August 31, 2009

Experience Study 2004 - 2008
Public Employees Retirement Fund

MERCER

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Consulting. Outsourcing. Investments.

August 31, 2009

Ms. Mary Most Vanek
Executive Director
Public Employees Retirement Association of Minnesota
60 Empire Drive, Suite 200
St. Paul, MN 55103

2008 Experience Study – Public Employees Retirement Fund

Dear Mary:

The results of the actuarial valuation are based on actuarial methods, procedures and assumptions adopted by the Legislative Commission on Pensions and Retirement (LCPR). These assumptions are used in developing employer contribution rates, disclosing employer liabilities pursuant to GASB requirements and for analyzing the fiscal impact of proposed legislative amendments.

The purpose of this report is to present the results of our review of the actuarial methods and procedures, economic assumptions, and demographic assumptions used in the June 30, 2008 actuarial valuation. Our recommendations represent our best-estimate based on recent experience, future expectations and professional judgment.

The analysis in this study was based on data for the period from July 1, 2004, to June 30, 2008, as provided by the Fund. The Fund's actuary would not customarily verify this data. We have reviewed the information for internal consistency and reasonableness and have no reason to doubt its substantial accuracy.

This report has been prepared exclusively for the Public Employees Retirement Fund. Mercer is not responsible for consequences arising from the use of this report for any other purposes.

We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate. The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.
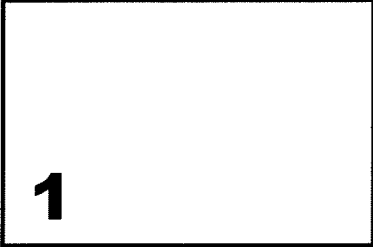
Sincerely,

Michael Moehle, FSA, EA, MAAA   Bonnie Wurst, ASA, EA, MAAA

The information contained in this document (including any attachments) is not intended by Mercer to be used, and it cannot be used, for the purpose of avoiding penalties under the Internal Revenue Code that may be imposed on the taxpayer.

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Executive Summary

This report has been prepared by Mercer for the Public Employees Retirement Fund in order to analyze the Fund's experience from July 1, 2004, through June 30, 2008, and to develop recommendations for changes in valuation methods, allocation procedures, economic assumptions, and demographic assumptions.

A brief summary of our recommendations are as follows:

Actuarial Methods	No changes to current actuarial methods.
Economic Assumptions	Reduce the real wage growth assumption from 1.50% to 1.00%.
	Reduce the payroll growth assumption from 4.50% to 4.00%.
	Reduce the salary increase assumption and change to a service related table.
	Reduce the investment return assumption from 8.50% to 8.00%.
Demographic Assumptions	Change the basis for several of the assumptions and make adjustments to several other current assumptions to more closely match experience.

A valuation assumption which is outside the scope of this experience study is the Combined Service Annuity load factor. Currently, active liabilities are increased 0.8% and deferred vested liabilities are increased 60.0% to account for the effect of some members being eligible for a Combined Service Annuity. This assumption has been unchanged since 2002. We recommend that actual Combined Service Annuity data be collected and reviewed in order to determine whether the current factors are appropriate.

Executive Summary

Overview of Recommended Changes

Actuarial Methods
We recommend no changes to the actuarial methods.

Economic Assumptions
Real Wage Growth

Based on our analysis of actual growth in real National Average Wages over the last 50 years, we recommend changing the current assumption from 1.50% to 1.00%.

Payroll Growth

Based on our recommended change in the Real Wage Growth assumption, we recommend changing the current assumption from 4.50% to 4.00%.

Salary Increases

We recommend changing the salary increase rates from a five-year select basis to a service based table which reflects lower expected salary increases.

Investment Return

Based on our analysis of anticipated returns for asset classes included in the target asset allocation, we recommend changing the current assumption from 8.50% to 8.00%.

Demographic Assumptions
Healthy Post Retirement Mortality

Mortality rates are used to project the length of time benefits will be paid to current and future retirees and beneficiaries. We recommend a change to a more recent mortality table to better anticipate current and future mortality patterns.

Disabled Post Retirement Mortality

In conjunction with our recommended change for healthy retiree mortality, we recommend a change to a more recent disabled mortality table with adjustments.

Pre-retirement Mortality

In conjunction with our recommended change for healthy retiree mortality, we are recommending a change to a more recent mortality table with adjustments.

Retirement from Active Status

Retirement rates are used to predict when active members will elect to begin receiving retirement benefits. We recommend lowering the retirement rates to reflect retirement patterns observed over the last two four-year experience study periods.

Executive Summary

Annuity Form Elections at Retirement

We recommend making minor adjustments to the percentages of retirees who are married, the age difference between retirees and beneficiaries and the percentages of retirees electing the optional forms of benefit at retirement.

Disability Retirement

We recommend a reduction in disability rates for male and female members.

Termination Rates

We recommend changing the termination rates from a three-year select and ultimate basis to an age and service based table which reflects higher expected turnover.

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Actuarial Methods

Overview

Actuarial methods and allocation procedures are used as part of the valuation to determine actuarial accrued liabilities, to determine normal costs, to allocate costs to individual employers and to amortize unfunded accrued liabilities (UAL). We used the following objectives to recommend actuarial methods and allocation procedures:

- Transparency of costs and funded status
- Predictable and stable employer contribution rates
- Protection of the plan's funded status
- Equity across generations
- Actuarial soundness
- Compliance with GASB requirements

We recommend no changes to the fundamental actuarial methods at this time. Consistent with our analysis from earlier this year, we recommend continued consideration of a corridor, such as 80% to 120%, which would limit the actuarial value of assets to ensure that it does not get too far from actual market value.

The actuarial methods used for the June 30, 2008 actuarial valuation are shown in the table on the next page.

Actuarial Methods

Method	June 30, 2008 Assumption	Recommended Assumption
Cost method	Entry Age Normal	No change
UAL amortization method	UAL Amortized as a level percent of payroll	No change
UAL amortization period	A closed period ending June 30, 2031. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll	No change
Asset valuation method	The assets are valued based on a five-year moving average of expected and market values (five-year average actuarial value) determined as follows:	No change

- At the end of each plan year, an average asset value is calculated as the average of the market asset value at the beginning and end of the fiscal year net of investment income for the fiscal year;

- The investment gain or (loss) is taken as the excess of actual investment income over the expected investment income based on average asset value as calculated above;

- The investment gain or (loss) so determined is recognized over five years at 20% per year;

- The asset value is the sum of the expected asset value plus the schedule recognition of investment gains or (losses) during the current and the preceding four plan years.

The Minnesota Post Retirement Investment Fund (Post Fund) has been recognized at full market value without smoothing. As of the date of this report, the Post Fund has been dissolved and its assets reassigned to each applicable active fund. Effective July 1, 2009, the Post Fund assets will be smoothed in a manner similar to the active fund assets, and 80% of the Post Fund investment gain or loss for the fiscal year ending June 30, 2009 will be deferred.

The funding method is described in greater detail on the following page.

Actuarial Methods

Actuarial Cost Method

The total cost of the Fund, over time, will be equal to the benefits paid less investment earnings and is not affected directly by the actuarial cost method. The actuarial cost method is simply a tool to assign costs to past, current or future years and, thus, primarily affects the timing of contributions.

Liabilities and contributions in this report are computed using the Individual Entry Age Normal Cost Method. This method is prescribed by Minnesota Statutes.

The objective under this method is to fund each participants' benefits under the Plan as payments which are level as a percentage of salary, starting at original participation date (or employment date), and continuing until the assumed retirement, termination, disability or death.

At the time the funding method is introduced, there will be a liability which represents the contributions which would have been accumulated if this method of funding had always been used. The difference between this liability and the assets (if any) which are held in the fund is the unfunded liability which is typically funded over a chosen period in accordance with the amortization schedule.

A detailed description of the calculation follows:

The normal costs for each active participant under the assumed retirement age is determined by applying to earnings the level percentage of salary which, if contributed each year from date of entry into the Plan until the assumed retirement (termination, disability or death) date, is sufficient to provide the full value of the benefits expected to be payable.

The present value of future normal costs is the total of the discounted values of all active participants' normal cost, assuming these to be paid in each case from the valuation date until retirement (termination, disability or death) date.

The present value of projected benefits is calculated as the value of all benefit payments expected to be paid to the Plan's current participants, including active and retired members, beneficiaries, and terminated members with vested rights.

The accrued liability is the excess of the present value of projected benefits over the present value of future normal cost.

The unfunded liability is the excess of the accrued liability over the assets of the fund, and represents that part of the accrued liability which has not been funded by accumulated past contributions.

We recommend no change to the actuarial cost method.

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Economic Assumptions

Overview

Actuaries have traditionally been involved in the selection of economic assumptions and actuarial standards provide parameters for doing so. However, while actuaries have expertise in making sure assumptions are internally consistent within a model, actuaries have no more expertise in selecting many of the economic assumptions than do certain other professionals, e.g. economists. In truth, selecting inflation and rate of return assumptions is more of a science; because, no one knows future outcomes with any certainly. Actuaries must make "educated guesses" using professional judgment applied to historical information and estimates of future outcomes. As such, this report contains one set of economic assumptions that we would categorize as our best estimate. However, other sets of assumptions may be equally valid.

Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations,* provides guidance on selecting economic assumptions used in measuring obligations under defined benefit pension plans. ASOP No. 27 suggests that economic assumptions be developed using the actuary's professional judgment, taking into consideration past experience and the actuary's expectations regarding the future. The process for selecting economic assumptions involves:

- Identifying components of each assumption and evaluating relevant data;
- Developing a best-estimate range for each economic assumption; and
- Evaluating measurement specific factors and selecting a point within the best-estimate range.

A summary of the economic assumptions used for the June 30, 2008 actuarial valuation and recommended changes are shown below:

Assumption	June 30, 2008 Assumption	Recommended Assumption
Inflation	3.00%	No Change
Real wage growth (productivity)	1.50%	1.00%
Payroll growth	4.50%	4.00%
Salary Growth	Age related table	Service related table
Regular investment return	8.50%	8.00%

Economic Assumptions

The recommended assumptions shown on the previous page, in our opinion, were selected in a manner consistent with the requirements of ASOP No. 27. Each of the above assumptions is described in detail below and on the following pages.

Inflation

The assumed inflation rate is the starting point for all of the other economic assumptions. It affects other assumptions including payroll growth, investment return, and salary increase rates.
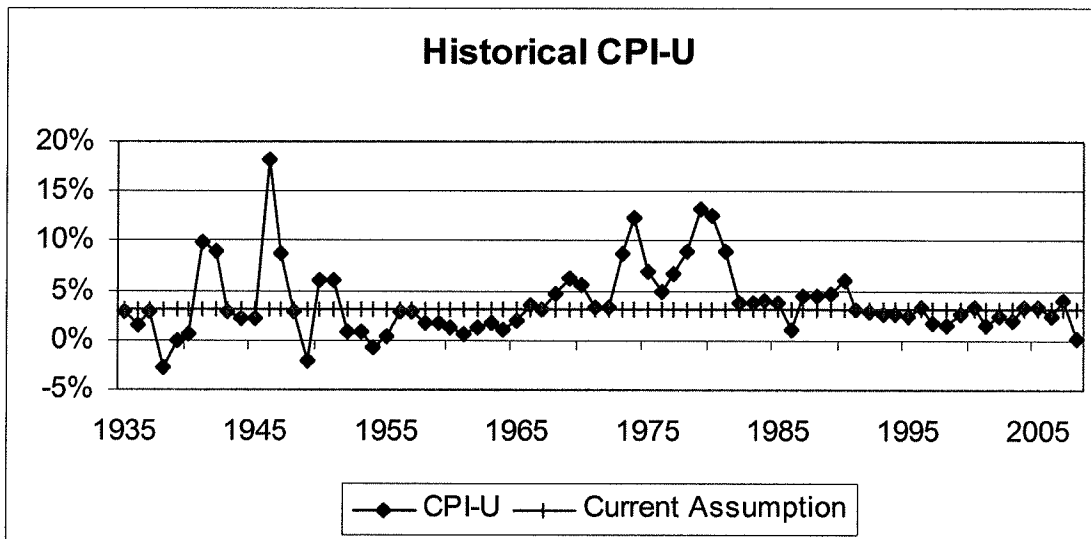
In selecting an appropriate inflation assumption, we consider both historical data and expected future inflation. The chart above shows the annual inflation rate for the years ending December 31 from 1935 through 2008 as reported by the Bureau of Labor Statistics. The mean and median annual rates over this period are 3.76% and 2.99% respectively.

Mercer Investment Consulting's best estimate of expected long-term inflation is a rate of 2.8% as of January 1, 2009. We also considered Social Security's current intermediate inflation assumption of 2.8%, and SBI's current inflation estimate of 3.0%.

Using Mercer's 2.8% assumption as a starting point, our best-estimate range for the inflation assumption is from 2.3% to 3.3%. Based on the potentially inflationary effects of the recent economic stimulus packages, we believe that inflation will be on the higher side of that range, and recommend no change to the assumed annual inflation rate of 3.0%.

Real Wage Growth

Real wage growth represents the increase in wages above inflation for the entire group due to improvements in productivity and competitive pressures. Merit and longevity wage growth, in contrast, represent the increases in wages for an individual due to factors such as performance, promotion, or seniority.

Economic Assumptions

Real wage growth combined with inflation represents the expected growth in total payroll for a stable population. Changes in payroll due to an increase or decline in the covered population are not captured by this assumption.

The chart below shows the real growth in national average wages over the past fifty years based on data compiled by the Social Security Administration.

Historical Real Growth in National Average Wages
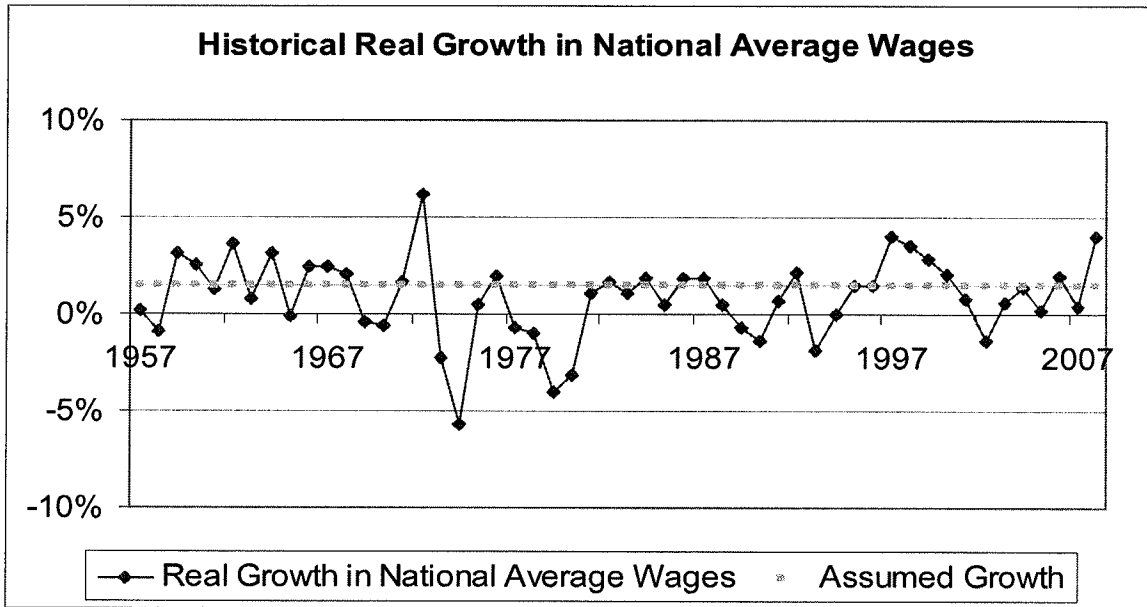
While the change in any one year has been volatile, the change over longer periods of time is more stable as shown in the table below.

Length of Period Ending June 30, 2008	Average Real Growth in National Average Wages
10 years	1.24%
20 years	0.94%
30 years	0.67%
40 years	0.56%
50 years	0.81%

Mercer's economic modeling suggests a reasonable expectation of average real growth in wages is from .50% to as much as 1.50%. Based on the table above, we recommend changing the current assumption of 1.50% to 1.00%.

Economic Assumptions

Payroll Growth

The payroll growth assumption is used to develop the annual amount necessary to amortize the unfunded actuarial liability as a level percentage of expected payroll.

Payroll growth is the sum of inflation and real wage growth. Since we are recommending a change in the real wage growth assumption, we recommend a corresponding change in the payroll growth assumption, from 4.50% to 4.00%.

Salary Increases

Using the building block approach recommended in ASOP 27, this assumption is composed of three components;

- Inflation
- Productivity
- Merit/promotion

The inflation and productivity components are combined to produce the assumed rate of wage inflation. This rate represents the "across the board" average annual increase in salaries shown in the experience data. The merit component includes the additional increases in salary due to individual performance, seniority, promotions, etc.

Our proposed salary increase table has some rates that are less than the assumed payroll growth of 4% for service of 13 or more years, which implies a negative merit/promotion component. Actual experience for the past 8 years supports the negative merit/promotion, with consistent plan experience below the national wage increase at advanced age and/or service.

This assumption is typically correlated to years of service, especially at lower years of service, and the current age based table incorporates a 5 year select period. During the 5-year select period, 0.60% x (5-T) is added to the ultimate rate, where T is completed years of service.

We reviewed the annual salary increases for the period July 1, 2004 through June 30, 2008 by both age and service. The data group was continuing active members with two consecutive full years of employment. For the salary analysis, we excluded some of the most dramatic salary changes. We excluded the lowest 2.5% and the highest 2.5% for a total of 5.0% of records excluded. While this was a relatively small group, their salary increases distorted the experience of the overall group of continuing active members. We also excluded people with less than one year of service for the same reason.

Economic Assumptions

The following chart shows the actual and expected salary increases for 2004 to 2008 in 5-year age bands, for service in the 5-year select period and for service beyond the 5-year select period.

Salary Increase

Age Group	Service less than 5 years			Service at least 5 years			Total		
	Exposures	Observed Average	Expected Average	Exposures	Observed Average	Expected Average	Exposures	Observed Average	Expected Average
<20	137	25.84%	7.55%				137	25.84%	7.55%
20-24	6,018	11.08%	7.19%	400	8.65%	5.40%	6,418	10.93%	7.08%
25-29	14,525	7.65%	6.80%	6,208	5.38%	5.32%	20,733	6.97%	6.36%
30-34	12,009	8.17%	6.52%	15,856	5.16%	5.12%	27,865	6.46%	5.72%
35-39	13,612	9.90%	6.30%	27,204	5.08%	4.92%	40,816	6.69%	5.38%
40-44	17,015	9.77%	6.08%	44,872	4.71%	4.72%	61,887	6.10%	5.09%
45-49	15,796	9.47%	5.87%	66,365	4.24%	4.52%	82,161	5.25%	4.78%
50-54	11,048	7.67%	5.65%	73,134	3.71%	4.32%	84,182	4.23%	4.49%
55-59	7,231	7.11%	5.48%	56,786	3.22%	4.12%	64,017	3.66%	4.27%
60-64	3,993	4.25%	5.36%	24,620	2.66%	4.00%	28,613	2.88%	4.19%
65-69	1,894	6.66%	5.38%	5,411	2.55%	4.00%	7,305	3.62%	4.36%
70-75	1,450	2.40%	5.32%	3,229	1.69%	4.00%	4,679	1.91%	4.41%
Total	**104,728**	**8.59%**	**6.16%**	**324,085**	**3.98%**	**4.46%**	**428,813**	**5.16%**	**4.87%**

Economic Assumptions

The actual experience shows that the current assumption is too low during the 5 year select period for most ages. For service beyond 5 years, the current assumption is too high at later ages. The observed salary increases tended to follow service more closely than age. Therefore, we are recommending a service based table.

Based on the experience from the last four years, and our expectations for inflation and productivity, our recommended salary increase assumption is shown below.

Service	Exposures	Observed Average	Expected Average	Proposed Average
1	14,715	14.98%	7.24%	12.00%
2	33,230	9.32%	6.58%	8.90%
3	29,322	7.19%	5.93%	7.50%
4	27,458	6.25%	5.30%	6.60%
5	26,858	5.90%	4.66%	6.00%
6	25,084	5.32%	4.64%	5.50%
7	22,777	4.60%	4.61%	5.20%
8	19,994	4.55%	4.58%	4.90%
9	17,872	4.51%	4.56%	4.60%
10	16,439	4.10%	4.53%	4.40%
11	15,245	4.10%	4.50%	4.20%
12	14,276	3.99%	4.48%	4.10%
13	13,631	3.74%	4.45%	3.90%
14	12,967	3.41%	4.42%	3.80%
15	12,669	3.48%	4.41%	3.70%
16	12,311	3.49%	4.39%	3.60%
17	12,023	3.33%	4.38%	3.50%
18	11,130	3.34%	4.36%	3.50%
19	10,486	3.10%	4.35%	3.50%
20	9,750	3.34%	4.33%	3.50%
21	8,376	3.37%	4.32%	3.50%
22	6,954	3.38%	4.31%	3.50%
23	6,013	3.11%	4.31%	3.50%
24	5,736	3.01%	4.30%	3.50%
25	6,133	3.24%	4.29%	3.50%
26	6,288	3.03%	4.27%	3.50%
27	5,938	3.09%	4.26%	3.50%
28	5,260	3.10%	4.25%	3.50%
29	4,396	3.06%	4.23%	3.50%
30	3,798	2.95%	4.22%	3.50%
31+	11,684	3.04%	4.22%	3.50%
Total	**428,813**	**5.16%**	**4.87%**	**5.26%**

Economic Assumptions

Investment Return

The assumed rate of investment return is used to discount the future expected benefit payments from the retirement plan to the valuation date. As such, it is one of the most important assumptions used in valuing the plan's liabilities and developing contribution rates. The assumption is intended to reflect the long-term expected return on the portfolio of assets that fund the benefits.

Investment return assumptions can be calculated using an arithmetic or geometric approach. In any given year, the approaches produce the same result. But when viewed over a period of time, the difference in approach can become significant. For example, consider a pension plan that earned 16% in the first year, and then earned nothing in the second year. The arithmetic average return is calculated by adding 16% plus 0%, and then dividing by 2, to get 8%. But this result is misleading. If the plan started with $1,000, then at the end of the period it would have $1,160. But if it had actually earned 8% each year, it would have had $1,166 [$1,000 times 1.08 times 1.08.] The actual average return, calculated on a compound (geometric) basis is 7.7% [$1,000 times 1.077 times 1.077 equals $1,160.] Unless the assets earn the same rate of return every year, geometric return will always be less than arithmetic return. Because the actuarial investment return assumption is used to project compound growth in assets over many years, it needs to be a geometric return assumption.

To develop our recommended investment return assumption, we use Mercer Investment Consulting's long-term return assumptions for each of the asset classes in which the plan is invested. Each asset class assumption is based on a consistent set of underlying assumptions, including the inflation assumption, which is currently 2.8%. These assumptions are not based on historical returns, but instead are based on a forward-looking economic model.

We then increase the returns to reflect the difference between the 2.8% underlying inflation expectation and our 3.0% best estimate used elsewhere in the valuation. Although the recent potentially inflationary spending increases our expected long term inflation by 0.2%, the economic stimulus package's infusion of capital into the marketplace will increase the supply of funds and therefore reduce the cost of capital (i.e. investment returns). While predicting the exact effect of the increased supply is impossible, a reasonable estimate is that half the increase in the inflation rate will be realized in investment returns. As such the net increase in expected return for the additional inflation/capital supply is 0.1%.

The result of our best estimate investment return calculation is 8.1%, and we would be comfortable using that assumption. However, such an assumption implies far more precision than is possible. Rates are frequently rounded to the nearest quarter percent, and as such **we suggest that 8.0% be adopted as the investment return assumption**.

Economic Assumptions

Investment Return Risk

The assets of the plan are invested in non risk-free securities. As such, future taxpayers are taking the risk associated with deviation from expected returns. Using a median expected return assumption would balance the likely upside and downside risk, but does not compensate those taxpayers for taking risk. Using an expected return assumption higher than the median shifts the balance so that future taxpayers are more likely to experience cost increases than decreases. Using an expected return assumption lower than the median shifts the balance so that future taxpayers are more likely to experience cost decreases than increases, although some of the decrease could be viewed as compensation for the risk being taken.

Details of our calculations are shown on the following pages.

Target Asset Allocation

We understand the plan's target asset allocation is as follows:

Target Asset Allocation

- ■ U.S. Equity
- ▨ International Equity
- ▱ Alternative Investments
- ■ Fixed Income
- ■ Cash
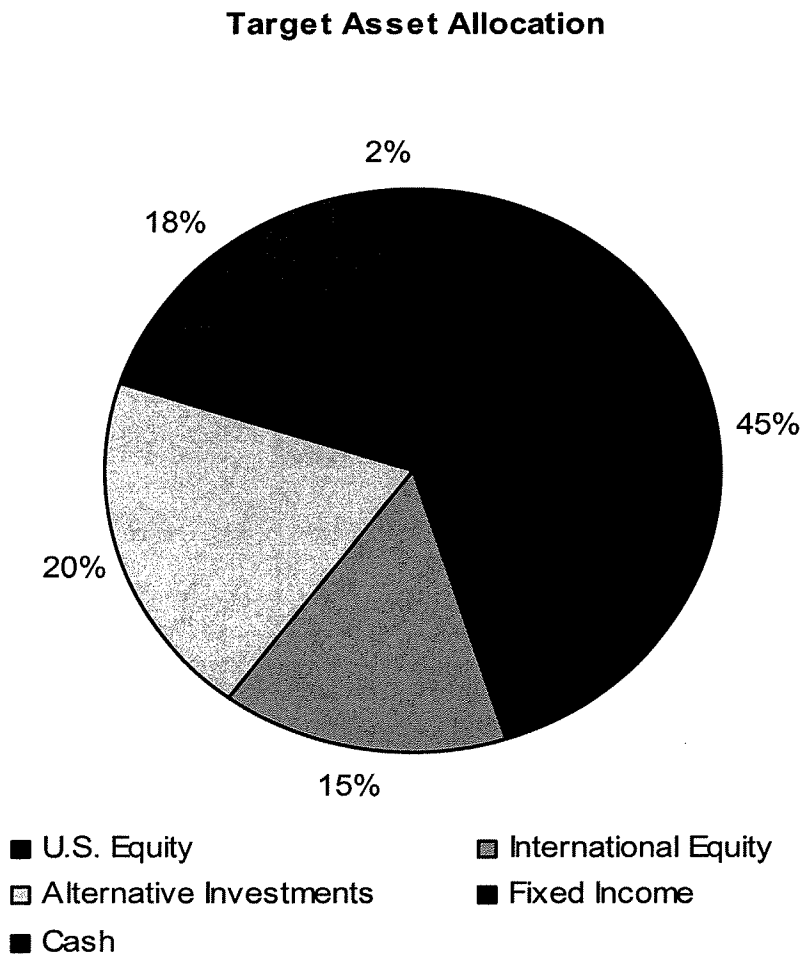
Economic Assumptions

Best Estimate Investment Return Development

Based on the target allocation and investment return assumptions for each of the asset classes, our best estimate assumption is developed as follows:

Asset Class	Target Allocation	Annual Geometric Return	Annual Arithmetic Return	Standard Deviation
U.S. Equity – Large Cap	42.6%	8.2%	9.6%	17.9%
U.S. Equity – Small Cap	2.4%	8.5%	11.0%	24.0%
Private Equity	10.6%	9.6%	13.0%	28.4%
Mezzanine Debt	4.1%	8.5%	10.2%	19.4%
International Equity	12.0%	8.4%	9.9%	18.4%
Emerging Markets Equity	3.0%	8.4%	11.3%	26.0%
U.S. Fixed Income	18.0%	4.7%	4.8%	5.5%
Real Estate	3.8%	7.4%	8.2%	13.7%
Resource	1.5%	4.6%	6.1%	18.0%
Cash	2.0%	3.5%	3.5%	1.3%
Portfolio – Gross	**100%**	**8.2%**	**9.0%**	**13.3%**

Based on capital market expectations developed by Mercer Investment Consulting as of January 1, 2009.

Gross Geometric Expected Return	8.2%
Increase in Expected Return from Net Inflation/Capital Supply Adjustment Described Above	0.1%
Assumed Investment Expenses	(0.2%)
Net Geometric Expected Return – Best Estimate	8.1%

Economic Assumptions

Best Estimate Range

At Mercer, once the actuary develops the expected return assumption in accordance with the requirements of ASOP No. 27, an independent verification is performed by comparing the expected return to the range of returns developed using Mercer's Portfolio Return Calculator and the asset class returns developed by Mercer Investment Consulting as of January 1, 2009. Our best-estimate range under our assumptions is from 7.0% to 9.3% with a median expected return of 8.1%.

Percentile	Net Investment Return
35th	7.0%
40th	7.4%
45th	7.7%
50th	8.1%
55th	8.5%
60th	8.9%
65th	9.3%

The current assumption of 8.5% represents approximately the 55th percentile of expected returns for the portfolio. This means that there is a 55% probability that asset returns will be less than 8.5% and a 45% probability that asset returns will be greater than 8.5%.

Additional Details

Following are details of the development of our best estimate investment return assumption. The calculation is based on the following parameters:

- **U.S. Equity** – Based on target percentages of 94.7% large cap and 5.3% small cap[1].
- **International Equity** – 20% of the allocation is assumed to be emerging markets equity.
- **Fixed Income** – Based on a benchmark of the Barclays Aggregate[1].
- **Alternative Investments** – The current actual alternative investment allocation is as follows: 9.2% Private Equity, 3.3% Real Estate, 3.5% Mezzanine Debt, and 1.3% Resource, for a total of 17.3% alternative investments[1]. In our best estimate development, we use the target alternative investment allocation of 20% and assume the proportions of the types of alternative investments remain the same.
  - **Mezzanine Debt** – Mercer Investment Consulting does not develop capital market assumptions for Mezzanine Debt. We used the return and standard deviation assumptions for Mezzanine Private Equity as a proxy.
  - **Resource** – We used the return and standard deviation assumptions for Commodities for this asset class.
- **Expenses** – Plan expenses paid out of the trust need to be taken into account when determining plan costs, either through a reduction in the expected return on assets, or through an explicit load in the calculation of the plan's normal cost. Plan expenses fall into two categories, administrative expenses and investment management and trustee fees.

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[1] Information provided by Howard Bicker in a memo dated April 16, 2009.

Economic Assumptions

- **Administrative expenses** – These expenses are taken into account through an explicit load in the calculation of the plan's normal cost, so no adjustment needs to be made to the expected return on plan assets.
- **Investment management and trustee fees** – We assume 20 basis points in expenses based on passive investments. To the extent the plan is not invested in passive funds, we assume the alpha for active management is equal to the additional fees for active management above the typical fees for passive management.

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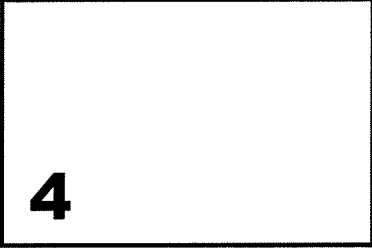
Demographic Assumptions

Overview

Actuarial Standard of Practice (ASOP) No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations,* provides guidance on selecting demographic assumptions used in measuring obligations under defined benefit pension plans. The general process for recommending demographic assumptions as defined in ASOP No. 35 is as follows:

- Identify the types of assumptions;
- Consider the relevant assumption universe;
- Consider the assumption format;
- Select the specific assumptions; and
- Evaluate the reasonableness of the selected assumption.

The purpose of the demographic experience study is to compare actual experience against expected experience based on the assumptions used in the most recent actuarial valuation. The observation period used in this study is July 1, 2004 through June 30, 2008, and the current assumptions are those adopted by the LCPR for the June 30, 2008 actuarial valuation. If the actual experience differs significantly from the overall expected experience, or if the pattern of actual decrements by age, sex, or duration does not follow the expected pattern, new assumptions are considered.

Demographic Assumptions

The demographic assumptions used for the June 30, 2008, actuarial valuation and the recommended assumptions for the June 30, 2009, actuarial valuation are shown in detail in the following sections.

A summary of the recommended changes are as follows:

- Changes to the healthy mortality assumption tables
- Changes to the disabled mortality assumption tables
- Adjustments to retirement assumptions
- Adjustments to marital status, beneficiary age and annuity option elections
- Reduction of disability incidence assumptions
- Changes to the select period basis used for the termination assumptions

The recommended assumptions, in our opinion, were selected in a manner consistent with the requirements of ASOP No. 35.

Mortality Assumptions

Mortality rates are used to project the length of time benefits will be paid to current and future retirees and beneficiaries. The selection of a mortality assumption affects plan liabilities because the value of retiree benefits depends on how long the benefit payments are expected to continue. There are clear differences in the mortality rates among males and females, healthy retired members, disabled retired members and non-retired members. As a result, each of these groups is reviewed independently.

A summary of the current and recommended mortality rates is shown below:

Assumption	Current Assumption	Recommended Assumption
Healthy Postretirement Mortality	1983 Group Annuity Mortality	RP 2000 annuitant generational mortality, white collar adjustment
Males	Set back 1 year	No adjustment
Females	Set back 1 year	Set back 2 years
Disabled Retired Mortality	1965 RRB rates through age 54. For ages 55 to 64, graded between 1965 RRB rates and the health postretirement mortality table. For ages 65 and later, the healthy postretirement mortality table.	RP2000 disabled retiree mortality table Set back 4 years for males Set forward 7 years for females
Healthy Pre-retirement Mortality	1983 Group Annuity Mortality	RP 2000 non-annuitant generational mortality, white collar adjustment
Males	Set back 8 years	Set forward 5 years
Females	Set back 7 years	Set back 3 years

Demographic Assumptions

Healthy Postretirement Mortality

Mortality assumptions for healthy retired members are separated based on gender.

Life expectancies are expected to improve in the future, and this increased longevity should be reflected in the actuarial valuation through lower mortality rates than indicated by current experience. To determine whether the current mortality assumption remains reasonable, we calculated the ratio of actual to expected (A/E) deaths during the experience study period for each of the gender groups. For a static mortality table such as the current assumption, A/E ratios are targeted at or near 110 percent, in order to provide a margin for future mortality improvement. For a generational mortality table that incorporates improvements in mortality each year into the future, A/E ratios are targeted near 100%. If the group's A/E ratio was significantly below these thresholds, we would recommend a change to bring that A/E ratio close to the thresholds.

The following chart shows the exposures, actual deaths, expected deaths and actual to expected ratios for males and females for each of the four years in the experience study.

Healthy Postretirement Mortality	Exposures	Actual Deaths	Current (June 30, 2008) Assumption	
			Expected Deaths	A/E Ratio
Males				
July 1, 2004 to June 30, 2005	17,505	698	735	95%
July 1, 2005 to June 30, 2006	17,945	673	762	88%
July 1, 2006 to June 30, 2007	18,515	711	797	89%
July 1, 2007 to June 30, 2008	19,193	723	828	87%
July 1, 2004 to June 30, 2008	**73,158**	**2,805**	**3,122**	**90%**
Females				
July 1, 2004 to June 30, 2005	35,036	932	1,032	90%
July 1, 2005 to June 30, 2006	36,507	978	1,087	90%
July 1, 2006 to June 30, 2007	38,174	1,056	1,150	92%
July 1, 2007 to June 30, 2008	39,841	1,133	1,211	94%
July 1, 2004 to June 30, 2008	**149,558**	**4,099**	**4,480**	**91%**

The actual experience shows that the current assumption for male and female retirees is predicting too many retiree deaths. Given that the current table is based on experience that is over a quarter century old, we are recommending a change to the RP 2000 generational white collar mortality tables for annuitants with no adjustment for males and a two year setback for females. The setback results in lower mortality rates for females than the standard table rates.

Demographic Assumptions

The following chart shows the exposures, actual deaths, expected deaths under the proposed assumption and actual to expected ratios for males and females for each of the four years in the experience study.

			Proposed Assumption	
Healthy Postretirement Mortality	**Exposures**	**Actual Deaths**	**Expected Deaths**	**A/E Ratio**
Males				
July 1, 2004 to June 30, 2005	17,505	698	648	108%
July 1, 2005 to June 30, 2006	17,945	673	668	101%
July 1, 2006 to June 30, 2007	18,515	711	695	102%
July 1, 2007 to June 30, 2008	19,193	723	717	101%
July 1, 2004 to June 30, 2008	**73,158**	**2,805**	**2,728**	**103%**
Females				
July 1, 2004 to June 30, 2005	35,036	932	1,000	93%
July 1, 2005 to June 30, 2006	36,507	978	1,034	95%
July 1, 2006 to June 30, 2007	38,174	1,056	1,090	97%
July 1, 2007 to June 30, 2008	39,841	1,133	1,145	99%
July 1, 2004 to June 30, 2008	**149,558**	**4,099**	**4,269**	**96%**

A summary of the current and recommended healthy retired mortality assumptions is shown below:

Healthy Postretirement Mortality	**Current (June 30, 2008) Assumption**	**Recommended Assumption**
Basic Tables	1983 Group Annuity Mortality	RP 2000 annuitant mortality, white collar adjustment
Males	Set back 1 year	No adjustment
Females	Set back 1 year	Set back 2 years

Disabled Retired Mortality (through age 65)

Disabled members are expected to have a shorter life expectancy than healthy retired members. In addition, future life expectancies for disabled members are not expected to increase as significantly as the future life expectancies for healthy retirees. As a result, A/E ratios for disabled retirees have been targeted near 100 percent.

Demographic Assumptions

The following chart shows the exposures, actual deaths, expected deaths and actual to expected ratios for males and females for each of the years in the experience study.

Disabled Retired Mortality	Exposures	Actual Deaths	Current (June 30, 2008) Assumption	
			Expected Deaths	A/E Ratio
Males				
July 1, 2004 to June 30, 2005	717	16	29	55%
July 1, 2005 to June 30, 2006	776	35	31	112%
July 1, 2006 to June 30, 2007	806	32	32	100%
July 1, 2007 to June 30, 2008	817	24	32	75%
July 1, 2004 to June 30, 2008	**3,116**	**107**	**124**	**86%**
Females				
July 1, 2004 to June 30, 2005	953	27	35	77%
July 1, 2005 to June 30, 2006	996	32	36	88%
July 1, 2006 to June 30, 2007	1,047	26	38	68%
July 1, 2007 to June 30, 2008	1,081	34	39	86%
July 1, 2004 to June 30, 2008	**4,077**	**119**	**148**	**80%**

Discussion

The actual experience shows that the current assumption for disabled male and female retirees is predicting too many deaths. We are recommending a change in this assumption to the RP2000 disabled mortality table, set forward 7 years for females and set back 4 years for males. The set forward results in higher mortality rates for females than the standard table rates, and the setback results in lower mortality rates for males than the standard table rates.

The following chart shows the exposures, actual deaths, expected deaths under the proposed assumption and actual to expected ratios for males and females for each of the four years in the experience study.

Disabled Retired Mortality	Exposures	Actual Deaths	Proposed Assumption	
			Expected Deaths	A/E Ratio
Males				
July 1, 2004 to June 30, 2005	717	16	23	70%
July 1, 2005 to June 30, 2006	776	35	25	140%
July 1, 2006 to June 30, 2007	806	32	27	119%
July 1, 2007 to June 30, 2008	817	24	27	89%
July 1, 2004 to June 30, 2008	**3,116**	**107**	**102**	**105%**
Females				
July 1, 2004 to June 30, 2005	953	27	26	104%
July 1, 2005 to June 30, 2006	996	32	27	119%
July 1, 2006 to June 30, 2007	1,047	26	29	90%
July 1, 2007 to June 30, 2008	1,081	34	30	113%
July 1, 2004 to June 30, 2008	**4,077**	**119**	**112**	**106%**

Demographic Assumptions

A summary of current and recommended disabled retiree mortality assumptions is shown below:

Disabled Retired Mortality	Current Assumption	Recommended Assumption
Basic Tables	1965 RRB rates through age 54. For ages 55 to 64, graded rates between 1965 RRB rates and the healthy postretirement mortality table. For ages 65 and later, the healthy postretirement mortality table.	RP2000 disabled retiree mortality table
Males		Set back 4 years
Females		Set forward 7 years

Preretirement Mortality

The preretirement mortality assumption applies to active members and inactive members (those members who have terminated employment but are vested and entitled to a future benefit). The current pre-retirement mortality assumption is based on 1983 Group Annuity Mortality. A/E ratios for non-retired members have been targeted around 100 percent.

The following chart shows the exposures, actual deaths, expected deaths and actual to expected ratios for males and females for each of the years in the experience study.

			Current (June 30, 2008) Assumption	
Preretirement Mortality	**Exposures**	**Actual Deaths**	**Expected Deaths**	**A/E Ratio**
Males				
July 1, 2004 to June 30, 2005	52,144	113	119	95%
July 1, 2005 to June 30, 2006	53,314	107	124	86%
July 1, 2006 to June 30, 2007	54,770	148	132	112%
July 1, 2007 to June 30, 2008	55,535	154	140	110%
July 1, 2004 to June 30, 2008	**215,763**	**522**	**515**	**101%**
Females				
July 1, 2004 to June 30, 2005	113,911	122	117	104%
July 1, 2005 to June 30, 2006	116,622	94	123	76%
July 1, 2006 to June 30, 2007	118,749	140	129	109%
July 1, 2007 to June 30, 2008	121,597	147	137	107%
July 1, 2004 to June 30, 2008	**470,879**	**503**	**506**	**99%**

Demographic Assumptions

Discussion

With the very limited number of deaths in the experience period, the A/E ratio tends to fluctuate year to year. Similar to our recommended change to healthy postretirement mortality, we are recommending a change to the RP 2000 generational white collar mortality tables for non-annuitants, but with a set forward 5 years for males and set back 3 years for females. The set forward results in higher mortality rates for males than the standard table rates, and the setback results in lower mortality rates for females than the standard table rates.

The following chart shows the exposures, actual deaths, expected deaths under the proposed assumption and actual to expected ratios for males and females for each of the four years in the experience study.

			Proposed Assumption	
Preretirement Mortality	**Exposures**	**Actual Deaths**	**Expected Deaths**	**A/E Ratio**
Males				
July 1, 2004 to June 30, 2005	52,144	113	128	88%
July 1, 2005 to June 30, 2006	53,314	107	132	81%
July 1, 2006 to June 30, 2007	54,770	148	136	109%
July 1, 2007 to June 30, 2008	55,535	154	138	112%
July 1, 2004 to June 30, 2008	**215,763**	**522**	**534**	**98%**
Females				
July 1, 2004 to June 30, 2005	113,911	122	120	102%
July 1, 2005 to June 30, 2006	116,622	94	125	75%
July 1, 2006 to June 30, 2007	118,749	140	128	109%
July 1, 2007 to June 30, 2008	121,597	147	133	111%
July 1, 2004 to June 30, 2008	**470,879**	**503**	**506**	**99%**

A summary of the current and recommended pre-retirement mortality assumptions is shown below:

Preretirement Mortality	**Current (June 30, 2008) Assumption**	**Recommended Assumption**
Basic Tables	1983 Group Annuity Mortality	RP 2000 non-annuitant generational mortality, white collar adjustment
Males	Set back 8 years	Set forward 5 years
Females	Set back 7 years	Set back 3 years

Demographic Assumptions

Retirement Assumptions

The retirement assumptions used in the actuarial valuation include the following assumptions:
- Rule of 90 retirement from active status
- Regular retirement from active status
- Retirement from inactive status

Retirement from Active Status
Members are eligible to retire as early as age 55 or earlier if the member has met the Rule of 90 provision and was hired prior to July 1, 1989.

A summary of the early, normal, and unreduced retirement dates under the plan are as follows:

Hire Date	Normal Retirement Age	Early Retirement Age	Unreduced Retirement
Before July 1, 1989	Age 65 and 3 years	Age 55 and 3 years, or 30 years	Rule of 90 or Age 62 with 30 years
July 1, 1989 or later	Social Security Normal Retirement Age, but not later than 66 years, and 1 year of service	Age 55 and 3 years	N/A

In prior Experience Studies, it was observed that members exhibited different retirement patterns based on eligibility for Rule of 90 unreduced benefits. As a result, our analysis focused on these groups. The following chart shows the exposures, actual retirements, expected retirements and actual to expected ratios for each of the years in the experience study for Rule of 90 retirements.

| | | | Current (June 30, 2008) Assumption | |
Rule of 90 Retirements	Exposures	Actual Retirements	Expected Retirements	A/E Ratio
Total				
July 1, 2004 to June 30, 2005	1,539	364	445	82%
July 1, 2005 to June 30, 2006	1,853	412	528	78%
July 1, 2006 to June 30, 2007	2,271	506	645	78%
July 1, 2007 to June 30, 2008	2,682	576	765	75%
July 1, 2004 to June 30, 2008	**8,345**	**1,858**	**2,383**	**78%**

Demographic Assumptions

The following chart shows the exposures, actual retirements, expected retirements and actual to expected ratios for each of the years in the experience study for Non-Rule of 90 retirements.

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Non-Rule of 90 Retirements	Exposures	Actual Retirements	Current (June 30, 2008) Assumption	
			Expected Retirements	A/E Ratio
Total				
July 1, 2004 to June 30, 2005	24,519	2,625	3,170	83%
July 1, 2005 to June 30, 2006	26,062	2,672	3,371	79%
July 1, 2006 to June 30, 2007	27,585	2,844	3,568	80%
July 1, 2007 to June 30, 2008	29,200	2,962	3,791	78%
July 1, 2004 to June 30, 2008	**107,366**	**11,103**	**13,900**	**80%**

Discussion

As was observed in the prior experience study analysis, the actual number of retirements is significantly less than is predicted by both current tables. As a result, we are recommending changes to both tables to more closely match the actual experience. Note that the proposed rates for Non Rule of 90 retirements produce an actual to expected ratio of 98% for under age 65 experience. The ratio drops to 93% when we factor in the experience for ages 65 and older.

Demographic Assumptions

The following charts show the exposures, actual retirements, expected retirements under the proposed assumption and actual to expected ratios for each of the years in the experience study for Rule of 90 and non Rule of 90 retirements.

| | | | Proposed Assumption | |
| | | **Actual** | **Expected** | |
Rule of 90 Retirements	**Exposures**	**Retirements**	**Retirements**	**A/E Ratio**
Total				
July 1, 2004 to June 30, 2005	1,539	364	336	108%
July 1, 2005 to June 30, 2006	1,853	412	396	104%
July 1, 2006 to June 30, 2007	2,271	506	482	105%
July 1, 2007 to June 30, 2008	2,682	576	573	101%
July 1, 2004 to June 30, 2008	**8,345**	**1,858**	**1,787**	**104%**

| | | | Proposed Assumption | |
| | | **Actual** | **Expected** | |
Non Rule of 90 Retirements	**Exposures**	**Retirements**	**Retirements**	**A/E Ratio**
Total				
July 1, 2004 to June 30, 2005	24,519	2,625	2,736	96%
July 1, 2005 to June 30, 2006	26,062	2,672	2,917	92%
July 1, 2006 to June 30, 2007	27,585	2,844	3,082	92%
July 1, 2007 to June 30, 2008	29,200	2,962	3,267	91%
July 1, 2004 to June 30, 2008	**107,366**	**11,103**	**12,002**	**93%**

Demographic Assumptions

Summary of Recommended Retirement Rates

Age	Rule of 90		Non-Rule of 90	
	Current	**Recommended**	**Current**	**Recommended**
55	30%	20%	7%	6%
56	25%	20%	7%	6%
57	25%	15%	7%	6%
58	25%	15%	7%	7%
59	25%	20%	9%	8%
60	25%	20%	9%	8%
61	30%	25%	15%	12%
62	40%	35%	22%	20%
63	30%	20%	20%	16%
64	30%	20%	20%	18%
65	40%	30%	40%	30%
66	25%	20%	25%	20%
67	25%	20%	25%	20%
68	25%	20%	25%	20%
69	25%	20%	25%	20%
70	25%	25%	25%	25%
71	100%	100%	100%	100%

Retirement from Inactive Status
Members who terminate after completing three years of service are vested and entitled to either a refund of their employee contributions with interest, or a deferred retirement benefit. The valuation currently assumes that members will elect a refund if it is more valuable than the deferred annuity. For those inactive members for whom the deferred retirement benefit is more valuable than a refund, the valuation assumes the benefit will commence at normal retirement age. We recommend no changes to these assumptions.

Demographic Assumptions

Retirement Statistics

The retirement statistics used in the actuarial valuation include the following assumptions:

- Marital status (% married)
- Age of beneficiary
- Annuity form elected at retirement

Marital Status

It is reasonable to assume that married members will make different annuity selections than non-married members. The current (June 30, 2008) valuation assumption is 85% of male members and 65% of female members are married. The following chart shows the current assumed rates of marriage and the observed experience.

	Total New Retirees	Actual Married New Retirees	Current (June 30, 2008) Assumption	
			Expected Married	A/E Ratio
Males				
July 1, 2004 to June 30, 2005	1,374	995	1,168	85%
July 1, 2005 to June 30, 2006	1,285	941	1,092	86%
July 1, 2006 to June 30, 2007	1,135	906	965	94%
July 1, 2007 to June 30, 2008	1,043	770	887	87%
July 1, 2004 to June 30, 2008	**4,837**	**3,612**	**4,112**	**88%**
Females				
July 1, 2004 to June 30, 2005	2,487	1,719	1,617	106%
July 1, 2005 to June 30, 2006	2,369	1,634	1,540	106%
July 1, 2006 to June 30, 2007	2,277	1,647	1,480	111%
July 1, 2007 to June 30, 2008	2,095	1,484	1,362	109%
July 1, 2004 to June 30, 2008	**9,228**	**6,484**	**5,999**	**108%**

We recommend a change from 85% married to 75% married for males and a change from 65% married to 70% married for females.

Demographic Assumptions

Age of Beneficiary

Joint & Survivor annuity benefit amounts are determined based on the member's and beneficiary's age. The current (June 30, 2008) valuation assumption is males are four years older than females. The following chart shows the current assumed age difference and the observed experience for married members.

	Total New Retirees	Average Age Difference	Current (June 30, 2008) Assumption	
			Expected Age Difference	A - E
Males				
July 1, 2004 to June 30, 2005	995	2.90	4.00	(1.10)
July 1, 2005 to June 30, 2006	941	3.16	4.00	(0.84)
July 1, 2006 to June 30, 2007	906	3.08	4.00	(0.92)
July 1, 2007 to June 30, 2008	770	3.05	4.00	(0.95)
July 1, 2004 to June 30, 2008	**3,612**	**3.04**	**4.00**	**(0.96)**
Females				
July 1, 2004 to June 30, 2005	1,719	(1.98)	(4.00)	2.02
July 1, 2005 to June 30, 2006	1,634	(2.04)	(4.00)	1.96
July 1, 2006 to June 30, 2007	1,647	(2.39)	(4.00)	1.61
July 1, 2007 to June 30, 2008	1,484	(2.16)	(4.00)	1.84
July 1, 2004 to June 30, 2008	**6,484**	**(2.14)**	**(4.00)**	**1.86**

We recommend changing the age difference assumption from 4 years to 3 years for males and to 2 years for females.

Annuity Form

Upon retirement, a member can elect any of the following forms of payment:

- Straight life annuity – the benefit is paid for the lifetime of the member. No benefit is payable to a beneficiary upon member's death.

- 25% Joint & Survivor – a reduced benefit is paid for the lifetime of the member. Upon death of the member, 25% of the benefit is paid to a beneficiary. If the beneficiary predeceases the member, the benefit reverts back to the straight life annuity amount.

- 50% Joint & Survivor – a reduced benefit is paid for the lifetime of the member. Upon death of the member, 50% of the benefit is paid to a beneficiary. If the beneficiary predeceases the member, the benefit reverts back to the straight life annuity amount.

- 75% Joint & Survivor – a reduced benefit is paid for the lifetime of the member. Upon death of the member, 75% of the benefit is paid to a beneficiary. If the beneficiary predeceases the member, the benefit reverts back to the straight life annuity amount.

- 100% Joint & Survivor – a reduced benefit is paid for the lifetime of the member. Upon death of the member, 100% of the benefit is paid to a beneficiary. If the beneficiary predeceases the member, the benefit reverts back to the straight life annuity amount.

Demographic Assumptions

The current (June 30, 2008) valuation assumption is as follows:

	Percent of Married Members Electing	
Annuity Form	**Males**	**Females**
Straight Life	30	70
25% Joint & Survivor	10	5
50% Joint & Survivor	20	5
75% Joint & Survivor	10	5
100% Joint & Survivor	30	15

The following chart shows the current assumed annuity selection and the observed experience:

			Current (June 30, 2008) Assumption	
New *Married* Retirees from July 1, 2004 to June 30, 2008	**Total New Married Retirees**	**Actual Electing Annuity Form**	**Expected Electing Annuity Form**	**A/E Ratio**
Males				
Straight Life Annuity	3,612	1,389	1,084	128%
25% Joint & Survivor	3,612	258	361	71%
50% Joint & Survivor	3,612	485	722	67%`
75% Joint & Survivor	3,612	293	361	81%
100% Joint & Survivor	3,612	1,187	1,084	110%
Females				
Straight Life Annuity	6,484	4,690	4,539	103%
25% Joint & Survivor	6,484	338	324	104%
50% Joint & Survivor	6,484	419	324	129%
75% Joint & Survivor	6,484	137	324	42%
100% Joint & Survivor	6,484	900	973	92%

We recommend the following changes to the annuity selection assumption:

	Percent of Married Members Electing			
	Current (June 30, 2008)		Recommended	
Annuity Form	**Males**	**Females**	**Males**	**Females**
Straight Life	30	70	40	70
25% Joint & Survivor	10	5	5	5
50% Joint & Survivor	20	5	15	5
75% Joint & Survivor	10	5	10	5
100% Joint & Survivor	30	15	30	15

Demographic Assumptions

Disability Assumptions

The Plan provides disability benefits to members. Members are eligible for disability benefits if they become totally and permanently disabled after three years of service but prior to normal retirement eligibility.

Disability Retirement

We analyzed disability incidence rates as a single group covering all members, with rates developed for each age.

The following chart shows the exposures, actual retirements, expected retirements under the current assumption and actual to expected ratios for males and females for each of the years in the experience study for disability retirements.

| | | | Current (June 30, 2008) Assumption | |
Disability Retirement	Exposures	Actual Retirements	Expected Retirements	A/E Ratio
Males				
July 1, 2004 to June 30, 2005	39,869	103	109	94%
July 1, 2005 to June 30, 2006	40,120	91	113	81%
July 1, 2006 to June 30, 2007	41,011	73	119	62%
July 1, 2007 to June 30, 2008	40,966	77	123	63%
July 1, 2004 to June 30, 2008	**161,966**	**344**	**464**	**74%**
Females				
July 1, 2004 to June 30, 2005	88,777	92	136	68%
July 1, 2005 to June 30, 2006	89,525	112	141	79%
July 1, 2006 to June 30, 2007	90,276	103	146	71%
July 1, 2007 to June 30, 2008	91,176	110	151	73%
July 1, 2004 to June 30, 2008	**359,754**	**417**	**574**	**73%**

Demographic Assumptions

Discussion

The actual experience shows that the current assumption for males and females is predicting too many disabilities. We are recommending a change in this assumption to use 80% of the rates from the current table for males and females.

The following chart shows the exposures, actual retirements, expected retirements under the proposed assumption and actual to expected ratios for males and females for each of the years in the experience study for disability retirements.

Disability Retirement	Exposures	Actual Retirements	Proposed Assumption	
			Expected Retirements	A/E Ratio
Males				
July 1, 2004 to June 30, 2005	39,869	103	87	118%
July 1, 2005 to June 30, 2006	40,120	91	91	100%
July 1, 2006 to June 30, 2007	41,011	73	95	78%
July 1, 2007 to June 30, 2008	40,966	77	98	79%
July 1, 2004 to June 30, 2008	**161,966**	**344**	**371**	**93%**
Females				
July 1, 2004 to June 30, 2005	88,777	92	109	84%
July 1, 2005 to June 30, 2006	89,525	112	113	99%
July 1, 2006 to June 30, 2007	90,276	103	116	89%
July 1, 2007 to June 30, 2008	91,176	110	121	91%
July 1, 2004 to June 30, 2008	**359,754**	**417**	**459**	**91%**

Demographic Assumptions

Termination Assumptions

The termination assumptions used in the actuarial valuation include an assumption for termination from active status prior to retirement eligibility, since not all active members are expected to continue working until retirement. Termination rates represent the probabilities that a member at any given age will leave employment at that age. Current termination rates for members are developed by gender on an ultimate basis with a 3-year select period.

The following chart shows the exposures, actual terminations, expected terminations under the current assumption and actual to expected ratios for males and females for each of the years in the experience study during the three-year select period.

Terminations in 3-year Select Period	Exposures	Actual Terminations	Current (June 30, 2008) Assumption	
			Expected Terminations	A/E Ratio
Males				
July 1, 2004 to June 30, 2005	8,593	2,108	1,574	134%
July 1, 2005 to June 30, 2006	8,585	2,080	1,626	128%
July 1, 2006 to June 30, 2007	9,711	2,345	1,823	129%
July 1, 2007 to June 30, 2008	9,432	2,278	1,710	133%
July 1, 2004 to June 30, 2008	**36,321**	**8,811**	**6,733**	**131%**
Females				
July 1, 2004 to June 30, 2005	20,837	5,135	3,631	141%
July 1, 2005 to June 30, 2006	20,328	5,066	3,706	137%
July 1, 2006 to June 30, 2007	21,998	5,416	3,967	137%
July 1, 2007 to June 30, 2008	22,547	5,687	3,972	143%
July 1, 2004 to June 30, 2008	**85,710**	**21,304**	**15,276**	**139%**

Demographic Assumptions

The following chart shows the exposures, actual terminations, expected terminations and actual to expected ratios for males and females for each of the years in the experience study for withdrawals beyond the 3-year select period.

Terminations beyond 3-year Select Period	Exposures	Actual Terminations	Current (June 30, 2008) Assumption	
			Expected Terminations	A/E Ratio
Males				
July 1, 2004 to June 30, 2005	24,916	1,252	705	178%
July 1, 2005 to June 30, 2006	24,515	1,193	692	172%
July 1, 2006 to June 30, 2007	23,762	1,153	669	172%
July 1, 2007 to June 30, 2008	23,314	1,247	660	189%
July 1, 2004 to June 30, 2008	**96,507**	**4,845**	**2,726**	**178%**
Females				
July 1, 2004 to June 30, 2005	55,614	3,652	1,801	203%
July 1, 2005 to June 30, 2006	55,860	3,720	1,805	206%
July 1, 2006 to June 30, 2007	53,901	3,496	1,727	202%
July 1, 2007 to June 30, 2008	52,963	3,891	1,694	230%
July 1, 2004 to June 30, 2008	**218,338**	**14,759**	**7,027**	**210%**

Demographic Assumptions

Discussion

Our analysis of terminations indicates that the current assumption is predicting too few terminations and that service has a strong influence on terminations, not only during the first three years of employment, but also well beyond the three year select period. As a result, we are recommending revising the basis for the termination assumption to an age and service based assumption.

The following chart shows the exposures, actual terminations, expected terminations under the proposed assumption and actual to expected ratios for males and females for each of the years in the experience study for withdrawals.

			Proposed Assumption	
Terminations	**Exposures**	**Actual Terminations**	**Expected Terminations**	**A/E Ratio**
Males				
July 1, 2004 to June 30, 2005	33,509	3,360	3,020	111%
July 1, 2005 to June 30, 2006	33,100	3,273	3,050	107%
July 1, 2006 to June 30, 2007	33,473	3,498	3,196	109%
July 1, 2007 to June 30, 2008	32,746	3,525	3,102	114%
July 1, 2004 to June 30, 2008	**132,828**	**13,656**	**12,367**	**110%**
Females				
July 1, 2004 to June 30, 2005	76,451	8,787	8,457	104%
July 1, 2005 to June 30, 2006	76,188	8,786	8,427	104%
July 1, 2006 to June 30, 2007	75,899	8,912	8,524	105%
July 1, 2007 to June 30, 2008	75,510	9,578	8,484	113%
July 1, 2004 to June 30, 2008	**304,048**	**36,063**	**33,893**	**106%**

Summary of Recommended Termination Rates -- Females

Age	Current 0	Current 1	Current 2	Current 3+	Proposed 0	Proposed 1	Proposed 2	Proposed 3	Proposed 4	Proposed 5	Proposed 6	Proposed 7	Proposed 8	Proposed 9	Proposed 10	Proposed 15	Proposed 20	Proposed 25	Proposed 30
20	40.00%	15.00%	10.00%	8.40%	45.01%	39.17%	30.39%	24.36%	19.39%	18.26%	18.22%	17.82%	17.82%	17.82%	17.82%	11.10%	4.67%	4.08%	4.08%
21	40.00%	15.00%	10.00%	8.10%	42.61%	38.75%	29.81%	23.56%	18.62%	17.02%	17.02%	17.02%	17.02%	17.02%	16.97%	8.22%	4.67%	4.08%	4.08%
22	40.00%	15.00%	10.00%	7.80%	40.84%	38.16%	29.18%	22.85%	18.03%	15.96%	15.96%	15.96%	15.96%	15.96%	14.36%	6.24%	4.67%	4.08%	3.74%
23	40.00%	15.00%	10.00%	7.50%	39.54%	37.44%	28.49%	22.21%	17.57%	15.06%	15.06%	15.06%	15.06%	14.24%	12.17%	4.98%	4.67%	4.08%	3.43%
24	40.00%	15.00%	10.00%	7.20%	38.58%	36.59%	27.75%	21.61%	17.18%	14.29%	14.29%	14.29%	14.29%	12.44%	10.38%	4.28%	4.28%	4.08%	3.18%
25	40.00%	15.00%	10.00%	6.90%	37.83%	35.64%	26.97%	21.04%	16.85%	13.64%	13.64%	13.64%	13.64%	10.83%	8.93%	4.00%	4.00%	4.00%	2.99%
26	40.00%	15.00%	10.00%	6.60%	37.20%	34.61%	26.15%	20.46%	16.54%	13.09%	13.09%	13.09%	12.57%	9.45%	7.80%	4.00%	4.00%	4.00%	2.84%
27	40.00%	15.00%	10.00%	6.30%	36.62%	33.51%	25.29%	19.88%	16.23%	12.63%	12.46%	12.46%	11.20%	8.29%	6.94%	3.88%	3.88%	3.83%	2.73%
28	40.00%	15.00%	10.00%	6.00%	36.04%	32.36%	24.41%	19.29%	15.90%	12.23%	11.61%	11.61%	9.96%	7.35%	6.33%	3.67%	3.67%	3.45%	2.64%
29	40.00%	15.00%	10.00%	5.70%	35.41%	31.19%	23.52%	18.68%	15.56%	11.89%	10.85%	10.85%	8.87%	6.63%	5.92%	3.58%	3.58%	3.11%	2.51%
30	40.00%	15.00%	10.00%	5.40%	34.72%	30.01%	22.61%	18.05%	15.19%	11.60%	10.21%	9.85%	7.96%	6.10%	5.68%	3.58%	3.58%	2.81%	2.39%
31	40.00%	15.00%	10.00%	5.10%	33.95%	28.85%	21.72%	17.40%	14.79%	11.34%	9.68%	8.81%	7.24%	5.76%	5.57%	3.58%	3.58%	2.56%	2.31%
32	40.00%	15.00%	10.00%	4.80%	33.11%	27.71%	20.83%	16.75%	14.37%	11.11%	9.27%	7.99%	6.71%	5.58%	5.57%	3.58%	3.58%	2.38%	2.25%
33	40.00%	15.00%	10.00%	4.60%	32.20%	26.62%	19.97%	16.09%	13.94%	10.90%	8.96%	7.38%	6.35%	5.53%	5.53%	3.58%	3.58%	2.26%	2.22%
34	40.00%	15.00%	10.00%	4.40%	31.24%	25.60%	19.14%	15.44%	13.49%	10.70%	8.75%	6.98%	6.16%	5.53%	5.53%	3.58%	3.35%	2.20%	2.19%
35	40.00%	15.00%	10.00%	4.20%	30.26%	24.65%	18.35%	14.81%	13.04%	10.50%	8.61%	6.76%	6.11%	5.53%	5.53%	3.58%	3.04%	2.17%	2.17%
36	40.00%	15.00%	10.00%	4.00%	29.29%	23.79%	17.61%	14.19%	12.59%	10.31%	8.53%	6.71%	6.11%	5.53%	5.53%	3.58%	2.74%	2.12%	2.09%
37	40.00%	15.00%	10.00%	3.80%	28.35%	23.02%	16.94%	13.62%	12.17%	10.13%	8.49%	6.71%	6.11%	5.53%	5.53%	3.58%	2.47%	1.95%	1.95%
38	40.00%	15.00%	10.00%	3.70%	27.49%	22.36%	16.33%	13.09%	11.78%	9.93%	8.47%	6.71%	6.11%	5.53%	5.53%	3.58%	2.22%	1.83%	1.83%
39	40.00%	15.00%	10.00%	3.60%	26.73%	21.81%	15.79%	12.61%	11.42%	9.74%	8.44%	6.71%	6.11%	5.53%	5.53%	3.58%	2.01%	1.76%	1.76%
40	40.00%	15.00%	10.00%	3.50%	26.09%	21.38%	15.33%	12.19%	11.11%	9.54%	8.39%	6.71%	6.11%	5.53%	5.53%	3.58%	1.85%	1.75%	1.75%
41	40.00%	15.00%	10.00%	3.40%	25.61%	21.05%	14.95%	11.85%	10.85%	9.34%	8.31%	6.71%	6.11%	5.53%	5.53%	3.58%	1.74%	1.74%	1.70%
42	40.00%	15.00%	10.00%	3.30%	25.31%	20.83%	14.65%	11.58%	10.65%	9.14%	8.17%	6.71%	6.11%	5.53%	5.53%	3.58%	1.69%	1.69%	1.64%
43	40.00%	15.00%	10.00%	3.20%	25.18%	20.72%	14.42%	11.38%	10.50%	8.94%	7.98%	6.71%	6.11%	5.53%	5.53%	3.58%	1.69%	1.69%	1.61%
44	40.00%	15.00%	10.00%	3.10%	25.18%	20.69%	14.28%	11.27%	10.40%	8.74%	7.73%	6.71%	6.11%	5.53%	5.53%	3.58%	1.69%	1.69%	1.59%
45	40.00%	15.00%	10.00%	3.00%	25.18%	20.69%	14.20%	11.22%	10.34%	8.54%	7.42%	6.71%	6.11%	5.53%	5.53%	3.51%	1.69%	1.69%	1.48%
46	40.00%	15.00%	10.00%	2.90%	25.18%	20.69%	14.19%	11.22%	10.31%	8.35%	7.06%	6.71%	6.11%	5.34%	5.34%	3.45%	1.69%	1.69%	1.33%
47	40.00%	15.00%	10.00%	2.80%	25.18%	20.69%	14.19%	11.22%	10.29%	8.18%	6.68%	6.68%	6.11%	4.95%	4.95%	3.45%	1.69%	1.69%	1.22%
48	40.00%	15.00%	10.00%	2.70%	25.18%	20.69%	14.19%	11.22%	10.25%	8.02%	6.31%	6.31%	5.95%	4.57%	4.57%	3.45%	1.69%	1.69%	1.15%
49	40.00%	15.00%	10.00%	2.60%	25.18%	20.69%	14.19%	11.22%	10.16%	7.88%	5.98%	5.98%	5.54%	4.26%	4.26%	3.39%	1.69%	1.53%	1.04%
50	40.00%	15.00%	10.00%	2.50%	25.18%	20.69%	14.19%	11.22%	9.98%	7.76%	5.75%	5.75%	5.19%	4.08%	4.08%	3.32%	1.69%	1.41%	0.95%
51	40.00%	15.00%	10.00%	2.40%	25.18%	20.69%	14.19%	11.22%	9.66%	7.68%	5.68%	5.68%	4.95%	4.08%	4.08%	3.32%	1.69%	1.39%	0.94%
52	40.00%	15.00%	10.00%	2.30%	25.18%	20.69%	14.19%	11.22%	9.15%	7.62%	5.68%	5.68%	4.93%	4.08%	4.08%	3.32%	1.69%	1.39%	0.94%
53	40.00%	15.00%	10.00%	2.20%	25.18%	20.29%	14.19%	11.22%	8.37%	7.61%	5.68%	5.68%	4.93%	4.08%	4.08%	3.32%	1.69%	1.39%	0.94%
54	40.00%	15.00%	10.00%	2.10%	24.97%	19.50%	14.19%	11.22%	7.25%	7.25%	5.68%	5.68%	4.93%	4.08%	4.08%	3.32%	1.69%	1.39%	0.94%

Summary of Recommended Termination Rates – Males

Age	Current				Proposed														
	0	1	2	3+	0	1	2	3	4	5	6	7	8	9	10	15	20	25	30
20	40.00%	15.00%	10.00%	8.40%	43.77%	35.56%	23.19%	23.19%	17.16%	14.61%	12.64%	11.80%	10.92%	10.80%	10.70%	8.63%	6.28%	4.69%	4.38%
21	40.00%	15.00%	10.00%	8.10%	42.73%	35.56%	23.19%	21.91%	15.83%	12.57%	11.74%	11.24%	10.92%	10.67%	10.21%	7.65%	5.72%	4.69%	4.21%
22	40.00%	15.00%	10.00%	7.80%	41.32%	35.56%	23.19%	20.60%	15.03%	11.22%	10.99%	10.61%	10.61%	10.32%	9.72%	6.95%	5.28%	4.69%	4.06%
23	40.00%	15.00%	10.00%	7.50%	39.68%	35.56%	23.19%	19.58%	14.62%	10.42%	10.35%	9.96%	9.96%	9.81%	9.23%	6.46%	5.01%	4.69%	3.91%
24	40.00%	15.00%	10.00%	7.20%	37.92%	35.08%	23.19%	18.77%	14.45%	10.01%	9.81%	9.31%	9.31%	9.21%	8.74%	6.11%	4.87%	4.61%	3.79%
25	40.00%	15.00%	10.00%	6.90%	36.16%	34.01%	23.19%	18.12%	14.44%	9.88%	9.34%	8.70%	8.70%	8.55%	8.27%	5.87%	4.80%	4.45%	3.67%
26	40.00%	15.00%	10.00%	6.60%	34.46%	32.77%	23.19%	17.58%	14.44%	9.88%	8.93%	8.14%	8.14%	7.87%	7.82%	5.68%	4.78%	4.22%	3.56%
27	40.00%	15.00%	10.00%	6.30%	32.90%	31.44%	23.19%	17.11%	14.44%	9.88%	8.56%	7.64%	7.64%	7.22%	7.22%	5.51%	4.75%	4.00%	3.45%
28	40.00%	15.00%	10.00%	6.00%	31.52%	30.08%	22.76%	16.69%	14.44%	9.88%	8.23%	7.23%	7.23%	6.60%	6.60%	5.34%	4.60%	3.80%	3.35%
29	40.00%	15.00%	10.00%	5.70%	30.35%	28.75%	21.90%	16.28%	14.44%	9.88%	7.93%	6.89%	6.89%	6.05%	6.05%	4.77%	4.46%	3.62%	3.25%
30	40.00%	15.00%	10.00%	5.40%	29.40%	27.49%	21.02%	15.88%	14.32%	9.88%	7.64%	6.63%	6.63%	5.56%	5.56%	4.17%	4.17%	3.47%	3.15%
31	40.00%	15.00%	10.00%	5.10%	28.69%	26.33%	20.15%	15.46%	14.03%	9.88%	7.38%	6.45%	6.45%	5.16%	5.16%	3.68%	3.68%	3.36%	3.05%
32	40.00%	15.00%	10.00%	4.80%	28.20%	25.30%	19.32%	15.03%	13.63%	9.88%	7.13%	6.34%	6.34%	4.83%	4.83%	3.31%	3.31%	3.27%	2.95%
33	40.00%	15.00%	10.00%	4.50%	27.93%	24.40%	18.52%	14.58%	13.14%	9.88%	6.90%	6.29%	6.24%	4.59%	4.59%	3.06%	3.06%	3.06%	2.84%
34	40.00%	15.00%	10.00%	4.20%	27.84%	23.65%	17.79%	14.11%	12.56%	9.88%	6.68%	6.29%	6.08%	4.42%	4.42%	2.92%	2.92%	2.92%	2.72%
35	40.00%	15.00%	10.00%	3.90%	27.84%	23.04%	17.11%	13.62%	11.91%	9.59%	6.49%	6.29%	5.96%	4.31%	4.31%	2.88%	2.88%	2.88%	2.60%
36	40.00%	15.00%	10.00%	3.60%	27.84%	22.57%	16.50%	13.14%	11.24%	9.17%	6.31%	6.29%	5.89%	4.27%	4.27%	2.88%	2.88%	2.88%	2.46%
37	40.00%	15.00%	10.00%	3.30%	27.84%	22.21%	15.95%	12.66%	10.55%	8.72%	6.16%	6.16%	5.84%	4.26%	4.26%	2.88%	2.85%	2.85%	2.32%
38	40.00%	15.00%	10.00%	3.20%	27.84%	21.96%	15.45%	12.19%	9.89%	8.26%	6.03%	6.03%	5.80%	4.26%	4.17%	2.64%	2.64%	2.62%	2.18%
39	40.00%	15.00%	10.00%	3.10%	27.84%	21.80%	15.00%	11.75%	9.28%	7.80%	5.93%	5.93%	5.77%	4.26%	4.04%	2.42%	2.40%	2.31%	2.03%
40	40.00%	15.00%	10.00%	3.00%	27.84%	21.70%	14.60%	11.34%	8.75%	7.37%	5.86%	5.86%	5.73%	4.26%	3.92%	2.25%	2.15%	2.00%	1.88%
41	40.00%	15.00%	10.00%	2.90%	27.84%	21.64%	14.24%	10.98%	8.33%	7.00%	5.82%	5.82%	5.67%	4.26%	3.82%	2.16%	1.93%	1.71%	1.71%
42	40.00%	15.00%	10.00%	2.80%	27.84%	21.58%	13.91%	10.67%	8.02%	6.71%	5.80%	5.80%	5.59%	4.26%	3.75%	2.13%	1.77%	1.45%	1.45%
43	40.00%	15.00%	10.00%	2.70%	27.84%	21.52%	13.60%	10.41%	7.84%	6.51%	5.80%	5.80%	5.48%	4.26%	3.70%	2.13%	1.66%	1.21%	1.21%
44	40.00%	15.00%	10.00%	2.60%	27.84%	21.42%	13.31%	10.20%	7.79%	6.41%	5.80%	5.80%	5.35%	4.26%	3.67%	2.13%	1.60%	1.02%	1.02%
45	40.00%	15.00%	10.00%	2.50%	27.84%	21.27%	13.04%	10.05%	7.79%	6.40%	5.80%	5.80%	5.18%	4.26%	3.66%	2.13%	1.60%	0.87%	0.87%
46	40.00%	15.00%	10.00%	2.40%	27.84%	21.04%	12.79%	9.94%	7.79%	6.40%	5.80%	5.61%	5.00%	4.16%	3.66%	2.13%	1.60%	0.78%	0.78%
47	40.00%	15.00%	10.00%	2.30%	27.84%	20.72%	12.56%	9.86%	7.79%	6.40%	5.80%	5.27%	4.81%	3.97%	3.66%	2.13%	1.47%	0.76%	0.76%
48	40.00%	15.00%	10.00%	2.20%	27.23%	20.29%	12.37%	9.80%	7.79%	6.40%	5.80%	4.92%	4.64%	3.74%	3.66%	2.13%	1.25%	0.76%	0.76%
49	40.00%	15.00%	10.00%	2.10%	26.33%	19.77%	12.22%	9.72%	7.79%	6.40%	5.80%	4.57%	4.50%	3.49%	3.49%	2.13%	1.09%	0.76%	0.76%
50	40.00%	15.00%	10.00%	2.00%	25.37%	19.14%	12.13%	9.60%	7.79%	6.40%	5.80%	4.24%	4.24%	3.23%	3.23%	2.13%	0.99%	0.76%	0.76%
51	40.00%	15.00%	10.00%	1.90%	24.43%	18.42%	12.13%	9.39%	7.79%	6.40%	5.65%	3.98%	3.98%	2.98%	2.98%	2.13%	0.98%	0.75%	0.75%
52	40.00%	15.00%	10.00%	1.80%	23.59%	17.62%	12.13%	9.03%	7.79%	6.40%	5.33%	3.83%	3.83%	2.78%	2.78%	2.13%	0.98%	0.76%	0.76%
53	40.00%	15.00%	10.00%	1.70%	22.96%	16.78%	12.13%	8.48%	7.39%	6.40%	4.85%	3.83%	3.83%	2.66%	2.66%	2.13%	0.98%	0.76%	0.75%
54	40.00%	15.00%	10.00%	1.60%	22.66%	15.92%	12.13%	7.66%	5.78%	5.35%	4.16%	3.83%	3.83%	2.66%	2.66%	2.13%	0.98%	0.76%	0.75%

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Appendix

Data

The experience analysis uses member data from July 1, 2004, through June 30, 2008, which was supplied by PERA. We have not verified the data, but have reviewed the information for internal consistency and have no reason to doubt its substantial accuracy.

The member data was summarized according to the actual and potential member decrements for each year in the study. Actual and potential decrements were grouped according to age or service depending on the demographic assumption.

Appendix

Methods and Procedures

Actuarial Cost Method

Liabilities and contributions are computed using the Individual Entry Age Normal Cost Method. This method is prescribed by Minnesota Statutes.

The objective under this method is to fund each participants' benefits under the Plan as payments which are level as a percentage of salary, starting at original participation date (or employment date), and continuing until the assumed retirement termination, disability or death.

At the time the funding method is introduced, there will be a liability which represents the contributions which would have been accumulated if this method of funding had always been used. The difference between this liability and the assets (if any) which are held in the fund is the unfunded liability which is typically funded over a chosen period in accordance with the amortization schedule.

A detailed description of the calculation follows:

The normal costs for each active participant under the assumed retirement age is determined by applying to earnings the level percentage of salary which, if contributed each year from date of entry into the Plan until the assumed retirement (termination, disability or death) date, is sufficient to provide the full value of the benefits expected to be payable.

- The present value of future normal costs is the total of the discounted values of all active participants' normal cost, assuming these to be paid in each case from the valuation date until retirement (termination, disability or death) date.

- The present value of projected benefits is calculated as the value of all benefit payments expected to be paid to the Plan's current participants, including active and retired members, beneficiaries, and terminated members with vested rights.

- The accrued liability is the excess of the present value of projected benefits over the present value of future normal cost.

The unfunded liability is the excess of the accrued liability over the assets of the fund, and represents that part of the accrued liability which has not been funded by accumulated past contributions.

Appendix

Asset Valuation Method

The assets are valued based on a five-year moving average of expected and market values (five-year average actuarial value) determined as follows:

- At the end of each plan year, an average asset value is calculated as the average of the market asset value at the beginning and end of the fiscal year net of investment income for the fiscal year;

- The investment gain or (loss) is taken as the excess of actual investment income over the expected investment income based on the average asset value as calculated above;

- The investment gain or (loss) so determined is recognized over five years at 20% per year;

- The asset value is the sum of the expected asset value plus the scheduled recognition of investment gains or (losses) during the current and the preceding four plan years.

Payment on the Unfunded Actuarial Accrued Liability

A level percentage of payroll each year to the statutory amortization date of July 1, 2031 assuming payroll increases of 4.50% per annum. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.

Economic Assumptions

Inflation	3.00%
Real wage growth	1.50
Payroll growth	4.50
Salary scale	Age based table
Investment Return	8.50

Appendix
Assumption Tables

Age	Healthy Preretirement Mortality				Healthy Postretirement Mortality				Disabled Mortality			
	Current Assumption		Proposed Assumption*		Current Assumption		Proposed Assumption*		Current Assumption		Proposed Assumption	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
20	0.0304%	0.0121%	0.0180%	0.0174%	0.0365%	0.0179%	0.0231%	0.0178%	4.3910%	4.3910%	2.2571%	0.7450%
21	0.0310%	0.0131%	0.0190%	0.0178%	0.0377%	0.0189%	0.0241%	0.0178%	4.3920%	4.3920%	2.2571%	0.7450%
22	0.0317%	0.0140%	0.0201%	0.0178%	0.0392%	0.0201%	0.0249%	0.0178%	4.3930%	4.3930%	2.2571%	0.7450%
23	0.0325%	0.0149%	0.0211%	0.0178%	0.0408%	0.0212%	0.0259%	0.0177%	4.3940%	4.3940%	2.2571%	0.7450%
24	0.0333%	0.0159%	0.0221%	0.0177%	0.0424%	0.0225%	0.0266%	0.0179%	4.3950%	4.3950%	2.2571%	0.7450%
25	0.0343%	0.0168%	0.0231%	0.0179%	0.0444%	0.0238%	0.0273%	0.0183%	4.3960%	4.3960%	2.2571%	0.7450%
26	0.0353%	0.0179%	0.0241%	0.0183%	0.0464%	0.0253%	0.0285%	0.0189%	4.3970%	4.3970%	2.2571%	0.7450%
27	0.0365%	0.0189%	0.0249%	0.0189%	0.0488%	0.0268%	0.0290%	0.0196%	4.3980%	4.3980%	2.2571%	0.7450%
28	0.0377%	0.0201%	0.0259%	0.0196%	0.0513%	0.0283%	0.0299%	0.0206%	4.3990%	4.3990%	2.2571%	0.7450%
29	0.0392%	0.0212%	0.0266%	0.0206%	0.0542%	0.0301%	0.0313%	0.0215%	4.4000%	4.4000%	2.2571%	0.7450%
30	0.0408%	0.0225%	0.0273%	0.0215%	0.0572%	0.0320%	0.0337%	0.0227%	4.4010%	4.4010%	2.2571%	0.7450%
31	0.0424%	0.0238%	0.0285%	0.0227%	0.0607%	0.0342%	0.0371%	0.0239%	4.4020%	4.4020%	2.2571%	0.7450%
32	0.0444%	0.0253%	0.0290%	0.0239%	0.0645%	0.0364%	0.0412%	0.0259%	4.4030%	4.4030%	2.2571%	0.7450%
33	0.0464%	0.0268%	0.0299%	0.0259%	0.0687%	0.0388%	0.0460%	0.0302%	4.4040%	4.4040%	2.2571%	0.7450%
34	0.0488%	0.0283%	0.0313%	0.0302%	0.0734%	0.0414%	0.0511%	0.0338%	4.4050%	4.4050%	2.2571%	0.7450%
35	0.0513%	0.0301%	0.0337%	0.0338%	0.0785%	0.0443%	0.0565%	0.0370%	4.4060%	4.4060%	2.2571%	0.7450%
36	0.0542%	0.0320%	0.0371%	0.0370%	0.0860%	0.0476%	0.0621%	0.0397%	4.4070%	4.4070%	2.2571%	0.7450%
37	0.0572%	0.0342%	0.0412%	0.0397%	0.0907%	0.0502%	0.0676%	0.0422%	4.4080%	4.4080%	2.2571%	0.7450%
38	0.0607%	0.0364%	0.0460%	0.0422%	0.0966%	0.0535%	0.0726%	0.0446%	4.4090%	4.4090%	2.2571%	0.7450%
39	0.0645%	0.0388%	0.0511%	0.0446%	0.1039%	0.0573%	0.0776%	0.0469%	4.4100%	4.4100%	2.2571%	0.8184%
40	0.0687%	0.0414%	0.0565%	0.0469%	0.1128%	0.0617%	0.0828%	0.0495%	4.4120%	4.4120%	2.2571%	0.8959%
41	0.0734%	0.0443%	0.0621%	0.0495%	0.1238%	0.0665%	0.0883%	0.0523%	4.4140%	4.4140%	2.2571%	0.9775%
42	0.0785%	0.0476%	0.0676%	0.0523%	0.1370%	0.0716%	0.0946%	0.0563%	4.4160%	4.4160%	2.2571%	1.0634%
43	0.0860%	0.0502%	0.0726%	0.0563%	0.1527%	0.0775%	0.1017%	0.0610%	4.4280%	4.4280%	2.2571%	1.1535%
44	0.0907%	0.0535%	0.0776%	0.0610%	0.1715%	0.0841%	0.1099%	0.0666%	4.4490%	4.4490%	2.2571%	1.2477%
45	0.0966%	0.0573%	0.0828%	0.0666%	0.1932%	0.0919%	0.1193%	0.0730%	4.4810%	4.4810%	2.2571%	1.3456%
46	0.1039%	0.0617%	0.0883%	0.0730%	0.2183%	0.1010%	0.1284%	0.0805%	4.5260%	4.5260%	2.2571%	1.4465%
47	0.1128%	0.0665%	0.0946%	0.0805%	0.2471%	0.1117%	0.1382%	0.0879%	4.5820%	4.5820%	2.2571%	1.5497%
48	0.1238%	0.0716%	0.1017%	0.0879%	0.2790%	0.1237%	0.1480%	0.0959%	4.6560%	4.6560%	2.2571%	1.6544%
49	0.1370%	0.0775%	0.1099%	0.0959%	0.3138%	0.1366%	0.1580%	0.1044%	4.7480%	4.7480%	2.2571%	1.7598%

* Rates shown are recommended RP-2000 rates projected to 2008.

Age	Healthy Preretirement Mortality				Healthy Postretirement Mortality				Disabled Mortality			
	Current Assumption		Proposed Assumption*		Current Assumption		Proposed Assumption*		Current Assumption		Proposed Assumption	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
50	0.1527%	0.0841%	0.1193%	0.10044%	0.3513%	0.1505%	0.5081%	0.1141%	4.8640%	4.8640%	2.3847%	1.8654%
51	0.1715%	0.0919%	0.1284%	0.1141%	0.3909%	0.1647%	0.5014%	0.1243%	5.0080%	5.0080%	2.5124%	1.9710%
52	0.1932%	0.1010%	0.1382%	0.1243%	0.4324%	0.1793%	0.4889%	0.2097%	5.1780%	5.1780%	2.6404%	2.0768%
53	0.2183%	0.1117%	0.1480%	0.1362%	0.4755%	0.1948%	0.4766%	0.2188%	5.3840%	5.3840%	2.7687%	2.1839%
54	0.2471%	0.1237%	0.1580%	0.1487%	0.5200%	0.2119%	0.4635%	0.2362%	5.6140%	5.6140%	2.8975%	2.2936%
55	0.2790%	0.1366%	0.1679%	0.1641%	0.5660%	0.2315%	0.4571%	0.2600%	5.2297%	5.1617%	3.0268%	2.4080%
56	0.3138%	0.1505%	0.1777%	0.1808%	0.6131%	0.2541%	0.4592%	0.2894%	4.8454%	4.7094%	3.1563%	2.5293%
57	0.3513%	0.1647%	0.1876%	0.1997%	0.6618%	0.2803%	0.4694%	0.3245%	4.4611%	4.2570%	3.2859%	2.6600%
58	0.3909%	0.1793%	0.2000%	0.2209%	0.7139%	0.3103%	0.4920%	0.3647%	4.0768%	3.8047%	3.4152%	2.8026%
59	0.4324%	0.1948%	0.2136%	0.2454%	0.7719%	0.3442%	0.5237%	0.4066%	3.6925%	3.3524%	3.5442%	2.9594%
60	0.4755%	0.2119%	0.2312%	0.2707%	0.8384%	0.3821%	0.5713%	0.4478%	3.3083%	2.9001%	3.6732%	3.1325%
61	0.5200%	0.2315%	0.2529%	0.2970%	0.9158%	0.4241%	0.6387%	0.4912%	2.9240%	2.4478%	3.8026%	3.3234%
62	0.5660%	0.2541%	0.2783%	0.3265%	1.0064%	0.4702%	0.7157%	0.5369%	2.5397%	1.9955%	3.9334%	3.5335%
63	0.6131%	0.2803%	0.3066%	0.3589%	1.1133%	0.5210%	0.8132%	0.5873%	2.1554%	1.5431%	4.0668%	3.7635%
64	0.6618%	0.3103%	0.3359%	0.3949%	1.2391%	0.5769%	0.9147%	0.6438%	1.7711%	1.0908%	4.2042%	4.0140%
65	0.7139%	0.3442%	0.3687%	0.4339%	1.3868%	0.6385%	1.0248%	0.7093%	1.3868%	0.6385%	4.3474%	4.2851%
66	0.7719%	0.3821%	0.4087%	0.4759%	1.5592%	0.7064%	1.1525%	0.7849%	1.5592%	0.7064%	4.4981%	4.5769%
67	0.8384%	0.4241%	0.4489%	0.5205%	1.7579%	0.7817%	1.2759%	0.8708%	1.7579%	0.7817%	4.6584%	4.8895%
68	0.9158%	0.4702%	0.4965%	0.5681%	1.9804%	0.8681%	1.3947%	0.9666%	1.9804%	0.8681%	4.8307%	5.2230%
69	1.0064%	0.5210%	0.5429%	0.6182%	2.2229%	0.9702%	1.5354%	1.0716%	2.2229%	0.9702%	5.0174%	5.5777%
70	1.1133%	0.5769%	0.5923%	0.6708%	2.4817%	1.0921%	1.6823%	1.1847%	2.4817%	1.0921%	5.2213%	5.9545%
71	1.2391%	0.6385%	0.6494%	0.7256%	2.7530%	1.2385%	1.8679%	1.3109%	2.7530%	1.2385%	5.4450%	6.3545%
72	1.3868%	0.7064%	0.7024%	0.7824%	3.0354%	1.4128%	2.0835%	1.4515%	3.0354%	1.4128%	5.6909%	6.7793%
73	1.5592%	0.7817%	0.7509%	0.8412%	3.3370%	1.6159%	2.3313%	1.5980%	3.3370%	1.6159%	5.9613%	7.2312%
74	1.7579%	0.8681%	0.8075%	1.5980%	3.6680%	1.8481%	2.6156%	1.7794%	3.6680%	1.8481%	6.2583%	7.7135%
75	1.9804%	0.9702%	0.8574%	1.7794%	4.0388%	2.1091%	2.9626%	1.9622%	4.0388%	2.1091%	6.5841%	8.2298%
76	2.2229%	1.0921%	1.8679%	1.9622%	4.4597%	2.3992%	3.3281%	2.1795%	4.4597%	2.3992%	6.9405%	8.7838%
77	2.4817%	1.2385%	2.0835%	2.1795%	4.9388%	2.7184%	3.7650%	2.3924%	4.9388%	2.7184%	7.3292%	9.3794%
78	2.7530%	1.4128%	2.3313%	2.3924%	5.4758%	3.0672%	4.2595%	2.6502%	5.4758%	3.0672%	7.7512%	10.0203%
79	3.0354%	1.6159%	2.6156%	2.6502%	6.0678%	3.4459%	4.8138%	2.9614%	6.0678%	3.4459%	8.2067%	10.7099%
80	3.3370%	1.8481%	2.9626%	2.9614%	6.7125%	3.8549%	5.4274%	3.2821%	6.7125%	3.8549%	8.6951%	11.4512%
81	3.6680%	2.1091%	3.3281%	3.2821%	7.4070%	4.2945%	6.1563%	3.6392%	7.4070%	4.2945%	9.2149%	12.2464%
82	4.0388%	2.3392%	3.7650%	3.6392%	8.1484%	4.7655%	6.9707%	4.0441%	8.1484%	4.7655%	9.7640%	13.0972%
83	4.4597%	2.7184%	4.2595%	4.0441%	8.9320%	5.2691%	7.8120%	4.5000%	8.9320%	5.2691%	10.3392%	14.0049%

* Rates shown are recommended RP-2000 rates projected to 2008.

| Age | Healthy Preretirement Mortality | | | | Healthy Postretirement Mortality | | | | Disabled Mortality | | | |
| | Current Assumption | | Proposed Assumption* | | Current Assumption | | Proposed Assumption* | | Current Assumption | | Proposed Assumption | |
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
84	4.9388%	3.0672%	4.8138%	4.5000%	9.7525%	5.8071%	8.8046%	5.0097%	9.7525%	5.8071%	10.9372%	16.9698%
85	5.4758%	3.4459%	5.4274%	5.0097%	10.6047%	6.3807%	9.8253%	5.5860%	10.6047%	6.3807%	11.5544%	15.9924%
86	6.0678%	3.8549%	6.1563%	5.5860%	11.4836%	6.9918%	10.9625%	6.2321%	11.4836%	6.9918%	12.1877%	17.0433%
87	6.7125%	4.2945%	6.9707%	6.2321%	12.4170%	7.6570%	12.3329%	7.0282%	12.4170%	7.6570%	12.8343%	18.2799%
88	7.4070%	4.7655%	7.8120%	7.0282%	13.3870%	8.3870%	13.8477%	7.9181%	13.3870%	8.3870%	13.4923%	19.4509%
89	8.1484%	5.2691%	8.8046%	7.9181%	14.4073%	9.1935%	15.3989%	8.9207%	14.4073%	9.1935%	14.1603%	20.5379%
90	8.9320%	5.8071%	9.8253%	8.9207%	15.4859%	10.1354%	17.1956%	9.9361%	15.4859%	10.1354%	14.8374%	21.5240%
91	9.7525%	6.3807%	10.9625%	9.9361%	16.6307%	11.1750%	18.8067%	11.1220%	16.6307%	11.1750%	15.5235%	22.3947%
92	10.6047%	6.9918%	12.3329%	11.1220%	17.8214%	12.3076%	20.6399%	12.2786%	17.8214%	12.3076%	16.2186%	23.1387%
93	11.4836%	7.6570%	13.8477%	12.2786%	19.0460%	13.5630%	22.3335%	13.4835%	19.0460%	13.5630%	16.9233%	23.7467%
94	12.4170%	8.3870%	15.3989%	13.4835%	20.3007%	14.9577%	23.9857%	14.6970%	20.3007%	14.9577%	18.3408%	24.4834%
95	13.3870%	9.1935%	17.1956%	14.6970%	21.7904%	16.5103%	25.8511%	16.0527%	21.7904%	16.5103%	19.9769%	25.4498%
96	14.4073%	10.1354%	18.8067%	16.0527%	23.4086%	18.2419%	27.8835%	17.2353%	23.4086%	18.2419%	21.6605%	26.6044%
97	15.4859%	11.1750%	20.6399%	17.2353%	24.8436%	20.1757%	29.4498%	18.3585%	24.8436%	20.1757%	23.3662%	27.9055%
98	16.6307%	12.3076%	22.3335%	18.3585%	26.3954%	22.2043%	31.2470%	20.1712%	26.3954%	22.2043%	25.0693%	29.3116%
99	17.8214%	13.5630%	23.9857%	20.1712%	28.0803%	24.3899%	32.7247%	21.3311%	28.0803%	24.3899%	26.7491%	30.7811%
100	19.0460%	14.9577%	25.8511%	21.3311%	29.9154%	26.8185%	34.1467%	22.1940%	29.9154%	26.8185%	28.3905%	32.2725%

* Rates shown are recommended RP-2000 rates projected to 2008.

Proposed Termination Assumption – Males

Age	Current Assumption \Male	Years Of Service
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
20	8.40%	43.77%	35.56%	23.19%	23.19%	17.16%	14.61%	12.64%	11.80%	10.92%	10.80%	10.70%	9.74%	9.74%	9.28%	9.23%	8.63%
21	8.10%	42.73%	35.56%	23.19%	21.91%	15.83%	12.57%	11.74%	11.24%	10.92%	10.67%	10.21%	9.74%	9.36%	8.82%	8.23%	7.65%
22	7.80%	41.32%	35.56%	23.19%	20.60%	15.03%	11.22%	10.99%	10.61%	10.61%	10.32%	9.72%	9.72%	8.81%	8.33%	7.47%	6.95%
23	7.50%	39.68%	35.56%	23.19%	19.58%	14.62%	10.42%	10.35%	9.96%	9.96%	9.81%	9.23%	9.23%	8.25%	7.81%	6.90%	6.46%
24	7.20%	37.92%	35.08%	23.19%	18.77%	14.45%	10.01%	9.81%	9.31%	9.31%	9.21%	8.74%	8.65%	7.70%	7.29%	6.46%	6.11%
25	6.90%	36.16%	34.01%	23.19%	18.12%	14.44%	9.88%	9.34%	8.70%	8.70%	8.55%	8.27%	7.88%	7.17%	6.77%	6.13%	5.87%
26	6.60%	34.46%	32.77%	23.19%	17.58%	14.44%	9.88%	8.93%	8.14%	8.14%	7.87%	7.82%	7.06%	6.66%	6.27%	5.87%	5.68%
27	6.30%	32.90%	31.44%	23.19%	17.11%	14.44%	9.88%	8.56%	7.64%	7.64%	7.22%	7.22%	6.24%	6.19%	5.80%	5.65%	5.51%
28	6.00%	31.52%	30.08%	22.76%	16.69%	14.44%	9.88%	8.23%	7.23%	7.23%	6.60%	6.60%	5.47%	5.47%	5.36%	5.36%	5.34%
29	5.70%	30.35%	28.75%	21.90%	16.28%	14.44%	9.88%	7.93%	6.89%	6.89%	6.05%	6.05%	4.77%	4.77%	4.77%	4.77%	4.77%
30	5.40%	29.40%	27.49%	21.02%	15.88%	14.32%	9.88%	7.64%	6.63%	6.63%	5.56%	5.56%	4.17%	4.17%	4.17%	4.17%	4.17%
31	5.10%	28.69%	26.33%	20.15%	15.46%	14.03%	9.88%	7.38%	6.45%	6.45%	5.16%	5.16%	3.68%	3.68%	3.68%	3.68%	3.68%
32	4.80%	28.20%	25.30%	19.32%	15.03%	13.63%	9.88%	7.13%	6.34%	6.34%	4.83%	4.83%	3.31%	3.31%	3.31%	3.31%	3.31%
33	4.50%	27.93%	24.40%	18.52%	14.58%	13.14%	9.88%	6.90%	6.24%	6.24%	4.59%	4.59%	3.06%	3.06%	3.06%	3.06%	3.06%
34	4.20%	27.84%	23.65%	17.79%	14.11%	12.56%	9.88%	6.68%	6.08%	6.08%	4.42%	4.42%	2.92%	2.92%	2.92%	2.92%	2.92%
35	3.90%	27.84%	23.04%	17.11%	13.62%	11.91%	9.59%	6.49%	5.96%	5.96%	4.31%	4.31%	2.88%	2.88%	2.88%	2.88%	2.88%
36	3.60%	27.84%	22.57%	16.50%	13.14%	11.24%	9.17%	6.31%	5.89%	5.89%	4.27%	4.27%	2.88%	2.88%	2.88%	2.88%	2.88%
37	3.30%	27.84%	22.21%	15.95%	12.66%	10.55%	8.72%	6.16%	5.84%	5.84%	4.26%	4.26%	2.88%	2.88%	2.88%	2.88%	2.88%
38	3.20%	27.84%	21.96%	15.45%	12.19%	9.89%	8.26%	6.03%	5.80%	5.80%	4.26%	4.17%	2.88%	2.88%	2.88%	2.88%	2.64%
39	3.10%	27.84%	21.80%	15.00%	11.75%	9.28%	7.80%	5.93%	5.77%	5.77%	4.26%	4.04%	2.88%	2.88%	2.88%	2.88%	2.42%
40	3.00%	27.84%	21.70%	14.60%	11.34%	8.75%	7.37%	5.86%	5.73%	5.73%	4.26%	3.92%	2.88%	2.88%	2.88%	2.86%	2.25%
41	2.90%	27.84%	21.64%	14.24%	10.98%	8.33%	7.00%	5.82%	5.67%	5.67%	4.26%	3.82%	2.88%	2.88%	2.88%	2.72%	2.16%
42	2.80%	27.84%	21.58%	13.91%	10.67%	8.02%	6.71%	5.80%	5.59%	5.59%	4.26%	3.75%	2.88%	2.88%	2.88%	2.63%	2.13%
43	2.70%	27.84%	21.52%	13.60%	10.41%	7.84%	6.51%	5.80%	5.48%	5.48%	4.26%	3.70%	2.88%	2.88%	2.88%	2.58%	2.13%
44	2.60%	27.84%	21.42%	13.31%	10.20%	7.79%	6.41%	5.80%	5.35%	5.35%	4.26%	3.67%	2.88%	2.88%	2.88%	2.58%	2.13%
45	2.50%	27.84%	21.27%	13.04%	10.05%	7.79%	6.40%	5.80%	5.18%	5.18%	4.26%	3.66%	2.86%	2.86%	2.86%	2.58%	2.13%
46	2.40%	27.84%	21.04%	12.79%	9.94%	7.79%	6.40%	5.80%	5.00%	5.00%	4.16%	3.66%	2.78%	2.78%	2.78%	2.58%	2.13%
47	2.30%	27.84%	20.72%	12.56%	9.86%	7.79%	6.40%	5.80%	4.81%	4.81%	3.97%	3.66%	2.72%	2.72%	2.72%	2.58%	2.13%
48	2.20%	27.23%	20.29%	12.37%	9.80%	7.79%	6.40%	5.80%	4.64%	4.64%	3.74%	3.66%	2.70%	2.70%	2.70%	2.58%	2.13%
49	2.10%	26.33%	19.77%	12.22%	9.72%	7.79%	6.40%	5.80%	4.50%	4.50%	3.49%	3.49%	2.70%	2.70%	2.70%	2.58%	2.13%
50	2.00%	25.37%	19.14%	12.13%	9.60%	7.79%	6.40%	5.80%	4.24%	4.24%	3.23%	3.23%	2.70%	2.70%	2.70%	2.58%	2.13%
51	1.90%	24.43%	18.42%	12.13%	9.39%	7.79%	6.40%	5.65%	3.98%	3.98%	2.98%	2.98%	2.70%	2.70%	2.70%	2.58%	2.13%
52	1.80%	23.59%	17.62%	12.13%	9.03%	7.79%	6.40%	5.33%	3.83%	3.83%	2.78%	2.78%	2.66%	2.66%	2.66%	2.58%	2.13%
53	1.70%	22.96%	16.78%	12.13%	8.48%	7.39%	6.40%	4.85%	3.83%	3.83%	2.66%	2.66%	2.66%	2.66%	2.66%	2.58%	2.13%
54	1.60%	22.66%	15.92%	12.13%	7.66%	5.78%	5.35%	4.16%	3.83%	3.83%	2.66%	2.66%	2.66%	2.66%	2.59%	2.58%	2.13%
55+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

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Proposed Termination Assumption – Males

Age	Current Assumption Male	Years of Service														
		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
20	8.40%	7.95%	7.15%	6.73%	6.28%	6.28%	5.99%	5.10%	5.10%	5.08%	4.69%	4.69%	4.67%	4.65%	4.49%	4.38%
21	8.10%	7.23%	6.70%	6.38%	6.05%	5.72%	5.50%	5.10%	5.10%	5.01%	4.69%	4.69%	4.60%	4.46%	4.34%	4.21%
22	7.80%	6.65%	6.34%	6.05%	5.80%	5.28%	5.17%	5.10%	5.07%	4.90%	4.69%	4.64%	4.50%	4.30%	4.20%	4.06%
23	7.50%	6.19%	6.05%	5.76%	5.56%	5.01%	4.94%	4.94%	4.94%	4.77%	4.69%	4.52%	4.37%	4.15%	4.05%	3.91%
24	7.20%	5.83%	5.80%	5.49%	5.33%	4.87%	4.80%	4.80%	4.80%	4.61%	4.61%	4.39%	4.22%	4.02%	3.92%	3.79%
25	6.90%	5.54%	5.54%	5.26%	5.11%	4.80%	4.71%	4.71%	4.65%	4.46%	4.45%	4.24%	4.08%	3.91%	3.79%	3.67%
26	6.60%	5.32%	5.32%	5.05%	4.92%	4.78%	4.65%	4.59%	4.48%	4.30%	4.22%	4.09%	3.93%	3.80%	3.67%	3.56%
27	6.30%	5.14%	5.14%	4.87%	4.75%	4.75%	4.61%	4.33%	4.31%	4.15%	4.00%	3.93%	3.79%	3.69%	3.56%	3.45%
28	6.00%	5.00%	4.95%	4.72%	4.60%	4.60%	4.56%	4.10%	4.10%	4.01%	3.80%	3.78%	3.65%	3.59%	3.45%	3.35%
29	5.70%	4.77%	4.74%	4.58%	4.46%	4.46%	4.46%	3.90%	3.90%	3.88%	3.62%	3.62%	3.53%	3.49%	3.35%	3.25%
30	5.40%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	3.75%	3.75%	3.75%	3.47%	3.47%	3.42%	3.39%	3.25%	3.15%
31	5.10%	3.68%	3.68%	3.68%	3.68%	3.68%	3.68%	3.65%	3.65%	3.65%	3.36%	3.36%	3.31%	3.28%	3.15%	3.05%
32	4.80%	3.31%	3.31%	3.31%	3.31%	3.31%	3.31%	3.31%	3.31%	3.31%	3.27%	3.27%	3.21%	3.17%	3.05%	2.95%
33	4.50%	3.06%	3.06%	3.06%	3.06%	3.06%	3.06%	3.06%	3.06%	3.06%	3.06%	3.06%	3.06%	3.06%	2.95%	2.84%
34	4.20%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.84%	2.72%
35	3.90%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.81%	2.73%	2.60%
36	3.60%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%	2.85%	2.68%	2.61%	2.46%
37	3.30%	2.88%	2.85%	2.85%	2.85%	2.85%	2.85%	2.85%	2.85%	2.85%	2.85%	2.83%	2.75%	2.55%	2.48%	2.32%
38	3.20%	2.64%	2.64%	2.64%	2.64%	2.64%	2.62%	2.62%	2.62%	2.62%	2.62%	2.62%	2.62%	2.41%	2.34%	2.18%
39	3.10%	2.42%	2.42%	2.42%	2.42%	2.42%	2.40%	2.31%	2.31%	2.31%	2.31%	2.31%	2.31%	2.28%	2.19%	2.03%
40	3.00%	2.25%	2.25%	2.25%	2.25%	2.15%	2.15%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	1.88%
41	2.90%	2.16%	2.16%	2.16%	2.16%	1.93%	1.93%	1.71%	1.71%	1.71%	1.71%	1.71%	1.71%	1.71%	1.71%	1.71%
42	2.80%	2.13%	2.13%	2.13%	2.13%	1.77%	1.77%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%
43	2.70%	2.13%	2.10%	2.10%	2.10%	1.66%	1.66%	1.21%	1.21%	1.21%	1.21%	1.21%	1.21%	1.21%	1.21%	1.21%
44	2.60%	2.13%	2.10%	2.10%	2.10%	1.60%	1.60%	1.02%	1.02%	1.02%	1.02%	1.02%	1.02%	1.02%	1.02%	1.02%
45	2.50%	2.13%	2.10%	1.97%	1.97%	1.60%	1.60%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%
46	2.40%	2.13%	2.10%	1.71%	1.71%	1.60%	1.60%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%	0.78%
47	2.30%	2.13%	2.10%	1.47%	1.47%	1.47%	1.47%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%
48	2.20%	2.13%	2.10%	1.25%	1.25%	1.25%	1.25%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%
49	2.10%	2.13%	2.10%	1.09%	1.09%	1.09%	1.09%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%
50	2.00%	2.13%	2.10%	0.99%	0.99%	0.99%	0.99%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%
51	1.90%	2.13%	2.10%	0.98%	0.98%	0.98%	0.98%	0.76%	0.76%	0.76%	0.76%	0.76%	0.75%	0.75%	0.75%	0.75%
52	1.80%	2.13%	2.10%	0.98%	0.98%	0.98%	0.98%	0.76%	0.76%	0.76%	0.76%	0.76%	0.75%	0.75%	0.75%	0.75%
53	1.70%	2.13%	2.10%	0.98%	0.98%	0.98%	0.98%	0.76%	0.76%	0.76%	0.76%	0.76%	0.75%	0.75%	0.75%	0.75%
54	1.60%	2.13%	2.10%	0.98%	0.98%	0.98%	0.98%	0.76%	0.76%	0.76%	0.76%	0.76%	0.75%	0.75%	0.75%	0.75%
55+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

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Experience Study 2004 - 2008   Public Employees Retirement Fund

Proposed Termination Assumption – Females
Years of Service

Age	Current Assumption Females	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
20	8.40%	45.01%	39.17%	30.39%	24.36%	19.39%	18.26%	18.22%	17.82%	17.82%	17.82%	17.82%	17.82%	16.91%	14.32%	12.53%	11.10%
21	8.10%	42.61%	38.75%	29.81%	23.56%	18.62%	17.02%	17.02%	17.02%	17.02%	17.02%	16.97%	15.20%	13.28%	11.56%	9.80%	8.22%
22	7.80%	40.84%	38.16%	29.18%	22.85%	18.03%	15.96%	15.96%	15.96%	15.96%	15.96%	14.36%	12.46%	10.51%	9.32%	7.73%	6.24%
23	7.50%	39.54%	37.44%	28.49%	22.21%	17.57%	15.06%	15.06%	15.06%	15.06%	14.24%	12.17%	10.29%	8.44%	7.54%	6.22%	4.98%
24	7.20%	38.58%	36.59%	27.75%	21.61%	17.18%	14.29%	14.29%	14.29%	14.29%	12.44%	10.38%	8.60%	6.96%	6.16%	5.15%	4.28%
25	6.90%	37.83%	35.64%	26.97%	21.04%	16.85%	13.64%	13.64%	13.64%	13.64%	10.83%	8.93%	7.32%	5.96%	5.14%	4.46%	4.00%
26	6.60%	37.20%	34.61%	26.15%	20.46%	16.54%	13.09%	13.09%	13.09%	12.57%	9.45%	7.80%	6.38%	5.33%	4.41%	4.06%	4.00%
27	6.30%	36.62%	33.51%	25.29%	19.88%	16.23%	12.63%	12.46%	12.46%	11.20%	8.29%	6.94%	5.72%	4.99%	3.94%	3.88%	3.88%
28	6.00%	36.04%	32.36%	24.41%	19.29%	15.90%	12.23%	11.61%	11.61%	9.96%	7.35%	6.33%	5.28%	4.86%	3.67%	3.67%	3.67%
29	5.70%	35.41%	31.19%	23.52%	18.68%	15.56%	11.89%	10.85%	10.85%	8.87%	6.63%	5.92%	5.02%	4.86%	3.58%	3.58%	3.58%
30	5.40%	34.72%	30.01%	22.61%	18.05%	15.19%	11.60%	10.21%	9.85%	7.96%	6.10%	5.68%	4.89%	4.86%	3.58%	3.58%	3.58%
31	5.10%	33.95%	28.85%	21.72%	17.40%	14.79%	11.34%	9.68%	8.81%	7.24%	5.76%	5.57%	4.85%	4.85%	3.58%	3.58%	3.58%
32	4.80%	33.11%	27.71%	20.83%	16.75%	14.37%	11.11%	9.27%	7.99%	6.71%	5.58%	5.57%	4.85%	4.85%	3.58%	3.58%	3.58%
33	4.60%	32.20%	26.62%	19.97%	16.09%	13.94%	10.90%	8.96%	7.38%	6.35%	5.53%	5.53%	4.85%	4.85%	3.58%	3.58%	3.58%
34	4.40%	31.24%	25.60%	19.14%	15.44%	13.49%	10.70%	8.75%	6.98%	6.16%	5.53%	5.53%	4.85%	4.85%	3.58%	3.58%	3.58%
35	4.20%	30.26%	24.65%	18.35%	14.81%	13.04%	10.50%	8.61%	6.76%	6.11%	5.53%	5.53%	4.85%	4.85%	3.58%	3.58%	3.58%
36	4.00%	29.29%	23.79%	17.61%	14.19%	12.59%	10.31%	8.53%	6.71%	6.11%	5.53%	5.53%	4.85%	4.85%	3.58%	3.58%	3.58%
37	3.80%	28.35%	23.02%	16.94%	13.62%	12.17%	10.13%	8.49%	6.71%	6.11%	5.53%	5.53%	4.85%	4.85%	3.58%	3.58%	3.58%
38	3.70%	27.49%	22.36%	16.33%	13.09%	11.78%	9.93%	8.47%	6.71%	6.11%	5.53%	5.53%	4.85%	4.85%	3.58%	3.58%	3.58%
39	3.60%	26.73%	21.81%	15.79%	12.61%	11.42%	9.74%	8.44%	6.71%	6.11%	5.53%	5.53%	4.85%	4.85%	3.58%	3.58%	3.58%
40	3.50%	26.09%	21.38%	15.33%	12.19%	11.11%	9.54%	8.39%	6.71%	6.11%	5.53%	5.53%	4.85%	4.85%	3.58%	3.58%	3.58%
41	3.40%	25.61%	21.05%	14.95%	11.85%	10.85%	9.34%	8.31%	6.71%	6.11%	5.53%	5.53%	4.85%	4.85%	3.58%	3.58%	3.58%
42	3.30%	25.31%	20.83%	14.65%	11.58%	10.65%	9.14%	8.17%	6.71%	6.11%	5.53%	5.53%	4.85%	4.85%	3.58%	3.58%	3.58%
43	3.20%	25.18%	20.72%	14.42%	11.38%	10.50%	8.94%	7.98%	6.71%	6.11%	5.53%	5.53%	4.79%	4.79%	3.58%	3.58%	3.58%
44	3.10%	25.18%	20.69%	14.28%	11.27%	10.40%	8.74%	7.73%	6.71%	6.11%	5.53%	5.53%	4.65%	4.65%	3.58%	3.58%	3.58%
45	3.00%	25.18%	20.69%	14.20%	11.22%	10.34%	8.54%	7.42%	6.71%	6.11%	5.53%	5.53%	4.50%	4.50%	3.58%	3.58%	3.51%
46	2.90%	25.18%	20.69%	14.19%	11.22%	10.31%	8.35%	7.06%	6.71%	6.11%	5.34%	5.34%	4.37%	4.37%	3.58%	3.58%	3.45%
47	2.80%	25.18%	20.69%	14.19%	11.22%	10.29%	8.18%	6.68%	6.68%	6.11%	4.95%	4.95%	4.26%	4.26%	3.58%	3.58%	3.45%
48	2.70%	25.18%	20.69%	14.19%	11.22%	10.25%	8.02%	6.31%	6.31%	5.95%	4.57%	4.57%	4.19%	4.19%	3.56%	3.56%	3.39%
49	2.60%	25.18%	20.69%	14.19%	11.22%	10.16%	7.88%	5.98%	5.98%	5.54%	4.26%	4.26%	4.16%	4.16%	3.39%	3.39%	3.32%
50	2.50%	25.18%	20.69%	14.19%	11.22%	9.98%	7.76%	5.75%	5.75%	5.19%	4.08%	4.08%	4.08%	4.08%	3.32%	3.32%	3.32%
51	2.40%	25.18%	20.69%	14.19%	11.22%	9.66%	7.68%	5.68%	5.68%	4.95%	4.08%	4.08%	4.08%	4.08%	3.32%	3.32%	3.32%
52	2.30%	25.18%	20.69%	14.19%	11.22%	9.15%	7.62%	5.68%	5.68%	4.93%	4.08%	4.08%	4.08%	4.08%	3.32%	3.32%	3.32%
53	2.20%	25.18%	20.29%	14.19%	11.22%	8.37%	7.61%	5.68%	5.68%	4.93%	4.08%	4.08%	4.08%	4.08%	3.32%	3.32%	3.32%
54	2.10%	24.97%	19.50%	14.19%	11.22%	7.25%	7.25%	5.68%	5.68%	4.93%	4.08%	4.08%	4.08%	4.08%	3.32%	3.32%	3.32%
55+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Proposed Termination Assumption – Females
Years of Service

Age	Current Assumption Females	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
20	8.40%	8.87%	7.20%	6.02%	5.13%	4.67%	4.12%	4.12%	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%
21	8.10%	6.96%	6.08%	5.41%	4.96%	4.67%	4.12%	4.12%	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%
22	7.80%	5.68%	5.32%	5.02%	4.89%	4.67%	4.12%	4.12%	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%	3.74%
23	7.50%	4.89%	4.84%	4.80%	4.80%	4.67%	4.12%	4.12%	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%	3.88%	3.43%
24	7.20%	4.28%	4.28%	4.28%	4.28%	4.28%	4.12%	4.12%	4.08%	4.08%	4.08%	4.08%	3.88%	3.89%	3.60%	3.18%
25	6.90%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	3.58%	3.60%	3.33%	2.99%
26	6.60%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	3.90%	3.30%	3.32%	3.07%	2.84%
27	6.30%	3.88%	3.88%	3.88%	3.88%	3.88%	3.88%	3.88%	3.88%	3.88%	3.83%	3.56%	3.04%	3.06%	2.85%	2.73%
28	6.00%	3.67%	3.67%	3.67%	3.67%	3.67%	3.67%	3.67%	3.67%	3.67%	3.45%	3.24%	2.81%	2.83%	2.66%	2.64%
29	5.70%	3.58%	3.58%	3.58%	3.58%	3.58%	3.58%	3.58%	3.58%	3.45%	3.11%	2.94%	2.62%	2.63%	2.51%	2.51%
30	5.40%	3.58%	3.58%	3.58%	3.58%	3.58%	3.58%	3.58%	3.37%	3.12%	2.81%	2.69%	2.46%	2.47%	2.39%	2.39%
31	5.10%	3.58%	3.58%	3.58%	3.58%	3.58%	3.58%	3.54%	3.05%	2.84%	2.56%	2.49%	2.46%	2.35%	2.31%	2.31%
32	4.80%	3.58%	3.58%	3.58%	3.58%	3.58%	3.41%	3.21%	2.77%	2.60%	2.38%	2.34%	2.34%	2.27%	2.25%	2.25%
33	4.60%	3.58%	3.58%	3.58%	3.58%	3.58%	3.15%	2.90%	2.55%	2.41%	2.26%	2.24%	2.24%	2.22%	2.22%	2.22%
34	4.40%	3.58%	3.58%	3.58%	3.58%	3.35%	2.91%	2.60%	2.37%	2.27%	2.20%	2.19%	2.19%	2.19%	2.19%	2.19%
35	4.20%	3.58%	3.58%	3.58%	3.38%	3.04%	2.70%	2.34%	2.25%	2.17%	2.17%	2.17%	2.17%	2.17%	2.17%	2.17%
36	4.00%	3.58%	3.58%	3.58%	3.09%	2.74%	2.52%	2.12%	2.12%	2.12%	2.12%	2.12%	2.12%	2.12%	2.12%	2.09%
37	3.80%	3.58%	3.58%	3.58%	2.82%	2.47%	2.38%	1.95%	1.95%	1.95%	1.95%	1.95%	1.95%	1.95%	1.95%	1.95%
38	3.70%	3.58%	3.58%	3.42%	2.57%	2.22%	2.22%	1.83%	1.83%	1.83%	1.83%	1.83%	1.83%	1.83%	1.83%	1.83%
39	3.60%	3.28%	3.28%	3.18%	2.37%	2.01%	2.01%	1.76%	1.76%	1.76%	1.76%	1.76%	1.76%	1.76%	1.76%	1.76%
40	3.50%	2.97%	2.97%	2.97%	2.21%	1.85%	1.85%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
41	3.40%	2.71%	2.71%	2.71%	2.11%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.70%
42	3.30%	2.51%	2.51%	2.51%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.64%
43	3.20%	2.39%	2.39%	2.39%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.61%
44	3.10%	2.35%	2.35%	2.35%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.62%	1.59%
45	3.00%	2.35%	2.35%	2.35%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.68%	1.48%	1.48%
46	2.90%	2.35%	2.35%	2.35%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.64%	1.51%	1.33%	1.33%
47	2.80%	2.35%	2.35%	2.35%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.51%	1.34%	1.22%	1.22%
48	2.70%	2.35%	2.35%	2.35%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.69%	1.39%	1.17%	1.15%	1.15%
49	2.60%	2.35%	2.35%	2.35%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.53%	1.53%	1.31%	1.04%	1.04%	1.04%
50	2.50%	2.35%	2.35%	2.35%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.41%	1.41%	1.29%	0.95%	0.95%	0.95%
51	2.40%	2.35%	2.35%	2.35%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.39%	1.39%	1.29%	0.94%	0.94%	0.94%
52	2.30%	2.35%	2.35%	2.35%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.39%	1.39%	1.29%	0.94%	0.94%	0.94%
53	2.20%	2.35%	2.35%	2.35%	2.07%	1.69%	1.69%	1.69%	1.69%	1.69%	1.39%	1.39%	1.29%	0.94%	0.94%	0.94%
54	2.10%	2.35%	2.35%	2.35%	1.95%	1.69%	1.69%	1.69%	1.69%	1.69%	1.39%	1.39%	1.29%	0.94%	0.94%	0.94%
55+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Appendix

Retirement Rates

Age	Current Assumption		Proposed Assumption	
	Rule of 90	Non-Rule of 90	Rule of 90	Non-Rule of 90
55	30.0%	7.0%	20.0%	6.0%
56	25.0%	7.0%	20.0%	6.0%
57	25.0%	7.0%	15.0%	6.0%
58	25.0%	7.0%	15.0%	7.0%
59	25.0%	9.0%	20.0%	8.0%
60	25.0%	9.0%	20.0%	8.0%
61	30.0%	15.0%	25.0%	12.0%
62	40.0%	22.0%	35.0%	20.0%
63	30.0%	20.0%	20.0%	16.0%
64	30.0%	20.0%	20.0%	18.0%
65	40.0%	40.0%	30.0%	30.0%
66	25.0%	25.0%	20.0%	20.0%
67	25.0%	25.0%	20.0%	20.0%
68	25.0%	25.0%	20.0%	20.0%
69	25.0%	25.0%	20.0%	20.0%
70	25.0%	25.0%	25.0%	25.0%
71+	100.0%	100.0%	100.0%	100.0%

Appendix

Disability Rates

Age	Current Assumption		Proposed Assumption	
	Male	**Female**	**Male**	**Female**
20	0.0100%	0.0100%	0.0080%	0.0080%
21	0.0100%	0.0100%	0.0080%	0.0080%
22	0.0100%	0.0100%	0.0080%	0.0080%
23	0.0100%	0.0100%	0.0080%	0.0080%
24	0.0100%	0.0100%	0.0080%	0.0080%
25	0.0100%	0.0100%	0.0080%	0.0080%
26	0.0100%	0.0100%	0.0080%	0.0080%
27	0.0100%	0.0100%	0.0080%	0.0080%
28	0.0100%	0.0100%	0.0080%	0.0080%
29	0.0100%	0.0100%	0.0080%	0.0080%
30	0.0200%	0.0200%	0.0160%	0.0160%
31	0.0200%	0.0200%	0.0160%	0.0160%
32	0.0300%	0.0300%	0.0240%	0.0240%
33	0.0300%	0.0300%	0.0240%	0.0240%
34	0.0400%	0.0400%	0.0320%	0.0320%
35	0.0500%	0.0400%	0.0400%	0.0320%
36	0.0600%	0.0400%	0.0480%	0.0320%
37	0.0700%	0.0500%	0.0560%	0.0400%
38	0.0700%	0.0500%	0.0560%	0.0400%
39	0.0800%	0.0500%	0.0640%	0.0400%
40	0.0900%	0.0600%	0.0720%	0.0480%
41	0.1000%	0.0600%	0.0800%	0.0480%
42	0.1100%	0.0600%	0.0880%	0.0480%
43	0.1200%	0.0700%	0.0960%	0.0560%
44	0.1300%	0.0800%	0.1040%	0.0640%
45	0.1400%	0.0900%	0.1120%	0.0720%
46	0.1600%	0.1000%	0.1280%	0.0800%
47	0.1700%	0.1200%	0.1360%	0.0960%
48	0.1900%	0.1300%	0.1520%	0.1040%
49	0.2100%	0.1400%	0.1680%	0.1120%
50	0.2300%	0.1600%	0.1840%	0.1280%
51	0.2500%	0.1800%	0.2000%	0.1440%
52	0.2800%	0.1900%	0.2240%	0.1520%
53	0.3500%	0.2200%	0.2800%	0.1760%
54	0.4200%	0.2400%	0.3360%	0.1920%
55	0.4900%	0.2600%	0.3920%	0.2080%
56	0.5600%	0.2800%	0.4480%	0.2240%
57	0.6100%	0.3100%	0.4880%	0.2480%
58	0.6800%	0.3600%	0.5440%	0.2880%
59	0.7500%	0.4100%	0.6000%	0.3280%
60	0.8200%	0.4600%	0.6560%	0.3680%
61	0.8900%	0.5100%	0.7120%	0.4080%
62	0.9600%	0.5800%	0.7680%	0.4640%
63	1.0300%	0.6500%	0.8240%	0.5200%
64	1.1000%	0.7200%	0.8800%	0.5760%
65+	0.0000%	0.0000%	0.0000%	0.0000%

Appendix

Salary Scale

Current Assumption		Proposed Assumption	
Age	**Ultimate***	**Service**	**Ultimate**
20	5.40%	1	12.03%
21	5.40%	2	8.90%
22	5.40%	3	7.46%
23	5.40%	4	6.58%
24	5.40%	5	5.97%
25	5.40%	6	5.52%
26	5.36%	7	5.16%
27	5.32%	8	4.87%
28	5.28%	9	4.63%
29	5.24%	10	4.42%
30	5.20%	11	4.24%
31	5.16%	12	4.08%
32	5.12%	13	3.94%
33	5.08%	14	3.82%
34	5.04%	15	3.70%
35	5.00%	16	3.60%
36	4.96%	17	3.51%
37	4.92%	18	3.50%
38	4.88%	19	3.50%
39	4.84%	20	3.50%
40	4.80%	21	3.50%
41	4.76%	22	3.50%
42	4.72%	23	3.50%
43	4.68%	24	3.50%
44	4.64%	25	3.50%
45	4.60%	26	3.50%
46	4.56%	27	3.50%
47	4.52%	28	3.50%
48	4.48%	29	3.50%
49	4.44%	30+	3.50%
50	4.40%		
51	4.36%		
52	4.32%		
53	4.28%		
54	4.24%		
55	4.20%		
56	4.16%		
57+	4.12%		

* *During a 5-year select period, .60% x (5-T) where T is completed years of service, is added to the ultimate rate.*

Appendix

Detailed Experience Analysis

Salary Increases

2004-2008 Experience

Age Group	Service < 5 Years		Service >= 5 Years	
	Actual Increases	Expected Increases	Actual Increases	Expected Increases
<20	25.84%	7.55%		
20 – 24	11.08%	7.19%	8.65%	5.40%
25 – 29	7.65%	6.80%	5.38%	5.32%
30 – 34	8.17%	6.52%	5.16%	5.12%
35 – 39	9.90%	6.30%	5.08%	4.92%
40 – 44	9.77%	6.08%	4.71%	4.72%
45 – 49	9.47%	5.87%	4.24%	4.52%
50 – 54	7.67%	5.65%	3.71%	4.32%
55 – 59	7.11%	5.48%	3.22%	4.12%
60 – 64	4.25%	5.36%	2.66%	4.00%
65 – 69	6.66%	5.38%	2.55%	4.00%
70 – 75	2.40%	5.32%	1.69%	4.00%
Total	**8.59%**	**6.16%**	**3.98%**	**4.46%**

2004-2005 Experience

Age Group	Service < 5 Years		Service >= 5 Years	
	Actual Increases	Expected Increases	Actual Increases	Expected Increases
<20	27.47%	7.49%		
20 – 24	11.01%	7.13%	1.95%	5.40%
25 – 29	6.84%	6.73%	5.70%	5.32%
30 – 34	6.80%	6.45%	4.06%	5.12%
35 – 39	7.71%	6.25%	4.23%	4.92%
40 – 44	7.65%	6.04%	3.55%	4.72%
45 – 49	7.92%	5.83%	3.02%	4.52%
50 – 54	5.86%	5.63%	2.60%	4.32%
55 – 59	5.61%	5.47%	1.96%	4.12%
60 – 64	2.93%	5.33%	1.57%	4.00%
65 – 69	7.03%	5.40%	1.36%	4.00%
70 – 75	2.44%	5.37%	0.30%	4.00%
Total	**7.34%**	**6.06%**	**3.04%**	**4.61%**

Appendix

Salary Increases

2005-2006 Experience

Age Group	Service < 5 Years		Service >= 5 Years	
	Actual Increases	**Expected Increases**	**Actual Increases**	**Expected Increases**
<20	25.40%	7.62%		
20 – 24	9.88%	7.16%	16.75%	5.40%
25 – 29	7.31%	6.76%	5.25%	5.32%
30 – 34	8.50%	6.47%	5.43%	5.12%
35 – 39	10.29%	6.24%	5.13%	4.92%
40 – 44	10.36%	6.03%	5.04%	4.72%
45 – 49	10.28%	5.84%	4.65%	4.52%
50 – 54	7.82%	5.60%	3.99%	4.32%
55 – 59	7.41%	5.44%	3.45%	4.12%
60 – 64	4.25%	5.36%	2.89%	4.00%
65 – 69	8.00%	5.31%	2.54%	4.00%
70 – 75	3.74%	5.31%	2.44%	4.00%
Total	**8.74%**	**6.05%**	**5.28%**	**4.63%**

2006-2007 Experience

Age Group	Service < 5 Years		Service >= 5 Years	
	Actual Increases	**Expected Increases**	**Actual Increases**	**Expected Increases**
<20	14.98%	7.56%		
20 – 24	11.49%	7.26%	11.37%	5.40%
25 – 29	7.72%	6.87%	4.83%	5.32%
30 – 34	8.90%	6.62%	5.30%	5.12%
35 – 39	11.02%	6.41%	5.05%	4.92%
40 – 44	10.99%	6.18%	4.91%	4.72%
45 – 49	9.80%	5.93%	4.33%	4.52%
50 – 54	8.38%	5.73%	3.68%	4.32%
55 – 59	7.69%	5.53%	3.35%	4.12%
60 – 64	6.25%	5.38%	2.72%	4.00%
65 – 69	4.62%	5.42%	2.60%	4.00%
70 – 75	1.18%	5.42%	2.47%	4.00%
Total	**8.81%**	**6.16%**	**4.54%**	**4.61%**

Appendix

Salary Increases

2007-2008 Experience

Age Group	Service < 5 Years		Service >= 5 Years	
	Actual Increases	**Expected Increases**	**Actual Increases**	**Expected Increases**
<20	14.98%	7.56%		
20 – 24	11.49%	7.26%	11.37%	5.40%
25 – 29	7.72%	6.87%	4.83%	5.32%
30 – 34	8.90%	6.62%	5.30%	5.12%
35 – 39	11.02%	6.41%	5.05%	4.92%
40 – 44	10.99%	6.18%	4.91%	4.72%
45 – 49	9.80%	5.93%	4.33%	4.52%
50 – 54	8.38%	5.73%	3.68%	4.32%
55 – 59	7.69%	5.53%	3.35%	4.12%
60 – 64	6.25%	5.38%	2.72%	4.00%
65 – 69	4.62%	5.42%	2.60%	4.00%
70 – 75	1.30%	5.30%	1.86%	4.00%
Total	**8.81%**	**6.16%**	**4.54%**	**4.61%**

Appendix

Postretirement Mortality

2004-2008 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
50-54	53	28.03	189.1%	28	21.28	131.6%	81	49.31	164.3%
55-59	94	104.03	90.4%	99	99.05	100.0%	193	203.07	95.0%
60-64	222	274.76	80.8%	261	249.72	104.5%	483	524.47	92.1%
65-69	350	466.36	75.0%	400	399.24	100.2%	750	865.60	86.6%
70-74	509	653.40	77.9%	540	640.74	84.3%	1,049	1,294.14	81.1%
75-79	663	739.82	89.6%	752	891.59	84.3%	1,415	1,631.41	86.7%
80-84	535	558.41	95.8%	871	924.49	94.2%	1,406	1,482.90	94.8%
85-89	302	241.85	124.9%	725	740.36	97.9%	1,027	982.21	104.6%
90-94	71	50.95	139.4%	313	331.21	94.5%	384	382.15	100.5%
95-99	6	4.16	144.3%	110	181.51	60.6%	116	185.67	62.5%
Total	**2,805**	**3,121.75**	**89.9%**	**4,099**	**4,479.19**	**91.5%**	**6,904**	**7,600.94**	**90.8%**

2004-2005 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
50-54	16	6.61	241.9%	8	4.92	162.5%	24	11.54	208.0%
55-59	22	24.45	90.0%	29	23.38	124.0%	51	47.83	106.6%
60-64	52	66.07	78.7%	58	58.41	99.3%	110	124.49	88.4%
65-69	102	115.20	88.5%	105	94.39	111.2%	207	209.59	98.8%
70-74	129	159.20	81.0%	133	156.54	85.0%	262	315.74	83.0%
75-79	159	173.81	91.5%	183	205.63	89.0%	342	379.44	90.1%
80-84	132	124.28	106.2%	181	212.23	85.3%	313	336.51	93.0%
85-89	66	51.59	127.9%	130	155.52	83.6%	196	207.11	94.6%
90-94	17	12.00	141.7%	72	75.15	95.8%	89	87.14	102.1%
95-99	3	1.36	219.8%	33	45.57	72.4%	36	46.93	76.7%
Total	**698**	**734.58**	**95.0%**	**932**	**1,031.74**	**90.3%**	**1,630**	**1,766.32**	**92.3%**

Appendix

Postretirement Mortality

2005-2006 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
50-54	15	7.01	213.9%	8	5.32	150.3%	23	12.33	186.5%
55-59	21	24.90	84.4%	25	23.82	104.9%	46	48.72	94.4%
60-64	59	68.37	86.3%	56	60.88	92.0%	115	129.25	89.0%
65-69	89	114.53	77.7%	95	97.96	97.0%	184	212.49	86.6%
70-74	131	162.67	80.5%	131	157.14	83.4%	262	319.82	81.9%
75-79	150	182.63	82.1%	196	219.05	89.5%	346	401.68	86.1%
80-84	119	131.30	90.6%	195	223.33	87.3%	314	354.64	88.5%
85-89	70	57.70	121.3%	178	179.85	99.0%	248	237.55	104.4%
90-94	18	12.42	144.9%	75	77.12	97.2%	93	89.54	103.9%
95-99	1	0.62	161.7%	19	42.41	44.8%	20	43.03	46.5%
Total	**673**	**762.15**	**88.3%**	**978**	**1,086.90**	**90.0%**	**1,651**	**1,849.05**	**89.3%**

2006-2007 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
50-54	8	7.22	110.8%	6	5.46	109.9%	14	12.68	110.4%
55-59	25	26.59	94.0%	20	25.51	78.4%	45	52.10	86.4%
60-64	61	68.67	88.8%	65	63.56	102.3%	126	132.23	95.3%
65-69	71	117.60	60.4%	106	101.45	104.5%	177	219.05	80.8%
70-74	131	165.24	79.3%	142	161.57	87.9%	273	326.81	83.5%
75-79	167	186.49	89.5%	188	228.32	82.3%	355	414.81	85.6%
80-84	148	147.19	100.5%	231	238.45	96.9%	379	385.64	98.3%
85-89	81	64.15	126.3%	195	194.44	100.3%	276	258.60	106.7%
90-94	18	12.52	143.8%	72	83.51	86.2%	90	96.03	93.7%
95-99	1	0.92	109.0%	31	47.31	65.5%	32	48.23	66.4%
Total	**711**	**796.59**	**89.3%**	**1,056**	**1,149.58**	**91.9%**	**1,767**	**1,946.17**	**90.8%**

Appendix

Postretirement Mortality

2007-2008 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
50-54	14	7.18	194.9%	6	5.58	107.6%	20	12.76	156.7%
55-59	26	28.09	92.6%	25	26.33	94.9%	51	54.42	93.7%
60-64	50	71.65	69.8%	82	66.86	122.6%	132	138.51	95.3%
65-69	88	119.03	73.9%	94	105.44	89.2%	182	224.47	81.1%
70-74	118	166.29	71.0%	134	165.49	81.0%	252	331.77	76.0%
75-79	187	196.88	95.0%	185	238.58	77.5%	372	435.47	85.4%
80-84	136	155.63	87.4%	264	250.49	105.4%	400	406.12	98.5%
85-89	85	68.41	124.3%	222	210.55	105.4%	307	278.95	110.1%
90-94	18	14.01	128.5%	94	95.43	98.5%	112	109.44	102.3%
95-99	1	1.26	79.5%	27	46.23	58.4%	28	47.49	59.0%
Total	**723**	**828.43**	**87.3%**	**1,133**	**1,210.97**	**93.6%**	**1,856**	**2,039.40**	**91.0%**

Appendix

Preretirement Mortality

2004-2008 Experience

Age Group	Males			Females			Total		
	Actual Deaths	Expected Deaths	Actual/ Expected	Actual Deaths	Expected Deaths	Actual/ Expected	Actual Deaths	Expected Deaths	Actual/ Expected
25-29	4	5.11	78.3%	5	5.23	95.6%	9	10.34	87.0%
30-34	6	7.94	75.6%	7	8.39	83.4%	13	16.33	79.6%
35-39	16	13.13	121.9%	17	16.46	103.3%	33	29.59	111.5%
40-44	37	22.75	162.7%	43	33.77	127.3%	80	56.52	141.5%
45-49	53	41.43	127.9%	60	61.50	97.6%	113	102.93	109.8%
50-54	98	76.17	128.7%	97	90.10	107.7%	195	166.27	117.3%
55-59	125	133.49	93.6%	130	126.37	102.9%	255	259.85	98.1%
60-64	183	215.56	84.9%	144	164.89	87.3%	327	380.45	86.0%
Total	**522**	**515.58**	**101.2%**	**503**	**506.71**	**99.3%**	**1,025**	**1,022.29**	**100.3%**

2004-2005 Experience

Age Group	Males			Females			Total		
	Actual Deaths	Expected Deaths	Actual/ Expected	Actual Deaths	Expected Deaths	Actual/ Expected	Actual Deaths	Expected Deaths	Actual/ Expected
25-29	2	1.21	164.8%	-	1.25	0.0%	2	2.46	81.3%
30-34	1	2.05	48.7%	3	2.19	137.0%	4	4.24	94.3%
35-39	2	3.21	62.3%	6	4.20	142.9%	8	7.41	108.0%
40-44	10	5.98	167.1%	13	8.97	144.9%	23	14.96	153.8%
45-49	9	10.24	87.9%	15	14.97	100.2%	24	25.22	95.2%
50-54	26	18.75	138.7%	17	21.20	80.2%	43	39.95	107.6%
55-59	28	29.02	96.5%	42	27.57	152.3%	70	56.59	123.7%
60-64	35	48.53	72.1%	26	36.41	71.4%	61	84.95	71.8%
Total	**113**	**119.00**	**95.0%**	**122**	**116.77**	**104.5%**	**235**	**235.77**	**99.7%**

Appendix

Preretirement Mortality

2005-2006 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
25-29	-	1.25	0.0%	3	1.29	233.0%	3	2.53	118.4%
30-34	-	1.98	0.0%	1	2.07	48.3%	1	4.05	24.7%
35-39	4	3.28	122.0%	3	4.14	72.5%	7	7.41	94.4%
40-44	10	5.72	174.7%	8	8.63	92.7%	18	14.36	125.4%
45-49	10	10.39	96.3%	14	15.37	91.1%	24	25.76	93.2%
50-54	22	19.09	115.3%	13	22.37	58.1%	35	41.46	84.4%
55-59	23	31.93	72.0%	21	30.03	69.9%	44	61.96	71.0%
60-64	38	50.87	74.7%	31	39.40	78.7%	69	90.26	76.4%
Total	**107**	**124.50**	**85.9%**	**94**	**123.31**	**76.2%**	**201**	**247.80**	**81.1%**

2006-2007 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
25-29	-	1.30	0.0%	-	1.33	0.0%	-	2.63	0.0%
30-34	1	1.93	51.7%	2	2.03	98.7%	3	3.96	75.8%
35-39	7	3.34	209.3%	6	4.07	147.3%	13	7.42	175.3%
40-44	9	5.63	160.0%	11	8.28	132.8%	20	13.91	143.8%
45-49	18	10.51	171.3%	13	15.55	83.6%	31	26.06	119.0%
50-54	19	19.24	98.7%	32	22.96	139.4%	51	42.20	120.9%
55-59	42	35.17	119.4%	35	33.08	105.8%	77	68.26	112.8%
60-64	52	55.30	94.0%	41	42.06	97.5%	93	97.36	95.5%
Total	**148**	**132.43**	**111.8%**	**140**	**129.36**	**108.2%**	**288**	**261.79**	**110.0%**

Appendix

Preretirement Mortality

2007-2008 Experience

Age Group	Males			Females			Total		
	Actual Deaths	Expected Deaths	Actual/ Expected	Actual Deaths	Expected Deaths	Actual/ Expected	Actual Deaths	Expected Deaths	Actual/ Expected
25-29	2	1.35	148.3%	2	1.37	146.4%	4	2.71	147.4%
30-34	4	1.98	202.2%	1	2.10	47.6%	5	4.08	122.6%
35-39	3	3.30	91.0%	2	4.05	49.4%	5	7.35	68.0%
40-44	8	5.41	147.8%	11	7.88	139.5%	19	13.29	142.9%
45-49	16	10.29	155.4%	18	15.61	115.3%	34	25.90	131.3%
50-54	31	19.10	162.3%	35	23.56	148.5%	66	42.66	154.7%
55-59	32	37.36	85.6%	32	35.68	89.7%	64	73.04	87.6%
60-64	58	60.86	95.3%	46	47.02	97.8%	104	107.88	96.4%
Total	**154**	**139.65**	**110.3%**	**147**	**137.27**	**107.1%**	**301**	**276.92**	**108.7%**

Appendix

Disability Mortality

2004-2008 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
40-44	2	2.84	70.5%	3	6.60	45.5%	5	9.43	53.0%
45-49	4	12.95	30.9%	9	20.22	44.5%	13	33.17	39.2%
50-54	22	30.64	71.8%	21	42.14	49.8%	43	72.78	59.1%
55-59	41	48.23	85.0%	40	49.86	80.2%	81	98.09	82.6%
60-64	37	28.14	131.5%	44	29.72	148.1%	81	57.86	140.0%
65+	1	1.73	57.9%	2	0.93	215.5%	3	2.65	113.0%
Total	**107**	**124.52**	**85.9%**	**119**	**149.46**	**79.6%**	**226**	**273.98**	**82.5%**

2004-2005 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
40-44	1	1.02	98.1%	-	1.55	0.0%	1	2.57	38.9%
45-49	-	3.29	0.0%	3	5.44	55.1%	3	8.73	34.4%
50-54	3	7.11	42.2%	4	10.34	38.7%	7	17.45	40.1%
55-59	6	10.90	55.1%	7	10.65	65.7%	13	21.54	60.3%
60-64	5	6.16	81.2%	12	7.13	168.2%	17	13.29	127.9%
65+	1	0.43	230.7%	1	0.14	711.3%	2	0.57	348.4%
Total	**16**	**28.91**	**55.3%**	**27**	**35.25**	**76.6%**	**43**	**64.16**	**67.0%**

2005-2006 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
40-44	-	0.75	0.0%	-	1.64	0.0%	-	2.39	0.0%
45-49	3	3.46	86.6%	1	5.52	18.1%	4	8.99	44.5%
50-54	6	7.79	77.0%	8	9.91	80.7%	14	17.70	79.1%
55-59	15	12.46	120.4%	13	11.84	109.8%	28	24.30	115.2%
60-64	11	6.42	171.5%	10	7.32	136.6%	21	13.74	152.9%
65+	-	0.47	0.0%	-	0.20	0.0%	-	0.67	0.0%
Total	**35**	**31.35**	**111.6%**	**32**	**36.43**	**87.8%**	**67**	**67.78**	**98.9%**

Appendix

Disability Mortality

2006-2007 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
40-44	-	0.58	0.0%	1	1.55	64.6%	1	2.13	47.1%
45-49	1	3.24	30.9%	2	4.67	42.8%	3	7.91	37.9%
50-54	7	8.00	87.5%	5	10.84	46.1%	12	18.84	63.7%
55-59	10	12.52	79.9%	6	13.42	44.7%	16	25.94	61.7%
60-64	14	7.34	190.6%	12	7.51	159.8%	26	14.85	175.0%
65+	-	0.36	0.0%	-	0.30	0.0%	-	0.66	0.0%
Total	**32**	**32.03**	**99.9%**	**26**	**38.30**	**67.9%**	**58**	**70.33**	**82.5%**

2007-2008 Experience

Age Group	Males Actual Deaths	Males Expected Deaths	Males Actual/ Expected	Females Actual Deaths	Females Expected Deaths	Females Actual/ Expected	Total Actual Deaths	Total Expected Deaths	Total Actual/ Expected
40-44	1	0.49	205.4%	2	1.86	107.6%	3	2.35	127.9%
45-49	-	2.96	0.0%	3	4.58	65.5%	3	7.54	39.8%
50-54	6	7.74	77.5%	4	11.05	36.2%	10	18.79	53.2%
55-59	10	12.36	80.9%	14	13.94	100.4%	24	26.30	91.3%
60-64	7	8.23	85.1%	10	7.75	129.0%	17	15.98	106.4%
65+	-	0.46	0.0%	1	0.29	346.2%	1	0.75	133.3%
Total	**24**	**32.23**	**74.5%**	**34**	**39.48**	**86.1%**	**58**	**71.71**	**80.9%**

Appendix

Rule of 90 Retirement

2004-2008 Experience

Age	Actual Retirements	Expected Retirements	Actual/Expected
55	50	77.10	64.9%
56	98	124.00	79.0%
57	152	203.00	74.9%
58	179	245.00	73.1%
59	205	265.00	77.4%
60	187	271.75	68.8%
61	268	332.70	80.6%
62	335	403.20	83.1%
63	201	245.10	82.0%
64	183	215.70	84.8%
Total	**1,858**	**2,382.55**	**78.0%**

2004-2005 Experience

Age	Actual Retirements	Expected Retirements	Actual/Expected
55	8	12.90	62.0%
56	17	21.75	78.2%
57	21	35.50	59.2%
58	31	48.50	63.9%
59	24	38.50	62.3%
60	40	49.75	80.4%
61	64	68.70	93.2%
62	84	88.40	95.0%
63	41	42.90	95.6%
64	34	38.10	89.2%
Total	**364**	**445.00**	**81.8%**

2005-2006 Experience

Age	Actual Retirements	Expected Retirements	Actual/Expected
55	10	17.40	57.5%
56	28	28.75	97.4%
57	29	41.75	69.5%
58	40	55.75	71.7%
59	60	66.75	89.9%
60	43	55.50	77.5%
61	52	71.10	73.1%
62	77	88.40	87.1%
63	40	56.40	70.9%
64	33	46.50	71.0%
Total	**412**	**528.30**	**78.0%**

Appendix

Rule of 90 Retirement

2006-2007 Experience

Age	Actual Retirements	Expected Retirements	Actual/Expected
55	16	23.70	67.5%
56	21	33.00	63.6%
57	56	56.75	98.7%
58	57	67.00	85.1%
59	52	76.00	68.4%
60	51	78.00	65.4%
61	65	79.80	81.5%
62	72	102.80	70.0%
63	53	63.60	83.3%
64	63	64.20	98.1%
Total	**506**	**644.85**	**78.5%**

2007-2008 Experience

Age	Actual Retirements	Expected Retirements	Actual/Expected
55	16	23.10	69.3%
56	32	40.50	79.0%
57	46	69.00	66.7%
58	51	73.75	69.2%
59	69	83.75	82.4%
60	53	88.50	59.9%
61	87	113.10	76.9%
62	102	123.60	82.5%
63	67	82.20	81.5%
64	53	66.90	79.2%
Total	**576**	**764.40**	**75.4%**

Appendix

Non-rule of 90 Retirement

2004-2008 Experience

Age	Actual Retirements	Expected Retirements	Actual/Expected
55	933	1,119.30	83.4%
56	843	1,019.06	82.7%
57	768	916.72	83.8%
58	774	831.53	93.1%
59	768	905.04	84.9%
60	696	761.58	91.4%
61	880	1,064.85	82.6%
62	1,117	1,248.72	89.5%
63	675	861.60	78.3%
64	631	680.40	92.7%
65	1,154	1,430.00	80.7%
66	558	592.75	94.1%
67	367	467.00	78.6%
68	276	384.75	71.7%
69	262	333.25	78.6%
70	218	289.75	75.2%
71	183	995.00	18.4%
Total	**11,103**	**13,901.30**	**79.9%**

2004-2005 Experience

Age	Actual Retirements	Expected Retirements	Actual/Expected
55	232	264.39	87.7%
56	206	237.86	86.6%
57	192	218.68	87.8%
58	167	189.35	88.2%
59	176	179.37	98.1%
60	150	163.71	91.6%
61	238	259.20	91.8%
62	271	293.26	92.4%
63	155	192.80	80.4%
64	133	143.80	92.5%
65	281	317.20	88.6%
66	127	134.00	94.8%
67	89	111.50	79.8%
68	57	87.50	65.1%
69	59	82.25	71.7%
70	51	69.75	73.1%
71	41	226.00	18.1%
Total	**2,625**	**3,170.62**	**82.8%**

Appendix

Non-rule of 90 Retirement

2005-2006 Experience

Age	Actual Retirements	Expected Retirements	Actual/Expected
55	221	265.58	83.2%
56	207	252.56	82.0%
57	188	227.64	82.6%
58	189	208.04	90.8%
59	194	225.45	86.1%
60	154	163.53	94.2%
61	214	249.00	85.9%
62	328	334.62	98.0%
63	158	213.40	74.0%
64	132	162.80	81.1%
65	252	324.40	77.7%
66	115	138.00	83.3%
67	97	111.50	87.0%
68	69	97.75	70.6%
69	57	79.00	72.2%
70	51	72.50	70.3%
71	46	246.00	18.7%
Total	**2,672**	**3,371.77**	**79.2%**

2006-2007 Experience

Age	Actual Retirements	Expected Retirements	Actual/Expected
55	236	289.73	81.5%
56	200	252.42	79.2%
57	197	234.29	84.1%
58	202	213.99	94.4%
59	219	246.60	88.8%
60	186	206.10	90.2%
61	190	246.00	77.2%
62	282	314.16	89.8%
63	181	233.20	77.6%
64	171	178.40	95.9%
65	285	369.20	77.2%
66	150	150.75	99.5%
67	103	119.50	86.2%
68	69	96.00	71.9%
69	70	86.25	81.2%
70	49	72.00	68.1%
71	54	259.00	20.8%
Total	**2,844**	**3,567.59**	**79.7%**

Appendix

Non-rule of 90 Retirement

2007-2008 Experience

Age	Actual Retirements	Expected Retirements	Actual/Expected
55	244	299.60	81.4%
56	230	276.22	83.3%
57	191	236.11	80.9%
58	216	220.15	98.1%
59	179	253.62	70.6%
60	206	228.24	90.3%
61	238	310.65	76.6%
62	236	306.68	77.0%
63	181	222.20	81.5%
64	195	195.40	99.8%
65	336	419.20	80.2%
66	166	170.00	97.6%
67	78	124.50	62.7%
68	81	103.50	78.3%
69	76	85.75	88.6%
70	67	75.50	88.7%
71	42	264.00	15.9%
Total	**2,962**	**3,791.32**	**78.1%**

Appendix

Disability Retirements

2004-2008 Experience

Age Group	Males			Females			Total		
	Actual Disabilities	Expected Disabilities	Actual/ Expected	Actual Disabilities	Expected Disabilities	Actual/ Expected	Actual Disabilities	Expected Disabilities	Actual/ Expected
25-29	1	1.21	82.9%	-	2.50	0.0%	1	3.70	27.0%
30-34	4	3.75	106.6%	-	7.64	0.0%	4	11.40	35.1%
35-39	4	11.03	36.3%	6	17.66	34.0%	10	28.69	34.9%
40-44	9	24.16	37.2%	21	37.74	55.7%	30	61.90	48.5%
45-50	38	49.76	76.4%	59	83.38	70.8%	97	133.14	72.9%
50-54	93	94.01	98.9%	94	131.89	71.3%	187	225.89	82.8%
55-60	139	159.80	87.0%	126	157.26	80.1%	265	317.07	83.6%
60-64	56	120.32	46.5%	111	136.18	81.5%	167	256.49	65.1%
Total	**344**	**464.04**	**74.1%**	**417**	**574.24**	**72.6%**	**761**	**1,038.27**	**73.3%**

2004-2005 Experience

Age Group	Males			Females			Total		
	Actual Disabilities	Expected Disabilities	Actual/ Expected	Actual Disabilities	Expected Disabilities	Actual/ Expected	Actual Disabilities	Expected Disabilities	Actual/ Expected
25-29	-	0.28	0.0%	-	0.59	0.0%	-	0.88	0.0%
30-34	2	0.98	204.6%	-	2.01	0.0%	2	2.99	66.9%
35-39	2	2.78	72.0%	1	4.58	21.9%	3	7.35	40.8%
40-44	4	6.54	61.2%	2	10.13	19.7%	6	16.67	36.0%
45-50	12	12.53	95.7%	17	20.61	82.5%	29	33.14	87.5%
50-54	24	23.40	102.6%	22	31.61	69.6%	46	55.01	83.6%
55-60	46	35.63	129.1%	24	35.44	67.7%	70	71.07	98.5%
60-64	13	26.49	49.1%	26	30.72	84.6%	39	57.20	68.2%
Total	**103**	**108.62**	**94.8%**	**92**	**135.69**	**67.8%**	**195**	**244.32**	**79.8%**

Appendix

Disability Retirements

2005-2006 Experience

	Males			Females			Total		
Age Group	Actual Disabilities	Expected Disabilities	Actual/ Expected	Actual Disabilities	Expected Disabilities	Actual/ Expected	Actual Disabilities	Expected Disabilities	Actual/ Expected
25-29	-	0.29	0.0%	-	0.62	0.0%	-	0.91	0.0%
30-34	1	0.92	108.5%	-	1.90	0.0%	1	2.83	35.4%
35-39	-	2.75	0.0%	-	4.45	0.0%	-	7.20	0.0%
40-44	1	6.13	16.3%	3	9.69	31.0%	4	15.83	25.3%
45-50	13	12.50	104.0%	16	20.86	76.7%	29	33.36	86.9%
50-54	22	23.58	93.3%	23	32.87	70.0%	45	56.46	79.7%
55-60	40	39.04	102.5%	39	38.51	101.3%	79	77.55	101.9%
60-64	14	28.19	49.7%	31	32.11	96.5%	45	60.30	74.6%
Total	**91**	**113.41**	**80.2%**	**112**	**141.02**	**79.4%**	**203**	**254.43**	**79.8%**

2006-2007 Experience

	Males			Females			Total		
Age Group	Actual Disabilities	Expected Disabilities	Actual/ Expected	Actual Disabilities	Expected Disabilities	Actual/ Expected	Actual Disabilities	Expected Disabilities	Actual/ Expected
25-29	-	0.31	0.0%	-	0.64	0.0%	-	0.95	0.0%
30-34	-	0.91	0.0%	-	1.83	0.0%	-	2.75	0.0%
35-39	1	2.79	35.8%	2	4.35	45.9%	3	7.15	42.0%
40-44	3	5.92	50.7%	11	9.22	119.3%	14	15.14	92.5%
45-50	5	12.59	39.7%	11	20.96	52.5%	16	33.55	47.7%
50-54	27	23.66	114.1%	23	33.43	68.8%	50	57.09	87.6%
55-60	22	41.84	52.6%	31	40.70	76.2%	53	82.54	64.2%
60-64	15	31.29	47.9%	25	34.97	71.5%	40	66.26	60.4%
Total	**73**	**119.32**	**61.2%**	**103**	**146.10**	**70.5%**	**176**	**265.42**	**66.3%**

Appendix

Disability Retirements

2007-2008 Experience

Age Group	Males Actual Disabilities	Males Expected Disabilities	Males Actual/ Expected	Females Actual Disabilities	Females Expected Disabilities	Females Actual/ Expected	Total Actual Disabilities	Total Expected Disabilities	Total Actual/ Expected
25-29	1	0.32	314.0%	-	0.65	0.0%	1	0.97	103.1%
30-34	1	0.94	106.3%	-	1.89	0.0%	1	2.83	35.3%
35-39	1	2.71	36.9%	3	4.28	70.1%	4	6.99	57.2%
40-44	1	5.57	17.9%	5	8.69	57.5%	6	14.27	42.1%
45-50	8	12.13	65.9%	15	20.94	71.6%	23	33.08	69.5%
50-54	20	23.37	85.6%	26	33.97	76.5%	46	57.34	80.2%
55-60	31	43.30	71.6%	32	42.61	75.1%	63	85.91	73.3%
60-64	14	34.35	40.8%	29	38.38	75.6%	43	72.73	59.1%
Total	**77**	**122.69**	**62.8%**	**110**	**151.42**	**72.6%**	**187**	**274.11**	**68.2%**

Appendix

Terminations

2004-2008 Experience

Age Group	Males			Females			Total		
	Actual Terminations	Expected Terminations	Actual/ Expected	Actual Terminations	Expected Terminations	Actual/ Expected	Actual Terminations	Expected Terminations	Actual/ Expected
25-29	638	325.14	196.2%	1,660	683.18	243.0%	2,298	1,008.32	227.9%
30-34	781	419.18	186.3%	1,840	837.90	219.6%	2,621	1,257.09	208.5%
35-39	808	429.66	188.1%	2,281	1,038.05	219.7%	3,089	1,467.71	210.5%
40-44	824	493.95	166.8%	2,921	1,425.04	205.0%	3,745	1,918.99	195.2%
45-49	895	562.47	159.1%	3,268	1,656.19	197.3%	4,163	2,218.66	187.6%
50-54	899	495.24	181.5%	2,789	1,386.91	201.1%	3,688	1,882.15	195.9%
Total	**4,845**	**2,725.65**	**177.8%**	**14,759**	**7,027.27**	**210.0%**	**19,604**	**9,752.92**	**201.0%**

2004-2005 Experience

Age Group	Males			Females			Total		
	Actual Terminations	Expected Terminations	Actual/ Expected	Actual Terminations	Expected Terminations	Actual/ Expected	Actual Terminations	Expected Terminations	Actual/ Expected
25-29	155	80.66	192.2%	378	168.50	224.3%	533	249.16	213.9%
30-34	227	109.82	206.7%	497	221.47	224.4%	724	331.29	218.5%
35-39	211	110.66	190.7%	576	272.57	211.3%	787	383.22	205.4%
40-44	230	135.20	170.1%	759	388.06	195.6%	989	523.26	189.0%
45-49	213	143.75	148.2%	772	416.62	185.3%	985	560.36	175.8%
50-54	216	124.49	173.5%	670	334.00	200.6%	886	458.49	193.2%
Total	**1,252**	**704.56**	**177.7%**	**3,652**	**1,801.23**	**202.8%**	**4,904**	**2,505.79**	**195.7%**

2005-2006 Experience

Age Group	Males			Females			Total		
	Actual Terminations	Expected Terminations	Actual/ Expected	Actual Terminations	Expected Terminations	Actual/ Expected	Actual Terminations	Expected Terminations	Actual/ Expected
25-29	151	82.28	183.5%	439	180.21	243.6%	590	262.49	224.8%
30-34	185	104.31	177.4%	463	214.70	215.6%	648	319.01	203.1%
35-39	207	110.24	187.8%	580	270.19	214.7%	787	380.43	206.9%
40-44	200	127.37	157.0%	744	373.50	199.2%	944	500.86	188.5%
45-49	232	143.72	161.4%	818	417.55	195.9%	1,050	561.27	187.1%
50-54	218	124.54	175.0%	676	348.58	193.9%	894	473.12	189.0%
Total	**1,193**	**692.45**	**172.3%**	**3,720**	**1,804.73**	**206.1%**	**4,913**	**2,497.18**	**196.7%**

Appendix

Terminations

2006-2007 Experience

Age Group	Males			Females			Total		
	Actual Terminations	Expected Terminations	Actual/ Expected	Actual Terminations	Expected Terminations	Actual/ Expected	Actual Terminations	Expected Terminations	Actual/ Expected
25-29	162	79.52	203.7%	412	167.38	246.1%	574	246.90	232.5%
30-34	169	101.02	167.3%	412	199.58	206.4%	581	300.59	193.3%
35-39	175	105.64	165.7%	530	252.84	209.6%	705	358.48	196.7%
40-44	188	118.82	158.2%	702	343.68	204.3%	890	462.50	192.4%
45-49	239	139.71	171.1%	776	412.22	188.2%	1,015	551.93	183.9%
50-54	220	123.81	177.7%	664	351.33	189.0%	884	475.14	186.1%
Total	**1,153**	**668.51**	**172.5%**	**3,496**	**1,727.03**	**202.4%**	**4,649**	**2,395.55**	**194.1%**

2007-2008 Experience

Age Group	Males			Females			Total		
	Actual Terminations	Expected Terminations	Actual/ Expected	Actual Terminations	Expected Terminations	Actual/ Expected	Actual Terminations	Expected Terminations	Actual/ Expected
25-29	170	82.70	205.6%	431	167.08	258.0%	601	249.78	240.6%
30-34	200	104.04	192.2%	468	202.15	231.5%	668	306.20	218.2%
35-39	215	103.13	208.5%	595	242.45	245.4%	810	345.58	234.4%
40-44	206	112.56	183.0%	716	319.80	223.9%	922	432.36	213.2%
45-49	211	135.30	155.9%	902	409.79	220.1%	1,113	545.09	204.2%
50-54	245	122.40	200.2%	779	353.00	220.7%	1,024	475.39	215.4%
Total	**1,247**	**660.12**	**188.9%**	**3,891**	**1,694.28**	**229.7%**	**5,138**	**2,354.40**	**218.2%**

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