

**Orange County Employees
Retirement System**

ACTUARIAL EXPERIENCE STUDY

**Analysis of Actuarial Experience
During the Period
January 1, 2008 through December 31, 2010**

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September 7, 2011

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, 2011 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 the December 31, 2011 valuation.

Please note that we have also reviewed the economic assumptions. The economic actuarial assumption recommendations for the December 31, 2011 valuation are provided in a separate report.

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

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

Sincerely,

A handwritten signature in cursive script that reads "Paul Angelo".

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

A handwritten signature in cursive script that reads "Andy Yeung".

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

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TABLE OF CONTENTS

	Page
I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS.....	1
II. BACKGROUND AND METHODOLOGY	4
III. ACTUARIAL ASSUMPTIONS	5
A. ECONOMIC ASSUMPTIONS	5
B. RETIREMENT RATES	5
C. MORTALITY RATES - HEALTHY	15
D. MORTALITY RATES - DISABLED	21
E. TERMINATION RATES	26
F. DISABILITY INCIDENCE RATES	40
G. MERIT AND PROMOTION SALARY INCREASES	48
H. ANNUAL PAYOFFS	53
APPENDIX A CURRENT ACTUARIAL ASSUMPTIONS.....	54
APPENDIX B PROPOSED ACTUARIAL ASSUMPTIONS	60

I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

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

If assumptions are changed, contribution requirements are adjusted to take into account a change in the projected experience in all future years. There is a great difference in both philosophy and cost impact between recognizing the actuarial deviations as they occur annually and changing the actuarial assumptions. Taking into account one year's gains or losses without making a change in the assumptions means that that year's experience was temporary and that, over the long run, experience will return to what was originally assumed. Changing assumptions reflects a basic change in thinking about the future, and it has a much greater effect on the current contribution requirements than recognizing the 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 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" and, as appropriate, ASOP No. 27 "Selection of Economic Assumptions for Measuring Pension Obligations." These Standards of Practice put forth guidelines for the selection of the various actuarial assumptions utilized in a pension plan actuarial valuation. Based on the study's results and expected near-term experience, we are recommending various changes in the current actuarial assumptions.

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

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

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

Recommendation: We recommend a decrease in the current retirement rates to anticipate later retirements.

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

Recommendation: For General healthy retirees, we recommend changing the assumption from the RP-2000 Combined Healthy Mortality Tables set back one year to the RP-2000 Combined Healthy Mortality Tables set back three years. For Safety healthy retirees, we recommend maintaining the current assumption of the RP-2000 Combined Healthy Mortality Tables set back two years. The pre-retirement mortality assumption is set consistent with the table used for post-service retirement mortality. All pre-retirement deaths are assumed to be ordinary (non-duty). For General disabled retirees, we recommend maintaining the current assumption of the RP-2000 Combined Healthy Mortality Tables set forward three years. For Safety disabled retirees, we recommend maintaining the current assumption of the RP-2000 Combined Healthy Mortality Tables set forward two years.

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

Recommendation: The current termination rates have been increased in most cases. For members with less than five years of service, the assumption for withdrawal of contributions is reduced to anticipate that only 50% of General and 40% of Safety Law, Fire and Probation members would withdraw and receive a refund of member contributions instead of a deferred vested benefit (current assumption is 75%). For members with five or more years of service under the recommended assumptions, this assumption is increased from 20% to 30% for all except Safety Law and Fire where the assumption is increased from 10% to 30%.

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

Recommendation: The rates have been decreased slightly for General members and Safety Law and Fire 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: These new merit and promotion rates generally predict slightly higher salary increases, to reflect recent years' experience for Safety members with less than 15 years of service. There is also an increase for General members but only those with less than 1 year of service.

Annual Payoffs – Additional earnings that are expected to be received during a member's final average earnings period.

Recommendation: The annual payoffs assumptions have been adjusted to reflect recent years' experience.

Section II provides some background on basic principles and the methodology used for the experience study and review of the demographic actuarial assumptions. 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, 2011 valuation is provided in a separate report. Demographic assumptions include the probabilities of certain events occurring in the population of members, referred to as “decrements,” e.g., termination from service, disability retirement, service retirement, and death after retirement. We also review the individual salary increases net of inflation (i.e., the merit and promotion assumptions) in this report.

Demographic Assumptions

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

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

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

III. ACTUARIAL ASSUMPTIONS

A. ECONOMIC ASSUMPTIONS

The economic assumptions are provided in a separate report titled “Review of Economic Actuarial Assumptions for the December 31, 2011 Actuarial Valuation.”

B. RETIREMENT RATES

The age at which a member retires from service (i.e., who did not retire on a disability pension) will affect both the amount of the benefits that will be paid to that member as well as the period over which funding must take place.

The Plan’s current retirement rates are separated into (1) General Enhanced, (2) General Non-Enhanced, (3) Safety Law Enforcement (31664.1), (4) Safety Law Enforcement (31664.2), (5) Safety Fire (31664.1), (6) Safety Fire (31664.2) and (7) Safety Probation.

The retirement experience during the current three-year period generally indicated that there were fewer actual retirements than expected.

For Safety Law Enforcement and Safety Fire covered under 31664.2, we are not recommending a change in the retirement assumptions because there is not sufficient experience available.

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

Actual Rate of Retirement (From January 1, 2008 to December 31, 2010)

Age	Rate (%)				
	General – Enhanced	General – Non-Enhanced	Safety – Law (31664.1)	Safety – Fire (31664.1)	Safety – Probation
49	0.00%	0.00%	8.75%	1.23%	0.00%
50	3.69	0.00	11.73	2.04	4.76
51	1.68	0.63	14.29	8.43	0.00
52	1.83	2.48	12.12	0.00	5.26
53	2.24	1.79	11.39	3.23	0.00
54	5.33	1.96	19.12	14.29	6.06
55	14.01	2.31	18.64	9.38	10.00
56	9.60	3.27	20.45	17.14	9.09
57	9.46	5.45	14.71	17.86	11.11
58	7.90	8.55	18.18	20.00	25.00
59	9.21	4.26	20.00	21.05	5.88
60	11.09	7.58	19.05	33.33	11.76
61	12.08	8.46	13.64	31.25	0.00
62	17.61	17.27	20.00	25.00	7.69
63	14.13	14.81	11.11	28.57	25.57
64	16.28	11.11	20.00	66.67	0.00
65	19.78	20.34	66.67	-	0.00
66	26.00	34.62	100.00	-	0.00
67	18.62	11.43	-	-	0.00
68	19.27	27.59	-	-	-
69	20.59	22.73	-	-	-
70	19.09	8.00	-	-	-
71	12.82	5.26	-	-	-
72	14.52	6.67	-	-	-
73	15.91	22.22	-	-	-
74	20.00	22.22	-	-	-
75 and over	19.00	23.53	-	-	-

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

Current Retirement Probability

Rate (%)

Age	General – Enhanced	General – Non-Enhanced	Safety – Law (31664.1)⁽¹⁾	Safety – Fire (31664.1)⁽¹⁾	Safety – Probation⁽¹⁾
49	0.00%	0.00%	0.00%	0.00%	0.00%
50	2.50	3.00	15.00	10.00	4.00
51	2.50	3.00	15.00	12.00	4.00
52	2.50	3.00	15.00	14.00	4.00
53	2.50	3.00	20.00	15.00	7.00
54	5.00	3.00	20.00	17.00	10.00
55	15.00	4.00	20.00	25.00	20.00
56	8.00	5.00	20.00	25.00	20.00
57	8.00	6.00	20.00	30.00	20.00
58	10.00	7.00	25.00	30.00	25.00
59	10.00	9.00	30.00	40.00	30.00
60	13.00	11.00	100.00	100.00	35.00
61	13.00	13.00	100.00	100.00	45.00
62	15.00	15.00	100.00	100.00	60.00
63	15.00	17.00	100.00	100.00	100.00
64	20.00	19.00	100.00	100.00	100.00
65	20.00	25.00	100.00	100.00	100.00
66	24.00	20.00	100.00	100.00	100.00
67	24.00	20.00	100.00	100.00	100.00
68	24.00	20.00	100.00	100.00	100.00
69	24.00	20.00	100.00	100.00	100.00
70	100.00	100.00	100.00	100.00	100.00
71	100.00	100.00	100.00	100.00	100.00
72	100.00	100.00	100.00	100.00	100.00
73	100.00	100.00	100.00	100.00	100.00
74	100.00	100.00	100.00	100.00	100.00
75	100.00	100.00	100.00	100.00	100.00

⁽¹⁾ Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

The following rates of retirement are what we recommend to the Board.

Proposed Retirement Probability					
Rate (%)					
Age	General – Enhanced	General – Non-Enhanced	Safety – Law (31664.1)⁽¹⁾	Safety – Fire (31664.1)⁽¹⁾	Safety – Probation⁽¹⁾
49	0.00%	0.00%	10.00%	0.00%	0.00%
50	3.00	2.00	14.00	7.00	4.00
51	2.00	2.00	14.00	9.00	4.00
52	2.00	2.00	14.00	11.00	4.00
53	2.00	2.00	14.00	12.00	4.00
54	5.00	2.00	20.00	16.00	8.00
55	15.00	3.00	20.00	20.00	12.00
56	9.00	4.00	20.00	20.00	12.00
57	9.00	6.00	20.00	25.00	16.00
58	9.00	8.00	20.00	25.00	25.00
59	9.00	8.00	25.00	30.00	25.00
60	12.00	8.00	60.00	60.00	25.00
61	12.00	8.00	60.00	60.00	25.00
62	17.00	16.00	60.00	60.00	25.00
63	15.00	16.00	60.00	60.00	50.00
64	18.00	16.00	60.00	60.00	100.00
65	20.00	20.00	100.00	100.00	100.00
66	25.00	25.00	100.00	100.00	100.00
67	21.00	21.00	100.00	100.00	100.00
68	21.00	21.00	100.00	100.00	100.00
69	21.00	21.00	100.00	100.00	100.00
70	60.00	40.00	100.00	100.00	100.00
71	60.00	40.00	100.00	100.00	100.00
72	60.00	40.00	100.00	100.00	100.00
73	60.00	40.00	100.00	100.00	100.00
74	60.00	40.00	100.00	100.00	100.00
75	100.00	100.00	100.00	100.00	100.00

⁽¹⁾ Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

Chart 1 compares actual experience with the current and proposed rates of retirement for General Enhanced members. Chart 2 has the same data for General Non-Enhanced members. Chart 3 has the same data for Safety Law Enforcement members covered under 31664.1. Chart 4 has the same data for Safety Fire members covered under 31664.1. Chart 5 has the same data for Safety Probation members.

Deferred Vested Members

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

Please note that for members who terminate with less than five years of service after January 1, 2003 and are not vested, we assume they would retire at age 70 for both General and Safety if they decide to leave their contributions on deposit as permitted by §31629.5.

Reciprocity

It was also assumed that 30% of future General and Safety deferred vested members would go on to work for a reciprocal system and receive 4.50% compensation increases per annum from termination until their date of retirement. Based on the actual experience that 21% of General and 27% of Safety members went on to work for a reciprocal system during the last three years, we recommend decreasing the reciprocity assumption for General members from 30% to 25% and we recommend maintaining the reciprocity assumption for Safety members at 30%. Based on our ultimate 1.00% recommended merit and promotion salary increase assumption (and our recommended economic assumptions), we propose that a 4.75% (i.e., 3.50% inflation plus 0.25% “across the board” plus 1.00% merit and promotion) salary increase assumption be utilized to anticipate salary increases (under the reciprocal system) from termination from OCERS to the expected date of retirement.

Survivor Continuance Under Unmodified Option

In prior valuations, it was assumed that 80% of all active male members and 50% of all active female members would be married or have an eligible domestic partner when they retired. According to the experience of members who retired during the last three years, about 75% of all male members and 53% of all female members were married or had a domestic partner at retirement. We recommend no change to the current 80% and 50% male members’ and female members’ marriage assumptions.

We also recommend changing the assumption that when active members retire, female spouses are four years younger than their male spouses to the assumption that female spouses are three years younger than their male spouses. This is based on an observed difference of 3.0 years between the ages of male and female spouses of members who retired during the last three years. Also, spouses will continue to be assumed to be of the opposite sex of the member based on recent experience.

Chart 1
Retirement Rates - General Enhanced Members

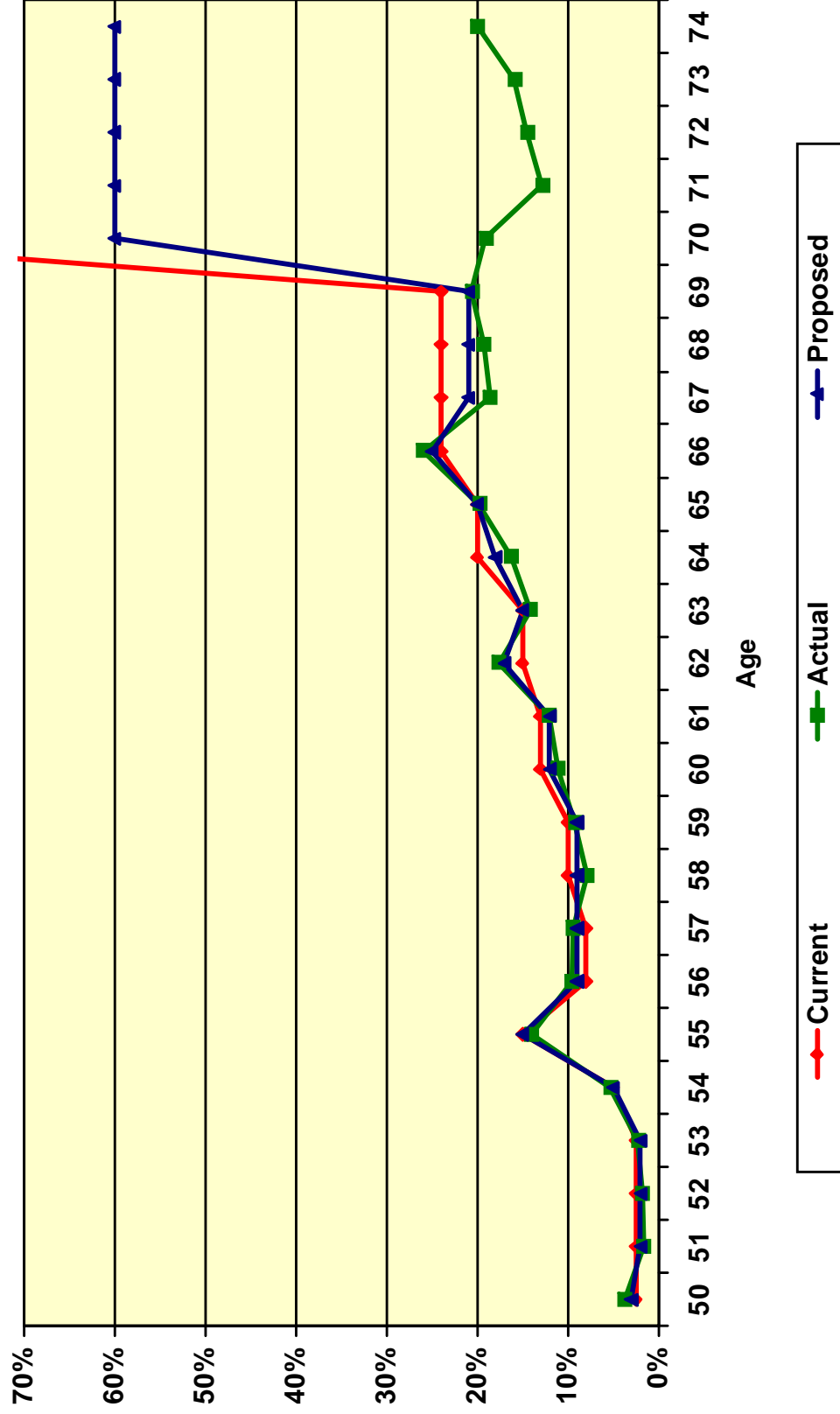


Chart 2
Retirement Rates - General Non-Enhanced Members

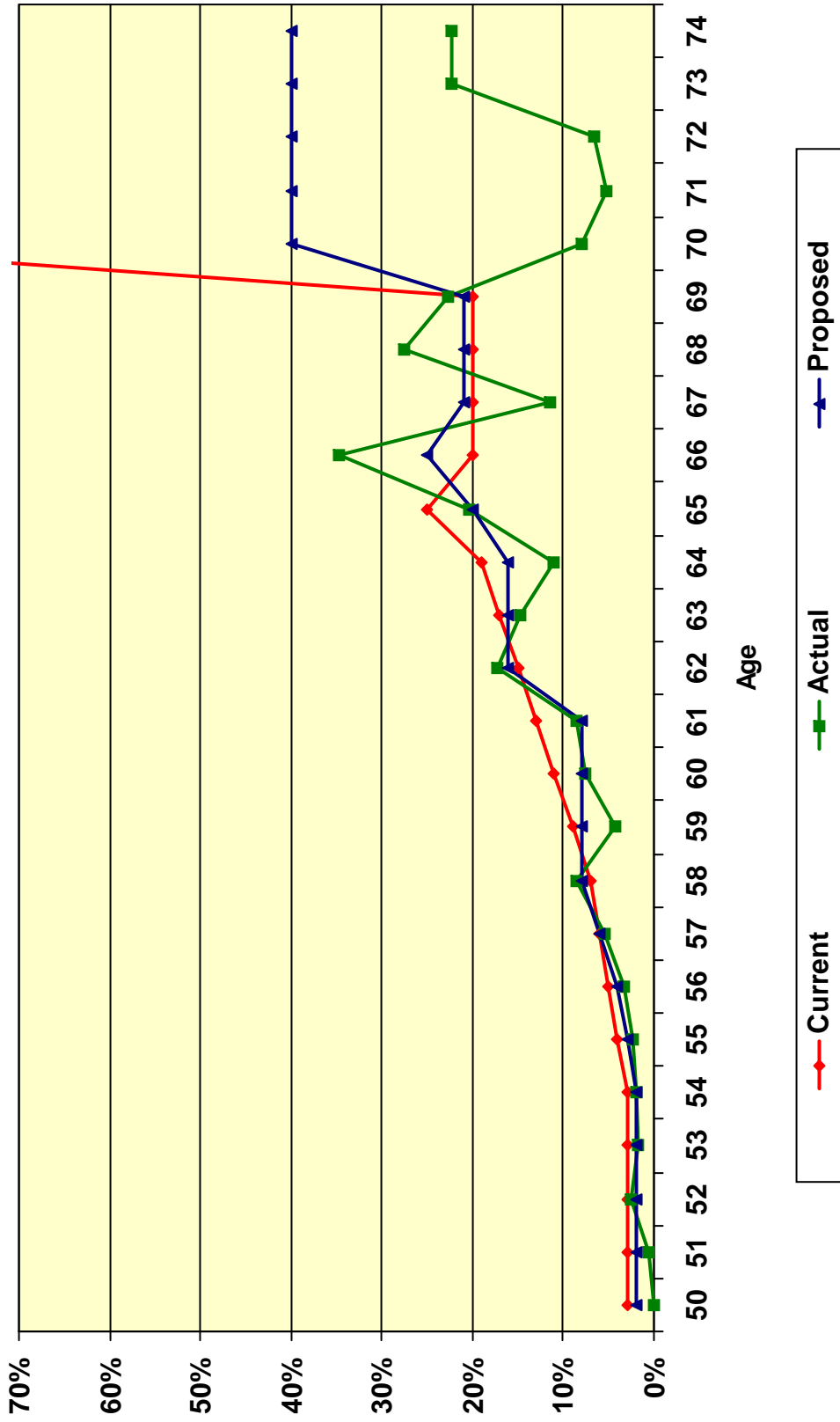


Chart 3
Retirement Rates - Safety Law Enforcement Members
(31664.1)

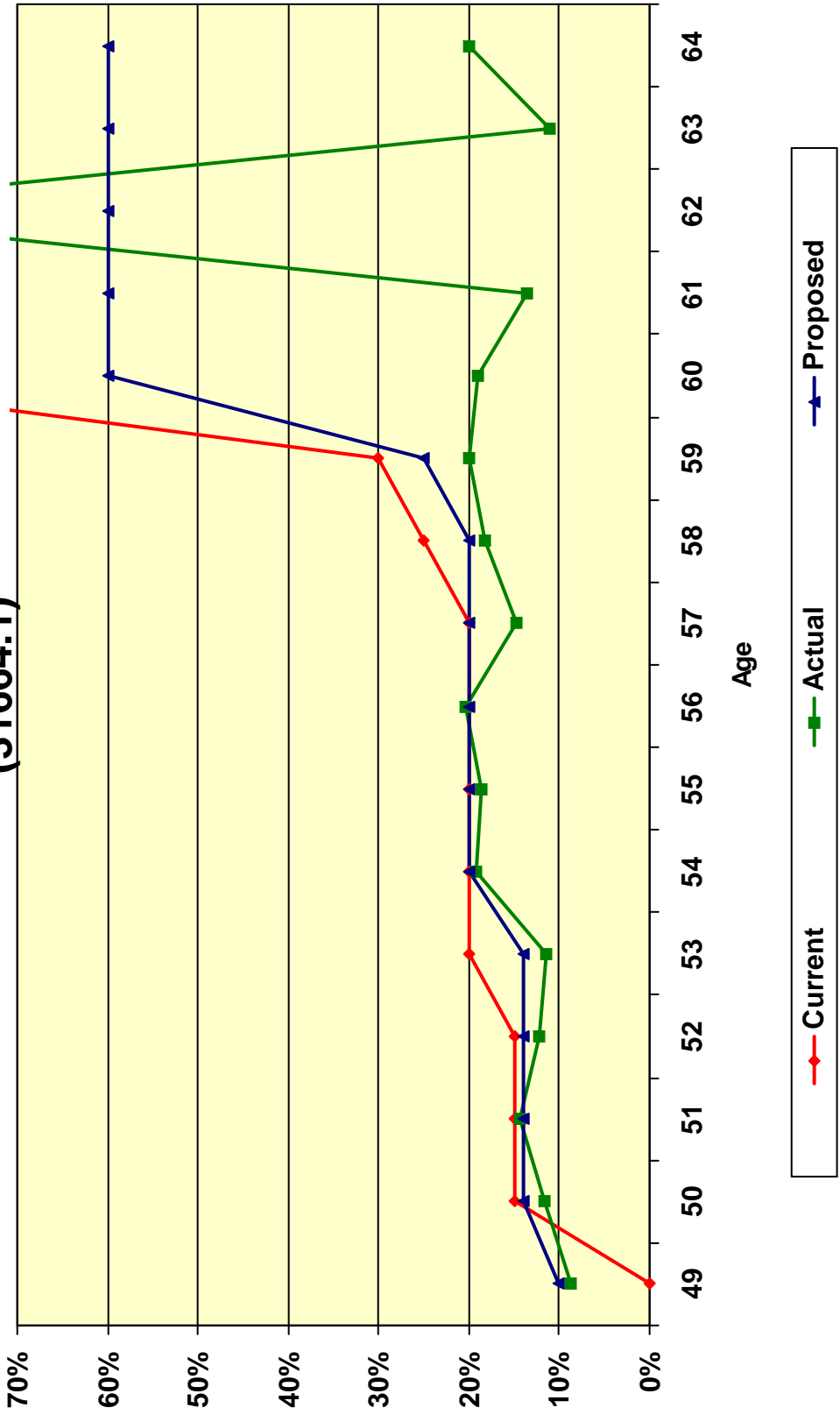


Chart 4
Retirement Rates - Safety Fire Authority Members
(31664.1)

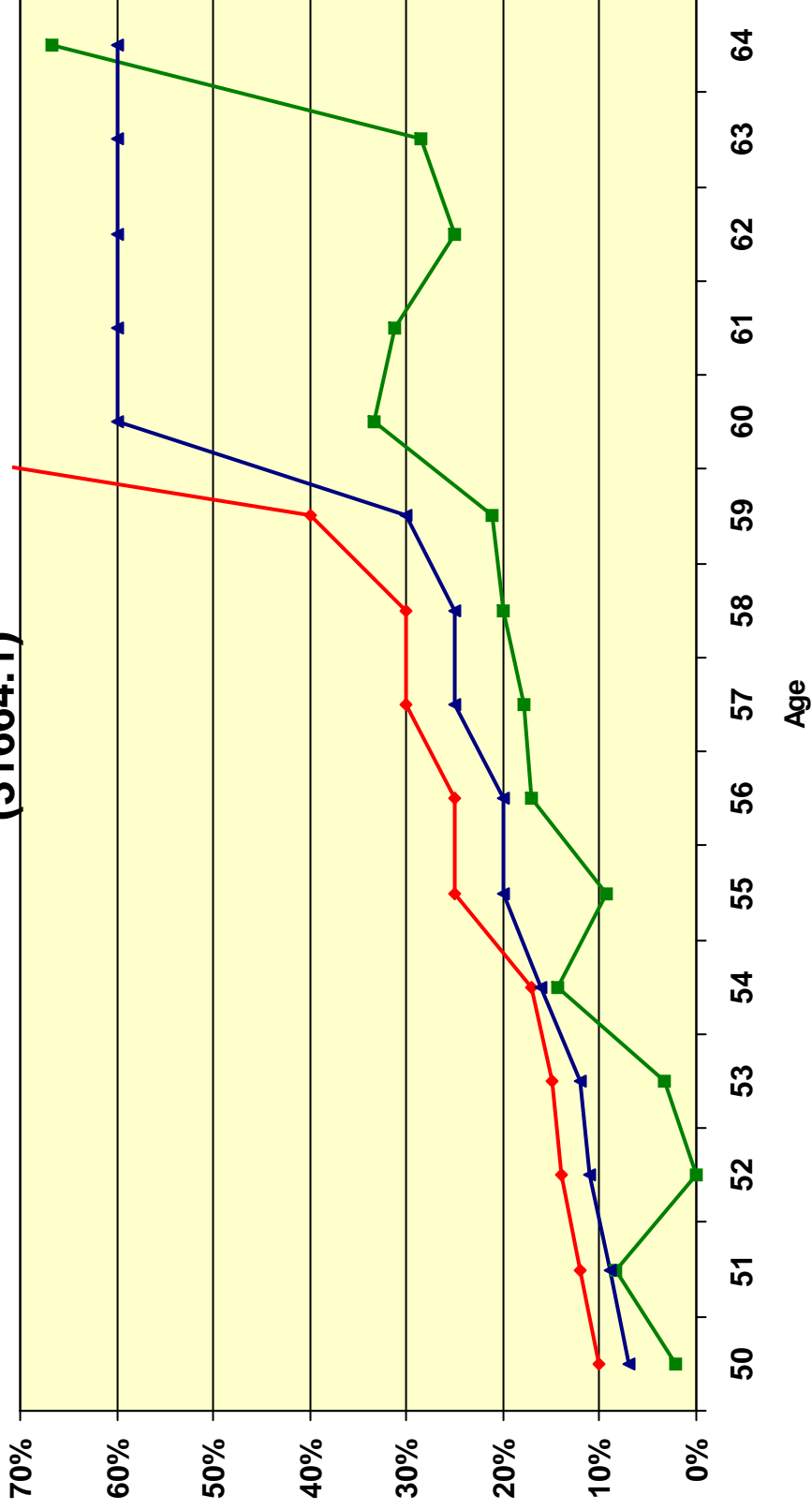
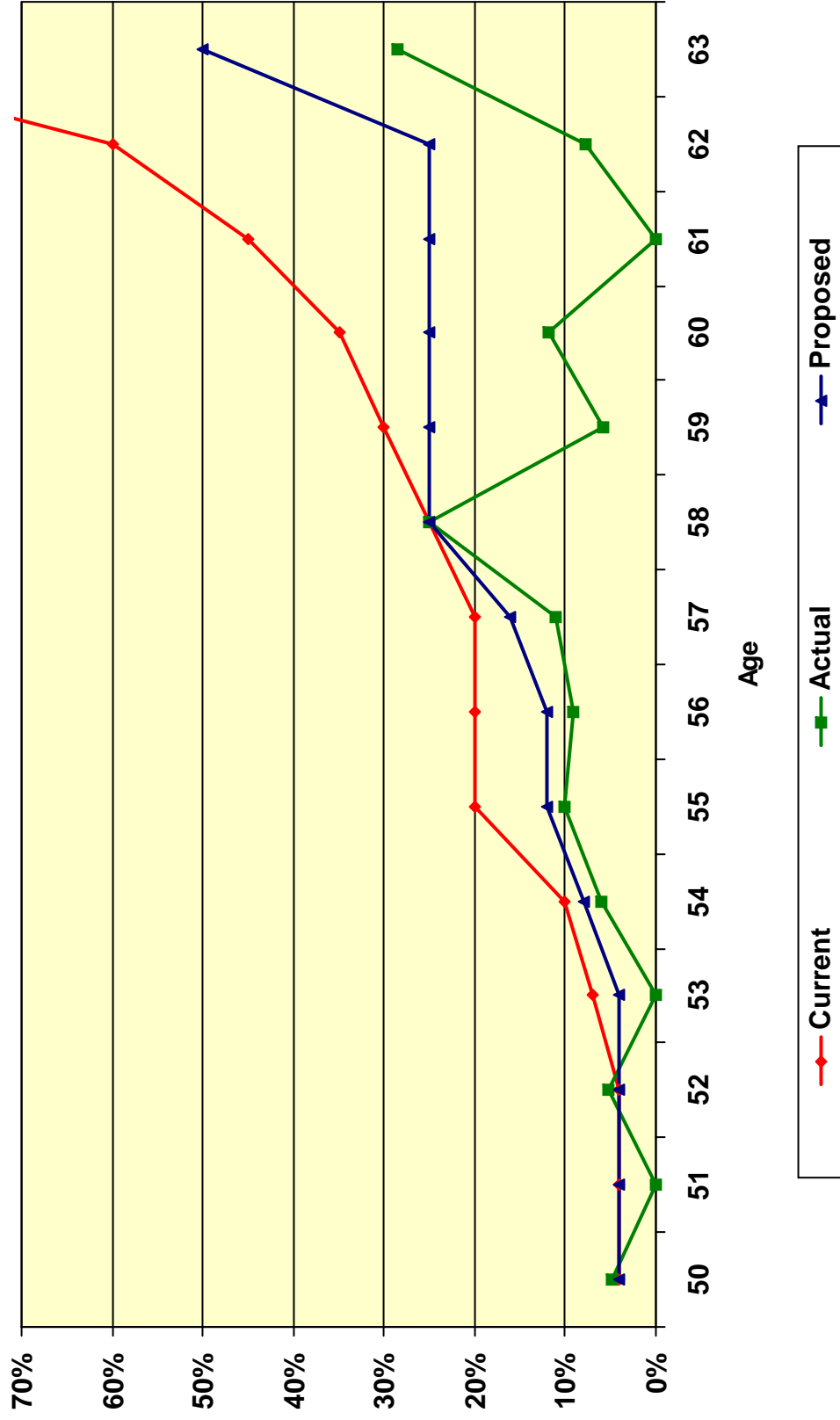


Chart 5
Retirement Rates - Safety Probation Officers Members



C. MORTALITY RATES - HEALTHY

The “healthy” mortality rates project what proportion of members will die before retirement as well as the life expectancy of a member who retires for service (i.e., who did not retire on a disability pension). The table currently being used for post-service retirement mortality rates is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set back one year for General members and all beneficiaries and set back two years for Safety members.

The table that we would recommend for the General members and all beneficiaries is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set back three years. For Safety members, we recommend maintaining the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set back two years.

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.

The current assumption is that all pre-retirement deaths are assumed to be ordinary (non-duty). Based on the fact that there was only one duty death in the last three years, we recommend maintaining the current assumption.

Post-Retirement Mortality (Service Retirements)

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

Year Ending 12/31	General Members and All Beneficiaries – Healthy			Safety Members – Healthy		
	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths
2008	257	236	208	12	10	12
2009	270	215	219	13	19	13
2010	289	275	235	14	18	14
Total	816	726	662	39	47 ⁽¹⁾	39
Actual / Expected	89%		110%	121%		121%

⁽¹⁾ For comparison, there were 31 deaths reported for Safety members in the last triennial experience study.

In preparing the recommended mortality assumptions, standard actuarial practice is to include some margin in the rates to anticipate expected future improvements in life expectancy. Generally, preferable practice is to have a margin of at least 10%; that is, the actual deaths among current members are around 10% greater than the expected deaths during the study period. Of note is that the margin for Safety members is greater than the typical 10% margin, because the number of actual deaths during the current experience study period of 47 is much higher than the 31 deaths observed during the last experience study even after adjusting the number of deaths by the growth in the number of Safety retirees during the last three years. We are not recommending a change in this assumption since the actual deaths observed in the previous experience study was substantially fewer than assumed.

Chart 6 compares actual to expected deaths for General members and all beneficiaries under the current and proposed assumptions over the last three years.

Chart 7 has the same comparison for Safety members.

Chart 8 shows the life expectancies under the current and the proposed tables for General members and all beneficiaries.

Chart 9 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 RP-2000 Combined Healthy Mortality Table set back one year weighted 40% male and 60% female to the RP-2000 Combined Healthy Mortality Table set back three years weighted 40% male and 60% female. This is based on the proposed mortality table for General members and the actual sex distribution for the current General members.

For Safety members, we recommend the mortality table be maintained as the RP-2000 Combined Healthy Mortality Table set back two years weighted 80% male and 20% female. This is based on the proposed mortality table for Safety members and the actual sex distribution for the current Safety members.

Chart 6
Post - Retirement Deaths - General Non-Disabled Members and All Beneficiaries

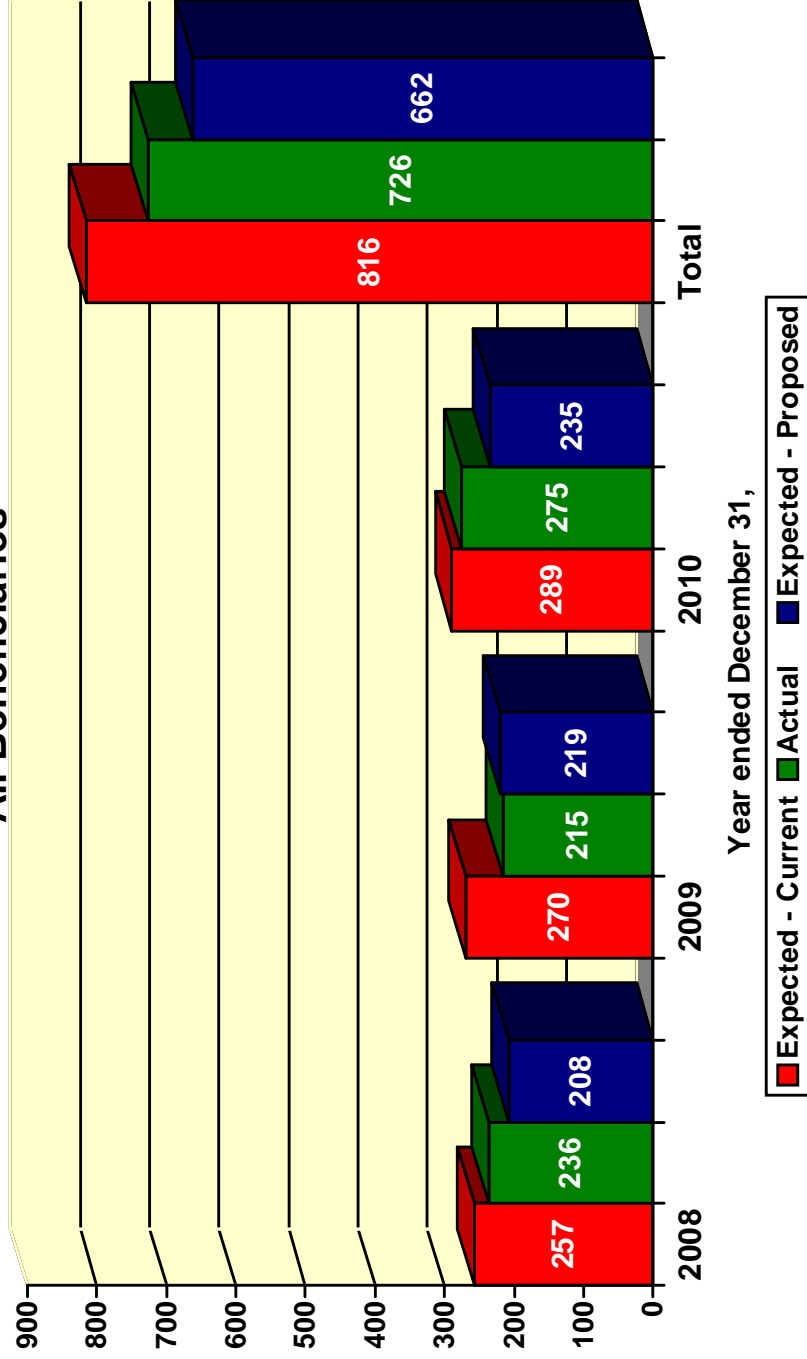


Chart 7
Post - Retirement Deaths - Safety Non - Disabled Members

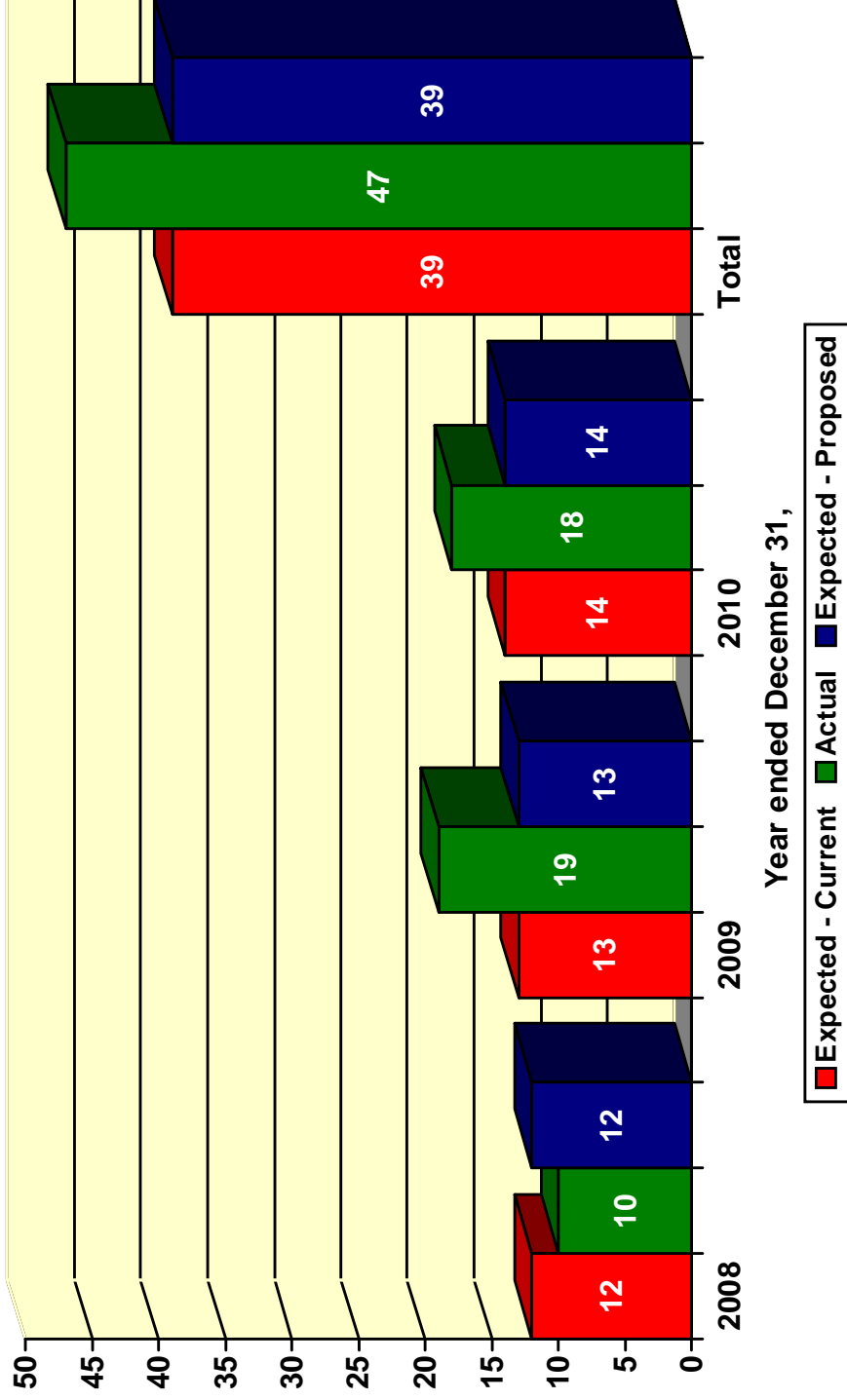


Chart 8 Life Expectancies (General and All Beneficiaries)

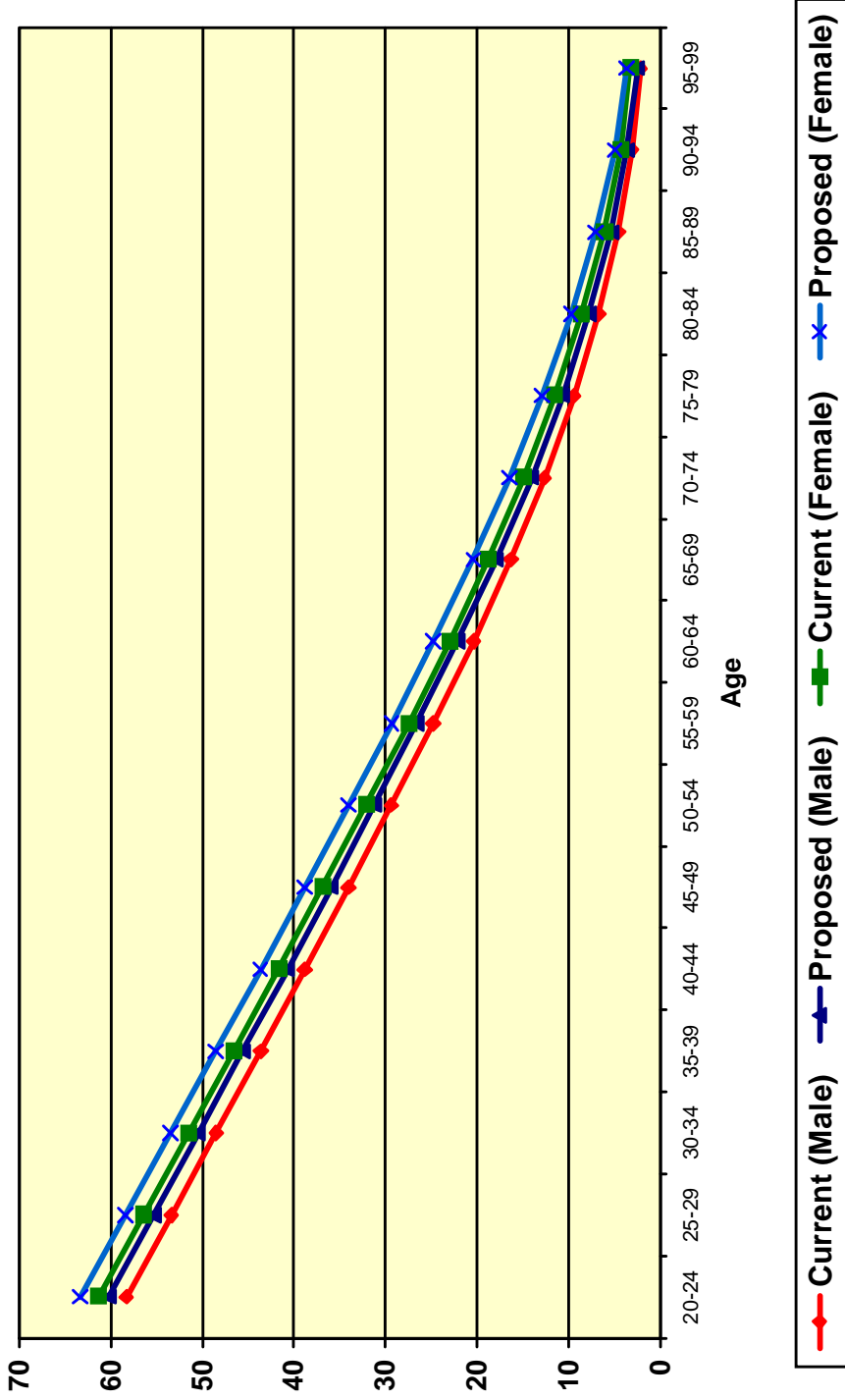
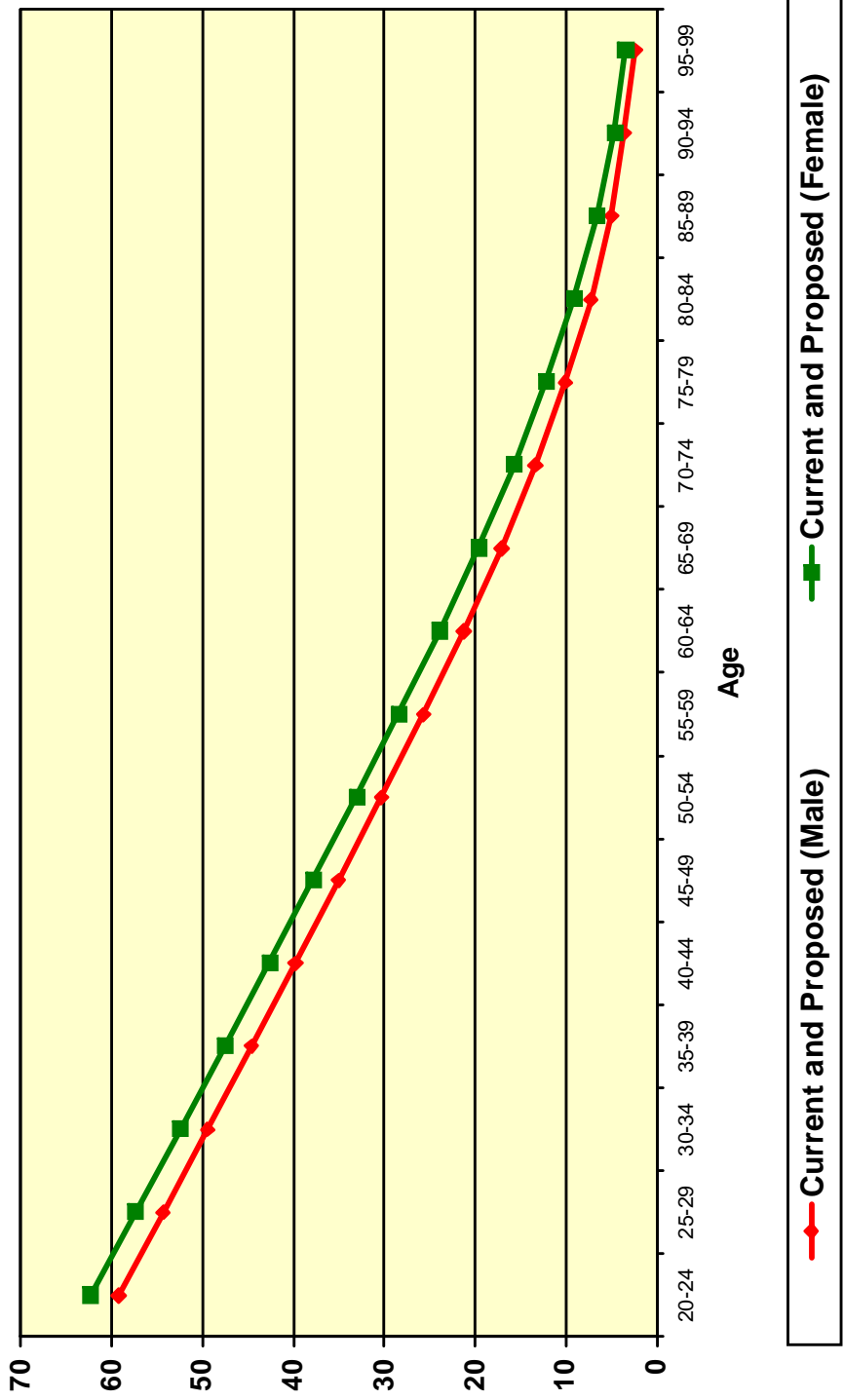


Chart 9
Life Expectancies (Safety)



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 is the RP-2000 Combined Healthy Annuity Mortality Table (separate tables for males and females) set forward three years for General members and set forward two years for Safety members.

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

Ending 12/31	General – Disability			Safety – Disability		
	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths
2008	20	21	20	5	6	5
2009	21	25	21	5	5	5
2010	21	23	21	6	7	6
Total	62	69	62	16	18	16
Actual / Expected	111%		111%	113%		113%

We are not recommending any changes to the disabled member mortality tables.

The recommended assumptions for General and Safety maintain the actual to expected ratio above 110%. The recommended assumptions are consistent with standard actuarial practice to include some margin in the rates to anticipate expected future improvements in life expectancy. Generally, preferable practice is to have a margin of at least 10%; that is, the actual deaths among current members are around 10% greater than the expected deaths during the study period.

Chart 10 compares actual to expected deaths under both the current and proposed assumptions for disabled General members over the last three years.

Chart 11 compares actual to expected deaths under both the current and proposed assumptions for disabled Safety members over the last three years.

Chart 12 and 13 show the life expectancies under both the current and proposed tables for General and Safety, respectively.

Chart 10
Post - Retirement Deaths
Disabled General Members

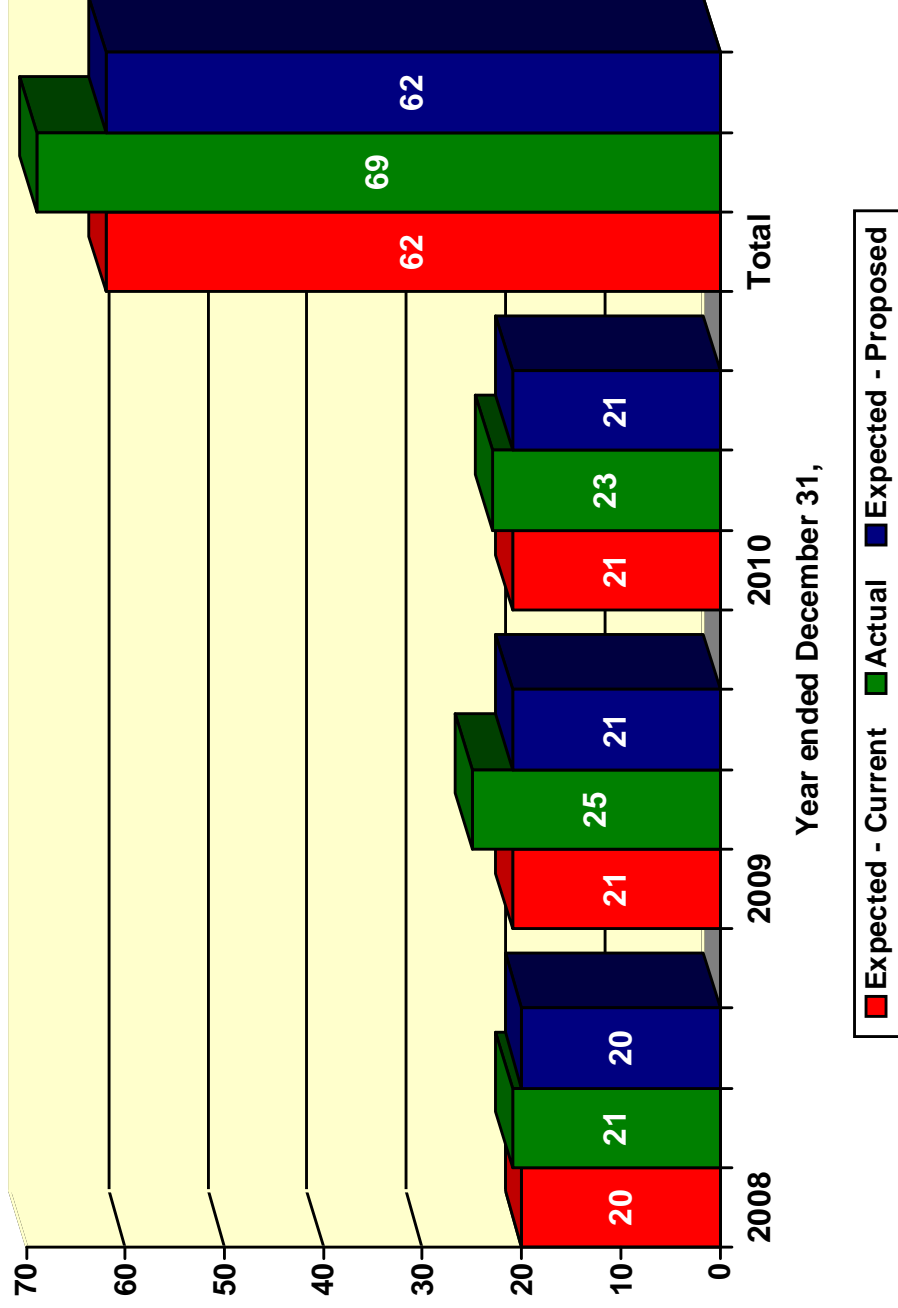


Chart 11
Post - Retirement Deaths
Disabled Safety Members

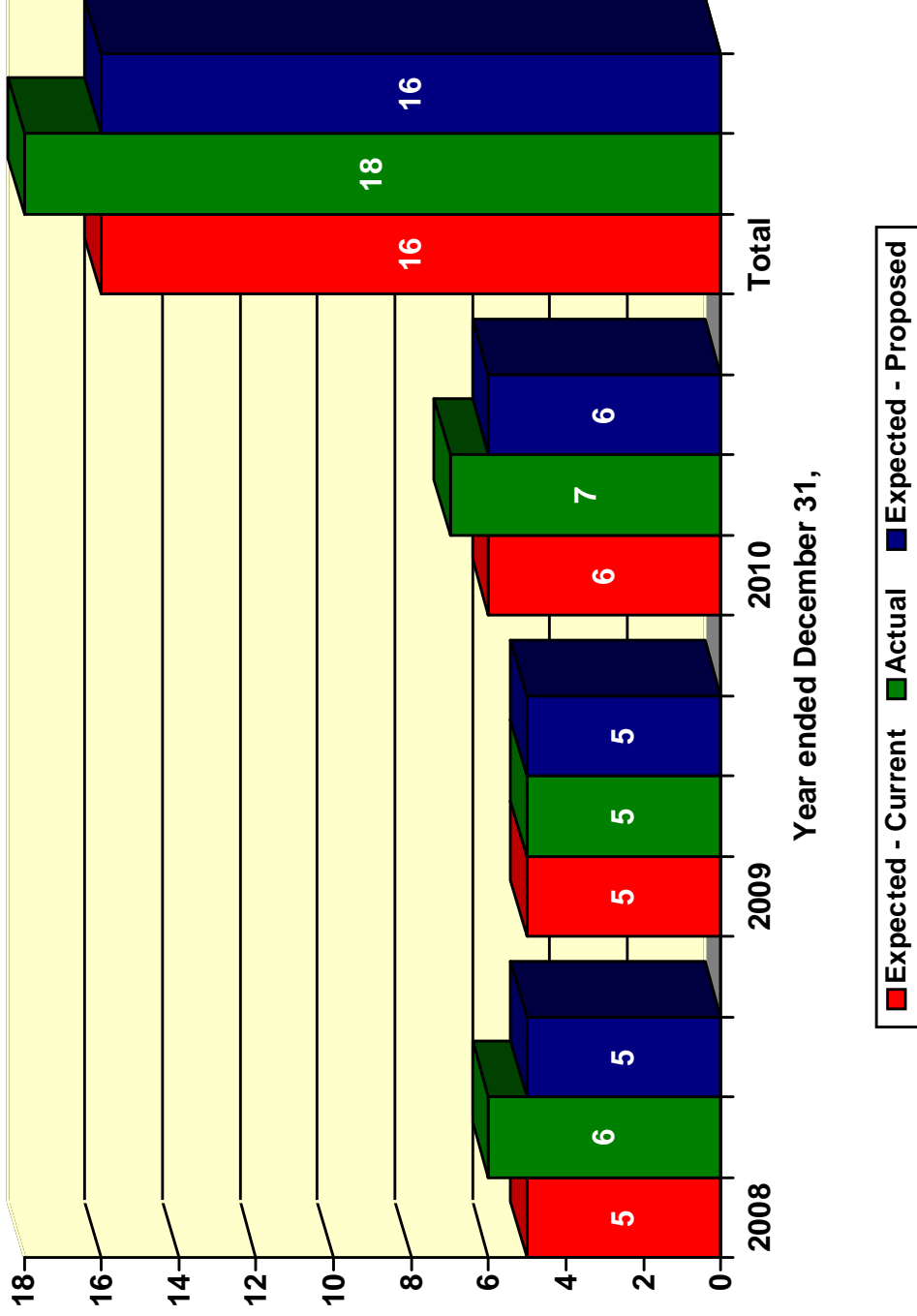


Chart 12 Life Expectancies (General Disabled)

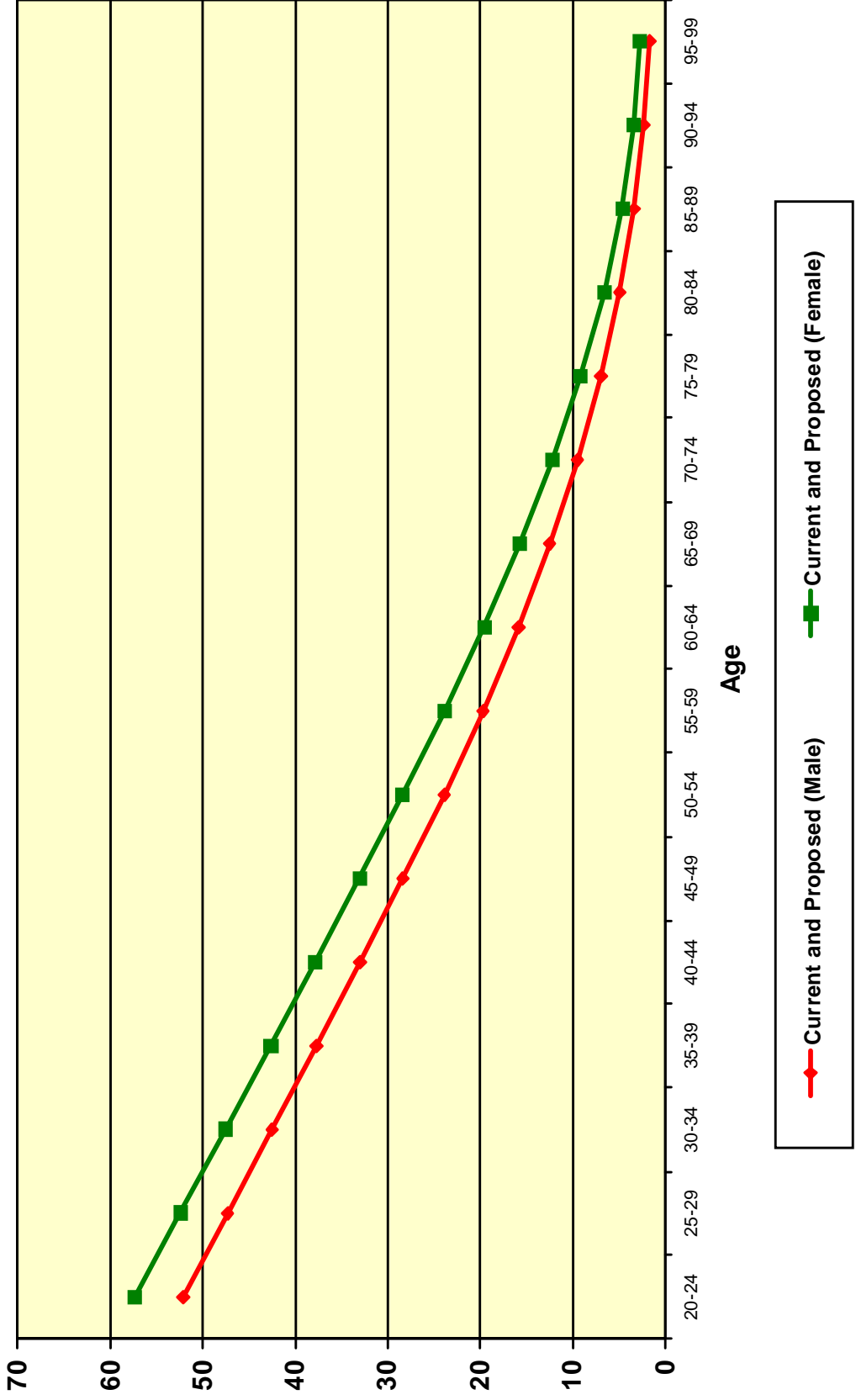
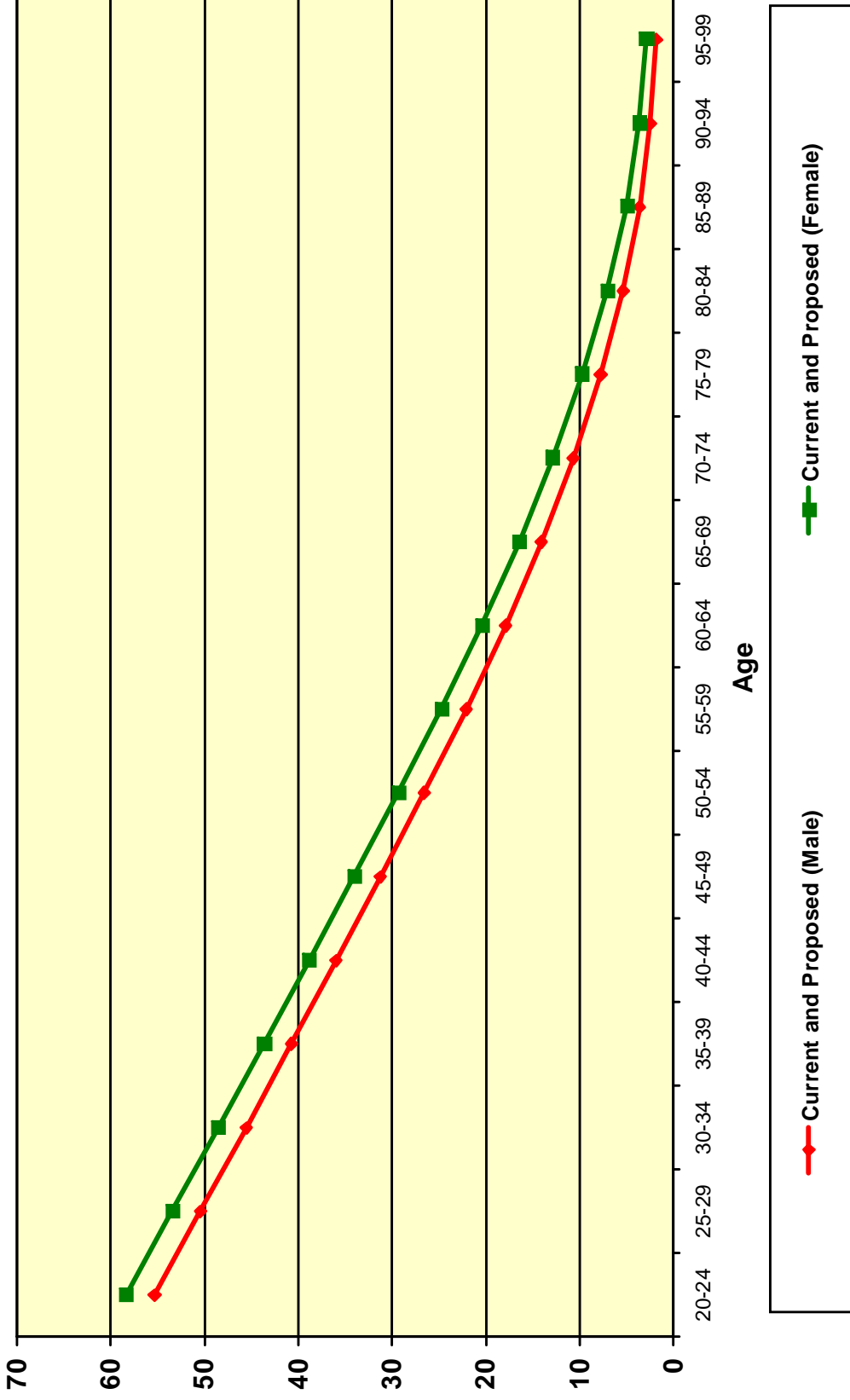


Chart 13 Life Expectancies (Safety Disabled)



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 members with less than five years of service and members with five or more years of service. There is also another set of assumptions to anticipate the percentage of members who will withdraw their contributions and members who will leave their contributions on deposit and receive a deferred vested benefit.

We have developed rates for the following four groups: 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 is 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 Termination – General All Other (Fewer than Five Years of Service)

Years of Service	Current Rate	Observed Rate	Proposed Rate
0	13.0%	12.7%	13.0%
1	9.0	7.1	8.0
2	8.0	6.2	7.0
3	7.0	4.0	6.0
4	5.0	4.3	5.0

Rates of Termination – General OCTA (Fewer than Five Years of Service)

Years of Service	Current Rate	Observed Rate	Proposed Rate
0	17.0%	32.5%	20.0%
1	9.0	13.1	16.0
2	8.0	23.1	12.0
3	7.0	9.3	9.0
4	6.0	7.7	7.0

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

Years of Service	Current Rate	Observed Rate	Proposed Rate
0	4.0%	3.2%	4.0%
1	3.0	3.5	3.0
2	2.0	2.1	2.0
3	2.0	2.3	2.0
4	1.0	0.4	1.0

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

Years of Service	Current Rate	Observed Rate	Proposed Rate
0	17.0%	44.1%	20.0%
1	10.0	21.0	15.0
2	8.0	14.1	10.0
3	6.0	3.8	5.0
4	5.0	4.0	4.0

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	5.0%	11.1%	5.0%
25 – 29	5.0	2.2	4.0
30 – 34	5.0	2.6	4.0
35 – 39	4.0	2.3	3.0
40 – 44	3.5	1.8	3.0
45 – 49	2.5	1.6	2.0
50 – 54	2.0	2.9	2.5
55 – 59	1.0	2.7	2.5
60 – 64	0.0	2.9	2.5
65 – 69	0.0	4.1	2.5
70 – 74	0.0	100.0	0.0

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

Age	Current Rate	Observed Rate	Proposed Rate
25 – 29	4.0%	0.0%	4.0%
30 – 34	4.0	3.4	4.0
35 – 39	4.0	3.8	4.0
40 – 44	4.0	2.2	3.0
45 – 49	3.0	3.0	3.0
50 – 54	2.5	4.1	3.0
55 – 59	1.5	4.0	3.0
60 – 64	0.0	6.9	3.0
65 – 69	0.0	7.1	0.0

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

Age	Current Rate	Observed Rate	Proposed Rate
25 – 29	1.0%	2.6%	1.0%
30 – 34	1.0	1.0	1.0
35 – 39	0.8	0.8	0.8
40 – 44	0.5	0.5	0.5
45 – 49	0.5	1.1	0.5
50 – 54	0.0	6.7	0.0
55 – 59	0.0	0.0	0.0
60 – 64	0.0	0.0	0.0

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

Age	Current Rate	Observed Rate	Proposed Rate
25 – 29	5.0%	2.1%	4.0%
30 – 34	4.3	1.9	3.0
35 – 39	3.5	1.5	3.0
40 – 44	2.8	1.7	2.0
45 – 49	2.3	0.6	2.0
50 – 54	1.8	3.7	2.0
55 – 59	1.0	0.0	1.0
60 – 64	0.0	0.0	0.0

Chart 14 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 15 shows the current, along with the proposed termination rates for General All Other members with less than five years of service.

Chart 16-18 shows the same information as Chart 15, but for General OCTA, Safety Law & Fire and Safety Probation members.

Chart 19 shows the current, along with the proposed termination rates for General All Other members with five or more years of service.

Chart 20-22 shows the same information as Chart 19, but for General OCTA, Safety Law & Fire and Safety Probation members.

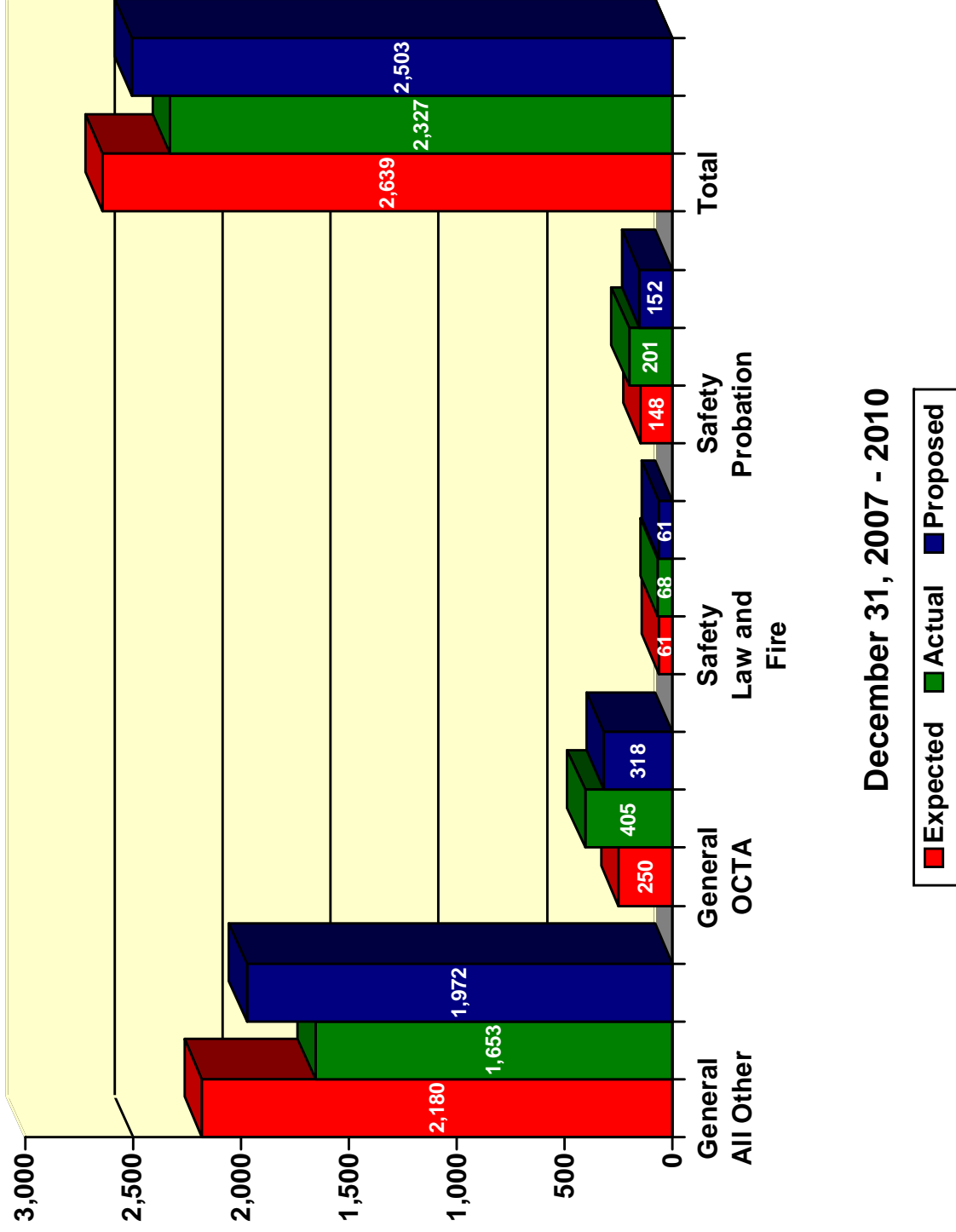
Based upon the recent experience, the termination rates for General OCTA and Safety Probation members with less than five years of service have been increased. For General All Other members with less than five years of service, the termination rates have been decreased. For General members with five or more years of service, we have increased the termination rates at the later ages. For Safety Probation members with five or more years of service, we have decreased the termination rates. We have maintained the termination rates for all Safety Law & Fire members.

The following table shows the currently assumed, observed and recommended assumed percentages for members who withdraw their contributions. For the observed experience, we have included the experience from the current and the last triennial experience study periods. The assumed percentages for members who leave their contributions on deposit and receive a deferred vested benefit is equal to one minus the percentage of those assumed to withdraw.

Members with Fewer than Five Years of Service				
Group	Current Assumed Withdrawal	January 1, 2005 Through December 31, 2007 Observed Withdrawal	January 1, 2008 Through December 31, 2011 Observed Withdrawal	Proposed Withdrawal
General All Other	75%	50%	41%	50%
General OCTA	75%	47%	61%	50%
Safety Law and Fire	75%	73%	15%	40%
Safety Probation	75%	68%	40%	40%

Members with Five or More Years of Service				
Group	Current Assumed Withdrawal	January 1, 2005 Through December 31, 2007 Observed Withdrawal	January 1, 2008 Through December 31, 2011 Observed Withdrawal	Proposed Withdrawal
General All Other	20%	72%	29%	30%
General OCTA	20%	60%	38%	30%
Safety Law and Fire	10%	92%	32%	30%
Safety Probation	20%	72%	21%	30%

Chart 14
Actual Number of Terminations Compared to Expected



December 31, 2007 - 2010

Expected Actual Proposed

Chart 15
Withdrawal Rates - General All Others Members
(Less than 5 Years of Service)

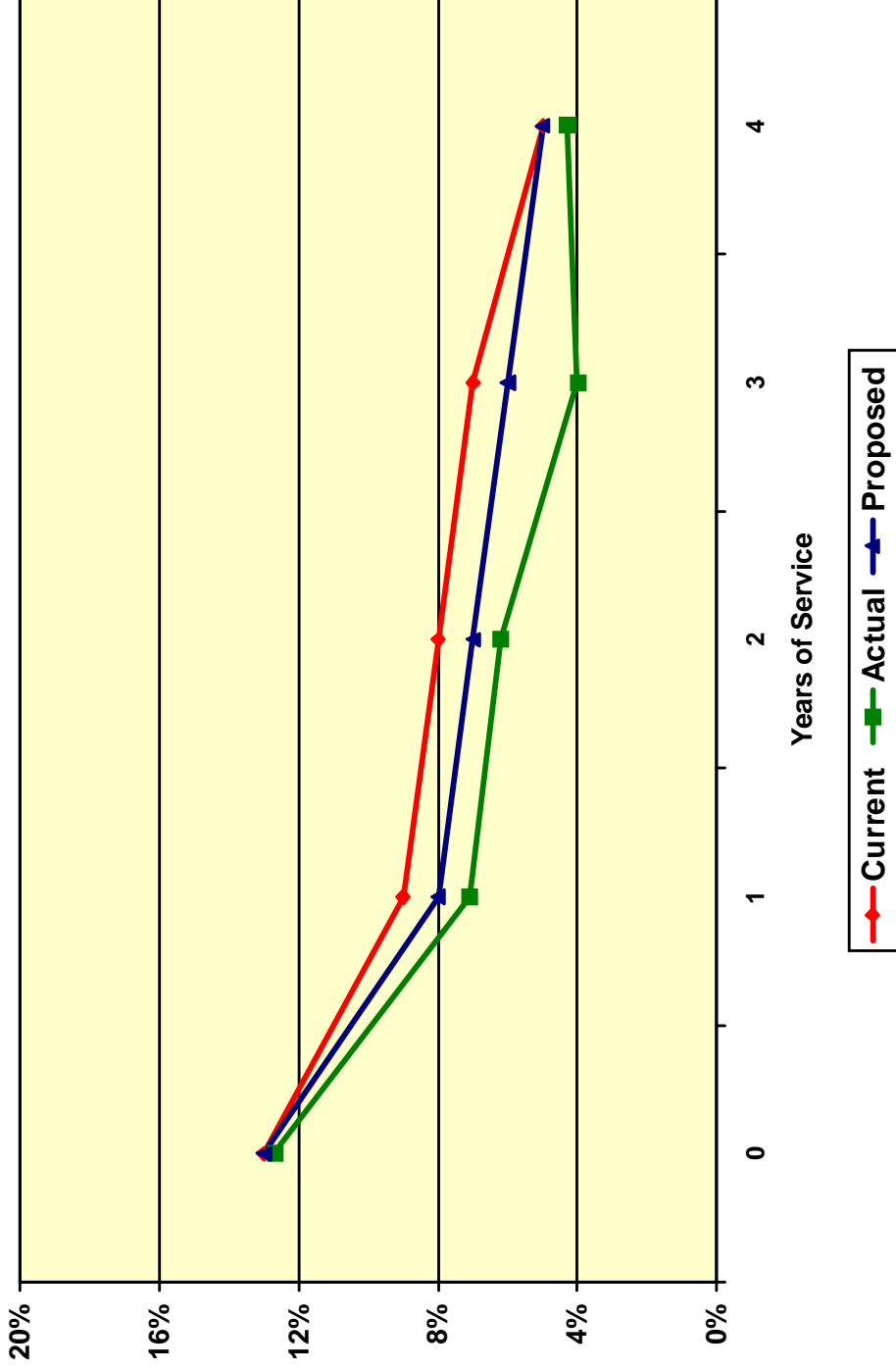


Chart 16
Withdrawal Rates - General OCTA Members
(Less Than 5 Years of Service)

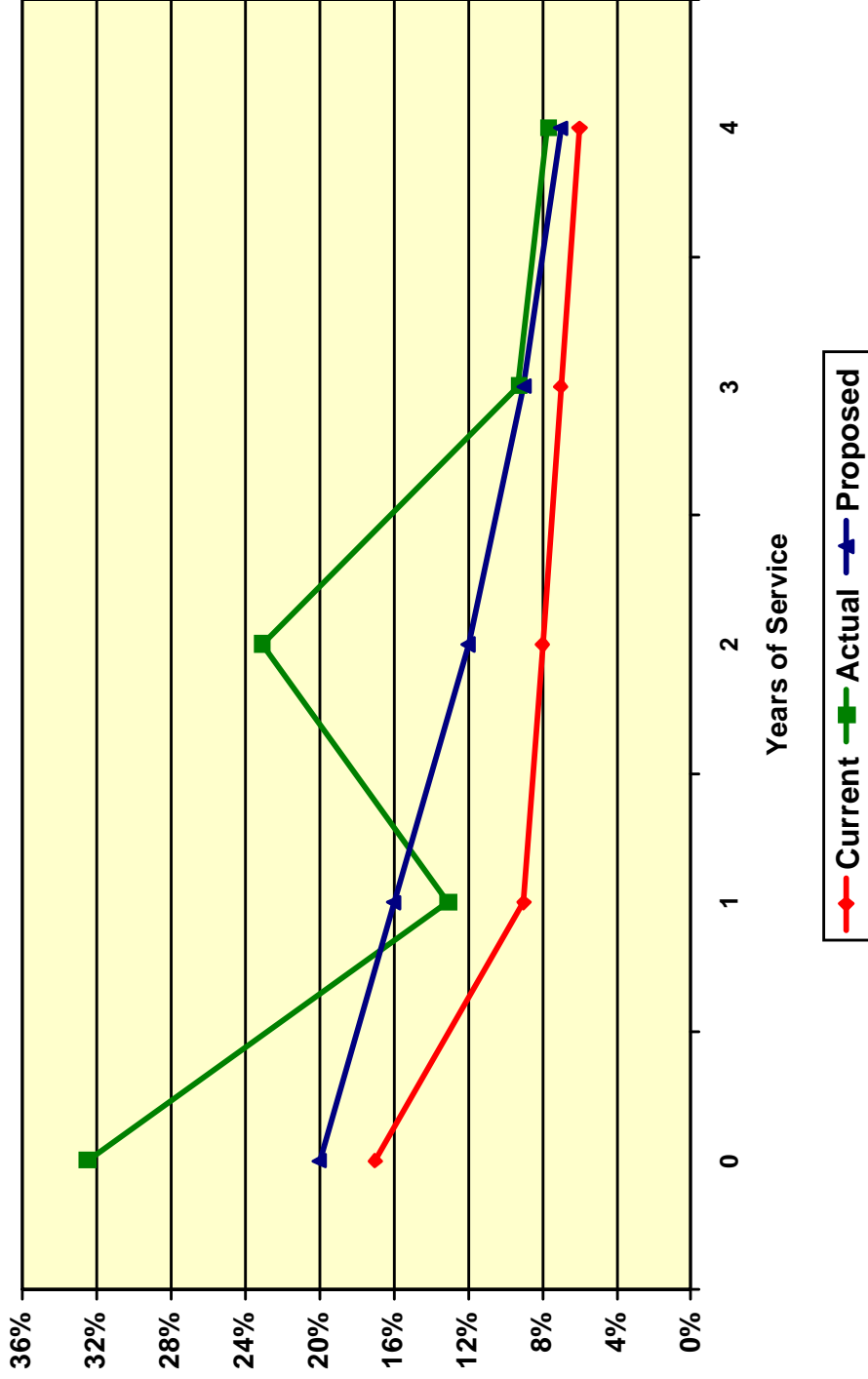


Chart 17
Withdrawal Rates - Safety Law & Fire Members
(Less Than 5 Years of Service)

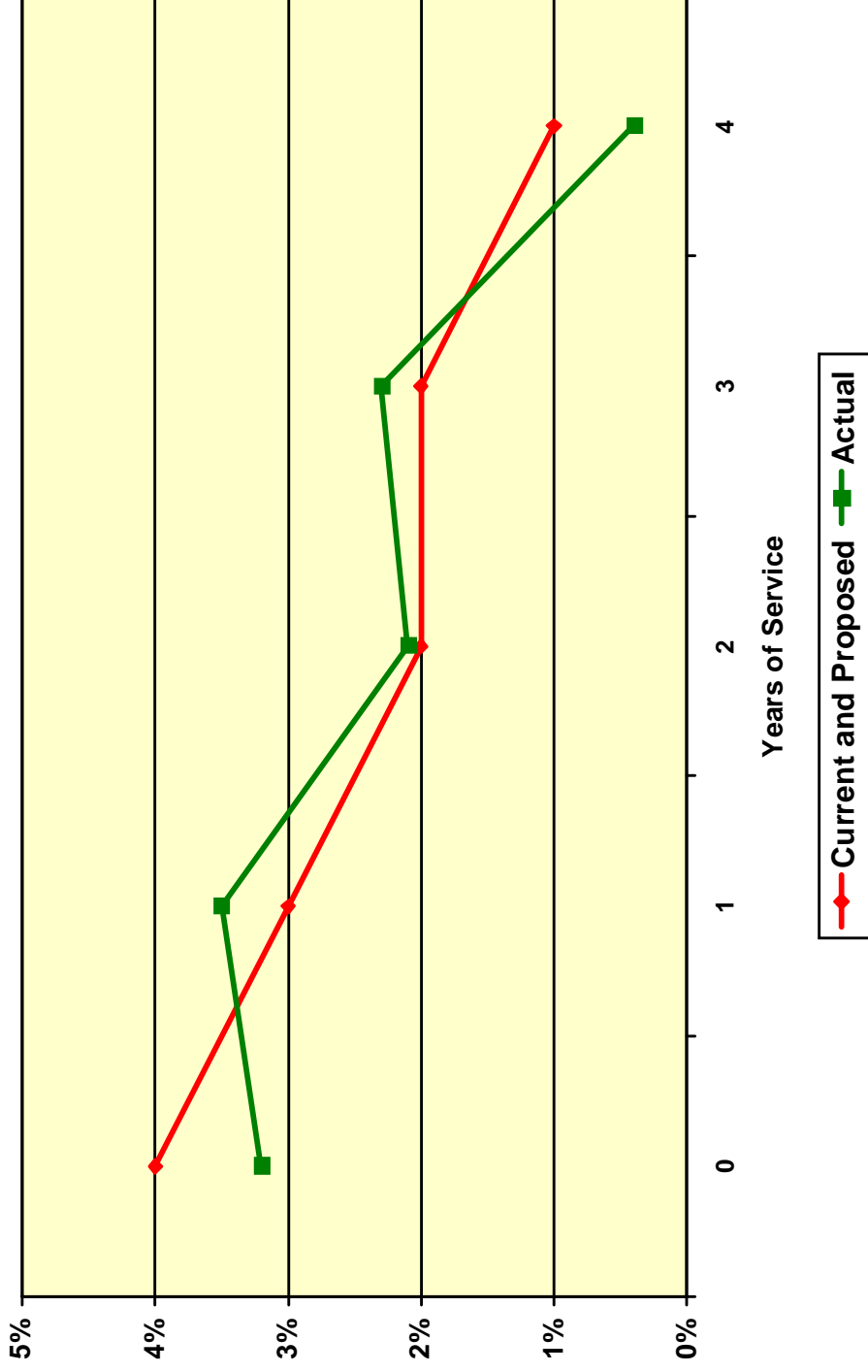


Chart 18
Withdrawal Rates - Safety Probation Members
(Less Than 5 Years of Service)

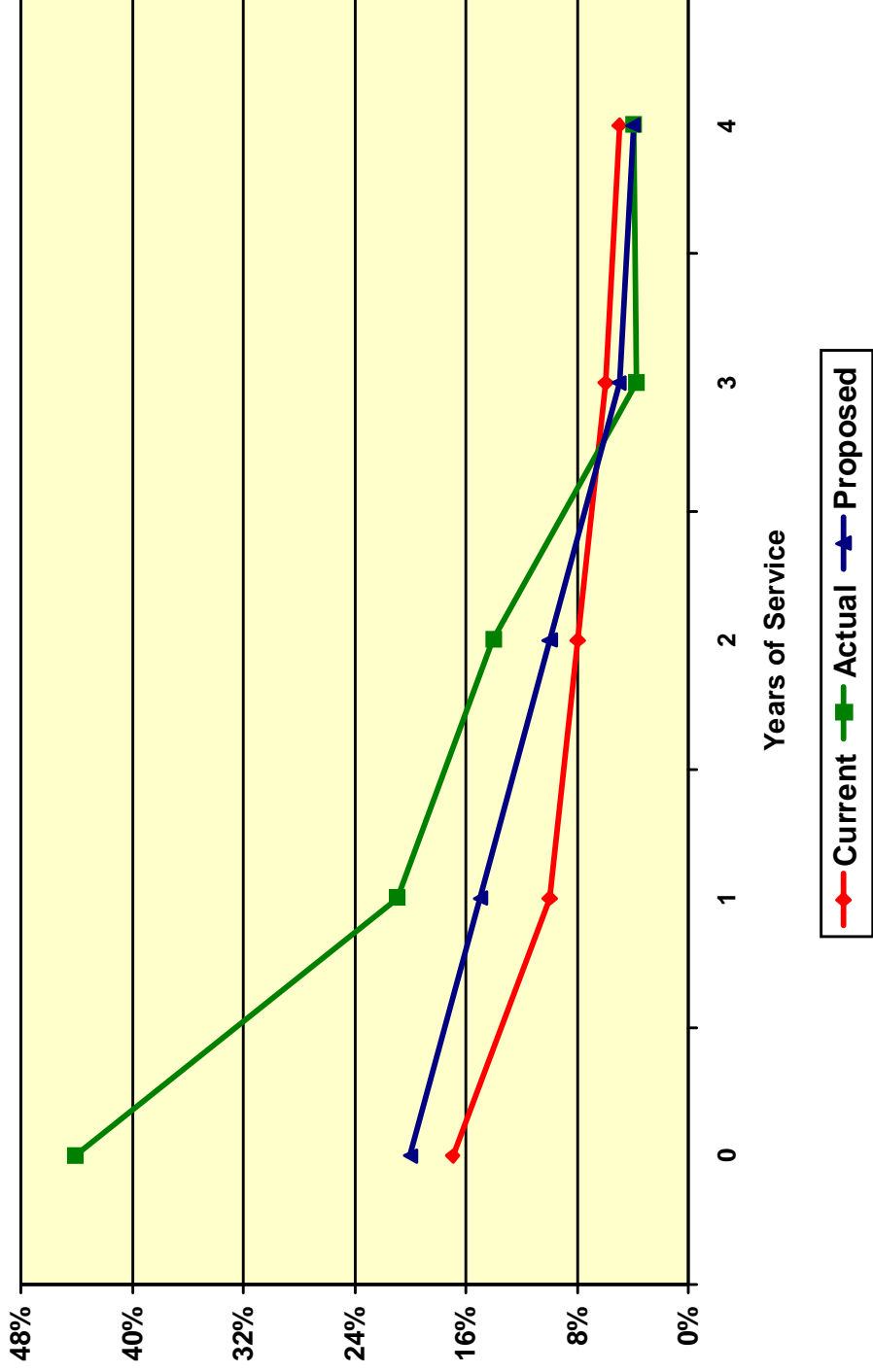


Chart 19
Withdrawal Rates - General All Other Members
(5 or More Years of Service)

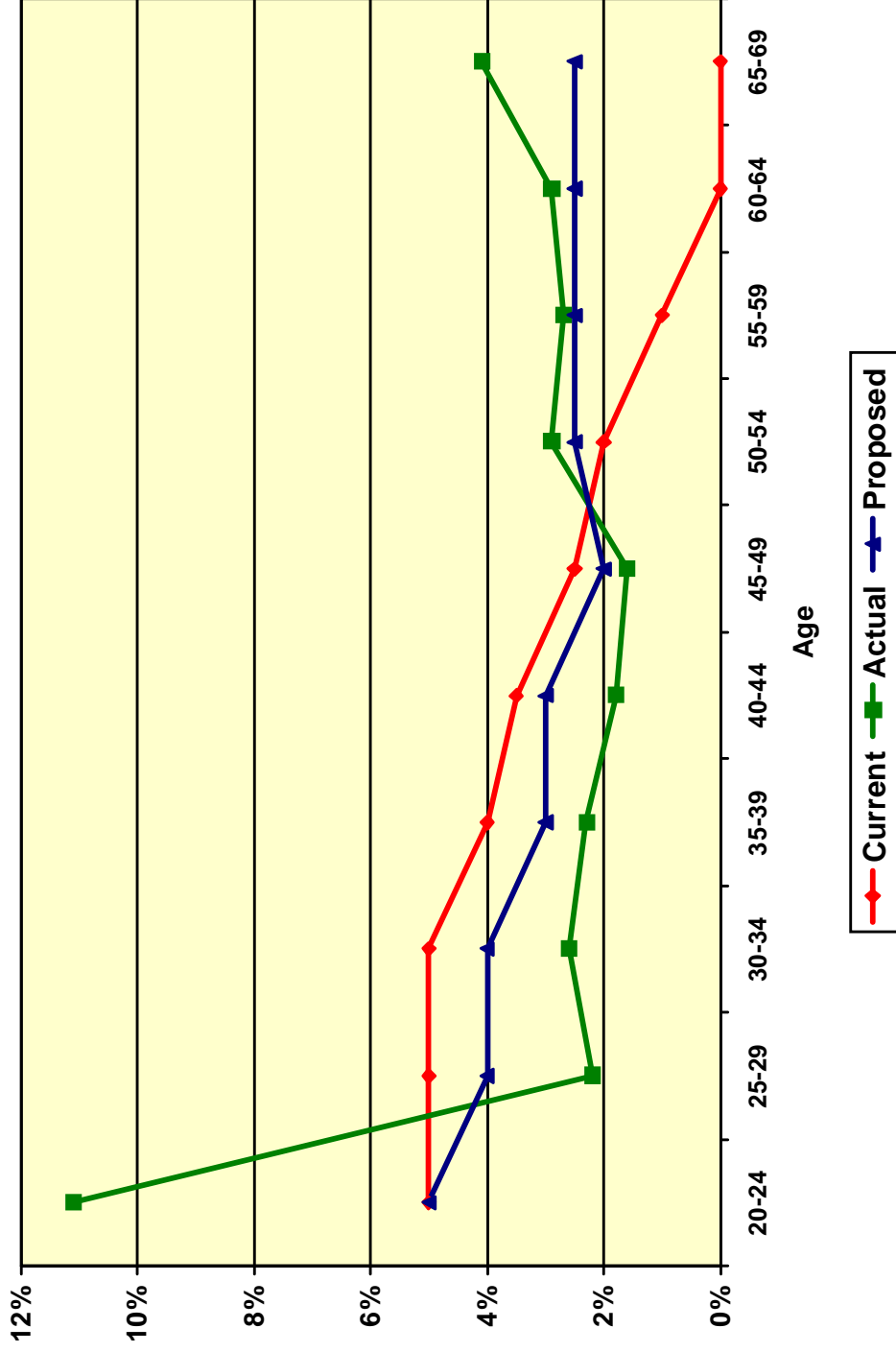


Chart 20
Withdrawal Rates - General OCTA Members
(5 or More Years of Service)

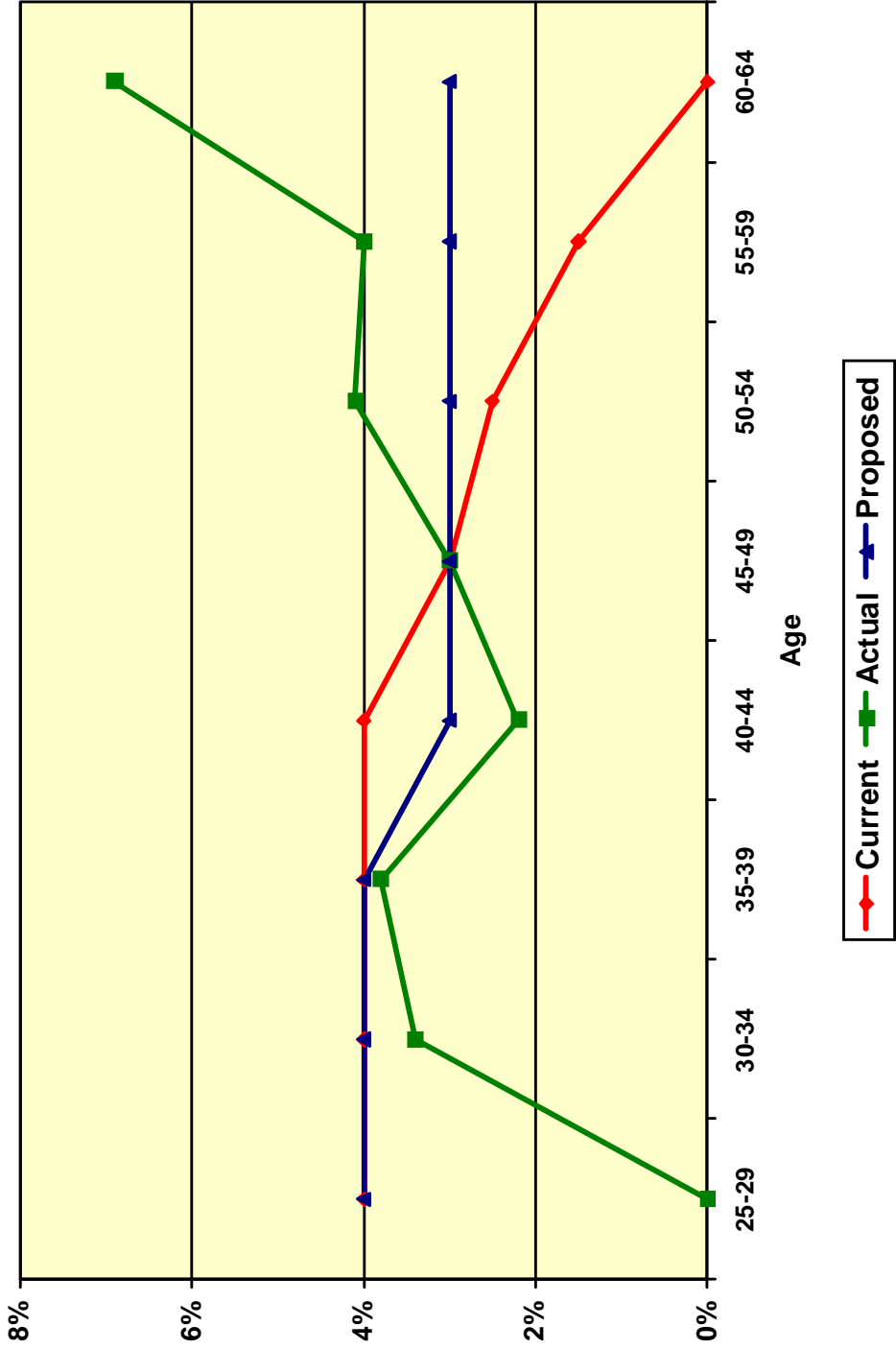


Chart 21
Withdrawal Rates - Safety Law & Fire Members
(5 or More Years of Service)

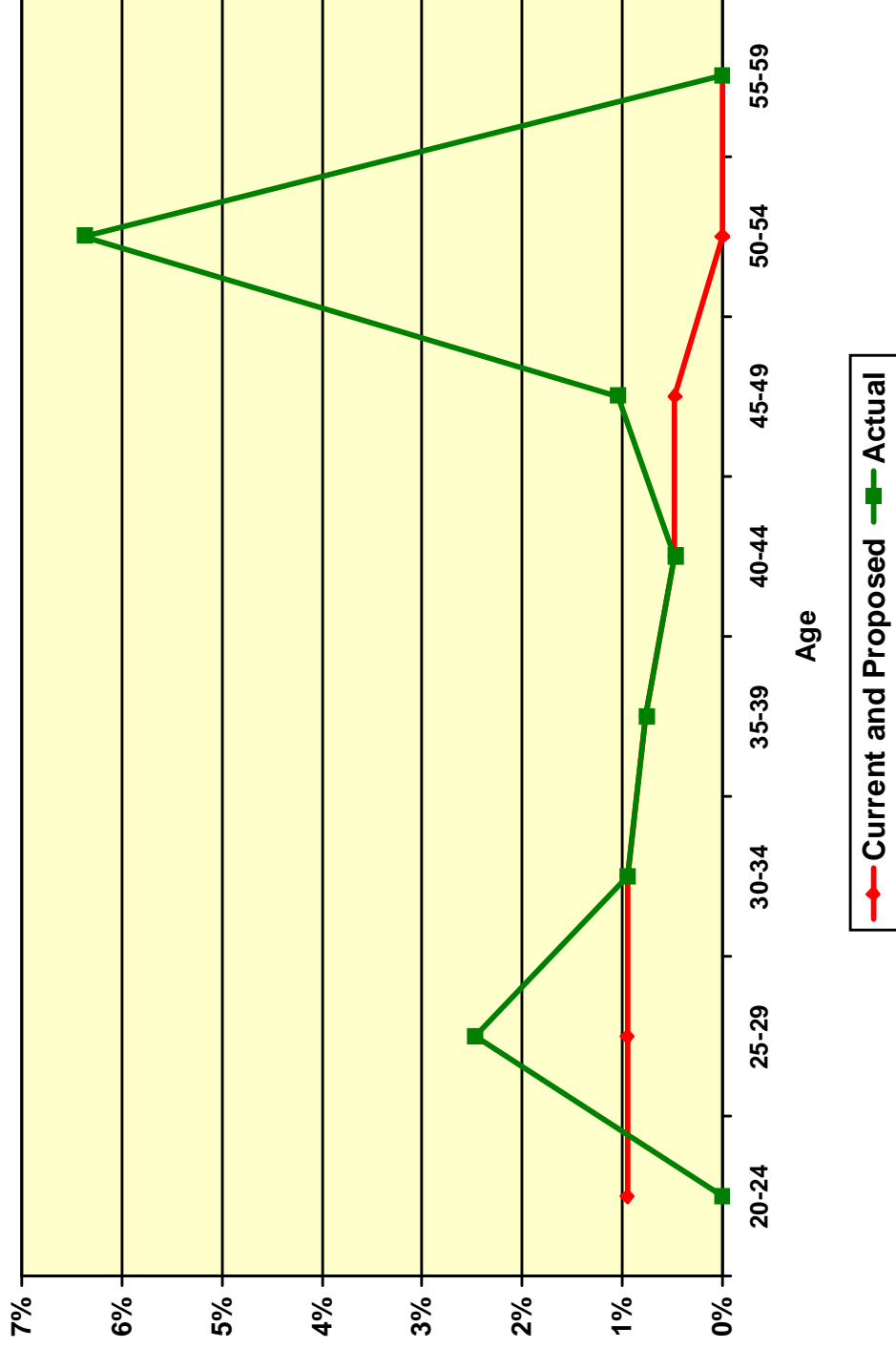
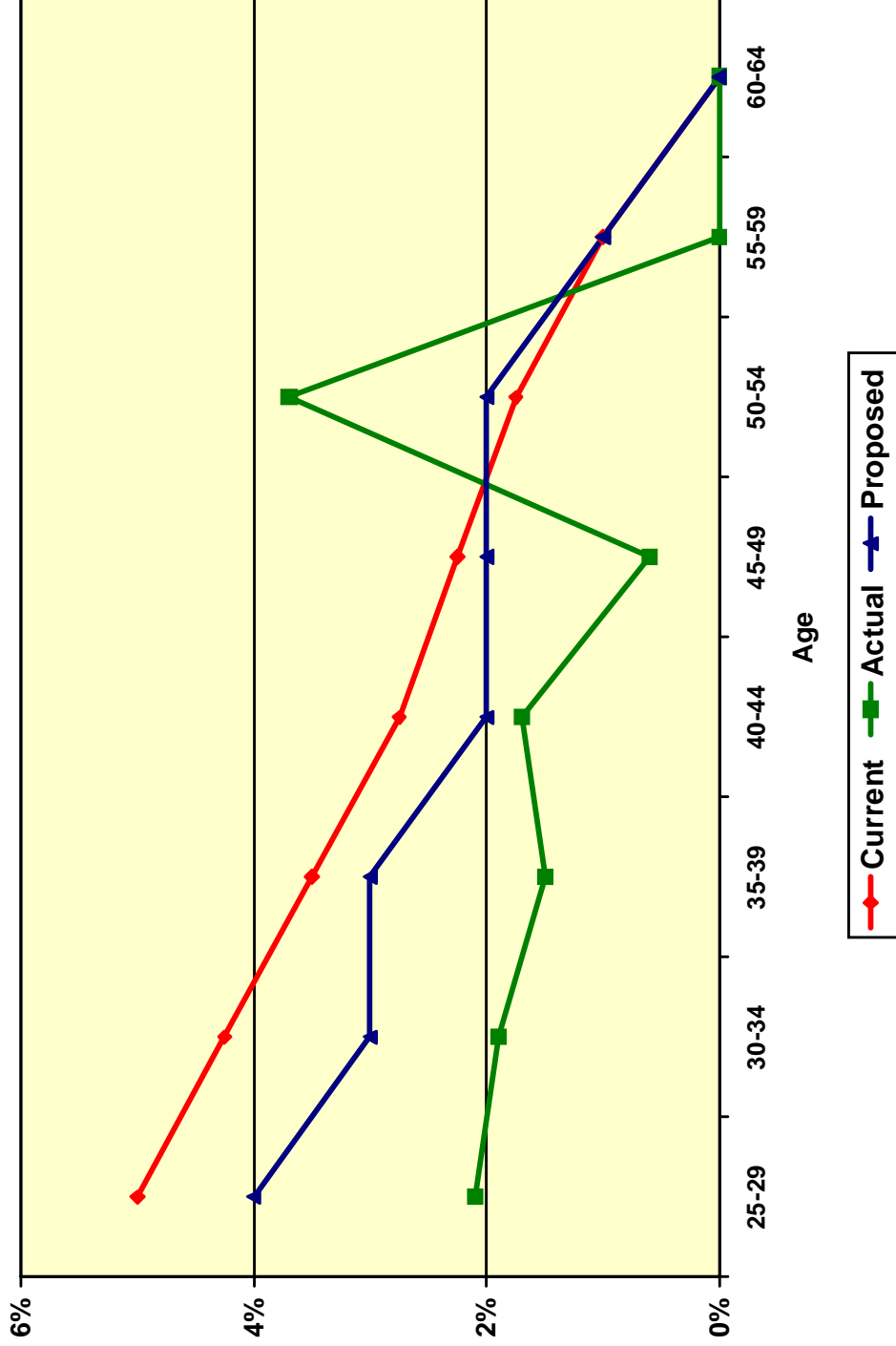


Chart 22
Withdrawal Rates - Safety Probation Members
(5 or More Years of Service)



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	0.00%	0.00%	0.00%
25 – 29	0.00	0.00	0.00
30 – 34	0.05	0.00	0.03
35 – 39	0.10	0.04	0.08
40 – 44	0.15	0.10	0.13
45 – 49	0.18	0.10	0.15
50 – 54	0.20	0.10	0.15
55 – 59	0.25	0.18	0.20
60 – 64	0.40	0.41	0.40
65 – 69	0.40	0.30	0.40

Rates of Disability Incidence – General OCTA

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	0.00%	0.00%	0.00%
25 – 29	0.00	0.00	0.00
30 – 34	0.05	0.20	0.05
35 – 39	0.10	0.35	0.10
40 – 44	0.40	0.00	0.40
45 – 49	0.55	0.48	0.50
50 – 54	0.70	0.29	0.60
55 – 59	1.00	0.92	1.00
60 – 64	1.50	1.39	1.50
65 – 69	1.50	0.62	1.50

Rates of Disability Incidence – Safety Law & Fire

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	0.05%	0.00%	0.02%
25 – 29	0.10	0.00	0.05
30 – 34	0.20	0.00	0.10
35 – 39	0.40	0.21	0.30
40 – 44	0.60	0.18	0.40
45 – 49	0.80	0.23	0.60
50 – 54	1.10	1.35	1.20
55 – 59	3.00	1.60	2.00
60 – 64	4.00	5.45	5.00

Rates of Disability Incidence – Safety Probation

Age	Current Rate	Observed Rate	Proposed Rate
20 – 24	0.00%	0.00%	0.00%
25 – 29	0.10	0.00	0.10
30 – 34	0.20	0.00	0.20
35 – 39	0.20	0.15	0.20
40 – 44	0.20	0.00	0.20
45 – 49	0.20	0.00	0.20
50 – 54	0.20	0.43	0.20
55 – 59	0.20	0.72	0.20
60 – 64	0.00	1.67	0.00

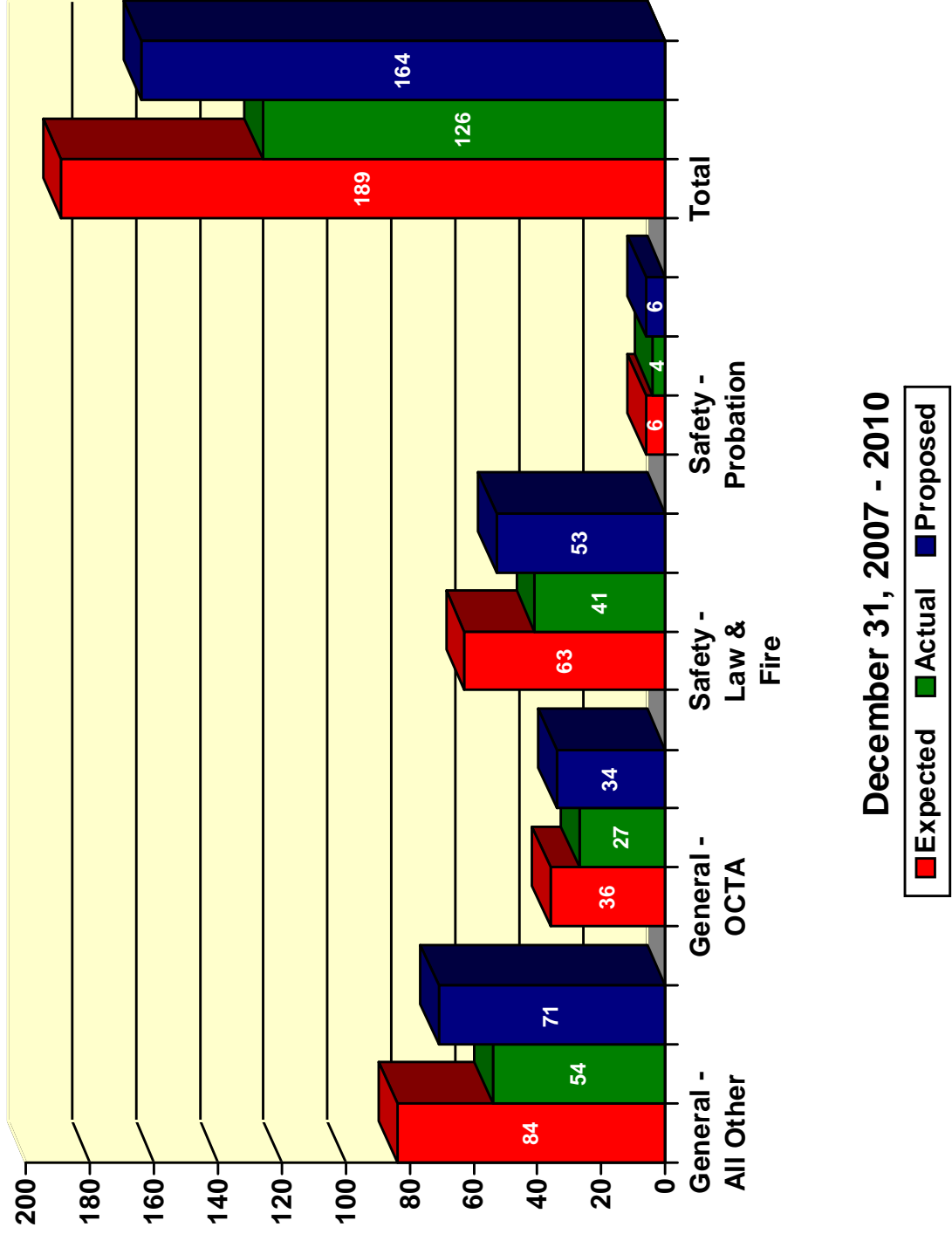
Chart 23 compares the actual number of non-service connected and service connected disabilities over the past three years to that expected under both the current and proposed assumptions. The proposed disability rates were adjusted to reflect the past three years experience.

Chart 24 shows actual disablement rates, compared to the assumed and proposed rates for General All Other members. Charts 25-27 graph the same information as Chart 24, but for General OCTA, Safety Law and Fire and Safety Probation members.

The following table shows the currently assumed, observed and recommended assumed percentages for service versus non-service connected disability for the groups.

Group	Currently assumed percentage for disablements receiving service connected disability	Observed percentage receiving service connected disability	Proposed percentage for disablements receiving service connected disability	Proposed percentage for disablements receiving non-service connected disability
General All Other	50%	52%	50%	50%
General OCTA	70%	63%	70%	30%
Safety Law & Fire	100%	95%	100%	0%
Safety Probation	100%	75%	100%	0%

Chart 23
Actual Number of Disabilities Compared to Expected



December 31, 2007 - 2010

Expected Actual Proposed

Chart 24
Disablement Rates for General All Other Members

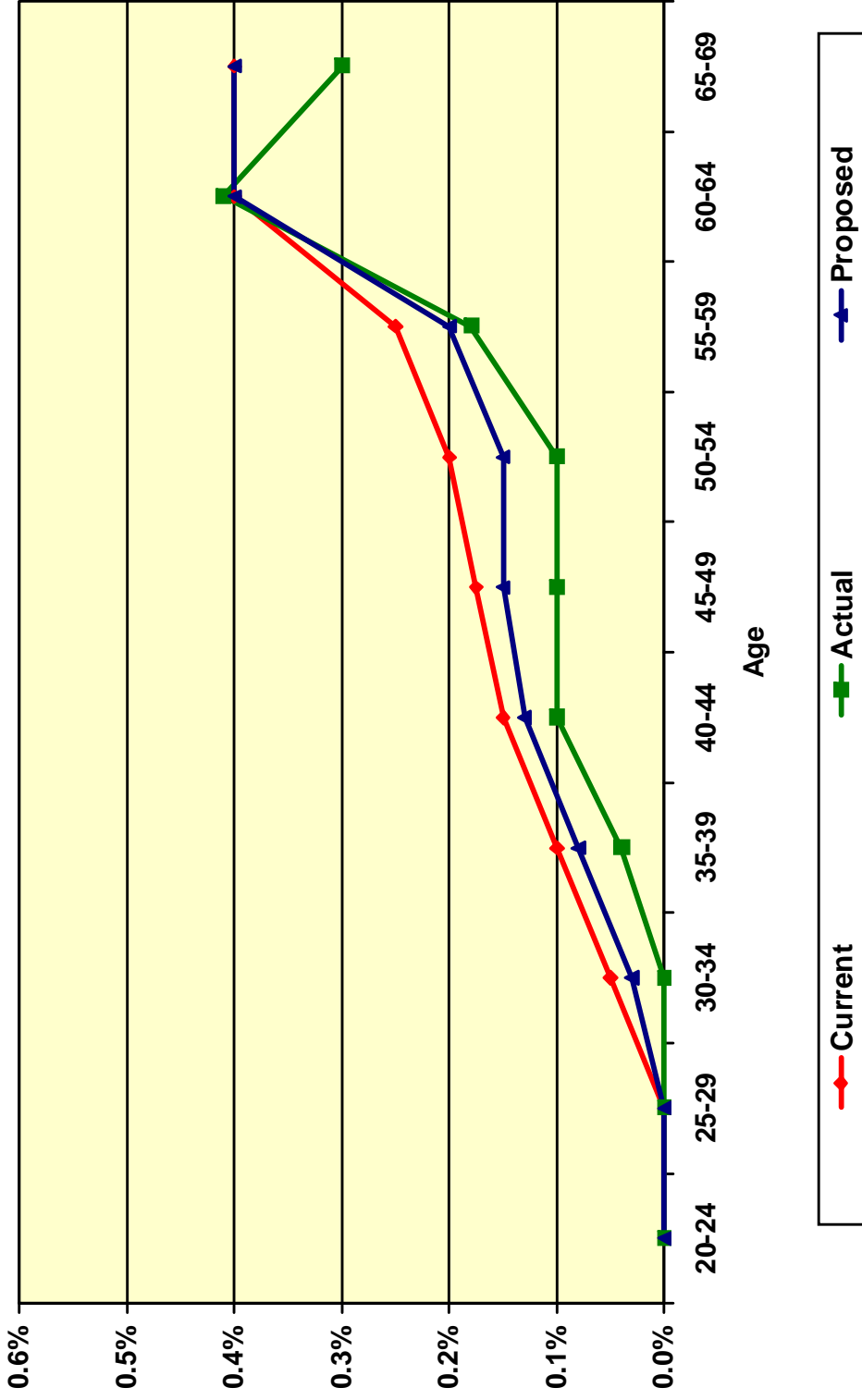


Chart 25
Disablement Rates for General OCTA Members

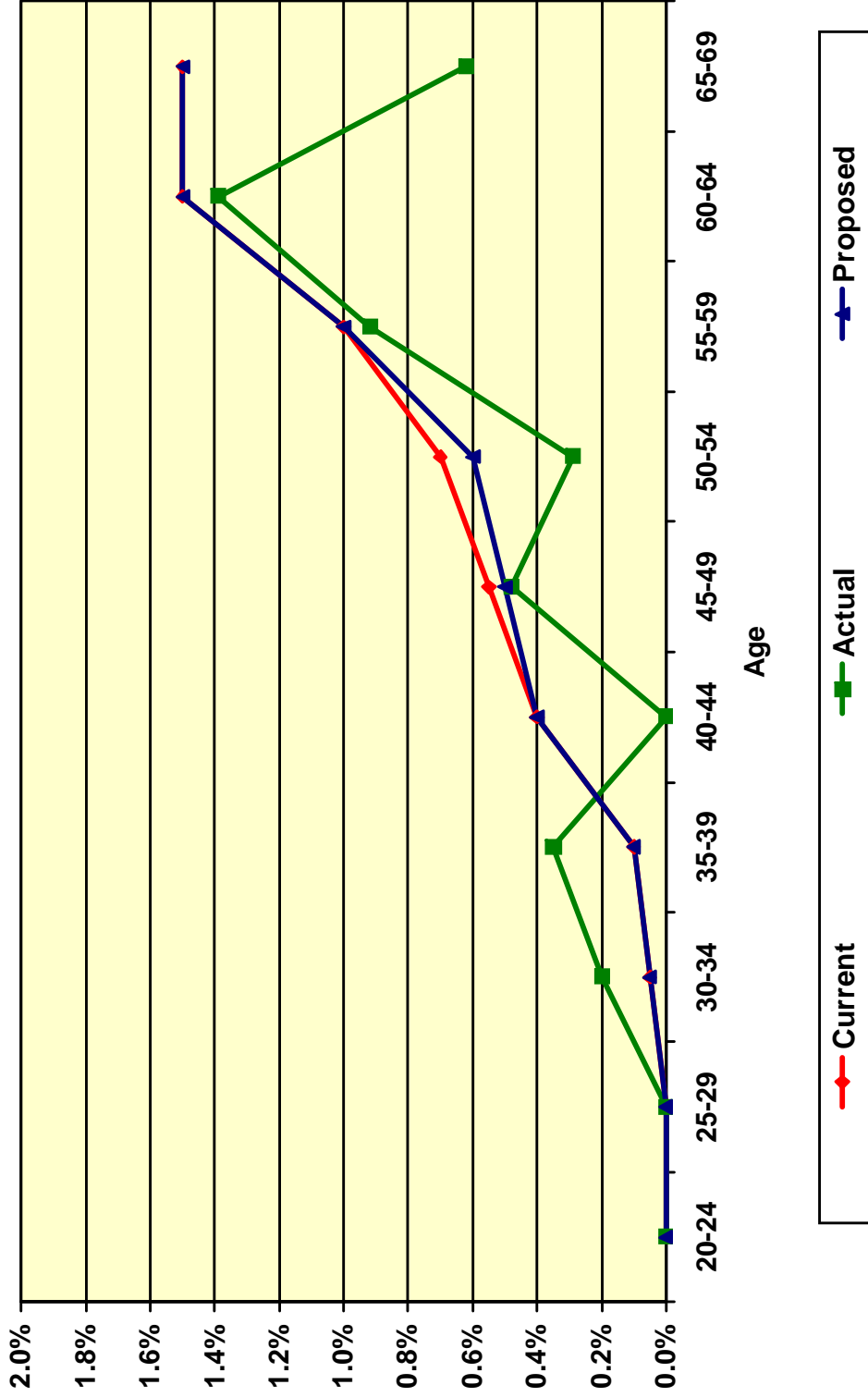
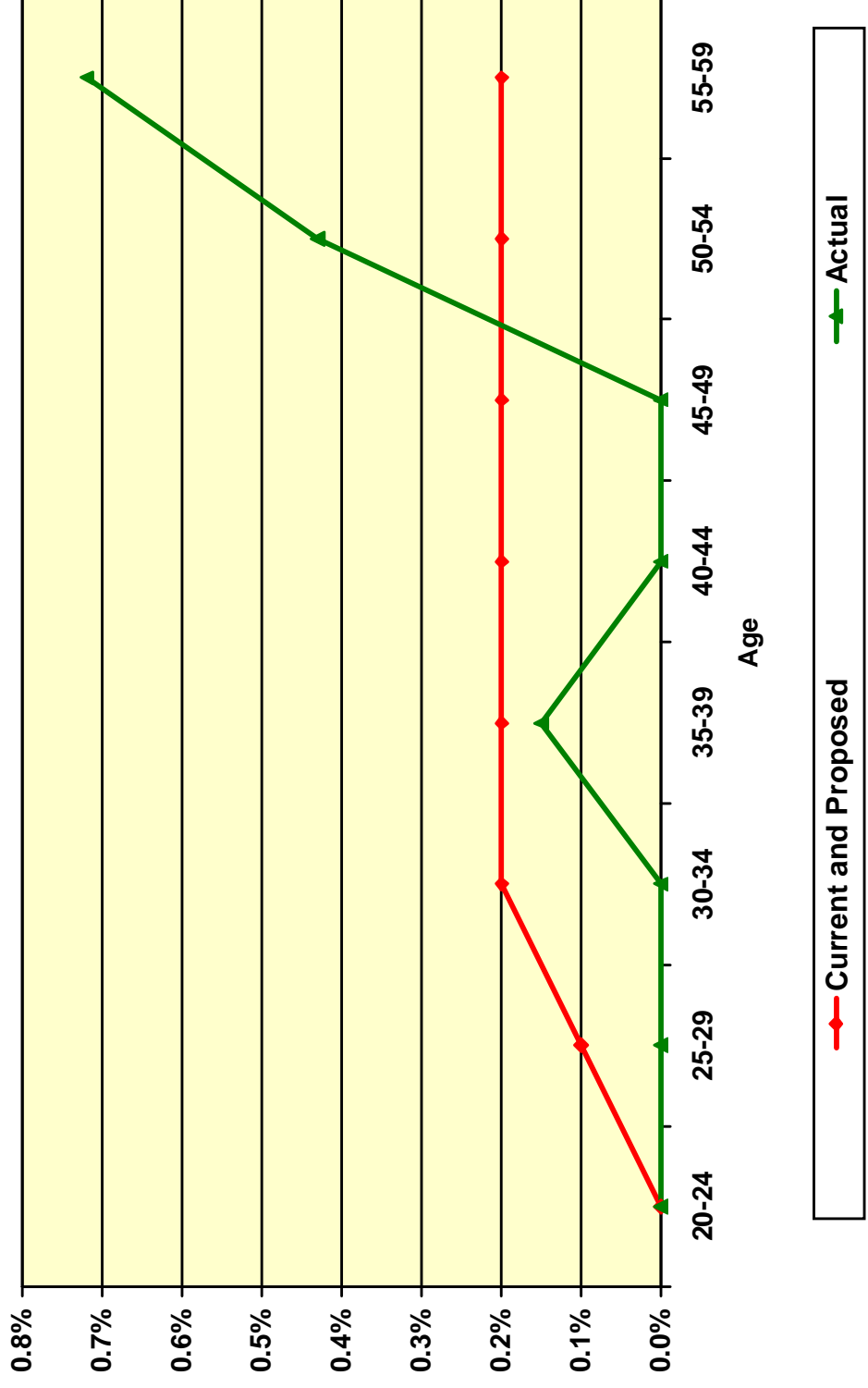


Chart 26
Disablement Rates for Safety Law & Fire Members



Chart 27
Disablement Rates for Safety - Probation Members



G. MERIT AND PROMOTION 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 promotion increases.

The inflationary increases are assumed to follow the general inflation assumption discussed in our separate economic assumption report, where we recommended a 3.50% inflation assumption. We also discussed in that report our recommended assumption of 0.25% annual "across the board" pay increases. Therefore, the total assumed inflation and real "across the board" pay increase (i.e., wage inflation) is 3.75%; this is used as the assumed annual rate of payroll growth at which payments to the UAAL are assumed to increase.

The annual merit and promotion 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 wage inflation component from these increases (equal to the increase in the members' average salary during the year);
- Averaging these annual increases over the three year experience period; and
- Modifying current assumptions to reflect some portion of these measured increases reflective of their "credibility."

We are recommending increases in the merit and promotion assumptions for both General and Safety members; however, for General members the increase is only for the first year of service.

The following table summarizes General members' actual average merit and promotion increases by years of service over the three-year experience periods from January 1, 2005 through December 31, 2007 and from January 1, 2008 through December 31, 2010, and compares both to the current and proposed assumptions for General members. The actual increases were reduced by 3.05% for the three-year period from January 1, 2005 through December 31, 2007 and by 4.53% for the three-year period from January 1, 2008 through December 31, 2010. These were the actual increases in the members' average salaries over each three-year experience period. Of note is that the 4.53% average inflation plus "across the board" increase might have been extraordinarily high in an environment where the number of actives decreased between the December 31, 2007 and December 31, 2010 valuations.

General				
Years of Service	Current Assumptions	January 1, 2005 Through December 31, 2007 Average General Merit and Promotion Increases	January 1, 2008 Through December 31, 2010 Average General Merit and Promotion Increases	Proposed Assumptions
Less than 1	8.00%	13.27%	11.10%	10.00%
1	7.00	9.10	7.17	7.00
2	6.00	7.99	5.89	6.00
3	5.00	6.46	4.85	5.00
4	4.00	5.20	4.35	4.00
5	3.00	3.94	3.41	3.00
6	2.00	3.42	1.96	2.00
7	1.75	3.08	1.79	1.75
8	1.50	2.69	1.12	1.50
9	1.25	3.04	0.99	1.25
10	1.25	2.77	0.56	1.25
11	1.25	2.55	0.70	1.25
12	1.25	2.44	0.77	1.25
13	1.25	2.76	0.65	1.25
14	1.25	2.23	0.44	1.25
15	1.25	2.00	0.00	1.25
16	1.00	1.76	0.25	1.00
17	1.00	1.77	-0.10	1.00
18	1.00	1.92	0.26	1.00
19	1.00	1.71	0.10	1.00
20 & over	1.00	1.90	0.12	1.00

The following table provides the same information for Safety members. The actual average merit and promotion increases were determined by reducing the actual average total salary increases by 3.29% for the three-year period from January 1, 2005 through December 31, 2007 and by 4.84% for the three-year period from January 1, 2008 through December 31, 2010. These were the actual increases in the members' average salaries over each three-year experience period. Again, the 4.84% average inflation plus "across the board" increase might have been extraordinarily high in an environment where the number of actives decreased between the December 31, 2007 and December 31, 2010 valuations.

Safety				
Years of Service	Current Assumptions	January 1, 2005 Through December 31, 2007 Average Safety Merit and Promotion Increases	January 1, 2008 Through December 31, 2010 Average Safety Merit and Promotion Increases	Proposed Assumptions
Less than 1	10.00%	22.39%	17.76%	14.00%
1	8.00	11.90	8.88	9.00
2	7.00	8.68	9.01	8.00
3	6.00	8.27	7.30	7.00
4	4.00	5.52	6.19	5.00
5	3.00	4.23	4.69	4.00
6	2.00	3.58	3.78	3.00
7	1.75	2.99	3.18	3.00
8	1.50	2.00	2.59	2.00
9	1.25	2.36	2.48	2.00
10	1.00	1.82	1.73	1.50
11	1.00	2.11	2.14	1.50
12	1.00	1.43	2.82	1.50
13	1.00	1.52	2.28	1.50
14	1.00	1.66	3.33	1.50
15	1.00	1.40	2.27	1.50
16	1.00	1.68	2.33	1.00
17	1.00	2.11	2.21	1.00
18	1.00	1.51	4.08	1.00
19	1.00	1.75	3.54	1.00
20 & over	1.00	1.41	3.27	1.00

Charts 28 and 29 provide a graphical comparison of the actual merit and promotion increases, compared to the proposed assumptions. Chart 28 shows this information for General members and Chart 29 is for Safety members.

Chart 28
Promotional and Merit Salary Increase Rates -
General Members

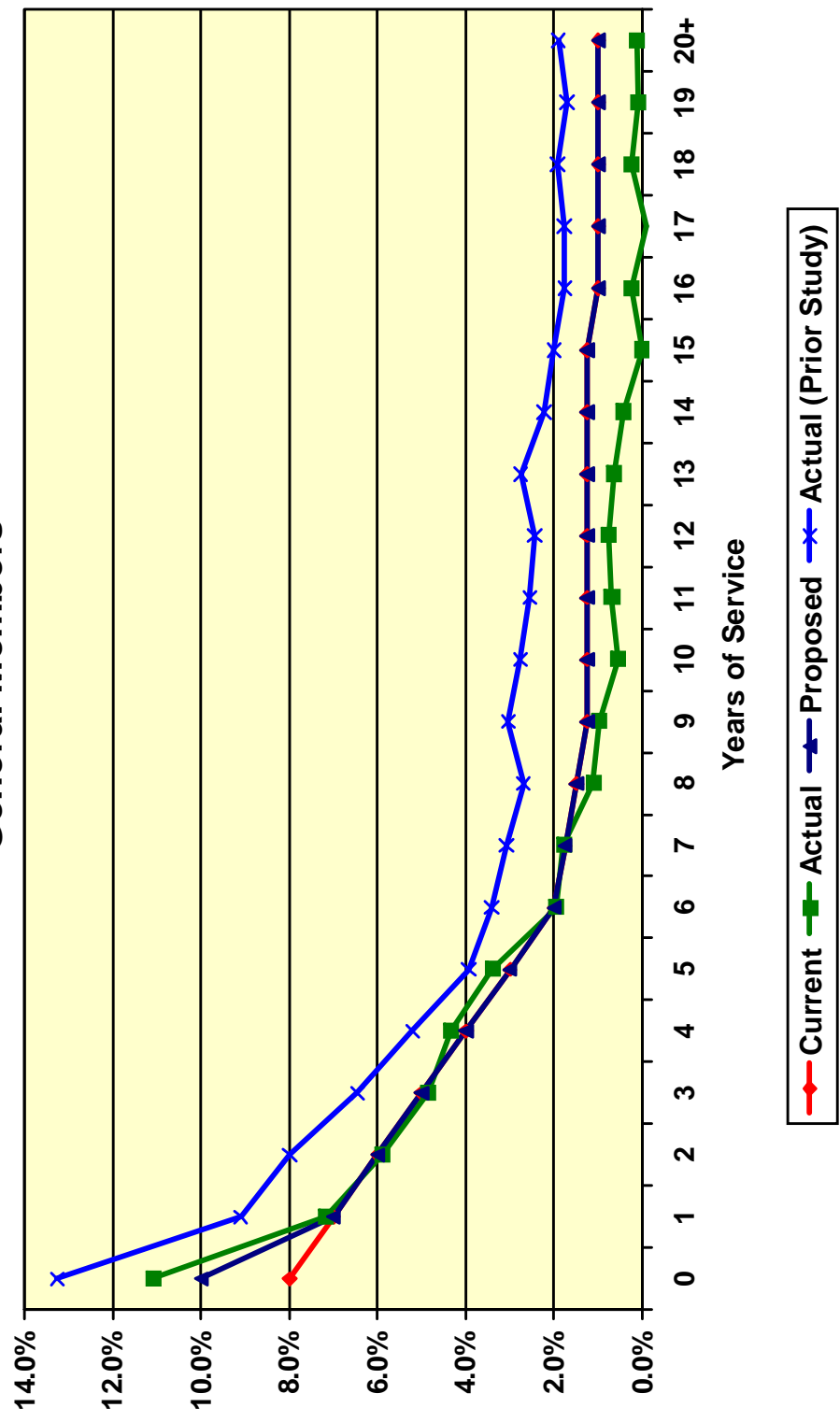
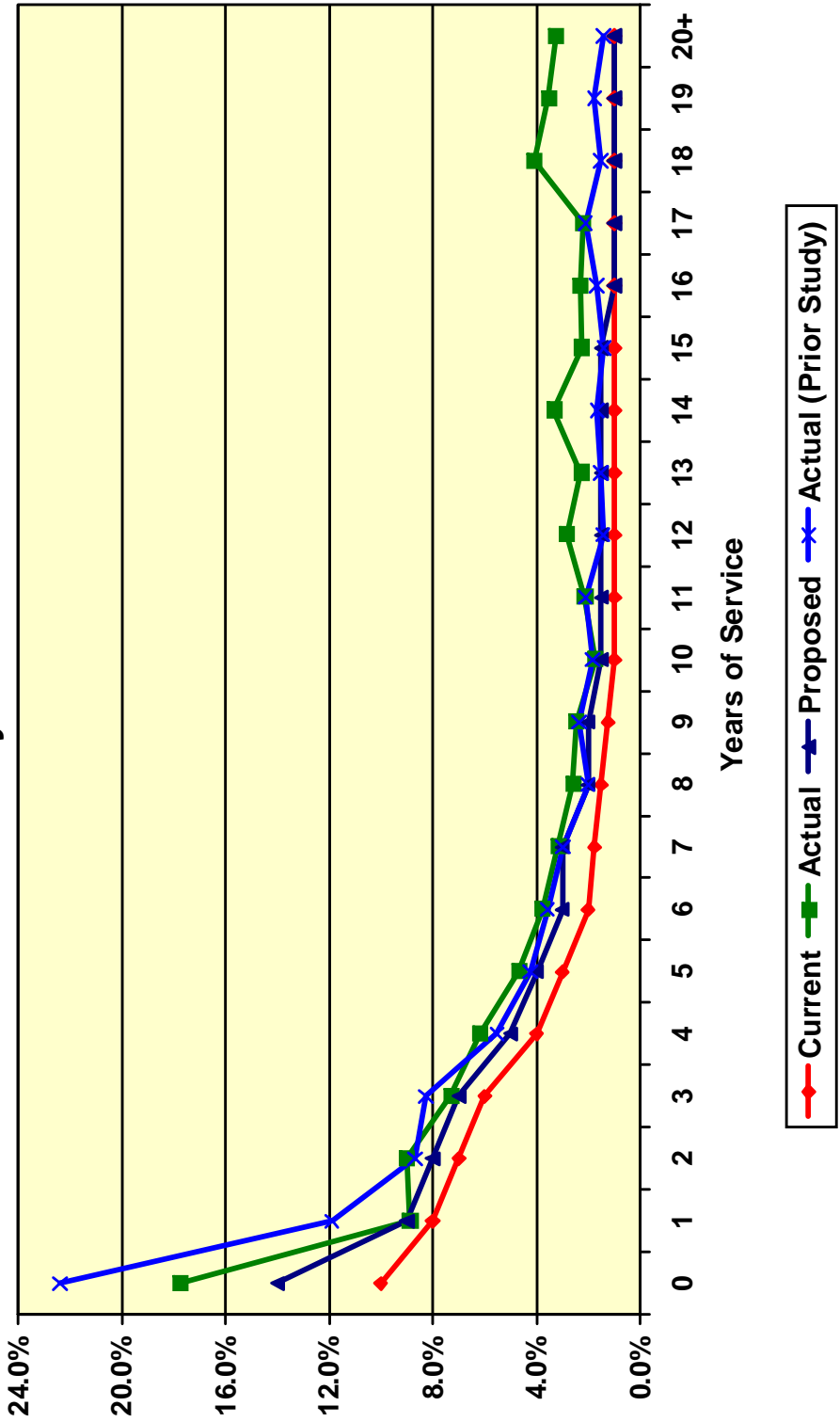


Chart 29
Promotional and Merit Salary Increase Rates -
Safety Members



H. ANNUAL PAYOFFS

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.

In this study, we have collected data for the last three years to estimate terminal pay for active members as a percentage of current pay.

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

	Final One Year Salary			Final Three Year Salary		
	Currently Assumed	Actual	Proposed	Currently Assumed	Actual	Proposed
General Members	4.50%	4.00%	4.00%	2.60%	2.68%	2.70%
Safety - Probation	4.80%	5.17%	5.20%	2.70%	2.56%	2.70%
Safety - Law	8.20%	6.53%	6.60%	5.60%	4.39%	4.50%
Safety - Fire	4.00%	4.12%	4.00%	3.60%	1.80%	2.00%

APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS

Post – Retirement Mortality Rates:

Healthy: For General Members and all Beneficiaries: RP-2000 Combined Healthy Mortality Table set back one year.

For Safety Members: RP-2000 Combined Healthy Mortality Table set back two years.

Disabled: For General Members: RP-2000 Combined Healthy Mortality Table set forward three years.

For Safety Members: RP-2000 Combined Healthy Mortality Table set forward two years.

Employee Contribution Rates and Optional Benefits:

For General Members: RP-2000 Combined Healthy Mortality Table set back one year, weighted 40% male and 60% female.

For Safety Members: RP-2000 Combined Healthy Mortality Table set back two years, weighted 80% male and 20% female.

Termination Rates Before Retirement:

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

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

Termination Rates Before Retirement (Continued):

Age	Rate (%)			
	Disability			
	General All Other⁽¹⁾	General OCTA⁽²⁾	Safety – Law & Fire⁽³⁾	Safety – Probation⁽³⁾
20	0.00	0.00	0.03	0.00
25	0.00	0.00	0.08	0.06
30	0.03	0.03	0.16	0.16
35	0.08	0.08	0.32	0.20
40	0.13	0.28	0.52	0.20
45	0.17	0.49	0.72	0.20
50	0.19	0.64	0.98	0.20
55	0.23	0.88	2.24	0.20
60	0.34	1.30	3.60	0.08

- ⁽¹⁾ 50% of General All Other disabilities are assumed to be service connected disabilities. The other 50% are assumed to be non-service connected.
- ⁽²⁾ 70% of General – OCTA disabilities are assumed to be service connected disabilities. The other 30% are assumed to be non-service connected.
- ⁽³⁾ 100% of Safety – Law Enforcement, Fire and Probation disabilities are assumed to be service connected disabilities.

Termination Rates Before Retirement (Continued):

Rate (%)				
Termination (< 5 Years of Service)				
Years of Service	General All Other ⁽¹⁾	General OCTA ⁽¹⁾	Safety – Law & Fire ⁽¹⁾	Safety – Probation ⁽¹⁾
0	13.0	17.0	4.0	17.0
1	9.0	9.0	3.0	10.0
2	8.0	8.0	2.0	8.0
3	7.0	7.0	2.0	6.0
4	5.0	6.0	1.0	5.0

Termination (5+ Years of Service)				
Age	General All Other ⁽²⁾	General OCTA ⁽²⁾	Safety – Law & Fire ⁽³⁾	Safety – Probation ⁽²⁾
20	5.0	4.0	1.0	5.0
25	5.0	4.0	1.0	5.0
30	5.0	4.0	1.0	4.6
35	4.4	4.0	0.9	3.8
40	3.7	4.0	0.6	3.1
45	2.9	3.4	0.5	2.5
50	2.2	2.7	0.2	2.0
55	1.4	1.9	0.0	1.3
60	0.4	0.6	0.0	0.4

⁽¹⁾ 75% of all terminated members will choose a refund of contributions and 25% will choose a deferred vested benefit.

⁽²⁾ 20% of all terminated members will choose a refund of contributions and 80% will choose a deferred vested benefit.

⁽³⁾ 10% of terminated members will choose a refund of contributions and 90% will choose a deferred vested benefit.

Retirement Rates:

Age	Rate (%)						
	General – Enhanced	General – Non- Enhanced	Safety – Law (31664.1) ⁽¹⁾	Safety – Law (31664.2) ⁽¹⁾	Safety – Fire (31664.1) ⁽¹⁾	Safety – Fire (31664.2) ⁽¹⁾	Safety – Probation ⁽¹⁾
50	2.5	3.0	15.0	11.5	10.0	8.0	4.0
51	2.5	3.0	15.0	12.0	12.0	10.0	4.0
52	2.5	3.0	15.0	12.7	14.0	11.0	4.0
53	2.5	3.0	20.0	17.9	15.0	12.0	7.0
54	5.0	3.0	20.0	18.8	17.0	14.0	10.0
55	15.0	4.0	20.0	30.7	25.0	24.0	20.0
56	8.0	5.0	20.0	20.0	25.0	23.0	20.0
57	8.0	6.0	20.0	20.0	30.0	27.0	20.0
58	10.0	7.0	25.0	25.0	30.0	27.0	25.0
59	10.0	9.0	30.0	30.0	40.0	36.0	30.0
60	13.0	11.0	100.0	100.0	100.0	100.0	35.0
61	13.0	13.0	100.0	100.0	100.0	100.0	45.0
62	15.0	15.0	100.0	100.0	100.0	100.0	60.0
63	15.0	17.0	100.0	100.0	100.0	100.0	100.0
64	20.0	19.0	100.0	100.0	100.0	100.0	100.0
65	20.0	25.0	100.0	100.0	100.0	100.0	100.0
66	24.0	20.0	100.0	100.0	100.0	100.0	100.0
67	24.0	20.0	100.0	100.0	100.0	100.0	100.0
68	24.0	20.0	100.0	100.0	100.0	100.0	100.0
69	24.0	20.0	100.0	100.0	100.0	100.0	100.0
70	100.0	100.0	100.0	100.0	100.0	100.0	100.0

⁽¹⁾ 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 deferred vested members, we make the following retirement assumption:

General Age: 57

Safety Age: 52

We assume that 30% of future General and Safety deferred vested members are reciprocal. For reciprocals, we assume 4.50% compensation increases per annum.

**Liability Calculation for Current
Deferred Vested Members:**

Liability for a current deferred vested member is calculated based on salary, service, and eligibility for reciprocal benefit as provided by the Retirement System. For those members without salary and/or service information, we assumed a refund of account balance.

Future Benefit Accruals:

1.0 year of service per year of employment. 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.

Percent Married:

80% of male members and 50% of female members are assumed to be married at retirement or time of pre-retirement death.

Age of Spouse:

Female (or male) four years younger (or older) than spouse.

Net Investment Return:

7.75%; net of investment and administrative expenses.

**Employee Contribution
Crediting Rate:**

5.00%, compounded semi-annually.

Consumer Price Index:

Increase of 3.50% per year, retiree COLA increases due to CPI subject to a 3.0% maximum change per year.

Salary Increases:

<u>Annual Rate of Compensation Increase (%)</u>		
Inflation: 3.50% per year, plus the following merit and promotion increases:		
<u>Years of Service</u>	<u>General</u>	<u>Safety</u>
Less than 1	8.00%	10.00%
1	7.00	8.00
2	6.00	7.00
3	5.00	6.00
4	4.00	4.00
5	3.00	3.00
6	2.00	2.00
7	1.75	1.75
8	1.50	1.50
9	1.25	1.25
10	1.25	1.00
11	1.25	1.00
12	1.25	1.00
13	1.25	1.00
14	1.25	1.00
15	1.25	1.00
16	1.00	1.00
17	1.00	1.00
18	1.00	1.00
19	1.00	1.00
20 & over	1.00	1.00

Annual Payoffs Assumptions:

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

	<u>Final One Year Salary</u>	<u>Final Three Year Salary</u>
General Members	4.50%	2.60%
Safety - Probation	4.80%	2.70%
Safety - Law	8.20%	5.60%
Safety - Fire	4.00%	3.60%

The annual payoffs assumptions are the same for service and disability retirements.

APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS

Post – Retirement Mortality Rates:

Healthy: For General Members and all Beneficiaries: RP-2000 Combined Healthy Mortality Table set back three years.

For Safety Members: RP-2000 Combined Healthy Mortality Table set back two years.

Disabled: For General Members: RP-2000 Combined Healthy Mortality Table set forward three years.

For Safety Members: RP-2000 Combined Healthy Mortality Table set forward two years.

Employee Contribution Rates and Optional Benefits:

For General Members: RP-2000 Combined Healthy Mortality Table set back three years, weighted 40% male and 60% female.

For Safety Members: RP-2000 Combined Healthy Mortality Table set back two years, weighted 80% male and 20% female.

Termination Rates Before Retirement:

	Rate (%)			
	Mortality			
	General		Safety	
Age	Male	Female	Male	Female
25	0.04	0.02	0.04	0.02
30	0.04	0.02	0.04	0.02
35	0.06	0.04	0.06	0.04
40	0.09	0.06	0.10	0.06
45	0.12	0.09	0.13	0.09
50	0.17	0.13	0.19	0.14
55	0.27	0.20	0.29	0.22
60	0.47	0.35	0.53	0.39
65	0.88	0.67	1.00	0.76

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

Termination Rates Before Retirement (Continued):

Age	Rate (%)			
	Disability			
	General All Other⁽¹⁾	General OCTA⁽²⁾	Safety – Law & Fire⁽³⁾	Safety – Probation⁽³⁾
20	0.00	0.00	0.01	0.00
25	0.00	0.00	0.04	0.06
30	0.02	0.03	0.08	0.16
35	0.06	0.08	0.22	0.20
40	0.11	0.28	0.36	0.20
45	0.14	0.46	0.52	0.20
50	0.15	0.56	0.96	0.20
55	0.18	0.84	1.68	0.20
60	0.32	1.30	3.80	0.08

- ⁽¹⁾ 50% of General All Other disabilities are assumed to be service connected disabilities. The other 50% are assumed to be non-service connected.
- ⁽²⁾ 70% of General – OCTA disabilities are assumed to be service connected disabilities. The other 30% are assumed to be non-service connected.
- ⁽³⁾ 100% of Safety – Law Enforcement, Fire and Probation disabilities are assumed to be service connected disabilities.

Termination Rates Before Retirement (Continued):

Rate (%)				
Termination (< 5 Years of Service)				
Years of Service	General All Other ⁽¹⁾	General OCTA ⁽¹⁾	Safety – Law & Fire ⁽²⁾	Safety – Probation ⁽²⁾
0	13.0	20.0	4.0	20.0
1	8.0	16.0	3.0	15.0
2	7.0	12.0	2.0	10.0
3	6.0	9.0	2.0	5.0
4	5.0	7.0	1.0	4.0

Termination (5+ Years of Service)				
Age	General All Other ⁽³⁾	General OCTA ⁽³⁾	Safety – Law & Fire ⁽³⁾	Safety – Probation ⁽³⁾
20	5.0	4.0	1.0	4.0
25	4.4	4.0	1.0	4.0
30	4.0	4.0	1.0	3.4
35	3.4	4.0	0.9	3.0
40	3.0	3.4	0.6	2.4
45	2.4	3.0	0.5	2.0
50	2.3	3.0	0.2	2.0
55	2.5	3.0	0.0	1.4
60	2.5	3.0	0.0	0.4

⁽¹⁾ 50% of all terminated members will choose a refund of contributions and 50% will choose a deferred vested benefit.

⁽²⁾ 40% of all terminated members will choose a refund of contributions and 60% will choose a deferred vested benefit.

⁽³⁾ 30% of all terminated members will choose a refund of contributions and 70% will choose a deferred vested benefit.

Retirement Rates:

Age	Rate (%)						
	General – Enhanced	General – Non- Enhanced	Safety – Law (31664.1) ⁽¹⁾	Safety – Law (31664.2) ⁽¹⁾	Safety – Fire (31664.1) ⁽¹⁾	Safety – Fire (31664.2) ⁽¹⁾	Safety – Probation ⁽¹⁾
49	0.0	0.0	10.0	0.0	0.0	0.0	0.0
50	3.0	2.0	14.0	11.5	7.0	8.0	4.0
51	2.0	2.0	14.0	12.0	9.0	10.0	4.0
52	2.0	2.0	14.0	12.7	11.0	11.0	4.0
53	2.0	2.0	14.0	17.9	12.0	12.0	4.0
54	5.0	2.0	20.0	18.8	16.0	14.0	8.0
55	15.0	3.0	20.0	30.7	20.0	24.0	12.0
56	9.0	4.0	20.0	20.0	20.0	23.0	12.0
57	9.0	6.0	20.0	20.0	25.0	27.0	16.0
58	9.0	8.0	20.0	25.0	25.0	27.0	25.0
59	9.0	8.0	25.0	30.0	30.0	36.0	25.0
60	12.0	8.0	60.0	100.0	60.0	100.0	25.0
61	12.0	8.0	60.0	100.0	60.0	100.0	25.0
62	17.0	16.0	60.0	100.0	60.0	100.0	25.0
63	15.0	16.0	60.0	100.0	60.0	100.0	50.0
64	18.0	16.0	60.0	100.0	60.0	100.0	100.0
65	20.0	20.0	100.0	100.0	100.0	100.0	100.0
66	25.0	25.0	100.0	100.0	100.0	100.0	100.0
67	21.0	21.0	100.0	100.0	100.0	100.0	100.0
68	21.0	21.0	100.0	100.0	100.0	100.0	100.0
69	21.0	21.0	100.0	100.0	100.0	100.0	100.0
70	60.0	40.0	100.0	100.0	100.0	100.0	100.0
71	60.0	40.0	100.0	100.0	100.0	100.0	100.0
72	60.0	40.0	100.0	100.0	100.0	100.0	100.0
73	60.0	40.0	100.0	100.0	100.0	100.0	100.0
74	60.0	40.0	100.0	100.0	100.0	100.0	100.0
75	100.0	100.0	100.0	100.0	100.0	100.0	100.0

⁽¹⁾ 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 deferred vested members, we make the following retirement assumption:

General Age: 57

Safety Age: 53

We assume that 25% of future General and 30% of future Safety deferred vested members are reciprocal. For reciprocals, we assume 4.75% compensation increases per annum.

**Liability Calculation for Current
Deferred Vested Members:**

Liability for a current deferred vested member is calculated based on salary, service, and eligibility for reciprocal benefit as provided by the Retirement System. For those members without salary and/or service information, we assumed a refund of account balance.

Future Benefit Accruals:

1.0 year of service per year of employment. 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.

Percent Married:

80% of male members and 50% of female members are assumed to be married at retirement or time of pre-retirement death.

Age of Spouse:

Female (or male) three years younger (or older) than spouse.

Net Investment Return:

7.50%; net of investment and administrative expenses.

**Employee Contribution
Crediting Rate:**

5.00%, compounded semi-annually.

Consumer Price Index:

Increase of 3.50% per year, retiree COLA increases due to CPI subject to a 3.0% maximum change per year.

Salary Increases:

<u>Annual Rate of Compensation Increase (%)</u>		
Inflation: 3.50% per year, plus “across the board” salary increases of 0.25% per year, plus the following merit and promotion increases:		
<u>Years of Service</u>	<u>General</u>	<u>Safety</u>
Less than 1	10.00%	14.00%
1	7.00	9.00
2	6.00	8.00
3	5.00	7.00
4	4.00	5.00
5	3.00	4.00
6	2.00	3.00
7	1.75	3.00
8	1.50	2.00
9	1.25	2.00
10	1.25	1.50
11	1.25	1.50
12	1.25	1.50
13	1.25	1.50
14	1.25	1.50
15	1.25	1.50
16	1.00	1.00
17	1.00	1.00
18	1.00	1.00
19	1.00	1.00
20 & over	1.00	1.00

Annual Payoffs Assumptions:

Additional compensation amounts are expected to be received during a member’s final average earnings period. The percentages used in this valuation are:

	<u>Final One Year Salary</u>	<u>Final Three Year Salary</u>
General Members	4.00%	2.70%
Safety - Probation	5.20%	2.70%
Safety - Law	6.60%	4.50%
Safety - Fire	4.00%	2.00%

The annual payoffs assumptions are the same for service and disability retirements.