

**Fresno County Employees'
Retirement Association**

ACTUARIAL EXPERIENCE STUDY

**Analysis of Actuarial Experience
During the Period
July 1, 2003 through June 30, 2006**

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December 13, 2007

Board of Retirement
Fresno County Employees' Retirement Association
1111 "H" Street
Fresno, CA 93721

**Re: Review of Non-economic Actuarial Assumptions for the June 30, 2007
Actuarial Valuation**

Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience of the Fresno County Employees' Retirement Association. This study utilizes the census data for the period July 1, 2003 to June 30, 2006 and provides the proposed actuarial assumptions to be used in the June 30, 2007 valuation.

Please note that we have also reviewed the economic assumptions. The economic actuarial assumption recommendations for the June 30, 2007 valuation are provided in a separate report.

We look forward to reviewing this report with you and answering any questions you may have.

Sincerely,

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Senior Vice President and Actuary

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TABLE OF CONTENTS

	Page
I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS.....	1
II. BACKGROUND AND METHODOLOGY	4
III. ACTUARIAL ASSUMPTIONS	5
A. ECONOMIC ASSUMPTIONS	5
B. RETIREMENT RATES	5
C. MORTALITY RATES - HEALTHY	13
D. MORTALITY RATES - DISABLED.....	19
E. TERMINATION RATES	24
F. DISABILITY INCIDENCE RATES	35
G. MERIT AND PROMOTIONAL SALARY INCREASES.....	41
H. ANNUAL LEAVE CONVERSION	46
APPENDIX A CURRENT ACTUARIAL ASSUMPTIONS.....	47
APPENDIX B PROPOSED ACTUARIAL ASSUMPTIONS	53

I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

To project the cost and liabilities of the Pension Fund, assumptions are made about all future events that could affect the amount and timing of the benefits to be paid and the assets to be accumulated. Each year actual experience is compared against the projected experience, and to the extent there are differences, the future contribution requirement is adjusted.

If assumptions are changed, contribution requirements are adjusted to take into account a change in the projected experience in all future years. There is a great difference in both philosophy and cost impact between recognizing the actuarial deviations as they occur annually and changing the actuarial assumptions. Taking into account one year's gains or losses without making a change in the assumptions means that that year's experience was temporary and that, over the long run, experience will return to what was originally assumed. Changing assumptions reflects a basic change in thinking about the future, and it has a much greater effect on the current contribution requirements than recognizing gains or losses as they occur.

The use of realistic actuarial assumptions is important in maintaining adequate funding, while paying promised benefit amounts to participants already retired and to those near retirement. The actuarial assumptions used do not determine the "actual cost" of the plan. The actual cost is determined solely by the benefits and administrative expenses paid out, offset by investment income received. However, it is desirable to estimate as closely as possible what the actual cost will be so as to permit an orderly method for setting aside contributions today to provide benefits in the future, and to maintain equity among generations of participants and taxpayers.

This study was undertaken in order to review the demographic actuarial assumptions and to compare the actual experience with that expected under the current assumptions during the three year experience period from July 1, 2003 through June 30, 2006. The study was performed in accordance with Actuarial Standard of Practice (ASOP) No. 35, "Selection of Demographic and Other Non-economic Assumptions for Measuring Pension Obligations" and ASOP No. 27 "Selection of Economic Assumptions for Measuring Pension Obligations." These Standards of Practice put forth guidelines for the selection of the various actuarial assumptions utilized in a pension plan actuarial valuation. Based on the study's results and expected near-term experience, we are recommending various changes in the current actuarial assumptions.

We are recommending changes in the assumptions for retirement from active employment, deferred vested retirement age, pre-retirement mortality, healthy life mortality, disabled life mortality, turnover, disability (ordinary and duty), salary increases, and annual leave conversion.

Our recommendations for the major actuarial assumption categories are as follows:

Retirement Rates - The probability of retirement at each age at which participants are eligible to retire.

Recommendation: For General Tier 1 Male and Female members, we recommend slightly increasing the current retirement rates to anticipate earlier retirements. For Safety members, we recommend decreasing the current retirement rates to anticipate later retirements.

Mortality Rates - The probability of dying at each age. Mortality rates are used to project life expectancies.

Recommendation: We recommend no change to the current RP-2000 Healthy Annuitant Mortality Tables with adjustment for white collar workers for General members who retire from service. The current RP-2000 Healthy Annuitant Mortality Tables with adjustment for blue collar workers for Safety members who retire from service have been adjusted by two years to reflect decreased mortality rates. The disabled member mortality rates for General and Safety members have also been reduced to reflect a decrease in actual mortality rates.

The recommended pre-retirement mortality assumptions for non-service connected deaths for General and Safety members are consistent with the tables used for post-service retirement mortality. Also, we recommend that the current additional 0.10% per year assumed rate of service connected deaths for Safety members be maintained.

Termination Rates - The probability of leaving employment at each age and receiving either a refund of member contributions or a deferred vested retirement benefit.

Recommendation: The current termination rates have been increased in most cases. In addition, a higher proportion of members is expected to elect a refund of member contributions instead of a deferred vested benefit under the recommended assumptions.

Disability Incidence Rates - The probability of becoming disabled at each age.

Recommendation: The rates have been increased significantly to reflect recent experience.

Individual Salary Increases - Increases in the salary of a member between the date of the valuation to the date of separation from active service

Recommendation: The merit and promotional rates have been increased at most ages to reflect recent years' experience.

Annual Leave Conversion – Additional service that is expected to be received when the member retires due to conversion of unused annual leave.

Recommendation: We recommend adjusting the current assumption to reflect a reduction in accumulated annual leave in most cases.

Section II provides some background on basic principles and the methodology used for the experience study and the review of the demographic actuarial assumptions. A detailed discussion of each assumption and reasons for the proposed changes is found in Section III.

II. BACKGROUND AND METHODOLOGY

In this report, we analyzed the “demographic” or “non-economic” assumptions only. Our analysis of the “economic” assumptions for the June 30, 2007 valuation is provided in a separate report. Demographic assumptions include the probabilities of certain events occurring in the population of members, referred to as “decrements,” e.g., termination from service, disability retirement, service retirement, and death after retirement. We also reviewed the individual salary increases net of inflation (i.e., the merit and promotional assumptions) in this report.

Demographic Assumptions

In order to determine the probability of an event occurring, we examine the “decrements” and “exposures” of that event. For example, taking termination from service, we compare the number of employees who actually terminate in a certain age and/or service category (i.e., the number of “decrements”) with those who could have terminated (i.e., the number of “exposures”). For example, if there were 500 active employees in the 20-24 age group at the beginning of the year and 50 of them left during the year, we would say the probability of termination in that age group is $50 \div 500$ or 10%.

The reliability of the resulting probability is highly dependent on both the number of decrements and the number of exposures. For example, if there are only a few people in a high age category at the beginning of the year (number of exposures), we would not lend as much credence to the probability of termination developed for that age category, especially if it is out of line with the pattern shown for the other age groups. Similarly, if we are considering the death decrement, there may be a large number of exposures in, say, the age 20-24 category, but very few decrements (actual deaths); therefore, we would not be able to rely heavily on the probability developed for that category.

One reason we use several years of experience for such a study is to have more exposures and decrements, and therefore more statistical reliability. Another reason for using several years of data is to smooth out fluctuations that may occur from one year to the next. However, we also calculate the rates on a year-to-year basis to check for any trend that may be developing in the later years.

III. ACTUARIAL ASSUMPTIONS

A. ECONOMIC ASSUMPTIONS

The economic assumptions are currently reviewed on an annual basis. Our recommendations are provided in a separate report titled “Review of Economic Actuarial Assumptions for the June 30, 2007 Actuarial Valuation.”

B. RETIREMENT RATES

The age at which a member retires will affect both the amount of the benefits that will be paid to that member as well as the period over which funding must take place.

The retirement experience during the current three-year period indicated that there were slightly more actual retirements than expected from General Tier 1 Male and Female. However, there were fewer actual retirements than expected for the Safety Tier 1 member category.

For General Tiers 2 and 3, we are not recommending a change in the retirement assumptions because there is not sufficient data available to support a change. Similarly, we recommend the continuation of the current practice of applying the Safety Tier 1 retirement rates for Safety Tier 2.

In this study, we have adjusted the retirement probabilities to reflect the current three-year experience. However, we have continued to leave some margins in the General and Safety rates to make sure that the most recent three-year experience was not just a statistical fluctuation.

The following tables show the current, observed and proposed rates for General Tier 1 Male, General Tier 1 Female, and Safety.

Retirement Rates for General Tier 1 Male

Rate (%)

Age	Current	Observed	Proposed
45-49	0.00	83.33	0.00
50	5.00	4.23	4.00
51	3.00	1.34	4.00
52	3.00	2.53	4.00
53	3.00	4.24	4.00
54	4.50	6.33	4.00
55	6.00	5.33	7.00
56	10.00	11.95	11.00
57	15.00	19.33	16.00
58	20.00	21.24	20.00
59	25.00	25.00	25.00
60	30.00	30.61	30.00
61	30.00	31.43	30.00
62	50.00	26.09	34.00
63	30.00	41.18	34.00
64	30.00	36.36	34.00
65	40.00	61.54	43.00
66	40.00	57.14	48.00
67	40.00	0.00	53.00
68	60.00	33.33	60.00
69	80.00	66.67	70.00
70	100.00	0.00	100.00

Retirement Rates for General Tier 1 Female

Rate (%)

Age	Current	Observed	Proposed
45-49	0.00	83.33	0.00
50	4.00	4.03	4.00
51	4.00	2.94	4.00
52	4.00	1.95	4.00
53	4.00	4.38	4.00
54	4.00	7.22	4.00
55	10.00	11.59	10.00
56	10.00	12.14	12.00
57	10.00	12.64	12.00
58	15.00	14.81	15.00
59	17.50	15.63	16.00
60	20.00	22.58	22.00
61	20.00	28.81	25.00
62	40.00	37.84	40.00
63	20.00	27.27	25.00
64	20.00	20.69	22.00
65	45.00	27.59	30.00
66	30.00	35.00	35.00
67	30.00	50.00	40.00
68	30.00	20.00	45.00
69	30.00	40.00	50.00
70	100.00	17.39	100.00

Retirement Rates for Safety Tier 1

Rate (%)

Age	Current	Observed	Proposed
0-44	0.00	14.81	0.00
45	3.00	0.00	1.00
46	3.00	0.00	1.00
47	3.00	0.00	1.00
48	3.00	0.00	1.00
49	3.00	2.86	3.00
50	6.00	1.49	5.00
51	7.00	3.03	6.00
52	8.00	10.91	9.00
53	15.00	12.50	14.00
54	25.00	28.57	25.00
55	50.00	36.84	45.00
56	25.00	37.50	35.00
57	25.00	26.67	25.00
58	40.00	25.00	30.00
59	40.00	40.00	40.00
60	100.00	55.56	100.00

Chart 1 compares actual experience with the current and proposed rates of retirement for General Tier 1 Male members. Chart 2 has the same data for General Tier 1 Female members and Chart 3 has the same data for Safety Tier 1 members.

In prior valuations, deferred vested General and Safety members were assumed to retire at age 63 and 55, respectively. The average age at retirement over the prior three years was 57 for both General and Safety. We recommend changing the assumed retirement age for General deferred vested members to age 58. For Safety deferred vested members, we recommend leaving the assumed retirement age assumption at 55 because the benefit factors for each year of service for those members does not increase after age 55 and there was evidence based on the data from the prior three years that the actual retirement ages for deferred Safety members have come down during that 3 year period.

It was also assumed that 50% of future inactive General and Safety deferred vested participants would be covered under a reciprocal retirement system and receive 4.75% and 5.00% compensation increases for General and Safety members, respectively, from termination until their date of retirement. Based on the actual experience that 39% of General and 54% of Safety members went

on to be covered by a reciprocal retirement system during the last three years, we recommend changing to a 40% reciprocal assumption for General and a 55% reciprocal assumption for Safety. Based on our average 0.90% and 1.25% recommended merit and longevity salary increase assumptions, we propose a 4.90% and 5.25% salary increase assumption for General and Safety members, respectively, be utilized to anticipate salary increases from the date of termination from FCERA to the expected date of retirement.

In prior valuations, it was assumed that 90% of all active male members and 50% of all active female members would be married or have an eligible domestic partner when they retired. According to the experience of members who retired recently, about 80% of all male members and 56% of all female members were married or had a domestic partner at retirement. We recommend that 80% of all active male members and 55% of all active female members are assumed to be married or have a domestic partner when they retire.

Based on observed experience from members who retired during the last three years, we also recommend that we maintain the assumption that when active members retire, female spouses are assumed to be three years younger than their male spouses. Spouses will be assumed to be of the opposite sex to the member until we have more actual experience concerning domestic partners.

Chart 1 Retirement Rates - General Tier 1 Male Members

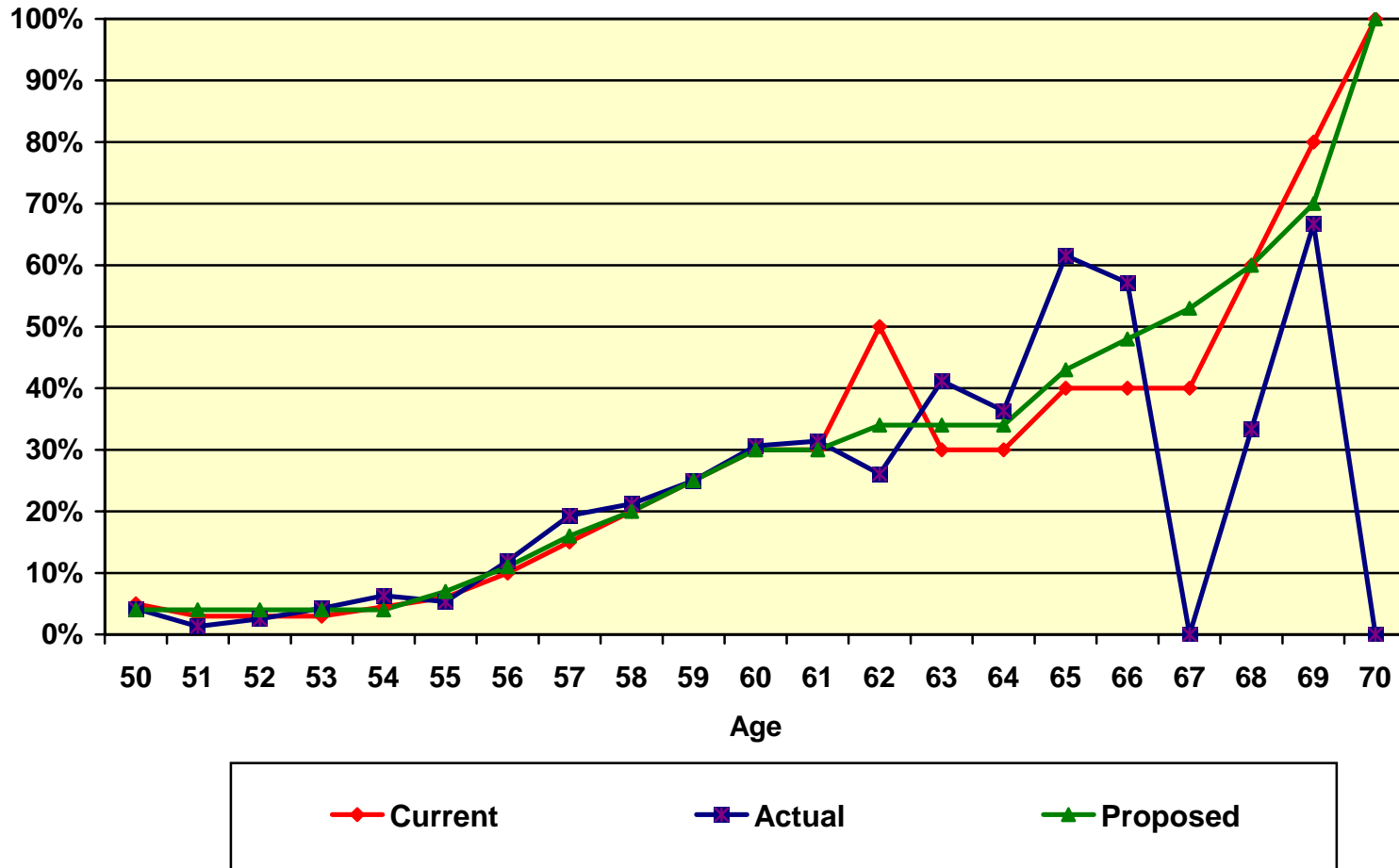


Chart 2

Retirement Rates - General Tier 1 Female Members

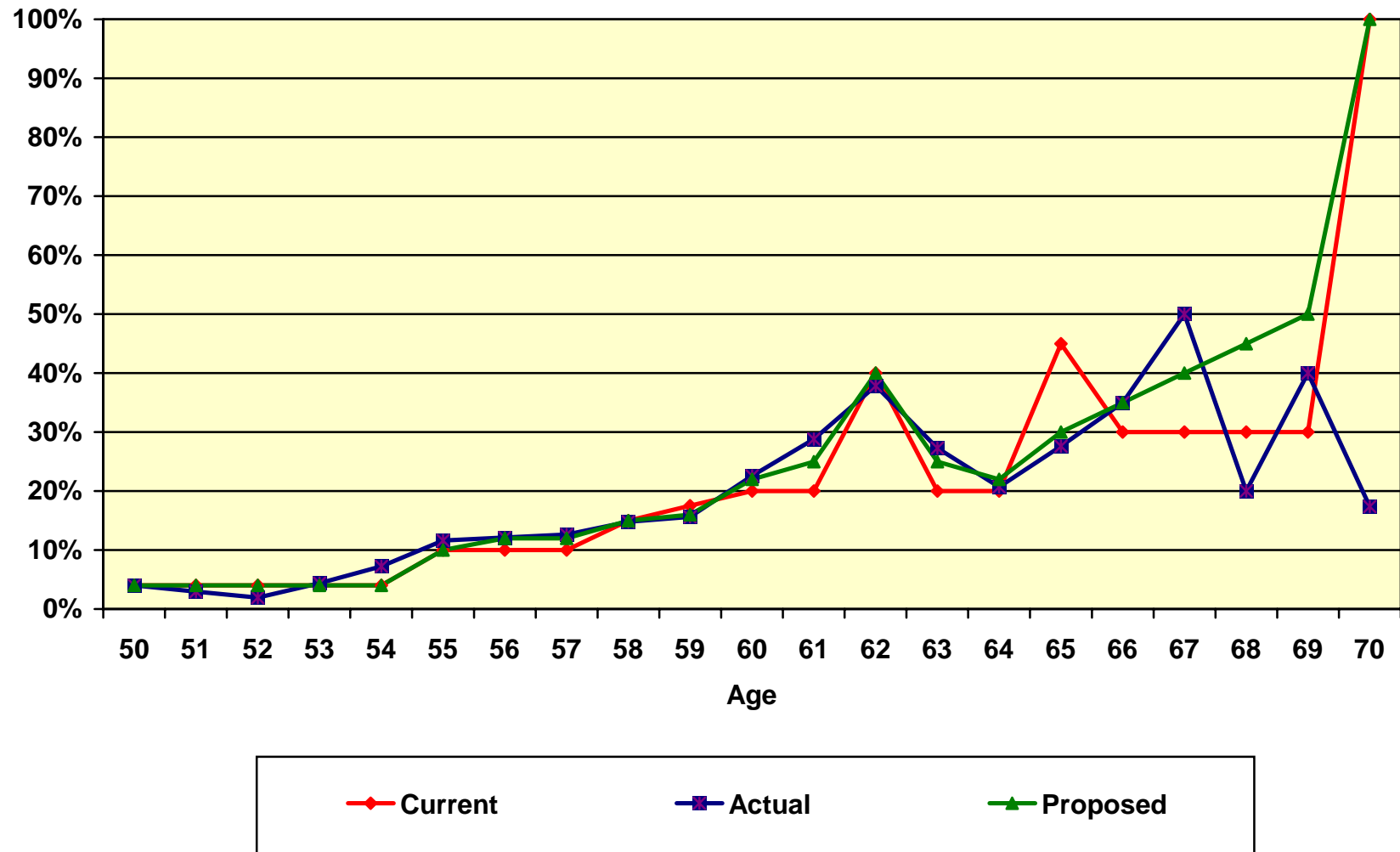
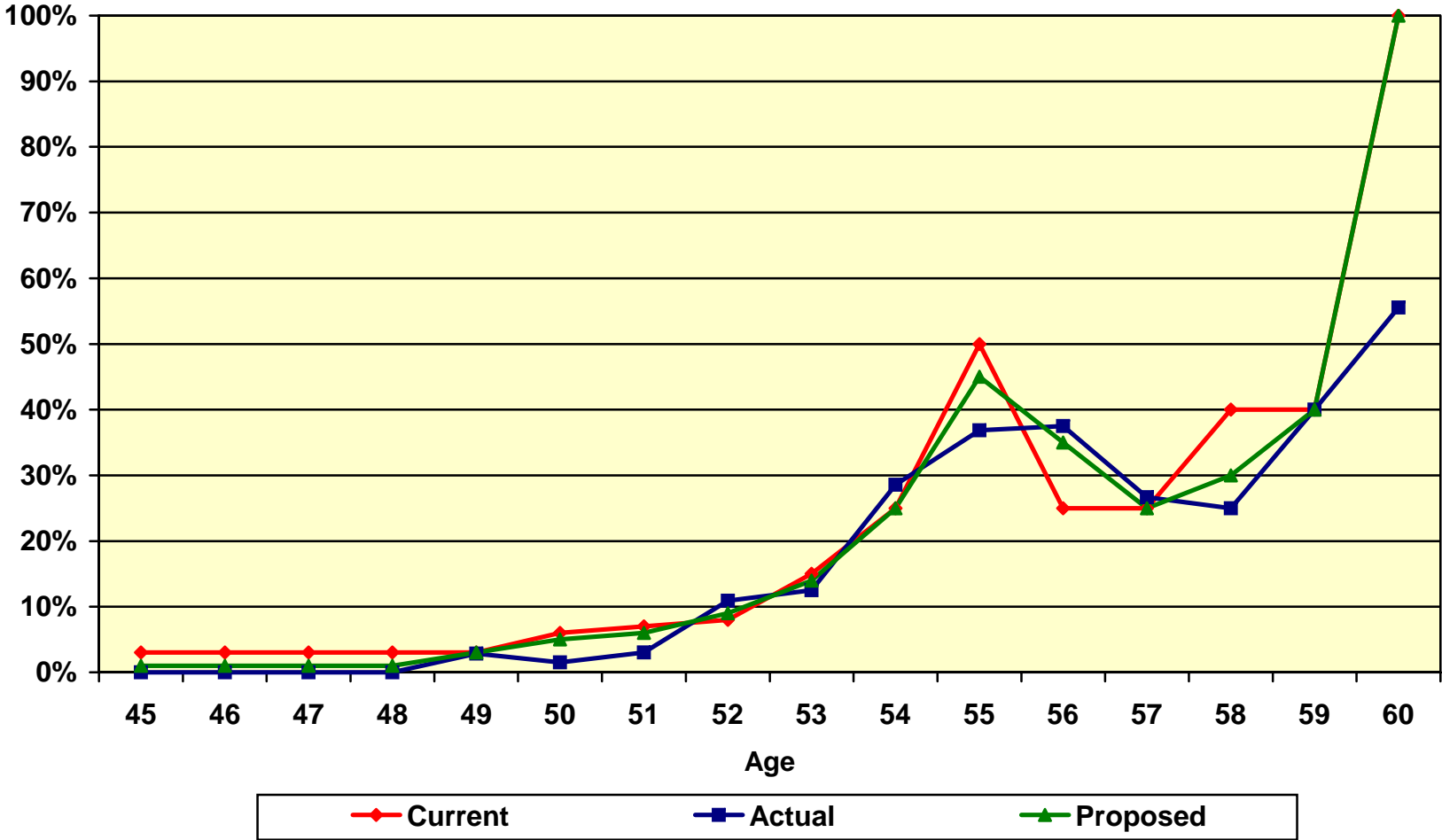


Chart 3
Retirement Rates - Safety Tier 1 Members



C. MORTALITY RATES - HEALTHY

The “healthy” mortality rates project what proportion of members will die before retirement as well as the life expectancy of a member who retires from service (i.e., who did not retire on a disability pension). The tables currently being used for post-service retirement mortality rates are the RP-2000 Healthy Annuitant Mortality Table with adjustment for white collar workers for General members and all beneficiaries and the RP-2000 Healthy Annuitant Mortality Table with adjustment for blue collar workers for Safety members.

Pre-Retirement Mortality

The number of deaths among active members is not large enough to provide statistics credible enough to develop a unique table. Therefore, it is now assumed that pre-retirement mortality assumptions for non-service connected deaths for General and Safety follow the same tables used for post-retirement mortality. Also, we recommend that the current additional 0.10% per year assumed rate of service connected deaths for Safety members be maintained.

Post-Retirement Mortality (Service Retirements)

Among service retired members, the actual deaths compared to the expected deaths under the current and proposed assumptions for the last three years are as follows:

Year Ending June 30	General - Healthy			Safety – Healthy		
	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths
2004	80	67	80	7	5	6
2005	86	77	86	8	8	6
2006	89	135	89	8	4	7
Total	255	279	255	23	17	19
Actual / Expected	109%		109%	74%		89%

We do not recommend a change in the “General-Healthy” mortality tables used for General members and all beneficiaries. However, the Board should be aware that our recommendation is heavily influenced by the observation that the actual number of deaths reported during 2006 was significantly higher than the number of deaths reported for the prior two years. We will continue to monitor this assumption to determine if mortality improvement is warranted in the next study.

The table that we recommend for the Safety members is the same RP-2000 Healthy Annuitant Mortality Table for Males and Females with adjustments for blue collar workers but set back two years to reflect the mortality experience during the current three-year period. Please note that the actual deaths are still lower than the expected under the recommended assumptions. Standard actuarial practice would prefer that the expected deaths are fewer than actual, i.e. an actual-to-expected ratio of over 100%. We will continue to monitor this assumption to determine if mortality improvement is warranted in the next study.

Chart 4 compares actual to expected deaths for General members under the current and proposed assumptions for all pensioners over the last three years. Experience shows that there were less deaths than predicted by the current table over two of the last three years.

Chart 5 has the same comparison for Safety members, where there were fewer deaths than predicted.

Chart 6 shows the life expectancies under the current and the proposed tables for General Members.

Chart 7 has the same information for Safety members.

Mortality Table for Member Contributions

We recommend the mortality table used for determining contributions for General members remain the RP-2000 Healthy Annuitant Mortality Table with adjustment for white collar workers weighted 1/3 male and 2/3 female. This is based on the proposed mortality table for General members and the actual gender distribution for the current General members.

For Safety members, we recommend the mortality table be changed from the RP-2000 Healthy Annuitant Mortality Table with adjustment for blue collar workers weighted 5/6 male and 1/6 female to the RP-2000 Healthy Annuitant Mortality Table with adjustment for blue collar workers set back two years weighted 5/6 male and 1/6 female. This is based on the proposed mortality table for Safety members and the actual gender distribution for the current Safety members.

Chart 4
Post - Retirement Deaths (General)
Non - Disabled Members

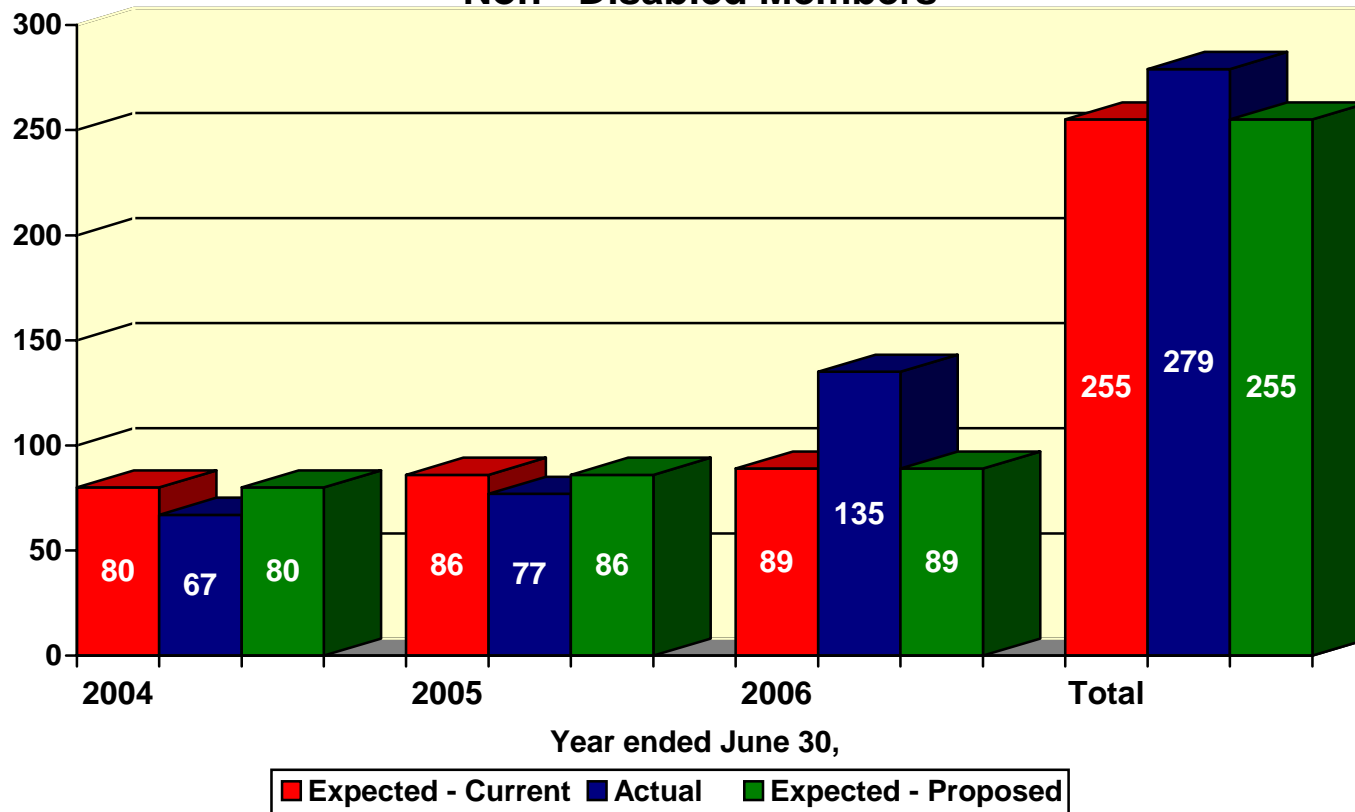


Chart 5
Post - Retirement Deaths (Safety)
Non - Disabled Members

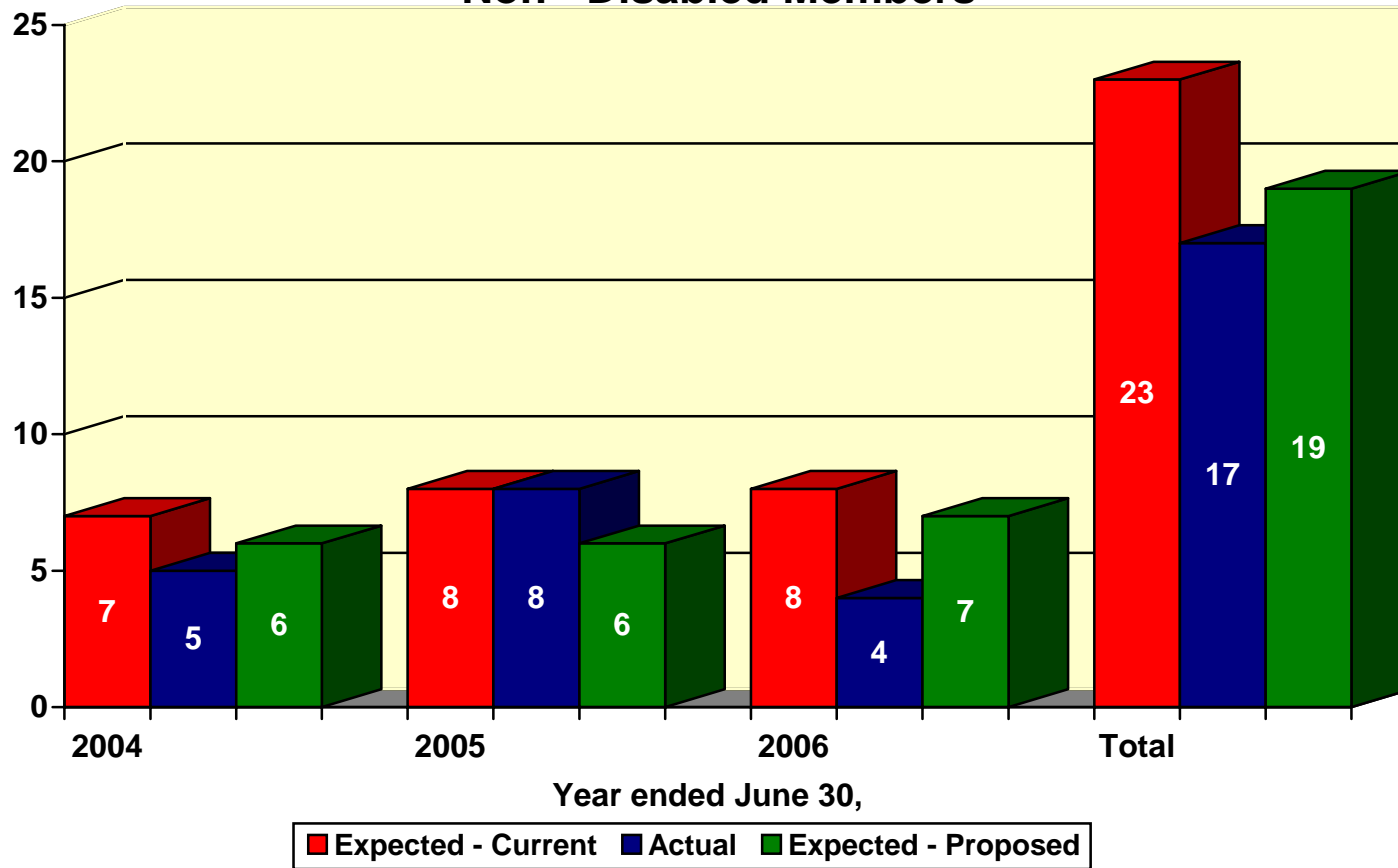


Chart 6 Life Expectancies (General Member and Beneficiary)

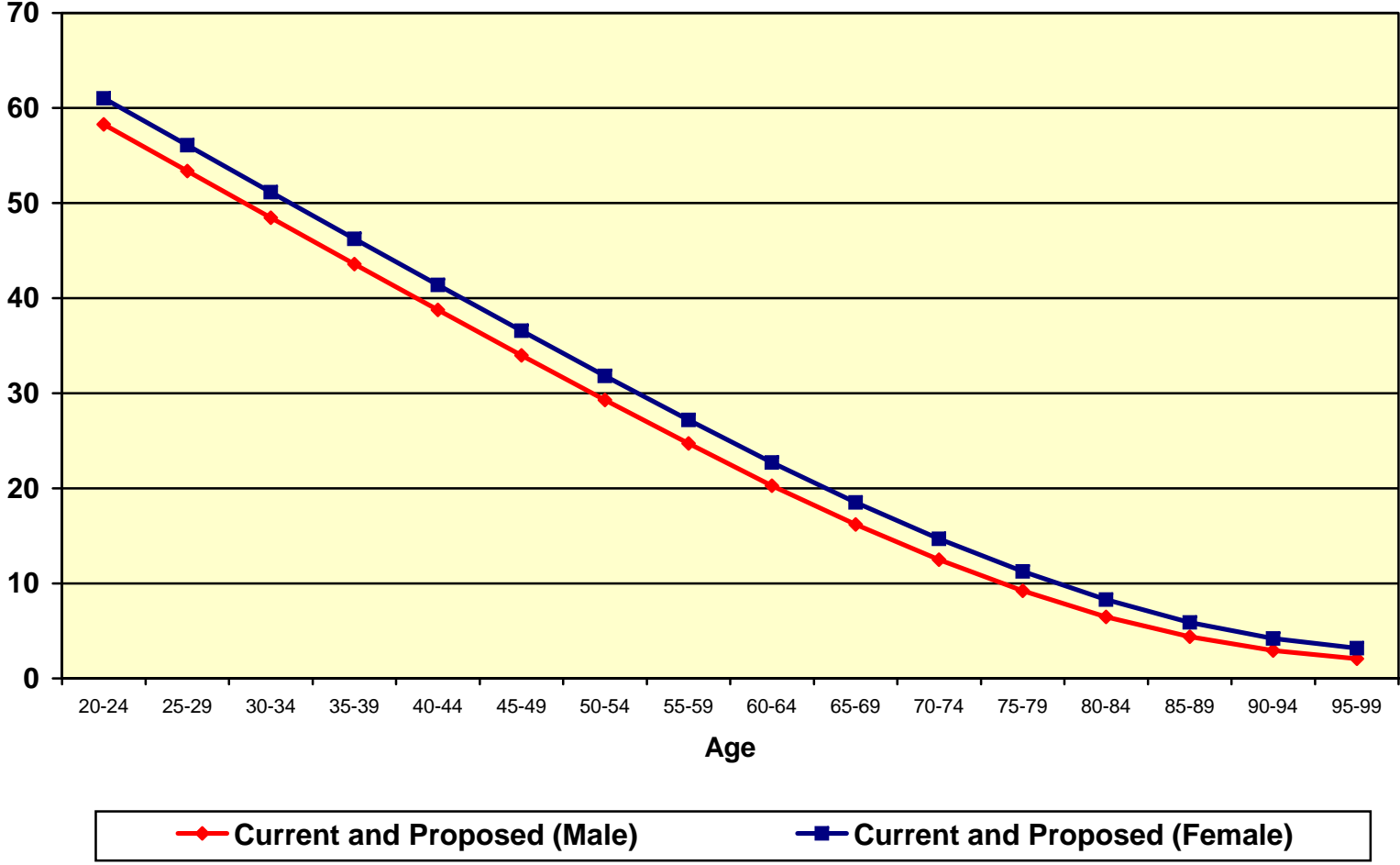
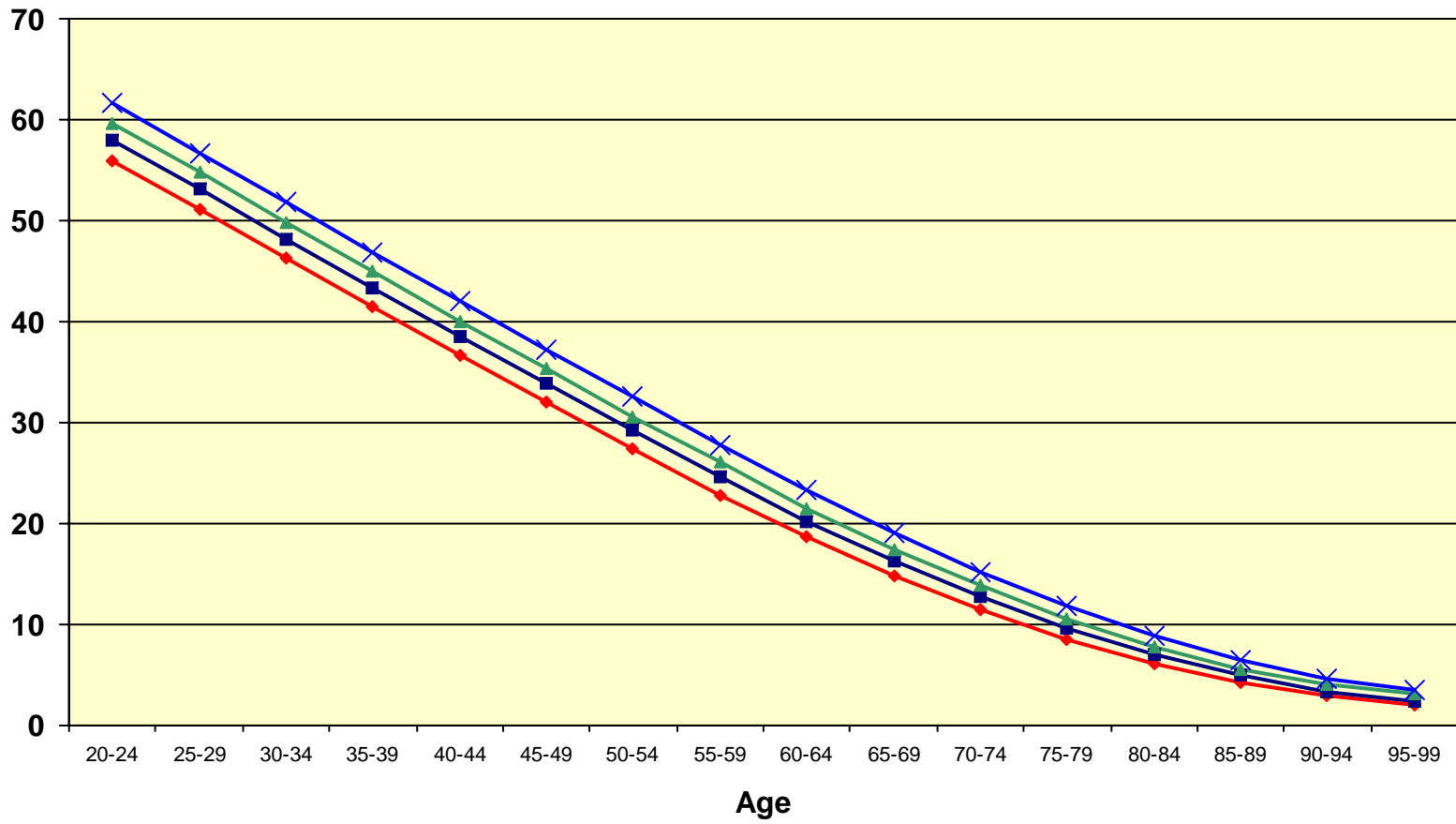


Chart 7

Life Expectancies (Safety)



◆ Current (Male)
 ■ Proposed (Male)
 ▲ Current (Female)
 × Proposed (Female)

D. MORTALITY RATES - DISABLED

Since death rates for disabled members can vary from those of healthy members, a different mortality assumption is often used. The table currently being used for both General and Safety members is the RP-2000 Disabled Annuitant Mortality Table.

The number of actual deaths compared to the number expected for the last three years has been as follows:

Ending 6/30	General – Disability			Safety – Disability		
	Expected Deaths	Actual Deaths	Proposed Expected Deaths	Expected Deaths	Actual Deaths	Proposed Expected Deaths
2004	8.11	5	7.68	2.31	1	2.12
2005	8.05	5	7.62	2.76	1	2.54
2006	8.95	11	8.47	3.11	1	2.88
Total	25.11	21	23.77	8.18	3	7.54
Actual / Expected	84%		88%	37%		40%

We recommend that the mortality table for disabled General members be changed from the RP-2000 Disabled Annuitant Mortality Table to the same table but with a one year set back. We will continue to monitor this assumption to determine if mortality improvement is warranted in the next study.

We recommend that the mortality table for disabled Safety members be changed from the RP-2000 Disabled Annuitant Mortality Table to the same table but with a two year set back. We will continue to monitor this assumption to determine if mortality improvement is warranted in the next study.

Chart 8 compares actual to expected deaths under both the current and proposed assumptions for disabled General members over the last three years.

Chart 9 compares actual to expected deaths under both the current and proposed assumptions for disabled Safety members over the last three years.

Chart 10 and 11 show the life expectancies under both the current and proposed tables for General and Safety, respectively.

Chart 8
Post - Retirement Deaths
Disabled General Members

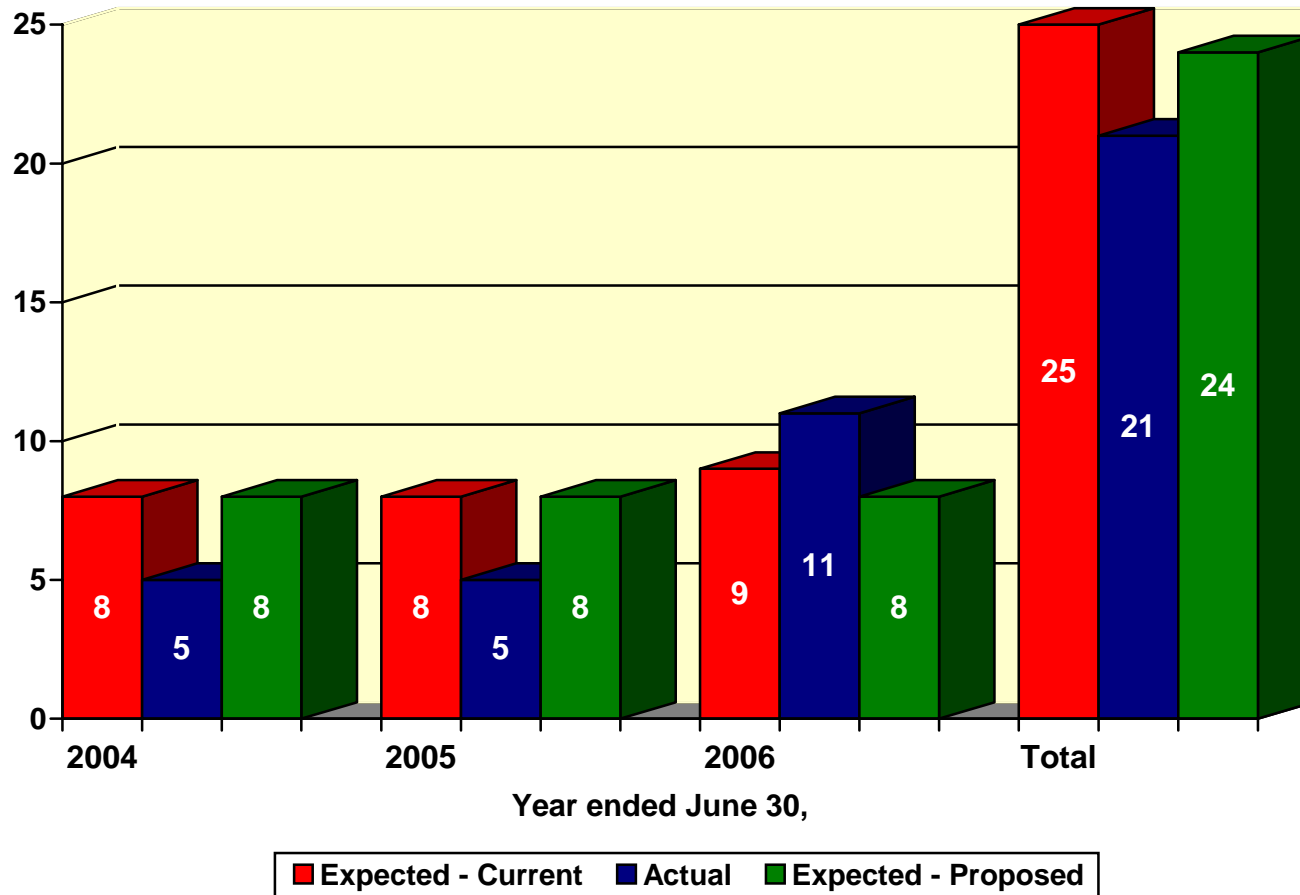


Chart 9
Post - Retirement Deaths
Disabled Safety Members

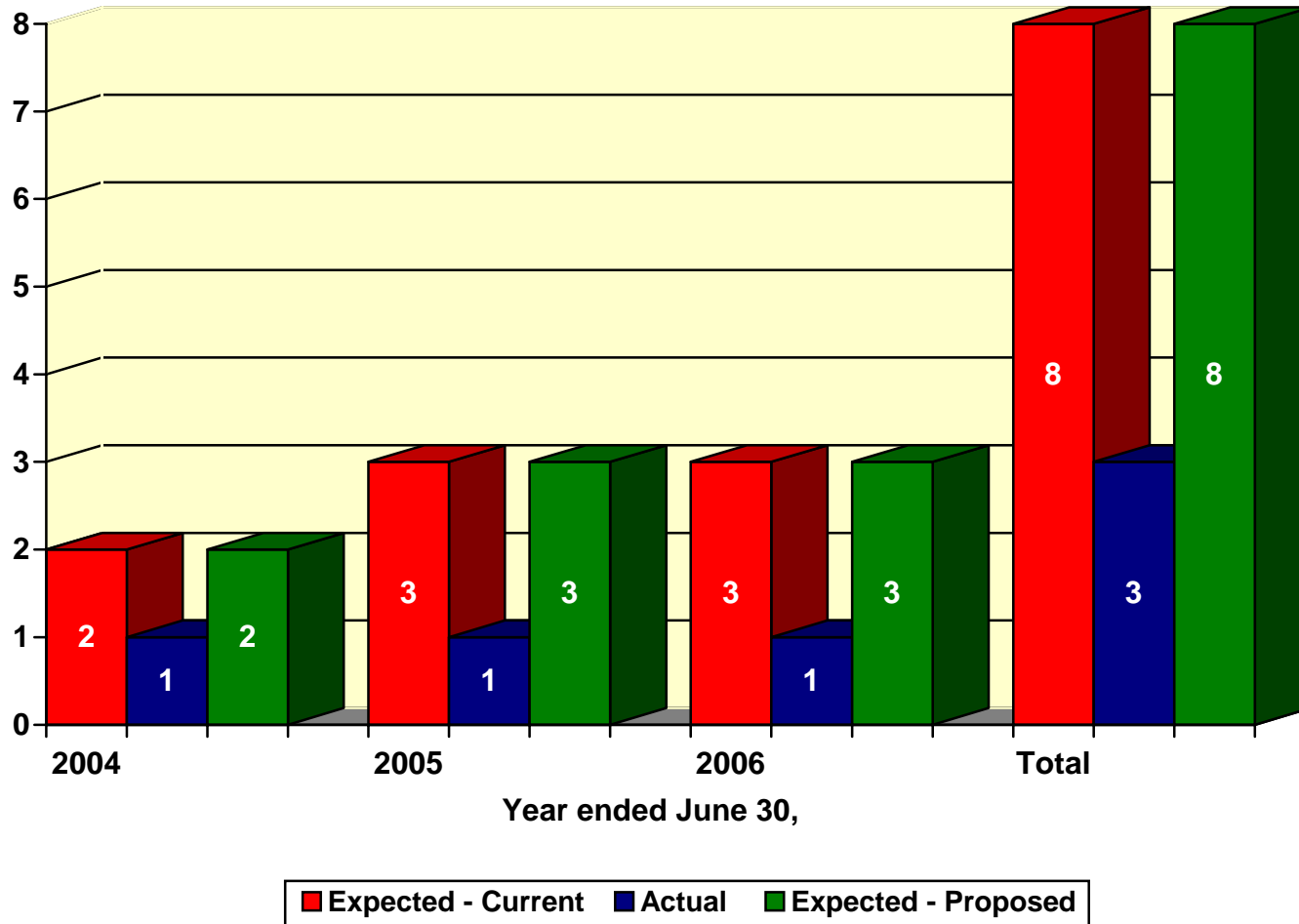


Chart 10 Life Expectancies (General Disabled)

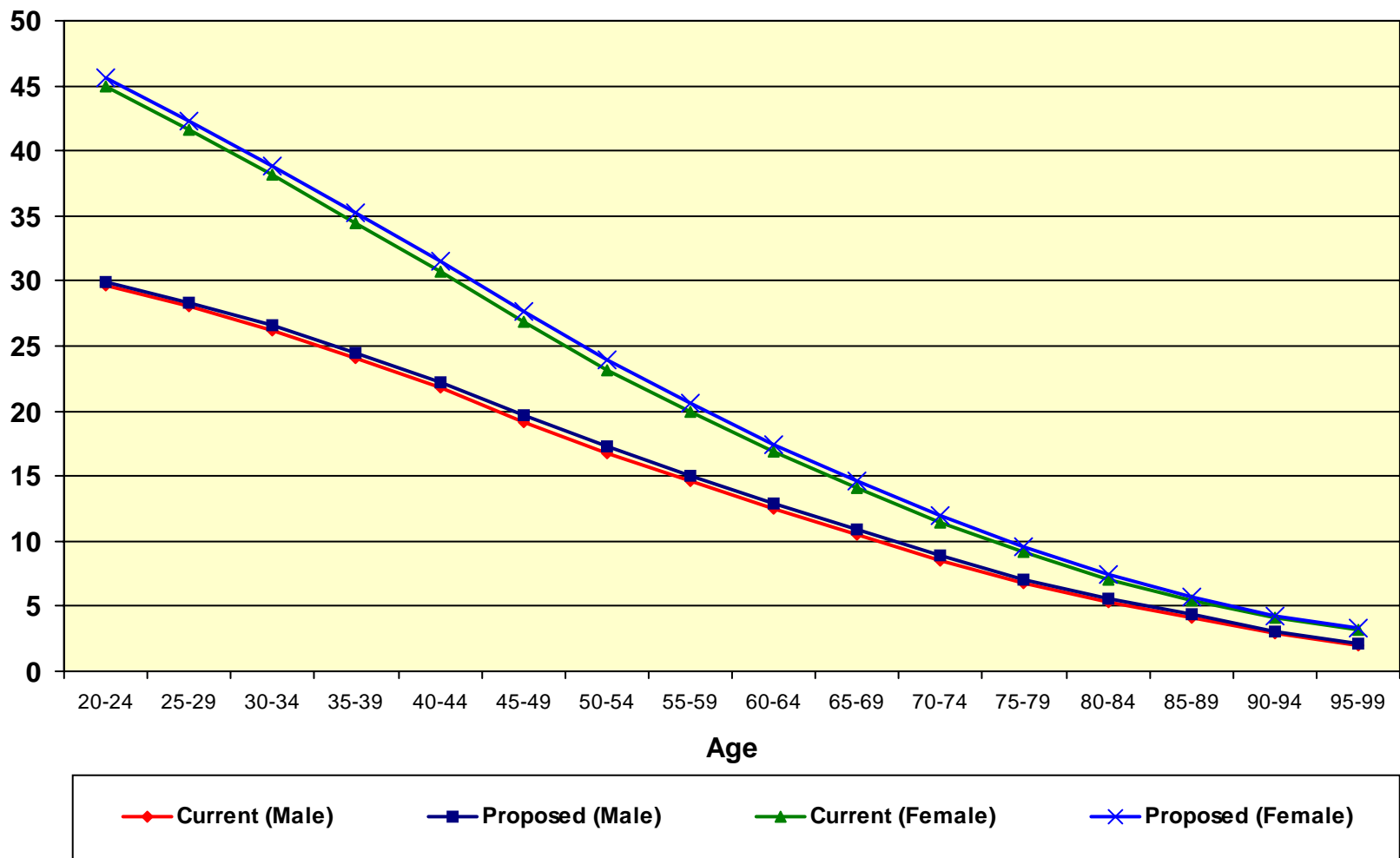
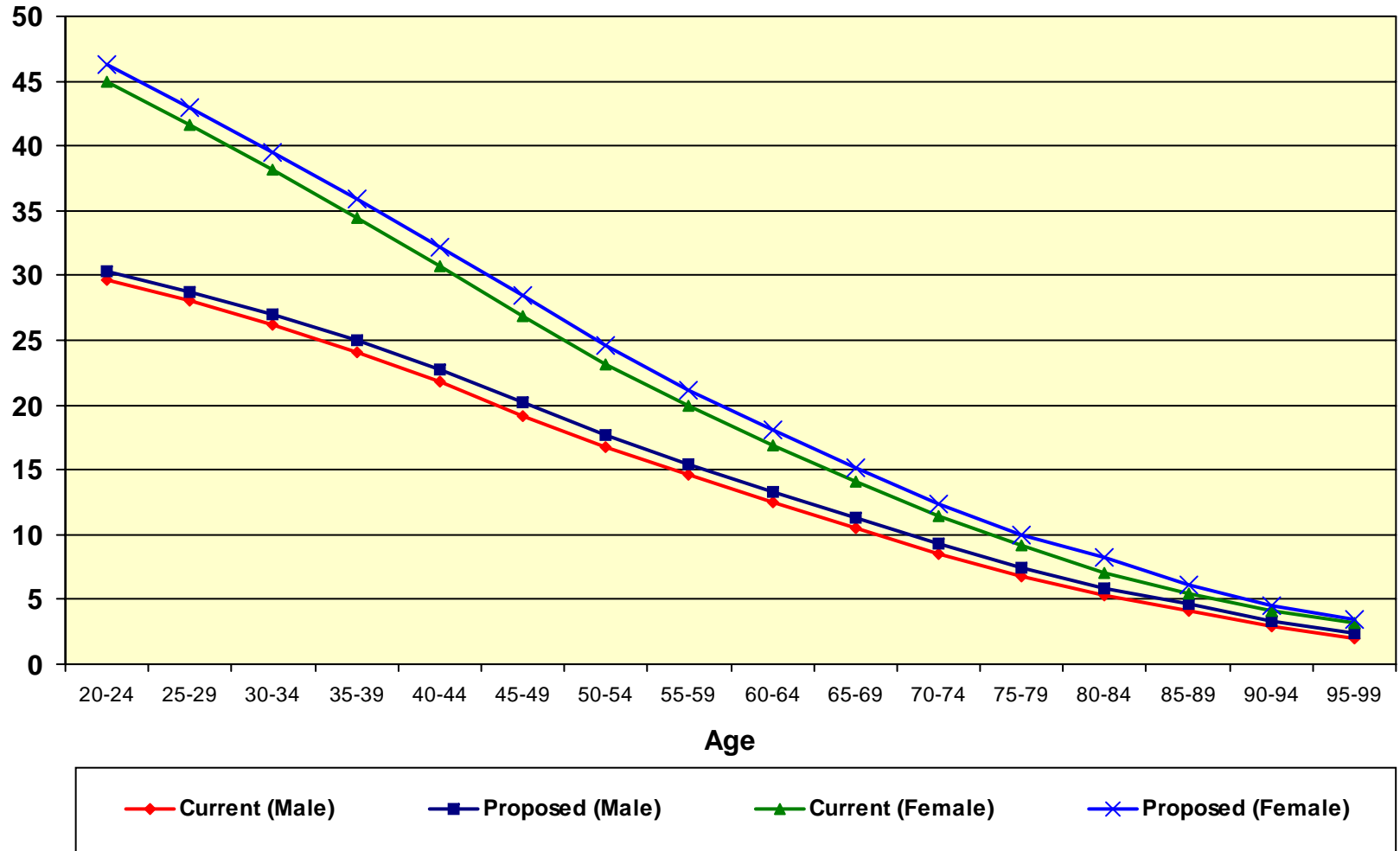


Chart 11 Life Expectancies (Safety Disabled)



E. TERMINATION RATES

Termination rates include all terminations for reasons other than death, disability, or retirement. Under the current assumptions there is an overall assumed incidence of total termination combined with a separate assumption for the percent of members who would elect a refund of contributions versus a deferred retirement benefit. The termination experience (total) over the last three years for General and Safety members separated between those members with under five years of service and those with five or more years of service is as follows:

Rates of Termination (General Male)
(Fewer than Five Years of Service)

Years of Service	Current Rate*	Observed Rate	Proposed Rate
0	5.67%	16.70%	10.00%
1	5.55	6.40	7.00
2	5.47	8.25	7.00
3	5.31	5.91	6.00
4	5.20	6.99	6.00

Rates of Termination (General Female)
(Fewer than Five Years of Service)

Years of Service	Current Rate*	Observed Rate	Proposed Rate
0	6.32%	15.74%	11.00%
1	6.21	12.46	9.00
2	6.07	8.57	7.00
3	5.95	6.04	6.00
4	5.80	7.86	6.00

Rates of Termination (Safety)
(Fewer than Five Years of Service)

Years of Service	Current Rate*	Observed Rate	Proposed Rate
0	4.80%	12.26%	9.00%
1	4.62	4.38	6.00
2	4.55	5.61	5.00
3	4.24	3.78	4.00
4	4.20	3.98	4.00

* Calculated by taking the average of the current age based termination rates by the exposure of members in the corresponding years of service category.

Rates of Termination (General Male)

(Five or More Years of Service)

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	7.10%	0.00%	5.00%
25 – 29	6.60	6.15	5.00
30 – 34	6.10	4.13	5.00
35 – 39	5.60	4.05	4.50
40 – 44	5.10	4.46	4.50
45 – 49	4.60	3.83	4.00
50 – 54	4.10	1.11	3.00
55 – 59	3.60	2.06	2.00
60 – 64	3.10	2.97	2.00
65 – 69	0.00	9.62	0.00

Rates of Termination (General Female)

(Five or More Years of Service)

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	7.92%	0.00%	7.00%
25 – 29	7.32	6.92	7.00
30 – 34	6.72	7.05	7.00
35 – 39	6.12	4.95	5.50
40 – 44	5.52	3.74	4.50
45 – 49	4.92	2.66	4.00
50 – 54	4.32	1.82	3.00
55 – 59	3.72	1.60	2.00
60 – 64	3.12	2.71	2.00
65 – 69	0.00	5.15	0.00

Rates of Termination (Safety)
(Five or More Years of Service)

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	6.08%	0.00%	4.00%
25 – 29	5.00	0.00	4.00
30 – 34	5.67	2.45	3.50
35 – 39	3.07	1.92	3.00
40 – 44	1.53	2.76	2.50
45 – 49	0.53	1.48	1.00
50 – 54	0.27	1.77	1.00
55 – 59	0.00	3.39	0.00
60 – 64	0.00	8.70	0.00

Chart 12 compares actual to expected total terminations of the past three years for both the current and proposed assumptions for General Male and Female members and Safety members.

Chart 13 shows the current along with the proposed termination rates for General Male members with less than five years of service.

Chart 14 shows the same information as Chart 13, but for General Female members.

Chart 15 shows the same information as Chart 13, but for Safety members.

Chart 16 shows the current along with the proposed termination rates for General Male members with five or more years of service.

Chart 17 shows the same information as Chart 16, but for General Female members.

Chart 18 shows the same information as Chart 16, but for Safety members

Based upon the recent experience, the terminations rates for General and Safety members have been increased in most cases. In addition, among the terminations, we recommend the following assumptions for the percent of members electing a refund and the percent of members electing to leave their contributions on deposit so that they would be eligible to receive a deferred retirement benefit.

Proportion of Total Termination Assumed to Receive Refunds and Deferred Vested Benefit (%)

Years of Service	Refunds			Deferred Vested Benefits		
	Current Rate	Observed Rate	Proposed Rate	Current Rate	Observed Rate	Proposed Rate
0-4	100.00%	86.85%	85.00%	0.00%	13.15%	15.00%
5-9	25.00	27.49	30.00	75.00	72.51	70.00
10-14	16.70	28.72	30.00	83.30	71.28	70.00
15-19	10.00	40.43	30.00	90.00	59.57	70.00
20 or more	0.00	52.38	30.00	100.00	47.62	70.00

We will continue to assume that all termination rates are zero at any age where members are assumed to retire. That means that, at these ages, the members will either retire (and commence receiving a benefit) or continue working.

Chart 12
Actual Number of Terminations Compared to Expected

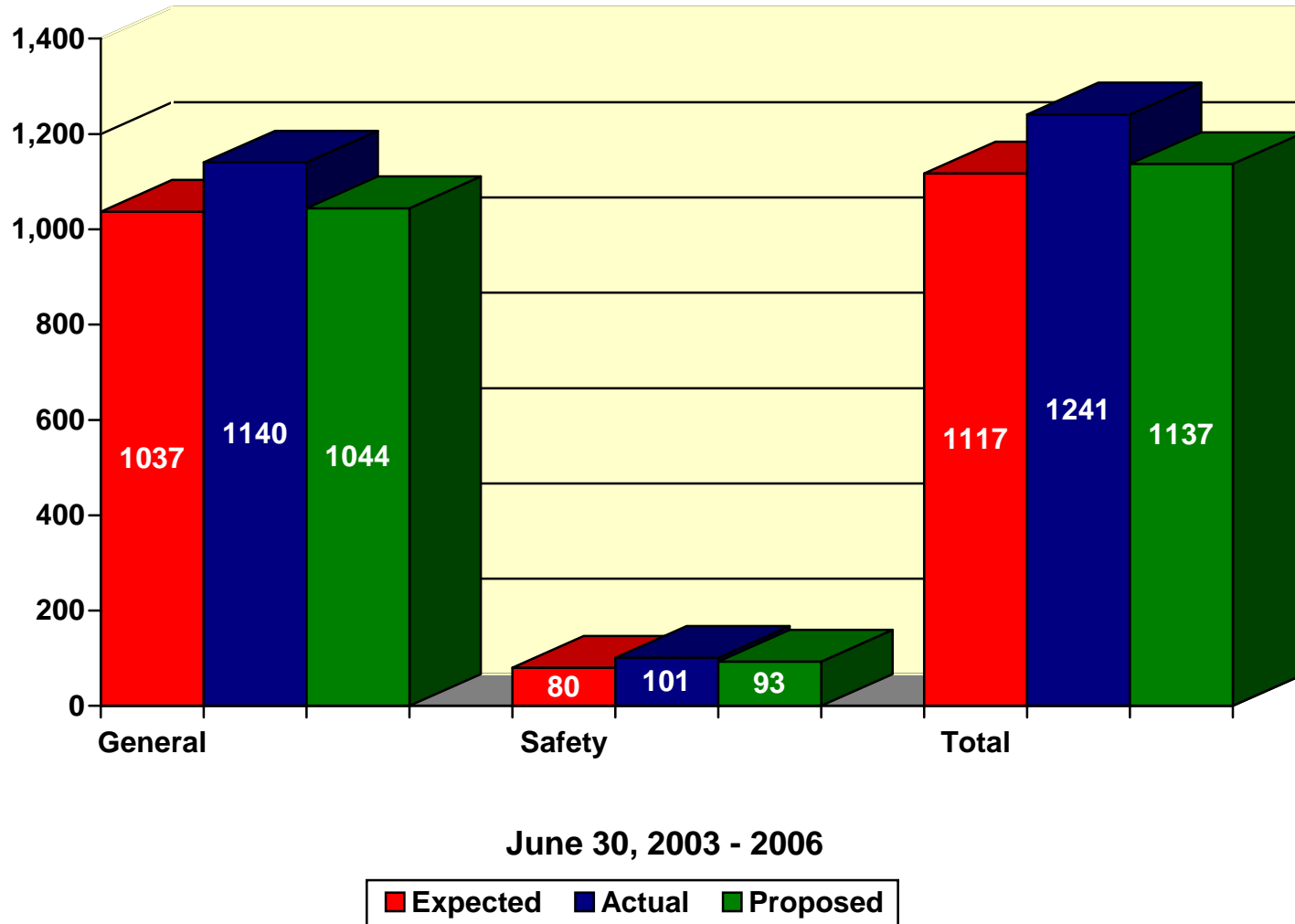


Chart 13
Termination Rates - General Male Members
(Less than Five Years of Service)

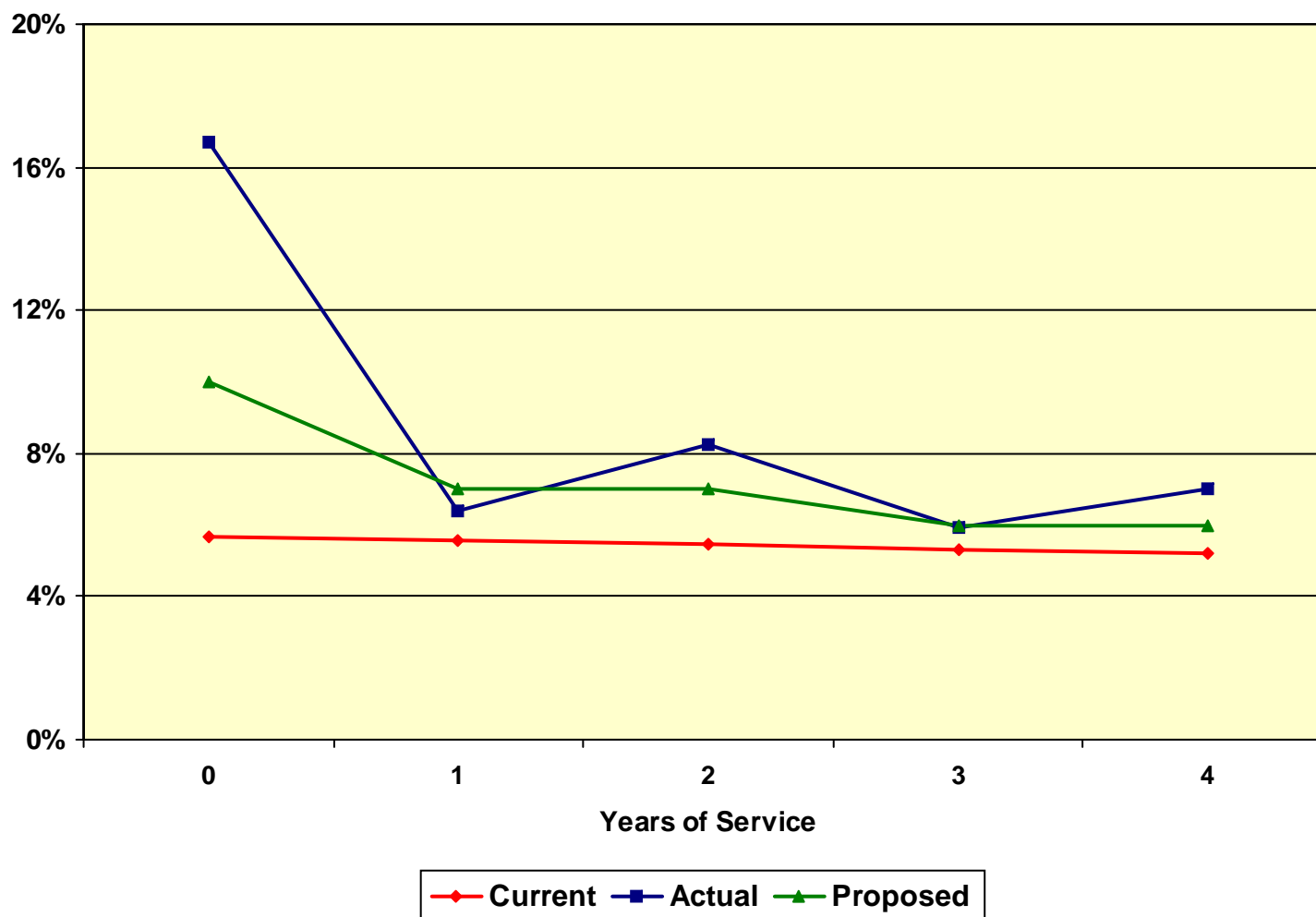


Chart 14
Termination Rates - General Female Members
(Less Than Five Years of Service)

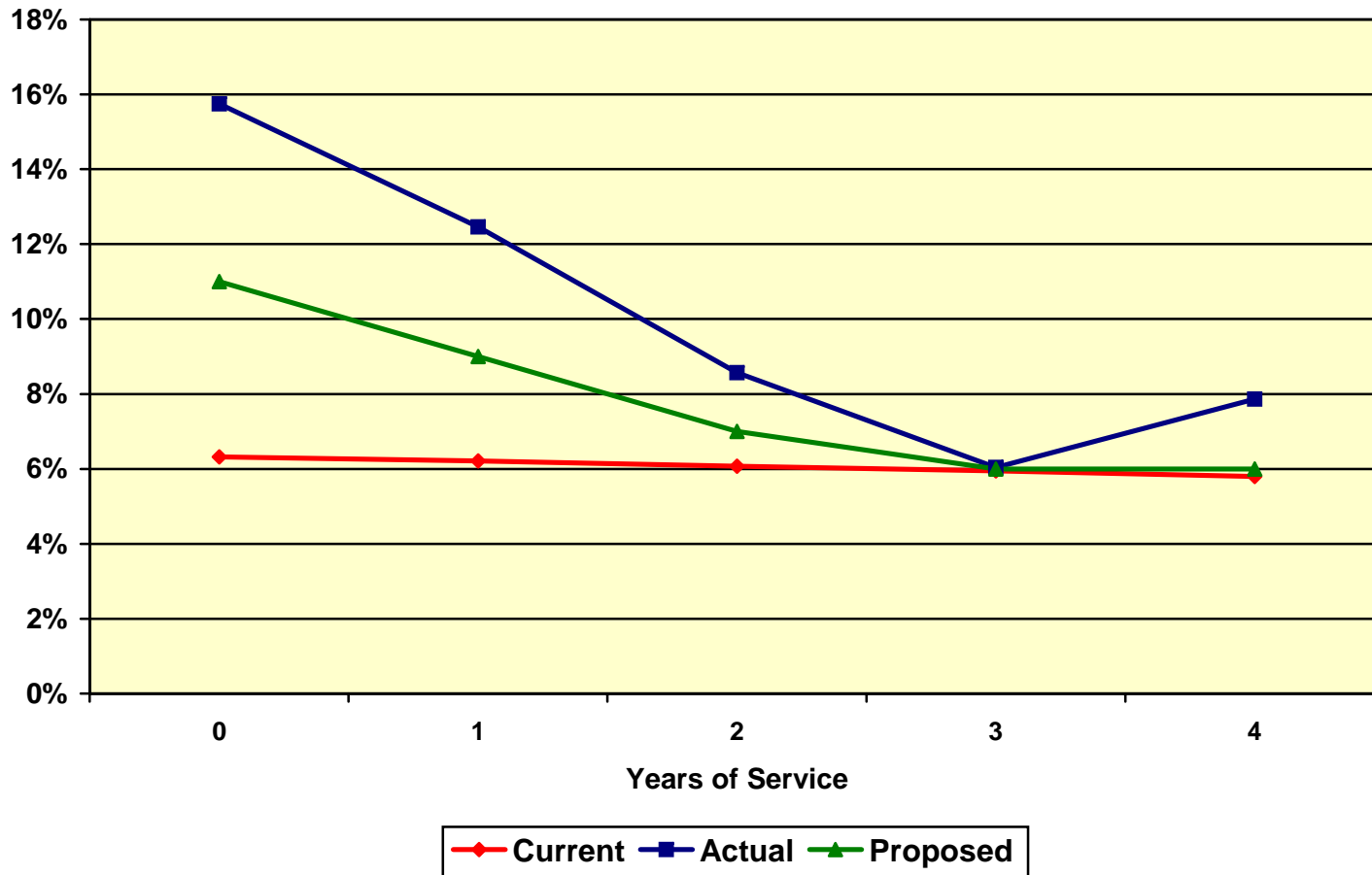


Chart 15
Termination Rates - Safety Members
(Less Than Five Years of Service)

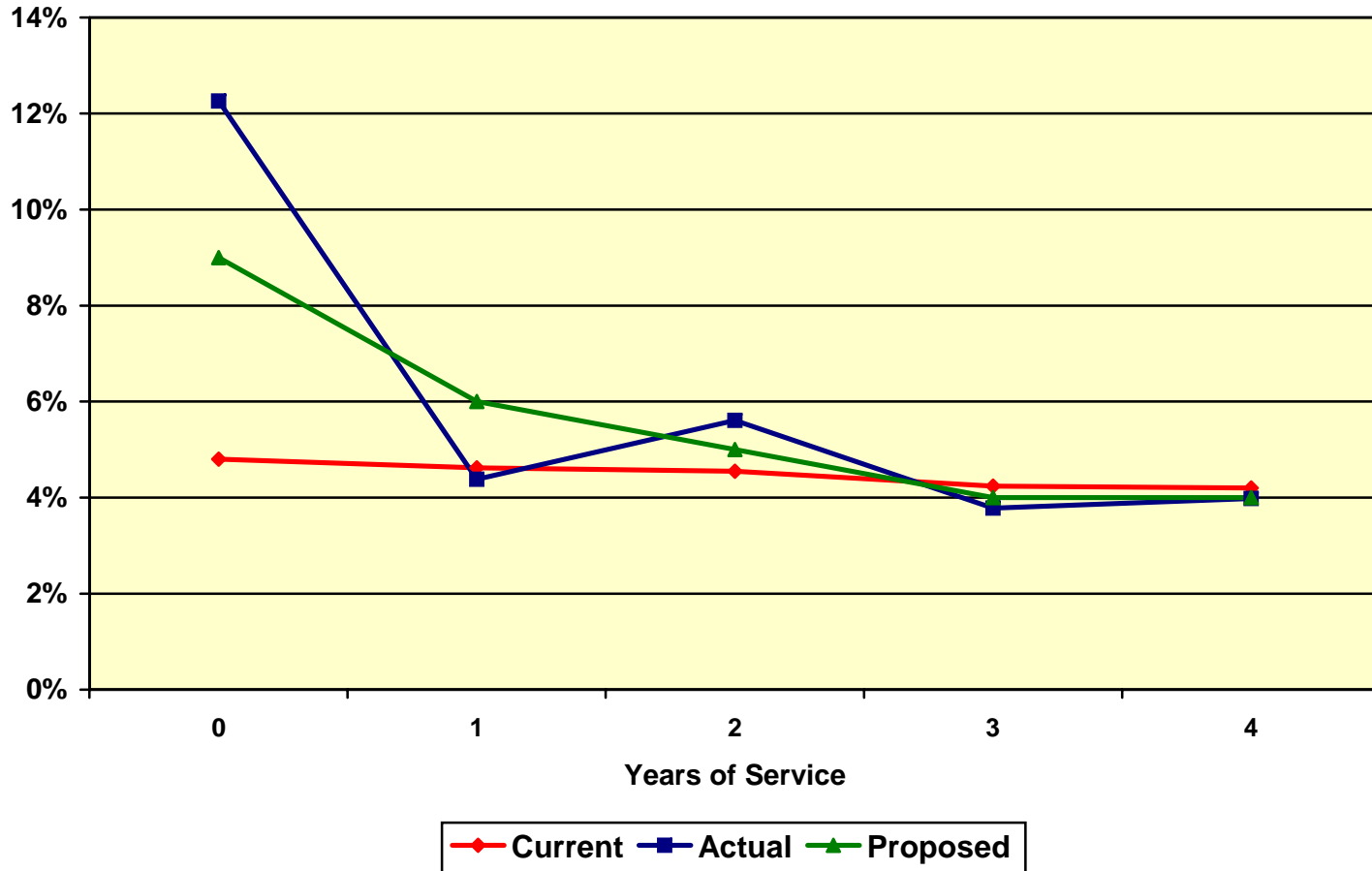


Chart 16
Termination Rates - General Male Members
(Five or More Years of Service)

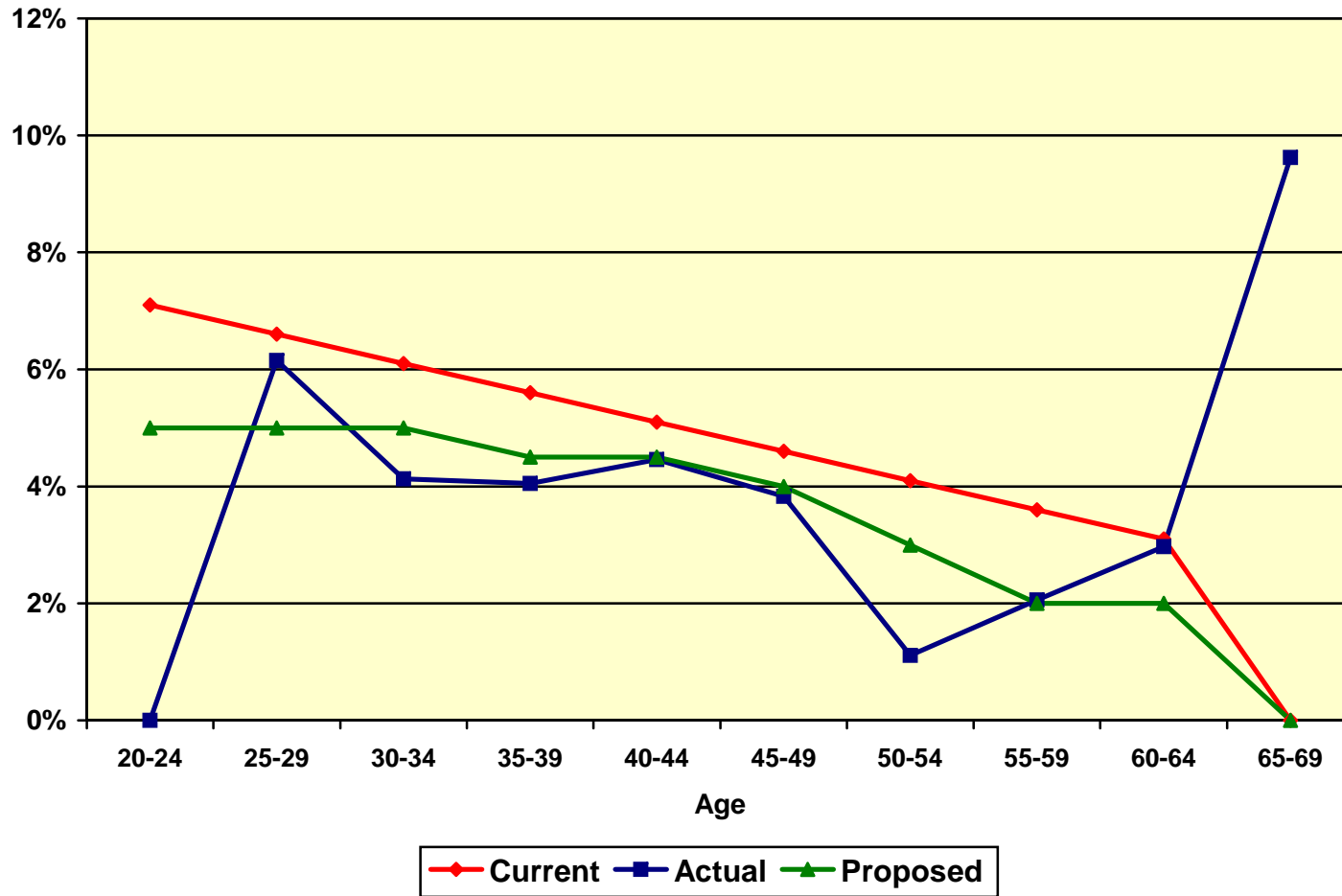


Chart 17
Termination Rates - General Female Members
(Five or More Years of Service)

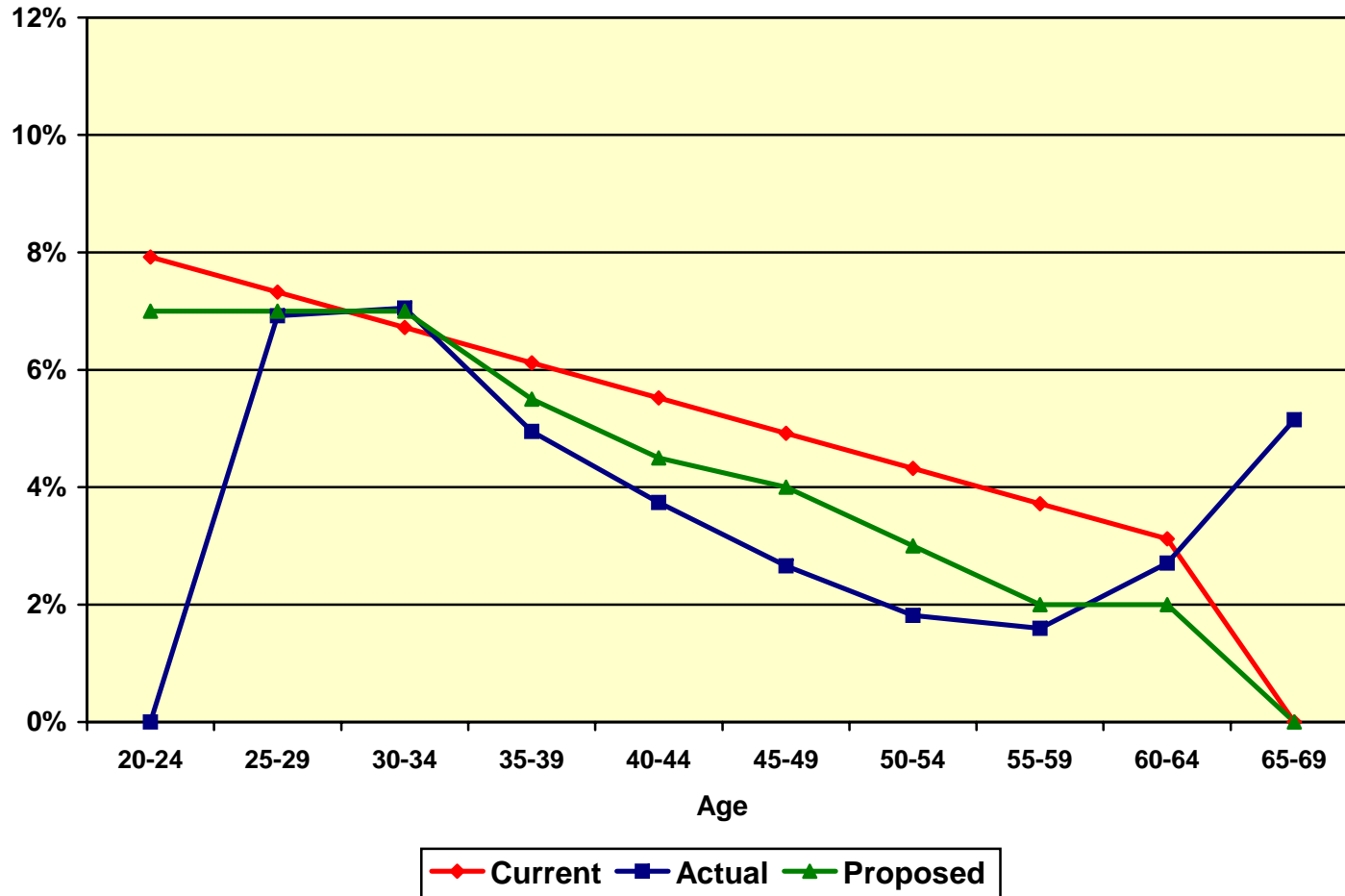
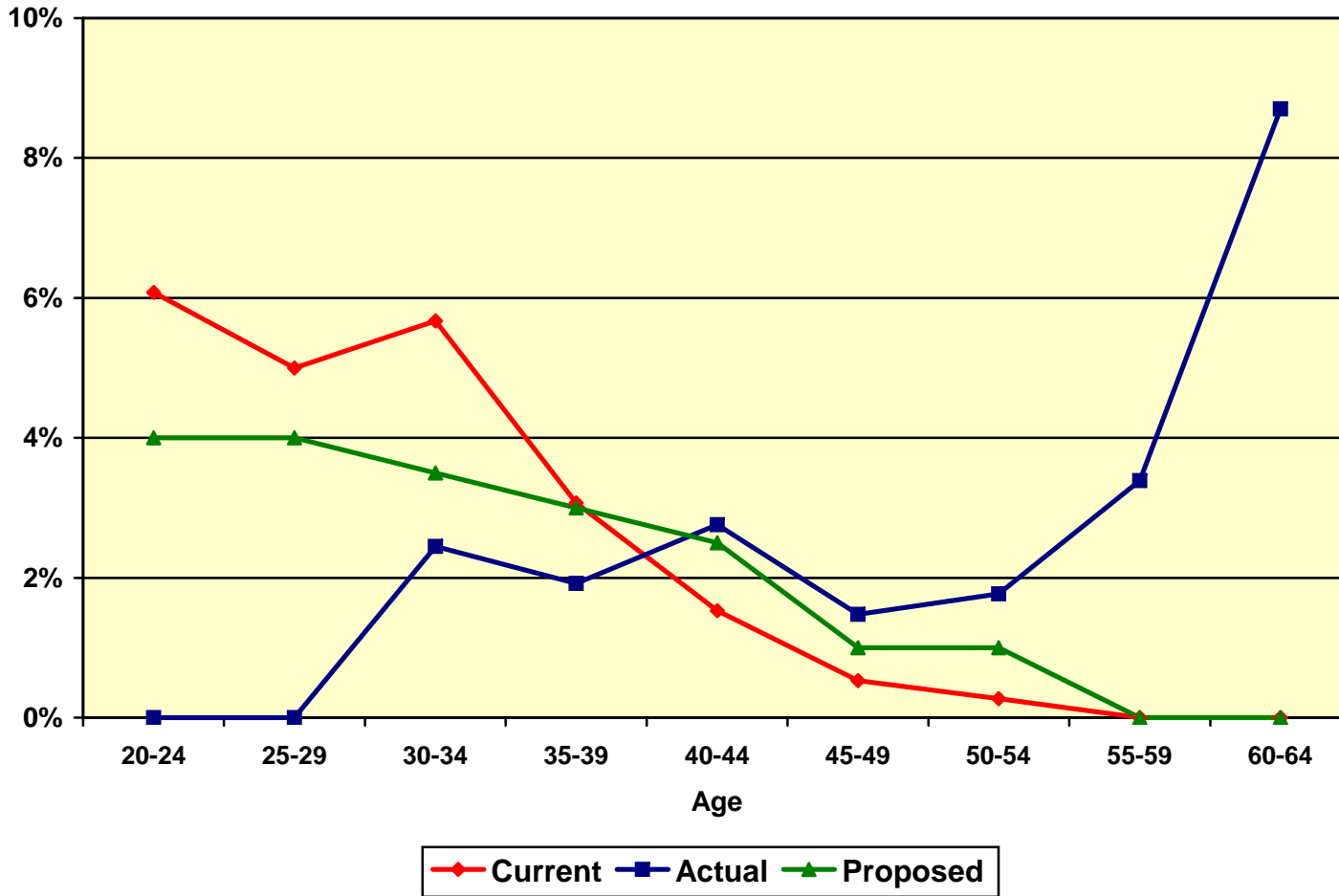


Chart 18
Termination Rates - Safety Members
(Five or More Years of Service)



F. DISABILITY INCIDENCE RATES

When a member becomes disabled, he or she may be entitled to a minimum 50% of pay pension (duty disability), or a pension that depends upon the member's years of service (ordinary disability). The following summarizes the actual incidence of combined duty and ordinary disabilities over the past three years compared to the current and proposed assumptions for combined duty and ordinary disability incidence:

Rates of Disability Incidence (General Male)

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	0.01%	0.00%	0.01%
25 – 29	0.02	0.00	0.02
30 – 34	0.02	0.00	0.02
35 – 39	0.03	0.00	0.03
40 – 44	0.06	0.11	0.07
45 – 49	0.12	0.68	0.25
50 – 54	0.21	0.16	0.35
55 – 59	0.34	0.59	0.50
60 – 64	0.41	1.90	1.20
65 – 69	0.00	0.00	0.00

Rates of Disability Incidence (General Female)

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	0.01%	0.00%	0.01%
25 – 29	0.02	0.00	0.02
30 – 34	0.02	0.00	0.02
35 – 39	0.03	0.12	0.08
40 – 44	0.06	0.33	0.12
45 – 49	0.10	0.00	0.15
50 – 54	0.17	0.28	0.20
55 – 59	0.24	0.35	0.30
60 – 64	0.37	0.63	0.50
65 – 69	0.00	0.00	0.00

Rates of Disability Incidence (Safety)

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	0.06%	0.00%	0.06%
25 – 29	0.13	0.00	0.13
30 – 34	0.20	0.35	0.25
35 – 39	0.35	0.54	0.45
40 – 44	0.58	0.87	0.70
45 – 49	0.93	0.28	0.90
50 – 54	1.43	1.33	1.40
55 – 59	1.97	4.69	3.00
60 – 64	0.00	11.54	0.00

Chart 19 compares the actual number of ordinary and duty disabilities over the past three years to that expected under both the current and proposed assumptions. The current disability rates were significantly adjusted to reflect the past three years experience.

Chart 20 shows actual disablement rates, compared to the assumed and proposed rates for General Male members.

Chart 21 graphs the same information as Chart 20, but for General Female members.

Since 34% of disabled General members received a duty disability, we recommend that the current 33% assumption used to anticipate duty disability retirement be maintained. The remaining 67% of General disabled members will be assumed to receive an ordinary disability.

Chart 22 graphs the same information as Chart 20, but for Safety members.

Since 92% of disabled Safety members received a duty disability, we recommend that the current 100% assumption used to anticipate duty disability retirement be maintained. No Safety disabled members will be assumed to receive an ordinary disability.

Chart 19
Actual Number of Disabilities Compared to
Expected

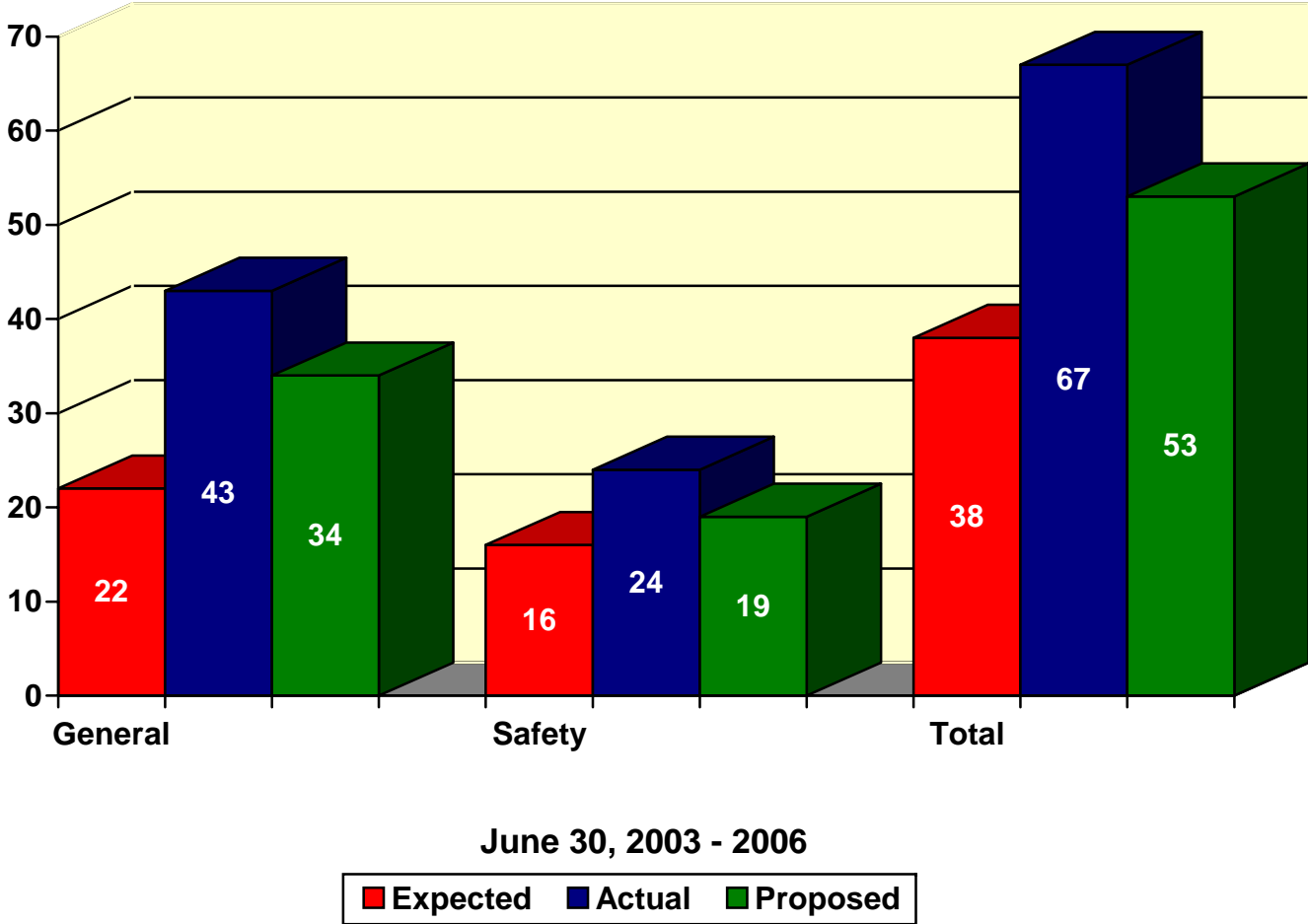


Chart 20

Disablement Rates for General Male Members

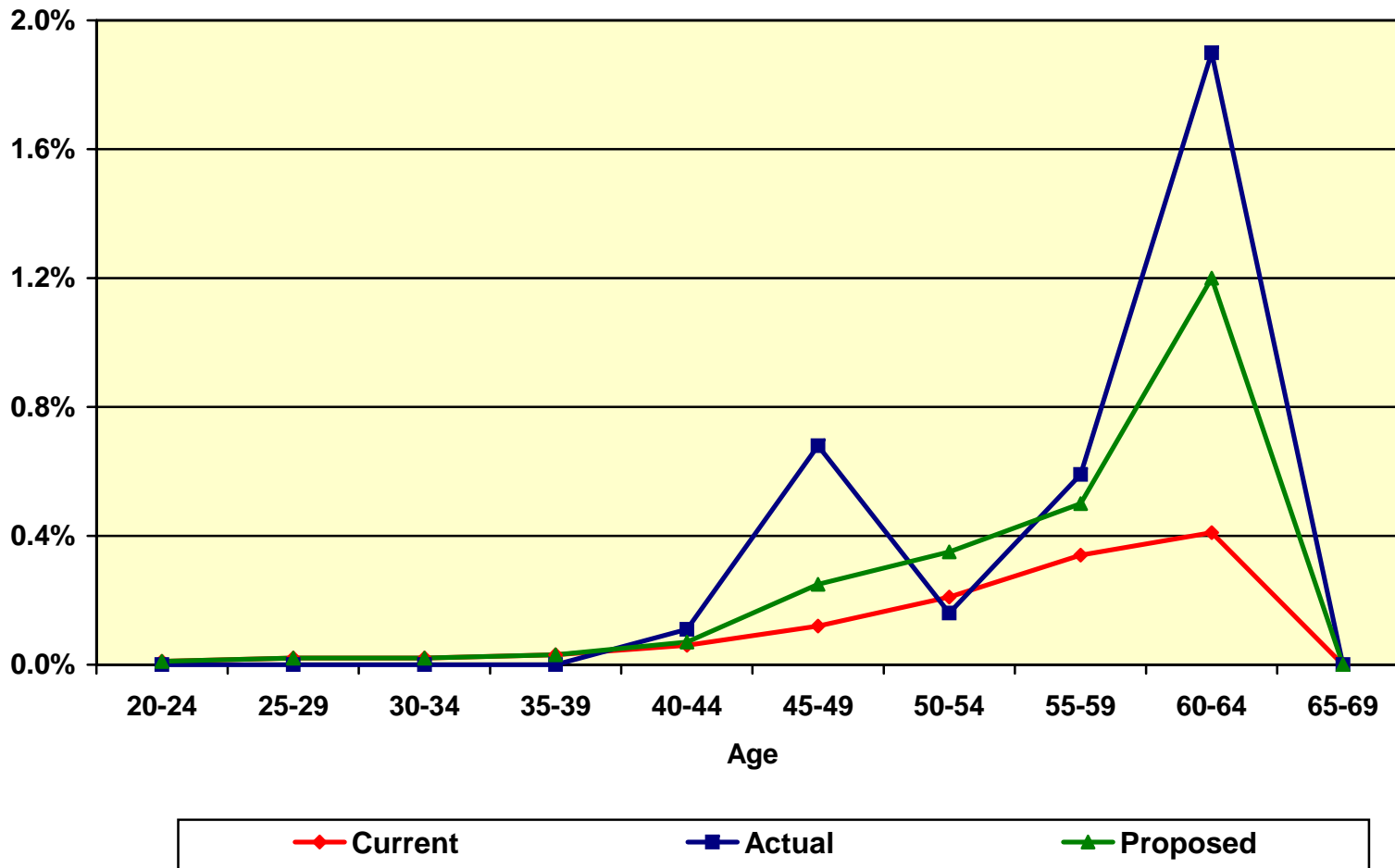


Chart 21 Disablement Rates for General Female Members

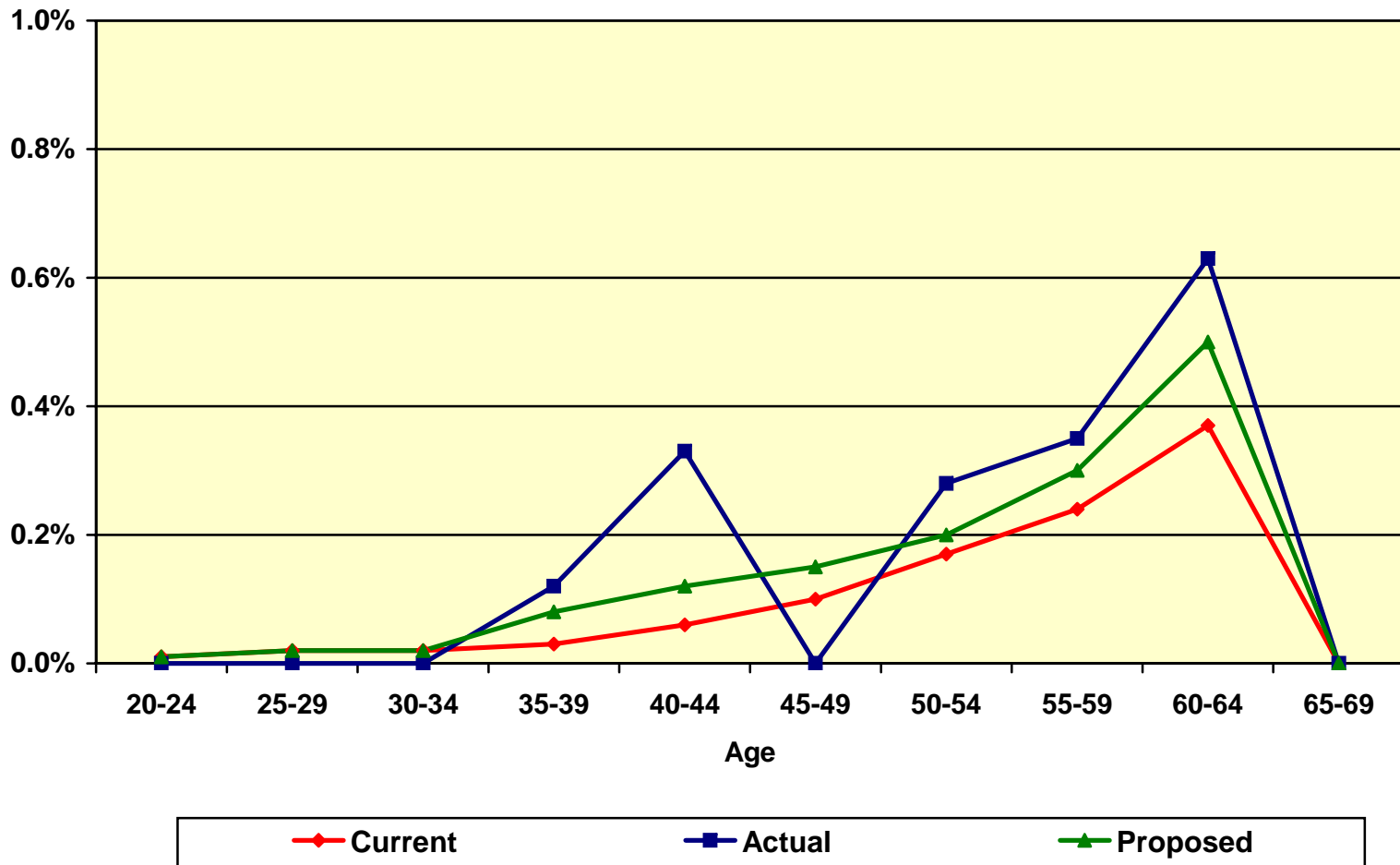
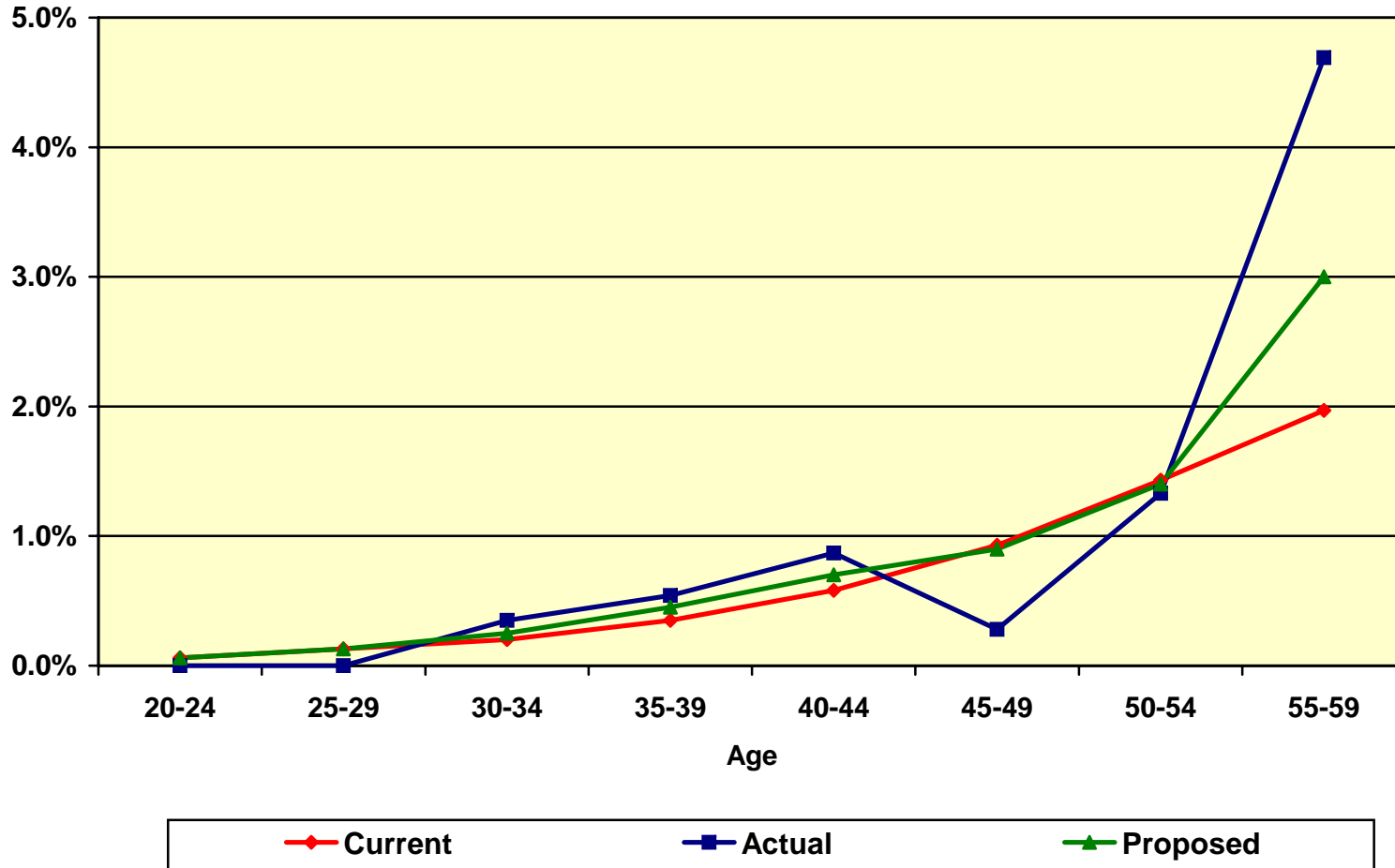


Chart 22 Disablement Rates for Safety Members



G. MERIT AND PROMOTIONAL SALARY INCREASES

The Association's retirement benefits are determined in large part by a member's compensation just prior to retirement. For that reason it is important to anticipate salary increases that employees will receive over their careers. These salary increases are made up of three components:

- Inflationary increases;
- Real "across the board" increases; and
- Merit and promotional increases.

The inflationary increases are assumed to follow the general inflation assumption discussed in our separate economic assumption report, where we recommended a 3.75% inflation assumption. We also discussed in that report our recommended assumption of 0.25% "across the board" pay increases. Therefore, the total inflation and real "across the board" increase of 4.00% is used as the assumed annual rate of payroll growth at which payments to the UAAL are assumed to increase.

The merit and promotional increases are determined by measuring the actual increases received by members over the experience period, net of the actual average inflationary and real "across the board" pay increases. Increases are measured separately for General and Safety members. This is accomplished by:

- Measuring each member's actual salary increase over each year of the experience period;
- Categorizing these increases into age groups;
- Removing the wage inflation component from these increases (equal to the increase in the members' average salary during the year);
- Averaging these annual increases over the three year experience period; and
- Modifying current assumptions to reflect some portion of these measured increases reflective of their "credibility."

We are recommending increases in the merit and promotional assumptions for both General and Safety members. The new assumptions raise the merit and promotional increase for members with eight or more years of service from an average of about 0.75% and 1.00% per year to an average of about 0.90% and 1.25% per year for General and Safety, respectively.

The following table shows the average increases over the three-year experience period (July 1, 2003 through June 30, 2006) before removing the actual inflationary and real wage increase component:

Average Increase (%)		
Years of Service	General Members	Safety Members
0	11.48	13.24
1	9.75	14.06
2	8.19	10.45
3	7.26	8.65
4	6.20	9.07
5	5.02	9.76
6	4.17	8.08
7	4.01	7.63
8 or more	3.21	6.61

The increase in average salary for all ages over this three-year period was about 2.05% for General members and 0.69% for Safety members. The following table shows the average merit and promotional increases for the three-year period, after removing the increases in average salary in each service category:

Average Merit and Promotional Increase (%)		
Years of Service	General Members	Safety Members
0	9.23	12.68
1	7.53	13.39
2	6.01	9.76
3	5.09	8.01
4	4.06	8.39
5	2.90	9.12
6	2.07	7.43
7	1.91	6.97
8 or more	1.13	5.98

The following table shows the current and recommended merit and promotional assumptions based on this recent experience:

Current vs. Proposed Merit and Promotional Salary Increase (%)

Years of Service	General Members		Safety Members	
	Current	Proposed	Current	Proposed
0	5.00	6.00	2.00	6.00
1	5.00	5.50	2.00	5.00
2	5.00	5.25	2.00	3.50
3	5.00	5.00	2.00	3.50
4	5.00	4.75	2.00	3.50
5	0.75	1.50	2.00	3.50
6	0.75	1.25	2.00	3.50
7	0.75	1.00	2.00	3.50
8 or more	0.75	0.90	1.00	1.25

Charts 23 and 24 provide a graphical comparison of the current, actual experience and proposed merit and longevity increases.

Chart 23
Merit and Promotional Salary Increase Rates
for General Members

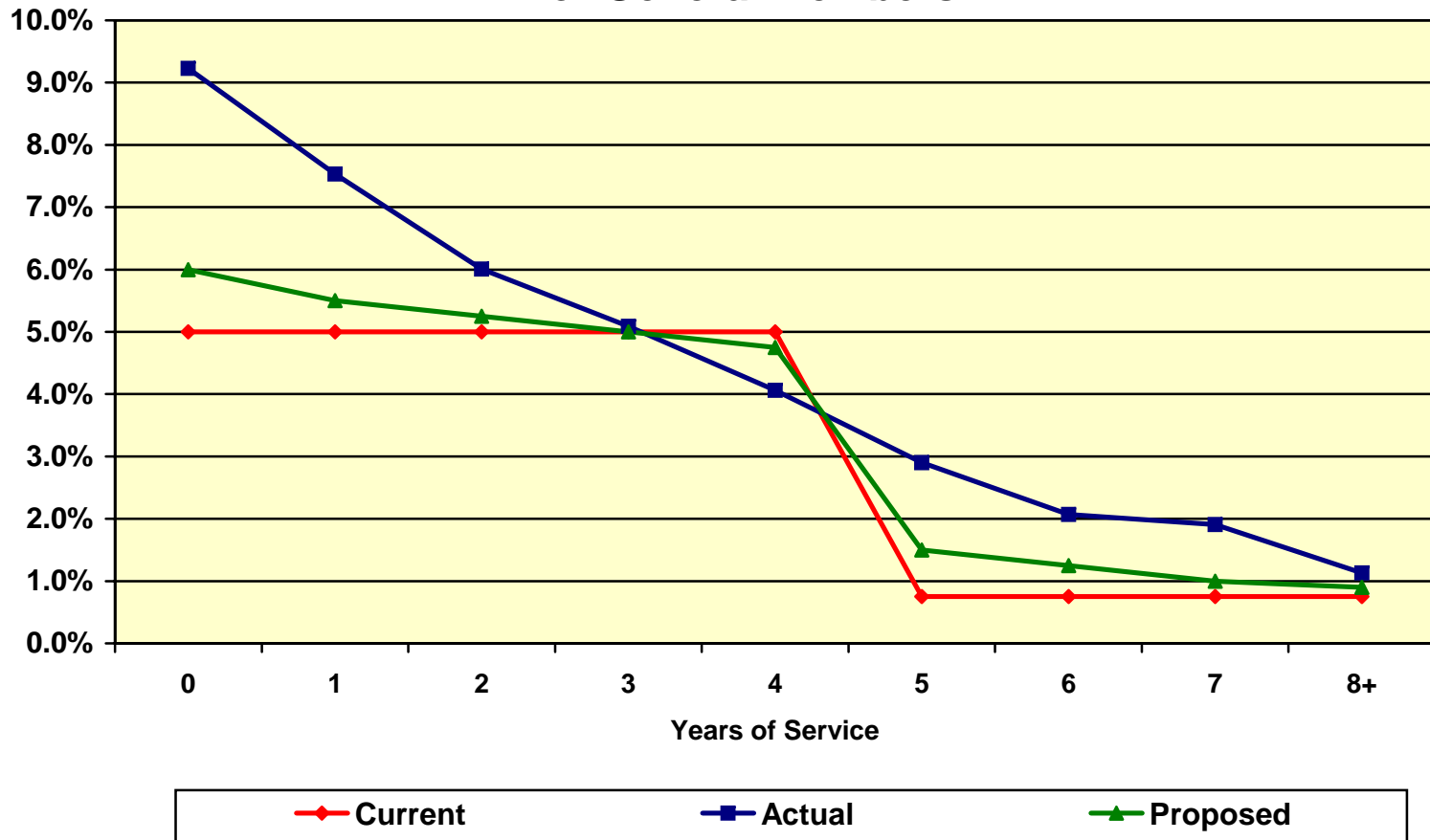
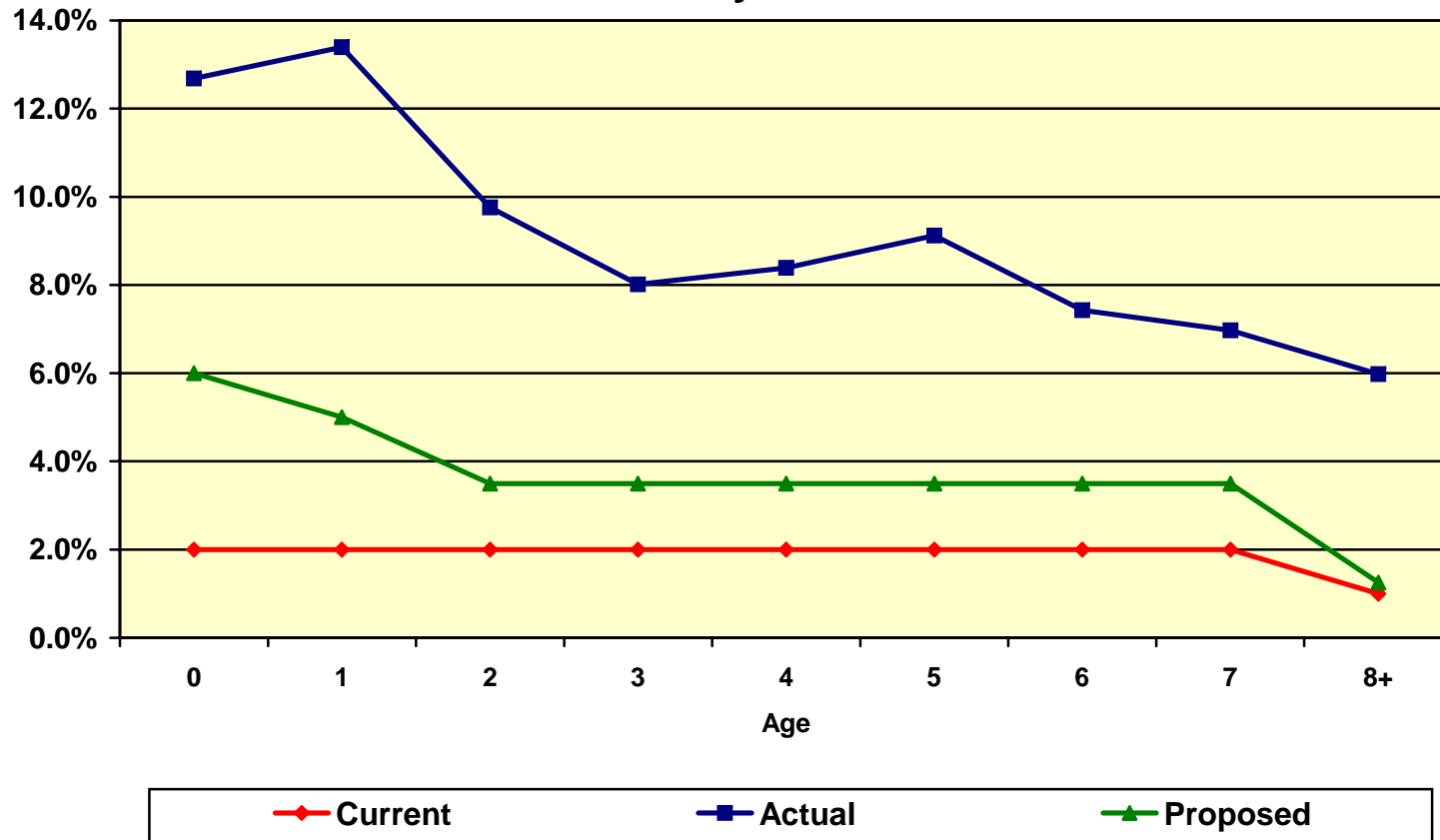


Chart 24
Merit and Promotional Salary Increase Rates
for Safety Members



H. ANNUAL LEAVE CONVERSION

At retirement, members can convert their unused annual leave to increase the service credit used in the calculation of their retirement benefit. The actuarial valuation anticipates this additional benefit using an assumption to estimate the number of hours of annual leave that will be converted at retirement.

We collected information on the actual amount of annual leave balance for actives as of June 30, 2006. Consistent with the structure of the current assumption, the actual annual leave balance was expressed as a number of hours per year of service.

The tables below show the actual hours of accumulated annual leave available at retirement.

	Current	Actual	Proposed
New Annual Leave Plan (5Y)	60.00	35.78	40.00
Annual Leave Plan II (5Y)	30.00	21.67	25.00
Vacation/Sick Leave Plan (General: 5Q, 5S and 5W)	20.00	23.72	20.00
Vacation/Sick Leave Plan (Safety: 5Q, 5S and 5W)	30.00	46.73	45.00

Annual Leave IV Plan or the Old Annual Leave Plan (5O) will continue to depend on the actual hours in a member's frozen time off bank.

APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS

Mortality Rates:

Healthy:

For General Members and all Beneficiaries: RP-2000 Healthy Annuitant Mortality Table, with adjustment for white collar workers.

For Safety Members: RP-2000 Healthy Annuitant Mortality Table, with adjustment for blue collar workers.

Disabled:

For General Members: RP-2000 Disabled Annuitant Mortality Table.

Member Contribution Rates:

For General Members: RP-2000 Healthy Annuitant Mortality Table with adjustment for white collar workers weighted 1/3 male and 2/3 female.

For Safety Members: RP-2000 Healthy Annuitant Mortality Table with adjustment for blue collar workers weighted 5/6 male and 1/6 female.

Termination Rates Before Retirement:

Rate (%)				
Mortality				
General ⁽¹⁾		Safety ⁽²⁾		
Age	Male	Female	Male	Female
25	0.11	0.03	0.10	0.03
30	0.12	0.04	0.12	0.03
35	0.22	0.07	0.20	0.06
40	0.30	0.10	0.28	0.08
45	0.42	0.16	0.40	0.13
50	0.60	0.24	0.56	0.20
55	0.54	0.35	0.72	0.28
60	0.66	0.56	0.00	0.00
65	1.16	0.91	0.00	0.00

(1) All pre-retirement deaths are assumed to be non-service connected.

(2) Rates shown are for non-service deaths. An additional 0.10% per year is used to predict service connected death for Safety members (male and female).

Termination Rates Before Retirement (continued):

Age	Rate (%)		
	Disability		
	General ⁽¹⁾		Safety ⁽²⁾
	Male	Female	Male and Female
20	0.01	0.01	0.06
25	0.02	0.02	0.10
30	0.02	0.02	0.16
35	0.03	0.03	0.29
40	0.05	0.05	0.49
45	0.09	0.08	0.77
50	0.17	0.14	1.23
55	0.29	0.21	1.75
60	0.39	0.31	0.00

(1) One-third of General disabilities are assumed to be duty disabilities. The other two-thirds are assumed to be ordinary disabilities.

(2) 100% of Safety disabilities are assumed to be duty disabilities.

Termination Rates Before Retirement (continued):

Rate (%)			
Total Termination			
Age	General		Safety
	Male	Female	Male and Female
20	7.50	8.40	7.01
25	6.80	7.56	5.13
30	6.30	6.96	5.93
35	5.80	6.36	3.93
40	5.30	5.76	2.07
45	4.80	5.16	0.80
50	4.30	4.56	0.33
55	3.80	3.96	0.00
60	3.30	3.36	0.00

**Proportion of Total Termination Assumed to
Receive Refunds and Deferred Vested Benefits**

Rate (%)		
Years of Service	Refunds	Deferred Vested Benefits
0-4	100.00	0.00
5-9	25.00	75.00
10-14	16.70	83.30
15-19	10.00	90.00
20 or more	0.00	100.00

Retirement Rates:

Age	Rate (%)				
	General Tier 1 Male	General Tier 1 Female	General Tier 2 Male & Female*	General Tier 3 Male & Female**	Safety Tiers 1 and 2 Male & Female
50	5.00	4.00	3.00	3.00	6.00***
51	3.00	4.00	3.00	3.00	7.00
52	3.00	4.00	3.60	3.60	8.00
53	3.00	4.00	3.60	3.60	15.00
54	4.50	4.00	4.20	4.20	25.00
55	6.00	10.00	8.40	8.40	50.00
56	10.00	10.00	10.00	10.00	25.00
57	15.00	10.00	10.00	10.00	25.00
58	20.00	15.00	10.00	10.00	40.00
59	25.00	17.50	10.00	15.00	40.00
60	30.00	20.00	15.00	19.20	100.00
61	30.00	20.00	15.00	19.20	100.00
62	50.00	40.00	25.00	34.20	100.00
63	30.00	20.00	24.00	23.70	100.00
64	30.00	20.00	24.00	23.70	100.00
65	40.00	45.00	35.00	43.30	100.00
66	40.00	30.00	34.00	33.30	100.00
67	40.00	30.00	34.00	33.30	100.00
68	60.00	30.00	35.00	40.00	100.00
69	80.00	30.00	35.00	46.70	100.00
70	100.00	100.00	100.00	100.00	100.00

* Determined, in part, by incorporating the retirement age assumptions currently used by another 1937 Act System that provides benefits under Section 31676.16.

** Determined by incorporating the retirement age assumptions currently used by General Tiers 1 and 2.

***The retirement rates for Safety Tiers 1 and 2 are 3% for ages 45 through 49.

**Retirement Age and Benefit for
Deferred Vested Members:**

For deferred vested members, we make the following retirement assumption:

General: Age 63
Safety: Age 55

We assume that 50% of future General and Safety deferred vested members will continue to work for a reciprocal employer. For these members, we assume 4.75% and 5.00% compensation increases per annum for General and Safety members, respectively.

Future Benefit Accruals:

1.0 year of service per year of employment.

Unknown Data for Members:

Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

Percent Married:

90% of male members; 50% of female members.

Age of Spouse:

Female (or male) spouses are 3 years younger (or older) than their spouses.

Annual Leave Conversion:

The following assumptions for service from unused annual leave balance at retirement are used:

New Annual Leave Plan

60 hours per year of service.

Annual Leave Plan II

30 hours per year of service.

Vacation/Sick Leave Plans

20 hours per year of service for General and 30 hours per year of service for Safety.

*Annual Leave IV Plan or
the Old Annual Leave Plan*

Based on actual hours in a member's frozen time off bank.

Net Investment Return:

8.16%; net of administration and investment expenses.

**Employee Contribution
Crediting Rate:**

3.00%, compounded semi-annually.

Consumer Price Index:

Increase of 4.00% per year, retiree COLA increases due to CPI, subject to a 3.00% maximum charge per year for all General and Safety.

Salary Increases:

Annual Rate of Compensation Increase (%)

Inflation: 4.00%; plus “across the board” salary increases of 0.00% per year; plus the following merit and promotional increases.

Service	General	Safety
0	5.00	2.00
1	5.00	2.00
2	5.00	2.00
3	5.00	2.00
4	5.00	2.00
5	0.75	2.00
6	0.75	2.00
7	0.75	2.00
8 or more	0.75	1.00

APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS

Mortality Rates:

Healthy:

For General Members and all Beneficiaries: RP-2000 Healthy Annuity Mortality Table with adjustment for white collar workers.

For Safety Members: RP-2000 Healthy Annuity Mortality Table with adjustment for blue collar workers set back two years.

Disabled:

For General Members: RP-2000 Disabled Annuitant Mortality Table set back one year.

For Safety Members: RP-2000 Disabled Annuitant Mortality Table set back two years.

Member Contribution Rates:

For General Members: RP-2000 Health Annuitant Mortality Table with adjustment for white collar workers weighted 1/3 male and 2/3 female.

For Safety Members: RP-2000 Healthy Annuitant Mortality Table with adjustment for blue collar workers set back two years weighted 5/6 male and 1/6 female.

Termination Rates Before Retirement:

Age	Rate (%)			
	Mortality			
	General ⁽¹⁾		Safety ⁽²⁾	
	Male	Female	Male	Female
25	0.04	0.02	0.04	0.02
30	0.04	0.03	0.04	0.02
35	0.06	0.05	0.09	0.04
40	0.09	0.06	0.13	0.07
45	0.13	0.10	0.16	0.12
50	0.20	0.16	0.21	0.17
55	0.33	0.26	0.33	0.24
60	0.56	0.47	0.64	0.38
65	1.11	0.87	1.23	0.80

(1) All pre-retirement deaths are assumed to be non-service connected.

(2) Rates shown are for non-service deaths. An additional 0.10% per year is used to predict service connected death for Safety members (male and female).

Termination Rates Before Retirement (continued):

Age	Rate (%)		
	Disability		
	General ⁽¹⁾		Safety ⁽²⁾
	Male	Female	Male and Female
20	0.01	0.01	0.01
25	0.01	0.01	0.10
30	0.02	0.02	0.20
35	0.02	0.06	0.37
40	0.05	0.10	0.60
45	0.18	0.14	0.86
50	0.31	0.18	1.20
55	0.44	0.26	2.36
60	0.92	0.42	1.20

⁽¹⁾ One-third of General disabilities are assumed to be duty disabilities. The other two-thirds are assumed to be ordinary disabilities.

⁽²⁾ 100% of Safety disabilities are assumed to be duty disabilities.

Termination Rates Before Retirement (continued):

Rate (%)

Total Termination (< 5 Years of Service)

Years of Service	General		Safety
	Male	Female	Male and Female
0	10.00	11.00	9.00
1	7.00	9.00	6.00
2	7.00	7.00	5.00
3	6.00	6.00	4.00
4	6.00	6.00	4.00

Rate (%)

Total Termination (5+ Years of Service)

Age	General		Safety
	Male	Female	Male and Female
20	5.00	7.00	4.00
25	5.00	7.00	4.00
30	5.00	7.00	3.70
35	4.70	6.10	3.20
40	4.50	4.90	2.70
45	4.20	4.20	1.60
50	3.40	3.40	1.00
55	2.40	2.40	0.00
60	2.00	2.00	0.00

**Proportion of Total Termination Assumed to
Receive Refunds and Deferred Vested Benefits (%)**

Years of Service	Refunds	Deferred Vested Benefits
0-4	85.00	15.00
5-9	30.00	70.00
10-14	30.00	70.00
15-19	30.00	70.00
20 or more	30.00	70.00

Retirement Rates:

Age	Rate (%)				
	General Tier 1 Male	General Tier 1 Female	General Tier 2 Male & Female	General Tier 3 Male & Female	Safety Tiers 1 and 2 Male & Female
45	0.00	0.00	0.00	0.00	1.00
46	0.00	0.00	0.00	0.00	1.00
47	0.00	0.00	0.00	0.00	1.00
48	0.00	0.00	0.00	0.00	1.00
49	0.00	0.00	0.00	0.00	3.00
50	4.00	4.00	3.00	3.00	5.00
51	4.00	4.00	3.00	3.00	6.00
52	4.00	4.00	3.60	3.60	9.00
53	4.00	4.00	3.60	3.60	14.00
54	4.00	4.00	4.20	4.20	25.00
55	7.00	10.00	8.40	8.40	45.00
56	11.00	12.00	10.00	10.00	35.00
57	16.00	12.00	10.00	10.00	25.00
58	20.00	15.00	10.00	10.00	30.00
59	25.00	16.00	10.00	15.00	40.00
60	30.00	22.00	15.00	19.20	100.00
61	30.00	25.00	15.00	19.20	100.00
62	34.00	40.00	25.00	34.20	100.00
63	34.00	25.00	24.00	23.70	100.00
64	34.00	22.00	24.00	23.70	100.00
65	43.00	30.00	35.00	43.30	100.00
66	48.00	35.00	34.00	33.30	100.00
67	53.00	40.00	34.00	33.30	100.00
68	60.00	45.00	35.00	40.00	100.00
69	70.00	50.00	35.00	46.70	100.00
70	100.00	100.00	100.00	100.00	100.00

**Retirement Age and Benefit for
Deferred Vested Members:**

For deferred vested members, we make the following retirement assumption:

General: Age 58
Safety: Age 55

We assume that 40% of future General and 55% of future Safety deferred vested members will continue to work for a reciprocal employer. For these members, we assume 4.90% and 5.25% compensation increases per annum for General and Safety members, respectively.

Future Benefit Accruals:

1.0 year of service per year of employment.

Unknown Data for Members:

Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

Percent Married:

80% of male members; 55% of female members.

Age of Spouse:

Female (or male) spouses are 3 years younger (or older) than their spouses.

Annual Leave Conversion:

The following assumptions for service from unused annual leave balance at retirement are used:

New Annual Leave Plan

40 hours per year of service.

Annual Leave Plan II

25 hours per year of service.

Vacation/Sick Leave Plans

20 hours per year of service for General and 45 hours per year of service for Safety.

*Annual Leave IV Plan or
the Old Annual Leave Plan*

Based on actual hours in a member's frozen time off bank.

Net Investment Return:

8.00%; net of administration and investment expenses.

**Employee Contribution
Crediting Rate:**

3.00%, compounded semi-annually.

Consumer Price Index:

Increase of 3.75% per year, retiree COLA increases due to CPI subject to a 3.00% maximum charge per year for all General and Safety.

Salary Increases:

Annual Rate of Compensation Increase (%)

Inflation: 3.75%; plus “across the board” salary increases of 0.25% per year; plus the following merit and promotional increases.

Service	General	Safety
0	6.00	6.00
1	5.50	5.00
2	5.25	3.50
3	5.00	3.50
4	4.75	3.50
5	1.50	3.50
6	1.25	3.50
7	1.00	3.50
8 or more	0.90	1.25

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**FRESNO COUNTY EMPLOYEES'
RETIREMENT ASSOCIATION**

**Review of Economic Actuarial Assumptions
for the June 30, 2007 Actuarial Valuation**



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DECEMBER 2007**



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December 13, 2007

Board of Retirement
Fresno County Employees' Retirement Association
1111 H Street
Fresno, CA 93721

**Re: Review of Economic Actuarial Assumptions
for the June 30, 2007 Actuarial Valuation**

Dear Members of the Board:

We are pleased to submit this report of our review of the June 30, 2007 economic actuarial assumptions for the Fresno County Employees' Retirement Association. This report includes our recommendations and the analysis supporting their development.

Please note that we have also reviewed the non-economic actuarial experience for the three-year period from July 1, 2003 to June 30, 2006. Based on that review, the results and the associated assumptions recommended for the June 30, 2007 valuation are provided in a separate report.

We look forward to reviewing this report with you and answering any questions you may have.

Sincerely,

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TABLE OF CONTENTS

	Page
I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS	1
II. BACKGROUND AND METHODOLOGY.....	4
III. ECONOMIC ASSUMPTIONS	5

I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

To project the cost and liabilities of the Pension Fund, assumptions are made about all future events that could affect the amount and timing of the benefits to be paid and the assets to be accumulated. Each year actual experience is compared against the projected experience, and to the extent there are differences, the future contribution requirement is adjusted.

If assumptions are changed, contribution requirements are adjusted to take into account a change in the projected experience in all future years. There is a great difference in both philosophy and cost impact between recognizing the actuarial deviations as they occur annually and changing the actuarial assumptions. Adjusting contributions as gains or losses occur without making a change in the assumptions is appropriate if the deviation from projections is considered temporary and if, over the long run, experience is expected to return to what was originally assumed. Changing assumptions reflects a basic change in thinking about the future, and it has a much greater effect on the current contribution requirements than the gain or loss for a single year.

The use of realistic actuarial assumptions is important to maintain adequate funding, while fulfilling benefit commitments to participants already retired and to those near retirement. The actuarial assumptions do not determine the “actual cost” of the plan. The actual cost is determined solely by the benefits and administrative expenses paid out, offset by investment income received. However, it is desirable to estimate as closely as possible what the actual cost will be so as to permit an orderly method for setting aside contributions today to provide benefits in the future, and to maintain equity among generations of participants and taxpayers.

This study was undertaken in order to review the economic actuarial assumptions. The study was performed in accordance with Actuarial Standard of Practice (ASOP) No. 27, “Selection of Economic Assumptions for Measuring Pension Obligations.” This Standard of Practice puts forth guidelines for the selection of the economic actuarial assumptions utilized in a pension plan actuarial valuation.

We are recommending changes in the economic assumptions currently used by the Board. Our recommendations for the economic actuarial assumptions for the June 30, 2007 Actuarial Valuation are as follows:

Investment Return - The estimated average future net rate of return on current and future assets of the Association as of the valuation date. This rate is used to discount liabilities.

Recommendation: *Reduce the current 8.16% investment return rate assumption to 8.00% per annum.*

Inflation – Future increases in the cost-of-living index which drives investment returns and active member salary increases, as well as COLA increases to retired employees.

Recommendation: *Reduce the current 4.00% inflation assumption to 3.75% per annum.*

Individual Salary Increases - Increases in the salary of a member between the date of the valuation to the date of separation from active service. This assumption has three components:

- Inflationary salary increases.
- Real “across the board” salary increases.
- Promotional and merit increases.

Recommendation: *Reduce the current inflationary salary increase assumption from 4.00% to 3.75% per annum consistent with our recommended general inflation assumption and introduce a real “across the board” salary increase assumption of 0.25%. This means that the combined inflationary and real “across the board” salary increases will remain 4.00% per annum. The recommended promotional and merit increase assumptions are provided in our June 30, 2006 triennial experience study report.*

Section II provides some background on basic principles and the methodology used for the review of the economic actuarial assumptions. A detailed discussion of each of the economic assumptions and reasons behind the recommendations is found in Section III.

II. BACKGROUND AND METHODOLOGY

In this report, we analyzed the “economic” assumptions only. The primary economic assumptions reviewed are inflation, investment return and salary increases.

Economic Assumptions

Economic assumptions consist of:

Inflation - Increases in the price of goods and services. The inflation assumption reflects the basic return that investors expect from securities markets. It also reflects the expected basic salary increase for active employees and drives increases in the allowances of retired members. Payments to the Unfunded Actuarial Accrued Liability (UAAL) are assumed to increase each year by the inflation rate plus any “across the board” pay increases that are assumed.

Investment Return – Expected return on the Association’s investments after expenses. This assumption has a significant impact on contribution rates.

Salary Increases – In addition to inflationary increases, it is assumed that employees will receive raises from promotions and step increases. These are commonly referred to as promotional and merit increases. Salaries will also grow by any “across the board” real pay increases in excess of price inflation.

The setting of these assumptions is described in Section III.

III. ECONOMIC ASSUMPTIONS

The investment return assumption is comprised of two components: (i) Inflation; and (ii) Real Rate of Investment Return.

Inflation

Unless an investment grows at least as fast as prices increase, investors will experience a reduction in the inflation-adjusted value of their investment. There may be times when “riskless” investments return more or less than inflation, but over the long term, investment market forces will generally require an issuer of fixed income securities to maintain a minimum return which protects investors from inflation.

The inflation assumption is long term in nature, so it is set using primarily historical information. Following is an analysis of 15 and 30 year moving averages of historical inflation rates:

Historical Consumer Price Index – 1930 to 2006

(U.S. City Average - All Urban Consumers)

	<u>25th Percentile</u>	<u>Median</u>	<u>75th Percentile</u>
15 year moving averages	2.8%	3.7%	5.0%
30 year moving averages	3.3%	4.3%	5.0%

The average inflation rates have continued to decline gradually over the last several years due to the relatively low inflationary period in the 1990’s and early 2000’s. However, the inflation rates for the past 3 years have started to show some increase. Also, the 15 year averages are declining as the high inflation years of the mid-1970s and early 1980s are diluted by the recent low inflation years in the 15 year moving average calculations.

FCERA’s investment consultant, Wurts & Associates, anticipates an annual inflation rate of 2.72%. Note that, in general, investment consultants use a time horizon for this assumption that is shorter than the time horizon we use for the actuarial valuation.

In a 2006 public fund survey published by the National Association of State Retirement Administrators, the median inflation assumption used by 109 large public retirement funds in their 2005 valuations has remained unchanged from the 3.50% used in the 2004 valuations.

Based on all of the above information, we recommend that the current 4.00% annual inflation assumption be reduced to 3.75% for the June 30, 2007 actuarial valuation.

Retiree Cost-of-Living Increases

In the June 30, 2006 valuation, consistent with the 4.00% annual inflation assumption adopted by the Board for that valuation, the Board adopted a 3.00% retiree cost-of-living adjustment for all General and Safety.

We are recommending that the same assumption (i.e., 3.00% per year) be used in the June 30, 2007 valuation.

Real Rate of Investment Return

This component represents the portfolio's incremental investment market returns over inflation. Theory has it that, as an investor takes a greater investment risk, the return on the investment is expected to also be greater, at least in the long run. This additional return is expected to vary by asset class and empirical data supports that expectation. For that reason, the real rate of return assumptions are developed by asset class. Therefore, the real rate of return assumption for a retirement association's portfolio will vary with the Board's asset allocation among asset classes.

Following is the Association's most recently adopted target asset allocation and the assumed real rate of return assumptions by asset class. The first column of real rate of return assumptions are determined by netting Wurts' total return assumptions by their assumed 2.72% for inflation. The second column of returns represents the average of a sample of real rate of return assumptions. The sample includes the expected annual real rates of return provided to us by Wurts and by eight other investment advisory firms retained by Segal's California public sector clients and are based on projected arithmetic returns provided by the investment advisory firms. We believe these averages are a reasonable forecast of long term future market returns.

FCERA’s Target Asset Allocation as of June 30, 2007 and Assumed Arithmetic Real Rate of Return Assumptions by Asset Class and for the Portfolio

<u>Asset Class</u>	<u>Percentage of Portfolio</u>	<u>Wurts’ Assumed Real Rate of Return⁽¹⁾</u>	<u>Average from a Sample of Consultants to Segal’s Public Sector Clients’ Real Rates of Return⁽²⁾</u>
Large Cap U.S. Equity	28%	6.76%	6.59%
Small Cap U.S. Equity	10%	8.50%	7.26%
Developed International Equity	11%	7.89%	7.04%
Emerging Markets Equity	7%	13.21%	9.69%
U.S. Core Fixed Income	30%	2.96%	2.64%
International Hedged Bonds	3%	2.12%	2.32%
Real Estate	5%	4.10%	4.66%
Private Equity	<u>6%</u>	<u>13.10%</u>	<u>13.10%</u> ⁽³⁾
Total Portfolio	100%	6.48%	5.91%

- (1) Derived by netting Wurts’ rate of return assumptions by their assumed 2.72% inflation rate.
- (2) Including the county retirement associations of Fresno, Sacramento, Orange, San Bernardino, Alameda, Contra Costa, San Diego, the LA City Employees’ Retirement System and the City of Fresno Retirement Systems.
- (3) For this asset class Wurts’ assumption is applied in lieu of the average because there is a larger disparity in returns for this asset class among the firms surveyed and using Wurts’ assumption should more closely reflect the underlying investments made specifically for FCERA.

Please note that the above are representative of “indexed” returns and do not include any additional returns (“alpha”) from active management. This is consistent with the Actuarial Standard of Practice No. 27, Section 3.6.3.e, which states:

“Investment Manager Performance - Anticipating superior (or inferior) investment manager performance may be unduly optimistic (pessimistic). Few investment managers consistently achieve significant above-market returns net of expenses over long periods.”

The following are some observations about the returns provided above:

1. The investment consultants to our California public sector clients have each provided us with their expected real rates of return for each asset class, over various future periods of time. However, in general, the returns available from investment consultants are projected over time periods shorter than the durations of a retirement plan's liabilities.
2. Using a sample average of expected real rates of return allows the Association's investment return assumption to reflect a broader range of capital market information and should help reduce year to year volatility in the Association's investment return assumption.
3. Therefore, we recommend that the 5.91% portfolio real rate of return be used to determine the Association's investment return assumption.

Association Expenses

The real rate of return assumption for the portfolio needs to be adjusted for administrative and investment expenses expected to be paid from investment income.

The following table provides these expenses in relation to the actuarial value of assets for the four years ending June 30, 2006.

Administrative and Investment Expenses as a Percentage of Actuarial Value of Assets (All dollars in 000's)

FYE	Actuarial Value of Assets	Administrative Expenses	Investment Expenses	Administrative %	Investment %	Total %
2003	\$1,806,494	\$2,129	\$5,567	0.12%	0.31%	0.43%
2004	2,265,388	2,001	6,637	0.09	0.29	0.38
2005	2,337,311	2,484	8,883	0.11	0.38	0.49
2006	2,462,841	2,865	10,228	0.12	0.42	0.53
					Average	0.46%

The average expenses percentage over this four year period is 0.46%. Based on this experience, we believe a future expense assumption of 0.50% is reasonable. This assumption will be re-examined as new data becomes available.

Risk Adjustment

The real rate of return assumption for the portfolio is adjusted to reflect the potential risk of shortfalls in the return assumptions. The Association's asset allocation determines this portfolio risk, since risk levels also are expected to vary by asset class. This portfolio risk is incorporated into the real rate of return assumption through a risk adjustment.

The purpose of the risk adjustment is to increase the likelihood of achieving the actuarial investment return assumption in the long term. The 5.91% expected real rate of return developed earlier in this report was based on expected mean or average returns. This means there is a 50% chance of the actual return being at least as great as the average. The risk adjustment is intended to increase that probability.

Last year, the Board adopted an investment return assumption of 8.16%. When combined with the inflation assumption from last year and the other components developed in this report, it implied that the Board included a risk adjustment of 1.25% (i.e., 4.00% inflation plus 5.91% expected real rate of return minus 0.50% expenses, compared to the assumed return of 8.16%.) A 1.25% risk adjustment on an Association with an annual portfolio standard deviation of 11.28% (as provided by Wurts) leads to about a 66% chance that the actual average return over 15 years would equal or exceed the assumed return, if the distribution of returns over that period follows the Normal statistical distribution¹. In this model, that means that the 8.16% assumption provides a 66% "confidence level" that average future returns will equal or exceed the assumed return.

Since we are recommending a lower inflation assumption of 3.75%, maintaining the 8.16% assumption would imply a lower confidence level of 63%. An interest rate assumption of 8.00% would imply a risk adjustment of 1.16%, which corresponds to a confidence level of 65%. We also note that an 8.00% assumption is within the most common range for this

¹ The theory that long term investment returns follow a Normal distribution is debatable; however, we believe the Normal distribution assumption is not unreasonable for purposes of setting the risk adjustment.

assumption among other California public sector retirement systems. That range, with few exceptions, is from 7.75% to 8.00%.

Also, it is our understanding that the current 8.16% effective investment return assumption is obtained by taking an 8.00% nominal interest rate assumption and compounding it semi-annually (i.e., 4% each six months) to reflect the interest crediting procedure in the 1937 Act. We believe it is more important in this context to pick an investment return assumption that reflects the expected market rate of return on the underlying investments, which is independent of the effective interest crediting rate on the reserves.

Recommended Investment Return Assumption

The following table summarizes the components of the investment return assumption developed in the previous discussion.

Calculation of Investment Return Assumption	
<u>Assumption Component</u>	<u>Recommended Value</u>
Inflation	3.75%
Plus Portfolio Real Rate of Return	5.91%
Minus Expense Adjustment	(0.50%)
Minus Risk Adjustment	<u>(1.16%)</u>
Total	8.00%

Based on this analysis, we recommend that the investment return assumption be reduced from 8.16% to 8.00% per annum.

Salary Increase Assumption

Salary increases impact plan costs in two ways: (i) by increasing members’ benefits (since benefits are a function of the members’ highest average pay) and future normal cost collections; and (ii) by increasing total active member payroll which in turn generates higher UAAL amortization payments (or higher amortization credits if the UAAL is negative). These two impacts are discussed separately below.

As an employee progresses through his or her career, increases in pay are expected to come from three sources:

1. Inflation – Unless pay grows at least as fast as consumer prices grow, employees will experience a reduction in their standard of living. There may be times when pay increases lag or exceed inflation, but over the long term, labor market forces will require an employer to maintain its employees’ standards of living.

As discussed earlier in this report, we are recommending that the assumed rate of inflation be reduced from 4.00% to 3.75% per annum. This inflation component will be used as part of the salary increase assumption.

2. Real “Across the Board” Pay Increases – These increases are sometimes termed productivity increases since they are considered to be derived from the ability of an organization or an economy to produce goods and services in a more efficient manner. As that occurs, at least some portion of the value of these improvements can provide a source for pay increases. These increases are typically assumed to extend to all employees “across the board.” The State and Local Government Workers Employment Cost Index produced by the Department of Labor provides evidence that real “across the board” pay increases have averaged about 0.7% - 1.0% annually during the last 10 - 20 years.

We recommend the introduction of a real “across the board” salary increase assumption of 0.25% for the June 30, 2007 actuarial valuation.

3. Promotional and Merit Increases – As the name implies, these increases come from an employee’s career advances. This form of pay increase differs from the previous two, since it is specific to the individual. For FCERA, there are service specific promotional and merit increases. We have reviewed this promotional and merit component as part of the triennial experience study as of June 30, 2006.

Recommended promotional and merit assumptions are provided as part of our triennial experience study as of June 30, 2006.

4. All three of these forces are incorporated into a salary increase assumption that is applied in the actuarial valuation to project future benefits and future normal cost contribution collections.

Active Member Payroll

Projected active member payrolls are used to develop the UAAL contribution rate. Future values are determined as a product of the number of employees in the workforce and the average pay for all employees. The average pay for all employees increases only by inflation and real “across the board” pay increases. The merit and promotional increases are not an influence, because this average pay is not specific to an individual.

For the June 30, 2007 valuation, we recommend that the active member payroll increase assumption be 4.00% annually, consistent with the combined inflation and “across the board” salary increase assumptions. Again, this is unchanged from the prior valuation.

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