Orange County Employees Retirement System

ACTUARIAL EXPERIENCE STUDY

Analysis of Actuarial Experience During the Period January 1, 2002 through December 31, 2004

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May 6, 2005

Board of Retirement
Orange County Employees Retirement System
2223 Wellington Avenue
Santa Ana, California 92701

Re: **Review of Non-economic Actuarial Assumptions for the December 31, 2004 Actuarial Valuation**

Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience of the Orange County Employees Retirement System. This study utilizes the census data of the last three actuarial valuations and includes the proposed actuarial assumptions to be used in future actuarial valuations.

Please note that we have also reviewed the economic assumptions. The economic actuarial assumption recommendations for the December 31, 2004 valuation were provided in a separate report dated September 7, 2004.

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

Sincerely,

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

Andy Yeung, ASA, MAAA
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 assumptions, and to the extent there are differences, the future contribution requirement is adjusted.

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

The use of realistic actuarial assumptions is important in maintaining adequate funding, while paying adequate 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 compare the actual experience during this three year period with that expected under the current assumptions. 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 put forth guidelines for the selection of the various actuarial assumptions utilized in a pension plan actuarial valuation. Based on the study's results and expected near-term experience, we are recommending various changes in the current actuarial assumptions.

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

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 is not significantly different enough to warrant establishing different assumptions by sex. This is also evidenced by the fact that the current male and female assumptions are fairly close.

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 based on experience: For Safety Law and Fire members, we recommend slight decrease in the rates. For General and Probation members, we recommend combining the current sex distinct retirement rates to a set of unisex rates. We also recommend a separate set of rates for Probation members. The expected number of General and Probation retirements increases under the new assumptions.

Mortality Rates - The probability of dying at each age. Mortality rates are used to project life expectancies.
Recommendation based on experience: For healthy retirees, we recommend a switch from the current 1983 Group Annuity Mortality Tables to the 1994 Group Annuity Mortality Tables set forward one year for both General and Safety employees. The pre-retirement mortality assumption has been adjusted to be consistent with the table used for post-service retirement mortality. All pre-retirement deaths are assumed to be ordinary (non-duty). For disabled retirees, we recommend a switch from the current 60% of the 1981 Disability General and Safety Mortality Tables to the 1994 Group Annuity Mortality Tables set forward five years. The above changes for healthy and disabled retirees result in no material change in the life expectancies.

Termination Rates - The probability of leaving employment at each age and receiving either a refund of contributions or a deferred vested retirement benefit.
Recommendation based on experience: A combined set of withdrawal and termination assumptions is recommended in addition to a new assumption that 85% of vested members terminating at any particular age will choose a deferred vested benefit and the remaining 15% will choose a refund of contributions. Overall, the new assumptions predict lower probability of withdrawal and termination.

Disability Incidence Rates - The probability of becoming disabled at each age.
Recommendation based on experience: The rates have been modified slightly. Overall, there is an increase in the expected annual number of disabilities among Safety Law and Fire members and General OCTA members.

Individual Salary Increases - Increases in the salary of a member between the date of entry into the System to the date of separation from active membership.
Recommendation based on experience: The merit and longevity rates have been increased at most ages to reflect recent years' experience.

Service From Unused Sick Leave Conversion – Additional service that is expected to be received from converting unused sick leave when a member retires.
Recommendation: Due to the fact that not all members are entitled to convert their sick leave into retirement service credit, we do not recommend introducing an assumption at this time to anticipate the value of retirement benefits that are produced from the conversion of unused sick leave at retirement. The cost of this benefit will be reflected in the System's actuarial accrued liability as members make the conversion.

Terminal Pay – Additional earnings that is expected to be received when a member retires.
Recommendation: We recommend deferring any change in the current terminal pay assumptions until the necessary data to review this assumption has been collected.

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. Our analysis of the "economic" assumptions for the December 31, 2004 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., withdrawal from service, disability retirement, service retirement, and death after retirement. We also review the individual salary increases net of inflation (i.e., the merit and longevity 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 withdrawal from service, we compare the number of employees who actually withdraw in a certain age and/or service category (i.e., the number of "decrements") with those who could have withdrawn (i.e., the number of "exposures"). For example, if there were 500 active employees in the 20-24 age group at the beginning of the year and 50 of them left during the year, we would say the probability of withdrawal in that age group is 50 ÷ 500 or 10%.

The reliability of the resulting probability is highly dependent on both the number of decrements and the number of exposures. For example, if there are only a few people in a high age category at the beginning of the year (number of exposures), we would not lend as much credence to the probability of withdrawal 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 reviewed on an annual basis. The detail was provided in a separate report titled "Review of Economic Actuarial Assumptions for the December 31, 2004 Actuarial Valuation." dated September 7, 2004

B. RETIREMENT RATES

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

The Plan's current retirement rates are separated into 1) Safety Law Enforcement and Safety Fire, 2) General and Safety Probation male and 3) General and Safety Probation female.

Since retirement rates are generally affected when the benefit formula changes, we believe retirement probabilities under the enhanced formulas can only be estimated using experience collected from the plan year after the benefit improvement. For other clients we have observed lower retirement experience before a benefit enhancement and accelerated retirement experience after a benefit enhancement. For OCERS, we observed increased retirement rates for all groups with the most significant change in retirement rates for the Safety Probation group that adopted the 2% at 50 formula effective July 2002. The observed rates of retirement for this group suggest higher retirement rates at the younger ages. We expect an increase in the retirement rates once the 2.7% at 55 formula becomes effective July 2005 for a large group of General members. We have increased the retirement rates to reflect both the experience for this group and to anticipate that the retirement rates for this group will continue to increase.

We separated the observed retirement rates for General members between OCTA and all other General members and concluded that these two groups continue to have a similar retirement pattern. We will continue to monitor the effect of the benefit on retirement rates for the General members in future valuations. We recommend combining the sex distinct retirement rates into a unisex table, as well as separate rates for Safety Probation. This results in recommended retirement rates separated into 1) Safety Law Enforcement and Safety Fire, 2) General and 3) Safety Probation – all unisex tables. The service (non-disability) retirement experience for active participants over the past three years (from January 1, 2002 to December 31, 2004) along with our recommendations are provided on the following pages.

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

Actual Rate of Retirement (From January 1, 2002 to December 31, 2004)

	Rate (%)			
Age	General - all other	General - OCTA	Safety - Law Enforcement and Fire	Safety – Probation
50	3.68%	3.36%	8.20%	5.00%
51	1.75	4.72	10.37	12.50
52	1.55	3.81	12.58	5.56
53	2.63	2.13	19.29	8.82
54	2.85	4.12	18.44	24.32
55	6.02	3.41	27.48	25.00
56	7.47	1.37	22.22	26.09
57	7.17	2.94	27.12	27.78
58	8.20	4.17	47.50	56.25
59	9.39	8.86	52.17	35.71
60	14.62	11.29	30.00	60.00
61	19.87	20.45	28.57	50.00
62	18.00	16.22	20.00	71.43
63	16.27	16.67	66.67	100.00
64	19.92	40.00	66.67	-
65	25.12	25.00	100.00	-
66	13.61	22.22	-	-
67	16.24	28.57	-	-
68	23.33	50.00	-	-
69	24.62	20.00	-	-
70	22.77	52.94	-	-

The following rates of retirement are currently assumed for OCERS members currently actively working:

Current Retirement Probability

Rate (%)

	General Members and Safety Probation Officers		Law Enforcement and Fire Authority
Age	Male	Female	Male and Female
50	2.00%	2.93%	26.60%
51	1.44	1.90	20.00
52	1.90	2.03	20.00
53	2.15	2.29	20.00
54	2.37	2.25	20.00
55	3.26	4.05	20.00
56	4.10	3.70	20.00
57	4.86	5.14	20.00
58	5.08	5.23	20.00
59	5.95	5.58	20.00
60	6.32	7.21	100.00
61	8.29	9.25	
62	11.98	13.00	
63	11.44	11.52	
64	12.00	12.07	
65	15.00	19.40	
66	13.12	19.46	
67	14.55	20.89	
68	21.14	20.94	
69	21.42	37.25	
70	100.00	100.00	

The following rates of retirement are what we recommend to the Board. For General Members, we recommend unisex rates calculated based on a combination of the blended current tables and the observed rates. For Safety Law Enforcement and Fire, we are also recommending a 100% probability of retirement after a member accrues a benefit of 100% of Final Average Earnings.

Proposed Combined Unisex Retirement Probability

Rate (%)

Age	General	Safety - Law Enforcement and Fire	Safety – Probation
50	3.00%	10.00%	4.00%
51	3.00	15.00	6.00
52	3.00	20.00	8.00
53	3.00	20.00	10.00
54	3.00	20.00	15.00
55	4.00	25.00	20.00
56	5.00	25.00	25.00
57	6.00	30.00	25.00
58	7.00	30.00	30.00
59	9.00	40.00	30.00
60	11.00	100.00	40.00
61	13.00		50.00
62	15.00		60.00
63	17.00		100.00
64	19.00		
65	25.00		
66	20.00		
67	20.00		
68	20.00		
69	20.00		
70	100.00		

Chart 1 compares actual experience with the current and proposed rates of retirement for General members. The actual and proposed rates are composites of male and female rates. Chart 2 has the same data for Safety Law Enforcement and Fire members. Chart 3 has the same data for Safety Probation.

Deferred Vested Members

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

Reciprocity

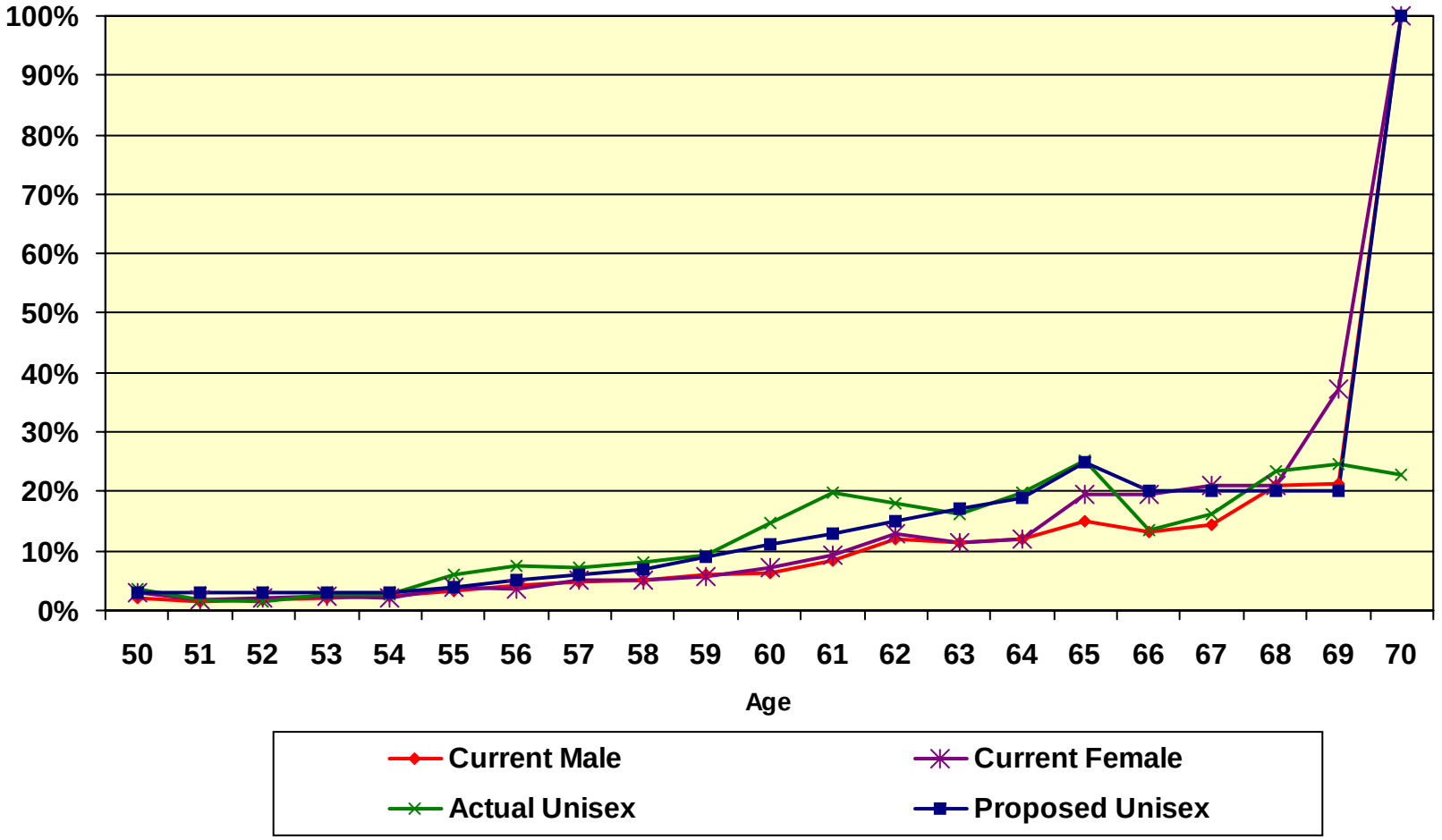
Currently, the System does not maintain data on the proportion of deferred vested participants who go on to work for a reciprocal system. As a result, it was assumed that no inactive General and Safety deferred vested participants would be reciprocal and their liabilities do not include any adjustment for salary increases from termination until their date of retirement. Based on the experience from Segal's other 1937 Act clients, the percent of members who goes on to work for a reciprocal system ranges from 40% to 60%. We recommend that the Board adopt the low end of assumption (i.e., 40%) that Segal observed for our 1937 Act clients and use that as an approximation until a percentage based on actual experience can be calculated. Based on our average 1.1% recommended merit and longevity salary increase assumptions, we propose that a 5.10% (i.e., 4% inflation plus 1.1% merit and longevity) salary increase assumption be utilized to anticipate salary increases (under the reciprocal system) between termination and the expected date of retirement.

Survivor Continuance Under Unmodified Option

In prior valuations, it was assumed that 80% of all active male members and 50% of all active female members would have an eligible survivor when they retired. Because of problems with the marital status data provided to us for the experience study, we have not been able to verify these percentages. We recommend that the current 80% and 50% male members' and female members' marriage assumptions be utilized until the percentages based on recent actual experience can be calculated.

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

Chart 1
Retirement Rates - General Members



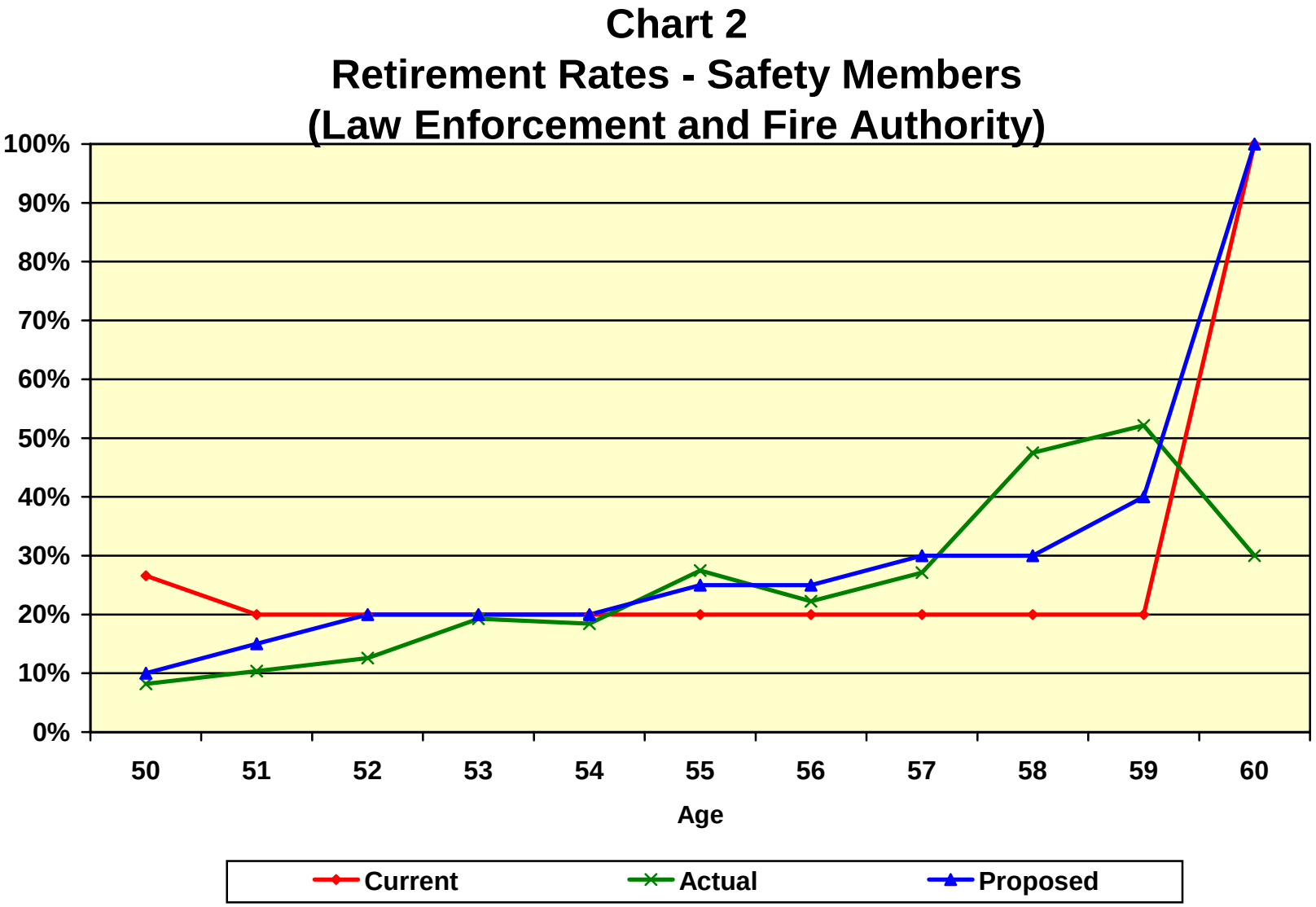
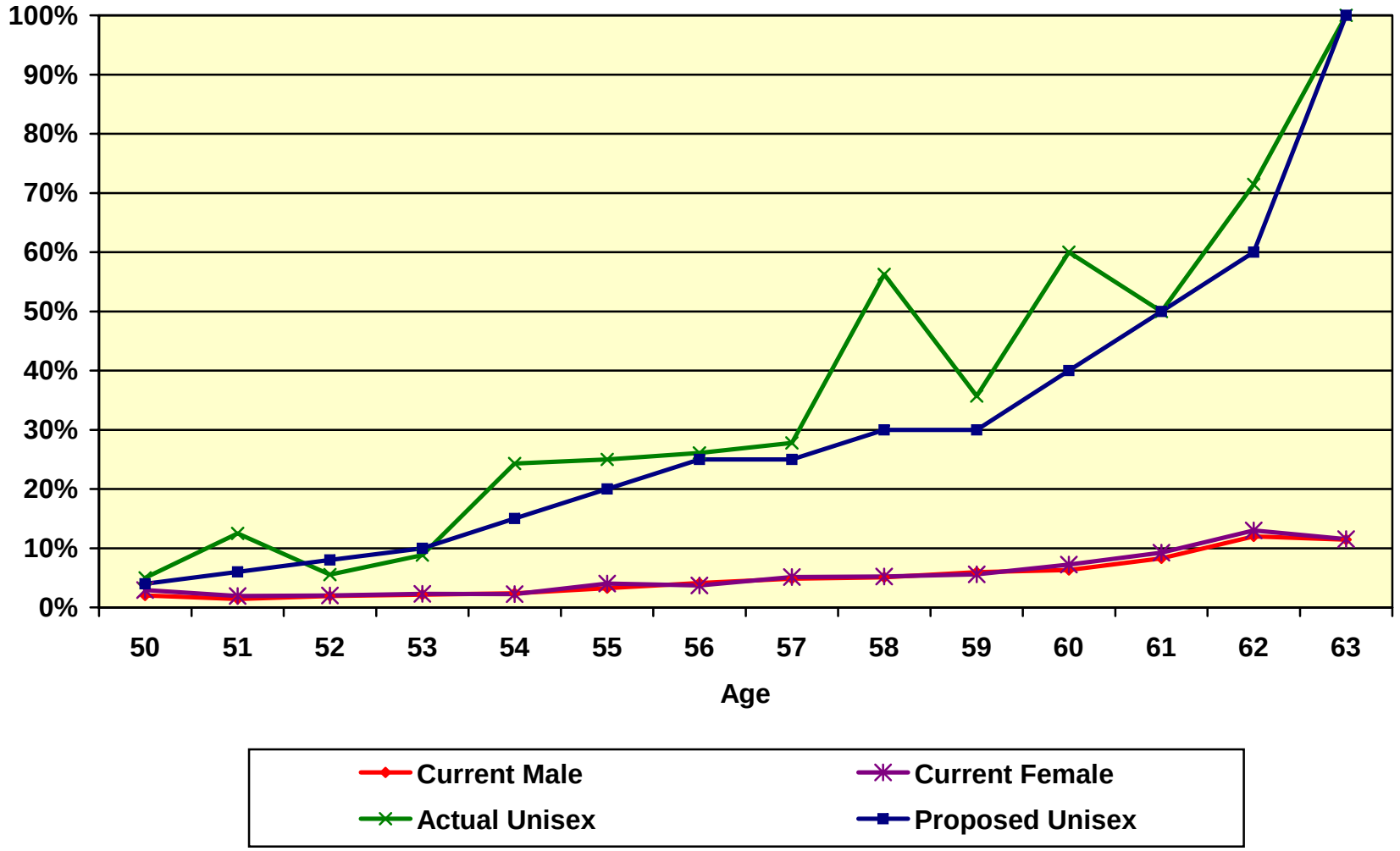


Chart 2
Retirement Rates - Safety Members
(Law Enforcement and Fire Authority)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
50
51
52
53
54
55
56
57
58
59
60
Age
Current
Actual
Proposed

Chart 3
Retirement Rates - Safety Members
(Probation Officers)



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 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 1983 Group Annuity Mortality Male and Female Tables. For Safety Law Enforcement, Fire and Probation members, the Male table is used for all members. For beneficiaries of Safety Law Enforcement, Fire and Probation members the Female table is used.

The tables that we would recommend for the General, Safety and Probation members and beneficiaries are the 1994 Group Annuity Mortality Tables for Males and Females set forward one year.

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. All pre-retirement deaths are 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:

	General – Healthy			Safety – Healthy		
Year Ending 12/31	Expected Deaths	Proposed Expected Deaths	Actual Deaths	Expected Deaths	Proposed Expected Deaths	Actual Deaths
2002	163	165	132	12	9	6
2003	173	176	251	11	11	17
2004	177	180	217	9	11	9
Total	513	521	600	32	31	32
Actual / Expected	117%	115%		100%	103%	

Chart 4 compares actual to expected deaths for General members under the current and proposed assumptions for all pensioners over the last three years. Recent experience shows that there were more deaths than predicted by the current table. However, the System's prior actuary only reported 409 deaths among healthy General and Safety during the prior three years which would give less weight to the most recent experience. Also, the difference in proposed expected experience versus actual should provide some margin for future improvements in life expectancy.

Chart 5 has the same comparison for Safety members.

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

Chart 7 has the same information for Safety members.

Mortality Table for Member Contributions

We recommend that the mortality table used for determining contributions for General members be changed from the 1983 Group Annuity Mortality (50% Male and 50% Female) Table to the 1994 Group Annuity Mortality Table set forward one year weighted 40% male and 60% female. This is based on the proposed mortality table for General members and the actual gender distribution for the current General members.

For Safety and Probation members, we recommend the mortality table be changed from the 1983 Group Annuity Mortality Male Table to the 1994 Group Annuity Mortality Table set forward one year weighted 80% male and 20% female. This is based on the proposed mortality table for Safety members and the actual gender distribution for the current Safety and Probation members.

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

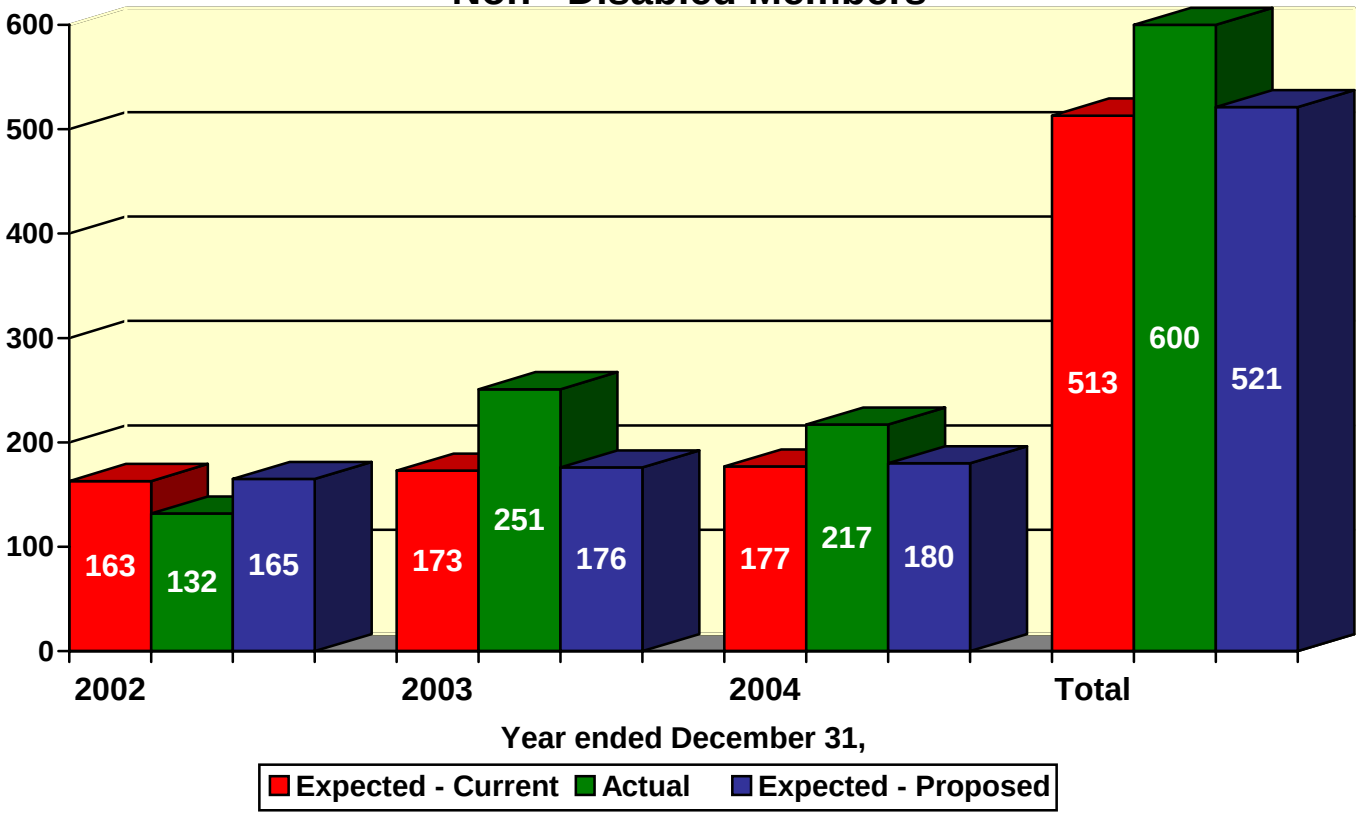


Chart 5
Post - Retirement Deaths (Safety)
Non - Disabled Members

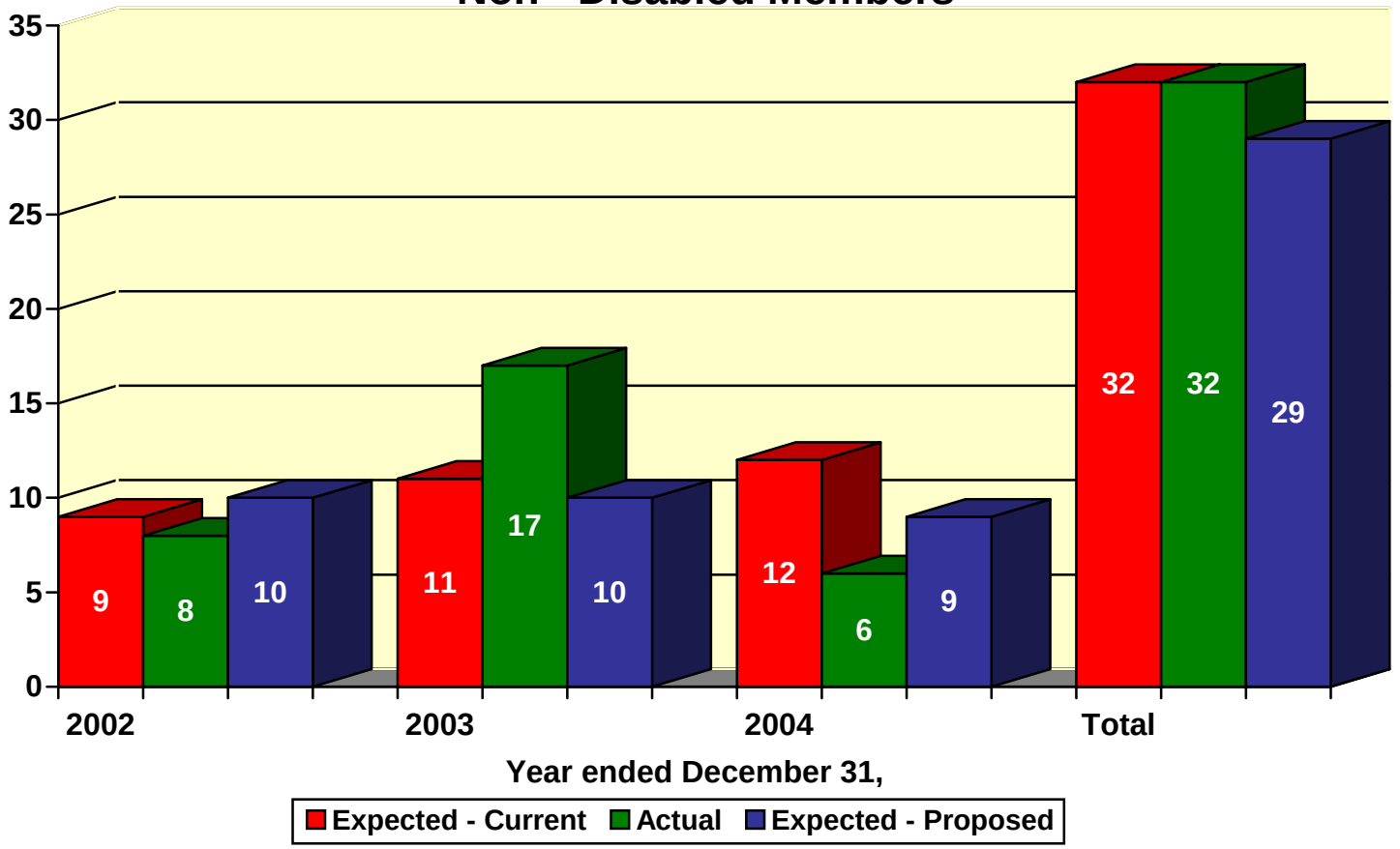


Chart 6
Life Expectancies (General)

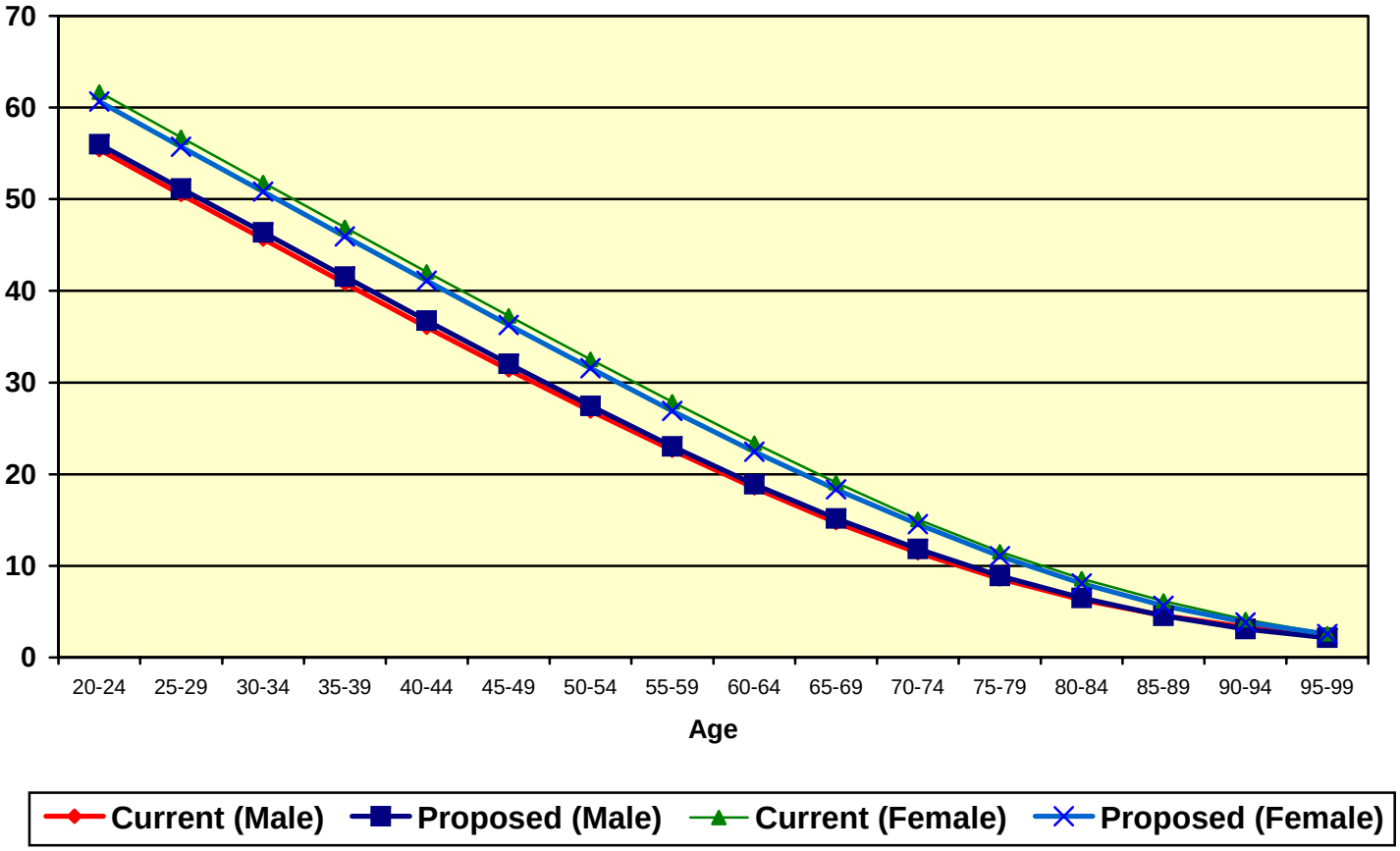
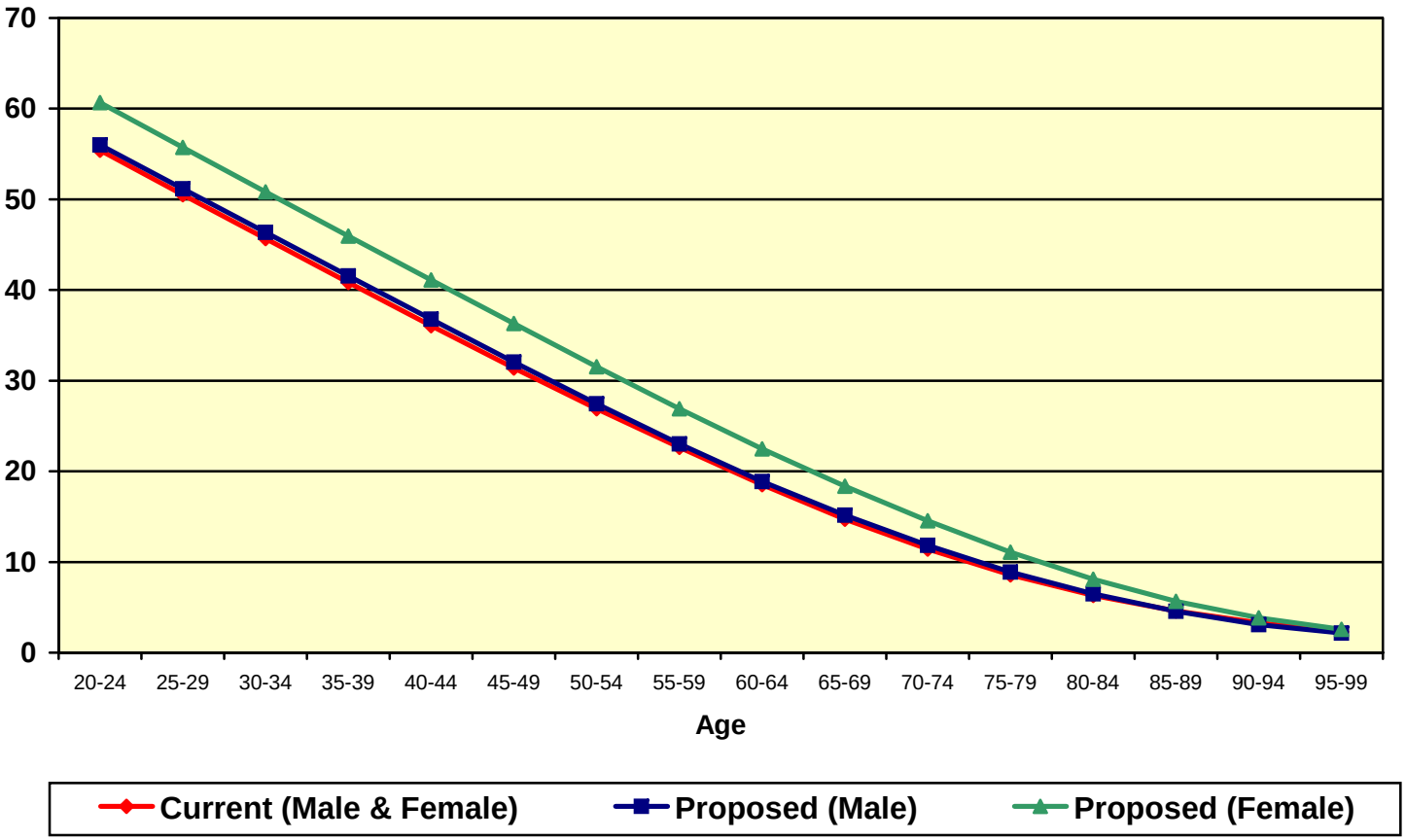


Chart 7
Life Expectancies (Safety)



D. MORTALITY RATES - DISABLED

Since death rates for disabled members are typically higher than for healthy members, a different mortality assumption is used. The table currently being used for General members is based on 60% of the CHE 1981 General Disability Mortality Table. For Safety members, 60% of the CHE 1981 Safety Disability Mortality Table.

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

	General – Disability			Safety – Disability		
Ending 12/31	Expected Deaths	Proposed Expected Deaths	Actual Deaths	Expected Deaths	Proposed Expected Deaths	Actual Deaths
2002	19	19	42	5	4	6
2003	19	20	32	6	4	7
2004	20	19	25	4	4	3
Total	58	58	99	15	12	16
Actual / Expected	171%	171%		107%	133%	

We are recommending a change in the mortality table to the 1994 Group Annuity Mortality Tables for males and females set forward five years for all disabled members. Experience shows that there were more deaths than predicted by the current table. However, the System's prior actuary only reported 62 deaths among disabled General and Safety during the prior three years. The proposed assumption will allow for some margin if mortality were to improve in the future.

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

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

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

Chart 8
Post - Retirement Deaths
Disabled General Members

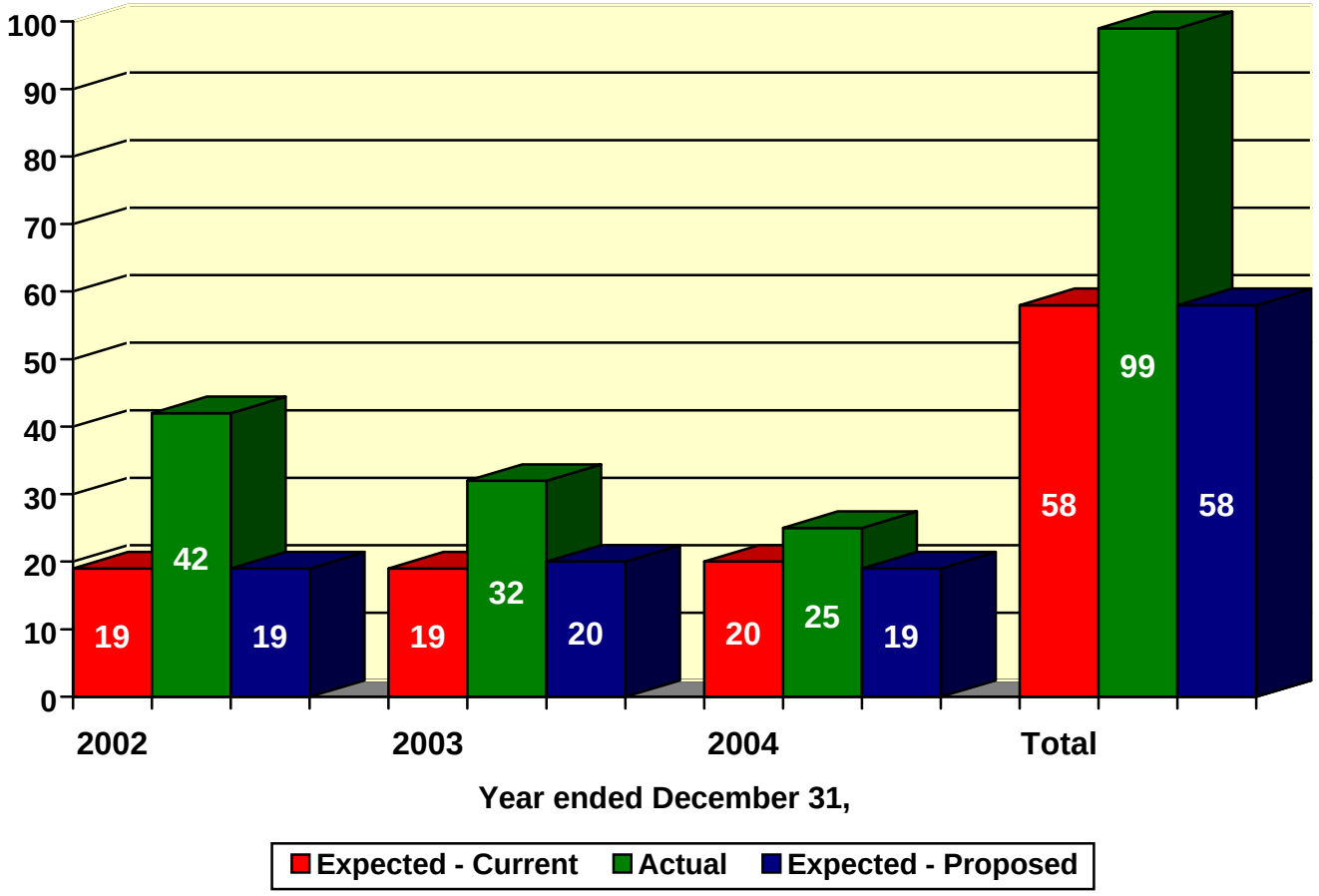


Chart 9
Post - Retirement Deaths
Disabled Safety Members

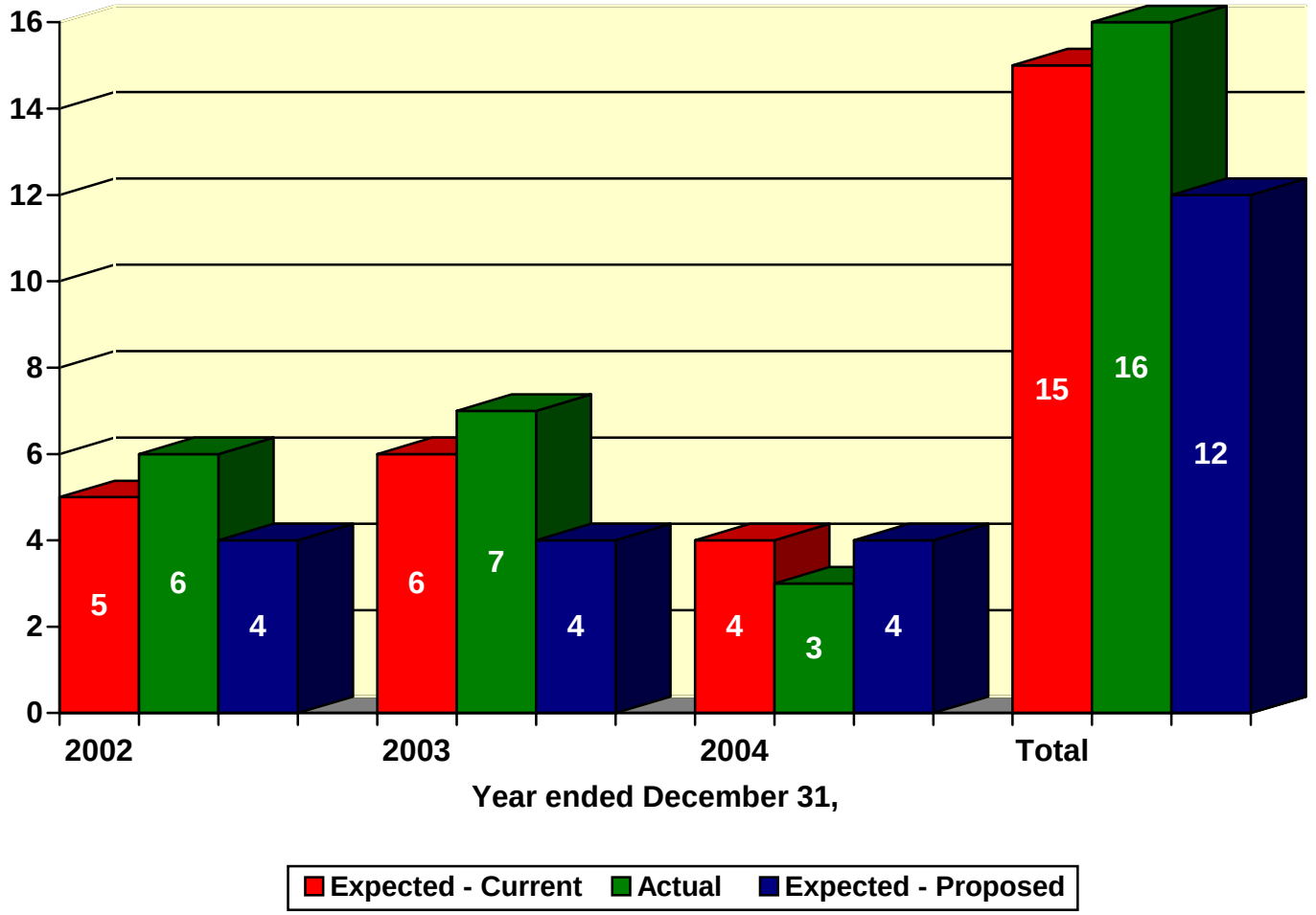


Chart 10
Life Expectancies (General Disabled)

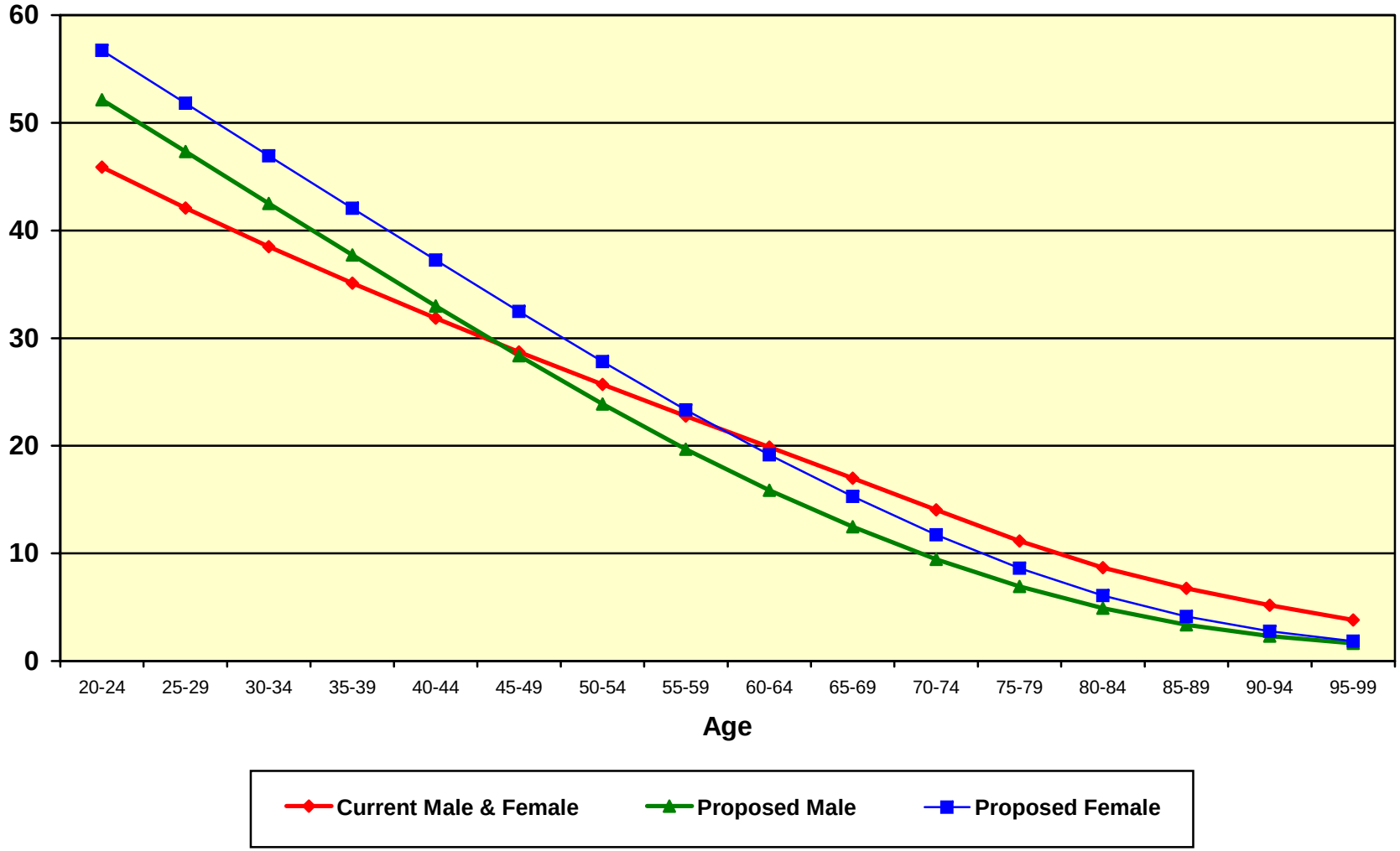
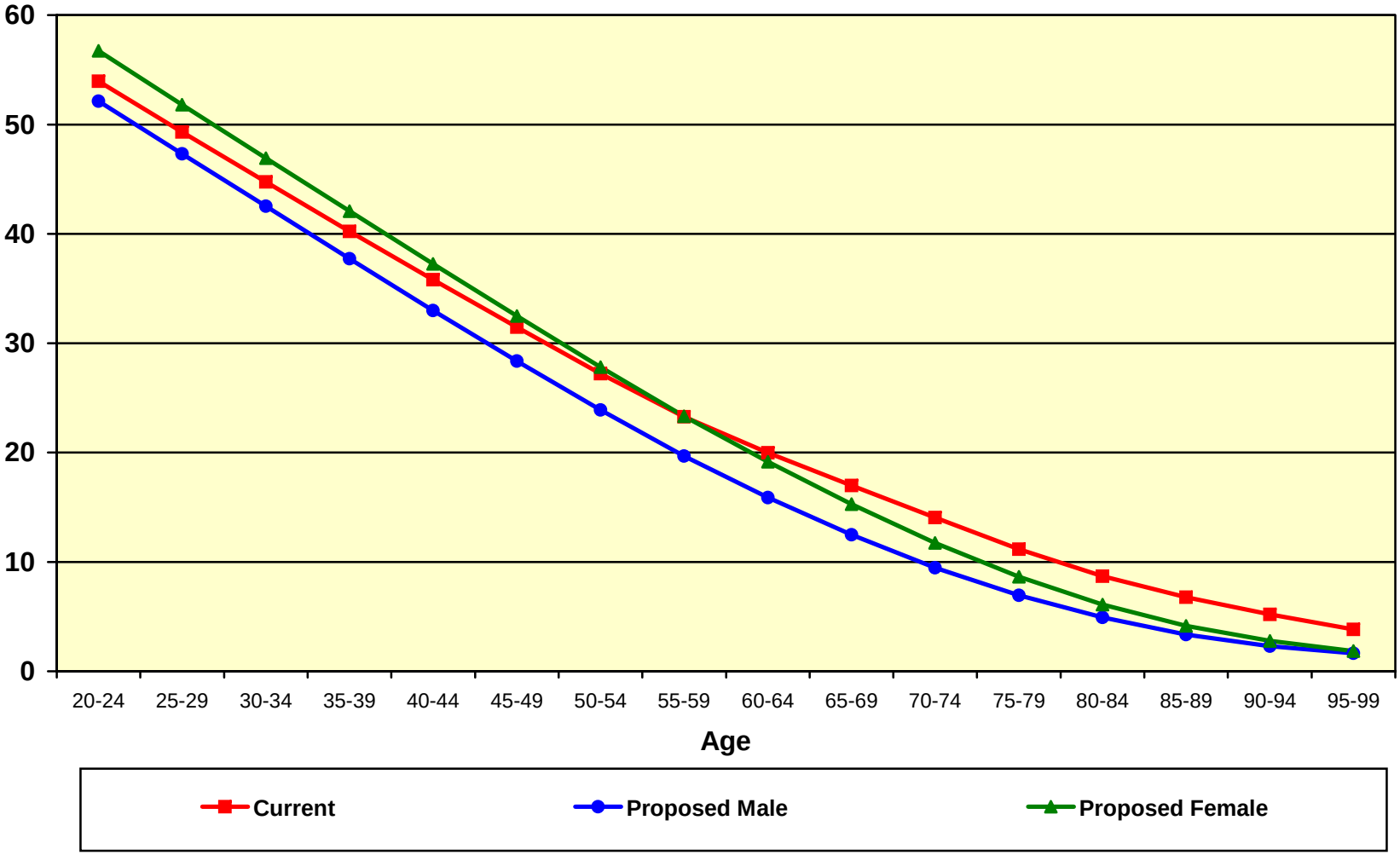


Chart 11
Life Expectancies (Safety Disabled)



E. TERMINATION RATES

Termination rates include all terminations for reasons other than death, disability, or retirement. Under the current assumptions there is a separate set of assumptions for ordinary withdrawal and for vested termination to predict, respectively, those members who are anticipated to withdraw their contributions (ordinary withdrawal), and those who will leave their contributions on deposit and receive a deferred vested benefit (vested termination). With this experience study we are recommending that a combined set of withdrawal and termination assumptions be used, together with a new assumption that 15% of all terminated vested members will choose a refund of contributions and 85% will choose a deferred vested benefit. This is based on the observation that out of all vested members who have terminated, 64% of General and 80% of Safety and Probation chose a deferred vested benefit. We are assuming a higher proportion of deferred vested members than recent experience shows because members are becoming more aware of the value of the benefit they are leaving behind if they refund their contributions, especially after the recent benefit enhancements.

We have developed rates for the following four groupings: 1) General all other, 2) General OCTA, 3) Safety Law Enforcement & Fire and 4) Safety Probation. The termination experience over the last three years for these four member groups are split between those members with under five years of service and those with five or more years of service. The breakdown by group for under five years of service is as follows:

Rates of Withdrawal - General all other
(Fewer than Five Years of Service)

Years of Service	Current Rate*	Observed Rate	Proposed Rate
0	7.63%	11.99%	10.00%
1	7.14	7.06	8.00
2	6.82	6.41	6.00
3	6.41	4.92	6.00
4	6.09	4.35	5.00

* *Current rate varies by age, tier and sex. Rate listed is a weighted average rate.*

Rates of Withdrawal - General OCTA
(Fewer than Five Years of Service)

Years of Service	Current Rate*	Observed Rate	Proposed Rate
0	7.94%	9.23%	10.00%
1	7.70	6.34	7.00
2	7.51	5.27	6.00
3	6.80	3.16	5.00
4	6.17	3.25	4.00

* *Current rate varies by age, tier and sex. Rate listed is a weighted average rate.*

Rates of Withdrawal – Safety Law Enforcement and Fire
(Fewer than Five Years of Service)

Years of Service	Current Rate*	Observed Rate	Proposed Rate
0	1.38%	2.29%	3.00%
1	1.40	1.81	2.00
2	1.40	1.85	2.00
3	1.34	1.73	1.00
4	1.26	1.15	1.00

* *Current rate varies by age, tier and sex. Rate listed is a weighted average rate.*

Rates of Withdrawal – Safety Probation
(Fewer than Five Years of Service)

Years of Service	Current Rate*	Observed Rate	Proposed Rate
0	10.47%	12.78%	11.00%
1	9.56	6.88	10.00
2	8.68	9.60	8.00
3	8.13	5.04	6.00
4	7.90	3.61	5.00

* *Current rate varies by age. Rate listed is a weighted average rate.*

The breakdown by group for five years of service or more is as follows:

Rates of Termination - General all other
(Five or More Years of Service)

Age	Current Rate*	Observed Rate	Proposed Rate**
20 – 24	13.16%	11.11%	5.00%
25 – 29	9.49	4.81	5.00
30 – 34	7.87	3.70	5.00
35 – 39	5.90	2.99	4.00
40 – 44	5.02	2.12	3.50
45 – 49	3.87	1.35	2.50
50 – 54	2.78	0.81	2.00
55 – 59	1.85	0.43	1.00
60 – 64	0.00	0.65	0.00
65 – 69	0.00	0.66	0.00

* *Current rate varies by tier and sex. Rate listed is an average weighted by those in each tier and sex category. It is the sum of the ordinary and vested termination rates.*

** *Proposed rates are shown for the mid-point value. Rates between these points have been interpolated.*

Rates of Termination - General OCTA
(Five or More Years of Service)

Age	Current Rate*	Observed Rate	Proposed Rate**
25 – 29	14.71%	-	3.00%
30 – 34	12.50	2.08%	3.00
35 – 39	7.51	4.74	3.00
40 – 44	5.66	2.18	3.00
45 – 49	4.48	1.23	3.00
50 – 54	3.19	1.12	2.50
55 – 59	2.20	0.66	1.50
60 – 64	0.00	1.65	0.00
65 – 69	0.00	6.56	0.00

** Current rate varies by tier and sex. Rate listed is an average weighted by those in each tier and sex category. It is the sum of the ordinary and vested termination rates.*

*** Proposed rates are shown for the mid-point value. Rates between these points have been interpolated.*

Rates of Termination – Safety Law Enforcement and Fire
(Five or More Years of Service)

Age	Current Rate*	Observed Rate	Proposed Rate**
20 – 24	3.22%	0.00%	1.00%
25 – 29	1.82	1.88	1.00
30 – 34	1.27	0.62	1.00
35 – 39	0.75	0.85	0.80
40 – 44	0.49	0.52	0.50
45 – 49	0.19	0.56	0.50
50 – 54	0.11	0.11	0.00
55 – 59	0.00	0.51	0.00
60 – 64	0.00	5.13	0.00

** Rate listed is the sum of the ordinary withdrawal and vested termination rates*

*** Proposed rates are shown for the mid-point value. Rates between these points have been interpolated..*

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

Age	Current Rate*	Observed Rate	Proposed Rate**
25 – 29	9.81%	1.89%	5.00%
30 – 34	8.18	4.69	5.00
35 – 39	5.91	2.69	4.00
40 – 44	4.98	1.94	3.50
45 – 49	3.83	0.76	2.50
50 – 54	2.74	1.34	2.00
55 – 59	1.81	0.00	1.00
60 – 64	0.00	2.70	0.00

** Rate listed is the sum of the ordinary withdrawal and vested termination rates.*

*** Proposed rates are shown for the mid-point value. Rates between these points have been interpolated.*

Chart 12 compares actual to expected terminations of the past three years for 1) General all other, 2) General OCTA, 3) Safety Law & Fire and 4) Safety Probation members.

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

Chart 14-16 shows the same information as Chart 13, but for General OCTA, Safety Law & Fire and Safety Probation members.

Chart 17 shows the current, along with the proposed termination rates for General all other members with five or more years of service.

Chart 18-20 shows the same information as Chart 17, but for General OCTA, Safety Law & Fire and Safety Probation members.

Based upon the recent experience, the withdrawal rates for General and Safety members with less than five years of service have been decreased in most cases. These select rates are now based on years of service only and not age. For General and Safety members with five or more years of service we have lowered the termination rates at most ages.

Chart 12
Actual Number of Terminations Compared to Expected

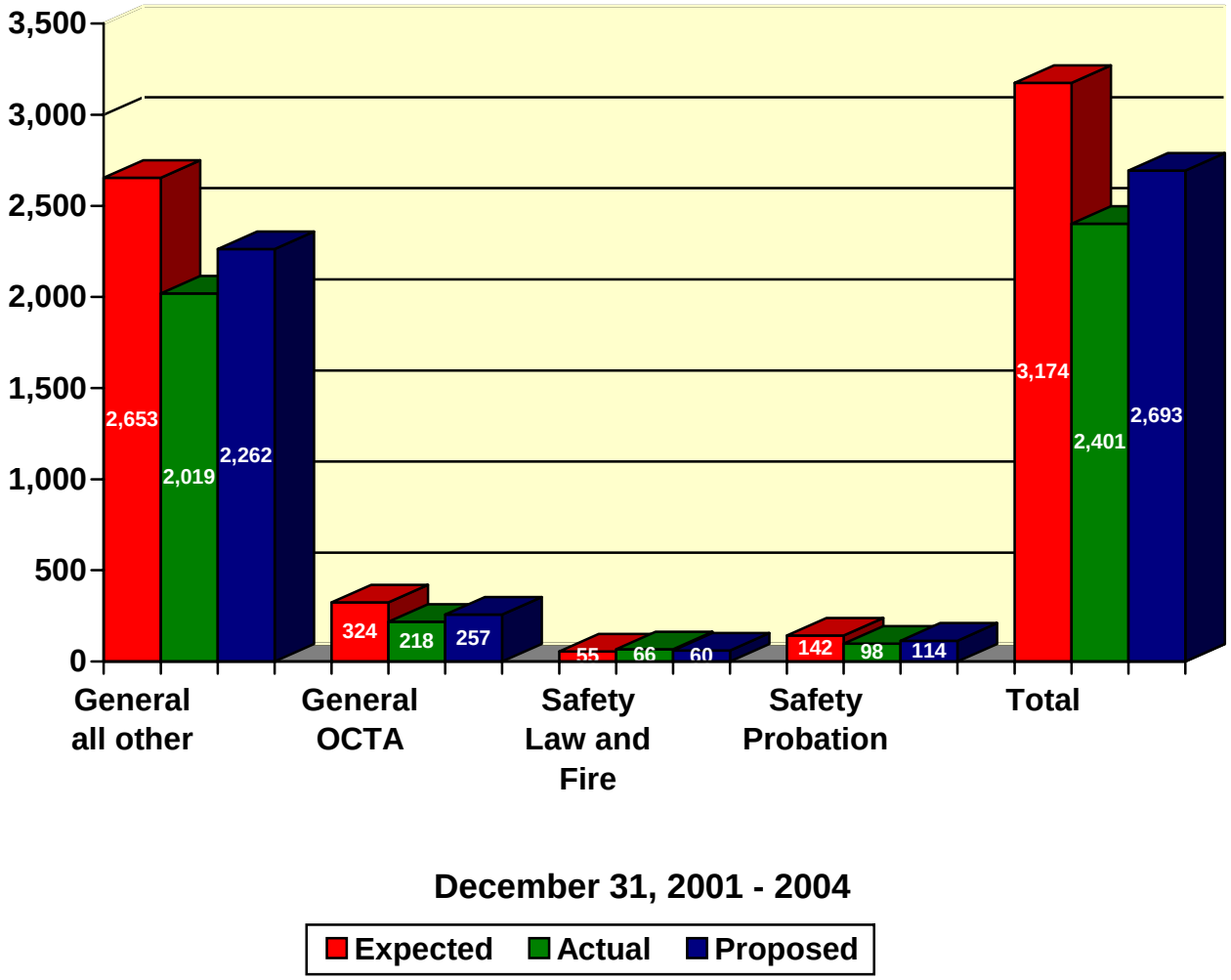


Chart 13
Withdrawal Rates - General all others Members
(Less than 5 Years of Service)

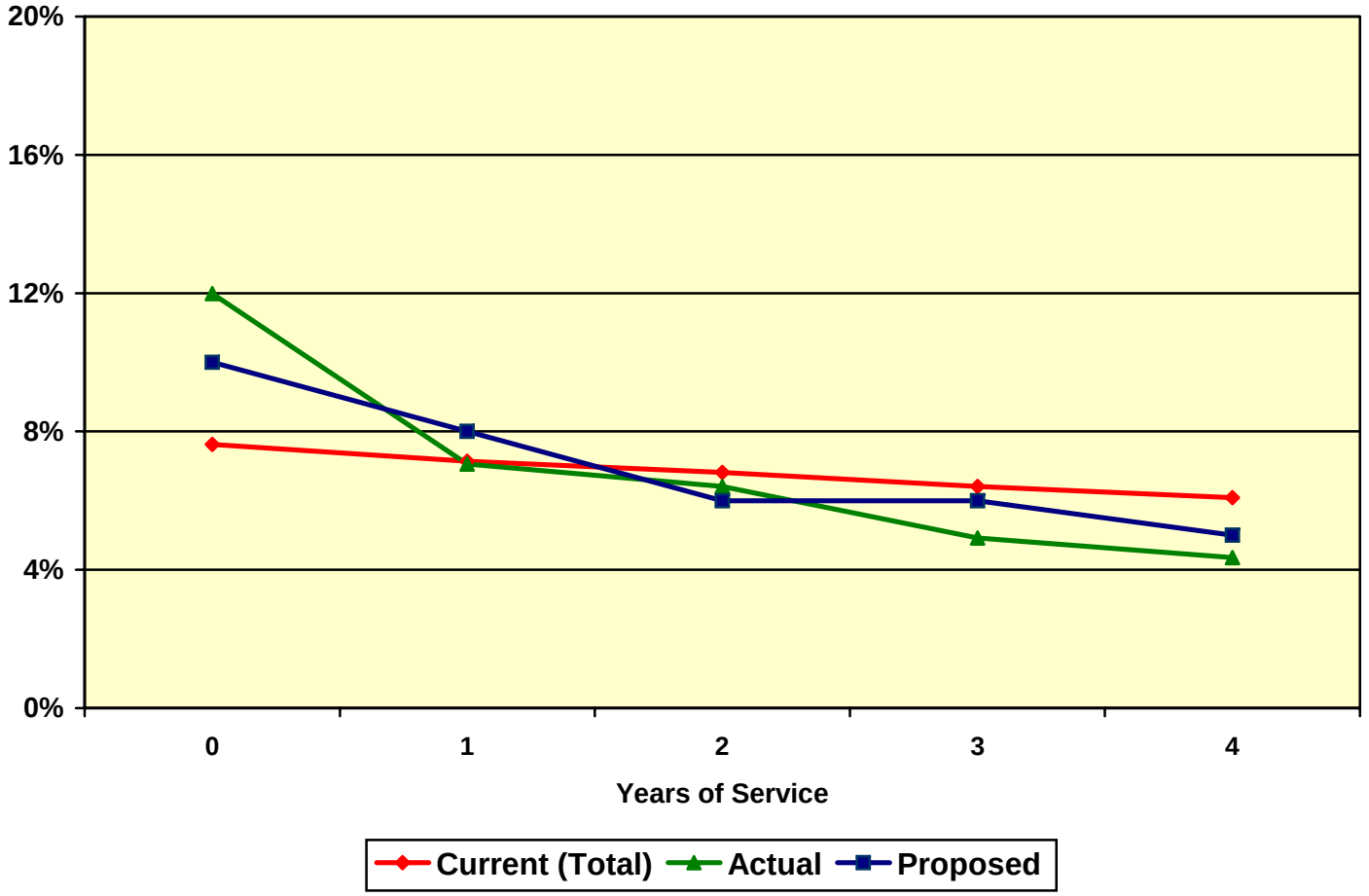


Chart 14
Withdrawal Rates - General OCTA Members
(Less Than 5 Years of Service)

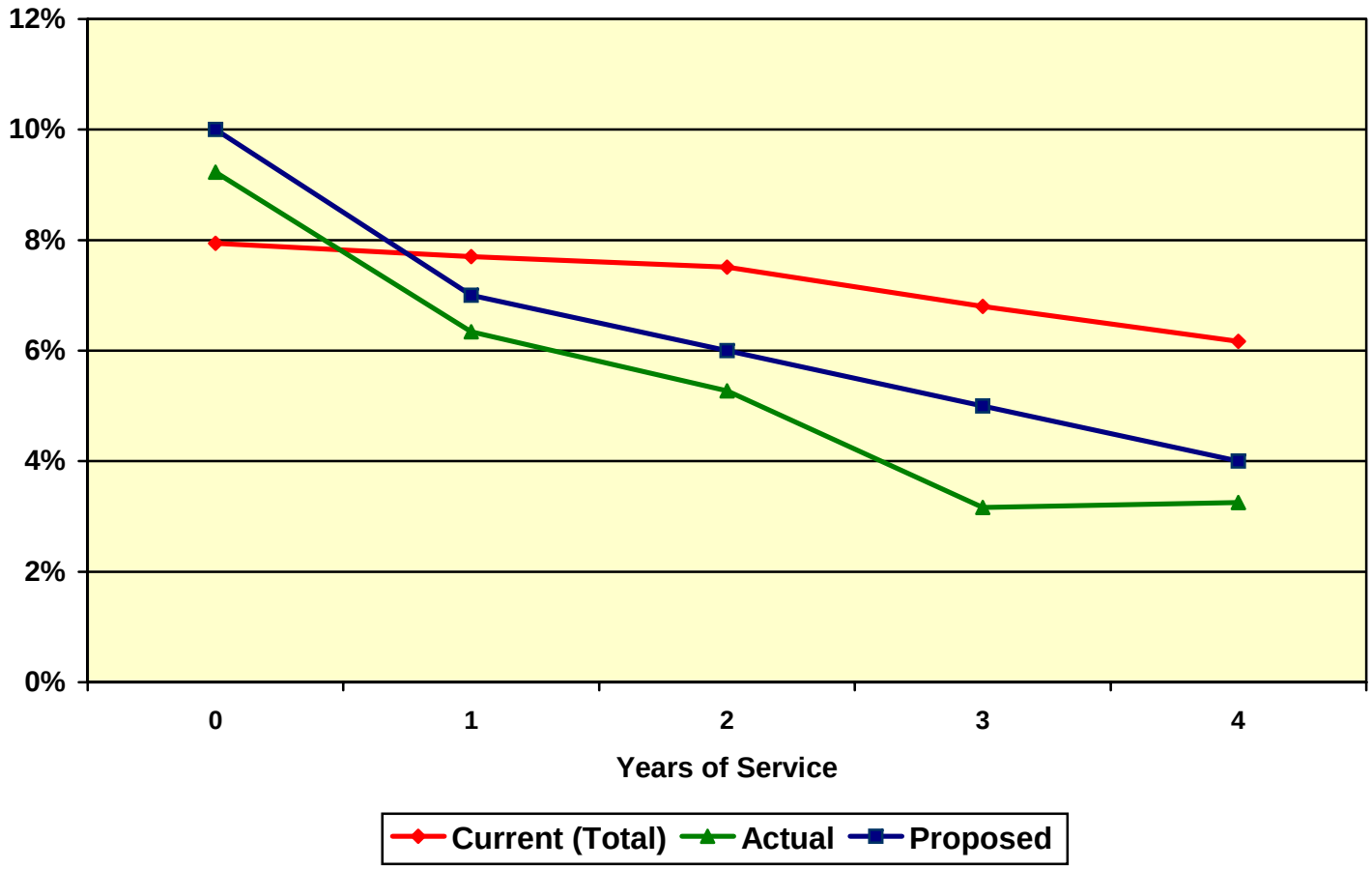


Chart 15
Withdrawal Rates - Safety Law & Fire Members
(Less Than 5 Years of Service)

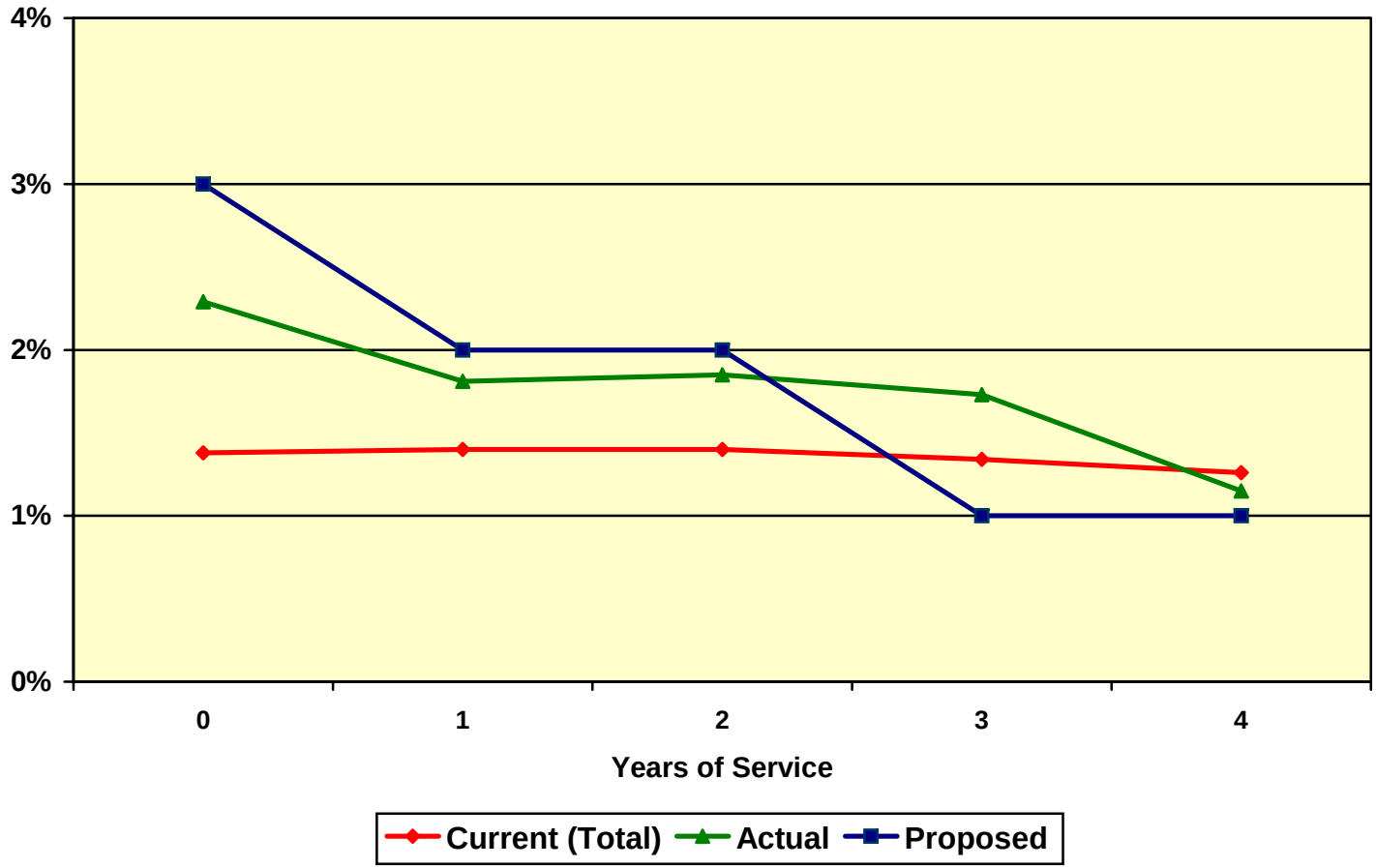


Chart 16
Withdrawal Rates - Safety Probation Members
(Less Than 5 Years of Service)

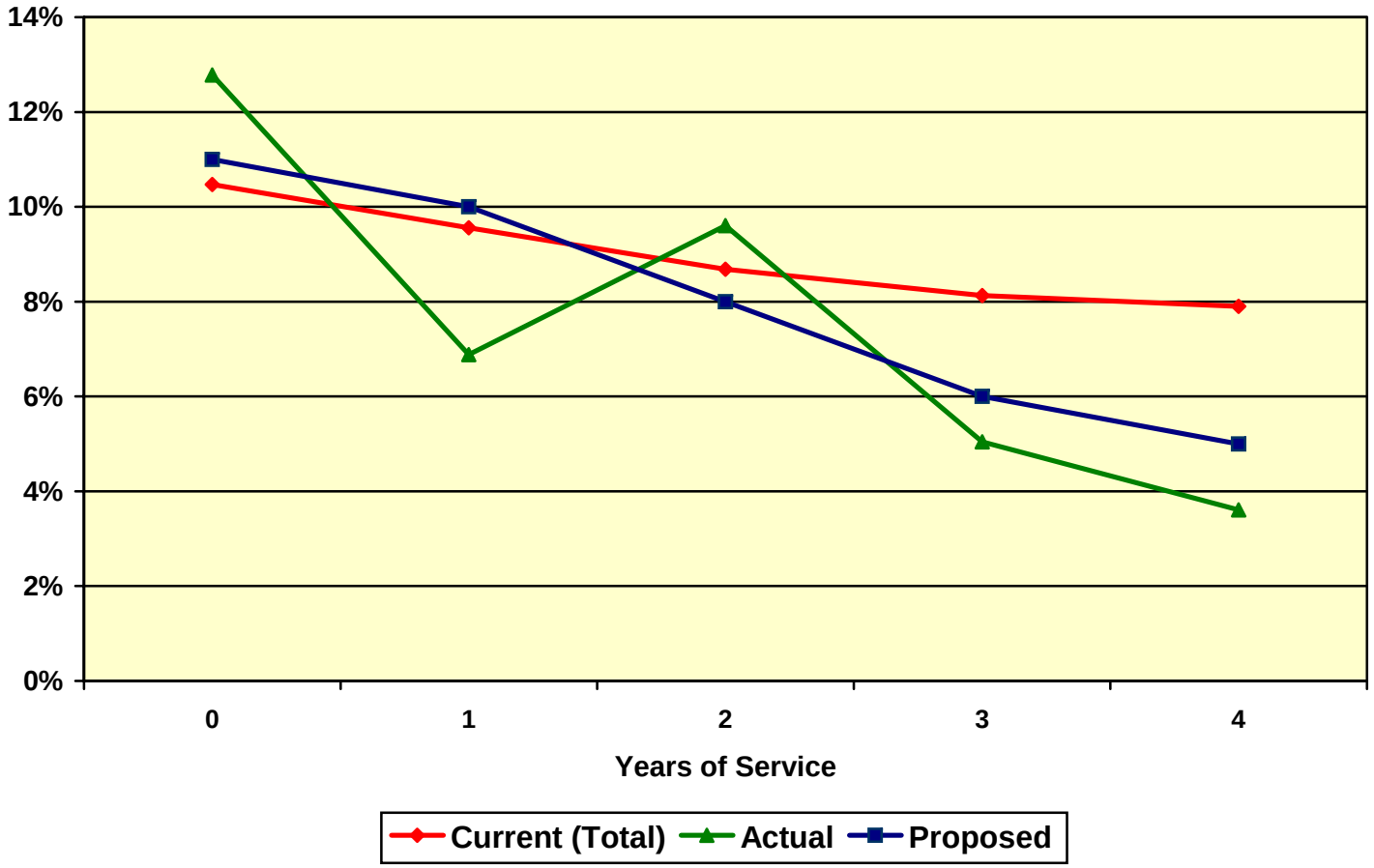


Chart 17
Withdrawal Rates - General all other Members
(5 or More Years of Service)

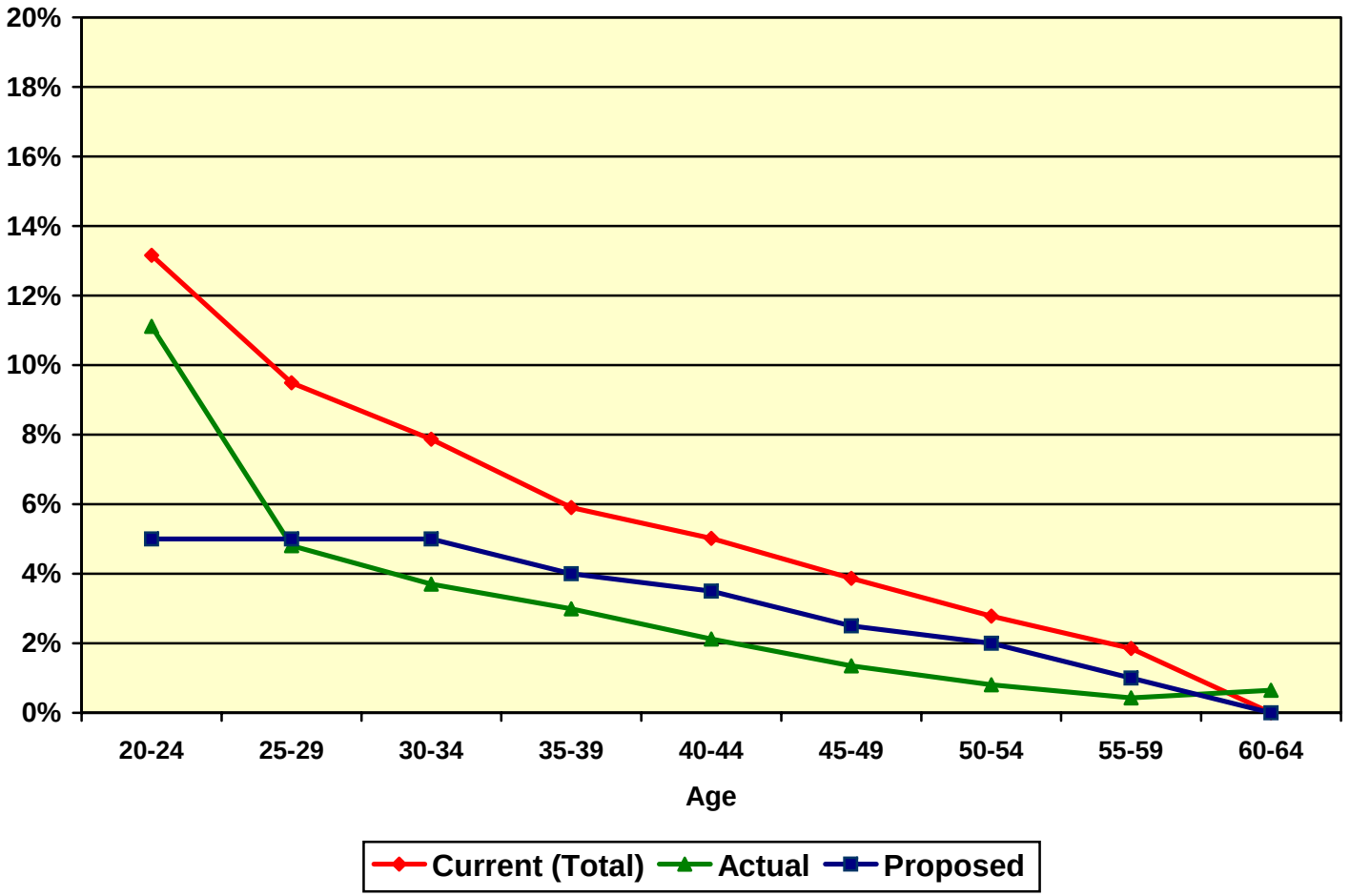


Chart 18
Withdrawal Rates - General OCTA Members
(5 or More Years of Service)

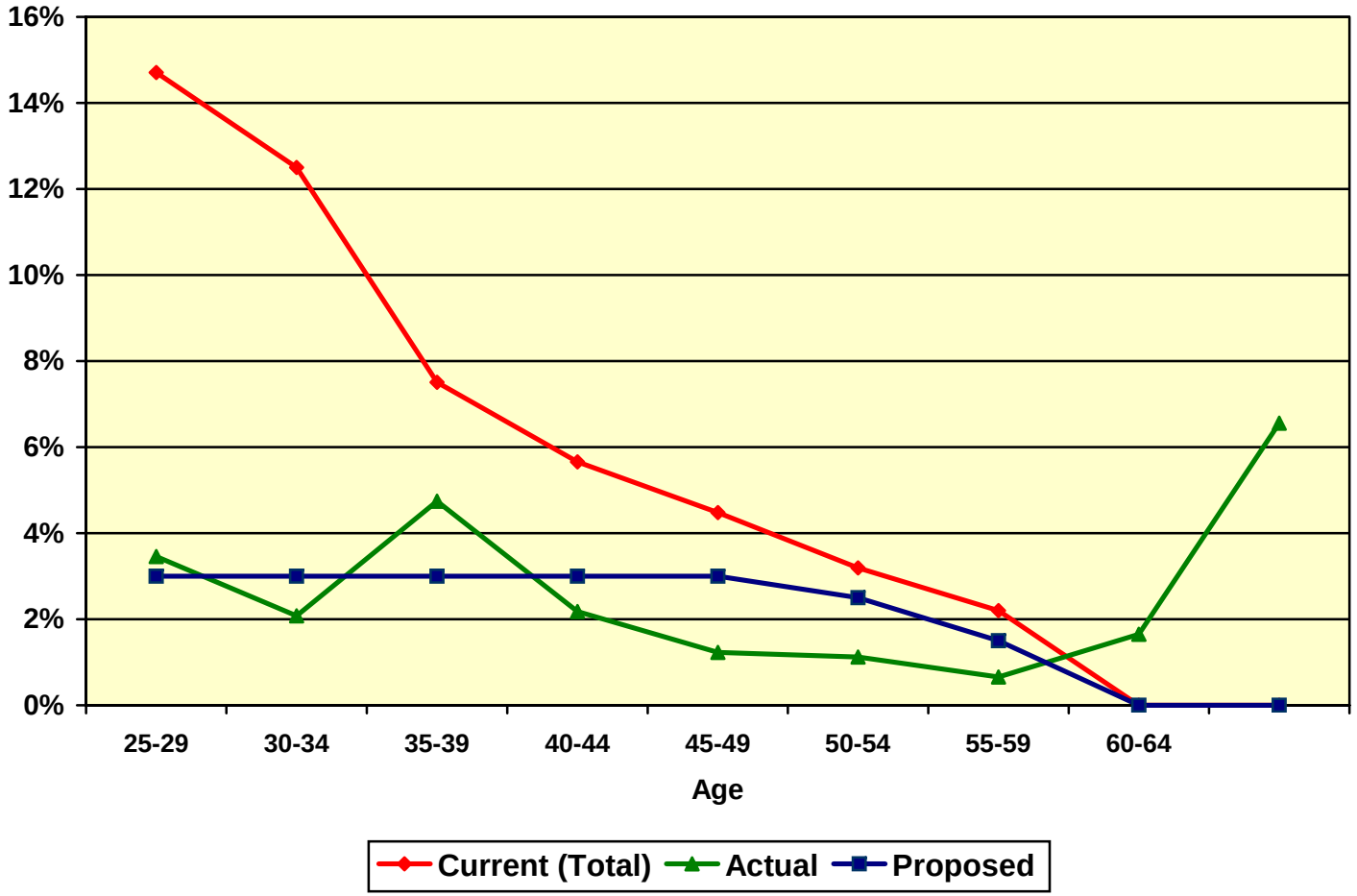


Chart 19
Withdrawal Rates - Safety Law & Fire Members
(5 or More Years of Service)

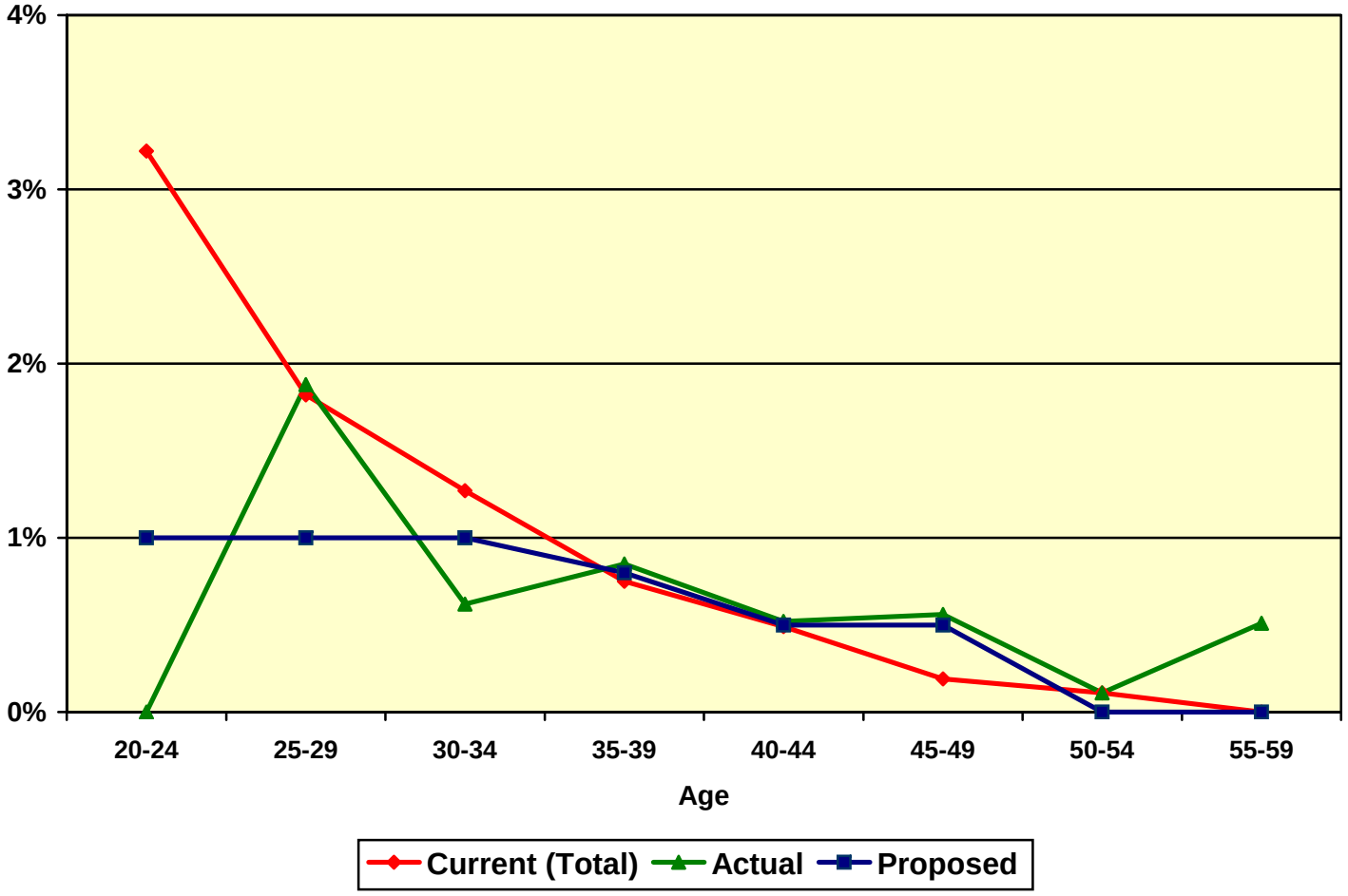
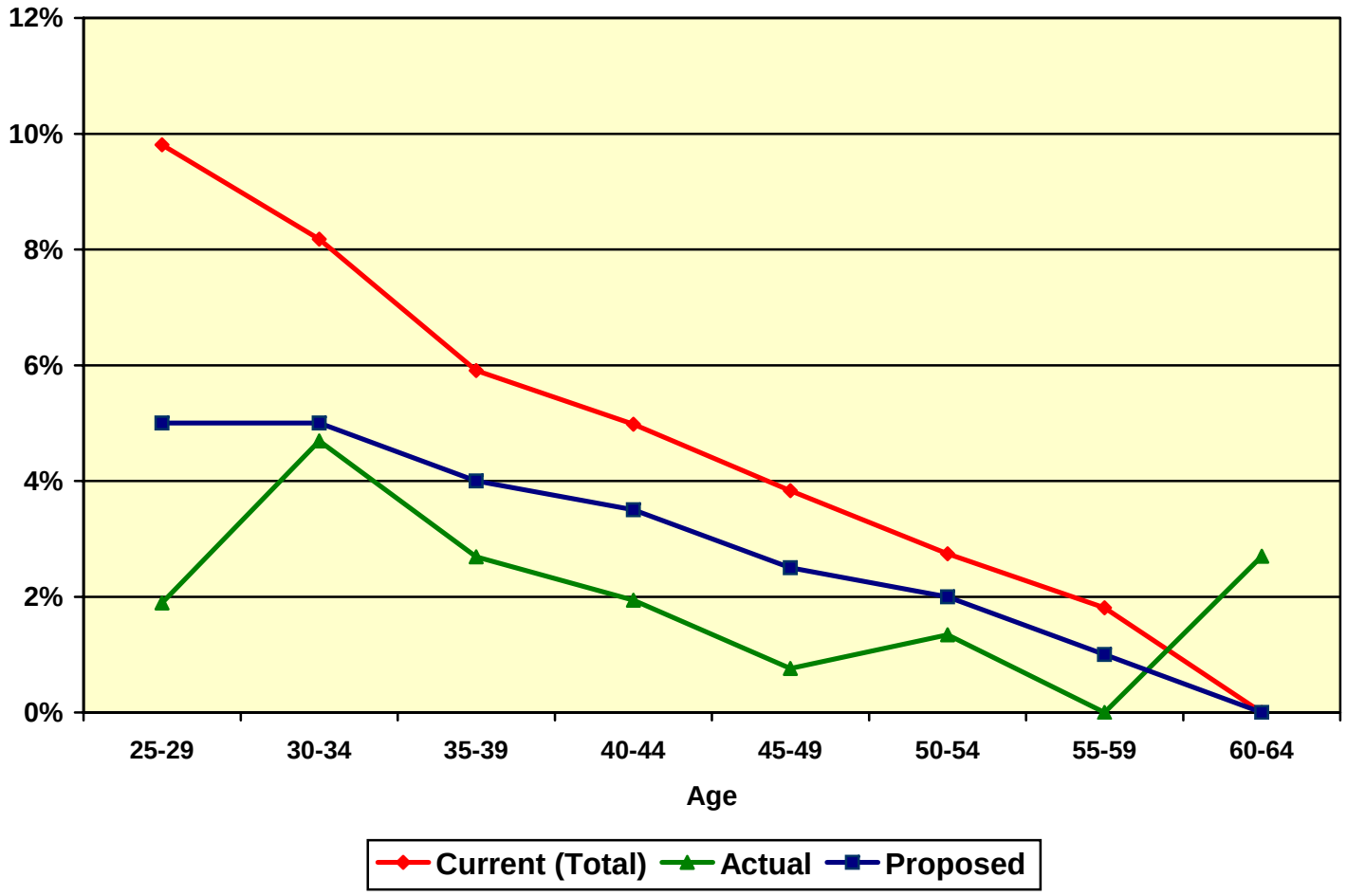


Chart 20
Withdrawal Rates - Safety Probation Members
(5 or More Years of Service)



F. DISABILITY INCIDENCE RATES

When a member becomes disabled, he or she may be entitled to at least a 50% pension (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 all other

Age	Current Rate*	Observed Rate	Proposed Rate
20 – 24	0.000%	0.000%	0.00%
25 – 29	0.017	0.020	0.05
30 – 34	0.063	0.087	0.10
35 – 39	0.101	0.114	0.15
40 – 44	0.168	0.218	0.20
45 – 49	0.230	0.122	0.20
50 – 54	0.309	0.228	0.25
55 – 59	0.406	0.386	0.35
60 – 64	0.513	0.659	0.45
65 – 69	0.000	0.456	0.45

* *Current rate varies by sex. It is the sum of the rates for service connected and non-service connected disability.*

Rates of Disability Incidence – General OCTA

Age	Current Rate*	Observed Rate	Proposed Rate
20 – 24	0.000%	0.000%	0.00%
25 – 29	0.019	0.000	0.00
30 – 34	0.041	0.000	0.05
35 – 39	0.093	0.289	0.10
40 – 44	0.263	0.622	0.40
45 – 49	0.488	0.872	0.70
50 – 54	0.522	0.518	0.80
55 – 59	0.774	1.380	1.00
60 – 64	0.963	1.923	1.50
65 – 69	0.000	1.389	1.50

* *Current rate varies by sex. It is the sum of the rates for service connected and non-service connected disability.*

Rates of Disability Incidence - Safety Law & Fire

Age	Current Rate*	Observed Rate	Proposed Rate
20 – 24	0.098%	0.000%	0.050%
25 – 29	0.099	0.000	0.100
30 – 34	0.171	0.245	0.200
35 – 39	0.358	0.900	0.400
40 – 44	0.584	0.235	0.600
45 – 49	0.803	0.229	0.800
50 – 54	1.285	1.469	1.100
55 – 59	1.699	5.656	3.000
60 – 64	0.000	10.000	4.000

* *Current rate varies by Law Enforcement and Fire. It is the sum of the rates for service and non-service connected disability.*

Rates of Disability Incidence - Safety Probation

Age	Current Rate*	Observed Rate	Proposed Rate
20 – 24	0.000%	0.000%	0.000%
25 – 29	0.023	0.202	0.100
30 – 34	0.066	0.214	0.200
35 – 39	0.133	0.000	0.200
40 – 44	0.306	0.000	0.200
45 – 49	0.393	0.613	0.200
50 – 54	0.497	0.000	0.200
55 – 59	0.648	0.000	0.200
60 – 64	0.835	0.000	0.000

* *Current rate varies by sex. It is the sum of the rates for service and non-service connected disability.*

Chart 21 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. Please note that we have included in the observed disability incidences those member who were pending as of December 31, 2001 but were not granted a disability retirement until after December 31, 2001 (note that these were not included as disabilities in the last experience study). The aggregate number of disabilities in that category is about the same as the disabilities pending as of December 31, 2004 who are expected to be granted by the Board after December 31, 2004.

Chart 22 shows actual disablement rates, compared to the assumed and proposed rates for General all other members. Charts 23-25 graph the same information as Chart 22, but for General OCTA, Safety Law & Fire and Safety Probation members.

Since 58% of disabled General all other members received a service connected disability, we recommend that 60% of the proposed rates be used to anticipate service connected disability retirement. The remaining 40% of the rates will be used to anticipate non-service connected disability.

The following table shows the recommended percentages for service versus non-service connected disability for the remaining groups.

Group	Observed percentage receiving service connected disability	Proposed percentage for disablements receiving service connected disability	Proposed percentage for disablements receiving non-service connected disability
General OCTA	68%	70%	30%
Safety Law & Fire	85%	85%	15%
Safety Probation	100%	85%	15%

Chart 21
Actual Number of Disabilities Compared to Expected

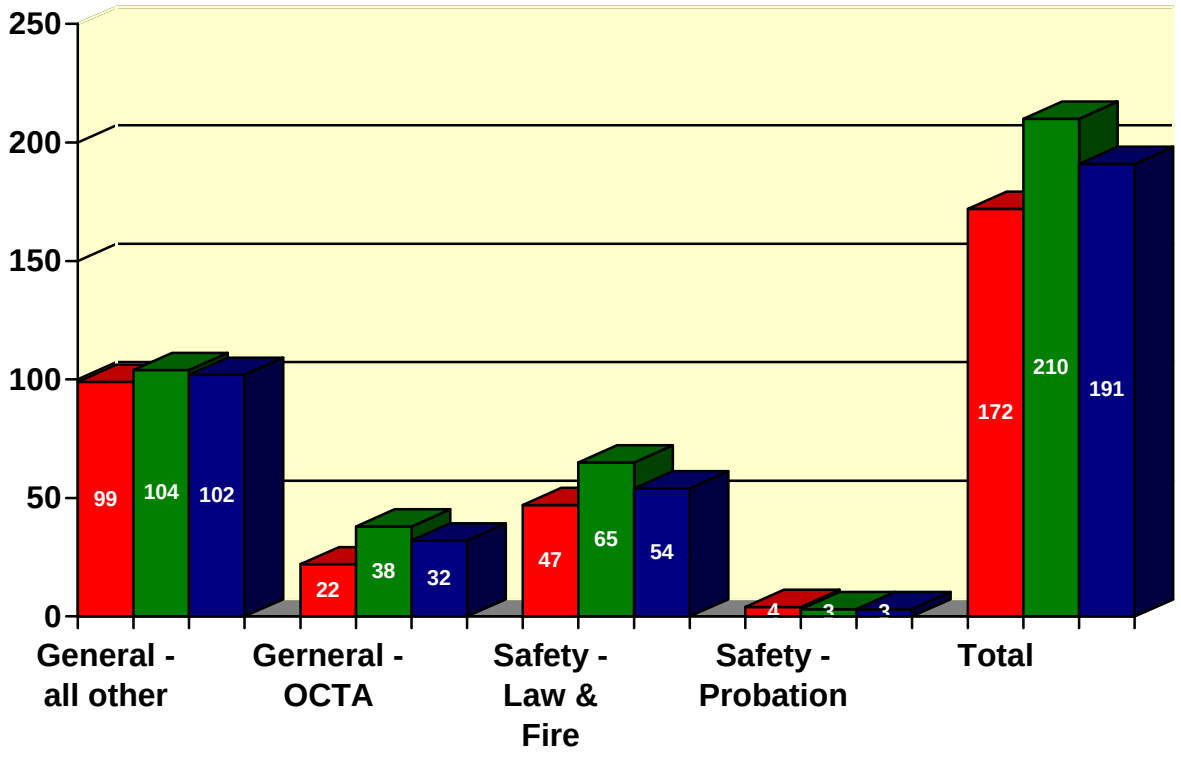


Chart 22
Disablement Rates for General all other Members

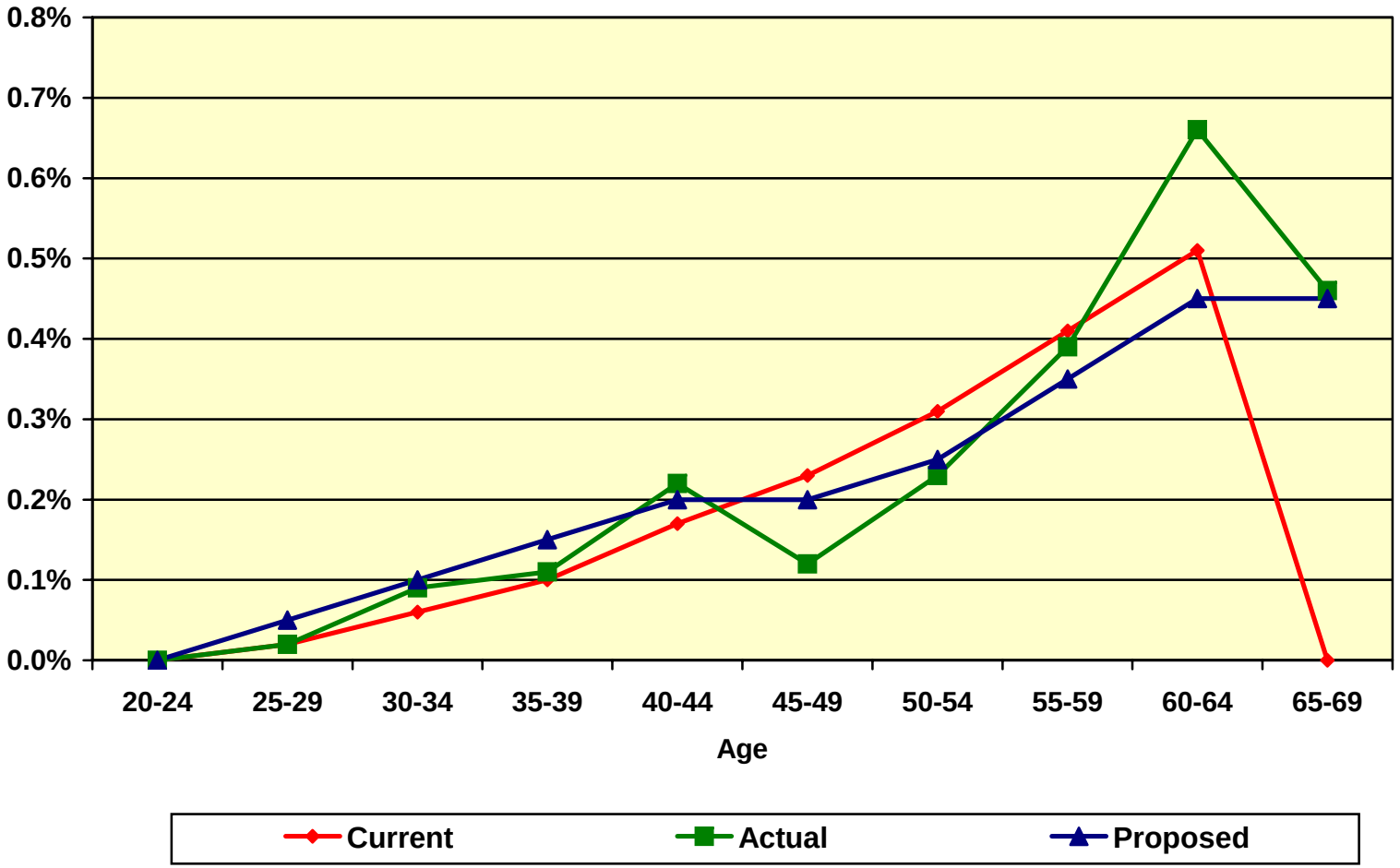


Chart 22
Disablement Rates for General OCTA Members

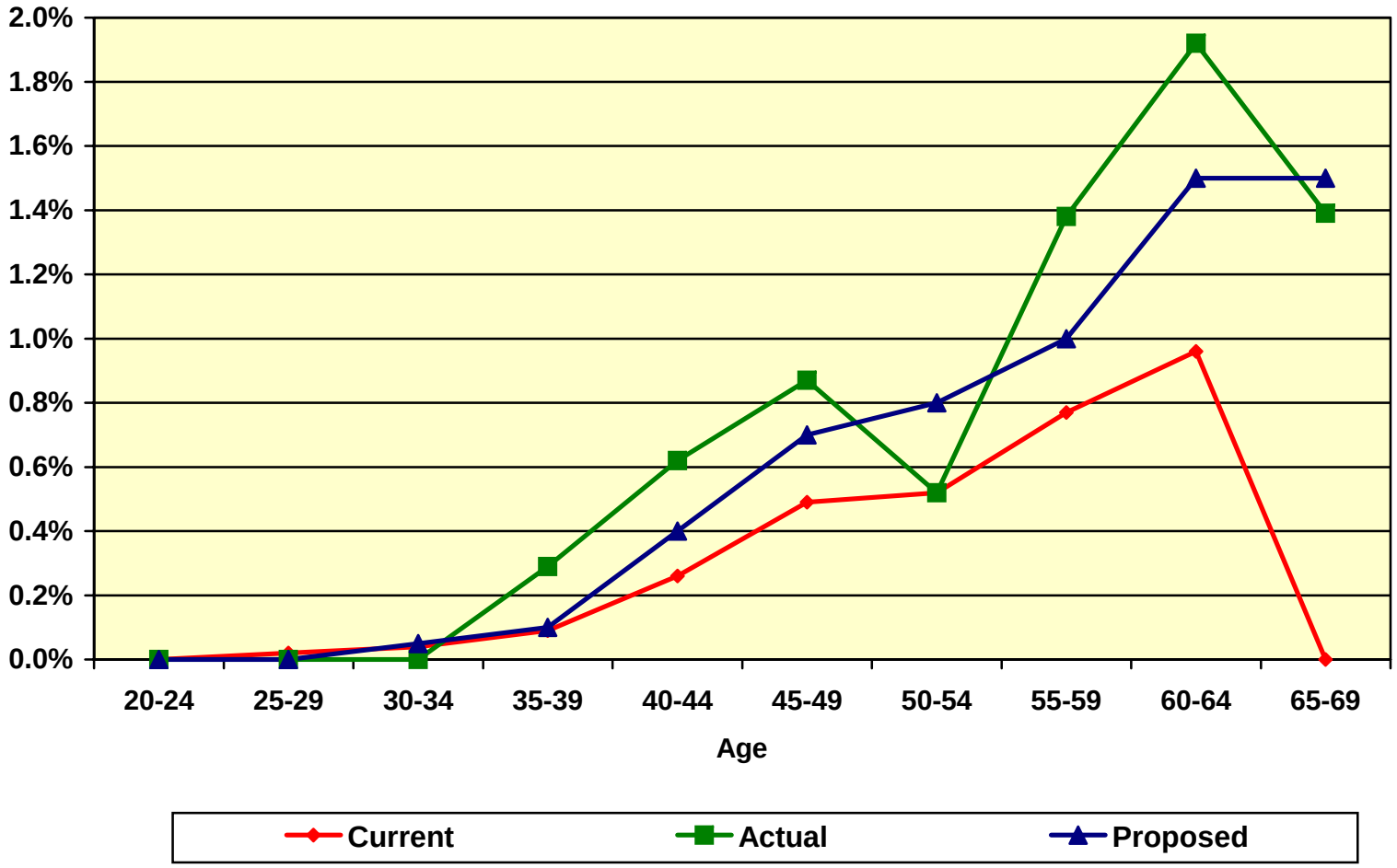


Chart 24
Disablement Rates for Safety Law & Fire Members

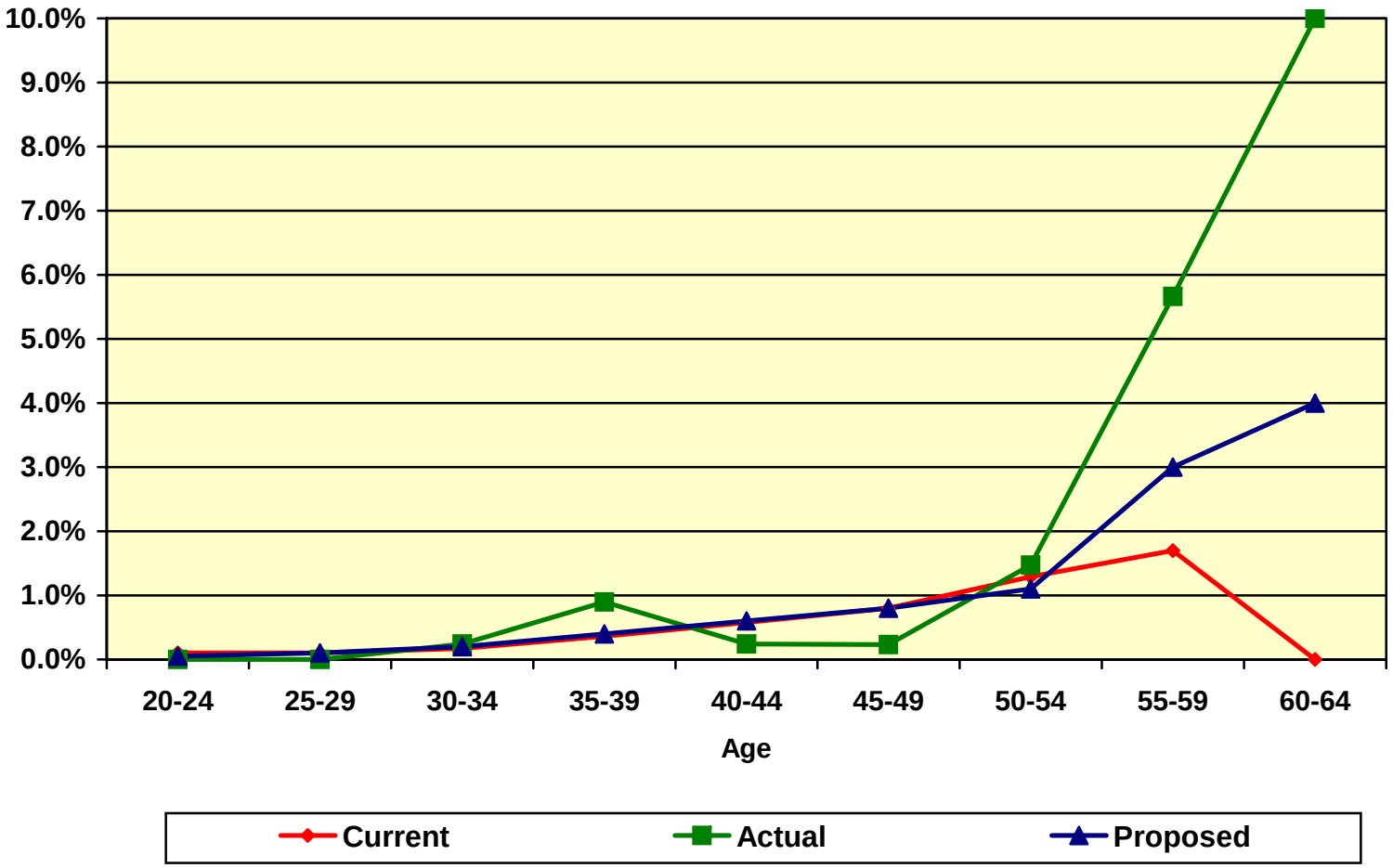
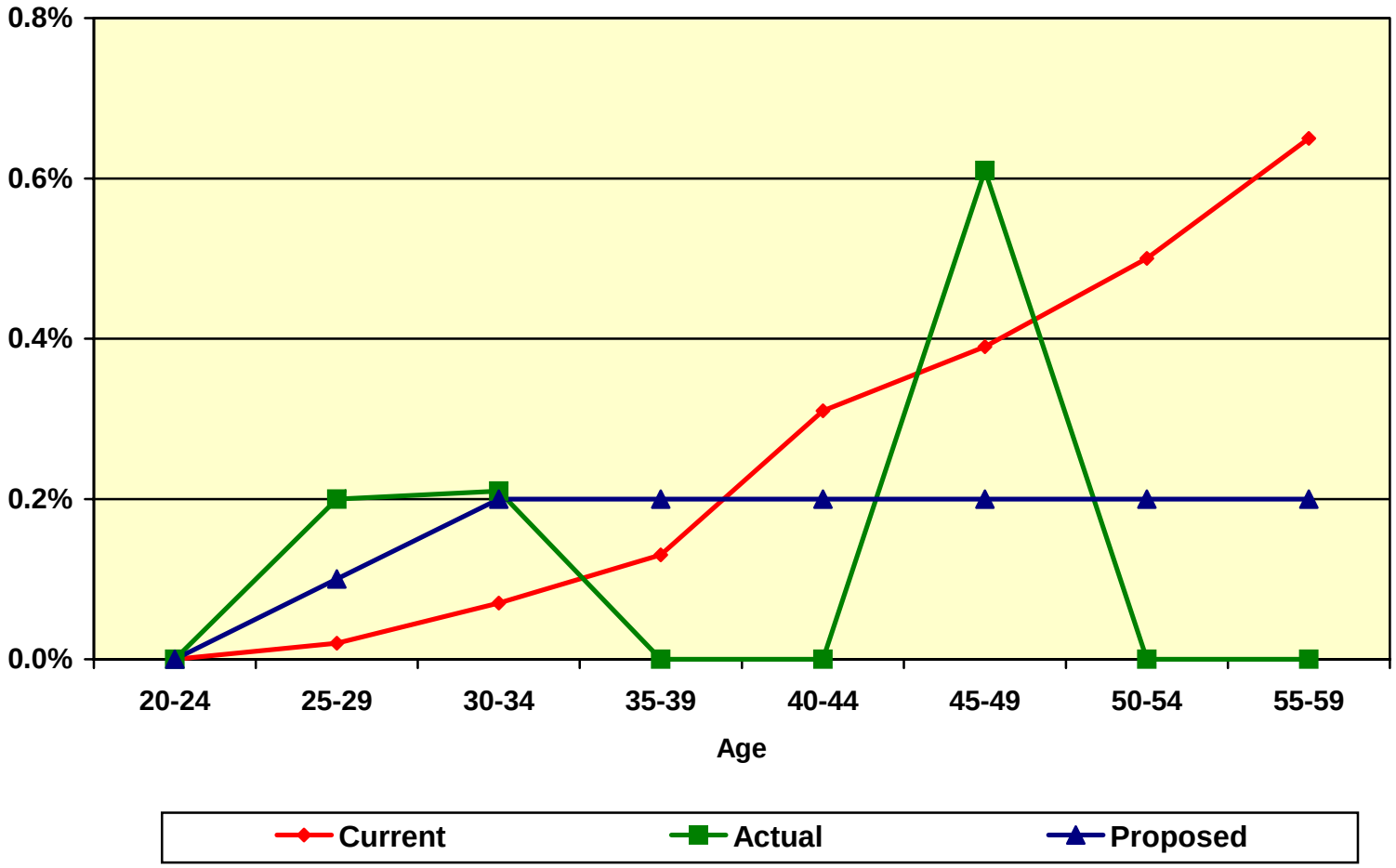


Chart 25
Disablement Rates for Safety - Probation Members



G. MERIT AND LONGEVITY SALARY INCREASES

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

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

The inflationary increases are assumed to follow the general inflation assumption of 4.0% discussed in our separate economic assumption report. We also discussed in that report our assumption that there will be no "across the board" real pay increase. Therefore, the total inflation and real "across the board" increase of 4.00% is used as the assumed annual rate of payroll growth.

The merit and longevity 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 actually granted to the members. Increases are measured separately for General and Safety members. Because of the volatility inherent in the data if we include all part-time and full-time members, we have compared the salaries only for full-time employees. This is accomplished by:

- Measuring each member's actual salary increase over each year of the experience period;
- Categorizing these increases into age groups;
- Removing the inflation and real "across the board" pay increases 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."

Because the current merit and longevity salary increase assumption of 0.5% per year is significantly lower than the assumptions used by both our Northern and Southern California 1937 Act clients, we have also compared the observed increases determined in the account process against those used by our other 1937 Act clients.

Based on the above processes, we are recommending increases in the merit and longevity assumptions for both General and Safety members. The new assumptions increase the promotional and merit increase from an average of about 0.5% per annum to an average of about 1.1% per annum.

The following table shows the average increases over the three-year experience period (January 1, 2002 through December 31, 2004) before removing the inflationary component:

	Average Increase (%)	
Age Group	General Members	Safety Members
20-24	8.93%	12.49%
25-29	10.67	8.12
30-34	12.87	5.38
35-39	14.19	3.33
40-44	8.62	2.40
45-49	8.38	2.34
50-54	7.91	2.67
55-59	7.03	2.46
60-64	5.60	1.02
65-69	4.20	5.19
70+	2.99	-

The increase in average salary for all ages over this three-year period was about 4.25% for General members and 1.14% for safety members. The following table shows the average merit and longevity increases for the three-year period.

	Average Merit and Longevity Increase (%)	
Age Group	General Members	Safety Members
20-24	5.51%	11.47%
25-29	5.69	7.01
30-34	6.71	4.29
35-39	6.79	2.22
40-44	3.31	1.29
45-49	3.19	1.22
50-54	2.74	1.54
55-59	1.51	1.31
60-64	0.67	-0.11
65-69	-0.45	3.99
70+	-1.32	-

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

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

Age Group	General Members		Safety Members	
	Current	Proposed	Current	Proposed*
20-24	0.50%	7.00%	0.50%	6.00%
25-29	0.50	4.00	0.50	4.50
30-34	0.50	2.80	0.50	3.00
35-39	0.50	2.00	0.50	1.00
40-44	0.50	1.60	0.50	0.50
45-49	0.50	1.40	0.50	0.50
50-54	0.50	1.20	0.50	0.50
55-59	0.50	0.90	0.50	0.50
60-64	0.50	0.60	0.50	0.00
65+	0.50	0.50	0.50	0.00

* Note: Since the 1.14% observed average salary increase for Safety members was lower than the 2.90% actual change in the CPI for the Orange County area during the same period, we have assigned equal credibility to the 1.14% observed average salary increase and the 2.90% actual CPI increase in developing our recommended Safety merit and longevity salary increase assumption.

For reference purposes only, the Board should be aware that, depending on age, the proposed merit and longevity assumptions are still 0.5% to 1.5% lower than those adopted by Segal's other 1937 Act clients. We are not recommending a higher increase at this time but we will continue to monitor this assumption for the Board. We will also continue to monitor the need for any "across the board" component of the salary increase assumption.

Charts 26 and 27 provide a graphical comparison of the current, actual experience and proposed merit and longevity increases.

Chart 26
Merit and Longevity Salary Increase Rates for General Members

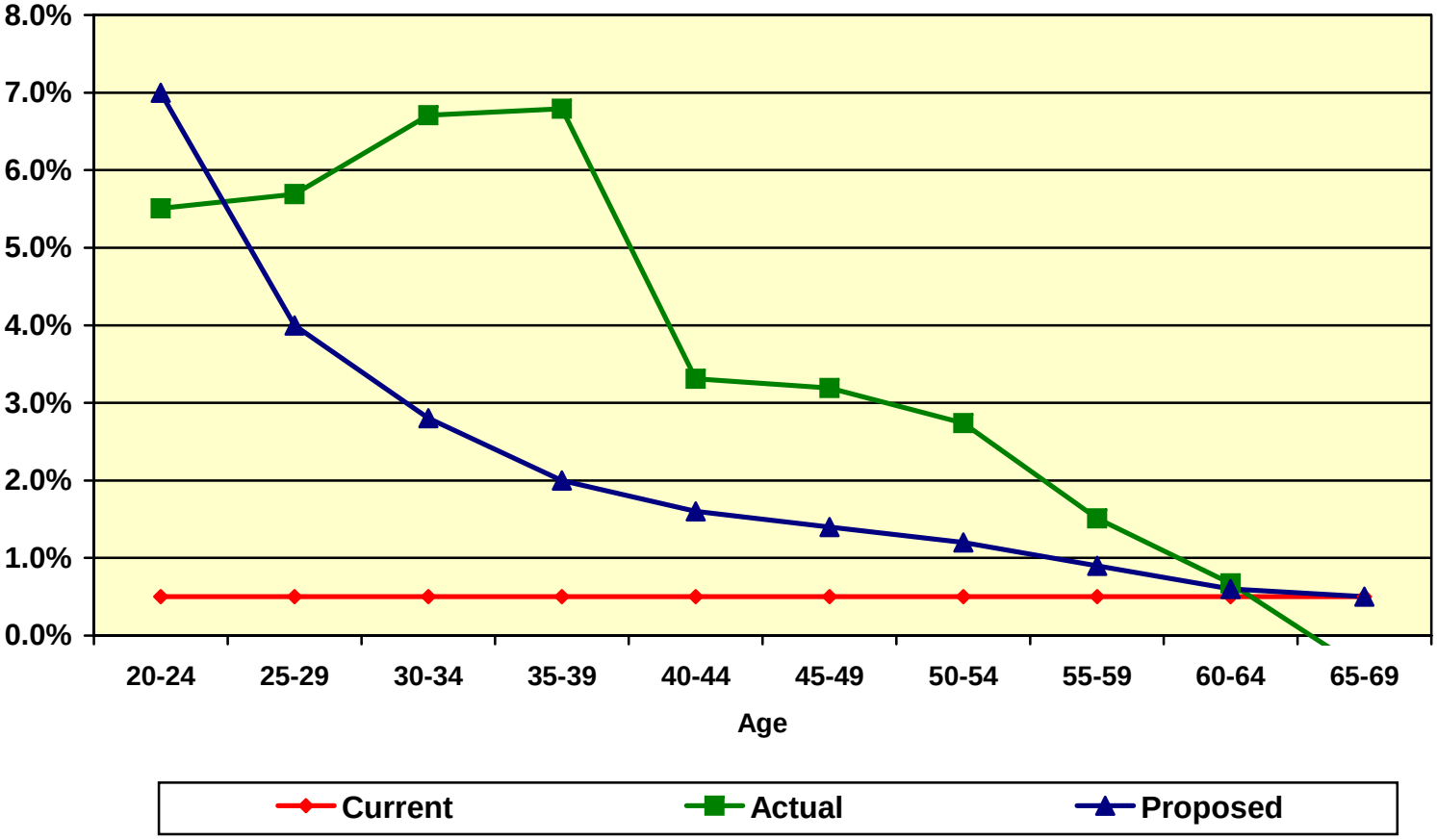
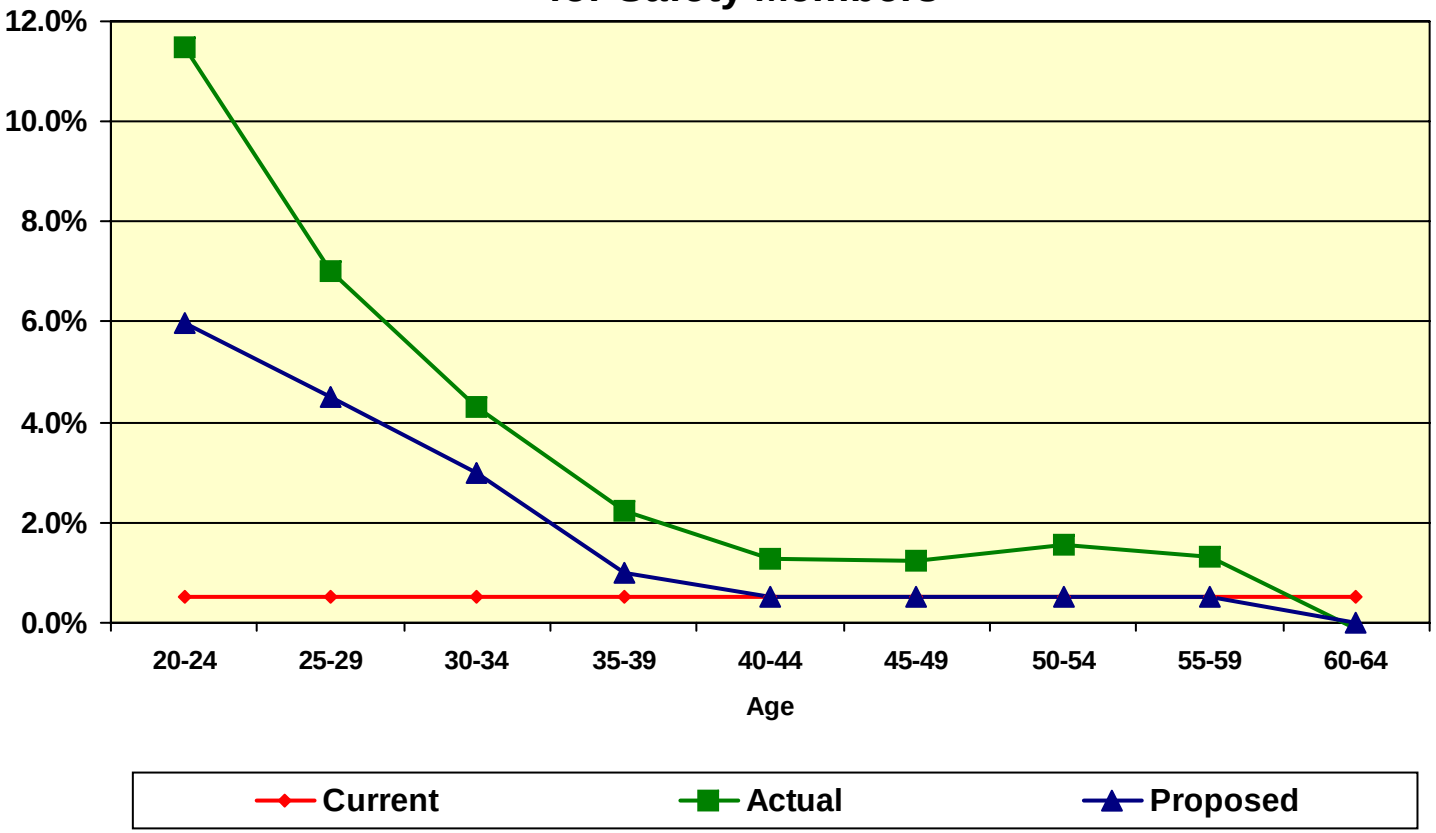


Chart 27
Merit and Longevity Salary Increase Rates for Safety Members



H. SERVICE FROM UNUSED SICK LEAVE CONVERSION

We understand from our discussion with the System that only certain members (e.g., for County employees, only Tier 1 members) are allowed to convert unused sick leave to service credit for retirement purposes. Furthermore, out the members eligible to convert such service, most bargaining agreements we have reviewed would only allow the members to convert up to 96 hours and that after the conversion, a members would still have to maintain a minimum sick leave accrual (in most cases it is at least 280 hours).

Since 96 hours are not significant when compared to the total service accrual at retirement, we do not recommend introducing an assumption at this time to anticipate the value of retirement benefits that are produced from the conversion of unused sick leave at retirement. This means that the cost of this benefit will be recognized in the System's actuarial accrued liability as sick leave conversions actually take place.

I. TERMINAL PAY

Under the Ventura Court Ruling, employers agreed to include several additional pay elements as Earnable Compensation. There are two categories within which these additional pay elements fall:

- Ongoing Pay Elements – Those that are expected to be received relatively uniformly over a member's employment years; and
- Terminal Pay Elements – Those that are expected to be received only during the member's final average earnings pay period.

The first category is recognized in the actuarial calculations by virtue of being included in the current pay of active members. The second category requires an actuarial assumption to anticipate its impact on a member's retirement benefit.

We are currently working with the System to collect the data necessary to study the impact of terminal pay on final average salary. We are recommending that the Board maintain the current assumptions until the data is available for our review.

The current and recommended terminal pay assumptions are provided in the following table:

Member Category	Terminal Pay Assumptions for Service and Disability Retirement - Current and Recommended Assumptions
General and Probation Tier 1	4.5%
General and Probation Tier 2	2.1%
Safety Law Enforcement Tier 1	9.3%
Safety Law Enforcement Tier 2	6.3%
Safety Fire Tier 1	5.1%
Safety Fire Tier 2	2.4%

APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS

Section 1 – Post-Retirement Mortality Rates

Healthy:	General males and Safety - 1983 Group Annuity Mortality Table for males. General females and beneficiaries of Safety – 1983 Group Annuity Mortality Table for females.
Disabled:	For General members, 60% of the CHE 1981 General Disability Mortality Table. For Safety members, 60% of the 1981 Safety Disability Mortality Table.
Employee Contribution Rates and Optional Benefits:	For General members, 1983 Group Annuity Mortality Table 50% male and 50% females. For Safety members, 1983 Group Annuity Mortality Table for males.

Termination Rates Before Retirement:

General (Non-OCTA) - Male

Age	Ordinary Withdrawal	Vested Withdrawal	Ordinary Disability	Duty Disability	Ordinary Death
25	12.56%	0.70%	0.00%	0.01%	0.05%
30	8.88	0.90	0.01	0.04	0.06
35	6.16	1.00	0.02	0.10	0.09
40	4.32	1.10	0.04	0.10	0.12
45	3.28	0.74	0.06	0.14	0.22
50	2.64	0.41	0.11	0.16	0.39
55	2.16	0.16	0.21	0.19	0.61
60	0.00	0.00	0.52	0.19	0.92
65	0.00	0.00	0.00	0.00	1.56

General (Non-OCTA) - Female

Age	Ordinary Withdrawal	Vested Withdrawal	Ordinary Disability	Duty Disability	Ordinary Death
25	9.90%	0.20%	0.0%	0.00%	0.03%
30	7.20	0.80	0.01	0.04	0.03
35	5.51	1.00	0.03	0.05	0.05
40	4.44	1.02	0.06	0.06	0.07
45	3.54	1.18	0.10	0.14	0.10
50	2.53	0.60	0.15	0.16	0.16
55	1.86	0.28	0.21	0.19	0.25
60	0.00	0.00	0.26	0.19	0.42
65	0.00	0.00	0.00	0.00	0.71

Termination Rates Before Retirement (Continued):

General (OCTA) - Male

Age	Ordinary Withdrawal	Vested Withdrawal	Ordinary Disability	Duty Disability	Ordinary Death
25	15.07%	0.70%	0.00%	0.01%	0.05%
30	10.66	0.90	0.01	0.02	0.06
35	7.39	1.00	0.02	0.04	0.09
40	5.18	1.10	0.04	0.05	0.12
45	3.94	0.74	0.06	0.15	0.22
50	3.17	0.41	0.11	0.22	0.39
55	2.59	0.16	0.21	0.40	0.61
60	0.00	0.00	0.52	0.63	0.92
65	0.00	0.00	0.00	0.00	1.56

General (OCTA) - Female

Age	Ordinary Withdrawal	Vested Withdrawal	Ordinary Disability	Duty Disability	Ordinary Death
25	17.00%	0.20%	0.00%	0.00%	0.03%
30	15.10	0.80	0.01	0.04	0.03
35	12.00	1.00	0.03	0.05	0.05
40	7.50	1.02	0.06	0.10	0.07
45	4.73	1.18	0.10	0.90	0.10
50	3.38	0.60	0.15	1.00	0.16
55	2.48	0.28	0.21	1.00	0.25
60	0.00	0.00	0.26	1.00	0.42
65	0.00	0.00	0.00	0.00	0.71

Termination Rates Before Retirement (Continued):

Safety – Law Enforcement

Age	Ordinary Withdrawal	Vested Withdrawal	Ordinary Disability	Duty Disability	Ordinary Death
25	1.75%	0.34%	0.00%	0.11%	0.05%
30	1.18	0.29	0.01	0.13	0.06
35	0.67	0.25	0.02	0.32	0.09
40	0.26	0.26	0.04	0.66	0.12
45	0.00	0.22	0.12	0.66	0.22
50	0.00	0.15	0.23	0.66	0.39
55	0.00	0.00	0.00	1.00	0.61
60	0.00	0.00	0.00	0.00	0.92
65	0.00	0.00	0.00	0.00	0.00

Safety – Fire Authority

Age	Ordinary Withdrawal	Vested Withdrawal	Ordinary Disability	Duty Disability	Ordinary Death
25	1.75%	0.34%	0.00%	0.03%	0.05%
30	1.18	0.29	0.01	0.04	0.06
35	0.67	0.25	0.02	0.05	0.09
40	0.26	0.26	0.04	0.09	0.12
45	0.00	0.22	0.12	0.50	0.22
50	0.00	0.15	0.23	1.20	0.39
55	0.00	0.00	0.00	2.00	0.61
60	0.00	0.00	0.00	0.00	0.92
65	0.00	0.00	0.00	0.00	0.00

Termination Rates Before Retirement (Continued):

Safety – Probation Officers - Male

Age	Ordinary Withdrawal	Vested Withdrawal	Ordinary Disability	Duty Disability	Ordinary Death
25	12.56%	0.70%	0.00%	0.01%	0.05%
30	8.88	0.90	0.01	0.04	0.06
35	6.16	1.00	0.02	0.10	0.09
40	4.32	1.10	0.04	0.20	0.12
45	3.28	0.74	0.06	0.28	0.22
50	2.64	0.41	0.11	0.32	0.39
55	2.16	0.16	0.21	0.38	0.61
60	0.00	0.00	0.52	0.38	0.92
65	0.00	0.00	0.00	0.00	1.56

Safety – Probation Officers - Female

Age	Ordinary Withdrawal	Vested Withdrawal	Ordinary Disability	Duty Disability	Ordinary Death
25	9.90%	0.20%	0.00%	0.00%	0.03%
30	7.20	0.80	0.01	0.04	0.03
35	5.51	1.00	0.03	0.05	0.05
40	4.44	1.02	0.06	0.12	0.07
45	3.54	1.18	0.10	0.28	0.10
50	2.53	0.60	0.15	0.32	0.16
55	1.86	0.28	0.21	0.38	0.25
60	0.00	0.00	0.26	0.38	0.42
65	0.00	0.00	0.00	0.00	0.71

Retirement Rates:

Age	General Members and Safety Probation Officers		Law Enforcement and Fire Authority
	Male	Female	
50	2.00%	2.93%	26.60%
51	1.44	1.90	20.00
52	1.90	2.03	20.00
53	2.15	2.29	20.00
54	2.37	2.25	20.00
55	3.26	4.05	20.00
56	4.10	3.70	20.00
57	4.86	5.14	20.00
58	5.08	5.23	20.00
59	5.95	5.58	20.00
60	6.32	7.21	100.00
61	8.29	9.25	100.00
62	11.98	13.00	100.00
63	11.44	11.52	100.00
64	12.00	12.07	100.00
65	15.00	19.40	100.00
66	13.12	19.46	100.00
67	14.55	20.89	100.00
68	21.14	20.94	100.00
69	21.42	37.25	100.00
70	100.00	100.00	100.00

Retirement Age and Benefit for Deferred Vested Members:

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

General Age:	57
Safety Age:	50

Future Benefit Accruals:

1.0 year of service per year for the full-time employees. Continuation of current partial service accrual for part-time employees. There is no assumption to anticipate conversion of unused sick leave at retirement.

Unknown Data for Members:

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

Inclusion of Deferred Vested Members:

All deferred vested members are included in the valuation.

Percent Married:

80% of male members; 50% of female members.

Age of Spouse:

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

Net Investment Return:

7.50%

Employee Contribution Crediting Rate:

5.00%, compounded semi-annually.

Consumer Price Index:

Increase of 4.0% per year.

Salary Increases:

Annual Rate of Compensation Increase

Inflation: 4.0%; plus the following Merit and Longevity increases based age.

Age	General	Safety
25	0.5%	0.5%
30	0.5	0.5
35	0.5	0.5
40	0.5	0.5
45	0.5	0.5
50	0.5	0.5
55	0.5	0.5
60	0.5	0.5
65	0.5	0.5

There is no "across the board" salary increases (other than inflation).

Terminal Pay Assumptions:

Additional pay elements are expected to be received during a member's final average earnings period. The percentages used in this valuation are:

	Tier 1	Tier 2
General including Safety Probation	4.50%	2.10%
Law Enforcement	9.30%	6.30%
Fire Protection	5.10%	2.40%

Please note that the terminal pay assumptions are the same for service and disability retirements.

APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS

Section 1 – Post-Retirement Mortality Rates

Healthy: For General Members and Beneficiaries: 1994 Group Annuity Mortality Table set forward one year.

For Safety Members and Beneficiaries: 1994 Group Annuity Mortality Table set forward one year.

Disabled: For General Members and Safety members: 1994 Group Annuity Mortality Table set forward five years.

Employee Contribution Rate: For General members, 1994 Group Annuity Mortality Table set forward one year weighted 40% male and 60% female.

For Safety and Probation members, 1994 Group Annuity Mortality Table set forward one year weighted 80% male and 20% female.

Section 2 - Termination Rates Before Retirement:

Healthy Mortality:

	Rate (%) Mortality			
	General		Safety	
Age	Male	Female	Male	Female
25	0.07%	0.03%	0.07%	0.03%
30	0.08	0.04	0.08	0.04
35	0.09	0.05	0.09	0.05
40	0.12	0.08	0.12	0.08
45	0.17	0.10	0.17	0.10
50	0.29	0.16	0.29	0.16
55	0.49	0.26	0.49	0.26
60	0.90	0.51	0.90	0.51
65	1.62	0.97	1.62	0.97

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

Section 2 - Termination Rates Before Retirement (continued):
Disability Incidence Rates:

	Rate (%)			
	Disability			
Age	General all other[1]	General OCTA[2]	Safety – Law & Fire[3]	Safety - Probation[4]
20	0.00%	0.00%	0.05%	0.00%
25	0.03	0.00	0.08	0.06
30	0.08	0.03	0.16	0.16
35	0.13	0.08	0.32	0.20
40	0.18	0.28	0.52	0.20
45	0.20	0.58	0.72	0.20
50	0.23	0.76	0.98	0.20
55	0.31	0.92	2.24	0.20
60	0.41	1.30	3.60	0.08

(1) 60% of General all other disabilities are assumed to be duty disabilities. The other 40% are assumed to be ordinary disabilities.

(2) 70% of General - OCTA disabilities are assumed to be duty disabilities. The other 30% are assumed to be ordinary disabilities.

(3) 85% of Safety – Law Enforcement and Fire disabilities are assumed to be duty disabilities. The other 15% are assumed to be ordinary disabilities.

(4) 85% of Safety - Probation disabilities are assumed to be duty disabilities. The other 15% are assumed to be ordinary disabilities.

Section 2 - Termination Rates Before Retirement (continued):
Withdrawal Rates:

Rate (%)

Withdrawal (< 5 Years of Service)

Years of Service	General all other	General OCTA	Safety – Law & Fire	Safety - Probation
0	10.0%	10.0%	3.0%	11.0%
1	8.0	7.0	2.0	10.0
2	6.0	6.0	2.0	8.0
3	6.0	5.0	1.0	6.0
4	5.0	4.0	1.0	5.0

Withdrawal (5+ Years of Service) *

Age	General all other	General OCTA	Safety – Law & Fire	Safety – Probation
20	5.0%	3.0%	1.0%	5.0%
25	5.0	3.0	1.0	5.0
30	5.0	3.0	1.0	5.0
35	4.4	3.0	0.9	4.4
40	3.5	3.0	0.6	3.7
45	2.5	3.0	0.5	2.9
50	2.0	2.7	0.2	2.2
55	1.0	1.9	0.0	1.4
60	0.0	0.6	0.0	0.4

* *15% of all terminated vested members will choose a refund of contributions and 85% will choose a deferred vested benefit. This is based on the observation that out of all vested members who have terminated, 64% of General and 80% of Safety and Probation chose a deferred vested benefit.*

Retirement Rates:
The following rates apply:

	Combined Unisex Retirement Probability		
		Rate (%)	
Age	General	Safety - Law Enforcement and Fire*	Safety – Probation
50	3.0%	10.0%	4.0%
51	3.0	15.0	6.0
52	3.0	20.0	8.0
53	3.0	20.0	10.0
54	3.0	20.0	15.0
55	4.0	25.0	20.0
56	5.0	25.0	25.0
57	6.0	30.0	25.0
58	7.0	30.0	30.0
59	9.0	40.0	30.0
60	11.0	100.0	40.0
61	13.0		50.0
62	15.0		60.0
63	17.0		100.0
64	19.0		
65	25.0		
66	20.0		
67	20.0		
68	20.0		
69	20.0		
70	100.0		

* Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Retirement Age and Benefit for Deferred Vested Members:

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

General Age:	57
Safety Age:	53

We assume that 40% of future General Safety deferred vested members are reciprocal. For reciprocals, we assume 5.10% compensation increases per annum.

Future Benefit Accruals:

1.0 year of service per year for the full-time employees. Continuation of current partial service accrual for part-time employees. There is no assumption to anticipate conversion of unused sick leave at retirement.

Unknown Data for Members:

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

Inclusion of Deferred Vested Members:

All deferred vested members are included in the valuation.

Percent Married:

80% of male members; 50% of female members.

Age of Spouse:

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

Net Investment Return:

7.50%

Employee Contribution Crediting Rate:

5.00%

Consumer Price Index:

Increase of 4.00% per year, retiree COLA increases due to CPI subject to a 3.0% maximum change per year.

Salary Increases:

Annual Rate of Compensation Increase (%)

Inflation: 4.00%, plus the following Merit and Longevity

Age	General	Safety
20	7.0%	6.0%
25	5.2	5.1
30	3.4	3.6
35	2.2	1.8
40	1.7	0.7
45	1.6	0.5
50	1.4	0.5
55	0.9	0.5
60	0.6	0.0
65+	0.6	

There are assumed to be 0.00% “across the board” salary increases (other than inflation).

Terminal Pay Assumptions:

Additional pay elements are expected to be received during a member's final average earnings period. The percentages used in this valuation are:

	Tier 1	Tier 2
General including Safety Probation	4.50%	2.10%
Law Enforcement	9.30%	6.30%
Fire Protection	5.10%	2.40%

Please note that the terminal pay assumptions are the same for service and disability retirements.