City of Fresno Employees Retirement System

ACTUARIAL EXPERIENCE STUDY

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

SEGAL

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June 7, 2010

Board of Retirement
City of Fresno Employees Retirement System
2828 Fresno Street, Suite 201
Fresno, CA 93721-1327

Re: Review of Non-Economic Actuarial Assumptions for the June 30, 2010 Actuarial Valuation

Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience of the City of Fresno Employees Retirement System. This study utilizes the census data from the last three actuarial valuations ending June 30, 2009. The study includes the proposed actuarial assumptions to be used effective with the June 30, 2010 valuation.

Please note that we have also reviewed the economic assumptions. The economic actuarial assumption recommendations for the June 30, 2010 valuation are provided in a separate report.

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

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

Sincerely,

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

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

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I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

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

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

The use of realistic actuarial assumptions is important in maintaining adequate funding, while paying 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 review the demographic actuarial assumptions and to compare the actual experience with that expected under the current assumptions during the three year experience period from July 1, 2006 through June 30, 2009. The study was performed in accordance with Actuarial Standard of Practice (ASOP) No. 35, "Selection of Demographic and Other Non-economic Assumptions for Measuring Pension Obligations" 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, pre-retirement mortality, healthy life post-retirement mortality, disabled life post-retirement mortality, termination (withdrawal and vested terminations), disability, DROP election, years of participation in DROP, deferred vested retirement age, percentage of members married, and salary increases.

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

Retirement Rates - The probability of retirement at each age at which participants are eligible to retire.
Recommendation: We recommend adjusting the retirement rates to those developed in Section III (B) to anticipate later retirement. We also recommend maintaining the current male marriage/domestic partnership assumption but decreasing the female marriage/domestic partnership assumption.

Mortality Rates - The probability of dying at each age. Mortality rates are used to project life expectancies.
Recommendation: For members who retire from service, we recommend adjusting the rates as developed in Section III (C) to include about a one-year improvement in mortality. We recommend using the same tables for pre-retirement mortality as those recommended for post-retirement mortality. The disabled member mortality rates have also been decreased as developed in Section III (D) to include about a two-year improvement in mortality.

Termination Rates - The probability of leaving employment at each age and receiving either a refund of contributions or a deferred vested retirement benefit.
Recommendation: We recommend adjusting the termination rates (withdrawal and vested terminations) to those developed in Section III (E) to reflect lower incidence of termination.

Disability Incidence Rates - The probability of becoming disabled at each age.
Recommendation: We recommend adjusting the disability rates to those developed in Section III (F) to reflect lower incidence of disability.

DROP Assumptions – The probability that a participant elects DROP and the duration of DROP participation.
Recommendation: We recommend decreasing the current DROP participation probability during the first year of becoming eligible for the DROP and increasing the current DROP participation probability during the fifth year of eligibility for the DROP. We recommend increasing the length of time members are assumed to remain in DROP from four years to six years.

Individual Salary Increases - Increases in the salary of a member between the date of the valuation to the date of separation from active service.

Recommendation: We recommend increasing merit and promotion rates to those developed in Section III (H) to reflect past experience.

Section II provides some background on basic principles and the methodology used for the experience study and for the review of the demographic actuarial assumptions. A detailed discussion of 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 June 30, 2010 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, DROP election, and death after retirement. We also reviewed the individual salary increases in excess of general salary increases (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 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 in a separate reported titled "Review of Economic Actuarial Assumptions for the June 30, 2010 Actuarial Valuation."

B. RETIREMENT RATES

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

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

Please note that the actual retirement experience was only a reflection of those members who never elected to participate in the DROP. Based on the data collected, 61 members have retired during the past three years who never elected the DROP.

Age	Current Rate of Retirement	Actual Rate of Retirement	Proposed Rate of Retirement
50	0.00%	1.82%*	1.00%
51	0.00	0.00*	1.00
52	0.00	1.12*	1.00
53	0.00	0.00*	1.00
54	0.00	2.68*	2.00
55	13.00	2.69	6.00
56	7.00	4.17	6.00
57	7.00	4.76	6.00
58	7.00	0.99	6.00
59	8.00	5.95	6.00
60	9.00	8.20	8.00
61	11.00	9.09	10.00
62	17.00	4.08	10.00
63	11.00	7.32	10.00
64	12.00	18.75	15.00
65	20.00	24.00	20.00
66	21.00	7.14	20.00
67	22.00	20.00	20.00
68	40.00	50.00	40.00
69	50.00	0.00	50.00
70	100.00	12.50	100.00

** Only includes experience effective January 28, 2008 when members become eligible to retire before age 55.*

Chart 1 compares actual experience with the assumed and the proposed rates of retirement.

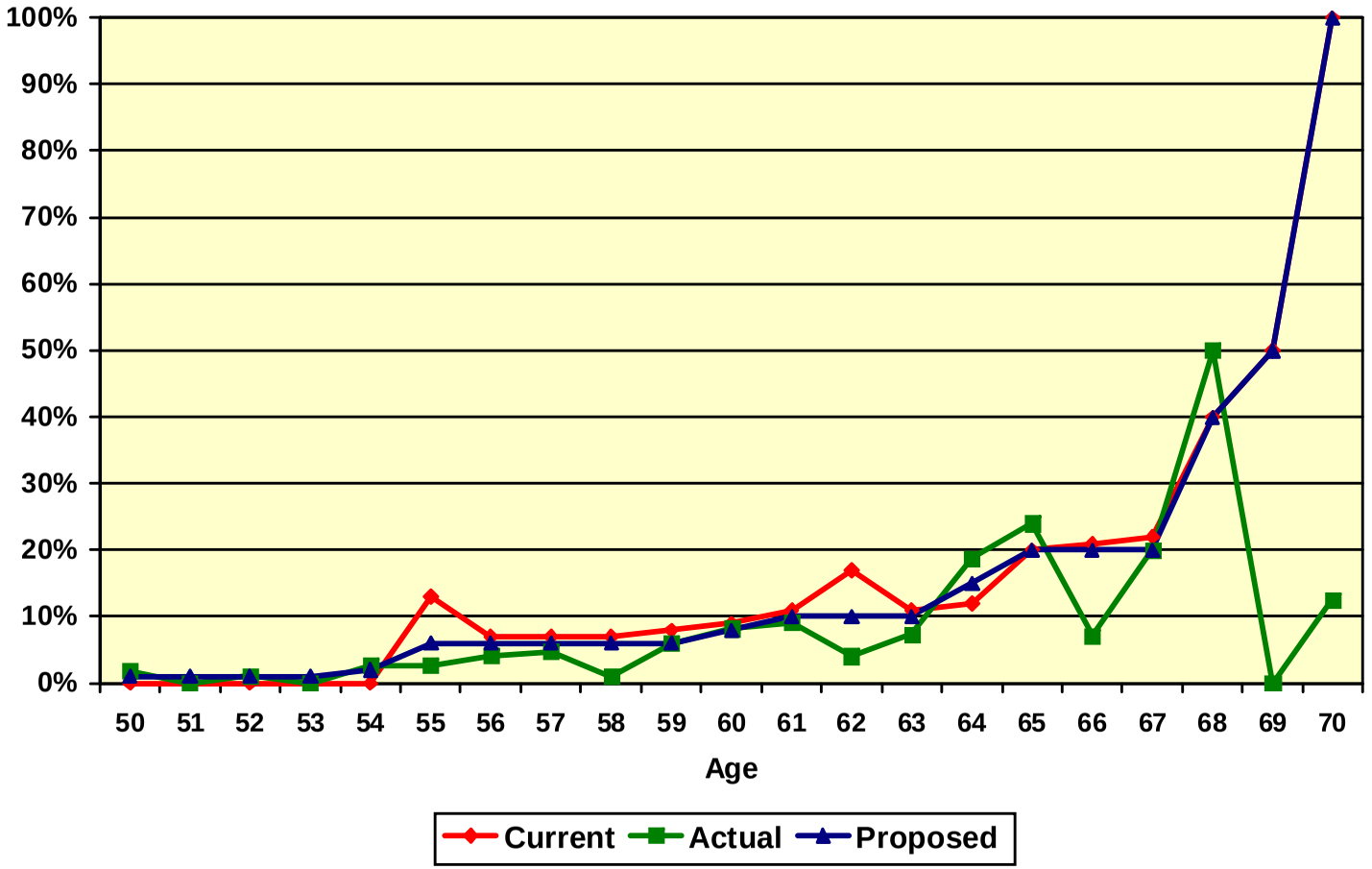
In prior valuations, deferred vested members were assumed to retire at age 55. The average age at retirement over the prior three years was 56. We recommend modifying the assumed retirement age for deferred vested participants to age 56.

It was also assumed in the prior experience study that no inactive deferred vested participants would be employed by a reciprocal employer. Due to the distinctive design of the plan which requires that the salary rate from the most recent salary resolution prior to the date of retirement be used in determining final average salary, in effect there is an implicit assumption that 100% of all deferred vested members are on reciprocity in our June 30, 2009 valuation. For that reason, an explicit reciprocity assumption is not necessary.

In prior valuations, it was assumed that 80% of all active male members and 70% of all active female members would be married or have an eligible domestic partner when they retired. Prior to the June 30, 2009 valuation, almost all DROP members were reported with a spouse or domestic partner eligible for the plan's 50% automatic continuance benefit. We have confirmed with the System that there was some review and revision of the data prepared for in the June 30, 2009 valuation and as a result, the percentage of DROP members reported as married or with domestic partner has decreased. According to experience of members who retired from active employment or started their participation in DROP during the last three years, about 77% of all male members and 54% of all female members were married or had a domestic partner at retirement. We recommend no change to the male marriage/domestic partnership assumption of 80% and recommend decreasing the female marriage/domestic partnership assumption from 70% to 60%.

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

Chart 1
Retirement Rates



C. MORTALITY RATES - HEALTHY

The "healthy" mortality rates project what proportion of members will die before retirement as well as the life expectancy of a member who retires from service (i.e., who did not retire on a disability pension). The tables currently being used for post-service retirement mortality rates are the 1994 Group Annuity Mortality Table (separate tables for males and females).

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.

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 is as follows:

Year Ended June 30	Healthy Retirees and Beneficiaries		
	Actual Deaths	Current Expected Deaths	Proposed Expected Deaths
		Males Only	
2007	23	26	22
2008	27	27	23
2009	26	29	24
Total	76	82	69
Actual / Expected		93%	110%
		Females Only	
2007	18	15	14
2008	18	17	16
2009	20	17	16
Total	56	49	46
Actual / Expected		114%	122%
		Total	
2007	41	41	36
2008	45	44	39
2009	46	46	40
Total	132	131	115
Actual / Expected		101%	115%

Chart 2 compares actual to expected deaths for all members and beneficiaries under the current and the proposed assumptions over the last three years. Experience shows that actual deaths were about the same as those predicted by the current table.

For retirees and beneficiaries, the ratio of actual to expected deaths was 101%. We recommend changing to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set back two years. This will bring the actual to expected rates to 115% and will provide some margin for mortality improvements. This is consistent with standard actuarial practice to include some margin in the rates to anticipate expected future improvement in life expectancy. We will continue to monitor this assumption closely in future studies.

Chart 3 shows the life expectancies under the current and the proposed tables for male members.

Chart 4 shows the same information for female members.

Mortality Table for Member Contributions and Optional Benefits

We recommend that the mortality table used for determining contributions be changed from the 1994 Group Annuity Mortality Table weighted 65% male and 35% female to the RP-2000 Combined Healthy Mortality Table set back two years weighted 65% male and 35% female. This is based on the proposed valuation tables for members and the actual sex distribution of members.

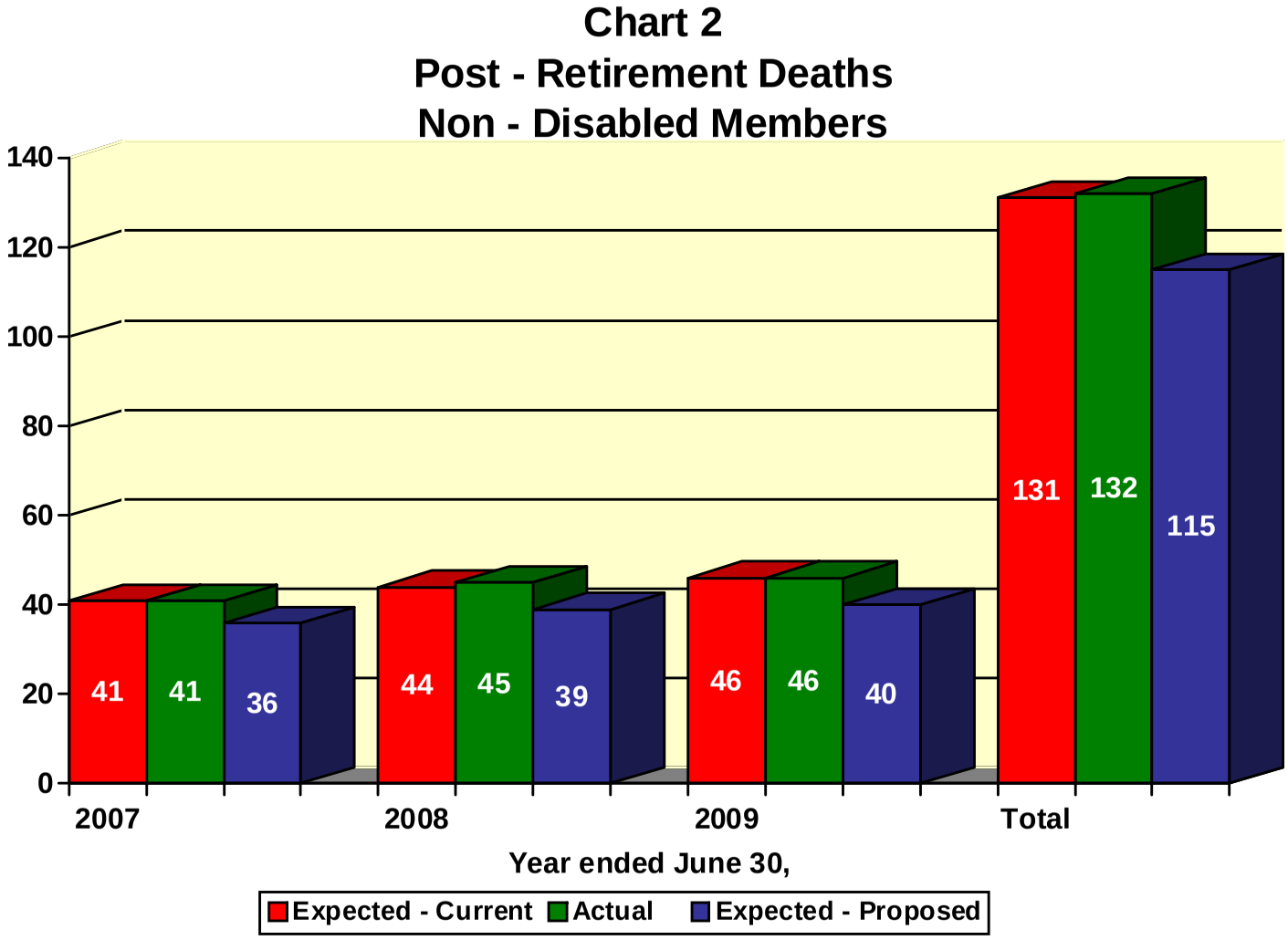


Chart 2
Post - Retirement Deaths
Non - Disabled Members
140
120
100
80
60
40
20
0
41
41
36
44
45
39
46
46
40
131
132
115
2007
2008
2009
Total
Year ended June 30,
Expected - Current
Actual
Expected - Proposed

Chart 3
Life Expectancies (Male)
Non-Disabled Members

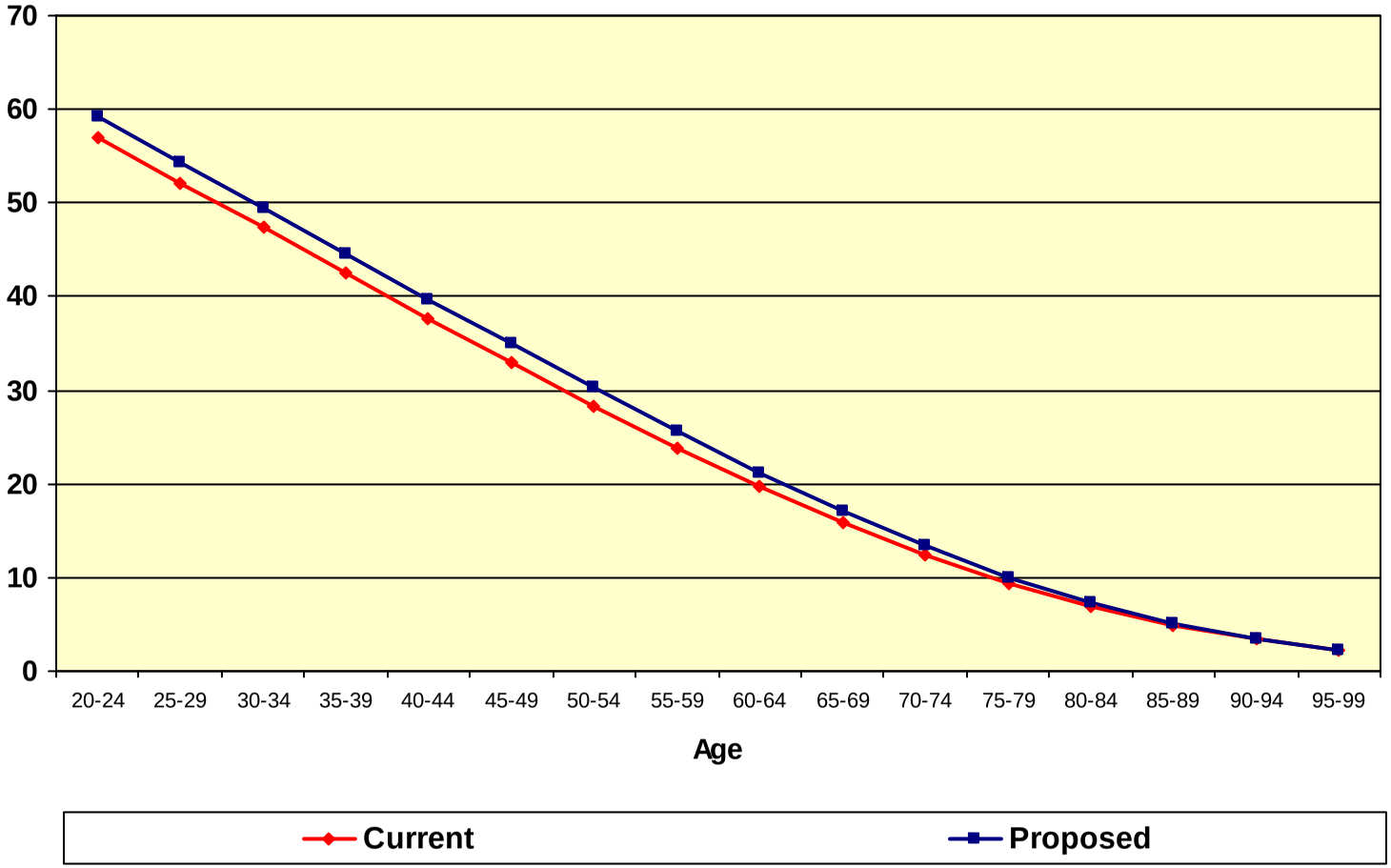
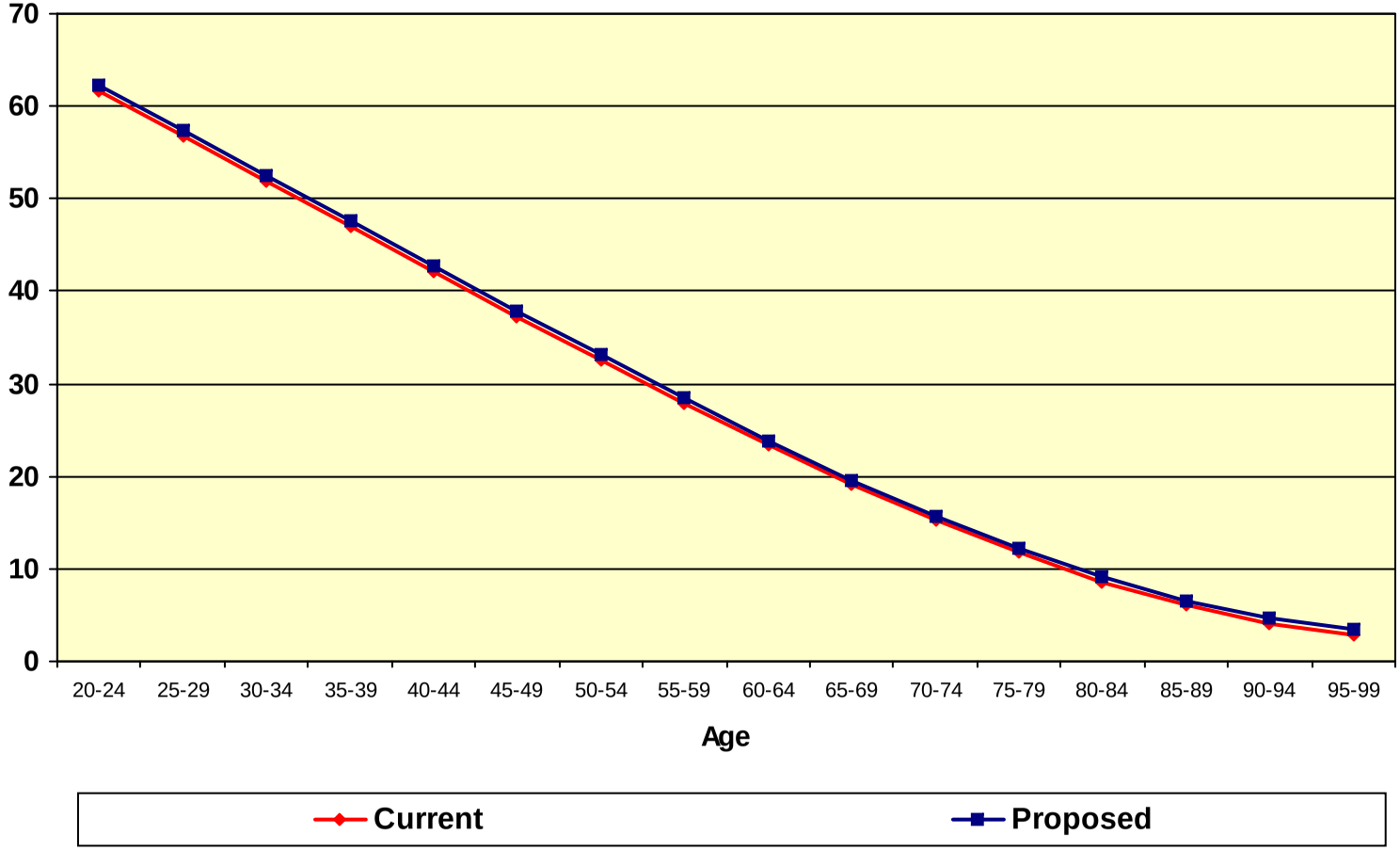


Chart 4
Life Expectancies (Female)
Non-Disabled Members



D. MORTALITY RATES - DISABLED

Since death rates for disabled members can be higher than for healthy members, a different mortality assumption is often used. The table currently being used is the 1981 General Disability Mortality Table set back four years.

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

Year Ended June 30	Disabled		
	Actual Deaths	Current Expected Deaths	Proposed Expected Deaths
2007	2	4	4
2008	3	5	4
2009	8	6	4
Total	13	15	12
Actual / Expected		87%	108%

Based on the combined experience for all disabled retirees, we recommend changing to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set forward four years. We will continue to monitor the assumption for disableds closely to see if the mortality rates need to be further adjusted.

Chart 5 compares actual to expected deaths under the current and the proposed assumptions for disabled members over the last three years.

Chart 6 shows the life expectancies under the current and the proposed tables for male members.

Chart 7 shows the same information for female members.

Chart 5
Post - Retirement Deaths
Disabled General Members

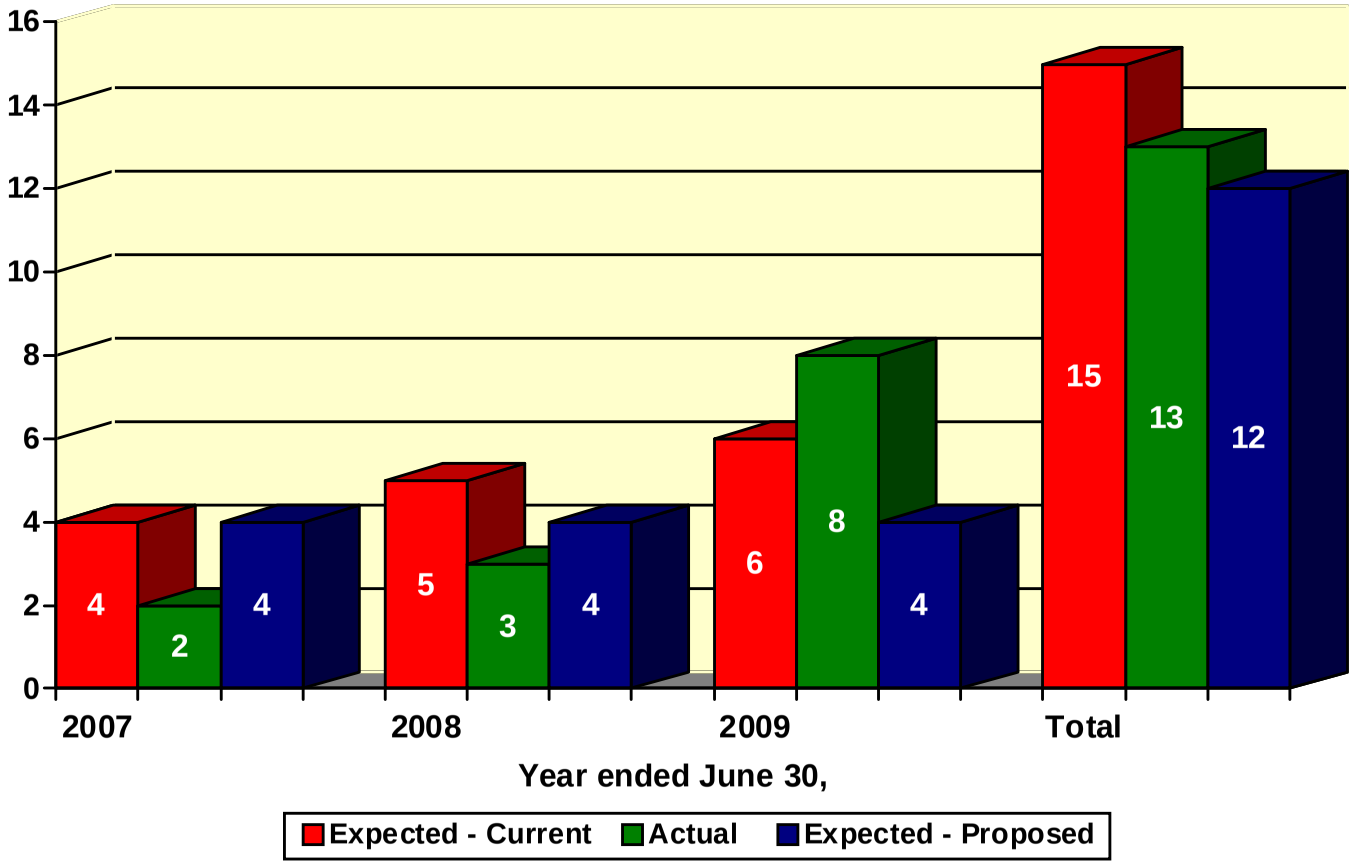


Chart 6
Life Expectancies (Male)
Disabled Members

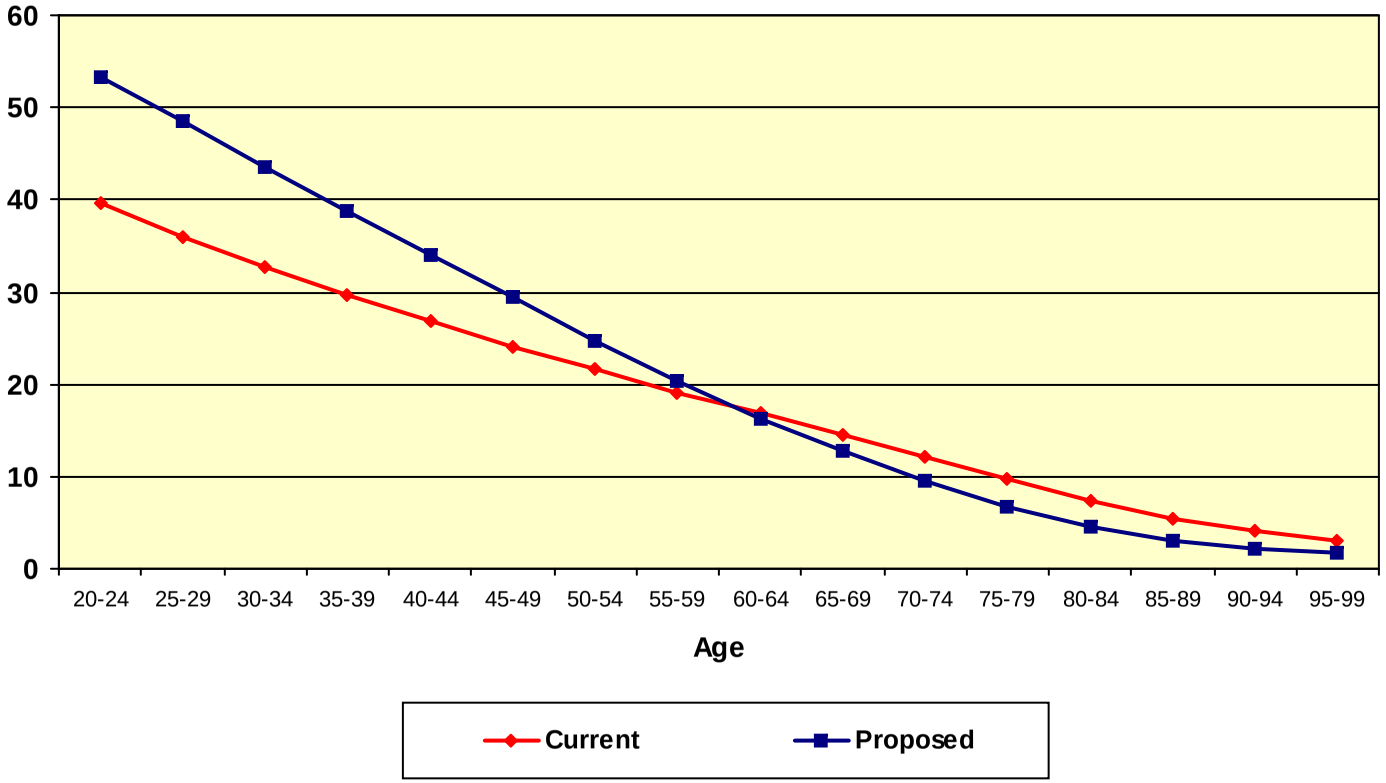
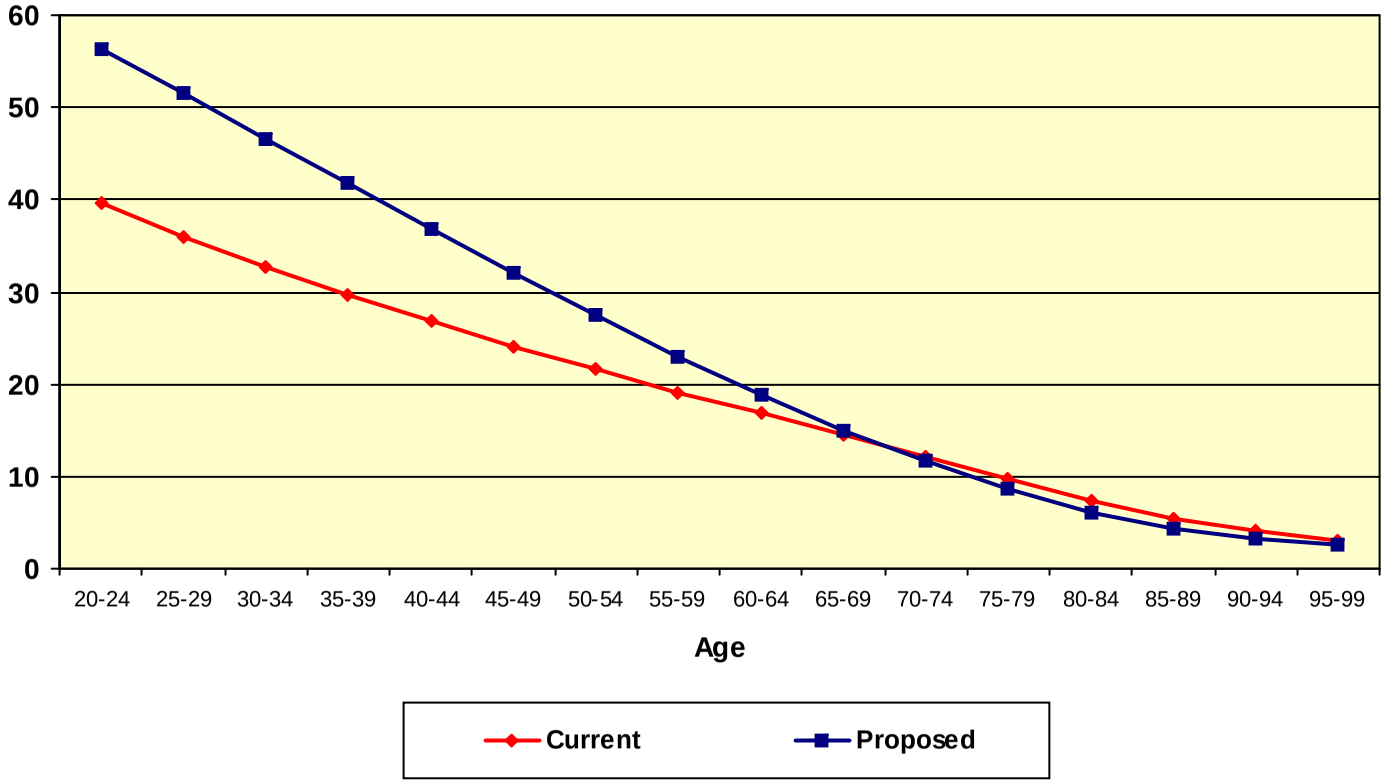


Chart 7
Life Expectancies (Female)
Disabled Members



E. TERMINATION RATES

Termination rates include all terminations for reasons other than death, disability, or retirement. Under the current assumptions, there are separate sets of assumptions for ordinary withdrawal and for vested termination to predict, respectively, those members who are anticipated to withdraw their contributions (ordinary withdrawal) or leave their contributions on deposit and receive a deferred vested benefit (vested termination). With this experience study, we are recommending changes to the current assumptions.

The termination experience over the last three is shown on the next two pages.

Rates of Withdrawal
(Fewer than Five Years of Service)

Years of Service	Current Rates	Observed Rates	Proposed Rates
0 - 1	14.00%	10.06%	12.00%
1 - 2	8.00	8.42	8.00
2 - 3	7.00	4.45	6.00
3 - 4	6.00	2.99	5.00
4 - 5	4.00	3.13	3.50

Rates of Withdrawal
(More than Five and Less than Ten Years of Service)

Age	Current Rates	Observed Rates	Proposed Rates
20 – 24	4.00%	0.00%	4.50%
25 – 29	4.00	5.17	4.50
30 – 34	4.00	2.72	3.50
35 – 39	3.00	2.17	3.00
40 – 44	3.00	1.64	2.50
45 – 49	2.00	2.47	2.00
50 – 54	1.00	2.16	1.50
55 – 59	0.00	16.67	0.00
60 – 64	0.00	16.67	0.00

Rates of Withdrawal
(More than Ten Years of Service)

Age	Current Rates	Observed Rates	Proposed Rates
20 – 24	3.00%	0.00%	3.00%
25 – 29	3.00	0.00	3.00
30 – 34	3.00	0.00	3.00
35 – 39	2.00	2.50	2.50
40 – 44	1.50	1.33	1.50
45 – 49	1.00	1.28	1.25
50 – 54	0.50	1.76	0.75
55 – 59	0.00	0.00	0.00
60 – 64	0.00	0.00	0.00

Rates of Vested Termination

Age	Current Rates	Observed Rates	Proposed Rates
20 – 24	2.50%	1.22%	2.00%
25 – 29	2.50	0.73	2.00
30 – 34	2.50	1.60	2.00
35 – 39	2.25	1.77	2.00
40 – 44	2.25	1.42	2.00
45 – 49	2.00	1.28	2.00
50 – 54	2.00	1.85	2.00
55 – 59	0.00	0.00	0.00
60 - 64	0.00	0.00	0.00

Chart 8 compares actual to expected terminations (both withdrawal and vested terminations) over the past three years for both the current and proposed assumptions.

Chart 9 shows the current and the proposed withdrawal rates for members with less than five years of service.

Chart 10 shows the current and the proposed withdrawal rates for members with more than five, but less than ten years of service.

Chart 11 shows the current and the proposed withdrawal rates for members with ten or more years of service.

Chart 12 shows the current and the proposed vested termination rates.

Based upon the recent experience, we recommend modifying the current assumptions for withdrawal rates and termination rates.

Chart 8
Actual Number of Terminations
Compared to Expected

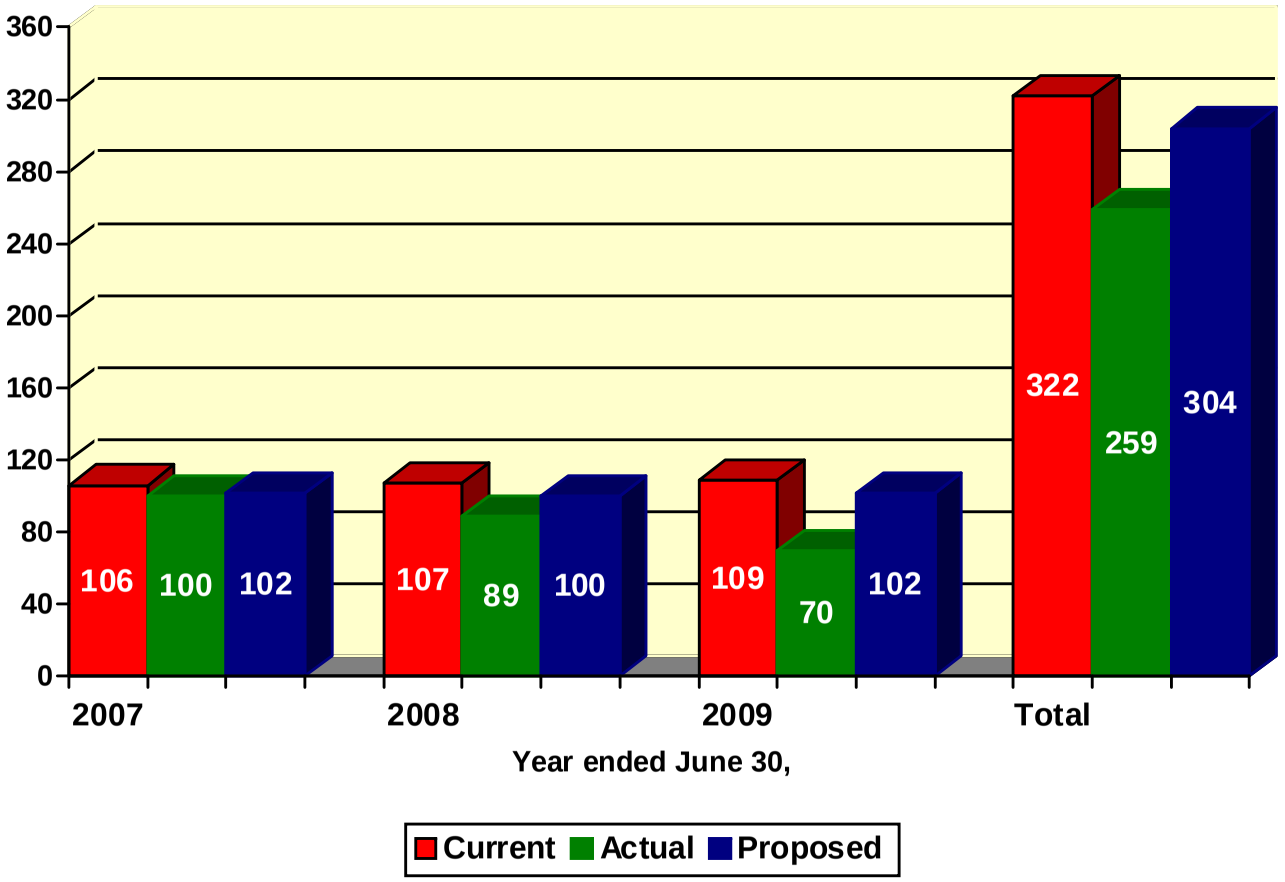


Chart 9
Withdrawal Rates
(Less than Five Years of Service)

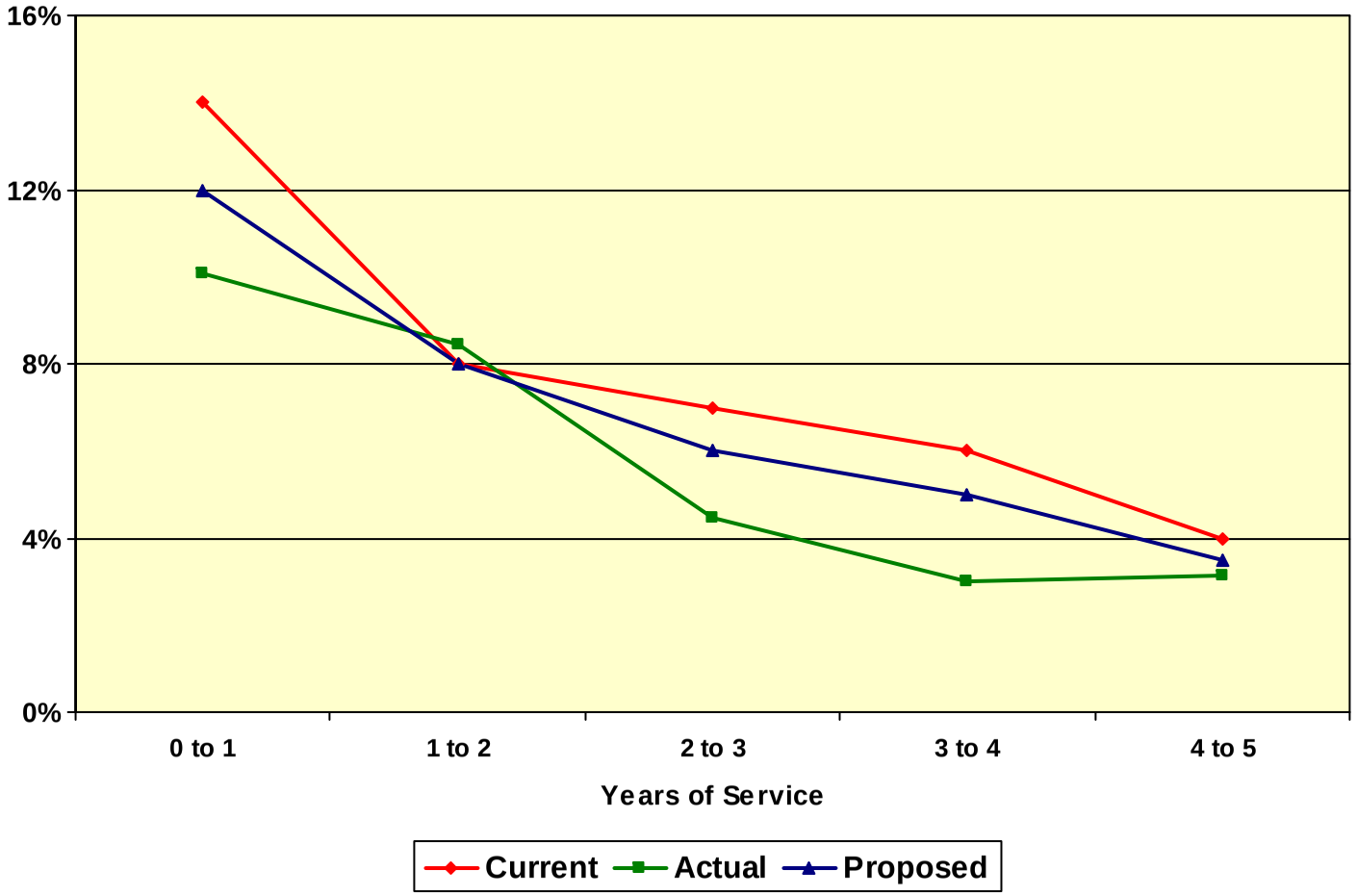


Chart 10
Withdrawal Rates
(More than Five and Less than Ten Years of Service)

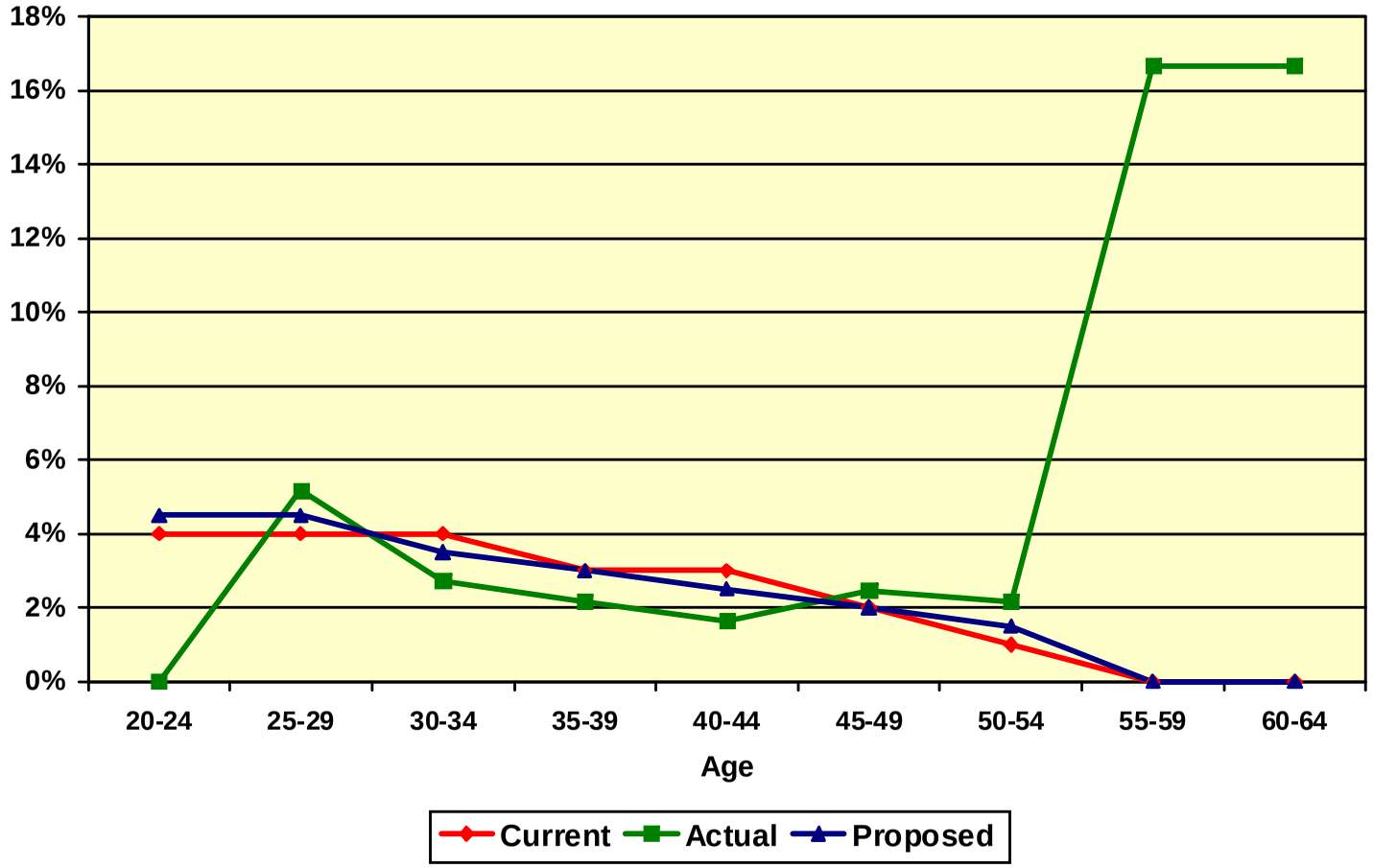


Chart 11
Withdrawal Rates
(More than Ten Years of Service)

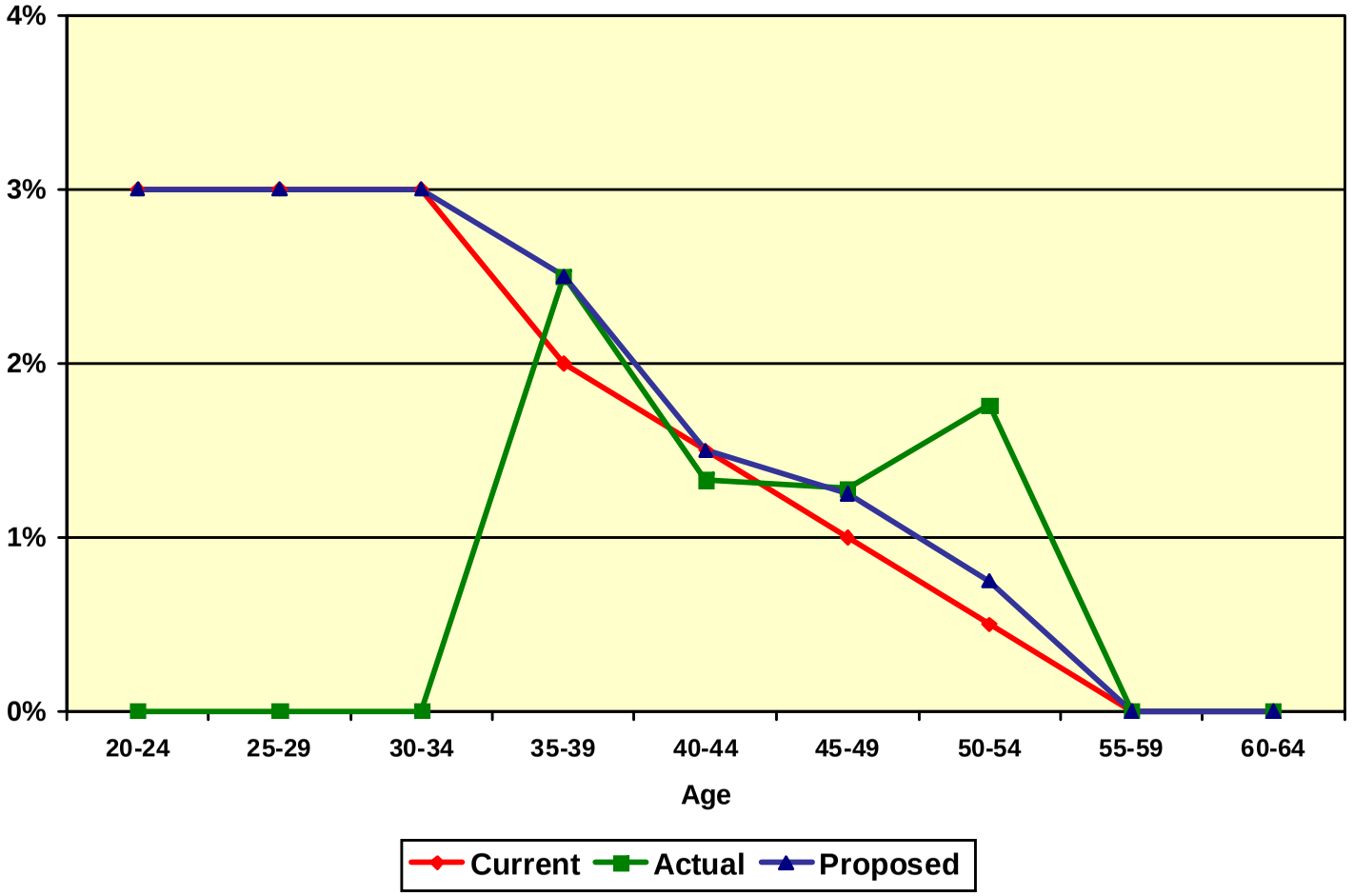
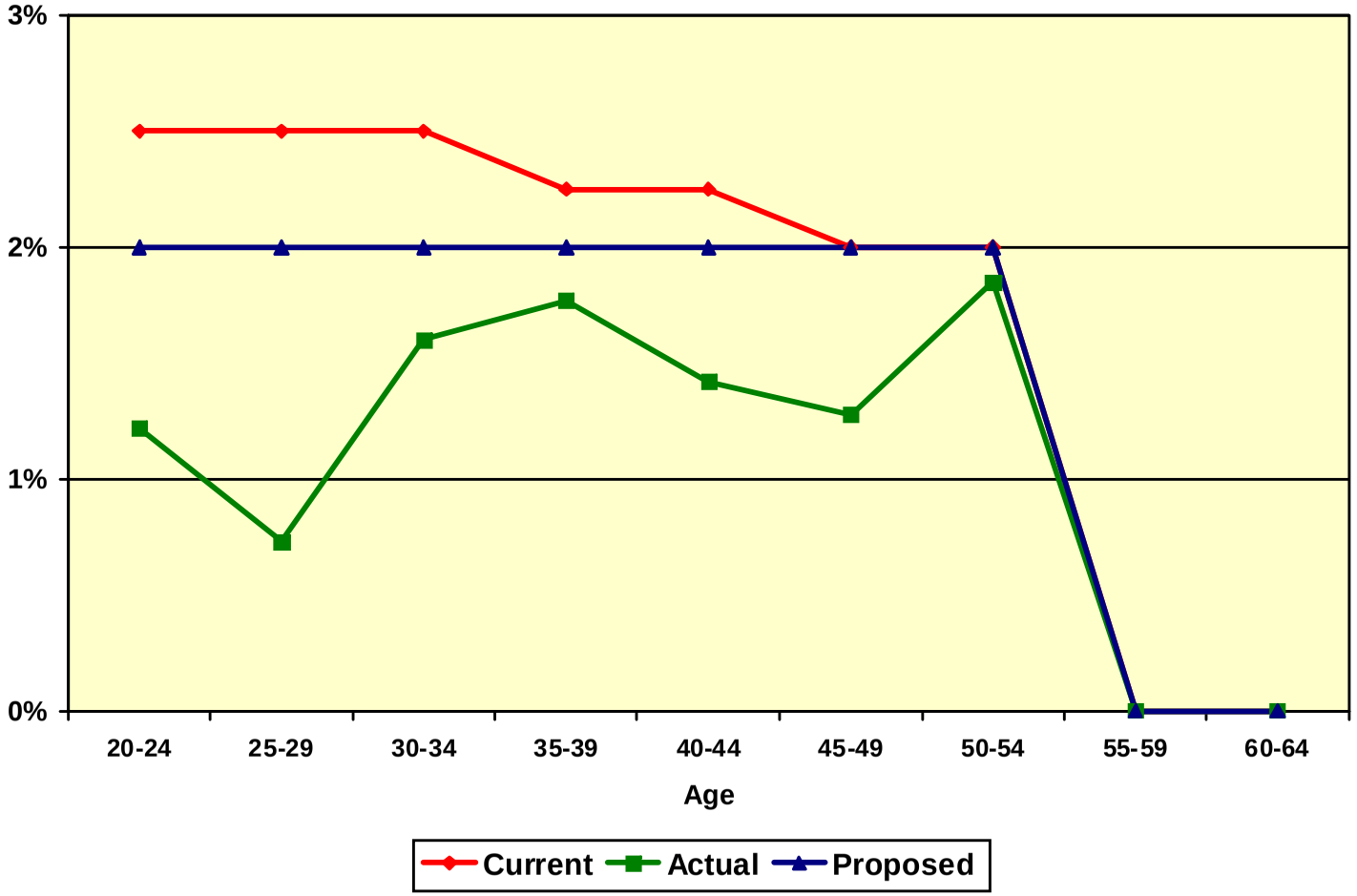


Chart 12
Vested Termination Rates



F. DISABILITY INCIDENCE RATES

When a member becomes disabled, he or she may be entitled to a pension that may depend on upon the member's years of service. The following summarizes the actual incidence of disabilities over the past three years compared to the current and proposed assumptions for disability incidence:

Rates of Disability Incidence

Age	Current Rates	Observed Rates	Proposed Rates
20 – 24	0.00%	0.00%	0.00%
25 – 29	0.00	0.00	0.00
30 – 34	0.03	0.00	0.01
35 – 39	0.25	0.00	0.10
40 – 44	0.60	0.00	0.30
45 – 49	0.85	0.16	0.50
50 – 54	0.85	0.24	0.65
55 – 59	0.85	0.49	0.85
60 – 64	0.00	0.61	1.00

The above observed rates do not include four service retirees who were granted a disability status after retirement. Of those retirees, one member retired between the age of 55 and 59 and three retired between the age of 60 and 64. With these reclassifications, we recommend maintaining the disability assumption between the age of 55 and 59 and increasing the disability assumption between the age of 60 and 64.

Chart 13 compares the actual number of disabilities over the past three years to that expected under both the current and proposed assumptions.

Chart 14 shows the current and the proposed disablement rates.

We recommend adjusting the current assumptions for disability incidence. We will continue to monitor this assumption for the Board.

Chart 13
Actual Number of Disabilities Compared to Expected

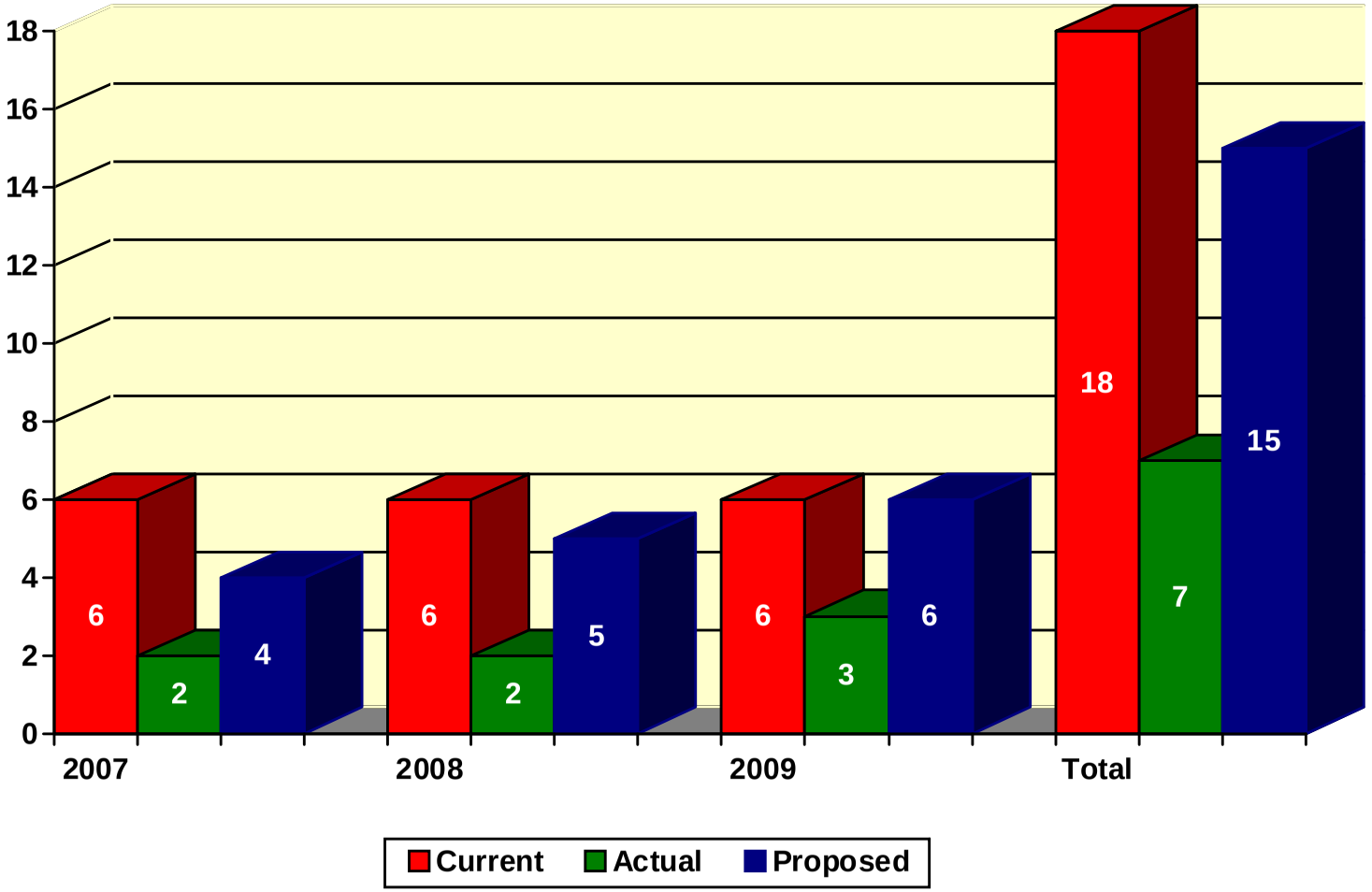
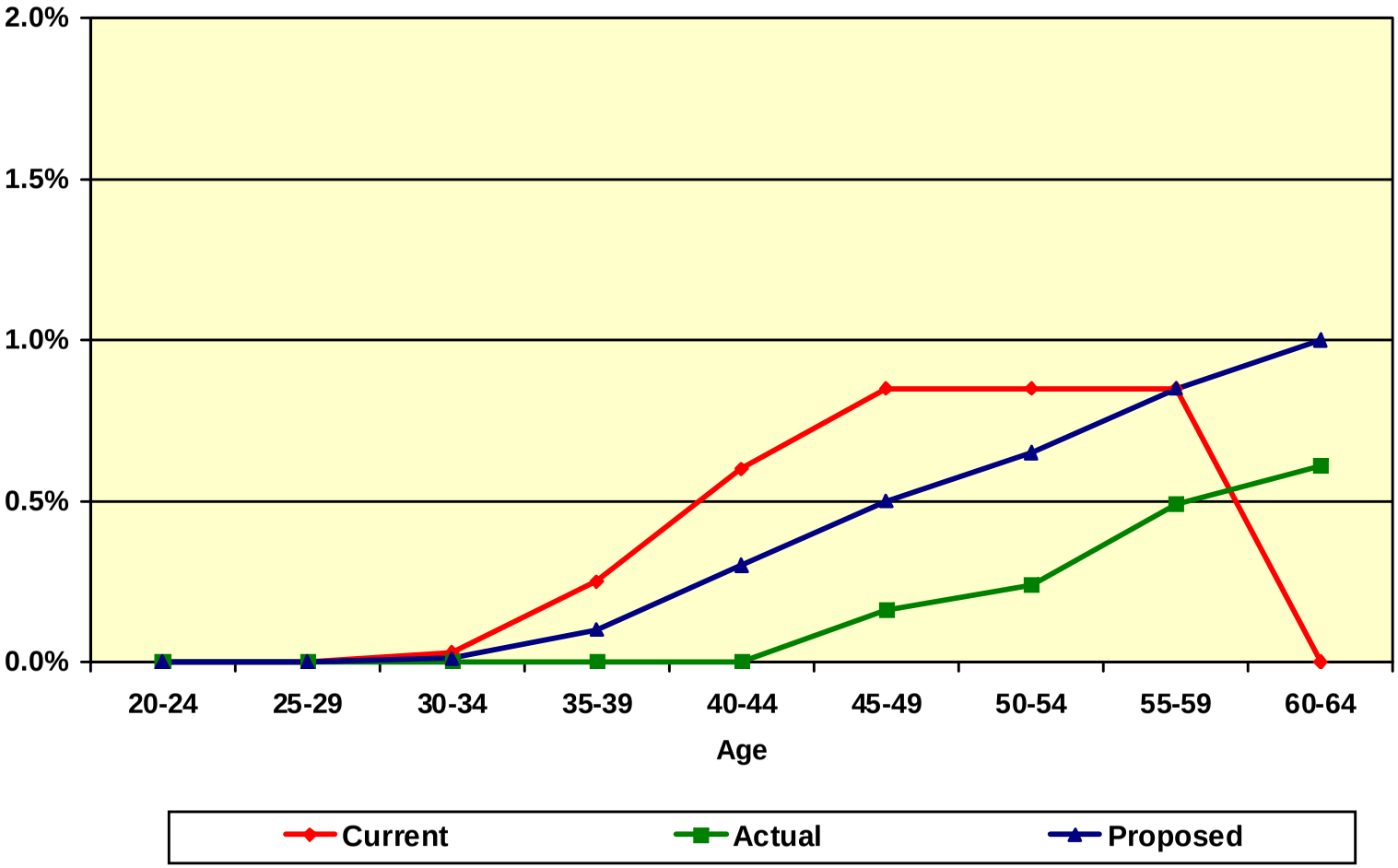


Chart 14
Disablement Rates



G. DROP ELECTION RATES

The DROP election experience over the last three years is shown below. Since there were very few members who elected DROP before attaining age 55, we have only included the DROP election experience for those who elected DROP after attaining age 55.

Rates of DROP Election (after attaining age 55)

Year Eligible	Current Rates	Observed Rates	Proposed Rates
1st	40%	29.07%	35%
2nd	15	7.01	15
3rd	10	6.92	10
4th	10	8.33	10
5^{th}	0	10.96	10
Thereafter	0	6.63	0

It is currently assumed that members remain in DROP for 4 years. Based on the experience of members who retired from the DROP during the past three years, the average number of years of participation in the DROP was 6.3. We recommend increasing the current DROP participation period to 6 years while decreasing the current DROP election rate for the first year that members are eligible for the DROP and increasing the current DROP election rate for the fifth year that members are eligible for the DROP. We will continue to monitor the participation period in the DROP and the DROP election rates.

H. MERIT AND PROMOTION SALARY INCREASES

The System's retirement benefits are determined in large part by a member's compensation just prior to retirement or election to participate in the DROP. 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 annual inflation assumption of 3.50% discussed in our separate economic assumption report. We also discussed in that report our recommended assumption of an annual 0.50% "across the board" pay increase. Therefore, the total annual inflation and real "across the board" increase of 4.00% is used as the assumed annual rate of payroll growth at which payments to the UAAL or Prefunded Actuarial Accrued Liability 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. 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 general salary increases (including inflation and "across the board" components) from these increases. These general increases are equal to the increase in the members' average salary during the year;
- Averaging these annual increases over the three-year experience period; and
- Modifying current assumptions to reflect some portion of these measured increases reflective of their "credibility."

Based on our analysis, we are recommending some adjustments in the merit and promotion assumptions for members.

The following table shows the average annual increases over the three-year experience period (July 1, 2006 through June 30, 2009) before removing the general increases (inflationary and "across the board" components):

Years of Service	Increase
0 - 1	19.68%
1 - 2	14.83
2 - 3	10.33
3 - 4	9.53
4 - 5	8.59
5 - 6	7.54
6 - 7	7.03
7 - 8	6.46
8 - 9	6.93
9+	6.13

The annual increase in average salary over this three-year period was about 5.3%. After removing these general increases, the following table shows the average annual merit and promotion increases for the three-year period:

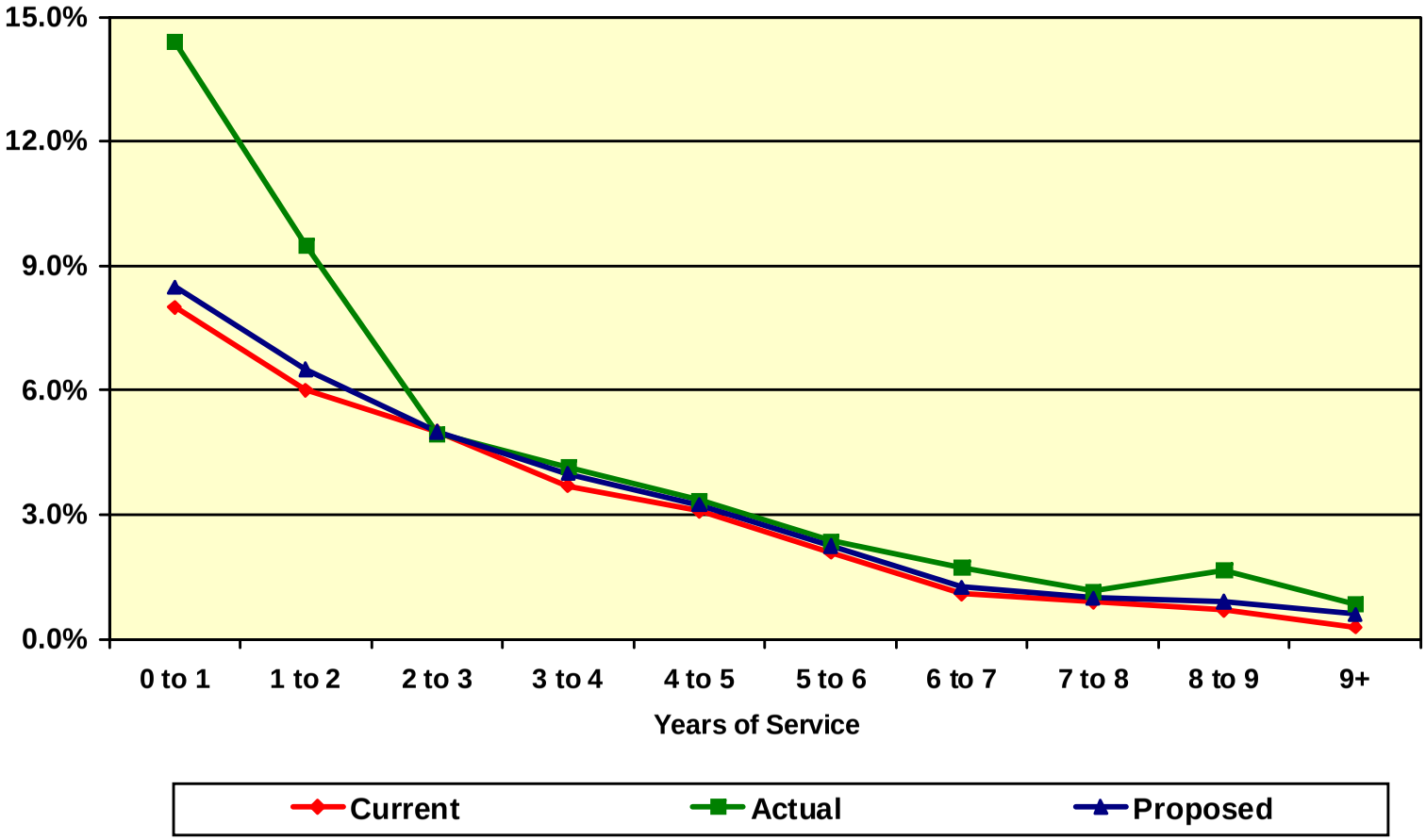
Years of Service	Increase
0 - 1	14.40%
1 - 2	9.51
2 - 3	4.96
3 - 4	4.15
4 - 5	3.36
5 - 6	2.37
6 - 7	1.73
7 - 8	1.16
8 - 9	1.67
9+	0.85

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

Years of Service	Current	Recommended
0 - 1	8.00%	8.50%
1 - 2	6.00	6.50
2 - 3	5.00	5.00
3 - 4	3.70	4.00
4 - 5	3.10	3.25
5 - 6	2.10	2.25
6 - 7	1.10	1.25
7 - 8	0.90	1.00
8 - 9	0.70	0.90
9+	0.30	0.60

Chart 15 provides a graphical comparison of the current, actual experience and recommended merit and promotion increases.

Chart 15
Merit and Promotion Salary Increase Rates



APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS

Mortality Rates

Healthy: 1994 Group Annuity Mortality Table (separate tables for males and females).

Disabled: 1981 General Disability Mortality Table set back four years.

Employee Contribution Rates and Optional Benefits:

For healthy members: 1994 Group Annuity Mortality Table weighted 65% male and 35% female.

For beneficiaries: 1994 Group Annuity Mortality Table weighted 35% male and 65% female.

For disabled members: 1981 General Disability Mortality Table set back four years.

Termination Rates Before Retirement:

	Rate (%)	
	Mortality	
Age	Male	Female
25	0.07	0.03
30	0.08	0.04
35	0.09	0.05
40	0.11	0.07
45	0.16	0.10
50	0.26	0.14
55	0.44	0.23
60	0.80	0.44
65	1.45	0.86

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

Termination Rates Before Retirement (continued):

Rate (%)		
Disability		
Age	**Male**	**Female**
20	0.00	0.00
25	0.00	0.00
30	0.01	0.01
35	0.05	0.05
40	0.50	0.50
45	0.75	0.75
50	0.85	0.85
55	0.85	0.85
60	0.00	0.00

All disabilities are assumed to be non-service connected.

Rate (%)							
Withdrawal (Refund of Contributions)							
Age	**0 – 1 Years**	**1 – 2 Years**	**2 – 3 Years**	**3 – 4 Years**	**4 – 5 Years**	**5 – 9 Years**	**10+ Years**
20	14.00	8.00	7.00	6.00	4.00	4.00	3.00
25	14.00	8.00	7.00	6.00	4.00	4.00	3.00
30	14.00	8.00	7.00	6.00	4.00	4.00	3.00
35	14.00	8.00	7.00	6.00	4.00	3.40	2.40
40	14.00	8.00	7.00	6.00	4.00	3.00	1.70
45	14.00	8.00	7.00	6.00	4.00	2.40	1.20
50	14.00	8.00	7.00	6.00	4.00	1.40	0.70
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Termination Rates Before Retirement (continued):

Vested Termination (Deferred Vested Benefit)	
Age	**Rate (%)**
20	2.50
25	2.50
30	2.50
35	2.35
40	2.25
45	2.10
50	2.00
55	0.00
60	0.00

Retirement Rates:

Age	Rate (%)
55	13.00
56	7.00
57	7.00
58	7.00
59	8.00
60	9.00
61	11.00
62	17.00
63	11.00
64	12.00
65	20.00
66	21.00
67	22.00
68	40.00
69	50.00
70	100.00

Effective January 28, 2008, members may retire at age 50 with an actuarially equivalent service retirement benefit. The retirement assumptions for ages 50 through 54 were not changed as this data is not yet available.

DROP Assumptions:

		Male and Female
	First Year Eligible	45%
	Second Year Eligible	15%
	Third Year Eligible	10%
	Fourth Year Eligible	10%
	Thereafter	0%
	Members are assumed to remain in DROP for 4 years.	

Retirement Age and Benefit for Deferred Vested Members:	For current deferred vested members, the retirement assumption is age 55. We assume no future deferred vested members will continue to work for a reciprocal employer.
Future Benefit Accruals:	1.0 year of service per year.
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Inclusion of Deferred Vested Members:	All deferred vested members are included in the valuation.
Percent Married:	80% of male members; 70% of female members.
Age of Spouse:	Wives are 4 years younger than their husbands.
Net Investment Return:	8.25%, net of administration and investment expenses.
Employee Contribution Crediting Rate:	8.25%, assumed in the valuation.
Consumer Price Index:	Increase of 3.75% per year; Retiree COLA increases due to CPI are limited to maximum at 3.75% per year.

Salary Increases:

Annual Rate of Compensation Increase	
Inflation: 3.75% per year; plus 0.25% real across-the-board salary increase; plus the following Merit and Promotion increases based on completed years of service.	
Years of Service	**Annual Increase**
0	8.00%
1	6.00
2	5.00
3	3.70
4	3.10
5	2.10
6	1.10
7	0.90
8	0.70
9+	0.30

APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS

Mortality Rates

Healthy: RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set back two years.

Disabled: RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set forward four years.

Employee Contribution Rates and Optional Benefits:

For healthy members: RP-2000 Combined Healthy Mortality Table set back two years weighted 65% male and 35% female.

For beneficiaries: RP-2000 Combined Healthy Mortality Table set back two years weighted 35% male and 65% female.

For disabled members: RP-2000 Combined Healthy Mortality Table set forward four years weighted 65% male and 35% female.

Termination Rates Before Retirement:

	Rate (%)	
	Mortality	
Age	Male	Female
25	0.04	0.02
30	0.04	0.02
35	0.06	0.04
40	0.10	0.06
45	0.13	0.09
50	0.19	0.14
55	0.29	0.22
60	0.53	0.39
65	1.00	0.76

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

Termination Rates Before Retirement (continued):

Rate (%)	
Age	**Disability**
20	0.00
25	0.00
30	0.01
35	0.06
40	0.22
45	0.42
50	0.59
55	0.77
60	0.94

All disabilities are assumed to be non-service connected.

Rate (%)							
Withdrawal (Refund of Contributions)							
Age	**0 – 1 Years**	**1 – 2 Years**	**2 – 3 Years**	**3 – 4 Years**	**4 – 5 Years**	**5 – 9 Years**	**10+ Years**
20	12.00	8.00	6.00	5.00	3.50	4.50	3.00
25	12.00	8.00	6.00	5.00	3.50	4.50	3.00
30	12.00	8.00	6.00	5.00	3.50	3.90	3.00
35	12.00	8.00	6.00	5.00	3.50	3.20	2.70
40	12.00	8.00	6.00	5.00	3.50	2.70	1.90
45	12.00	8.00	6.00	5.00	3.50	2.20	1.35
50	12.00	8.00	6.00	5.00	3.50	1.70	0.95
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Termination Rates Before Retirement (continued):

Vested Termination (Deferred Vested Benefit)	
Age	**Rate (%)**
20	2.00
25	2.00
30	2.00
35	2.00
40	2.00
45	2.00
50	2.00
55	0.00
60	0.00

Retirement Rates:

Age	Rate (%)
50	1.00
51	1.00
52	1.00
53	1.00
54	2.00
55	6.00
56	6.00
57	6.00
58	6.00
59	6.00
60	8.00
61	10.00
62	10.00
63	10.00
64	15.00
65	20.00
66	20.00
67	20.00
68	40.00
69	50.00
70	100.00

DROP Assumptions:

		Male and Female (after attaining age 55)
	First Year Eligible	35%
	Second Year Eligible	15%
	Third Year Eligible	10%
	Fourth Year Eligible	10%
	Fifth Year Eligible	10%
	Thereafter	0%

Members are assumed to remain in DROP for 6 years.

Retirement Age and Benefit for Deferred Vested Members:	For current deferred vested members, the retirement assumption is age 56. We assume no future deferred vested members will continue to work for a reciprocal employer.
Future Benefit Accruals:	1.0 year of service per year.
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Inclusion of Deferred Vested Members:	All deferred vested members are included in the valuation.
Percent Married:	80% of male members; 60% of female members.
Age of Spouse:	Wives are 4 years younger than their husbands.
Net Investment Return:	8.00%, net of administration and investment expenses.
Employee Contribution Crediting Rate:	8.00%, assumed in the valuation.
Consumer Price Index:	Increase of 3.50% per year; Retiree COLA increases due to CPI are limited to maximum at 3.50% per year.

Salary Increases:

Annual Rate of Compensation Increase	
Inflation: 3.50% per year; plus 0.50% real across-the-board salary increase; plus the following Merit and Promotion increases based on completed years of service.	
Years of Service	**Annual Increase**
0	8.50%
1	6.50
2	5.00
3	4.00
4	3.25
5	2.25
6	1.25
7	1.00
8	0.90
9+	0.60

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