	0.3300	0.00720	0.00080	0.00010	0.00158		
56	0.2500	0.00720	0.00080	0.00010	0.00175		
57	0.2500	0.00720	0.00080	0.00010	0.00196		
58	0.2500	0.00720	0.00080	0.00010	0.00219		
59	0.2500	0.00720	0.00080	0.00010	0.00251		
60	0.2500	0.00720	0.00080	0.00010	0.00291		
61	0.2500	0.00720	0.00080	0.00010	0.00331		
62	0.3500	0.00720	0.00080	0.00010	0.00373		
63	0.3500	0.00720	0.00080	0.00010	0.00422		
64	0.3500	0.00720	0.00080	0.00010	0.00481		
65	1.0000	0.00000	0.00000	0.00000	0.00000		

Santa Barbara County Employees' Retirement System Investigation of Experience (2007-2010)

Appendix B: Member Contribution Rates



This section illustrates the member contribution rates by plan, tier and entry age.

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

**Table B-1: General Members
Member Contribution Rates**

Current Assumptions				Proposed Assumptions			
Entry Age	One Year FAS Half Rates Plan 5A	One Year FAS Full Rates Plan 5B	Three Year FAS Half Rates Plan 5C	Entry Age	One Year FAS Half Rates Plan 5A	One Year FAS Full Rates Plan 5B	Three Year FAS Half Rates Plan 5C
20	2.39%	4.77%	2.29%	20	2.60%	5.19%	2.50%
21	2.45%	4.89%	2.35%	21	2.66%	5.31%	2.55%
22	2.50%	5.00%	2.40%	22	2.72%	5.43%	2.61%
23	2.56%	5.12%	2.46%	23	2.78%	5.55%	2.67%
24	2.62%	5.24%	2.51%	24	2.84%	5.67%	2.73%
25	2.68%	5.36%	2.57%	25	2.90%	5.80%	2.79%
26	2.74%	5.48%	2.63%	26	2.97%	5.93%	2.85%
27	2.81%	5.61%	2.69%	27	3.03%	6.06%	2.91%
28	2.87%	5.74%	2.75%	28	3.10%	6.19%	2.98%
29	2.94%	5.87%	2.82%	29	3.17%	6.33%	3.04%
30	3.01%	6.01%	2.88%	30	3.24%	6.47%	3.11%
31	3.07%	6.14%	2.95%	31	3.31%	6.61%	3.18%
32	3.14%	6.28%	3.01%	32	3.38%	6.75%	3.25%
33	3.21%	6.42%	3.08%	33	3.45%	6.90%	3.32%
34	3.29%	6.57%	3.15%	34	3.53%	7.05%	3.39%
35	3.36%	6.71%	3.22%	35	3.60%	7.20%	3.46%
36	3.43%	6.86%	3.29%	36	3.68%	7.35%	3.53%
37	3.51%	7.01%	3.36%	37	3.75%	7.50%	3.60%
38	3.58%	7.16%	3.43%	38	3.83%	7.66%	3.68%
39	3.66%	7.31%	3.50%	39	3.91%	7.81%	3.75%
40	3.74%	7.47%	3.58%	40	3.99%	7.97%	3.83%
41	3.81%	7.62%	3.65%	41	4.07%	8.13%	3.90%
42	3.89%	7.78%	3.73%	42	4.15%	8.30%	3.98%
43	3.98%	7.95%	3.80%	43	4.23%	8.46%	4.06%
44	4.06%	8.11%	3.88%	44	4.32%	8.63%	4.14%
45	4.14%	8.27%	3.96%	45	4.40%	8.80%	4.22%
46	4.22%	8.44%	4.03%	46	4.48%	8.96%	4.29%
47	4.31%	8.61%	4.11%	47	4.57%	9.13%	4.37%
48	4.39%	8.77%	4.19%	48	4.65%	9.30%	4.45%
49	4.47%	8.94%	4.27%	49	4.74%	9.48%	4.53%
50	4.56%	9.12%	4.35%	50	4.83%	9.65%	4.62%
51	4.65%	9.29%	4.43%	51	4.92%	9.84%	4.70%
52	4.74%	9.47%	4.50%	52	5.01%	10.02%	4.77%
53	4.83%	9.65%	4.58%	53	5.10%	10.20%	4.85%
54	4.91%	9.81%	4.64%	54	5.18%	10.36%	4.91%
55	4.98%	9.96%	4.68%	55	5.26%	10.51%	4.95%
56	5.04%	10.08%	4.71%	56	5.32%	10.63%	4.98%
57	5.08%	10.16%	4.71%	57	5.36%	10.71%	4.98%
58	5.10%	10.19%	4.90%	58	5.37%	10.73%	5.16%
59 and Over	5.10%	10.19%	5.10%	59 and Over	5.37%	10.73%	5.35%

Assumptions:

Interest:

8.16%

7.75%

Salary:

2009 Val (service based)

2009 Val with 3.5% general wage growth

Unisex Mortality:

RP 2000 (Male, Setback 4 years)

RP 2000 (Male, Setback 4 years)

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

**Table B-2: APCD Members
Member Contribution Rates**

Current Assumptions			Proposed Assumptions		
Entry Age	One Year FAS Half Rates APCD Plan 1	One Year FAS Full Rates APCD Plan 2	Entry Age	One Year FAS Half Rates APCD Plan 1	One Year FAS Full Rates APCD Plan 2
20	2.84%	5.68%	20	3.07%	6.15%
21	2.91%	5.82%	21	3.14%	6.28%
22	2.98%	5.95%	22	3.21%	6.42%
23	3.04%	6.09%	23	3.28%	6.56%
24	3.11%	6.23%	24	3.35%	6.71%
25	3.19%	6.37%	25	3.43%	6.86%
26	3.26%	6.52%	26	3.50%	7.01%
27	3.33%	6.67%	27	3.58%	7.16%
28	3.41%	6.82%	28	3.66%	7.31%
29	3.48%	6.97%	29	3.74%	7.47%
30	3.56%	7.12%	30	3.81%	7.63%
31	3.64%	7.28%	31	3.89%	7.79%
32	3.72%	7.44%	32	3.98%	7.95%
33	3.80%	7.60%	33	4.06%	8.11%
34	3.88%	7.76%	34	4.14%	8.28%
35	3.96%	7.92%	35	4.22%	8.45%
36	4.04%	8.09%	36	4.31%	8.62%
37	4.13%	8.26%	37	4.40%	8.79%
38	4.21%	8.43%	38	4.48%	8.97%
39	4.30%	8.60%	39	4.57%	9.15%
40	4.39%	8.78%	40	4.66%	9.32%
41	4.48%	8.95%	41	4.75%	9.50%
42	4.56%	9.13%	42	4.84%	9.68%
43	4.65%	9.31%	43	4.93%	9.86%
44	4.74%	9.49%	44	5.02%	10.05%
45	4.84%	9.67%	45	5.12%	10.23%
46	4.93%	9.86%	46	5.21%	10.43%
47	5.03%	10.05%	47	5.31%	10.62%
48	5.12%	10.24%	48	5.40%	10.81%
49	5.21%	10.41%	49	5.49%	10.98%
50	5.28%	10.57%	50	5.57%	11.14%
51	5.35%	10.69%	51	5.63%	11.27%
52	5.39%	10.78%	52	5.67%	11.35%
53	5.41%	10.81%	53	5.69%	11.38%
54 and Over	5.41%	10.81%	54 and Over	5.69%	11.38%

Assumptions:

Interest: 8.16%
 Salary: 2009 Val (service based)
 Unisex Mortality: RP 2000 (Male, Setback 4 years)

7.75%
 2009 Val with 3.5% general wage growth
 RP 2000 (Male, Setback 4 years)

**Santa Barbara County Employees' Retirement System
Investigation of Experience (2007-2010)**

**Table B-3: Safety Members
Member Contribution Rates**

Current Assumptions				Proposed Assumptions			
Entry Age	One Year FAS Half Rates Plan 4A / 6A	One Year FAS Full Rates Plan 4B	Three Year FAS Half Rates Plans 4C / 6B	Entry Age	One Year FAS Half Rates Plan 4A / 6A	One Year FAS Full Rates Plan 4B	Three Year FAS Half Rates Plans 4C / 6B
20	4.47%	8.93%	4.28%	20	4.83%	9.66%	4.63%
21	4.56%	9.13%	4.37%	21	4.93%	9.86%	4.73%
22	4.66%	9.32%	4.46%	22	5.03%	10.06%	4.83%
23	4.76%	9.52%	4.56%	23	5.13%	10.26%	4.92%
24	4.86%	9.73%	4.66%	24	5.24%	10.48%	5.03%
25	4.97%	9.94%	4.76%	25	5.35%	10.69%	5.13%
26	5.07%	10.15%	4.86%	26	5.45%	10.91%	5.23%
27	5.18%	10.36%	4.96%	27	5.56%	11.13%	5.34%
28	5.29%	10.58%	5.06%	28	5.68%	11.35%	5.44%
29	5.40%	10.80%	5.16%	29	5.79%	11.58%	5.55%
30	5.51%	11.02%	5.27%	30	5.90%	11.80%	5.65%
31	5.62%	11.24%	5.37%	31	6.01%	12.03%	5.76%
32	5.73%	11.47%	5.48%	32	6.13%	12.26%	5.87%
33	5.85%	11.69%	5.58%	33	6.25%	12.49%	5.98%
34	5.96%	11.92%	5.69%	34	6.36%	12.73%	6.09%
35	6.08%	12.15%	5.80%	35	6.48%	12.96%	6.20%
36	6.19%	12.39%	5.91%	36	6.60%	13.20%	6.32%
37	6.31%	12.62%	6.02%	37	6.72%	13.44%	6.43%
38	6.43%	12.86%	6.14%	38	6.84%	13.68%	6.54%
39	6.55%	13.10%	6.25%	39	6.97%	13.93%	6.66%
40	6.67%	13.35%	6.37%	40	7.09%	14.18%	6.78%
41	6.80%	13.60%	6.48%	41	7.22%	14.44%	6.90%
42	6.93%	13.86%	6.60%	42	7.35%	14.70%	7.02%
43	7.06%	14.12%	6.73%	43	7.48%	14.96%	7.14%
44	7.19%	14.38%	6.85%	44	7.62%	15.23%	7.27%
45	7.33%	14.65%	6.97%	45	7.75%	15.51%	7.39%
46	7.46%	14.93%	7.09%	46	7.89%	15.78%	7.51%
47	7.60%	15.20%	7.20%	47	8.03%	16.06%	7.63%
48	7.74%	15.47%	7.30%	48	8.17%	16.34%	7.73%
49	7.86%	15.72%	7.39%	49	8.29%	16.58%	7.81%
50	7.96%	15.93%	7.44%	50	8.40%	16.79%	7.86%
51	8.04%	16.08%	7.45%	51	8.47%	16.94%	7.87%
52	8.08%	16.15%	7.45%	52	8.50%	17.01%	7.87%
53	8.08%	16.15%	7.71%	53	8.50%	17.01%	8.13%
54 and Over	8.08%	16.15%	8.02%	54 and Over	8.50%	17.01%	8.43%

Assumptions:

Interest:	8.16%	7.75%
Salary:	2009 Val (service based)	2009 val with 3.5% general wage growth
Unisex Mortality	RP 2000 (Male, Setback 3 years)	RP 2000 (Male, Setback 3 years)