Sacramento County Employees' Retirement System

ACTUARIAL EXPERIENCE STUDY

Analysis of Actuarial Experience During the Period July 1, 2010 through June 30, 2013

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June 12, 2014

Board of Retirement
Sacramento County Employees' Retirement System
980 9th Street, Suite 1900
Sacramento, CA 95814

Re: Review of Non-Economic Actuarial Assumptions for the June 30, 2014 Actuarial Valuation

Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience of the Sacramento County Employees' Retirement System. This study utilizes the census data for the period July 1, 2010 to June 30, 2013 and provides the proposed actuarial assumptions to be used in the June 30, 2014 valuation.

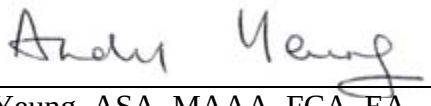
The review of the economic assumptions for use in the June 30, 2014 valuation is provided in a separate report.

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

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

Sincerely,

Paul Angelo, FSA, MAAA, FCA, EA
Senior Vice President and Actuary



Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Associate Actuary

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TABLE OF CONTENTS

Page

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 assumptions, 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, 2010 through June 30, 2013. 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, as appropriate, 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, reciprocity, pre-retirement mortality, post-retirement healthy and disabled life mortality, termination (refunds and deferred vested retirements), disability (non-duty and duty) and salary increases.

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: We recommend adjusting the retirement rates to those developed in Section III (B) for Miscellaneous Tiers 1, 2 and 3 and Safety Tiers 1 and 2 members to reflect slightly later retirements. We also recommend decreasing the reciprocity assumption for both Miscellaneous and Safety members. While we recommend no change in the retirement rates for Miscellaneous Tiers 4 and 5 until actual experience becomes available, we recommend reductions in retirement rates for Safety Tiers 3 and 4 commensurate with those we recommend for Safety Tiers 1 and 2 at the later retirement ages as the rates for Safety Tiers 3 and 4 were originally set equal to those for Safety Tiers 1 and 2.

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

Recommendation: For members who retire from service, we recommend adjustment the rates as developed in Section III (C) for Miscellaneous and Safety members and all beneficiaries to reflect a slight mortality improvement. The disabled member mortality rates for Miscellaneous and Safety members have also been adjusted as developed in Section III (D).

The recommended pre-retirement mortality assumptions for Miscellaneous and Safety members are consistent with the tables used for post-service retirement mortality. In addition, we recommend

maintaining the assumption that all Miscellaneous pre-retirement deaths and increasing the assumption that 25% of Safety pre-retirement deaths are assumed to be non-duty deaths to 50%.

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: We recommend adjusting the termination rates to those developed in Section III (E) to reflect lower incidence of termination overall. In addition, a lower proportion of members is expected to elect a refund of member contributions with a higher proportion electing instead to receive a deferred vested benefit under the recommended assumptions.

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

Recommendation: We recommend adjusting the disability rates to those developed in Section III (F) to reflect slightly lower incidence of disability for Miscellaneous and Safety members.

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: We recommend using years of service instead of age in determining and applying the merit and promotional rates of salary increase as developed in Section III (G) to reflect past experience. Relative to the current age based assumptions, the recommended years of service based assumptions anticipate higher salary increases the first several years of employment and lower salary increases after those years.

Service From Unused Sick Leave Conversion – Additional service that is expected to be received when the member retires due to conversion of unused sick leave.

Recommendation: We recommend maintaining the current assumptions to anticipate conversions of unused sick leave at retirement.

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, 2014 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 ÷ 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 review of the economic assumptions for use in the June 30, 2014 valuation is provided in a separate report.

B. RETIREMENT RATES

The age at which a member retires from service (i.e., who did not retire on a disability pension) 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 fewer actual retirements than expected from the Miscellaneous Tiers 1, 2 and 3 and Safety Tiers 1 and 2 member categories. For Miscellaneous Tiers 4 and 5, we are not recommending a change in the retirement assumptions because there is no data available to support a change (and these rates were developed specifically for those tiers). Even though these is no data available for Safety Tiers 3 and 4, we are recommending reductions to some of the rates for ages 56 – 64 to remain commensurate with those we recommend for Safety Tiers 1 and 2 as the rates for Safety Tiers 3 and 4 were originally set equal to the rates for Safety Tiers 1 and 2.

In this study, we have adjusted the retirement probabilities to reflect the most recent three-year experience. We have continued to balance this recent experience with the current assumptions so as to reflect the possibility that the most recent three-year experience was a statistical fluctuation related to recent economic conditions.

The following tables show the current, observed and proposed rates for Miscellaneous and Safety Tiers.

Retirement Rates for Miscellaneous Tier 1

Age	Rate (%) Current	Observed	Proposed
45-49	0.00	0.00	0.00
50	6.00	5.26	6.00
51	4.00	7.14	4.00
52	4.00	2.78	4.00
53	4.00	0.00	4.00
54	7.00	5.88	7.00
55	10.00	11.48	10.00
56	12.00	23.17	15.00
57	15.00	17.07	16.00
58	20.00	17.20	18.00
59	24.00	19.28	22.00
60	29.00	27.50	28.00
61	32.00	25.76	30.00
62	35.00	36.36	35.00
63	40.00	26.67	35.00
64	45.00	12.50	40.00
65	50.00	45.00	50.00
66	45.00	30.00	45.00
67	45.00	75.00	45.00
68	50.00	0.00	50.00
69	60.00	0.00	60.00
70	100.00	35.29	100.00

Retirement Rates for Miscellaneous Tiers 2 and 3

Age	Rate (%) Current	Observed	Proposed
45-49	0.00	45.45[(1)]	0.00
50	2.00	2.30	2.00
51	2.00	2.69	2.00
52	2.00	2.06	2.00
53	3.00	2.27	3.00
54	4.00	2.57	4.00
55	6.00	4.91	6.00
56	6.00	6.50	6.00
57	8.00	5.67	8.00
58	13.00	7.33	12.00
59	15.00	8.53	14.00
60	18.00	14.11	14.00
61	20.00	10.70	14.00
62	30.00	24.09	25.00
63	35.00	18.93	30.00
64	40.00	22.48	35.00
65	45.00	38.22	40.00
66	45.00	34.78	45.00
67	45.00	31.08	45.00
68	50.00	34.43	50.00
69	60.00	32.43	60.00
70	100.00	19.66	100.00

(1) Based on 5 actual retirements out of 11 members eligible to retire at those ages.

Retirement Rates for Miscellaneous Tier 4

Age	Rate (%) Current	Observed	Proposed
45-49	0.00	N/A	0.00
50	2.00	N/A	2.00
51	2.00	N/A	2.00
52	2.00	N/A	2.00
53	2.00	N/A	2.00
54	3.00	N/A	3.00
55	4.00	N/A	4.00
56	5.00	N/A	5.00
57	6.00	N/A	6.00
58	7.00	N/A	7.00
59	8.00	N/A	8.00
60	9.00	N/A	9.00
61	10.00	N/A	10.00
62	18.00	N/A	18.00
63	16.00	N/A	16.00
64	20.00	N/A	20.00
65	25.00	N/A	25.00
66	20.00	N/A	20.00
67	20.00	N/A	20.00
68	30.00	N/A	30.00
69	40.00	N/A	40.00
70	100.00	N/A	100.00

Retirement Rates for Miscellaneous Tier 5

Age	Rate (%) Current	Observed	Proposed
45-49	0.00	N/A	0.00
50	0.00	N/A	0.00
51	0.00	N/A	0.00
52	4.00	N/A	4.00
53	1.50	N/A	1.50
54	2.50	N/A	2.50
55	3.50	N/A	3.50
56	4.50	N/A	4.50
57	5.50	N/A	5.50
58	6.50	N/A	6.50
59	7.50	N/A	7.50
60	8.50	N/A	8.50
61	9.50	N/A	9.50
62	17.00	N/A	17.00
63	15.00	N/A	15.00
64	19.00	N/A	19.00
65	24.00	N/A	24.00
66	20.00	N/A	20.00
67	20.00	N/A	20.00
68	30.00	N/A	30.00
69	40.00	N/A	40.00
70	100.00	N/A	100.00

Retirement Rates for Safety Tiers 1 and 2

Rate (%)

Age	Current	Observed	Proposed
45	2.00	0.00	2.00
46	2.00	4.40	2.00
47	2.00	1.72	2.00
48	2.00	7.48	2.00
49	5.00	14.84	5.00
50	25.00	22.44	25.00
51	20.00	16.81	18.00
52	20.00	15.79	18.00
53	25.00	15.48	22.00
54	25.00	16.28	22.00
55	25.00	15.15	22.00
56	30.00	13.33	25.00
57	30.00	20.45	25.00
58	30.00	17.95	25.00
59	30.00	26.32	30.00
60	50.00	21.43	45.00
61	60.00	50.00	55.00
62	75.00	37.50	70.00
63	75.00	60.00	70.00
64	75.00	0.00	70.00
65	100.00	62.50	100.00
66	100.00	0.00	100.00
67	100.00	100.00	100.00
68	100.00	100.00	100.00
69	100.00	0.00	100.00
70	100.00	0.00	100.00

Retirement Rates for Safety Tier 3

Rate (%)

Age	Current	Observed	Proposed
45	1.50	N/A	1.50
46	1.50	N/A	1.50
47	1.50	N/A	1.50
48	1.50	N/A	1.50
49	4.00	N/A	4.00
50	10.00	N/A	10.00
51	12.00	N/A	12.00
52	14.00	N/A	14.00
53	16.00	N/A	16.00
54	18.00	N/A	18.00
55	50.00	N/A	50.00
56	30.00	N/A	25.00
57	30.00	N/A	25.00
58	30.00	N/A	25.00
59	30.00	N/A	30.00
60	50.00	N/A	45.00
61	60.00	N/A	55.00
62	75.00	N/A	70.00
63	75.00	N/A	70.00
64	75.00	N/A	70.00
65	100.00	N/A	100.00
66	100.00	N/A	100.00
67	100.00	N/A	100.00
68	100.00	N/A	100.00
69	100.00	N/A	100.00
70	100.00	N/A	100.00

Retirement Rates for Safety Tier 4

Rate (%)

Age	Current	Observed	Proposed
45	0.00	N/A	0.00
46	0.00	N/A	0.00
47	0.00	N/A	0.00
48	0.00	N/A	0.00
49	0.00	N/A	0.00
50	15.00	N/A	15.00
51	10.50	N/A	10.50
52	12.00	N/A	12.00
53	14.00	N/A	14.00
54	15.50	N/A	15.50
55	40.00	N/A	40.00
56	25.00	N/A	25.00
57	25.00	N/A	25.00
58	25.00	N/A	25.00
59	25.00	N/A	25.00
60	50.00	N/A	45.00
61	60.00	N/A	55.00
62	75.00	N/A	70.00
63	75.00	N/A	70.00
64	75.00	N/A	70.00
65	100.00	N/A	100.00
66	100.00	N/A	100.00
67	100.00	N/A	100.00
68	100.00	N/A	100.00
69	100.00	N/A	100.00
70	100.00	N/A	100.00

Chart 1 compares actual experience with the current and proposed rates of retirement for Miscellaneous Tier 1 members. Chart 2 has the same data for Miscellaneous Tier 2 & 3 members and Chart 3 has the same data for Safety Tiers 1 & 2 members.

In prior valuations, deferred vested Miscellaneous and Safety members were assumed to retire at age 59 and 53, respectively. The average age at retirement over the prior three years was 58.1 for Miscellaneous and 52.4 for Safety. We recommend maintaining the assumed retirement age for deferred vested members for Miscellaneous and Safety members.

It was also assumed that 50% of future inactive Miscellaneous and 60% of future inactive Safety deferred vested participants would be covered under a reciprocal retirement system and receive 5.40% salary increases from termination until their date of retirement. Based on the actual experience that 35% of Miscellaneous and 42% Safety members went on to be covered by a reciprocal retirement system during the last three years, we recommend decreasing the current 50% reciprocal assumption for Miscellaneous to 40% and decreasing the current 60% reciprocal assumption for Safety to 50%. Based on our ultimate 1.00% and 1.75% recommended merit and longevity salary increase assumptions for members with ten or more years of service, we propose that a 4.50% and 5.25% salary increase assumption for Miscellaneous and Safety members, respectively, be used to anticipate salary increases from the date of termination from SCERS to the expected date of retirement for participants in a reciprocal retirement system.

In prior valuations, it was assumed that 80% of all active male members and 55% 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 during the last three years, about 77% of all male members and 56% of all female members were married or had a domestic partner at retirement. We recommend no change to the current 80% married or domestic partner assumption for male members and 55% married or domestic partner assumption for female members.

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 as only 1.6% of members who retired during the last three years were reported with a domestic partner.

Chart 1
Retirement Rates - Miscellaneous Tier 1 Members

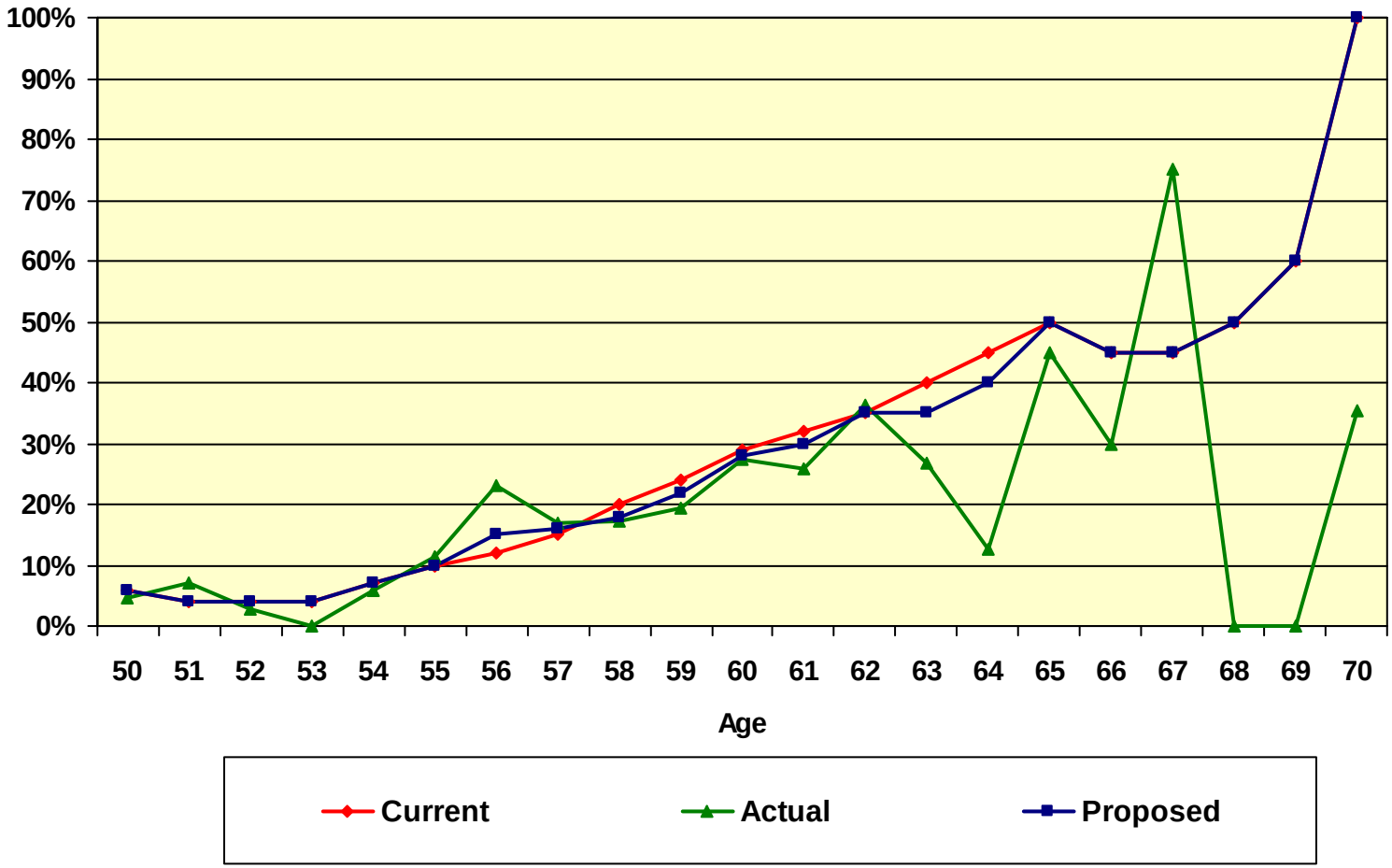


Chart 2
Retirement Rates - Miscellaneous Tier 2 & 3 Members

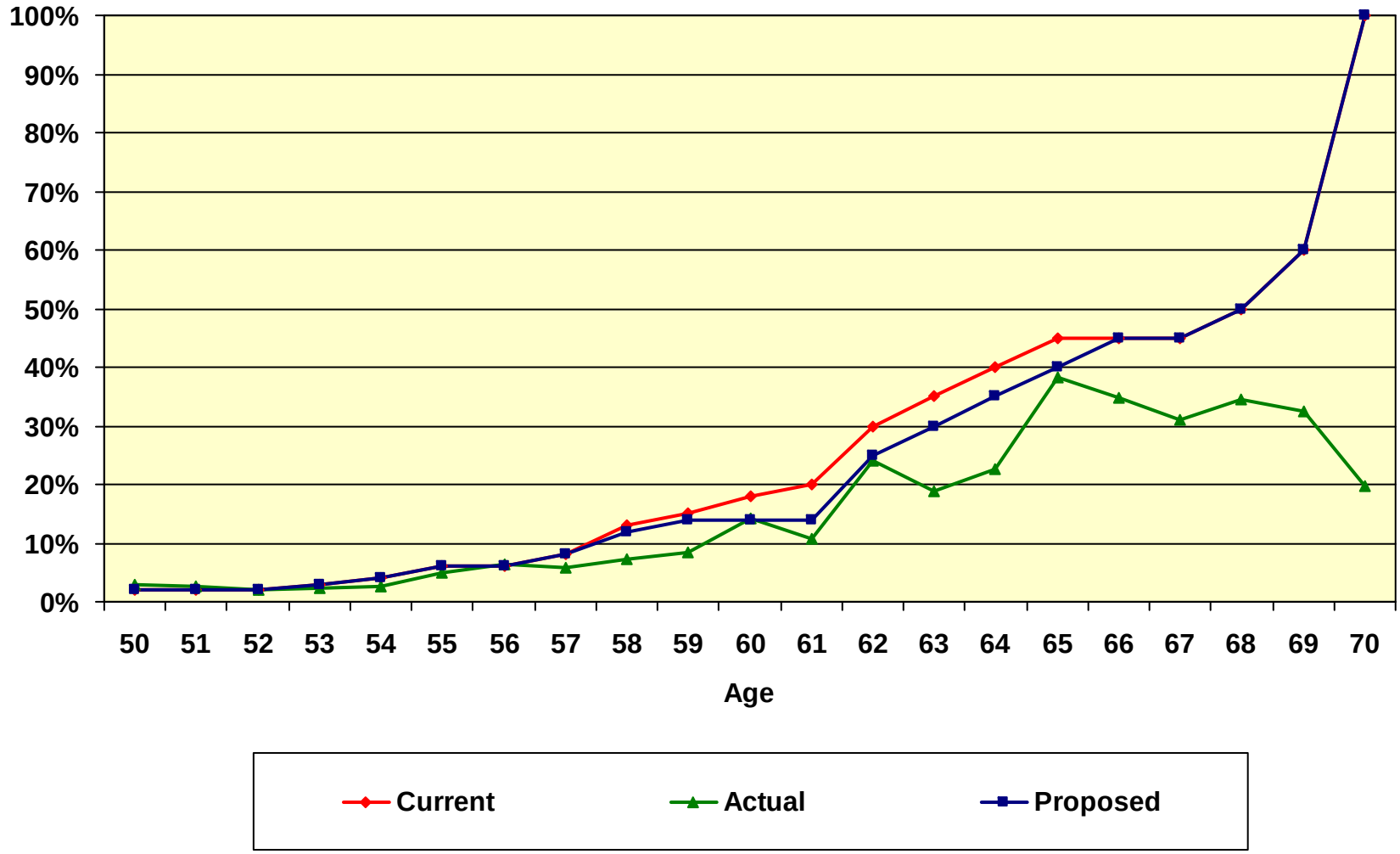
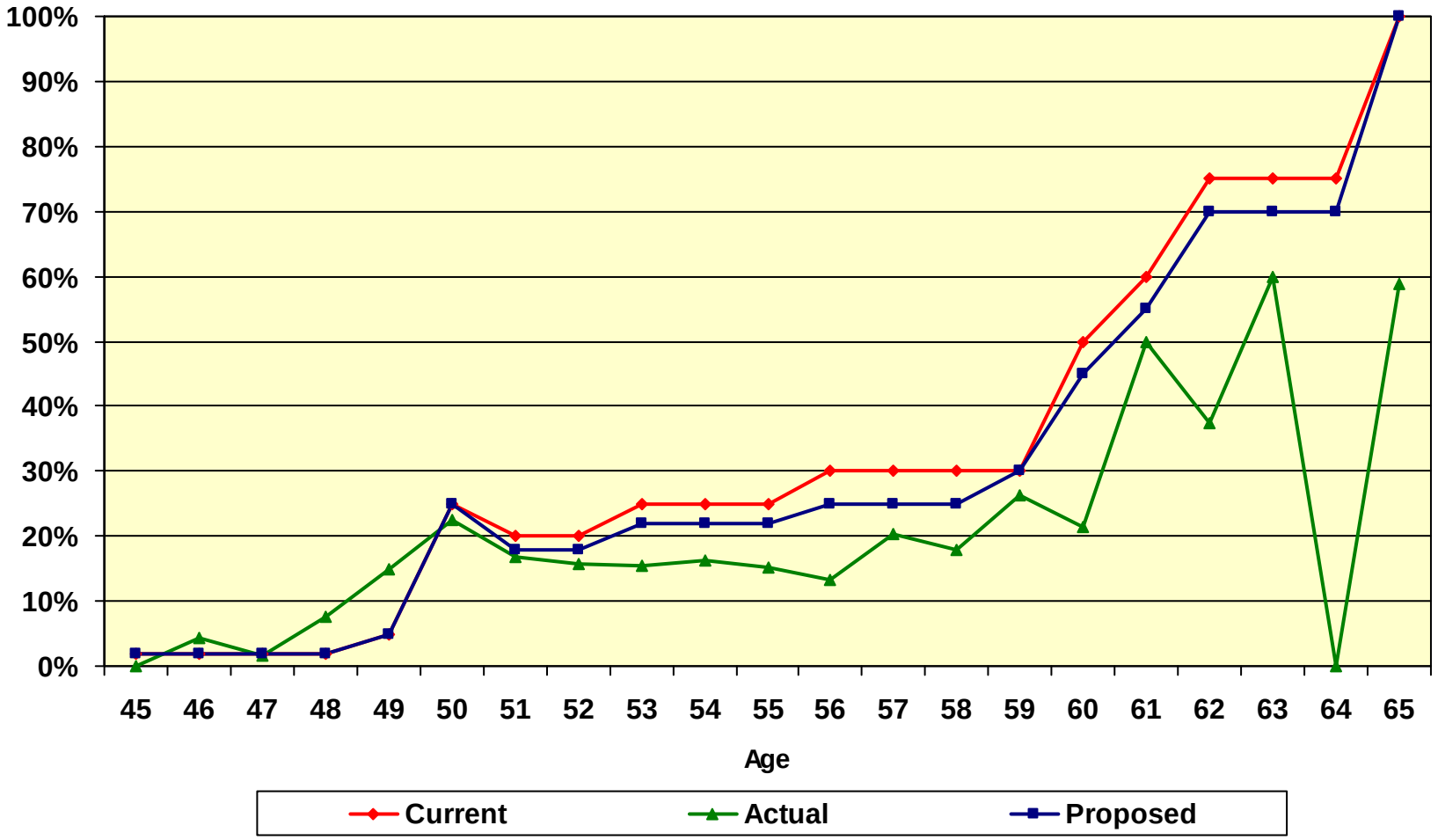


Chart 3
Retirement Rates - Safety Tier 1 & 2 Members



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 Combined Healthy Mortality Table (separate tables for males and females) set back two years for Miscellaneous members and all beneficiaries and set back one year 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 assumed that pre-retirement mortality follows the same tables used for post-retirement mortality. Based on actual experience during the last three years (with 100% non-duty deaths for Miscellaneous and 66.67% non-duty deaths for Safety), all Miscellaneous pre-retirement deaths are assumed to be non-duty while 50% of Safety pre-retirement deaths are assumed to be non-duty and the rest are assumed to be duty deaths.

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	Miscellaneous – Healthy[1]			Safety – Healthy		
	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths
2011	171	171	161	16	7	13
2012	179	199	169	19	14	15
2013	189	195	178	21	16	16
Total	539	565	508	56	37[2]	44
Actual / Expected	105%		111%	66%		84%

[1] Includes beneficiaries of Miscellaneous and Safety members.

[2] During the July 1, 2007 to June 30, 2010 experience study, there were 51 Safety deaths reported during that 3-year period.

The tables that we recommend for the Miscellaneous members and all beneficiaries is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with scale BB to

2022. For Safety members, we recommend the same tables as for Miscellaneous but set back one year for males and set forward two years for females. Of note is that the ratio of actual to expected deaths for Safety members under the proposed assumptions is lower than the 110% ratio that we would normally propose to allow for some margin for future mortality improvements. This is the case because the number of actual deaths during the most recent 3-year period is much lower than that during the last experience study period from 2007 to 2010.

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

Chart 5 has the same comparison for Safety members. Experience shows that there were fewer deaths than predicted by the current table over the last three years.

Chart 6 shows the life expectancies under the current and the proposed tables for Miscellaneous members and all beneficiaries.

Chart 7 has the same information for Safety members.

Mortality Table for Member Contributions

We recommend that the mortality table used for determining contributions for Miscellaneous members be changed from the RP-2000 Combined Healthy Mortality Table set back two years weighted 40% male and 60% female to the RP-2000 Combined Healthy Mortality Table projected with scale BB to 2022 weighted 40% male and 60% female. This is based on the proposed mortality table for Miscellaneous members and the actual gender distribution for the current Miscellaneous members.

For Safety members, we recommend the mortality table be changed from the RP-2000 Combined Healthy Mortality Table set back one year weighted 70% male and 30% female to the RP-2000 Combined Healthy Mortality Table projected with scale BB to 2022 set back one year for males and set forward two years for females then weighted 70% male and 30% 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 (Miscellaneous)
Non - Disabled Members

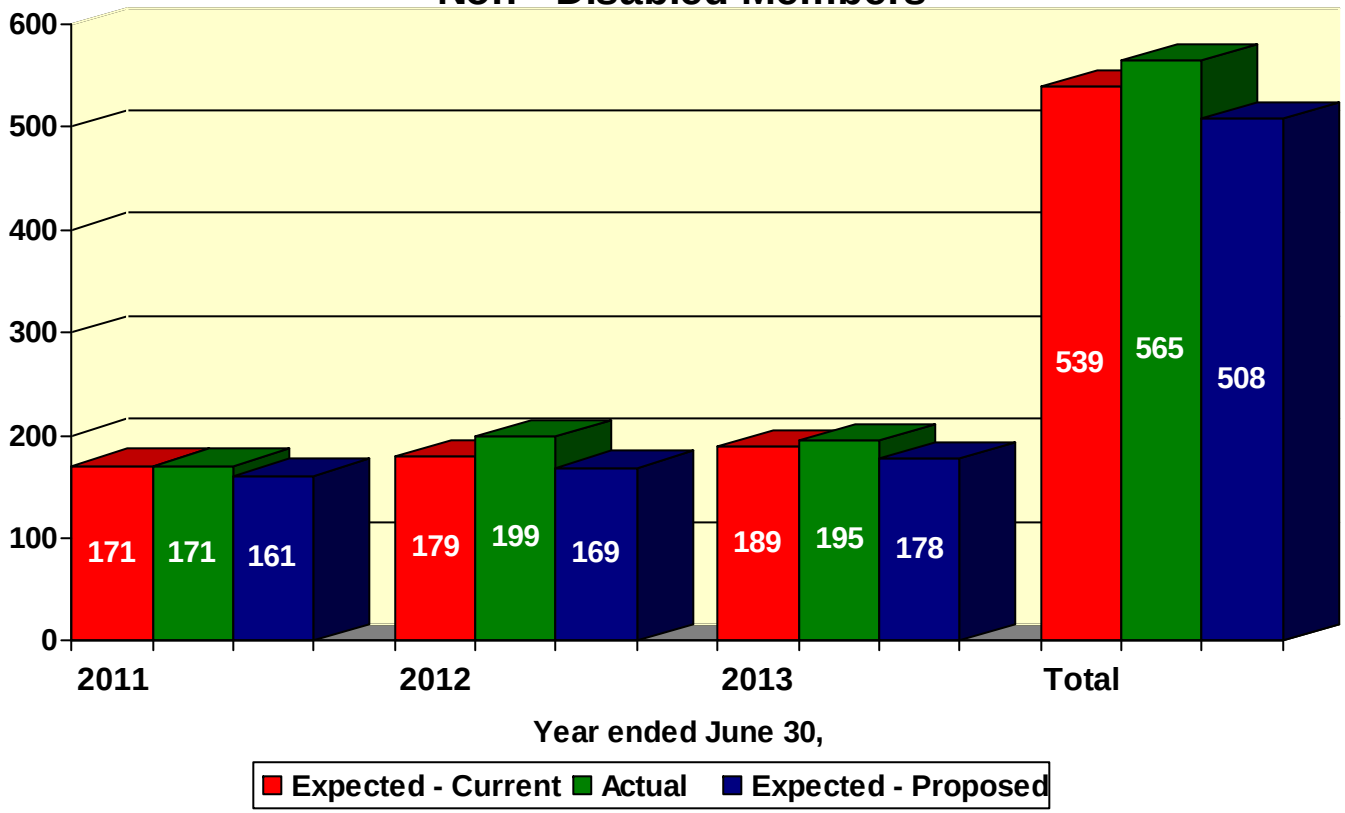


Chart 5
Post - Retirement Deaths (Safety)
Non - Disabled Members

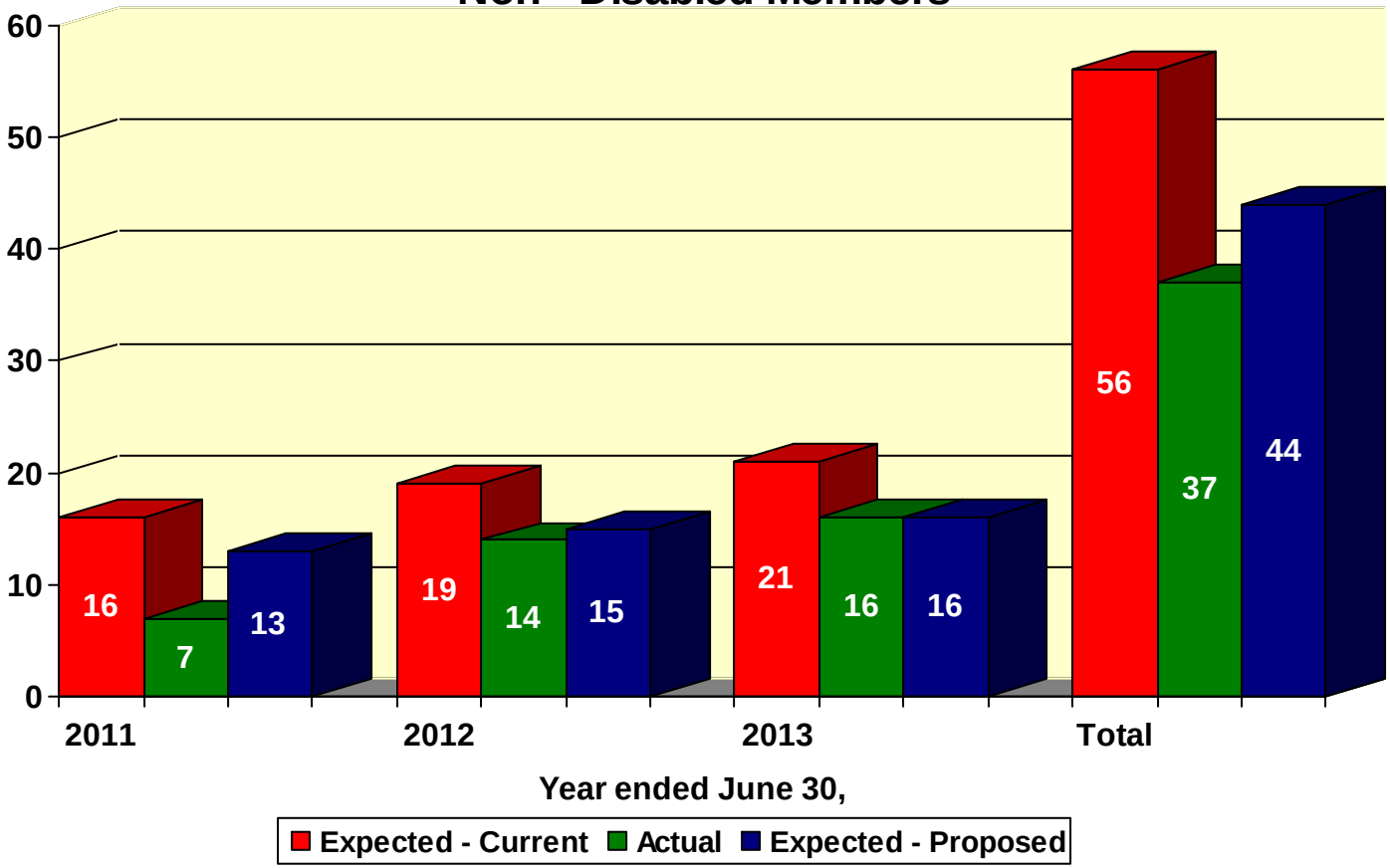


Chart 6
Life Expectancies (Miscellaneous)

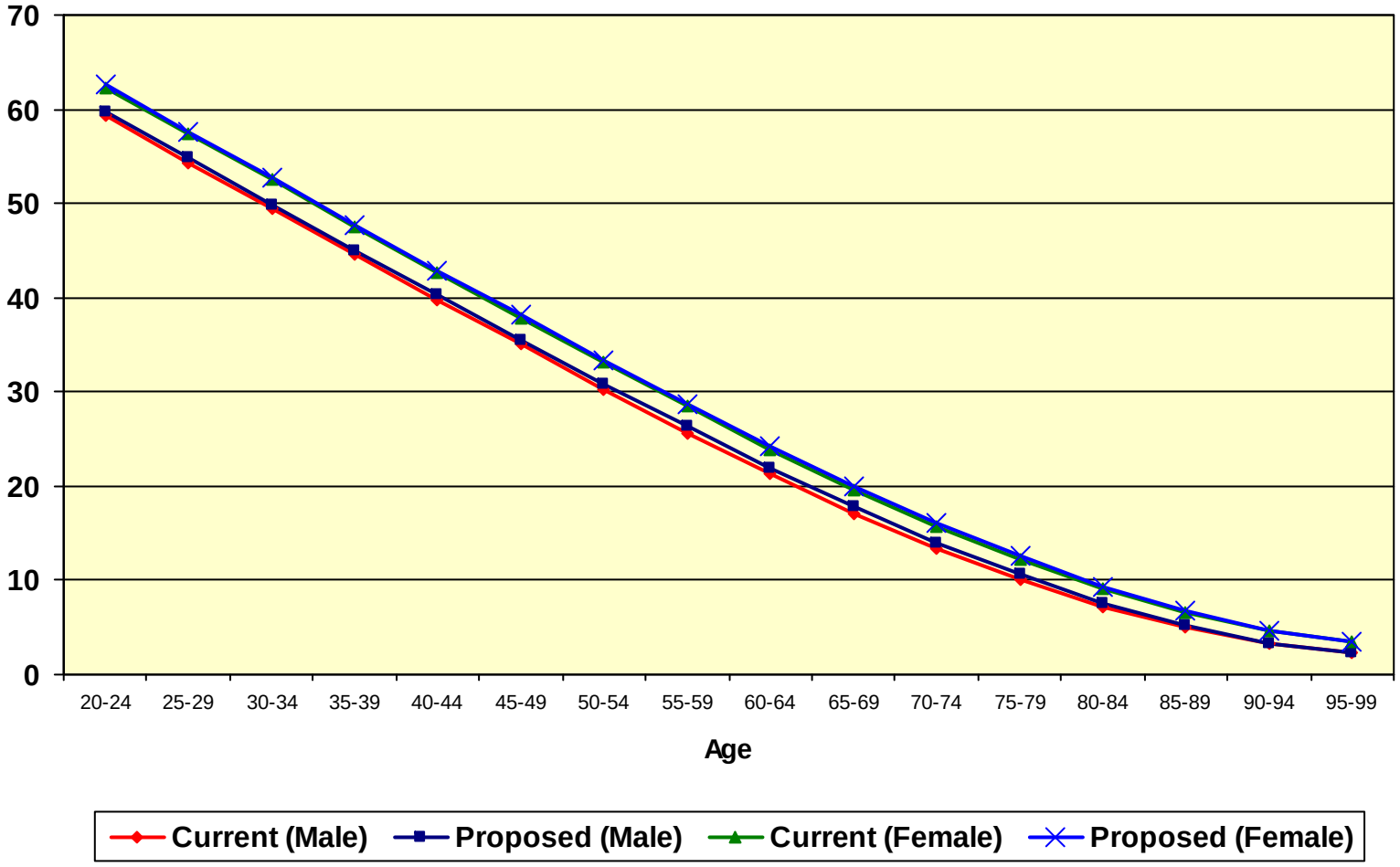
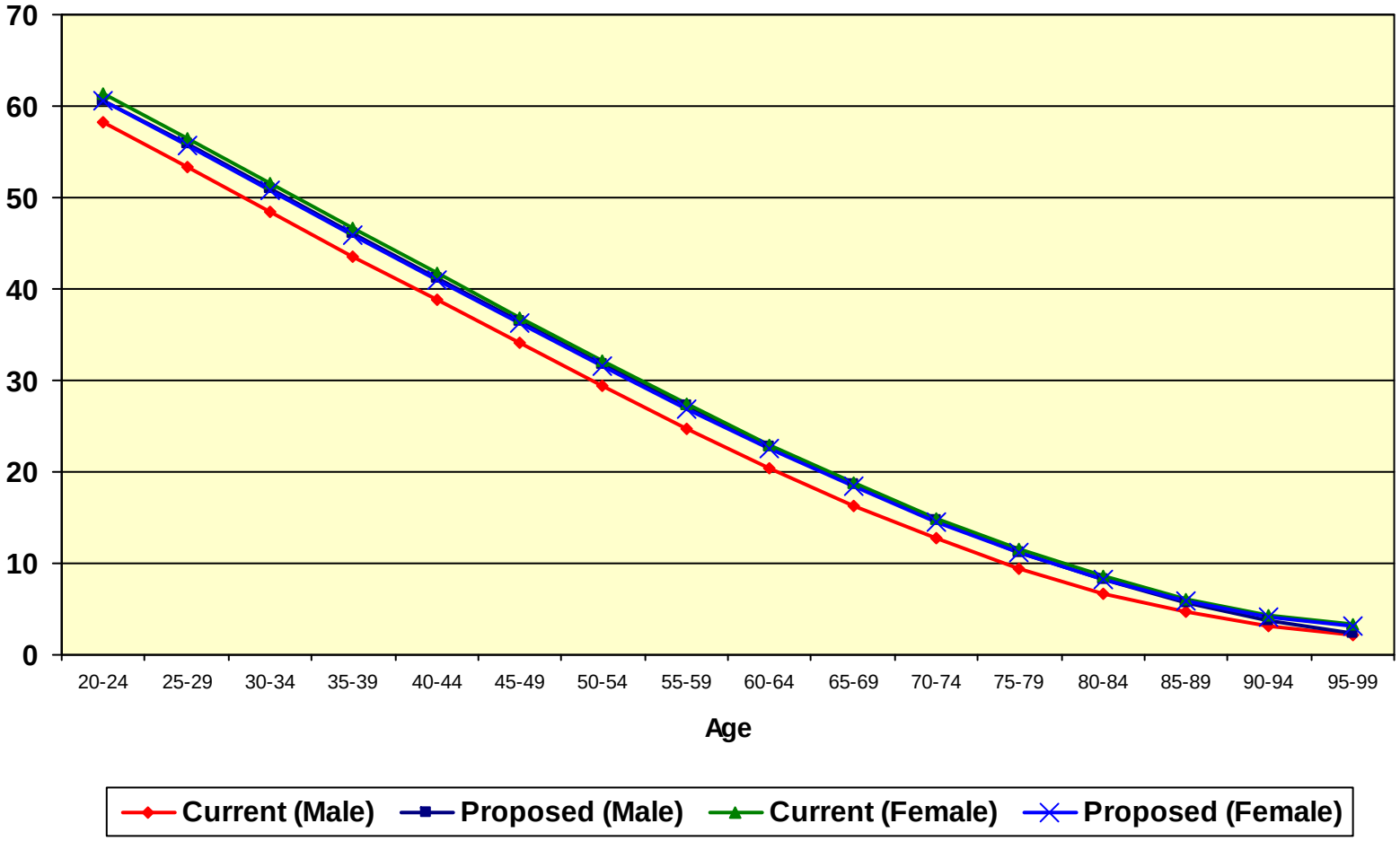


Chart 7
Life Expectancies (Safety)



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 Miscellaneous members is the RP-2000 Disabled Retiree Mortality Table (separate tables for males and females) set forward one year. For Safety members, the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set back one year is used, which is the same as the current "healthy" mortality assumption.

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

	Miscellaneous – Disability			Safety – Disability		
Year Ending June 30	Expected Deaths	Actual Deaths	Proposed Expected Deaths	Expected Deaths	Actual Deaths	Proposed Expected Deaths
2011	26	24	20	3	4	3
2012	26	23	21	3	3	3
2013	25	20	20	5	9	5
Total	77	67	61	11	16	11
Actual / Expected	87%		110%	145%		145%

We recommend that the mortality table for disabled Miscellaneous members be changed from the RP-2000 Disabled Retiree Mortality Table (separate tables for males and females) set forward one year to the RP-2000 Disabled Retiree Mortality Table (separate tables for males and females) projected with scale BB to 2022 with no age adjustment for males and set forward three years for females.

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

We recommend that the mortality table for disabled Safety members be changed from the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set back one year to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with scale BB to 2022 set forward two years. Even though the ratios of actual to expected deaths under both the current and the proposed assumptions are higher than the 110% ratios that we would normally propose to allow for margin for future mortality improvements, the additional margin for disabled members may be used to offset the "negative" margin for healthy members. We will continue to monitor this assumption.

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 Miscellaneous and Safety, respectively.

Chart 8
Post - Retirement Deaths
Disabled Miscellaneous Members

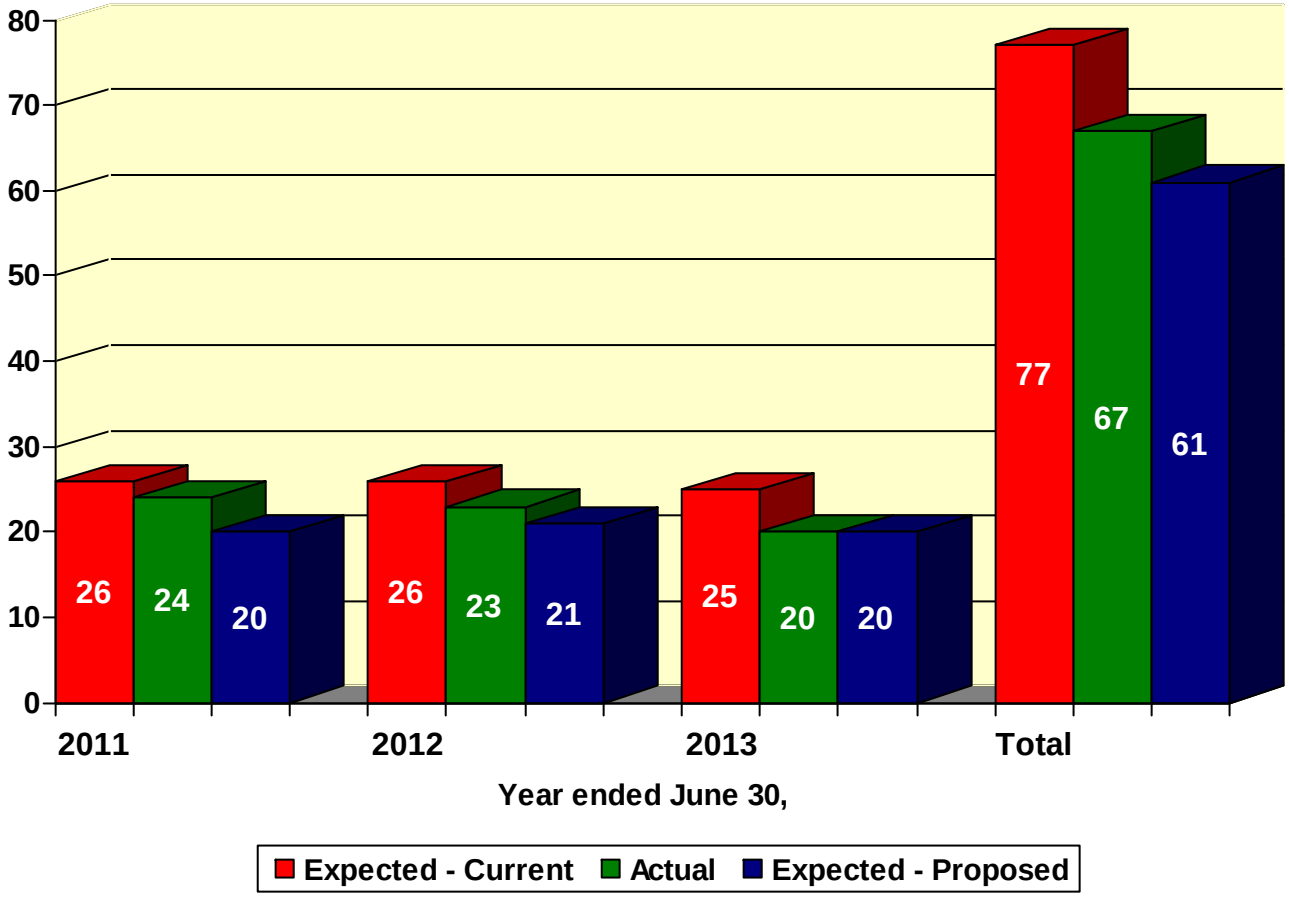


Chart 9
Post - Retirement Deaths
Disabled Safety Members

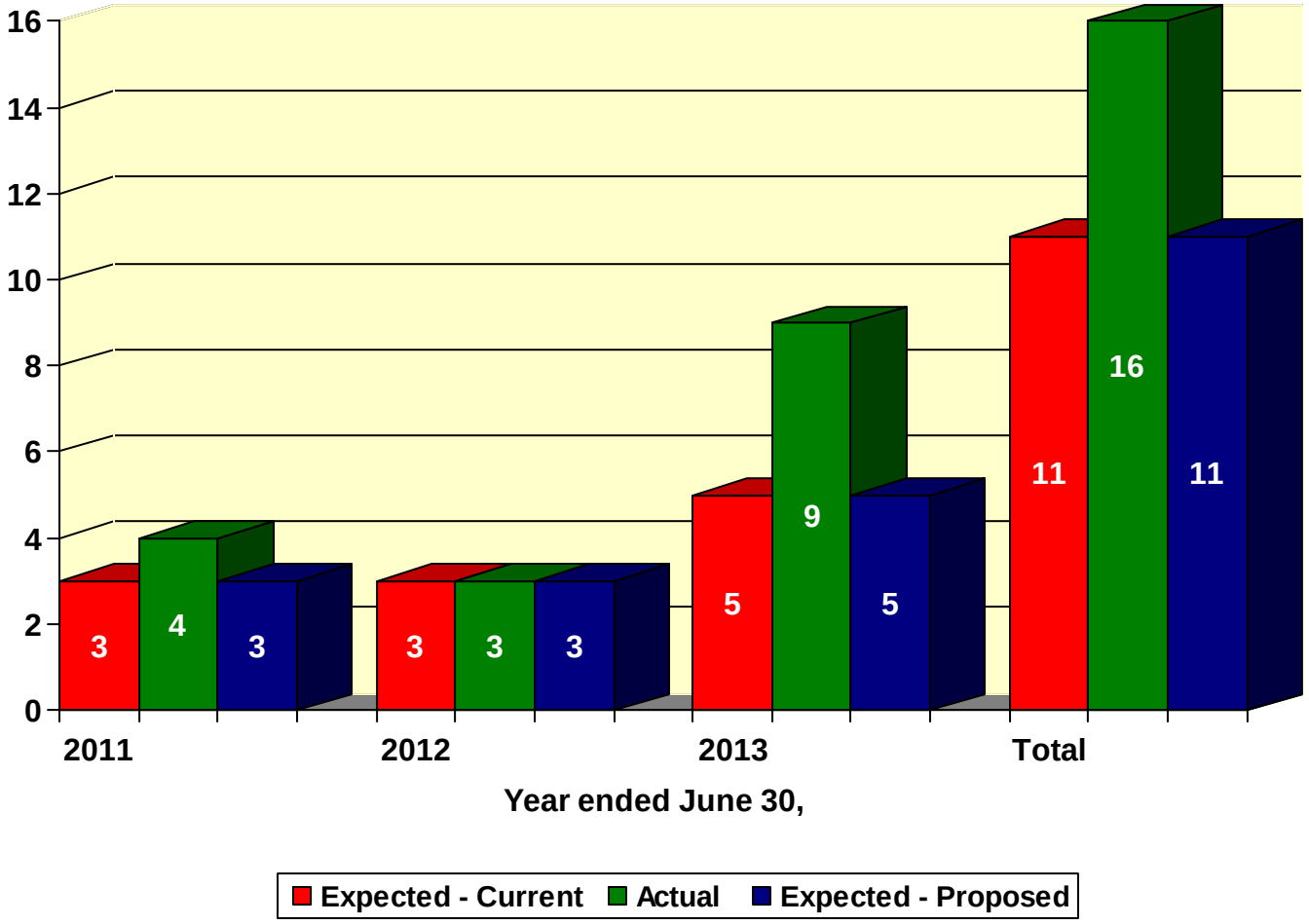


Chart 10
Life Expectancies (Miscellaneous Disabled)

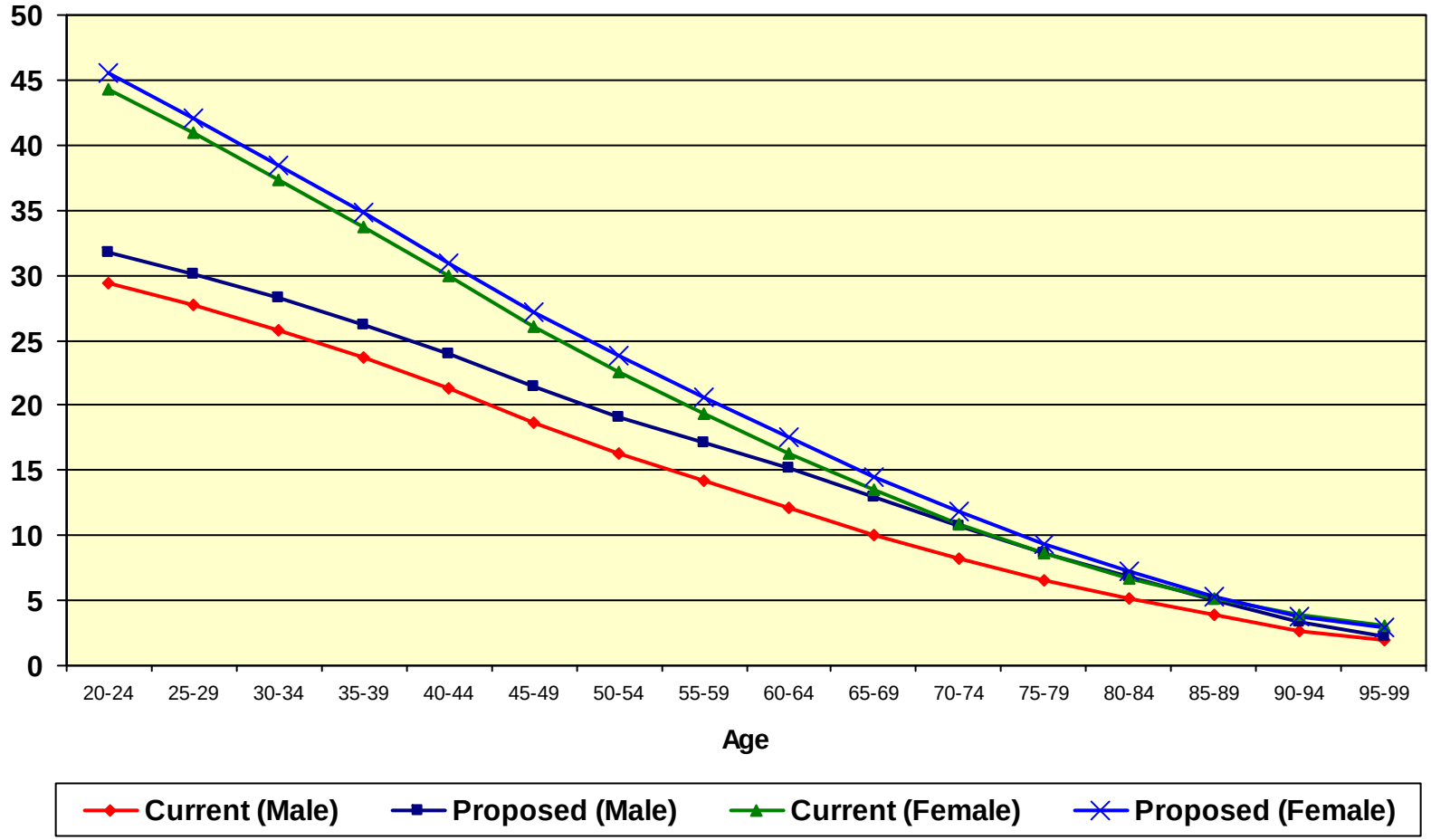
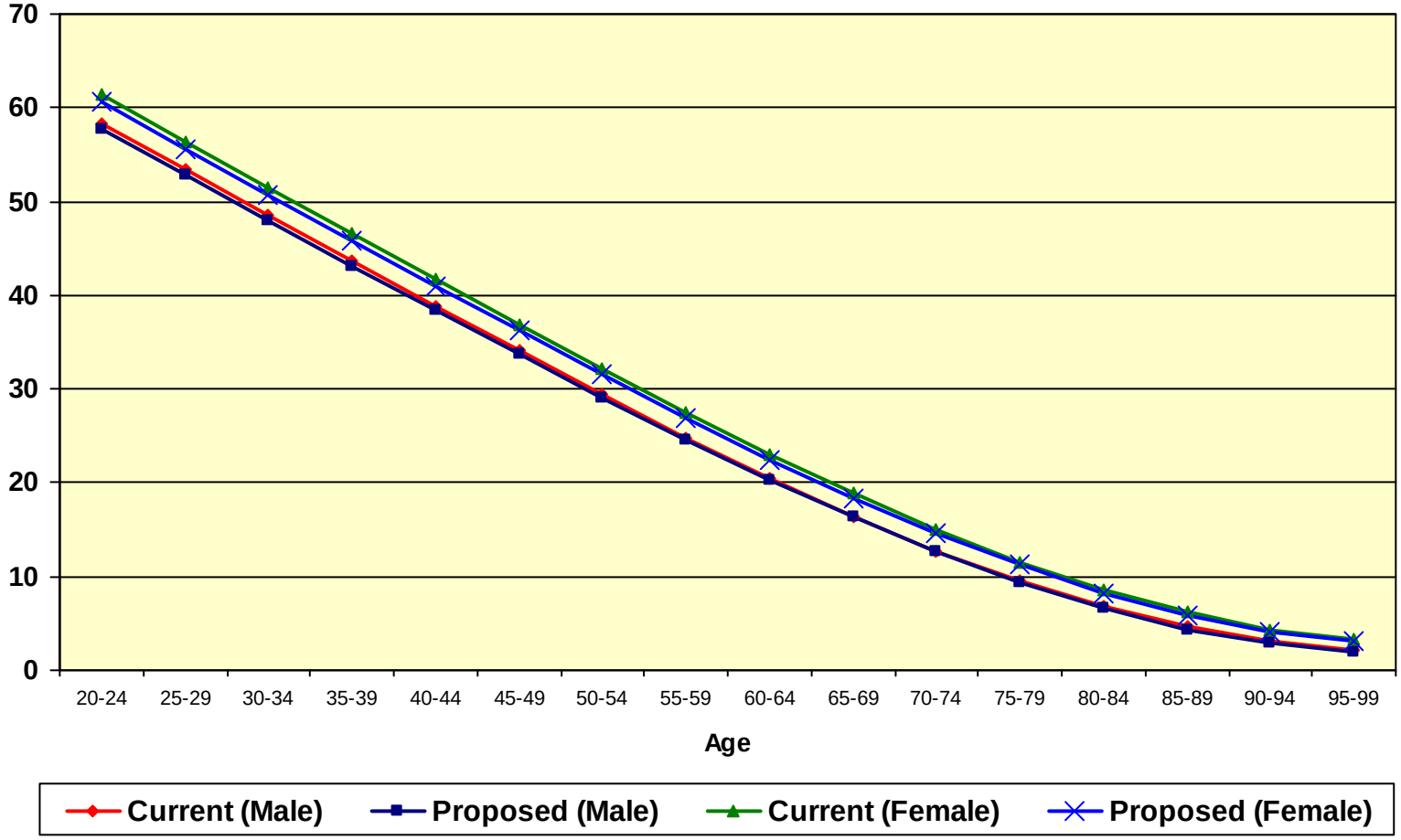


Chart 11
Life Expectancies (Safety Disabled)



E. TERMINATION RATES

Termination rates include all terminations for reasons other than death, disability, or retirement. For members who terminate employment with less than five years of service, they are anticipated under the current assumptions to elect only a refund of contributions. For members with over five years of service, it is anticipated under the current assumptions that 50% of Miscellaneous members and 40% of Safety members would elect a refund of contributions while the remaining 50% and 60% of Miscellaneous and Safety members, respectively, would elect a deferred retirement benefit.

Because of the significant reduction-in-force that occurred during the 2010/2011 plan year, we believe that including terminations from that year to set the long term termination rates would significantly over estimate the number of future terminations. Therefore, we have only used the experience from the remaining two-year period (i.e., from June 30, 2011 to June 30, 2013) to review the termination rates. The termination experience over the last two years for Miscellaneous 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 (Miscellaneous)
(Fewer than Five Years of Service)

Years of Service	Current Rate	Observed Rate	Proposed Rate
0	15.00%	12.44%	13.00%
1	9.00	7.53	8.00
2	8.00	5.87	7.00
3	6.00	6.21	6.00
4	5.00	6.48	5.50

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

Years of Service	Current Rate	Observed Rate	Proposed Rate
0	10.00%	4.26%	8.00%
1	6.00	3.85	6.00
2	5.00	0.00	5.00
3	4.00	4.29	4.00
4	3.00	2.44	3.00

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

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	5.00%	0.00%	5.00%
25 – 29	4.75	6.44	5.00
30 – 34	4.50	4.43	4.50
35 – 39	4.25	3.00	4.00
40 – 44	3.50	2.15	3.00
45 – 49	2.50	2.24	2.50
50 – 54	1.70	2.63	2.00
55 – 59	1.50	2.13	1.75
60 – 64	0.00	3.93	1.00
65 – 69	0.00	7.08	1.00

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

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	3.00%	0.00%	2.50%
25 – 29	3.00	1.39	2.50
30 – 34	3.00	1.95	2.50
35 – 39	2.50	1.55	2.00
40 – 44	2.00	1.28	1.75
45 – 49	1.50	1.81	1.50
50 – 54	0.00	7.14	1.50
55 – 59	0.00	4.35	1.50
60 – 64	0.00	0.00	1.50

Chart 12 compares actual to expected terminations of the past two years for both the current and proposed assumptions for Miscellaneous members and Safety members.

Chart 13 shows the current, along with the proposed withdrawal rates for Miscellaneous members with less than five years of service.

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

Chart 15 shows the current, along with the proposed termination rates for Miscellaneous members with five or more years of service.

Chart 16 shows the same information as Chart 15, but for Safety members.

Based upon the recent experience, we recommend slight adjustments to the withdrawal rates for Miscellaneous and Safety members.[1]

Under the current withdrawal assumptions, all members who terminate employment with less than five years of service are anticipated to elect only a refund of contributions. For members with over five years of service, it is anticipated under the current assumptions that 50% of Miscellaneous members and 40% of Safety members would elect a refund of contributions while the remaining 50% and 60% of Miscellaneous and Safety members, respectively, would elect a deferred retirement benefit. Because there is often a lag between when a member terminates employment and when that member makes an election to receive either a refund of contributions or a deferred retirement benefit, we tracked the election made by all members who terminated during 2010/2011 from the date of termination through the end of the experience study period (June 30, 2013) to determine the proportion of members that elect to leave their contributions on deposit. The table below shows the proportion of members assumed to elect a refund of contributions separately for members with less than five years of service and members with five or more years of service as well as Miscellaneous and Safety members.

Election for Refund of Contributions

	Current Assumption	Actual Rate	Proposed Assumption
Members with Fewer than Five Years of Service			
Miscellaneous	100%	62%	75%
Safety	100%	30%	50%
Members with Five of More Years of Service			
Miscellaneous	50%	62%	50%
Safety	40%	8%	20%

We will also 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.

[1] As previously outlined in the June 30, 2012 and June 30, 2013 valuations, we have reclassified some inactive members as being assumed to have elected a deferred benefit upon termination instead of a refund of contributions as was assumed in our prior valuations.

Chart 12
Actual Number of Terminations Compared to Expected

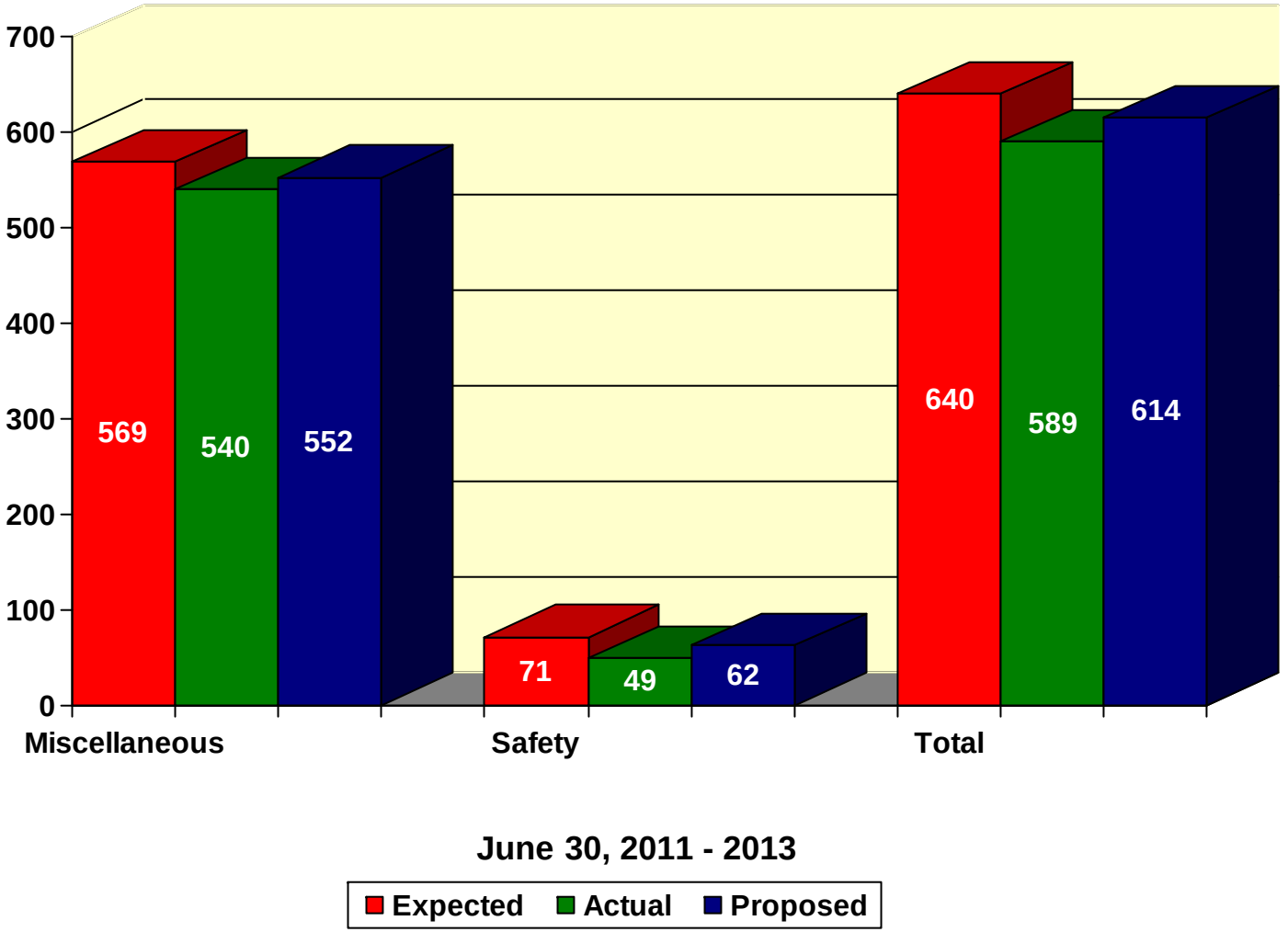


Chart 13
Termination Rates - Miscellaneous Members
(Less than Five Years of Service)

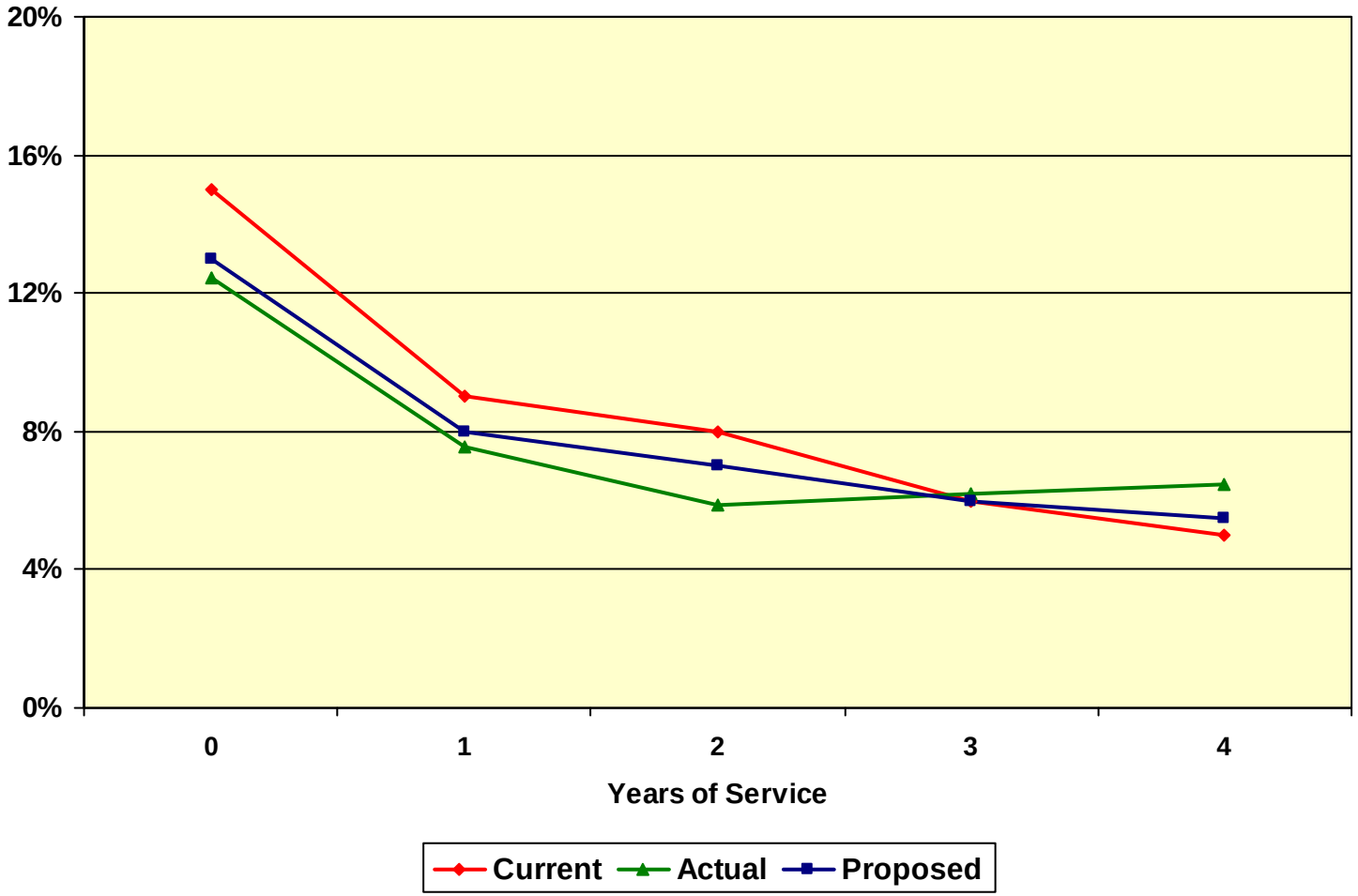


Chart 14
Termination Rates - Safety Members
(Less Than Five Years of Service)

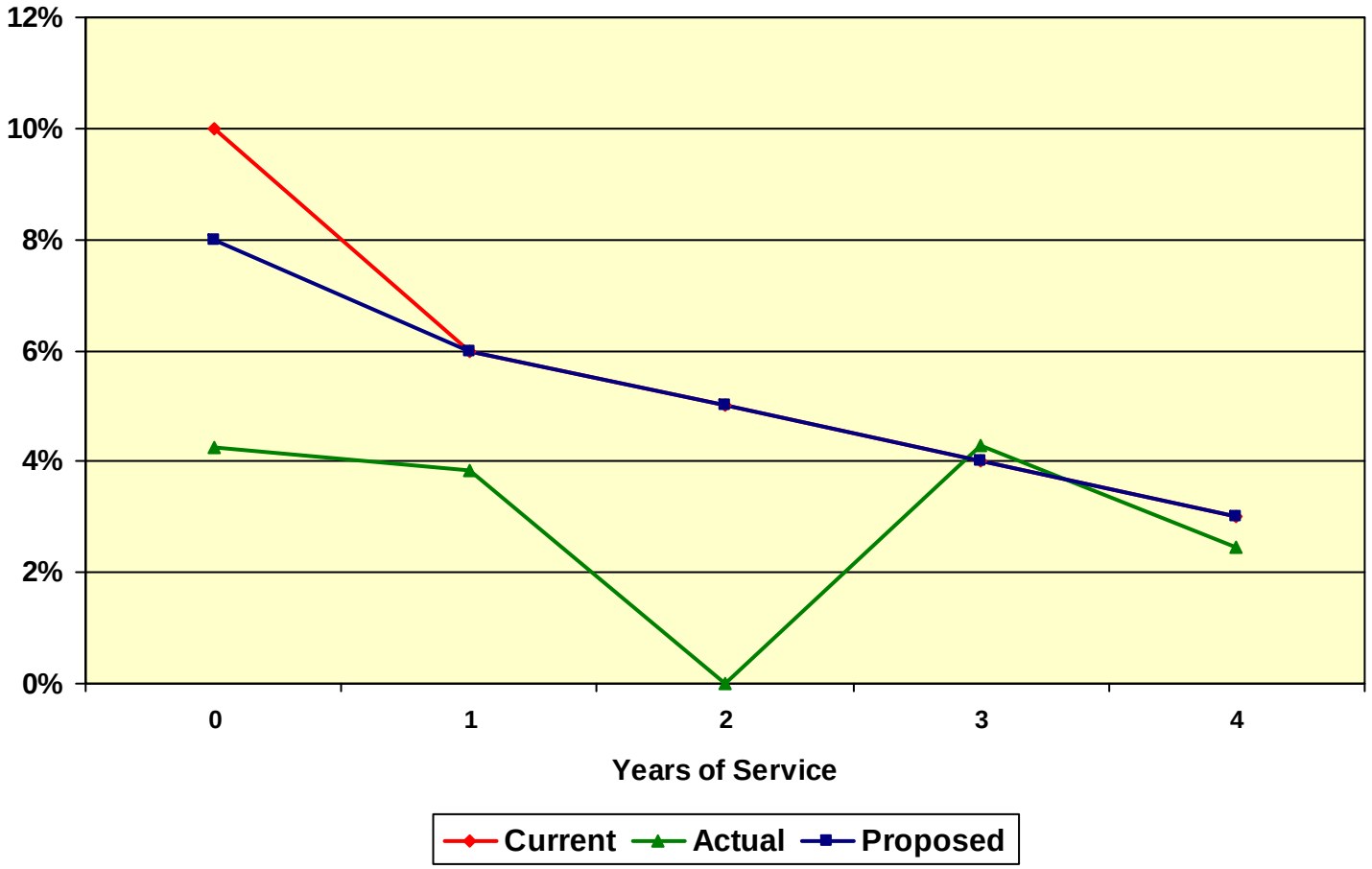


Chart 15
Termination Rates - Miscellaneous Members
(Five or More Years of Service)

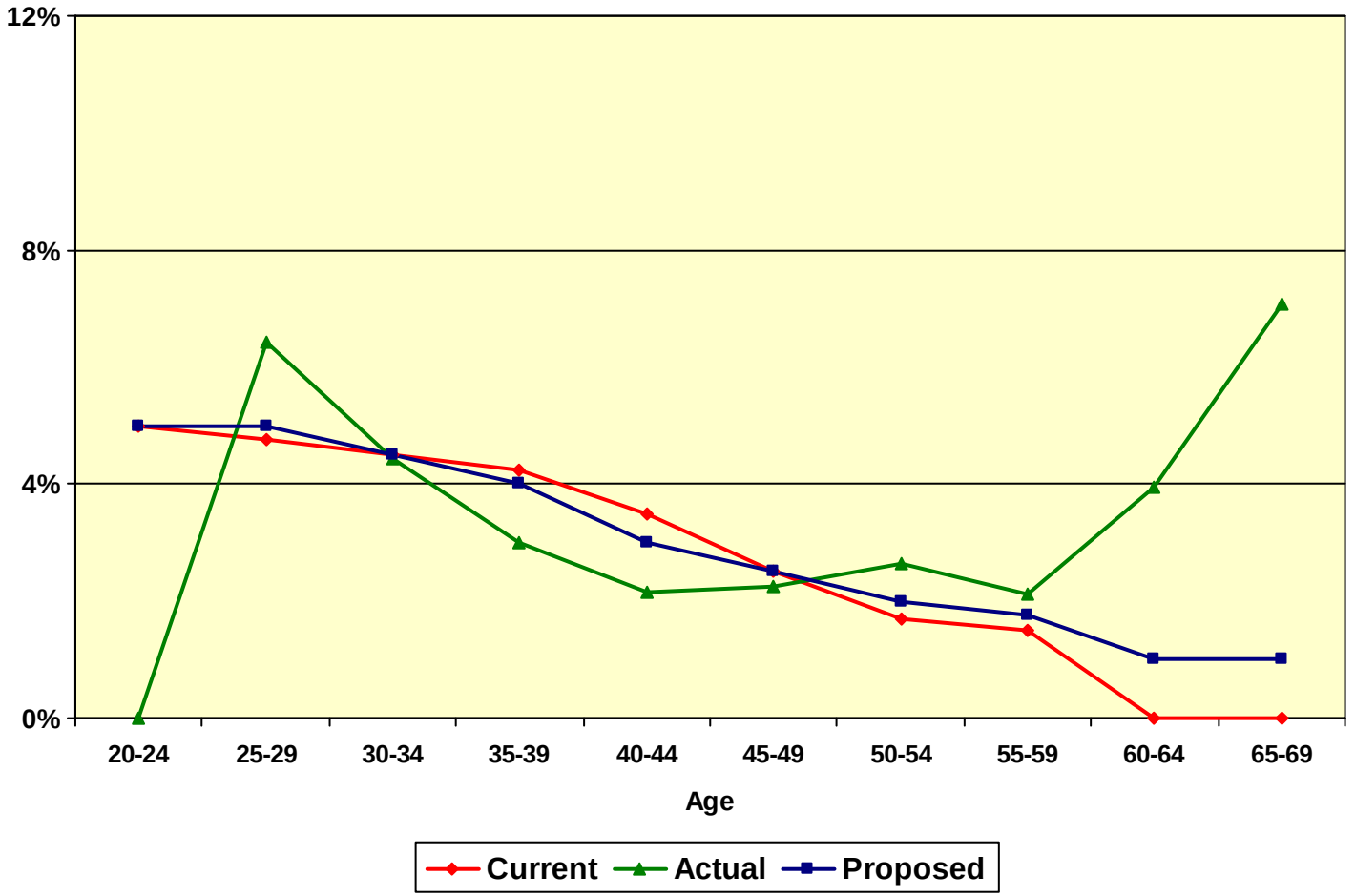
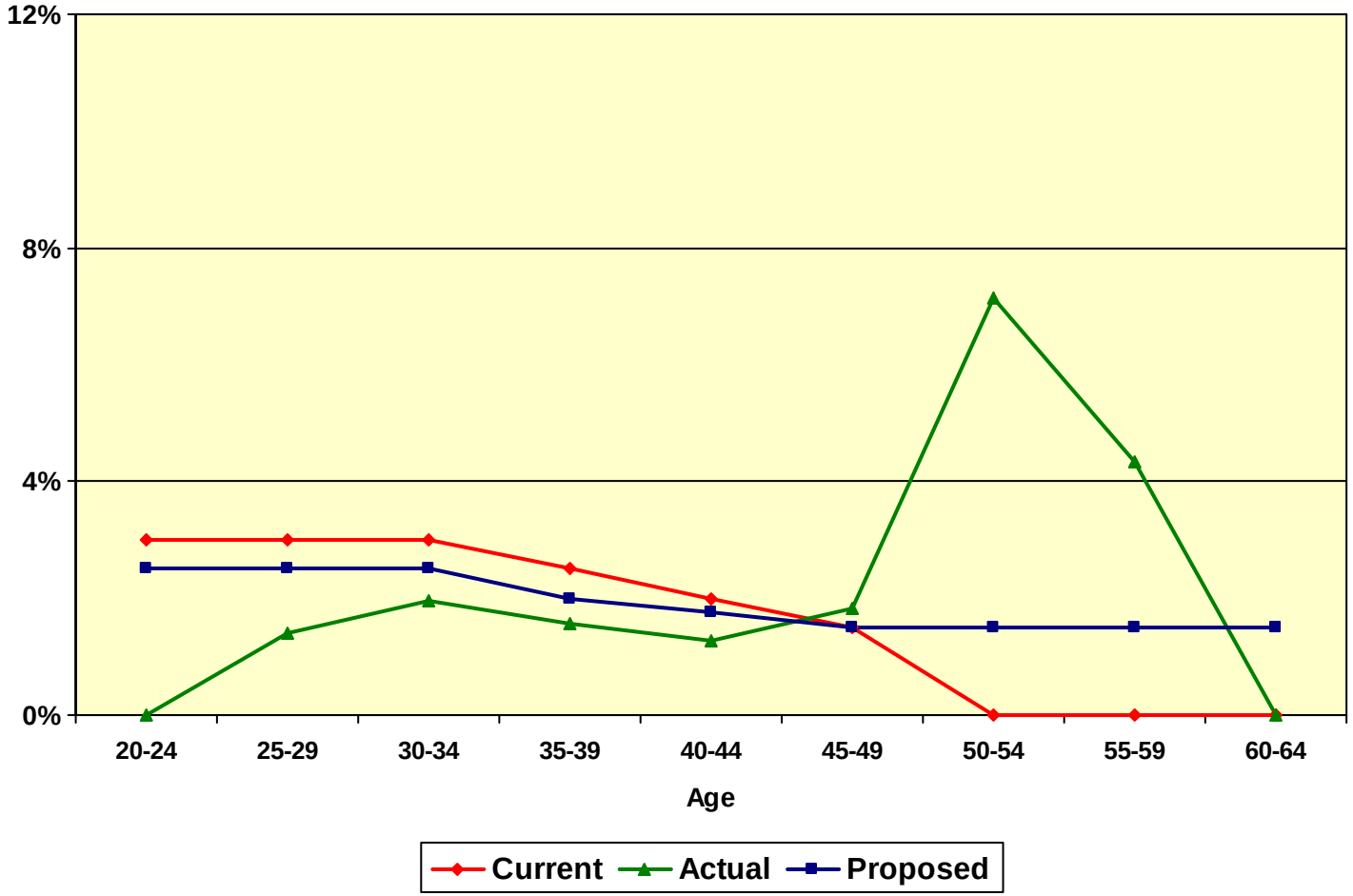


Chart 16
Termination Rates - Safety Members
(Five or More Years of Service)



F. DISABILITY INCIDENCE RATES

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

Rates of Disability Incidence (Miscellaneous)

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	0.00%	0.00%	0.00%
25 – 29	0.02	0.00	0.02
30 – 34	0.04	0.03	0.04
35 – 39	0.06	0.00	0.06
40 – 44	0.10	0.07	0.10
45 – 49	0.20	0.10	0.20
50 – 54	0.30	0.31	0.30
55 – 59	0.40	0.41	0.40
60 – 64	0.75	0.46	0.60
65 – 69	1.10	1.15	1.10

Rates of Disability Incidence (Safety)

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	0.10%	0.00%	0.10%
25 – 29	0.10	0.00	0.10
30 – 34	0.25	0.11	0.20
35 – 39	0.40	0.16	0.30
40 – 44	0.55	0.54	0.55
45 – 49	0.70	0.52	0.65
50 – 54	0.90	0.85	0.90
55 – 59	2.20	0.69	1.50
60 – 64	0.00	5.66	2.50

Chart 17 compares the actual number of non-duty and duty disabilities over the past three years to that expected under both the current and proposed assumptions. The proposed disability rates were adjusted to reflect the past three years' experience.

Chart 18 shows actual disablement rates, compared to the assumed and proposed rates for Miscellaneous members.

Since 30% of disabled Miscellaneous members received a duty disability, we recommend that the current 20% assumption used to anticipate duty disability retirement be increased to 25%. The remaining 75% of Miscellaneous disabled members will be assumed to receive a non-duty disability.

Chart 19 graphs the same information as Chart 18, but for Safety members. While 85% of disabled Safety members received a duty disability, we are continuing to recommend that the current 90% assumption be used to anticipate duty disability retirement as that assumption was only increased from 80% to 90% in the last experience study. The remaining 10% of Safety disabled members are assumed to receive a non-duty disability.

Chart 17
Actual Number of Disabilities Compared to Expected

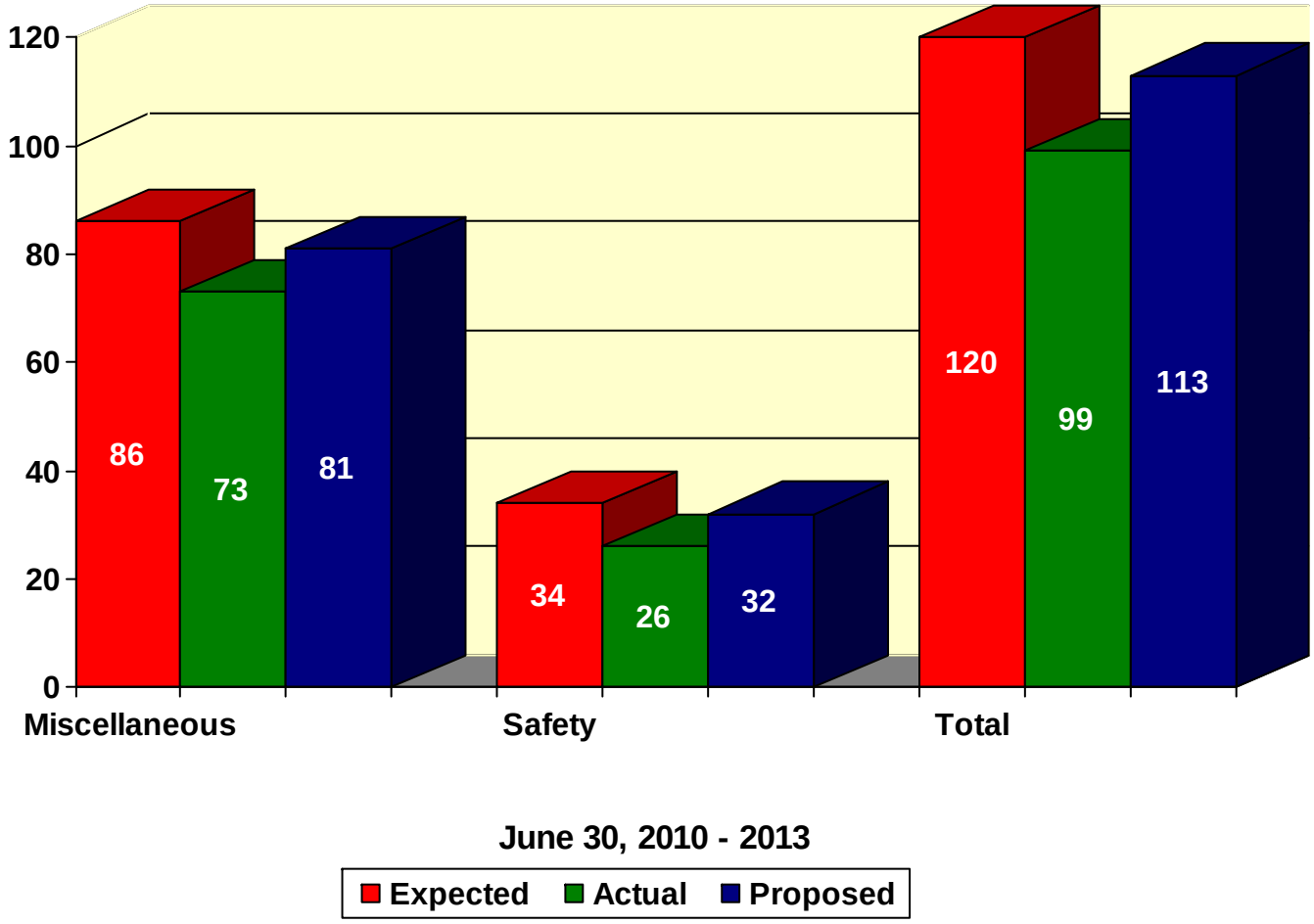


Chart 18
Disablement Rates for Miscellaneous Members

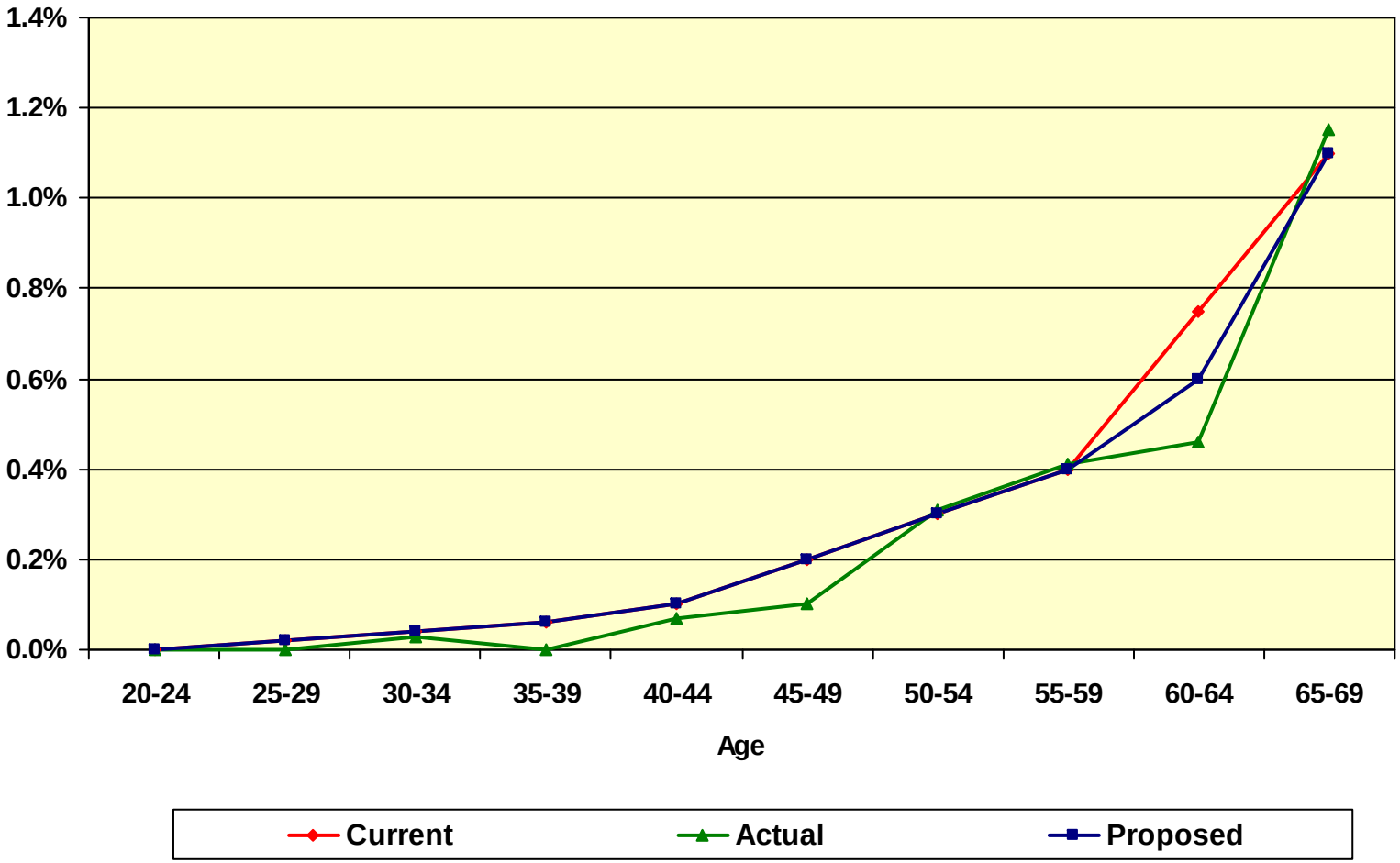
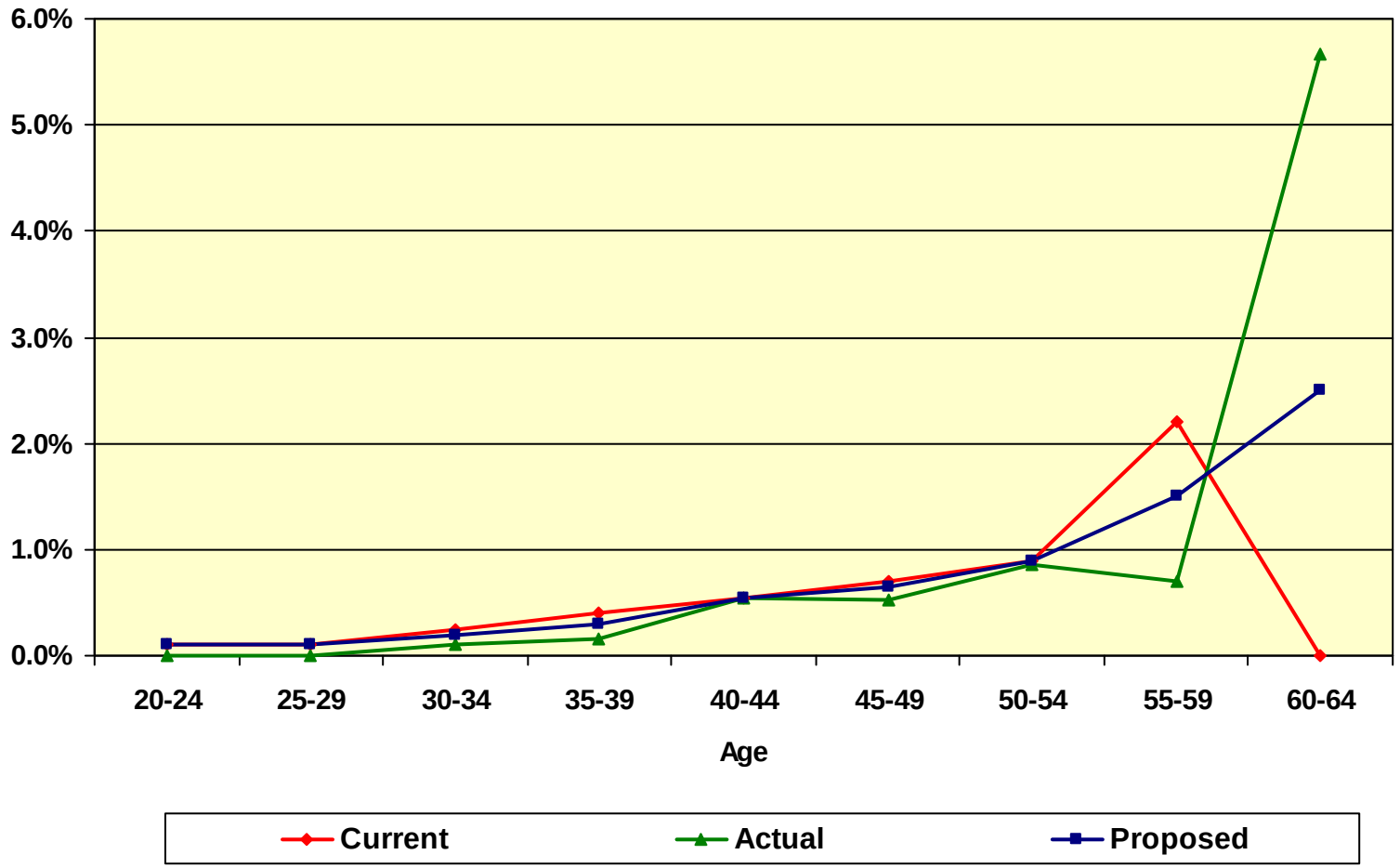


Chart 19
Disablement Rates for Safety Members



G. MERIT AND PROMOTIONAL SALARY INCREASES

The System'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 are recommending a 3.25% inflation assumption for the June 30, 2014 valuation. We also discussed in that report our recommended assumption of 0.25% real "across the board" pay increases. Therefore, the total inflation and real "across the board" increase of 3.50% 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 inflationary and real "across the board" pay increases. Increases are measured separately for Miscellaneous 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 service groups;
- Removing the wage inflation component from these increases (assumed 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."

Currently, the assumed merit and promotional salary increases are a function of a member's age. Our experience review analyzed merit and promotional salary increases both as a function of age and as a function of years of service. Our review found that while merit and promotional salary increases correlate with both years of service and age, we believe there is a stronger correlation with years of service. This is consistent with our experience from other systems.

As a result of this review, we recommend that the merit and promotional salary increase assumptions be structured solely as a function of years of service.

The following table shows the average increases over the three-year experience period before removing the inflationary component:

	Average Increase (%)	
Years of Service	Miscellaneous Members	Safety Members
0 – 1	5.89	12.62
1 – 2	7.99	11.88
2 – 3	7.41	14.49
3 – 4	6.56	11.08
4 – 5	4.74	8.93
5 – 6	3.62	8.00
6 – 7	3.13	7.33
7 – 8	3.09	6.53
8 – 9	3.33	6.25
9 – 10	2.72	6.33
10 or more	2.67	5.58

The annual increase in average salary for this three-year period was about 1.60% for Miscellaneous members and 3.89% for Safety members. The following table shows the average merit and promotional increases for the current three-year period, after removing the increases in average salary in each service category:

	Average Merit and Promotional Salary Increase (%)	
Years of Service	Miscellaneous Members	Safety Members
0 – 1	4.84	8.17
1 – 2	5.81	7.62
2 – 3	4.72	10.55
3 – 4	4.50	7.08
4 – 5	3.05	5.30
5 – 6	2.10	4.37
6 – 7	1.83	3.38
7 – 8	1.36	2.65
8 – 9	1.14	2.54
9 – 10	0.83	2.53
10 or more	1.06	1.64

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

Current vs. Proposed Merit and Promotional Salary Increase (5)

	Miscellaneous Members			Safety Members		
Years of Service	Current	Actual	Proposed	Current	Actual	Proposed
0 – 1	3.15	4.84	5.00	3.77	8.17	8.00
1 – 2	3.07	5.81	4.50	3.42	7.62	7.00
2 – 3	2.99	4.72	3.75	3.41	10.55	6.00
3 – 4	2.90	4.50	3.50	3.31	7.08	5.00
4 – 5	2.78	3.05	3.00	3.30	5.30	4.00
5 – 6	2.67	2.10	2.50	3.33	4.37	3.50
6 – 7	2.56	1.83	2.25	3.12	3.38	3.25
7 – 8	2.45	1.36	2.00	2.93	2.65	3.00
8 – 9	2.37	1.14	1.75	2.71	2.54	2.75
9 – 10	2.32	0.83	1.00	2.57	2.53	2.00
10 or more	1.98	1.06	1.00	2.04	1.64	1.75

Charts 20 and 21 provide a graphical comparison of the current, actual experience and proposed merit and longevity increases.

Chart 20
Merit and Promotional Salary Increase Rates
for Miscellaneous Members

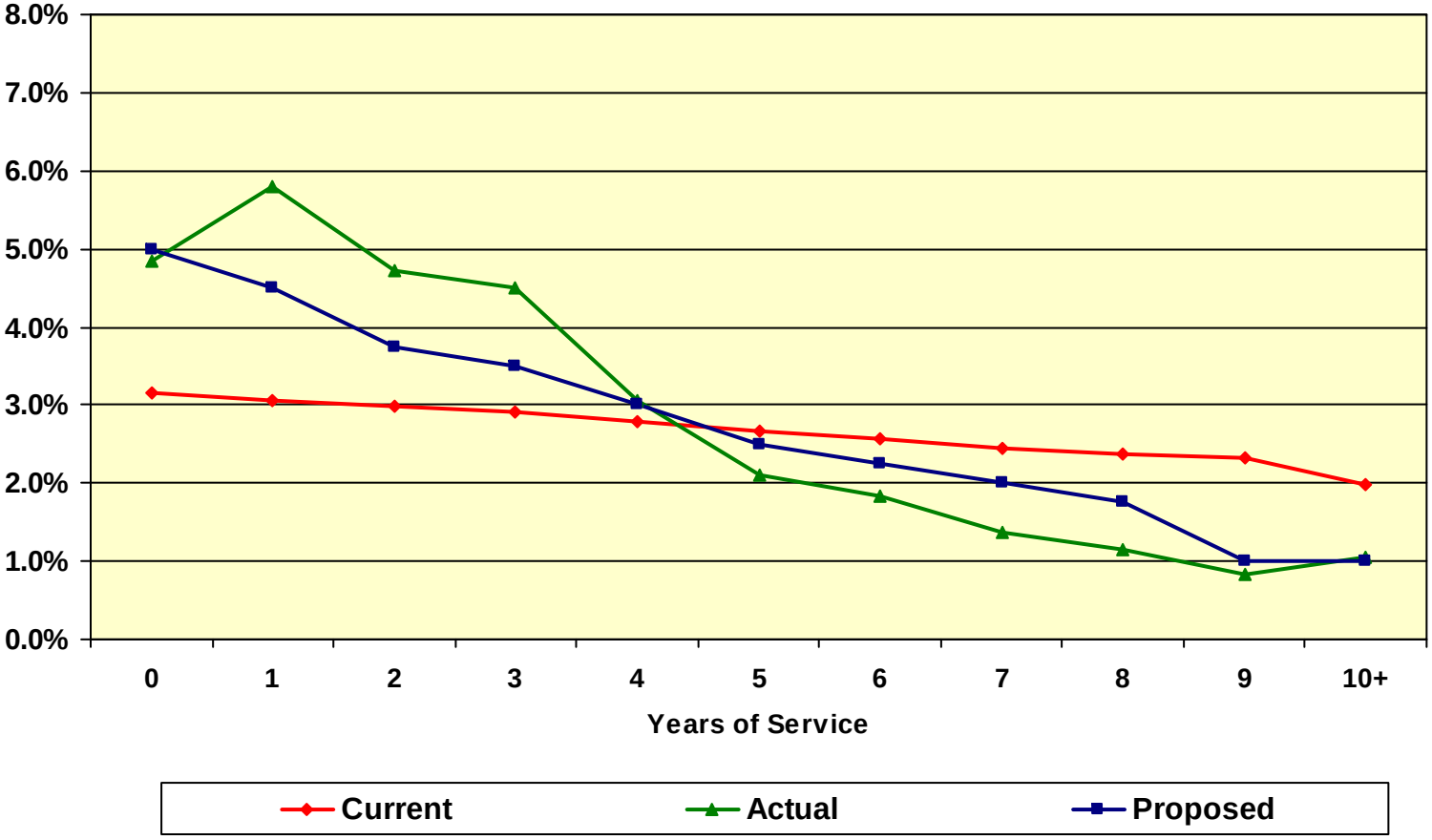
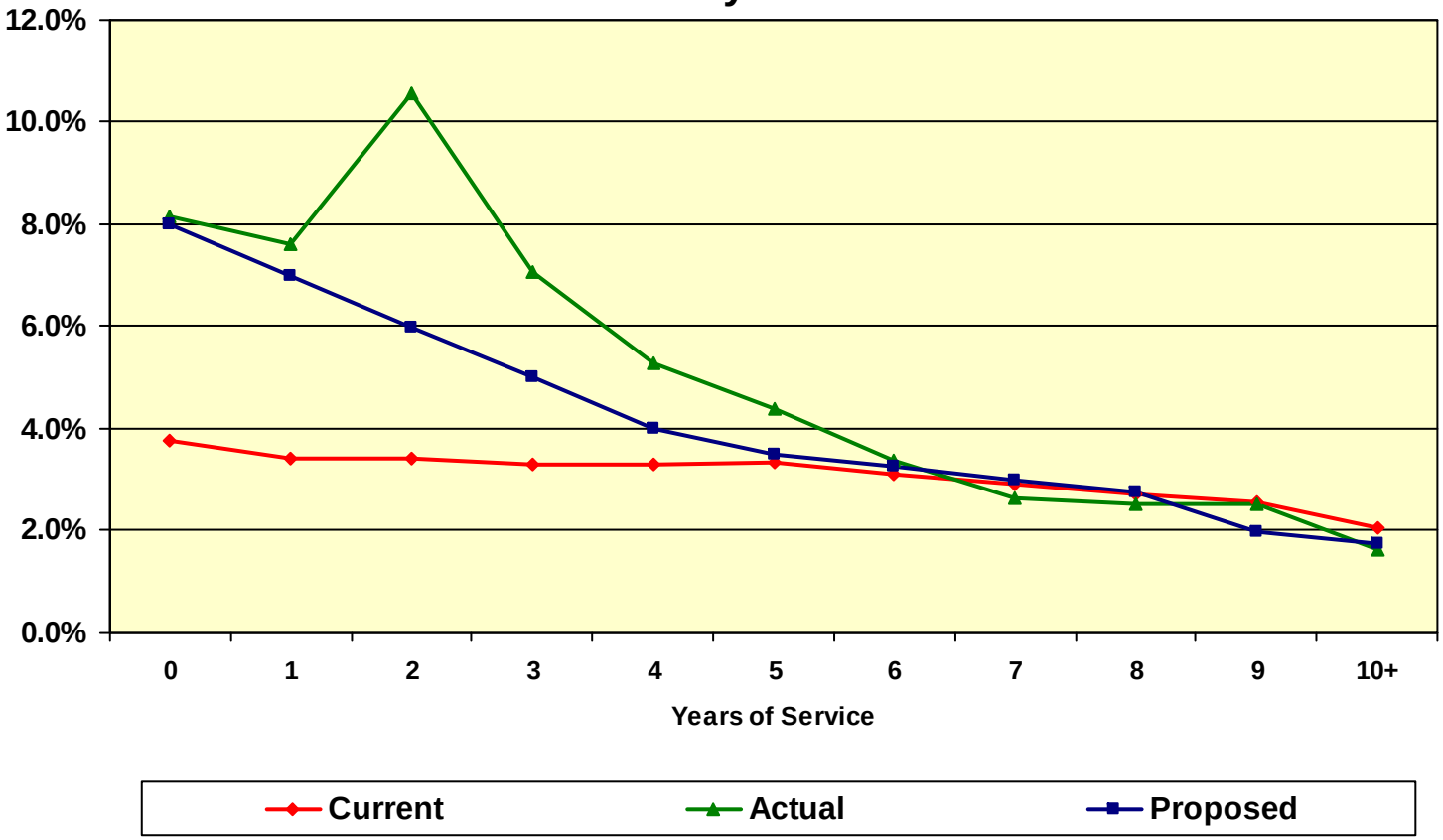


Chart 21
Merit and Promotional Salary Increase Rates for Safety Members



H. SERVICE FROM UNUSED SICK LEAVE CONVERSION

At retirement, members can convert their unused sick 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 proportional increase in service that will occur due to unused sick leave conversions.

We collected information on the actual amount of sick leave converted to service credit for retirees during the three year period studied. Consistent with the format of the current assumption, the actual converted sick leave was expressed as a percentage of members' total service credit (before including the unused sick leave credit).

The tables below show the actual sick leave converted to service credit as a percentage of total service credit (before including the sick leave converted to service credit) at retirement separately for Miscellaneous and Safety members as well as for non-disabled and disabled members.

Miscellaneous New Retirees (Non-Disabled)

Year of Retirement	Current Assumption	Actual Rate	Proposed Assumption
2010 – 2013	1.50%	1.47%	1.50%

Safety New Retirees (Non-Disabled)

Year of Retirement	Current Assumption	Actual Rate	Proposed Assumption
2010 – 2013	2.25%	2.09%	2.25%

Miscellaneous New Retirees (Disabled)

Year of Retirement	Current Assumption	Actual Rate	Proposed Assumption
2010 – 2013	0.00%	0.16%[(1)]	0.00%

Safety New Retirees (Disabled)

Year of Retirement	Current Assumption	Actual Rate	Proposed Assumption
2010 – 2013	0.25%	0.14%	0.25%

(1) Actual rate of conversion was 0.02% during the July 1, 2007 to June 30, 2010 experience study.

Based on this experience we recommend no changes to the current assumptions.

I. AVERAGE ENTRY AGES

SCERS members who entered Miscellaneous Tiers 1, 2, 3 and 4 and Safety Tiers 1, 2 and 3 after January 1, 1975 and prior to January 1, 2013 pay member contribution rates based on an average entry age of all members in the Miscellaneous or the Safety plan.

Based on average age at entry of 34.8 and 28.5 for Miscellaneous and Safety, respectively, we recommend reducing the assumed average entry age from 36 to 35 for Miscellaneous and we recommend no change in the assumed average entry age of 29 for Safety.

APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS

Mortality Rates:

Healthy: For Miscellaneous Members and Beneficiaries: RP-2000 Combined Healthy Mortality Table set back two years.

For Safety Members: RP-2000 Combined Healthy Mortality Table set back one year.

Disabled: For Miscellaneous Members: RP-2000 Disabled Retiree Mortality Table set forward one year.

For Safety members: RP-2000 Combined Healthy Mortality Table set back one year.

Member Contribution Rates: For Miscellaneous members: RP-2000 Combined Healthy Mortality Table set back two years weighted 40% male and 60% female.

For Safety members: RP-2000 Combined Healthy Mortality Table set back one year weighted 70% male and 30% female.

Termination Rates Before Retirement:

	Rate (%) Mortality			
	Miscellaneous		Safety	
Age	Male	Female	Male	Female
25	0.04	0.02	0.04	0.02
30	0.04	0.02	0.04	0.02
35	0.06	0.04	0.07	0.04
40	0.10	0.06	0.10	0.06
45	0.13	0.09	0.14	0.10
50	0.19	0.14	0.20	0.16
55	0.29	0.22	0.32	0.24
60	0.53	0.39	0.59	0.44
65	1.00	0.76	1.13	0.86

All Miscellaneous pre-retirement deaths are assumed to be non-duty. For Safety, 25% pre-retirement deaths are assumed to be non-duty and the rest are assumed to be duty.

Termination Rates Before Retirement (continued):

	Rate (%)	
	Disability	
Age	Miscellaneous[1]	Safety[2]
20	0.00	0.10
25	0.01	0.10
30	0.03	0.19
35	0.05	0.34
40	0.08	0.49
45	0.16	0.64
50	0.26	0.82
55	0.36	1.68
60	0.61	0.00

(1) 20% of Miscellaneous disabilities are assumed to be duty disabilities. The other 80% are assumed to be non-duty disabilities.

(2) 90% of Safety disabilities are assumed to be duty disabilities. The other 10% are assumed to be non-duty disabilities.

Termination Rates Before Retirement (continued):

Rate (%)

Termination (< 5 Years of Service) [1]

Years of Service	Miscellaneous	Safety
0	15.00	10.00
1	9.00	6.00
2	8.00	5.00
3	6.00	4.00
4	5.00	3.00

Termination (5+ Years of Service) [2]

Age	Miscellaneous	Safety
20	5.10	3.00
25	4.85	3.00
30	4.60	3.00
35	4.35	2.70
40	3.80	2.20
45	2.90	1.70
50	2.02	0.00
55	1.58	0.00
60	0.00	0.00

[1] 100% of all members are assumed to elect a refund of contributions.

[2] 50% of the Miscellaneous members and 40% of the Safety members are assumed to elect a refund of contribution balance while the remaining 50% and 60% of Miscellaneous and Safety members, respectively, are assumed to elect a deferred retirement benefit. No withdrawal is assumed after a member is assumed to retire.

Retirement Rates:

	Rate (%)			
Age	Miscellaneous Tier 1	Miscellaneous Tiers 2 & 3	Miscellaneous Tier 4	Miscellaneous Tier 5
45	0.00	0.00	0.00	0.00
46	0.00	0.00	0.00	0.00
47	0.00	0.00	0.00	0.00
48	0.00	0.00	0.00	0.00
49	0.00	0.00	0.00	0.00
50	6.00	2.00	2.00	0.00
51	4.00	2.00	2.00	0.00
52	4.00	2.00	2.00	4.00
53	4.00	3.00	2.00	1.50
54	7.00	4.00	3.00	2.50
55	10.00	6.00	4.00	3.50
56	12.00	6.00	5.00	4.50
57	15.00	8.00	6.00	5.50
58	20.00	13.00	7.00	6.50
59	24.00	15.00	8.00	7.50
60	29.00	18.00	9.00	8.50
61	32.00	20.00	10.00	9.50
62	35.00	30.00	18.00	17.00
63	40.00	35.00	16.00	15.00
64	45.00	40.00	20.00	19.00
65	50.00	45.00	25.00	24.00
66	45.00	45.00	20.00	20.00
67	45.00	45.00	20.00	20.00
68	50.00	50.00	30.00	30.00
69	60.00	60.00	40.00	40.00
70	100.00	100.00	100.00	100.00

Retirement Rates (continued):

	Rate (%)		
Age	Safety Tiers 1 & 2	Safety Tier 3	Safety Tier 4
45	2.00	1.50	0.00
46	2.00	1.50	0.00
47	2.00	1.50	0.00
48	2.00	1.50	0.00
49	5.00	4.00	0.00
50	25.00	10.00	15.00
51	20.00	12.00	10.50
52	20.00	14.00	12.00
53	25.00	16.00	14.00
54	25.00	18.00	15.50
55	25.00	50.00	40.00
56	30.00	30.00	25.00
57	30.00	30.00	25.00
58	30.00	30.00	25.00
59	30.00	30.00	25.00
60	50.00	50.00	50.00
61	60.00	60.00	60.00
62	75.00	75.00	75.00
63	75.00	75.00	75.00
64	75.00	75.00	75.00
65	100.00	100.00	100.00
66	100.00	100.00	100.00
67	100.00	100.00	100.00
68	100.00	100.00	100.00
69	100.00	100.00	100.00
70	100.00	100.00	100.00

Retirement Age and Benefit for Deferred Vested Members:

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

Miscellaneous Age:	59
Safety Age:	53

We assume that 50% of future Miscellaneous and 60% of future Safety deferred vested members will continue to work for a reciprocal employer. For reciprocals, we assume 5.40% compensation increases per annum.

Future Benefit Accruals:

1.0 year of service per year for the full-time employees. Continuation of current partial service accrual for part-time employees.

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.

Service From Unused Sick Leave Conversion:

The following assumptions for service converted from unused sick leave as a percentage of service at retirement are used:

Service Retirements:

Miscellaneous:	1.50%
Safety:	2.25%

Disability Retirements:

Miscellaneous:	0.00%
Safety:	0.25%

Net Investment Return:

7.50%; net of administration and investment expenses.

Employee Contribution Crediting Rate:

Interest up to the current 5-year Treasury rate, if such earnings are available. However, the difference in earnings between the target crediting rate and the 5-year Treasury rate will be applied to the other valuation reserves so that the overall valuation reserve target crediting rate is maintained at 7.50%.

Consumer Price Index:

Miscellaneous and Safety Tier 1 benefits are assumed to increase at 3.25% per year. Miscellaneous Tier 3, Tier 4 and Tier 5 and Safety Tier 2, Tier 3 and Tier 4 benefits are assumed to increase at 2.0% per year. Miscellaneous Tier 2 receive no COLA increases.

Salary Increases:

Annual Rate of Compensation Increase (%)

Inflation: 3.25%, plus "across the board" salary increases of 0.25% per year; plus the following merit and promotional increases.

Age	Miscellaneous	Safety
20	7.80	6.01
25	5.13	5.12
30	3.73	3.97
35	3.17	2.78
40	2.66	2.24
45	2.36	1.86
50	2.00	1.74
55	1.58	1.64
60	1.39	0.00

APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS

Mortality Rates:

Healthy: For Miscellaneous Members and Beneficiaries: RP-2000 Combined Healthy Mortality Table projected with scale BB to 2022.

For Safety Members: RP-2000 Combined Healthy Mortality Table projected with scale BB to 2022 set back one year for males and set forward two years for females.

Disabled: For Miscellaneous Members: RP-2000 Disabled Retiree Mortality Table projected with scale BB to 2022 with no age adjustment for males and set forward three years for females.

For Safety members: RP-2000 Combined Healthy Mortality Table projected with scale BB to 2022 set forward two years.

Member Contribution Rates: For Miscellaneous members: RP-2000 Combined Healthy Mortality Table projected with scale BB to 2022 weighted 40% male and 60% female.

For Safety members: RP-2000 Combined Healthy Mortality Table projected with scale BB to 2022 set back one year for males and set forward two years for females weighted 70% male and 30% female.

Termination Rates Before Retirement:

	Rate (%) Mortality			
	Miscellaneous		Safety	
Age	Male	Female	Male	Female
25	0.04	0.02	0.04	0.02
30	0.04	0.02	0.04	0.03
35	0.07	0.04	0.07	0.05
40	0.10	0.07	0.10	0.08
45	0.14	0.11	0.13	0.12
50	0.20	0.16	0.19	0.19
55	0.34	0.24	0.30	0.30
60	0.58	0.41	0.52	0.51
65	0.98	0.74	0.88	0.93

All Miscellaneous pre-retirement deaths are assumed to be non-duty. For Safety, 50% pre-retirement deaths are assumed to be non-duty and the rest are assumed to be duty.

Termination Rates Before Retirement (continued):

	Rate (%)	
	Disability	
Age	Miscellaneous[1]	Safety[2]
20	0.00	0.10
25	0.01	0.10
30	0.03	0.16
35	0.05	0.26
40	0.08	0.45
45	0.16	0.61
50	0.26	0.80
55	0.36	1.26
60	0.52	2.10

(1) 25% of Miscellaneous disabilities are assumed to be duty disabilities. The other 75% are assumed to be non-duty disabilities.

(2) 90% of Safety disabilities are assumed to be duty disabilities. The other 10% are assumed to be non-duty disabilities.

Termination Rates Before Retirement (continued):

Rate (%)

Termination (< 5 Years of Service) [1]

Years of Service	Miscellaneous	Safety
0	13.00	8.00
1	8.00	6.00
2	7.00	5.00
3	6.00	4.00
4	5.50	3.00

Termination (5+ Years of Service) [2]

Age	Miscellaneous	Safety
20	5.00	2.50
25	5.00	2.50
30	4.70	2.50
35	4.20	2.20
40	3.40	1.85
45	2.70	1.60
50	2.20	1.50
55	1.85	1.50
60	1.30	1.50
65	1.00	0.00

[1] 75% of the Miscellaneous members and 50% of the Safety members are assumed to elect a refund of contribution balance while the remaining 25% and 50% of Miscellaneous and Safety members, respectively, are assumed to elect a deferred retirement benefit. No withdrawal is assumed after a member is assumed to retire.

[2] 50% of the Miscellaneous members and 20% of the Safety members are assumed to elect a refund of contribution balance while the remaining 50% and 80% of Miscellaneous and Safety members, respectively, are assumed to elect a deferred retirement benefit. No withdrawal is assumed after a member is assumed to retire.

Retirement Rates:

	Rate (%)			
Age	Miscellaneous Tier 1	Miscellaneous Tiers 2 & 3	Miscellaneous Tier 4	Miscellaneous Tier 5
45	0.00	0.00	0.00	0.00
46	0.00	0.00	0.00	0.00
47	0.00	0.00	0.00	0.00
48	0.00	0.00	0.00	0.00
49	0.00	0.00	0.00	0.00
50	6.00	2.00	2.00	0.00
51	4.00	2.00	2.00	0.00
52	4.00	2.00	2.00	4.00
53	4.00	3.00	2.00	1.50
54	7.00	4.00	3.00	2.50
55	10.00	6.00	4.00	3.50
56	15.00	6.00	5.00	4.50
57	16.00	8.00	6.00	5.50
58	18.00	12.00	7.00	6.50
59	22.00	14.00	8.00	7.50
60	28.00	14.00	9.00	8.50
61	30.00	14.00	10.00	9.50
62	35.00	25.00	18.00	17.00
63	35.00	30.00	16.00	15.00
64	40.00	35.00	20.00	19.00
65	50.00	40.00	25.00	24.00
66	45.00	45.00	20.00	20.00
67	45.00	45.00	20.00	20.00
68	50.00	50.00	30.00	30.00
69	60.00	60.00	40.00	40.00
70	100.00	100.00	100.00	100.00

Retirement Rates (continued):

	Rate (%)		
Age	Safety Tiers 1 & 2	Safety Tier 3	Safety Tier 4
45	2.00	1.50	0.00
46	2.00	1.50	0.00
47	2.00	1.50	0.00
48	2.00	1.50	0.00
49	5.00	4.00	0.00
50	25.00	10.00	15.00
51	18.00	12.00	10.50
52	18.00	14.00	12.00
53	22.00	16.00	14.00
54	22.00	18.00	15.50
55	22.00	50.00	40.00
56	25.00	25.00	25.00
57	25.00	25.00	25.00
58	25.00	25.00	25.00
59	30.00	30.00	25.00
60	45.00	45.00	45.00
61	55.00	55.00	55.00
62	70.00	70.00	70.00
63	70.00	70.00	70.00
64	70.00	70.00	70.00
65	100.00	100.00	100.00
66	100.00	100.00	100.00
67	100.00	100.00	100.00
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69	100.00	100.00	100.00
70	100.00	100.00	100.00

Retirement Age and Benefit for Deferred Vested Members:

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

Miscellaneous Age:	59
Safety Age:	53

We assume that 40% of future Miscellaneous and 50% of future Safety deferred vested members will continue to work for a reciprocal employer. For reciprocals, we assume 4.50% and 5.25% compensation increases per annum, respectively.

Future Benefit Accruals:

1.0 year of service per year for the full-time employees. Continuation of current partial service accrual for part-time employees.

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.

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The following assumptions for service converted from unused sick leave as a percentage of service at retirement are used:

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Disability Retirements:

Miscellaneous:	0.00%
Safety:	0.25%

Net Investment Return:

7.50%; net of administration and investment expenses.

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Interest up to the current 5-year Treasury rate, if such earnings are available. However, the difference in earnings between the target crediting rate and the 5-year Treasury rate will be applied to the other valuation reserves so that the overall valuation reserve target crediting rate is maintained at 7.50%.

Consumer Price Index:

Miscellaneous and Safety Tier 1 benefits are assumed to increase at 3.25% per year. Miscellaneous Tier 3, Tier 4 and Tier 5 and Safety Tier 2, Tier 3 and Tier 4 benefits are assumed to increase at 2.0% per year. Miscellaneous Tier 2 receive no COLA increases.

Salary Increases:

Annual Rate of Compensation Increase (%)

Inflation: 3.25%, plus "across the board" salary increases of 0.25% per year; plus the following merit and promotional increases.

Years of Service	Miscellaneous	Safety
0 – 1	5.00	8.00
1 – 2	4.50	7.00
2 – 3	3.75	6.00
3 – 4	3.50	5.00
4 – 5	3.00	4.00
5 – 6	2.50	3.50
6 – 7	2.25	3.25
7 – 8	2.00	3.00
8 – 9	1.75	2.75
9 – 10	1.00	2.00
10 or more	1.00	1.75

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