



Benefits, Compensation and HR Consulting

**University of California
Retirement Plan**

ACTUARIAL EXPERIENCE STUDY

**Analysis of Actuarial Experience
During the Period
July 1, 2002 through June 30, 2006**

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April 25, 2007

Ms. Judith W. Boyette
Associate Vice President, Human Resources and Benefits
1111 Franklin Street, 7th Floor
Oakland, California 94607-5200

Re: Review of Actuarial Assumptions for the July 1, 2007 Actuarial Valuation

Dear Associate Vice President Boyette:

We are pleased to submit this report of our review of the actuarial experience of the University of California Retirement Plan. This study utilizes the census data of the last four actuarial valuations and includes the proposed actuarial assumptions, both demographic and economic, to be used in future actuarial valuations.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Angelo".

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

A handwritten signature in black ink, appearing to read "John Monroe".

John Monroe, ASA, EA, MAAA
Associate Actuary

JKH/dvb

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I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

To project the cost and liabilities of the pension plan, assumptions are made about all future events that could affect the amount and timing of the benefits to be paid and the assets to be accumulated. Each year actual experience is compared against the projected experience, and to the extent there are differences, the plan will incur changes in funded status due to actuarial gains or losses.

If assumptions are modified, the plan's funded status will be affected due to the 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 funded status than recognizing gains or losses as they occur.

The use of realistic actuarial assumptions is important in maintaining adequate funding, while paying the promised benefit amounts to participants already retired and to those near retirement. These assumptions will also be utilized in estimating future costs and projecting the funded status of the plan. Therefore, matching the assumptions as closely as possible to expected plan experience will best inform planning for the restart of contributions to the pension plan, as necessary.

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 funding sources.

This study was undertaken in order to review the economic and demographic actuarial assumptions and to compare the actual experience with that expected under the current assumptions during the four year experience period from July 1, 2002 through June 30, 2006. The study was performed in accordance with Actuarial Standard of Practice (ASOP) No. 27, “Selection of Economic Assumptions for Measuring Pension Obligations” and ASOP No. 35, “Selection of Demographic and Other Non-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 inflation, real (“across the board”) salary increases, promotional and merit salary increases, retirement from active employment, deferred vested retirement age, disabled life mortality, termination, disability incidence, percent with Eligible Survivors, number of Eligible Survivors, service from unused sick leave conversion, lump sum cashout take-rate, guaranteed survivor and disability benefits and covered payroll projection.

In some cases we have changed the structure of the assumption. For example, we recommend that the promotional and merit salary increases be established separately for Faculty and Staff members. Also, we observe that promotional and merit salary increases correlate better with years of service than with age. Therefore, the recommended promotional and merit increases are by years of service instead of by age, which was the previous practice.

Our recommendations for the actuarial assumption categories for the University of California Retirement Plan (UCRP) are as follows:

Inflation – Future increases in the cost-of-living index which drives investment returns and active member salary increases, as well as COLA increases to retired employees.

Recommendation: Reduce the rate from 4.00% to 3.50% per annum as discussed in Section III(A).

Investment Return – The estimated average net rate of return on assets over the projected lifetime of the Plan as of the valuation date. This rate is used to discount liabilities.

Recommendation: Maintain the rate at 7.50% per annum as discussed in Section III(B).

Individual Salary Increases – Increases in the salary of a member between the date of the valuation and the date of separation from active service. This assumption has three components:

- Inflationary salary increases.
- Real “across the board” salary increases.
- Promotional and merit increases.

Recommendation: *Reduce the current inflationary salary increase from 4.00% to 3.50% and introduce a real “across the board” salary increase of 0.25%, as discussed in Section III(C). In addition to the combined inflationary and real across the board salary increases of 3.75%, change the promotional and merit increases to those developed in Section III(C).*

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

Recommendation: *For active members, adjust the current retirement rates to those developed in Section IV(A). For deferred vested members, increase the assumed retirement age from age 50 to age 59.*

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

Recommendation: *For healthy pensioners, maintain the current mortality rates as described in Section IV(B). For disabled pensioners, use the RP-2000 Disabled Retiree Mortality Tables, but with a two year setback for males and one year setback for females as developed in Section IV(C). For pre-retirement mortality, no change is recommended.*

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

Recommendation: *Increase the current termination rates overall to those developed in Section IV(D).*

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

Recommendation: *Decrease the current disability rates overall to those developed in Section IV(E).*

Eligible Survivor Assumptions – The probability of having a survivor at decrement.

Recommendation: *Decrease the current percentages with Eligible Survivors and go to a uniform assumption for all ages, as developed in Section IV(F). Also, slightly adjust the assumption for number of Eligible Survivors per Active Member with Eligible Survivors.*

Service from Unused Sick Leave Conversion – Increases in Service Credit due to conversion of unused sick leave.

Recommendation: *Slightly decrease the current assumption for Faculty and Safety members retiring from active employment, as developed in Section IV(G).*

Lump Sum Cashout Take-Rate – The probability of electing a Lump Sum Cashout at retirement.
Recommendation: *Introduce a new assumption to reflect the percentage of members electing a Lump Sum Cashout as described in Section IV(H).*

Future Benefit Accruals – Amount of Service Credit projected to be earned by active members in years after the valuation date.

Recommendation: *No change to assuming that all active members earn one Service Credit each year in the future, as discussed in Section IV(I).*

Guaranteed Survivor & Disability Benefits – Minimum benefit guarantee for those members that were active on April 1, 1976 and coordinated with Social Security.

Recommendation: *Eliminate the current loading factor to approximate these benefits, as discussed in Section IV(J). This assumption has an immaterial impact on valuation results. Also, the number of members potentially affected is small and will continue to decline over time.*

Administrative Expenses – Fees for administrative, legal, accounting, and actuarial services, and other functions carried out by the plan.

Recommendation: *No change to the percentage loading to the normal cost of 0.50% of payroll, as developed in Section IV(K).*

Covered Payroll Projection – Projection of total covered payroll for the twelve months following the actuarial valuation date.

Recommendation: *Recognize the effect of decrements for active members in the covered payroll projection as discussed in Section IV(L). This is more consistent with the derivation of the dollar amount of the Normal Cost and the closed group nature of the actuarial valuation.*

We also suggest that for any assumption changes being recommended for UCRP, the assumption will also be changed for the University of California 415(m) Restoration Plan and the PERS Plus 5 Plan actuarial valuations, as applicable. The only exception to this is for the administrative expense assumptions where these two plans will continue to have their own distinct assumptions.

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

II. BACKGROUND AND METHODOLOGY

In this report, we analyzed both economic and demographic (“non-economic”) assumptions. The primary economic assumptions reviewed are inflation, investment return, and salary increases. 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.

Economic Assumptions

Economic assumptions consist of:

Inflation – Increases in the price of goods and services. The inflation assumption reflects the basic return that investors expect from securities markets. It also reflects the expected basic salary increase for active employees and drives increases in the allowances of retired members.

Investment Return – Expected return on the Plan’s investments after expenses. This assumption has a significant impact on contribution rates.

Salary Increases – In addition to inflationary increases, it is assumed that employees will receive raises from promotions and step increases. These are sometimes referred to as promotional and merit increases. Salaries will also grow by any real “across the board” pay increases that are assumed as a result of labor’s share of productivity gains.

The setting of these economic assumptions is described in Section III.

Demographic Assumptions

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

Please note that any active member experience during the four year period for members who worked at the Los Alamos National Laboratory (LANL) or the Lawrence Livermore National Laboratory (LLNL) was excluded from the determination of any prospective assumptions that affect active members. This is because there are currently no active members in UCRP working at LANL and the same will be true on October 1, 2007 for LLNL. We believe that in general it would not be appropriate to include the experience for a subset of the plan's active members in developing assumptions for future events when that subset of members is (or will shortly be) no longer active in the plan.

III. ECONOMIC ASSUMPTIONS

A. INFLATION

Unless an investment grows at least as fast as prices increase, investors will experience a reduction in the inflation-adjusted value of their investment. There may be periods during which the “riskless” investment return is more or less than inflation, but over the long term, investment market forces will require an issuer of securities to maintain a minimum return which protects investors from inflation.

The inflation assumption is long term in nature, so it is set using primarily historical information. Following is an analysis of 15 and 30 year moving averages of historical inflation rates:

Historical Consumer Price Index – 1931 to 2006
(U.S. City Average - All Urban Consumers)

	25 th Percentile	Median	75 th Percentile
15 year moving averages	2.8%	3.7%	5.0%
30 year moving averages	3.3%	4.3%	5.0%

The average inflation rates have continued to decline over the last several years due to the relatively low inflationary period we are currently experiencing. Also, the 15 year averages are declining as the high inflation years of the mid-1970s and early 1980s are diluted by the recent low inflation years in the 15 year moving average calculations.

The current inflation assumption of 4.00% is higher than most comparable retirement systems, not only in California, but nationally. Here are some relevant comparisons:

System	Inflation Assumption
Los Angeles City (Employees and Fire & Police)	3.75%
Los Angeles County Employees’ Retirement Association	3.50%
CalPERS	3.00%
Median from NASRA 2006 Public Fund Survey	3.50%

Regarding the last entry, in a 2006 public fund survey published by the National Association of State Retirement Administrators (NASRA), the median inflation assumption used by 112 large public retirement funds in their 2005 actuarial valuations was 3.50%.

UCRP's investment consultant, Richards & Tierney, anticipates an annual inflation rate of 2.5%. Note that in general, the investment consultants' time horizon for this assumption is shorter than the time horizon used in the actuarial valuation.

Based on all of the above information, we recommend that the current 4.00% annual inflation assumption be reduced to 3.50% for the July 1, 2007 actuarial valuation.

B. INVESTMENT RETURN

Investment return is an important component in the pension funding equation: contributions plus investment return equals benefits plus expenses. The investment return assumption is intended to reflect the long-term return that will be achieved on the plan's assets in future years. The use of a higher investment return assumption increases the risk that the plan will not achieve its assumed return over the long run, causing a future shortfall of plan assets and an increase in required contributions. Conversely, a lower investment return assumption increases the chance that the plan will exceed its assumed return over the long run, leading to more than expected plan assets and a decrease in required contributions.

Since no amount of analysis can predict future returns with certainty, setting the investment return assumption generally involves considering an acceptable range of expected returns and then selecting a specific point within that range consistent with the plan's tolerance of the risks described just above.

Historical Returns

For reference, UCRP actual rates of return from 1997 through 2006, on a market and actuarial basis, are shown below, along with the assumed earnings rates during that period.

Year ended June 30:	Return on Market Value	Return on Actuarial Value	Assumed Investment Return
1997	25.8%	19.4%	7.50%
1998	21.6%	22.1%	7.50%
1999	12.3%	21.4%	7.50%
2000	12.7%	18.2%	7.50%
2001	(5.5)%	12.1%	7.50%
2002	(9.0)%	5.2%	7.50%
2003	5.6%	1.9%	7.50%
2004	14.5%	2.5%	7.50%
2005	10.3%	2.7%	7.50%
2006	<u>7.2%</u>	<u>5.9%</u>	<u>7.50%</u>
Ten-year average	9.6%	11.1%	7.50%

Please note that while historical plan performance is one data element that may be reviewed, caution should be exercised to avoid relying on that data too heavily. The relevant Actuarial Standard of Practice (ASOP No. 27, Section 3.3) states with regard to selecting any of the economic assumptions:

“[T]he actuary should consider recent economic data. However, the actuary should not give undue weight to recent experience. For example, if the recent history was largely attributable to a significant change in bond yields or inflation, it may be unreasonable to assume that such investment returns will continue over the measurement period.”

This Standard is particularly relevant when setting the investment return assumption because UCRP’s recent investment experience has been heavily influenced by extraordinary investment market events, including periods of unprecedented market gains and losses surrounding the turn of the 21st century. For that reason, our investment return assumption is not explicitly based on the actual return history of UCRP.

However, these returns do provide information about the historical practice of the Regents regarding its selection of a specific investment return assumption. The Regents adopted the 7.50% earnings assumption in 1992 and maintained that assumption during the 1990s when market returns were very high and many funds were increasing their earnings assumptions.

Comparison with Other Public Retirement Systems

One general test of the current investment return assumption is to compare it against those used by other public retirement systems, both in California and nationwide.

The following table compares the current UCRP net investment return assumption against a sample of 20 large California state, county and city public retirement systems:

Assumption	Current UCRP	Sample California Public Retirement Systems*		
		Low	Median	High
Net Investment Return	7.50%	7.50%	8.00%	8.25%

* Includes CalPERS, UCRP, 15 county systems and 3 major city systems

The next table compares the current UCRP net investment return assumption against those of 112 nationwide public retirement systems that participated in the National Association of State Retirement Administrators (NASRA) 2006 Public Fund Survey:

Assumption	Current UCRP	NASRA 2006 Public Fund Survey		
		Low*	Median	High*
Net Investment Return	7.50%	7.25%	8.00%	8.50%

* After eliminating very lowest and highest as outliers

Based on the above, the current investment return assumption of 7.50% falls toward the lower end of a reasonable range when compared to other retirement systems. This provides relatively greater protection against the risk of future asset shortfalls and increasing contribution requirements. This is consistent with the Regents' historical practice, noted above.

A “Risk Adjustment” Methodology

In addition to the historical perspective and comparisons against other public retirement systems, Segal's standard approach for its California public sector plans is a more quantitative analysis that starts with the very common “building block method” (as described in ASOP No. 27, Section 3.6.2.a) which looks at the components of the investment return assumption: inflation, real rate of return and expenses. It then includes a “Risk Adjustment”, which is an empirically based method of measuring and comparing risk tolerances among different plans. We will develop each of these “building block” components in turn.

Inflation – As previously discussed in Section III(A), we are recommending a 3.50% inflation assumption.

Real Rate of Investment Return – This component represents the portfolio's incremental investment market returns over inflation. In theory, as an investor takes a greater investment risk, the return on the investment is expected to also be greater, at least in the long run. This additional return is expected to vary by asset class and empirical data supports that expectation. For that reason, the real rate of return assumptions are developed by asset class. This means that the real rate of return assumption for the UCRP portfolio will vary with the Regents' asset allocation among asset classes.

The following table shows the UCRP target asset allocation and assumed real rates of return assumptions by asset class. The first column of real rate of return assumptions are determined by reducing Richards & Tierney's total return assumptions by their assumed inflation of 2.5%. The

second column of returns represents the average of a broader sample of real rate of return assumptions. The sample includes the expected annual real rate of returns provided to us by eight other investment advisory firms retained by California public retirement systems. We believe these assumptions reasonably reflect a consensus forecast of future market returns.

**UCRP Target Asset Allocation and Assumed Real Rate of Return Assumptions by
Asset Class and for the Portfolio**

Asset Class	Percentage of Portfolio	Richards & Tierney's Assumed Real Rate of Return*	Average Real Rate of Return from a Sample of Consultants to Segal's California Public Clients**
US Large Cap Equity	41.5%	5.50%	6.54%
US Small Cap Equity	4.0%	6.00%	7.29%
Developed International Equity	18.0%	5.50%	6.99%
Emerging Market Equity	3.0%	6.50%	10.22%
US Fixed Income	12.0%	2.50%	2.71%
US High Yield	3.0%	3.50%	4.19%
International Fixed Income	3.0%	2.50%	2.59%
Emerging Market Debt	3.0%	4.50%	7.01%
TIPS	6.0%	2.50%	2.50%***
US Real Estate	3.0%	3.95%	4.71%
Private Equity	3.0%	9.00%	9.00%***
Hedge Funds	<u>0.5%</u>	<u>5.25%</u>	<u>5.25%***</u>
Total	100.0%	4.89%	5.90%

* Derived by netting Richards & Tierney's arithmetic annual rate of return assumptions for 2007 by their assumed 2.5% inflation rate. Note that these return assumptions are net of any applicable investment expenses. For marketable assets (equity & bonds) the expected return is for the underlying passive index (no alpha, no fees). For alternative investments, the expected return includes active management and is net of fees.

** Including the City of Los Angeles and the county retirement systems of Alameda, Contra Costa, Orange, Sacramento, San Bernardino, San Diego, and Ventura counties. These return assumptions are gross of any applicable investment expenses.

*** Assumption is applied in lieu of the average because there is a larger disparity in returns for this asset class among the firms surveyed, and using Richards & Tierney's assumption should more closely reflect the underlying investments made specifically for UCRP.

Please note that the above are representative of “indexed” returns and do not include any additional returns (“alpha”) from active management. This is consistent with the Actuarial Standard of Practice No. 27, Section 3.6.3.e, which states:

“Investment Manager Performance - Anticipating superior (or inferior) investment manager performance may be unduly optimistic (pessimistic). Few investment managers consistently achieve significant above-market returns net of expenses over long periods.”

The following are some observations about the returns provided above:

1. The investment return assumptions utilized by Richards & Tierney are lower than the average assumptions utilized by the investment consultants to Segal’s public clients in the sample, even when they are adjusted to a comparable “gross of fees” basis by adding 15 basis points (0.15%).
2. Using an average of expected real rates of return allows the Plan’s investment return assumption to include a broader range of capital market information and it should help reduce year to year volatility in the Plan’s investment return assumption.
3. Therefore, we recommend that the 5.90% portfolio real rate of return be used in this analysis of the UCRP investment return assumption.

Plan Expenses – The real rate of return assumption for the portfolio needs to be adjusted for investment expenses to be paid from investment income. Note that the valuation assumptions include a separate loading for administrative expenses, as discussed in Section IV(K) of this report.

We obtained information on investment expenses for the purpose of this assumption from the Treasurer’s Office. Based on this information it appears that a future investment expense assumption of 0.15% is reasonable.

Risk Adjustment – As noted above, this model adjusts the real rate of return assumption for the portfolio to reflect the potential risk of shortfalls in the return assumptions. The UCRP asset allocation also determines this portfolio risk, since that risk is driven by the variability of returns for the various asset classes and the correlation of returns among those asset classes. This portfolio risk is incorporated into the real rate of return assumption through a risk adjustment, which in turn corresponds to a statistical confidence level of meeting or exceeding the assumed return.

The purpose of the risk adjustment (as measured by the corresponding confidence level) is to increase the likelihood of achieving the assumed investment return in the long term by factoring market volatility into the assumption. The 5.90% expected real rate of return developed earlier in this report

was based on “mean” or average returns. This means there is a 50% chance of the actual return being at least as great as the average (assuming a symmetrical distribution of future returns). The risk adjustment increases that probability. This is consistent with our experience that retirement plan fiduciaries generally would prefer that returns exceed the assumed rate more often than not.

In our model, the confidence level associated with a particular risk adjustment represents the likelihood that the System’s actual average return would equal or exceed the assumed value over a 15 year period. For example, if we set our real rate of return assumption using a risk adjustment that produces a confidence level of 70%, then there is a 70% chance (7 out of 10) that the average return over 15 years will be equal to or greater than the assumed value. This confidence level reflects the volatility risk of the UCRP portfolio as measured by the annual portfolio standard deviation, assuming that the distribution of returns over that period follows the Normal statistical distribution.¹ We used a portfolio standard deviation of 10.13%, as calculated by Richards & Tierney for the UCRP asset allocation.

We start by determining the confidence level associated with the current investment return assumption. In combination with the inflation, real return and expense components developed above, the current 7.50% investment return implies a risk adjustment of 1.75%.

<u>Components of the Investment Return Assumption</u>	
Assumption Component	Recommended Value
Inflation	3.50%
Plus Portfolio Real Rate of Return	5.90%
Minus Expense Adjustment	(0.15)%
Minus Risk Adjustment	<u>(1.75)%</u>
Total	7.50%

¹ The theory that long term investment returns follow a Normal distribution is debatable; however, we believe the Normal distribution assumption is reasonable for purposes of setting this risk adjustment.

Based on the 10.13% portfolio standard deviation, a 1.75% risk adjustment provides approximately a 74% probability that the actual average return over 15 years would not fall below the assumed return. We refer to this probability as providing a 74% confidence level that the assumed return will be achieved over a 15 year period. The 15 year time horizon represents an approximation of the “duration” of the retirement plan’s liabilities, where the duration of a liability represents the sensitivity of that liability to interest rate variations.

Segal’s other California public retirement system clients have risk adjustments corresponding to confidence levels in the range of 57% to 65%. A 74% confidence level would be consistent with the Regents’ historical practice of maintaining an investment return assumption that provides a relatively high level of protection against the risk of future returns falling short of the assumed return.

Test of the Risk Adjustment

The appropriateness of the risk adjustment component of our investment earnings assumption model is based on our empirical experience with many retirement boards over many years. We have found that simply combining the inflation assumption with the real return and expense components (i.e., using no risk adjustment) produces a substantially higher assumed return than retirement plan fiduciaries tend to adopt in practice, regardless of the consulting actuary or the methods involved in the process. There is a relatively wide range of risk adjustments that may be incorporated in the earnings assumption. Ideally, the particular risk adjustment selected from that range should reflect the “downside” risk tolerance of the plan fiduciaries making the decision. This is similar to the volatility risk that fiduciaries consider when selecting an appropriate asset allocation.

In addition to the generally risk adverse attitude of retirement plan fiduciaries noted above, we believe another reason for the use of the risk adjustment is to control the risk of overstating the effect of the inflation assumption on the assumed investment return. As noted earlier, the inflation assumption for actuarial valuations is generally longer term than that used by investment consultants. For many years, that has lead to relatively high actuarial valuation inflation assumptions. A higher inflation assumption has a conservative effect - higher current cost - on the wage increase and COLA assumption, but is less conservative as part of the investment earnings assumption. In effect, the risk adjustment compensates for this by offsetting the effect of the higher inflation assumption on assumed investment earnings.

One way to test the reasonableness of the 1.75% risk adjustment derived above for UCRP is to compare the resulting risk adjusted investment return (i.e., 7.50%) against the expected net investment return that would result from using the same real return and inflation assumptions that were used to set the plan’s asset allocation. The following table shows that comparison.

Assumption Element:	Risk Adjusted Investment Return	Richards & Tierney's Expected Investment Return ²	Difference
Inflation	3.50%	2.50%	1.00%
Risk Adjustment	(1.75)%	0.00%	(1.75)%
Real Rate of Return	5.90%	4.37%	1.53%
Expenses	<u>(0.15)%</u>	<u>0.00%</u>	<u>(0.15)%</u>
Total	7.50%	6.87%	0.63%

This comparison indicates that the risk adjusted return assumption is certainly not overly conservative when measured against the market and inflationary expectations of the plan's investment advisors. This indicates that a 1.75% risk adjustment, although relatively high when compared to levels used by our other clients, is a reasonable level to use in our model for UCRP.

Historical Test of Real Rate of Return Assumptions and Confidence Level

Another way to test whether the risk adjustment model's expected real rate of return and confidence level are both reasonable and consistent is to compare them against those developed from historical data.

This comparison was accomplished as follows:

- Historical quarterly real rates of return by asset class were obtained from data published by Ibbotson Associates. This data is somewhat limited in terms of the number of asset classes represented so a broader grouping of classes was necessary. Richards & Tierney's assumptions were used for real estate and alternative investments.
- The rates of return in each asset class were weighted by UCRP's asset allocation percentages to derive a theoretical historical portfolio return by quarter.
- A series of 15 year real rates of portfolio return were obtained by compounding the quarterly portfolio returns over rolling 15 year periods and netting them by the 15 year compounded inflation rate for each period. A distribution of average annual real rates of return over rolling 15 year periods was then derived from this series of 15 year returns.

² This portfolio return was provided by Richards & Tierney. It differs from the Richards & Tierney portfolio return derived in the "Risk Adjustment Methodology" section of this report. The reason for this difference is that the above return is the "geometric" average versus the "arithmetic" average used in the previous table. The geometric average return implicitly reflects the expected volatility of future portfolio returns, as opposed to the arithmetic return that requires an explicit adjustment for expected volatility.

The following table provides the median (50th percentile) of these historical average annual real rates of return (after adding the 3.50% assumed inflation rate and adjusting 0.15% for expenses) as well as the percentile ranking associated with the risk adjusted 7.50% risk adjusted investment return.

Percentile Levels Developed from Historical Returns		
Assumption Component	50 th Percentile of Returns	35 th Percentile of Returns
Inflation	3.50%	3.50%
Plus Portfolio Real Rate of Return	6.17%	4.24%
Minus Expense Adjustment	(0.15%)	(0.15%)
Total	9.52%	7.59%

The 9.52% historical 50th percentile return from the above table compares to the 50th percentile return of 9.25% developed from our model (i.e., before making the risk adjustment). This implies that the real rate of return assumptions used in the model are below median historical levels. This result is consistent with the outlook of many investment professionals that future returns are likely to fall short of historical averages.

The result that 7.59% represents the 35th percentile tells us that, if one were to select a 15 year historical period at random, there is a 65% chance that the return for the UCRP asset allocation would be at least 7.59%. This is reasonably consistent with the results of the risk adjustment model that an assumed return of 7.50% represents a 74% confidence level, although it also indicates that, at least historically, the confidence level associated with a 7.50% assumption may be lower than 74%.

Conclusions and Recommendation

In summary:

- The risk adjustment model indicates a 74% confidence level that the future average return of the UCRP portfolio will be no less than 7.50% which, compared to other systems, is consistent with the Regents' historical practice in setting the investment earnings assumption;
- The 7.50% risk adjusted investment return assumption is not overly conservative when measured against the market and inflationary expectations of the plan's investment advisors; and
- The real rate of return assumptions used to develop the expected rate of return and the 74% confidence level are reasonable and consistent when compared to historical data, although historical data also indicates that the confidence level associated with a 7.50% assumption may be lower than 74%.

Based on these results, we recommend that the investment return assumption remain at 7.50%.

C. SALARY INCREASE

Salary increases impact plan costs in two ways: (i) by increasing members' benefits (since benefits are a function of the members' highest average pay) and future normal cost collections; and (ii) by increasing total active member payroll over which UAAL payments (or credits if the UAAL is negative) can be amortized. These two impacts are discussed separately below.

As an employee progresses through his or her career, increases in pay are expected to come from three sources:

1. Inflation – Unless pay grows at least as fast as consumer prices grow, employees will experience a reduction in their standard of living. There may be times when pay increases lag or exceed inflation, but over the long term, labor market forces will require employers to maintain the employees' standard of living.

As discussed earlier in this report, we are recommending an inflation rate of 3.50%. This inflation component will be used as part of the salary increase assumption.

2. Real “Across the Board” Pay Increases – These increases are typically termed productivity increases since they are considered to be derived from the ability of an organization or economy to produce goods and services in a more efficient manner. As that occurs, some portion of the value of these improvements can provide a source for pay increases. These increases are typically assumed to extend to all employees “across the board.” The State and Local Government Workers Employment Cost Index produced by the Department of Labor provides evidence that real “across the board” pay increases for public colleges and universities have averaged about 0.60% annually during the last approximately 15 years. However, this has generally been a period of low inflation and favorable investment markets, so there remains some question as to whether increases can sustain this level in the long run.

We recommend introducing a real “across the board” salary increase assumption of 0.25% for the July 1, 2007 valuation.

3. Promotional and Merit Increases – As the name implies, these increases come from an employee's career advances. This form of pay increase differs from the previous two, since it is specific to the individual. This assumption is typically structured as a function of an employee's age and/or service, and it is derived from employer- and employee-specific information as part of the experience study. The promotional and merit increases are determined by measuring the actual salary increases by employees, net of inflationary and “across the board” components.

Currently, the same promotional and merit increase assumptions are used for Staff, Faculty, and Safety members in the actuarial valuation. These assumed rates of future promotional and merit increases are currently a function of an employee's age. Our experience review analyzed recent years' promotional and merit increases independently for Staff, Faculty, and Safety members, both as a function of age and also as a function of years of service. Our review concluded:

- There are distinct differences between Staff and Faculty promotional and merit salary increase patterns. Compared to Staff, Faculty members continue to experience higher increases later into their careers. The results for Safety members were inconclusive due to the amount of data available.
- We observed that salary increases correlated better with years of service than with age. This was the case for both Staff and Faculty members.

As a result of these observations, we recommend that promotional and merit increase assumptions be:

1. Separately established for Staff and Faculty members; and
2. Structured as a function of years of service instead of age.

Assumptions for Safety members are recommended to be the same as those for Staff.

The following table shows the current assumptions for promotional and merit increases for all members.

Promotional and Merit Increase	
Age	Increase
20	2.50%
25	2.50%
30	2.10%
35	1.70%
40	1.50%
45	1.30%
50	1.20%
55	1.10%
60	0.90%

The following table compares Faculty members' actual average promotional and merit increases by years of service over the four year experience period from July 1, 2002 through June 30, 2006. The actual increases were reduced by 1.62%, the actual average inflation plus "across the board" increase over the four year experience period.

FACULTY		
July 1, 2002 Through June 30, 2006 Average Faculty		
Years of Service	Promotional and Merit Increases	Proposed Assumptions
Less than 1	2.57%	3.25%
1	2.83	3.25
2	3.19	3.25
3	2.65	3.25
4	3.40	3.25
5	3.08	3.25
6	3.61	3.20
7	2.98	3.10
8	3.08	3.00
9	3.24	2.90
10	2.63	2.80
11	2.96	2.70
12	2.43	2.60
13	2.69	2.50
14	2.41	2.40
15	2.89	2.30
16	2.18	2.20
17	2.12	2.10
18	1.90	2.00
19	2.08	1.75
20 & over	1.55	1.50

The following table provides the same information for Staff members. The actual average promotional and merit increases were determined by reducing the actual average total salary increases by 2.64%, which was the actual average inflation plus real “across the board” increase over the four year period.

STAFF		
July 1, 2002 Through June 30, 2006 Average Staff Promotional and Merit Increases		
Years of Service		Proposed Assumptions*
Less than 1	2.85%	3.25%
1	3.02	3.00
2	2.85	2.80
3	2.37	2.50
4	2.08	2.20
5	1.87	2.00
6	1.85	1.80
7	1.61	1.70
8	1.54	1.60
9	1.42	1.50
10	1.60	1.40
11	1.36	1.30
12	1.15	1.20
13	1.08	1.10
14	0.87	1.00
15	0.92	0.90
16	0.79	0.80
17	0.80	0.75
18	0.72	0.70
19	0.86	0.65
20 and over	0.47	0.60

* These assumptions are also recommended for Safety members.

Charts 1 and 2 provide a graphical comparison of the actual promotional and merit increases, compared to the proposed assumptions. Chart 1 shows this information for Faculty members and Chart 2 is for Staff members.

We realize that the four year experience period from July 1, 2002 through June 30, 2006 consisted of some years where inflationary salary increases were suppressed and other years where “catchup” pay increases occurred for many members. We also understand that there potentially will be a number of “catchup” pay increases occurring over the next several years. We believe that when the four year experience period is looked at on average it provides a reasonable representation of potential future increases. We have not attempted to incorporate any potential future “catchup” pay increases into our salary increase assumptions. We will monitor the effect that those increases have on future valuations as compared to our current assumptions and make any appropriate adjustments to any projections of assets and liabilities that we perform.

Chart 1
Promotional and Merit Salary Increase Rates -
Faculty

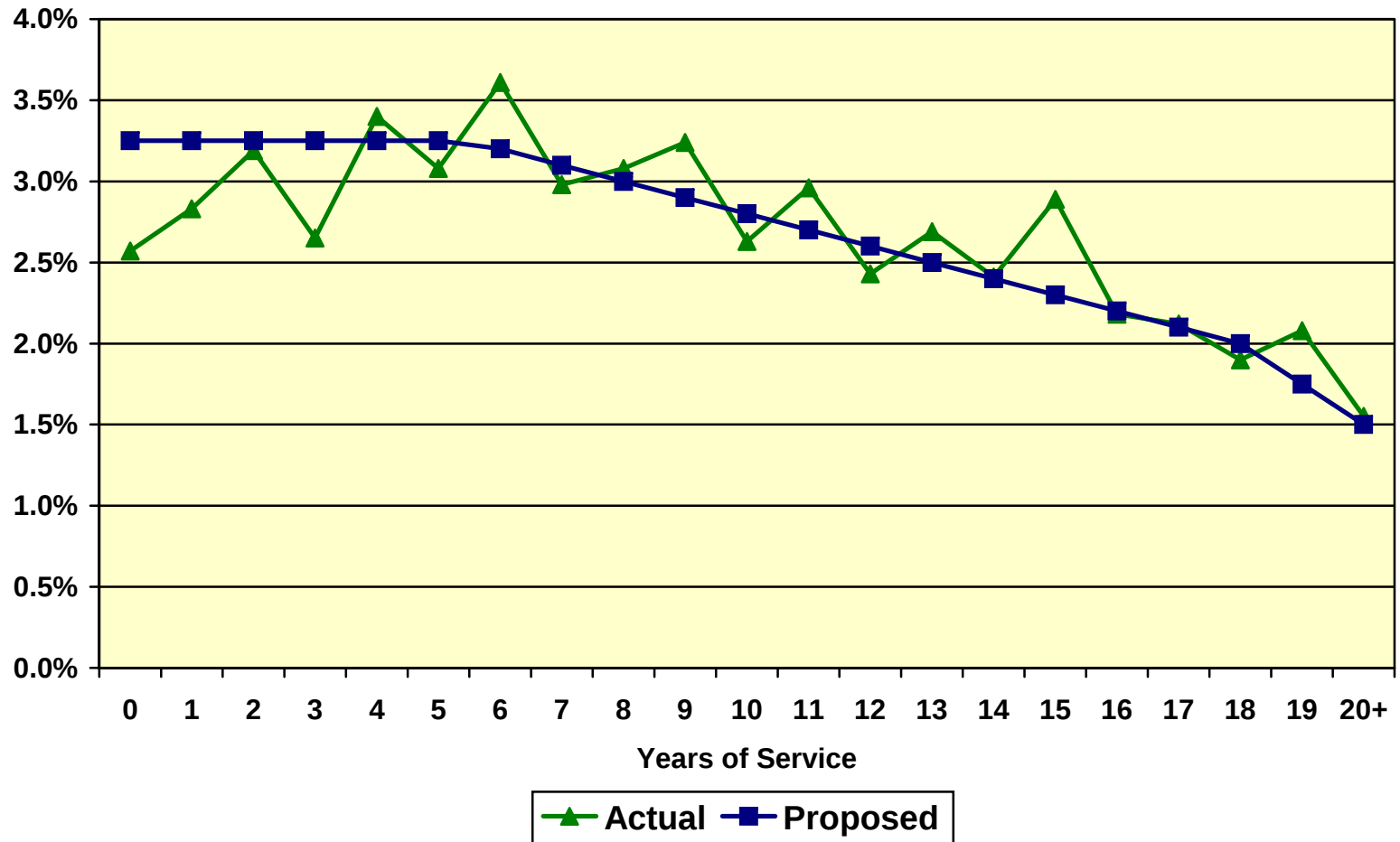
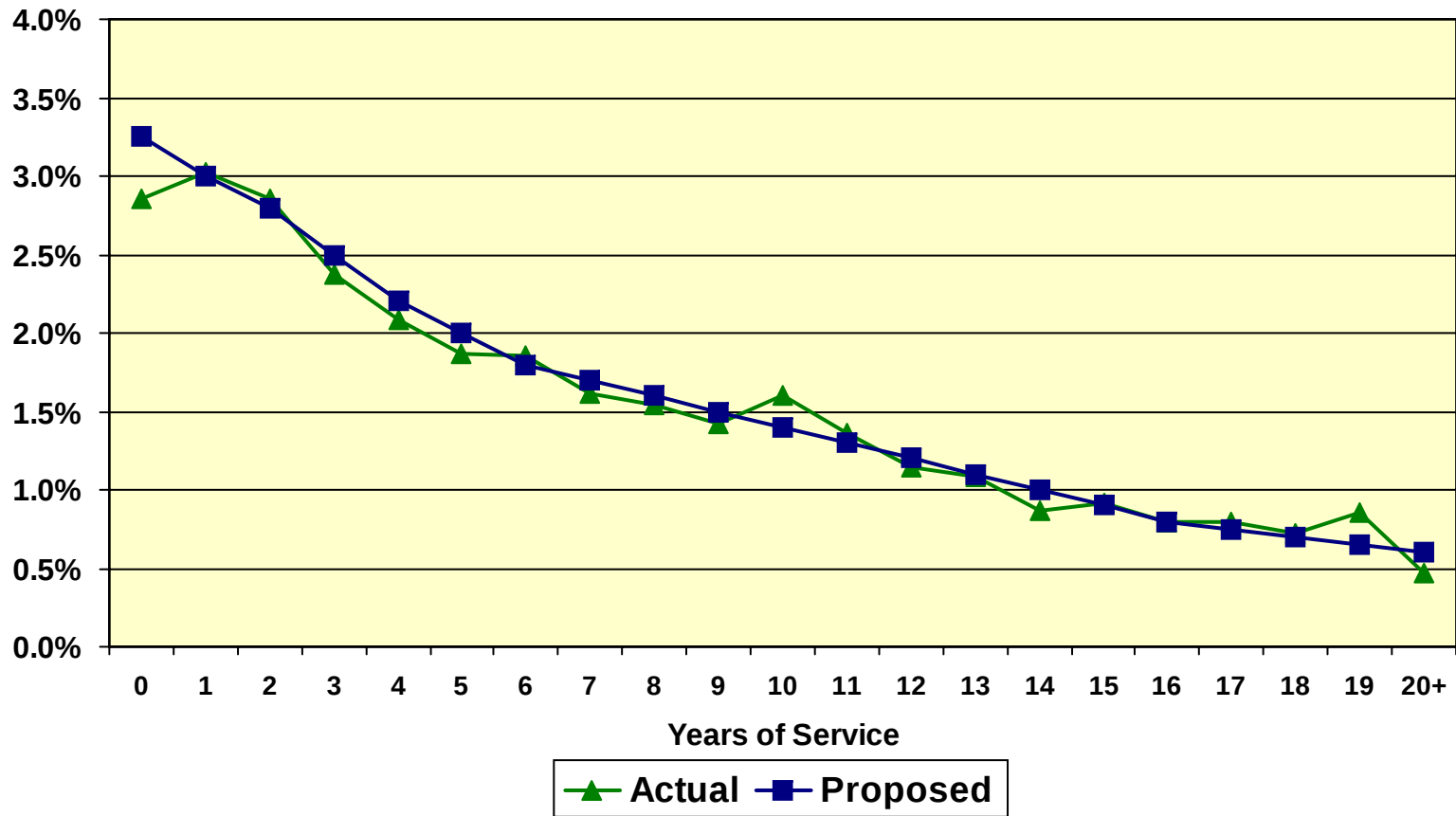


Chart 2
Promotional and Merit Salary Increase Rates -
Staff



IV. DEMOGRAPHIC ASSUMPTIONS

A. RETIREMENT RATES

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

The following table shows the observed retirement rates for Faculty members based on the actual experience over the four year period. Also shown are the current rates assumed and the rates we propose:

FACULTY			
Age	Current Rate of Retirement	Actual Rate of Retirement	Proposed Rate of Retirement
50	3.00%	0.76%	2.00%
51	2.00	1.36	1.00
52	2.00	0.89	1.00
53	2.00	0.92	1.00
54	2.00	1.01	1.00
55	2.00	1.95	2.00
56	2.00	1.31	2.00
57	2.00	1.56	2.00
58	2.00	1.68	2.00
59	4.00	2.35	3.00
60	5.00	5.35	5.00
61	5.00	5.30	5.00
62	5.00	5.21	5.00
63	5.00	5.89	5.00
64	5.00	7.64	7.00
65	6.00	9.34	8.00
66	6.00	10.04	9.00
67	10.00	9.78	10.00
68	10.00	13.89	12.00
69	15.00	11.17	15.00
70	100.00	17.28	15.00
71	100.00	11.42	12.00
72	100.00	14.46	12.00
73	100.00	10.24	12.00
74	100.00	11.11	12.00
75 & Over	100.00	16.51	100.00

For the 50-54 age group, we are proposing decreases in the assumed rates for Faculty members. There are some increases recommended in the rates leading up to age 70. We are also recommending to extend the retirement rates for Faculty members to age 75, due to the number of Faculty members working past age 70. The current rates end at age 70.

Chart 3 compares actual experience with the current and proposed rates of retirement for Faculty Members.

The following table shows the observed retirement rates for Staff members (excludes Faculty and Safety members) over the four year period. Also shown are the current rates assumed and the rates we propose:

STAFF			
Age	Current Rate of Retirement	Actual Rate of Retirement	Proposed Rate of Retirement
50	8.00%	2.97%	4.00%
51	5.00	2.80	4.00
52	5.00	2.57	4.00
53	5.00	3.00	4.00
54	6.00	3.44	5.00
55	6.00	5.01	5.00
56	6.00	5.37	6.00
57	6.00	6.20	6.00
58	8.00	7.53	8.00
59	20.00	10.12	14.00
60	20.00	20.63	20.00
61	20.00	16.00	20.00
62	20.00	21.88	20.00
63	20.00	17.61	20.00
64	30.00	15.52	25.00
65	30.00	26.88	30.00
66	25.00	26.37	25.00
67	25.00	24.78	25.00
68	25.00	22.73	25.00
69	30.00	20.85	25.00
70	100.00	20.77	20.00
71	100.00	24.14	20.00
72	100.00	17.58	20.00
73	100.00	20.59	20.00
74	100.00	18.52	20.00
75 & Over	100.00	25.20	100.00

We are generally recommending decreases (most of which are in the 50-55 age group and the age 70 and older group) in the assumed rates of retirement for Staff members.

Chart 4 compares actual experience with the current and proposed rates of retirement for Staff members.

The following table shows the observed retirement rates for Safety members over the four year period. Also shown are the current rates assumed and the rates we propose:

SAFETY			
Age	Current Rate of Retirement	Actual Rate of Retirement	Proposed Rate of Retirement
50	20.00%	14.89%	15.00%
51	5.00	8.11	10.00
52	5.00	27.78	10.00
53	5.00	9.68	10.00
54	5.00	13.04	10.00
55	25.00	42.11	25.00
56	25.00	14.29	25.00
57	25.00	42.86	25.00
58	25.00	33.33	25.00
59	25.00	40.00	25.00
60	25.00	0.00	25.00
61	25.00	0.00	25.00
62	50.00	50.00	50.00
63	50.00	0.00	50.00
64	75.00	0.00	75.00
65 & over	100.00	100.00	100.00

We are recommending changes in the age 50-54 retirement rates for Safety members. Most of these changes are increases in the assumed rates.

We are not recommending changes in retirement rates at some of the later ages, since there is a lack of sufficient data at these ages due to the small number of Safety members in the UCRP.

Chart 5 compares actual experience with the current and proposed rates of retirement for Safety members.

Please note that in determining the actual rates of retirement over the four year period we included any retirements that occurred on July 1, 2006 as most of those retirements are reported to us in the July 1, 2006 data used in the actuarial valuation. Conversely, most retirements that occurred on July 1, 2002

were reported in the July 1, 2002 valuation data and are not included in the actual experience used in this study.

In prior valuations, deferred vested members were assumed to retire at age 50. The average age at retirement over the prior four years was 59. We recommend changing the assumed retirement age for all deferred vested members to age 59 to reflect actual experience.

We also reviewed the average age at retirement for deferred vested members separately for Faculty and Staff, over the last two years. These were the only years in which data was available for deferred vested members that denoted whether they were Faculty or Staff. While there were some differences in the average age at retirement, they did not appear to be sufficient to warrant using different assumptions at this time.

Currently there is no assumption made as to whether inactive members will go on to work for a reciprocal system. As a result, their liabilities do not include any adjustment for salary increases or service credits for eligibility purposes earned at the reciprocal system. However, we do assume that all deferred vested members receive the inactive COLA (generally 2% each year) from termination date until retirement date. Therefore, the impact on actuarial liabilities of assuming no salary increases for those deferred vested members who work for a reciprocal system is lessened.

We will continue to assume that no inactive members go on to work for a reciprocal system. We will also work with University of California Office of the President (UCOP) staff on obtaining data to denote which inactive members went on to work for a reciprocal system, and include this data in future experience studies.

Chart 3
Retirement Rates - Faculty

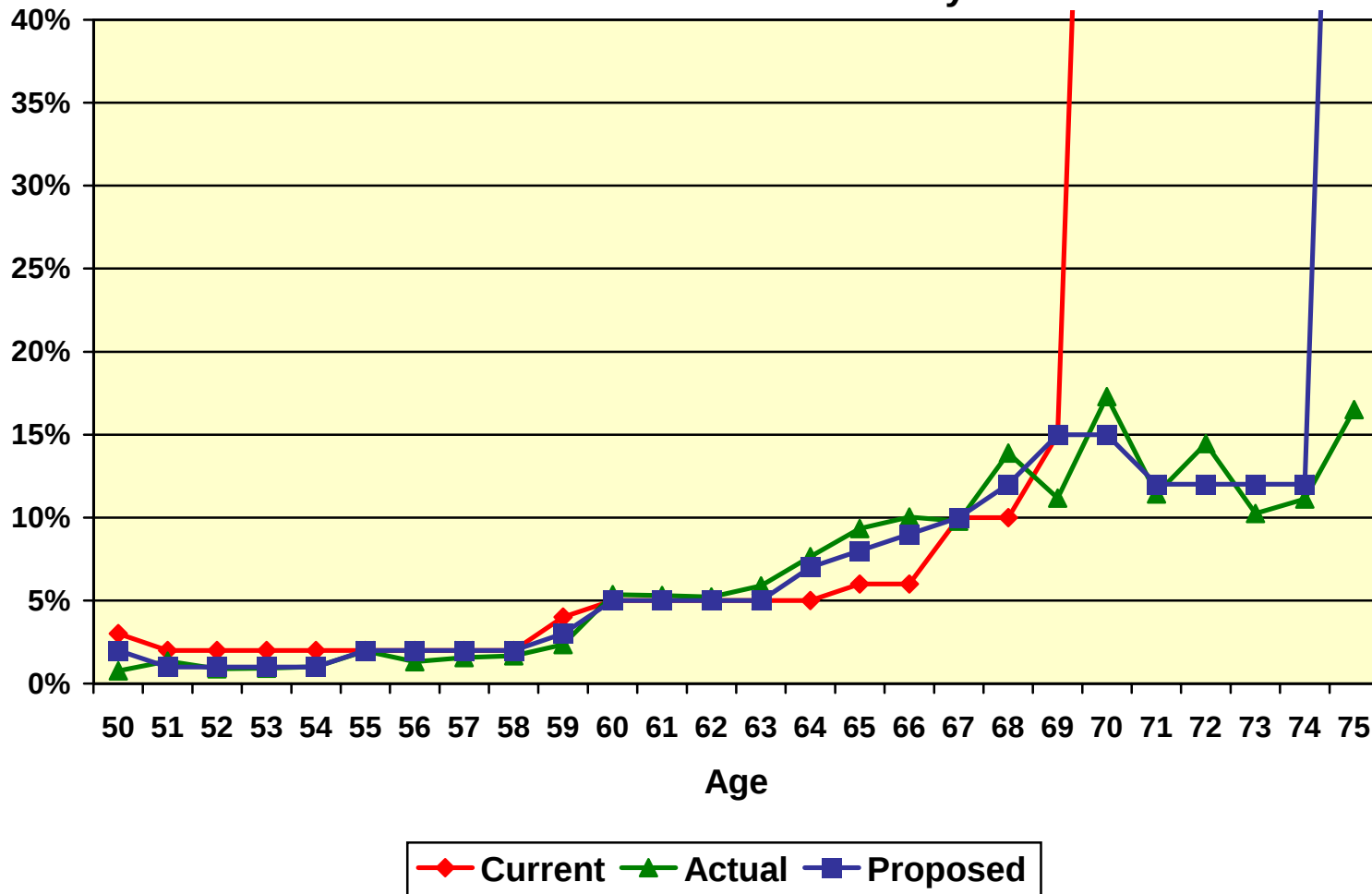


Chart 4
Retirement Rates - Staff

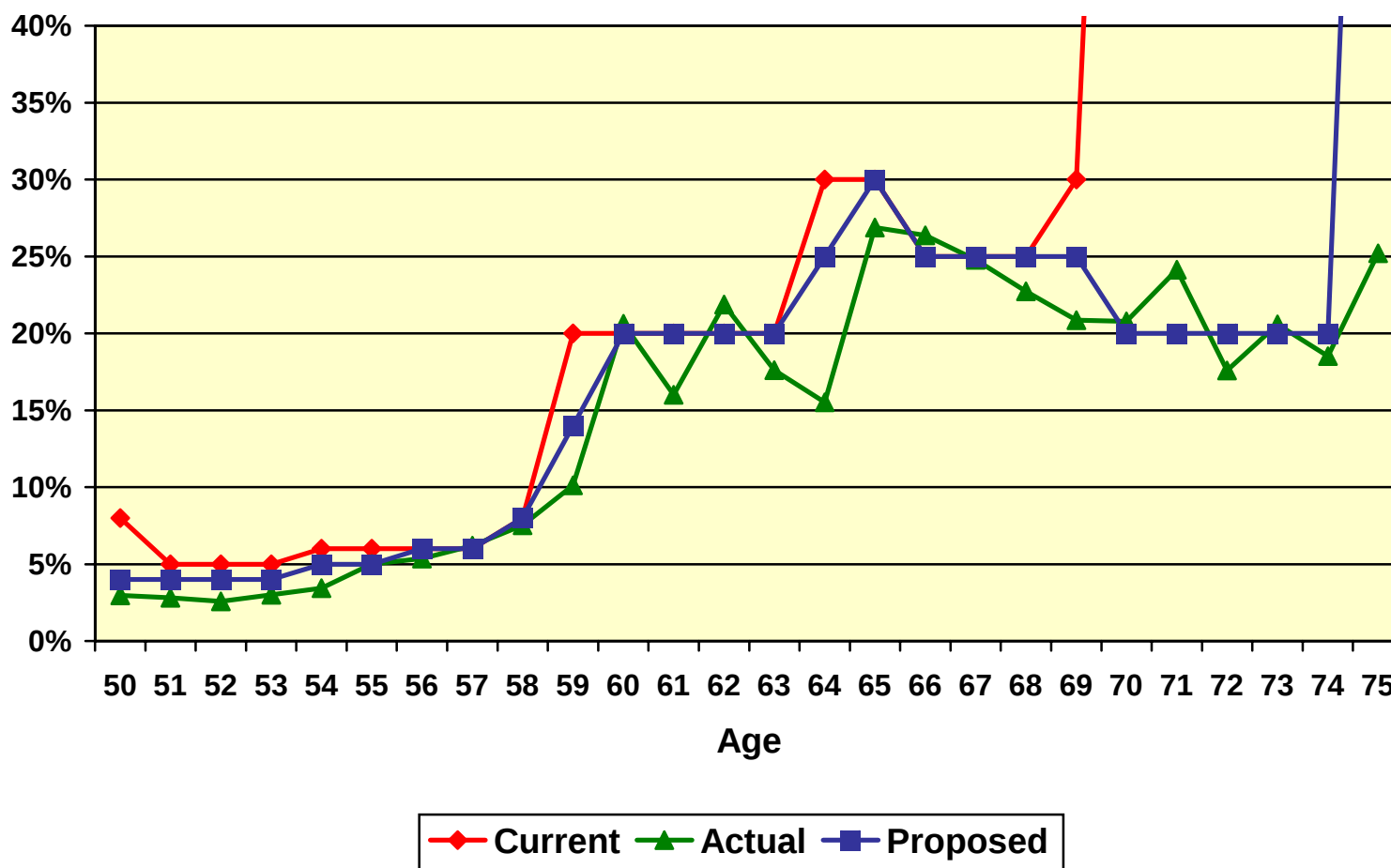
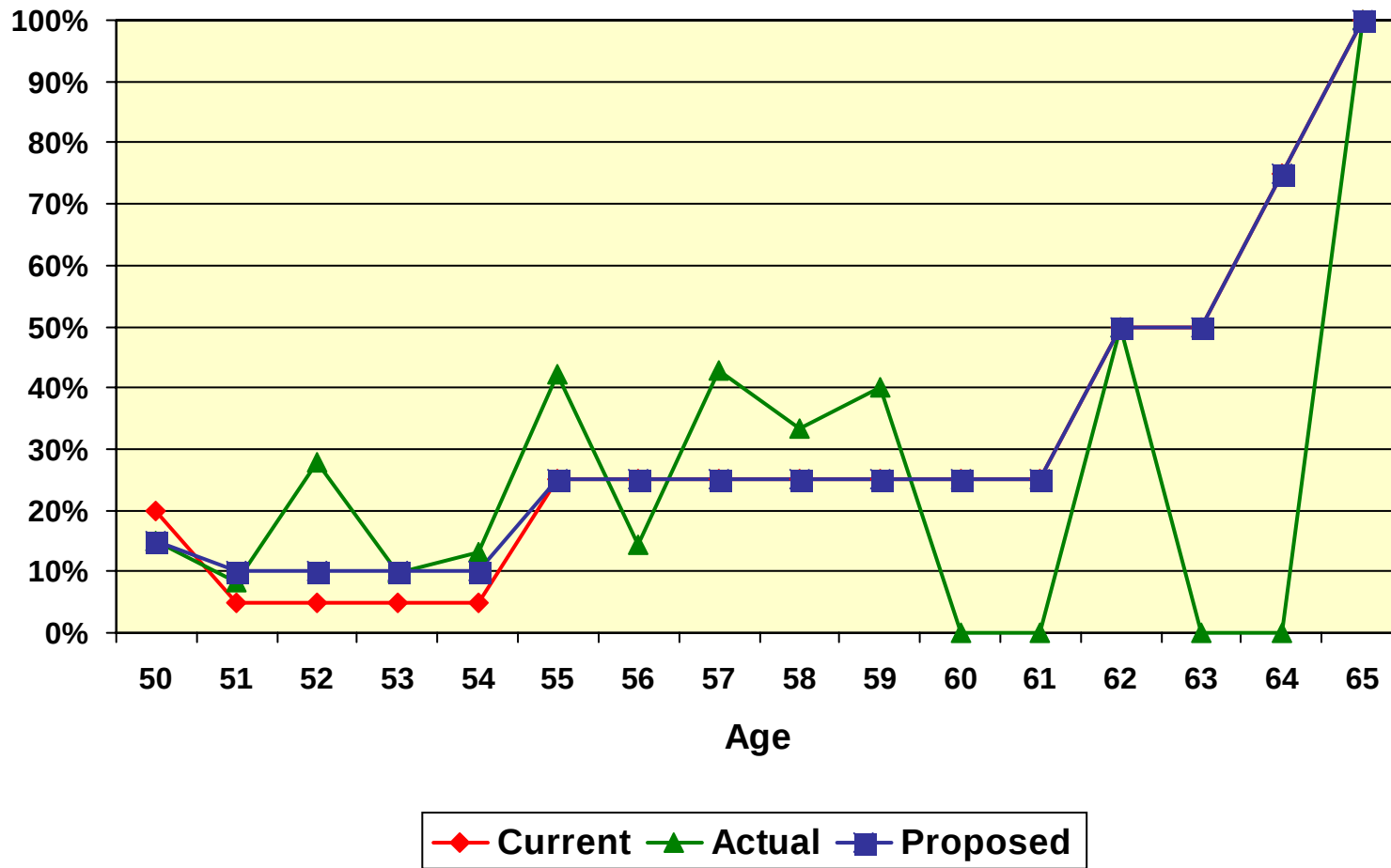


Chart 5
Retirement Rates - Safety



B. MORTALITY RATES - HEALTHY

The “healthy” mortality rates project what proportion of members will die before retirement as well as the life expectancy of a member who retires from service (i.e., not receiving a disability pension). The table currently being used for post-service retirement mortality rates is the 1994 Group Annuity Reserving Table, unloaded, projected with scale AA to 2002. Ages are set back two years for males (from the male table) and set back one year for females (from the female table).

Post-service Retirement Mortality

Among healthy service retired members, the actual deaths compared to the expected deaths under the current assumptions for the last four years are as follows:

Year Ending June 30,	Healthy Pensioners	
	Expected Deaths – Current Assumptions	Actual Deaths
2003	648	734
2004	692	667
2005	733	748
2006	<u>780</u>	<u>810</u>
Total	2,853	2,959
Actual / Expected	104%	

Chart 6 summarizes the above information. Experience shows that there were slightly more deaths than predicted by the current tables. Therefore, we are not recommending any change to the current assumption. The current table, which was first introduced in the July 1, 2004 actuarial valuation, provides a slight margin for future improvements in life expectancy. The next experience study will show whether the margin for future mortality improvements has fully eroded and whether a change is needed at that time.

Some consideration was given to changing to a more current mortality table, with adjustments as necessary to match UCRP experience. However, that approach would yield a table with mortality rates very similar to the table currently being used.

Chart 7 shows the life expectancies under the current tables.

Pre-Retirement Mortality

The number of deaths among active members is not large enough to provide credible statistics to develop a unique table. Therefore, we propose that pre-retirement mortality follow the same tables used for post-service retirement mortality. This also represents no change to the current assumptions.

Chart 6
Post-Retirement Deaths
Healthy/Non-disabled Pensioners

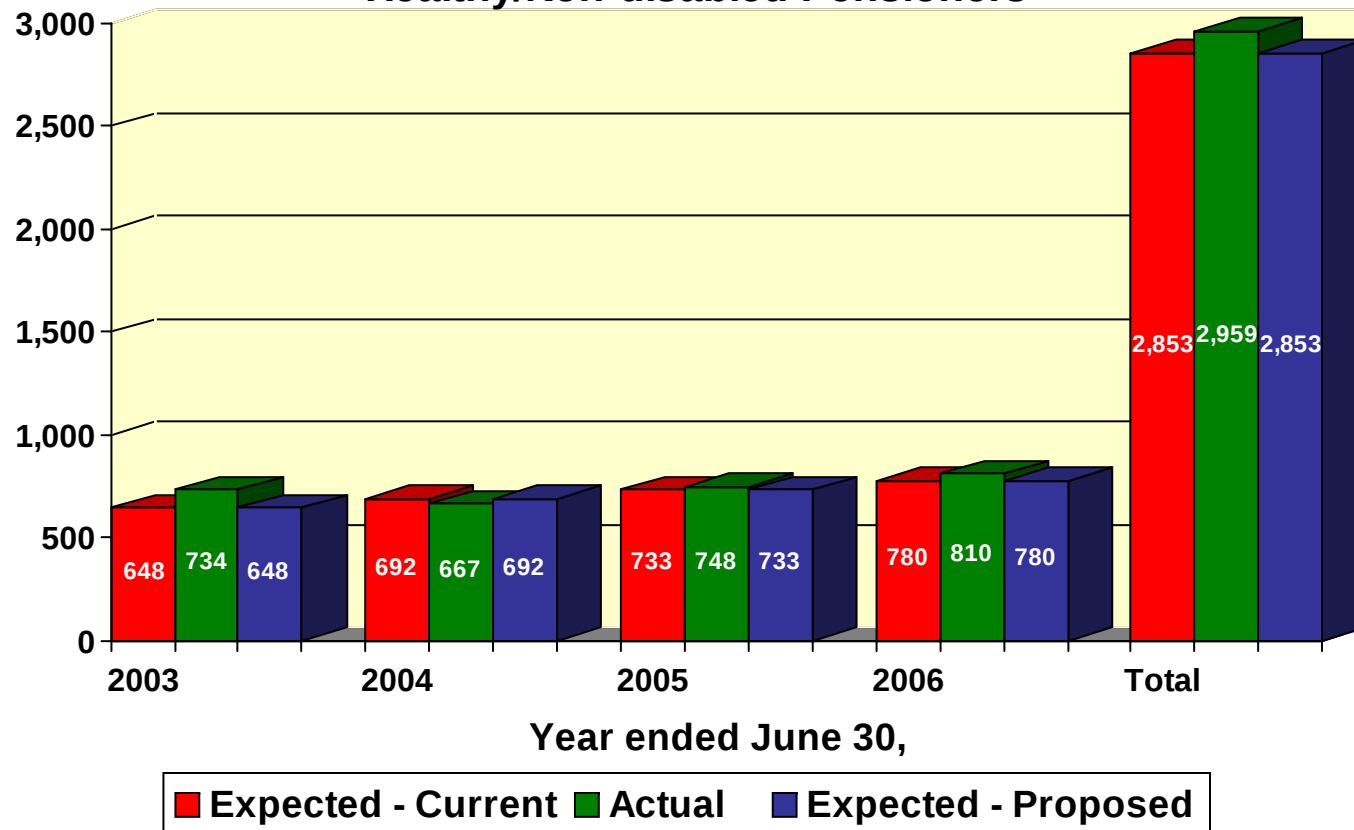
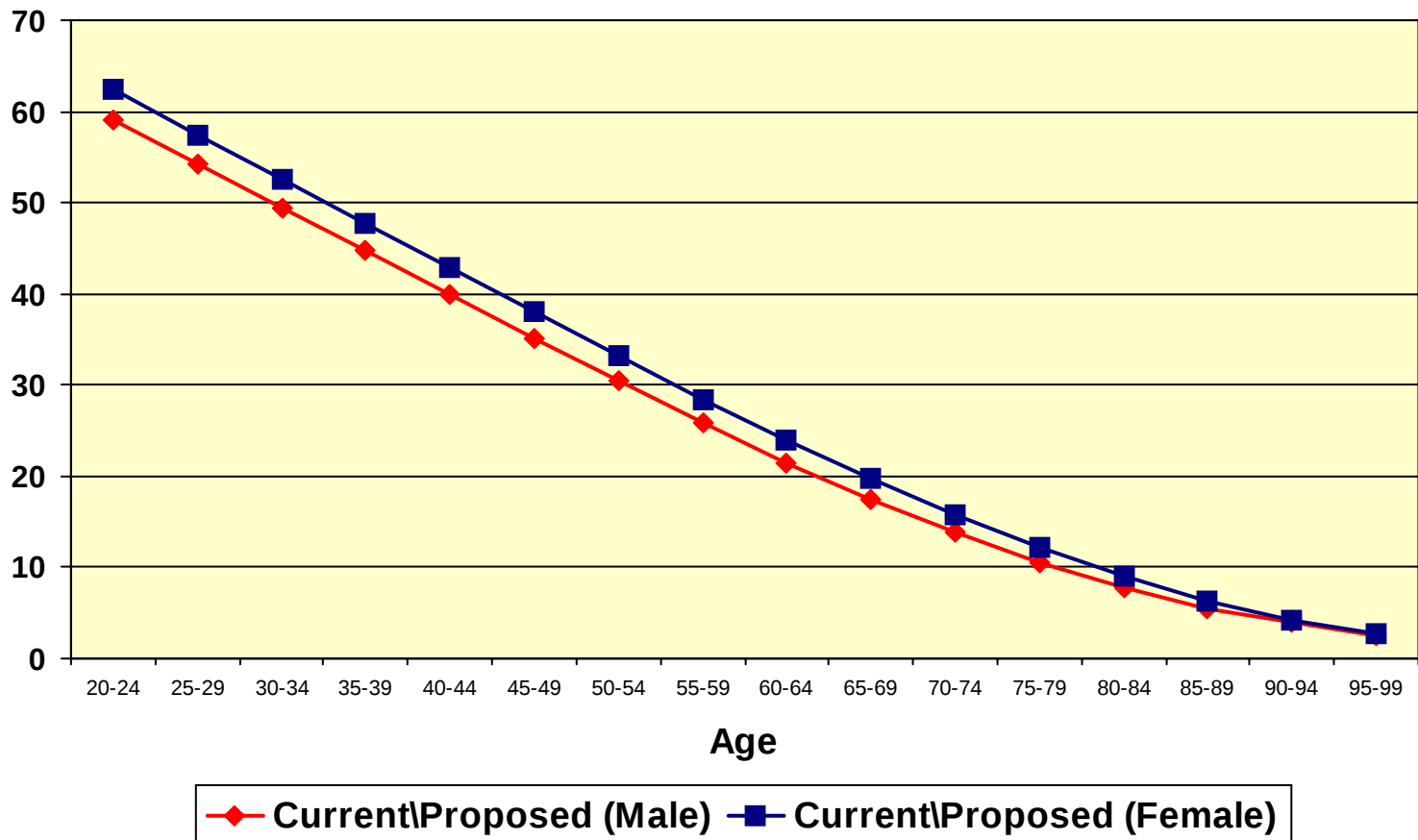


Chart 7
Life Expectancies (Healthy Pensioners)



C. MORTALITY RATES - DISABLED

Since mortality rates for disabled members can be higher than for healthy members, a different mortality assumption is often used. The table currently being used is the 1987 Group Long Term Disability Table (composite select and ultimate rates).

The current assumption includes not only mortality rates for disabled members, but also anticipates recoveries from disablement. However, there is currently no separate assumption for what proportion of disabled members recover and no explicit assumption for what happens to those that recover from their disablement (i.e., return to active employment, become inactive, etc.).

We recommend changing the disability mortality assumption to anticipate deaths only. This is based on what we believe to be more common actuarial practice. Also, as mentioned earlier, if we assume that recoveries from disablements occur, then we would also need to have a separate assumption for how many recover and, for those that recovered, an explicit assumption as to whether they return to work, become inactive, etc.

We are also recommending a change in the disabled mortality table to the RP-2000 Disabled Retiree Table for Males and Females, with a setback of two years for males and one year for females. The number of actual deaths as compared to the expected number under the proposed table is shown below by year.

Disabled Pensioners		
Year Ending June 30,	Actual Deaths	Expected Deaths - Proposed Assumptions
2003	41	47
2004	37	49
2005	54	50
2006	<u>31</u>	<u>52</u>
Total	163	198
Actual / Expected		82%

Note that the expected number of deaths under the proposed table is greater than the actual number of deaths. This is especially true if you look at males only. Generally, we like to have some margin in the mortality rates, but since we are already recommending a significant decrease in the disabled mortality rates by going to the proposed table, we are not recommending a further reduction in the rates at this time. In future experience studies, as more experience becomes available, we will determine if further adjustments are necessary.

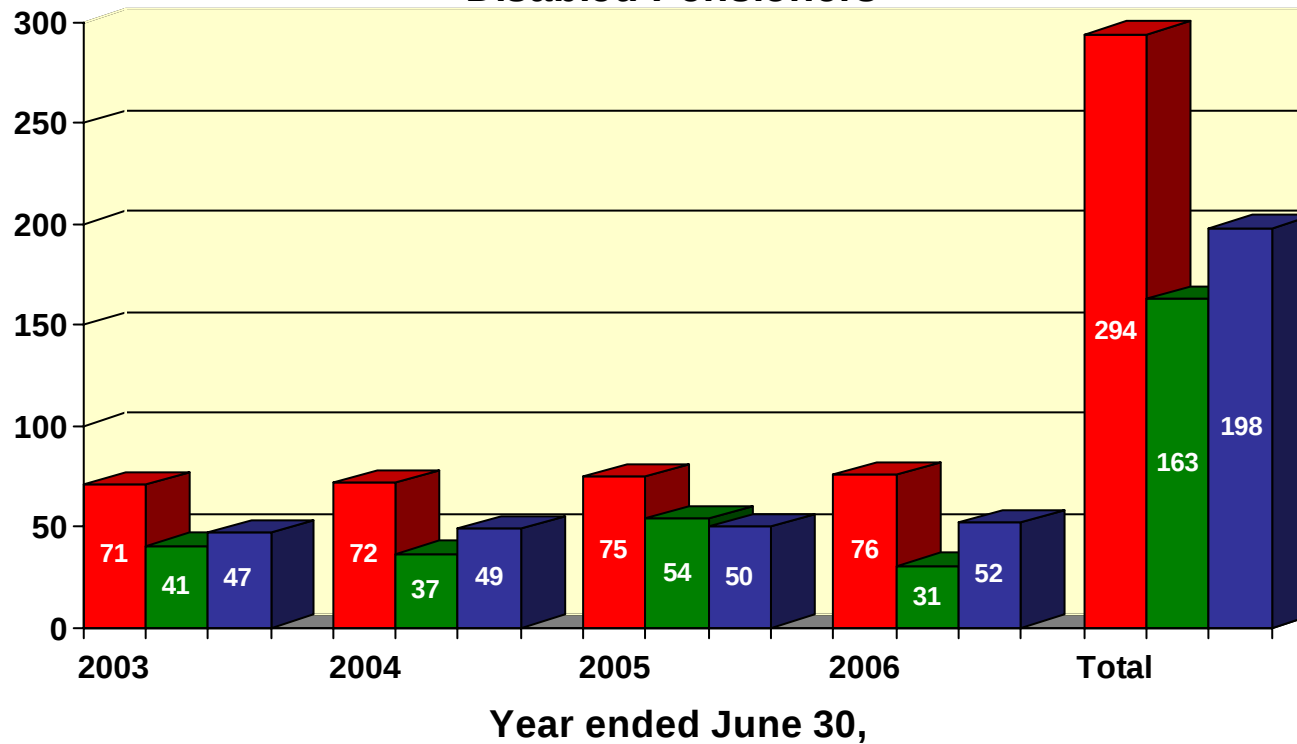
Chart 8 compares actual to expected deaths under both the current and proposed assumptions for disabled members over the last four years. Keep in mind that the current assumption actually includes expected recoveries from disablement as well as deaths.

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

We also recommend that the disabled mortality rates apply only while the disability income benefit is being received. In operation, disability benefits are paid until age 65 or 67 in most cases, at which time the member is treated as a service retirement. So the member's total benefit is a combination of an immediate but temporary disability benefit, followed by a deferred retirement benefit.

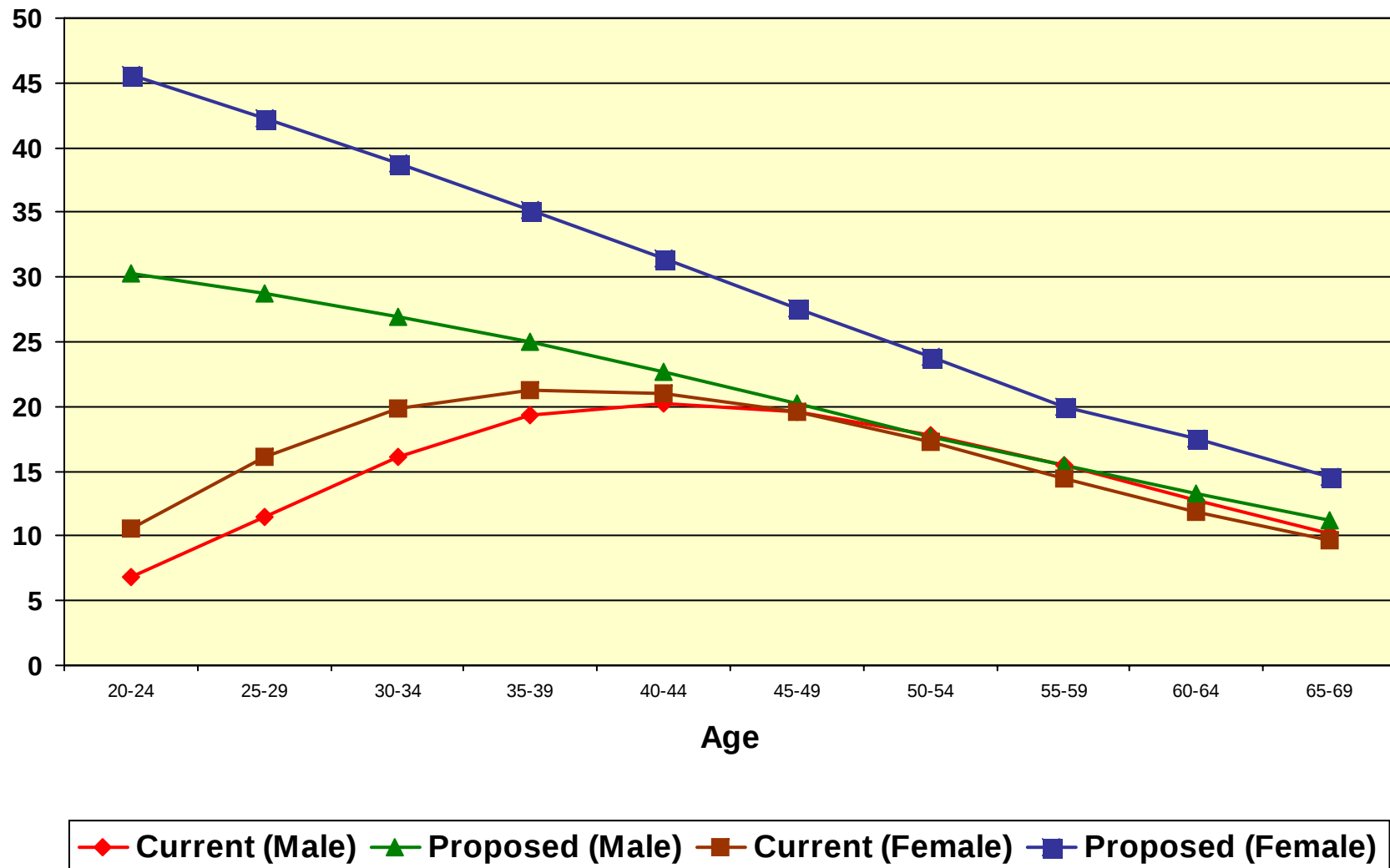
For valuing these members' deferred retirement benefits, as a change from current practice, we will use the healthy mortality rates. This is done in order to prevent actuarial losses from occurring when members "cross over" from receiving a disability income benefit to receiving a retirement benefit. If data becomes available in the future on who "crosses over" to retirement then we may be able to isolate those retirees and value them with disabled mortality, if appropriate.

Chart 8
Post-Retirement Deaths
Disabled Pensioners



■ Expected - Current (Including Recoveries) ■ Actual - Mortality Only ■ Expected - Proposed (Mortality Only)

Chart 9
Life Expectancies (Disabled Members)



D. TERMINATION RATES

Termination rates include all terminations for reasons other than death, disability, or retirement. Under the current assumptions, for members who terminate with over five years of service, the member is assumed to choose a deferred vested benefit. This is based on the fact that there have been no member contributions in UCRP for approximately the past fifteen years. Members who terminate with less than five years of service are only entitled to a refund of their member contributions (although they should not have any member contributions since there have not been member contributions for over five years, as noted above) and distribution of their Capital Accumulation Provision balance.

The termination experience for Faculty members over the last four years between those members with under five years of service (by specific years of service categories) and those with five or more years of service is as follows:

Faculty Rates of Termination (Less than one year of service)

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	24.00%	66.67%	24.00%
25 – 29	23.00%	47.92%	23.00%
30 – 34	17.00%	26.84%	20.00%
35 – 39	12.00%	22.09%	17.00%
40 – 44	12.00%	15.06%	16.00%
45 – 49	12.00%	20.87%	15.00%
50 – 54	12.00%	17.98%	14.00%
55 – 59	12.00%	21.39%	13.00%
60 – 64	12.00%	20.00%	12.00%
65 & Over	0.00%	19.15%	11.00%

Faculty Rates of Termination (At least one, but less than two years of service)

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	22.00%	0.00%	22.00%
25 – 29	16.00%	15.05%	18.00%
30 – 34	8.00%	17.68%	12.00%
35 – 39	8.00%	14.92%	11.00%
40 – 44	6.00%	10.94%	9.00%
45 – 49	4.00%	10.68%	7.00%
50 – 54	3.00%	10.81%	6.00%
55 – 59	3.00%	10.19%	5.00%
60 – 64	3.00%	8.57%	4.00%
65 & Over	0.00%	10.26%	3.00%

Faculty Rates of Termination
(At least two, but less than three years of service)

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	21.00%	0.00%	20.00%
25 – 29	14.00%	26.00%	17.00%
30 – 34	8.00%	13.53%	10.00%
35 – 39	5.00%	9.19%	9.00%
40 – 44	5.00%	7.44%	7.00%
45 – 49	4.00%	10.38%	6.00%
50 – 54	3.00%	8.53%	5.00%
55 – 59	3.00%	7.89%	4.00%
60 – 64	3.00%	6.32%	3.00%
65 & Over	0.00%	10.39%	2.00%

Faculty Rates of Termination
(At least three, but less than four years of service)

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	19.00%	0.00%	18.00%
25 – 29	14.00%	27.27%	16.00%
30 – 34	5.00%	13.17%	8.00%
35 – 39	4.00%	9.96%	7.00%
40 – 44	3.00%	6.36%	6.00%
45 – 49	2.00%	9.46%	5.00%
50 – 54	2.00%	7.37%	4.00%
55 – 59	2.00%	5.85%	3.00%
60 – 64	2.00%	4.00%	3.00%
65 & Over	0.00%	6.15%	2.00%

Faculty Rates of Termination
(At least four, but less than five years of service)

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	19.00%	0.00%	12.00%
25 – 29	14.00%	0.00%	11.00%
30 – 34	5.00%	7.66%	8.00%
35 – 39	4.00%	6.91%	6.00%
40 – 44	3.00%	7.87%	5.00%
45 – 49	2.00%	6.50%	4.00%
50 – 54	2.00%	5.57%	3.00%
55 – 59	2.00%	6.08%	3.00%
60 – 64	2.00%	5.56%	2.00%
65 & Over	0.00%	7.02%	1.00%

**Faculty Rates of Termination
(Five or more years of service)**

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	19.00%	0.00%	9.00%
25 – 29	14.00%	0.00%	8.00%
30 – 34	5.00%	8.57%	7.00%
35 – 39	4.00%	5.96%	5.00%
40 – 44	3.00%	5.25%	4.00%
45 – 49	2.00%	3.49%	3.00%
50 – 54	2.00%	2.32%	2.00%
55 – 59	2.00%	1.31%	1.00%
60 – 64	2.00%	0.82%	1.00%
65 & Over	0.00%	1.21%	1.00%

* The rate listed is the median rate for each category (i.e., the age 22 rate is shown for the 20 – 24 age group).

It is important to note that not every age and service category has enough exposures and/or decrements such that the results in that category are statistically credible. This is especially the case for low age and higher service categories.

Chart 10 compares actual to expected terminations of the past four years under both the current and proposed assumptions for Faculty members.

Charts 11 through 15 show the current and proposed termination rates for Faculty members with less than five years of service. Chart 16 shows the current and proposed termination rates for Faculty members with five or more years of service.

The actual termination experience over the four year period was much higher than was assumed. In the previous experience study, the termination rates for Faculty members were significantly lowered to match the actual experience during that seven year period. We propose increasing the termination rates for Faculty members to reflect a more even weighting between the currently assumed rates and the actual experience that occurred during the recent four year period.

The termination experience for Staff members over the last four years between those members with under five years of service (by specific years of service categories) and those with five or more years of service is as follows:

**Staff Rates of Termination
(Less than one year of service)**

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	27.00%	34.50%	27.00%
25 – 29	25.00%	28.78%	25.00%
30 – 34	21.00%	26.92%	23.00%
35 – 39	18.00%	22.85%	20.00%
40 – 44	15.00%	19.94%	18.00%
45 – 49	12.00%	18.93%	15.00%
50 – 54	12.00%	16.64%	13.00%
55 – 59	12.00%	17.52%	12.00%
60 – 64	12.00%	18.33%	11.00%
65 & Over	0.00%	22.88%	10.00%

**Staff Rates of Termination
(At least one, but less than two years of service)**

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	20.00%	28.28%	24.00%
25 – 29	20.00%	28.79%	22.00%
30 – 34	15.00%	23.02%	19.00%
35 – 39	13.00%	18.44%	15.00%
40 – 44	10.00%	15.13%	12.00%
45 – 49	7.00%	13.36%	10.00%
50 – 54	7.00%	11.74%	8.00%
55 – 59	7.00%	10.87%	7.00%
60 – 64	7.00%	12.64%	6.00%
65 & Over	0.00%	13.03%	5.00%

**Staff Rates of Termination
(At least two, but less than three years of service)**

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	16.00%	18.52%	21.00%
25 – 29	14.00%	24.56%	18.00%
30 – 34	11.00%	19.23%	15.00%
35 – 39	9.00%	16.38%	12.00%
40 – 44	7.00%	13.29%	10.00%
45 – 49	6.00%	10.99%	8.00%
50 – 54	4.00%	9.82%	7.00%
55 – 59	4.00%	8.80%	6.00%
60 – 64	4.00%	10.65%	5.00%
65 & Over	0.00%	16.86%	4.00%

Staff Rates of Termination
(At least three, but less than four years of service)

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	16.00%	15.95%	16.00%
25 – 29	13.00%	19.06%	15.00%
30 – 34	9.00%	16.24%	12.00%
35 – 39	6.00%	13.75%	9.00%
40 – 44	4.00%	9.60%	7.00%
45 – 49	3.00%	7.66%	6.00%
50 – 54	3.00%	7.53%	5.00%
55 – 59	2.00%	6.13%	4.00%
60 – 64	2.00%	7.28%	3.00%
65 & Over	0.00%	10.65%	2.00%

Staff Rates of Termination
(At least four, but less than five years of service)

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	16.00%	7.58%	15.00%
25 – 29	13.00%	16.29%	14.00%
30 – 34	9.00%	13.68%	11.00%
35 – 39	6.00%	11.02%	8.00%
40 – 44	4.00%	8.44%	6.00%
45 – 49	3.00%	6.76%	5.00%
50 – 54	3.00%	4.62%	4.00%
55 – 59	2.00%	5.40%	3.00%
60 – 64	2.00%	4.24%	2.00%
65 & Over	0.00%	4.59%	1.00%

Staff Rates of Termination
(Five or more years of service)

Age	Current Assumption*	Actual Rate	Proposed Assumption*
20 – 24	16.00%	11.90%	13.00%
25 – 29	13.00%	12.07%	11.00%
30 – 34	9.00%	9.55%	9.00%
35 – 39	6.00%	7.28%	7.00%
40 – 44	4.00%	5.57%	5.00%
45 – 49	3.00%	3.57%	3.00%
50 – 54	3.00%	1.76%	2.00%
55 – 59	2.00%	1.47%	2.00%
60 – 64	2.00%	1.28%	1.00%
65 & Over	0.00%	1.41%	1.00%

* The rate listed is the median rate for each category (i.e., the age 22 rate is shown for the 20 – 24 age group).

It is important to note that not every age and service category has enough exposures and/or decrements such that the results in that category are statistically credible. This is especially the case for low age and higher service categories.

Chart 17 compares actual to expected terminations of the past four years under both the current and proposed assumptions for Staff members.

Charts 18 through 22 show the current and proposed termination rates for Staff members with less than five years of service. Chart 23 shows the current and proposed termination rates for Staff members with five or more years of service.

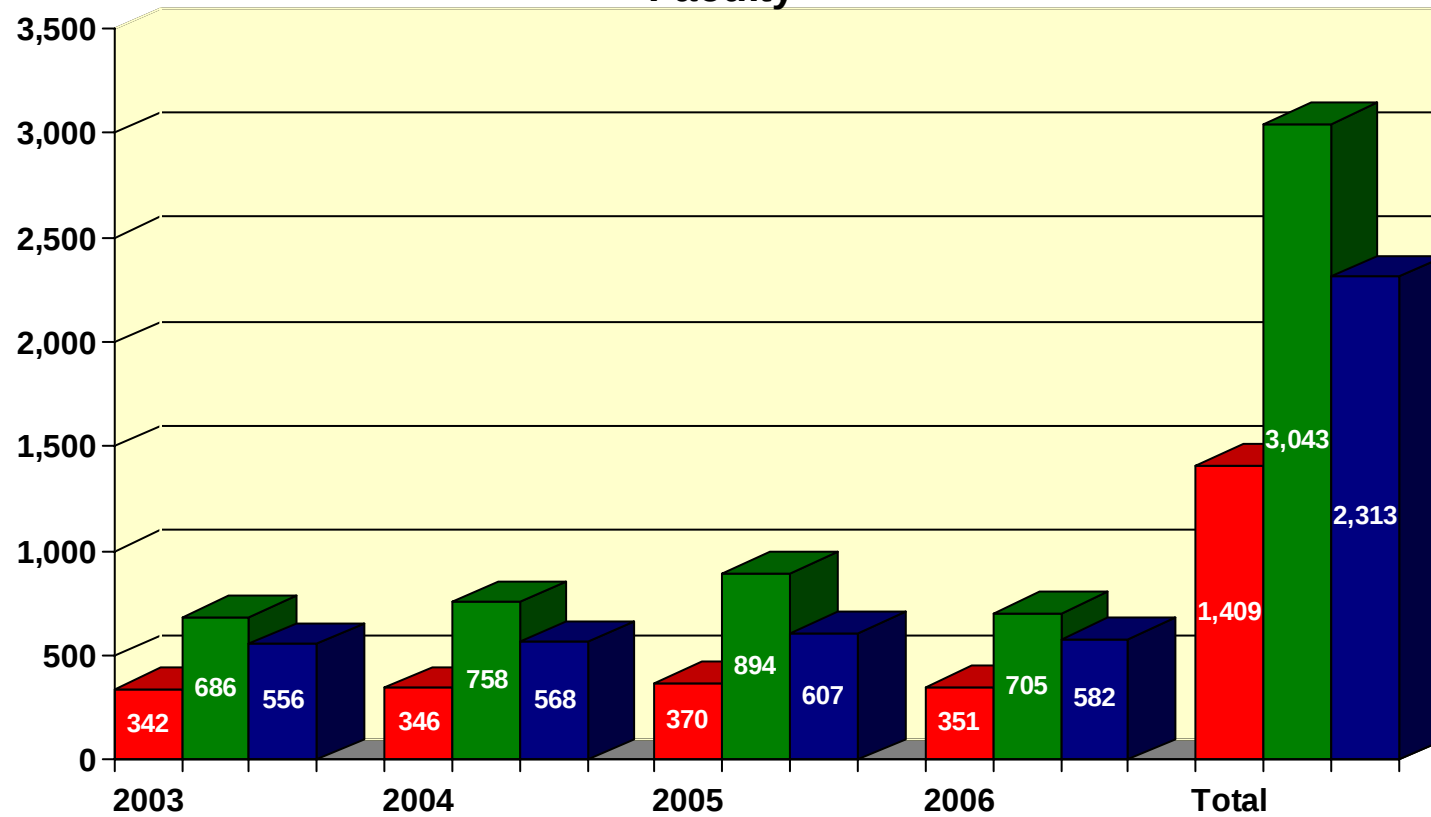
The actual termination experience over the four year period was higher than was assumed. In the previous experience study, the termination rates for Staff members were lowered to match the actual experience during that seven year period. We propose increasing the termination rates for Staff members to reflect a more even weighting between the currently assumed rates and the actual experience that occurred during the recent four year period.

Assumptions for Safety members will be the same as those for Staff since the number of Safety members is small and the data is not credible enough to develop termination rates for Safety members only.

Currently all termination rates are zero for all members eligible to retire, that is, it is assumed that members eligible to retire at termination will retire rather than defer their benefit. Based on the actual experience during this four year period we will assume that those assumed to terminate while eligible to retire will elect to defer their benefit instead of taking an immediate retirement.

We will continue to assume that members who terminate with over five years of service will choose a deferred vested benefit since there have been no member contributions for around fifteen years. However, once member contributions do resume we will monitor the experience as members with over five years of service choose between a refund of member contributions or a deferred vested benefit. Initially, we will assume that the member's choice is based upon whichever option is more valuable in terms of present value. It may take many years for the refund of member contributions to be greater than the deferred vested benefit for all members except recent or future hires. This assumption will be closely examined again as actual experience is available for future experience studies.

Chart 10
Actual Number of Terminations Compared to Expected -
Faculty



Year ended June 30,

■ Expected - Current
 ■ Actual
 ■ Expected - Proposed

Chart 11
Termination Rates - Faculty
(Less than one year of service)

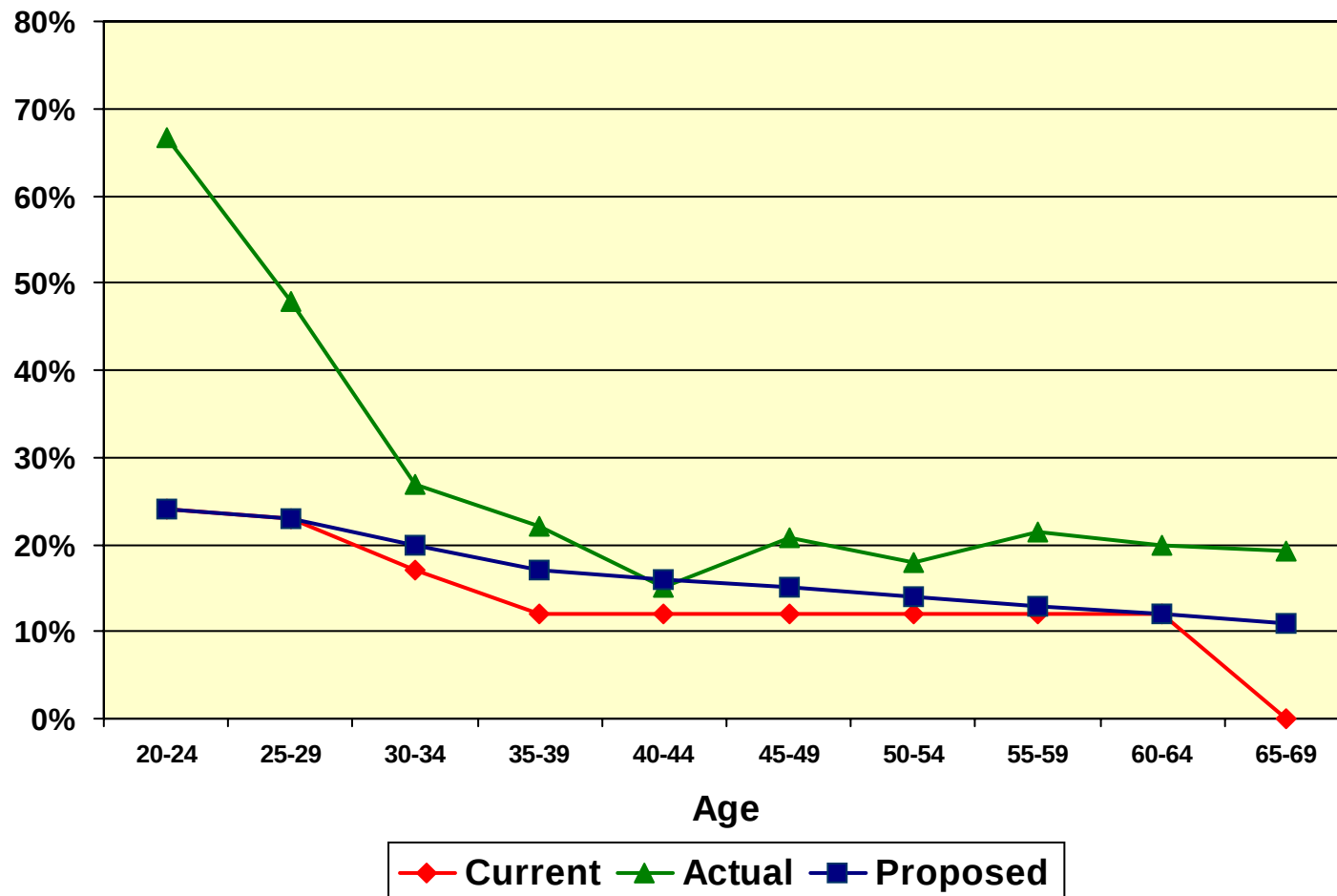


Chart 12
Termination Rates - Faculty
(At least one, but less than two years of service)

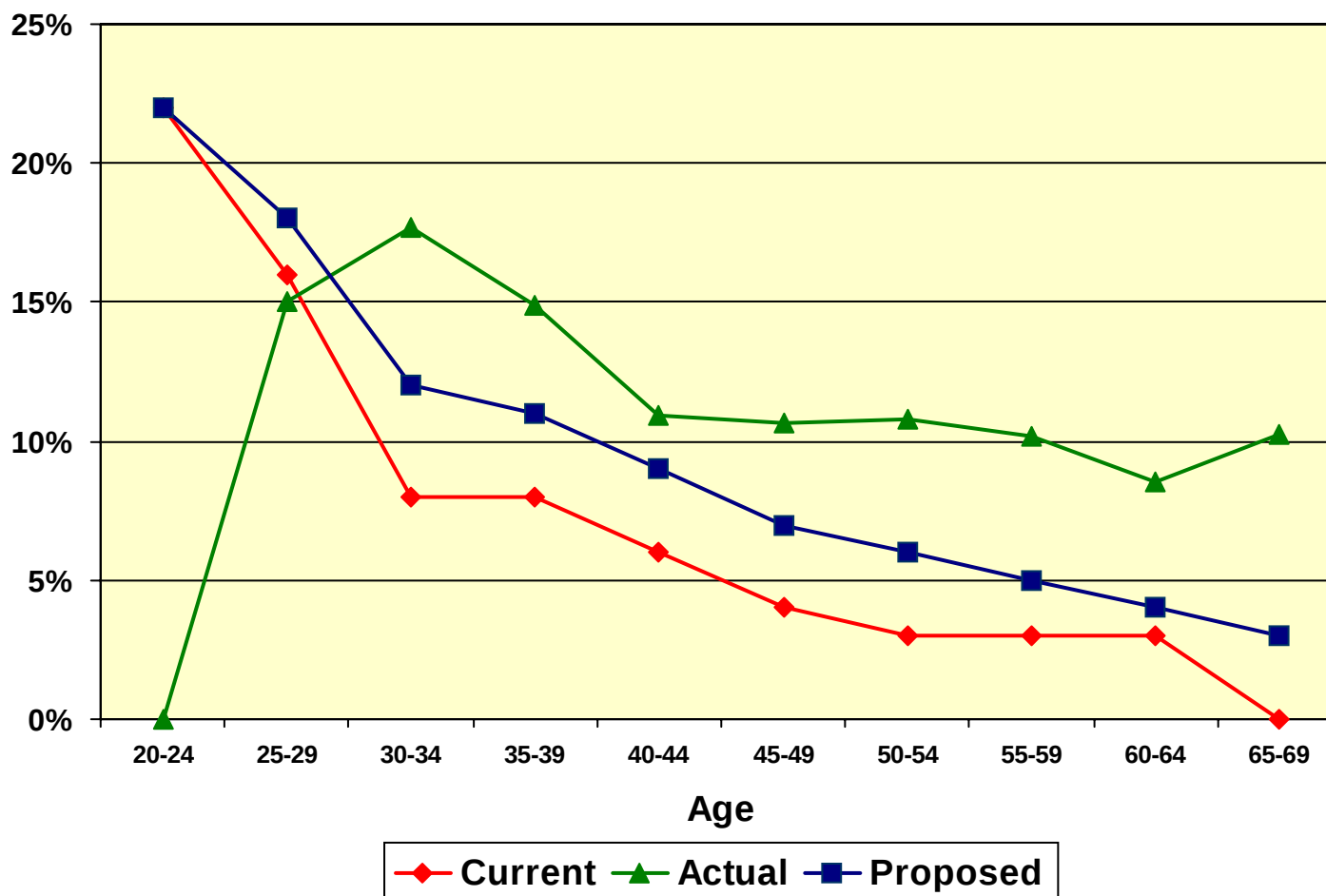


Chart 13
Termination Rates - Faculty
(At least two, but less than three years of service)

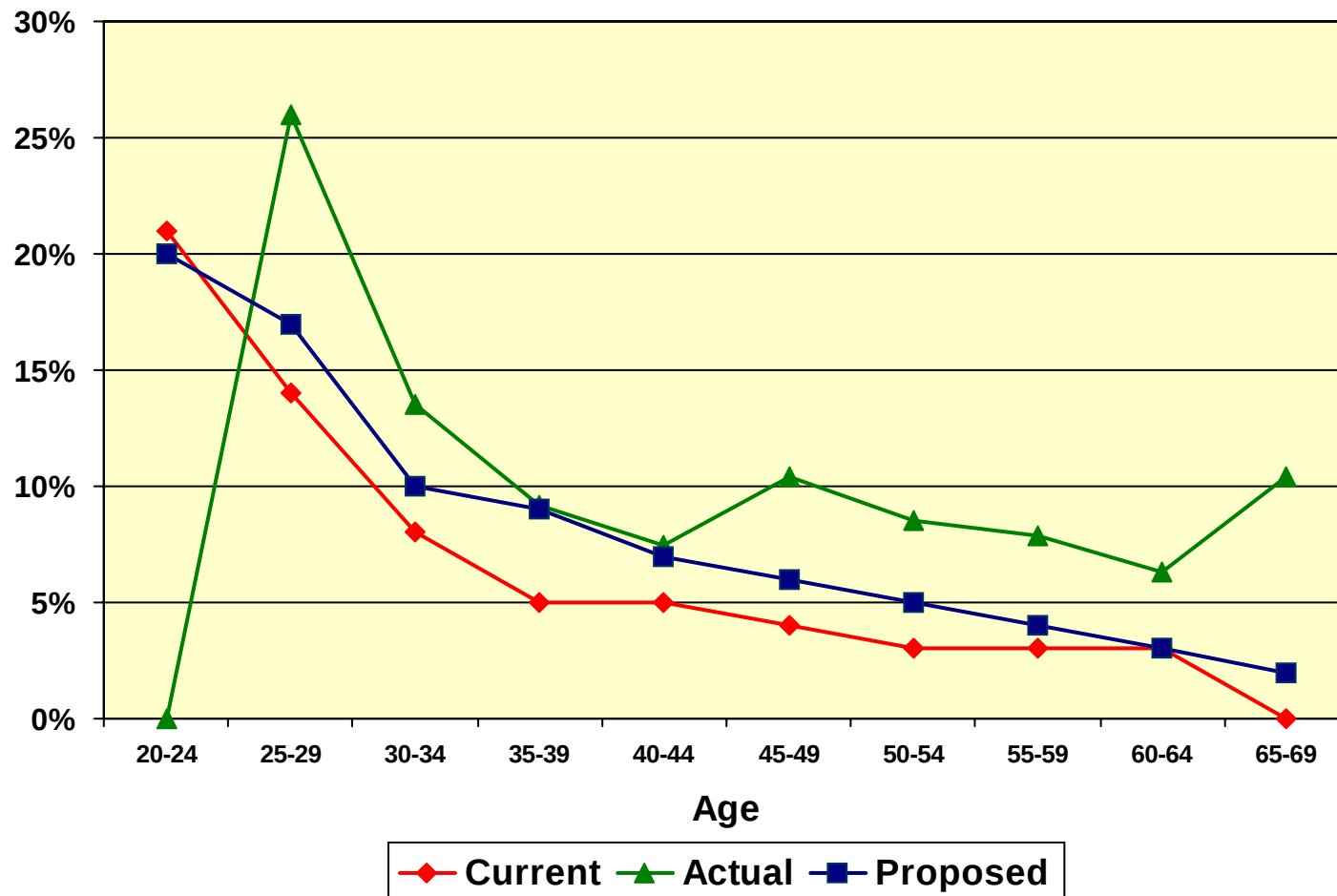


Chart 14
Termination Rates - Faculty
(At least three, but less than four years of service)

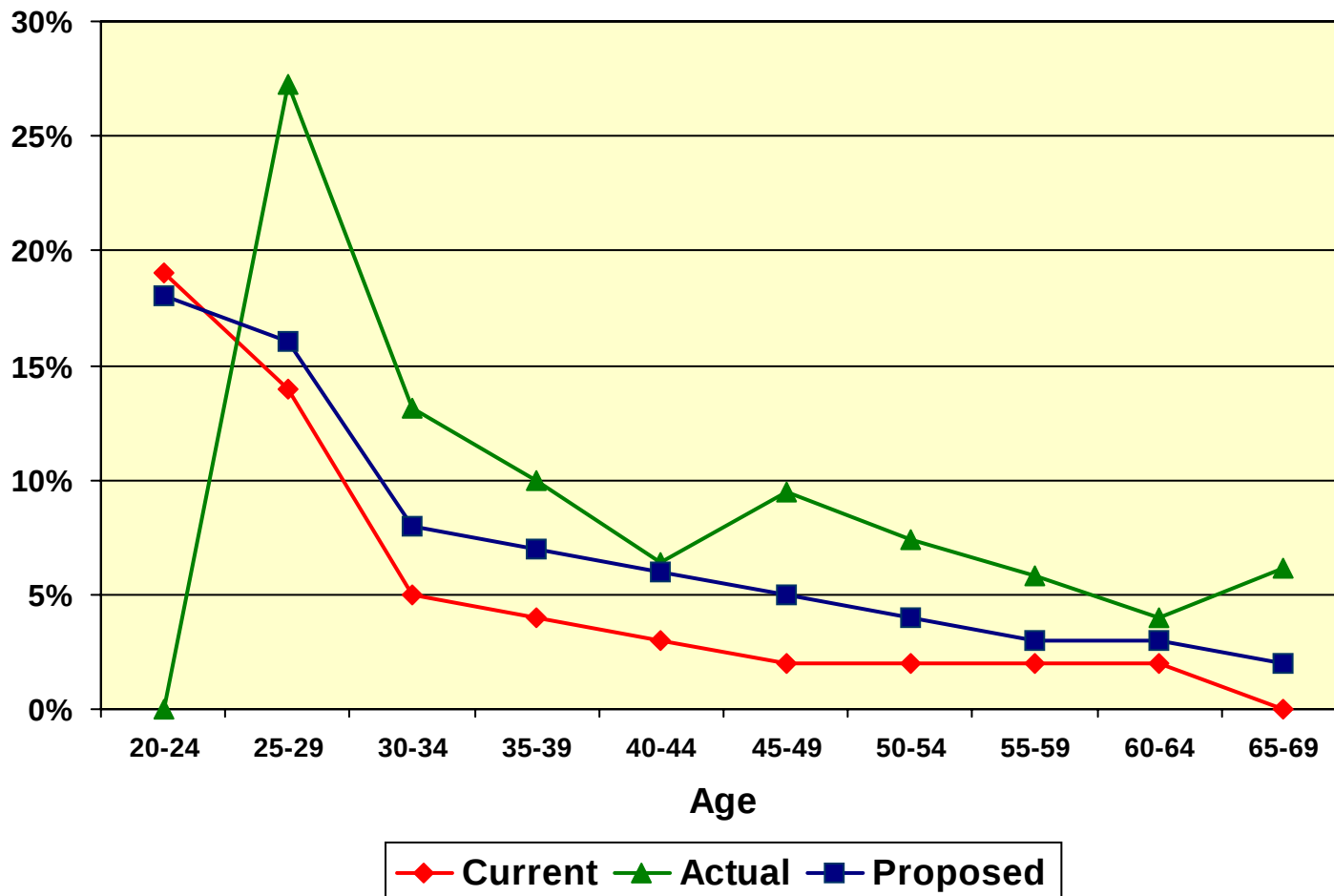


Chart 15
Termination Rates - Faculty
(At least four, but less than five years of service)

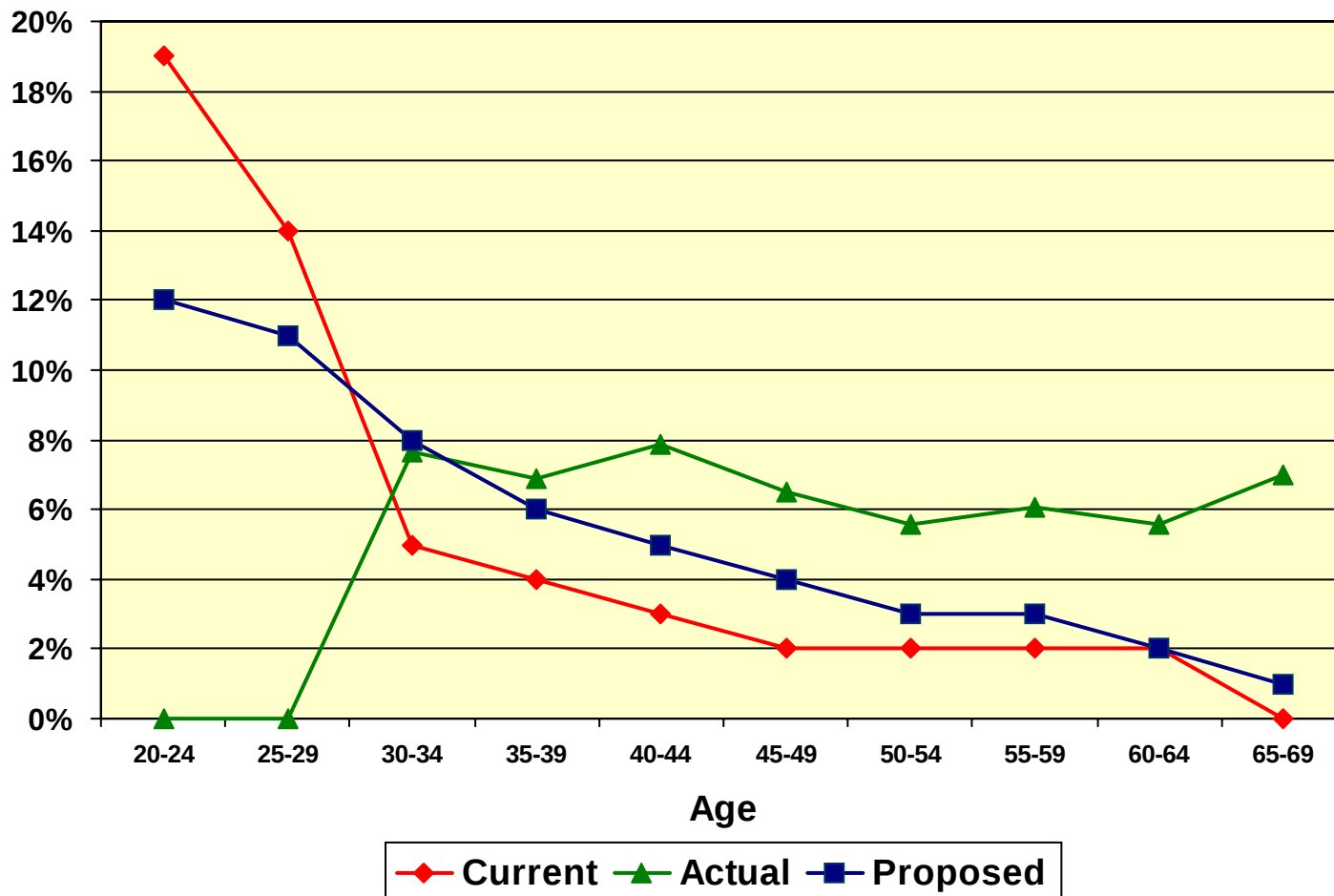


Chart 16
Termination Rates - Faculty
(Five or more years of service)

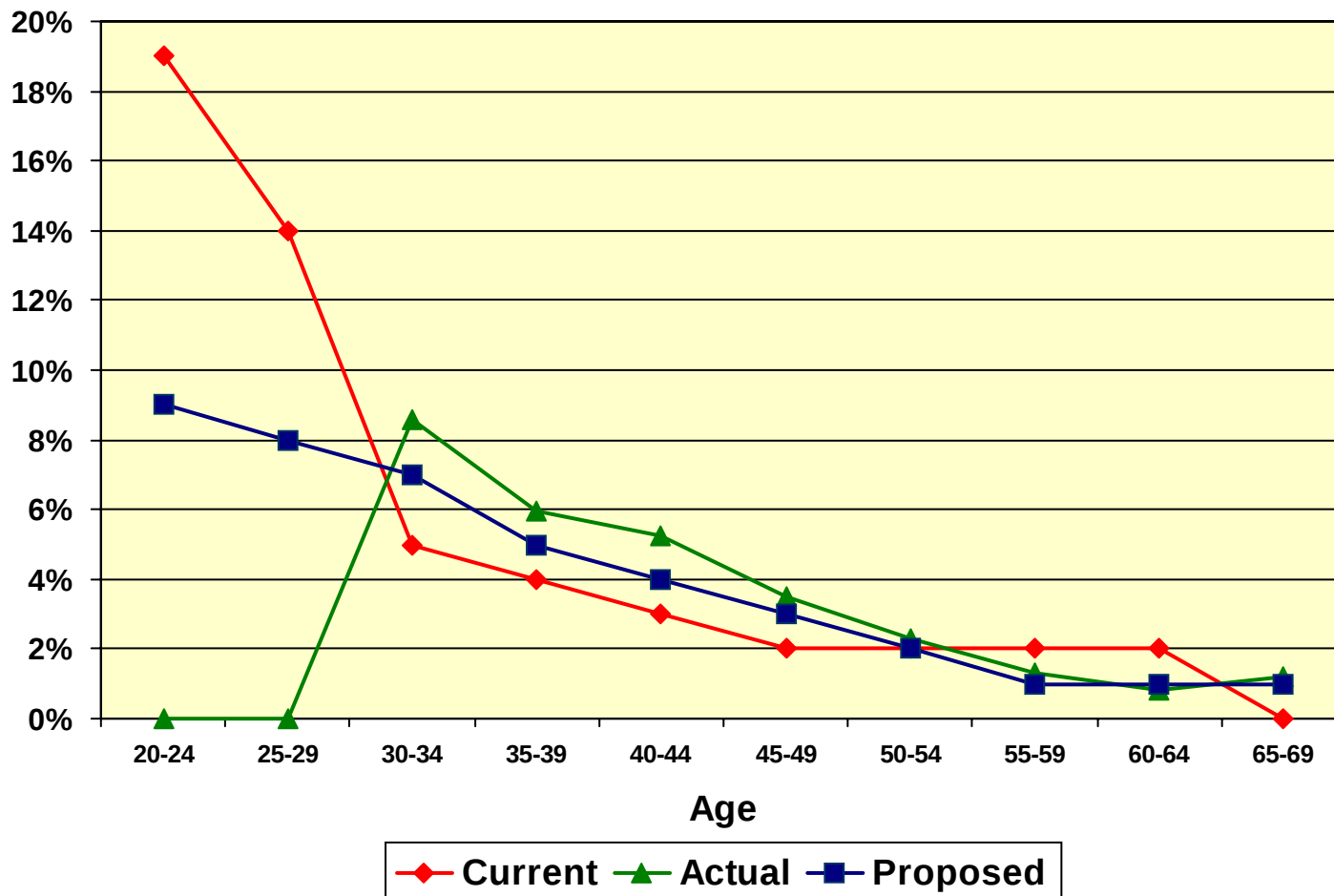
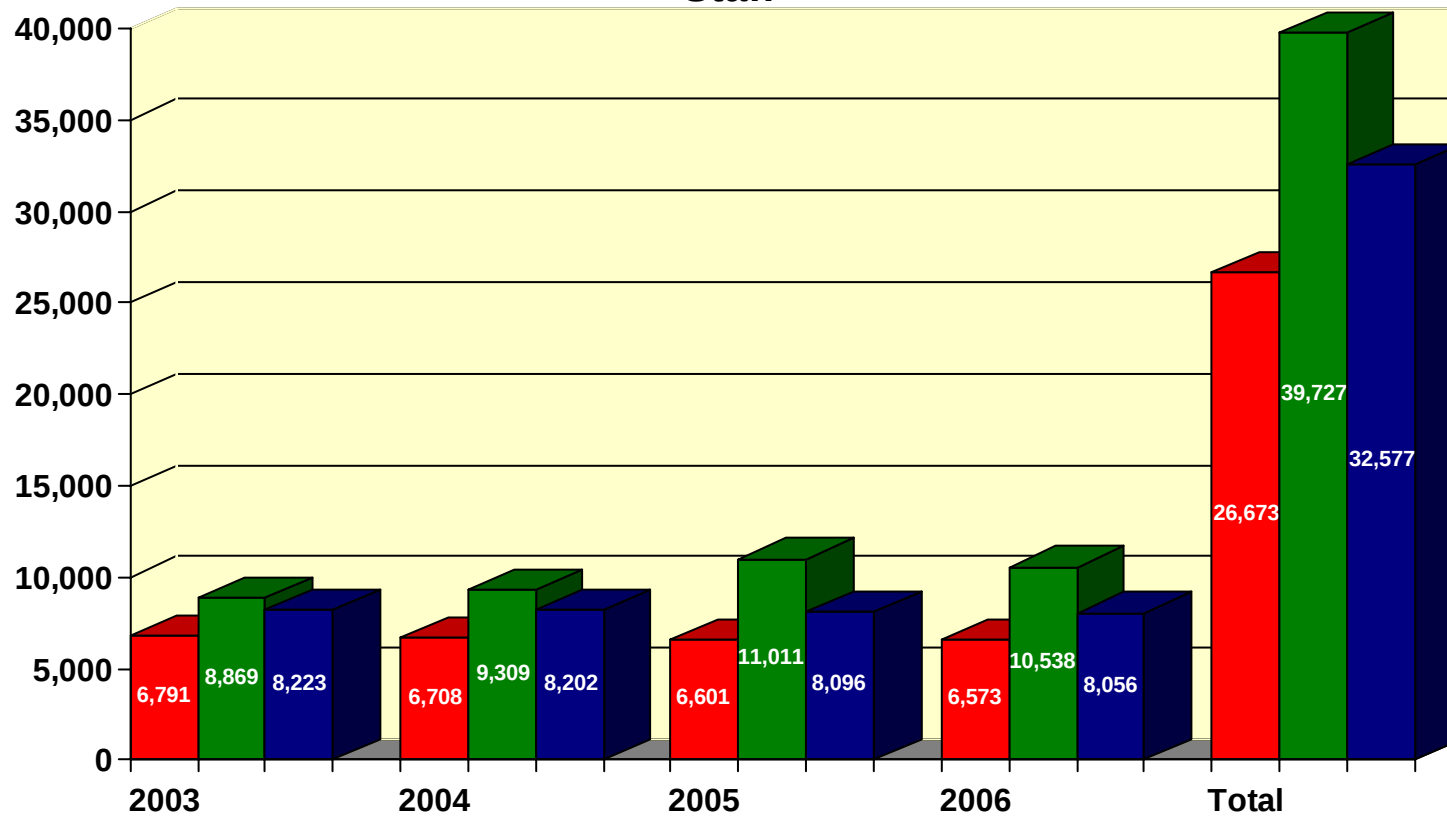


Chart 17
Actual Number of Terminations Compared to Expected -
Staff



Year ended June 30,

■ Expected - Current
 ■ Actual
 ■ Expected - Proposed

Chart 18
Termination Rates - Staff
(Less than one year of service)

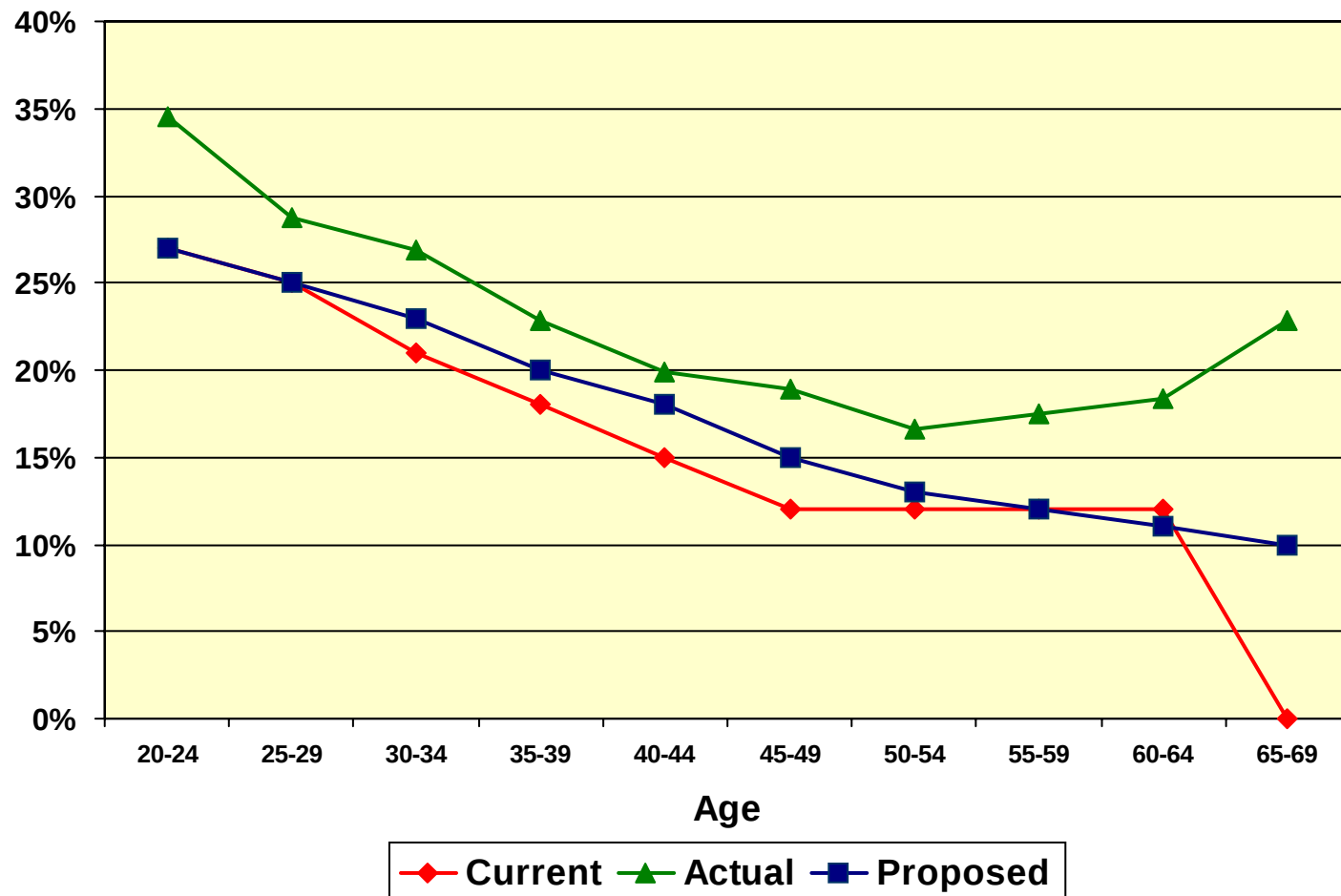


Chart 19
Termination Rates - Staff
(At least one, but less than two years of service)

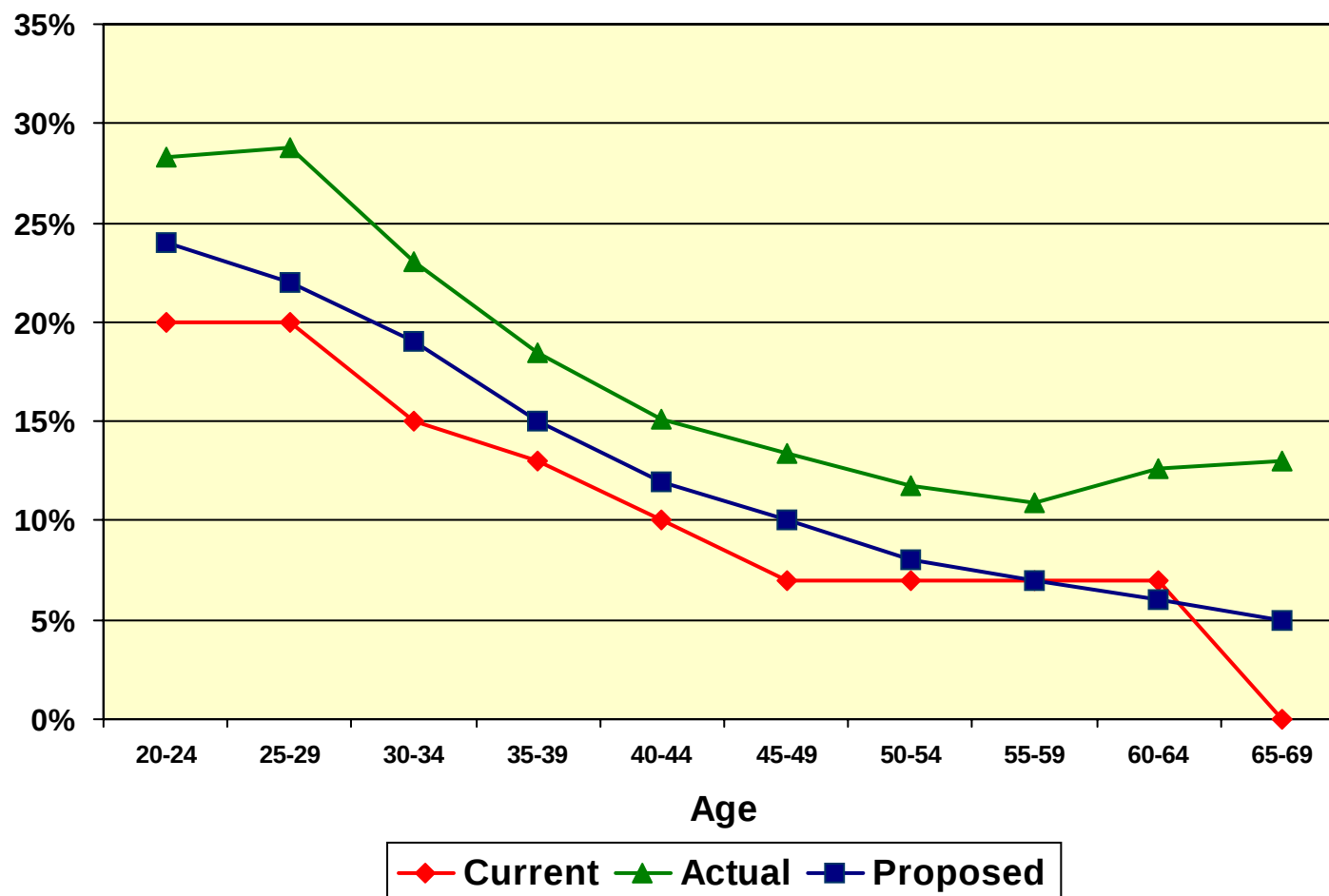


Chart 20
Termination Rates - Staff
(At least two, but less than three years of service)

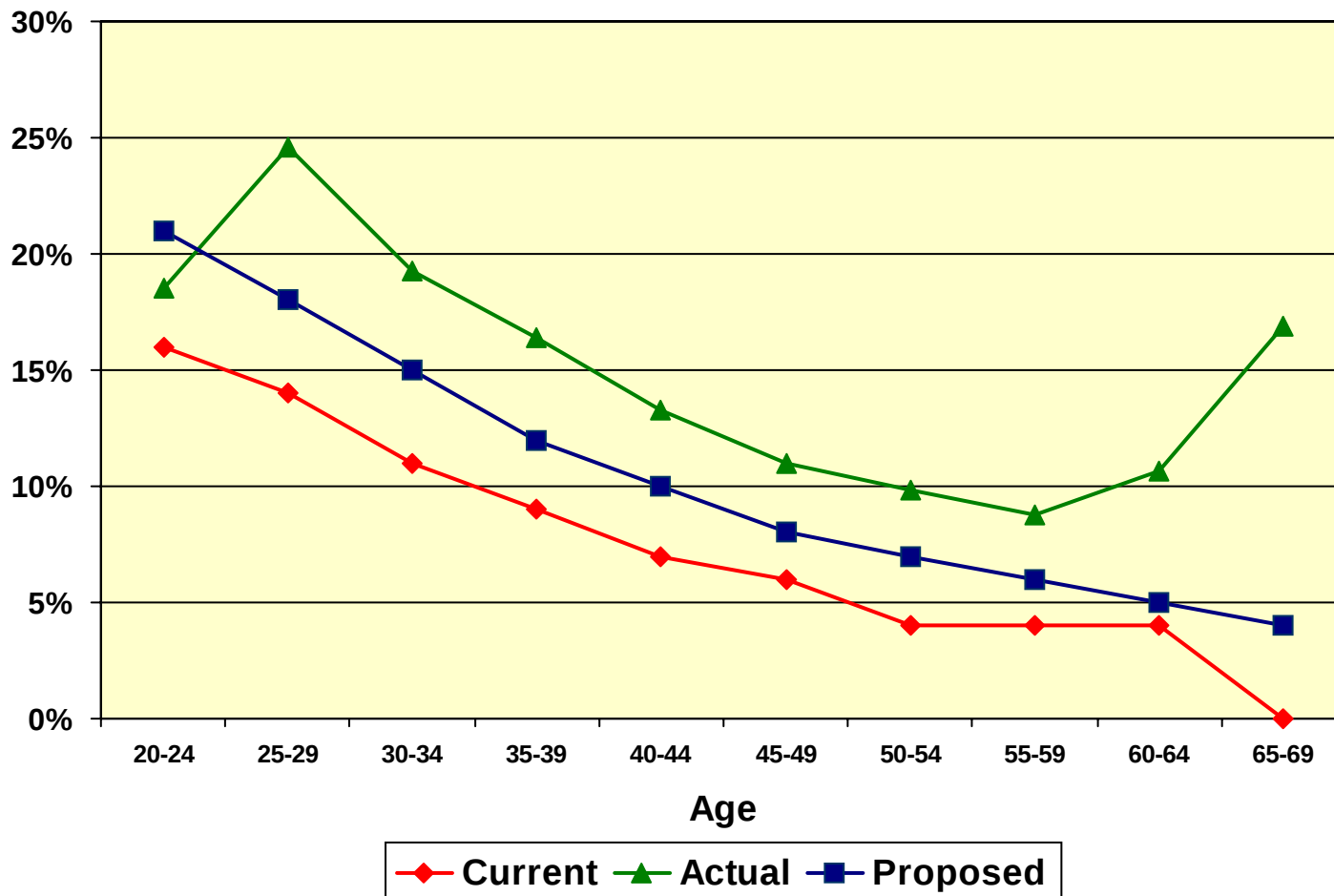


Chart 21
Termination Rates - Staff
(At least three, but less than four years of service)

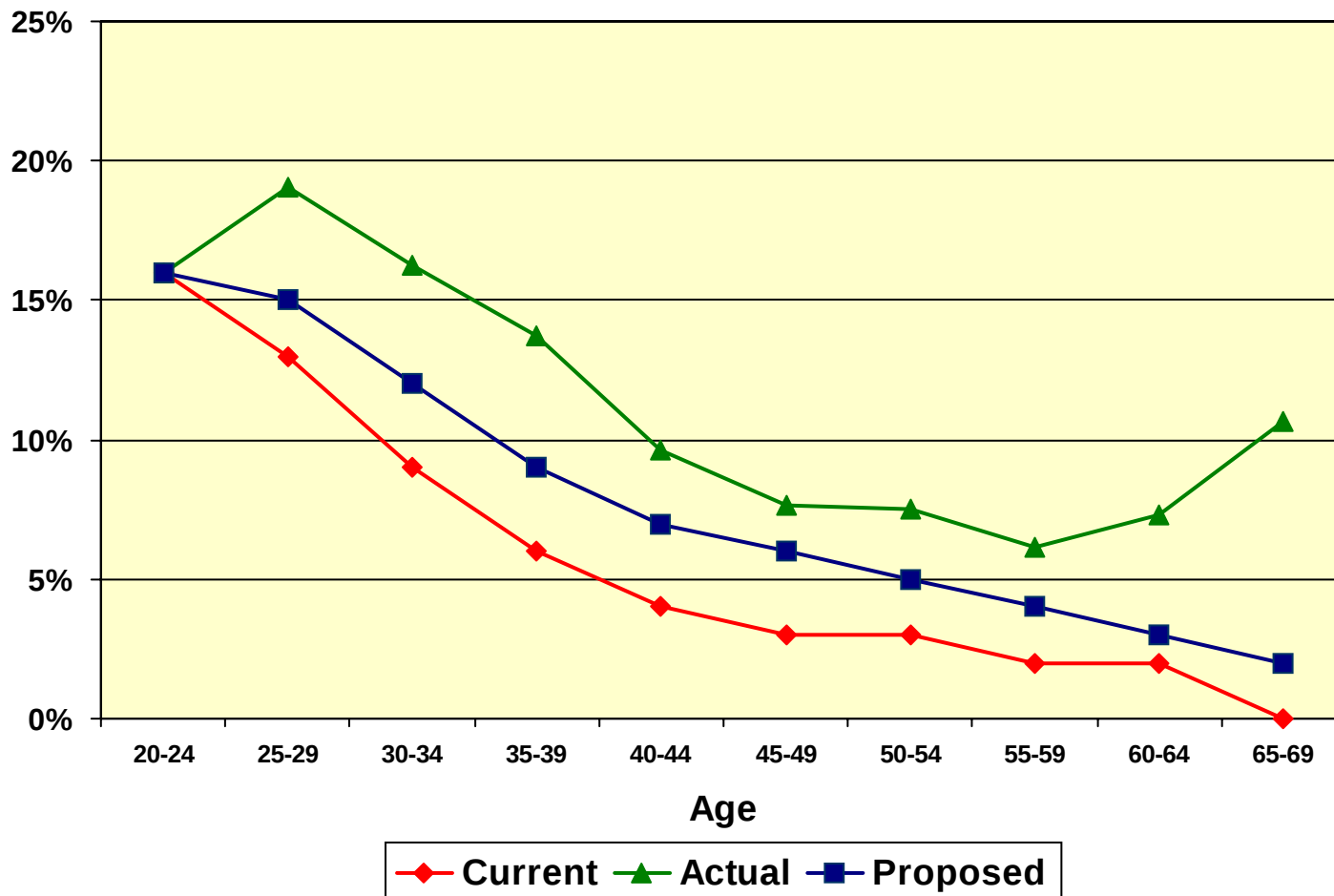


Chart 22
Termination Rates - Staff
(At least four, but less than five years of service)

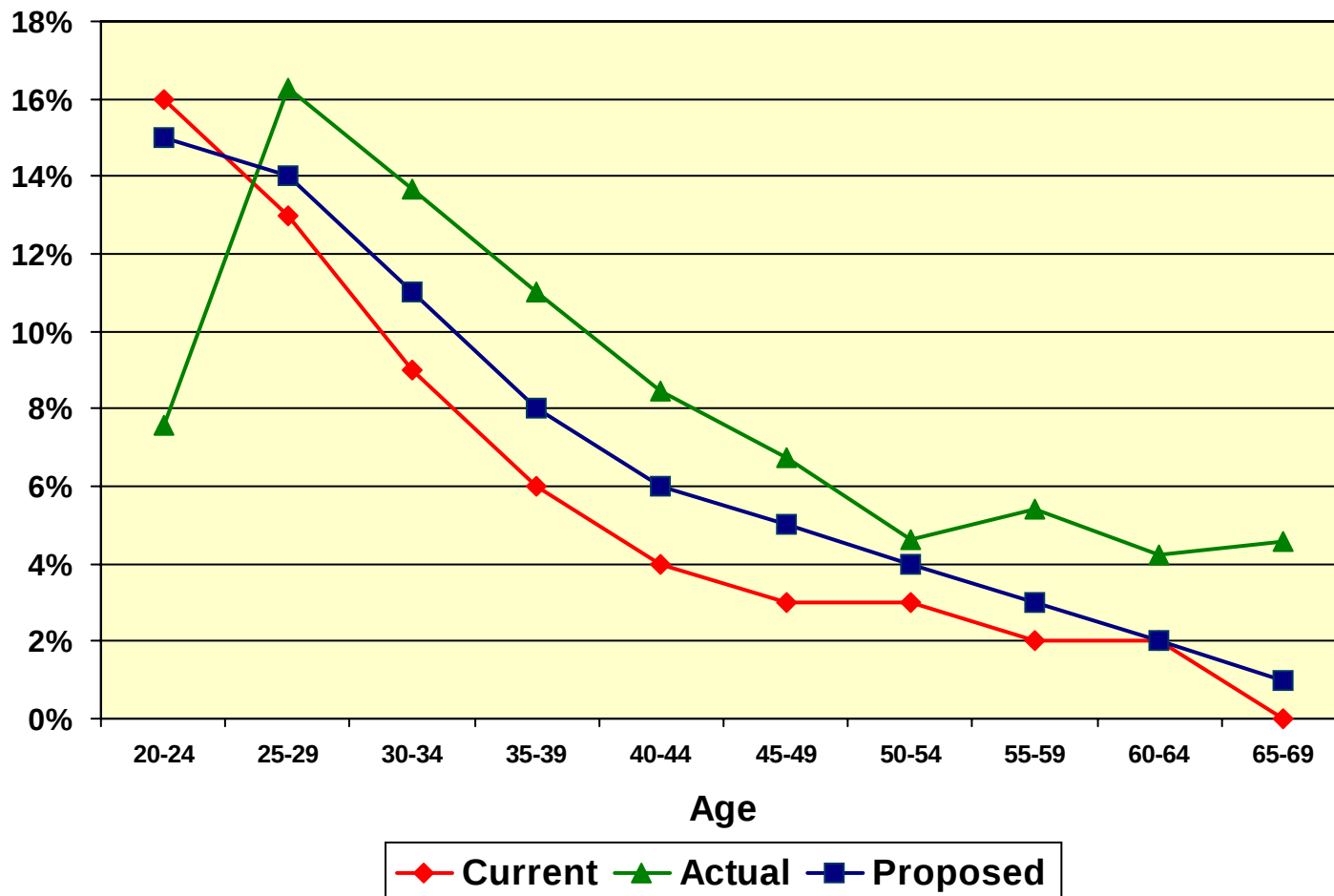
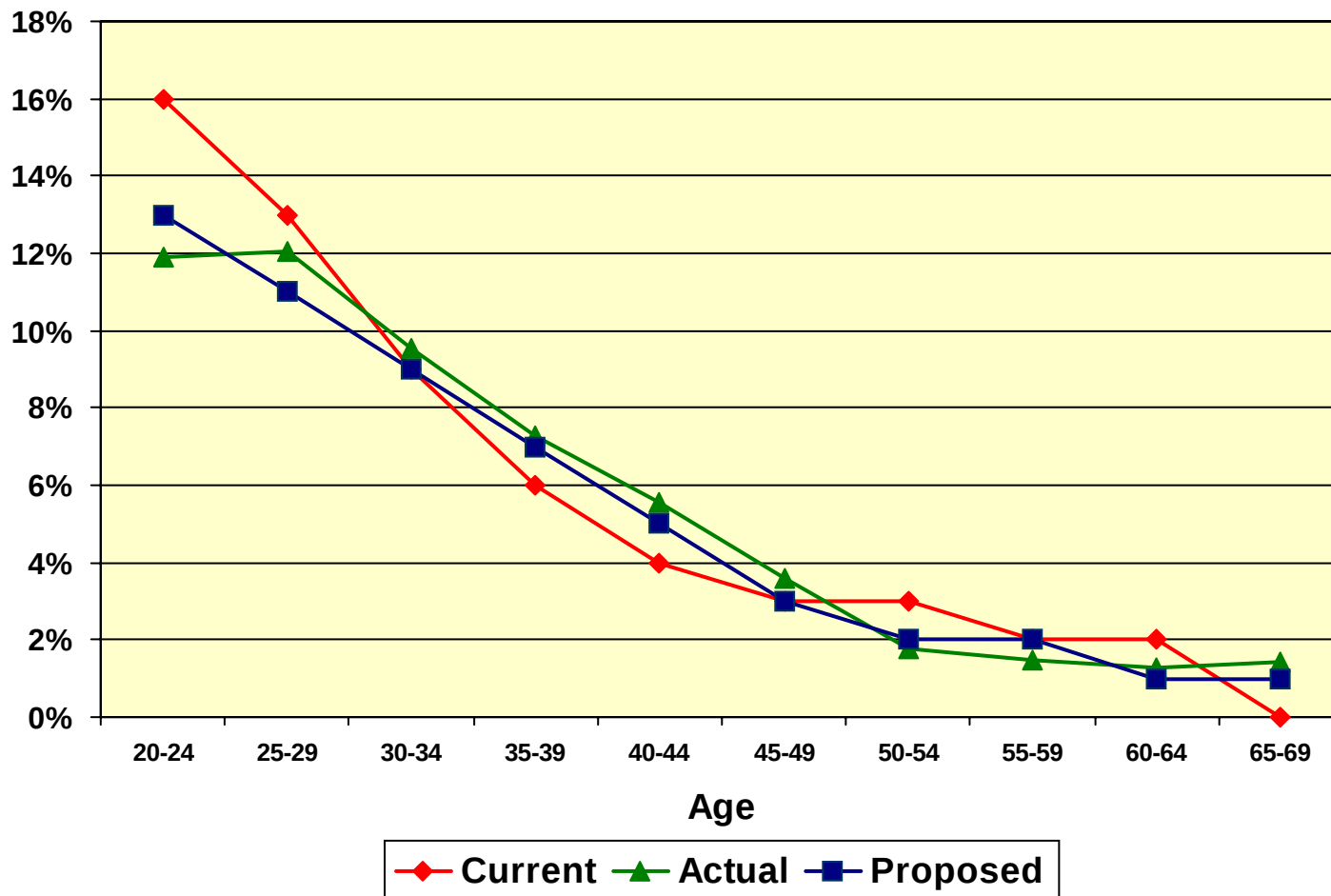


Chart 23
Termination Rates - Staff
(Five or more years of service)



E. DISABILITY INCIDENCE RATES

When a member becomes disabled, he or she is generally entitled to a disability income benefit if they had five or more years of service credit. Safety members are eligible for a duty disability without regard to years of service credit. The following summarizes the actual incidence of disabilities over the past four years compared to the current and proposed assumptions:

Disability Incidence Rates – Males			
Age	Current Assumption	Actual Rate	Proposed Assumption
20 – 24	0.14%	0.00%	0.10%
25 – 29	0.15	0.00	0.11
30 – 34	0.16	0.09	0.14
35 – 39	0.20	0.18	0.19
40 – 44	0.24	0.14	0.24
45 – 49	0.30	0.28	0.30
50 – 54	0.41	0.36	0.39
55 – 59	0.57	0.47	0.54
60 – 64	0.92	0.28	0.54
65 & over	1.46	0.18	0.54

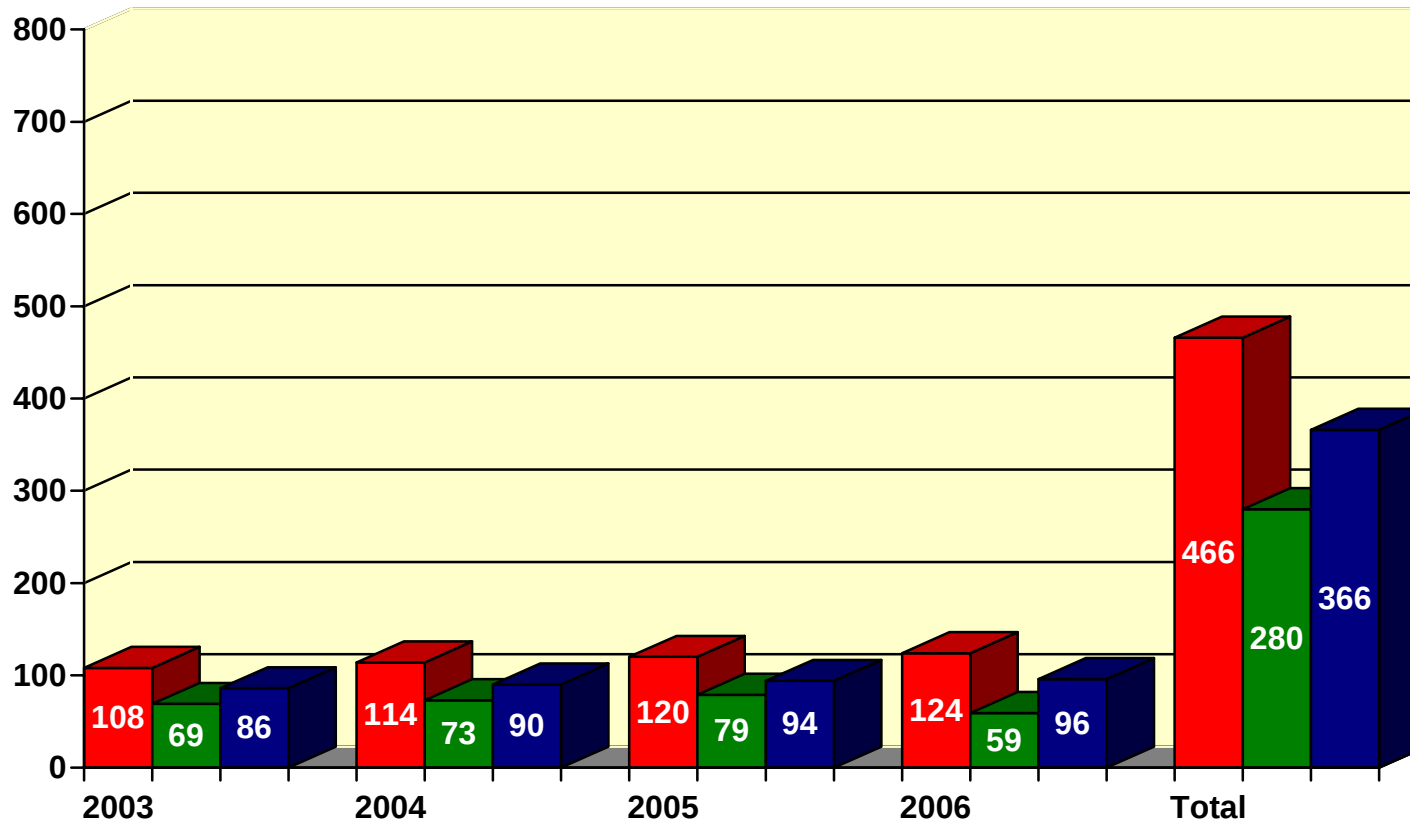
Disability Incidence Rates – Females			
Age	Current Assumption	Actual Rate	Proposed Assumption
20 – 24	0.06%	0.00%	0.06%
25 – 29	0.09	0.00	0.09
30 – 34	0.11	0.10	0.11
35 – 39	0.19	0.17	0.19
40 – 44	0.30	0.23	0.29
45 – 49	0.44	0.38	0.42
50 – 54	0.66	0.57	0.60
55 – 59	0.90	0.63	0.86
60 – 64	1.26	0.48	0.86
65 & over	1.57	0.60	0.86

Chart 24 compares the actual number of disabilities for males over the past four years to that expected under both the current and proposed assumptions. The proposed disability rates were adjusted to reflect the past four years experience. Chart 25 graphs the same information for females.

Chart 26 shows actual disablement rates for males, compared to the assumed and proposed rates. Chart 27 graphs the same information for females.

Note that the actual incidence of disabilities was lower than that expected under the current assumptions. This was most significant at the higher end of the age ranges (i.e., 55+). Adjustments have been made to the disability incidence rates so that they level out at those ages. This is consistent with the disability experience from the seven year period before this study. We have also extended the disability rates to apply through age 74 since 100% retirement is no longer assumed at age 70.

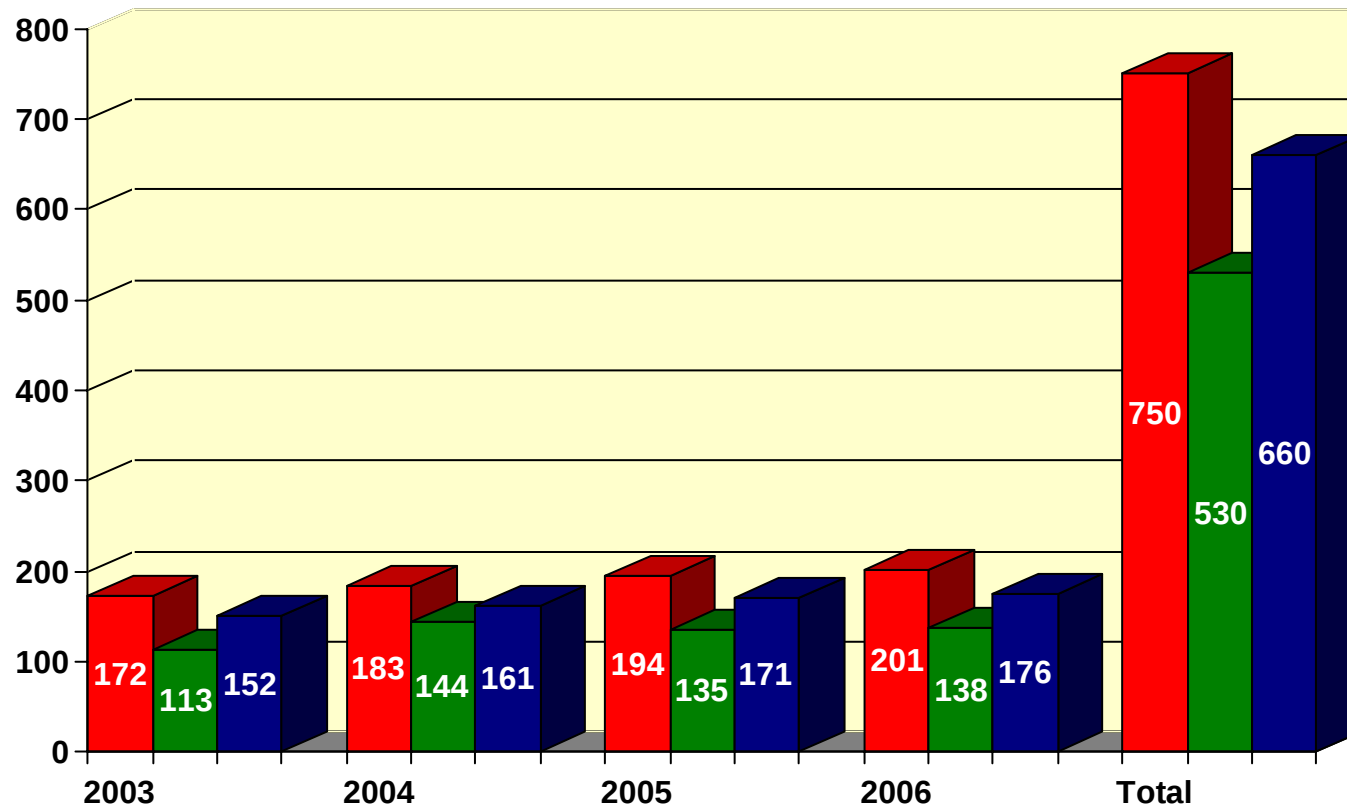
Chart 24
Actual Number of Disabilities Compared to Expected - Males



Year ended June 30,

Expected - Current Actual Expected - Proposed

Chart 25
Actual Number of Disabilities Compared to Expected - Females



Year ended June 30,

Expected - Current Actual Expected - Proposed

Chart 26
Disablement Rates - Males

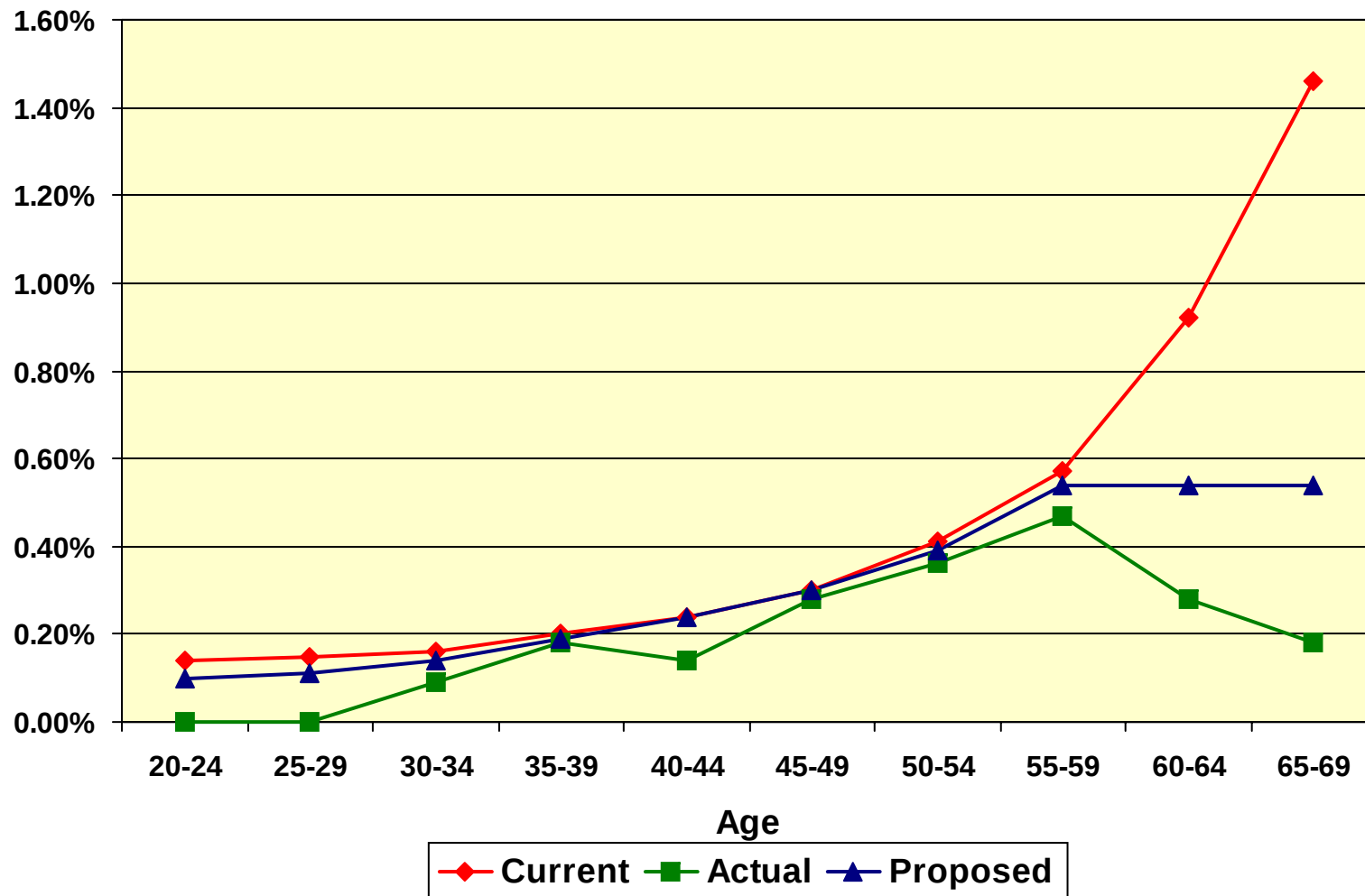
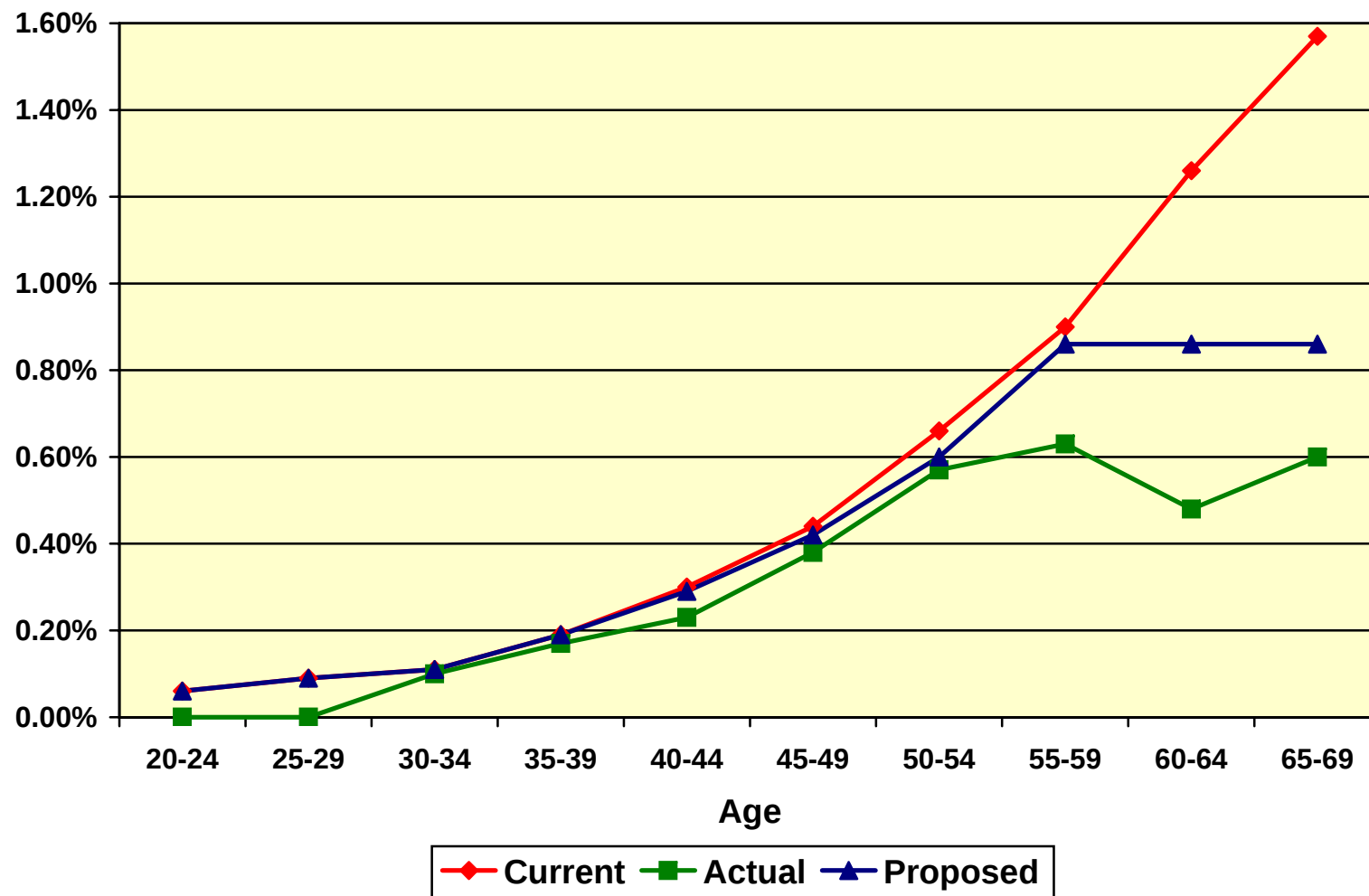


Chart 27
Disablement Rates - Females



F. ELIGIBLE SURVIVOR ASSUMPTIONS

At retirement, for members that are not assumed to elect a Lump Sum Cashout, we assume that the Basic Retirement Income (BRI) option is elected. Upon the death of a member whose benefit is coordinated with Social Security, this option provides Eligible Survivors with a benefit of 25% of what the member was receiving before their death. For members whose benefits are not coordinated with Social Security and for Safety members the benefit is 50% of what the member was receiving before their death. However, for those members without Eligible Survivors, there is no annuity death benefit payable upon the member's death. Therefore, the percentage of members who have an Eligible Survivor impacts the value of this benefit. The current assumption for the percent with Eligible Survivors is as follows:

Percent with Eligible Survivors (Sample Ages) – Current Assumptions		
Age	Male	Female
20	58.00%	66.50%
25	85.00	89.50
30	91.50	92.50
35	93.00	94.00
40	93.50	93.50
45	94.00	92.50
50	95.00	91.00
55	94.50	89.00
60	94.00	85.00
65	93.00	80.00

We reviewed new retirees (excluding those who elected Lump Sum Cashouts) during the four year period and determined the actual percentage of these new retirees that had an Eligible Spouse or Eligible Domestic Partner at the time of retirement. The results of that analysis are shown below:

<u>New Retirees – Actual Percent with Eligible Spouse or Domestic Partner</u>		
Year Ending June 30,	Male	Female
2003	75%	52%
2004	79%	57%
2005	77%	55%
2006	82%	58%
Total	79%	56%

It is clear that UCRP's experience during this four year period is lower than what was assumed. We then compared UCRP's experience with marital statistics from the U.S. Census Bureau. For people between age 50 and 69 (the ages when most retirements occur), these national statistics showed that

76% of males and 64% of females were married. Based on these statistics we believe that the actual experience during this four year period is credible.

We recommend changing the percent with Eligible Survivors assumption to be a uniform 85% for males at all ages and 65% for females at all ages. We do not believe that there is enough experience available to allow us to vary this assumption by individual ages especially at ages under 50 where there is only limited experience available with regard to pre-retirement death benefits. Setting this assumption above the actual experience will allow for some conservatism in the assumption to account for those that have Eligible Survivors that are not Eligible Spouses or Domestic Partners. Plus there may be a gradual increase in Eligible Survivors over time due to the recent extension of benefits to Eligible Domestic Partners.

Chart 28 shows the actual percent with Eligible Survivors separately for males and females, along with the assumed and proposed percentages.

Since the value of the Eligible Survivor's benefit is dependent on his/her age and sex, we must also have assumptions for the age and sex of the Eligible Survivor. Based on the experience during the four year period and studies done for other retirement systems we believe that the current assumption is reasonable. Since the majority of Eligible Survivors are expected to be of the opposite sex, even with the inclusion of Eligible Domestic Partners, we will continue to assume that the Eligible Survivor's sex is the opposite of the member. This assumption will continue to be monitored in future experience studies.

The current assumption for the age of the Eligible Survivor and recommended assumption is as follows:

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

We also have an assumption for the number of Eligible Survivors per active member with Eligible Survivors. This is necessary because disability benefits and pre-retirement death benefits for members whose benefits are not coordinated with Social Security are based on how many Eligible Survivors the member has. The current assumption, along with the actual number of Eligible Survivors per active and the proposed assumption is shown below for males:

Number of Eligible Survivors (Sample Ages)			
Age	Number of Eligible Survivors per Male Active Member with Survivors		
	Current Assumptions*	Actual Experience**	Proposed Assumptions*
22	1.5	1.6	1.5
27	2.0	1.7	1.9
32	2.5	2.0	2.3
37	3.2	2.4	2.9
42	3.3	2.6	3.0
47	2.8	2.5	2.7
52	2.3	2.2	2.3
57	1.8	1.7	1.8
62	1.4	1.4	1.4
67	1.2	1.2	1.2

* The number listed is the median number for each category (i.e., the age 22 number is shown for the 20 – 24 age group).

** Actual experience is based on recent Eligible Survivor data that was integrated into the July 1, 2006 actuarial valuation data.

As shown in the table above there were slight reductions to the assumed number of Eligible Survivors per male active member with survivors.

The current assumption, along with the actual number of Eligible Survivors per active and the proposed assumption is shown below for females:

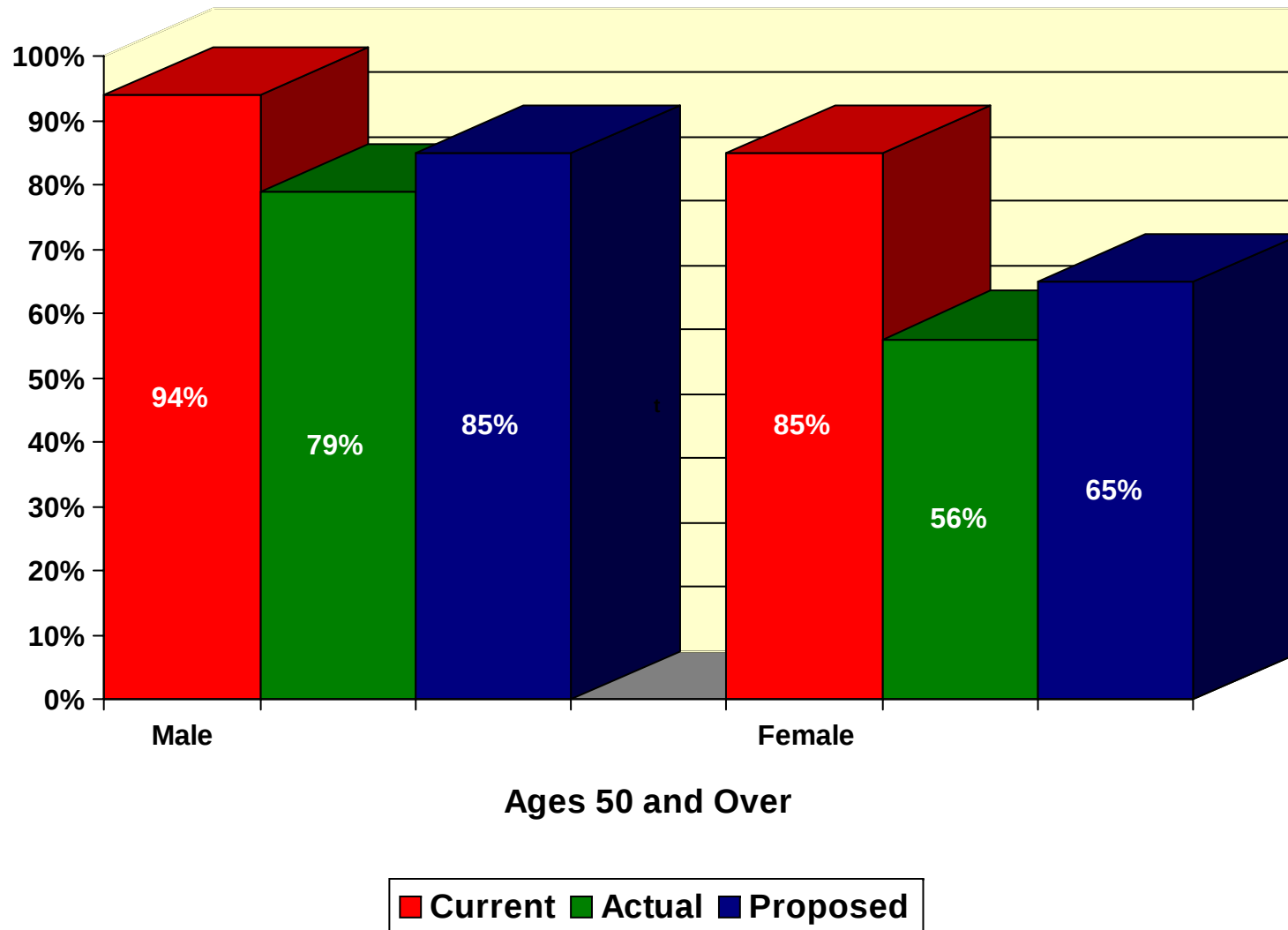
Number of Eligible Survivors (Sample Ages)			
Age	Number of Eligible Survivors per Female Active Member with Survivors		
	Current Assumptions*	Actual Experience**	Proposed Assumptions*
22	1.8	1.5	1.7
27	2.7	1.7	2.3
32	3.5	2.1	2.9
37	2.9	2.4	2.7
42	2.3	2.4	2.3
47	1.8	2.2	2.0
52	1.4	1.8	1.6
57	1.2	1.4	1.3
62	1.1	1.2	1.1
67	1.0	1.1	1.0

* The number listed is the median number for each category (i.e., the age 22 number is shown for the 20 – 24 age group).

** Actual experience is based on recent Eligible Survivor data that was integrated into the July 1, 2006 actuarial valuation data.

As shown in the table above there are reductions at some of the earlier ages and increases at some of the later ages to the assumed number of Eligible Survivors per female active member with survivors.

Chart 28
Percent with Eligible Survivors



G. SERVICE FROM UNUSED SICK LEAVE CONVERSION

At retirement, members can convert their unused sick leave to increase the service credit used in the calculation of their retirement benefit. Members must retire within 120 days of their separation from service to be allowed to convert their unused sick leave. Also, Plan provisions specify that members electing a Lump Sum Cashout do not have service credit from unused sick leave included in the calculation of their Lump Sum Cashout.

We collected information on the actual amount of sick leave converted to service credit for retirees during the four year period studied. This information was compared against the current assumption to determine if the current assumption for unused sick leave converted to service credit expressed as a percentage of total service credit (before including the sick leave converted to service credit) is reasonable.

The tables below show the actual sick leave converted to service credit as a percentage of total service credit (before including the sick leave converted to service credit) at retirement separately for Faculty, Staff and Safety members. This includes only those members who retired from active employment on a non-disability retirement and did not elect to take a Lump Sum Cashout.

Faculty New Retirees (Non-disability and excluding Lump Sum Cashouts)

<u>Year of Retirement</u>	<u>Current Assumption</u>	<u>Actual Rate</u>	<u>Proposed Assumption</u>
2002 - 2006	0.20%	0.08%	0.15%

Staff New Retirees (Non-disability and excluding Lump Sum Cashouts)

<u>Year of Retirement</u>	<u>Current Assumption</u>	<u>Actual Rate</u>	<u>Proposed Assumption</u>
2002 - 2006	1.40%	1.39%	1.40%

Safety New Retirees (Non-disability and excluding Lump Sum Cashouts)

<u>Year of Retirement</u>	<u>Current Assumption</u>	<u>Actual Rate</u>	<u>Proposed Assumption</u>
2002 - 2006	2.50%	2.01%	2.25%

Chart 29 shows the same information in graphical format.

We are recommending a decrease in the assumption for service from unused sick leave conversion at retirement for Faculty and Safety members based on the experience during the four year period. The

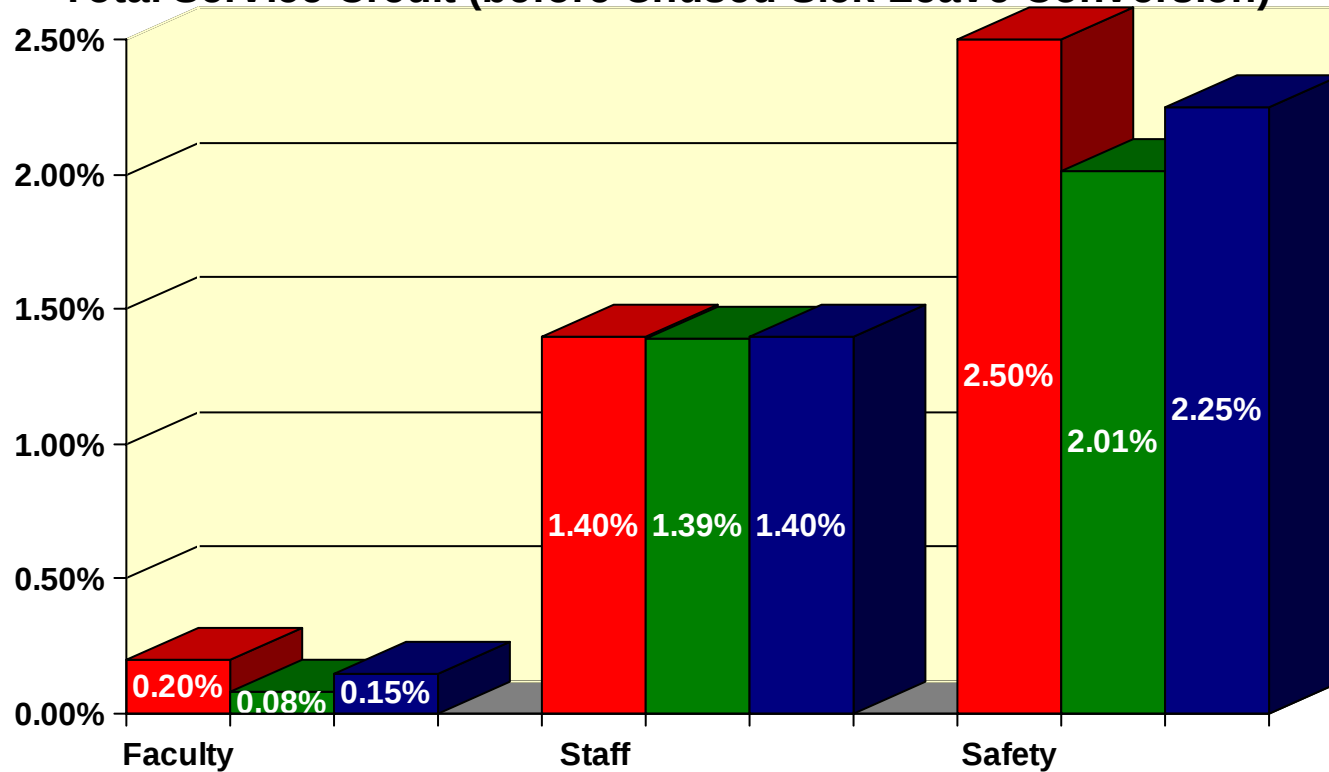
recommended decrease is not based solely on fully recognizing the actual experience over the four year period. Rather, the proposed assumptions are a blend based on the actual experience during this four year period, the previous seven year period and the current assumption. No changes are recommended for Staff members as the actual experience matched the assumption almost exactly. We will continue to monitor this assumption as more actual experience becomes available.

We are not recommending the introduction of an assumption for service from unused sick leave conversion for any retirements other than those non-disability retirements that occur from active employment for those that do not elect a Lump Sum Cashout. This is based on the following reasons:

- For those that do not retire immediately from active employment, they will in most instances retire more than 120 days after they separated from active employment and therefore will not be able to convert unused sick leave to service credit at retirement.
- For those that elect a Lump Sum Cashout at retirement we understand that their service credit from unused sick leave conversion is not included in the calculation of their Lump Sum Cashout.
- For those that become disabled or die from active employment, we determined that there is minimal service credit from unused sick leave converted due to these individuals having less time to accumulate sick leave to be converted before their disablement or death occurs. This is in contrast to members that retire from active employment, who have more years to accumulate sick leave to be converted upon their retirement. Also, disabled members may have more need to use their sick leave prior to disability retirement.

Chart 29

**Service Credit from Unused Sick Leave Conversion as a % of
Total Service Credit (before Unused Sick Leave Conversion)**



**Includes New Non-disability retirements
(excluding Lump Sum Cashouts)**

Expected - Current Actual Expected - Proposed

H. LUMP SUM CASHOUT TAKE-RATE

At retirement, members can elect to have their benefit paid in the form of a one-time Lump Sum Cashout. Currently, there is no assumption as to how many members will elect to take a Lump Sum Cashout at retirement. This is because the present value of the Lump Sum Cashout at retirement is generally actuarially equivalent to the monthly annuity benefits that would be payable at retirement.

However, since there are a substantial number of members electing Lump Sum Cashouts we are recommending the introduction of a Lump Sum Cashout take-rate assumption in the actuarial valuation. This will be especially useful in increasing the accuracy of any benefit payment projections for UCRP since it will more accurately reflect the accelerated cash flows due to Lump Sum Cashouts that members elect over future years.

We collected information on the actual number of members electing a Lump Sum Cashout at retirement during the four year period studied. This information was used to develop a Lump Sum Cashout take-rate assumption.

The tables below show the actual number of members retiring in total and those that elected a Lump Sum Cashout. Tables are separately shown for members retiring from active employment, inactive (deferred vested) status and also those whose disability income ends when they “crossover” to retirement.

New Retirees from Active Employment			
Year of Retirement Ending June 30,	Number Electing Lump Sum Cashout	Total Number Retiring	Percentage Electing a Lump Sum Cashout
2003	164	1,522	11%
2004	192	2,020	10%
2005	270	1,754	15%
2006	<u>342</u>	<u>2,773</u>	<u>12%</u>
Total	968	8,069	12%

New Retirees from Inactive (Deferred Vested) Status

Year of Retirement Ending June 30,	Number Electing Lump Sum Cashout	Total Number Retiring	Percentage Electing a Lump Sum Cashout
2003	121	293	41%
2004	160	376	43%
2005	445	757	59%
2006	<u>326</u>	<u>799</u>	<u>41%</u>
Total	1,052	2,225	47%

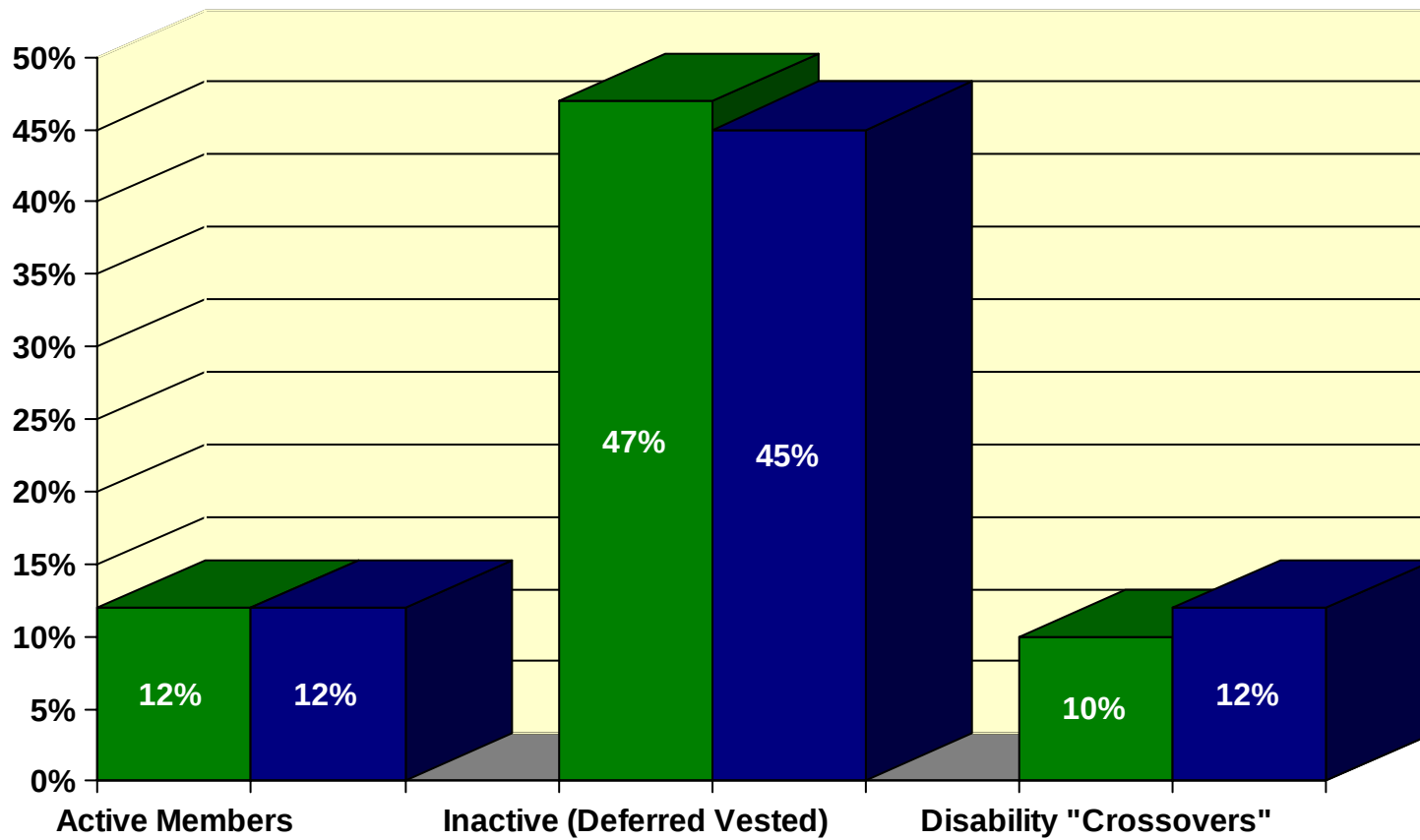
New Retiree “Crossovers” from Disability Status

Year of Retirement Ending June 30,	Number Electing Lump Sum Cashout	Total Number Retiring	Percentage Electing a Lump Sum Cashout
2003	13	115	11%
2004	0	98	0%
2005	23	151	15%
2006	<u>16</u>	<u>154</u>	<u>10%</u>
Total	52	518	10%

Chart 30 shows the same information in graphical format.

Based on the experience during the four year period we are recommending the introduction of a Lump Sum Cashout take-rate assumption for members retiring from active employment of 12%. For inactive (deferred vested) members we are recommending a 45% Lump Sum Cashout take-rate assumption. For those “crossovers” from disability we are recommending a 12% Lump Sum Cashout take-rate assumption. This assumption will continue to be monitored closely as more experience becomes available.

Chart 30
Lump Sum Cashout Take-Rate



Percentage of New Retirees electing Lump Sump Cashouts

■ Actual ■ Expected - Proposed

I. FUTURE BENEFIT ACCRUALS

Benefits under the plan are based on the service credit and compensation earned by the member. In order to project benefits and determine the liabilities, an assumption about the amount of service credit earned by members each year is necessary.

Over the last four years, the average service credit earned by continuing active members from one valuation date to the next was 0.97 service credit. Based on this actual experience, we recommend continuing to assume that all members earn full-time service (or 1.00 service credit) per year in the future. Compensation for those members that actually earned less than a full year of service credit in a particular year will be projected to be full-time equivalent for future years.

J. GUARANTEED SURVIVOR AND DISABILITY BENEFITS

Survivor and disability benefits payable under the plan are subject to a minimum benefit guarantee for those members that were active on April 1, 1976 and have benefits coordinated with Social Security. These minimum benefits guarantee that these members receive total UCRP and Social Security benefits at least equal to what they would have received under the “noncoordinated with Social Security” formula that was in effect prior to April 1, 1976.

Currently there is a 10% loading factor that applies to benefits for those active members of UCRP who were also active as of April 1, 1976 and have benefits coordinated with Social Security. This assumption currently has no material impact on the valuation due to the small number of members in this group and also the fact that the loading is only applied to survivor and disability benefits which have a relatively small value compared to retirement benefits.

Due to the immaterial impact on valuation results, limited data available concerning who has received these guarantees in prior years and the fact that this group of members will only continue to get smaller over time, we recommend eliminating the current loading factor to approximate these benefits.

K. ADMINISTRATIVE EXPENSES

Like benefit payments made to members, expenses incurred in connection with the plan's operation are paid from plan assets. These expenses include fees for administrative, legal, accounting, and actuarial services, as well as routine costs for printing, mailings, computer-related activities, and other functions carried out by the retirement plan. They generally do not include investment-related expenses. In order to reflect future administrative expenses in the plan's funding costs, a 0.50% of payroll load is added to the plan's normal cost. In operation, this assumption has resulted in an average overstatement of expected expenses of about \$12 million in each of the last four years.

To more accurately reflect administrative expenses as a percentage of active payroll in the future, we have expressed the actual administrative expenses as a percentage of valuation payroll for the last four years excluding the payroll for the Los Alamos National Laboratory (LANL) and the Lawrence Livermore National Laboratory (LLNL). This was done because, while there will no longer be active payroll for these two laboratories beyond September 2007, the administrative expenses include fixed costs that will not reduce proportionately. This information is shown in the table below.

Administrative Expenses as a Percentage of Valuation Payroll
(All dollars in 000's)

Year Ending June 30	Valuation Payroll* at Beginning of Plan Year	Total Administrative Expenses	Total %
2006	\$6,572,939	\$34,010	0.52%
2005	6,380,728	21,258	0.33%
2004	6,259,684	24,053	0.38%
2003	5,881,670	27,696	<u>0.47%</u>
Average			0.43%

* Excludes LANL and LLNL payroll.

Based on past experience and future expectations, we do not recommend a change at this time and recommend keeping the assumption at 0.50% of payroll per year.

L. COVERED PAYROLL PROJECTION

The covered payroll projected for the twelve months following the valuation date is used to convert the dollar amount of the Normal Cost into a Normal Cost rate. Currently, this projected payroll is determined before any decrements (i.e. mortality, termination, disability or retirement) for active members are applied. Therefore, this payroll is generally representative of the covered payroll for the twelve months following the valuation date assuming that any active members who decrement out of the population would be replaced by someone with a similar salary. This method for determining projected covered payroll is commonly used in corporate plans. While UCRP was “fully funded” and no contributions were being made, this method had no immediate consequences.

Since this is a closed group actuarial valuation (i.e. no new active members are assumed) we are recommending a change in the current method described above. We are recommending that the covered payroll projected for the twelve months following the valuation date be reduced to reflect the impact of those decrementing during the year. This would be more consistent with the closed group nature of the actuarial valuation. Most importantly, this would also be more consistent with the derivation of the dollar amount of the Normal Cost in the actuarial valuation, which is determined on a closed group basis. It is also expected that the plan will soon be emerging from full funding and the Normal Cost rates will eventually be used to generate actual contributions. The recommended method for determining the going forward Normal Cost rates is consistent with those of other public plans.

This change will not affect the closed group dollar amount of the Normal Cost (except for the administrative expense loading amount which is based on the covered payroll projection) or the Actuarial Accrued Liability (AAL) determined in the actuarial valuation. It will, however, increase the Normal Cost as expressed as a percentage of payroll (Normal Cost rate). This is appropriate, but for a fairly technical reason. Under the current approach, the Normal Cost rate had to be applied to the open group payroll in order to provide for the closed group Normal Cost dollar amount. Under the proposed approach, applying the Normal Cost rate to new entrants during the year will provide for the cost of service earned by these new members, in addition to the expected cost for members as of the valuation date.

V. COST IMPACT OF ASSUMPTION CHANGES

The following table shows the changes in funding elements due to the recommended assumption changes as if they were applied to the plan year beginning July 1, 2006. If all of the proposed assumption changes were implemented, the Plan's Normal Cost and Actuarial Accrued Liability (AAL) as dollar amounts would have decreased by \$27 million (2.1% of Normal Cost) and \$196 million (0.5% of AAL), respectively. These "proposed assumptions" results were determined as of July 1, 2006, using the July 1, 2006 valuation data, and they include the effect of immediately phasing out the last year of the temporary three-year reduction in salary increase assumption.

Funding Elements for Plan Year Beginning July 1, 2006

	Current Assumptions (\$ in 000s)	Proposed Assumptions (\$ in 000s)
Normal cost (beginning of year)	\$1,305,390	\$1,278,107
Percentage of payroll (beginning of year)	15.81%	16.70%
Percentage of payroll (middle of year)	16.39%	17.31%
Market value of assets	\$43,362,224	\$43,362,224
Actuarial value of assets (AVA)	41,972,476	41,972,476
Actuarial accrued liability (AAL)	40,301,708	40,105,432
Unfunded/(Overfunded) actuarial accrued liability	(1,670,768)	(1,867,044)
Covered Payroll	8,258,985	7,653,730

Note that, even though the dollar amount of the Normal Cost decreased, there is an increase in the Normal Cost as a percentage of payroll. This is due to recognizing the effect of decrements in the covered payroll shown in the Proposed Assumptions column. This change was discussed earlier in the report in Section IV(L).

APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS

Post – Retirement Mortality Rates:

Healthy: 1994 Group Annuity Reserving Mortality Table unloaded, projected with scale AA to 2002. Ages are set back two years for males (from the male table) and set back one year for females (from the female table).

Disabled: Based upon 1987 Group Long Term Disability Table (composite select and ultimate rates).

Sample Termination Rates Before Retirement:

Age	Rate (%)					
	Healthy Mortality		Disabled Mortality*		Disability Incidence	
	Male	Female	Male	Female	Male	Female
20	0.04	0.03	19.60	15.10	0.14	0.06
25	0.06	0.03	18.18	13.81	0.15	0.08
30	0.08	0.03	11.49	7.88	0.16	0.10
35	0.09	0.04	7.86	5.48	0.18	0.16
40	0.10	0.06	5.26	4.13	0.22	0.26
45	0.13	0.09	3.89	3.15	0.28	0.38
50	0.20	0.12	3.30	2.66	0.37	0.57
55	0.33	0.21	3.02	2.84	0.51	0.80
60	0.60	0.40	3.14	3.75	0.78	1.12
65	1.10	0.79	4.28	5.07	1.24	1.45

Sample Termination Rates Before Retirement (continued):

Rate (%)				
Withdrawal – Faculty*				
	Less than one Year of Service	At least one, but less than two Years of Service	At least two, but less than three Years of Service	Three or more Years of Service
Age	Unisex	Unisex	Unisex	Unisex
20	24.00	22.00	21.00	21.00
25	24.00	20.00	18.00	16.00
30	21.00	10.00	9.00	9.00
35	12.00	8.00	5.00	4.00
40	12.00	6.00	5.00	4.00
45	12.00	5.00	5.00	2.00
50	12.00	3.00	3.00	2.00
55	12.00	3.00	3.00	2.00
60	12.00	3.00	3.00	2.00

* Withdrawal rates are assumed to be zero for those members eligible for retirement.

Rate (%)				
Withdrawal – Faculty*				
	Less than one Year of Service	At least one, but less than two Years of Service	At least two, but less than three Years of Service	Three or more Years of Service
Age	Unisex	Unisex	Unisex	Unisex
20	27.00	20.00	16.00	16.00
25	25.00	20.00	16.00	15.00
30	23.00	18.00	12.00	10.00
35	18.00	15.00	10.00	7.00
40	15.00	10.00	8.00	5.00
45	15.00	7.00	6.00	3.00
50	12.00	7.00	6.00	3.00
55	12.00	7.00	4.00	2.00
60	12.00	7.00	4.00	2.00

* Withdrawal rates are assumed to be zero for those members eligible for retirement.

Sample Termination Rates Before Retirement (continued):

Rate (%) Withdrawal – Safety*								
Age	Less than one Year of Service		At least one, but less than two Years of Service		At least two, but less than three Years of Service		Three or more Years of Service	
	Male	Female	Male	Female	Male	Female	Male	Female
20	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
25	20.00	20.00	20.00	20.00	20.00	19.00	18.00	18.00
30	15.00	20.00	15.00	20.00	15.00	16.00	10.00	11.00
35	10.00	19.00	10.00	19.00	10.00	15.00	6.00	7.00
40	10.00	16.00	10.00	16.00	10.00	10.00	4.00	6.00
45	10.00	14.00	10.00	14.00	10.00	10.00	3.00	6.00
50	10.00	10.00	10.00	10.00	10.00	10.00	2.00	5.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

* *Withdrawal rates are assumed to be zero for those members eligible for retirement.*

Retirement Rates:

Retirement Probability – Unisex			
Age	Faculty	Staff	Safety
50	3.00%	8.00%	20.00%
51	2.00%	5.00%	5.00%
52	2.00%	5.00%	5.00%
53	2.00%	5.00%	5.00%
54	2.00%	6.00%	5.00%
55	2.00%	6.00%	25.00%
56	2.00%	6.00%	25.00%
57	2.00%	6.00%	25.00%
58	2.00%	8.00%	25.00%
59	4.00%	20.00%	25.00%
60	5.00%	20.00%	25.00%
61	5.00%	20.00%	25.00%
62	5.00%	20.00%	50.00%
63	5.00%	20.00%	50.00%
64	5.00%	30.00%	75.00%
65	6.00%	30.00%	100.00%
66	6.00%	25.00%	100.00%
67	10.00%	25.00%	100.00%
68	10.00%	25.00%	100.00%
69	15.00%	30.00%	100.00%
70	100.00%	100.00%	100.00%

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

Deferred vested members are assumed to retire at age 50.

Form of Payment:

Life annuity for single members;

25% contingent annuity for members with Social Security in a relationship for at least one year;

50% contingent annuity for members without Social Security in a relationship for at least one year;

50% contingent annuity for Safety members in a relationship for at least one year.

Future Benefit Accruals:

1.0 year of service per year for the full-time employees. Part-time employees are assumed to earn full-time service for all future years.

Definition of Active Members:

All members of UCRP who are not separated from active employment as of the valuation date or have not started receiving a monthly pension on or before the valuation date.

Percent with Eligible Dependents (Samples):

Age	Male	Female
20	58.00%	66.50%
25	85.00	89.50
30	91.50	92.50
35	93.00	94.00
40	93.50	93.50
45	94.00	92.50
50	95.00	91.00
55	94.50	89.00
60	94.00	85.00
65	93.00	80.00

Spouse/Domestic Partner Ages: Members assumed to have an opposite sex spouse or domestic partner, with females three years younger than males.

Number of Dependents (Samples):

Age	Number of Eligible Dependents per Active Member with Dependents	
	Male	Female
20	1.0	1.0
25	1.8	2.3
30	2.3	3.2
35	3.0	3.1
40	3.5	2.5
45	3.0	2.0
50	2.5	1.5
55	2.0	1.3
60	1.5	1.1
65	1.3	1.1

Economic Assumptions

Net Investment Return: 7.50% (including 4.00% for inflation)

Consumer Price Index: Increase of 4.00% per year.

Salary Increases (Samples):**Annual Rate of Compensation Increase**

The sum of 4.00% inflation (at all ages) plus the following Merit and Longevity increases:

Age	
20	2.50%
25	2.50%
30	2.10%
35	1.70%
40	1.50%
45	1.30%
50	1.20%
55	1.10%
60	0.90%

The assumed salary increases will be 2.0% lower overall for the period July 1, 2006 through June 30, 2007.

Administrative Expenses:

0.50% of payroll added to normal cost.

Actuarial Methods**Actuarial Value of Assets:**

The market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual and the expected returns on a market value basis and is recognized over a five-year period.

Actuarial Cost Method:

Entry Age Normal Actuarial Cost Method. Entry Age is calculated as the valuation date minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salaries, as if the current benefit accrual rate has always been in effect.

Other Actuarial Assumptions**Lump Sum Assumptions:**

Discount Rate: 7.50%

COLA: 2.00%

Take-rate: None assumed.

Mortality: 1994 Group Annuity Reserving Mortality Table unloaded for males set back three years, projected with scale AA to 2002.

Approximations:

Guaranteed Survivor and Disability Benefits

Liability and normal cost for guaranteed survivor and disability benefits for members who elected Social Security was estimated as 10% of their basic liability and normal cost.

Sick Leave

Service has been increased by 0.2% for Faculty, 1.4% for Staff, and 2.5% for Safety members to account for unused sick leave.

APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS

Post – Retirement Mortality Rates:

Healthy: 1994 Group Annuity Reserving Mortality Table unloaded, projected with scale AA to 2002. Ages are set back two years for males (from the male table) and set back one year for females (from the female table).

Disabled: RP-2000 Disabled Retiree Mortality Table. Ages are set back two years for males (from the male table) and set back one year for females (from the female table).

Sample Termination Rates Before Retirement:

Age	Rate (%)					
	Healthy Mortality		Disabled Mortality*		Disability Incidence	
	Male	Female	Male	Female	Male	Female
20	0.04	0.03	2.26	0.75	0.10	0.06
25	0.06	0.03	2.26	0.75	0.10	0.08
30	0.08	0.03	2.26	0.75	0.12	0.10
35	0.09	0.04	2.26	0.75	0.17	0.16
40	0.10	0.06	2.26	0.75	0.22	0.25
45	0.13	0.09	2.26	0.75	0.28	0.36
50	0.20	0.12	2.64	1.06	0.36	0.53
55	0.33	0.21	3.29	1.55	0.47	0.75
60	0.60	0.40	3.93	2.08	0.54	0.86
65	1.10	0.79	4.66	2.66	0.54	0.86

* Assumed to apply only for valuing the disability income benefit.

Sample Termination Rates Before Retirement (continued):

Rate (%) Withdrawal – Faculty						
	Less than one Year of Service	At least one, but less than two Years of Service	At least two, but less than three Years of Service	At least three, but less than four Years of Service	At least four, but less than five Years of Service	Five or more Years of Service
Age	Unisex	Unisex	Unisex	Unisex	Unisex	Unisex
20	24.00	22.00	21.00	21.00	13.00	9.00
25	23.00	20.00	19.00	17.00	11.00	8.00
30	22.00	14.00	12.00	11.00	10.00	7.00
35	19.00	11.00	9.00	7.00	7.00	6.00
40	16.00	10.00	8.00	6.00	5.00	4.00
45	15.00	8.00	6.00	5.00	4.00	3.00
50	14.00	6.00	5.00	4.00	3.00	2.00
55	13.00	5.00	4.00	3.00	3.00	1.00
60	12.00	4.00	3.00	3.00	2.00	1.00
65	11.00	3.00	2.00	2.00	1.00	1.00

Rate (%) Withdrawal – Staff and Safety						
	Less than one Year of Service	At least one, but less than two Years of Service	At least two, but less than three Years of Service	At least three, but less than four Years of Service	At least four, but less than five Years of Service	Five or more Years of Service
Age	Unisex	Unisex	Unisex	Unisex	Unisex	Unisex
20	27.00	24.00	21.00	16.00	15.00	13.00
25	26.00	23.00	20.00	15.00	14.00	12.00
30	24.00	21.00	17.00	14.00	13.00	10.00
35	22.00	17.00	14.00	11.00	10.00	8.00
40	19.00	14.00	11.00	8.00	7.00	6.00
45	17.00	11.00	9.00	6.00	5.00	4.00
50	14.00	9.00	7.00	5.00	4.00	2.00
55	12.00	7.00	6.00	4.00	3.00	2.00
60	11.00	6.00	5.00	3.00	2.00	1.00
65	10.00	5.00	4.00	2.00	1.00	1.00

Retirement Rates:

Retirement Probability – Unisex			
Age	Faculty	Staff	Safety
50	2.00%	4.00%	15.00%
51	1.00	4.00	10.00
52	1.00	4.00	10.00
53	1.00	4.00	10.00
54	1.00	5.00	10.00
55	2.00	5.00	25.00
56	2.00	6.00	25.00
57	2.00	6.00	25.00
58	2.00	8.00	25.00
59	3.00	14.00	25.00
60	5.00	20.00	25.00
61	5.00	20.00	25.00
62	5.00	20.00	50.00
63	5.00	20.00	50.00
64	7.00	25.00	75.00
65	8.00	30.00	100.00
66	9.00	25.00	100.00
67	10.00	25.00	100.00
68	12.00	25.00	100.00
69	15.00	25.00	100.00
70	15.00	20.00	100.00
71	12.00	20.00	100.00
72	12.00	20.00	100.00
73	12.00	20.00	100.00
74	12.00	20.00	100.00
75	100.00	100.00	100.00

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

Deferred vested members are assumed to retire at age 59.

Form of Payment:

For those members not electing a Lump Sum Cashout:

Life annuity for members without an Eligible Survivor;

25% contingent annuity for members with Social Security who have an Eligible Survivor;

50% contingent annuity for members without Social Security who have an Eligible Survivor;

50% contingent annuity for Safety members who have an Eligible Survivor.

It is also assumed that some members elect a Lump Sum Cashout (see Lump Sum Assumptions).

Future Benefit Accruals:

1.0 year of service per year for the full-time employees. Part-time employees are assumed to earn full-time service for all future years.

Definition of Active Members:	All members of UCRP who are not separated from active employment as of the valuation date or have not started receiving a monthly pension on or before the valuation date.
Percent with Eligible Survivors:	85% of male members and 65% of female members are assumed to have Eligible Survivors at time of decrement.
Eligible Survivor Ages:	Members assumed to have an opposite sex Eligible Spouse or Eligible Domestic Partner, with females three years younger than males.
Number of Eligible Survivors (Samples):	

Age	Number of Eligible Survivors per Active Member with Survivors	
	Male	Female
20	1.0	1.0
25	1.8	2.1
30	2.2	2.7
35	2.7	2.8
40	3.0	2.4
45	2.8	2.1
50	2.5	1.7
55	2.0	1.4
60	1.5	1.2
65	1.3	1.1

Economic Assumptions

Net Investment Return:	7.50% (including 3.50% for inflation)
Consumer Price Index:	Increase of 3.50% per year.

Salary Increases:

Annual Rate of Compensation Increase		
Inflation: 3.50% per year, plus “across the board” salary increases of 0.25% per year, plus the following merit and promotional increases:		
Years of Service	Faculty	Staff and Safety
Less than 1	3.25%	3.25%
1	3.25	3.00
2	3.25	2.80
3	3.25	2.50
4	3.25	2.20
5	3.25	2.00
6	3.20	1.80
7	3.10	1.70
8	3.00	1.60
9	2.90	1.50
10	2.80	1.40
11	2.70	1.30
12	2.60	1.20
13	2.50	1.10
14	2.40	1.00
15	2.30	0.90
16	2.20	0.80
17	2.10	0.75
18	2.00	0.70
19	1.75	0.65
20 & over	1.50	0.60

Administrative Expenses: 0.50% of payroll added to normal cost.

Actuarial Methods

Actuarial Value of Assets: The market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual and the expected returns on a market value basis and is recognized over a five-year period.

Actuarial Cost Method: Entry Age Normal Actuarial Cost Method. Entry Age is calculated as the valuation date minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salaries, as if the current benefit accrual rate has always been in effect.

Other Actuarial Assumptions**Lump Sum Assumptions:**

<i>Discount Rate:</i>	7.50%
<i>COLA:</i>	2.00%
<i>Take-rate:</i>	For those members retiring from active employment and for those who were receiving a disability income and now retiring, we are assuming that 12% elect a lump sum cashout. For those members retiring from inactive (deferred vested) status, we are assuming that 45% elect a lump sum cashout.
<i>Mortality:</i>	1994 Group Annuity Reserving Mortality Table unloaded for males set back three years, projected with scale AA to 2002.

Approximations:

<i>Sick Leave</i>	Service has been increased by 0.15% for Faculty, 1.40% for Staff, and 2.25% for Safety members to account for unused sick leave. This assumption applies only for members retiring from active employment and not electing a lump sum cashout. For all other benefits there is assumed to be no conversion of unused sick leave to service credit.
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