San Mateo County
Employees' Retirement Association
Active and Retired Experience Analysis

July 1, 1996 to June 30, 1999

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January 2000

March 7, 2000

Board of Retirement
San Mateo County Employees'
Retirement Association
702 Marshall, Suite 280
Redwood City, CA 94063-1823

Dear Members of the Board:

We are pleased to present our active and retired member experience analysis covering the period from July 1, 1996 to June 30, 1999.

The purpose of this report is to recommend noneconomic and salary increase assumptions to be used in the June 30, 1999 actuarial valuation.

We look forward to presenting our results at the January Board meeting.

Sincerely,

Drew James, FSA, EA MAAA

Andy Yeung, ASA, EA, MAAA

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SECTION I.
SUMMARY OF RESULTS

Noneconomic and Salary Increase Assumptions

Changes were made to most of the assumptions. Following were the most significant:

- Withdrawal — Reduction in the number of members who are expected to withdraw their contributions. We have eliminated probability of withdrawal for most member categories, once they become eligible for service retirement. This increases costs.

- Vested Terminations — Reduction in the probability of termination to reflect lower turnover among County employees over the experience period. We have extended application of the vested termination probabilities to all members (including those with less than 5 years of services), considering the fact that 34% of our actual terminations were from members with less than 5 years of service. This increases costs.

- Duty and Non-Duty Disability — Probabilities of both duty and non-duty disabilities were increased for General female employees. Probabilities of duty disability were increased for Safety and Probation employees. This increases costs.

- Service Retirement — There was a significant increase in the probability of retirement prior to age 60 for Safety and Probation employees. Service retirement rates were reduced slightly for General members. This increases costs for Safety and Probation employees.

- Inflation — The inflation assumption was reduced from 4.50% to 4.25%. This reduces costs provided the nominal investment return rate is held constant at 8%.

- Real Rate of Investment Return — Increase from 3.50% to 3.75%. We suggest the Board also consider 4.00% since our analysis supports such an increase. This reduces costs.

- Salary Increase — The merit and longevity salary increase assumptions were raised considerably to reflect higher salary increases over the last three years. This increases costs for both employers and members.

- Marriage Assumption — Experience indicates that a greater number of members are married at retirement, so this assumption has been changed accordingly. This increases costs.

- Post-Retirement Mortality After Service Retirement — We recommend a change to the 1994 Group Annuity Mortality Tables, with some modification. This increases both employer and member costs.

- Post-Retirement Mortality After Disability — We modified these assumptions for General members. This increases costs.

These and other assumption changes are detailed in Sections III and IV.

Asset Valuation Method

We are recommending no change in the asset valuation method. The current asset valuation method smoothes over 5 years any market investment return which is above or below the expected investment return.

Ventura Decision

The contribution and liabilities reflected in this report are consistent with the Board's determination of pay elements which comprise Earnable Compensation. Significant cost increases would occur if the outcome of pending litigation is to expand Earnable Compensation to include terminal pay, or to apply an expansion of Earnable Compensation retroactively.

County Wide Salary Increase Anticipated for 1999-2000 Fiscal Year

We understand from discussion we had with Retirement Staff that most County employees will receive a 6% across-the-board increase effective August 1999. We have adjusted the June 30, 1999 annual payroll by 6% to reflect this increase.

Post Retirement Cost-of-Living Benefit Increases

Members who retire from the Association will get an automatic cost-of-living adjustment (COLA) benefit on each April 1. Members in Plan 2 will receive up to a 3% COLA on April 1 if the actual CPI is at least 3%.

In our valuation, we assume the long-term average annual inflation to be 4.25%. If this long term average holds, inflation will actually be above 4.25% for some years and less than 4.25% for other years.

We have refined the COLA assumption based on statistical simulations of future inflation rates. The simulations were structured to produce long-term inflation averaging 4.25% emerging from the current low inflation environment. The simulations indicate that the average COLA expected to be received by members with a 3% COLA cap will most likely be no more than 2.75%. We have applied this lower COLA in our valuation. This decreases the cost of providing future COLA benefits. We are using 4.25% for Plan 1 members with a 5% maximum COLA.

Impact on Contribution Rates

Following is the impact on 1999-2000 fiscal year contribution rates if the recommendations in this study were adopted as part of the June 30, 1999 actuarial valuation.

	Employer		Members	
	% of Payroll	Amount *	% of Payroll	Amount *
Retain 8% Investment Return Rate				
June 30, 1998 Rates	15.46%	$ 36,928,000	5.49%	$ 13,114,000
June 30, 1999 Rates				
Before Assumption Change	12.93%	$ 30,885,000	5.49%	$ 13,114,000
After Assumption Change	16.27%	$ 38,863,000	5.85%	$ 13,974,000
Net Impact of Assumption Change	3.34%	$ 7,978,000	0.36%	$ 860,000
Change to 8.25% Investment Return Rate				
June 30, 1998 Rates	15.46%	$ 36,928,000	5.49%	$ 13,114,000
June 30, 1999 Rates				
Before Assumption Change	12.93%	$ 30,885,000	5.49%	$ 13,114,000
After Assumption Change	13.91%	$ 33,226,000	5.55%	$ 13,257,000
Net Impact of Assumption Change	0.98%	$ 2,341,000	0.06%	$ 143,000

* Based on July 1 1999 Annual Payroll $ 238,864,000

SECTION II.
DISCUSSION OF PLAN ASSUMPTIONS

Noneconomic Assumptions

The purpose of this study is to recommend noneconomic and salary increase assumptions to be used in the June 30, 1999 actuarial valuation. The noneconomic assumptions can be categorized as follows:

Active Members	Retired Members
• Withdrawal of Member Contributions	• Mortality After Service Retirement
• Duty Death	• Mortality After Disability Retirement
• Ordinary Death	
• Service Retirement	
• Terminated Vested	
• Percentage of Members Married (for survivor benefits)	
• Percentage of Terminated Members Who Will Be Entitled to a Reciprocal Benefit	

Noneconomic assumptions for active members are custom designed to be reflective of SamCERA's unique experience by category of member by age and/or service group.

Post-retirement mortality tables typically are some variation of industry-wide tables developed from a much wider base of data. Some variations are made to reflect SamCERA's unique experience.

Economic Assumptions

The Association's economic assumptions consist of:

- Inflation
- Investment Return
- Salary Increases

Inflation

Inflation is an important factor affecting both assets and liabilities. It is a component of the investment return assumption, and directly impacts salary and COLA increases.

Investment Return

The investment return assumption represents the expected return on current and future assets of the system. It is a critical factor with a powerful influence on contribution rates and funding ratios.

Salary Increases

We have reviewed the salary increases of members over the study period to evaluate the need for modifications. In this review we focused on the actual versus expected real salary increases (i.e., increases over inflation). Real salary increases have two components:

- General salary increases which exceed inflation ("Real Across-the-Board Salary Increases"); and
- Merit and Longevity Increases.

Real Across-the Board Salary Increases — These are typically referred to as productivity increases because, in theory, they are generated from any activity that allows workers to produce goods and services more efficiently, thus cheaper. If these efficiencies result in increased revenues to the employer and are passed along as salary increases, Real-Across-the-Board Salary Increases will result.

There is currently no Real Across-the-Board Salary Increase assumption for SamCERA, and this study recommends that no such assumption be added.

Merit and Longevity Salary Increases — Merit and Longevity Salary Increases reflect the promotional and salary grade increases an individual member is expected to receive over his or her career. This assumption is based on observed experience of real salary increases by category of member by age and/or service group. This assumption is reviewed at the time of the triennial experience investigation.

Member Data

The experience used in the noneconomic assumptions and salary increase study was derived by linking together the member data files for the June 30, 1996 and June 30, 1999 valuations and identifying the changes which occurred in each member category by cause of such change. This experience was analyzed by age and service categories, as appropriate.

Following is a summary of the membership changes between July 1, 1996 and June 30, 1999.

San Mateo County Employees' Retirement Association
Flow of Lives

	Actives	Deferred Benefit	Service Retirement	Disability Retirement	Survivors/ Ex-Spouse	Total
As of 7/1/96	4,271	470	2,268	222	353	7,584
Service Retirement	(230)	(65)	295	–	N/A	–
Disability Retirement	(58)	–	(5)	63	–	–
Deaths	(5)	–	(230)	(23)	(48)	(306)
Nonvested Terminations (withdrawal)	(615)	–	N/A	N/A	N/A	(615)
Vested Terminations	(181)	181	N/A	N/A	N/A	–
Rehires	3	(3)	–	–	N/A	–
Survivors/Ex-Souses	N/A	N/A	N/A	–	98	98
New Entrants during the year	1,371	N/A	N/A	–	–	1,371
Data Adjustments *	22	30	(33)	1	(2)	18
New Change	307	143	27	41	48	566
As of 6/30/99	4,578	613	2,295	263	401	8,150

* The 33 member adjustment to the Service Retirement count is for those who are currently receiving benefits from two different plans. The 7/1/96 count double counts them.

* Of the 30 Deferred Benefit adjustments, 21 were withdrawals that were reclassified as Terminated Vested by the Association.

SECTION III.
DETAIL OF RESULTS
NONECONOMIC ASSUMPTIONS

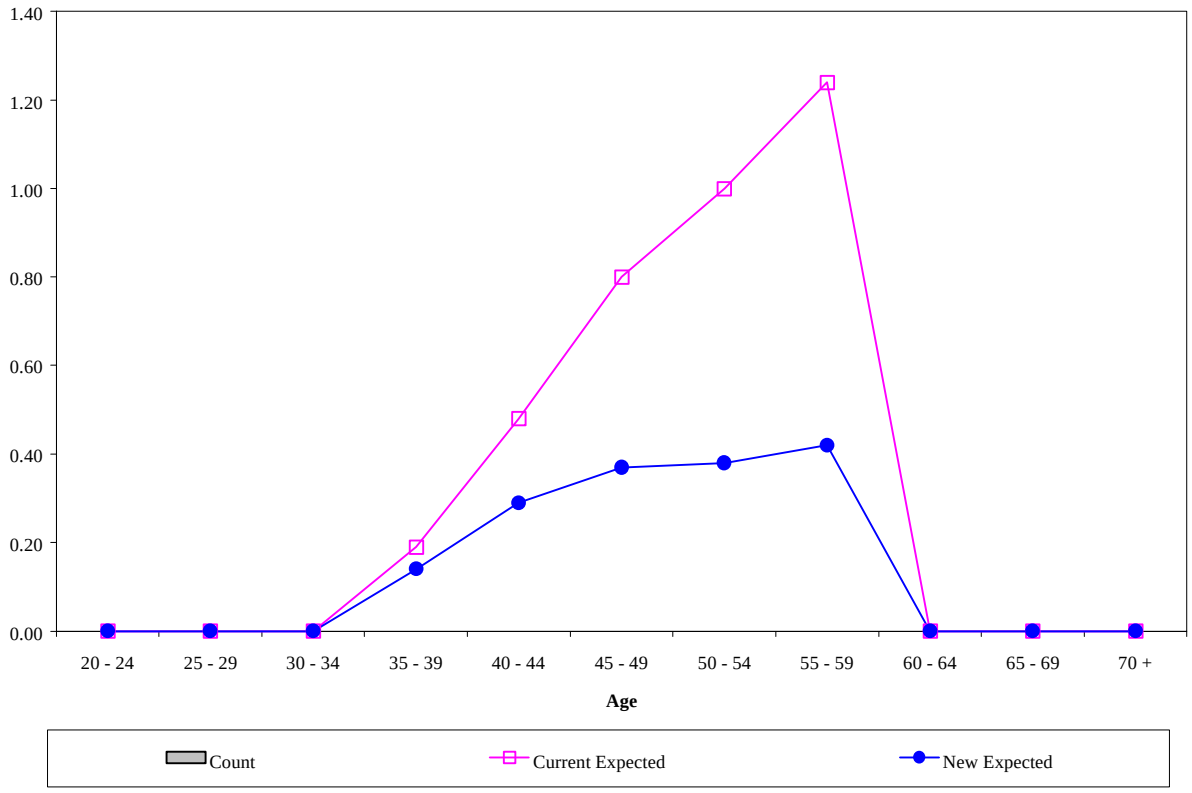
I. Active Member Noneconomic Assumptions

Our experience results are presented primarily in graphical form to allow the reader to get a "big picture" of both experience and assumption changes. Narrative is provided in those areas where the changes are in fundamental methodology or where changes are especially significant.

A. Withdrawal of Member Contributions

General — Male Plan 1

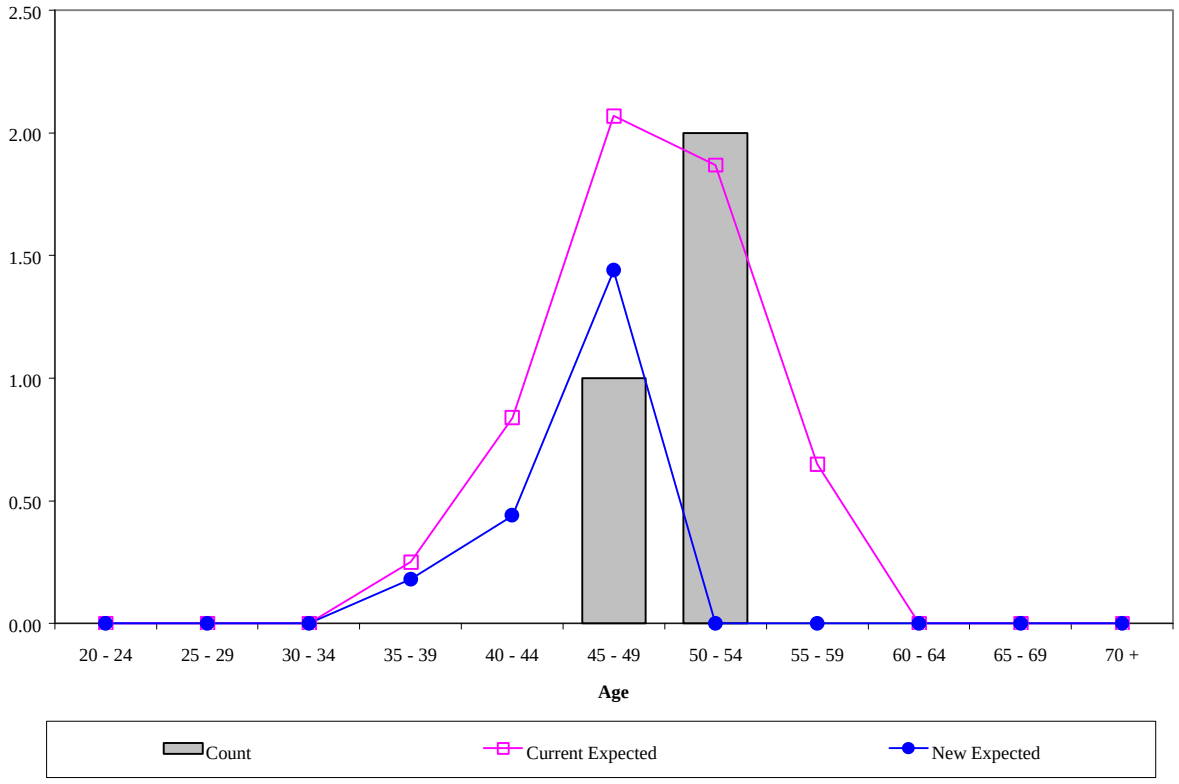
Members with 5 or more Years of Service — The current assumptions predicted that 4 members would withdraw, and 0 actually did. The assumptions were changed to predict 2 withdrawals.



A. Withdrawal of Member Contributions (continued)

General — Female Plan 1

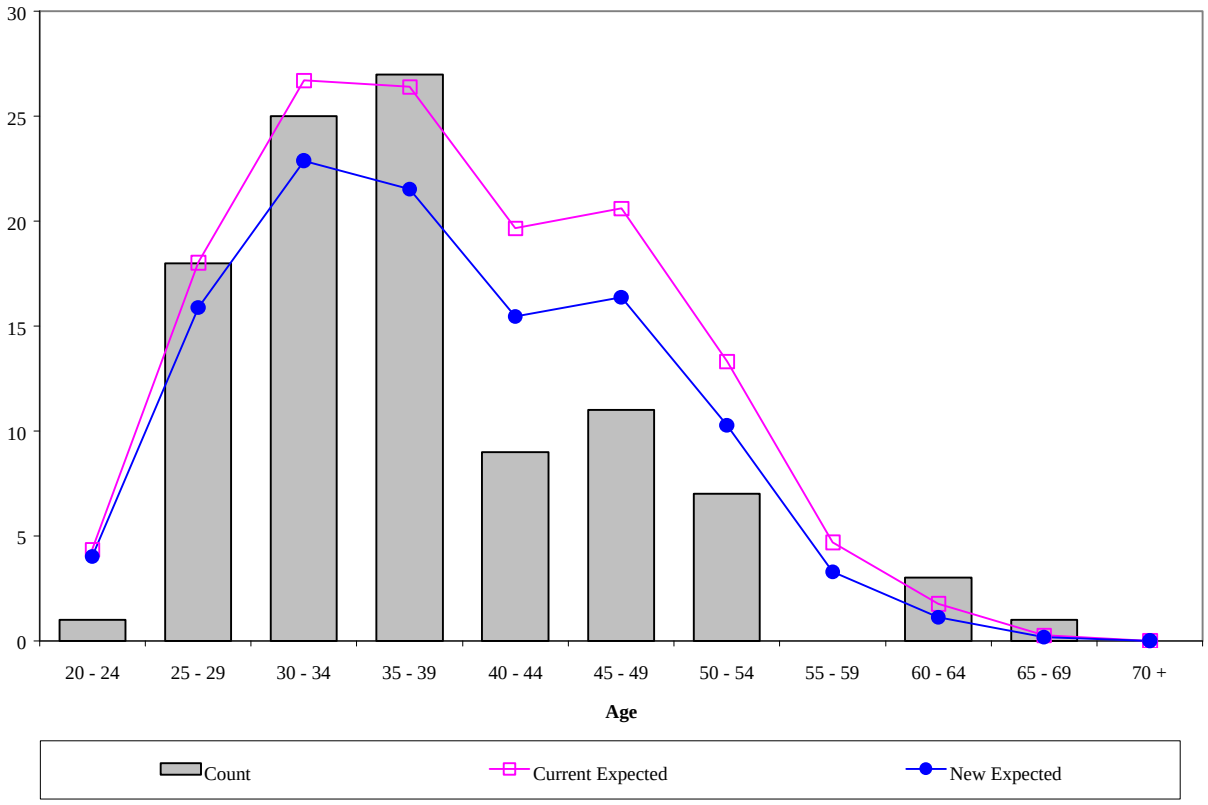
Members with 5 or more Years of Service — The current assumptions predicted 6 — but only 3 actually occurred. The new assumptions would have predicted 2.



A. Withdrawal of Member Contributions (continued)

General — Male Plan 2 and Plan 4

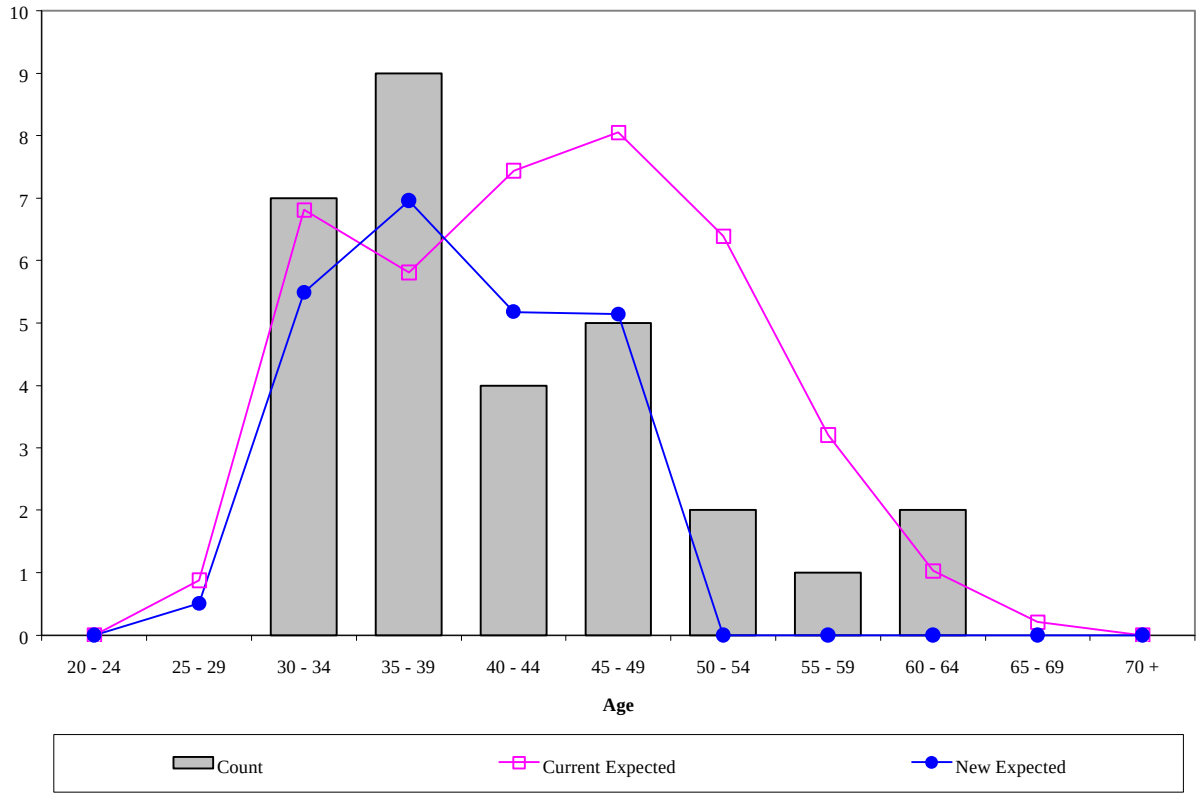
Members with less than 5 Years of Service — There were 102 actual terminations, compared to 136 expected. The new assumptions would have predicted 111 withdrawals.



A. Withdrawal of Member Contributions (continued)

General — Male Plan 2 and Plan 4 (continued)

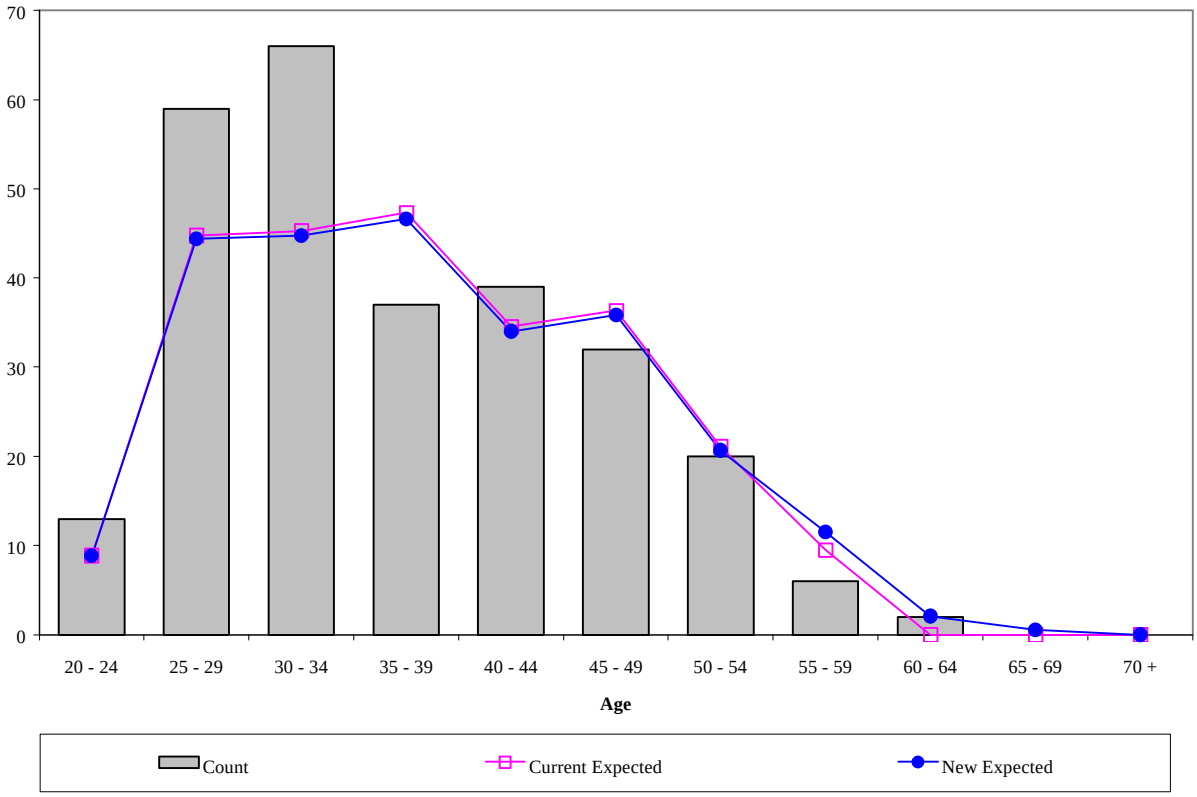
Members with 5 or more Years of Service — There were 30 actual withdrawals versus 40 expected. The new assumptions would predict 23.



A. Withdrawal of Member Contributions (continued)

General — Female Plan 2 and Plan 4

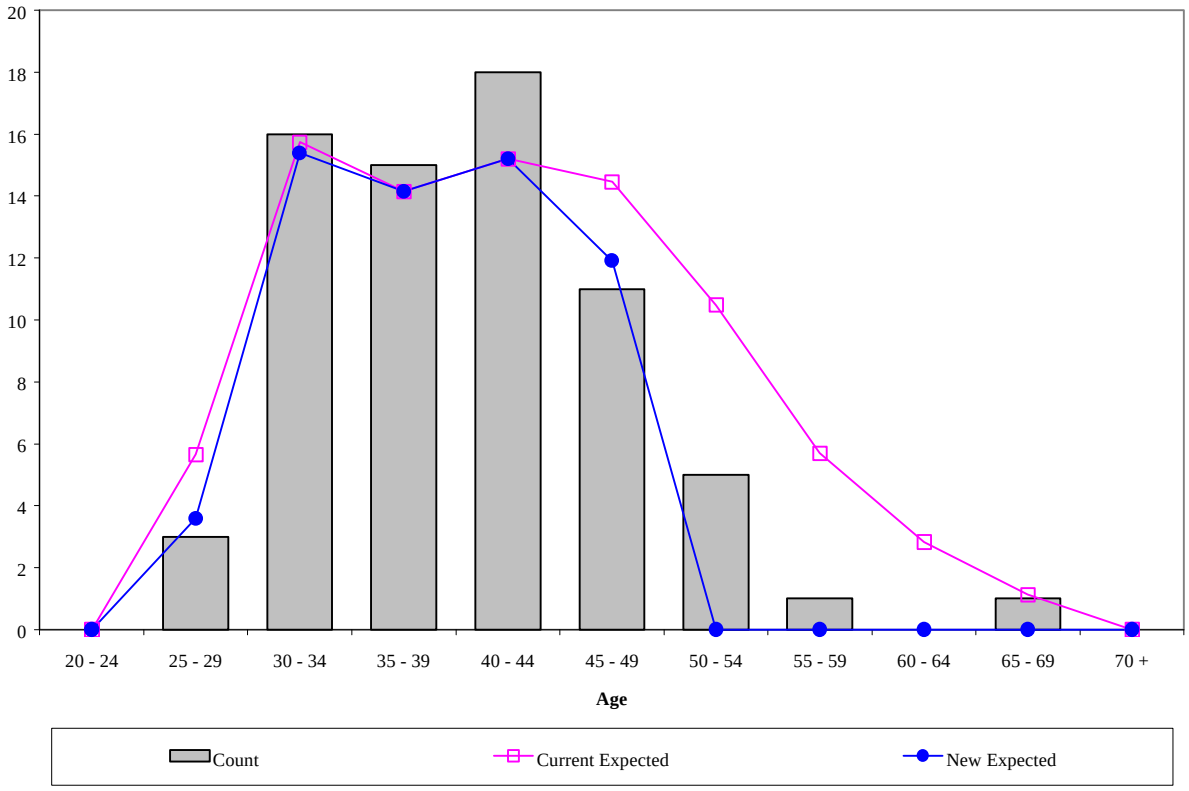
Members with less than 5 Years of Service — There were 274 actual terminations versus 248 expected. The new expected is 249.



A. Withdrawal of Member Contributions (continued)

General — Female Plan 2 and Plan 4 (continued)

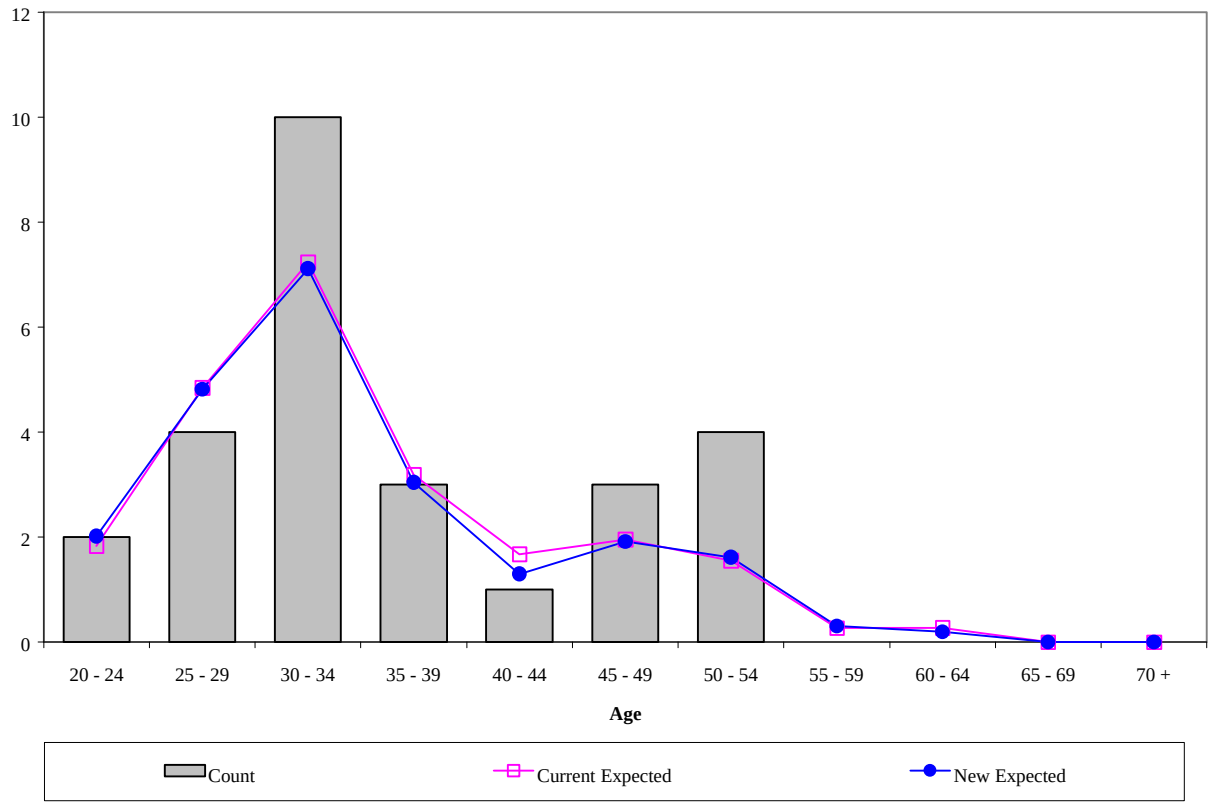
Members with 5 or more Years of Service — There were 70 actual terminations versus 85 expected. The new expected is 60.



A. Withdrawal of Member Contributions (continued)

General — Male Plan 3

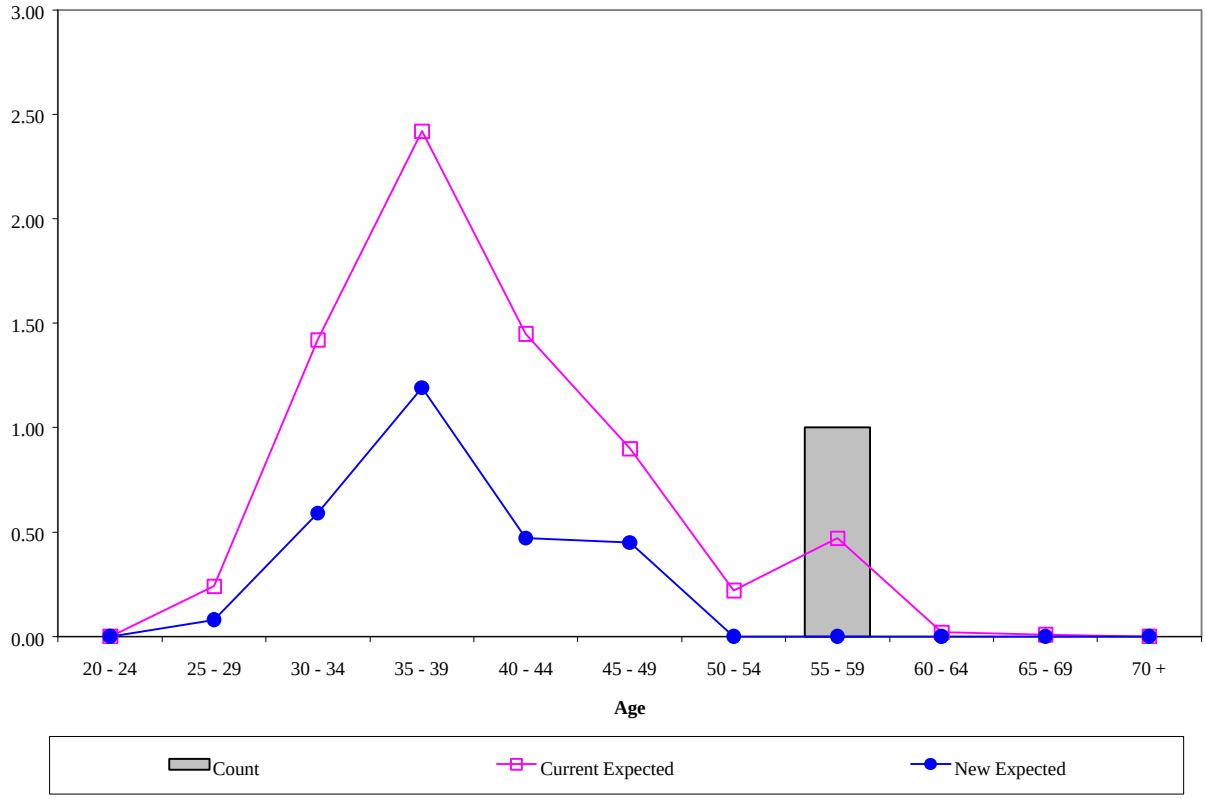
Members with less than 5 Years of Service — There were 27 actual terminations, compared to 23 expected. The new assumptions would have predicted 22 withdrawals.



A. Withdrawal of Member Contributions (continued)

General — Male Plan 3 (continued)

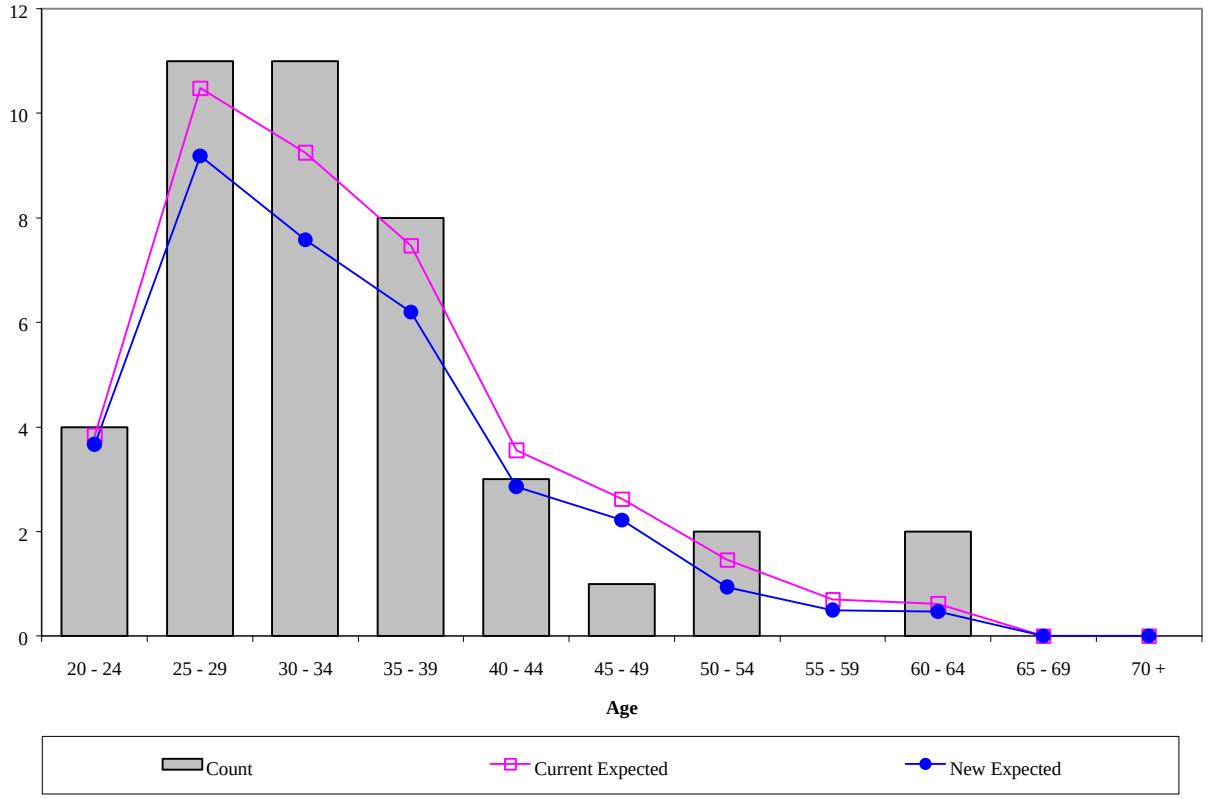
Members with 5 or more Years of Service — There was 1 actual withdrawal versus 7 expected. The new assumptions would also predict 3.



A. Withdrawal of Member Contributions (continued)

General — Female Plan 3

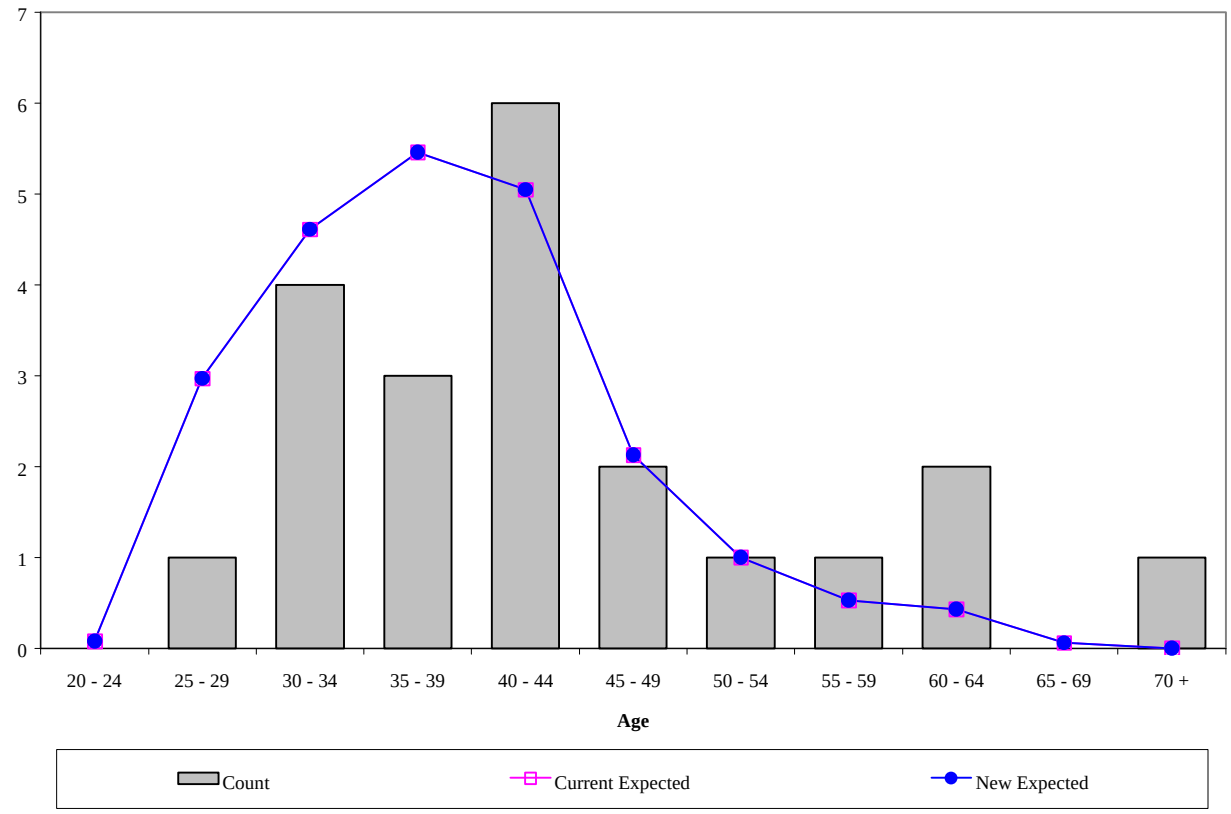
Members with less than 5 Years of Service — There were 42 actual terminations versus 40 expected. The new expected is 34.



A. Withdrawal of Member Contributions (continued)

General — Female Plan 3 (continued)

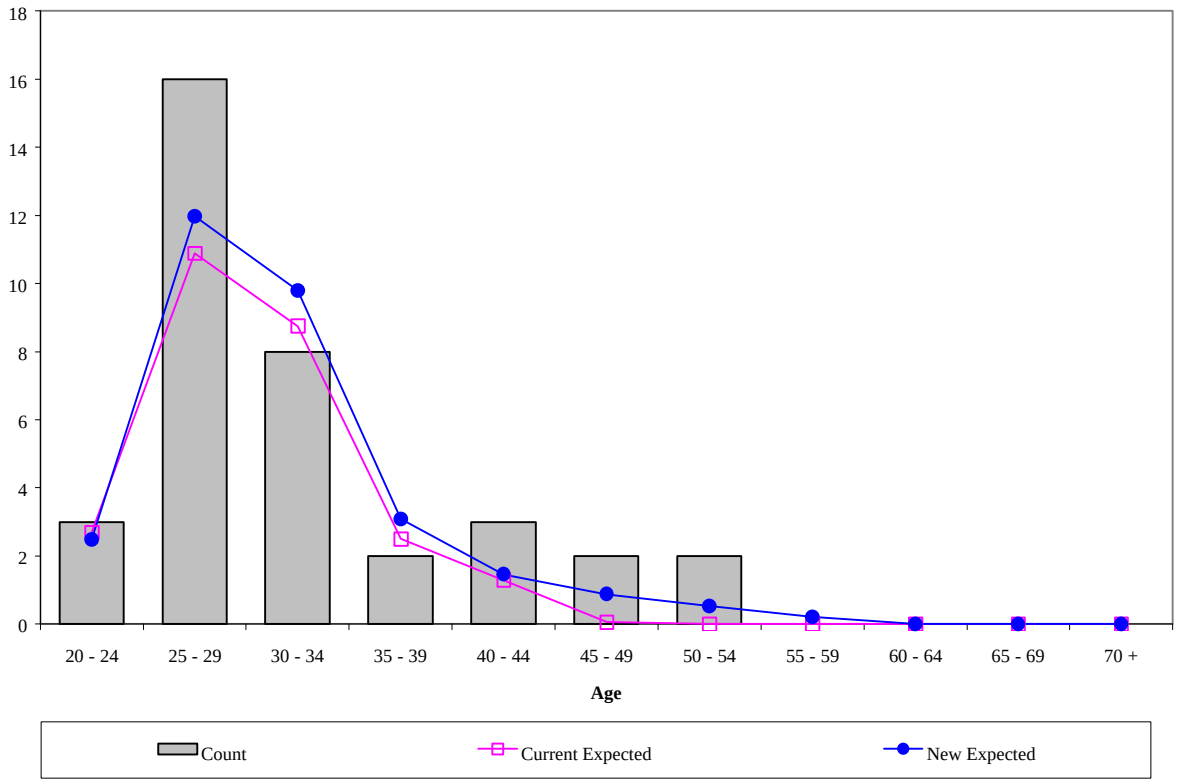
Members with 5 or more Years of Service — There were 21 actual terminations versus 22 expected. The new expected is unchanged.



A. Withdrawal of Member Contributions (continued)

Safety and Probation — All Plans

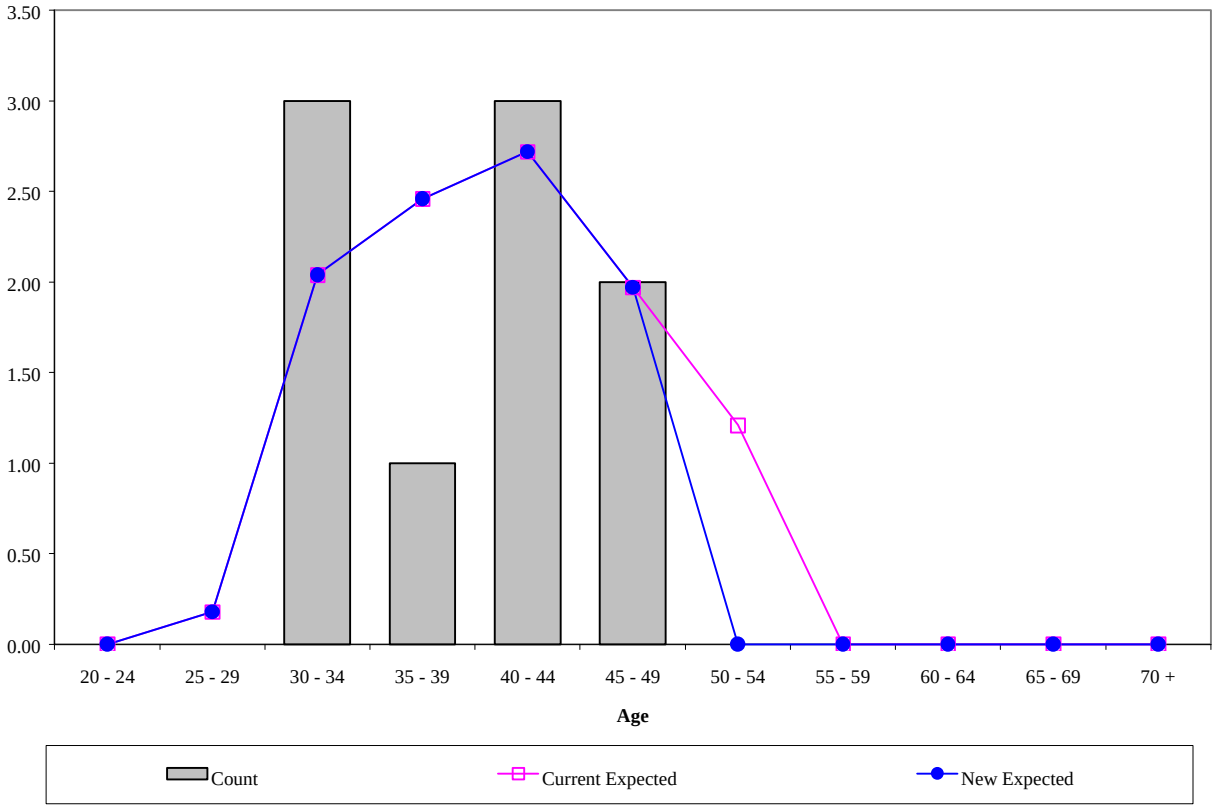
Members with less than 5 Years of Service — There were 36 actual withdrawals versus 26 expected. The new expected is 30.



A. Withdrawal of Member Contributions (continued)

Safety and Probation — All Plans

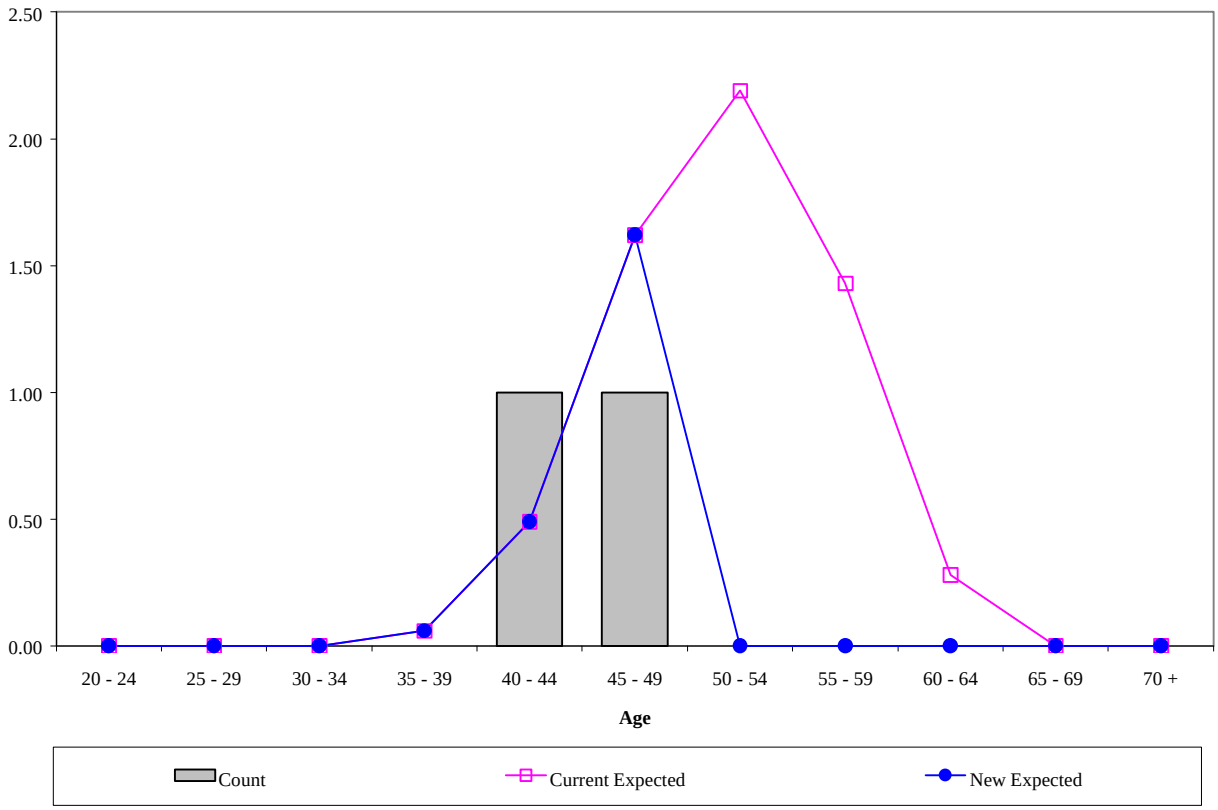
Members with 5 or more Years of Service — There were 9 actual withdrawals versus 11 expected. The new expected is 9.



B. Vested Terminations

General — Male Plan 1

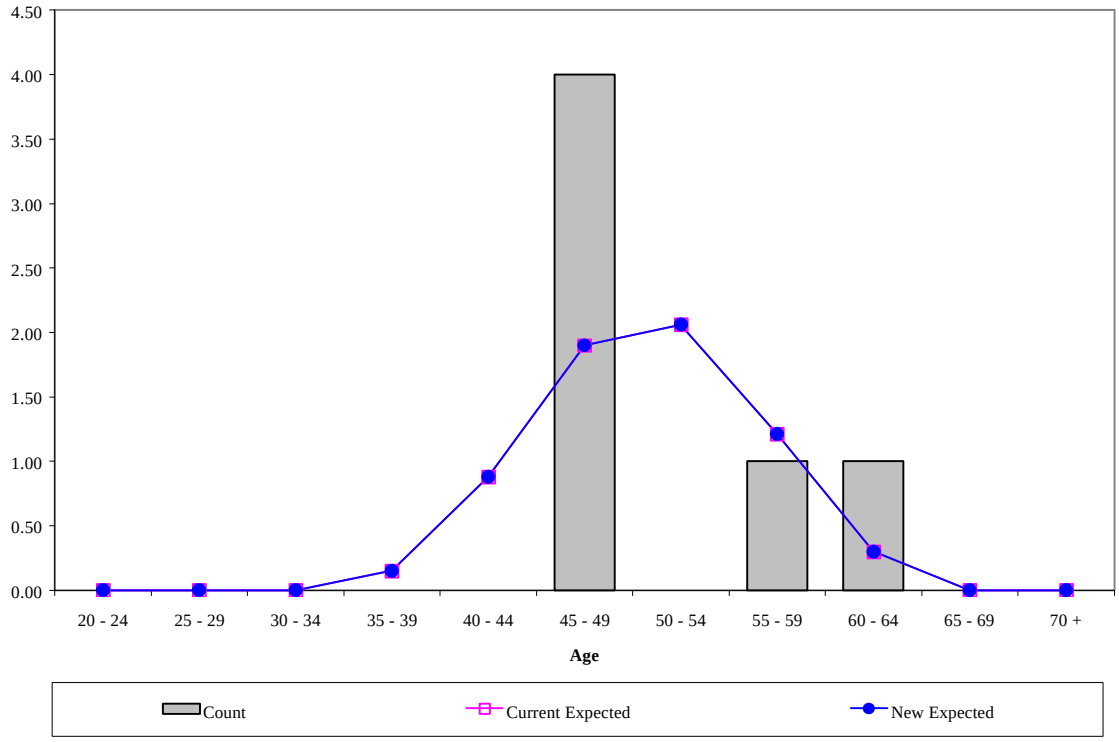
Actual number	=	2
Expected number	=	6
New expected number	=	2



B. Vested Terminations (continued)

General — Female Plan 1

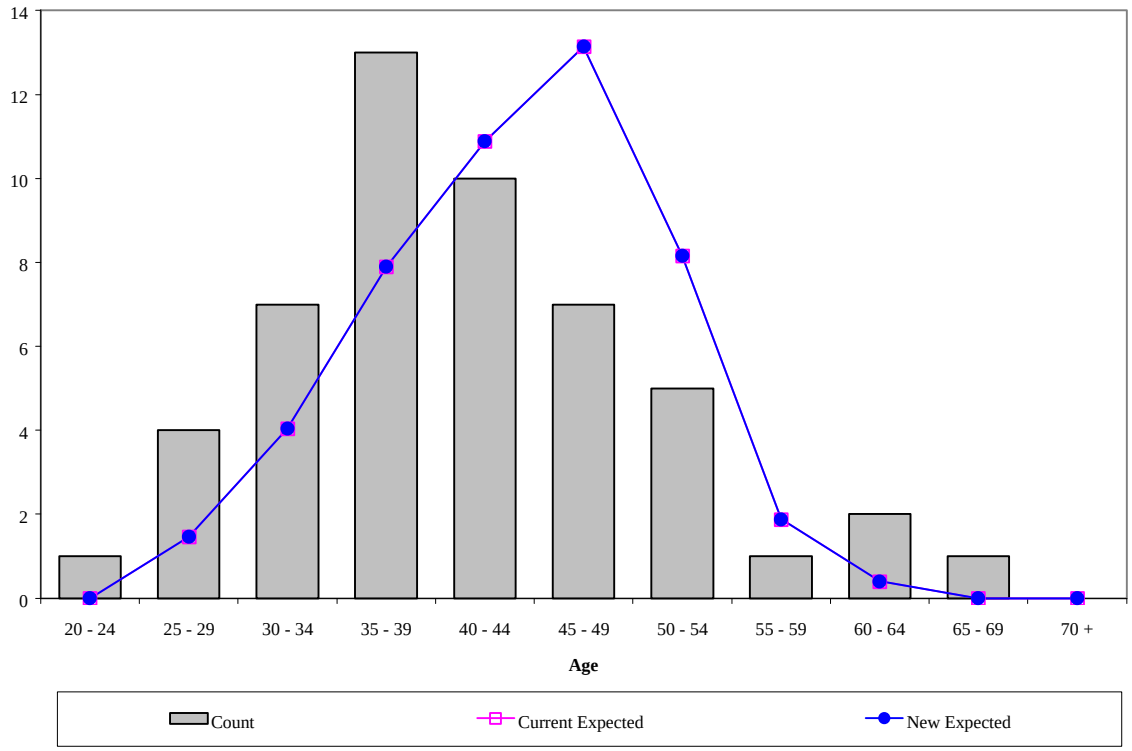
Actual number	=	6
Expected number	=	7
New expected number	=	7



B. Vested Terminations (continued)

General — Male Plan 2 and Plan 4

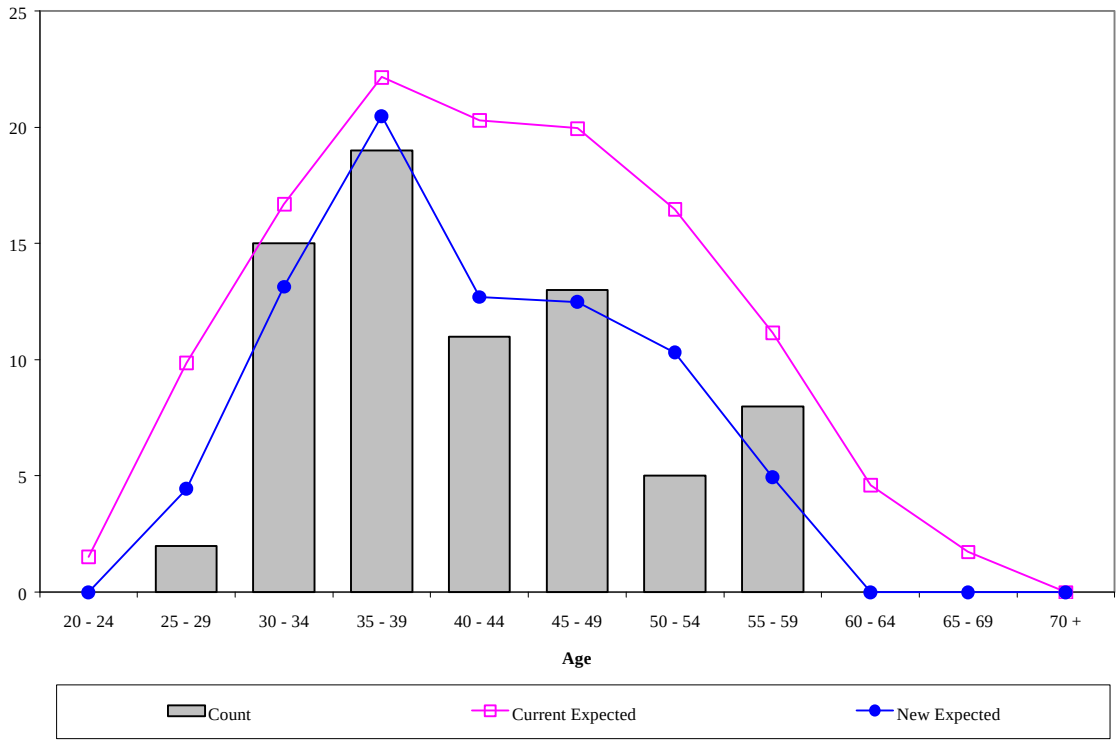
Actual number	=	51
Expected number	=	48
New expected number	=	48



B. Vested Terminations (continued)

General — Female Plan 2 and Plan 4

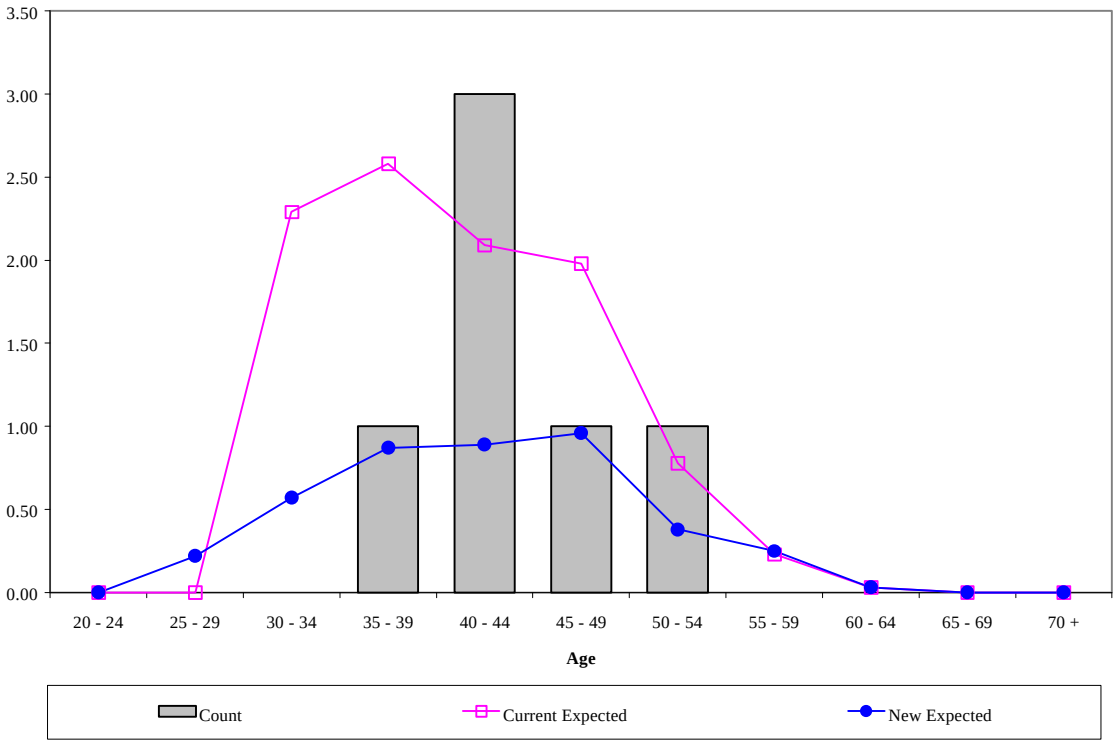
Actual number	=	73
Expected number	=	124
New expected number	=	78



B. Vested Terminations (continued)

General — Male Plan 3

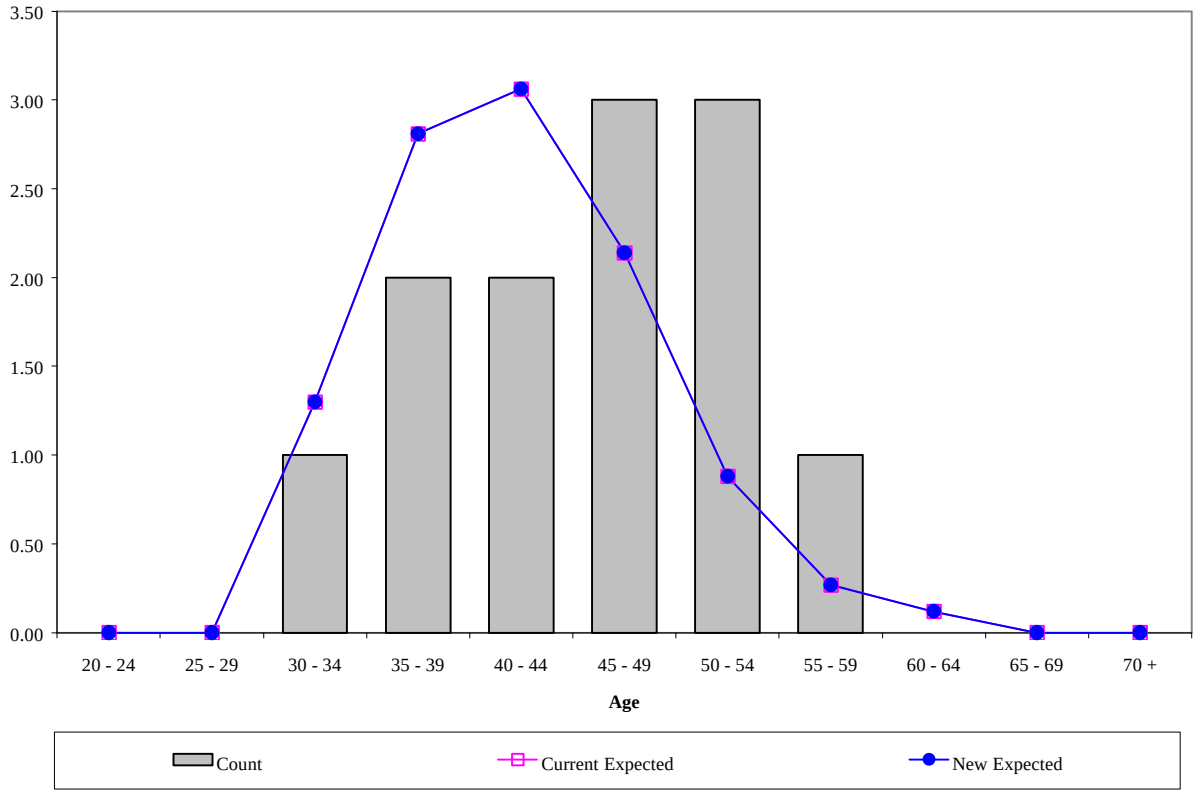
Actual number	=	6
Expected number	=	10
New expected number	=	4



B. Vested Terminations (continued)

General — Female Plan 3

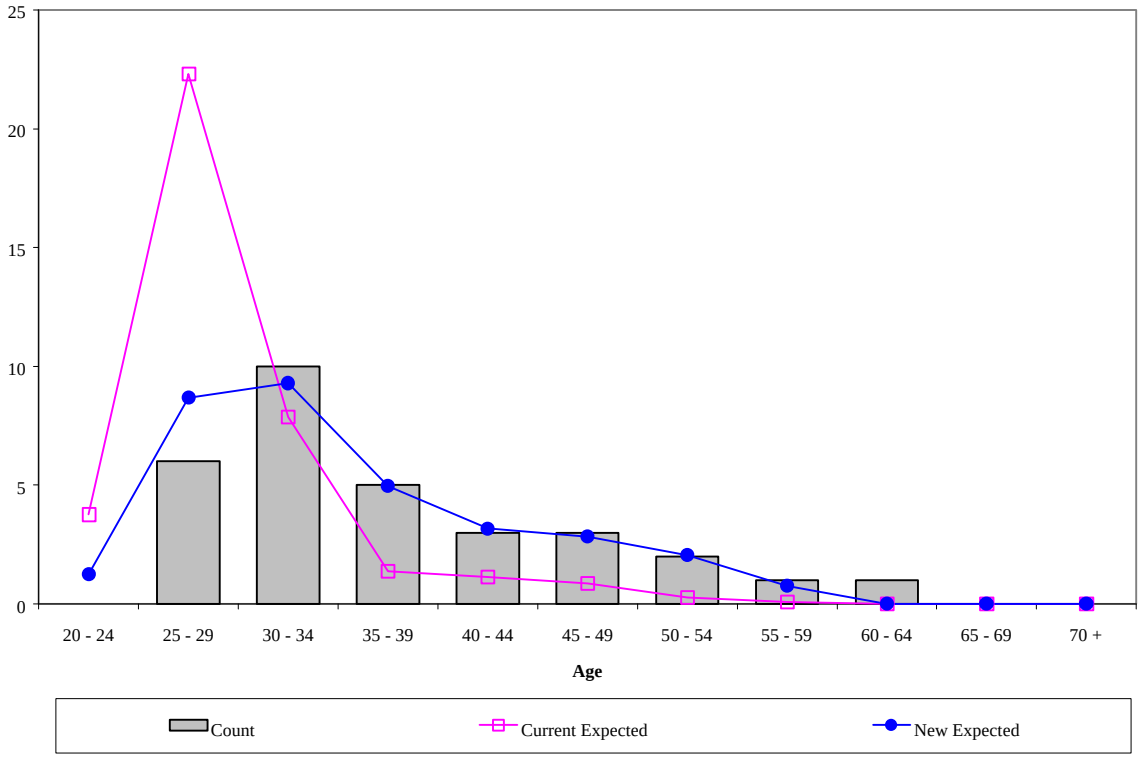
Actual number	=	12
Expected number	=	11
New expected number	=	11



B. Vested Terminations (continued)

Safety and Probation — All Plans

Actual number	=	31
Expected number	=	38
New expected number	=	33



C. Duty Death

Slight changes were made to some, but not all of the duty death assumptions. Following is a tabulation by member category:

	Actual	Expected	New Expected
Male Plan 1	0	0.19	0.17
Female Plan 1	0	0.00	0.00
Male Plan 2 and Plan 4	0	0.46	0.46
Female Plan 2 and Plan 4	0	0.00	0.00
Male Plan 3	0	0.00	0.00
Female Plan 3	0	0.00	0.00
Safety and Probation	0	1.40	1.17

D. Ordinary Death

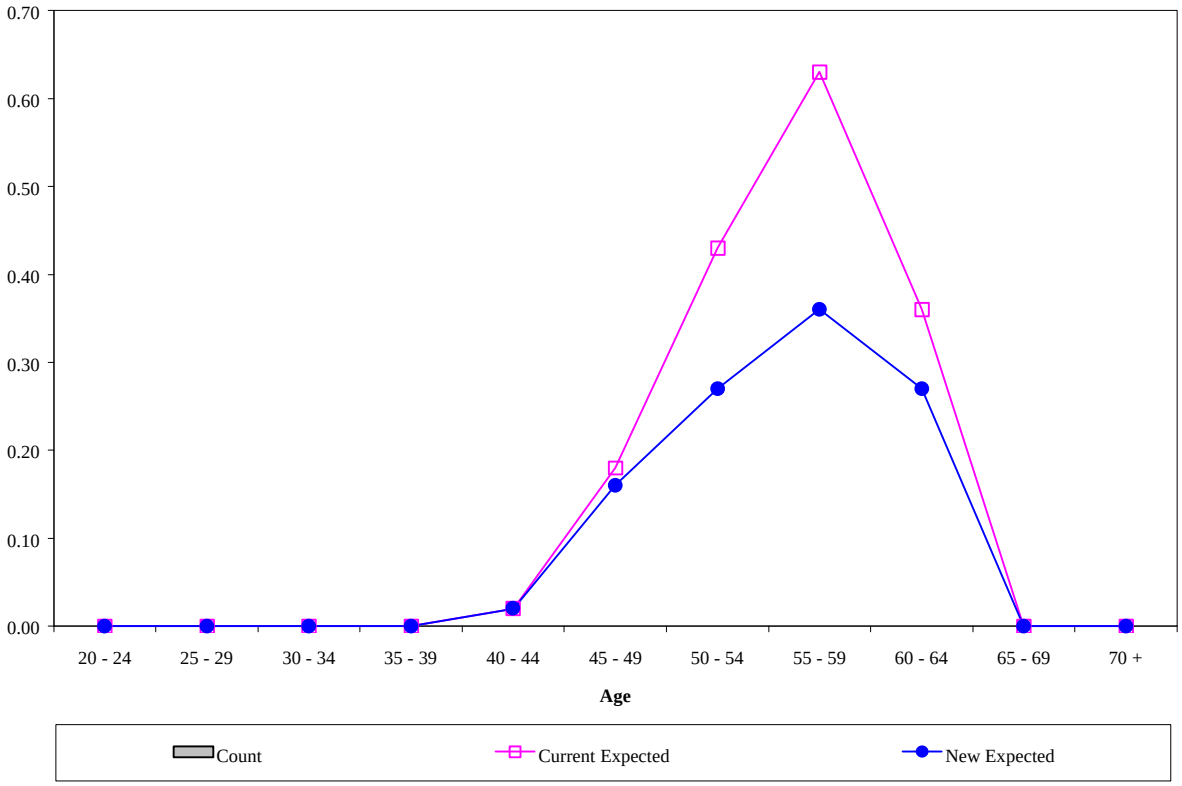
Minor changes were made to the ordinary death assumptions for some member categories. We are now using this mortality table to predict deaths for members whether or not they are eligible for retirement. Following is a tabulation for all member categories:

	Actual	Expected	New Expected
Male Plan 1	1	2.41	1.98
Female Plan 1	1	1.33	1.33
Male Plan 2 and Plan 4	1	4.37	3.87
Female Plan 2 and Plan 4	1	5.15	5.11
Male Plan 3	0	0.43	0.29
Female Plan 3	1	0.72	0.91
Safety and Probation	0	1.60	1.18

E. Duty Disability

General — Male Plan 1

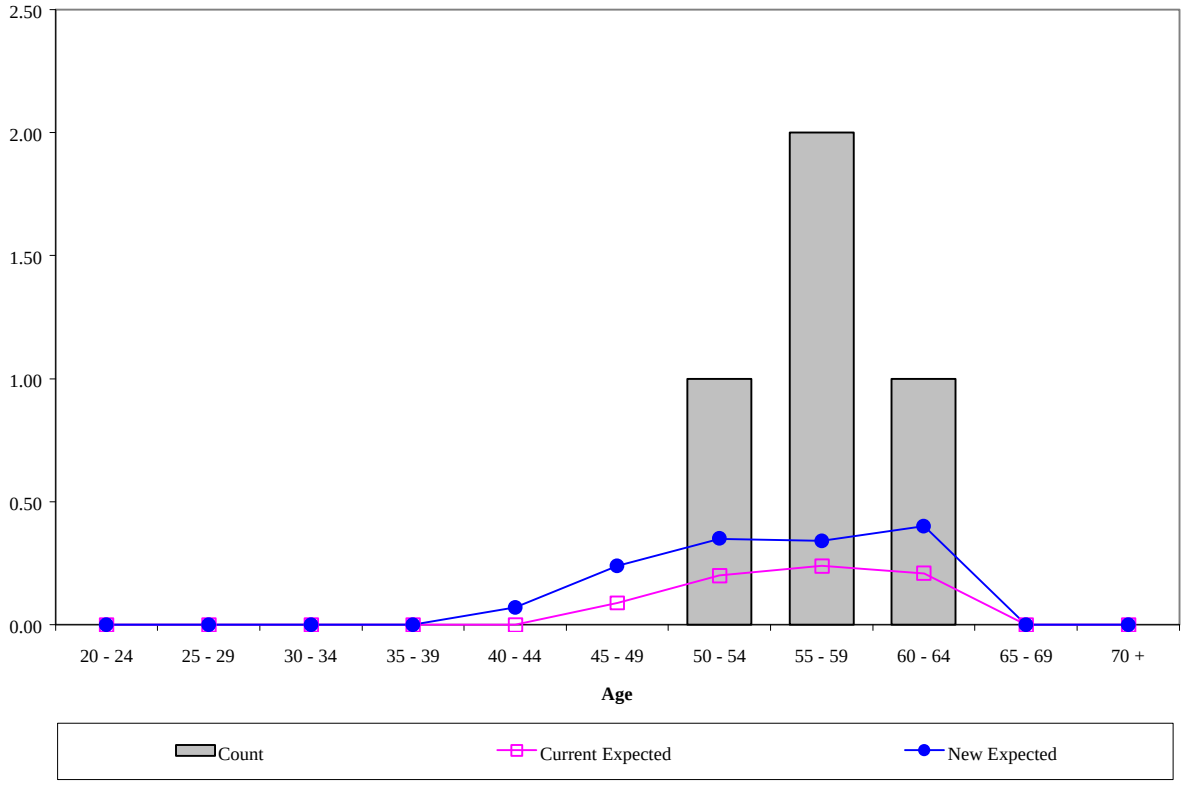
Actual number	=	0
Expected number	=	2
New expected number	=	1



E. Duty Disability (continued)

General — Female Plan 1

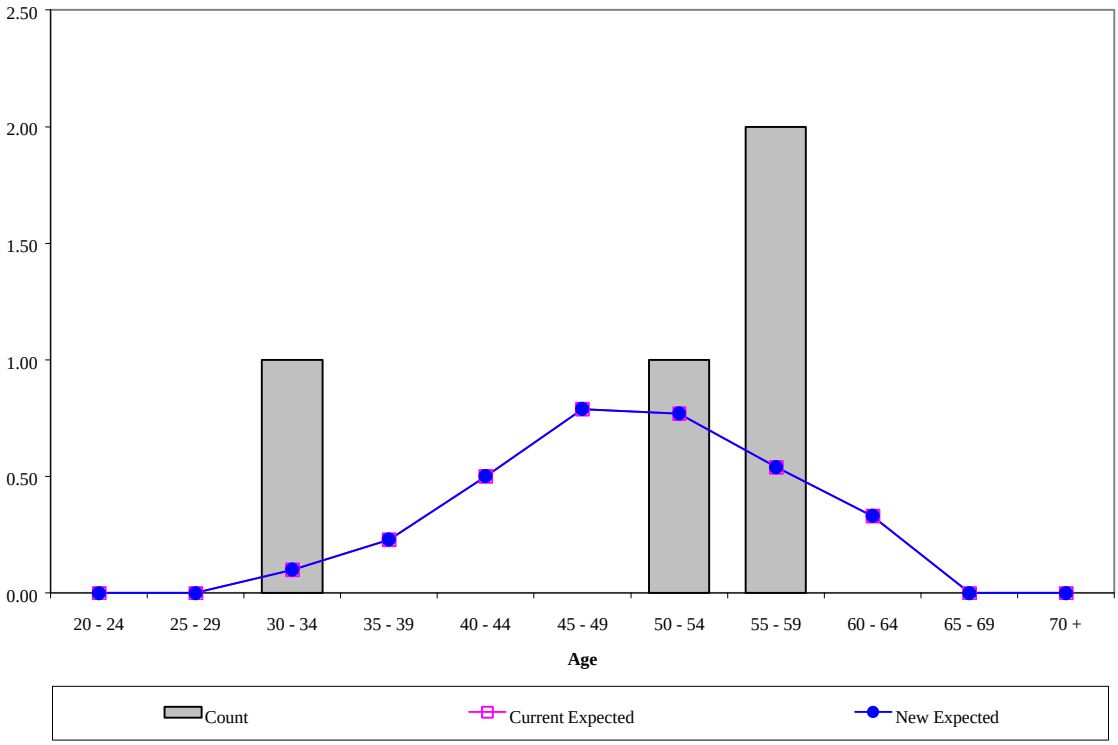
Actual number	=	4
Expected number	=	1
New expected number	=	1



E. Duty Disability (continued)

General — Male Plan 2 and Plan 4

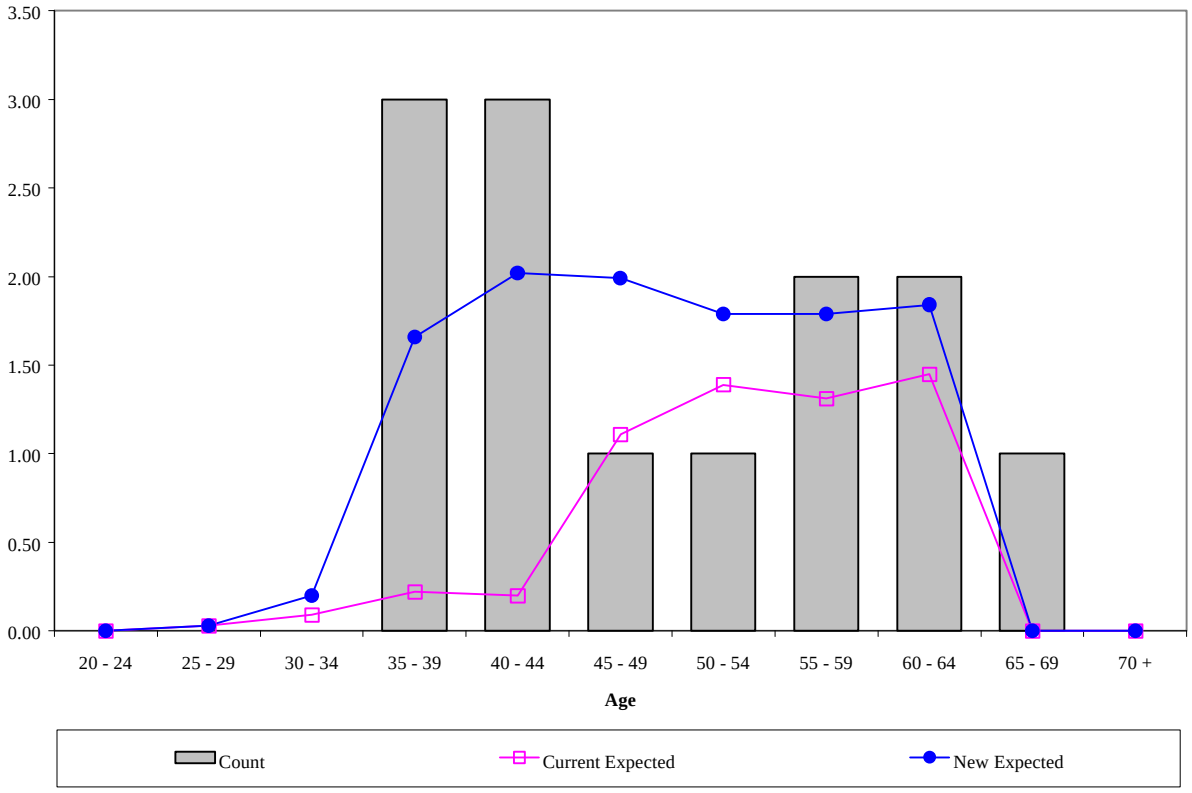
Actual number	=	4
Expected number	=	3
New expected number	=	3



E. Duty Disability (continued)

General — Female Plan 2 and Plan 4

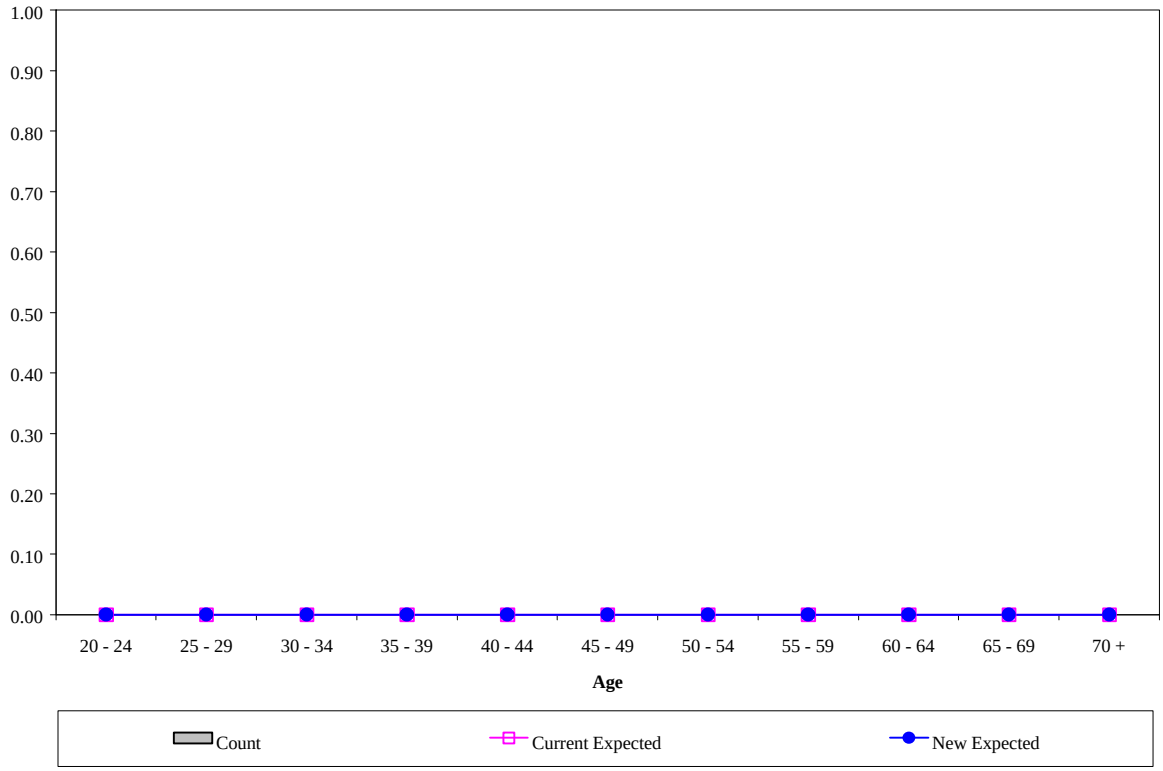
Actual number	=	13
Expected number	=	6
New expected number	=	11



E. Duty Disability (continued)

General — Male Plan 3

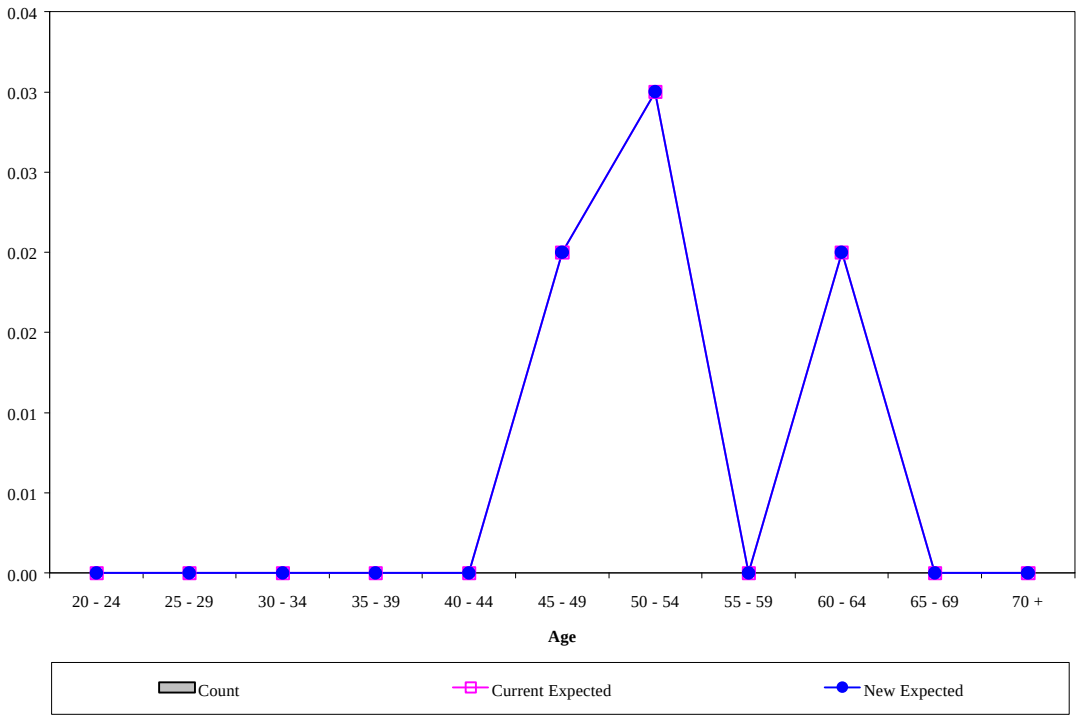
Actual number	=	0
Expected number	=	0
New expected number	=	0



E. Duty Disability (continued)

General — Female Plan 3

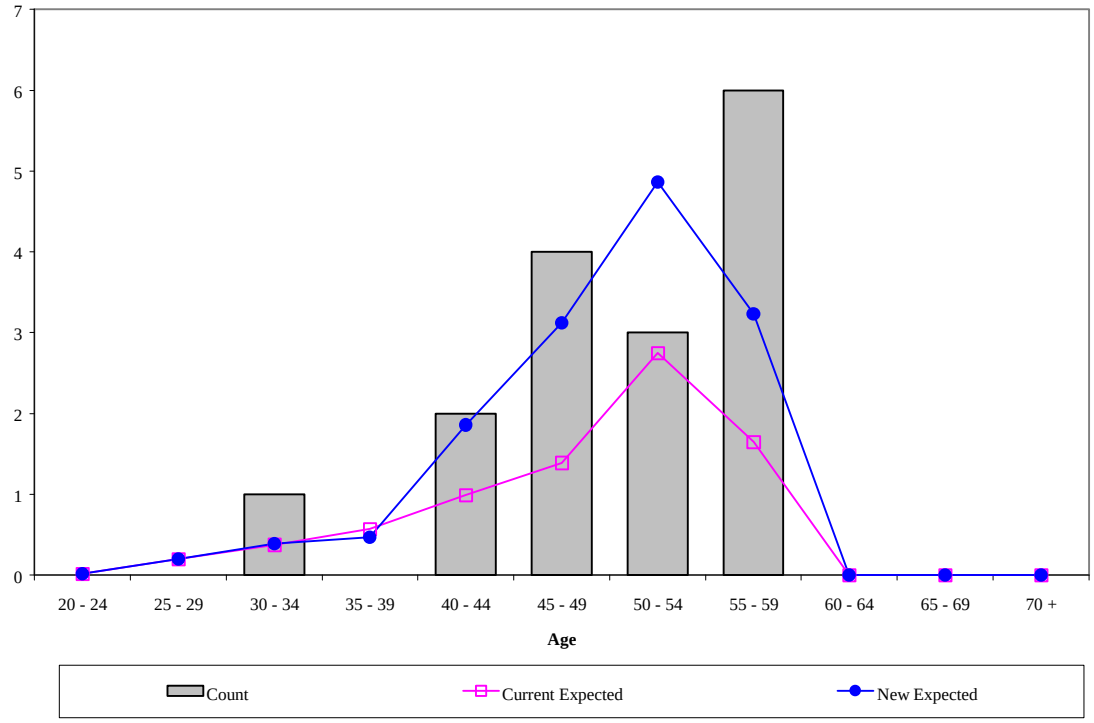
Actual number	=	0
Expected number	=	0.07
New expected number	=	0.07



E. Duty Disability (continued)

Safety and Probation — All Plans

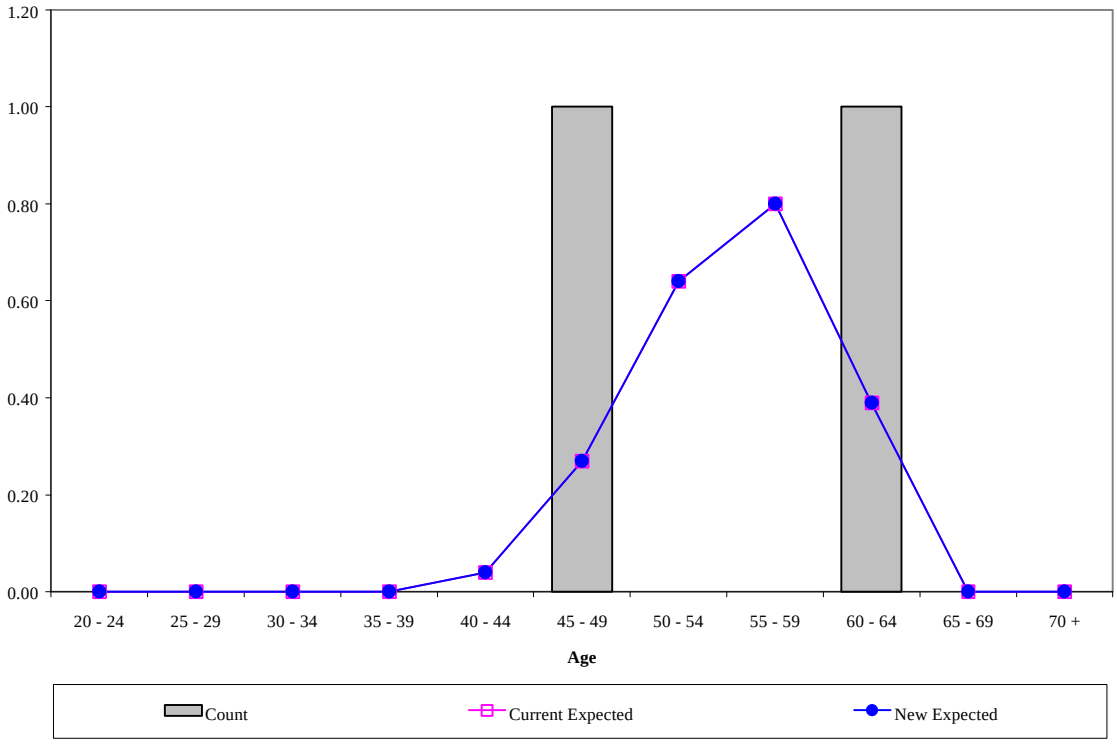
Actual number	=	16
Expected number	=	8
New expected number	=	14



F. Ordinary Disability

General — Male Plan 1

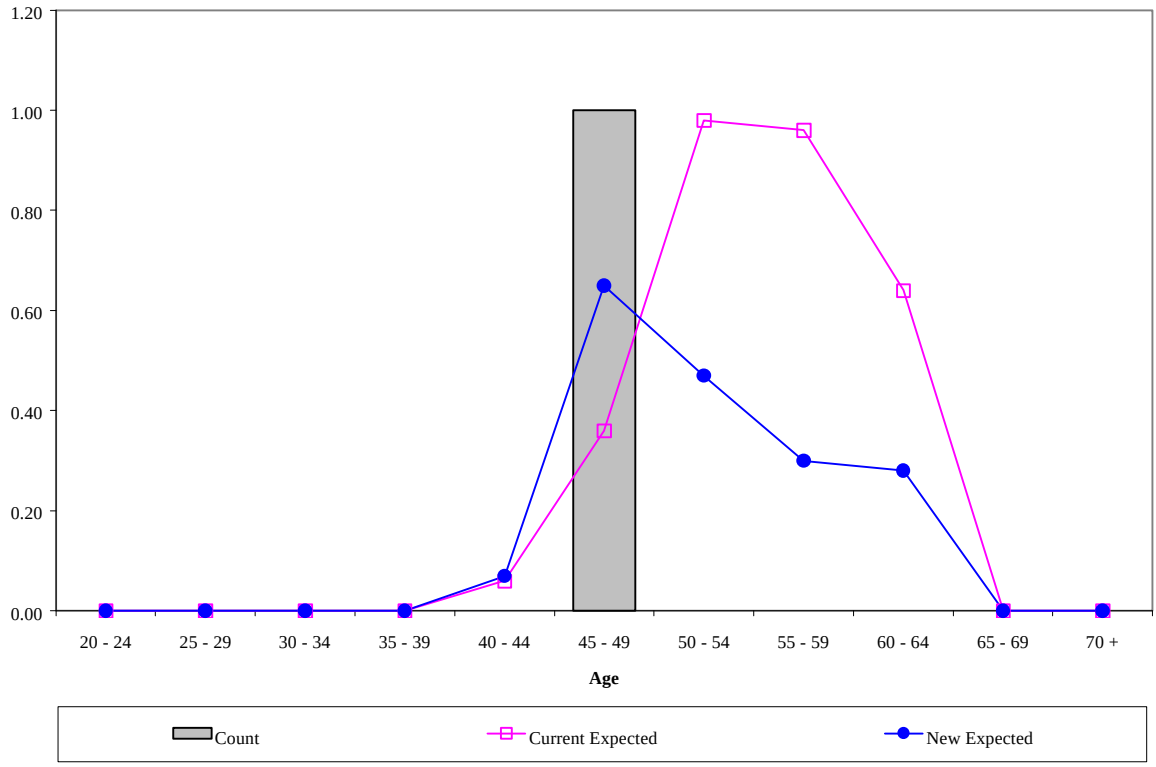
Actual number	=	2
Expected number	=	2
New expected number	=	2



F. Ordinary Disability (continued)

General — Female Plan 1

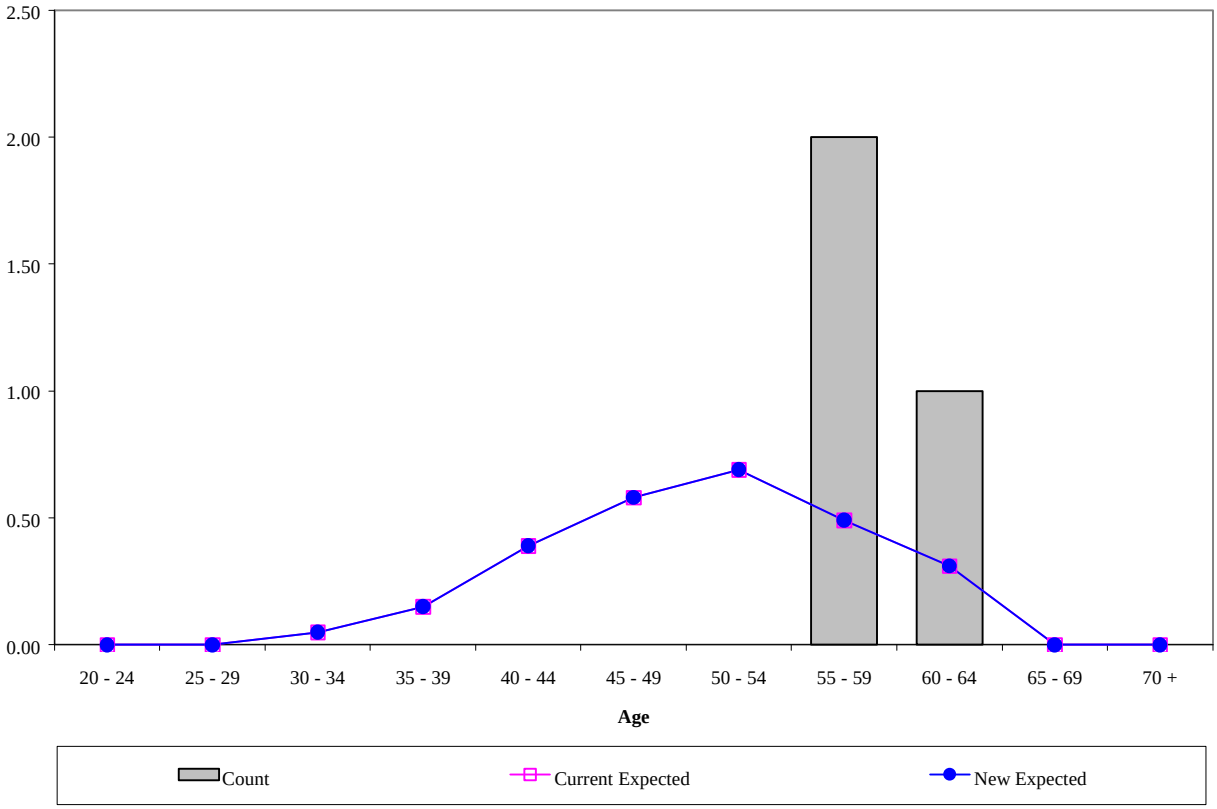
Actual number	=	1
Expected number	=	3
New expected number	=	2



F. Ordinary Disability (continued)

General — Male Plan 2 and Plan 4

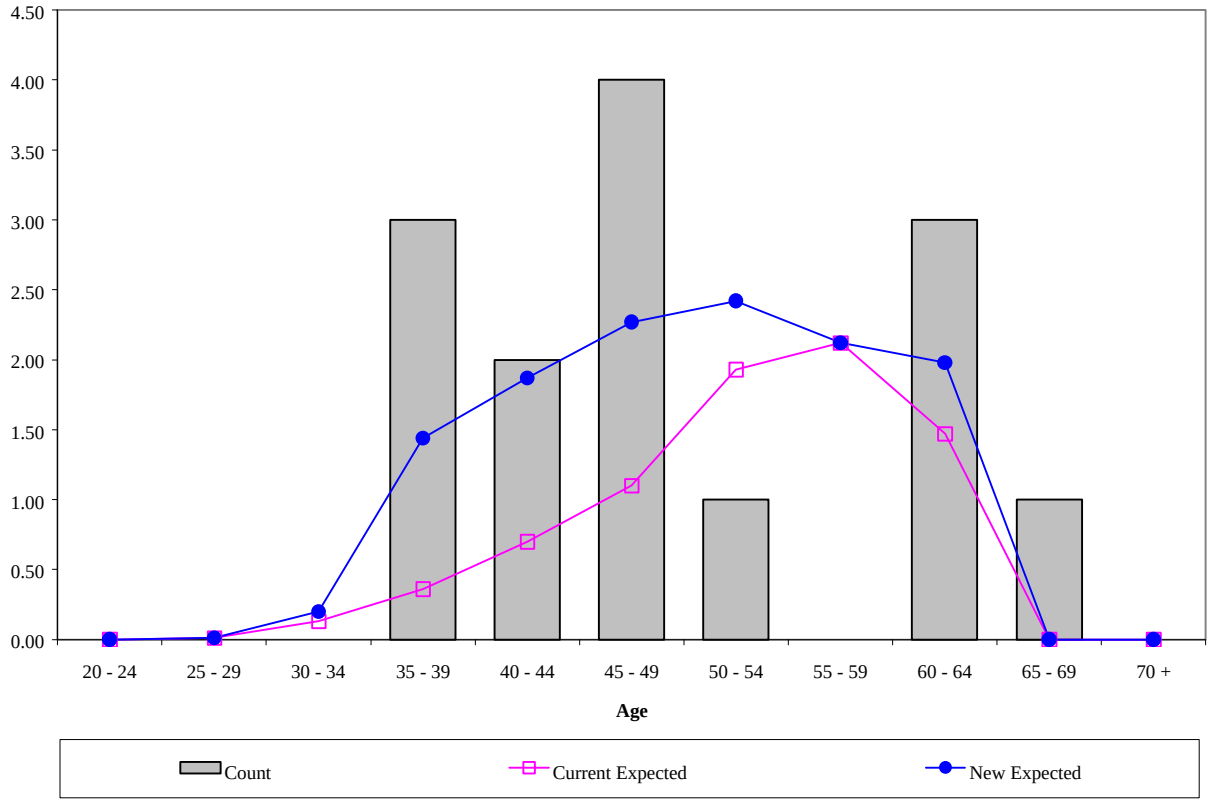
Actual number	=	3
Expected number	=	3
New expected number	=	3



F. Ordinary Disability (continued)

General — Female Plan 2 and Plan 4

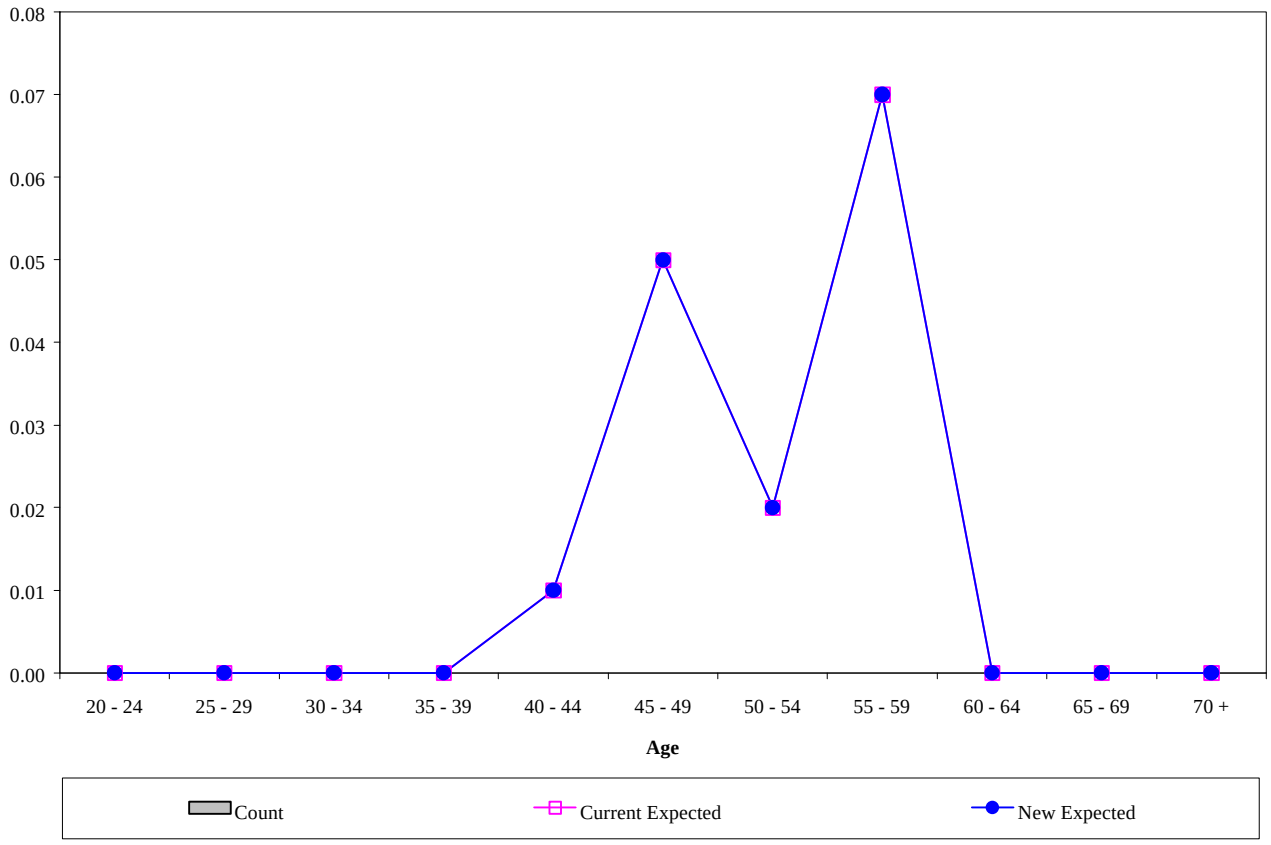
Actual number	=	14
Expected number	=	8
New expected number	=	12



F. Ordinary Disability (continued)

General — Male Plan 3

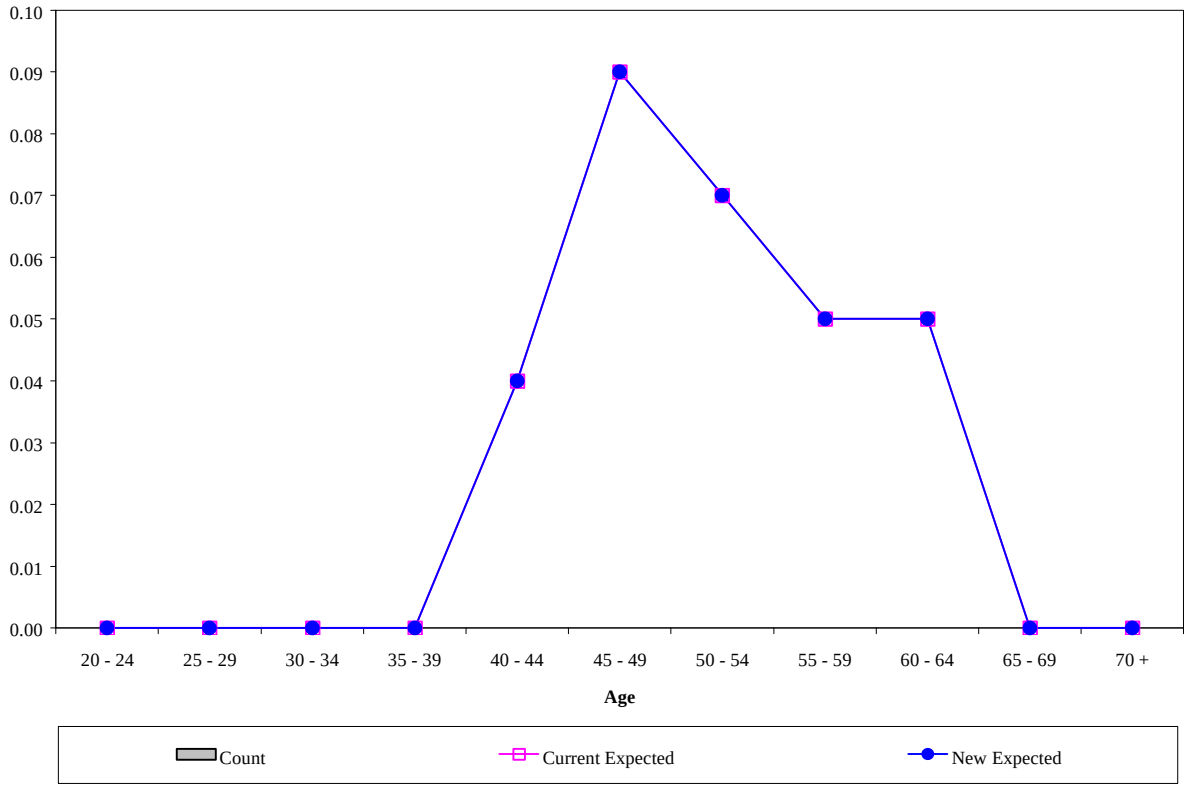
Actual number	=	0
Expected number	=	0.15
New expected number	=	0.15



F. Ordinary Disability (continued)

General — Female Plan 3

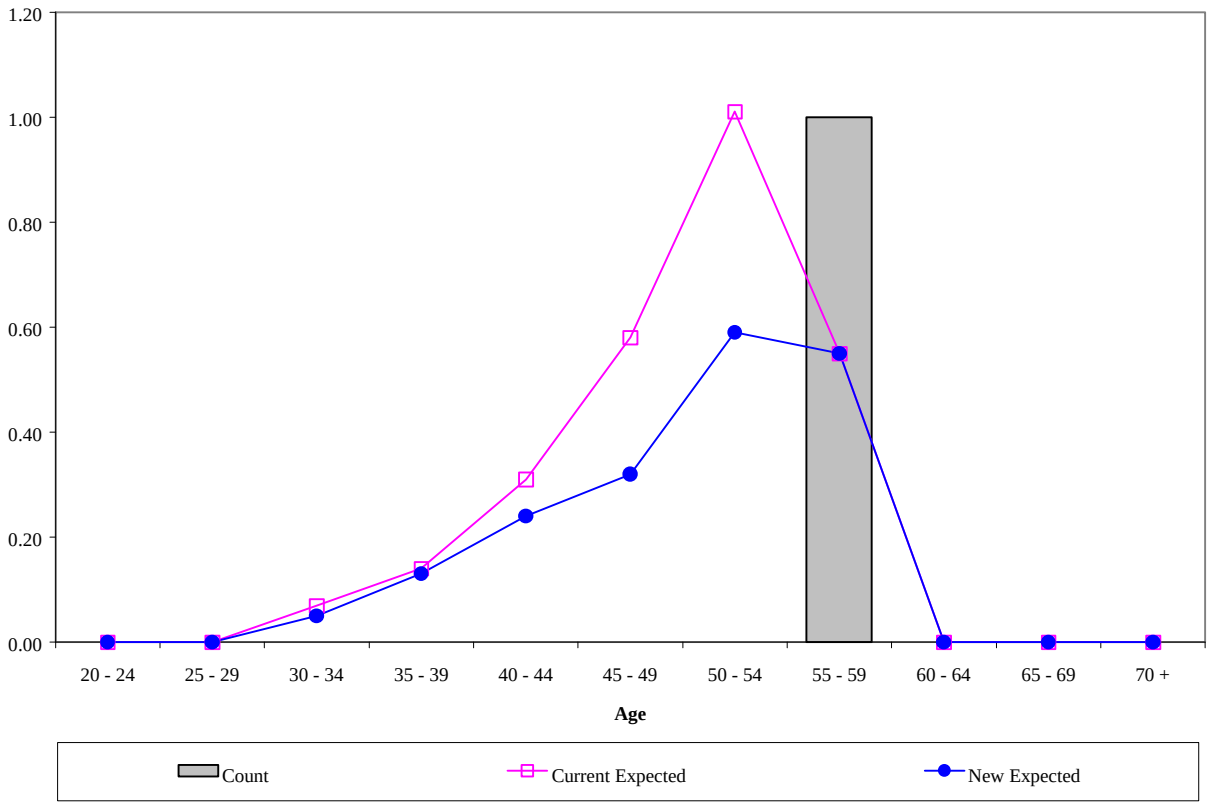
Actual number	=	0
Expected number	=	0.30
New expected number	=	0.30



F. Ordinary Disability (continued)

Safety & Probation — All Plans

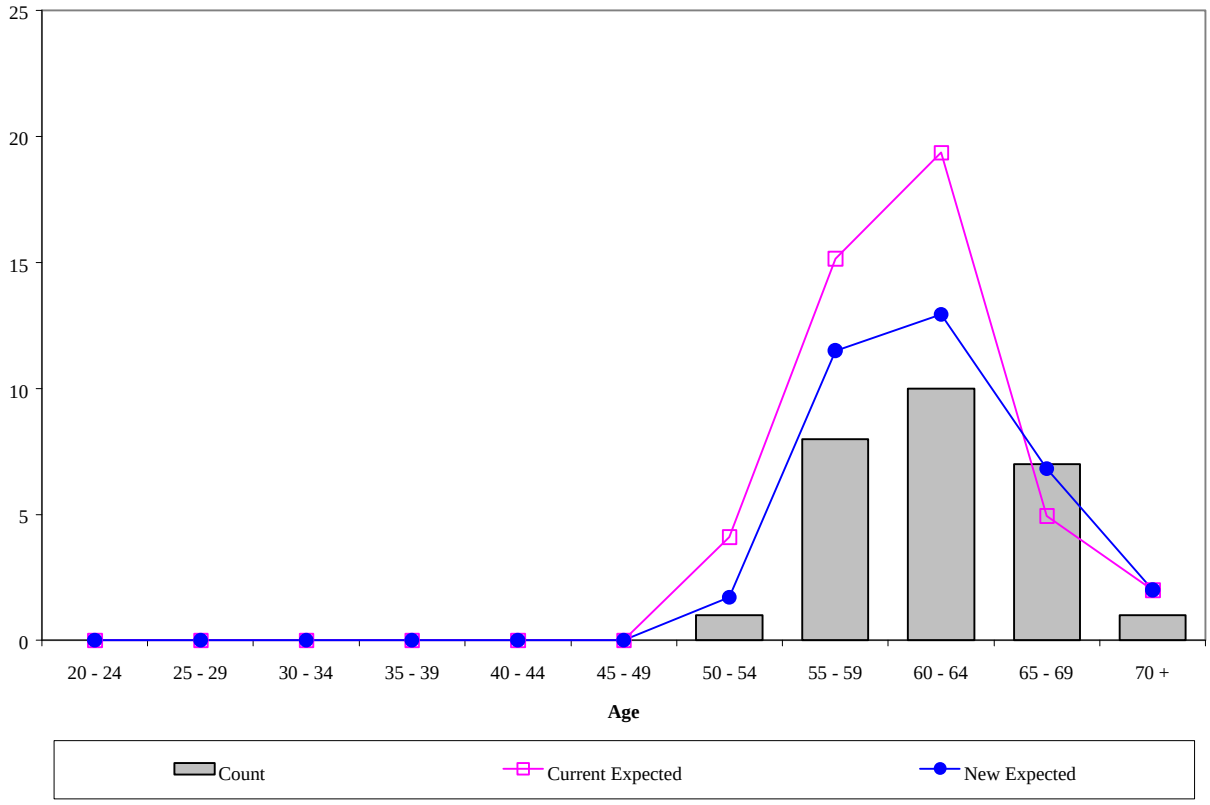
Actual number	=	1
Expected number	=	3
New expected number	=	2



G. Service Retirement

General — Male Plan 1

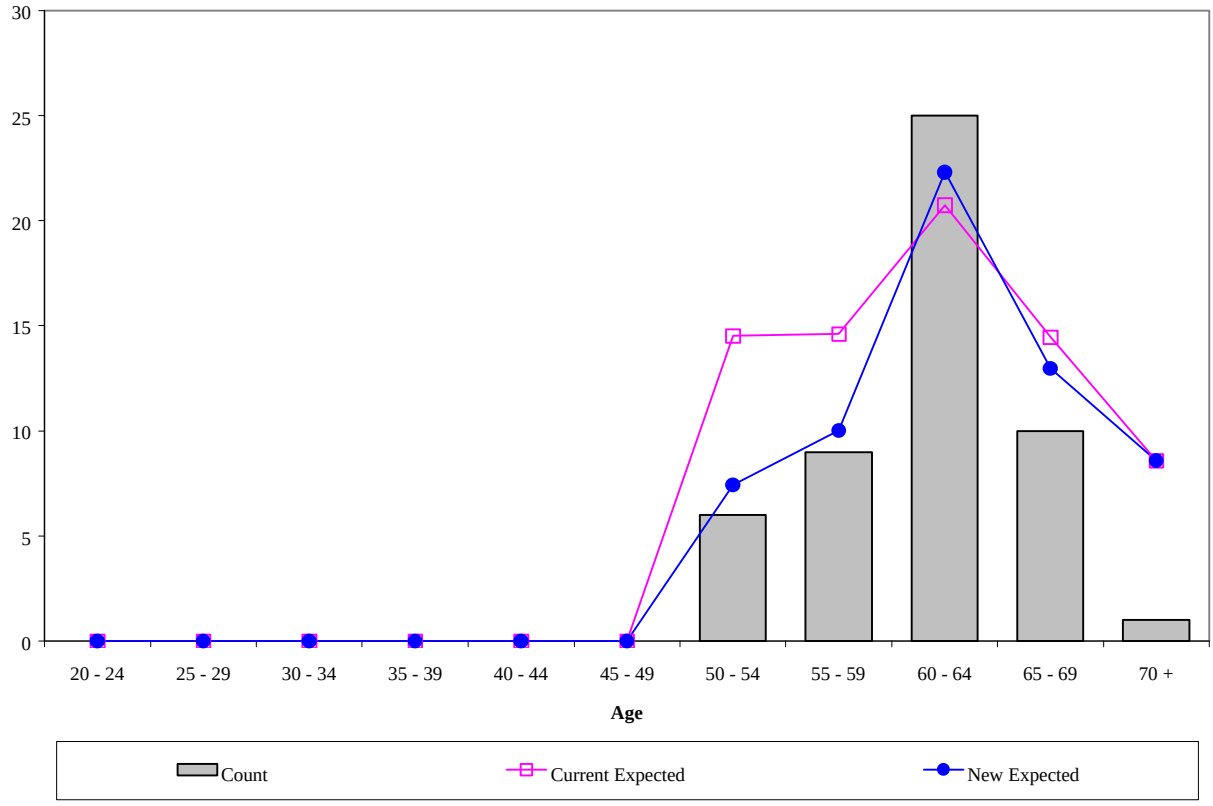
Actual number	=	27
Expected number	=	46
New expected number	=	35



G. Service Retirement (continued)

General — Female Plan 1

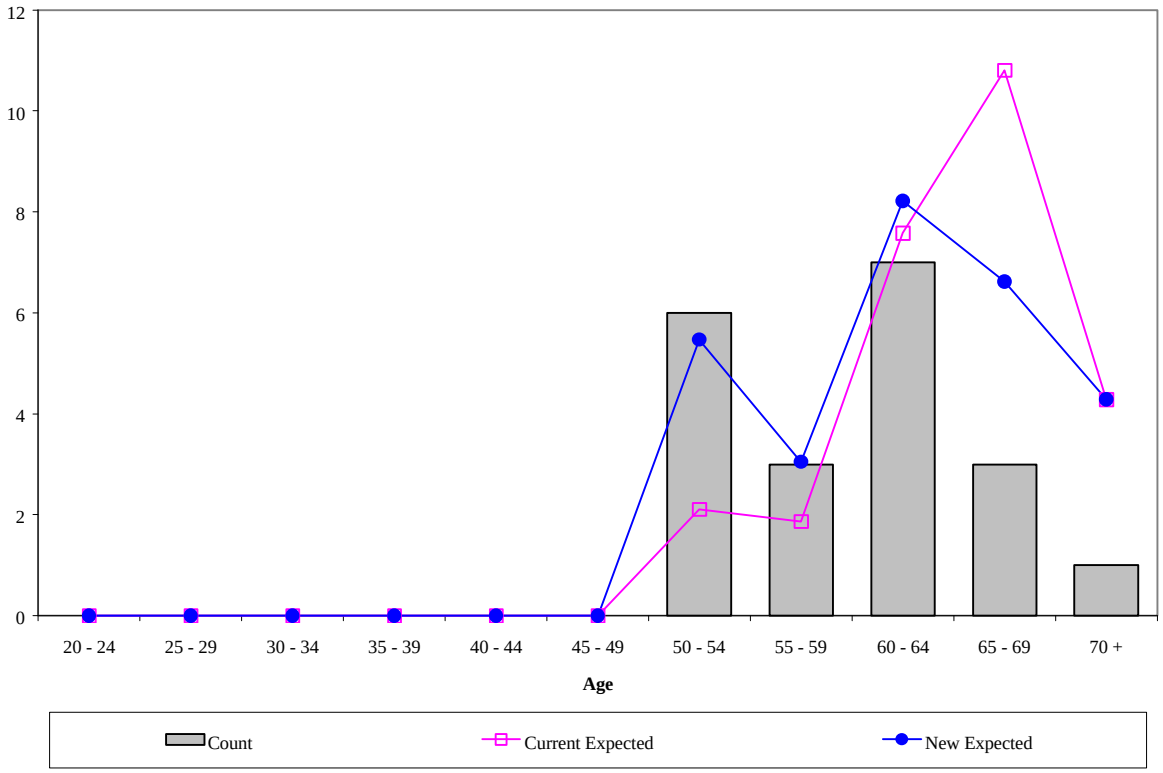
Actual number	=	51
Expected number	=	73
New expected number	=	61



G. Service Retirement (continued)

General — Male Plan 2 and Plan 4

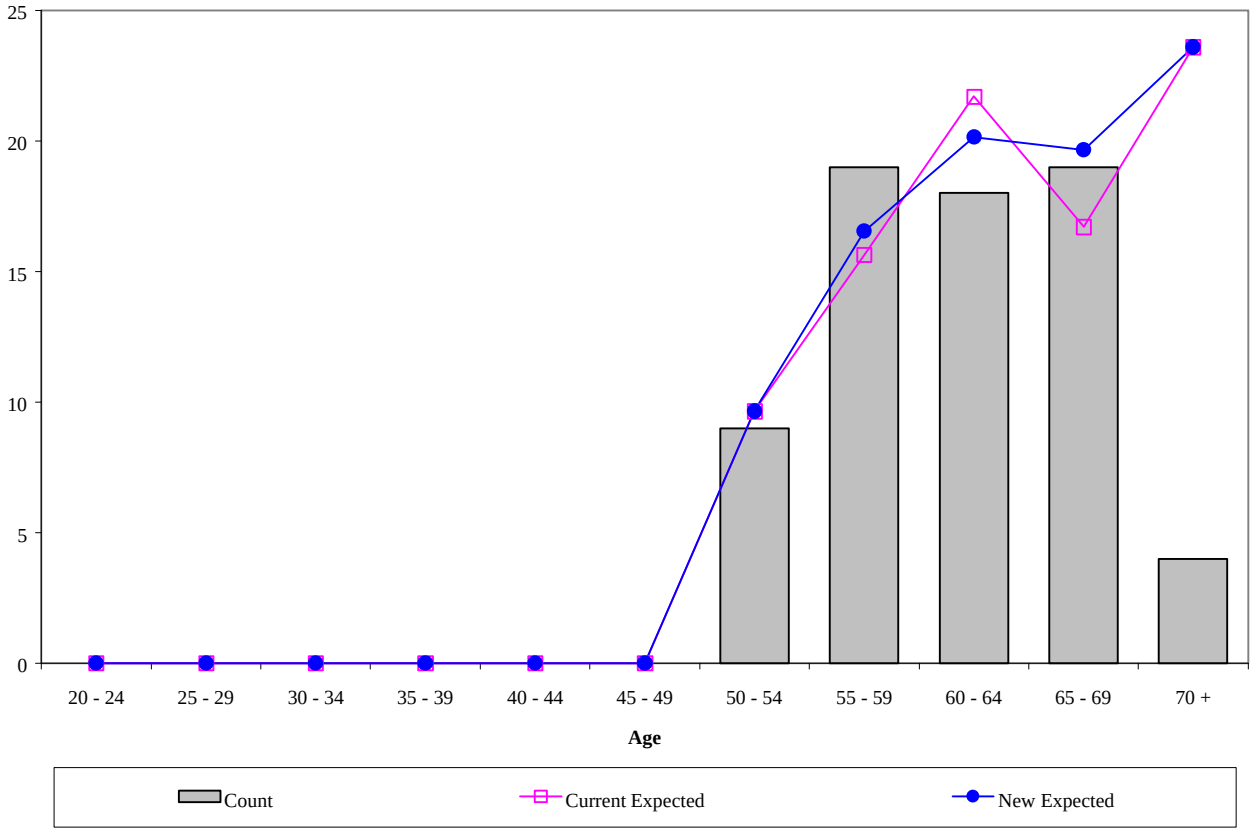
Actual number	=	20
Expected number	=	27
New expected number	=	28



G. Service Retirement (continued)

General — Female Plan 2 and Plan 4

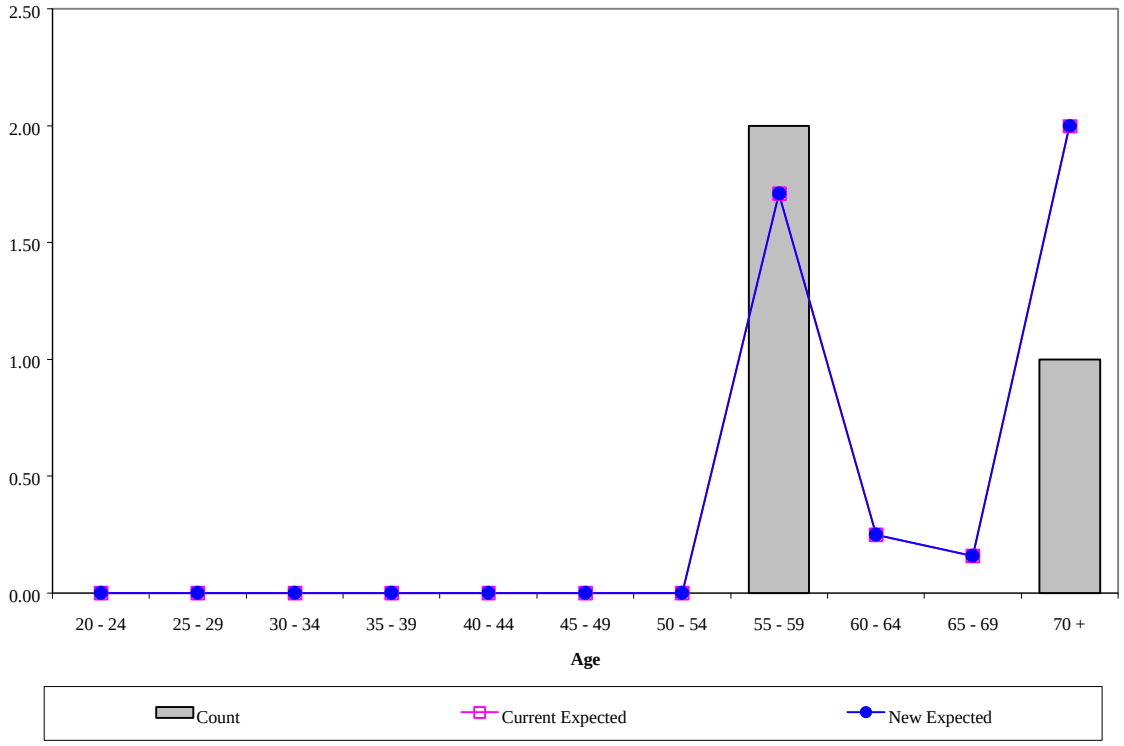
Actual number	=	69
Expected number	=	87
New expected number	=	90



G. Service Retirement (continued)

General — Male Plan 3

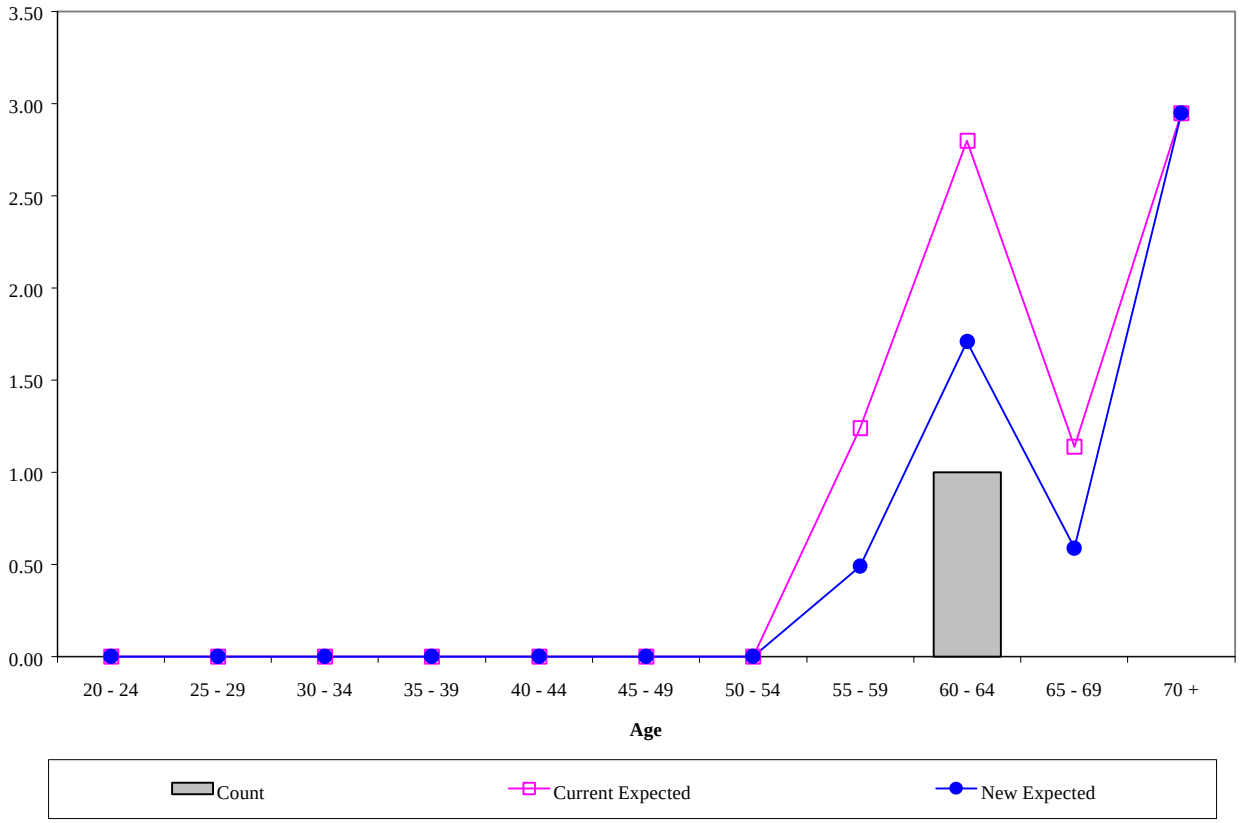
Actual number	=	3
Expected number	=	4
New expected number	=	4



G. Service Retirement (continued)

General — Female Plan 3

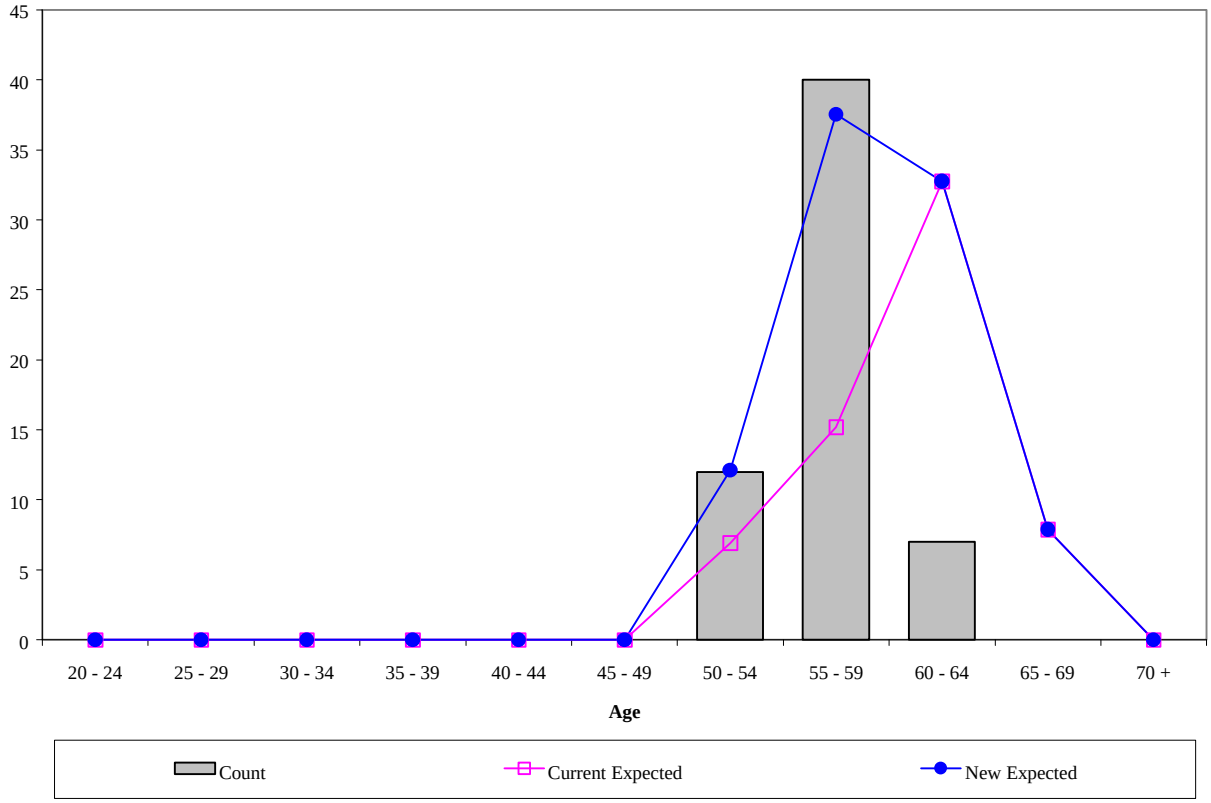
Actual number	=	1
Expected number	=	8
New expected number	=	6



G. Service Retirement (continued)

Safety & Probation — All Plans

Actual number	=	59
Expected number	=	63
New expected number	=	90



H. Percentage of Members Married

The current assumption is that 80% of male members and 50% of female members will be married at the time of death before retirement. Based on our study, we recommend that the 80% and the 50% assumption for males and females be increased to 85%, and 55%, respectively.

The recommended percentages were derived based on marital status for retired members who retired during the last five years. The actual statistic is summarized below.

Members Who Retired During Last 5 Years	Actual Number Married (% of Total)	Actual Number Not Married (% of Total)
Male	84%	16%
Female	53%	47%

I. Percentage of Terminated Members Who Will Be Entitled to a Reciprocal Benefit

We recommend the current assumption that 50% of all terminated members will be entitled to a reciprocal benefit remain unchanged in this valuation.

Our recommendation is based on the proportion of terminated members who terminated during the last three years with a reciprocal benefit, and is summarized below.

	Eligible for Reciprocal Benefit (% of Total)	Not Eligible for Reciprocal Benefit (% of Total)
Terminated Members	50%	50%

J. Summary

In summary, we believe that the experience during the study period and expectations for the future indicate a need to revise assumptions for withdrawal, vested termination, duty disability, ordinary disability and service retirement. We have developed new rate tables for each of these events. Following is a summary of our results.

General Male Members

	7/96 to 6/99 Actual Count	Current Expected	Revised Expected
Withdrawals (0 < = Service < 5)	129.00	158.65	133.29
Withdrawals (Service > = 5)	31.00	50.69	27.66
Total Withdrawals	160.00	209.34	160.95
Terminated Vested	59.00	63.90	54.19
Ordinary Disability	5.00	4.95	4.95
Duty Disability	4.00	4.88	4.34
Ordinary Death	2.00	7.21	6.14
Duty Death	0.00	0.65	0.63
Service Retirement	50.00	76.38	66.75

General Female Members

	7/96 to 6/99 Actual Count	Current Expected	Revised Expected
Withdrawals (0 < = Service < 5)	316.00	287.80	282.89
Withdrawals (Service > = 5)	94.00	113.32	84.60
Total Withdrawals	410.00	401.12	367.49
Terminated Vested	91.00	141.52	95.52
Ordinary Disability	15.00	11.12	14.38
Duty Disability	17.00	6.61	12.79
Ordinary Death	3.00	7.20	7.35
Duty Death	0.00	0.00	0.00
Service Retirement	121.00	168.36	156.65

Safety and Probation Members

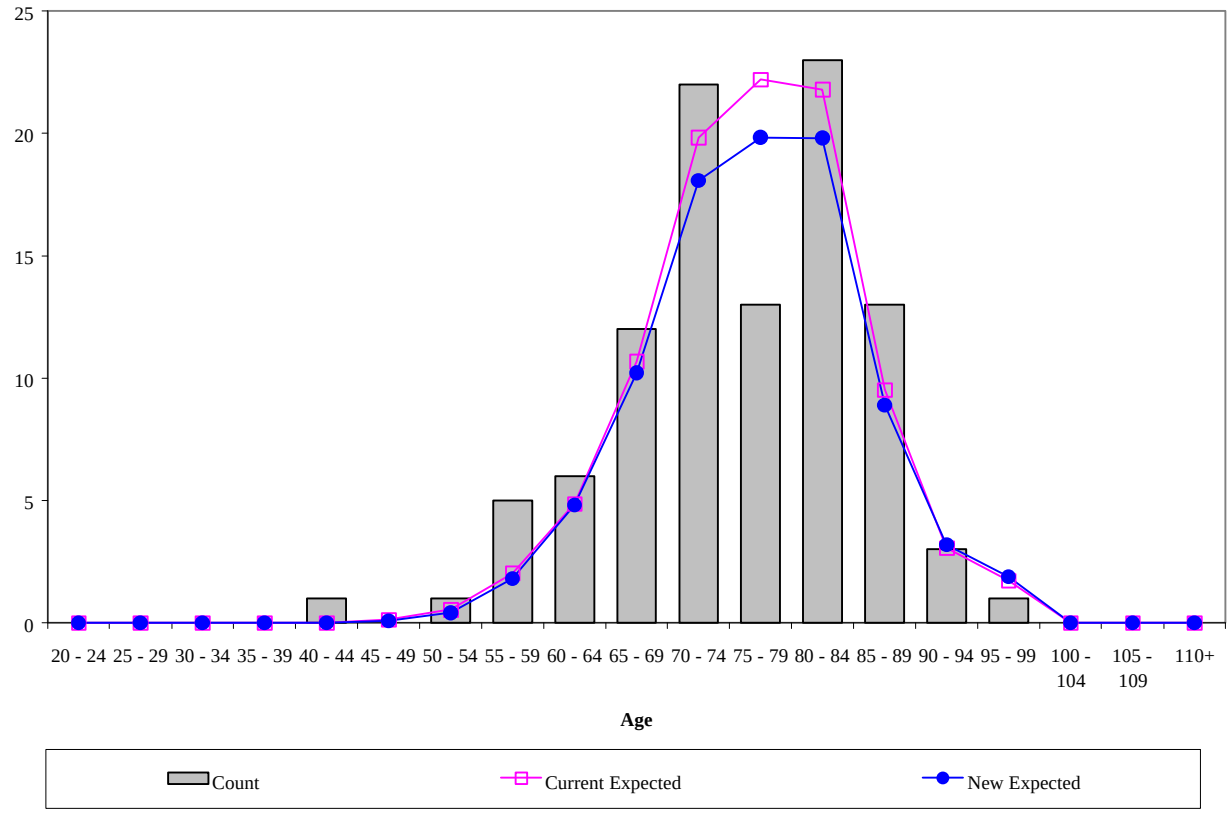
	7/96 to 6/99 Actual Count	Current Expected	Revised Expected
Withdrawals (0 < = Service < 5)	36.00	26.18	30.42
Withdrawals (Service > = 5)	9.00	10.58	9.37
Total Withdrawals	45.00	36.76	39.79
Terminated Vested	31.00	37.68	33.00
Ordinary Disability	1.00	2.66	1.88
Duty Disability	16.00	7.95	14.15
Ordinary Death	0.00	1.60	1.18
Duty Death	0.00	1.40	1.17
Service Retirement	59.00	62.76	90.27

II. Retired Member Noneconomic Assumptions

A. Mortality for Members After Service Retirement and Beneficiary Mortality

Male General Members and Beneficiaries

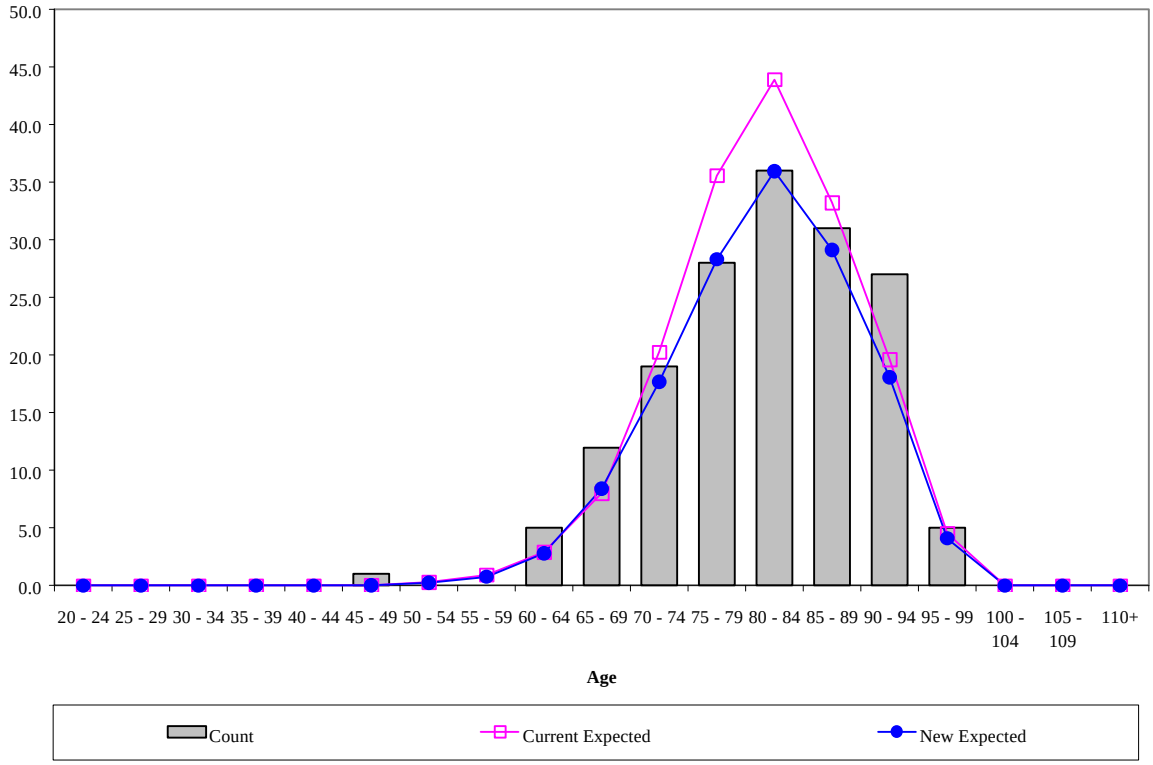
Actual deaths	=	100
Expected deaths	=	96
New expected deaths	=	89



The new mortality assumption is based on the 1994 Group Annuity Mortality Table for male with a 1 year set forward.

Female General Members and Beneficiaries

Actual deaths = 164
Expected deaths = 169
New expected deaths = 145



The new mortality table is based on the 1994 Group Annuity Mortality Table for female with a 1 year set back.

Safety Members

Actual deaths = 8
Expected deaths = 7
New expected deaths = 7

The new mortality table is based on the 1994 Group Annuity Mortality Table for male with a 1 year set forward.

B. Mortality for Members After Disability Retirement

General Members

Actual deaths	=	20
Expected deaths	=	25
New expected deaths	=	23

The new mortality table is based on the 1981 General Disability Table with a 3 year set back.

Safety Members

Actual deaths	=	3
Expected deaths	=	3
New expected deaths	=	3

The new mortality table is based on the 1981 Safety Disability Table with a 1 year set back.

SECTION IV.
ECONOMIC ACTUARIAL ASSUMPTIONS

Economic Actuarial Assumptions

Introduction

Economic actuarial assumptions are of three types:

1. *Inflation* results from increases in prices of goods and services. Inflation drives employee salary increases, retiree cost-of-living increases and the returns that investors demand from securities markets and other investments. For those reasons the inflation assumption underlies all economic actuarial assumptions. This assumption also determines the rate at which payments to the Unfunded Actuarial Accrued Liability (or credits from the Overfunded Actuarial Accrued Liability) increase each year.

2. *Investment Return* has a powerful influence on a retirement system's cost to employers and members. The more money earned from investments, the less needs to be contributed. Assuming a typical new member's pension is funded over a 25 year career and that employee receives pension checks for 20 years after retirement, a 1% higher rate of investment return will reduce required contributions by about 20% (all else remaining equal). For this reason, setting the investment return assumption is an important decision.

3. *Salary Increases* have a significant impact on the benefit members will receive at retirement. This assumption contains two components – cost-of-living (inflation) increases plus pay raises that members receive as a result of promotions and step increases.

Setting Economic Assumptions

The Actuarial Standards Board has issued a practice standard entitled "Selection of Economic Assumptions for Measuring Pension Obligations". This Actuarial Standard of Practice (SOP) is designed to provide pension actuaries guidance in the setting of economic assumptions. Section 3.4 of the SOP provides the following general steps for selecting economic assumptions for a specific measurement:

1. Identify components, if any, of each assumption and evaluate relevant data;

2. Develop a best-estimate range for each economic assumption required for the measurement, reflecting appropriate measurement-specific factors; and

3. Further evaluate measurement-specific factors and select a specific point within the best-estimate range.

After completing these steps for each assumption, the actuary should review the set of economic assumptions for reasonableness and consistency and make any needed changes.

The relevant data referred to in step 1 should consist of appropriate historical and current economic data. In Section 3.3, the SOP recommends that the actuary consider recent economic data, "however, the actuary should not give undue weight to recent experience."

The remainder of this Section provides the analytical development of each of the three economic assumptions.

Inflation

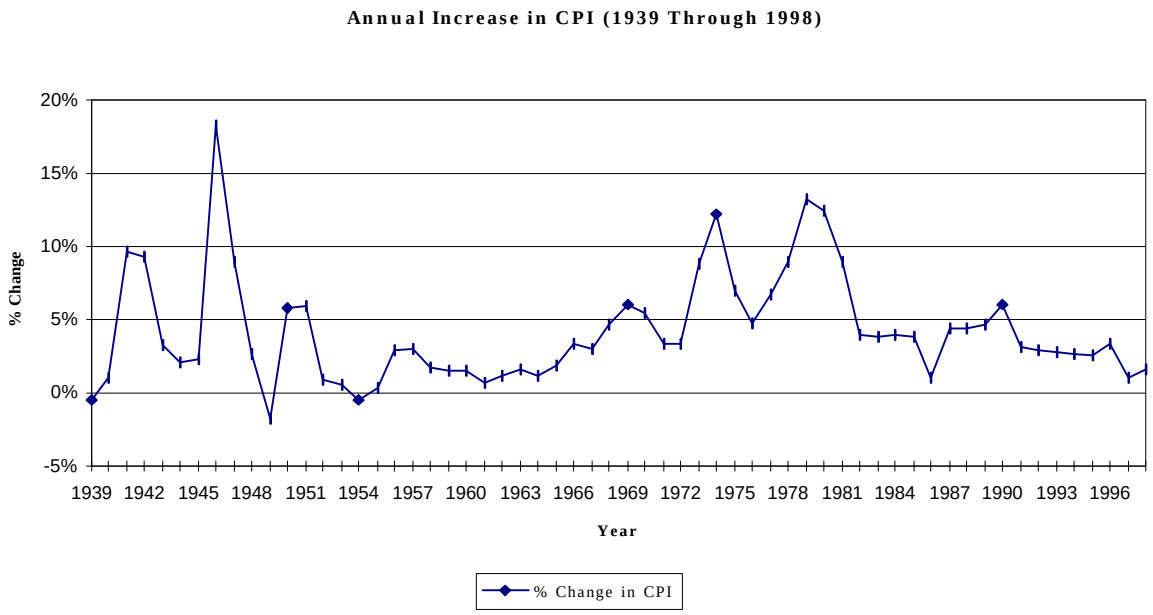
Recommendation

We recommend that the Board reduce the current inflation rate of 4.50% to 4.25%. The analysis supporting our recommendation follows.

Setting the Assumption

The rate of inflation has varied significantly over time. The following chart shows the annual increases in the Consumer Price Index over the last 60 years:

Chart 1



The actuarial SOP specifies the following data to be considered in setting the inflation assumption (Section 3.5.1):

- Consumer Price Indices (CPI)
- The Gross Domestic Product Implicit Price Deflator (IPD)
- Forecasts of inflation
- Yields on government securities of various maturities

Because the CPI and IPD have not differed significantly over the last 60 years, we will focus our analysis on the CPI.

CPI

Table 1 provides the annualized increases in the Consumer Price Index for recent and extended periods over the last 60 years.

Table 1
History of CPI Increases
Expressed as an Annualized Average (1)

Number of Years Ending 12/31/98:	CPI
10	3.06%
20	4.48%
30	5.21%
40	4.41%
50	3.90%
60	4.17%

(1) Geometric average. CPI data is based upon US All City Average, CPI-U for years after 1979.

With the exception of the last 30 year period, which is heavily influenced by the high inflationary period between 1972 and 1981, inflation has typically ranged between about 3.00% and 4.50%. On the other hand, the last ten years have produced inflation at the low end of this range. After considering both long-term historical and recent trends, we have concluded that an appropriate range for long-term inflation is 3.50% to 4.50%.

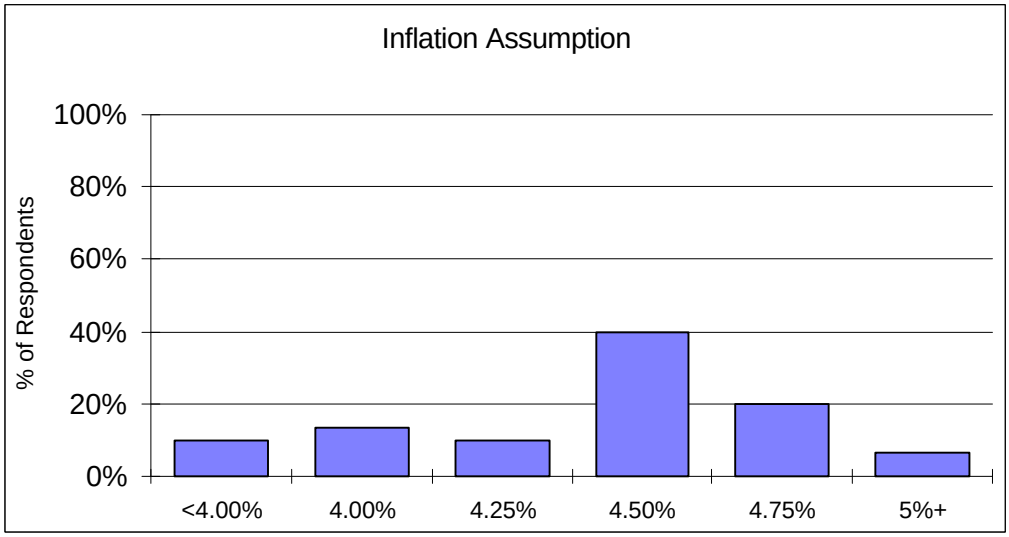
Forecasts of Inflation

We believe it is valuable to examine inflation assumptions adopted by similarly situated public retirement systems as an indicator of their long–term inflation expectations. Charts 2 and 3 provide the inflation assumptions used by the 30 California public retirement systems who responded to

Mercer's 1998 survey of economic actuarial assumptions, and the 18 1937 Act respondents, respectively.

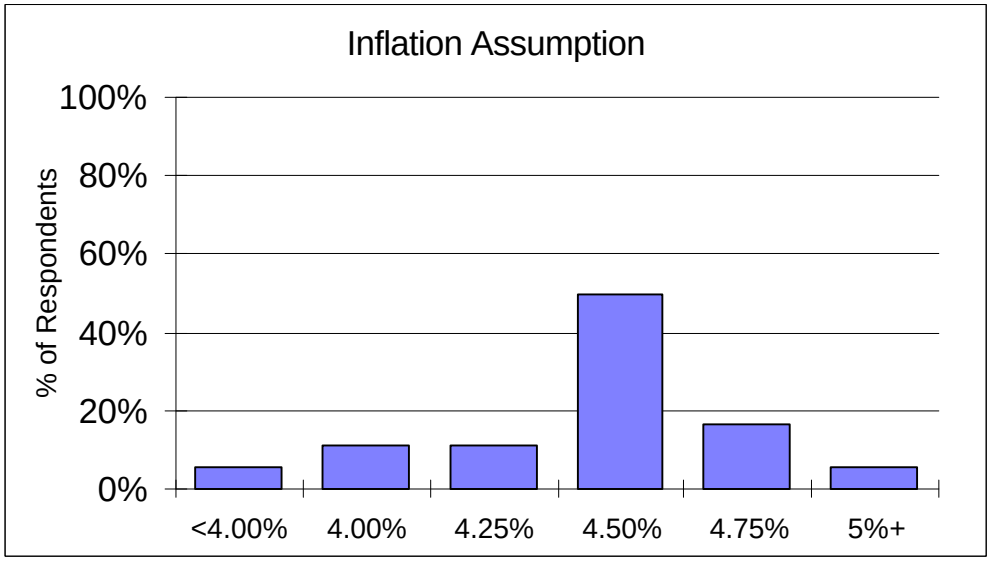
The average inflation rates from the survey for both of these groups was about 4.4% in 1998, although we are aware that many systems reduced their inflation rates in 1999.

Chart 2 - Comparisons of Economic Actuarial Assumptions
All Respondents
(based on 30 responses)



Average	4.39%
25th Percentile	4.25%
50th Percentile	4.50%
75th Percentile	4.69%

Chart 3 - Comparison of Economic Actuarial Assumptions
37 Act County Respondents
(based on 18 responses)



Average	4.43%
25th Percentile	4.31%
50th Percentile	4.50%

75th Percentile	4.50%

Treasury Yield Curves

Inflation expectations implicit in Treasury yield curves can vary widely over a relatively short period of time. As a result, we have not included a treasury yield analysis as part of our inflation assumption development.

Summary

We conclude from our analysis that:

1. Historical inflation data indicates an assumption range of 3.5% to 4.5%; and

2. Inflation forecasts inherent in inflation assumptions adopted by similarly situated retirement systems were about 4.40% in 1998 and have been dropping since.

Based on this data, we believe a 4.25% long-term inflation assumption is reasonable.

Investment Return

Recommendation

Although the 8.00% annual investment return assumption is reasonable, we recommend that the Board consider increasing annual investment return assumption to 8.25% in light of the cost impact of other changes in actuarial assumptions recommended in this experience study. The analysis supporting our recommendation follows.

Setting the Assumption

The actuarial SOP specifies that in addition to historical plan performance, the following data may be considered in setting the investment return assumption (Section 3.6.1):

- Forecasts of inflation
- Historical risk-free returns
- Real return or risk premium for each asset class
- Yields to maturity on fixed income government securities and corporate bonds

The first item has already been addressed in the previous section. The second item is the historical return on short term Treasury bills, such as 30 days, and is used to develop risk premiums for other asset classes. The fourth item relates primarily to corporate pension plans. Our analysis will focus on the third item.

Section 3.6.3 of the actuarial SOP includes the following measurement-specific factors that should be considered in selecting the investment return assumption:

- Investment policy or asset allocation
- Expenses
- Investment manager performance

Each of these items will be addressed in the context of our analysis.

Real Rate of Return on Investments

The real rate of return on investments is a function of:

- The real rates of return on individual classes of assets within the investment portfolio;
- The relative proportion of the fund's total investments held in each class of securities (the "Asset Allocation");
- Expenses to be paid from earnings; and
- Reasonable risk (variability) adjustments.

Each of these four components are addressed separately.

Real Returns on Classes of Securities

Empirical studies of total real rates of return are available on most classes of securities in which the System invests. These studies are used to develop historical average real rates of return. These historical averages are adjusted considering any fundamental changes in the economy, changes in government regulation, and any other factors, which might affect their continued applicability.

Many empirical studies have been carried out to measure historical real rates of return on various types of investment. One most frequently used is the Ibbotson Associates studies. Table 2 provides the Ibbotson-Sinquefield measure of the real rates of return between 1926 and 1998. Investment consulting firms also utilize this and other studies to derive expected long-term real rates of return for use in asset allocation models. These models serve as an aid to retirement plan fiduciaries in determining what proportion of the plans' investment portfolio to place in various classes of securities.

Table 2

Ibbotson Associates
Real Rates of Return of Investments
(Geometric Mean)

	(1926 – 1998)
Common Stocks	8.2%
Small Stocks	9.4%
Long-term government bonds	2.1%
Long-term corporate bonds	2.6%
Intermediate government bonds	2.1%
Treasury bills	0.7%

Since this data is entirely historical it does not necessarily reflect future expectations. It also does not cover some types of investments common in the System's portfolio, Mercer has developed the following more detailed rate of return assumption by asset class. These expected real rates of return are taken from a number of sources which include consideration of future expectations.

Table 3
Expected Asset Class Returns Net of Inflation (Real)

Asset Class	Total Real Return
Large Stocks	6.4%
Small Stocks	7.4
Int'l Stocks	6.8
Long Bonds	3.2
Intermediate Bonds	3.2
Real Estate	5.1
Money Market	1.5

Asset Allocation

The Association employs a third-party investment consultant to assist in establishing its target asset allocation and investment policy. The target asset allocation reflects the consultant's professional opinion on expected returns; the Association's risk profile, prudent diversification, asset/liability matching, cash flow needs and other investment considerations. This target allocation is designed as a guidepost for balancing investments among asset classes. As such, it is the best indicator for the Association actual long-term asset allocation. The target asset allocation will be combined with the real rates of return on classes of securities to develop the expected gross real rate of return assumption for the System's portfolio.

The current and target asset allocations utilized by the Association are shown in Table 4.

Table 4
SamCERA Asset Allocation as of 6/30/99
At Market Value

	Current	Target
Domestic Stocks*	41%	42%
International Stocks	19%	15%
Emerging Market Stocks	0%	5%
Bonds and Fixed Income	28%	30%
Real Estate	9%	8%
Cash Equivalents and Short-Term	3%	0%

* Includes 15% in small cap.

Applying the target asset allocation (Table 4) to the information in Table 3 results in a real rate of return of approximately 5.66%. There are a number of additional factors, which must be considered before arriving at an appropriate level for actuarial valuation purposes. These are discussed below.

Expenses to be Paid from Earnings

The expected gross real rate of return must be reduced to reflect expenses to be charged against investment earnings. To the extent such charges are expected to be made in the future, the expense margin will be sufficient to cover (References are to sections of the County Employees' Retirement Law of 1937).

a) Administrative expenses (Section 31580.2);

b) The cost of actuarial valuations (Section 31596.1(a);

c) The cost of bank custodial services (Section 31596.1(b));

d) Fees related to investment in deeds of trust or mortgages (Section 31596.1(c));

e) Investment expenses (Section 31596.1(d)); and

f) The cost of legal counsel (Section 31529.5).

An expense percentage of 0.40% was used as an estimate of future expenses.

Risk Adjustment

The net real rate of return assumption should reflect the risk associated with not achieving expectations. This is developed by considering:

- The probability that actual future returns within asset classes will deviate statistically from historical averages;

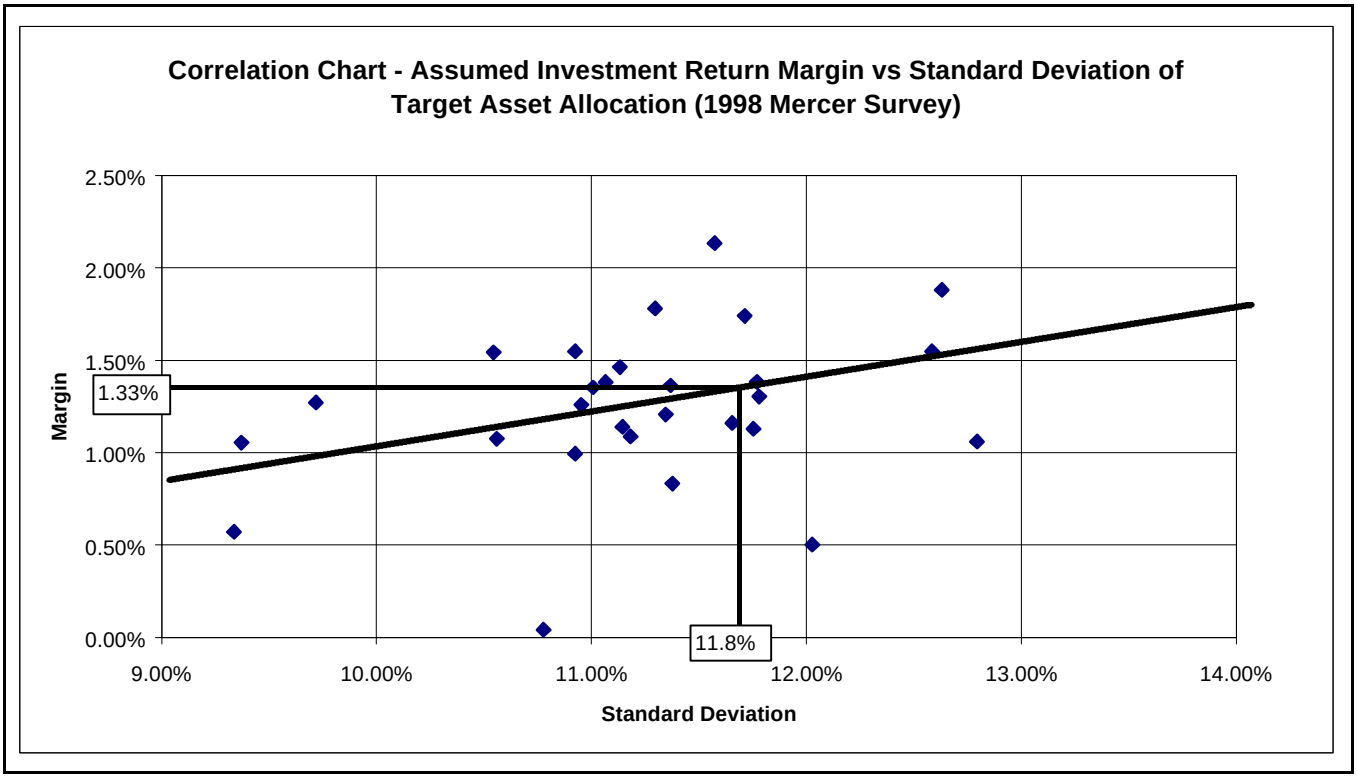
- The effect that asset diversification will have on dampening statistical fluctuations of future returns; and

- The expectation that fund managers will under-perform or outperform the general market indices upon which the real rates of return on individual classes of securities are measured.

Annual real rates of return have varied substantially over the years. For example, even if we expect the averages displayed in Table 4 to be a reasonable estimate of real returns in the future, we know there is some likelihood that future real rates will be more or less than historical averages. The risk lies in setting too high an investment earnings assumption, which leads to future losses and higher employer contributions. The risk adjustment helps protect against such an occurrence.

As an aid in setting an appropriate risk adjustment, Chart 4 presents a distribution diagram developed from Mercer's 1998 survey of economic assumptions of 30 California public retirement systems. From this survey we are able to identify how the risk adjustments implicit within a system's investment return assumption varies with the system's risk level (as measured by the standard deviation of their current asset allocation). The diagram in Chart 4 provides that relationship. The chart also includes a regression line which, given a system's risk level, can be used to identify a risk adjustment consistent with the survey data.

Chart 4



As you can see from the chart, the System's risk adjustment so calculated would be approximately 1.33%, based on our calculation of the portfolio's annual standard deviation of 11.8% (based on the System's target asset allocation).

Investment Manager Performance

Section 3.6.3.e. of the actuarial SOP states that:

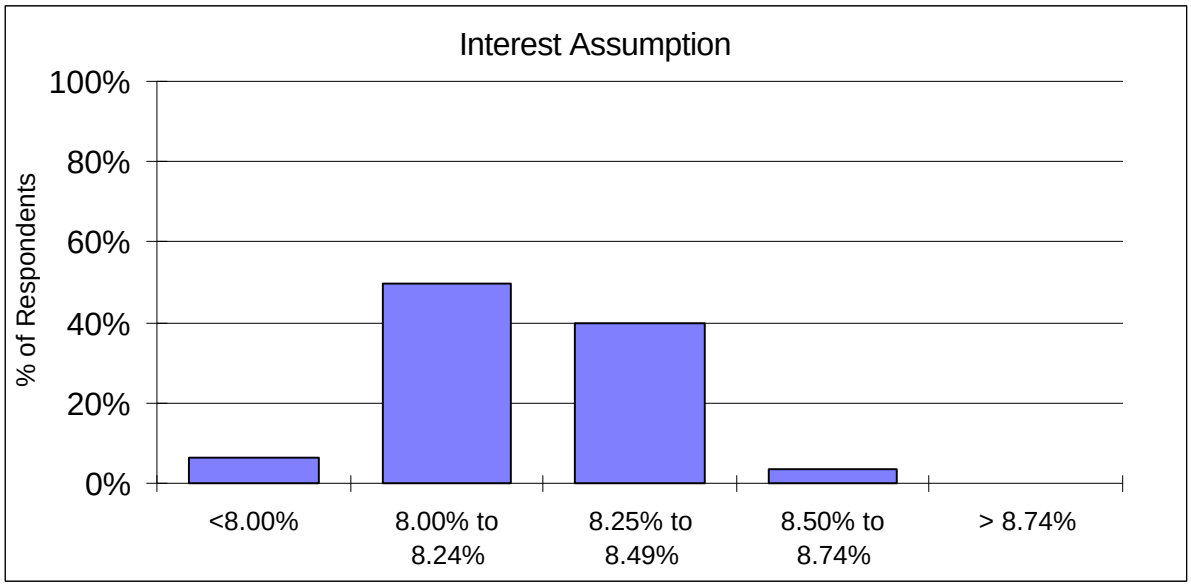
> Anticipating superior (or inferior) investment manager performance may be unduly optimistic (or pessimistic). Few investment managers consistently achieve significant above-market returns net of expenses over long periods. The plan sponsor may replace managers who consistently under-perform market indices.

We concur with this statement, thus do not make any provision within our investment return assumption for superior or inferior performance relative to the market.

Comparison with Similarly Situated Systems

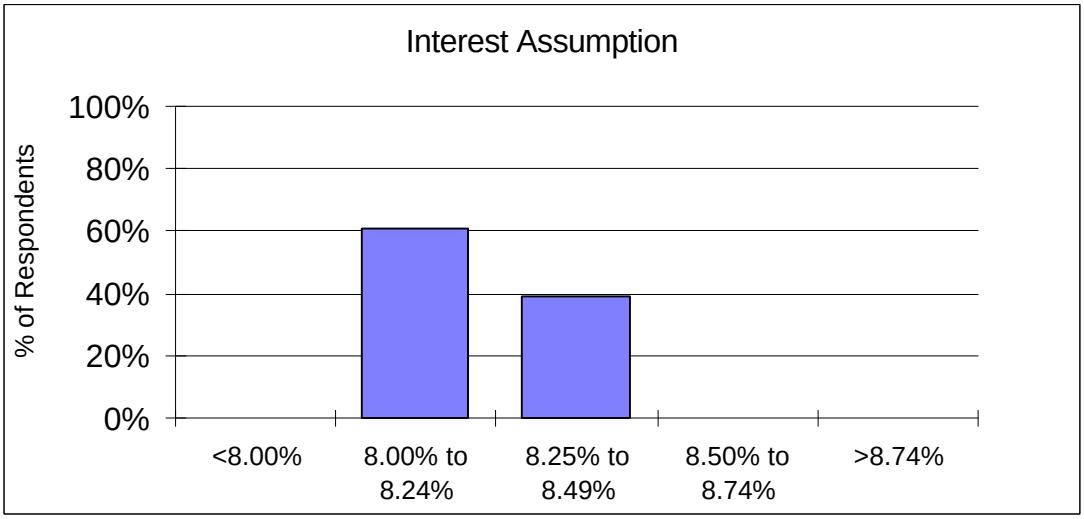
Charts 5 and 6 provide the investment return assumptions used by the 30 California public retirement systems who responded to Mercer's 1998 survey of the economic actuarial assumptions, and the 18 respondents subject to the 1937 Act, respectively.

Chart 5 - Comparison of Economic Actuarial Assumptions
All Respondents
(based on 30 responses)



Average	8.10%
25th Percentile	8.00%
50th Percentile	8.16%
75th Percentile	8.25%

Chart 6 - Comparison of Economic Actuarial Assumptions
37 Act County Respondents
(based on 18 responses)



Average	8.14%

25th Percentile	8.00%
50th Percentile	8.16%
75th Percentile	8.25%

The average investment return rates from the survey for both of these groups is approximately 8.1%. About 40% of 1937 Act Systems are using a return assumption of 8.25% or greater.

Development of Recommendation

Based on the above analysis, we arrive at a real rate of return assumption of 3.93% (average gross rate of return of 5.66% minus 0.40% expenses minus risk adjustment of 1.33%). Combining this rate and the inflation assumption of 4.25% results in an expected return of 8.18%.

Although this result is higher than the current 8.0% investment return assumption, the 8.0% assumption is still reasonable. However, we believe the Board has flexibility to raise the assumption by 0.25% If such a move is deemed prudent. Before making such a move, the Board should consider any need to maintain additional conservatism as a contingency against future court interpretations requiring Earnable Compensation to include such items as accrued vacation time paid off at retirement or application of the Ventura decision retroactively.

Salary Increase Assumptions

Recommendations

Salary Increase Assumptions

The Association's salary increase assumptions are comprised of two components:

- Inflation Rate
- Salary Scale

Salary increases are provided to employees in the form of cost-of-living adjustments to offset the debasement of pay levels caused by inflation. In addition to inflationary increases, active members will receive "real" salary increases (i.e., over inflation) as they advance through salary grades and receive promotions over their career.

As part of our analysis we have reviewed real salary increases received by members over the three years ending June 30, 1999. Members were grouped by service and age to determine how salary increases vary across these groups. We recommend that the real salary increases be continued as a function of age rather than both age and years of service. Age based salary increase assumptions are common in California county retirement systems. We are recommending the following changes to the annual real salary increase assumptions:

Real Salary Increase Assumptions

	General Members		**Safety Members**	
	Current Salary Increase Assumptions	Recommended Salary Increase Assumptions	Current Salary Increase Assumptions	Recommended Salary Increase Assumptions
Ages 20-24	5.00%	5.50%	4.30%	4.75%
Ages 25-29	3.50%	4.25%	4.00%	4.50%
Ages 30-34	3.40%	4.00%	2.90%	3.50%
Ages 35-39	2.00%	2.75%	1.30%	2.25%
Ages 40-44	1.20%	2.00%	0.90%	1.50%
Ages 45-49	1.10%	1.50%	0.70%	1.00%
Ages 50-54	0.80%	0.80%	0.60%	0.75%
Ages 55-59	0.70%	0.70%	0.40%	0.50%
Ages 60-64	0.60%	0.60%	0.40%	0.40%
Ages 65-69	0.30%	0.50%	0.00%	0.00%

Real Salary Increase Assumptions

	General Members		Safety Members	
	Current Salary Increase Assumptions	Recommended Salary Increase Assumptions	Current Salary Increase Assumptions	Recommended Salary Increase Assumptions
Age 70 +	0.00%	0.00%	0.00%	0.00%

Setting the Assumption

The Actuarial Standards Board has specified the following data be considered in setting the salary increase assumption (Section 3.7) in its Standard of Practice (SOP):

- Employer's current compensation practice and any anticipated changes in this practice;
- Current compensation distributions by service or age;
- Historical compensation increases of employer and other employers in the same industry or geographic area; and
- Historical national wage and productivity increases.

In addition, the SOP states that the actuary should consider employer-specific compensation data, but the actuary must carefully weigh the credibility of this data when selecting the salary increase assumption.

The methodology used to construct the assumption is to utilize the inflation assumption as a base salary increase assumption. There is a sound economic reason for doing this. This is a long term assumption and represents the expected annual increases in the cost of goods and services. In order for a member to maintain the same standard of living in the future as he or she does today, wages must at least keep up with inflation. If they do not, members will suffer a continuously eroding standard of living, which in turn will increase member turnover as workers seek jobs elsewhere that offer more competitive salaries. This creates obvious instability, which may occur for a short while, but eventually will have to return to equilibrium if the County and special districts are to continue as ongoing operating entities.

Once the inflation component of the salary increase assumption is set, the process turns to the selection of the real (inflation-free) salary increase assumption component.

Real Salary Increases

In addition to inflation, member salaries are expected to increase due to:

- General increases which exceeded inflation ("Real Across-the-Board Salary Increases"); and

- Merit and longevity increases.

Real Across-the-Board Salary Increases

These are generally categorized as productivity increases because, in theory, they are generated from any activity that allows workers to produce goods and services more efficiently, thus cheaper. If these efficiencies result in increased revenues to the employer and are passed along as salary increases, Real Across-the-Board Salary Increases will result.

Because of the general nature of governmental employment and the foreseeable budgetary outlook for California governmental employers, there is currently no Real Across-the-Board Salary Increase assumption for the Association.

As part of our analysis, we monitor the Bureau of Labor Statistics Employment Cost Index (ECI). The ECI was developed in the early 1970's to provide wage growth data free from the influence of employment shifts among industries and occupations. The ECI was expanded to include a separate index for state and local governments in 1981.

The State and Local Government Workers ECI data provides evidence that real wage growth for this sector has averaged about 0.83% since 1982. However, we believe this evidence does not require any change to our current assumption of no real Across-The-Board wage growth for the following reasons:

1. The period since 1982 has been a period of low inflation. The average annual increase in total wage growth over this period was 4.12% – below our current 4.25% inflation assumption. This indicates that our inflation assumption is sufficient to predict total wage growth.

2. This has also been a period of very high real rates of investment return. Real rates of investment return have been almost double our long term assumptions. Adding a wage growth assumption to the 4.25% inflation rate would only make sense if we also increased the real rate of investment return assumption by at least that same amount. This would more than offset the effect of the additional wage growth assumption on liabilities.

We will continue to monitor the ECI to determine whether more compelling evidence for a real wage growth assumption emerges.

Merit and Longevity Salary Increases

Merit and longevity increases reflect the promotional grade increase an individual member is expected to receive over his or her career. This assumption is based on observed experience of real salary increases by category of member by age and/or service group. This assumption is reviewed at the time of the triennial experience investigation.

Following are the average nominal (inflation plus real) annual salary increases received by members over the three years ending June 30, 1999.

Age Bracket	General Members Average Annual Increase	Safety Members Average Annual Increase
20-24	15.0%	16.4%
25-29	12.0%	14.6%
30-34	10.0%	12.0%
35-39	8.7%	11.9%
40-44	8.2%	10.5%
45-49	7.3%	8.5%
50-54	5.0%	9.0%
55-59	4.5%	8.2%
60-64	4.5%	5.5%
65-69	2.1%	7.6%
70 +	4.0%	0.0%

The increase in average annual salary for active members over this three year period was about 3.9% for General members and 6.9% for Safety members. Removing these average increases provides the following real increases over the three years.

Age Bracket	General Members Average Annual Increase	Safety Members Average Annual Increase
20-24	11.1%	9.5%
25-29	8.1%	7.7%
30-34	6.1%	5.1%
35-39	4.8%	5.0%
40-44	4.3%	3.6%
45-49	3.4%	2.0%
50-54	1.1%	2.1%
55-59	0.6%	1.3%
60-64	0.6%	-1.4%
65-69	-1.8%	0.8%
70 +	0.1%	0.0%

In light of this experience, the merit and longevity assumption was modified using the detailed methodology at the beginning of this section. The following graphs summarize the current, actual and recommended merit and longevity assumptions.

Chart 7

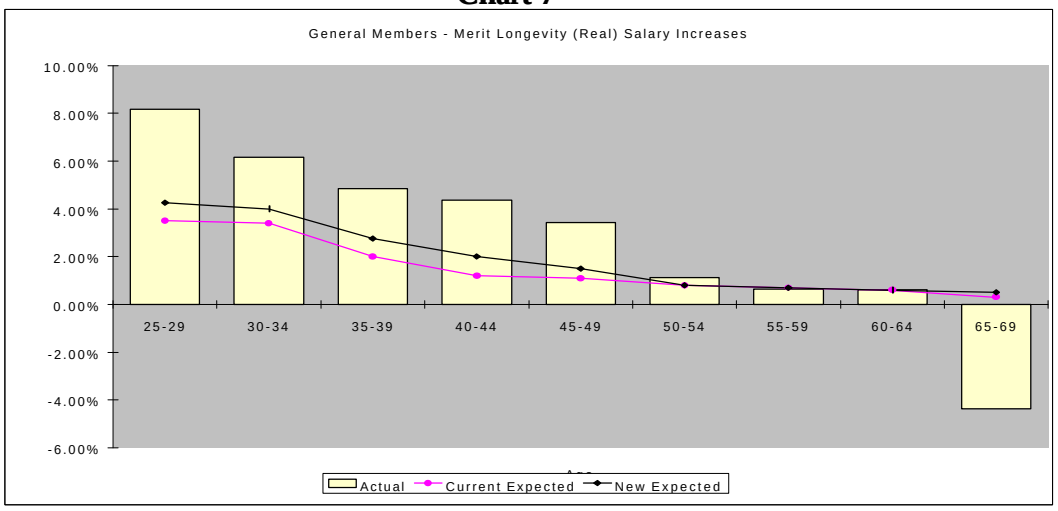
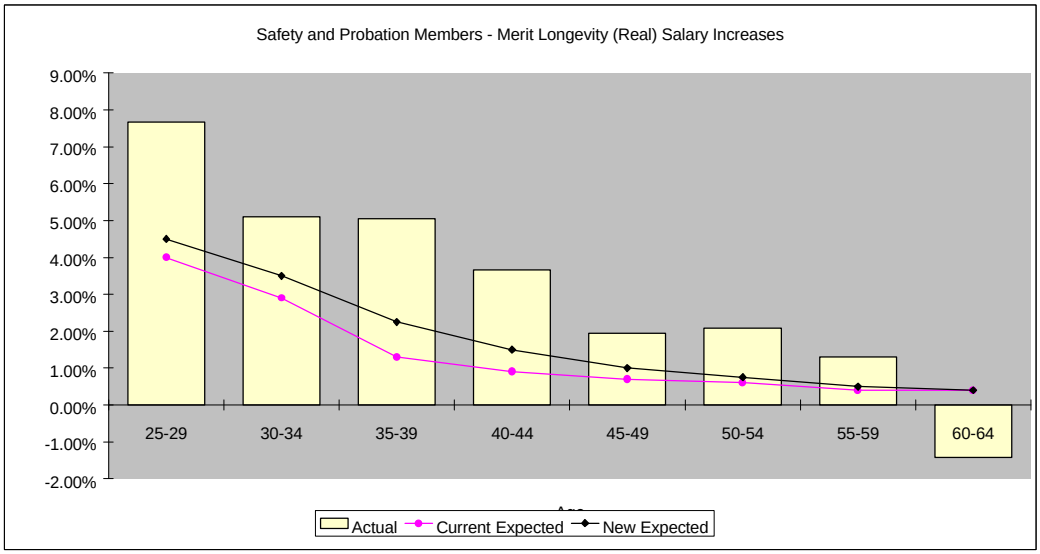


Chart 8



Adding the 4.25% recommended inflation rate to the recommended merit and longevity salary increases results in the following total salary increase assumptions:

Total Recommended Salary Increase Assumption

Age	General Members	Safety and Probation Members
20-24	9.75%	9.00%
25-29	8.50%	8.75%
30-34	8.25%	7.75%
35-39	7.00%	6.50%
40-44	6.25%	5.75%
45-49	5.75%	5.25%
50-54	5.05%	5.00%
55-59	4.95%	4.75%
60-64	4.85%	4.65%
65-69	4.75%	4.25%
70 +	4.25%	4.25%

SECTION V.
ASSET VALUATION METHOD

Actuarial Value of Assets

Background

Under the Entry Age Normal Actuarial Funding Method, a determination is made of the assets the Association would have on hand if the current levels of employer normal cost and member contribution rates had been paid from each member's entry age through the actuarial valuation date and credited with the current actuarial interest rate assumption. This target value of assets is called the Actuarial Accrued Liability (AAL). The Unfunded Actuarial Accrued Liability (UAAL) is equal to the AAL less the Actuarial Value of Assets as of the actuarial valuation date.

Effective with the fiscal year ending June 30, 1997, the Association adopted a smoothed market value of assets for establishing its reserves. This allows us to use the Association's reserves directly for actuarial purposes. The actuarial value of assets calculated using this method is provided in the following table.

Calculation of Smoothed Market Value of Assets
June 30, 1999

Six Month Period From	To	Total Actual Market Return (net)	Expected Market Return (net)	Investment Gain (Loss)	Deferred Factor	Deferred Return
through	6/95			$60,777,780	0.2	$12,155,556
7/95	6/96	$106,343,433	$58,297,937	$48,045,496	0.2	$9,609,099
7/96	6/97	$151,565,063	$65,384,853	$86,180,210	0.4	$34,472,084
7/97	12/97	$55,406,564	$40,075,645	$15,330,919	0.6	$9,198,552
1/98	6/98	$112,680,907	$42,418,662	$70,262,245	0.7	$49,183,572
7/98	12/98	17,930,384	47,015,616	(29,085,232)	0.8	($23,268,186)
1/99	6/99	64,623,459	47,810,457	16,813,003	0.9	$15,131,701

1. Total deferred return	$106,482,378
2. Market Value	$1,261,022,241
3. Actuarial Value of Assets for Funding Ratio (Item 2 - Item 1)	$1,154,539,863
4. Non-valuation reserves and designations:	
a. Reserve for Interest Fluctuations	$12,728,004
b. Medicare Part B Reserve	$249,759
c. Total	$12,977,763
5. Actuarial Value of Assets for valuation (Item 3 - Item 4)	$1,141,562,100

SECTION VI
NEW MEMBER CONTRIBUTION RATE

I. Member Contribution Rates Under 8.00% Interest and 4.25% Inflation Assumptions

MEMBERS' CONTRIBUTION RATES

ENTRY	GENERAL		SAFETY		PROBATION
AGE	Plan 1 & 2	Plan 4	Plan 1 & 2	Plan 4	Plan 1, 2 & 4
16	5.78%	5.51%			
17	5.78%	5.51%			
18	5.78%	5.51%	7.16%	6.82%	8.02%
19	5.78%	5.51%	7.16%	6.82%	8.02%
20	5.78%	5.51%	7.16%	6.82%	8.02%
21	5.78%	5.51%	7.17%	6.82%	8.02%
22	5.79%	5.52%	7.17%	6.83%	8.03%
23	5.79%	5.53%	7.18%	6.84%	8.04%
24	5.80%	5.54%	7.19%	6.85%	8.06%
25	5.82%	5.55%	7.21%	6.86%	8.07%
26	5.84%	5.57%	7.23%	6.88%	8.10%
27	5.86%	5.58%	7.26%	6.91%	8.12%
28	5.88%	5.61%	7.29%	6.93%	8.16%
29	5.90%	5.63%	7.32%	6.97%	8.20%
30	5.93%	5.66%	7.36%	7.00%	8.24%
31	5.96%	5.69%	7.41%	7.05%	8.29%
32	6.00%	5.72%	7.46%	7.10%	8.35%
33	6.04%	5.76%	7.51%	7.15%	8.41%
34	6.08%	5.80%	7.57%	7.21%	8.48%
35	6.13%	5.84%	7.64%	7.27%	8.55%
36	6.18%	5.89%	7.71%	7.34%	8.64%
37	6.23%	5.94%	7.79%	7.41%	8.72%
38	6.29%	6.00%	7.87%	7.49%	8.81%
39	6.35%	6.06%	7.96%	7.57%	8.91%
40	6.42%	6.12%	8.05%	7.66%	9.01%
41	6.49%	6.19%	8.14%	7.75%	9.11%
42	6.56%	6.25%	8.24%	7.84%	9.22%
43	6.63%	6.33%	8.34%	7.94%	9.34%
44	6.71%	6.40%	8.45%	8.04%	9.46%
45	6.79%	6.48%	8.55%	8.14%	9.58%
46	6.88%	6.56%	8.67%	8.25%	9.70%
47	6.97%	6.64%	8.78%	8.36%	9.83%
48	7.06%	6.73%	8.90%	8.68%	10.21%
49	7.15%	6.82%	9.02%	9.02%	10.61%
50	7.25%	6.92%			
51	7.36%	7.02%			
52	7.46%	7.12%			
53	7.57%	7.22%			
54	7.68%	7.33%			
55	7.80%	7.44%			
56	7.91%	7.54%			
57	8.03%	7.66%			
58	8.14%	7.95%			
59 & Over	8.26%	8.26%			

The following sections are also used in deriving the contribution rates.

	General		Safety		Probation Officers
	Plan 1 & 2	Plan 4	Plan 1 & 2	Plan 4	Plan 1, 2 & 4
Section	31676.1	31676.1	31664	31664	31664
Years of Final Average Salary	1	3	1	3	3
Percent of Full Rates	100%	100%	85%*	85%*	100%

* For Safety management and sergeants, their rates should be calculated by taking the above rates and dividing by 85%.

II. Member Contribution Rates Under 8.25% Interest and 4.25% Inflation Assumptions

MEMBERS' CONTRIBUTION RATES

ENTRY	GENERAL		SAFETY		PROBATION
AGE	Plan 1 & 2	Plan 4	Plan 1 & 2	Plan 4	Plan 1, 2 & 4
16	5.39%	5.14%			
17	5.39%	5.14%			
18	5.39%	5.14%	6.75%	6.42%	7.56%
19	5.39%	5.14%	6.75%	6.42%	7.56%
20	5.39%	5.14%	6.76%	6.43%	7.57%
21	5.40%	5.15%	6.77%	6.44%	7.58%
22	5.41%	5.16%	6.78%	6.46%	7.60%
23	5.42%	5.17%	6.80%	6.47%	7.61%
24	5.44%	5.19%	6.82%	6.49%	7.64%
25	5.46%	5.21%	6.84%	6.51%	7.66%
26	5.48%	5.23%	6.87%	6.54%	7.69%
27	5.51%	5.25%	6.90%	6.57%	7.73%
28	5.54%	5.28%	6.94%	6.60%	7.77%
29	5.57%	5.31%	6.98%	6.64%	7.82%
30	5.60%	5.34%	7.03%	6.69%	7.87%
31	5.64%	5.38%	7.08%	6.74%	7.93%
32	5.68%	5.41%	7.14%	6.79%	7.99%
33	5.72%	5.46%	7.20%	6.85%	8.06%
34	5.77%	5.50%	7.27%	6.92%	8.14%
35	5.82%	5.55%	7.34%	6.99%	8.22%
36	5.88%	5.60%	7.42%	7.06%	8.31%
37	5.94%	5.66%	7.50%	7.14%	8.40%
38	6.00%	5.72%	7.59%	7.22%	8.50%
39	6.07%	5.79%	7.68%	7.31%	8.60%
40	6.14%	5.85%	7.78%	7.40%	8.71%
41	6.21%	5.92%	7.88%	7.50%	8.82%
42	6.29%	6.00%	7.99%	7.60%	8.94%
43	6.37%	6.07%	8.09%	7.70%	9.06%
44	6.45%	6.15%	8.21%	7.81%	9.19%
45	6.54%	6.24%	8.32%	7.92%	9.32%
46	6.63%	6.32%	8.44%	8.03%	9.45%
47	6.72%	6.41%	8.56%	8.15%	9.59%
48	6.82%	6.50%	8.69%	8.48%	9.97%
49	6.92%	6.60%	8.82%	8.82%	10.37%
50	7.03%	6.70%			
51	7.14%	6.81%			
52	7.25%	6.91%			
53	7.36%	7.02%			
54	7.48%	7.13%			
55	7.60%	7.25%			
56	7.72%	7.36%			
57	7.84%	7.48%			
58	7.97%	7.78%			
59 & Over	8.09%	8.09%			

The following sections are also used in deriving the contribution rates.

	General		Safety		Probation Officers
	Plan 1 & 2	Plan 4	Plan 1 & 2	Plan 4	Plan 1, 2 & 4
Section	31676.1	31676.1	31664	31664	31664
Years of Final Average Salary	1	3	1	3	3
Percent of Full Rates	100%	100%	85%*	85%*	100%

*For Safety management and sergeants, their rates should be calculated by taking the above rates and dividing by 85%.

EXHIBITS

EXHIBIT 1

PROBABILITIES OF SEPARATION PRIOR TO RETIREMENT
GENERAL PLAN 1 MALE MEMBERS

Age	Withdrawal 0 <= X < 1	Withdrawal 1 <= X < 2	Withdrawal 2 <= X < 3	Withdrawal 3 <= X < 4	Withdrawal 4 <= X < 5	Withdrawal X >= 5	Terminated Vested	Non-Duty Disability	Duty Disability	Non-Duty Death	Duty Death	Service Retirement
<= 20	0.1460	0.1460	0.1460	0.1460	0.1460	0.1460	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
21	0.1440	0.1440	0.1440	0.1440	0.1440	0.1440	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
22	0.1420	0.1420	0.1420	0.1420	0.1420	0.1420	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
23	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
24	0.1370	0.1370	0.1370	0.1370	0.1370	0.1370	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
25	0.1340	0.1340	0.1340	0.1340	0.1340	0.1340	0.0085	0.0003	0.0000	0.0003	0.0001	0.0000
26	0.1310	0.1310	0.1310	0.1310	0.1310	0.1310	0.0085	0.0003	0.0000	0.0003	0.0001	0.0000
27	0.1280	0.1280	0.1280	0.1280	0.1280	0.1280	0.0090	0.0003	0.0001	0.0003	0.0001	0.0000
28	0.1250	0.1250	0.1250	0.1250	0.1250	0.1250	0.0090	0.0003	0.0001	0.0003	0.0001	0.0000
29	0.1210	0.1210	0.1210	0.1210	0.1210	0.1210	0.0095	0.0003	0.0001	0.0003	0.0001	0.0000
30	0.1170	0.1170	0.1170	0.1170	0.1170	0.1170	0.0098	0.0003	0.0002	0.0003	0.0001	0.0000
31	0.1120	0.1120	0.1120	0.1120	0.1120	0.1120	0.0103	0.0003	0.0002	0.0004	0.0001	0.0000
32	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.0108	0.0004	0.0002	0.0004	0.0001	0.0000
33	0.0960	0.0960	0.0960	0.0960	0.0960	0.0927	0.0113	0.0004	0.0003	0.0005	0.0001	0.0000
34	0.0860	0.0860	0.0860	0.0860	0.0860	0.0800	0.0123	0.0005	0.0003	0.0005	0.0001	0.0000
35	0.0760	0.0760	0.0760	0.0760	0.0760	0.0727	0.0130	0.0006	0.0003	0.0005	0.0001	0.0000
36	0.0650	0.0650	0.0650	0.0650	0.0650	0.0597	0.0137	0.0007	0.0004	0.0006	0.0001	0.0000
37	0.0550	0.0550	0.0550	0.0550	0.0550	0.0485	0.0144	0.0008	0.0005	0.0006	0.0001	0.0000
38	0.0460	0.0460	0.0460	0.0460	0.0460	0.0386	0.0152	0.0009	0.0006	0.0006	0.0001	0.0000
39	0.0380	0.0380	0.0380	0.0380	0.0380	0.0301	0.0159	0.0010	0.0007	0.0006	0.0001	0.0000
40	0.0300	0.0300	0.0300	0.0300	0.0300	0.0176	0.0166	0.0010	0.0008	0.0006	0.0001	0.0000
41	0.0240	0.0240	0.0240	0.0240	0.0240	0.0133	0.0170	0.0011	0.0009	0.0007	0.0001	0.0000
42	0.0200	0.0200	0.0200	0.0200	0.0200	0.0103	0.0170	0.0013	0.0010	0.0008	0.0001	0.0000
43	0.0180	0.0180	0.0180	0.0180	0.0180	0.0088	0.0168	0.0014	0.0010	0.0009	0.0001	0.0000
44	0.0160	0.0160	0.0160	0.0160	0.0160	0.0074	0.0165	0.0016	0.0011	0.0010	0.0002	0.0000
45	0.0140	0.0140	0.0140	0.0140	0.0140	0.0050	0.0157	0.0018	0.0012	0.0012	0.0002	0.0000
46	0.0120	0.0120	0.0120	0.0120	0.0120	0.0040	0.0150	0.0020	0.0012	0.0014	0.0002	0.0000
47	0.0100	0.0100	0.0100	0.0100	0.0100	0.0031	0.0142	0.0021	0.0013	0.0016	0.0002	0.0000
48	0.0090	0.0090	0.0090	0.0090	0.0090	0.0027	0.0134	0.0023	0.0013	0.0018	0.0002	0.0000
49	0.0080	0.0080	0.0080	0.0080	0.0080	0.0023	0.0126	0.0025	0.0013	0.0020	0.0002	0.0000
50	0.0070	0.0070	0.0070	0.0070	0.0070	0.0026	0.0000	0.0026	0.0013	0.0022	0.0002	0.0107
51	0.0060	0.0060	0.0060	0.0060	0.0060	0.0021	0.0000	0.0028	0.0013	0.0024	0.0002	0.0082
52	0.0050	0.0050	0.0050	0.0050	0.0050	0.0017	0.0000	0.0030	0.0013	0.0026	0.0003	0.0056
53	0.0040	0.0040	0.0040	0.0040	0.0040	0.0013	0.0000	0.0031	0.0013	0.0028	0.0003	0.0065
54	0.0040	0.0040	0.0040	0.0040	0.0040	0.0012	0.0000	0.0033	0.0013	0.0030	0.0003	0.0088
55	0.0030	0.0030	0.0030	0.0030	0.0030	0.0029	0.0000	0.0035	0.0014	0.0032	0.0003	0.0336
56	0.0020	0.0020	0.0020	0.0020	0.0020	0.0019	0.0000	0.0036	0.0015	0.0034	0.0003	0.0446
57	0.0020	0.0020	0.0020	0.0020	0.0020	0.0018	0.0000	0.0038	0.0016	0.0036	0.0004	0.0562
58	0.0010	0.0010	0.0010	0.0010	0.0010	0.0013	0.0000	0.0040	0.0019	0.0038	0.0004	0.0663
59	0.0010	0.0010	0.0010	0.0010	0.0010	0.0017	0.0000	0.0042	0.0022	0.0040	0.0004	0.0762
60	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0043	0.0025	0.0042	0.0004	0.0835
61	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0045	0.0028	0.0044	0.0004	0.0863
62	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0047	0.0032	0.0046	0.0005	0.2500
63	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0048	0.0038	0.0048	0.0005	0.1809
64	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0044	0.0050	0.0005	0.2248
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0052	0.0005	0.5000
66	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0056	0.0005	0.5000
67	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060	0.0006	0.7500
68	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0065	0.0006	0.8500
69	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0070	0.0006	0.9500
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

EXHIBIT 1

PROBABILITIES OF SEPARATION PRIOR TO RETIREMENT
GENERAL PLAN 1 FEMALE MEMBERS

Age	Withdrawal 0 <= X < 1	Withdrawal 1 <= X < 2	Withdrawal 2 <= X < 3	Withdrawal 3 <= X < 4	Withdrawal 4 <= X < 5	Withdrawal X >= 5	Terminated Vested	Non-Duty Disability	Duty Disability	Non-Duty Death	Duty Death	Service Retirement
<= 20	0.1540	0.1540	0.1540	0.1540	0.1540	0.1540	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
21	0.1471	0.1471	0.1471	0.1471	0.1471	0.1471	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
22	0.1401	0.1401	0.1401	0.1401	0.1401	0.1401	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
23	0.1332	0.1332	0.1332	0.1332	0.1332	0.1332	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
24	0.1263	0.1263	0.1263	0.1263	0.1263	0.1263	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
25	0.1194	0.1194	0.1194	0.1194	0.1194	0.1194	0.0035	0.0001	0.0000	0.0003	0.0000	0.0000
26	0.1124	0.1124	0.1124	0.1124	0.1124	0.1124	0.0040	0.0001	0.0000	0.0003	0.0000	0.0000
27	0.1055	0.1055	0.1055	0.1055	0.1055	0.1055	0.0045	0.0002	0.0001	0.0003	0.0000	0.0000
28	0.0986	0.0986	0.0986	0.0986	0.0986	0.0986	0.0055	0.0002	0.0001	0.0003	0.0000	0.0000
29	0.0916	0.0916	0.0916	0.0916	0.0916	0.0916	0.0070	0.0002	0.0001	0.0003	0.0000	0.0000
30	0.0847	0.0847	0.0847	0.0847	0.0847	0.0847	0.0080	0.0002	0.0002	0.0003	0.0000	0.0000
31	0.0762	0.0762	0.0762	0.0762	0.0762	0.0762	0.0094	0.0002	0.0002	0.0003	0.0000	0.0000
32	0.0676	0.0676	0.0676	0.0676	0.0676	0.0676	0.0113	0.0002	0.0002	0.0003	0.0000	0.0000
33	0.0591	0.0591	0.0591	0.0591	0.0591	0.0565	0.0132	0.0003	0.0003	0.0004	0.0000	0.0000
34	0.0520	0.0520	0.0520	0.0520	0.0520	0.0474	0.0151	0.0003	0.0003	0.0004	0.0000	0.0000
35	0.0461	0.0461	0.0461	0.0461	0.0461	0.0400	0.0180	0.0004	0.0003	0.0005	0.0000	0.0000
36	0.0402	0.0402	0.0402	0.0402	0.0402	0.0331	0.0190	0.0004	0.0004	0.0005	0.0000	0.0000
37	0.0344	0.0344	0.0344	0.0344	0.0344	0.0268	0.0200	0.0005	0.0005	0.0005	0.0000	0.0000
38	0.0285	0.0285	0.0285	0.0285	0.0285	0.0202	0.0200	0.0006	0.0006	0.0005	0.0000	0.0000
39	0.0227	0.0227	0.0227	0.0227	0.0227	0.0145	0.0190	0.0006	0.0007	0.0006	0.0000	0.0000
40	0.0168	0.0168	0.0168	0.0168	0.0168	0.0096	0.0188	0.0006	0.0008	0.0005	0.0000	0.0000
41	0.0157	0.0157	0.0157	0.0157	0.0157	0.0079	0.0172	0.0006	0.0009	0.0005	0.0000	0.0000
42	0.0145	0.0145	0.0145	0.0145	0.0145	0.0063	0.0156	0.0007	0.0010	0.0006	0.0000	0.0000
43	0.0138	0.0138	0.0138	0.0138	0.0138	0.0067	0.0144	0.0010	0.0010	0.0006	0.0000	0.0000
44	0.0134	0.0134	0.0134	0.0134	0.0134	0.0071	0.0132	0.0014	0.0011	0.0007	0.0000	0.0000
45	0.0126	0.0126	0.0126	0.0126	0.0126	0.0073	0.0119	0.0022	0.0012	0.0005	0.0000	0.0000
46	0.0118	0.0118	0.0118	0.0118	0.0118	0.0075	0.0107	0.0030	0.0012	0.0006	0.0000	0.0000
47	0.0107	0.0107	0.0107	0.0107	0.0107	0.0073	0.0094	0.0039	0.0013	0.0007	0.0000	0.0000
48	0.0099	0.0099	0.0099	0.0099	0.0099	0.0075	0.0089	0.0037	0.0013	0.0007	0.0000	0.0000
49	0.0092	0.0092	0.0092	0.0092	0.0092	0.0076	0.0080	0.0034	0.0013	0.0008	0.0000	0.0000
50	0.0084	0.0084	0.0084	0.0084	0.0084	0.0000	0.0079	0.0030	0.0013	0.0009	0.0000	0.0327
51	0.0076	0.0076	0.0076	0.0076	0.0076	0.0000	0.0076	0.0021	0.0013	0.0010	0.0000	0.0269
52	0.0069	0.0069	0.0069	0.0069	0.0069	0.0000	0.0075	0.0011	0.0013	0.0012	0.0000	0.0210
53	0.0061	0.0061	0.0061	0.0061	0.0061	0.0000	0.0074	0.0012	0.0013	0.0013	0.0000	0.0233
54	0.0054	0.0054	0.0054	0.0054	0.0054	0.0000	0.0072	0.0013	0.0013	0.0015	0.0000	0.0308
55	0.0046	0.0046	0.0046	0.0046	0.0046	0.0000	0.0071	0.0014	0.0014	0.0016	0.0000	0.0331
56	0.0038	0.0038	0.0038	0.0038	0.0038	0.0000	0.0068	0.0015	0.0015	0.0018	0.0000	0.0425
57	0.0031	0.0031	0.0031	0.0031	0.0031	0.0000	0.0061	0.0015	0.0016	0.0019	0.0000	0.0458
58	0.0023	0.0023	0.0023	0.0023	0.0023	0.0000	0.0054	0.0016	0.0019	0.0021	0.0000	0.0561
59	0.0019	0.0019	0.0019	0.0019	0.0019	0.0000	0.0047	0.0018	0.0022	0.0022	0.0000	0.0766
60	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0032	0.0019	0.0025	0.0024	0.0000	0.0804
61	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0026	0.0020	0.0028	0.0025	0.0000	0.0892
62	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0021	0.0021	0.0032	0.0027	0.0000	0.2449
63	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0016	0.0025	0.0038	0.0028	0.0000	0.2266
64	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0011	0.0029	0.0044	0.0030	0.0000	0.2083
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0031	0.0000	0.3505
66	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0033	0.0000	0.2641
67	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0035	0.0000	0.2832
68	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0036	0.0000	0.4484
69	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0038	0.0000	0.5765
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

EXHIBIT 1

PROBABILITIES OF SEPARATION PRIOR TO RETIREMENT
GENERAL PLANS 2 AND 4 MALE MEMBERS

Age	Withdrawal 0 <= X < 1	Withdrawal 1 <= X < 2	Withdrawal 2 <= X < 3	Withdrawal 3 <= X < 4	Withdrawal 4 <= X < 5	Withdrawal X >= 5	Terminated Vested	Non-Duty Disability	Duty Disability	Non-Duty Death	Duty Death	Service Retirement
<= 20	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
21	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
22	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
23	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
24	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
25	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0085	0.0003	0.0000	0.0003	0.0001	0.0000
26	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0085	0.0003	0.0000	0.0003	0.0001	0.0000
27	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0090	0.0003	0.0001	0.0003	0.0001	0.0000
28	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0090	0.0003	0.0001	0.0003	0.0001	0.0000
29	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0095	0.0003	0.0001	0.0003	0.0001	0.0000
30	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0100	0.0003	0.0002	0.0003	0.0001	0.0000
31	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0105	0.0003	0.0002	0.0004	0.0001	0.0000
32	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0110	0.0004	0.0002	0.0004	0.0001	0.0000
33	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0115	0.0004	0.0003	0.0005	0.0001	0.0000
34	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0125	0.0005	0.0003	0.0005	0.0001	0.0000
35	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0135	0.0005	0.0003	0.0005	0.0001	0.0000
36	0.1323	0.0900	0.0800	0.0700	0.0400	0.0400	0.0160	0.0006	0.0004	0.0006	0.0001	0.0000
37	0.1323	0.0900	0.0800	0.0700	0.0400	0.0350	0.0180	0.0006	0.0005	0.0006	0.0001	0.0000
38	0.1323	0.0900	0.0800	0.0700	0.0400	0.0300	0.0195	0.0007	0.0006	0.0006	0.0001	0.0000
39	0.1323	0.0900	0.0800	0.0700	0.0400	0.0250	0.0205	0.0009	0.0007	0.0006	0.0001	0.0000
40	0.1323	0.0900	0.0800	0.0700	0.0400	0.0200	0.0210	0.0010	0.0008	0.0006	0.0001	0.0000
41	0.1323	0.0900	0.0800	0.0700	0.0400	0.0175	0.0215	0.0011	0.0009	0.0007	0.0001	0.0000
42	0.1323	0.0900	0.0800	0.0700	0.0400	0.0150	0.0215	0.0012	0.0010	0.0008	0.0001	0.0000
43	0.1323	0.0900	0.0800	0.0700	0.0400	0.0150	0.0220	0.0013	0.0011	0.0009	0.0001	0.0000
44	0.1323	0.0900	0.0800	0.0700	0.0400	0.0150	0.0230	0.0014	0.0012	0.0010	0.0002	0.0000
45	0.1323	0.0900	0.0800	0.0700	0.0400	0.0150	0.0240	0.0015	0.0013	0.0012	0.0002	0.0000
46	0.1323	0.0900	0.0800	0.0700	0.0400	0.0150	0.0250	0.0016	0.0014	0.0014	0.0002	0.0000
47	0.1323	0.0900	0.0800	0.0700	0.0400	0.0150	0.0260	0.0017	0.0015	0.0016	0.0002	0.0000
48	0.1323	0.0900	0.0800	0.0700	0.0400	0.0150	0.0250	0.0018	0.0016	0.0018	0.0002	0.0000
49	0.1323	0.0900	0.0800	0.0700	0.0400	0.0150	0.0245	0.0020	0.0017	0.0020	0.0002	0.0000
50	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0245	0.0022	0.0018	0.0022	0.0002	0.0200
51	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0225	0.0024	0.0019	0.0024	0.0002	0.0200
52	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0200	0.0026	0.0020	0.0026	0.0003	0.0200
53	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0175	0.0028	0.0021	0.0028	0.0003	0.0200
54	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0140	0.0030	0.0022	0.0030	0.0003	0.0200
55	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0120	0.0032	0.0024	0.0032	0.0003	0.0200
56	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0110	0.0034	0.0027	0.0034	0.0003	0.0211
57	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0100	0.0036	0.0030	0.0036	0.0004	0.0221
58	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0090	0.0038	0.0033	0.0038	0.0004	0.0241
59	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0080	0.0040	0.0036	0.0040	0.0004	0.0256
60	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0070	0.0045	0.0039	0.0042	0.0004	0.0750
61	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0060	0.0049	0.0042	0.0044	0.0004	0.1000
62	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0050	0.0052	0.0046	0.0046	0.0005	0.1500
63	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0040	0.0055	0.0050	0.0048	0.0005	0.1000
64	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0030	0.0058	0.0054	0.0050	0.0005	0.2500
65	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0000	0.0000	0.0000	0.0052	0.0005	0.3000
66	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0000	0.0000	0.0000	0.0056	0.0005	0.1000
67	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0000	0.0000	0.0000	0.0060	0.0006	0.1500
68	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0000	0.0000	0.0000	0.0065	0.0006	0.2000
69	0.1323	0.0900	0.0800	0.0700	0.0400	0.0000	0.0000	0.0000	0.0000	0.0070	0.0006	0.2500
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

EXHIBIT 1

PROBABILITIES OF SEPARATION PRIOR TO RETIREMENT
GENERAL PLANS 2 AND 4 FEMALE MEMBERS

Age	Withdrawal 0 <= X < 1	Withdrawal 1 <= X < 2	Withdrawal 2 <= X < 3	Withdrawal 3 <= X < 4	Withdrawal 4 <= X < 5	Withdrawal X >= 5	Terminated Vested	Non-Duty Disability	Duty Disability	Non-Duty Death	Duty Death	Service Retirement
<= 20	0.1153	0.1097	0.0882	0.0600	0.0493	0.0493	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
21	0.1153	0.1097	0.0882	0.0600	0.0493	0.0493	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
22	0.1153	0.1097	0.0882	0.0600	0.0493	0.0493	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
23	0.1153	0.1097	0.0882	0.0600	0.0493	0.0493	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
24	0.1153	0.1097	0.0882	0.0600	0.0493	0.0493	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
25	0.1153	0.1097	0.0882	0.0600	0.0493	0.0493	0.0085	0.0001	0.0000	0.0003	0.0000	0.0000
26	0.1153	0.1097	0.0882	0.0600	0.0493	0.0493	0.0085	0.0001	0.0000	0.0003	0.0000	0.0000
27	0.1153	0.1097	0.0882	0.0600	0.0493	0.0493	0.0090	0.0002	0.0001	0.0003	0.0000	0.0000
28	0.1153	0.1097	0.0882	0.0600	0.0493	0.0493	0.0090	0.0002	0.0001	0.0003	0.0000	0.0000
29	0.1153	0.1097	0.0882	0.0600	0.0493	0.0493	0.0095	0.0002	0.0001	0.0003	0.0000	0.0000
30	0.1153	0.1097	0.0882	0.0600	0.0493	0.0476	0.0125	0.0003	0.0001	0.0003	0.0000	0.0000
31	0.1153	0.1097	0.0882	0.0600	0.0493	0.0468	0.0150	0.0003	0.0001	0.0003	0.0000	0.0000
32	0.1153	0.1097	0.0882	0.0600	0.0493	0.0450	0.0160	0.0003	0.0001	0.0003	0.0000	0.0000
33	0.1153	0.1097	0.0882	0.0600	0.0493	0.0395	0.0170	0.0007	0.0003	0.0004	0.0000	0.0000
34	0.1153	0.1097	0.0882	0.0600	0.0493	0.0349	0.0175	0.0010	0.0006	0.0004	0.0000	0.0000
35	0.1153	0.1097	0.0882	0.0600	0.0493	0.0240	0.0200	0.0016	0.0010	0.0005	0.0000	0.0000
36	0.1153	0.1097	0.0882	0.0600	0.0493	0.0240	0.0200	0.0020	0.0012	0.0005	0.0000	0.0000
37	0.1153	0.1097	0.0882	0.0600	0.0493	0.0240	0.0200	0.0028	0.0015	0.0005	0.0000	0.0000
38	0.1153	0.1097	0.0882	0.0600	0.0493	0.0240	0.0175	0.0029	0.0018	0.0005	0.0000	0.0000
39	0.1153	0.1097	0.0882	0.0600	0.0493	0.0240	0.0150	0.0030	0.0020	0.0006	0.0000	0.0000
40	0.1153	0.1097	0.0882	0.0600	0.0493	0.0240	0.0125	0.0030	0.0020	0.0005	0.0000	0.0000
41	0.1153	0.1097	0.0882	0.0600	0.0493	0.0240	0.0125	0.0030	0.0020	0.0005	0.0000	0.0000
42	0.1153	0.1097	0.0882	0.0600	0.0493	0.0240	0.0125	0.0030	0.0020	0.0006	0.0000	0.0000
43	0.1153	0.1097	0.0882	0.0600	0.0493	0.0240	0.0125	0.0030	0.0020	0.0006	0.0000	0.0000
44	0.1153	0.1097	0.0882	0.0600	0.0493	0.0240	0.0125	0.0030	0.0020	0.0007	0.0000	0.0000
45	0.1153	0.1097	0.0882	0.0600	0.0493	0.0227	0.0125	0.0030	0.0020	0.0005	0.0000	0.0000
46	0.1153	0.1097	0.0882	0.0600	0.0493	0.0211	0.0125	0.0036	0.0020	0.0006	0.0000	0.0000
47	0.1153	0.1097	0.0882	0.0600	0.0493	0.0195	0.0125	0.0042	0.0020	0.0007	0.0000	0.0000
48	0.1153	0.1097	0.0882	0.0600	0.0493	0.0180	0.0125	0.0042	0.0020	0.0007	0.0000	0.0000
49	0.1153	0.1097	0.0882	0.0600	0.0493	0.0166	0.0125	0.0042	0.0020	0.0008	0.0000	0.0000
50	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0125	0.0042	0.0020	0.0009	0.0000	0.0160
51	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0125	0.0042	0.0021	0.0010	0.0000	0.0160
52	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0125	0.0042	0.0022	0.0012	0.0000	0.0160
53	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0125	0.0042	0.0023	0.0013	0.0000	0.0160
54	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0125	0.0042	0.0024	0.0015	0.0000	0.0193
55	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0120	0.0045	0.0025	0.0016	0.0000	0.0329
56	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0110	0.0049	0.0030	0.0018	0.0000	0.0398
57	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0100	0.0053	0.0035	0.0019	0.0000	0.0406
58	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0050	0.0057	0.0037	0.0021	0.0000	0.0416
59	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0025	0.0061	0.0040	0.0022	0.0000	0.0484
60	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0000	0.0073	0.0056	0.0024	0.0000	0.0568
61	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0000	0.0090	0.0071	0.0025	0.0000	0.0533
62	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0000	0.0109	0.0085	0.0027	0.0000	0.1244
63	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0000	0.0110	0.0097	0.0028	0.0000	0.1311
64	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0000	0.0115	0.0107	0.0030	0.0000	0.1377
65	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0000	0.0000	0.0000	0.0031	0.0000	0.2500
66	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0000	0.0000	0.0000	0.0033	0.0000	0.1545
67	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0000	0.0000	0.0000	0.0035	0.0000	0.1935
68	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0000	0.0000	0.0000	0.0036	0.0000	0.2046
69	0.1153	0.1097	0.0882	0.0600	0.0493	0.0000	0.0000	0.0000	0.0000	0.0038	0.0000	0.2630
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

EXHIBIT 1

PROBABILITIES OF SEPARATION PRIOR TO RETIREMENT
GENERAL PLAN 3 MALE MEMBERS

Age	Withdrawal 0 <= X < 1	Withdrawal 1 <= X < 2	Withdrawal 2 <= X < 3	Withdrawal 3 <= X < 4	Withdrawal 4 <= X < 5	Withdrawal X >= 5	Terminated Vested	Non-Duty Disability	Duty Disability	Non-Duty Death	Duty Death	Service Retirement
<= 20	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
21	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
22	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
23	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
24	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
25	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0085	0.0002	0.0000	0.0003	0.0001	0.0000
26	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0085	0.0002	0.0000	0.0003	0.0001	0.0000
27	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0090	0.0002	0.0000	0.0003	0.0001	0.0000
28	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0090	0.0002	0.0000	0.0003	0.0001	0.0000
29	0.3000	0.1387	0.1394	0.1394	0.0600	0.0400	0.0095	0.0002	0.0000	0.0003	0.0001	0.0000
30	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0100	0.0002	0.0000	0.0003	0.0001	0.0000
31	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0105	0.0002	0.0000	0.0004	0.0001	0.0000
32	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0110	0.0002	0.0000	0.0004	0.0001	0.0000
33	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0115	0.0002	0.0000	0.0005	0.0001	0.0000
34	0.3000	0.1387	0.1396	0.1396	0.0600	0.0400	0.0125	0.0002	0.0000	0.0005	0.0001	0.0000
35	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0135	0.0003	0.0001	0.0005	0.0001	0.0000
36	0.3000	0.1387	0.1387	0.1387	0.0600	0.0400	0.0160	0.0004	0.0001	0.0006	0.0001	0.0000
37	0.3000	0.1387	0.1387	0.1387	0.0600	0.0350	0.0180	0.0004	0.0001	0.0006	0.0001	0.0000
38	0.3000	0.1387	0.1387	0.1387	0.0600	0.0300	0.0195	0.0005	0.0001	0.0006	0.0001	0.0000
39	0.3000	0.1387	0.1380	0.1380	0.0600	0.0250	0.0205	0.0005	0.0001	0.0006	0.0001	0.0000
40	0.3000	0.1387	0.1387	0.1387	0.0600	0.0200	0.0210	0.0006	0.0001	0.0006	0.0001	0.0000
41	0.3000	0.1387	0.1387	0.1387	0.0600	0.0175	0.0215	0.0006	0.0001	0.0007	0.0001	0.0000
42	0.3000	0.1387	0.1387	0.1387	0.0600	0.0150	0.0215	0.0007	0.0001	0.0008	0.0001	0.0000
43	0.3000	0.1387	0.1387	0.1387	0.0600	0.0150	0.0220	0.0008	0.0001	0.0009	0.0001	0.0000
44	0.3000	0.1387	0.1379	0.1379	0.0600	0.0150	0.0230	0.0009	0.0001	0.0010	0.0002	0.0000
45	0.3000	0.1387	0.1387	0.1387	0.0600	0.0150	0.0240	0.0010	0.0002	0.0012	0.0002	0.0000
46	0.3000	0.1387	0.1387	0.1387	0.0600	0.0150	0.0250	0.0011	0.0002	0.0014	0.0002	0.0000
47	0.3000	0.1387	0.1387	0.1387	0.0600	0.0150	0.0260	0.0012	0.0002	0.0016	0.0002	0.0000
48	0.3000	0.1387	0.1387	0.1387	0.0600	0.0150	0.0250	0.0014	0.0002	0.0018	0.0002	0.0000
49	0.3000	0.1387	0.1400	0.1400	0.0600	0.0150	0.0245	0.0015	0.0002	0.0020	0.0002	0.0000
50	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0245	0.0016	0.0002	0.0022	0.0002	0.0000
51	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0225	0.0018	0.0003	0.0024	0.0002	0.0000
52	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0200	0.0019	0.0004	0.0026	0.0003	0.0000
53	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0175	0.0021	0.0004	0.0028	0.0003	0.0000
54	0.3000	0.1387	0.1400	0.1400	0.0600	0.0000	0.0140	0.0023	0.0005	0.0030	0.0003	0.0000
55	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0120	0.0025	0.0005	0.0032	0.0003	0.0513
56	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0110	0.0027	0.0006	0.0034	0.0003	0.0660
57	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0100	0.0029	0.0006	0.0036	0.0004	0.0806
58	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0090	0.0032	0.0007	0.0038	0.0004	0.0953
59	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0080	0.0034	0.0008	0.0040	0.0004	0.1099
60	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0070	0.0038	0.0009	0.0042	0.0004	0.1200
61	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0060	0.0040	0.0010	0.0044	0.0004	0.1250
62	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0050	0.0042	0.0011	0.0046	0.0005	0.2500
63	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0040	0.0045	0.0012	0.0048	0.0005	0.2000
64	0.3000	0.1387	0.1414	0.1414	0.0600	0.0000	0.0030	0.0047	0.0013	0.0050	0.0005	0.2000
65	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0000	0.0000	0.0000	0.0052	0.0005	0.2553
66	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0000	0.0000	0.0000	0.0056	0.0005	0.2553
67	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0000	0.0000	0.0000	0.0060	0.0006	0.2918
68	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0000	0.0000	0.0000	0.0065	0.0006	0.3283
69	0.3000	0.1387	0.1387	0.1387	0.0600	0.0000	0.0000	0.0000	0.0000	0.0070	0.0006	0.3647
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

EXHIBIT 1

PROBABILITIES OF SEPARATION PRIOR TO RETIREMENT
GENERAL PLAN 3 FEMALE MEMBERS

Age	Withdrawal 0 <= X < 1	Withdrawal 1 <= X < 2	Withdrawal 2 <= X < 3	Withdrawal 3 <= X < 4	Withdrawal 4 <= X < 5	Withdrawal X >= 5	Terminated Vested	Non-Duty Disability	Duty Disability	Non-Duty Death	Duty Death	Service Retirement
<= 20	0.1500	0.1500	0.1000	0.1000	0.0400	0.1687	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
21	0.1500	0.1500	0.1000	0.1000	0.0400	0.1603	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
22	0.1500	0.1500	0.1000	0.1000	0.0400	0.1527	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
23	0.1500	0.1500	0.1000	0.1000	0.0400	0.1460	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
24	0.1500	0.1500	0.1000	0.1000	0.0400	0.1400	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
25	0.1500	0.1500	0.1000	0.1000	0.0400	0.1254	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
26	0.1500	0.1500	0.1000	0.1000	0.0400	0.1214	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
27	0.1500	0.1500	0.1000	0.1000	0.0400	0.1183	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
28	0.1500	0.1500	0.1000	0.1000	0.0400	0.1160	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
29	0.1500	0.1500	0.1000	0.1000	0.0400	0.1136	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
30	0.1500	0.1500	0.1000	0.1000	0.0400	0.1080	0.0085	0.0001	0.0000	0.0003	0.0000	0.0000
31	0.1500	0.1500	0.1000	0.1000	0.0400	0.1024	0.0100	0.0001	0.0000	0.0004	0.0000	0.0000
32	0.1500	0.1500	0.1000	0.1000	0.0400	0.0968	0.0120	0.0001	0.0000	0.0004	0.0000	0.0000
33	0.1500	0.1500	0.1000	0.1000	0.0400	0.0911	0.0140	0.0001	0.0000	0.0005	0.0000	0.0000
34	0.1500	0.1500	0.1000	0.1000	0.0400	0.0855	0.0160	0.0001	0.0000	0.0005	0.0000	0.0000
35	0.1500	0.1500	0.1000	0.1000	0.0400	0.0799	0.0180	0.0002	0.0001	0.0005	0.0000	0.0000
36	0.1500	0.1500	0.1000	0.1000	0.0400	0.0743	0.0200	0.0002	0.0001	0.0006	0.0000	0.0000
37	0.1500	0.1500	0.1000	0.1000	0.0400	0.0687	0.0215	0.0002	0.0001	0.0006	0.0000	0.0000
38	0.1500	0.1500	0.1000	0.1000	0.0400	0.0631	0.0230	0.0002	0.0001	0.0006	0.0000	0.0000
39	0.1500	0.1500	0.1000	0.1000	0.0400	0.0574	0.0240	0.0002	0.0001	0.0006	0.0000	0.0000
40	0.1500	0.1500	0.1000	0.1000	0.0400	0.0518	0.0240	0.0002	0.0001	0.0006	0.0000	0.0000
41	0.1500	0.1500	0.1000	0.1000	0.0400	0.0462	0.0220	0.0002	0.0001	0.0007	0.0000	0.0000
42	0.1500	0.1500	0.1000	0.1000	0.0400	0.0406	0.0200	0.0003	0.0001	0.0008	0.0000	0.0000
43	0.1500	0.1500	0.1000	0.1000	0.0400	0.0350	0.0190	0.0004	0.0001	0.0009	0.0000	0.0000
44	0.1500	0.1500	0.1000	0.1000	0.0400	0.0294	0.0180	0.0005	0.0001	0.0010	0.0000	0.0000
45	0.1500	0.1500	0.1000	0.1000	0.0400	0.0238	0.0175	0.0006	0.0002	0.0012	0.0000	0.0000
46	0.1500	0.1500	0.1000	0.1000	0.0400	0.0211	0.0170	0.0006	0.0002	0.0014	0.0000	0.0000
47	0.1500	0.1500	0.1000	0.1000	0.0400	0.0188	0.0165	0.0008	0.0002	0.0016	0.0000	0.0000
48	0.1500	0.1500	0.1000	0.1000	0.0400	0.0166	0.0155	0.0008	0.0002	0.0018	0.0000	0.0000
49	0.1500	0.1500	0.1000	0.1000	0.0400	0.0143	0.0140	0.0009	0.0002	0.0020	0.0000	0.0000
50	0.1500	0.1500	0.1000	0.1000	0.0400	0.0157	0.0130	0.0010	0.0003	0.0022	0.0000	0.0000
51	0.1500	0.1500	0.1000	0.1000	0.0400	0.0160	0.0125	0.0011	0.0003	0.0024	0.0000	0.0000
52	0.1500	0.1500	0.1000	0.1000	0.0400	0.0170	0.0120	0.0012	0.0004	0.0026	0.0000	0.0000
53	0.1500	0.1500	0.1000	0.1000	0.0400	0.0180	0.0115	0.0014	0.0004	0.0028	0.0000	0.0000
54	0.1500	0.1500	0.1000	0.1000	0.0400	0.0190	0.0110	0.0017	0.0005	0.0030	0.0000	0.0000
55	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0105	0.0018	0.0005	0.0032	0.0000	0.0229
56	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0100	0.0021	0.0006	0.0034	0.0000	0.0204
57	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0090	0.0022	0.0006	0.0036	0.0000	0.0137
58	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0080	0.0023	0.0006	0.0038	0.0000	0.0166
59	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0070	0.0025	0.0007	0.0040	0.0000	0.0225
60	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0060	0.0027	0.0008	0.0042	0.0000	0.0317
61	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0050	0.0028	0.0008	0.0044	0.0000	0.0350
62	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0040	0.0029	0.0008	0.0046	0.0000	0.0957
63	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0030	0.0031	0.0009	0.0048	0.0000	0.0886
64	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0020	0.0033	0.0009	0.0050	0.0000	0.2000
65	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0000	0.0000	0.0000	0.0052	0.0000	0.2500
66	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0000	0.0000	0.0000	0.0056	0.0000	0.1158
67	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0000	0.0000	0.0000	0.0060	0.0000	0.1244
68	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0000	0.0000	0.0000	0.0065	0.0000	0.4540
69	0.1500	0.1500	0.1000	0.1000	0.0400	0.0200	0.0000	0.0000	0.0000	0.0070	0.0000	0.5837
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

EXHIBIT 1

PROBABILITIES OF SEPARATION PRIOR TO RETIREMENT
SAFETY AND PROBATION MEMBERS

Age	Withdrawal 0 <= X < 1	Withdrawal 1 <= X < 2	Withdrawal 2 <= X < 3	Withdrawal 3 <= X < 4	Withdrawal 4 <= X < 5	Withdrawal X >= 5	Terminated Vested	Non-Duty Disability	Duty Disability	Non-Duty Death	Duty Death	Service Retirement
<= 20	0.1000	0.0799	0.0799	0.0799	0.0799	0.0130	0.0500	0.0000	0.0008	0.0002	0.0005	0.0000
21	0.1000	0.0754	0.0754	0.0754	0.0754	0.0130	0.0500	0.0000	0.0009	0.0002	0.0005	0.0000
22	0.1000	0.0709	0.0709	0.0709	0.0709	0.0130	0.0500	0.0000	0.0010	0.0002	0.0005	0.0000
23	0.1000	0.0663	0.0663	0.0663	0.0663	0.0130	0.0500	0.0000	0.0011	0.0002	0.0005	0.0000
24	0.1000	0.0618	0.0618	0.0618	0.0618	0.0130	0.0500	0.0000	0.0012	0.0002	0.0005	0.0000
25	0.1000	0.0474	0.0474	0.0474	0.0474	0.0130	0.0500	0.0002	0.0010	0.0003	0.0005	0.0000
26	0.1000	0.0449	0.0449	0.0449	0.0449	0.0130	0.0500	0.0002	0.0011	0.0003	0.0005	0.0000
27	0.1000	0.0424	0.0424	0.0424	0.0424	0.0130	0.0500	0.0002	0.0011	0.0004	0.0005	0.0000
28	0.1000	0.0411	0.0411	0.0411	0.0411	0.0130	0.0500	0.0002	0.0012	0.0004	0.0004	0.0000
29	0.1000	0.0399	0.0399	0.0399	0.0399	0.0130	0.0450	0.0002	0.0013	0.0004	0.0004	0.0000
30	0.1000	0.0369	0.0369	0.0369	0.0369	0.0130	0.0400	0.0003	0.0011	0.0003	0.0005	0.0000
31	0.1000	0.0357	0.0357	0.0357	0.0357	0.0130	0.0300	0.0003	0.0011	0.0004	0.0005	0.0000
32	0.1000	0.0345	0.0345	0.0345	0.0345	0.0129	0.0250	0.0004	0.0012	0.0003	0.0005	0.0000
33	0.1000	0.0333	0.0333	0.0333	0.0333	0.0129	0.0250	0.0004	0.0012	0.0004	0.0005	0.0000
34	0.1000	0.0321	0.0321	0.0321	0.0321	0.0129	0.0250	0.0005	0.0012	0.0004	0.0005	0.0000
35	0.1000	0.0310	0.0310	0.0310	0.0310	0.0129	0.0225	0.0004	0.0012	0.0004	0.0005	0.0000
36	0.1000	0.0299	0.0299	0.0299	0.0299	0.0128	0.0200	0.0005	0.0016	0.0004	0.0005	0.0000
37	0.1000	0.0289	0.0289	0.0289	0.0289	0.0128	0.0200	0.0006	0.0020	0.0004	0.0005	0.0000
38	0.1000	0.0278	0.0278	0.0278	0.0278	0.0128	0.0200	0.0007	0.0023	0.0004	0.0005	0.0000
39	0.1000	0.0267	0.0267	0.0267	0.0267	0.0128	0.0175	0.0008	0.0026	0.0004	0.0006	0.0000
40	0.1000	0.0257	0.0257	0.0257	0.0257	0.0127	0.0150	0.0009	0.0047	0.0004	0.0006	0.0000
41	0.1000	0.0214	0.0214	0.0214	0.0214	0.0127	0.0125	0.0010	0.0057	0.0004	0.0006	0.0000
42	0.1000	0.0172	0.0172	0.0172	0.0172	0.0127	0.0100	0.0010	0.0070	0.0005	0.0007	0.0000
43	0.1000	0.0129	0.0129	0.0129	0.0129	0.0110	0.0100	0.0011	0.0081	0.0005	0.0007	0.0000
44	0.1000	0.0086	0.0086	0.0086	0.0086	0.0102	0.0100	0.0011	0.0092	0.0006	0.0007	0.0000
45	0.1000	0.0025	0.0025	0.0025	0.0025	0.0093	0.0100	0.0012	0.0100	0.0006	0.0007	0.0000
46	0.1000	0.0019	0.0019	0.0019	0.0019	0.0085	0.0100	0.0012	0.0105	0.0007	0.0007	0.0000
47	0.1000	0.0019	0.0019	0.0019	0.0019	0.0077	0.0100	0.0012	0.0110	0.0008	0.0007	0.0000
48	0.1000	0.0013	0.0013	0.0013	0.0013	0.0069	0.0100	0.0012	0.0115	0.0008	0.0007	0.0000
49	0.1000	0.0013	0.0013	0.0013	0.0013	0.0060	0.0100	0.0012	0.0120	0.0008	0.0007	0.0000
50	0.1000	0.0013	0.0013	0.0013	0.0013	0.0000	0.0075	0.0012	0.0125	0.0009	0.0007	0.0362
51	0.1000	0.0013	0.0013	0.0013	0.0013	0.0000	0.0065	0.0012	0.0130	0.0009	0.0007	0.0239
52	0.1000	0.0007	0.0007	0.0007	0.0007	0.0000	0.0055	0.0015	0.0135	0.0009	0.0007	0.0261
53	0.1000	0.0007	0.0007	0.0007	0.0007	0.0000	0.0050	0.0020	0.0150	0.0010	0.0007	0.0384
54	0.1000	0.0007	0.0007	0.0007	0.0007	0.0000	0.0050	0.0030	0.0167	0.0012	0.0010	0.0527
55	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0035	0.0175	0.0013	0.0011	0.2500
56	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0036	0.0200	0.0014	0.0011	0.2500
57	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0038	0.0225	0.0015	0.0012	0.2500
58	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0040	0.0250	0.0017	0.0015	0.1500
59	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0041	0.0275	0.0019	0.0000	0.1000
60	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
61	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
62	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
63	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
64	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
66	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
67	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
68	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
69	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

EXHIBIT 2
YEARS OF LIFE EXPECTANCY AFTER SERVICE RETIREMENT

	General Members				General Members		
Age	Male	Female	Safety	Age	Male	Female	Safety
50	29.09	35.19	29.09	80	7.51	10.49	7.51
51	28.18	34.24	28.18	81	7.07	9.88	7.07
52	27.28	33.29	27.28	82	6.65	9.30	6.65
53	26.38	32.34	26.38	83	6.24	8.74	6.24
54	25.49	31.40	25.49	84	5.86	8.20	5.86
55	24.61	30.47	24.61	85	5.48	7.68	5.48
56	23.74	29.53	23.74	86	5.12	7.18	5.12
57	22.88	28.61	22.88	87	4.78	6.71	4.78
58	22.04	27.68	22.04	88	4.45	6.25	4.45
59	21.20	26.77	21.20	89	4.15	5.83	4.15
60	20.38	25.86	20.38	90	3.87	5.42	3.87
61	19.57	24.97	19.57	91	3.61	5.05	3.61
62	18.78	24.09	18.78	92	3.37	4.70	3.37
63	18.01	23.22	18.01	93	3.15	4.37	3.15
64	17.26	22.36	17.26	94	2.95	4.07	2.95
65	16.53	21.52	16.53	95	2.77	3.79	2.77
66	15.81	20.69	15.81	96	2.61	3.53	2.61
67	15.11	19.88	15.11	97	2.46	3.28	2.46
68	14.43	19.09	14.43	98	2.33	3.06	2.33
69	13.77	18.30	13.77	99	2.21	2.85	2.21
70	13.11	17.53	13.11	100	2.09	2.65	2.09
71	12.48	16.77	12.48	101	1.98	2.48	1.98
72	11.85	16.01	11.85	102	1.87	2.31	1.87
73	11.25	15.26	11.25	103	1.77	2.16	1.77
74	10.66	14.53	10.66	104	1.68	2.02	1.68
75	10.08	13.81	10.08	105	1.62	1.89	1.62
76	9.52	13.11	9.52	106	1.57	1.78	1.57
77	8.98	12.43	8.98	107	1.53	1.69	1.53
78	8.46	11.76	8.46	108	1.51	1.62	1.51
79	7.97	11.11	7.97	109	1.49	1.56	1.49
				110	1.47	1.51	1.47

General Male Members - 1994 GAM Male Set Forward 1 Year
Female Members - 1994 GAM Female Table Set back 1 Year

Safety All Members - 1994 GAM Male Set Forward 1 Year

EXHIBIT 2
YEARS OF LIFE EXPECTANCY AFTER DISABILITY RETIREMENT
General Members

Age	Male & Female	Age	Male & Female	Age	Male & Female
20	41.73	50	22.56	80	8.28
21	40.73	51	22.06	81	7.83
22	39.73	52	21.57	82	7.41
23	38.73	53	21.08	83	7.00
24	37.98	54	20.59	84	6.63
25	37.26	55	20.11	85	6.27
26	36.56	56	19.63	86	5.94
27	35.87	57	19.16	87	5.63
28	35.19	58	18.68	88	5.34
29	34.53	59	18.21	89	5.06
30	33.87	60	17.75	90	4.80
31	33.23	61	17.29	91	4.55
32	32.60	62	16.83	92	4.31
33	31.98	63	16.37	93	4.09
34	31.37	64	15.91	94	3.87
35	30.76	65	15.45	95	3.66
36	30.17	66	14.99	96	3.46
37	29.58	67	14.53	97	3.26
38	29.00	68	14.07	98	3.07
39	28.43	69	13.60	99	2.89
40	27.87	70	13.13	100	2.71
41	27.31	71	12.66	101	2.54
42	26.76	72	12.18	102	2.37
43	26.21	73	11.70	103	2.20
44	25.67	74	11.21	104	2.04
45	25.14	75	10.72	105	1.88
46	24.61	76	10.22	106	1.72
47	24.09	77	9.73	107	1.55
48	23.57	78	9.24	108	1.38
49	23.06	79	8.76	109	1.21
				110	1.21

General 1981 General Disability Table Set Back 3 Years

EXHIBIT 2

YEARS OF LIFE EXPECTANCY AFTER DISABILITY RETIREMENT

Safety Members

Age	Male & Female	Age	Male & Female	Age	Male & Female
20	50.29	50	24.38	80	7.41
21	49.29	51	23.59	81	7.00
22	48.39	52	22.80	82	6.63
23	47.48	53	22.03	83	6.27
24	46.58	54	21.26	84	5.94
25	45.68	55	20.50	85	5.63
26	44.79	56	19.77	86	5.34
27	43.89	57	19.06	87	5.06
28	43.01	58	18.40	88	4.80
29	42.12	59	17.78	89	4.55
30	41.24	60	17.20	90	4.31
31	40.36	61	16.64	91	4.09
32	39.48	62	16.11	92	3.87
33	38.61	63	15.59	93	3.66
34	37.74	64	15.08	94	3.46
35	36.88	65	14.58	95	3.26
36	36.02	66	14.09	96	3.07
37	35.16	67	13.61	97	2.89
38	34.31	68	13.13	98	2.71
39	33.45	69	12.66	99	2.54
40	32.61	70	12.18	100	2.37
41	31.77	71	11.70	101	2.20
42	30.93	72	11.21	102	2.04
43	30.09	73	10.72	103	1.88
44	29.26	74	10.22	104	1.72
45	28.43	75	9.73	105	1.55
46	27.61	76	9.24	106	1.38
47	26.80	77	8.76	107	1.21
48	25.98	78	8.28	108	1.04
49	25.18	79	7.83	109	0.88
				110	0.88

Safety 1981 Safety Disability Table Set Back 1 Year