Kern County Employees'
Retirement Association

ACTUARIAL EXPERIENCE STUDY

Analysis of Actuarial Experience
During the Period
July 1, 2008 through June 30, 2011

December 6, 2011

Board of Retirement
Kern County Employees' Retirement Association
11125 River Run Boulevard
Bakersfield, CA 93301

Re: Review of Non-economic Actuarial Assumptions for the June 30, 2011
       Actuarial Valuation

Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience of the
Kern County Employees' Retirement Association. This study utilizes the census data of the
last three actuarial valuations and the data that will be used for the June 30, 2011 actuarial
valuation. The study includes the proposed actuarial assumptions to be used in future actuarial
valuations starting with the June 30, 2011 actuarial valuation.

Please note that we are also reviewing the economic assumptions. The economic actuarial
assumption recommendations for the June 30, 2011 actuarial valuation are 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   John W. Monroe, ASA, MAAA, EA
Senior Vice President and Actuary   Vice President and Associate Actuary

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I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

To project the cost and liabilities of the pension plan, 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 modified, 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 the 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, 2008 through June 30, 2011. 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 future experience, we are recommending various changes in the current actuarial assumptions.

In some cases we have worked to refine and simplify the structure of the assumptions as long as accuracy and predictive power are not lost in the process. For example, some assumptions which currently differentiate between males and females reflect experience which can be effectively predicted without using assumptions that differ by sex. This result is also indicated by the fact that current male and female assumptions are fairly close.

We are recommending changes in the assumptions for retirement from active employment, deferred vested retirement age, percent with reciprocity upon termination, percent with survivor, pre-retirement mortality, healthy life post-retirement mortality, disabled life post-retirement mortality, turnover (including percent assumed to elect a refund of member contributions), disability (non-service connected and service connected) and promotional and merit salary increases. The Board could also consider a change to the current method for adjusting employer contribution rates for the one-year delay between the valuation date and the date the rates become effective.

The economic assumptions are currently reviewed every three years at the same time as the non-economic assumptions. See the separate report titled "Review of Economic Actuarial Assumptions for the June 30, 2011 Actuarial Valuation."

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: Adjust the current retirement rates to those developed in Section III(B). Both General and Safety members are assumed to retire at slightly younger ages overall.

Mortality Rates - The probability of dying at each age. Mortality rates are used to project life expectancies.
Recommendation: Pre- and post-retirement mortality rates for non-disabled General and Safety members have been decreased for males and increased for females as developed in Section III(C). Mortality rates have been increased overall for disabled General and Safety members as developed in Section III(D).

Termination Rates - The probability of leaving employment at each age and receiving either a refund of contributions or a deferred vested retirement benefit.
Recommendation: Decrease the current termination rates overall for General members and increase the rates overall for Safety members to those developed in Section III(E). We are also recommending small increases in the proportion of members assumed to elect a refund of member contributions at termination.

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

Recommendation: Decrease the current disability rates overall for both General and Safety members to those developed in Section III(F).

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: Change the promotional and merit increases to those developed in Section III(G). Overall salary increases are slightly lower for both General and Safety members under the new assumptions.

In previous valuations the employer contribution rates were adjusted to account for the one-year delay between the valuation date and the date the rates become effective using a methodology developed by the previous actuary. As discussed in Section III(H), the Board could consider eliminating this adjustment. Alternatively, we can continue to make the adjustment for the one-year delay using the methodology that Segal has developed for this purpose.

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

We have estimated the impact of all of the proposed assumption changes (including both economic and demographic) as if they were applied to the June 30, 2010 actuarial valuation. If all of the proposed assumption changes were implemented, the average employer rate would have increased by 2.1% of compensation and the average member rate would have increased by 0.1% of compensation. The estimated cost increase is mainly the result of the recommendation to lower the investment return assumption from 7.75% to 7.50% per annum.

The estimated cost increases shown above continue to reflect an adjustment (using Segal methodologies) to account for the one-year delay between the actuarial valuation date and the date contribution rates become effective. If the Board removes this adjustment then the immediate employer contribution rate impact would decrease by about 0.4% of payroll.

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, 2011 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 review the individual salary increases net of inflation (i.e., the promotional and merit 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 terminate 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 every three years at the same time as the non-economic assumptions. See the separate report titled "Review of Economic Actuarial Assumptions for the June 30, 2011 Actuarial Valuation".

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 table on the following page shows the observed service retirement rates for General Tier I members based on the actual experience over the past three years. The observed service retirement rates were determined by comparing those members who actually retired from service to those eligible to retire from service. This same methodology is followed throughout this report and was described in Section II. Also shown are the current rates assumed and the rates we propose:

General Tier I

Age	Current Rate of Retirement*	Actual Rate of Retirement	Proposed Rate of Retirement
Under 50	0.00%	42.86%	0.00%
50	6.00	6.19	6.00
51	5.03	5.90	6.00
52	5.33	5.17	6.00
53	5.65	6.11	6.00
54	5.67	6.98	7.00
55	8.66	10.11	9.00
56	10.35	10.34	11.00
57	12.72	12.23	13.00
58	15.73	15.65	16.00
59	18.00	16.13	18.00
60	21.27	25.27	22.00
61	22.07	27.95	25.00
62	30.79	28.57	30.00
63	30.00	27.01	30.00
64	30.00	30.17	30.00
65	30.00	31.65	30.00
66	30.00	46.15	40.00
67	30.00	38.46	40.00
68	30.00	45.71	40.00
69	30.00	42.86	40.00
70 & Over	100.00	23.38	100.00

*Composite of current separate assumptions for males and females.

As shown above, we recommend minor increases in the retirement rates at most ages for General Tier I members. We also recommend using the same retirement rates for both males and females.

Chart 1 that follows later in this section compares actual experience with the current and proposed rates of retirement for General Tier I members.

There is not enough General Tier II experience to perform a statistically meaningful study. In particular, over the past three years, there were no General Tier II retirees. Based on our recommended rates for General Tier I, we also recommend using a single set of retirement rates for both male and female General Tier II members. We recommend increases in the rates for ages 66 through 69 in order to be consistent with the proposed assumption for General Tier I.

The following table shows the current rates assumed and the rates we proposed for General Tier II members:

	General Tier II		
Age	Current Rate of Retirement – Male	Current Rate of Retirement – Female	Proposed Rate of Retirement
Under 50	0.00%	0.00%	0.00%
50	3.00	3.00	3.00
51	3.00	3.00	3.00
52	3.00	3.00	3.00
53	3.00	3.00	3.00
54	3.00	3.00	3.00
55	8.00	4.00	5.00
56	6.00	6.00	6.00
57	8.00	7.00	7.00
58	12.00	9.00	10.00
59	13.00	10.00	11.00
60	15.00	12.00	13.00
61	20.00	14.00	17.00
62	32.00	30.00	30.00
63	30.00	30.00	30.00
64	30.00	30.00	30.00
65	30.00	30.00	30.00
66	30.00	30.00	40.00
67	30.00	30.00	40.00
68	30.00	30.00	40.00
69	30.00	30.00	40.00
70 & Over	100.00	100.00	100.00

The following table shows the observed retirement rates for Safety members over the past three years. Also shown are the current rates assumed and the rates we propose:

| | Safety | | |
Age	Current Rate of Retirement	Actual Rate of Retirement	Proposed Rate of Retirement
Under 45	0.00%	1.67%	0.00%
45	1.00	0.00	1.00
46	0.50	1.37	1.00
47	0.50	1.32	1.00
48	1.00	1.22	1.00
49	2.00	10.53	6.00
50	12.00	16.80	16.00
51	12.00	16.22	14.00
52	12.00	14.13	16.00
53	12.00	20.43	18.00
54	15.00	22.55	20.00
55	17.00	27.38	22.00
56	20.00	36.84	25.00
57	23.00	34.04	27.00
58	25.00	36.36	30.00
59	25.00	16.13	25.00
60	100.00	16.67	25.00
61	100.00	28.57	25.00
62 & Over	100.00	24.49	100.00

We recommend increases in the retirement rates at most ages for Safety members. We are increasing the age at which 100% retirement is assumed from age 60 to age 62.

Chart 2 compares actual experience with the current and proposed rates for Safety members.

Deferred Vested Members

In prior valuations, deferred vested General and Safety members were assumed to retire at age 60 and 50, respectively. The average age at retirement over the prior three years was 57 for General members and 53 for Safety members. We recommend decreasing the General assumption to age 57 and increasing the Safety assumption to age 53.

Reciprocity

It was also assumed that 50% of inactive General and Safety deferred vested members would be covered under a reciprocal retirement system and receive annual salary increases from termination until their date of retirement of 4.52% for General members and 4.78% for Safety members. During the last three years, actual experience shows that 24% of General members and 35% of Safety members went on to be covered by a reciprocal retirement system. However, we recommend a 55% reciprocal assumption be utilized for General members and a 60% reciprocal assumption be utilized for Safety members. This recommendation takes into account the fact that about 56% of the total General deferred vested members and 65% of the total Safety deferred vested members have gone on to be covered by a reciprocal retirement system. Based on our recommended salary increase assumptions, we propose adjusting the current annual salary increase assumption to 4.75% for both General and Safety members. This assumption will be used to anticipate salary increases from termination from KCERA to the expected date of retirement.

Survivor Continuance Under Unmodified Option

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. We reviewed new retirees during the three-year period and determined the actual percentage of these new retirees that had an eligible spouse or eligible domestic partner at the time of retirement. The results of that analysis are shown below.

New Retirees – Actual Percent with Eligible Spouse or Domestic Partner

Year Ending June 30	Male	Female
2009	73%	53%
2010	72%	56%
2011	75%	56%
Total	73%	56%

According to experience of members who retired during the last three years, about 73% of all male members and 56% of all female members were married or had a domestic partner at retirement. We recommend decreasing this assumption to 75% for male members and maintaining the assumption at 55% for female members.

Since the value of the survivor's benefit is dependent on the survivor's age and sex, we must also have assumptions for the age and sex of the survivor. Based on the experience during the three-year period and studies done for other retirement systems, we believe that it is reasonable to maintain the current assumptions.

Since the majority of survivors are expected to be of the opposite sex, even with the inclusion of domestic partners, we will continue to assume that the survivor's sex is the opposite of the member.

The current assumption for the age of the survivor and recommended assumption are shown below. These assumptions will continue to be monitored in future experience studies.

Survivor Ages – Current Assumptions

| | Survivor's Age as Compared to Member's Age | |
Beneficiary Sex	Current Assumption	Recommended Assumption
Male	3 years older	No change
Female	3 years younger	No change

Chart 1
Retirement Rates - General Tier I Members

Legend: Current · Actual · Proposed
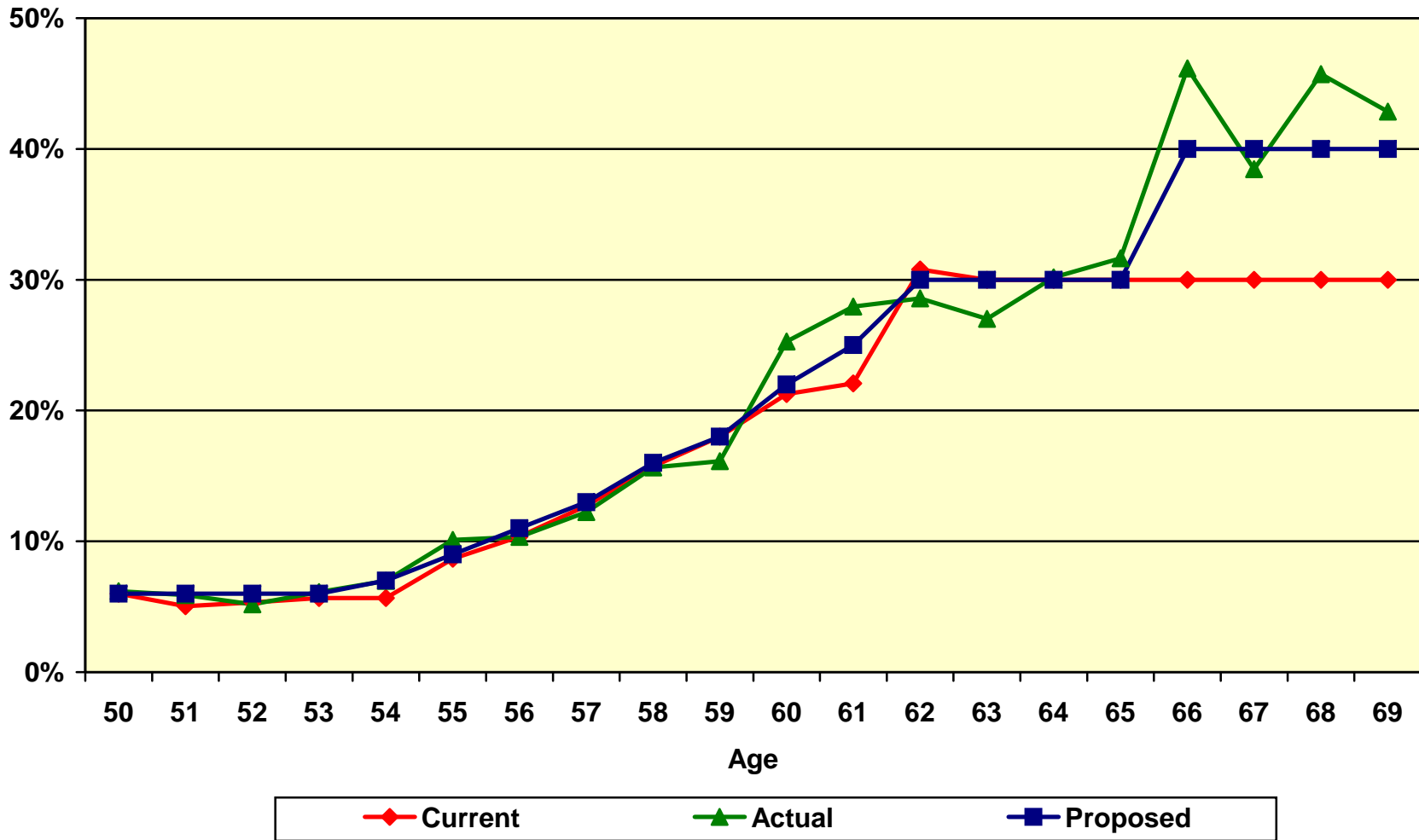
Chart 2
Retirement Rates - Safety Members

Legend: Current, Actual, Proposed
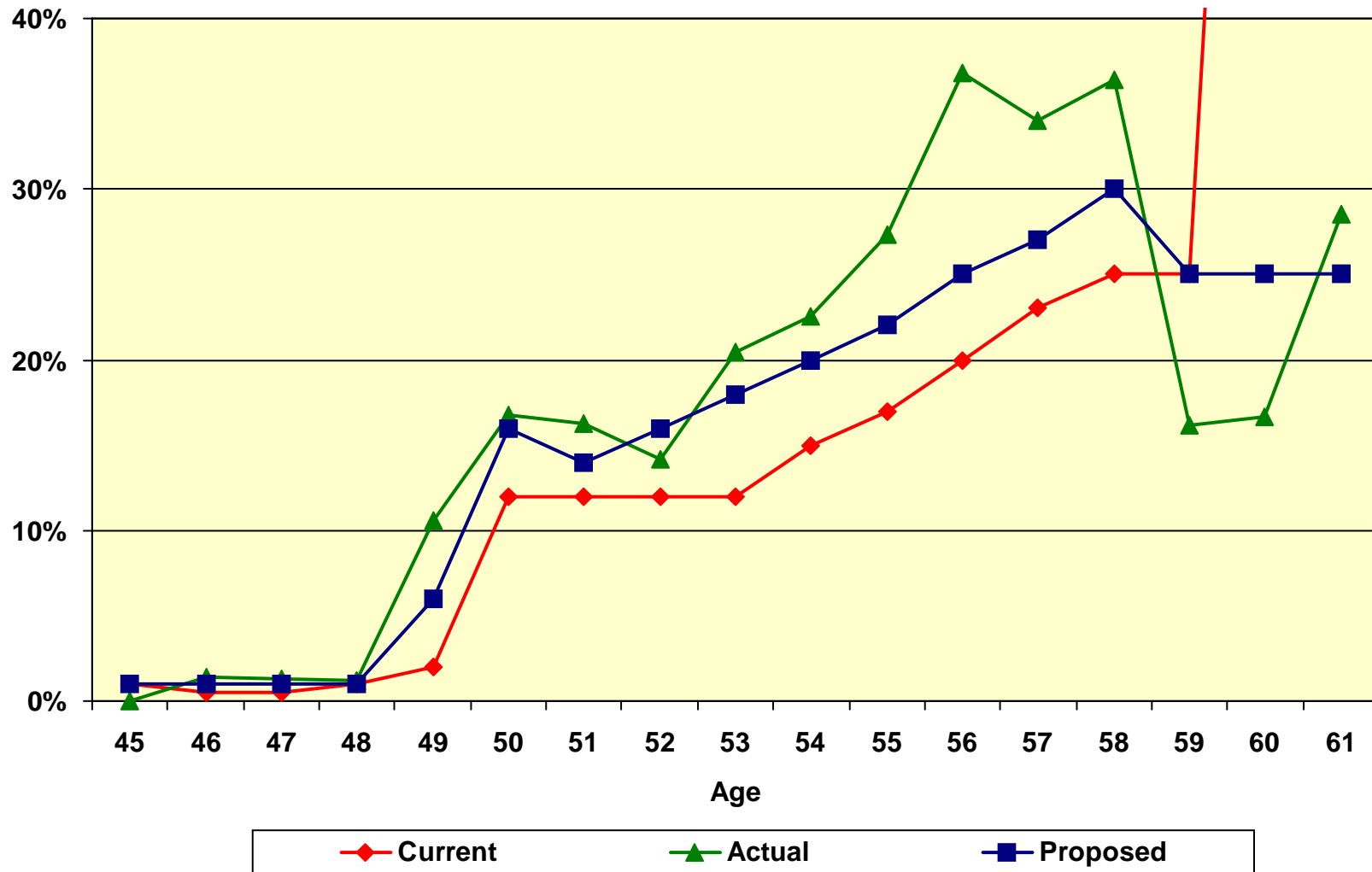
C. MORTALITY RATES - HEALTHY

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 table currently being used for post-service retirement mortality rates for both General and Safety service retirees is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) with ages set back one year for males and two years for females.

Pre-Retirement Mortality

The number of deaths among active and deferred vested members is not large enough to provide a statistically credible basis for a specific pre-retirement mortality analysis. Therefore, we propose that pre-retirement mortality follow the same tables used for post-retirement mortality. All pre-retirement deaths will be assumed to be ordinary (non-duty).

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 Ended June 30	General – Healthy			Safety – Healthy		
	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths
2009	81	86	82	13	17	12
2010	83	106	84	15	15	13
2011	87	98	88	16	17	14
Total	251	290	254	44	49	39
Actual / Expected	116%		114%	111%		126%

Chart 3 compares actual to expected deaths for General members under the current and proposed assumptions over the last three years. Experience shows that there were more deaths than predicted by the current table.

Chart 4 has the same comparison for Safety members. Experience shows that there were also more deaths than predicted by the current table.

For General service retirees the ratio of actual to expected deaths was 116%. We recommend changing to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) with ages set back two years for males and one year for females. This will bring the actual to expected ratio to 114% and the separate male and female rates will be brought near this ratio also. This is consistent with standard actuarial practice to include some margin in the rates to anticipate expected future improvement in life expectancy. Generally, preferable practice is to have a margin of around 10%; that is, the actual deaths among current retirees are around 10% greater than the expected deaths during the study period.

For Safety service retirees the ratio of actual to expected deaths was 111%. We recommend changing to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) with ages set back two years for males and one year for females. This will bring the actual to expected ratio to 126%. Note that, since there is considerably less mortality experience available for Safety service retirees as compared to General service retirees, we are recommending that we continue to use the same mortality tables for General and Safety service retirees.

Chart 5 shows the life expectancies (i.e. expected future lifetime) under the current and the proposed tables for General members.

Chart 6 shows the same information for Safety members.

Mortality Table for Member Contributions

We recommend that the mortality table used for determining contributions for General members be updated from the RP-2000 Combined Healthy Mortality Table set back one year for males and two years for females weighted one-third male and two-thirds female to the RP-2000 Combined Healthy Mortality Table set back two years for males and one year for females weighted 30% male and 70% female. This is based on the proposed valuation mortality table for General members and the actual sex distribution of General members.

For Safety members, we recommend the mortality table be changed from the RP-2000 Combined Healthy Mortality Table set back one year for males and two years for females weighted five-sixths male and one-sixth female to the RP-2000 Combined Healthy Mortality Table set back two years for males and one year for females weighted 80% male and 20% female. This is based on the proposed valuation mortality table for Safety members and the actual sex distribution of Safety members.

Chart 3
Post - Retirement Deaths
Non - Disabled General Members

Year ended June 30,	Expected - Current	Actual	Expected - Proposed
2009	81	86	82
2010	83	106	84
2011	87	98	88
Total	251	290	254

Year ended June 30,

■ Expected - Current ■ Actual ■ Expected - Proposed
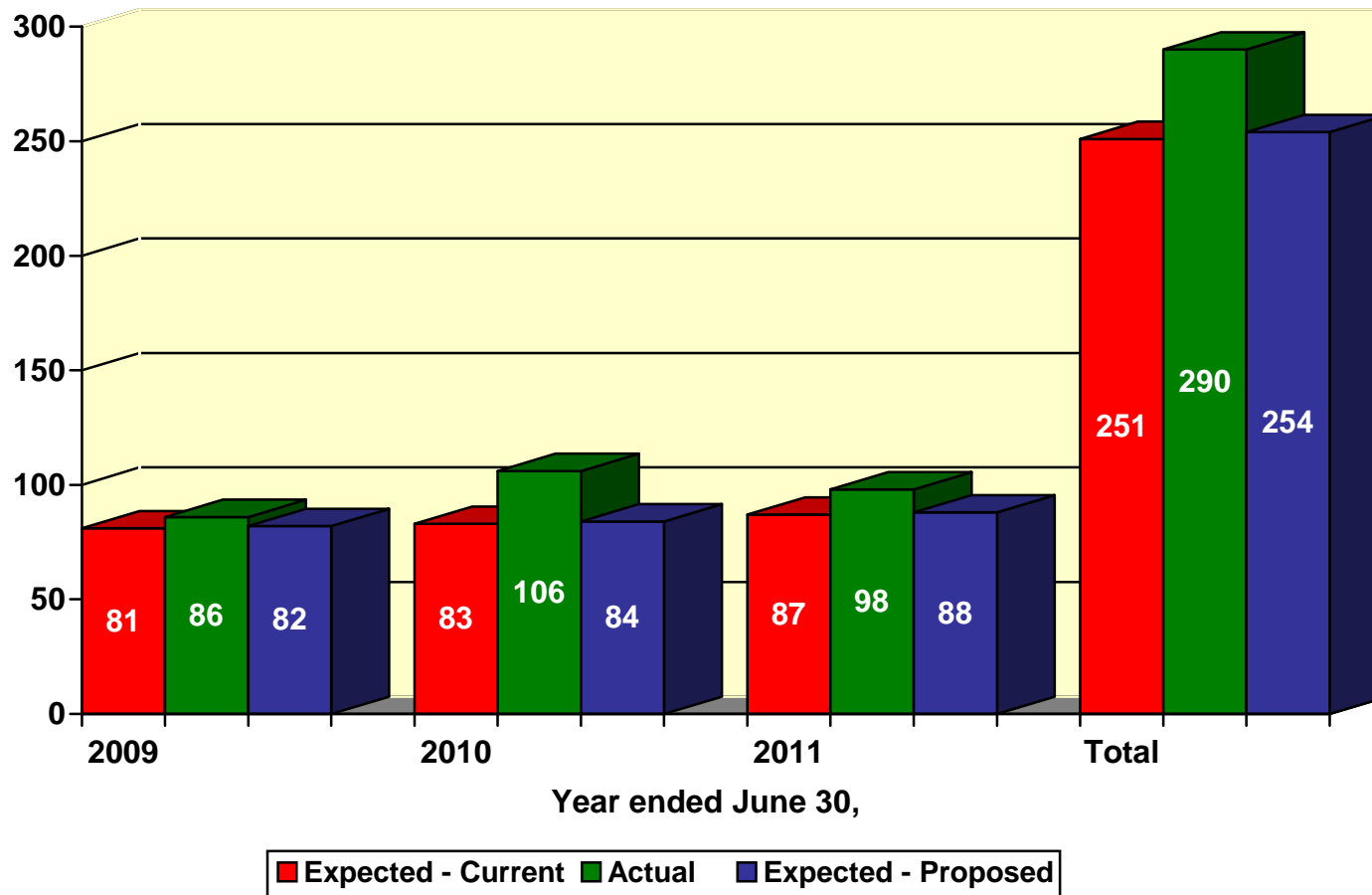
Chart 4
Post - Retirement Deaths
Non - Disabled Safety Members

Year ended June 30,

Legend: ■ Expected - Current ■ Actual ■ Expected - Proposed

Year ended June 30,	Expected - Current	Actual	Expected - Proposed
2009	13	17	12
2010	15	15	13
2011	16	17	14
Total	44	49	39

Chart 5
Life Expectancies
Non - Disabled General Members

Chart 6
Life Expectancies
Non - Disabled Safety Members
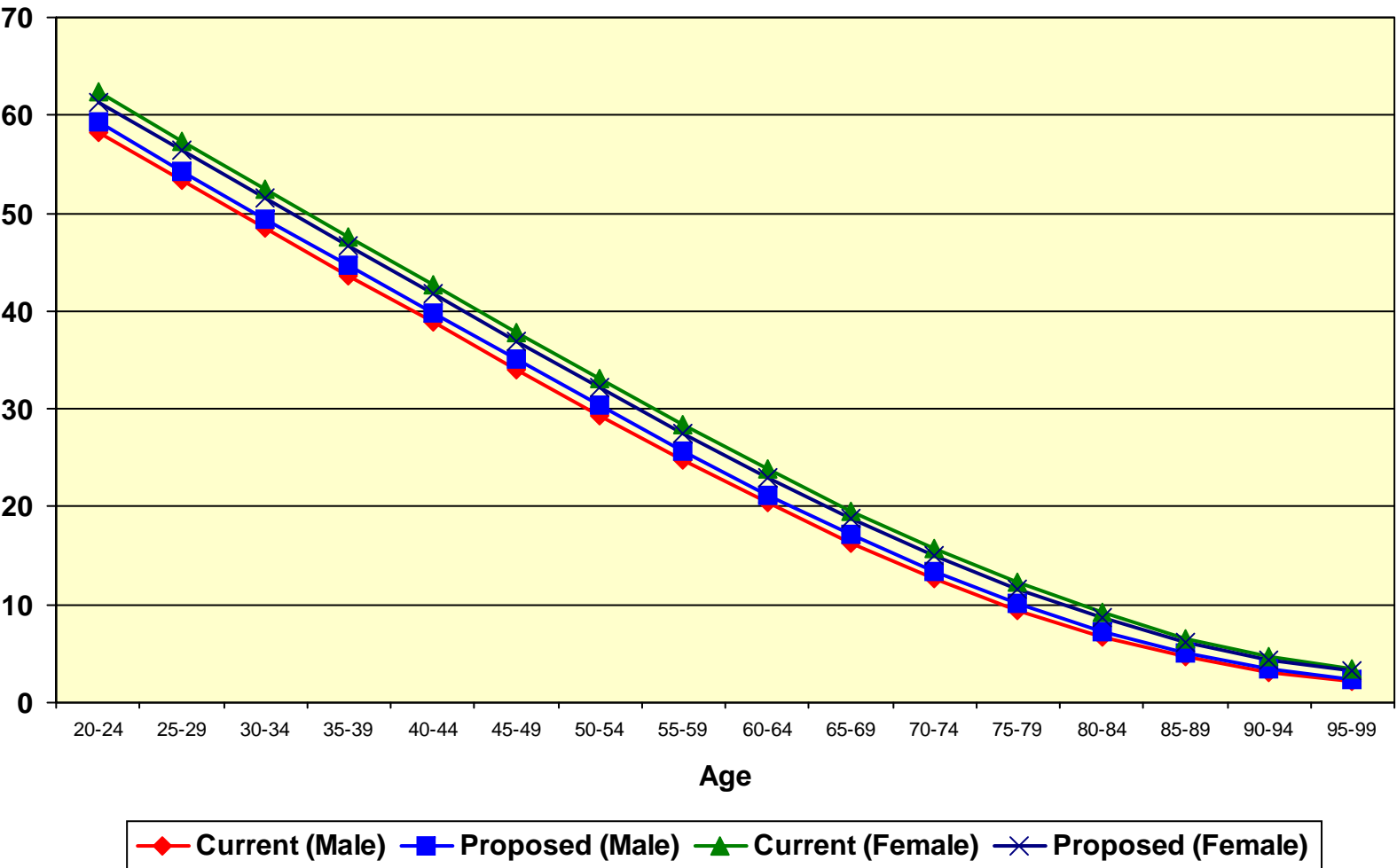
D.   MORTALITY RATES - DISABLED

Since death rates for disabled members can vary from those of healthy members, a different mortality assumption is often used. For General members, the table currently being used is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) with ages set forward two years for males and four years for females. Rates are adjusted to be not less than 1.00% at all ages. For Safety members, the table currently being used is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) with no age adjustments. Rates are adjusted to be not less than 0.50% at all ages.

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

Year Ended June 30	General – Disabled			Safety – Disabled		
	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths
2009	12	17	14	5	5	6
2010	11	15	14	6	9	6
2011	11	16	13	7	8	8
Total	34	48	41	18	22	20
Actual / Expected	141%		117%	122%		111%

Based on this experience, we recommend that the mortality table for General members be changed to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) with ages set forward six years. We recommend that the mortality table for Safety members be changed to the RP-2000 Combined Table (separate tables for males and females) with ages set forward one year.

Chart 7 compares actual to expected deaths under both the current and proposed assumptions for disabled General members over the last three years. Experience shows that there were more deaths than predicted by the current table. Our recommendation still incorporates a sufficient margin for future mortality improvement.

Chart 8 has the same comparison for Safety members. Experience shows that there were more deaths than predicted by the current table. Our recommendation still incorporates a sufficient margin for future mortality improvement.

Chart 9 shows the life expectancies under both the current and proposed tables for General members.

Chart 10 shows the same information for Safety members.

Chart 7
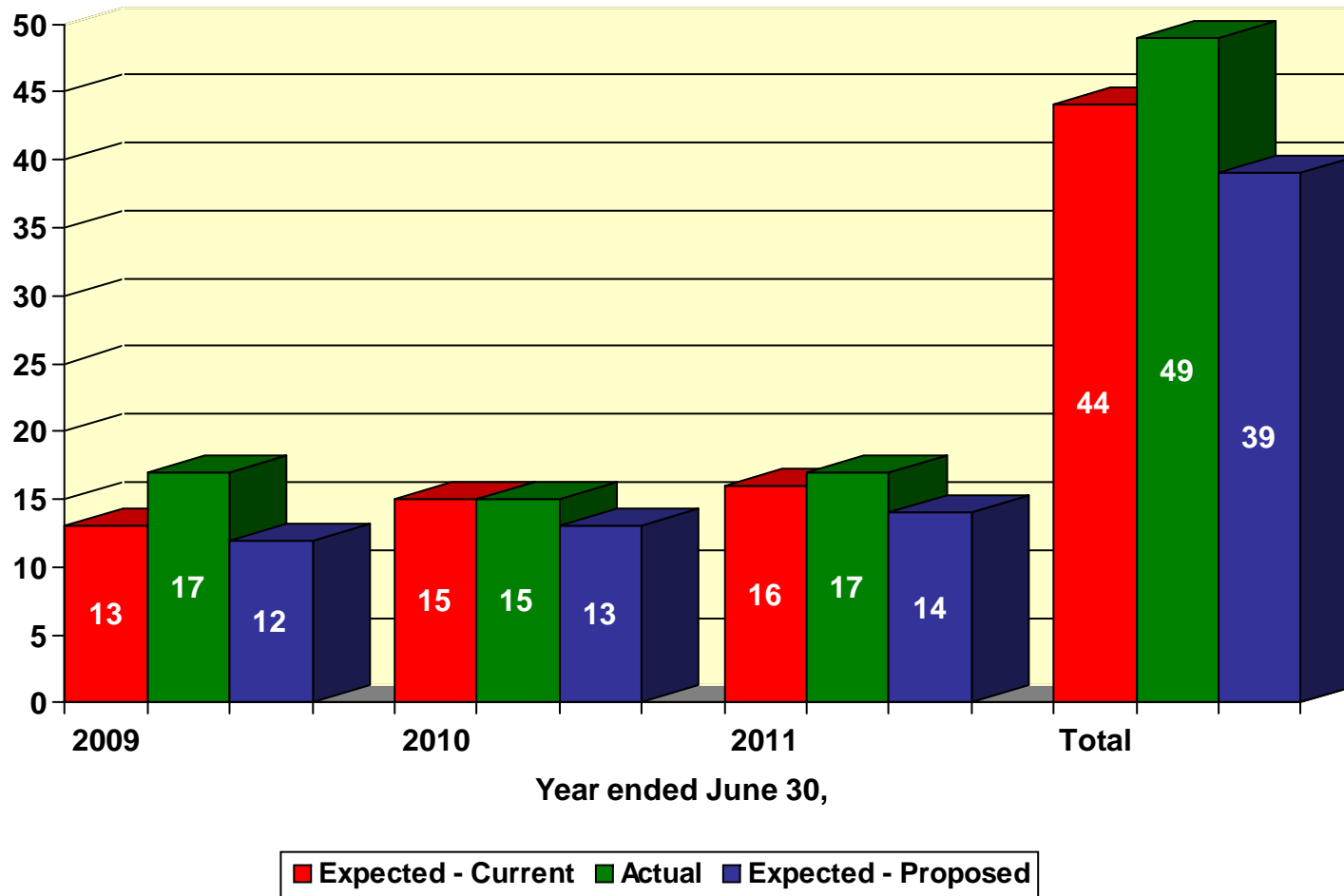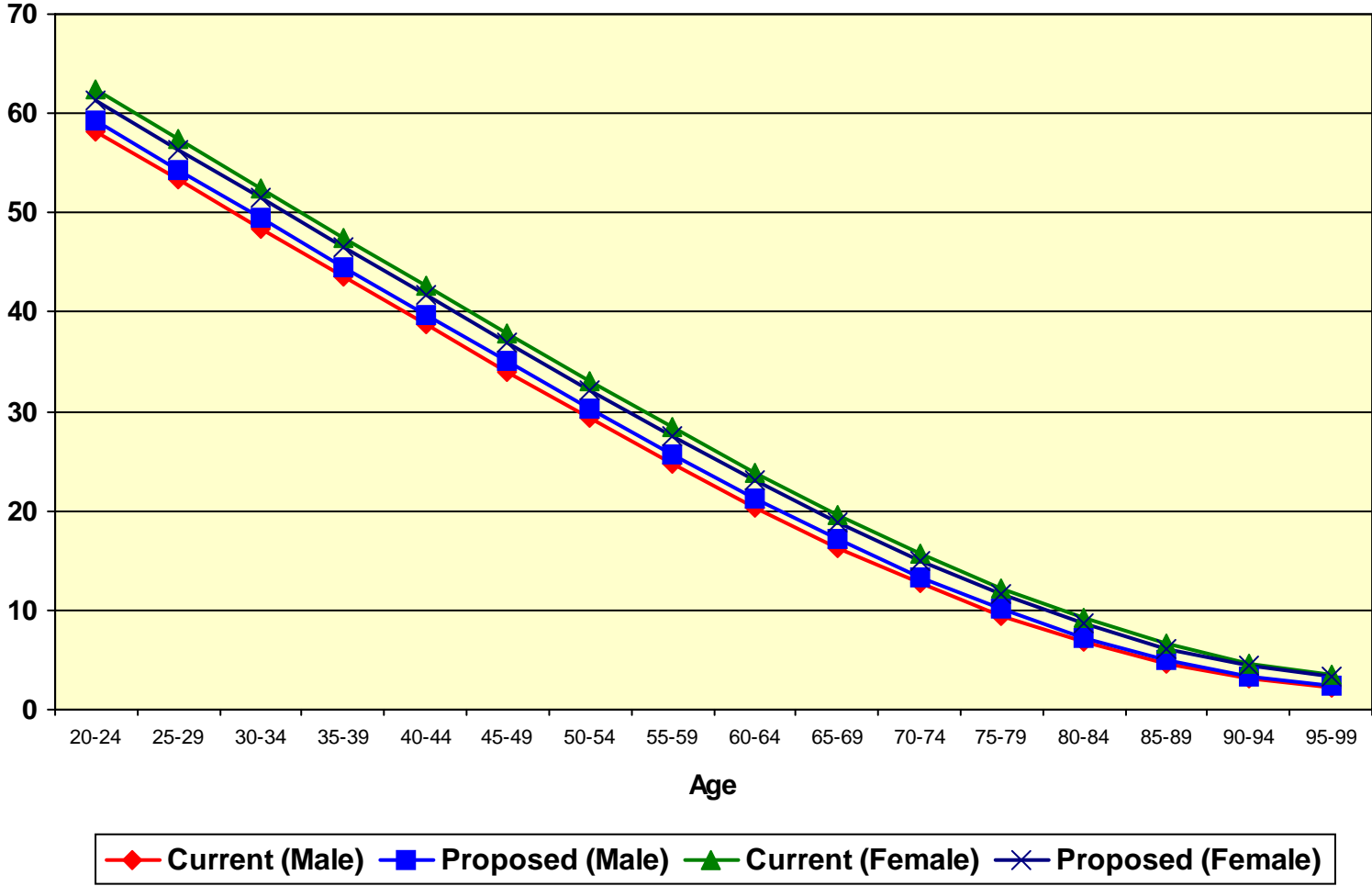**Post - Retirement Deaths**
Disabled General Members

Chart 8
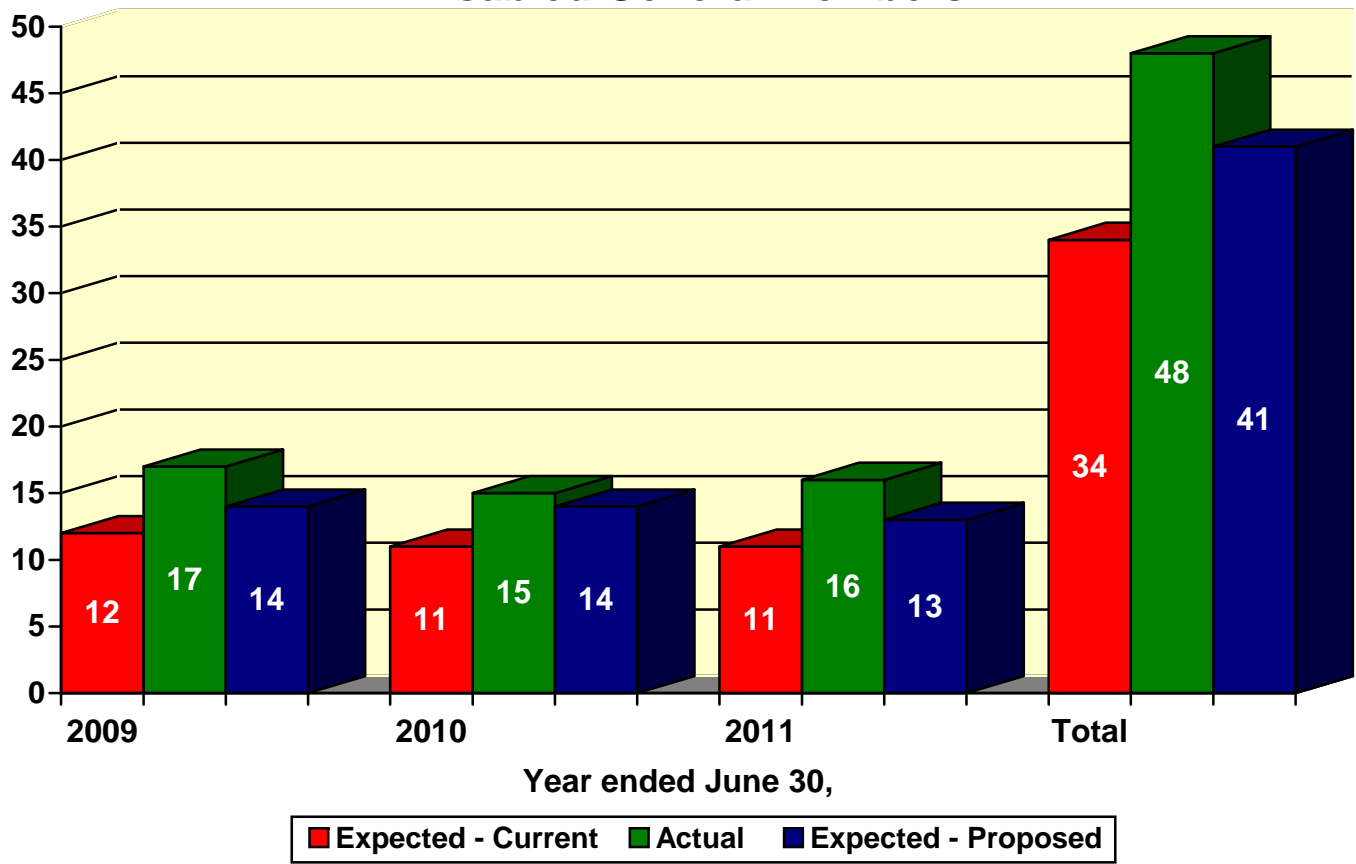# Post - Retirement Deaths
Disabled Safety Members

Year ended June 30,

■ Expected - Current ■ Actual ■ Expected - Proposed
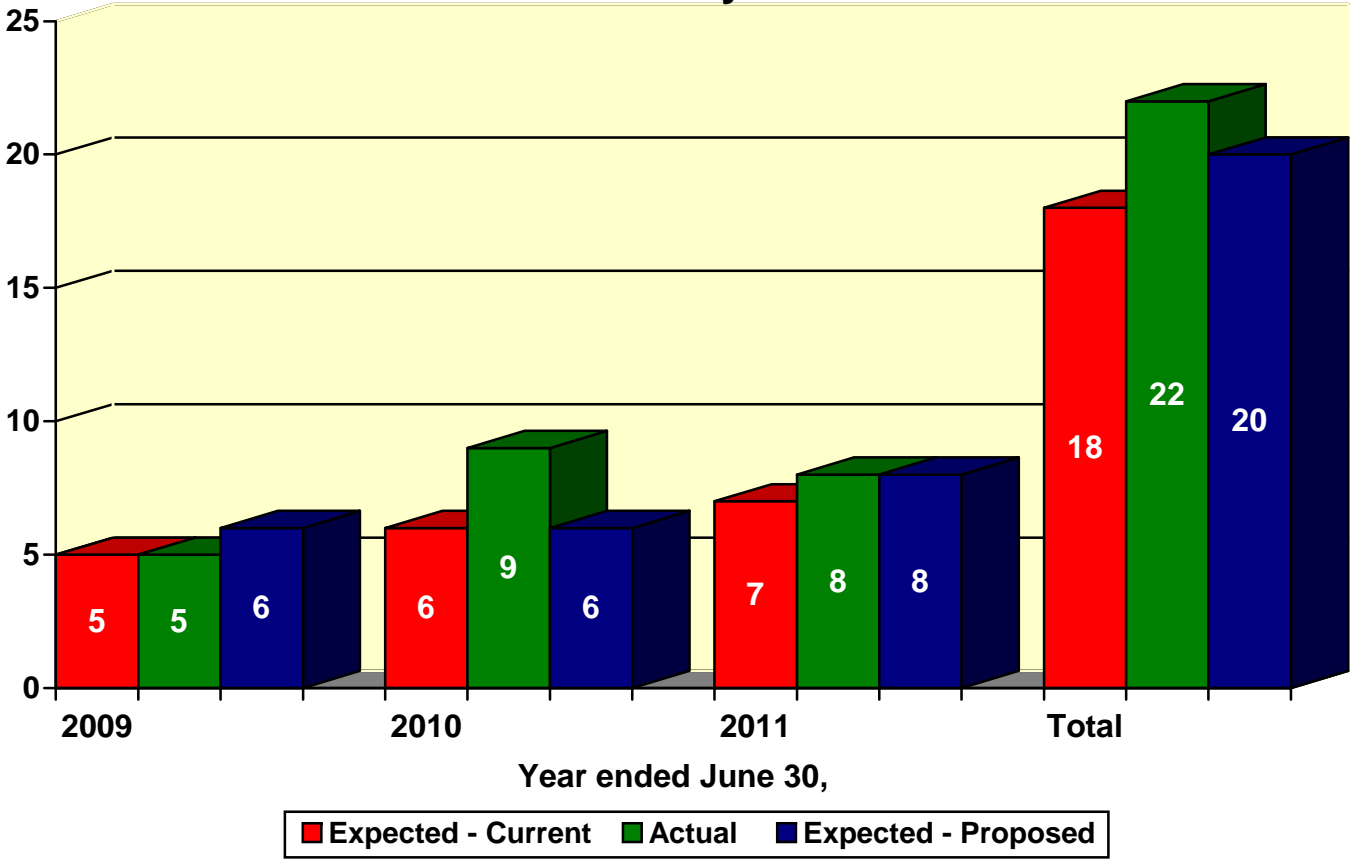
Chart 9
Life Expectancies
Disabled General Members
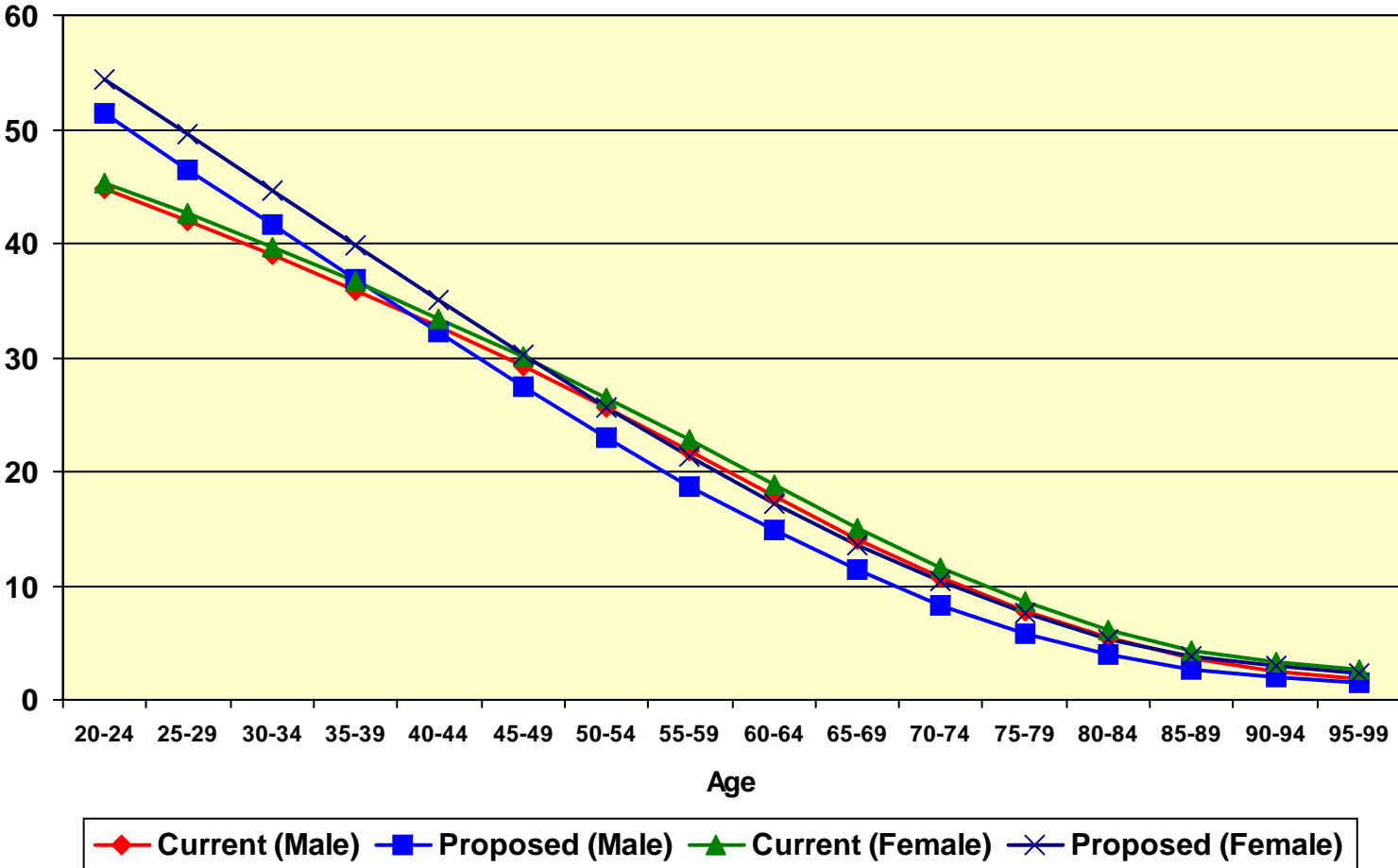
Chart 10
Life Expectancies
Disabled Safety Members
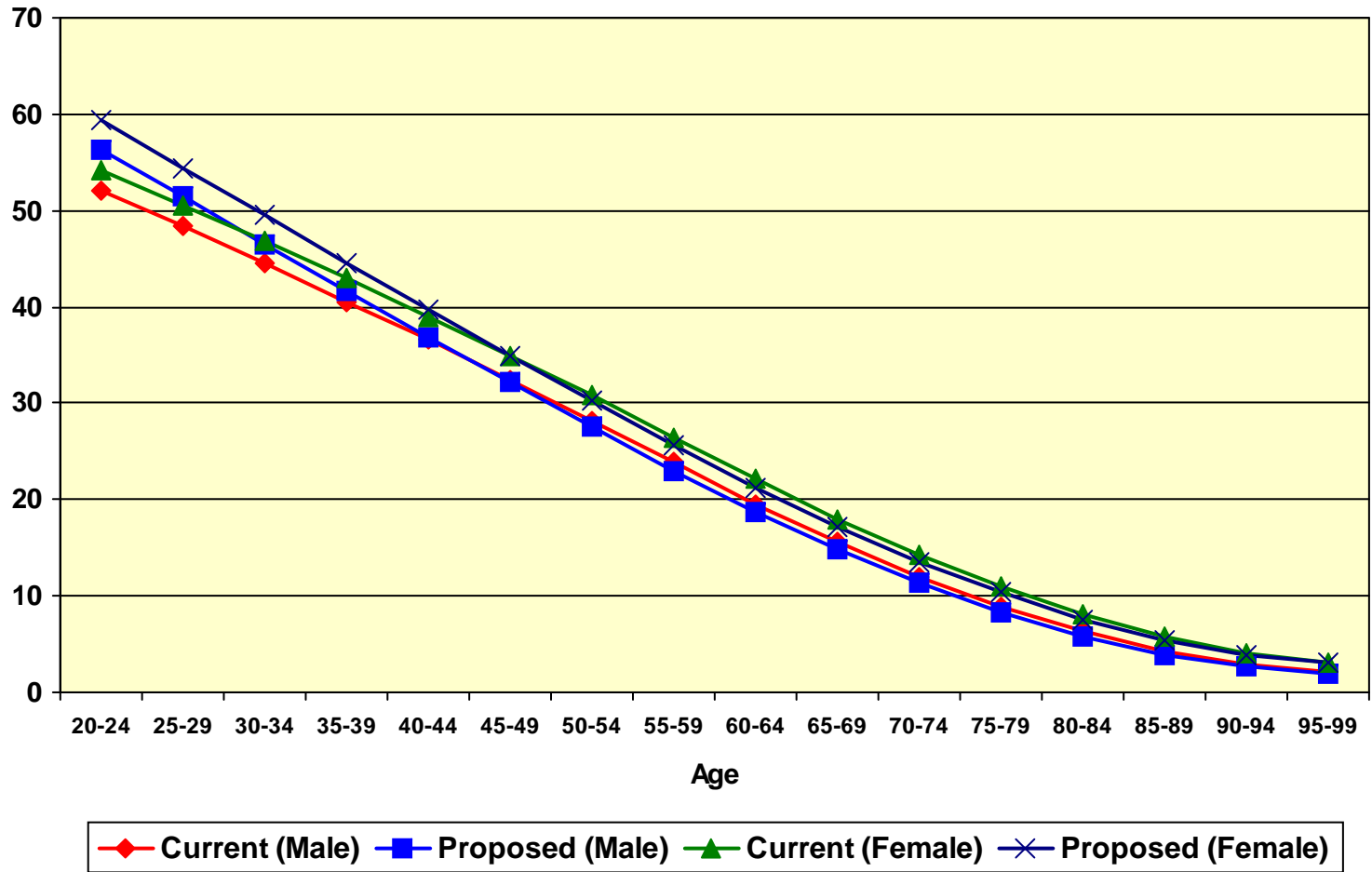
E.   TERMINATION RATES

Termination rates include all terminations for reasons other than death, disability, or retirement. Under the current assumptions there is an overall incidence of termination assumed, combined with a service-based assumption that a percentage of all terminated vested members will choose a refund of contributions. All terminated nonvested members are assumed to choose a refund of contributions. With this study, we continue to recommend that this same assumption structure be used. The termination experience over the last three years for General and Safety members is as follows:

Rates of Termination (General)

Years of Service	Current Rate	Observed Rate	Proposed Rate
0	20.00%	16.00%	18.00%
1	14.00	11.81	13.00
2	10.00	9.64	10.00
3	7.00	8.28	7.50
4	6.20	6.89	6.50
5	5.53	6.52	6.00
6	4.87	5.83	5.00
7	4.20	3.48	4.00
8	3.86	3.69	3.75
9	3.52	3.56	3.50
10	3.18	3.39	3.25
11	2.84	3.14	3.00
12	2.50	3.33	2.80
13	2.40	3.06	2.60
14	2.30	1.87	2.40
15	2.20	2.45	2.30
16	2.10	2.25	2.20
17	2.00	2.26	2.10
18	1.80	1.54	1.90
19	1.60	1.60	1.70
20	1.40	3.13	1.50
21	1.20	1.55	1.30
22	1.00	2.78	1.10
23	1.00	0.98	1.00
24	1.00	0.00	1.00
25	1.00	0.00	1.00
26	1.00	0.00	1.00
27	1.00	0.00	1.00
28	1.00	0.00	1.00
29	1.00	0.00	1.00
30 & Over	1.00	0.00	0.00

Rates of Termination (Safety)

Years of Service	Current Rate	Observed Rate	Proposed Rate
0	7.00%	13.48%	9.00%
1	5.00	12.79	7.00
2	4.00	2.50	4.00
3	3.00	3.02	3.00
4	3.00	2.41	3.00
5	2.83	0.93	2.50
6	2.67	1.40	2.40
7	2.50	0.84	2.30
8	2.40	0.70	2.20
9	2.30	0.75	2.10
10	2.20	1.54	2.00
11	2.10	0.84	1.90
12	2.00	1.46	1.70
13	1.70	0.71	1.50
14	1.40	2.15	1.30
15	1.10	1.37	1.10
16	0.80	0.00	0.90
17	0.50	7.55	0.75
18	0.50	3.61	0.75
19	0.50	3.33	0.75
20 & Over	0.00	11.11%	0.00

It is important to note that not every service category has enough exposures and/or decrements such that the results in that category are statistically credible. This is mainly the case at the highest service categories since most members in those categories are eligible to retire and so have been excluded from our review of this experience.

The next tables show the refund election experience over the last three years for General and Safety members.

Rates of Electing a Refund of Contributions upon Withdrawal (General)

Years of Service	Current Rate	Observed Rate	Proposed Rate
5	45.00%	70.69%	50.00%
6	45.00	54.55	47.00
7	45.00	41.94	44.00
8	42.00	44.44	41.00
9	39.00	52.94	38.00
10	36.00	31.58	35.00
11	33.00	25.00	32.00
12	30.00	30.00	30.00
13	28.00	42.86	28.00
14	26.00	100.00	26.00
15	24.00	20.00	24.00
16	22.00	50.00	22.00
17	20.00	50.00	20.00
18	18.00	0.00	18.00
19	16.00	33.33	16.00
20	14.00	80.00	14.00
21	12.00	0.00	12.00
22	10.00	0.00	10.00
23	8.00	100.00	8.00
24	6.00	0.00	6.00
25	4.00	0.00	4.00
26	2.00	0.00	2.00
27 & Over	0.00	0.00	0.00

Rates of Electing a Refund of Contributions upon Withdrawal (Safety)

Years of Service	Current Rate	Observed Rate	Proposed Rate
5	40.00%	100.00%	50.00%
6	40.00	66.67	46.00
7	40.00	50.00	42.00
8	36.00	0.00	38.00
9	32.00	0.00	34.00
10	28.00	50.00	30.00
11	24.00	0.00	27.00
12	20.00	33.33	24.00
13	17.00	0.00	21.00
14	14.00	50.00	18.00
15	11.00	0.00	15.00
16	8.00	0.00	12.00
17	5.00	50.00	9.00
18	4.00	66.67	7.00
19	3.00	66.67	5.00
20 & Over	0.00	100.00	0.00

Chart 11 compares actual to expected terminations over the past three years for both the current and proposed assumptions for General members.

Chart 12 graphs the same information as Chart 11, but for Safety members.

Chart 13 shows the actual termination rates compared to the current and proposed assumptions for General members.

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

Chart 15 shows the actual rates of electing a refund of contributions compared to the current and proposed assumptions for General members.

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

Based upon the recent experience, the termination rates for General members have been decreased for those with less than two years of service and generally increased for those with more than two years of service. For Safety members, the termination rates have been increased or decreased to better reflect the recent experience. Overall, for General members, the proposed termination rates are slightly lower than those under the current assumptions. For Safety members, the proposed termination rates are slightly higher overall than those under the current assumptions.

For both General and Safety members, the proposed rates of electing a refund of contributions are higher overall than under the current assumptions reflecting some of the experience of the past three years.

We will also continue to assume that termination rates are zero at any age where members are assumed to retire. In other words, at those ages, members will retire in accordance with the retirement rate assumptions rather than terminate and defer their benefit.

Chart 11
Actual Number of Terminations Compared to Expected - General Members

Year ended June 30,

■ Expected - Current　■ Actual　■ Expected - Proposed
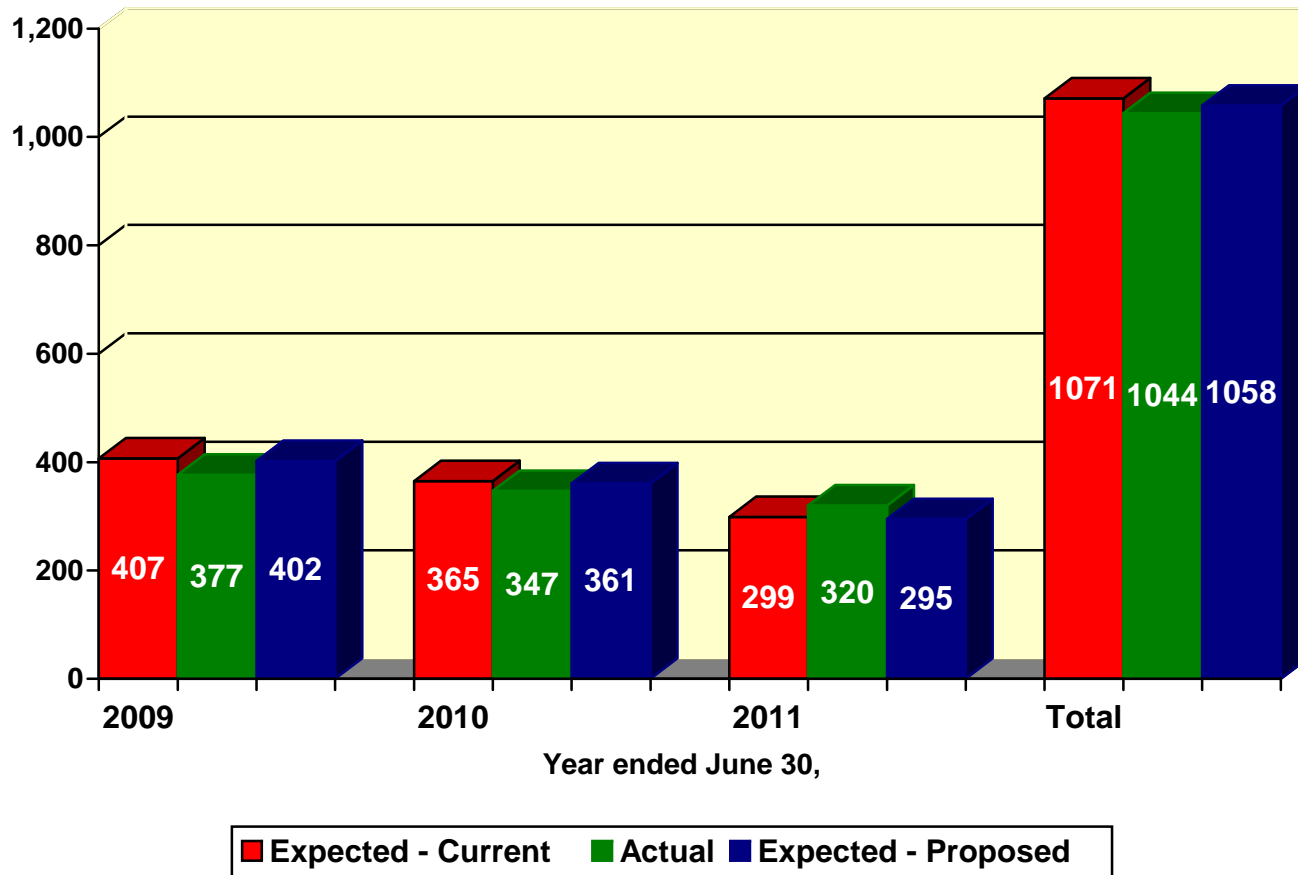
Chart 12
Actual Number of Terminations Compared to Expected - Safety Members

Year ended June 30,

	Expected - Current	Actual	Expected - Proposed
2009	41	32	44
2010	40	65	42
2011	35	34	37
Total	116	131	123

Chart 13
Termination Rates - General Members

Chart 14
Termination Rates - Safety Members

Chart 15
Rates of Electing a Refund of Contributions - General Members
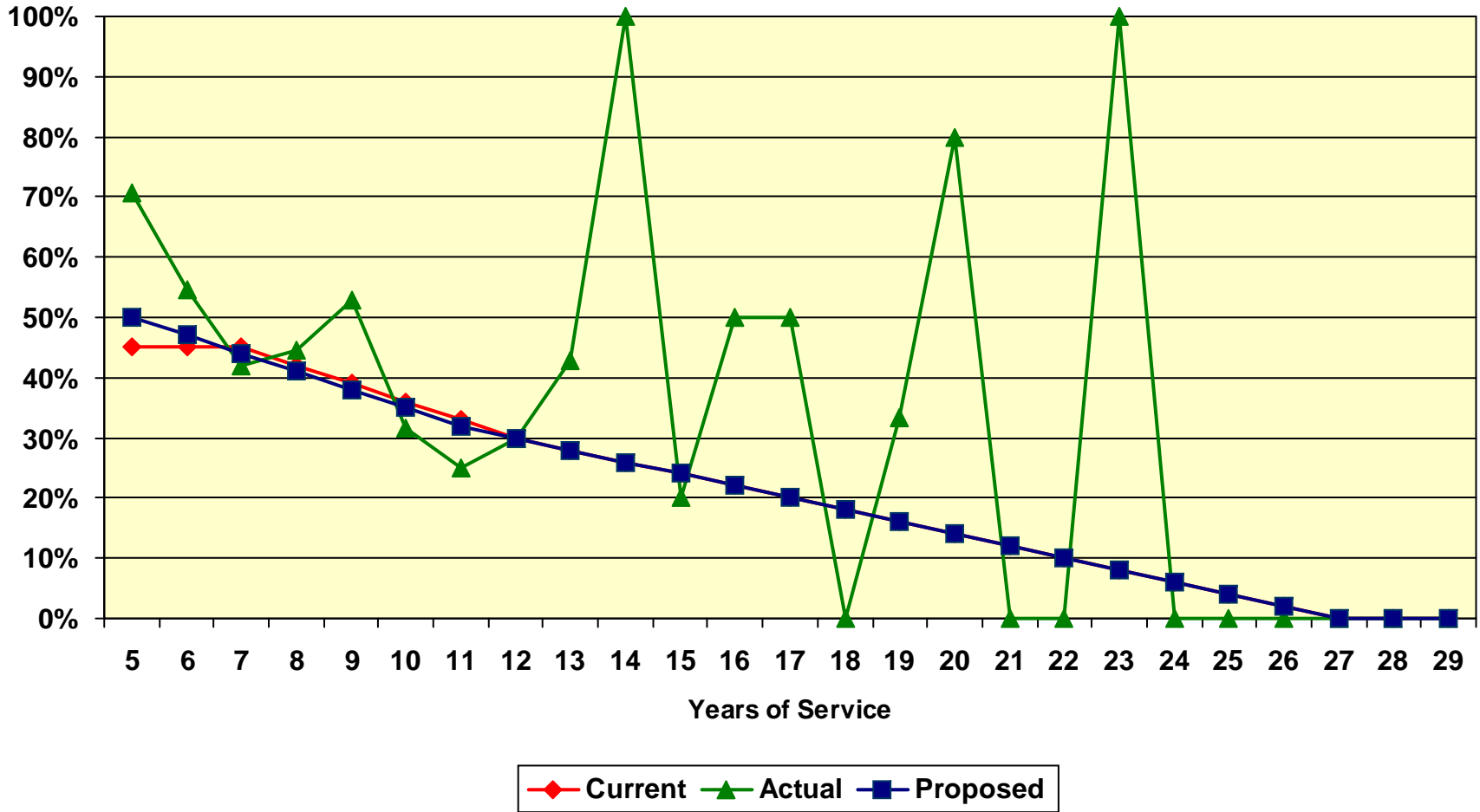
Chart 16
Rates of Electing a Refund of Contributions - Safety Members
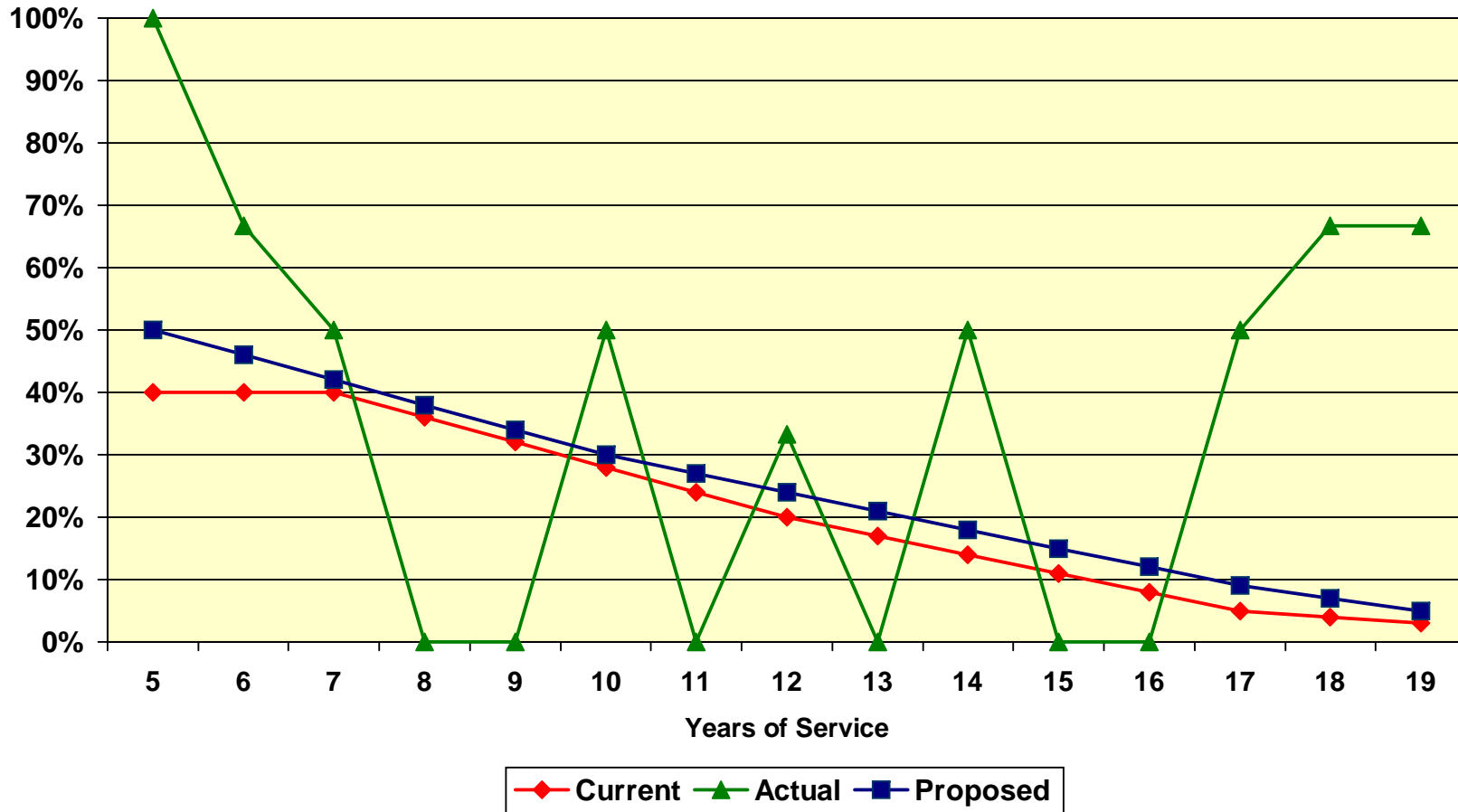
F.   DISABILITY INCIDENCE RATES

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

Rates of Disability Incidence (General)

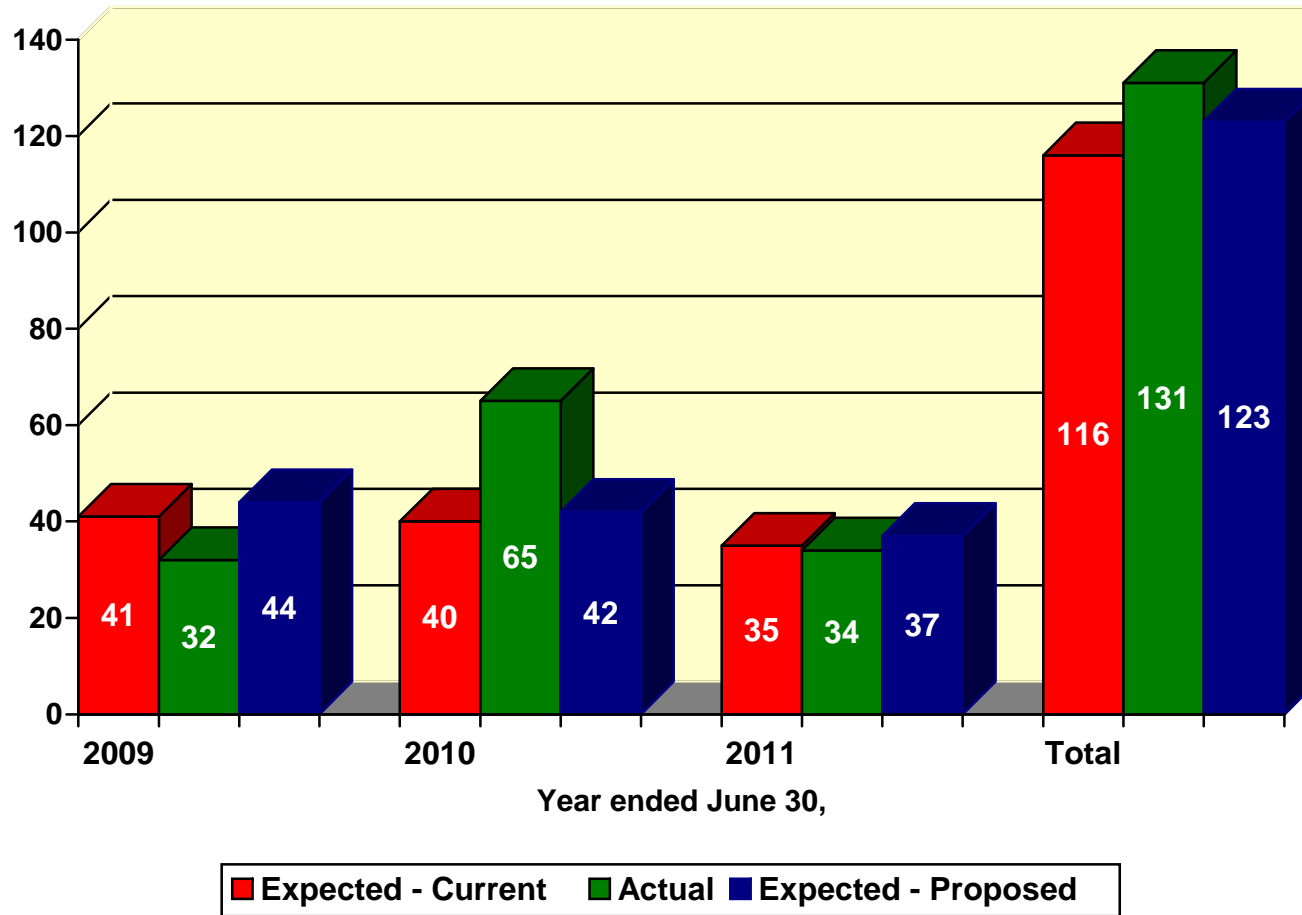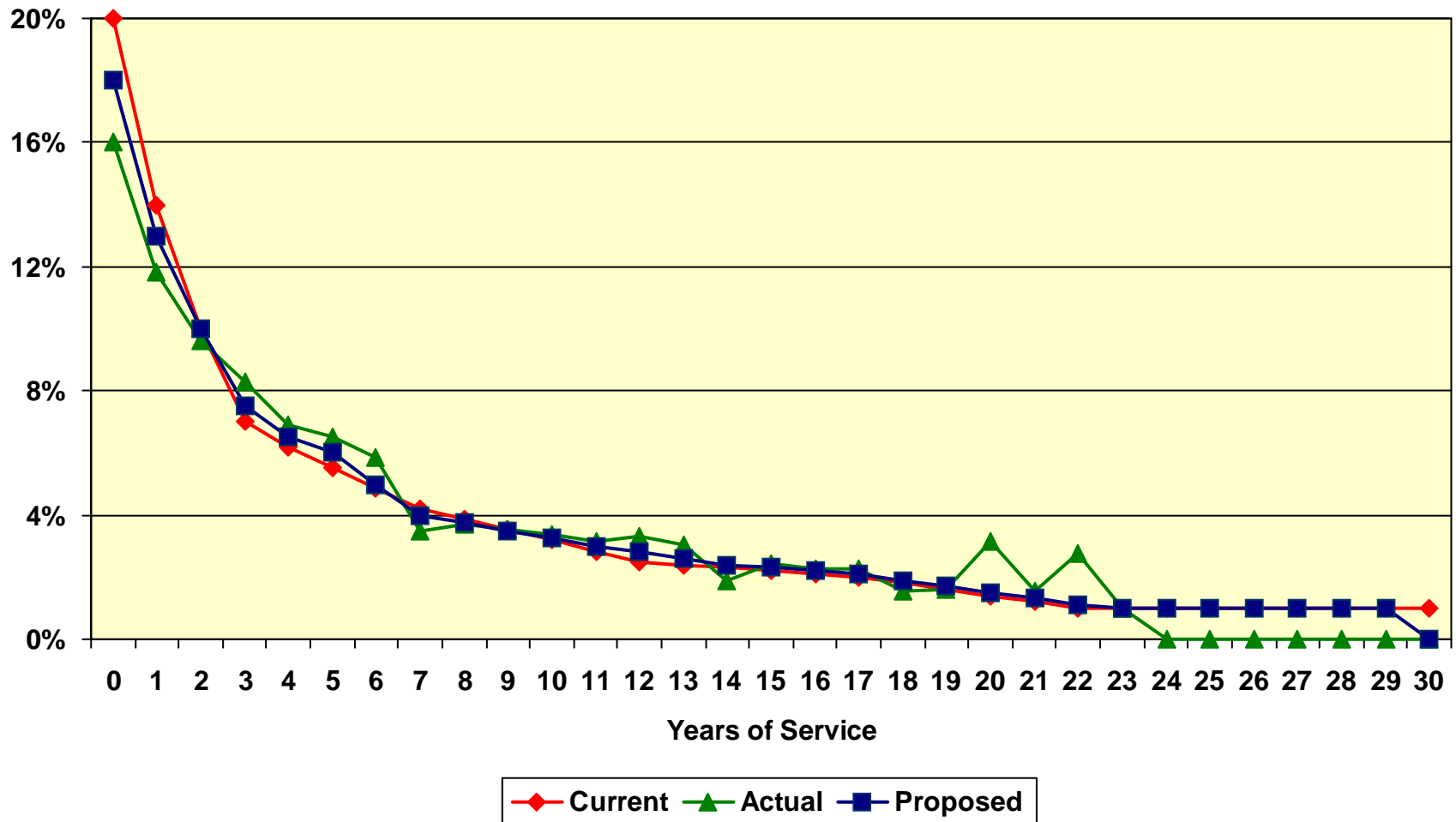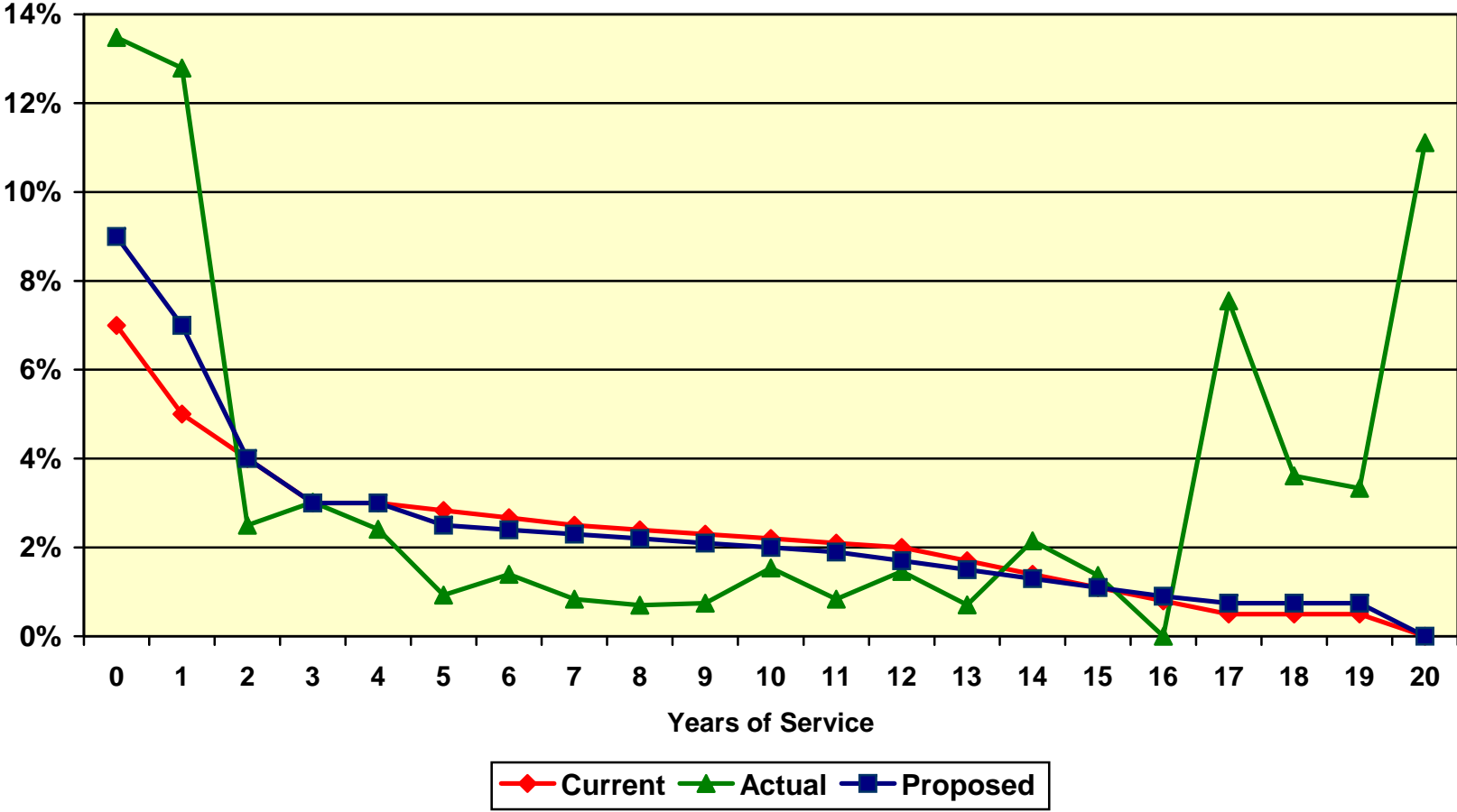| Age	Current Rate*	Observed Rate	Proposed Rate
20 – 24	0.05%	0.00%	0.02%
25 – 29	0.05	0.00	0.04
30 – 34	0.08	0.04	0.06
35 – 39	0.13	0.16	0.15
40 – 44	0.20	0.21	0.20
45 – 49	0.30	0.32	0.30
50 – 54	0.60	0.18	0.40
55 – 59	0.60	0.38	0.40
60 – 64	0.50	0.34	0.40
65 – 69	0.40	0.55	0.40

*   *Total current rate for service and non-service connected disabilities.*

Rates of Disability Incidence (Safety)

Age	Current Rate*	Observed Rate	Proposed Rate
20 – 24	0.07%	0.00%	0.05%
25 – 29	0.19	0.00	0.15
30 – 34	0.36	0.20	0.25
35 – 39	0.60	0.21	0.45
40 – 44	1.02	0.48	0.70
45 – 49	1.62	0.58	1.10
50 – 54	2.34	1.77	2.00
55 – 59	3.24	3.68	3.50
60 – 64	0.00	8.51	5.00

*   *Total current rate for service and non-service connected disabilities.*

Chart 17 compares the actual number of non-service connected and service connected 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. There are mostly decreases in the rates proposed for both General and Safety members.

Chart 18 shows actual disability incidence rates, compared to the assumed and proposed rates for General members.

Since 45% of disabled General members received a service connected disability, we recommend decreasing the current assumption from 60% to 55% of disabilities being entitled to a service connected disability retirement. The remaining 45% of disabled General members are assumed to receive a non-service connected disability.

Chart 19 graphs the same information as Charts 18, but for Safety members. Since 93% of disabled Safety members received a service connected disability, we recommend maintaining the current assumption that 100% of disabilities will receive a service connected disability retirement. This means that no non-service connected disabilities will be assumed for Safety members.

Chart 17
Actual Number of Disabilities Compared to Expected
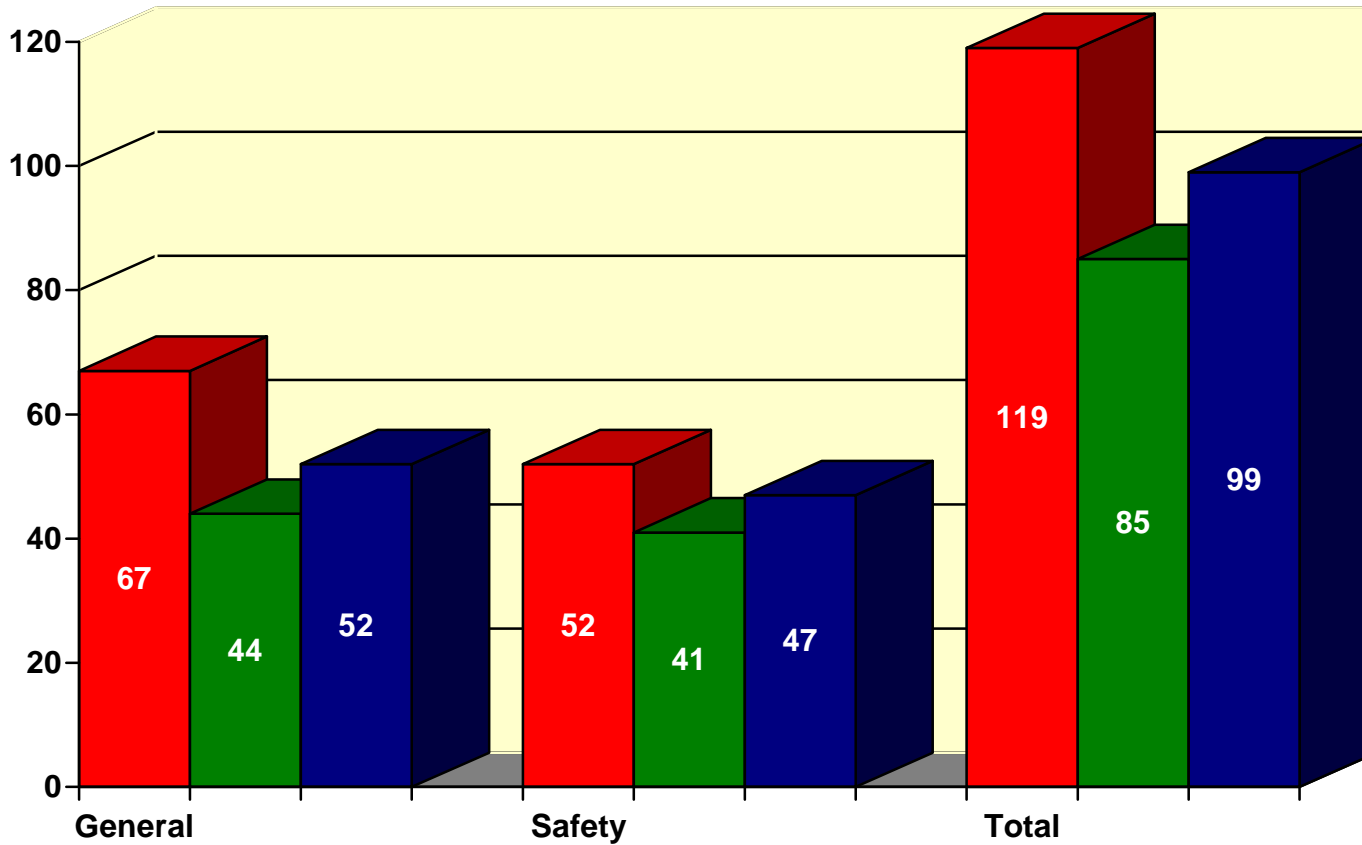
3-Year Totals (Both Service and Non-Service Connected)

■ Expected ■ Actual ■ Proposed

Chart 18
Disability Incidence Rates for General Members
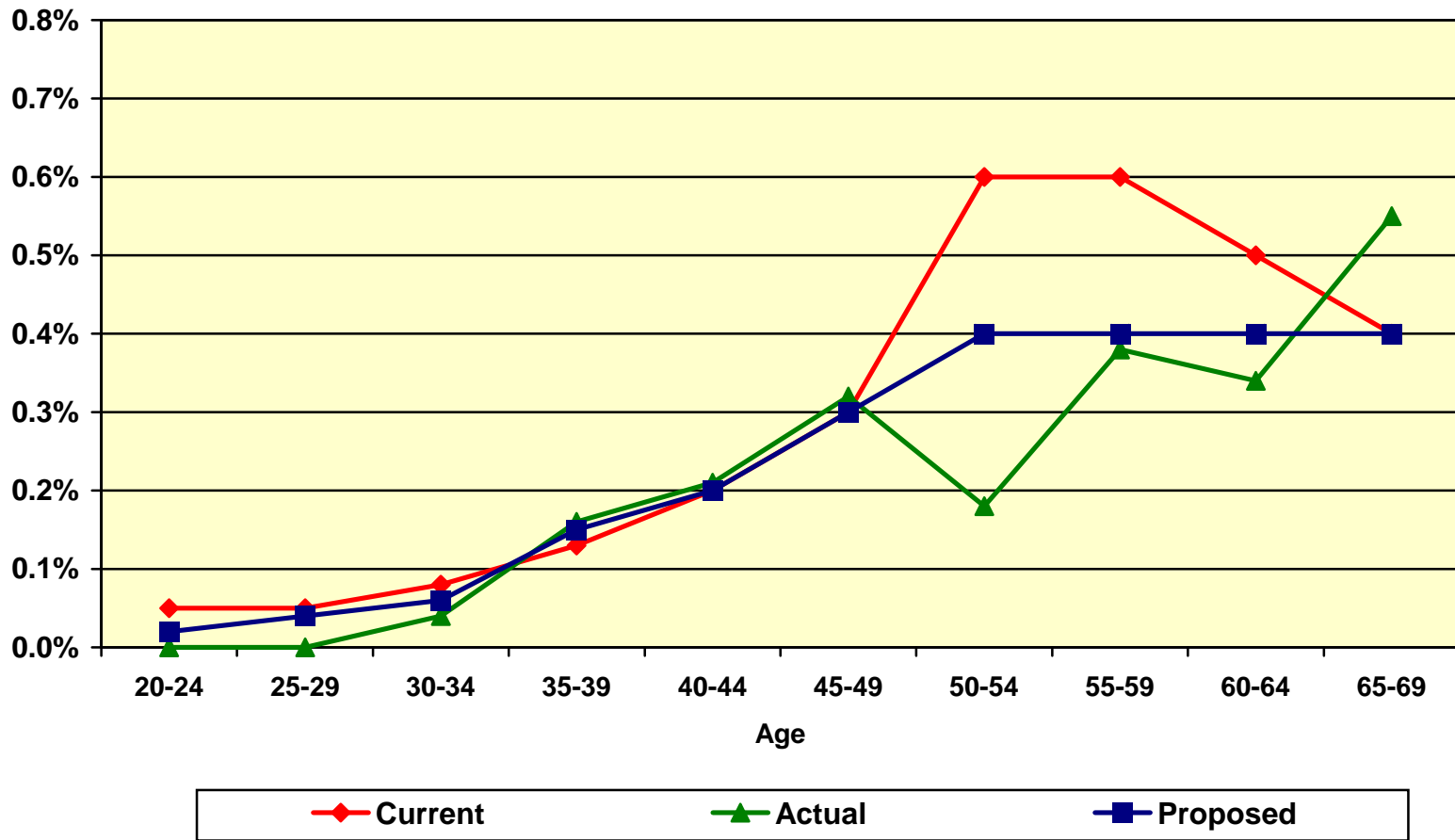
Chart 19
Disability Incidence Rates for Safety Members
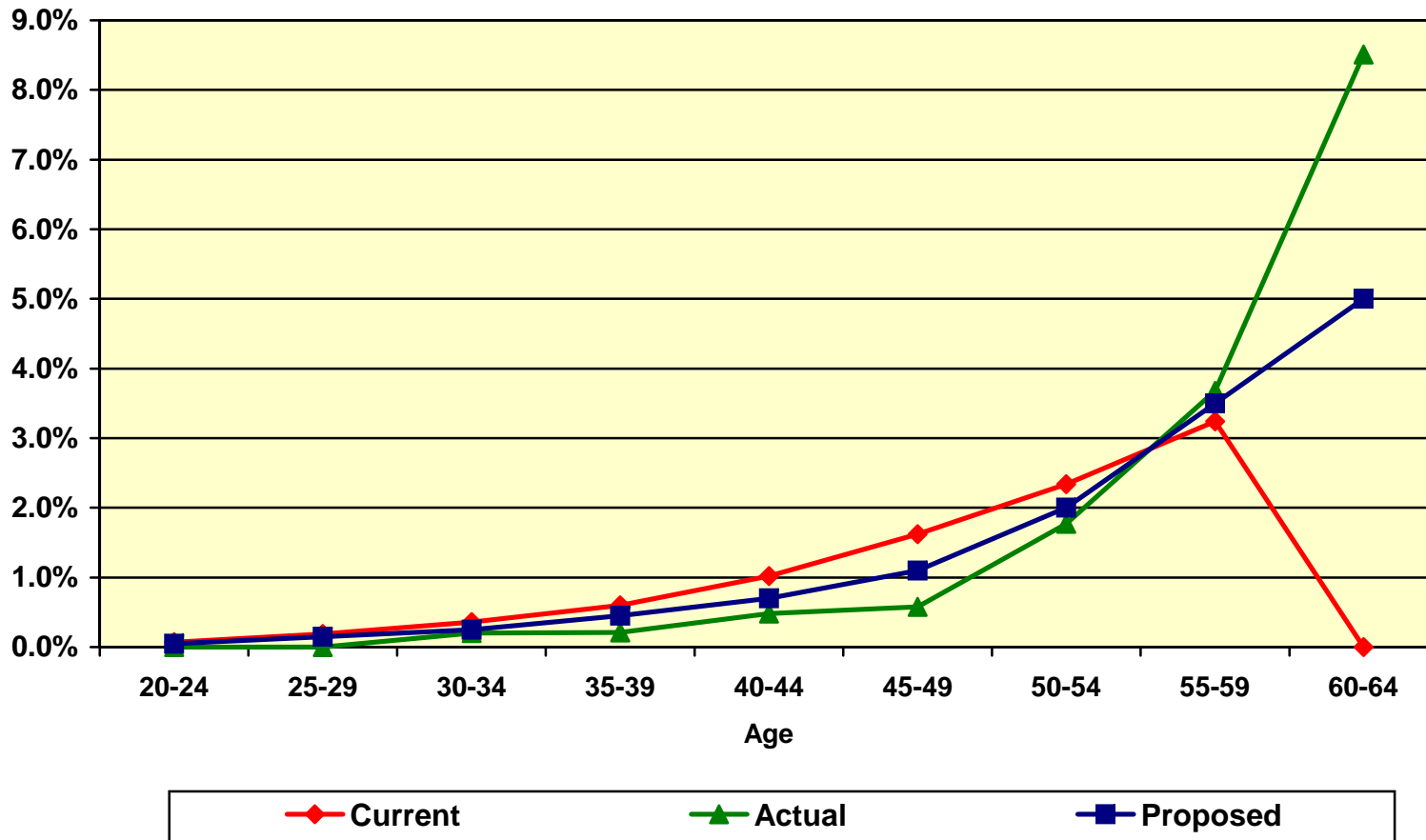
G. PROMOTIONAL AND MERIT SALARY INCREASES

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

➤ Promotional and merit increases.

The inflationary increases are assumed to follow the general annual inflation assumption discussed in our separate economic assumptions report where we recommend a 3.25% inflation assumption. We also discuss in that report our recommended assumption of 0.75% annual "across the board" pay increases. Therefore, the total assumed inflation and real "across the board" pay increase (i.e., wage inflation) is 4.00%; this is used as the assumed annual rate of payroll growth at which payments to amortize the Unfunded Actuarial Accrued Liability (UAAL) are assumed to increase.

The annual promotional and merit 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 General and Safety members. This is accomplished by:

➤ Measuring each continuing member's actual salary increase over each year of the experience period;

➤ Categorizing these increases according to member demographics;

➤ Removing the wage inflation component from these increases (estimated as 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."

The following table shows the General members' actual average promotional and merit increases by years of service over the three-year period from July 1, 2008 through June 30, 2011 along with the actual average based on the current three-year period. The current and proposed assumptions are also shown. The actual increases for the most recent three-year period were reduced by an estimate of the actual average inflation plus "across the board" increase (i.e., wage inflation) for each year over the current three-year experience period (4.9% on average).

| | | General | |
| | | July 1, 2008 Through June 30, 2011 Average General | |
Years of Service	Current Assumptions*	Promotional and Merit Increases	Proposed Assumptions
Less than 1	6.24%	1.75%	6.00%
1	5.20	3.66	5.00
2	4.16	3.65	4.00
3	3.12	2.93	3.00
4	2.60	2.26	2.50
5	2.34	1.82	2.00
6	2.08	1.23	1.75
7	1.82	0.62	1.50
8	1.56	0.04	1.25
9	1.35	-0.18	1.00
10	1.14	0.28	0.90
11	0.94	-0.23	0.80
12	0.83	-0.79	0.70
13	0.73	-0.93	0.60
14	0.62	-0.35	0.50
15	0.52	-0.12	0.50
16	0.52	-0.35	0.50
17	0.52	-0.96	0.50
18	0.52	-0.85	0.50
19	0.52	-1.10	0.50
20 & over	0.52	-0.92	0.50

* *Determined by taking the compounded annual increase (with wage inflation) and subtracting the assumed 4.00% wage inflation component.*

The following table provides the same information for Safety members. The actual average promotional and merit increases were determined by reducing the actual average total salary increases by an estimate of the actual average inflation plus real "across the board" increase (i.e., wage inflation) for each year over the three-year period (3.6% on average).

| | | **Safety** | |
| | | **July 1, 2008 Through June 30, 2011 Average Safety** | |
Years of Service	**Current Assumptions***	**Promotional and Merit Increases**	**Proposed Assumptions**
Less than 1	6.24%	9.77%	7.00%
1	5.20	10.46	5.75
2	4.16	5.42	4.50
3	3.12	3.97	3.50
4	2.60	4.42	3.00
5	2.34	3.26	2.50
6	2.08	3.77	2.25
7	1.82	2.27	2.00
8	1.56	1.67	1.75
9	1.35	1.01	1.25
10	1.14	1.26	1.00
11	0.94	0.95	0.95
12	0.83	0.04	0.90
13	0.78	0.25	0.85
14	0.78	-0.12	0.80
15	0.78	-0.27	0.75
16	0.78	0.36	0.70
17	0.78	0.16	0.65
18	0.78	0.96	0.60
19	0.78	0.81	0.55
20 & over	0.78	0.53	0.50

* *Determined by taking the compounded annual increase (with wage inflation) and subtracting the assumed 4.00% wage inflation component.*

Charts 20 and 21 provide a graphical comparison of the actual promotional and merit increases, compared to the proposed and current assumptions. Chart 20 shows this information for General members and Chart 21 for Safety members.

Based on this experience, we are proposing slight decreases overall in the promotional and merit salary increases for both General and Safety members.

Also, as a procedural matter, we will combine the wage inflation and promotional and merit components of the salary scale together on an additive basis. This is in contrast to the current assumptions that are compounded together.

Chart 20
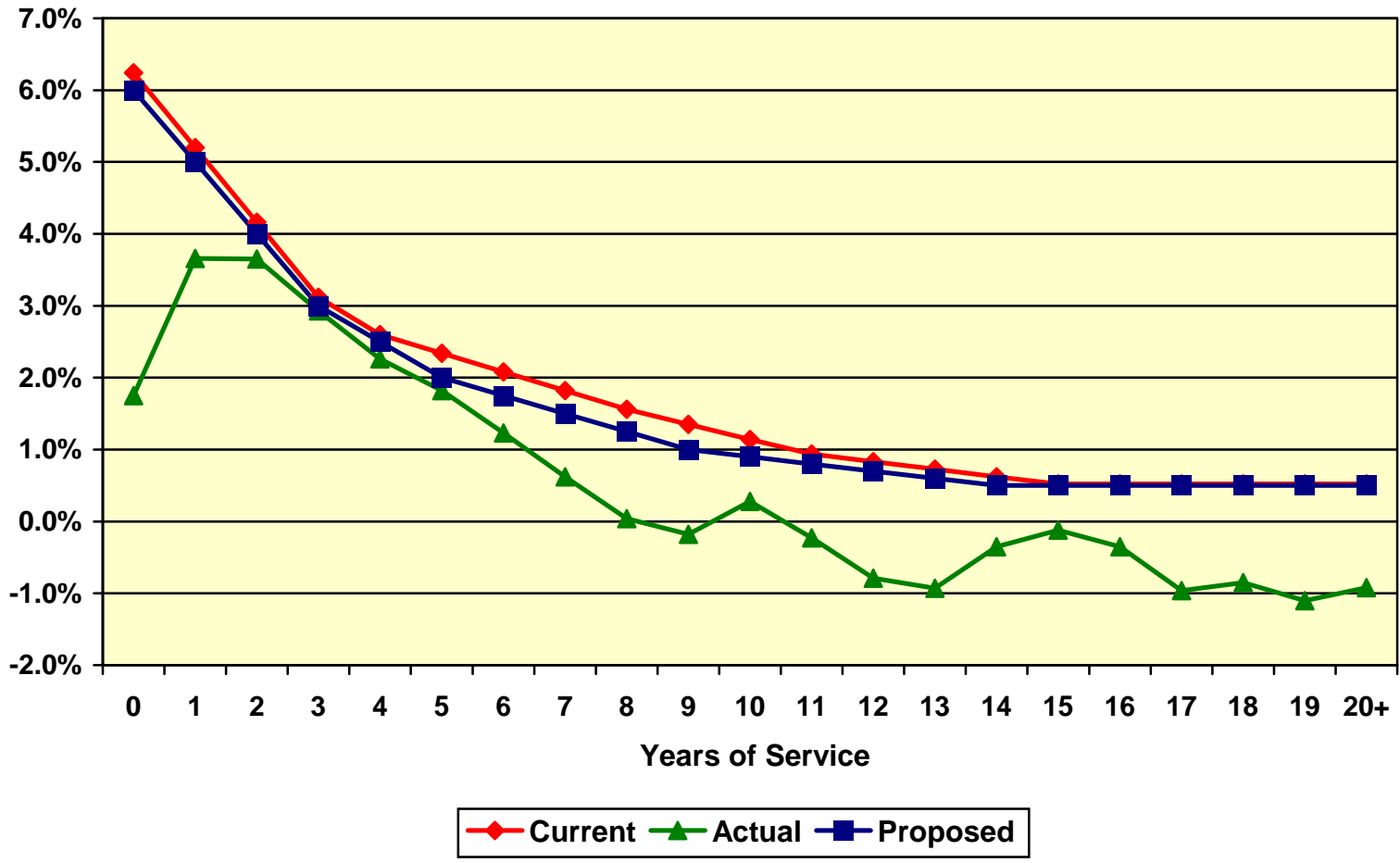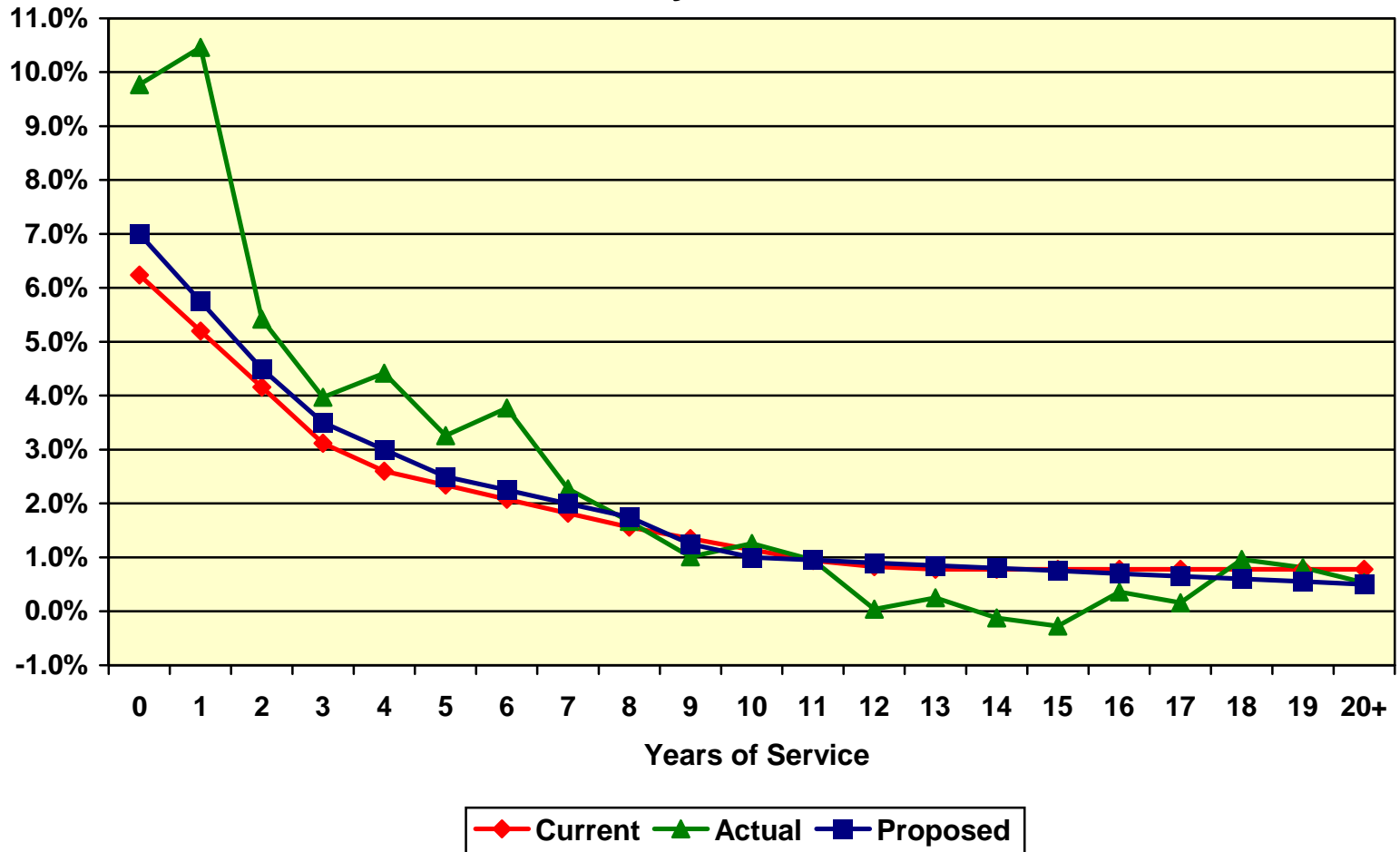**Promotional and Merit Salary Increase Rates -**
General Members

Chart 21
Promotional and Merit Salary Increase Rates - Safety Members

Legend: Current, Actual, Proposed

X-axis: Years of Service

H.   ADJUSTMENT FOR DELAY IN CONTRIBUTION RATE IMPLEMENTATION

As with many public retirement systems, there is a one-year delay between the actuarial valuation date and the date contribution rates become effective. KCERA's previous actuary has made an adjustment to the employer contribution rates determined in the actuarial valuation to account for this delay. Note that out of the twelve 37 Act County Systems that we serve as valuation actuary, only one system other than KCERA makes this type of adjustment. Because that system has a calendar valuation year, there is an adjustment to account for an 18-month delay between the valuation date and the date the contribution rates become effective.

We believe that the adjustment made by the previous actuary in KCERA's June 30, 2010 valuation amounts to roughly 0.20% of payroll for the aggregate plan. The adjustment attempts to reduce the difference between the actual and expected contributions that occurs each year. However, even with the adjustment these "contribution gains and losses" will still occur due to payroll amounts different than expected.

Note that the adjustment will vary with each valuation and depends on the difference between the contribution rates determined in the valuation and the contribution rates that are currently in effect. If the new rates are higher there is a positive (higher cost) adjustment and if the new rates are lower there is a negative (lower cost) adjustment. Therefore, over the long-term, we would expect that the average adjustment would be minimal due to positive and negative adjustments cancelling each other out over time. However, we also note that this would not be the case for the recent valuations, where employer rates have increased substantially due to the large market losses from 2008 and 2009.

Due to the generally small magnitude of this adjustment and the consistent practice among other 37 Act Systems, the Board could consider eliminating this adjustment starting with the June 30, 2011 Actuarial Valuation. However, if the Board prefers to continue making an adjustment to account for the delay between the valuation date and the date the contribution rates become effective then we would apply the method we have developed for this purpose, rather than using the particular method used by the previous actuary to determine the adjustment. The differences in the results between the two calculation methods would generally be immaterial.

IV. COST IMPACT OF ASSUMPTION CHANGES

The tables below show the changes in the employer and member contribution rates due to the recommended assumption changes as if they were applied to the June 30, 2010 actuarial valuation. If all of the proposed assumption changes were implemented, the Plan's average employer rate would have increased by 2.1% of compensation. The average member rate would have increased by 0.1% of compensation. The Plan's UAAL would have increased by $110 million.

Employer Contribution Rate Impact (% of Compensation)

Contributions	General County w/ Courts	General Districts	Safety	Overall
Normal Cost	1.0%	1.2%	1.9%	1.3%
UAAL	0.7%	0.6%	1.2%	0.8%
Total	1.7%	1.8%	3.1%	2.1%

Employer Contribution Rate Impact (Estimated Annual Dollar Amounts in Thousands)

Contributions	General County w/ Courts	General Districts	Safety	Overall
Total	$6,608	$571	$4,327	$11,506

Member Contribution Rate Impact at Sample Entry Ages (Annual Amounts in Dollars)*

	General Tier I				General Tier II			
Entry Age	Current	Proposed	Difference	Annual Amount**	Current	Proposed	Difference	Annual Amount**
25	7.21%	7.51%	0.30%	$180	5.14%	5.38%	0.24%	$144
35	8.68%	8.91%	0.23%	$138	6.18%	6.37%	0.19%	$114
45	10.45%	10.63%	0.18%	$108	7.47%	7.60%	0.13%	$78

	Safety Members (Excluding "Safety 3")				Safety 3 Members			
Entry Age	Current	Proposed	Difference	Annual Amount**	Current	Proposed	Difference	Annual Amount**
25	12.51%	13.08%	0.57%	$456	12.30%	13.55%	1.25%	$1,000
35	14.83%	15.60%	0.77%	$616	12.30%	13.55%	1.25%	$1,000
45	17.22%	17.91%	0.69%	$552	12.30%	13.55%	1.25%	$1,000

*Member rates shown apply to excess of $350 of monthly compensation for members integrated with Social Security or all compensation for those members that are not integrated with Social Security. These rates are before applying any maximum on the number of years over which members contribute.
**Based on annual compensation of $60,000 for General members and $80,000 for Safety members.

The total estimated annual dollar increase in member contributions is $0.7 million.

The estimated cost increase is mainly the result of the recommendation to lower the investment return assumption from 7.75% to 7.50% per annum. Note that we estimate that the <u>additional</u> cost that would result from decreasing the investment return assumption further to 7.25% is 2.5% of compensation for the employer and 0.2% of compensation for the member on average.

The estimated cost increases shown above continue to reflect an adjustment (using Segal methodologies) to account for the one-year delay between the actuarial valuation date and the date contribution rates become effective. If the Board removes this adjustment then the immediate employer contribution rate impact would decrease by about 0.4% of payroll. Note again that this adjustment will vary with each valuation and depends on the difference between the contribution rates determined in the valuation and the contribution rates that are currently in effect.

APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Mortality Rates:

Healthy:	For General Members: RP-2000 Combined Healthy Mortality Table set back one year for males and two years for females.
	For Safety Members: RP-2000 Combined Healthy Mortality Table set back one year for males and two years for females.
Disabled:	For General Members: RP-2000 Combined Healthy Mortality Table set forward two years for males and four years for females. Rates are not less than 1.00% for both males and females.
	For Safety Members: RP-2000 Combined Healthy Mortality Table. Rates are not less than 0.50% for both males and females.
Beneficiaries:	Beneficiaries are assumed to have the same mortality as a General Member of the opposite sex who has taken a service (non-disability) retirement.
Member Contribution Rates:	For General Members: RP-2000 Combined Healthy Mortality Table weighted one-third male and two-thirds female set back one year for males and two years for females.
	For Safety Members: RP-2000 Combined Healthy Mortality Table weighted five-sixths male and one-sixth female set back one year for males and two years for females.

Termination Rates Before Retirement:

Rate (%)

Mortality

	General		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	0.07	0.04	0.07	0.04
40	0.10	0.06	0.10	0.06
45	0.14	0.09	0.14	0.09
50	0.20	0.14	0.20	0.14
55	0.32	0.22	0.32	0.22
60	0.60	0.39	0.60	0.39
65	1.13	0.77	1.13	0.77

All pre-retirement deaths are assumed to be non-service connected, with the exception that for Safety members, an additional pre-retirement mortality rate of 0.02% applies to account for service-connected deaths.

Termination Rates Before Retirement (continued):

	Rate (%) Disability	
Age	**General[1]**	**Safety[2]**
20	0.05	0.03
25	0.05	0.13
30	0.07	0.28
35	0.10	0.48
40	0.17	0.78
45	0.26	1.38
50	0.48	1.98
55	0.60	2.88
60	0.54	0.00
65	0.44	0.00
70	0.00	0.00

[1]60% of General disabilities are assumed to be service connected (duty) disabilities and the other 40% are assumed to be non-service connected (ordinary) disabilities

[2]100% of Safety disabilities are assumed to be service connected (duty) disabilities.

Termination Rates Before Retirement (continued):

	Rate (%)	
	Withdrawal*	
Years of Service	**General**	**Safety**
0	20.00	7.00
1	14.00	5.00
2	10.00	4.00
3	7.00	3.00
4	6.20	3.00
5	5.53	2.83
6	4.87	2.67
7	4.20	2.50
8	3.86	2.40
9	3.52	2.30
10	3.18	2.20
11	2.84	2.10
12	2.50	2.00
13	2.40	1.70
14	2.30	1.40
15	2.20	1.10
16	2.10	0.80
17	2.00	0.50
18	1.80	0.50
19	1.60	0.50
20	1.40	0.00
21	1.20	0.00
22	1.00	0.00
23	1.00	0.00
24	1.00	0.00
25	1.00	0.00
26	1.00	0.00
27	1.00	0.00
28	1.00	0.00
29	1.00	0.00
30 & Over	1.00	0.00

* Refer to the next table that contains rates for electing a refund of contributions upon withdrawal.
No withdrawal is assumed after a member is first assumed to be retired.

Termination Rates Before Retirement (continued):

Rate (%)

**Electing a Refund of
Contributions upon Withdrawal**

Years of Service	General	Safety
0	100	100
1	100	100
2	100	100
3	100	100
4	100	100
5	45	40
6	45	40
7	45	40
8	42	36
9	39	32
10	36	28
11	33	24
12	30	20
13	28	17
14	26	14
15	24	11
16	22	8
17	20	5
18	18	4
19	16	3
20	14	0
21	12	0
22	10	0
23	8	0
24	6	0
25	4	0
26	2	0
27 & Over	0	0

Retirement Rates:

	Rate (%)				
	General Tier I		**General Tier II**		**Safety**
Age	**Male**	**Female**	**Male**	**Female**	**Unisex**
45	0.00	0.00	0.00	0.00	1.00
46	0.00	0.00	0.00	0.00	0.50
47	0.00	0.00	0.00	0.00	0.50
48	0.00	0.00	0.00	0.00	1.00
49	0.00	0.00	0.00	0.00	2.00
50	6.00	6.00	3.00	3.00	12.00
51	3.00	6.00	3.00	3.00	12.00
52	4.00	6.00	3.00	3.00	12.00
53	5.00	6.00	3.00	3.00	12.00
54	5.00	6.00	3.00	3.00	15.00
55	10.00	8.00	8.00	4.00	17.00
56	11.00	10.00	6.00	6.00	20.00
57	14.00	12.00	8.00	7.00	23.00
58	17.00	15.00	12.00	9.00	25.00
59	18.00	18.00	13.00	10.00	25.00
60	20.00	22.00	15.00	12.00	100.00
61	26.00	20.00	20.00	14.00	100.00
62	32.00	30.00	32.00	30.00	100.00
63	30.00	30.00	30.00	30.00	100.00
64	30.00	30.00	30.00	30.00	100.00
65	30.00	30.00	30.00	30.00	100.00
66	30.00	30.00	30.00	30.00	100.00
67	30.00	30.00	30.00	30.00	100.00
68	30.00	30.00	30.00	30.00	100.00
69	30.00	30.00	30.00	30.00	100.00
70	100.00	100.00	100.00	100.00	100.00

Retirement Age and Benefit for
Deferred Vested Members: For deferred vested benefits, we make the following retirement assumption:

General Age:	Age 60
Safety Age:	Age 50

We assume that 50% of future deferred vested members will continue to work for a reciprocal employer. For reciprocals, we assume compensation increases per annum of 4.52% for General members and 4.78% for Safety members.

Future Benefit Accruals: 1.0 year of service per year.

Percent Married: 80% of male members and 55% of female members are assumed to be married at pre-retirement death or retirement. There is no explicit assumption for children's benefits.

Age of Spouse: Female (or male) spouses are 3 years younger (or older) than their spouses.

Net Investment Return: 7.75%, net of adminstration and investment expenses

Employee Contribution
Crediting Rate: 7.75%, compounded semi-annually

Consumer Price Index: Increase of 3.25% per year; retiree COLA increases due to CPI are assumed to be 2.50% per year.

Salary Increases:

<div align="center">Annual Rate of Compensation Increase</div>

Inflation: 3.25% per year, plus "across the board" salary increases of 0.75% per year, plus the following promotional and merit increases.

Years of Service	General Members	Safety Members
Less than 1	6.00%	6.00%
1	5.00%	5.00%
2	4.00%	4.00%
3	3.00%	3.00%
4	2.50%	2.50%
5	2.25%	2.25%
6	2.00%	2.00%
7	1.75%	1.75%
8	1.50%	1.50%
9	1.30%	1.30%
10	1.10%	1.10%
11	0.90%	0.90%
12	0.80%	0.80%
13	0.70%	0.75%
14	0.60%	0.75%
15 & Over	0.50%	0.75%

Note: The promotional and merit increases are compounded with the sum of the inflationary and "across the board" increases.

Actuarial Value of Assets: Market value of assets (MVA) less unrecognized returns in each of the last nine semi-annual accounting periods. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized semi-annually over a five-year period. The actuarial value of assets (AVA) is limited by a 50% corridor; the AVA cannot be less than 50% of MVA, nor greater than 150% of MVA.

Valuation Value of Assets: Actuarial Value of Assets reduced by the value of the non-valuation reserves and designations.

Actuarial Cost Method: Entry Age Normal Actuarial Cost Method. Entry Age is calculated as age on the valuation date minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percent of compensation, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS AND METHODS

Mortality Rates

Healthy:	For General Members: RP-2000 Combined Healthy Mortality Table set back two years for males and one year for females.
	For Safety Members: RP-2000 Combined Healthy Mortality Table set back two years for males and one year for females.
Disabled:	For General Members: RP-2000 Combined Healthy Mortality Table set forward six years.
	For Safety Members: RP-2000 Combined Healthy Mortality Table set forward one year.
Beneficiaries:	Beneficiaries are assumed to have the same mortality as a General Member of the opposite sex who is receiving a service (non-disability) retirement.
Member Contribution Rates:	For General Members: RP-2000 Combined Healthy Mortality Table set back two years for males and one year for females weighted 30% male and 70% female.
	For Safety Members: RP-2000 Combined Healthy Mortality Table set back two years for males and one year for females weighted 80% male and 20% female.

Termination Rates Before Retirement:

	Rate (%)			
	Mortality			
	General		**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	0.06	0.04
40	0.10	0.06	0.10	0.06
45	0.13	0.10	0.13	0.10
50	0.19	0.16	0.19	0.16
55	0.29	0.24	0.29	0.24
60	0.53	0.44	0.53	0.44
65	1.00	0.86	1.00	0.86

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

Termination Rates Before Retirement (continued):

| | Rate (%) | |
| | Disability | |
Age	General[1]	Safety[2]
25	0.03	0.11
30	0.05	0.21
35	0.11	0.37
40	0.18	0.60
45	0.26	0.94
50	0.36	1.64
55	0.40	2.90
60	0.40	4.40
65	0.40	0.00

[1] 55% of General disabilities are assumed to be service connected (duty) disabilities and the other 45% are assumed to be non-service connected (ordinary) disabilities.

[2] 100% of Safety disabilities are assumed to be service connected (duty) disabilities.

Termination Rates Before Retirement (continued):

<div align="center">

Rate (%)

Withdrawal*

Years of Service	General	Safety
0	18.00	9.00
1	13.00	7.00
2	10.00	4.00
3	7.50	3.00
4	6.50	3.00
5	6.00	2.50
6	5.00	2.40
7	4.00	2.30
8	3.75	2.20
9	3.50	2.10
10	3.25	2.00
11	3.00	1.90
12	2.80	1.70
13	2.60	1.50
14	2.40	1.30
15	2.30	1.10
16	2.20	0.90
17	2.10	0.75
18	1.90	0.75
19	1.70	0.75
20	1.50	0.00
21	1.30	0.00
22	1.10	0.00
23	1.00	0.00
24	1.00	0.00
25	1.00	0.00
26	1.00	0.00
27	1.00	0.00
28	1.00	0.00
29	1.00	0.00
30 & Over	0.00	0.00

</div>

*   Refer to the next table that contains rates for electing a refund of contributions upon withdrawal. No withdrawal is assumed after a member is first assumed to retire.

Termination Rates Before Retirement (continued):

Rate (%)

Years of Service	Electing a Refund of Contributions upon Withdrawal	
	General	**Safety**
0	100%	100%
1	100	100
2	100	100
3	100	100
4	100	100
5	50	50
6	47	46
7	44	42
8	41	38
9	38	34
10	35	30
11	32	27
12	30	24
13	28	21
14	26	18
15	24	15
16	22	12
17	20	9
18	18	7
19	16	5
20	14	0
21	12	0
22	10	0
23	8	0
24	6	0
25	4	0
26	2	0
27 & Over	0	0

Retirement Rates:

Age	Rate (%)		
	General Tier I	General Tier II	Safety
45	0.00	0.00	1.00
46	0.00	0.00	1.00
47	0.00	0.00	1.00
48	0.00	0.00	1.00
49	0.00	0.00	6.00
50	6.00	3.00	16.00
51	6.00	3.00	14.00
52	6.00	3.00	16.00
53	6.00	3.00	18.00
54	7.00	3.00	20.00
55	9.00	5.00	22.00
56	11.00	6.00	25.00
57	13.00	7.00	27.00
58	16.00	10.00	30.00
59	18.00	11.00	25.00
60	22.00	13.00	25.00
61	25.00	17.00	25.00
62	30.00	30.00	100.00
63	30.00	30.00	100.00
64	30.00	30.00	100.00
65	30.00	30.00	100.00
66	40.00	40.00	100.00
67	40.00	40.00	100.00
68	40.00	40.00	100.00
69	40.00	40.00	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:

General Age:	57
Safety Age:	53

We assume that 55% and 60% of future General and Safety deferred vested members, respectively, will continue to work for a reciprocal employer. For reciprocals, we assume 4.75% compensation increases per annum.

Future Benefit Accruals: 1.0 year of service per year.

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

Definition of Active Members: All active members of KCERA as of the valuation date.

Percent Married: 75% of male members and 55% of female members are assumed to be married at pre-retirement death or retirement. There is no explicit assumption for children's benefits.

Age of Spouse: Female (or male) spouses are 3 years younger (or older) than their spouses.

Net Investment Return: 7.50%, net of investment and administration expenses.

Employee Contribution Crediting Rate: 7.50%, compounded semi-annually.

Consumer Price Index: Increase of 3.25% per year; retiree COLA increases due to CPI are assumed to be 2.50% per year.

Salary Increases:

<div align="center">Annual Rate of Compensation Increase</div>

Inflation: 3.25% per year, plus "across the board" salary increases of 0.75% per year, plus the following promotional and merit increases.

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6	1.75%	2.25%
7	1.50%	2.00%
8	1.25%	1.75%
9	1.00%	1.25%
10	0.90%	1.00%
11	0.80%	0.95%
12	0.70%	0.90%
13	0.60%	0.85%
14	0.50%	0.80%
15	0.50%	0.75%
16	0.50%	0.70%
17	0.50%	0.65%
18	0.50%	0.60%
19	0.50%	0.55%
20 & Over	0.50%	0.50%

Note: The promotional and merit increases are added to the sum of the inflationary and "across the board" increases.

Actuarial Value of Assets: Market value of assets (MVA) less unrecognized returns in each of the last nine semi-annual accounting periods. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized semi-annually over a five-year period. The actuarial value of assets (AVA) is limited by a 50% corridor; the AVA cannot be less than 50% of MVA, nor greater than 150% of MVA.

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