

San Diego County Employees Retirement Association

ACTUARIAL EXPERIENCE STUDY

**Analysis of Actuarial Experience
During the Period
July 1, 2006 through June 30, 2009**

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March 23, 2010

Board of Retirement
San Diego County Employees Retirement Association
2275 Rio Bonito Way, Suite 200
San Diego, CA 92108-1685

Re: Review of Non-economic Actuarial Assumptions as of June 30, 2009

Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience of the San Diego County Employees Retirement Association. This study utilizes the census data of the last three actuarial valuations and includes the proposed actuarial assumptions to be used in the next actuarial valuation as of June 30, 2010.

Please note that in this report, we have only reviewed the non-economic assumptions. The economic actuarial assumption recommendations for the June 30, 2010 valuation will be 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, EA, MAAA, FCA
Senior Vice President and Actuary

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

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I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

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

If assumptions are 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 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 period from July 1, 2006 through June 30, 2009. 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." This Standard of Practice puts 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.

During the three year period, the Association had losses of \$555 million related to actuarial experience. Out of this loss, \$279 million was from actual investment return less than assumed (even after asset “smoothing”) and \$276 million from adverse deviations in other actual experience from expected experience.

We are recommending changes in the assumptions for retirement from active employment, deferred vested retirement age, pre-retirement mortality, healthy life mortality, disabled life mortality, turnover (withdrawal and vested termination), disability (non-service connected and service connected), salary increases, and percentage of members married.

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 more accurately reflect past experience. Both General and Safety members are assumed to retire a little later.*

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

Recommendation: *The current post-retirement mortality rates for General and Safety members who retired for service retirement and disability retirement have been adjusted to reflect improvements in mortality. The pre-retirement mortality rates for both General and Safety have been adjusted based on the recommended post-retirement mortality rates.*

Termination Rates - The probability of leaving employment at each age and receiving either a refund of contributions (ordinary withdrawal) or a deferred vested retirement benefit (vested termination).

Recommendation: *For both General and Safety members, the ordinary withdrawal and vested termination rates have been decreased in total. We have also introduced an assumption for vested terminations for members with less than five years of service. Previously, these members were all assumed to be ordinary withdrawals.*

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

Recommendation: The rates have been slightly modified for both non-service connected disability (non-duty) and service connected disability (duty) to more accurately reflect past experience. Overall, the proposed assumptions predict a lower number of total non-service connected and service-connected disabilities for General members. The proposed assumptions predict about the same number of total non-service connected and service-connected disabilities for 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: The merit and promotional rates for all members during the first five years of service have been increased slightly. The merit and promotional increases after five years of service have been decreased slightly for General members and increased for Safety. These changes are made to reflect past experience and to more closely model future expectations.

Section II provides some background on basic principles and the methodology used for the experience study. A detailed discussion of the experience 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. The “economic” assumptions for the June 30, 2010 valuation will be 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 wage 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 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. 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 tables on the following pages show the observed service (non-disability) retirement rates for General Tier 1 and Tier A and Safety Tier A 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.

The following rates are the observed rates based on the actual experience:

Actual Rate of Retirement (From July 1, 2006 to June 30, 2009)

Age	Rate (%)	
	General (Tier 1 and Tier A)	Safety (Tier A)
48*	-	1.7
49*	75.0	11.1
50	8.3	15.1
51	3.1	10.1
52	4.4	10.5
53	4.0	14.4
54	7.0	17.7
55	11.6	15.9
56	9.3	12.0
57	9.9	18.4
58	11.4	19.7
59	14.1	21.3
60	20.8	23.4
61	16.7	15.2
62	23.8	18.2
63	20.6	25.0
64	30.2	18.2
65	32.3	30.8
66	29.7	55.6
67	25.6	-
68	35.0	33.3
69	23.9	-
70	25.4	-
71	15.6	-
72	14.3	-
73	11.1	-
74	25.0	-
75+	21.9	-

* *These rates are calculated based on General members with 30 or more years of service and Safety members with 20 or more years of service.*

The following rates of retirement are currently assumed for SDCERA active members:

Current Retirement Probability

Age	Rate (%)	
	General (Tier 1 and Tier A)	Safety (Tier A)
48	-	4.0
49	-	4.0
50	8.0	15.0
51	5.0	15.0
52	5.0	15.0
53	6.0	15.0
54	8.0	15.0
55	12.0	20.0
56	13.0	25.0
57	15.0	30.0
58	17.0	35.0
59	20.0	35.0
60	20.0	45.0
61	25.0	45.0
62	27.0	45.0
63	29.0	45.0
64	30.0	45.0
65	30.0	100.0
66	30.0	100.0
67	30.0	100.0
68	40.0	100.0
69	40.0	100.0
70	100.0	100.0

The following rates of retirement are what we would propose for this study:

<u>Proposed Retirement Probability</u>		
Rate (%)		
Age	General (Tier 1 and Tier A)	Safety (Tier A)
48	-	4.0
49	50.0	7.0
50	8.0	15.0
51	5.0	13.0
52	5.0	13.0
53	5.0	15.0
54	7.0	15.0
55	12.0	16.0
56	12.0	20.0
57	13.0	24.0
58	14.0	30.0
59	16.0	30.0
60	20.0	30.0
61	21.0	30.0
62	25.0	35.0
63	26.0	35.0
64	30.0	35.0
65	30.0	75.0
66	30.0	75.0
67	30.0	75.0
68	35.0	75.0
69	40.0	75.0
70	75.0	100.0
71	75.0	100.0
72	75.0	100.0
73	75.0	100.0
74	75.0	100.0
75+	100.0	100.0

As you can see from our proposed rates, we anticipate that both General Tier 1 and Tier A members and Safety Tier A members will retire a little later than the current assumptions.

Of note is that effective August 28, 2009, the employer implemented new Tier B formulas for General and Safety. For those new tiers we are not recommending any changes to the service retirement assumptions used in preparing our June 12, 2009 cost study until actual retirement experience is available for members who retire under those Tier B formulas.

Chart 1 compares actual experience with the assumed and proposed rates of retirement for General members. Chart 2 has the same data for Safety members.

In prior valuations, deferred vested General and Safety members were assumed to retire at age 57 and 53, respectively. The average age at retirement over the prior three years was 57 for General and 52 for Safety. We recommend maintaining 57 as the retirement age assumption for deferred vested General participants, while changing the assumed retirement age to 52 for Safety members.

It is also currently assumed that 35% of inactive General and 40% of inactive Safety deferred vested participants would be reciprocal and receive 5.25% annual salary increases from termination until their date of retirement. The actual experience indicated that only 21% of General and 29% of Safety members went on to be covered by a reciprocal retirement system. Therefore, we recommend modifying the reciprocal assumptions to 30% and 35% for General and Safety members, respectively. The recommended reciprocal assumptions remain higher than the observed experience during the last three years to reflect the generally higher reciprocal experience at other major California public retirement systems served by Segal. Since we are recommending separate salary increase assumptions for General and Safety members with five or more years of service, we propose that an annual salary increase assumption of 5.00% for General members and 5.50% for Safety members be used to anticipate salary increases for reciprocal members from termination to the expected date of retirement.

In prior valuations, it was assumed that 80% of all active male members and 55% of all active female members would be married when they retired. According to experience of members who retired during the last three years, about 76% of all male members and 54% of all female members were married at retirement. We recommend maintaining the current marriage assumption of 80% for male members and 55% for female members.

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

Chart 1
Retirement Rates - General Members

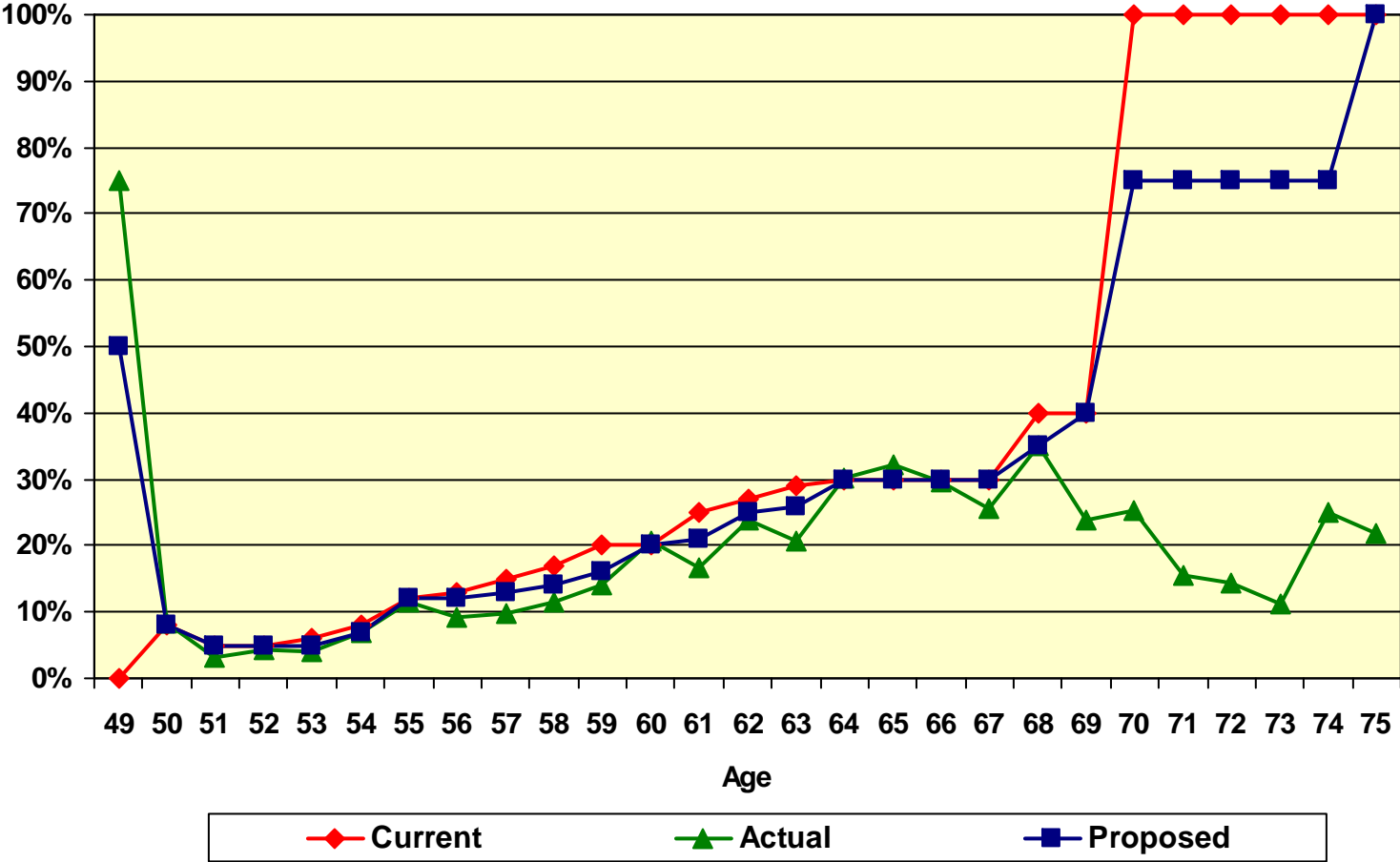
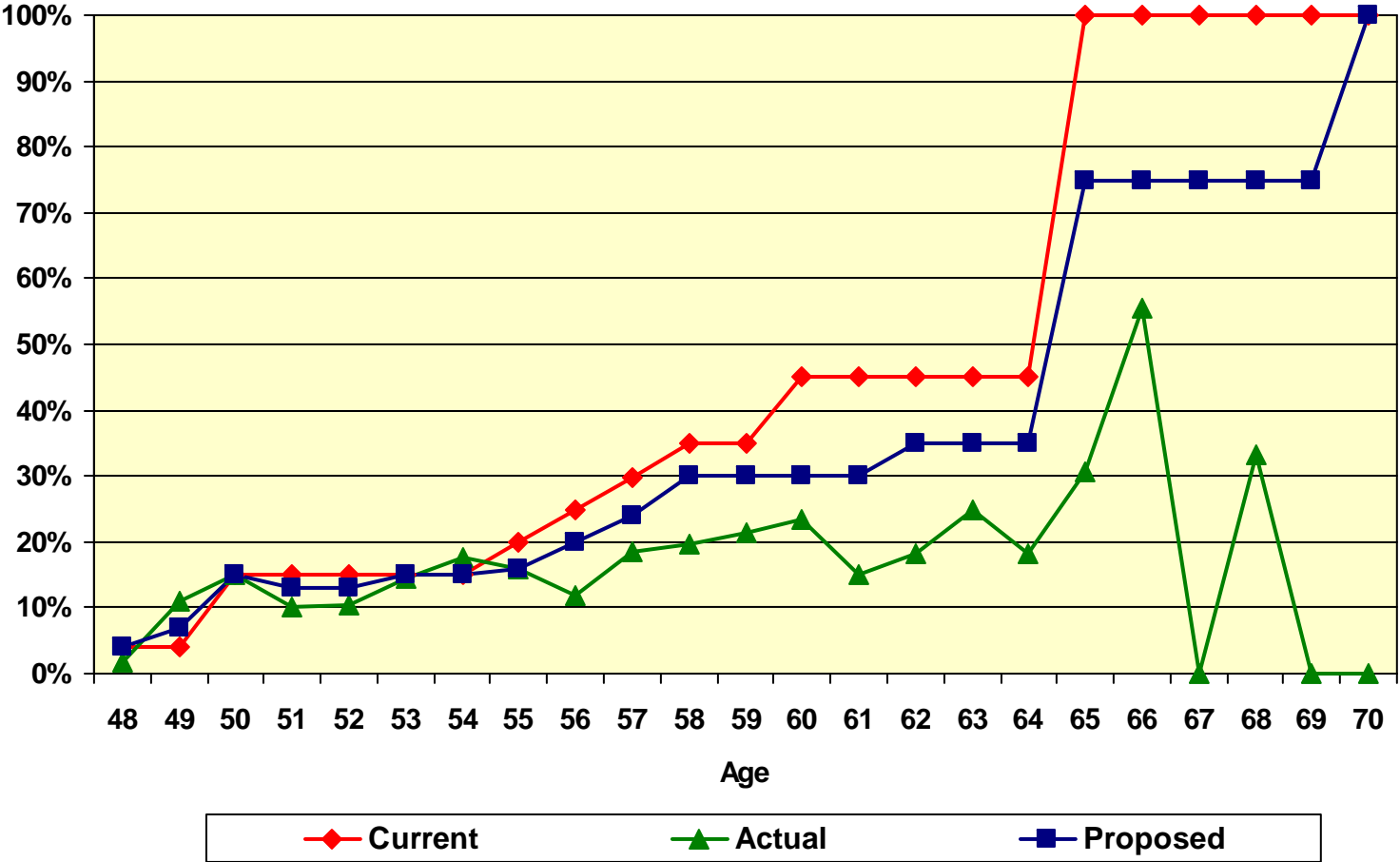


Chart 2
Retirement Rates - Safety Members



B. 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 for service (i.e., who did not retire on a disability pension). The tables currently being used for post-service retirement mortality rates are the 1994 Group Annuity Mortality Male and Female Tables for General members and the 1994 Group Annuity Mortality Male and Female Tables with a one year age set back 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 and post-retirement mortality will follow the same tables. For General, all pre-retirement deaths are assumed to be non-service connected while for Safety, all pre-retirement deaths are assumed to be service connected.

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:

	General - Healthy			Safety - Healthy		
	Actual Deaths	Current Expected Deaths	Proposed Expected Deaths	Actual Deaths	Current Expected Deaths	Proposed Expected Deaths
2007	232	249	224	13	13	11
2008	256	257	231	4	14	11
2009	256	265	238	12	16	12
Total	744	771	693	29	43	34
Actual / Expected		96%	107%		67%	85%

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

Chart 4 has the same comparison for Safety members. Experience shows that there were fewer deaths than expected.

For General service retirees, the ratio of actual to expected deaths was 96%. We recommend changing the mortality table to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) with a two-year age setback. This is equal to about a one year improvement in life expectancy and will bring the actual to expected ratio for General service retirees to 107%, which will allow some margin for improvements in mortality in the future in accordance with general actuarial practice.

For Safety service retirees, the ratio of actual to expected deaths was 67%. The actual number of deaths was 29. Based on the combined experience for all Safety service and disabled retirees, we recommend changing the mortality table to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) with a three-year age setback. The new mortality tables bring about a two year improvement in life expectancy. This will bring the actual to expected ratio for all Safety retirees (including disabled) to 109%. We will continue to monitor this assumption closely in future studies.

Chart 5 shows the life expectancies under the current and the proposed tables for General members.

Chart 6 has 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 changed from the 1994 Group Annuity Mortality Table for Males weighted 30% and the 1994 Group Annuity Mortality Table for Females weighted 70% to the RP-2000 Combined Healthy Mortality Tables for Males with a two-year age setback weighted 30% and the RP-2000 Combined Healthy Mortality Tables for Females with a two-year age setback weighted 70%. This is based on the proposed valuation tables for General members and the actual sex distribution of General members.

For Safety members, we recommend the mortality table be changed from the 1994 Group Annuity Mortality Table for Males with a one year set back weighted 75% and the 1994 Group Annuity Mortality Table for Females with a one year set back weighted 25% to the RP-2000 Combined Healthy Mortality Tables for Males with a three-year age setback weighted 75% and the RP-2000 Combined Healthy Mortality Tables for Females with a three-year age setback weighted 25%. This is based on the proposed valuation tables for Safety members and the actual sex distribution of Safety members.

Chart 3
Post - Retirement Deaths (General)
Non - Disabled Members

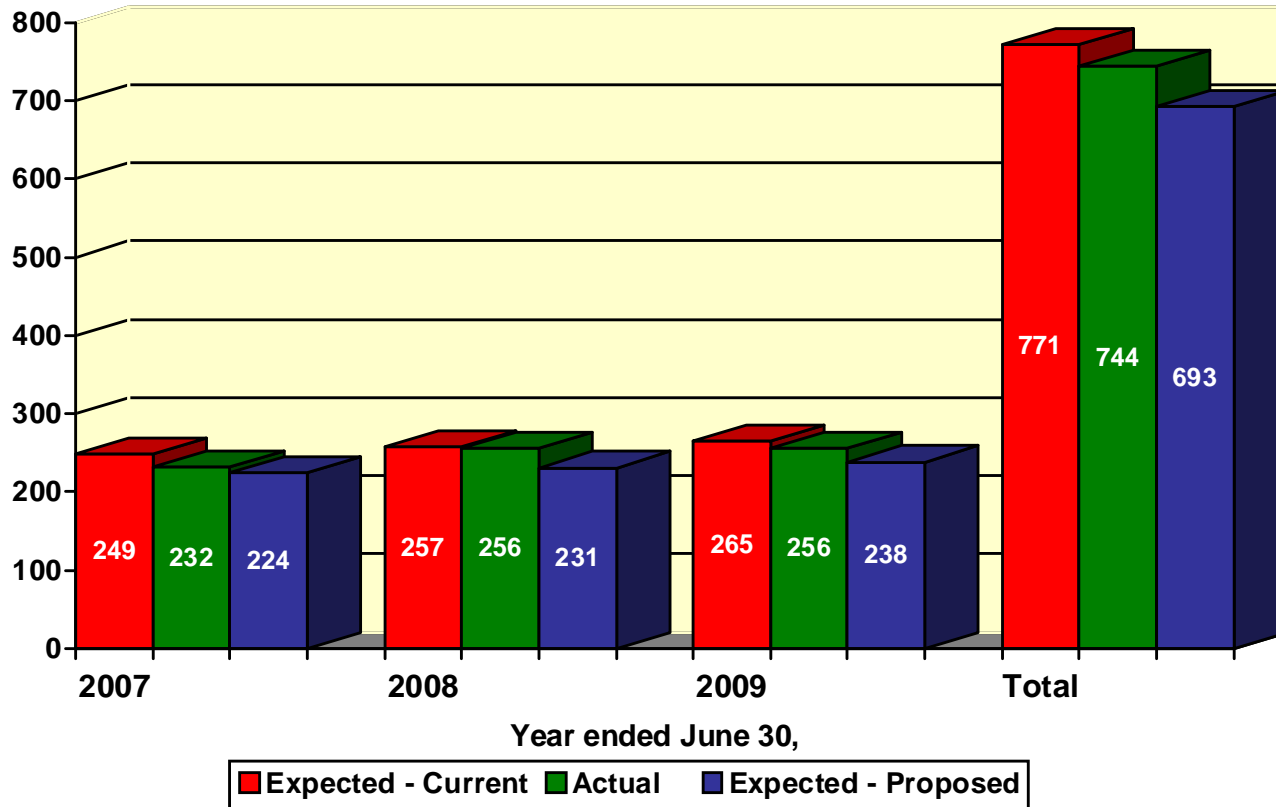


Chart 4
Post - Retirement Deaths (Safety)
Non - Disabled Members

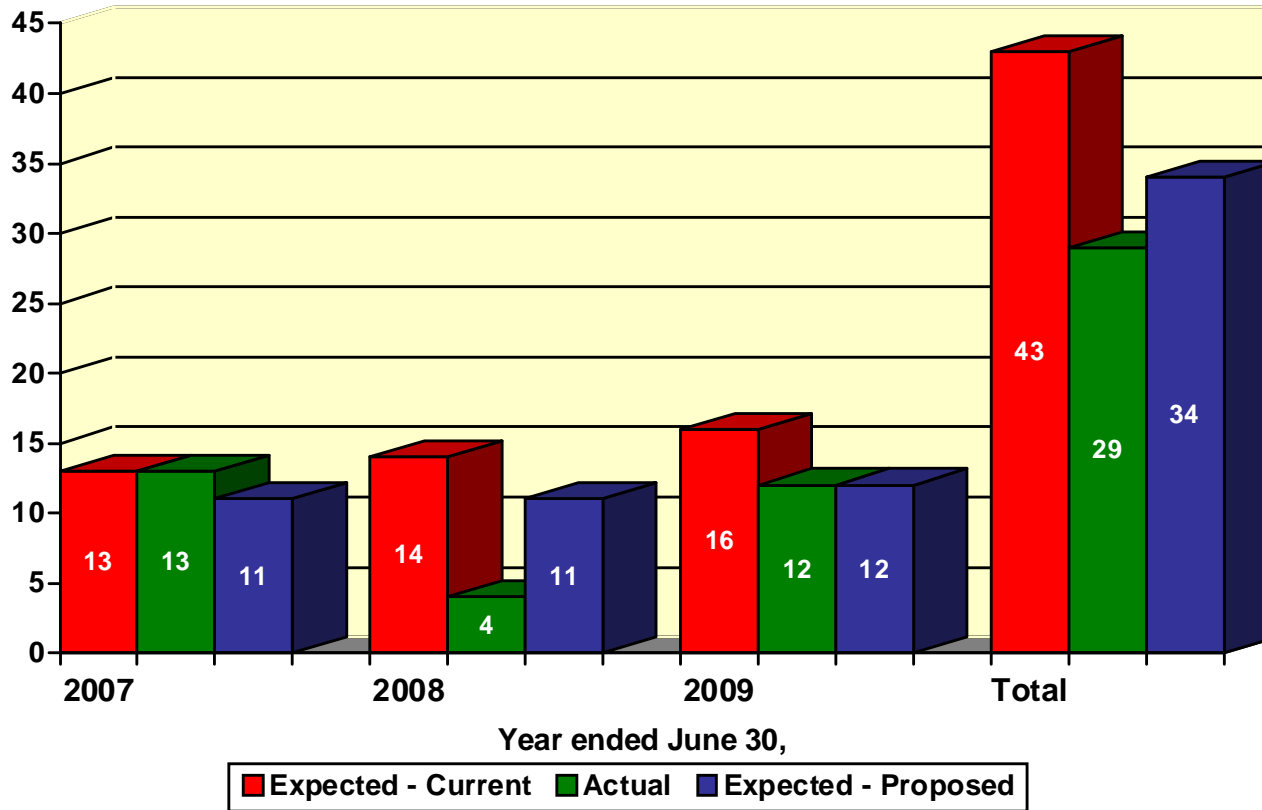


Chart 5
Life Expectancies (General)

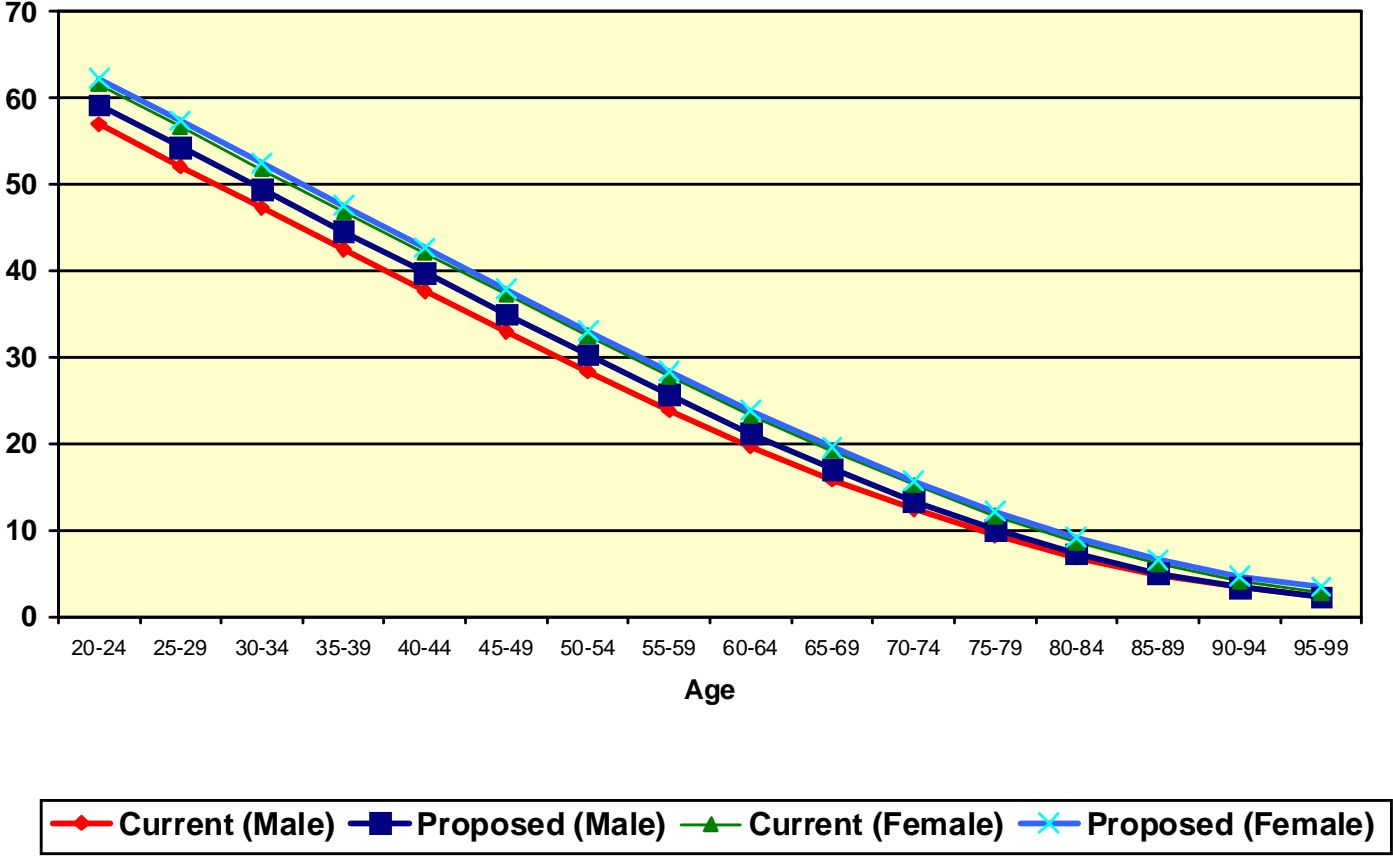
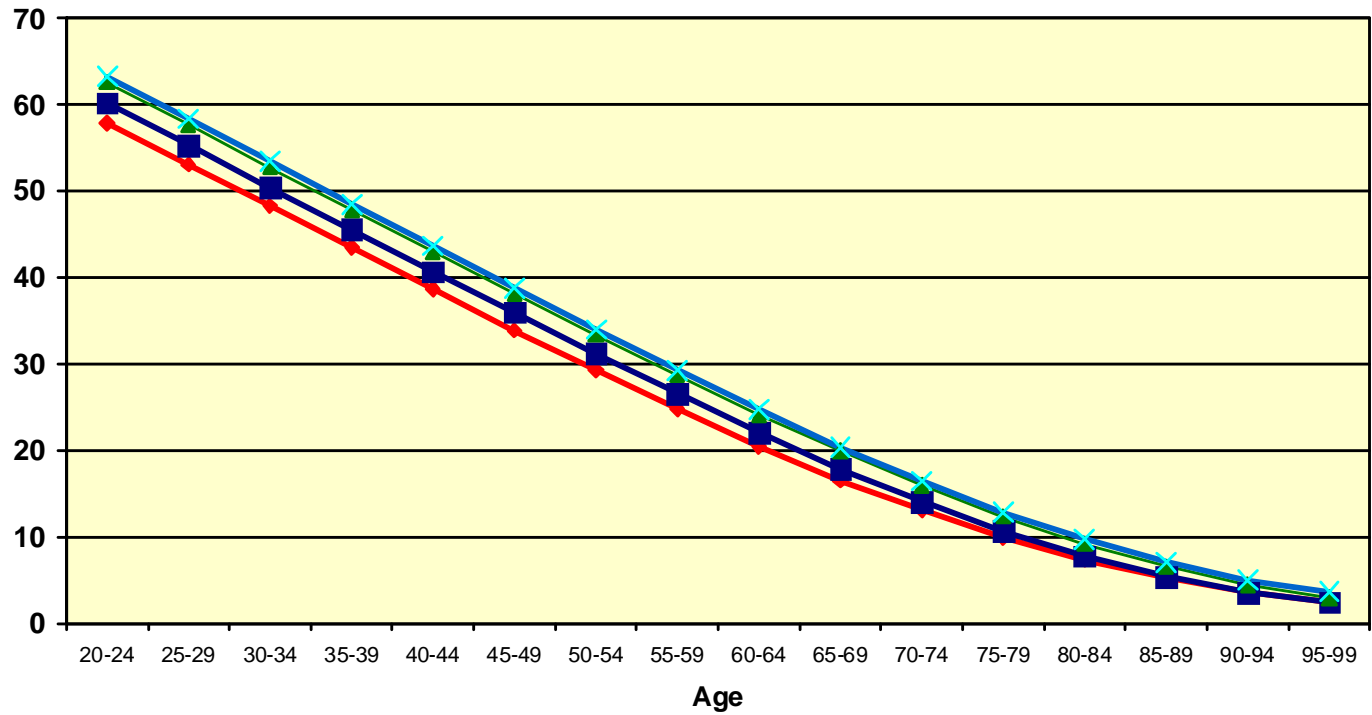


Chart 6
Life Expectancies (Safety)



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

C. MORTALITY RATES - DISABLED

Since mortality rates for disabled members can be higher than for healthy members, a different mortality assumption is often used. The tables currently being used for General members are the 1994 Group Annuity Mortality Table with a seven year age set forward. For Safety members, the tables currently used for healthy retirees are also used for disabled retirees.

The number of actual deaths compared to the number expected under the current and proposed assumptions for the last three years has been as follows:

	General - Disability			Safety – Disabled		
	Actual Deaths	Current Expected Deaths	Proposed Expected Deaths	Actual Deaths	Current Expected Deaths	Proposed Expected Deaths
2007	26	30	30	5	5	4
2008	27	30	30	6	5	4
2009	39	31	30	11	6	5
Total	92	91	90	22	16	13
Actual / Expected		101%	102%		138%	169%

Chart 7 compares actual to expected deaths under both the current and proposed assumptions for disabled General members over the last three years.

There were 92 actual deaths during this experience study period versus 79 actual deaths during the last experience study period. We recommend changing the mortality table to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) with a six-year age set forward.

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

For disabled Safety members, we recommend changing the mortality table to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) with a two-year age setback, the same mortality table that we recommend for General service retirements. Again, based on the combined experience for all Safety service and disabled retirees, the recommended assumptions will bring the actual to expected ratios for all Safety retirees (including healthy retirees) to 109%.

Chart 9 shows the life expectancies under both the current and proposed tables for General members. Chart 10 has the same information for Safety members.

Chart 7
Post - Retirement Deaths
Disabled General Members

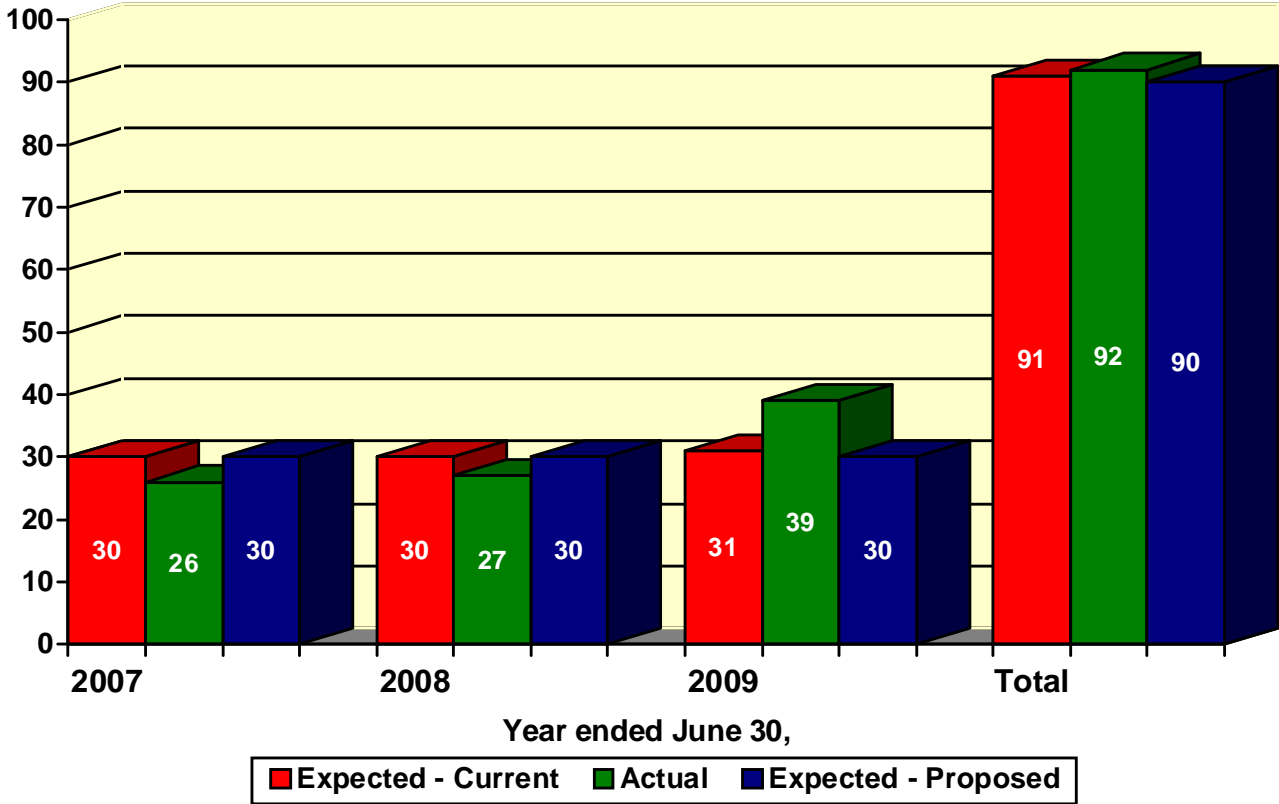


Chart 8
Post - Retirement Deaths
Disabled Safety Members

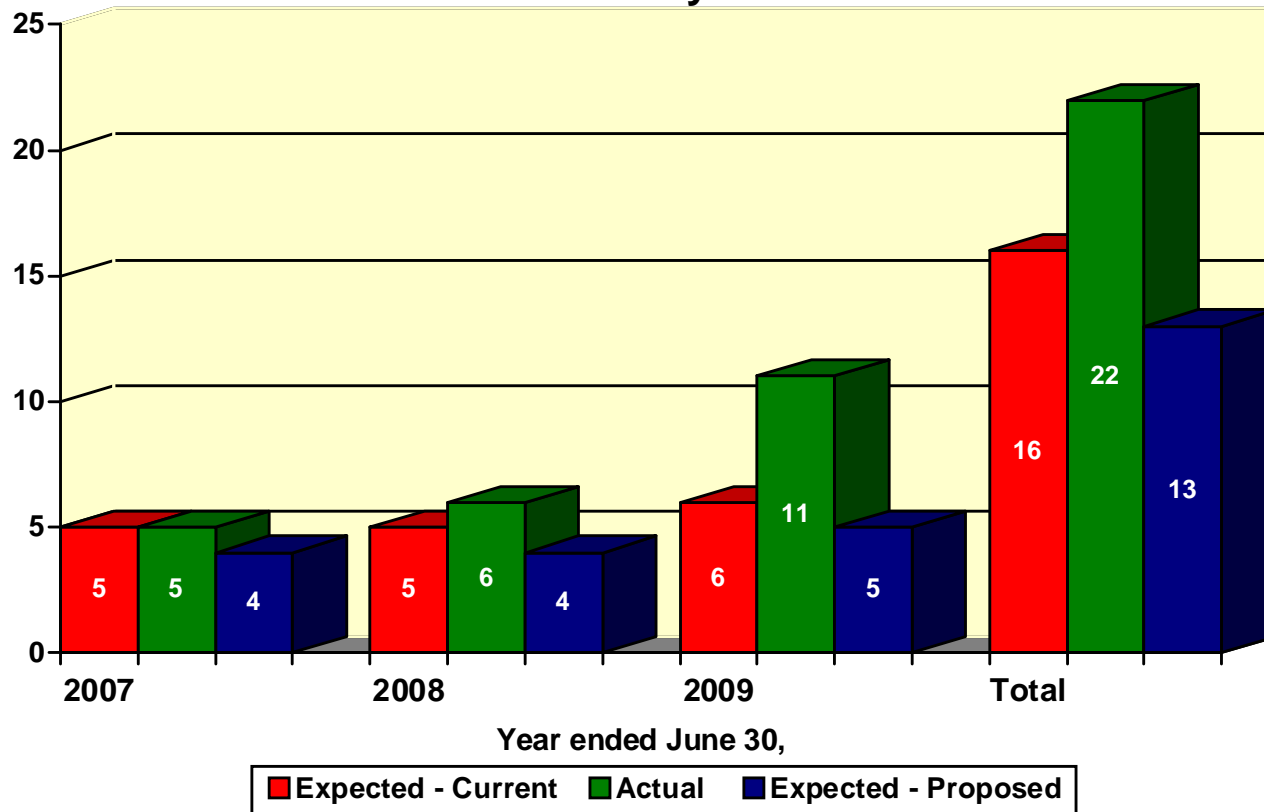
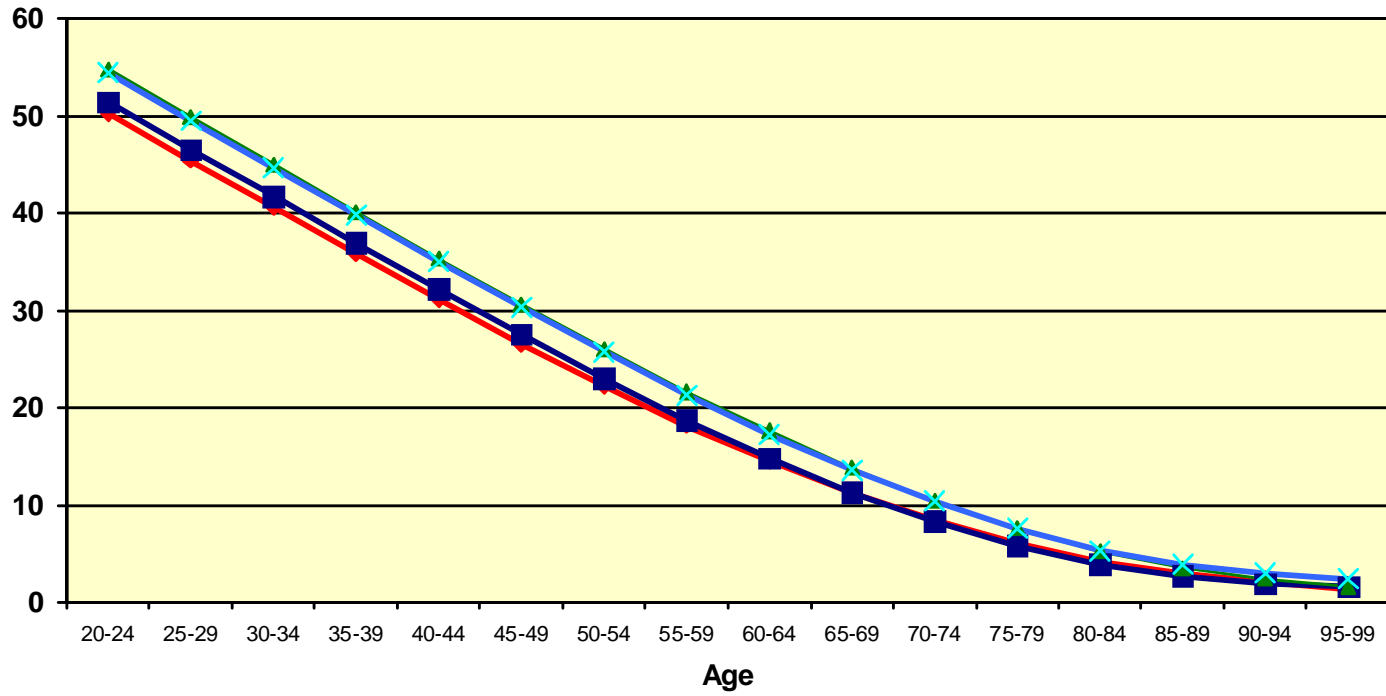
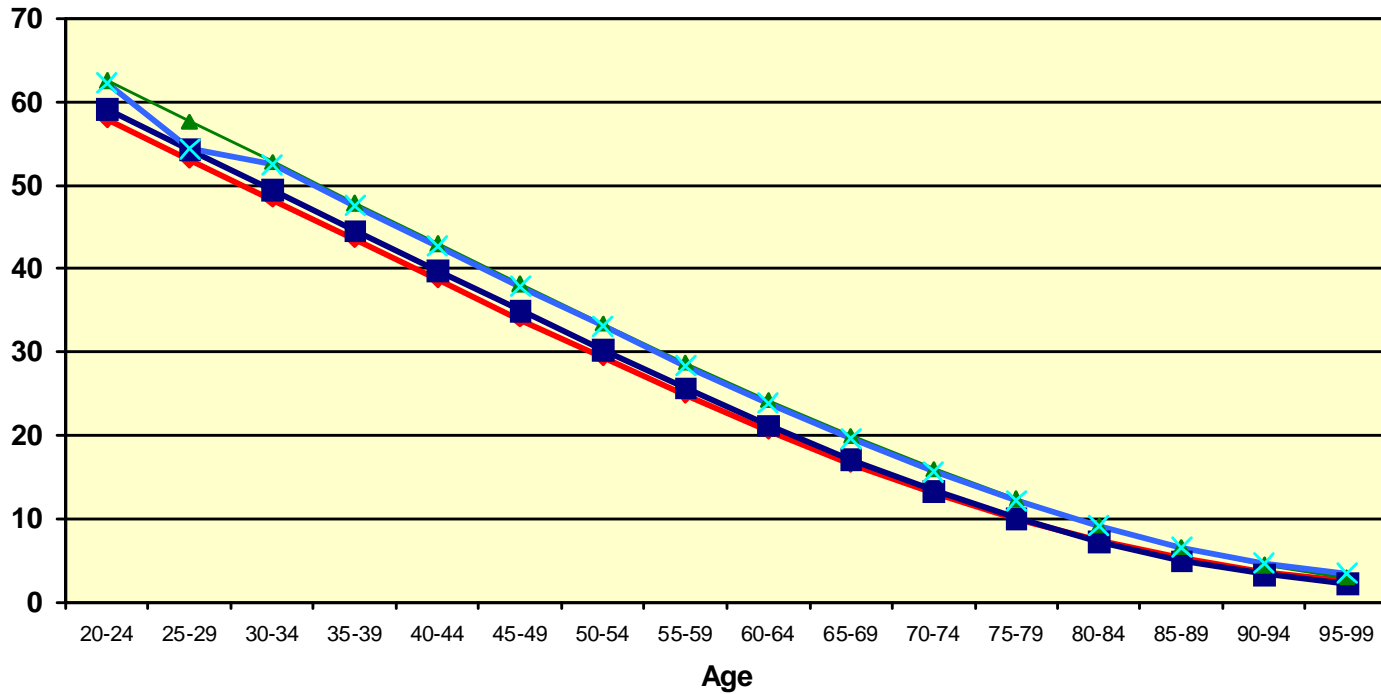


Chart 9
Life Expectancies
Disabled General Members



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

Chart 10
Life Expectancies
Disabled Safety Members



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

D. TERMINATION RATES

Termination rates include all terminations for reasons other than death, disability, or retirement. Under the current assumptions, there is a set of separate ordinary withdrawal and vested termination assumption to predict, respectively, those members who are anticipated to withdraw their contributions (ordinary withdrawal) and those who leave their contributions on deposit and receive a deferred vested benefit (vested termination). The experience over the last three years for General male, General female and Safety members split between those employees with under five years of service and those with five or more years of service is provided below. Of note is that we have adjusted the experience to reflect those members who were originally reported as a vested termination but subsequently received a refund of contributions.

Rates of Ordinary Withdrawal (General Male) (Fewer than Five Years of Service)

<u>Years of Service</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
0	16.00%	25.19%	12.25%
1	10.00	2.83	7.50
2	7.50	2.13	5.75
3	6.00	1.65	4.50
4	5.50	2.62	4.25

Rates of Ordinary Withdrawal (General Female) (Fewer than Five Years of Service)

<u>Years of Service</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
0	17.00%	18.31%	13.00%
1	11.00	4.16	8.25
2	8.00	2.90	6.00
3	7.00	1.67	5.25
4	6.50	1.84	5.00

Rates of Ordinary Withdrawal (Safety) (Fewer than Five Years of Service)

<u>Years of Service</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
0	12.00%	10.47%	11.00%
1	11.00	2.75	7.50
2	6.00	0.74	3.75
3	4.50	1.75	3.25
4	4.00	2.10	3.25

Rates of Ordinary Withdrawal (General Male)
(Five or More Years of Service)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	1.00%	0.00%	1.00%
25 – 29	1.00	0.53	1.00
30 – 34	0.90	1.25	1.00
35 – 39	0.80	0.64	0.72
40 – 44	0.70	0.17	0.52
45 – 49	0.50	0.46	0.51
50 – 54	0.40	0.31	0.50
55 – 59	0.30	1.57	0.50
60 – 64	0.30	0.00	0.30
65 – 69	0.30	0.00	0.30

Rates of Ordinary Withdrawal (General Female)
(Five or More Years of Service)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	1.80%	0.00%	1.25%
25 – 29	1.80	0.68	1.25
30 – 34	1.35	1.03	1.10
35 – 39	0.80	0.49	0.65
40 – 44	0.60	0.35	0.48
45 – 49	0.30	0.14	0.25
50 – 54	0.30	0.00	0.25
55 – 59	0.30	0.46	0.25
60 – 64	0.30	0.54	0.25
65 – 69	0.30	0.63	0.25

Rates of Ordinary Withdrawal (Safety)
(Five or More Years of Service)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	0.80%	0.00%	0.80%
25 – 29	0.72	0.40	0.66
30 – 34	0.60	0.72	0.66
35 – 39	0.72	0.29	0.53
40 – 44	0.60	0.00	0.33
45 – 49	0.48	0.11	0.33
50 – 54	0.36	0.68	0.30
55 – 59	0.36	2.70	0.30
60 – 64	0.00	0.00	0.00

Please note that consistent with the current assumption, under the proposed assumption we will continue to assume no withdrawal after a member is eligible for service retirement.

In prior experience studies, all terminations among members with less than five years of service were grouped under ordinary withdrawals, even if such members did not withdraw their contributions. Because it is possible for a member to terminate employment with less than five years of service and still be eligible to receive a refund of contributions at some future date, we reviewed the termination experience for those members with less than five years of service entitled to future refunds separately from those members with less than five years of service who had already received refunds.

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

<u>Years of Service</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
0	0.00%	6.88%	3.00%
1	0.00	4.91	2.00
2	0.00	3.09	1.50
3	0.00	1.99	1.00
4	0.00	4.59	1.00

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

<u>Years of Service</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
0	0.00%	7.35%	3.00%
1	0.00	5.12	2.00
2	0.00	3.82	1.50
3	0.00	3.15	1.50
4	0.00	4.04	1.50

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

<u>Years of Service</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
0	0.00%	6.74%	2.50%
1	0.00	4.07	1.25
2	0.00	4.58	1.25
3	0.00	0.59	1.00
4	0.00	1.81	1.00

Rates of Vested Termination (General Male)

(Five or More Years of Service)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	8.00%	0.00%	6.00%
25 – 29	7.00	4.35	5.60
30 – 34	6.00	3.16	4.50
35 – 39	4.50	2.08	3.20
40 – 44	3.00	2.78	2.90
45 – 49	2.50	2.01	2.50
50 – 54	2.00	3.39	2.50
55 – 59	1.00	4.51	2.50
60 – 64	1.00	4.84	2.50
65 – 69	1.00	6.59	2.50

Rates of Vested Termination (General Female)

(Five or More Years of Service)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	8.00%	0.00%	6.00%
25 – 29	7.00	3.04	4.80
30 – 34	5.00	3.57	4.30
35 – 39	4.00	2.76	3.40
40 – 44	3.00	2.17	2.60
45 – 49	2.00	1.87	2.20
50 – 54	2.00	2.37	2.00
55 – 59	1.00	3.51	1.90
60 – 64	1.00	3.59	1.90
65 – 69	1.00	4.90	1.90

Rates of Vested Termination (Safety)

(Five or More Years of Service)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	3.33%	0.00%	3.33%
25 – 29	2.76	3.33	3.00
30 – 34	2.18	2.53	2.30
35 – 39	1.73	1.65	1.70
40 – 44	1.28	0.89	1.10
45 – 49	0.80	1.25	1.00
50 – 54	0.60	1.49	0.80
55 – 59	0.40	2.90	0.80
60 – 64	0.00	0.00	0.00

Please note that consistent with the current assumption, under the proposed assumption we will continue to assume no vested termination after a member is eligible for service retirement.

Chart 11 compares actual to expected terminations (both ordinary withdrawal and vested 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 current and proposed ordinary withdrawal rates for General male members with over five years of service.

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

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

Chart 16 shows the current and proposed vested termination rates for General male members with five or more years of service.

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

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

Based upon the recent experience, we have adjusted the turnover rates accordingly. For General and Safety members, the ordinary withdrawal and vested termination rates have been decreased in general. We also continued to assume that all termination rates are zero for members eligible to retire; that is, it is assumed that members eligible to retire at termination will retire rather than defer their benefit.

Chart 11
Actual Number of Terminations Compared
to Expected (General Members)

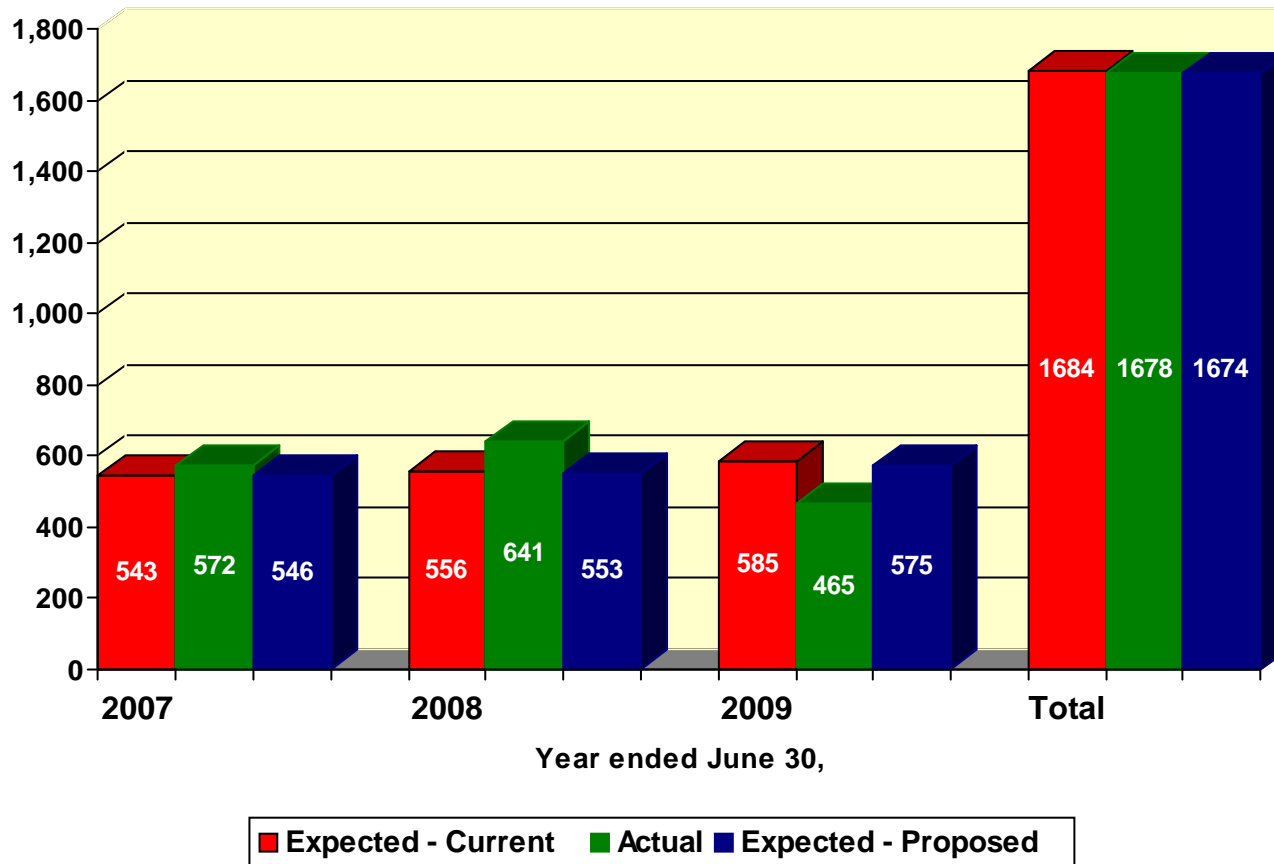


Chart 12
Actual Number of Terminations Compared
to Expected (Safety members)

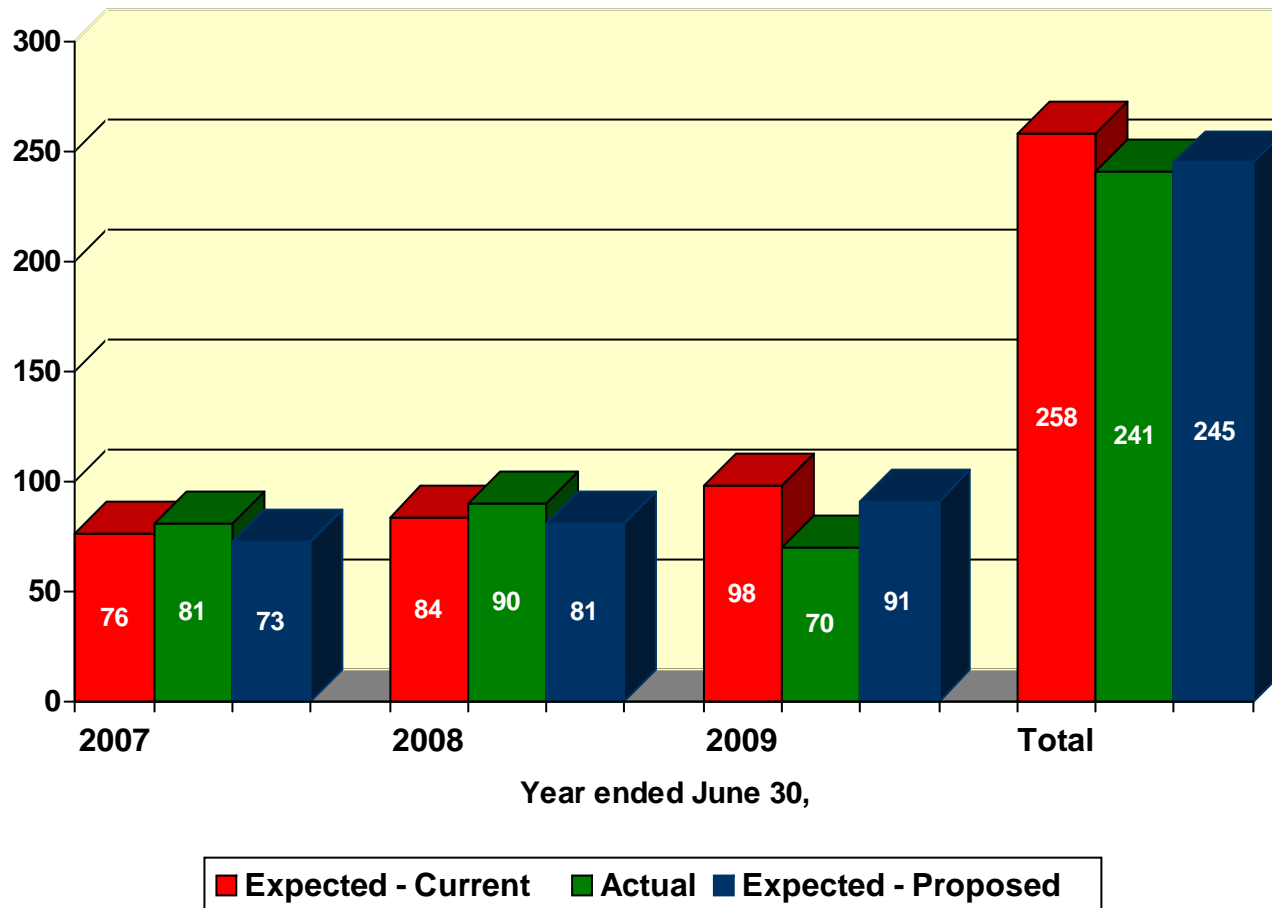


Chart 13
Ordinary Withdrawal Rates - General Male Members
(Over 5 Years of Service)

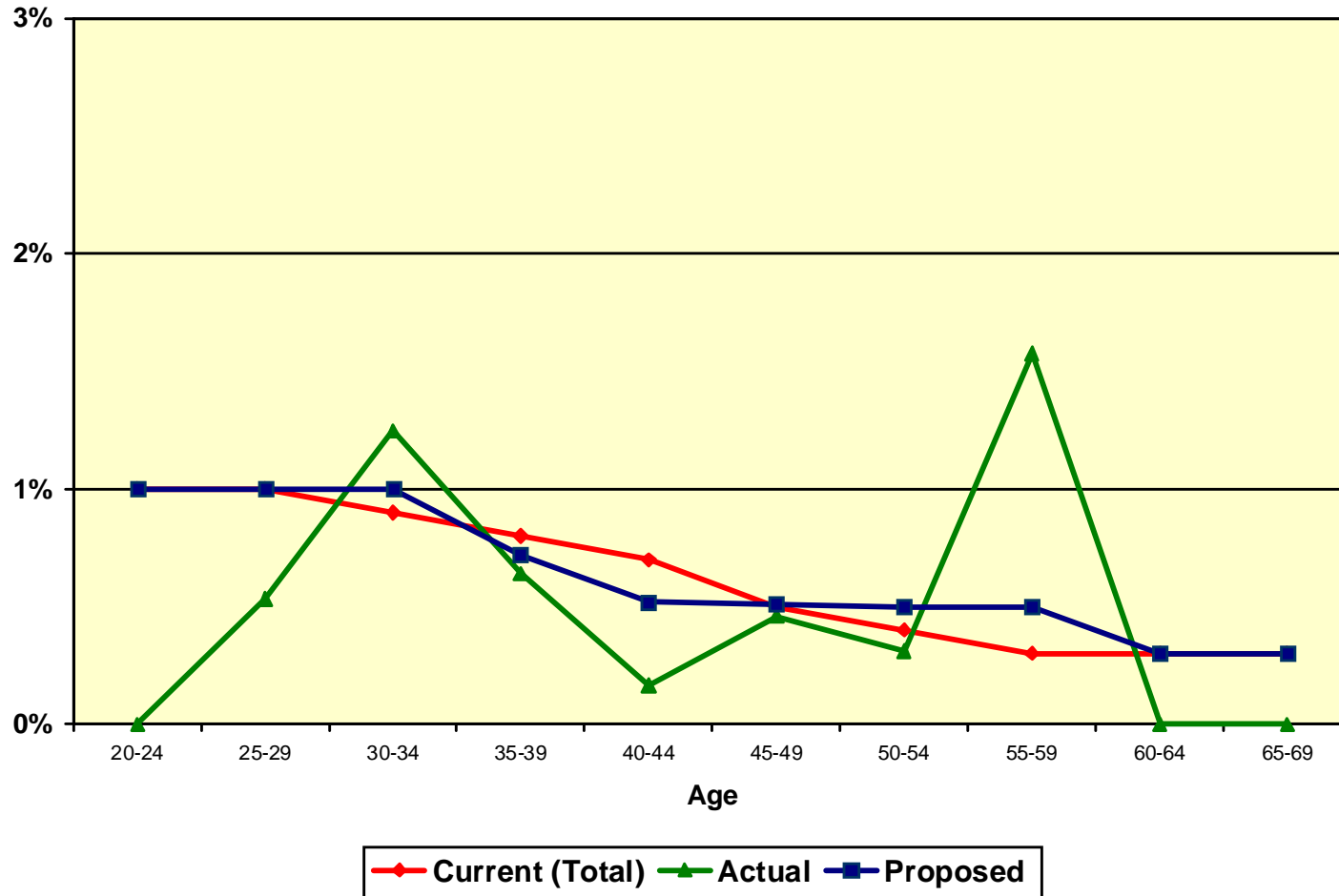


Chart 14
Ordinary Withdrawal Rates - General Female Members
(Over 5 Years of Service)

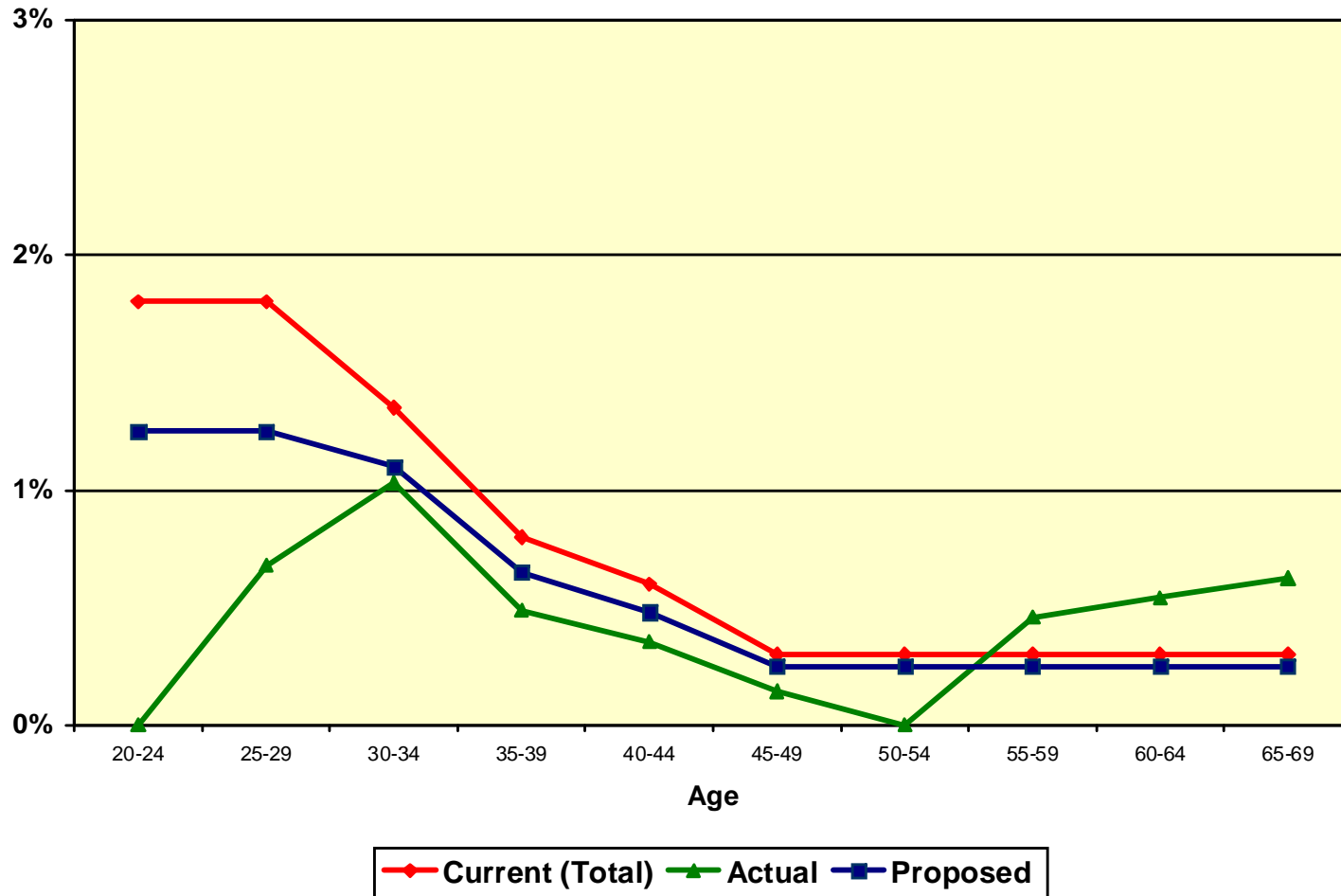


Chart 15
Ordinary Withdrawal Rates - Safety Members
(Over 5 Years of Service)

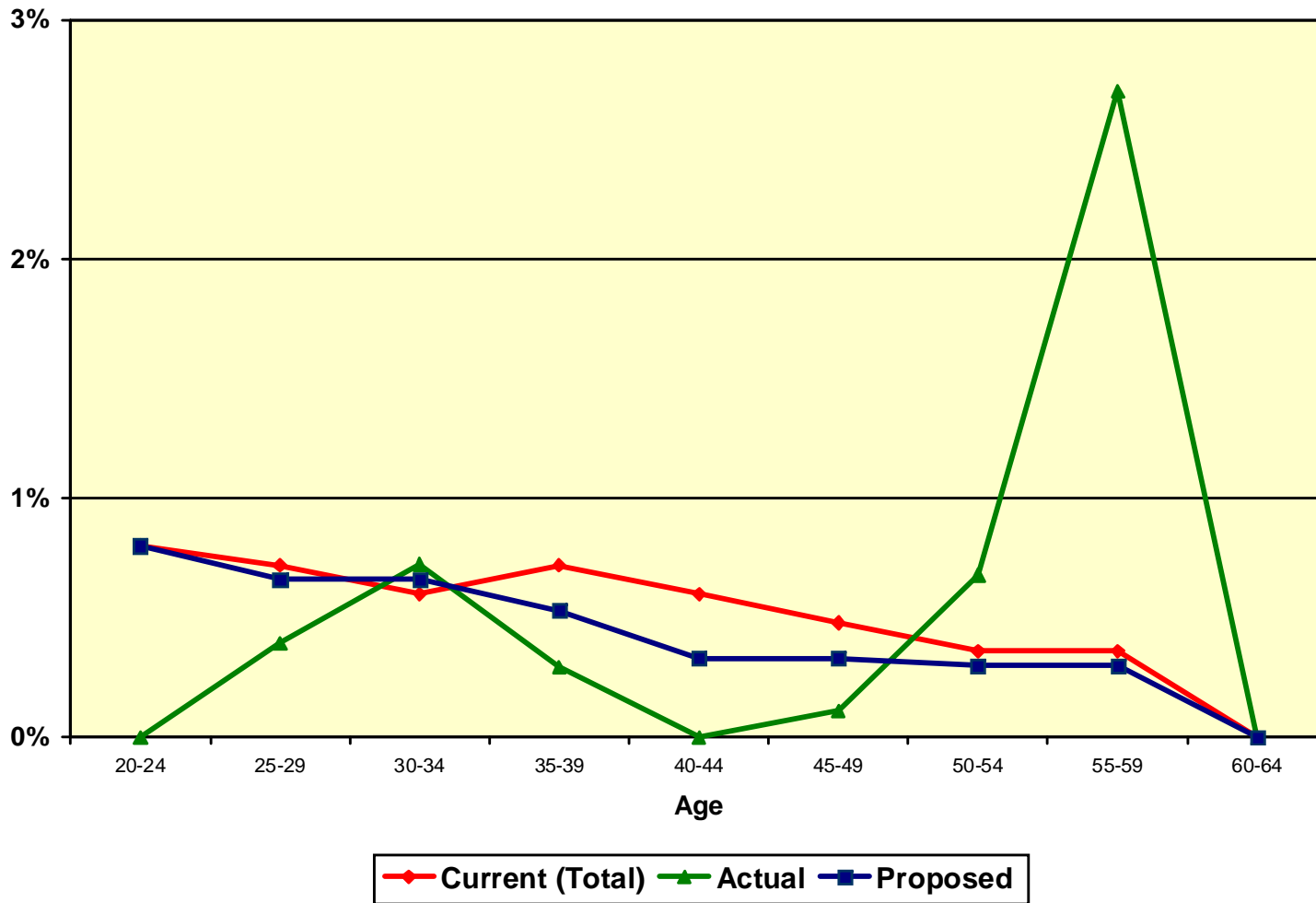


Chart 16
Vested Termination Rates - General Male Members
(Over 5 Years of Service)

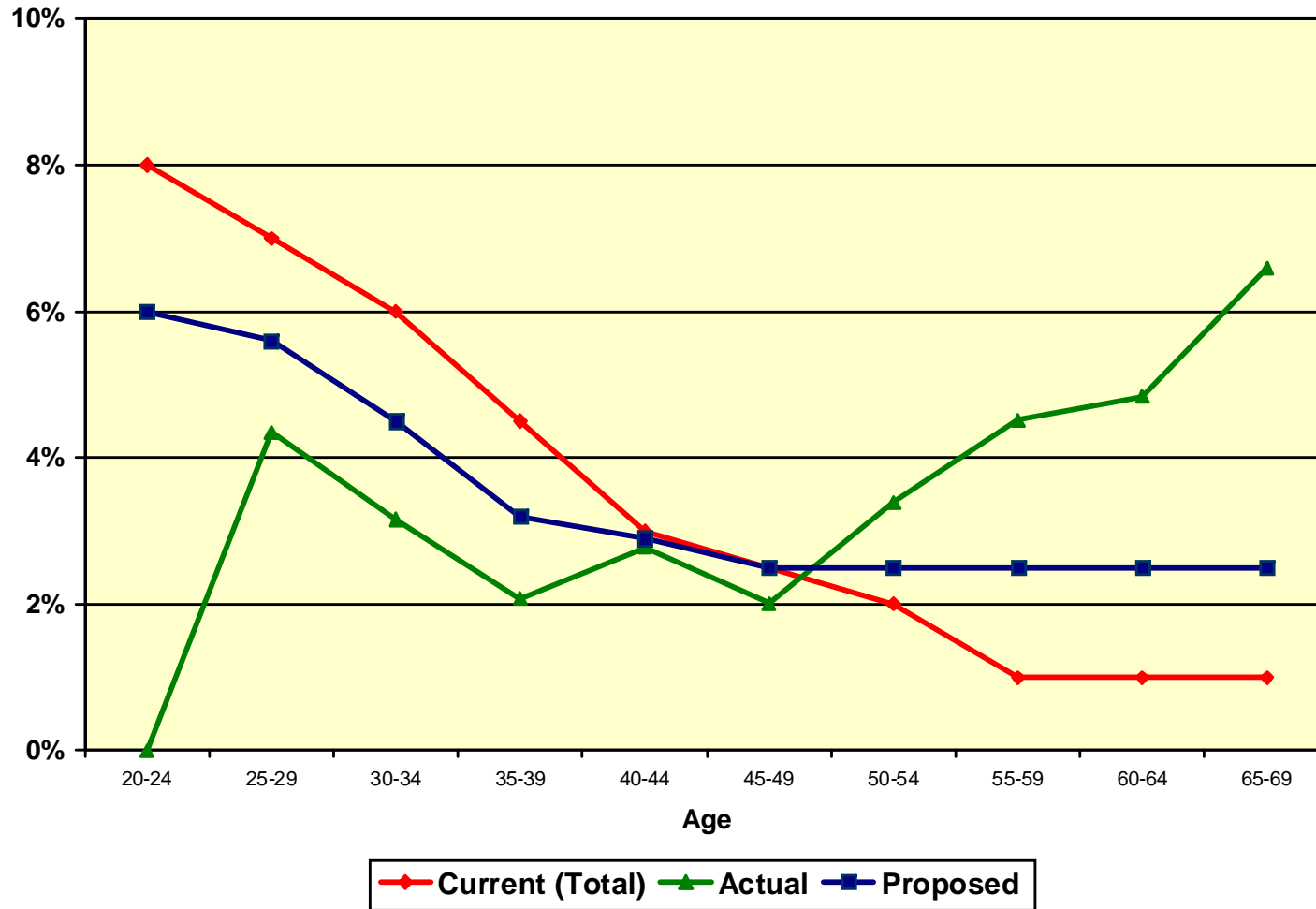


Chart 17
Vested Termination Rates - General Female Members
(Over 5 Years of Service)

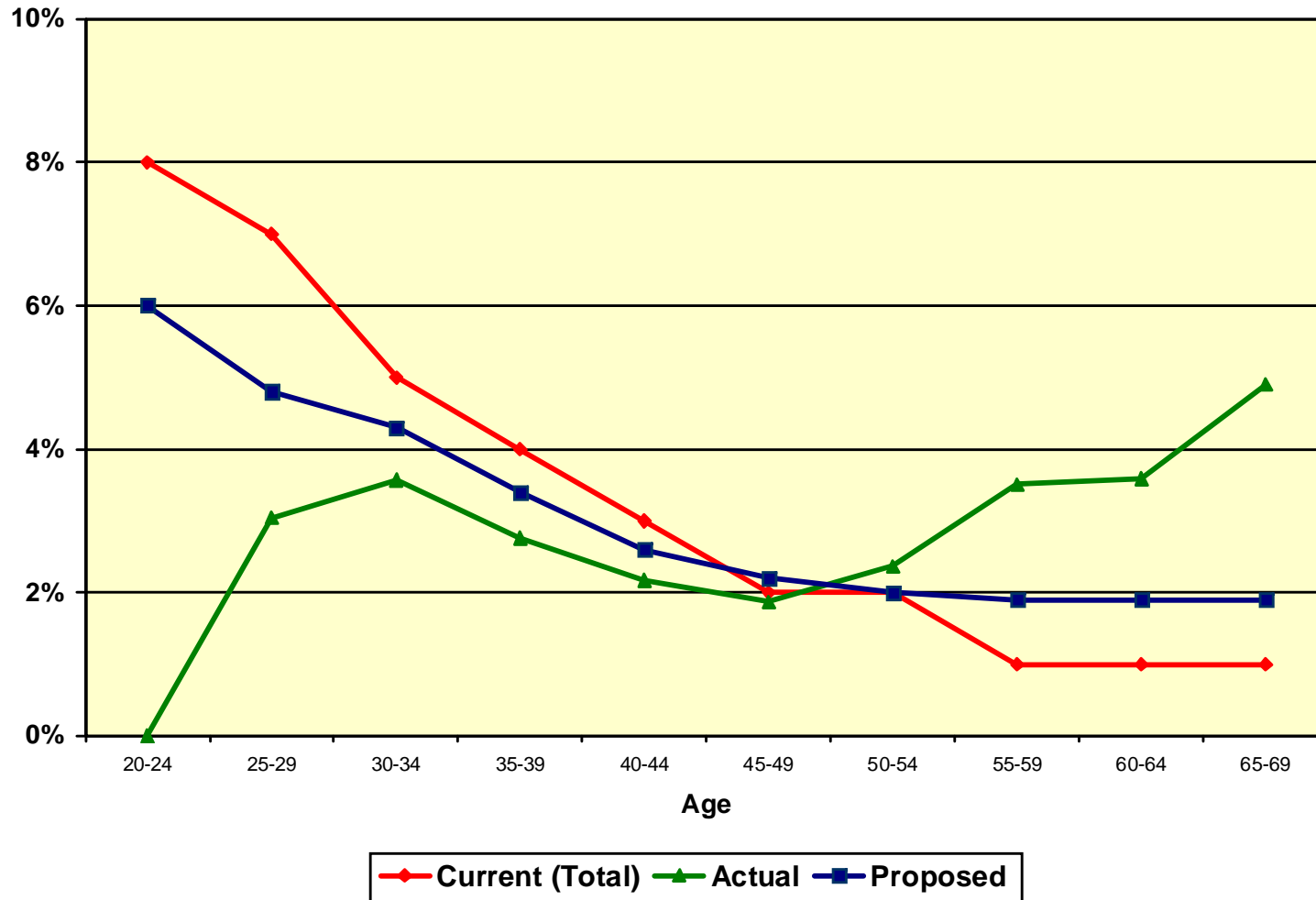
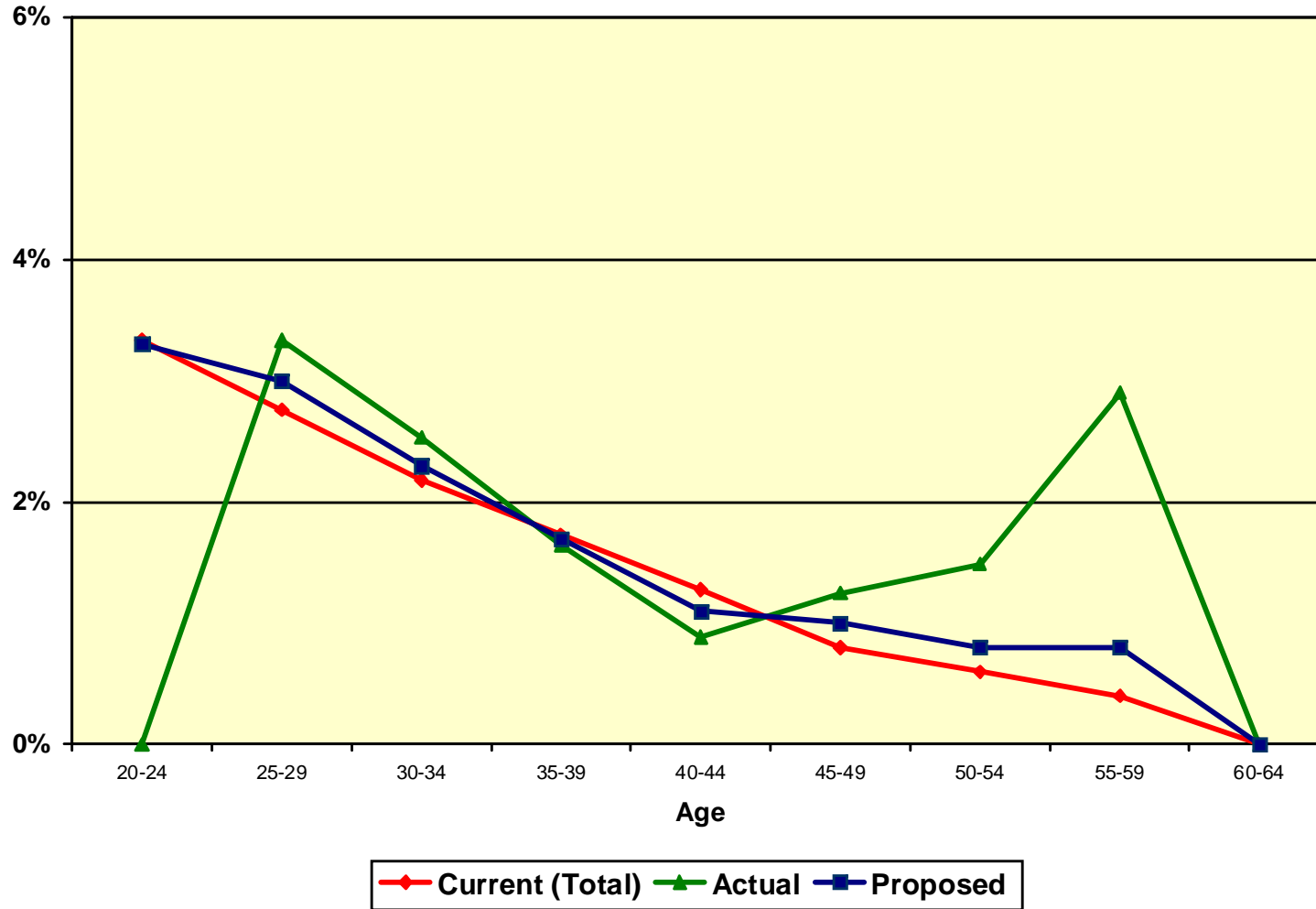


Chart 18
Vested Termination Rates - Safety Members
(Over 5 Years of Service)



E. DISABILITY INCIDENCE RATES

When a member becomes disabled, he or she may be entitled to a pension that depends upon the member's years of service (non-service connected disability), or the greater of that benefit or a 50% pension (service connected disability). The following summarizes the actual experience over the past three years compared to the current and proposed assumptions for both non-service connected and service-connected disability incidence. Of note is that the actual experience has been adjusted to anticipate those members who are anticipated to receive a disability retirement even though their applications for such retirements are pending as of June 30, 2009.

Rates of Non-Service Connected Disability Incidence (General Male)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	0.00%	0.00%	0.00%
25 – 29	0.00	0.00	0.00
30 – 34	0.01	0.00	0.01
35 – 39	0.02	0.00	0.02
40 – 44	0.04	0.09	0.06
45 – 49	0.08	0.00	0.08
50 – 54	0.12	0.16	0.14
55 – 59	0.20	0.23	0.22
60 – 64	0.25	0.12	0.22
65 – 69	0.00	0.79	0.22

Rates of Non-Service Connected Disability Incidence (General Female)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	0.00%	0.00%	0.00%
25 – 29	0.00	0.00	0.00
30 – 34	0.01	0.00	0.01
35 – 39	0.05	0.00	0.03
40 – 44	0.10	0.10	0.10
45 – 49	0.15	0.11	0.14
50 – 54	0.20	0.07	0.16
55 – 59	0.25	0.13	0.19
60 – 64	0.30	0.42	0.30
65 – 69	0.00	1.11	0.30

Rates of Non-Service Connected Disability Incidence (Safety)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	0.00%	0.00%	0.00%
25 – 29	0.00	0.00	0.00
30 – 34	0.06	0.00	0.03
35 – 39	0.06	0.06	0.06
40 – 44	0.06	0.17	0.10
45 – 49	0.10	0.14	0.10
50 – 54	0.10	0.00	0.10
55 – 59	0.10	0.00	0.10
60 – 64	0.10	0.00	0.10

Rates of Service-Connected Disability Incidence (General Male)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	0.01%	0.00%	0.01%
25 – 29	0.01	0.00	0.01
30 – 34	0.02	0.00	0.02
35 – 39	0.06	0.07	0.06
40 – 44	0.14	0.12	0.13
45 – 49	0.23	0.14	0.19
50 – 54	0.34	0.12	0.23
55 – 59	0.40	0.31	0.36
60 – 64	0.45	0.30	0.39
65 – 69	0.00	0.00	0.00

Rates of Service-Connected Disability Incidence (General Female)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	0.00%	0.00%	0.00%
25 – 29	0.02	0.04	0.03
30 – 34	0.06	0.09	0.07
35 – 39	0.10	0.14	0.12
40 – 44	0.20	0.07	0.14
45 – 49	0.25	0.23	0.25
50 – 54	0.30	0.16	0.25
55 – 59	0.35	0.32	0.33
60 – 64	0.40	0.23	0.33
65 – 69	0.00	0.35	0.00

Rates of Service-Connected Disability Incidence (Safety)

<u>Age</u>	<u>Current Rate</u>	<u>Observed Rate</u>	<u>Proposed Rate</u>
20 – 24	0.05%	0.00%	0.05%
25 – 29	0.10	0.18	0.14
30 – 34	0.30	0.33	0.31
35 – 39	0.60	1.13	0.81
40 – 44	0.80	0.87	0.81
45 – 49	1.00	0.38	0.81
50 – 54	1.80	1.06	1.42
55 – 59	2.60	2.41	2.50
60 – 64	3.00	2.21	2.60

Chart 19 compares the actual number of non-service connected disabilities over the past three years to that expected under both the current and proposed assumptions. The current non-service and service disability rates were modified to reflect the past three years experience.

Chart 20 shows actual non-service connected disablement rates, compared to the assumed and proposed rates for General male members.

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

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

Chart 23 compares the actual number of service connected disabilities over the past three years to that expected under both the current and proposed assumptions.

Chart 24 shows actual service connected disablement rates, compared to the assumed and proposed rates for General male members.

Chart 25 graphs the same information as Chart 24, but for General female members.

Chart 26 graphs the same information as Chart 24, but for Safety members.

Overall, the current and proposed assumptions predict a lower number of total ordinary and duty disabilities for General members. The proposed assumptions predict about the same number of total ordinary and duty disabilities for Safety members.

Chart 19
Actual Number of Non-Service Connected Disabilities Compared
to Expected

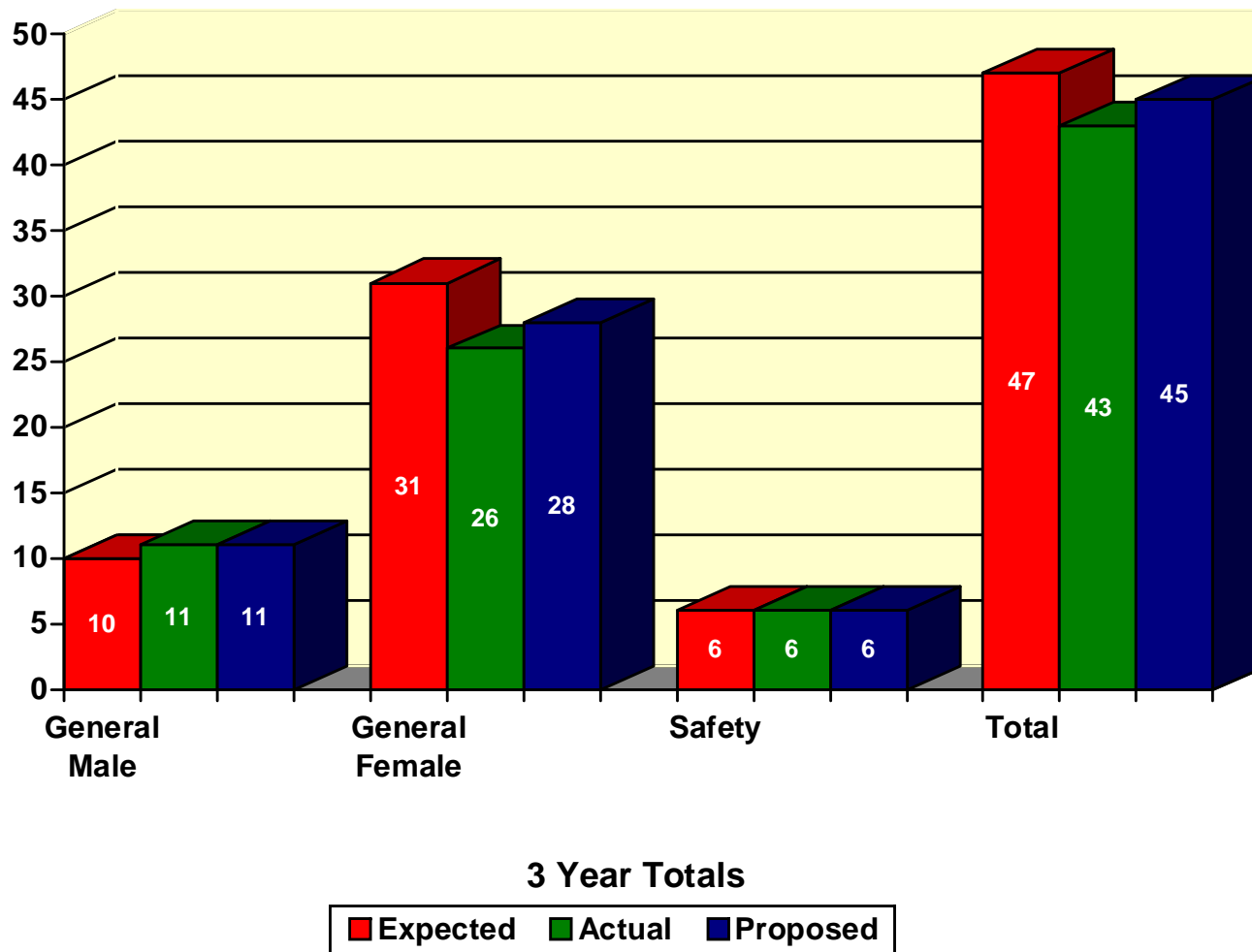
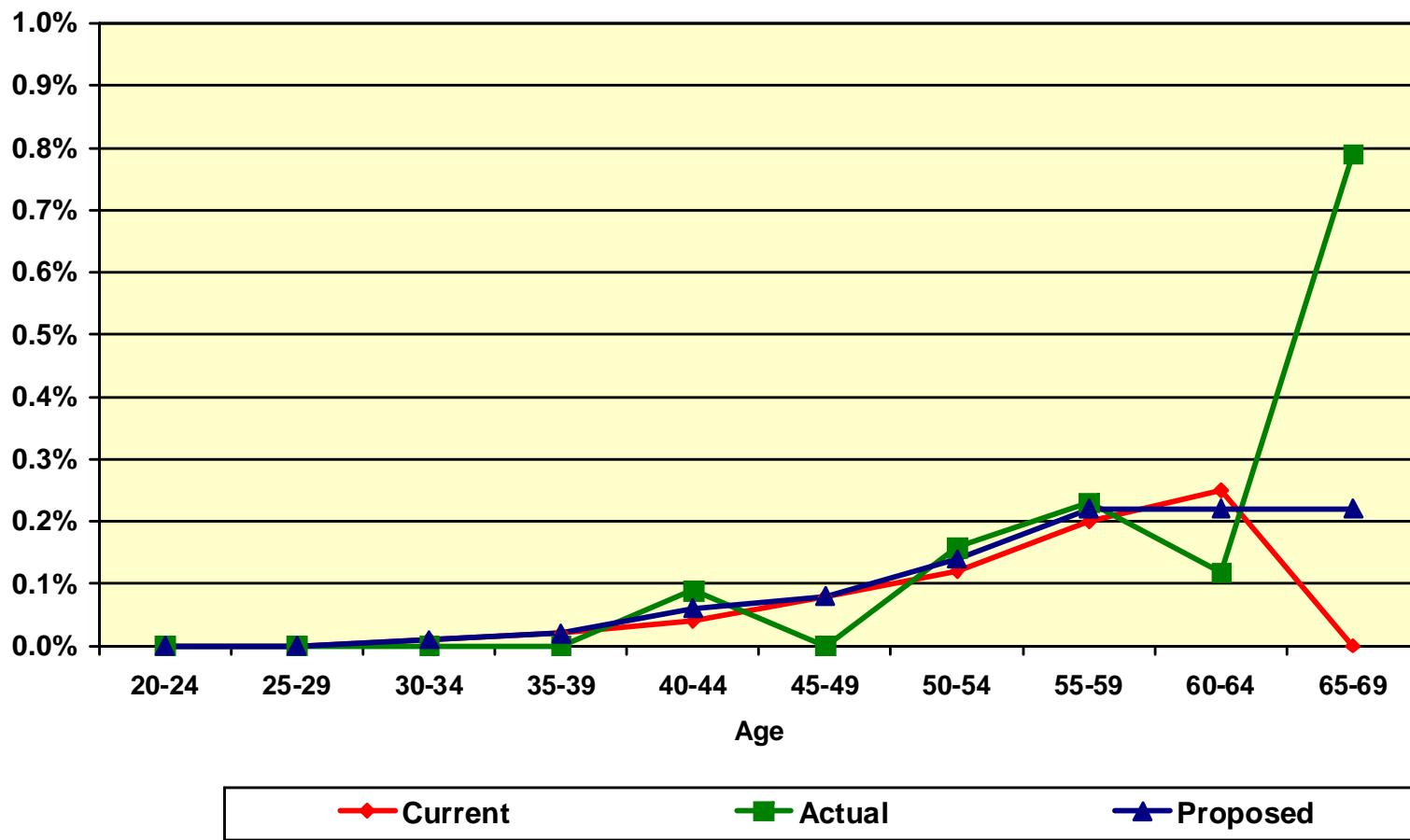


Chart 20
Non-Service Connected Disablement Rates
for General Males



0.0022

Chart 21
Non-Service Connected Disablement Rates
for General Females

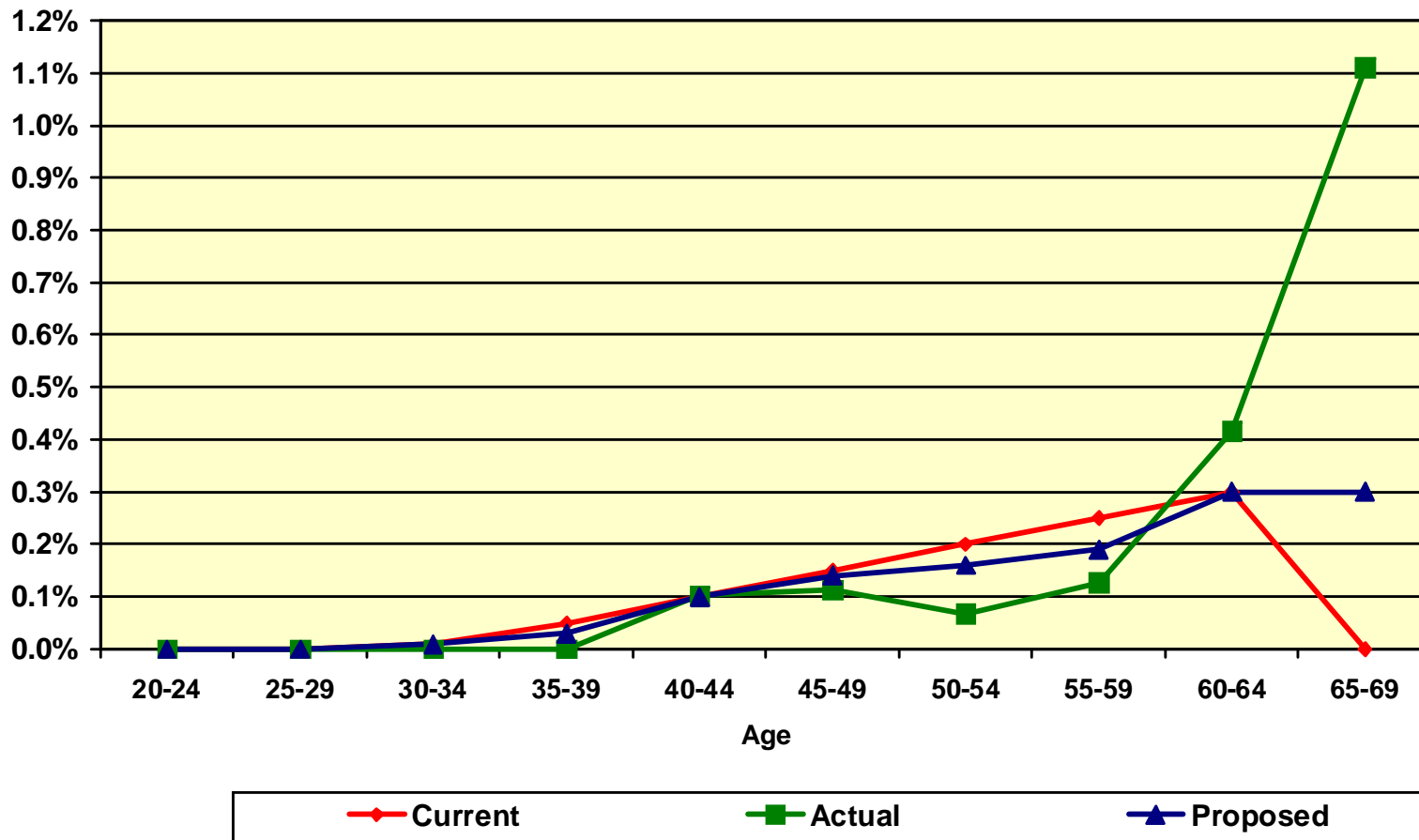


Chart 22
Non-Service Connected Disablement Rates
for Safety Members

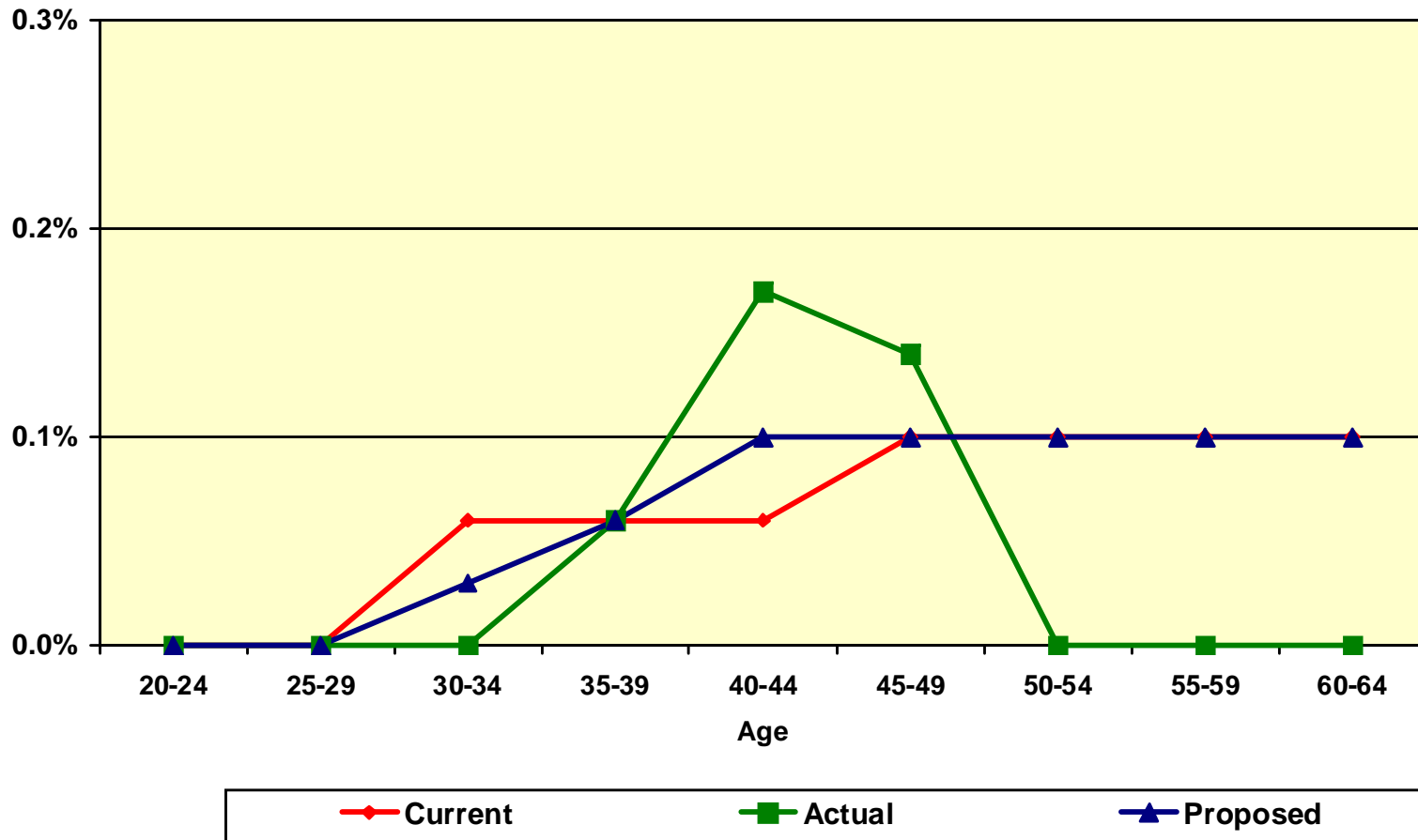


Chart 23
Actual Number of Service Connected Disabilities
Compared to Expected

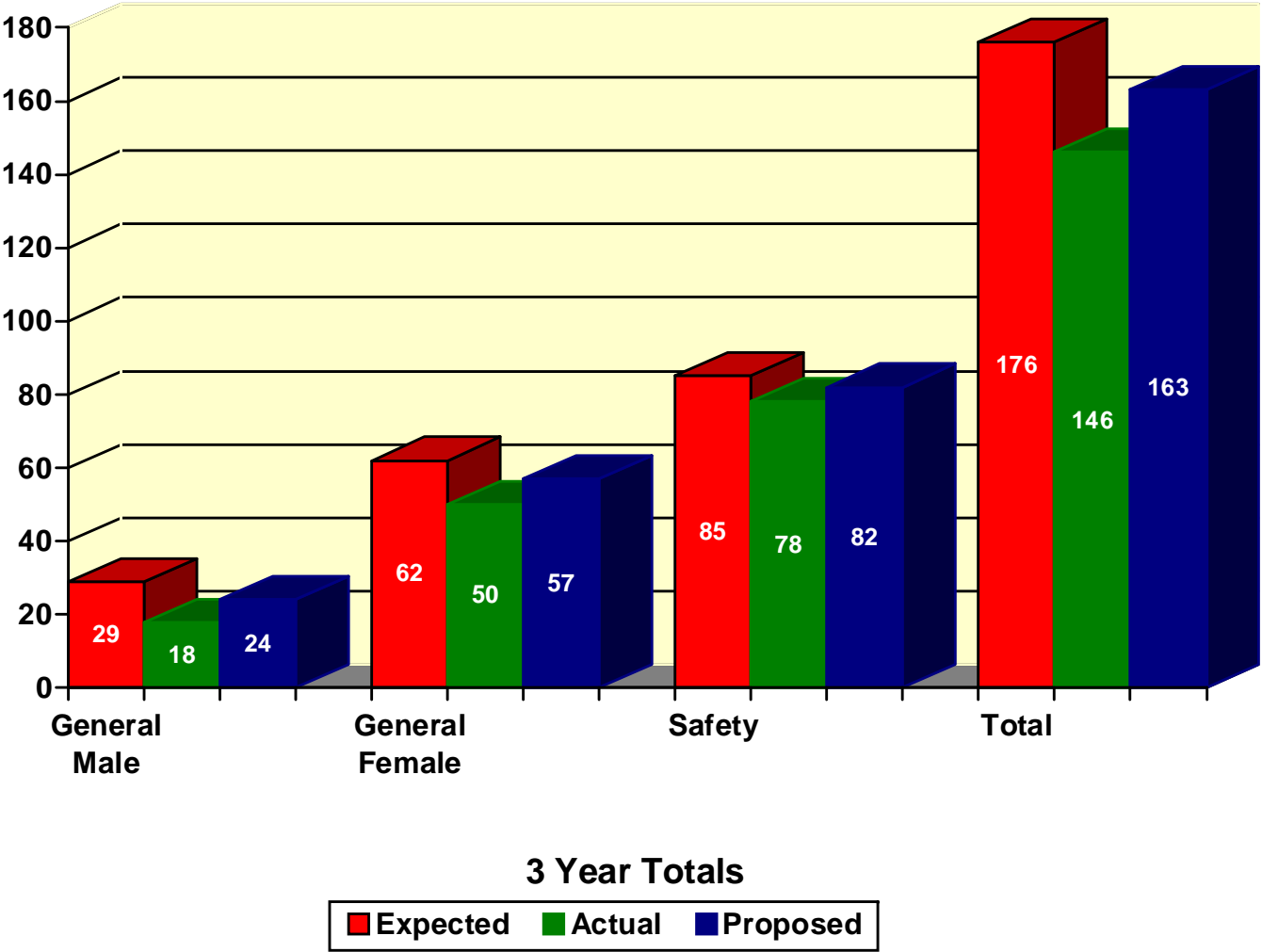


Chart 24
Service Connected Disablement Rates
for General Males

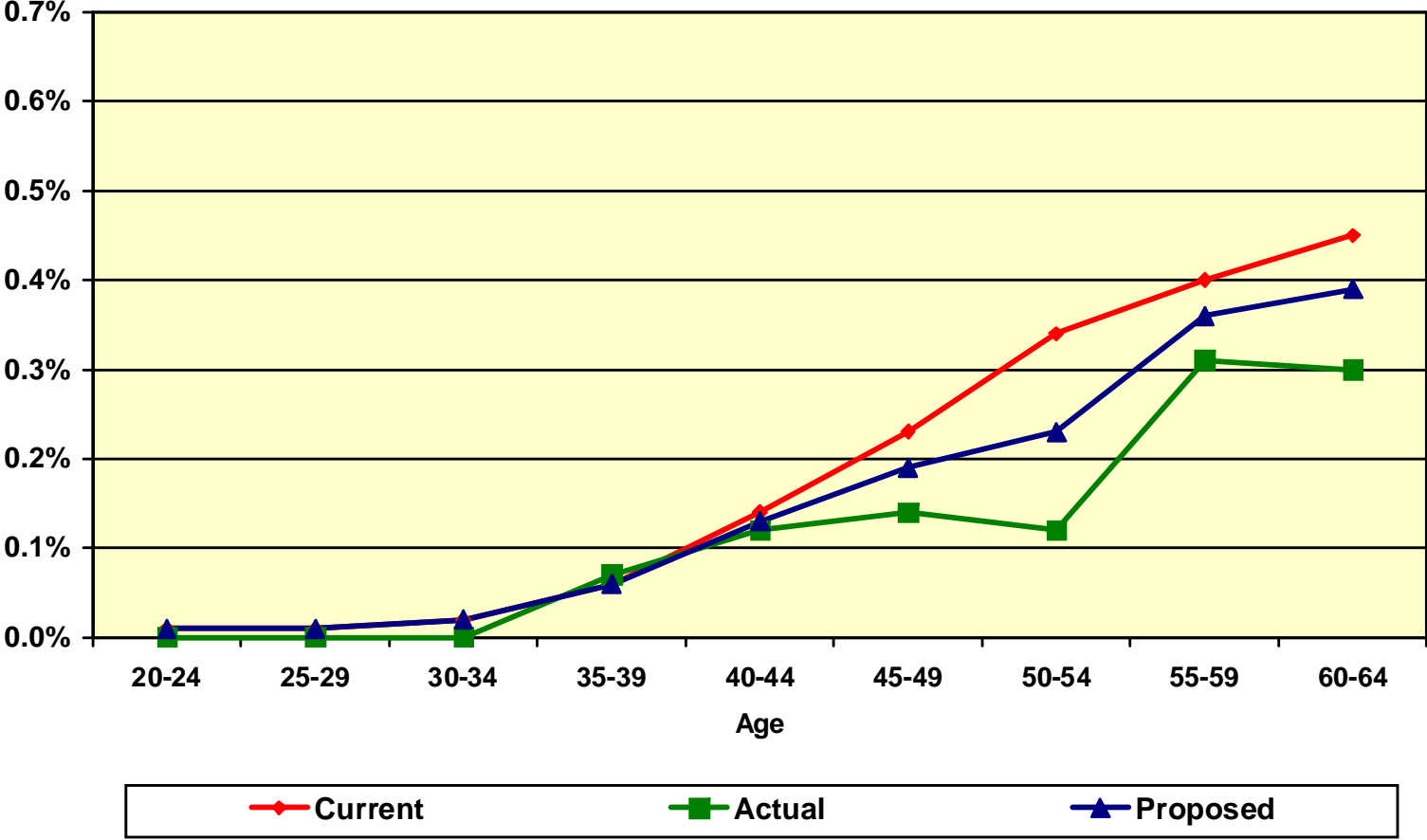


Chart 25
Service Connected Disablement Rates
for General Females

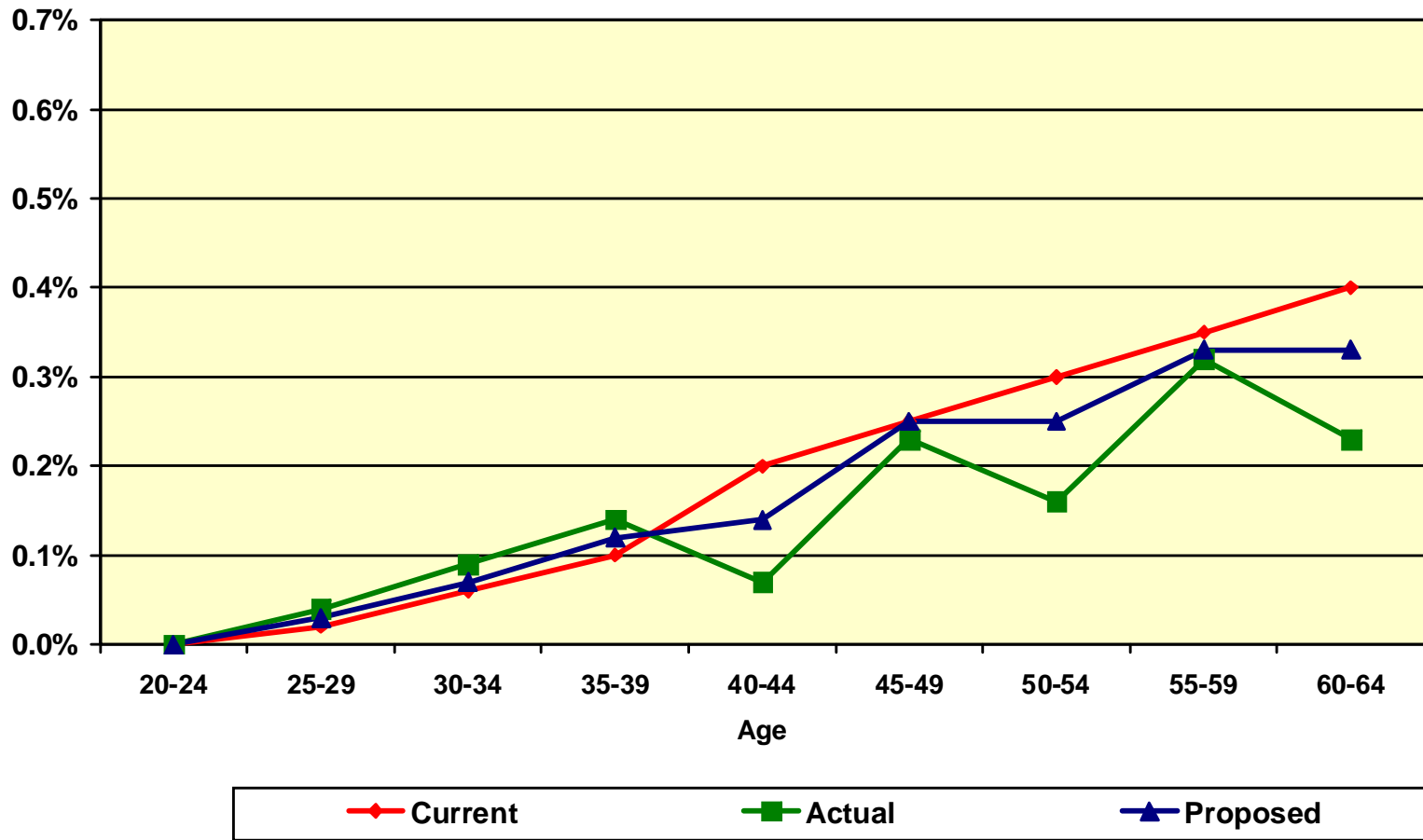
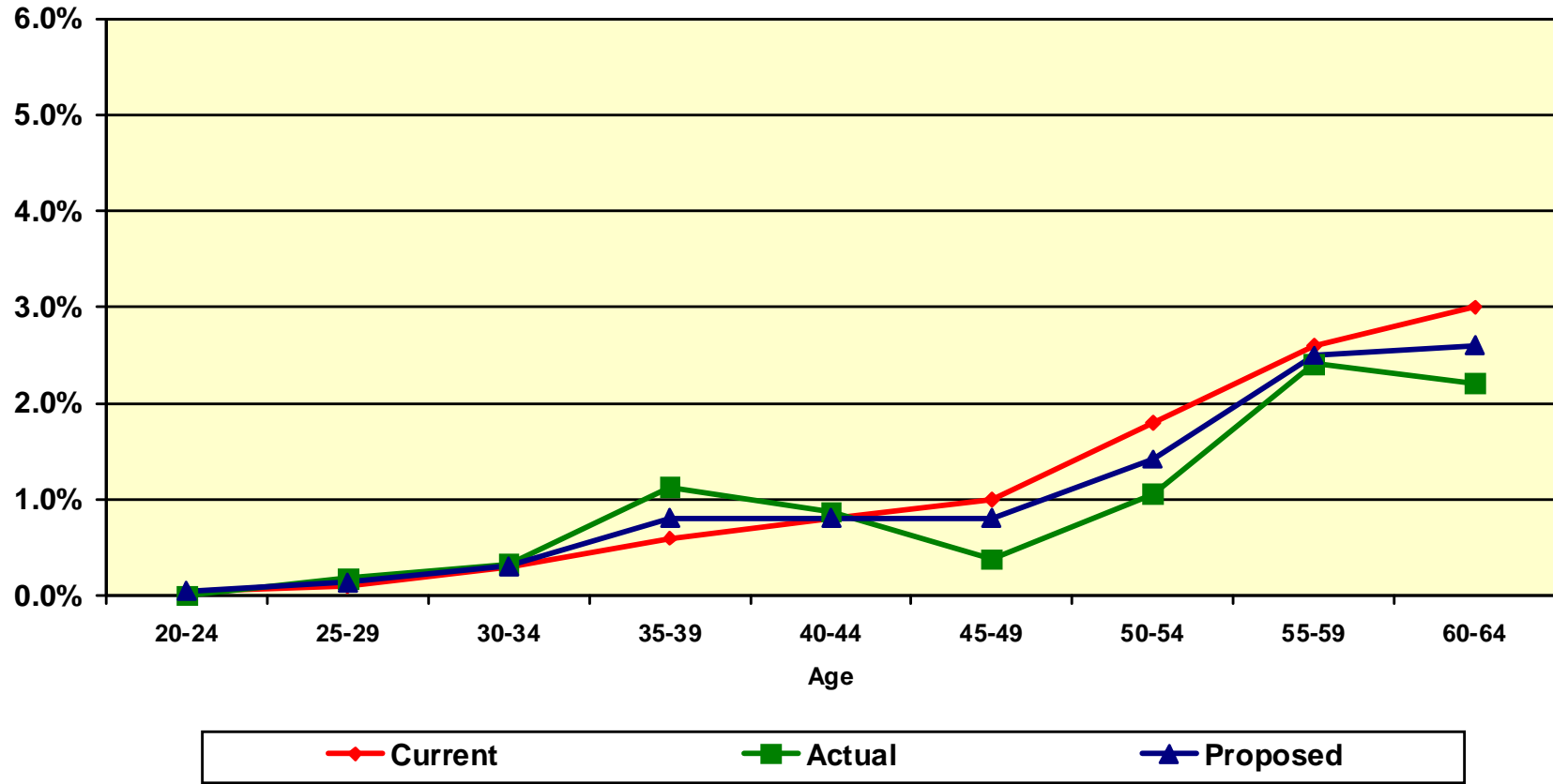


Chart 26
Service Connected Disablement Rates
for Safety Members



F. MERIT AND PROMOTIONAL SALARY INCREASES

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

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

In the June 30, 2009 valuation, the inflationary increases are assumed to follow the general annual inflation assumption of 3.75% and the annual "across the board" pay increase assumptions of 0.5%. Therefore, the total annual inflation and real "across the board" increase of 4.25% is used as the assumed annual rate of payroll growth at which payments toward the UAAL are assumed to increase.

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

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

Based on our analysis, we are recommending relatively small adjustments in the merit and promotional assumptions for both General and Safety members who have less than 5 years of service.

The following table shows the average annual increases over the three-year experience period (July 1, 2006 to June 30, 2009) before removing the inflationary component:

<u>Service Group</u>	<u>General Members</u>	<u>Safety Members</u>
0-1	12.15%	11.78%
1-2	9.82%	9.95%
2-3	8.25%	8.49%
3-4	8.35%	9.00%
4-5	8.11%	9.78%
5+	4.92%	4.94%

The increase in average salary over this three-year period was 4.67% for General members and 3.01% for Safety members. The following table shows the average annual merit and promotional increases for the three-year period after removing the average wage increase of 4.67% and 3.01% for General and Safety, respectively:

<u>Service Group</u>	<u>General Members</u>	<u>Safety Members</u>
0-1	7.40%	9.19%
1-2	5.45%	7.43%
2-3	4.47%	6.38%
3-4	3.20%	5.92%
4-5	2.52%	5.81%
5+	0.34%	1.97%

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

<u>Service Group</u>	<u>General Members</u>		<u>Safety Members</u>	
	<u>Current</u>	<u>Recommended</u>	<u>Current</u>	<u>Recommended</u>
0-1	4.50%	6.00%	7.50%	8.00%
1-2	4.00%	4.75%	6.00%	6.50%
2-3	3.25%	3.75%	5.00%	5.50%
3-4	2.50%	2.75%	4.00%	4.75%
4-5	2.00%	2.25%	3.00%	4.25%
5+	1.00%	0.75%	1.00%	1.25%

Charts 27 and 28 provide a graphical comparison of the current, actual experience and recommended merit and longevity increases.

Of note is that in addition to the above salary increase assumptions, we also have a 4% and a 3% assumption to predict annual pay for performance and other premium pays for General and Safety members, respectively. Those two assumptions were last reviewed as part of the June 30, 2008 actuarial valuation. We are not recommending any changes to those assumptions until we collect the data required to review those assumptions in our next triennial experience study.

Chart 27
Merit and Promotional Salary Increase Rates
for General Members

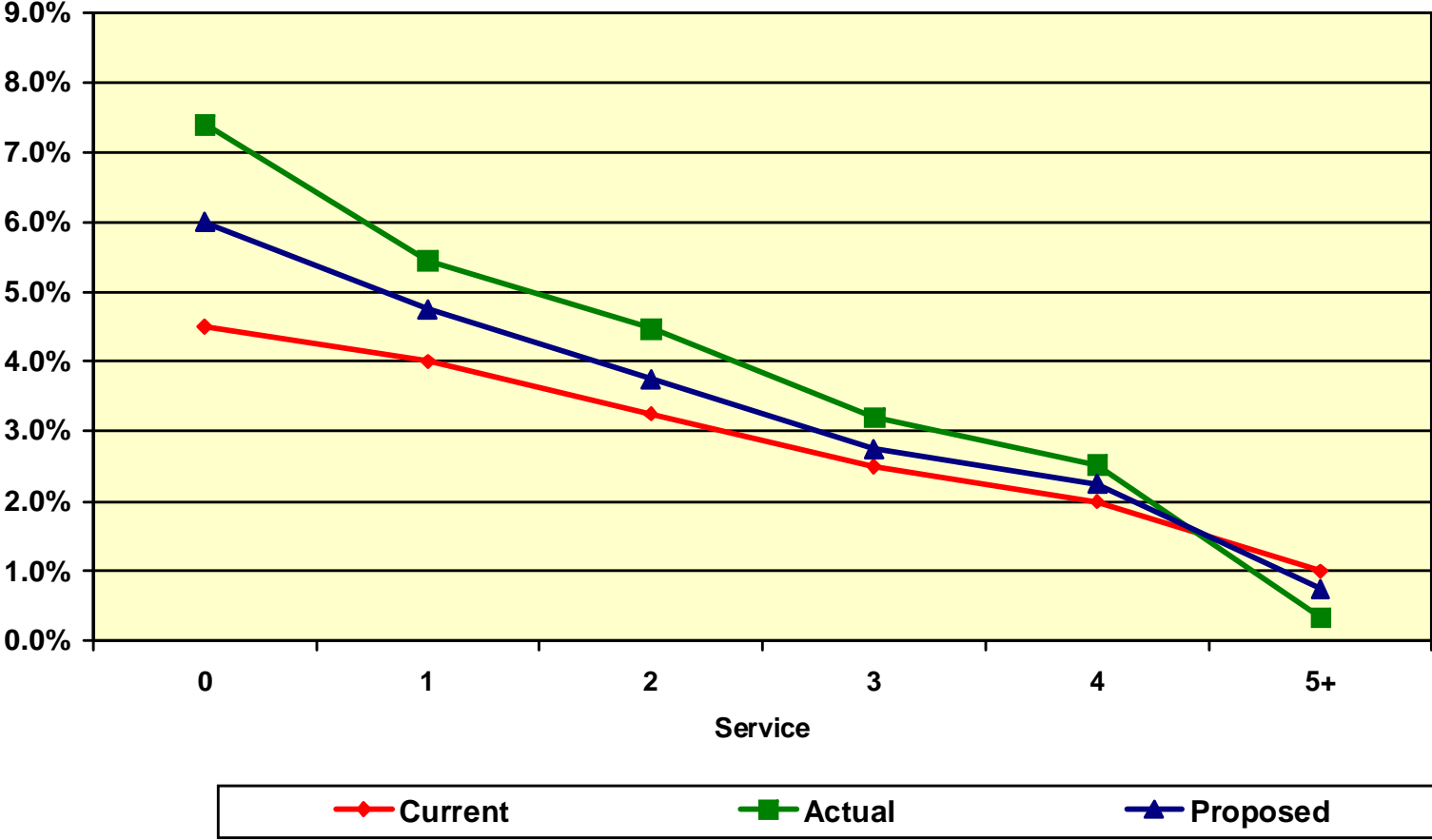
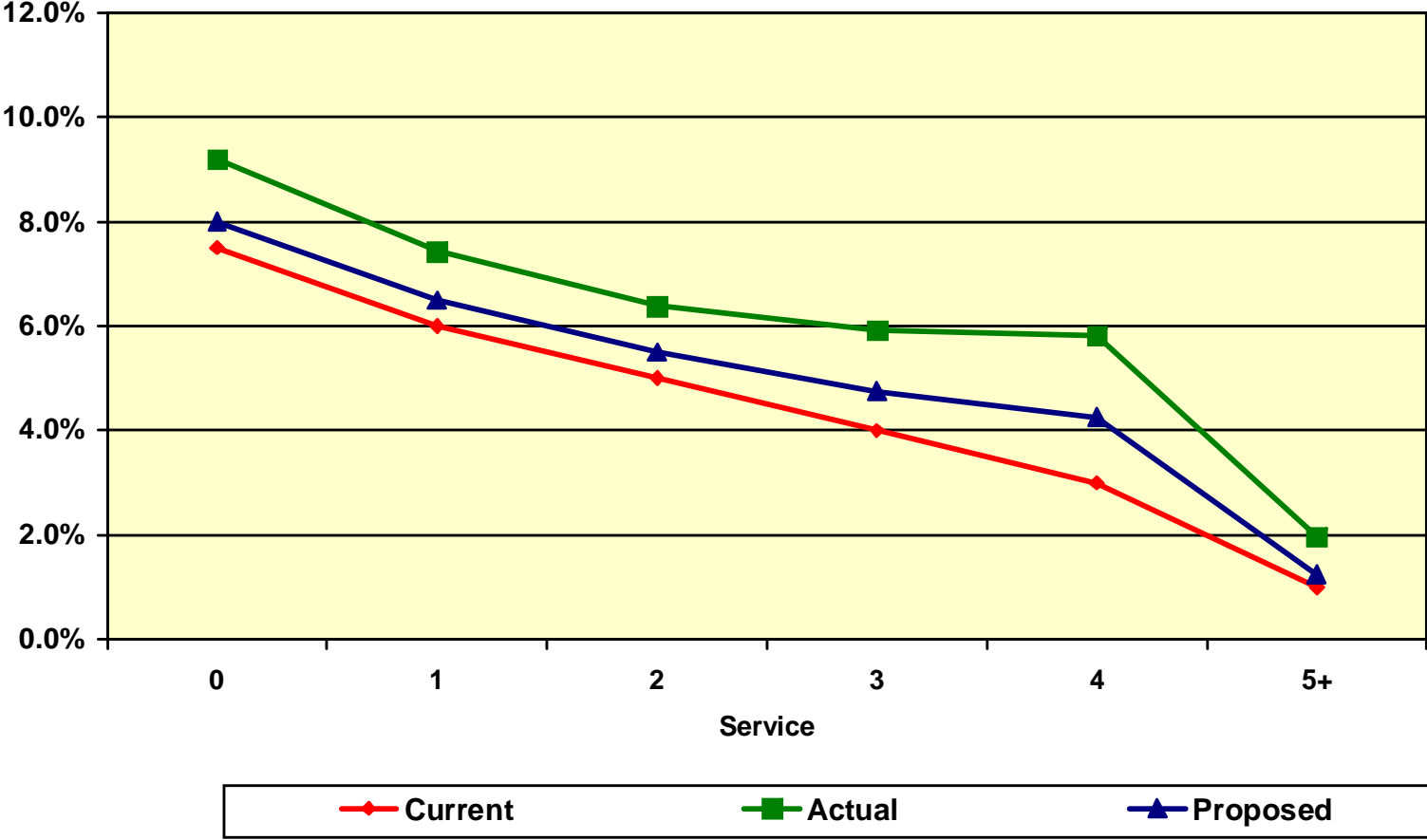


Chart 28
Merit and Promotional Salary Increase Rates
for Safety Members



APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS

Post-Retirement Mortality Rates:

Healthy Retirement: General – 1994 Group Annuity Mortality Table.
 Safety – 1994 Group Annuity Mortality Table with age set back one year.

Disabled Retirement: General – 1994 Group Annuity Mortality Table with age set forward seven years.
 Safety – same as Healthy Retirement.

Employee Contribution Rates: General – 1994 Group Annuity Mortality Table for Males weighted 30% and 1994 Group Annuity Mortality Table for Females weighted 70%.

Safety – 1994 Group Annuity Mortality Table for Males with age set back one year weighted 75% and 1994 Group Annuity Mortality Table for Females with age set back one year weighted 25%.

Termination Rates Before Retirement:

Mortality Rates: General – 1994 Group Annuity Mortality Table.
 Safety – 1994 Group Annuity Mortality Table with age set back one year.

For General members, out of the total probability of mortality before retirement, 100% is assumed to be non-service connected death.

For Safety members, 100% is assumed to be service connected death.

The following are sample rates (%):

Age	Mortality			
	General		Safety	
	Male	Female	Male	Female
25	0.07	0.03	0.06	0.03
30	0.08	0.04	0.08	0.03
35	0.09	0.05	0.08	0.04
40	0.11	0.07	0.10	0.07
45	0.16	0.10	0.15	0.09
50	0.26	0.14	0.23	0.13
55	0.44	0.23	0.40	0.21
60	0.80	0.44	0.71	0.39
65	1.45	0.86	1.29	0.76

Disability Rates:

Rate (%)						
Non Service Connected Disability				Service Connected Disability		
Age	General		Safety	General		Safety
	Male	Female		Males	Female	
20	0.00	0.00	0.00	0.01	0.00	0.03
25	0.00	0.00	0.00	0.01	0.01	0.08
30	0.01	0.01	0.04	0.02	0.04	0.22
35	0.02	0.03	0.06	0.04	0.08	0.48
40	0.03	0.08	0.06	0.11	0.16	0.72
45	0.06	0.13	0.08	0.19	0.23	0.92
50	0.10	0.18	0.10	0.30	0.28	1.48
55	0.17	0.23	0.10	0.38	0.33	2.28
60	0.23	0.28	0.10	0.43	0.38	2.84

Withdrawal Rates:

Rate (%)			
Ordinary Withdrawals (< 5 Years of Service)			
General			
Years of Service	Male	Female	Safety
0	16.00	17.00	12.00
1	10.00	11.00	11.00
2	7.50	8.00	6.00
3	6.00	7.00	4.50
4	5.50	6.50	4.00

Rate (%)			
Ordinary Withdrawal (5+ Years of Service) *			
General			
Age	Male	Female	Safety
20	1.00	1.80	0.83
25	1.00	1.80	0.75
30	0.94	1.53	0.65
35	0.84	1.02	0.67
40	0.74	0.68	0.65
45	0.58	0.42	0.53
50	0.44	0.30	0.41
55	0.34	0.30	0.36
60	0.30	0.30	0.14

* No withdrawal is assumed after a member is eligible for retirement.

Rate (%)			
Vested Terminations (< 5 Years of Service) *			
Years of Service	General		Safety
	Male	Female	
0 - 5	0.00	0.00	0.00

Rate (%)			
Vested Termination (5+ Years of Service) *			
Age	General		Safety
	Male	Female	
20	8.40	8.40	3.56
25	7.40	7.40	2.99
30	6.40	5.80	2.41
35	5.10	4.40	1.91
40	3.60	3.40	1.46
45	2.70	2.40	0.99
50	2.20	2.00	0.68
55	1.40	1.40	0.48
60	1.00	1.00	0.16

*No vested termination is assumed after a member is eligible for retirement.

Retirement Rates:

Age	Rate (%)	
	Retirement Probability	
	General (Tier 1 and Tier A)	Safety (Tier A)
48	-	4.0
49	-	4.0
50	8.0	15.0
51	5.0	15.0
52	5.0	15.0
53	6.0	15.0
54	8.0	15.0
55	12.0	20.0
56	13.0	25.0
57	15.0	30.0
58	17.0	35.0
59	20.0	35.0
60	20.0	45.0
61	25.0	45.0
62	27.0	45.0
63	29.0	45.0
64	30.0	45.0
65	30.0	100.0
66	30.0	100.0
67	30.0	100.0
68	40.0	100.0
69	40.0	100.0
70	100.0	100.0

Retirement Age and Benefit for Deferred Vested Members:

Reciprocal and Non-Reciprocal Members

General: Age 57; Safety: Age 53

35% of General and 40% of Safety deferred vested members are assumed to be reciprocal. For reciprocals, we assume 5.25% compensation increases per annum.

Future Benefit Accruals:

1.0 year of service per year.

Percent Married:

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

Age of Spouse:

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

Net Investment Return:

8.25%; net of administration and investment expenses.

Employee Contribution Crediting Rate:

½ of the net investment return credited semi-annually.

Consumer Price Index:

Increase of 3.75% per year; benefit increases due to CPI subject to 3.0% maximum.

Salary Scale:

Annual Rate of Compensation Increase

Inflation: 3.75% per year; plus “Across the Board” salary increases of 0.50% per year; plus Merit and Longevity as follows:

<u>Years of Service</u>	<u>General</u>	<u>Safety</u>
0	4.50%	7.50%
1	4.00	6.00
2	3.25	5.00
3	2.50	4.00
4	2.00	3.00
5+	1.00	1.00

APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS

Post-Retirement Mortality Rates

Healthy:

General – RP-2000 Combined Healthy Mortality Table with two-year age setback.

Safety – RP-2000 Combined Healthy Mortality Table with three-year age setback.

Disabled:

General – RP-2000 Combined Healthy Mortality Table with six-year age set forward.

Safety – RP-2000 Combined Healthy Mortality Table with two-year age setback.

Employee Contribution Rates:

For General members, RP-2000 Combined Healthy Mortality Table for Males with two-year age setback weighted 30% and RP-2000 Combined Healthy Mortality Table for Females with two-year age setback weighted 70%.

For Safety members, RP-2000 Combined Healthy Mortality Table for Males with three-year age setback weighted 75% and RP-2000 Combined Healthy Mortality Table for Females with three-year age setback weighted 25%.

Termination Rates Before Retirement:

Mortality Rates:

General: Post-Retirement Healthy Mortality Rates for retired General members
(i.e., RP-2000 Combined Healthy Mortality Table with a two-year age setback)

Safety: Post-Retirement Healthy Mortality Rates for retired Safety members
(i.e., RP-2000 Combined Healthy Mortality Table with a three-year age setback)

Rate (%)				
Mortality				
Age	General		Safety	
	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	0.09	0.06
45	0.13	0.09	0.12	0.09
50	0.19	0.14	0.17	0.13
55	0.29	0.22	0.27	0.20
60	0.53	0.39	0.47	0.35
65	1.00	0.76	0.88	0.67

For General members, all pre-retirement deaths are assumed to be non-service connected. For Safety members, all pre-retirement deaths are assumed to be service connected.

Disability Rates:

Age	Rate (%)					
	Non Service Connected Disability			Service Connected Disability		
	General		Safety	General		Safety
Male	Female	Males		Female		
20	0.00	0.00	0.00	0.01	0.00	0.05
25	0.00	0.00	0.00	0.01	0.02	0.10
30	0.01	0.01	0.02	0.02	0.05	0.24
35	0.02	0.02	0.05	0.04	0.10	0.61
40	0.04	0.07	0.08	0.10	0.13	0.81
45	0.07	0.12	0.10	0.17	0.21	0.81
50	0.12	0.15	0.10	0.21	0.25	1.18
55	0.19	0.18	0.10	0.31	0.30	2.07
60	0.22	0.26	0.10	0.38	0.33	2.56
65	0.22	0.30	0.04	0.16	0.13	1.04

Withdrawal Rates:

Rate (%)			
Ordinary Withdrawals (< 5 Years of Service)			
Years of Service	General		Safety
	Male	Female	
0	12.25	13.00	11.00
1	7.50	8.25	7.50
2	5.75	6.00	3.75
3	4.50	5.25	3.25
4	4.25	5.00	3.25

Rate (%)			
Ordinary Withdrawal (5+ Years of Service) *			
Age	General		Safety
	Male	Female	
20	1.00	1.25	0.86
25	1.00	1.25	0.72
30	1.00	1.16	0.66
35	0.83	0.83	0.58
40	0.60	0.55	0.41
45	0.51	0.34	0.33
50	0.50	0.25	0.31
55	0.50	0.25	0.30
60	0.38	0.25	0.12
65	0.30	0.25	0.00

* No withdrawal is assumed after a member is eligible for retirement.

Rate (%)			
Vested Terminations (< 5 Years of Service) *			
Years of Service	General		Safety
	Male	Female	
0	3.00	3.00	2.50
1	2.00	2.00	1.25
2	1.50	1.50	1.25
3	1.00	1.50	1.00
4	1.00	1.50	1.00

Rate (%)			
Vested Termination (5+ Years of Service) *			
Age	General-Male	General-Female	Safety
20	6.16	6.48	3.42
25	5.76	5.28	3.12
30	4.94	4.50	2.58
35	3.72	3.76	1.94
40	3.02	2.92	1.34
45	2.67	2.36	1.04
50	2.50	2.08	0.88
55	2.50	1.94	0.80
60	2.50	1.90	0.32

* No vested termination is assumed after a member is eligible for retirement.

Retirement Rates:

Rate (%)

Age	Retirement Probability	
	General (Tier 1 and Tier A)	Safety (Tier A)
48	-	4.0
49	50.0	7.0
50	8.0	15.0
51	5.0	13.0
52	5.0	13.0
53	5.0	15.0
54	7.0	15.0
55	12.0	16.0
56	12.0	20.0
57	13.0	24.0
58	14.0	30.0
59	16.0	30.0
60	20.0	30.0
61	21.0	30.0
62	25.0	35.0
63	26.0	35.0
64	30.0	35.0
65	30.0	75.0
66	30.0	75.0
67	30.0	75.0
68	35.0	75.0
69	40.0	75.0
70	75.0	100.0
71	75.0	100.0
72	75.0	100.0
73	75.0	100.0
74	75.0	100.0
75+	100.0	100.0

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

Reciprocal and Non-Reciprocal Members:

General: Age 57

Safety: Age 52

30% of General and 35% of Safety future deferred vested members are assumed to be reciprocal. For General reciprocal members, we assume 5.00% compensation increases per annum. For Safety reciprocal members, we assume 5.50% compensation increases per annum.

Future Benefit Accruals: 1.0 year of service per year.

Percent Married: 80% of male members; 55% of female members.

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

Net Investment Return: 8.25%, net of administration and investment expenses.

Employee Contribution Crediting Rate: ½ of the net investment return credited semi-annually.

Consumer Price Index: Increase of 3.75% per year; benefit increases due to CPI subject to 3.0% maximum.

Salary Scale:

Annual Rate of Compensation Increase

Inflation: 3.75% per year; plus “Across the Board” salary increases of 0.50% per year; plus Merit and Longevity as follows:

Years of Service	General	Safety
0	6.00%	8.00%
1	4.75	6.50
2	3.75	5.50
3	2.75	4.75
4	2.25	4.25
5+	0.75	1.25