

**MARIN COUNTY
EMPLOYEES' RETIREMENT ASSOCIATION**

**The Report of an
EXPERIENCE INVESTIGATION**

**Covering the Period
July 1, 2004 to June 30, 2006**



Marin County Employees' Retirement Association
Report of the Experience Investigation
Covering the Period July 1, 2004 to June 30, 2006

TABLE OF CONTENTS

	<u>Pages</u>
INTRODUCTION	
Cover letter	3
Comments and Summary	4
DISCUSSION	
The Experience Investigation Process	9
Selection of Assumptions Used in Actuarial Valuations	12
INVESTIGATION DATA	
Summary of Active Member Data Used	14
Summary of Retired Member Data Used	15
DEMOGRAPHIC ASSUMPTION STUDY	
Withdrawal Experience	17
Vested Deferred Experience	19
Disability Experience	21
Service Retirement Experience	25
Mortality Experience	
Active Members	29
Service Retirees	33
Disability Retirees	34
Marriage Experience	36
Summary of Overall Decrement Experience	38
ECONOMIC ASSUMPTION STUDY	
Summary of Economic Experience	43
CONCLUSION	
Summary of Recommendations Concerning Assumptions	47
APPENDIX A	
Current Actuarial Assumptions	50
APPENDIX B	
Recommended Actuarial Assumptions	59

INTRODUCTION

September 12, 2006

Board of Retirement
Marin County Employees' Retirement Association
3501 Civic Center Drive, Room 408
San Rafael, CA 94903

Members of the Board:

Submitted in this report are the results of the Experience Investigation of the Marin County Employees' Retirement Association. The investigation was made for the purpose of analyzing financial risk areas related to mortality, withdrawal, disability, retirement, and economic factors. We also analyzed existing actuarial methodology. Our recommendations are included in the report.

The investigation was based upon the statistical data furnished for the annual actuarial valuations and covered the period from July 1, 2004 through June 30, 2006.

Respectfully Submitted,



Rick A. Roeder, EA, FSA, MAAA

Marin County Employees' Retirement Association
Report of the Experience Investigation
Covering the Period July 1, 2004 to June 30, 2006

COMMENTS & SUMMARY

Experience Period.

The investigation covers the time from July 1, 2004 through June 30, 2006. To the best of our knowledge, there was only one extraordinary event that might jeopardize the credibility of the results generated by demographic data –benefit enhancements to certain actives. Changing economic times and collective bargaining always add uniqueness to each period of study. Basing assumptions solely on past experience is not recommended. Assumptions need to meld history with the dynamic nature of the workplace.

Census Data.

The data used for our study was the same data employed for our annual valuations. There was a lowering of pension compensation in the 2005 valuation for a number of active members relating to treatment of health premiums. An unusually high number of active members had less pension compensation in the 2005 valuation than in the 2004 valuation. On a “going forward” basis, we believe any past inconsistencies have been resolved.

Withdrawals.

Less than five years of service: There is higher turnover for new hires than expected. We recommend increasing the rate by 40% for those in their first year of service. Otherwise, we recommend no change.

At least five years of service: Actual experience was close to expected. We recommend no change.

Deferred Retirement.

Rates include termination due to reciprocal employment and are only applied after five years of service. Actual experience was sufficiently close to expected that we recommend no change.

Duty Disability Retirements.

Miscellaneous: Duty disabilities were only slightly less than the expected rate of disability. Also, our data understates disabilities because of the lag time between disability application and the decision to grant the disability. Thus, we recommend no change.

Safety: Duty disabilities were just slightly more than expected. This continued the trend from the prior study. This does not include “lagged disabilities” that tend to swell the number (the June 30, 2006 data has no disability retirements in 2006). We recommend that these rates be increased by 10%.

Marin County Employees' Retirement Association
Report of the Experience Investigation
Covering the Period July 1, 2004 to June 30, 2006

COMMENTS & SUMMARY

Ordinary Disability Retirements.

Miscellaneous: The data shows significantly fewer ordinary disabilities over this and the previous investigation periods. Again, the significant lag time in granting disabilities probably comes into play. As we reduced rates by 50% in the previous Experience Investigation, we recommend no additional reduction at this time.

Safety: Ordinary disabilities were fairly close to expected. We recommend no change.

Service Retirements.

Miscellaneous: Retirements were about 17% more than expected. This is the first study where the 2002 County benefit improvements covered an entire Experience Investigation period. All of the variance was at younger ages. For that reason, we recommend increasing the retirement rates below age 60 by 30%.

Safety: Experience was slightly less than expected despite the 2005 benefit improvement for many County Safety members from "3% at 55" to "3% at 50". We recommend no change at this time until there is a longer period of exposure after this benefit increase.

Active Life Mortality.

Miscellaneous: Total mortality experience was lower than expected. We recommend moving to the RP-2000 Combined Healthy Mortality Table, set back three years, in order to update to a more modern table.

Safety: Experience was very close to expected. In the interest of consistency with the proposed Miscellaneous mortality table, we recommend moving to the RP-2000 Combined Healthy Mortality Table, set back three years. We anticipate a negligible impact on liabilities due to this change.

Mortality – Service Retirees.

The actual mortality experience was less than expected especially for females. In line with updating to more modern tables, we recommend, however, a change to the RP-2000 Combined Healthy Mortality Table set back one year for Males and set back 2 years for Females.

Mortality – Disabled Retirees.

Miscellaneous and Safety: Mortality for disabled retirees was close to expected for the study period. However, the small exposure period and the low incidence do not warrant full recognition of this experience. For both Miscellaneous and Safety, we recommend moving to the RP-2000 *Male* Combined Healthy Mortality Table set forward 3 years.

Marin County Employees' Retirement Association
Report of the Experience Investigation
Covering the Period July 1, 2004 to June 30, 2006

COMMENTS & SUMMARY

Qualified Beneficiaries.

The employer pays for a 60% survivor annuity (100% if the retirant is disabled) for a qualified beneficiary at no cost to the employee.

Male retirants: 80% are assumed to have a qualified beneficiary. Actual experience over the past two studies has been close to such assumption. We recommend no change.

Female retirants: 60% are assumed to have a qualified beneficiary. Experience again showed a significantly lower percentage to have a qualified beneficiary. We recommend reducing the percent to 50%.

Reciprocity.

50% of those who take a vested deferred pension are assumed to work for a subsequent, reciprocal employer. For the second consecutive study, the actual experience is less than what has been assumed. We recommend reducing this percentage to 40%.

Salary Increases.

Overall, pay increases were less than expected. This was due, in part, to the impact of health care premiums, on valuation pay. Even so, this clearly reverses the trend of higher pay increases than anticipated in the previous Experience Investigation.

Assumed pay increases are the sum of: Assumed inflation **PLUS** Assumed merit/longevity

We are recommending a slight drop in the merit/longevity portion of assumed pay increases for Miscellaneous employees over five years. This is partly being offset by higher pay increases for short-term employees who have greater promotional opportunities in their early years of employment. This is particularly true for relatively new Safety members.

Since we are recommending that the inflation element be reduced from 4.25% to 4%, this will also have a corresponding impact on future compensation increase projections.

Economic Assumptions.

Because of the long-term nature of funding, our preference is to not make dramatic changes unless it is crystal clear to do so. The assumed investment return is the sum of two elements:

Assumed inflation **PLUS** Assumed real rate of return

Inflation: Over the 50-year period ending with the 2006 valuation, the average inflation rate has been 4.1% nationally and 4.3% for the Bay Area. The trailing 30-year average is 4.6%. Thus, we believe that the assumed inflation rate of 4.25% still falls within a reasonable range. However, the trailing 10-year average is roughly 3%. Many experts feel that future fiscal and monetary policy will continue to place a higher priority on controlling inflation than occurred during the 1970s. Also, a number of California public systems have reduced their inflation assumption in recent years. Thus, we recommend that the inflation assumption be reduced from 4.25% to 4%.

Marin County Employees' Retirement Association
Report of the Experience Investigation
Covering the Period July 1, 2004 to June 30, 2006

COMMENTS & SUMMARY

Assumed real rate of return: For this study period, the real rate of return is well below the 4.0% assumed rate due to the aftermath of the 2000-02 bear market. We do not use market value in determining returns but base returns on five-year smoothed actuarial value. However, market returns were healthy for this period and exceeded 4.0%. Thus, we recommend no change to the real rate of return.

The byproduct of both these assumptions is to reduce the assumed investment return from 8.25% to 8%. If our recommendation is adopted, the Board and staff will need to discuss whether changes in the employee contribution rates would also occur.

Administrative expenses: In theory, this has nothing to do with investment return. In practice, MCERA, like many systems, assumes that the system's assumed actuarial rate of return will not only be net of investment expenses but also administrative expenses. Is this best practice? Probably not. It is our preference to explicitly load for administrative expenses. If past practice is continued in this regard, all parties should be aware that the actual net investment return will need to be 0.10%-0.15% higher than the assumed rate adopted by MCERA.

Health premiums: We understand that the County has recently changed its practice of using investment earnings to pay for health premiums. If this had not been the case, we would have recommended an additional decrease to the assumed investment return.

Post-retirement COLA.

Currently, this assumption is 3.8% for Tier 1 and Special Districts. For other Tiers, the assumption is the 2% cap. The rationale for the 3.8% being lower than assumed inflation is that we continue to be in a low inflation period where recent retirants do not have the "excess COLA banks" to draw in order to receive the maximum possible COLA of 4%. We recommend no change in this assumption.

DISCUSSION

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
The Experience Investigation Process

The funding objective of the Retirement System is to finance members' benefits with contributions that remain approximately level from generation to generation. This objective is generally considered satisfied if contributions are structured as a level percentage of active member payroll.

Funding objective contributions are calculated by means of an actuarial valuation, a mathematical process.

The flow of activity constituting an actuarial valuation may be summarized as follows:

- A. Covered People Data, furnished by the administrator including:
 - Retired lives now receiving benefits
 - Former employees with vested benefits not yet payable
 - Active employees
- B. + Asset Data (cash & investments), furnished by the administrator
- C. + Plan Description Data, furnished by the administrator
- D. + Assumptions concerning various future system activities and economic experiences
- E. + The Actuarial Cost Method for determining employer contributions (the long-term planned pattern for employer contributions)
- F. + Mathematically combining the Data, Assumptions of future activities, and the Funding Method
- G. = Determination of:
 - Funding Objective Contribution Rate
 - and/or System Actuarial Condition

Items A, B and C provide the current "knowns" about the system. However, a good deal of activity which will result in benefit payments has yet to occur. Accordingly, assumptions must be made about future activities (frequently called actuarial assumptions).

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
The Experience Investigation Process

(Continued)

The assumptions may be classified as demographic and economic. Demographic activities include future mortality rates, disability rates, rates of pre-retirement withdrawal from employment, merit and longevity salary increases, and retirement ages. Economic activities consist of future across-the-board salary increases, future rates of investment return and future rates of inflation.

With modifications for expected future variances, demographic activities are generally selected on the basis of analysis of the system's historical activity or, if the level of activity is too small to be meaningful, the past activity of systems which are similar in nature.

The demographic activities which have had the greatest effect on computed contribution requirements are the probabilities of retirement after becoming eligible and probabilities of withdrawal before becoming eligible to retire. Lower rates of retirement result in lower contributions, and vice-versa. The opposite is true of withdrawal rates. Lower rates of withdrawal result in higher contributions. A third important demographic activity is the rate of mortality after retirement. Longer lifetimes result in higher employer contributions, and vice versa.

Economic activities, on the other hand, do not lend themselves to prediction on the basis of historical analysis because both salary increases and investment return are impacted by inflation which defies accurate long-term prediction. Economic assumptions are generally selected on the basis of the expectations in an inflation-free environment and then both are increased by some provision for long-term inflation.

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
The Experience Investigation Process

(Concluded)

If inflation is higher than expected it will probably result in actual rates of salary increase and investment return which exceed the assumed rates. Salaries increasing faster than expected produce unexpected liabilities. Investment return exceeding the assumed rates results in unanticipated assets. It is expected that to a large degree additional assets will offset additional liabilities over the long-term.

No single set of assumptions about future activities can be labeled "more appropriate" than all other sets. Honest differences of opinion are the norm rather than the exception with regard to future events, particularly in the area of economic assumptions. Selection of a set of assumptions involves policy decisions as well as technical decisions. We encourage your input.

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Selection of Assumptions Used in the Actuarial Valuations

Key Non-Economic Assumptions

Merit and Seniority Portion of Pay Increases to Individual Employees
Expected Ages at Retirement
Rates of Separation Before Retirement
Rates of Disablement
Rates of Mortality

Economic Assumptions

Rate of Investment Return
Rate of Inflation (General Inflation and Medical Inflation)
Base Portion of Pay Increases to Individual Employees

Relationship Between Retirement Board and the Actuary

The actuary should have the primary responsibility for choosing the non-economic (demographic) assumptions used in the actuarial valuation, making use of specialized training and experience.

The actuary, however, has no special skill concerning the choice of suitable economic assumptions. The basis of the economic assumptions is the assumed rate of inflation, a quantity which defies accurate prediction by anyone. Given an assumed rate of future inflation, however, it is very important that this rate be applied in a consistent manner in deriving both the assumed rate of investment return and the base portion of the pay increase assumptions.

A sound procedure is that the actuary suggests reasonable alternatives for economic assumptions, followed by discussion between the actuary, staff and the Retirement Board. The Board then makes a final choice from the various alternatives.

INVESTIGATION DATA

Marin County Employees' Retirement Association
in the 7/1/2004 - 6/30/2006 Experience Investigation

Summary of Active Member Data Used

	Valuation Date	Active Members	Annual Payroll	Averages		
				Age	Service	Pay
Marin County						
	<u>Miscellaneous</u>					
	7/1/2004	1,559	\$102,313,624	48.6	10.1	\$65,628
	7/1/2005	1,575	\$100,943,789	48.5	10.1	\$64,091
	7/1/2006	1,617	\$106,439,414	48.8	10.0	\$65,825
	<u>Safety</u>					
	7/1/2004	351	\$27,265,606	40.6	10.5	\$77,680
	7/1/2005	348	\$26,274,475	40.6	10.3	\$75,501
	7/1/2006	357	\$27,914,562	40.5	10.1	\$78,192
Special Districts						
	<u>Miscellaneous</u>					
	7/1/2004	191	\$10,714,399	46.8	9.6	\$56,096
	7/1/2005	210	\$11,247,548	46.8	9.1	\$53,560
	7/1/2006	215	\$12,186,514	46.7	8.9	\$56,681
	<u>Safety</u>					
	7/1/2004	35	\$2,813,632	41.8	13.0	\$80,389
	7/1/2005	35	\$2,805,859	41.5	11.8	\$80,167
	7/1/2006	35	\$2,986,542	40.2	10.2	\$85,330
Novato Fire						
	<u>Miscellaneous</u>					
	7/1/2004	7	\$423,264	44.7	5.6	\$60,466
	7/1/2005	8	\$514,963	43.8	5.8	\$64,370
	7/1/2006	8	\$513,512	43.4	3.1	\$64,189
	<u>Safety</u>					
	7/1/2004	87	\$7,193,152	36.1	7.6	\$82,680
	7/1/2005	83	\$7,374,432	37.2	8.6	\$88,849
	7/1/2006	80	\$7,476,598	38.1	8.9	\$93,459
City of San Rafael						
	<u>Miscellaneous</u>					
	7/1/2004	257	\$15,522,826	46.1	10.1	\$60,400
	7/1/2005	248	\$14,727,792	46.1	9.8	\$59,386
	7/1/2006	248	\$15,298,471	46.4	9.8	\$61,687
	<u>Safety</u>					
	7/1/2004	150	\$13,776,464	42.5	15.0	\$91,843
	7/1/2005	145	\$13,629,524	41.9	14.0	\$93,997
	7/1/2006	134	\$13,307,411	42.1	14.5	\$99,309
Total						
	<u>Miscellaneous</u>					
	7/1/2004	2,014	\$128,974,113	48.1	10.0	\$64,039
	7/1/2005	2,041	\$127,434,092	48.0	9.9	\$62,437
	7/1/2006	2,088	\$134,437,911	48.3	9.8	\$64,386
	<u>Safety</u>					
	7/1/2004	623	\$51,048,854	40.5	11.3	\$81,940
	7/1/2005	611	\$50,084,290	40.5	11.0	\$81,971
	7/1/2006	606	\$51,685,113	40.5	10.9	\$85,289

Marin County Employees' Retirement Association
in the 7/1/2004 - 6/30/2006 Experience Investigation

Summary of Pensioner Data Used

	Valuation Date	Pensioners	Annual Payroll	Averages		
				Attained Age	Retirement Age	Annual Pension
Marin County and Special Districts						
Miscellaneous	7/1/2004	1,306	\$28,840,964	70.9	58.6	\$22,083
	7/1/2005	1,371	\$31,816,585	70.6	58.6	\$23,207
	7/1/2006	1,427	\$34,196,120	70.7	58.6	\$23,964
Safety	7/1/2004	249	\$9,792,251	60.9	49.0	\$39,326
	7/1/2005	272	\$11,400,238	61.2	49.3	\$41,913
	7/1/2006	296	\$12,983,127	61.4	49.3	\$43,862
Novato Fire						
	7/1/2004	75	\$4,244,866	58.9	51.1	\$56,598
	7/1/2005	76	\$4,272,676	59.7	51.3	\$56,219
	7/1/2006	79	\$4,680,005	60.6	51.9	\$59,241
City of San Rafael						
Miscellaneous	7/1/2004	156	\$2,494,020	69.8	56.2	\$15,987
	7/1/2005	174	\$3,313,345	68.0	56.6	\$19,042
	7/1/2006	185	\$3,656,580	69.1	56.6	\$19,765
Safety	7/1/2004	153	\$5,557,891	63.2	50.8	\$36,326
	7/1/2005	164	\$6,749,109	64.1	50.8	\$41,153
	7/1/2006	174	\$7,606,761	62.7	50.6	\$43,717
Total						
<i>Miscellaneous</i>	7/1/2004	1,462	31,334,984	70.8	58.3	\$21,433
	7/1/2005	1,545	35,129,930	70.3	58.4	\$22,738
	7/1/2006	1,612	37,852,700	70.5	58.4	\$23,482
<i>Safety</i>	7/1/2004	477	\$19,595,008	61.3	49.9	\$41,080
	7/1/2005	512	\$22,422,023	61.9	50.1	\$43,793
	7/1/2006	549	\$25,269,893	61.7	50.1	\$46,029

**DEMOGRAPHIC
ASSUMPTION STUDY**

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Withdrawal Experience
Miscellaneous

Actual Experience versus Current Withdrawal Assumptions

Years of Service	Less Than Five Years of Service		
	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
0	72	41	58
1	22	21	21
2	25	18	18
3	24	22	22
4	<u>27</u>	<u>22</u>	<u>22</u>
Totals	170	124	141
Previous Study	148	138*	

Group	Five or More Years of Service	
	<u>Actual</u>	<u>Expected</u>
20-24	0	0
25-29	2	1
30-34	5	3
35-39	2	5
40-44	5	4
45-49	2	4
50-54	1	0
55 +	<u>1</u>	<u>0</u>
Totals	18	17
Previous Study	10	14*

* Based on Revised Assumption

COMMENT: Miscellaneous withdrawals were again significantly higher than expected for those with less than one year of service. We recommend increasing only that rate by 40%. We recommend no change in withdrawal rates for those with one or more years of service.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Withdrawal Experience
Safety

Actual Experience versus Current Withdrawal Assumptions

Years of Service	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
0	9	6	9
1	5	3	3
2	6	5	5
3	8	5	5
4	<u>2</u>	<u>4</u>	<u>4</u>
Totals	30	23	26
Previous Study	31	25	

Five or More Years of Service

<u>Group</u>	<u>Actual</u>	<u>Expected</u>
20-24	0	0
25-29	0	0
30-34	1	1
35-39	1	1
40-44	0	1
45-49	0	1
50-54	0	0
55 +	<u>1</u>	<u>0</u>
Totals	3	4
Previous Study	3	4

COMMENT: The rate of withdrawal was higher than expected during the investigation period for those with less than five years of service. The same trend was seen in the previous study. We recommend an increase of 40% in the rate of withdrawal under one year of service.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Deferred Retirement Experience
Miscellaneous

Actual Experience versus Current Deferred Retirement Assumptions

<u>Group</u>	<u>Actual</u>	<u>Expected</u>
20-24	0	0
25-29	0	1
30-34	5	4
35-39	5	6
40-44	13	7
45-49	9	8
50-54	3	6
55 +	<u>8</u>	<u>6</u>
Totals	43	38
Previous Study	30	36*

* Based on Revised Assumptions

COMMENT: The rate of deferred vested terminations was higher than expected during the investigation period. However, the opposite was true during the prior period. We recommend no change at this time.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
**Summary of Deferred Retirement Experience
 Safety**

<u>Group</u>	<u>Five or More Years of Service</u>	
	<u>Actual</u>	<u>Expected</u>
20-24	0	0
25-29	1	1
30-34	3	4
35-39	6	4
40-44	0	2
45-49	1	2
50-54	0	0
55 +	<u>0</u>	<u>0</u>
Totals	11	13
Previous		
Study	8	12

COMMENT: The rate of termination due to vested deferral was lower than expected during the investigation period, but narrowed from the prior study. The variances are small enough that we recommend no change.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Duty Disability Experience
Miscellaneous

Actual Experience versus Current Duty Disability Assumptions

Age <u>Group</u>	<u>Actual</u>	<u>Expected</u>
< 30	0	0
30-34	0	0
35-39	1	1
40-44	1	1
45-49	0	2
50-54	1	2
55-59	3	2
60-65	<u>2</u>	<u>1</u>
Totals	8	9
Previous Study	6	10

COMMENT: Miscellaneous employees had a slightly lower than expected duty disability incidence. However, your disability experience is usually understated since many disabilities have a long lag time for approval. We recommend no change at this time.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Duty Disability Experience
Safety

Age Group	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
< 30	1	0	0
30-34	1	1	1
35-39	2	2	2
40-44	4	2	2
45-49	0	3	3
50-54	4	3	3
55-59	2	2	3
60-65	<u>0</u>	<u>0</u>	<u>0</u>
Totals	14	13	14
Previous Study	18	14	

COMMENT: The data shows more disabilities than expected, especially when considering that additional disabilities may be granted but were “lagged.” In data received, we did not receive any data which indicated a date of disability grant in calendar year 2006. Over the last two studies that upward variance is almost 20%. We recommend increasing these rates by 10%.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Ordinary Disability Experience
Miscellaneous

<u>Group</u>	<u>Actual</u>	<u>Expected</u>
< 30	0	<u>0</u>
30-34	0	0
35-39	0	0
40-44	0	0
45-49	0	0
50-54	0	1
55-59	0	1
60-65	<u>1</u>	<u>1</u>
Totals	1	3
Previous		
Study	1	4*

* Based on Revised Assumption

COMMENT: Experience has been much less than assumed for the past two investigation periods. We decreased rates by 50% at the last study. The rates are minimal (less than one-half of one percent at all ages), so we recommend no additional change.

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Summary of Ordinary Disability Experience
Safety

<u>Group</u>	<u>Actual</u>	<u>Expected</u>
< 30	0	0
30-34	0	0
35-39	0	0
40-44	1	0
45-49	0	1
50-54	0	1
55-59	0	0
60-65	<u>0</u>	<u>0</u>
Totals	1	2
Previous Study	1	2

COMMENT: Experience is close to expected. We recommend no change.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Retirement Experience
Miscellaneous

Actual Experience versus Current Retirement Assumptions

<u>Group</u>	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
50	3	4	5
51	3	1	2
52	6	2	2
53	2	2	2
54	4	2	3
55	14	4	5
56	9	5	7
57	15	7	9
58	18	7	9
59	6	8	10
60	7	9	9
61	4	7	7
62	12	13	13
63	10	10	10
64	6	7	7
65	3	11	11
66	2	7	7
67	7	5	5
68	4	3	3
69	<u>3</u>	<u>4</u>	<u>4</u>
Totals ¹	138	118	130
Previous Study	86	103	

¹ Ignores retirement after attainment of age 70

COMMENT: Retirements were about 17% more than expected. This is the first investigation period in which 2002 benefit improvements were in place for the entire study period. We

recommend increasing the rate at each age below 60 by 30% to reflect higher benefits at these ages.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Retirement Experience
Safety – 3% @ Age 50

<u>Group</u>	<u>Actual</u>	<u>Expected</u>
<50	2	0
50	5	8
51	5	5
52	5	3
53	1	2
54	2	1
55	1	3
56	3	2
57	0	2
58	1	1
59	0	0
60+	<u>1</u>	<u>3</u>
Totals	26	30

COMMENT: Retirement rates for Safety members under 31664.1 were slightly less than expected. Many members changed to this benefit during the period. We recommend no change at this time, because the experience in this short time frame is not fully credible.

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Summary of Retirement Experience
Safety – 3% @ Age 55

<u>Group</u>	<u>Actual</u>	<u>Expected</u>
<50	0	0
50	0	1
51	1	1
52	0	1
53	1	2
54	1	1
55	5	3
56	4	4
57	1	3
58	0	2
59	0	0
60+	<u>0</u>	<u>1</u>
Totals	13	19

COMMENT: Retirement rates for Safety members under 31664.2 were less than expected. Because of the benefit changes during the study period, the impact is still not fully known. We recommend no change at this time.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Retirement Experience
Safety – 2% @ Age 50

<u>Group</u>	<u>Actual</u>	<u>Expected</u>
42	0	0
43	0	0
44	0	0
45	0	0
46	0	0
47	1	0
48	0	0
49	0	0
50	0	0
51	0	0
52	0	1
53	0	0
54	0	0
55	2	1
56	0	0
57	1	1
58	0	1
59	0	0
60	<u>0</u>	<u>1</u>
Totals	4	5

COMMENT: Retirement experience was close to expected. We recommend no change.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Active Life Mortality Experience
Miscellaneous - Men

<u>Group</u>	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
< 20	0	0	0
20-24	0	0	0
25-29	0	0	0
30-34	0	0	0
35-39	0	0	0
40-44	0	0	0
45-49	0	0	0
50-54	2	1	1
55-59	1	1	1
60-64	0	1	1
65-69	<u>0</u>	<u>0</u>	<u>0</u>
Totals	3	3	3
Previous Study	0	4*	

* Based on Revised Assumption

COMMENT: Mortality incidence is too low among miscellaneous male employees to develop any credible mortality table based solely on experience. We recommend updating to RP-2000 Male Combined Health Mortality Table with a 3-year setback.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Active Life Mortality Experience
Miscellaneous - Women

<u>Group</u>	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
< 20	0	0	0
20-24	0	0	0
25-29	0	0	0
30-34	0	0	0
35-39	0	0	0
40-44	0	0	0
45-49	0	0	0
50-54	0	1	1
55-59	0	1	1
60-64	1	1	1
65-69	<u>0</u>	<u>1</u>	<u>1</u>
Totals	1	4	4
Previous Study	1	4*	

* Based on Revised Assumption

COMMENT: Mortality incidence is too low among miscellaneous female employees to develop any credible mortality table based solely on experience. We recommend updating to the RP-2000 Female Combined Healthy Mortality Table with a 3-year setback.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Active Life Mortality Experience
Safety - Men

<u>Group</u>	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
< 20	0	0	0
20-24	0	0	0
25-29	0	0	0
30-34	0	0	0
35-39	0	0	0
40-44	0	0	0
45-49	0	0	0
50-54	0	0	0
55-59	<u>0</u>	<u>0</u>	<u>0</u>
Totals	0	0	0

COMMENT: Mortality incidence is too low among safety employees to develop any credible mortality table based solely on experience. For men, we recommend moving to the RP-2000 Male Combined Healthy Mortality Table with a 3-year setback to update.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Active Life Mortality Experience
Safety - Women

<u>Group</u>	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
< 20	0	0	0
20-24	0	0	0
25-29	0	0	0
30-34	0	0	0
35-39	0	0	0
40-44	0	0	0
45-49	0	0	0
50-54	0	0	0
55-59	<u>0</u>	<u>0</u>	<u>0</u>
Totals	0	0	0

COMMENT: Mortality incidence is too low among safety employees to develop any credible mortality table based solely on experience. For women, we recommend updating to the RP-2000 Female Combined Healthy Mortality Table with a 3-year setback.

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Summary of Mortality Experience of Service Retirees

Men

<u>Group</u>	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
< 50	0	0	0
50-54	0	0	0
55-59	1	1	1
60-64	2	3	2
65-69	3	4	4
70-74	5	6	5
75-79	3	6	6
80-84	9	8	8
85-89	12	8	8
90 +	<u>3</u>	<u>4</u>	<u>4</u>
Totals	38	40	38
Previous Study	45	40	

COMMENT: The actual mortality experience is fairly close to expected. However, we recommend an update to the RP-2000 Male Combined Healthy Mortality Table with a 1-year setback.

Women

<u>Group</u>	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
< 50	0	0	0
50-54	0	0	0
55-59	2	1	1
60-64	3	2	2
65-69	2	4	3
70-74	6	5	5
75-79	9	10	9
80-84	10	16	13
85-89	10	15	13
90 +	<u>11</u>	<u>16</u>	<u>13</u>
Totals	53	69	59
Previous Study	50	57	

COMMENT: The actual mortality experience is again lower than expected. We recommend a change to the RP-2000 Female Combined Healthy Mortality Table with a 2-year setback to update and recognize lower mortality.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Mortality Experience of Disabled Retirees
Miscellaneous

<u>Group</u>	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
< 50	0	0	0
50-54	1	0	0
55-59	2	0	0
60-64	0	1	1
65-69	0	1	1
70-74	2	1	1
75-79	2	1	1
80-84	0	2	2
85-89	1	0	0
90 +	<u>0</u>	<u>1</u>	<u>1</u>
Totals	8	7	7
Previous Study	3	6*	

* Based on revised assumptions.

COMMENT: Actual deaths are near expected. We recommend moving to the RP-2000 Male Combined Healthy Mortality Table set forward 3 years.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
**Summary of Mortality Experience of Disabled Retirees
 Safety**

<u>Group</u>	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
< 50	0	0	0
50-54	0	0	0
55-59	1	1	1
60-64	0	1	1
65-69	0	1	1
70-74	1	1	0
75-79	0	0	0
80-84	0	0	0
85-89	0	0	0
90 +	<u>0</u>	<u>0</u>	<u>0</u>
Totals	2	4	3
Previous Study	1	4*	

* Based on revised assumptions.

COMMENT: Actual mortality was again low compared to expected. We recommend moving to the male RP-2000 Male Combined Healthy Mortality Table set forward 3 years.

Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Qualified Beneficiary Incidence at Retirement

New Male Retirees

<u>Plan Year</u>	<u>Married</u>	<u>Total</u>	<u>Actual</u>	<u>Expected</u>
2005	62	86		
2006	<u>39</u>	<u>54</u>		
Total	101	140	72%	80%
Previous Study			82%	

New Female Retirees

<u>Plan Year</u>	<u>Married</u>	<u>Total</u>	<u>Actual</u>	<u>Expected</u>
2005	34	77		
2006	<u>25</u>	<u>62</u>		
Total	59	139	42%	60%
Previous Study			51%	

COMMENT: The percent of new retirees married is assumed to be 80% for men and 60% for women. For the past two investigation periods, actual marriage incidence for new retirees during the investigation period was fairly close for men at 72% (82% in previous study), but again lower than assumed for women at 42% (51% in the previous study). We recommend decreasing the percent of women with a qualified beneficiary to 50%.

It is possible that future studies might produce slightly higher numbers due to California's implementation of Assembly Bill 205. This bill provides comparable coverage among spouses and registered domestic partners.

Ages of Qualified Beneficiaries

	<u>Current Retirees with Qualified Beneficiary</u>	
	<u>Number</u>	<u>Average Age Difference</u>
Male	706	3.53 years
Female	<u>347</u>	<u>-2.52 years</u>
Total	1,053	3.03 years

COMMENT: The current assumption is that males are assumed to be three years older than females. We recommend no change in this assumption.

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation

Reciprocal Deferred Retirement

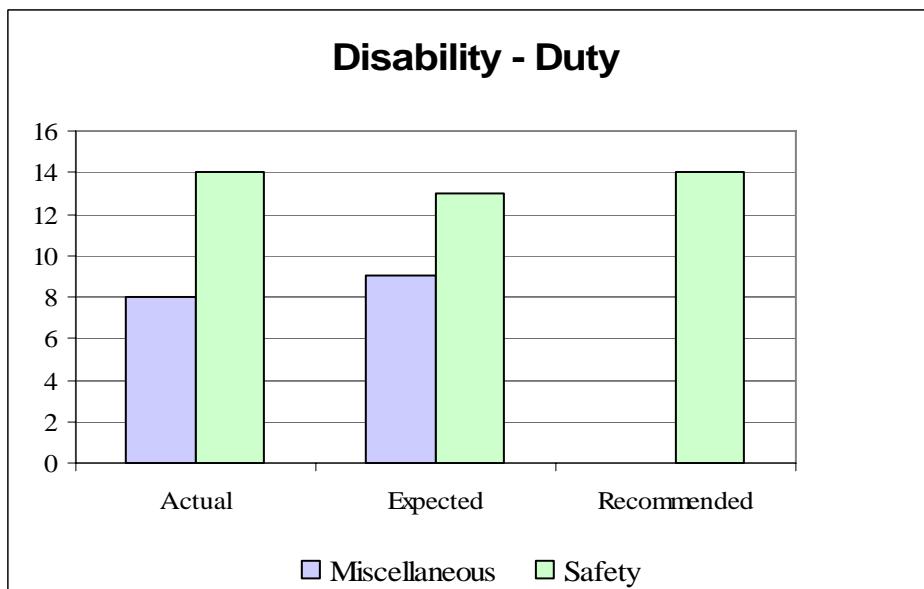
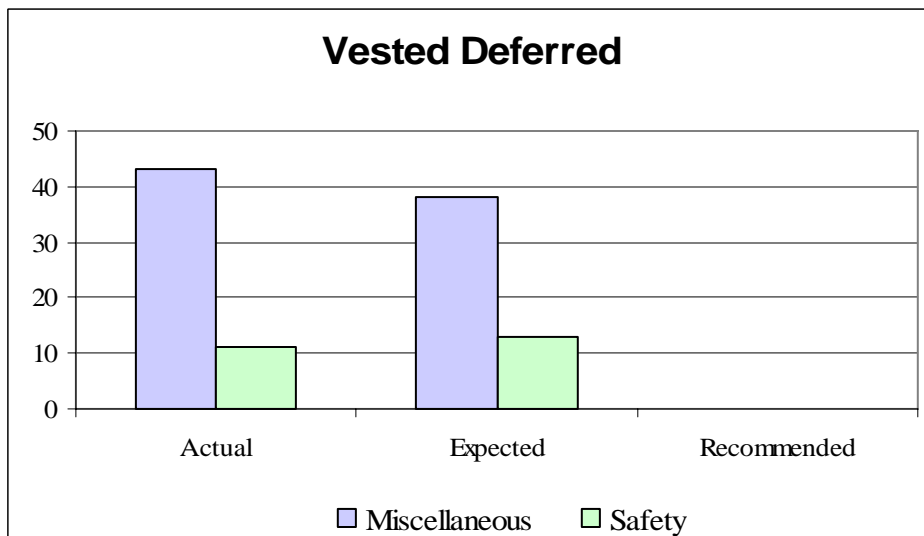
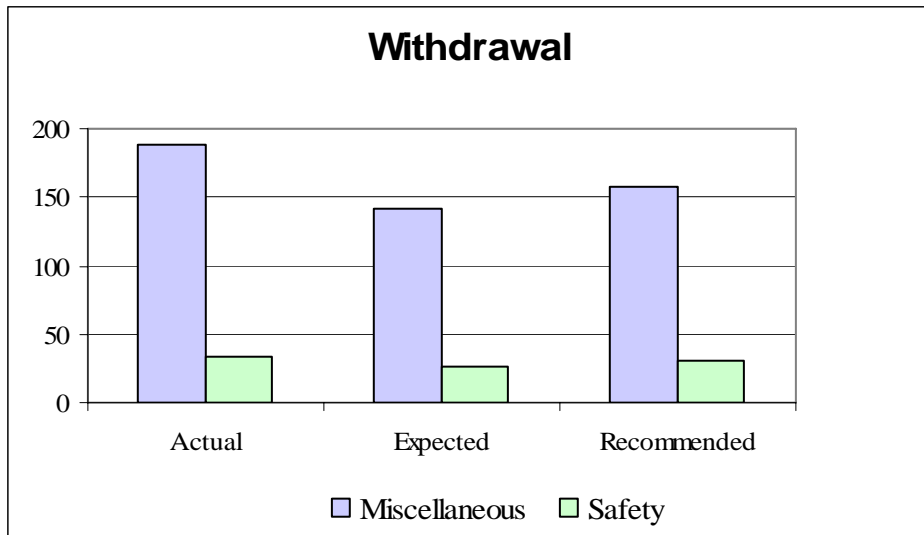
	<u>Percent moving to Reciprocal Employment</u>		
	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
Reciprocal Deferred Retirement	37%	50%	40%

COMMENT: The data shows that 20 members terminated with more than five years of service and moved to reciprocal employers out of 54 total terminations with five or more years of service (excluding withdrawals). For the past two investigation periods, actual experience is lower than the expected rate of 50%. We recommend moving to an assumed rate of 40%.

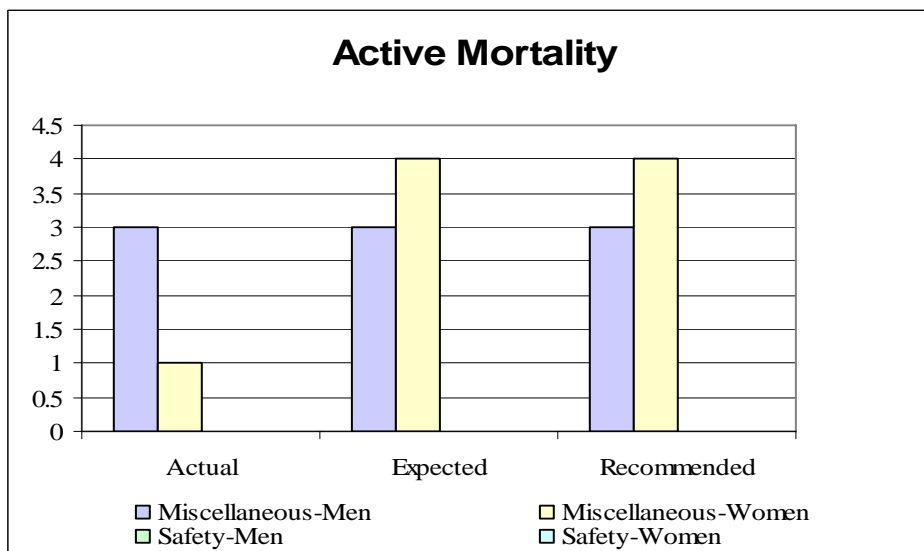
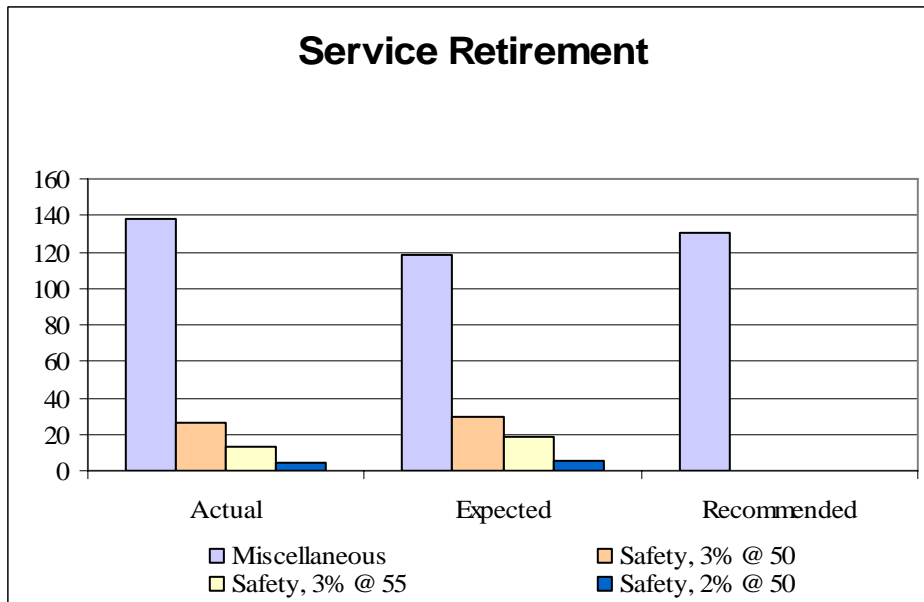
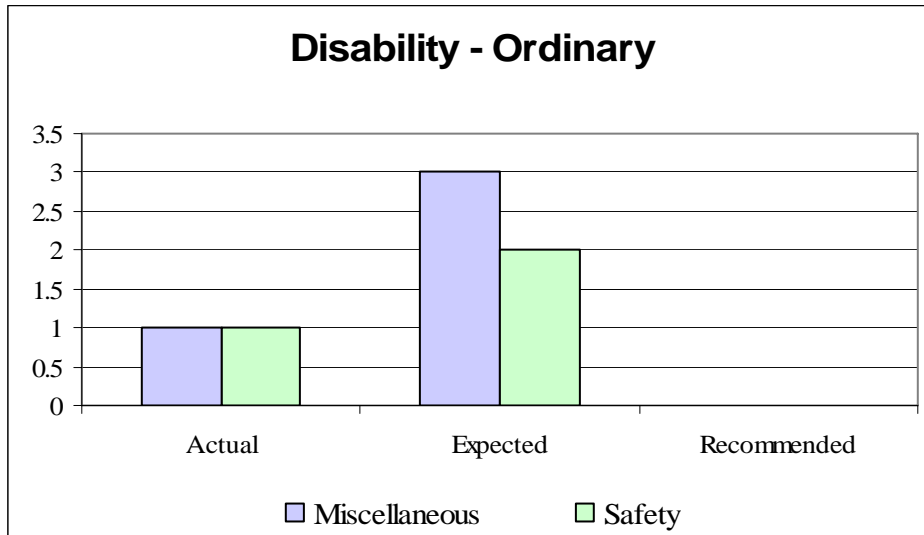
Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Summary of Overall Decrement Experience

<u>Type of Separation</u>	<u>Actual</u>	<u>Expected</u>	<u>Recommended</u>
Withdrawal			
Miscellaneous	188	141	158
Safety	33	27	30
Vested Deferred			
Miscellaneous	43	38	N/A
Safety	11	13	N/A
Disability-Duty			
Miscellaneous	8	9	N/A
Safety	14	13	14
Disability-Ordinary			
Miscellaneous	1	3	N/A
Safety	1	2	N/A
Service Retirement			
Miscellaneous	138	118	130
Safety, 3% @ 50	26	30	N/A
Safety, 3% @ 55	13	19	N/A
Safety, 2% @ 50	4	5	N/A
Active Mortality			
Miscellaneous-Men	3	3	3
Miscellaneous-Women	1	4	4
Safety-Men	0	0	0
Safety-Women	0	0	0
Mortality-Service Retirees			
Men	38	40	38
Women	53	69	59
Mortality-Disability Retirees			
Miscellaneous	8	7	7
Safety	2	4	3

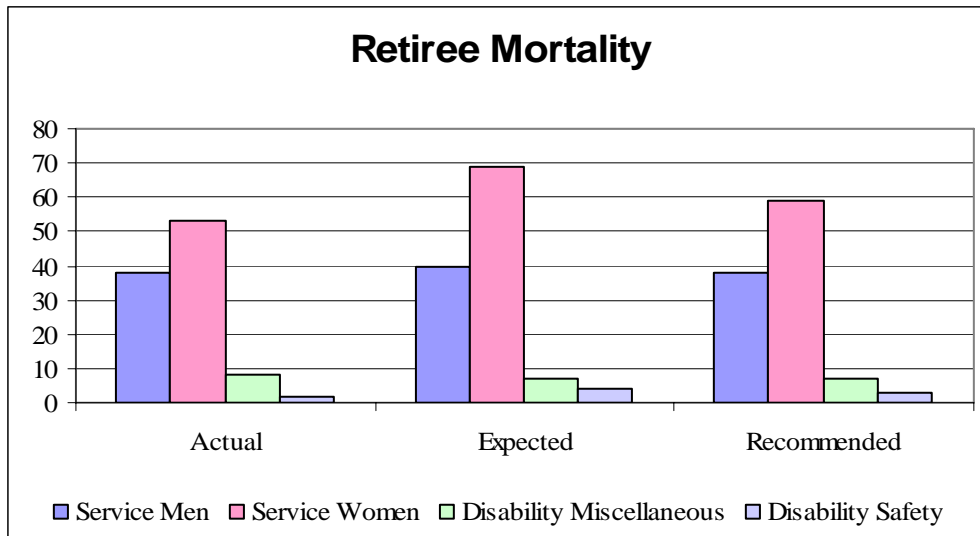
Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Overall Decrement Experience



Marin County Employees' Retirement Association
 7/1/2004 - 6/30/2006 Experience Investigation
Summary of Overall Decrement Experience



Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Summary of Overall Decrement Experience



ECONOMIC ASSUMPTION STUDY

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Summary of Economic Experience

	Year Ending				2-Year Average	Average from 7/1/02
	<u>6/03</u>	<u>6/04</u>	<u>6/05</u>	<u>6/06</u>		
<u>Investment Return Rate</u>						
Assumed	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%
Actuarial Return	1.56	3.45	4.28	unknown	unknown	3.09 ³
<u>General Inflation</u>						
Assumed	4.25	4.25	4.25	4.25	4.25	4.25
Actual ¹	1.60	1.40	1.10	3.90	2.50	1.99
<u>Real Return</u>						
Assumed	4.00	4.00	4.00	4.00	4.00	4.00
Actual	(0.04)	2.05	3.18	unknown	unknown	1.60 ³
<u>Salary Increase</u>						
Assumed						
Inflation	4.25	4.25	4.25	4.25	4.25	4.25
Merit	<u>1.60</u>	<u>1.60</u>	<u>1.60</u>	<u>1.60</u>	<u>1.60</u>	<u>1.60</u>
Total	5.85	5.85	5.85	5.85	5.85	5.85
Actual Average Increase ²	0.80	4.90	(1.95)	3.21	0.60	1.71

¹ Consumer Price Index for all urban consumers in San Francisco-Oakland-San Jose, CA.

² Average increase including new entrants: compare to 4.25% assumed inflation.

³ 3-year average.

Investment Return Rate: Based on the actuarial value of assets and composed of inflation plus real return on investments.

General Inflation: Actual inflation was computed in a manner consistent with the determination of annual cost-of-living allowances. Rates shown are based on the San Francisco-Oakland-San Jose CPI Index, All Urban, All Items, Base 1982 - 1984.

Consumer Price Index
Urban Wage Earners and Clerical Workers Before 1978
All Urban Consumers After 1977

10 Year Moving Averages

June 30, 1966	2.2%
June 30, 1976	5.6
June 30, 1986	7.5
June 30, 1996	3.3
June 30, 2006	3.0

50-Year Average 4.3%

The assumed rate of 4.25% is higher than actual inflation for the study period, the past decade and the past 50-year period. Note, however, that the trailing 30-year average is 4.6%. However, the trailing 10-year average is only 3.0% and is the impetus for our recommendation to reduce the inflation assumption to 4.0%. This reduction is also in line with predictions for continued low inflation that most investment consultants project over the next market cycle.

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Summary of Economic Experience

**1937 ACTS ---- Economic Assumption Survey
August 2006**

County	<u>Assumed Investment Return</u>	<u>Assumed Inflation Assumption</u>	<u>Assumed Real Rate Of Return</u>
Alameda	7.9	3.75	4.15
Contra Costa	7.9	3.75	4.15
Fresno	8.16	4	4.16
Imperial	7.75	4	3.75
Kern	8	3.5	4.5
Los Angeles	7.75	3.5	4.25
Marin	8.25	4.25	4
Mendocino	8	4.75	3.25
Merced	8	4.5	3.5
Orange	7.75	3.5	4.25
Sacramento	7.75	3.5	4.25
San Bernardino	8	3.75	4.25
San Diego	8.25	4	4.25
San Joaquin ¹	8.16	3.50	4.66
San Mateo	7.75	3.75	4
Santa Barbara	8.16	4.5	3.66
Sonoma	8	4.25	3.75
Stanislaus	8	4.5	3.5
Tulare	7.9	4	3.9
Ventura	8	3.75	4.25

¹Pending Retirement Board approval

Compiled by Gabriel, Roeder, Smith & Company

Salary Experience: The numbers below are the increases in average compensation by age during the study period. Although specific numbers vary, note that the pattern of decreasing compensation increases with age is confirmed.

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Summary of Economic Experience

Summary of Age-Based Salary Increase Rates

Group	Miscellaneous				Safety			
	Actual	Expected			Actual	Expected		
		Inflation	Merit	Total		Inflation	Merit	Total
20-25	3.91	4.25%	5.12%	9.37%	5.29%	4.25%	4.35%	8.60%
25-30	5.99	4.25	3.59	7.84	7.75	4.25	3.23	7.48
30-34	4.39	4.25	3.00	7.25	5.12	4.25	2.10	6.35
35-39	2.72	4.25	2.34	6.59	4.00	4.25	1.26	5.51
40-44	2.78	4.25	1.95	6.20	3.16	4.25	1.05	5.30
45-49	2.38	4.25	1.60	5.85	3.89	4.25	0.91	5.16
50-54	2.10	4.25	1.25	5.50	3.43	4.25	0.80	5.05
55-59	2.30	4.25	0.99	5.24	3.68	4.25	0.63	4.88
60+	1.47	4.25	0.75	5.00	1.34	--	--	--
Average	2.60%	4.25%	1.69%	5.94%	4.39%	4.25%	1.48%	5.73%
Inflation Adjusted	0.10%				1.89%			

COMMENT: After adjusting for inflation, merit increases were much lower than in the last study. This is partly due to the interaction between health premiums and valuation pay. We are recommending a slight reduction in pays for those with at least five years of service. We are recommending an increase for those with fewer than five years of experience to reflect your experience and the greater available promotional opportunities for relatively new employees.

We believe that greater employer contributions to both pension and health programs will continue to be an impediment to the employers being able to afford to grant the higher pay adjustments that occurred earlier this decade.

CONCLUSION

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Summary of Preliminary Recommendations Concerning Experience

<u>Type of Activity</u>	<u>Present</u>	<u>Proposed</u>	<u>Effect on Liabilities (Plus or Minus)</u>
Withdrawal			
Miscellaneous	Graded rates by age and service	Increase rates under 1 year service.	Slight Minus
Safety	Graded rates by age and service	Increase rates under 1 year service.	Slight Minus
Deferred Retirement			
Miscellaneous	Graded rates by age	No Change	None
Safety	Graded rates by age	No Change	None
Disability - Duty			
Miscellaneous	Graded rates by age	No Change	None
Safety	Graded rates by age	Increase rates by 10%	Slight Plus
Disability – Ordinary			
Miscellaneous	Graded rates by age	No Change	None
Safety	Graded rates by age	No Change	None
Service Retirement			
Miscellaneous	Graded rates by age	Increase rates under age 60	Plus
Safety	Graded rates by age	No Change	None
Pre-retirement Mortality			
Miscellaneous	1994 Uninsured Pensioner Mortality Table set back three years	RP-2000 Combined Healthy Mortality Table set back three years	Negligible
Safety	1994 Uninsured Pensioner Mortality Table set back three years	RP-2000 Combined Healthy Mortality Table set back three years	Negligible

Marin County Employees' Retirement Association
7/1/2004 - 6/30/2006 Experience Investigation
Summary of Preliminary Recommendations Concerning Experience
(continued)

Post-retirement Mortality – Service Retirees	1994 Group Annuity Basic Mortality Table (set back one year for males)	RP-2000 Combined Healthy Mortality Table (set back one year for Males & two years for Females)	Plus
Post-retirement Mortality – Miscellaneous Disabled Retirees	1994 Uninsured Pensioner Mortality Table (set forward three years)	RP-2000 Male Combined Healthy Mortality Table set forward three years	Negligible
Investment Return	8.25%	8.0%	Plus
General Inflation	4.25%	4.0%	Minus
Real Rate of Return	4.00%	No Change	None
Asset Valuation Method	Smoothed Market Value, subject to 20% Corridor of Market Value	No Change	None
Merit Salary Increases	Graded rates by age	Graded rates by service	Minus
Post-retirement COLA Increase	3.8% for Tier 1 & Special Districts; 2% for Tiers 2-3	No Change	None
Marriage Incidence			None
Male	80%	No Change	None
Female	60%	50%	Slight Minus
Reciprocal Deferred Retirement	50% of vested terminations	40%	Slight Minus
Qualified Beneficiary Ages	Male 3 years older than Female	No Change	None
Administrative Expenses	No Explicit Recognition	Recognize	Plus

KEY

“Slight” means the anticipated change would be less than 0.35%

“Significant” means the anticipated change would be greater than 1%.

If other than “slight” or “significant”, we would guesstimate that the impact would be between 0.35% and 1%.

APPENDIX A

Current Actuarial Assumptions

Actuarial Assumptions Used for the June 30, 2005 Valuation

The contribution requirements and benefit values of the Fund are calculated by applying actuarial assumptions to the benefit provisions and member information furnished, using the actuarial cost methods described on the previous page.

The principal areas of financial risk which require assumptions about future experiences are:

- (i) long-term rates of investment return to be generated by the assets of the Fund.
- (ii) patterns of pay increases to members.
- (iii) rates of mortality among members, retirants, and beneficiaries.
- (iv) rates of withdrawal of active members (without entitlement to a retirement benefit).
- (v) rates of disability among members.
- (vi) the age patterns of actual retirements.

In making a valuation, the monetary effect of each assumption is calculated for as long as a present covered person survives -- a period of time which can be as long as a century.

Actual experience of the System will not coincide exactly with assumed experience, regardless of the choice of the assumptions, the skill of the actuary and the precision of the many calculations made. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate. From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations).

(Continued on Next Page)

Marin County Employees' Retirement Association

Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

The Entry Age Normal Actuarial Cost Method was used in conjunction with the following actuarial assumptions.

The investment return rate used for the actuarial valuation calculations was 8.25% a year, net of administrative expenses, compounded annually. This assumption, used to equate the value of payments due at different points in time, is adopted by the Retirement Board. The rate is comprised of two elements:

Inflation	4.25%
Real Rate of Return	<u>4.00%</u>
Total	8.25%

The general inflation rate used for the actuarial valuation calculations was 4.25% per year, compounded annually. It represents the difference between the investment return rate and the assumed real rate of return.

Inflation actually experienced, as measured by the national Consumer Price Index for urban wage earners, has been as follows:

Consumer Price Index	
Urban Wage Earners and Clerical Workers Before 1978	
All Urban Consumers After 1977	
10 Year Moving Averages	
June 30, 1965	1.7%
June 30, 1975	5.4
June 30, 1985	7.2
June 30, 1995	3.5
June 30, 2005	2.5
50-Year Average	4.1%

Marin County Employees' Retirement Association

Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

Compensation increase rates used to project current pays to those, upon which a benefit will be based, are represented by the following table.

Annual Rate of Compensation Increase

Inflation	4.25%
plus	
Merit & Longevity	See Table Below for Sample Ages

<u>Age</u>	<u>Miscellaneous</u>	<u>Safety</u>
20	6.62%	5.13%
25	4.08%	3.34
30	3.37%	2.48
35	2.46%	1.40
40	2.09%	0.89
45	1.89%	0.97
50	1.46%	0.78
55	0.95%	0.70
60	0.90%	N/A
65	0.54%	N/A

Marin County Employees' Retirement Association

Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

Rates of separation from active membership are shown below (rates do not include separation on account of retirement). This assumption measures the probabilities of members remaining in employment.

% of Active Members
Separating Within Next Year
(less than 5 years)

<u>Years of Completed Service</u>	<u>Miscellaneous</u>	<u>Safety</u>
0	15%	10%
1	9	5
2	7	4
3	6	4
4	6	4

Marin County Employees' Retirement Association

Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

% of Active Members
Separating with Next Year

Retirement Ages	(at least 5 years)				Pre-Retirement	
	<u>Withdrawal</u>		<u>Vested Deferred</u>		<u>Death</u>	
	<u>Miscellaneous</u>	<u>Safety</u>	<u>Miscellaneous</u>	<u>Safety</u>	<u>Male</u>	<u>Female</u>
20	2.30%	1.13%	3.00%	2.06%	.05%	.03%
25	2.30%	1.13%	3.00%	2.24%	.06%	.03%
30	2.30%	0.75%	3.00%	3.53%	.08%	.03%
35	2.00%	0.56%	2.50%	3.41%	.09%	.04%
40	1.20%	0.56%	2.00%	1.14%	.10%	.06%
45	0.80%	0.56%	1.70%	1.70%	.13%	.09%
50	0.00%	0.00%	1.40%	0.27%	.20%	.12%
55	0.00%	0.00%	0.80%	0.00%	.35%	.19%
60	0.00%	0.00%	0.80%	0.00%	.60%	.31%
65	0.00%	0.00%	0.00%	0.00%	1.09%	.63%

	<u>Ordinary Disability</u>		<u>Duty Disability</u>	
	<u>Miscellaneous</u>	<u>Safety</u>	<u>Miscellaneous</u>	<u>Safety</u>
20	.000%	.020%	.050%	.110%
25	.005%	.030%	.080%	.150%
30	.010%	.050%	.130%	.360%
35	.015%	.070%	.160%	.550%
40	.025%	.160%	.210%	1.180%
45	.045%	.260%	.260%	1.140%
50	.090%	.360%	.310%	1.280%
55	.155%	.460%	.330%	3.900%
60	.255%	.000%	.370%	.000%
65	.395%	.000%	.390%	.000%

Marin County Employees' Retirement Association
Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

The post-retirement mortality table used was the 1994 Group Annuity Mortality Basic Tables, with one-year setback for Males. This assumption is used to measure the probabilities of members dying after retirement and the probabilities of each benefit payment being made after retirement. The male 1994 Uninsured Pensioner Mortality Table was set forward three years for disabled retirees. Related values are shown below.

Non-Disabled Retirees

Sample Ages	Future Life Expectancy (Years)		% Dying Within Next Year	
	Men	Women	Men	Women
45	35.6	39.0	.16%	.10%
50	30.9	34.2	.25	.15
55	26.4	29.5	.43	.25
60	22.0	25.0	.76	.48
65	18.0	20.7	1.39	.93
70	14.4	16.8	2.34	1.48
75	11.3	13.1	3.66	2.44

Disabled Retirees

Sample Ages	Future Life Expectancy (Years)	% Dying Within Next Year
45	31.9	0.23%
50	27.3	0.39
55	22.9	0.68
60	18.8	1.23
65	15.1	2.14
70	11.9	3.35
75	9.0	5.40

Marin County Employees' Retirement Association
Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year.

<u>Retirement Ages</u>	<u>Miscellaneous</u>	<u>Retirement Ages</u>	<u>Safety</u>	
			<u>3% at 55</u>	<u>3% at 50</u>
50	6%	50	7%	33%
51	2%	51	6%	25%
52	2%	52	12%	25%
53	2%	53	25%	33%
54	3%	54	25%	33%
55	4%	55	50%	50%
56	6%	56	50%	50%
57	8%	57	50%	50%
58	9%	58	50%	50%
59	12%	59	50%	50%
60	19%	60	100%	100%
61	16%			
62	24%			
63	20%			
64	23%			
65	44%			
66	30%			
67	31%			
68	29%			
69	34%			
70	100%			

Those members, whose accrued benefit is 100% of their final compensation, are assumed to retire immediately.

Marin County Employees' Retirement Association
Marin County and Special Districts
Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

Survivor Benefits. Marital status and spouses' census data were imputed with respect to active and deferred members.

Marital Status - 80% of male and 60% of female members are assumed to have a qualified beneficiary at retirement for an employer-paid survivor benefit.

Spouse Census - Spouses are assumed to be 3 years younger than members.

For current deferred vested members, we assume that benefits will commence at the later of age 55 (50 for Safety) or current attained age. We assume that 50% of the deferred vested members are reciprocal.

Post-Retirement COLA Assumed – 3.8% for Tier 1 and Special Districts; 2% for Tier 2 and Tier 3.

Accumulated Employee Contributions - Credited semiannual interest using the assumed inflation assumption.

APPENDIX B

Recommended Actuarial Assumptions

Changes to current assumptions are shown in red

Actuarial Assumptions Used for the June 30, 2005 Valuation

The contribution requirements and benefit values of the Fund are calculated by applying actuarial assumptions to the benefit provisions and member information furnished, using the actuarial cost methods described on the previous page.

The principal areas of financial risk which require assumptions about future experiences are:

- (i) long-term rates of investment return to be generated by the assets of the Fund.
- (ii) patterns of pay increases to members.
- (iii) rates of mortality among members, retirants, and beneficiaries.
- (iv) rates of withdrawal of active members (without entitlement to a retirement benefit).
- (v) rates of disability among members.
- (vi) the age patterns of actual retirements.

In making a valuation, the monetary effect of each assumption is calculated for as long as a present covered person survives -- a period of time which can be as long as a century.

Actual experience of the System will not coincide exactly with assumed experience, regardless of the choice of the assumptions, the skill of the actuary and the precision of the many calculations made. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate. From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations).

(Continued on Next Page)

Marin County Employees' Retirement Association

Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

The Entry Age Normal Actuarial Cost Method was used in conjunction with the following actuarial assumptions.

The investment return rate used for the actuarial valuation calculations was **8.00%** a year, net of administrative expenses, compounded annually. This assumption, used to equate the value of payments due at different points in time, is adopted by the Retirement Board. The rate is comprised of two elements:

Inflation	4.00%
Real Rate of Return	<u>4.00%</u>
Total	8.00%

The general inflation rate used for the actuarial valuation calculations was **4.00%** per year, compounded annually. It represents the difference between the investment return rate and the assumed real rate of return.

Inflation actually experienced, as measured by the Consumer Price Index for urban wage earners in the Bay area, has been as follows:

Consumer Price Index
Urban Wage Earners and Clerical Workers Before 1978
All Urban Consumers After 1977

10 Year Moving Averages

June 30, 1965	1.7%
June 30, 1975	5.4
June 30, 1985	7.2
June 30, 1995	3.5
June 30, 2005	2.5

50-Year Average	4.1%
------------------------	-------------

Marin County Employees' Retirement Association
Marin County and Special Districts
Actuarial Assumptions Used for the June 30, 2005 Valuation
(Continued)

Compensation increase rates used to project current pays to those, upon which a benefit will be based, are represented by the following table.

Annual Rate of Compensation Increase

Inflation 4.00%

PLUS

<u>Years of Service at Valuation Date</u>	<u>Miscellaneous</u>	<u>Safety</u>
0	3.00%	8.00%
1	2.25	3.00
2	1.50	1.50
3	0.75	1.00
4 or more	0.50	0.75

No merit increases are assumed upon attainment of age 60.

Marin County Employees' Retirement Association

Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

Rates of separation from active membership are shown below (rates do not include separation on account of retirement). This assumption measures the probabilities of members remaining in employment.

% of Active Members
Separating Within Next Year
(less than 5 years)

<u>Years of Completed Service</u>	<u>Miscellaneous</u>	<u>Safety</u>
0	21%	14%
1	9	5
2	7	4
3	6	4
4	6	4

Marin County Employees' Retirement Association

Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

% of Active Members
Separating with Next Year

Retirement Ages	(at least 5 years)				Pre-Retirement	
	<u>Withdrawal</u>		<u>Vested Deferred</u>		<u>Death</u>	
	<u>Miscellaneous</u>	<u>Safety</u>	<u>Miscellaneous</u>	<u>Safety</u>	<u>Male</u>	<u>Female</u>
20	2.30%	1.13%	3.00%	2.06%	.03%	.02%
25	2.30%	1.13%	3.00%	2.24%	.04%	.02%
30	2.30%	0.75%	3.00%	3.53%	.04%	.02%
35	2.00%	0.56%	2.50%	3.41%	.06%	.04%
40	1.20%	0.56%	2.00%	1.14%	.09%	.06%
45	0.80%	0.56%	1.70%	1.70%	.12%	.09%
50	0.00%	0.00%	1.40%	0.27%	.17%	.13%
55	0.00%	0.00%	0.80%	0.00%	.27%	.20%
60	0.00%	0.00%	0.80%	0.00%	.47%	.35%
65	0.00%	0.00%	0.00%	0.00%	.88%	.67%

	<u>Ordinary Disability</u>		<u>Duty Disability</u>	
	<u>Miscellaneous</u>	<u>Safety</u>	<u>Miscellaneous</u>	<u>Safety</u>
20	.000%	.020%	.050%	.121%
25	.005%	.030%	.080%	.165%
30	.010%	.050%	.130%	.396%
35	.015%	.070%	.160%	.605%
40	.025%	.160%	.210%	1.298%
45	.045%	.260%	.260%	1.254%
50	.090%	.360%	.310%	1.408%
55	.155%	.460%	.330%	4.290%
60	.255%	.000%	.370%	.000%
65	.395%	.000%	.390%	.000%

Marin County Employees' Retirement Association
Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

The post-retirement mortality tables used were the **RP-2000 Combined Healthy Mortality Basic Tables, with one-year setback for Males and a two-year setback for Females**. This assumption is used to measure the probabilities of members dying after retirement and the probabilities of each benefit payment being made after retirement. **The Male RP-2000 Combined Healthy Mortality Table was set forward three years** for disabled retirees. Related values are shown below.

Non-Disabled Retirees

Sample Ages	Future Life Expectancy (Years)		% Dying Within Next Year	
	Men	Women	Men	Women
45	36.7	40.3	.14%	.09%
50	31.7	35.6	.20	.14
55	27.1	30.8	.32	.22
60	22.6	26.2	.59	.39
65	18.4	21.8	1.13	.76
70	14.6	17.8	1.98	1.34
75	11.2	14.1	3.39	2.30

Disabled Retirees

Sample Ages	Future Life Expectancy (Years)	% Dying Within Next Year
45	32.7	0.19%
50	28.0	0.29
55	23.5	0.53
60	19.2	1.00
65	15.3	1.79
70	11.8	3.04
75	8.8	5.21

Marin County Employees' Retirement Association
Marin County and Special Districts

Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year.

<u>Retirement Ages</u>	<u>Miscellaneous</u>	<u>Retirement Ages</u>	<u>Safety</u>	
			<u>3% at 55</u>	<u>3% at 50</u>
50	7.8%	50	7%	33%
51	2.6%	51	6%	25%
52	2.6%	52	12%	25%
53	2.6%	53	25%	33%
54	3.9%	54	25%	33%
55	5.2%	55	50%	50%
56	7.8%	56	50%	50%
57	10.4%	57	50%	50%
58	11.7%	58	50%	50%
59	15.6%	59	50%	50%
60	19%	60	100%	100%
61	16%			
62	24%			
63	20%			
64	23%			
65	44%			
66	30%			
67	31%			
68	29%			
69	34%			
70	100%			

Those members, whose accrued benefit is 100% of their final compensation, are assumed to retire immediately.

Marin County Employees' Retirement Association
Marin County and Special Districts
Actuarial Assumptions Used for the June 30, 2005 Valuation

(Continued)

Survivor Benefits. Marital status and census data of qualified beneficiaries were imputed with respect to active and deferred members.

Marital Status - 80% of male and 50% of female members are assumed to have a qualified beneficiary of opposite sex at retirement.

Qualified Beneficiary Census – Females are assumed to be 3 years younger than males..

For current deferred vested members, we assume that benefits will commence at the later of age 55 (50 for Safety) or current attained age. We assume that 40% of the deferred vested members are reciprocal.

Post-Retirement COLA Assumed – 3.8% for Tier 1 and Special Districts; 2% for Tier 2 and Tier 3.

Accumulated Employee Contributions - Credited semiannual interest using the assumed inflation assumption.