



STATE OF WISCONSIN
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CORRESPONDENCE MEMORANDUM

DATE: November 20, 2012
TO: Employee Trust Funds Board
FROM: Robert C. Willett, CPA
Chief Trust Financial Officer
SUBJECT: Gain Loss Study and Three-Year Experience Study

Staff recommends that the Employee Trust Funds (ETF) Board accept the *Gain/Loss Analysis of Experience Among Active Members During Calendar Year 2011 and the Three-Year Experience Study January 1, 2009 – December 31, 2011.*

At the September meeting, the ETF Board approved the Active Lives actuarial valuation report, including the recommended 1.5% increase in the general category contribution rate. The Gain/Loss study provides an analysis of the 2011 actuarial experience leading to this rate increase.

The Three-Year Experience Study reviews actuarial gains and losses during the three years from 2009 through 2011 and makes recommendations on changes to actuarial assumptions needed to better match current plan experience.

Actuarial assumptions are critical in measuring the value of benefits being earned and the contributions needed to fund those benefits. Some assumptions represent voluntary participant behavior, such as the age at which a member retires. Other assumptions relate to involuntary behavior, notably the age when a member dies. Economic assumptions relate to more general economic conditions, including long-term investment returns and wage inflation. All of these assumptions change over time and need to be reviewed and updated regularly to assure they continue to match plan experience.

Actuaries from Gabriel, Roeder, Smith & Company will be at the Board meeting to present these reports and answer your questions.

Attach: Gain/Loss Analysis of Experience among Active Members during Calendar Year 2011
Three-Year Experience Study January 1, 2009 – December 31, 2011

Board	Mtg Date	Item #
JI	12.6.12	3B
ETF	12.6.12	4A & 4B

Reviewed and approved by Robert J. Marchant, Deputy Secretary


Signature _____ Date 11/21/12

WISCONSIN RETIREMENT SYSTEM
THREE-YEAR EXPERIENCE STUDY
JANUARY 1, 2009 – DECEMBER 31, 2011

TABLE OF CONTENTS

SECTION	PAGE	ITEM
	--	Cover Letter
	1	Executive Summary
	2-15	Summary of Findings
A	1-18	Withdrawal Experience
B	1-9	Disability Experience
C	1-6	Pay Increases
D	1-16	Normal & Early Retirement Experience
E	1-6	Mortality Experience
F	1-8	Complete Lists of Proposed Decrement Assumptions

November 20, 2012

The Employee Trust Funds Board
801 West Badger Road
Madison, Wisconsin 53707

Ladies and Gentlemen:

The results of the *3-year investigation of experience* of the Wisconsin Retirement System are presented in this report. The investigation was made for the purpose of updating the actuarial assumptions used in valuing the actuarial liabilities of the Wisconsin Retirement System in compliance with Section 40.03(5)(b) of the Wisconsin Statutes.

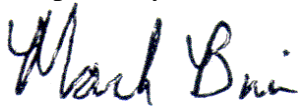
The investigation was based upon the statistical data furnished for annual active member and retired life actuarial valuations, supplemental information furnished by your Secretary and his staff, concerning Participants who died, withdrew, became disabled or retired during the last 3 years and on published historical economic data.

The investigation covered the 3-year period from **January 1, 2009 to December 31, 2011**, and was carried out using generally accepted actuarial principles and techniques.

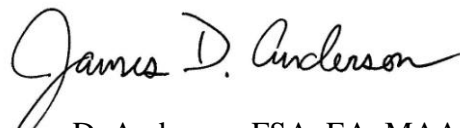
To the best of our knowledge, this report is complete and accurate and was made in accordance with generally recognized actuarial methods. The actuaries submitting this statement are Members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

We believe that the new actuarial assumptions that are the result of this investigation represent a reasonable estimate of past and possible future experience of the Wisconsin Retirement System.

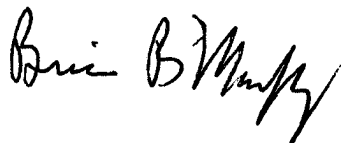
Respectfully submitted,



Mark Buis, FSA, EA, MAAA



James D. Anderson, FSA, EA, MAAA



Brian B. Murphy, FSA, EA, MAAA

MB/JDA/BBM:rmn

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Wisconsin Statutes require reviewing the actuarial assumptions every three years. The last review was prepared for the period from January 1, 2006 to December 31, 2008. In this report, we review the current actuarial assumptions and methods and compare them to the actual experience of the Retirement System for the years 2009-2011.

The table below lists each of the primary assumptions and methods that we analyzed, including our recommendations for each item, and the overall financial impact of any recommended changes.

Assumption	Recommendation	Financial Impact
Withdrawal rates	Lower Rates	Increase
Disability rates	Lower Rates	Decrease
Pay increases due to seniority	Lower Rates	Decrease
Retirement rates	Lower Rates	Decrease
Pre and post-retirement mortality rates	Lower Rates	Increase
Interest rate	No Change	N/A
Wage inflation	No Change	N/A
Price inflation	No Change	N/A
Miscellaneous adjustments	Higher	Increase
Total	Various	Increase

The overall impact on the contribution rate would be an increase of approximately 0.2% of payroll.

New assumptions will be first used in the December 31, 2012 actuarial valuations, at which time experience gains or losses incurred during 2012 will also be recognized. This would first impact rates in 2014. Consequently, no rate changes are recommended for 2013 based upon this study.

SUMMARY OF FINDINGS

INTRODUCTION

Each year, as of December 31, the liabilities of the Wisconsin Retirement System are valued. In order to perform the valuation, assumptions must be made regarding the future experience of the system with regard to the following risk areas:

- Rates of **withdrawal** of active participants.
- Rates of **disability** among active participants.
- Patterns of **salary increases** to active participants.
- Rates of **retirement** among active participants.
- Rates of **mortality** among active participants, retirees, and beneficiaries.
- Long-term rates of **investment return** to be generated by the assets of the Fund.

Assumptions should be carefully chosen and continually monitored. A poor initial choice of assumptions or continued use of outdated assumptions can lead to:

- Understated costs resulting in either an inability to pay benefits when due, or sharp increases in required contributions at some point in the future;
- Overstated costs resulting in either benefit levels that are kept below the level that could be supported by the computed rate or an unnecessarily large burden on the current generation of participants, employers and taxpayers.

A single set of assumptions will not be suitable indefinitely. Conditions change, and our understanding of conditions (whether or not they are changing) also changes.

In recognition of this, Wisconsin statutes require that assumptions used to value the liabilities of the Wisconsin Retirement System be studied in-depth every three years. The package of assumptions is then adjusted to reflect basic experience trends -- but not random year-to-year fluctuations. Actuarial assumptions were last revised following the December 31, 2008 regular actuarial valuation.

SUMMARY OF DECREMENT EXPERIENCE

Background: With the exception of mortality and disability, the decrements that we study tend to relate to voluntary human behavior. Human behavior in any short period can be influenced by economic and societal factors that change from time to time. In 2011, there were an unusually large number of retirements. Due to the perceived one-time nature of this event, we decided to remove this year from the study of retirement rates. Observed data will very often contain anomalies that cannot be assumed to continue into the future. This happens particularly in smaller groups.

In most cases, when adjustments are indicated, the proposed assumptions give partial recognition to present assumptions as well as to results from actual experience. Complete recognition is rarely given to actual experience over a limited period. This would cause contribution rates to be unduly sensitive to short-term experience fluctuations. In general, we moved about half way to the observed experience, except for the mortality experience which is discussed in detail on page 5.

In the past few experience studies, we have noticed that sometimes the use of new assumptions did not always reduce the size of the gain or loss in a particular decrement. Our experience with similar systems has shown that sometimes this is due to the relative magnitude of the liability of the members that decrement, rather than to number counts alone. For example, consider a plan with only two members who are both the same age and assume member one has a liability of \$10,000 and member two has a liability of \$90,000. If one of the members leaves and forfeits all of the liability, the net rate of decrement is one out of two for a rate of 50%. However, the net effect on liabilities will be 10% if member one leaves versus 90% if member two leaves.

As a result, we have continued the use of the ‘liability weighted rate’ for certain decrements. This represents the crude rate of decrement on a liability weighted basis as opposed to strictly a number count basis. The liability weighted rates were found to be more highly correlated with withdrawal and retirement decrements than with the population related rates. This makes some intuitive sense, since retirement and termination decisions are often made based on how much the members have to gain or lose if they retire or change jobs, whereas death and disability is typically not a decision at all, rather an event that happens. Comments on specific assumptions are provided below. Tabular results are presented in summary form on page 6.

SUMMARY OF DECREMENT EXPERIENCE

Withdrawal Rates: In general, there were fewer withdrawals (terminations) than expected. However, this varied by, age, service and group. Additionally, the operation of the withdrawal decrement is impacted by the operation of a ‘forfeiture’ assumption. The current assumption is that 25% of members at age 35 will forfeit a withdrawal benefit (graded down to zero percent at retirement eligibility). We recommend that the forfeiture assumption remain unchanged and that the withdrawal (termination) rates be modified to move closer to the liability weighted rates (see discussion on page 3). This change had a small upward effect on liabilities. Detailed information is presented beginning on page A-1.

Disability Rates: Overall, there were fewer disabilities than expected and we recommend lowering the incidence of disability for most groups. This change had a small downward effect on liabilities. Detailed information begins on page B-1.

Pay Increase Rate (Merit and Longevity Portion): Rates varied by group and provide a fairly reasonable match. In general, rates were adjusted slightly to move closer to actual experience. This change had a small downward effect on liabilities. Detailed information begins on page C-1.

Normal and Early Retirement Experience: Overall, there many more normal retirements and fewer early retirements than expected in most groups. However, these results were distorted by the unusually high number of retirements in 2011. Additionally, retirement experience was found to be more highly correlated with the liability weighted method described on page 3. As such, we modified the normal retirement rates slightly for all groups to move closer to the observed liability weighted rates over the 2009 and 2010 calendar years. As more experience emerges, we will monitor these rates to see if further adjustments are necessary. This change has a minimal effect on liabilities. Detailed information begins on page D-1.

SUMMARY OF DECREMENT EXPERIENCE

Mortality Among Retirees: Mortality rates among retired public employees have been declining for years. Additionally, and perhaps consequently, the Actuarial Standards of Practice with regard to the mortality assumption has recently been revised. ASOP No. 35 Disclosure Section 4.1.1 now states: *“...The disclosure of the mortality assumption should contain sufficient detail to permit another qualified actuary to understand the provision made for future mortality improvement. If the actuary assumes zero mortality improvement after the measurement date, the actuary should state that no provision was made for future mortality improvement.”* Based on the current experience, there appears to be no margin for future improvement in the current mortality assumption for males and females. Therefore, we are recommending a change in mortality table that builds in margin for future improvements in mortality. For active members, we recommend projecting rates based on current experience 5 years into the future with scale BB. We will refer to this table as the Wisconsin 2012 Mortality table. For retired lives, we recommend phasing into the new mortality table over a 3 year period (an increase in the mortality reserve of about 0.3% per year). The intention is to preserve equity in the operation of the dividend program. Detailed information begins on page E-1.

Mortality Among Active Members: Active member deaths were slightly above assumed rates. In conjunction with the change in post-retirement mortality to a mortality table that projects future improvements in mortality, we recommend a change in the pre-retirement mortality table to the Wisconsin 2012 Mortality table (multiplied by 55% for males and females). A lower multiplier is typically used for pre-retirement mortality because active members often first leave employment due to disability, sickness, or retirement prior to dying (and hence they are retirees when they die). Detailed information begins on page E-1.

Complete listings of all assumptions begin on page F-1.

SUMMARY OF DECREMENT EXPERIENCE

Decrement Risk Area	Actual	Expected	
		Current	Proposed
<u>Withdrawal - Total</u>			
General (Without Schools)	18,720	19,517	18,627
Public Schools and University	9,175	9,806	9,533
Protective			
With Social Security	1,193	1,300	1,248
Without Social Security	71	73	62
Executive and Elected	166	181	178
<u>Withdrawal - Service greater than 10</u>			
General (Without Schools)	1,859	2,040	1,765
Public Schools and University	1,336	1,463	1,287
Protective			
With Social Security	324	338	299
Without Social Security	38	29	24
Executive and Elected	21	37	29
<u>Disability</u>			
General (Without Schools)	338	725	571
Public Schools and University	154	276	224
Protective			
With Social Security	37	81	62
Without Social Security	10	17	14
Executive and Elected	-	2	1
<u>Early Retirement</u>			
General (Without Schools)	5,934	6,817	6,738
Public Schools and University	5,623	6,054	5,444
Executive and Elected	44	51	43
<u>Normal Retirement</u>			
General (Without Schools) **	6,123	6,044	6,126
Public Schools and University **	5,422	4,921	4,588
Protective*			
With Social Security	1,491	1,716	1,558
Without Social Security	195	307	266
Executive and Elected	160	157	168
<u>Mortality - Retired Lives</u>			
Normal Retirement			
Male	5,551	5,685	5,125
Female	6,343	6,380	5,923
Disabled Retirement			
Male	377	438	334
Female	388	407	370
<u>Mortality - Active Lives</u>			
Male	438	401	397
Female	410	390	397

* Includes Early Retirements.

** Figures shown are for people below age 75.

ECONOMIC ASSUMPTIONS

Economic assumptions include long-term rates of investment return and wage inflation (the across-the-board portion of salary increases). Unlike demographic activities, economic activities do not lend themselves to analysis solely on the basis of internal historical patterns because both salary increases and investment return are driven by external forces; and in particular by inflation which defies accurate long-term prediction. Estimates of investment return and pay increases are generally selected on the basis of expectations in an inflation-free environment and then both are increased by some provision for long-term inflation.

If inflation and/or productivity increases are higher than expected, actual rates of salary increase and investment return are likely to exceed the assumed rates. Salaries increasing faster than expected produce unexpected liabilities. Investment return exceeding the assumed rates (whether due to manager performance, change in the mix of assets, or general inflation) results in unanticipated assets. To the extent that inflation, productivity, and other factors have about the same effect on both sides of the balance sheet, these additional assets and liabilities can offset one another over the long-term.

Current economic assumptions for WRS are as follows:

Net Investment Return	7.2%
Wage Inflation	3.2%
Price Inflation	2.0% to 2.8%

Price Inflation. In past years, no specific price inflation assumption was necessary in order to perform the actuarial valuation. However, price inflation is a key component of the underlying wage inflation and interest rate assumptions and must now be disclosed in actuarial reports. The chart on the following page shows historical averages of both price and wage inflation. While long term historical averages approach 4.0%, short term averages are generally between 2.0% and 3.0%. Most investment firms expect inflation to be between 2.0% and 3.0% (see chart on page 10), and the 2012 annual report of the Social Security Trustees uses 2.8% as the intermediate assumption. **We believe the current assumption is reasonable and recommend no change at this time.**

ECONOMIC ASSUMPTIONS

Year	Annual Increase in		
	Prices (CPI-U)	Wages (NAE)	Difference
3-Year Avg	1.4%	2.1%	0.7%
5-Year Avg	2.2%	3.1%	0.9%
10-Year Avg	2.3%	3.0%	0.7%
20-Year Avg	2.7%	3.7%	1.0%
30-Year Avg	3.4%	4.4%	1.0%
50-Year Avg	4.0%	4.8%	0.8%

Wage Inflation. The long-term rate of increase in National Average Earnings over the last 50 years is somewhat higher than the current WRS assumption of 3.2%, although shorter term averages are below it. It is expected that, in the long run, salary increases in all parts of the country will be close to the national averages. However, few economists are forecasting a repeat of the high inflation rates experienced in the 1970s. In addition, average salaries in WRS have risen at approximately 3.0% a year since 1987 - a slower pace than the assumed 3.2% a year, although, the active member group has increased in size, which distorts this statistic. **We believe a reasonable range within which to set this assumption is anywhere from 3.0% to 4.0% a year and recommend no change to the current wage inflation assumption at this time.**

ECONOMIC ASSUMPTIONS

Investment Return and Spread. The current WRS Core asset portfolio is a diversified mix of equity and fixed income investments. Market returns for portfolios with equity holdings at levels similar to the Core portfolio have exceeded 7.2% since the early 1980s, although prior to that, returns were much weaker, and real returns were actually negative in some years. Of course, the results of the past decade are causing investment professionals to reconsider their longer term views of the investment markets. Each Retirement System will have a unique asset allocation and risk tolerance. We have modeled WRS' current investment portfolio by the expectations of various investment consulting firms. The results shown below range from a median 20 year geometric return of 7.16% to a mean return of 8.05%. Keep in mind that we are not investment experts and this analysis is based on broad ranges and averages of averages. GRS recommends seeking advice from WRS' investment consultants prior to making a significant change in the 7.2% investment return assumption. **We believe that the current investment rate of return is reasonable and recommend no change at this time.**

Investment Consultant	Distribution of 20-Year Average Geometric Net Nominal Return			Probability of exceeding 7.20% *	Expected Nominal Rate of Return**
	25th	50th	75th		
(1)	(2)	(3)	(4)	(5)	(6)
1	4.21%	6.19%	8.21%	36.7%	7.04%
2	4.60%	6.67%	8.79%	43.3%	7.61%
3	5.63%	7.30%	9.00%	51.6%	7.90%
4	5.16%	7.12%	9.13%	49.0%	7.95%
5	4.44%	6.84%	9.29%	46.0%	8.09%
6	5.67%	7.60%	9.56%	55.5%	8.39%
7	5.44%	7.53%	9.67%	54.2%	8.47%
8	5.96%	8.03%	10.13%	60.6%	8.94%
Average	5.14%	7.16%	9.22%	49.6%	8.05%

*Plan's current return assumption net of expenses.

** Based on 2.8% Price Inflation

ECONOMIC ASSUMPTIONS

Relationship between assumed investment return and liabilities. There is an inverse relationship between the assumed investment return and the liabilities of the System. That is, a decrease in the assumed interest rate results in an increase in System liabilities. In most systems, the liabilities are very sensitive to a change in interest rate. For example, a typical rule of thumb estimates that a 1% decrease in the interest rate will result in a 15% to 20% increase in liabilities. However, due to the cost sharing nature of the WRS, liabilities are not nearly as sensitive to a change in the interest rate as we would otherwise expect. Shown below are sample increases in present value for a 55 year old person attributable to a hypothetical 1% decrease in the interest rate. Under the WRS System, when the assumed interest rate changes, the assumed dividend also changes. This results in a much more dampened impact for the WRS (about half as much as for a typical system).

WRS Example of Hypothetical Change in Interest Rate for 55 Year Old

	Current Assumption WRS System	Hypothetical Assumption WRS System	Hypothetical Assumption Typical System
Interest Rate	7.2%	6.2%	6.2%
Assumed Dividend	2.1%	1.1%	2.1%
Age 65 Present Value Factor	11.37	11.37	12.35
Discounted to Age 55	0.5	0.55	0.55
Present Value of \$1 at age 55	5.685	6.2535	6.7925
% Increase in Present Value		10.0%	19.5%

This is due to the fact that the 7.2% interest assumption is really a pre-retirement assumption. The effective post-retirement assumption is 5.0%. As a result, the net effective interest rate for the WRS as a whole is really a blend of three different components (7.2% for actives pre-retirement, 5.0% for actives post-retirement and 5.0% for retirees). Based on Entry Age Normal Actuarial Liability, an overall effective rate of 5.5% would produce an equivalent result. This rate will be disclosed in future valuation reports. It is important to note however, that this is not an investment target. The SWIB targets a higher rate of return in order to return a dividend to retirees. This dividend however, is not guaranteed. Due to the non-guaranteed nature of the dividend program, this concept has not been widely understood, and the disclosure of a single interest rate assumption could result in misuse of information.

HISTORICAL PATTERNS OF INVESTMENT RETURN, PAY INCREASES & INFLATION

Calendar Year Period	Gross Market Returns			Stocks (S&P 500)	Price Inflation (CPI)	National Average Earnings	Sample Balanced Fund*	
	Bonds (Long)		Cash Equiv. (T Bills)				Total Return (I)	Spread: I - NAE - e
	U.S. Treasury	Corp. (S&P AA)						
1952-61	1.7 %	2.4 %	2.1 %	16.4 %	1.3 %	3.9 %	12.5 %	8.1 %
1962-71	2.5 %	3.1 %	4.5 %	7.1 %	3.2 %	4.7 %	6.0 %	0.8 %
1972-81	2.8 %	3.0 %	7.8 %	6.5 %	8.6 %	7.8 %	5.8 %	(2.5)%
1982-91	15.6 %	16.2 %	7.7 %	17.6 %	3.9 %	4.7 %	17.1 %	11.9 %
1992-01	8.7 %	8.1 %	4.6 %	12.9 %	2.5 %	4.2 %	11.8 %	7.1 %
2002-11	8.9 %	8.3 %	1.8 %	2.9 %	2.5 %	2.8 %	5.4 %	2.1 %
Last 60 Years	6.6 %	6.7 %	4.7 %	10.4 %	3.6 %	4.7 %	9.7 %	4.5 % #

* Sample Balanced Fund	
Equities	70%
Bonds - Government	15%
- Corporate	14%
Cash Equivalents	1%
	100%
Fund expenses(e)	0.50%

# Historical Spread	
# Observed spread is very sensitive to the observation period, even over long periods, as illustrated below:	
Observation Period	Spread
60 years	4.5%
50 years	3.8%
40 years	4.5%
30 years	7.0%

This page should not be interpreted as a recommendation for a 70% equity allocation. It is just an illustration showing what a 70% allocation to equities could have achieved in the past. The future could be very different.

SUMMARY OF VALUATION RESULTS

The table below describes hypothetical valuation results at December 31, 2011 with new and old decrement assumptions with indicated wage inflation. The rate changes are illustrative only since 2013 contribution rates have already been set based upon the actual December 31, 2011 valuation results.

	General	Executive & Elected	Protective With S.S.	Without S.S.
Present 2013 Contribution Rate	13.3%	14.0%	16.4%	19.0%
Hypothetical Rate Change Due to New Assumptions	0.2%	0.6%	0.1%	0.2%

New assumptions will be first used in the December 31, 2012 actuarial valuations, at which time experience gains or losses incurred during 2012 will also be recognized. This would first impact rates in 2014. Consequently, no rate changes are recommended for 2013 based upon this study.

OTHER RECOMMENDATIONS

Option Factors are calculated using a 5% interest assumption and the assumed rates of mortality with a blended mortality table consisting of 50% male rates and 50% female rates. If a retiring member elects an optional form of benefit, the straight life benefit is multiplied by the appropriate option factor to produce the benefit actually payable. Examples of option factors calculated using the present and proposed mortality assumptions are shown below. The factors shown illustrate that when mortality experience is improved (i.e., members live longer), than option factors generally increase. The revised factors will usually result in slightly higher benefits being paid when an optional form is elected. Option factors can be changed based upon this study since the mortality table has been changed. We recommend changing these factors not later than January 1, 2014.

Age		5 Year C&L		15 Year C&L		Joint and 75%	
Retiree	Beneficiary	Current	Proposed	Current	Proposed	Current	Proposed
50	45	0.999	0.999	0.987	0.988	0.923	0.927
55	50	0.997	0.998	0.977	0.979	0.905	0.910
60	55	0.996	0.996	0.962	0.967	0.885	0.891
65	60	0.992	0.993	0.932	0.941	0.859	0.866
75	70	0.967	0.974	0.781	0.804	0.791	0.800

When calculating formula benefit amounts for people beyond normal retirement age, the factor applicable to normal retirement age is used. Money purchase calculations are based upon the factor at the member's actual age.

Recommended Implementation Schedule. It is recommended that the results of this experience study be implemented in accordance with the following schedule.

Active and Inactive Lives Valuation:	12/31/2012 Valuation
Retired Lives Valuation:	12/31/2012 Valuation
Option Factors:	Not later than January 1, 2014

OTHER RECOMMENDATIONS

Recommendations from Actuarial Audit. An actuarial audit was completed in the fall of 2011. In our response, we commented that some of the technical items would be reviewed in the course of the upcoming experience study and are discussed further below.

- 1. Include an assumption for election of optional forms of payment to capture the subsidy in conversion factors for members retiring after normal retirement age and death in service benefits.** Our 2010 Reserve Transfer Loss study identified this activity as a source of unexplained loss. We currently apply a load of 2.0% to the formula benefit to account for various sources of unexplained losses including the subsidized optional form of payment. Although the pattern of unexplained losses has been significantly reduced over the past three years due to refinements made in the gain/loss procedures, there is still a pattern of losses. After analyzing the potential impact of this item, along with the other sources of loss, we are recommending increasing this load from 2.0% to 2.5% for general members (3.0% for executive and elected and 3.5% for protective members).
- 2. Review the methodology for post-65 LTDI benefit.** We have reviewed the methodology for the post-65 LTDI benefit. Although in some cases, the simplification approach used may overstate the cost for this benefit, the overall impact to the system is very minor and we have recommended no changes at this time.
- 3. Test recommended mortality assumptions from future experience studies against rates from then-current mortality tables for consistency in the pattern of rates.** We have tested the recommended mortality tables (discussed on page 5) and have determined that the pattern of rates provides a reasonable fit to past experience and also contains a margin for future improvement as prescribed by the Actuarial Standards of Practice.
- 4. Consider an age 54 commencement assumption for protective employees with a deferred vested benefit.** Deferred vested members are currently assumed to retire at age 55. We reviewed the experience and agree that we should assume age 54 commencement for these members. This change had no impact on contribution rates.
- 5. Aggregate some of the groups with like characteristics in order to have a larger experience base to set the disability incidence assumption.** We reviewed the characteristics of the employee groups and recommend that the current groups should not be combined. For example, it would not make sense to combine policemen with executives or teachers. The current classifications (General employees, University, Public School, Police, Fire and Executive and Elected) all have unique characteristics and experience.

OTHER RECOMMENDATIONS

- 6. Review marital status and spouse age actual differences in the next experience study.** We currently assume 100% of members are married and a 3 year spouse age difference for the death in service benefit. We reviewed the experience of recent retirees and determined that approximately 70% of males are married at the time of retirement, 50% of females are married at the time of retirement and the age difference is approximately 2 years on average. We think that these results might be slightly understated, since spousal information is not always available for members who do not select a joint and survivor form of payment. For the purpose of the death in service benefit, we have assumed 80% of males are married and 70% of females are married with a 2 year spouse age difference. This change resulted in slight downward pressure on liabilities, but will provide a more accurate model of operation of the system.

SECTION A

WITHDRAWAL EXPERIENCE

GENERAL MALES WITHDRAWAL EXPERIENCE

Male Service-Based Withdrawals

Service Index	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates		Expected Withdrawals	
					Present	Proposed	Present	Proposed
1	1,176	5,630	0.2089	0.1610	0.2100	0.1750	1,182	985
2	1,382	9,629	0.1435	0.1328	0.1300	0.1300	1,252	1,252
3	743	7,977	0.0931	0.0825	0.0900	0.0850	731	678
4	555	7,013	0.0791	0.0673	0.0700	0.0680	502	477
5	369	5,367	0.0688	0.0623	0.0580	0.0600	306	322
6	174	4,100	0.0424	0.0421	0.0470	0.0450	190	185
7	151	3,816	0.0396	0.0365	0.0430	0.0400	160	153
8	131	3,767	0.0348	0.0299	0.0400	0.0350	147	132
9	84	4,230	0.0199	0.0174	0.0350	0.0300	148	127
10	108	4,460	0.0242	0.0228	0.0300	0.0250	138	112
Totals (10 and under)	4,873	55,989	0.0870	0.0427	0.0849	0.0790	4,756	4,423

	<u>Actual</u>	<u>Proposed</u>
Current	0.0870	0.0790
Previous Investigation Results		
2006-2008	0.0883	0.0808
2003-2005	0.1494	0.1307
2000-2002	0.1070	0.1073

GENERAL MALES WITHDRAWAL EXPERIENCE

Male Age-Based Withdrawals with 10 or More Years of Service

Age	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates*		Expected Withdrawals	
					Present	Proposed	Present	Proposed
25-29	-	24	0.0000	0.0000	0.0300	0.0250	1	1
30-34	22	1,052	0.0209	0.0205	0.0300	0.0250	30	25
35-39	71	4,055	0.0175	0.0154	0.0210	0.0180	88	74
40-44	129	8,101	0.0159	0.0128	0.0170	0.0150	140	121
45-49	169	13,299	0.0127	0.0104	0.0135	0.0120	184	162
50-54	261	18,873	0.0138	0.0109	0.0120	0.0110	236	210
Totals	652	45,404	0.0144	0.0113	0.0150	0.0131	679	593

Ref

1140

1260

	<u>Actual</u>	<u>Proposed</u>
Current - combined tables	0.0545	0.0495
Previous Investigation Results		
2006-2008	0.0547	0.0509
2003-2005	0.0564	0.0506
2000-2002	0.0527	0.0529
1997-1999	0.0531	0.0520
1994-1996	0.0499	0.0478
1991-1993	0.0451	0.0478
1988-1990	0.0412	0.0505
1985-1987	0.0477	0.0523

* Sample rates are taken from midpoint of age group.

GENERAL FEMALES WITHDRAWAL EXPERIENCE

Female Service-Based Withdrawals

Service Index	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates		Expected Withdrawals	
					Present	Proposed	Present	Proposed
1	2,757	15,161	0.1818	0.1899	0.2000	0.1950	3,032	2,956
2	3,196	23,704	0.1348	0.1334	0.1400	0.1350	3,319	3,200
3	1,857	18,922	0.0981	0.0970	0.1000	0.1000	1,892	1,892
4	1,289	16,150	0.0798	0.0783	0.0820	0.0800	1,314	1,292
5	956	12,506	0.0764	0.0759	0.0720	0.0740	892	925
6	512	10,108	0.0507	0.0525	0.0620	0.0600	620	606
7	454	9,602	0.0473	0.0445	0.0530	0.0500	499	480
8	362	9,133	0.0396	0.0387	0.0470	0.0450	423	411
9	326	9,037	0.0361	0.0345	0.0440	0.0400	393	361
10	279	8,423	0.0331	0.0313	0.0400	0.0375	337	316
Totals (10 and under)	11,988	132,746	0.0903	0.0554	0.0958	0.0937	12,721	12,439

	<u>Actual</u>	<u>Proposed</u>
Current	0.0903	0.0937
Previous Investigation Results		
2006-2008	0.0980	0.0940
2003-2005	0.1497	0.1404
2000-2002	0.1184	0.1175

GENERAL FEMALES WITHDRAWAL EXPERIENCE

Female Age-Based Withdrawals with 10 or More Years of Service

Age	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates*		Expected Withdrawals	
					Present	Proposed	Present	Proposed
25-29	1	41	0.0244	0.0506	0.0400	0.0375	2	1
30-34	50	1,681	0.0297	0.0277	0.0350	0.0300	57	50
35-39	142	5,809	0.0244	0.0215	0.0300	0.0260	172	148
40-44	198	10,888	0.0182	0.0155	0.0240	0.0200	264	220
45-49	330	18,631	0.0177	0.0149	0.0190	0.0170	364	317
50-54	486	28,620	0.0170	0.0140	0.0170	0.0150	502	436
Totals	1,207	65,670	0.0184	0.0150	0.0207	0.0178	1,361	1,172

	<u>Actual</u>	<u>Proposed</u>
Current - combined tables	0.0665	0.0686
Previous Investigation Results		
2006-2008	0.0731	0.0699
2003-2005	0.0734	0.0695
2000-2002	0.0730	0.0723
1997-1999	0.0722	0.0714
1994-1996	0.0650	0.0680
1991-1993	0.0663	0.0761
1988-1990	0.0700	0.0867

* Sample rates are taken from midpoint of age group.

**PUBLIC SCHOOL MALES
WITHDRAWAL EXPERIENCE**

Male Service-Based Withdrawals

Service Index	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates		Expected Withdrawals	
					Present	Proposed	Present	Proposed
1	208	1,636	0.1271	0.1894	0.1650	0.1770	256	290
2	313	2,917	0.1073	0.1170	0.1100	0.1140	321	333
3	200	2,684	0.0745	0.0742	0.0710	0.0730	190	196
4	147	2,589	0.0568	0.0514	0.0520	0.0520	135	135
5	100	2,453	0.0408	0.0354	0.0420	0.0390	101	96
6	67	2,295	0.0292	0.0235	0.0340	0.0300	77	69
7	62	2,287	0.0271	0.0276	0.0290	0.0280	65	64
8	64	2,312	0.0277	0.0240	0.0250	0.0250	58	58
9	33	2,434	0.0136	0.0129	0.0225	0.0200	55	49
10	38	2,592	0.0147	0.0150	0.0200	0.0180	52	47
Totals (10 and under)	1,232	24,199	0.0509	0.0274	0.0541	0.0553	1,310	1,337

	<u>Actual</u>	<u>Proposed</u>
Current	0.0509	0.0553
Previous Investigation Results		
2006-2008	0.0522	0.0540
2003-2005	0.1057	0.0993
2000-2002	0.0683	0.0657

PUBLIC SCHOOL MALES WITHDRAWAL EXPERIENCE

Male Age-Based Withdrawals with 10 or More Years of Service

Age	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates*		Expected Withdrawals	
					Present	Proposed	Present	Proposed
25-29	-	-	N/A	N/A	0.0200	0.0180	-	-
30-34	6	737	0.0081	0.0067	0.0150	0.0120	11	9
35-39	60	5,488	0.0109	0.0097	0.0120	0.0115	68	63
40-44	83	7,468	0.0111	0.0100	0.0110	0.0105	83	79
45-49	102	7,284	0.0140	0.0113	0.0090	0.0100	69	73
50-54	96	7,831	0.0123	0.0094	0.0080	0.0095	66	75
Totals	347	28,808	0.0120	0.0100	0.0103	0.0104	297	299

	<u>Actual</u>	<u>Proposed</u>
Current - combined tables	0.0298	0.0309
Previous Investigation Results		
2006-2008	0.0301	0.0316
2003-2005	0.0334	0.0316
2000-2002	0.0285	0.0276
1997-1999	0.0233	0.0241
1994-1996	0.0198	0.0238
1991-1993	0.0193	0.0318
1988-1990	0.0218	0.0411

* Sample rates are taken from midpoint of age group.

PUBLIC SCHOOL FEMALES WITHDRAWAL EXPERIENCE

Female Service-Based Withdrawals

Service Index	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates		Expected Withdrawals	
					Present	Proposed	Present	Proposed
1	545	4,779	0.1140	0.1687	0.1300	0.1500	587	717
2	883	8,630	0.1023	0.1176	0.0950	0.1050	804	906
3	571	8,329	0.0686	0.0706	0.0720	0.0710	594	591
4	445	8,131	0.0547	0.0491	0.0610	0.0550	493	447
5	340	7,521	0.0452	0.0420	0.0500	0.0460	376	346
6	256	6,966	0.0367	0.0329	0.0430	0.0400	298	279
7	223	6,789	0.0328	0.0284	0.0370	0.0350	252	238
8	184	6,763	0.0272	0.0231	0.0320	0.0300	218	203
9	155	6,915	0.0224	0.0191	0.0270	0.0250	188	173
10	136	7,013	0.0194	0.0175	0.0250	0.0230	175	161
Totals (10 and under)	3,738	71,836	0.0520	0.0304	0.0555	0.0565	3,985	4,061

	<u>Actual</u>	<u>Proposed</u>
Current	0.0520	0.0565
Previous Investigation Results		
2006-2008	0.0564	0.0563
2005-2007	0.0713	0.0705
2002-2004	0.0640	0.0677

PUBLIC SCHOOL FEMALES WITHDRAWAL EXPERIENCE

Female Age-Based Withdrawals with 10 or More Years of Service

Age	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates*		Expected Withdrawals	
					Present	Proposed	Present	Proposed
25-29	-	2	0.0000	0.0000	0.0200	0.0220	-	-
30-34	34	2,166	0.0157	0.0146	0.0190	0.0170	39	33
35-39	125	12,716	0.0098	0.0087	0.0150	0.0120	194	154
40-44	151	17,693	0.0085	0.0067	0.0120	0.0095	220	173
45-49	165	17,409	0.0095	0.0068	0.0100	0.0092	182	160
50-54	213	19,637	0.0108	0.0086	0.0090	0.0090	186	177
Totals	688	69,623	0.0099	0.0078	0.0118	0.0100	821	697

Ref

1143

1263

	<u>Actual</u>	<u>Proposed</u>
Current - combined tables	0.0313	0.0336
Previous Investigation Results		
2006-2008	0.0353	0.0353
2003-2005	0.0373	0.0348
2000-2002	0.0315	0.0332
1997-1999	0.0315	0.0332
1994-1996	0.0270	0.0352
1991-1993	0.0277	0.0501
1988-1990	0.0327	0.0711

* Sample rates are taken from midpoint of age group.

UNIVERSITY MALES WITHDRAWAL EXPERIENCE

Male Service-Based Withdrawals

Service Index	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates		Expected Withdrawals	
					Present	Proposed	Present	Proposed
1	192	1,074	0.1788	0.1858	0.1800	0.1830	200	197
2	325	1,897	0.1713	0.1387	0.1600	0.1500	304	285
3	240	1,805	0.1330	0.1003	0.1250	0.1130	229	204
4	161	1,591	0.1012	0.0869	0.1050	0.0960	169	153
5	112	1,255	0.0892	0.0810	0.0880	0.0850	111	107
6	89	1,127	0.0790	0.0714	0.0760	0.0750	85	85
7	80	1,036	0.0772	0.0754	0.0620	0.0700	64	73
8	65	1,014	0.0641	0.0572	0.0530	0.0550	53	56
9	44	967	0.0455	0.0449	0.0410	0.0430	39	42
10	31	990	0.0313	0.0270	0.0360	0.0320	35	32
Totals (10 and under)	1,339	12,756	0.1050	0.0625	0.1011	0.0967	1,289	1,234

	<u>Actual</u>	<u>Proposed</u>
Current	0.1050	0.0967
Previous Investigation Results		
2006-2008	0.1114	0.0981
2003-2005	0.1102	0.1051
2000-2002	0.1203	0.1226

UNIVERSITY MALES WITHDRAWAL EXPERIENCE

Male Age-Based Withdrawals with 10 or More Years of Service

Age	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates*		Expected Withdrawals	
					Present	Proposed	Present	Proposed
25-29	-	-	N\A	N\A	0.0350	0.0320	-	-
30-34	2	78	0.0256	0.0205	0.0350	0.0320	3	2
35-39	19	543	0.0350	0.0357	0.0350	0.0310	19	16
40-44	30	1,327	0.0226	0.0192	0.0300	0.0250	40	33
45-49	34	2,076	0.0164	0.0109	0.0240	0.0180	49	38
50-54	46	2,849	0.0161	0.0121	0.0150	0.0140	45	41
Totals	131	6,873	0.0191	0.0136	0.0227	0.0189	156	130

	<u>Actual</u>	<u>Proposed</u>
Current - Combined	0.0749	0.0695
Previous Investigation Results		
2006-2008	0.0827	0.0725
2003-2005	0.0771	0.0747
2000-2002	0.0719	0.0733
1997-1999	0.0734	0.0732
1994-1996	0.0552	0.0707
1991-1993	0.0657	0.0844
1988-1990	0.0655	0.1028

* Sample rates are taken from midpoint of age group.

UNIVERSITY FEMALES WITHDRAWAL EXPERIENCE

Female Service-Based Withdrawals

Service Index	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates		Expected Withdrawals	
					Present	Proposed	Present	Proposed
1	240	1,276	0.1881	0.2325	0.2000	0.2200	255	281
2	337	2,241	0.1504	0.1387	0.1600	0.1500	367	336
3	283	2,242	0.1262	0.1076	0.1400	0.1250	314	280
4	199	2,002	0.0994	0.0863	0.1200	0.1000	240	200
5	161	1,620	0.0994	0.0901	0.0975	0.0950	159	154
6	100	1,386	0.0722	0.0620	0.0915	0.0800	126	111
7	78	1,211	0.0644	0.0561	0.0775	0.0700	95	85
8	62	1,174	0.0528	0.0485	0.0675	0.0600	80	70
9	42	1,087	0.0386	0.0379	0.0600	0.0500	66	54
10	28	1,069	0.0262	0.0270	0.0525	0.0400	57	43
Totals (10 and under)	1,530	15,308	0.0999	0.0596	0.1149	0.1054	1,759	1,614

	<u>Actual</u>	<u>Proposed</u>
Current	0.0999	0.1054
Previous Investigation Results		
2006-2008	0.1176	0.1137
2003-2005	0.1281	0.1186
2000-2002	0.1385	0.1377

UNIVERSITY FEMALES WITHDRAWAL EXPERIENCE

Female Age-Based Withdrawals with 10 or More Years of Service

Age	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates*		Expected Withdrawals	
					Present	Proposed	Present	Proposed
25-29	-	1	0.0000	0.0000	0.0525	0.0500	-	-
30-34	3	99	0.0303	0.0308	0.0525	0.0420	5	4
35-39	16	631	0.0254	0.0252	0.0525	0.0390	32	24
40-44	40	1,371	0.0292	0.0244	0.0375	0.0310	53	42
45-49	56	2,087	0.0268	0.0217	0.0250	0.0230	54	48
50-54	55	2,724	0.0202	0.0166	0.0150	0.0150	45	43
Totals	170	6,913	0.0246	0.0197	0.0273	0.0233	189	161

	<u>Actual</u>	<u>Proposed</u>
Current - Combined	0.0765	0.0799
Previous Investigation Results		
2006-2008	0.0883	0.0865
2003-2005	0.0941	0.0885
2000-2002	0.0878	0.0876
1997-1999	0.0827	0.0887
1994-1996	0.0887	0.0967
1991-1993	0.0952	0.1178
1988-1990	0.0917	0.1472

* Sample rates are taken from midpoint of age group.

**PROTECTIVE WITH SOCIAL SECURITY
WITHDRAWAL EXPERIENCE**

Male and Female Service-Based Withdrawals

Service Index	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates		Expected Withdrawals	
					Present	Proposed	Present	Proposed
1	125	1,153	0.1084	0.1709	0.1300	0.1500	145	173
2	182	2,751	0.0662	0.0702	0.0700	0.0700	187	193
3	116	2,910	0.0399	0.0396	0.0460	0.0430	133	125
4	106	2,794	0.0379	0.0354	0.0415	0.0380	116	106
5	90	2,416	0.0373	0.0350	0.0325	0.0340	79	82
6	49	2,234	0.0219	0.0210	0.0300	0.0260	67	58
7	55	2,180	0.0252	0.0222	0.0275	0.0250	60	55
8	52	2,375	0.0219	0.0203	0.0250	0.0230	59	55
9	49	2,690	0.0182	0.0176	0.0225	0.0200	61	54
10	45	2,828	0.0159	0.0141	0.0190	0.0170	55	48
Totals (10 and under)	869	24,331	0.0357	0.0227	0.0395	0.0390	962	949

	<u>Actual</u>	<u>Proposed</u>
Current	0.0357	0.0390
Previous Investigation Results		
2006-2008	0.0440	0.0402
2003-2005	0.0429	0.0390
2000-2002	0.0546	0.0551

**PROTECTIVE WITH SOCIAL SECURITY
WITHDRAWAL EXPERIENCE**

**Male and Female Age-Based Withdrawals
with 10 or More Years of Service**

Age	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates*		Expected Withdrawals	
					Present	Proposed	Present	Proposed
25-29	1	54	0.0185	0.0168	0.0190	0.0170	1	1
30-34	26	2,068	0.0126	0.0111	0.0190	0.0150	38	30
35-39	76	6,365	0.0119	0.0106	0.0150	0.0130	97	82
40-44	81	8,426	0.0096	0.0076	0.0120	0.0110	106	94
45-49	95	7,348	0.0129	0.0107	0.0110	0.0105	81	77
50-54	45	1,512	0.0298	0.0513	0.0100	0.0100	15	15
Totals	324	25,773	0.0126	0.0122	0.0131	0.0116	338	299

	<u>Actual</u>	<u>Proposed</u>
Current - Combined	0.0238	0.0249
Previous Investigation Results		
2006-2008	0.0293	0.0276
2003-2005	0.0302	0.0275
2000-2002	0.0256	0.0258
1997-1999	0.0269	0.0248
1994-1996	0.0212	0.0246
1991-1993	0.0208	0.0273
1988-1990	0.0238	0.0332

* Sample rates are taken from midpoint of age group.

**PROTECTIVE WITHOUT SOCIAL SECURITY
WITHDRAWAL EXPERIENCE**

Male and Female Service-Based Withdrawals

Service Index	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates		Expected Withdrawals	
					Present	Proposed	Present	Proposed
1	5	113	0.0442	0.0016	0.0520	0.0400	6	5
2	10	267	0.0375	0.0362	0.0340	0.0350	9	9
3	4	268	0.0149	0.0201	0.0210	0.0210	6	6
4	2	301	0.0066	0.0070	0.0150	0.0130	5	4
5	2	263	0.0076	0.0079	0.0140	0.0120	4	3
6	2	258	0.0078	0.0090	0.0130	0.0110	3	3
7	4	238	0.0168	0.0176	0.0120	0.0100	3	2
8	-	237	0.0000	0.0000	0.0100	0.0090	2	2
9	2	286	0.0070	0.0050	0.0090	0.0080	3	2
10	2	329	0.0061	0.0064	0.0085	0.0070	3	2
Totals (10 and under)	33	2,560	0.0129	0.0078	0.0172	0.0148	44	38

	<u>Actual</u>	<u>Proposed</u>
Current	0.0129	0.0148
Previous Investigation Results		
2006-2008	0.0150	0.0150
2003-2005	0.0128	0.0136
2000-2002	0.0227	0.0260

**PROTECTIVE WITHOUT SOCIAL SECURITY
WITHDRAWAL EXPERIENCE**

**Male and Female Age-Based Withdrawals
with 10 or More Years of Service**

Age	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates*		Expected Withdrawals*	
					Present	Proposed	Present	Proposed
25-29	-	-	N\A	N\A	0.0085	0.0070	-	-
30-34	3	228	0.0132	0.0092	0.0080	0.0070	2	2
35-39	4	930	0.0043	0.0035	0.0075	0.0065	7	6
40-44	5	1,225	0.0041	0.0034	0.0070	0.0060	9	7
45-49	4	1,428	0.0028	0.0019	0.0065	0.0055	10	8
50-54	22	210	0.1048	0.1999	0.0060	0.0050	1	1
Totals	38	4,021	0.0095	0.0140	0.0072	0.0060	29	24

	<u>Actual</u>	<u>Proposed</u>
Current	0.0108	0.0094
Previous Investigation Results		
2006-2008	0.0143	0.0103
2003-2005	0.0116	0.0105
2000-2002	0.0117	0.0117
1997-1999	0.0112	0.0115
1994-1996	0.0080	0.0102
1991-1993	0.0111	0.0130
1988-1990	0.0108	0.0150

* Sample rates are taken from midpoint of age group.

EXECUTIVE AND ELECTIVE WITHDRAWAL EXPERIENCE

Male and Female Service-Based Withdrawals

Service Index	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates		Expected Withdrawals	
					Present	Proposed	Present	Proposed
1	15	170	0.0882	0.0512	0.2000	0.2000	32	34
2	36	257	0.1401	0.1427	0.1450	0.1400	37	36
3	32	206	0.1553	0.1401	0.1250	0.1400	25	29
4	18	141	0.1277	0.0937	0.1050	0.1000	15	14
5	16	111	0.1441	0.1288	0.1000	0.1000	11	11
6	5	55	0.0909	0.1229	0.0950	0.0900	5	5
7	6	76	0.0789	0.0647	0.0900	0.0850	7	6
8	7	58	0.1207	0.1047	0.0750	0.0800	4	5
9	7	61	0.1148	0.0889	0.0700	0.0750	4	5
10	3	61	0.0492	0.0649	0.0650	0.0700	4	4
Totals(10 and under)	145	1,196	0.1212	0.0997	0.1204	0.1246	144	149

	<u>Actual</u>	<u>Proposed</u>
Current	0.1212	0.1246
Previous Investigation Results		
2006-2008	0.1257	0.1211
2003-2005	0.1226	0.1142
2000-2002	0.0874	0.0786

EXECUTIVE AND ELECTIVE WITHDRAWAL EXPERIENCE

Male and Female Age-Based Withdrawals with 10 or More Years of Service

Age	Withdrawal	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates*		Expected Withdrawals*	
					Present	Proposed	Present	Proposed
25-29	-	-	N\A	N\A	0.0650	0.0600	-	-
30-34	-	2	0.0000	0.0000	0.0650	0.0450	-	-
35-39	1	46	0.0217	0.0214	0.0600	0.0400	3	2
40-44	3	131	0.0229	0.0376	0.0450	0.0350	6	5
45-49	6	250	0.0240	0.0237	0.0400	0.0320	10	8
50-54	11	457	0.0241	0.0212	0.0375	0.0300	18	14
Totals	21	886	0.0237	0.0232	0.0418	0.0327	37	29

	<u>Actual</u>	<u>Proposed</u>
Current - combined	0.0797	0.0855
Previous Investigation Results		
2006-2008	0.0861	0.0870
2003-2005	0.0901	0.0832
2000-2002	0.0504	0.0477
1997-1999	0.0489	0.0450
1994-1996	0.0498	0.0398
1991-1993	0.0582	0.0511
1988-1990	0.0615	0.0455

* Sample rates are taken from midpoint of age group.

SECTION B

DISABILITY EXPERIENCE

GENERAL MALES DISABILITY EXPERIENCE

Male Disability Experience

Age	Disabilities	Exposure	Crude Rates	Sample Rates*		Expected Disabilities	
				Present	Proposed	Present	Proposed
Under 20	-	82	0.0000	0.0001	0.0001	-	-
20-24	-	2,785	0.0000	0.0001	0.0001	-	-
25-29	-	7,674	0.0000	0.0001	0.0001	1	-
30-34	-	10,023	0.0000	0.0001	0.0001	1	1
35-39	-	11,920	0.0000	0.0002	0.0002	3	2
40-44	1	16,014	0.0001	0.0006	0.0005	11	9
45-49	14	21,337	0.0007	0.0008	0.0007	25	19
50-54	42	26,453	0.0016	0.0023	0.0020	68	53
55-59	60	22,848	0.0026	0.0041	0.0035	102	80
60-64	33	12,133	0.0027	0.0082	0.0070	93	73
65-69	-	1,699	0.0000	0.0032	0.0027	7	6
70-74	-	591	0.0000	0.0028	0.0024	2	1
75 and over	-	-	N/A	0.0028	0.0024	-	-
Totals	150	133,559	0.0011	0.0023	0.0018	313	244

Ref

283

283

	<u>Actual</u>	<u>Proposed</u>
Current	0.0011	0.0018
Previous Investigation Results		
2006-2008	0.0016	0.0022
2003-2005	0.0024	0.0026
2000-2002	0.0029	0.0030
1997-1999	0.0024	0.0026
1994-1996	0.0025	0.0027
1991-1993	0.0034	0.0033
1988-1990	0.0032	

* Sample rates are taken from midpoint of age group.

GENERAL FEMALES DISABILITY EXPERIENCE

Female Disability Experience

Age	Disabilities	Exposure	Crude Rates	Sample Rates*		Expected Disabilities	
				Present	Proposed	Present	Proposed
Under 20	-	166	0.0000	0.0001	0.0001	-	-
20-24	-	5,753	0.0000	0.0001	0.0001	1	-
25-29	-	15,102	0.0000	0.0001	0.0001	3	2
30-34	-	18,632	0.0000	0.0003	0.0003	7	5
35-39	1	21,896	0.0000	0.0004	0.0004	11	9
40-44	2	31,336	0.0001	0.0007	0.0006	24	19
45-49	13	44,034	0.0003	0.0009	0.0008	46	37
50-54	51	51,818	0.0010	0.0016	0.0013	91	73
55-59	76	41,808	0.0018	0.0031	0.0025	126	100
60-64	43	23,728	0.0018	0.0038	0.0032	89	71
65-69	2	3,571	0.0006	0.0031	0.0025	12	9
70-74	-	810	0.0000	0.0026	0.0021	2	2
75 and over	-	-	N/A	0.0026	0.0021	-	-
Totals	188	258,654	0.0007	0.0016	0.0013	412	327
	Ref			284	284		

	<u>Actual</u>	<u>Proposed</u>
Current	0.0007	0.0013
Previous Investigation Results		
2006-2008	0.0014	0.0017
2003-2005	0.0017	0.0018
2000-2002	0.0020	0.0017
1997-1999	0.0014	0.0017
1994-1996	0.0018	0.0021
1991-1993	0.0018	0.0023
1988-1990	0.0021	

* Sample rates are taken from midpoint of age group.

PUBLIC SCHOOL MALES DISABILITY EXPERIENCE

Male Disability Experience

Age	Disabilities	Exposure	Crude Rates	Sample Rates*		Expected Disabilities	
				Present	Proposed	Present	Proposed
Under 20	-	1	0.0000	0.0001	0.0001	-	-
20-24	-	354	0.0000	0.0001	0.0001	-	-
25-29	-	5,230	0.0000	0.0001	0.0001	-	-
30-34	-	8,580	0.0000	0.0001	0.0001	1	1
35-39	-	9,523	0.0000	0.0001	0.0001	1	1
40-44	-	9,964	0.0000	0.0003	0.0002	3	3
45-49	2	9,169	0.0002	0.0005	0.0005	6	5
50-54	11	9,254	0.0012	0.0020	0.0018	18	15
55-59	17	7,145	0.0024	0.0026	0.0023	20	17
60-64	7	2,969	0.0024	0.0046	0.0041	14	12
65-69	3	284	0.0106	0.0065	0.0058	2	2
70-74	-	66	0.0000	0.0068	0.0060	-	-
75 and over	-	-	N/A	0.0068	0.0060	-	-
Totals	40	62,539	0.0006	0.0010	0.0009	65	56

Ref

281

281

	<u>Actual</u>	<u>Proposed</u>
Current	0.0006	0.0009
Previous Investigation Results		
2006-2008	0.0010	0.0011
2003-2005	0.0012	0.0013
2000-2002	0.0017	0.0016
1997-1999	0.0013	0.0014
1994-1996	0.0016	0.0016
1991-1993	0.0014	0.0015
1988-1990	0.0010	

* Sample rates are taken from midpoint of age group.

**PUBLIC SCHOOL FEMALES
DISABILITY EXPERIENCE**

Female Disability Experience

Age	Disabilities	Exposure	Crude Rates	Sample Rates*		Expected Disabilities	
				Present	Proposed	Present	Proposed
Under 20	-	1	0.0000	0.0001	0.0001	-	-
20-24	-	1,529	0.0000	0.0001	0.0001	-	-
25-29	-	17,818	0.0000	0.0001	0.0001	2	2
30-34	-	23,033	0.0000	0.0001	0.0001	3	2
35-39	-	22,781	0.0000	0.0001	0.0001	3	2
40-44	2	25,380	0.0001	0.0003	0.0003	11	9
45-49	15	24,011	0.0006	0.0012	0.0010	26	22
50-54	21	25,001	0.0008	0.0016	0.0014	42	34
55-59	40	20,930	0.0019	0.0024	0.0021	52	42
60-64	15	9,137	0.0016	0.0034	0.0029	30	24
65-69	1	690	0.0014	0.0019	0.0016	2	1
70-74	-	141	0.0000	0.0016	0.0014	-	-
75 and over	-	-	N/A	0.0016	0.0014	-	-
Totals	94	170,452	0.0006	0.0010	0.0008	171	138

Ref

282

282

	<u>Actual</u>	<u>Proposed</u>
Current	0.0006	0.0008
Previous Investigation Results		
2006-2008	0.0010	0.0011
2003-2005	0.0012	0.0013
2000-2002	0.0016	0.0013
1997-1999	0.0010	0.0010
1994-1996	0.0011	0.0011
1991-1993	0.0009	0.0011
1988-1990	0.0009	

* Sample rates are taken from midpoint of age group.

UNIVERSITY MALES DISABILITY EXPERIENCE

Male Disability Experience

Age	Disabilities	Exposure	Crude Rates	Sample Rates*		Expected Disabilities	
				Present	Proposed	Present	Proposed
Under 20	-	-	N\A	0.0001	0.0001	-	-
20-24	-	155	0.0000	0.0001	0.0001	-	-
25-29	-	1,022	0.0000	0.0001	0.0001	-	-
30-34	-	2,346	0.0000	0.0001	0.0001	-	-
35-39	-	3,430	0.0000	0.0001	0.0001	-	-
40-44	1	3,973	0.0003	0.0001	0.0001	1	-
45-49	-	3,912	0.0000	0.0003	0.0003	1	1
50-54	2	4,171	0.0005	0.0006	0.0005	3	2
55-59	3	4,026	0.0007	0.0019	0.0015	7	5
60-64	4	2,532	0.0016	0.0018	0.0014	5	4
65-69	-	329	0.0000	0.0022	0.0017	1	1
70-74	-	75	0.0000	0.0020	0.0015	-	-
75 and over	-	-	N\A	0.0020	0.0015	-	-
Totals	10	25,971	0.0004	0.0007	0.0005	18	13

Ref

279

279

	<u>Actual</u>	<u>Proposed</u>
Current	0.0004	0.0005
Previous Investigation Results		
2006-2008	0.0007	0.0007
2003-2005	0.0009	0.0008
2000-2002	0.0008	0.0010
1997-1999	0.0008	0.0011
1994-1996	0.0010	0.0011
1991-1993	0.0009	0.0015
1988-1990	0.0012	

* Sample rates are taken from midpoint of age group.

UNIVERSITY FEMALES DISABILITY EXPERIENCE

Female Disability Experience

Age	Disabilities	Exposure	Crude Rates	Sample Rates*		Expected Disabilities	
				Present	Proposed	Present	Proposed
Under 20	-	-	N/A	0.0001	0.0001	-	-
20-24	-	232	0.0000	0.0001	0.0001	-	-
25-29	-	1,767	0.0000	0.0001	0.0001	-	-
30-34	-	3,318	0.0000	0.0001	0.0001	-	-
35-39	-	3,740	0.0000	0.0005	0.0004	2	1
40-44	-	4,018	0.0000	0.0006	0.0005	2	2
45-49	2	4,203	0.0005	0.0005	0.0004	2	2
50-54	3	4,267	0.0007	0.0011	0.0009	5	3
55-59	4	3,980	0.0010	0.0015	0.0012	6	5
60-64	1	2,152	0.0005	0.0023	0.0018	5	4
65-69	-	276	0.0000	0.0016	0.0012	-	-
70-74	-	59	0.0000	0.0013	0.0010	-	-
75 and over	-	-	N/A	0.0013	0.0010	-	-
Totals	10	28,012	0.0004	0.0008	0.0006	22	17
Ref				280	280		

	<u>Actual</u>	<u>Proposed</u>
Current	0.0004	0.0006
Previous Investigation Results		
2006-2008	0.0007	0.0009
2003-2005	0.0010	0.0011
2000-2002	0.0006	0.0011
1997-1999	0.0010	0.0012
1994-1996	0.0003	0.0014
1991-1993	0.0010	0.0018
1988-1990	0.0016	

* Sample rates are taken from midpoint of age group.

**PROTECTIVE WITH SOCIAL SECURITY
DISABILITY EXPERIENCE**

Male and Female Disability Experience

Age	Disabilities	Exposure	Crude Rates	Sample Rates*		Expected Disabilities	
				Present	Proposed	Present	Proposed
Under 20	-	9	0.0000	0.0002	0.0001	-	-
20-24	-	1,635	0.0000	0.0002	0.0001	-	-
25-29	-	7,092	0.0000	0.0002	0.0001	1	1
30-34	-	8,900	0.0000	0.0002	0.0001	2	1
35-39	-	10,153	0.0000	0.0003	0.0003	4	3
40-44	2	10,656	0.0002	0.0004	0.0004	5	4
45-49	8	8,853	0.0009	0.0007	0.0006	7	5
50-54	25	6,001	0.0042	0.0011	0.0009	15	11
55-59	2	1,435	0.0014	0.0238	0.0196	31	24
60-64	-	598	0.0000	0.0255	0.0210	15	12
65-69	-	133	0.0000	0.0017	0.0014	1	1
70-74	-	12	0.0000	0.0017	0.0014	-	-
75 and over	-	3	0.0000	0.0017	0.0014	-	-
Totals	37	55,480	0.0007	0.0015	0.0011	81	62

Ref

391

391

	<u>Actual</u>	<u>Proposed</u>
Current	0.0007	0.0011
Previous Investigation Results		
2006-2008	0.0009	0.0011
2003-2005	0.0009	0.0009
2000-2002	0.0012	0.0017
1997-1999	0.0016	0.0019
1994-1996	0.0019	0.0019
1991-1993	0.0013	0.0018
1988-1990	0.0015	
1985-1987	0.0015	

* Sample rates are taken from midpoint of age group.

**PROTECTIVE WITHOUT SOCIAL SECURITY
DISABILITY EXPERIENCE**

Male and Female Disability Experience

Age	Disabilities	Exposure	Crude Rates	Sample Rates*		Expected Disabilities	
				Present	Proposed	Present	Proposed
Under 20	-	-	N\A	0.0005	0.0004	-	-
20-24	-	143	0.0000	0.0005	0.0004	-	-
25-29	-	675	0.0000	0.0005	0.0004	-	-
30-34	-	1,123	0.0000	0.0005	0.0004	1	-
35-39	-	1,421	0.0000	0.0006	0.0005	1	1
40-44	-	1,487	0.0000	0.0010	0.0008	1	2
45-49	-	1,496	0.0000	0.0020	0.0016	4	3
50-54	10	953	0.0105	0.0140	0.0112	10	8
55-59	-	53	0.0000	0.0020	0.0016	-	-
60-64	-	14	0.0000	0.0020	0.0016	-	-
65-69	-	2	0.0000	0.0020	0.0016	-	-
70-74	-	-	N\A	0.0020	0.0016	-	-
75 and over	-	-	N\A	0.0020	0.0016	-	-
Totals	10	7,367	0.0014	0.0023	0.0019	17	14

Ref

392

392

	<u>Actual</u>	<u>Proposed</u>
Current	0.0014	0.0019
Previous Investigation Results		
2006-2008	0.0028	0.0025
2003-2005	0.0027	0.0025
2000-2002	0.0030	0.0025
1997-1999	0.0017	0.0021
1994-1996	0.0031	0.0029
1991-1993	0.0013	0.0024
1988-1990	0.0024	

* Sample rates are taken from midpoint of age group.

EXECUTIVE AND ELECTED DISABILITY EXPERIENCE

Male and Female Disability Experience

Age	Disabilities	Exposure	Crude Rates	Sample Rates*		Expected Disabilities	
				Present	Proposed	Present	Proposed
Under 20	-	-	N\A	0.0000	0.0000	-	-
20-24	-	5	0.0000	0.0000	0.0000	-	-
25-29	-	12	0.0000	0.0000	0.0000	-	-
30-34	-	73	0.0000	0.0000	0.0000	-	-
35-39	-	211	0.0000	0.0001	0.0001	-	-
40-44	-	330	0.0000	0.0001	0.0001	-	-
45-49	-	498	0.0000	0.0002	0.0002	-	-
50-54	-	715	0.0000	0.0004	0.0003	-	-
55-59	-	813	0.0000	0.0016	0.0012	1	1
60-64	-	463	0.0000	0.0014	0.0011	1	-
65-69	-	143	0.0000	0.0012	0.0009	-	-
70-74	-	49	0.0000	0.0012	0.0009	-	-
75 and over	-	-	N\A	0.0012	0.0009	-	-
Totals	-	3,312	0.0000	0.0006	0.0003	2	1

Ref

275

275

	<u>Actual</u>	<u>Proposed</u>
Current	0.0000	0.0003
Previous Investigation Results		
2006-2008	0.0000	0.0004
2003-2005	0.0004	0.0008
2000-2002	0.0006	0.0012
1997-1999	0.0007	0.0012
1994-1996	0.0003	0.0007

* Sample rates are taken from midpoint of age group.

SECTION C

**PAY INCREASES
MERIT & LONGEVITY PORTION**

GENERAL
MERIT & LONGEVITY PAY INCREASE ASSUMPTION

Service Based Pay Increase Experience

Service Group		Merit/Seniority % Increase			Total % Increase		
Beginning of Year	Number	Actual	Expected*		Actual	Expected*	
			Present	Proposed		Present	Proposed
1-5	113,136	3.37 %	3.50 %	3.45 %	6.57 %	6.70 %	6.65 %
6-10	82,873	1.81 %	2.00 %	1.90 %	5.01 %	5.20 %	5.10 %
11-15	65,006	1.13 %	1.40 %	1.25 %	4.33 %	4.60 %	4.45 %
16-20	44,916	0.81 %	1.20 %	1.00 %	4.01 %	4.40 %	4.20 %
21-25	34,263	0.47 %	1.00 %	0.75 %	3.67 %	4.20 %	3.95 %
26-30	21,115	0.24 %	0.80 %	0.50 %	3.44 %	4.00 %	3.70 %
31-35	14,376	(0.01)%	0.60 %	0.30 %	3.19 %	3.80 %	3.50 %
36-40	3,928	(0.05)%	0.40 %	0.20 %	3.15 %	3.60 %	3.40 %
Over 40	538	(0.36)%	0.40 %	0.10 %	2.84 %	3.60 %	3.30 %
Total	380,151						

* Sample values are selected from mid-point of service group.

**PUBLIC SCHOOLS
MERIT & LONGEVITY PAY INCREASE ASSUMPTION**

Service Based Pay Increase Experience

Service Group		Merit/Seniority % Increase			Total % Increase		
Beginning of Year	Number	Actual	Expected*		Actual	Expected*	
			Present	Proposed		Present	Proposed
1-5	46,674	5.56 %	6.00 %	5.75 %	8.76 %	9.20 %	8.95 %
6-10	49,218	4.01 %	4.00 %	4.00 %	7.21 %	7.20 %	7.20 %
11-15	46,639	2.63 %	2.80 %	2.70 %	5.83 %	6.00 %	5.90 %
16-20	35,220	1.33 %	1.20 %	1.25 %	4.53 %	4.40 %	4.45 %
21-25	25,149	0.41 %	0.70 %	0.55 %	3.61 %	3.90 %	3.75 %
26-30	14,012	0.25 %	0.30 %	0.25 %	3.45 %	3.50 %	3.45 %
31-35	9,051	0.08 %	0.30 %	0.20 %	3.28 %	3.50 %	3.40 %
36-40	2,374	0.01 %	0.20 %	0.10 %	3.21 %	3.40 %	3.30 %
Over 40	317	(0.35)%	0.20 %	0.05 %	2.85 %	3.40 %	3.25 %
Total	228,654						

* Sample values are selected from mid-point of service group.

**UNIVERSITY
MERIT & LONGEVITY PAY INCREASE ASSUMPTION**

Service Based Pay Increase Experience

Service Group		Merit/Seniority % Increase			Total % Increase		
Beginning of Year	Number	Actual	Expected*		Actual	Expected*	
			Present	Proposed		Present	Proposed
1-5	15,000	2.81 %	3.50 %	3.15 %	6.01 %	6.70 %	6.35 %
6-10	12,182	2.46 %	3.00 %	2.75 %	5.66 %	6.20 %	5.95 %
11-15	9,281	1.59 %	2.50 %	2.10 %	4.79 %	5.70 %	5.30 %
16-20	5,949	1.09 %	2.00 %	1.50 %	4.29 %	5.20 %	4.70 %
21-25	4,864	0.33 %	1.50 %	0.90 %	3.53 %	4.70 %	4.10 %
26-30	3,060	0.28 %	1.20 %	0.75 %	3.48 %	4.40 %	3.95 %
31-35	1,623	(0.03)%	1.00 %	0.50 %	3.17 %	4.20 %	3.70 %
36-40	664	0.02 %	0.70 %	0.35 %	3.22 %	3.90 %	3.55 %
Over 40	236	(0.71)%	0.60 %	0.20 %	2.49 %	3.80 %	3.40 %
Total	52,859						

* Sample values are selected from mid-point of service group.

**PROTECTIVE WITH SOCIAL SECURITY
MERIT & LONGEVITY PAY INCREASE ASSUMPTION**

Service Based Pay Increase Experience

Service Group		Merit/Seniority % Increase			Total % Increase		
Beginning of Year	Number	Actual	Expected*		Actual	Expected*	
			Present	Proposed		Present	Proposed
1-5	11,320	4.61 %	5.00 %	4.75 %	7.81 %	8.20 %	7.95 %
6-10	12,745	1.15 %	1.80 %	1.50 %	4.35 %	5.00 %	4.70 %
11-15	12,790	0.78 %	1.20 %	0.90 %	3.98 %	4.40 %	4.10 %
16-20	9,429	0.61 %	1.00 %	0.80 %	3.81 %	4.20 %	4.00 %
21-25	6,195	0.79 %	0.90 %	0.70 %	3.99 %	4.10 %	3.90 %
26-30	3,252	0.69 %	0.70 %	0.60 %	3.89 %	3.90 %	3.80 %
31-35	1,222	0.78 %	0.60 %	0.50 %	3.98 %	3.80 %	3.70 %
36-40	180	0.78 %	0.50 %	0.40 %	3.98 %	3.70 %	3.60 %
Over 40	16	0.01 %	0.40 %	0.20 %	3.21 %	3.60 %	3.40 %
Total	57,149						

* Sample values are selected from mid-point of service group.

**PROTECTIVE WITHOUT SOCIAL SECURITY
MERIT & LONGEVITY PAY INCREASE ASSUMPTION**

Service Based Pay Increase Experience

Service Group		Merit/Seniority % Increase			Total % Increase		
Beginning of Year	Number	Actual	Expected*		Actual	Expected*	
			Present	Proposed		Present	Proposed
1-5	1,183	7.01 %	4.75 %	5.50 %	10.21 %	7.95 %	8.70 %
6-10	1,344	1.33 %	1.30 %	1.30 %	4.53 %	4.50 %	4.50 %
11-15	1,793	0.82 %	0.50 %	0.60 %	4.02 %	3.70 %	3.80 %
16-20	1,406	0.40 %	0.40 %	0.50 %	3.60 %	3.60 %	3.70 %
21-25	1,210	0.49 %	0.30 %	0.40 %	3.69 %	3.50 %	3.60 %
26-30	746	0.41 %	0.20 %	0.30 %	3.61 %	3.40 %	3.50 %
31-35	221	(0.19)%	0.10 %	0.20 %	3.01 %	3.30 %	3.40 %
36-40	8	0.73 %	0.00 %	0.10 %	3.93 %	3.20 %	3.30 %
Over 40	-	0.00 %	(0.10)%	0.05 %	3.20 %	3.10 %	3.25 %
Total	7,911						

* Sample values are selected from mid-point of service group.

**EXECUTIVE AND ELECTED
MERIT & LONGEVITY PAY INCREASE ASSUMPTION**

Service Based Pay Increase Experience

Service Group		Merit/Seniority % Increase			Total % Increase		
Beginning of Year	Number	Actual	Expected*		Actual	Expected*	
			Present	Proposed		Present	Proposed
1-5	1,105	4.48 %	1.20 %	2.00 %	7.68 %	4.40 %	5.20 %
6-10	564	1.56 %	1.10 %	1.75 %	4.76 %	4.30 %	4.95 %
11-15	517	2.00 %	1.00 %	1.50 %	5.20 %	4.20 %	4.70 %
16-20	465	1.02 %	0.90 %	1.00 %	4.22 %	4.10 %	4.20 %
21-25	417	(0.31)%	0.70 %	0.50 %	2.89 %	3.90 %	3.70 %
26-30	329	0.34 %	0.50 %	0.40 %	3.54 %	3.70 %	3.60 %
31-35	252	0.25 %	0.40 %	0.30 %	3.45 %	3.60 %	3.50 %
36-40	96	(0.10)%	0.00 %	0.20 %	3.10 %	3.20 %	3.40 %
Over 40	29	0.02 %	0.00 %	0.10 %	3.22 %	3.20 %	3.30 %
Total	3,774						

* Sample values are selected from mid-point of service group.

SECTION D

NORMAL & EARLY RETIREMENT EXPERIENCE

**GENERAL MALES
NORMAL RETIREMENT EXPERIENCE**

Male Age-Based Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
57	224	1,163	0.1926	0.1454	0.2400	0.2000	283	233
58	240	1,140	0.2105	0.1748	0.2400	0.2000	278	228
59	217	1,057	0.2053	0.1574	0.2400	0.2000	257	211
60	240	986	0.2434	0.1749	0.2400	0.2000	240	197
61	219	855	0.2561	0.2061	0.2000	0.2000	171	171
62	231	733	0.3151	0.2068	0.3300	0.2700	247	198
63	214	570	0.3754	0.3087	0.3300	0.3200	191	182
64	125	355	0.3521	0.2437	0.2400	0.2400	86	85
65	280	1,442	0.1942	0.1933	0.2600	0.2400	371	346
66	237	1,044	0.2270	0.3261	0.2800	0.3000	282	313
67	147	783	0.1877	0.3289	0.1500	0.2400	106	188
68	77	606	0.1271	0.2062	0.1500	0.1700	82	103
69	57	497	0.1147	0.1889	0.1500	0.1700	67	84
70	48	394	0.1218	0.1801	0.1500	0.1700	54	67
71	31	322	0.0963	0.1622	0.1500	0.1700	43	55
72	23	271	0.0849	0.2081	0.1500	0.1700	36	46
73	23	260	0.0885	0.0676	0.1500	0.1700	34	44
74	19	222	0.0856	0.2519	0.1500	0.1700	30	38
Sub Totals	2,671	12,700	0.2103	0.1993	0.2250	0.2196	2,858	2,789
75 & Over	73	857	0.0852	0.2462			857	857
Total	2,744	13,557	0.2024	0.1997			3,715	3,646

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.2103	0.2196
Previous Investigation Results		
2006-2008	0.1840	0.2251
2003-2005	0.1768	0.2089
2000-2002	0.2753	0.2820
1997-1999	0.2666	0.2732

GENERAL MALES

EARLY RETIREMENT EXPERIENCE

Male Age-Based Early Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
55	292	5,034	0.0580	0.0771	0.0800	0.0800	394	403
56	306	4,817	0.0635	0.0787	0.0800	0.0800	378	385
57	133	3,577	0.0372	0.0402	0.0450	0.0425	155	152
58	160	3,339	0.0479	0.0563	0.0500	0.0525	167	175
59	165	3,111	0.0530	0.0561	0.0550	0.0550	166	171
60	187	2,645	0.0707	0.0719	0.0800	0.0750	208	198
61	181	2,318	0.0781	0.0775	0.0800	0.0800	178	185
62	276	2,063	0.1338	0.1308	0.1700	0.1400	357	289
63	281	1,712	0.1641	0.1816	0.1700	0.1600	296	274
64	217	1,260	0.1722	0.1697	0.1700	0.1700	208	214
Totals	2,198	29,876	0.0736	0.0797	0.0839	0.0819	2,507	2,446

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.0736	0.0819
Previous Investigation Results		
2006-2008	0.0663	0.0821
2003-2005	0.0741	0.0777
2000-2002	0.0874	0.0868
1997-1999	0.0755	0.0773

**GENERAL FEMALES
NORMAL RETIREMENT EXPERIENCE**

Female Age-Based Retirement Experience

Age	Retirement	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
57	230	1,159	0.1984	0.1319	0.1900	0.1700	224	197
58	224	1,116	0.2007	0.1523	0.1900	0.1700	216	190
59	239	1,017	0.2350	0.1585	0.1900	0.1700	196	173
60	238	932	0.2554	0.2131	0.1900	0.2000	180	186
61	212	752	0.2819	0.2096	0.1900	0.2000	145	150
62	224	652	0.3436	0.2565	0.2900	0.2700	191	176
63	162	484	0.3347	0.2698	0.2900	0.2800	142	136
64	109	341	0.3196	0.2561	0.2500	0.2500	85	85
65	580	2,558	0.2267	0.2392	0.2500	0.2500	640	640
66	439	1,816	0.2417	0.3021	0.2800	0.2900	491	527
67	263	1,316	0.1998	0.2581	0.1500	0.2000	197	263
68	150	961	0.1561	0.1902	0.1500	0.1800	132	173
69	116	731	0.1587	0.2220	0.1500	0.1800	98	132
70	101	538	0.1877	0.2807	0.1500	0.1800	72	97
71	63	421	0.1496	0.2109	0.1500	0.1800	56	76
72	41	342	0.1199	0.1607	0.1500	0.1500	46	51
73	27	304	0.0888	0.1421	0.1500	0.1500	40	46
74	24	263	0.0913	0.1559	0.1500	0.1500	35	39
Sub Totals	3,452	15,703	0.2198	0.2042	0.2029	0.2125	3,186	3,337
75 & Over	105	928	0.1131	0.1761			928	928
Total	3,557	16,631	0.2139	0.2038			4,114	4,265

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.2198	0.2125
Previous Investigation Results		
2006-2008	0.1904	0.2047
2003-2005	0.1773	0.1849
2000-2002	0.2149	0.2378
1997-1999	0.2651	0.3218

**GENERAL FEMALES
EARLY RETIREMENT EXPERIENCE**

Female Age-Based Early Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
55	335	8,557	0.0391	0.0613	0.0600	0.0610	492	522
56	404	8,281	0.0488	0.0680	0.0600	0.0640	477	530
57	226	6,718	0.0336	0.0388	0.0450	0.0420	292	282
58	279	6,261	0.0446	0.0549	0.0550	0.0550	334	344
59	277	5,698	0.0486	0.0511	0.0550	0.0530	304	302
60	383	5,216	0.0734	0.0821	0.0800	0.0810	409	422
61	311	4,733	0.0657	0.0650	0.0800	0.0700	371	331
62	608	4,314	0.1409	0.1380	0.1600	0.1500	676	647
63	537	3,509	0.1530	0.1430	0.1600	0.1500	551	526
64	376	2,570	0.1463	0.1426	0.1600	0.1500	404	386
Totals	3,736	55,857	0.0669	0.0734	0.0772	0.0768	4,310	4,292

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.0669	0.0768
Previous Investigation Results		
2006-2008	0.0636	0.0765
2003-2005	0.0682	0.0696
2000-2002	0.0783	0.0785
1997-1999	0.0879	0.0924

**PUBLIC SCHOOL MALES
NORMAL RETIREMENT EXPERIENCE**

Male Age-Based Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
57	301	801	0.3758	0.2922	0.4000	0.4000	320	320
58	250	688	0.3634	0.2515	0.3500	0.3500	241	241
59	187	596	0.3138	0.2232	0.2800	0.2500	171	149
60	191	511	0.3738	0.2800	0.2800	0.2800	146	143
61	130	382	0.3403	0.2187	0.2800	0.2500	109	96
62	131	308	0.4253	0.3443	0.3800	0.3600	119	111
63	86	216	0.3981	0.2893	0.3500	0.3200	79	69
64	49	137	0.3577	0.2322	0.2500	0.2400	34	33
65	82	335	0.2448	0.2101	0.2500	0.2400	84	80
66	55	217	0.2535	0.2828	0.2500	0.2500	54	54
67	34	153	0.2222	0.2916	0.2000	0.2400	28	37
68	20	105	0.1905	0.2385	0.2000	0.2400	19	25
69	12	81	0.1481	0.3029	0.2000	0.2400	16	19
70	6	51	0.1176	0.0182	0.2500	0.2000	12	10
71	2	42	0.0476	0.1687	0.2500	0.2000	10	8
72	4	38	0.1053	0.2403	0.2500	0.2000	9	8
73	4	30	0.1333	0.2702	0.2500	0.2000	7	6
74	2	16	0.1250	0.0000	0.2500	0.2000	4	3
Totals	1,551	4,707	0.3295	0.2641	0.3106	0.3000	1,462	1,412
75 & Over	10	68	0.1471	0.5031			68	68
Total	1,561	4,775	0.3269	0.2651			1,530	1,480

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.3295	0.3000
Previous Investigation Results		
2006-2008	0.2907	0.3216
2003-2005	0.3376	0.3360
2000-2002	0.3552	0.3371
1997-1999	0.4213	0.3229

**PUBLIC SCHOOL MALES
EARLY RETIREMENT EXPERIENCE**

Male Age-Based Early Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
55	226	1,961	0.1152	0.1070	0.1500	0.1200	294	235
56	286	1,898	0.1507	0.1298	0.1500	0.1200	285	228
57	96	1,006	0.0954	0.0830	0.1500	0.1200	151	121
58	107	916	0.1168	0.1075	0.1400	0.1200	132	110
59	94	825	0.1139	0.1049	0.1100	0.1200	88	99
60	96	737	0.1303	0.1143	0.1500	0.1200	111	88
61	86	610	0.1410	0.1032	0.1400	0.1200	87	73
62	99	530	0.1868	0.1692	0.2300	0.2000	125	106
63	69	405	0.1704	0.1614	0.2300	0.2000	96	81
64	49	294	0.1667	0.1693	0.1600	0.2000	46	59
Totals	1,208	9,182	0.1316	0.1171	0.1541	0.1307	1,415	1,200

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.1316	0.1307
Previous Investigation Results		
2006-2008	0.1190	0.1499
2003-2005	0.1592	0.1514
2000-2002	0.1642	0.1511
1997-1999	0.1034	0.1043

**PUBLIC SCHOOL FEMALES
NORMAL RETIREMENT EXPERIENCE**

Female Age-Based Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
57	474	1,509	0.3141	0.2423	0.3000	0.2700	453	407
58	447	1,325	0.3374	0.2199	0.3000	0.2700	398	358
59	416	1,120	0.3714	0.2565	0.3000	0.2700	336	302
60	342	897	0.3813	0.2440	0.3000	0.2700	269	242
61	235	652	0.3604	0.2452	0.3000	0.2700	205	176
62	224	504	0.4444	0.2946	0.3800	0.3400	195	171
63	121	310	0.3903	0.2299	0.3200	0.2700	101	84
64	80	209	0.3828	0.2060	0.2600	0.2300	54	48
65	223	753	0.2961	0.2520	0.3100	0.2800	231	211
66	145	486	0.2984	0.2914	0.2700	0.3000	129	146
67	95	314	0.3025	0.3984	0.2600	0.2800	81	88
68	39	181	0.2155	0.2784	0.2400	0.2600	41	47
69	19	132	0.1439	0.1795	0.2200	0.2000	28	26
70	16	111	0.1441	0.2728	0.1800	0.2000	21	22
71	19	91	0.2088	0.2863	0.1800	0.2000	17	18
72	4	74	0.0541	0.0699	0.1800	0.2000	14	15
73	9	55	0.1636	0.3118	0.1800	0.2000	10	11
74	4	44	0.0909	0.1798	0.1800	0.2000	8	9
Totals	2,913	8,767	0.3323	0.2469	0.2955	0.2716	2,591	2,381
75 & Over	13	127	0.1024	0.0821			127	127
Total	2,926	8,894	0.3290	0.2462			2,718	2,508

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.3323	0.2716
Previous Investigation Results		
2006-2008	0.2719	0.2932
2003-2005	0.2975	0.2940
2000-2002	0.3024	0.2961
1997-1999	0.3297	0.2617

**PUBLIC SCHOOL FEMALES
EARLY RETIREMENT EXPERIENCE**

Female Age-Based Early Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
55	451	5,102	0.0884	0.0917	0.1250	0.1100	611	561
56	617	5,015	0.1230	0.1119	0.1250	0.1100	600	552
57	358	3,438	0.1041	0.0970	0.1150	0.1100	389	378
58	342	3,241	0.1055	0.0827	0.1250	0.1100	399	357
59	360	2,960	0.1216	0.1030	0.1250	0.1100	365	326
60	442	2,566	0.1723	0.1439	0.1500	0.1500	385	385
61	351	2,097	0.1674	0.1455	0.1600	0.1500	329	315
62	414	1,714	0.2415	0.1976	0.2300	0.2000	405	343
63	308	1,220	0.2525	0.2069	0.2100	0.2000	253	244
64	178	809	0.2200	0.2036	0.1900	0.2000	146	162
Totals	3,821	28,162	0.1357	0.1162	0.1378	0.1286	3,882	3,623

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.1357	0.1286
Previous Investigation Results		
2006-2008	0.1124	0.1354
2003-2005	0.1245	0.1236
2000-2002	0.1245	0.1241
1997-1999	0.1110	0.1075

**UNIVERSITY MALES
NORMAL RETIREMENT EXPERIENCE**

Male Age-Based Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
57	12	92	0.1304	0.0927	0.1500	0.1300	15	12
58	21	115	0.1826	0.1435	0.1500	0.1300	17	15
59	28	138	0.2029	0.1192	0.1500	0.1300	21	18
60	28	157	0.1783	0.0949	0.1500	0.1300	24	20
61	29	158	0.1835	0.1320	0.1500	0.1300	25	21
62	30	159	0.1887	0.1148	0.1700	0.1500	27	24
63	40	172	0.2326	0.1436	0.1700	0.1500	29	26
64	29	177	0.1638	0.0757	0.1700	0.1500	30	27
65	84	472	0.1780	0.1259	0.2000	0.1500	94	71
66	95	372	0.2554	0.1835	0.2200	0.2000	79	74
67	50	283	0.1767	0.1653	0.1800	0.1800	53	51
68	48	207	0.2319	0.2024	0.1800	0.1800	38	37
69	27	155	0.1742	0.1470	0.1800	0.1800	29	28
70	22	117	0.1880	0.1072	0.2000	0.2000	23	23
71	22	94	0.2340	0.2599	0.2000	0.2000	19	19
72	8	65	0.1231	0.0922	0.1800	0.1500	12	10
73	10	56	0.1786	0.1911	0.1800	0.1500	10	8
74	7	42	0.1667	0.0830	0.1800	0.1500	8	6
Sub Totals	590	3,031	0.1947	0.1406	0.1824	0.1617	553	490
75 & Over	28	139	0.2014	0.1702			139	139
Total	618	3,170	0.1950	0.1423			692	629

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.1947	0.1617
Previous Investigation Results		
2006-2008	0.1712	0.1789
2003-2005	0.1698	0.1809
2000-2002	0.2033	0.2022
1997-1999	0.2229	0.2158

UNIVERSITY MALES EARLY RETIREMENT EXPERIENCE

Male Age-Based Early Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
55	21	809	0.0260	0.0463	0.0500	0.0475	40	38
56	16	811	0.0197	0.0184	0.0450	0.0300	38	24
57	19	712	0.0267	0.0175	0.0250	0.0200	19	14
58	15	689	0.0218	0.0177	0.0350	0.0250	24	17
59	33	656	0.0503	0.0363	0.0400	0.0400	25	26
60	21	568	0.0370	0.0222	0.0550	0.0400	31	23
61	20	484	0.0413	0.0443	0.0750	0.0750	36	36
62	25	444	0.0563	0.0407	0.1000	0.0700	44	31
63	35	418	0.0837	0.0534	0.0950	0.0750	39	31
64	34	347	0.0980	0.0757	0.0850	0.0800	29	28
Totals	239	5,938	0.0402	0.0336	0.0547	0.0451	325	268

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.0402	0.0451
Previous Investigation Results		
2006-2008	0.0507	0.0539
2003-2005	0.0498	0.0520
2000-2002	0.0547	0.0541
1997-1999	0.0408	0.0500

**UNIVERSITY FEMALES
NORMAL RETIREMENT EXPERIENCE**

Female Age-Based Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
57	16	103	0.1553	0.1058	0.1700	0.1400	17	14
58	22	115	0.1913	0.1766	0.1400	0.1400	16	16
59	16	116	0.1379	0.0985	0.1400	0.1300	17	15
60	22	114	0.1930	0.1254	0.1400	0.1300	16	15
61	24	102	0.2353	0.1669	0.2200	0.1900	23	19
62	21	81	0.2593	0.1741	0.2000	0.1900	17	15
63	20	75	0.2667	0.0995	0.2000	0.1900	15	14
64	13	67	0.1940	0.1319	0.2000	0.1800	13	12
65	73	283	0.2580	0.2352	0.2200	0.2200	61	62
66	48	189	0.2540	0.2091	0.2000	0.2300	38	43
67	26	122	0.2131	0.1574	0.1800	0.1700	23	21
68	12	90	0.1333	0.1648	0.1800	0.1700	17	15
69	16	77	0.2078	0.1020	0.1800	0.1700	14	13
70	17	63	0.2698	0.2672	0.1800	0.2000	12	13
71	10	40	0.2500	0.1262	0.1800	0.2000	7	8
72	4	23	0.1739	0.0562	0.1800	0.2000	4	5
73	5	14	0.3571	0.6844	0.1800	0.2000	3	3
74	3	10	0.3000	0.2536	0.1800	0.2000	2	2
Totals	368	1,684	0.2185	0.1599	0.1871	0.1811	315	305
75 & Over	8	44	0.1818	0.0960			44	44
Total	376	1,728	0.2176	0.1568			359	349

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.2185	0.1811
Previous Investigation Results		
2006-2008	0.1840	0.1831
2003-2005	0.1777	0.1901
2000-2002	0.1964	0.2296
1997-1999	0.2722	0.0257

UNIVERSITY FEMALES EARLY RETIREMENT EXPERIENCE

Female Age-Based Early Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
55	25	785	0.0318	0.0479	0.0600	0.0550	47	43
56	43	804	0.0535	0.0480	0.0600	0.0550	48	44
57	18	698	0.0258	0.0218	0.0600	0.0400	40	28
58	34	654	0.0520	0.0230	0.0600	0.0400	39	26
59	34	574	0.0592	0.0661	0.0600	0.0650	38	37
60	36	502	0.0717	0.0444	0.0700	0.0650	40	33
61	37	448	0.0826	0.0725	0.0750	0.0750	34	34
62	39	388	0.1005	0.0674	0.1400	0.1000	56	39
63	45	325	0.1385	0.0682	0.1400	0.1000	46	33
64	44	278	0.1583	0.1091	0.1600	0.1300	44	36
Totals	355	5,456	0.0651	0.0515	0.0792	0.0647	432	353

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.0651	0.0647
Previous Investigation Results		
2006-2008	0.0682	0.0748
2003-2005	0.0803	0.0767
2000-2002	0.0667	0.0689
1997-1999	0.0680	0.0750

PROTECTIVE WITH SOCIAL SECURITY NORMAL RETIREMENT EXPERIENCE

Male and Female Age-Based Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
50	51	947	0.0539	0.0487	0.0750	0.0600	72	57
51	80	947	0.0845	0.0630	0.0800	0.0700	76	66
52	92	954	0.0964	0.0769	0.0850	0.0800	79	76
53	179	945	0.1894	0.1727	0.2800	0.2300	271	217
54	196	1,212	0.1617	0.1675	0.2000	0.1800	242	218
55	149	1,017	0.1465	0.1456	0.1700	0.1700	182	173
56	125	831	0.1504	0.1683	0.1700	0.1600	144	133
57	103	703	0.1465	0.1382	0.1700	0.1600	122	112
58	76	595	0.1277	0.1028	0.1700	0.1600	103	95
59	80	523	0.1530	0.1307	0.1700	0.1600	90	84
60	74	418	0.1770	0.1965	0.1700	0.1800	72	75
61	68	307	0.2215	0.1682	0.2000	0.1800	60	55
62	61	244	0.2500	0.2333	0.2000	0.2200	49	54
63	52	183	0.2842	0.2796	0.3000	0.2900	55	53
64	29	124	0.2339	0.1400	0.1800	0.1600	23	20
65	34	89	0.3820	0.3948	0.3000	0.3000	27	27
66	21	46	0.4565	0.1561	0.3000	0.2000	13	9
67	6	20	0.3000	0.1499	0.2300	0.1500	5	3
68	5	15	0.3333	0.5014	0.2300	0.2500	4	4
69	3	11	0.2727	0.1427	0.2000	0.2000	2	2
70	4	13	0.3077	0.6516	1.0000	1.0000	13	13
71	1	7	0.1429	0.5500	1.0000	1.0000	7	7
72	1	4	0.2500	N\A	1.0000	1.0000	4	4
73	1	-	N\A	N\A	1.0000	1.0000	-	-
74	-	1	0.0000	0.0000	1.0000	1.0000	1	1
Totals	1,491	10,156	0.1468	0.1288	0.1690	0.1534	1,716	1,558
75 & Over	-	2	0.0000	0.0000			2	2
Total	1,491	10,158	0.1468	0.1288			1,718	1,560

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.1468	0.1534
Previous Investigation Results		
2006-2008	0.1220	0.1579
2003-2005	0.1447	0.1619
2000-2002	0.1434	0.1566
1997-1999	0.1715	0.1509

**PROTECTIVE WITHOUT SOCIAL SECURITY
NORMAL RETIREMENT EXPERIENCE**

Male and Female Age-Based Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
50	4	219	0.0183	0.0089	0.0350	0.0350	7	8
51	7	213	0.0329	0.0394	0.0350	0.0375	7	8
52	8	206	0.0388	0.0320	0.0600	0.0450	13	9
53	25	208	0.1202	0.1033	0.2300	0.1700	49	35
54	44	217	0.2028	0.2180	0.2800	0.2500	62	54
55	24	157	0.1529	0.1346	0.2800	0.2100	45	33
56	29	139	0.2086	0.2525	0.2800	0.2700	40	38
57	10	94	0.1064	0.1160	0.3700	0.3000	34	28
58	19	71	0.2676	0.2898	0.3200	0.3000	22	21
59	8	44	0.1818	0.1685	0.3500	0.3000	13	13
60	7	22	0.3182	0.3070	0.2200	0.2600	5	6
61	2	9	0.2222	0.0000	0.1500	0.1500	1	1
62	-	8	0.0000	0.0000	0.2000	0.2000	2	2
63	3	10	0.3000	0.2771	0.2000	0.4000	2	4
64	2	9	0.2222	0.6864	0.2000	0.4000	2	4
65	1	2	0.5000	0.0000	0.4000	0.4000	1	1
66	2	2	1.0000	1.0000	0.4000	0.4000	1	1
67	-	-	N\A	N\A	0.4000	0.4000	-	-
68	-	-	N\A	N\A	0.4000	0.4000	-	-
69	-	-	N\A	N\A	0.4000	0.4000	-	-
70	-	-	N\A	N\A	1.0000	1.0000	-	-
71	-	-	N\A	N\A	1.0000	1.0000	-	-
72	-	-	N\A	N\A	1.0000	1.0000	-	-
73	-	-	N\A	N\A	1.0000	1.0000	-	-
74	-	-	N\A	N\A	1.0000	1.0000	-	-
Totals	195	1,630	0.1196	0.1189	0.1882	0.1632	307	266
75 & Over	-	-	N\A	N\A			-	-
Total	195	1,630	0.1196	0.1189			307	266

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.1196	0.1632
Previous Investigation Results		
2006-2008	0.1487	0.1766
2003-2005	0.1372	0.1606
2000-2002	0.1870	0.1863
1997-1999	0.1989	0.1679

**EXECUTIVE AND ELECTIVE
NORMAL RETIREMENT EXPERIENCE**

Male and Female Age-Based Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
57	4	39	0.1026	0.0288	0.1700	0.1500	6	5
58	4	38	0.1053	0.0748	0.1700	0.1500	6	6
59	6	35	0.1714	0.1283	0.1700	0.1500	6	5
60	7	30	0.2333	0.0938	0.1100	0.1000	4	3
61	9	36	0.2500	0.1489	0.1100	0.1300	5	5
62	21	163	0.1288	0.1580	0.1100	0.1300	18	21
63	18	156	0.1154	0.1256	0.1100	0.1200	17	19
64	12	137	0.0876	0.1231	0.0800	0.1200	11	16
65	17	115	0.1478	0.1522	0.0800	0.1200	9	14
66	15	93	0.1613	0.1336	0.2000	0.2000	19	19
67	17	80	0.2125	0.2979	0.1700	0.1700	14	14
68	4	58	0.0690	0.0000	0.1700	0.1500	10	9
69	5	51	0.0980	0.1437	0.1700	0.1500	9	8
70	3	47	0.0638	0.1236	0.1500	0.1300	7	6
71	4	39	0.1026	0.1138	0.1500	0.1300	6	5
72	6	37	0.1622	0.5774	0.1500	0.2500	6	9
73	2	19	0.1053	0.0000	0.1000	0.1000	2	2
74	2	20	0.1000	0.0000	0.1000	0.1000	2	2
Totals	160	1,193	0.1341	0.1515	0.1312	0.1408	157	168
75 & Over	12	122	0.0984	0.0666			122	122
Total	172	1,315	0.1308	0.1470			279	290

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.1341	0.1408
Previous Investigation Results		
2006-2008	0.0892	0.1278
2003-2005	0.1204	0.1299
2000-2002	0.0972	0.1769
1997-1999	0.1221	0.1769

EXECUTIVE AND ELECTIVE EARLY RETIREMENT EXPERIENCE

Male and Female Age-Based Early Retirement Experience

Age	Retirements	Exposure	Population Weighted Rates	Liability Weighted Rates*	Sample Rates		Expected Retirements	
					Present	Proposed	Present	Proposed
55	3	132	0.0227	0.0103	0.0550	0.0450	7	6
56	7	134	0.0522	0.0163	0.0550	0.0450	7	6
57	4	118	0.0339	0.0058	0.0550	0.0450	6	5
58	9	123	0.0732	0.0750	0.0550	0.0450	7	6
59	4	126	0.0317	0.0216	0.0550	0.0450	7	6
60	8	132	0.0606	0.0266	0.0550	0.0450	7	6
61	8	113	0.0708	0.1096	0.0550	0.0450	6	5
62	-	26	0.0000	0.0000	0.0550	0.0450	1	1
63	1	26	0.0385	0.1781	0.0550	0.0450	1	1
64	-	28	0.0000	0.0000	0.0550	0.0450	2	1
Totals	44	958	0.0459	0.0391	0.0532	0.0449	51	43

* Based on 2009 and 2010 retirements only.

	<u>Actual</u>	<u>Proposed</u>
Current	0.0459	0.0449
Previous Investigation Results		
2006-2008	0.0517	0.0537
2003-2005	0.0595	0.0551
2000-2002	0.0411	0.0437
1997-1999	0.0490	0.0600

SECTION E

MORTALITY EXPERIENCE

**MALE RETIRED-LIFE MORTALITY EXPERIENCE
(NORMAL RETIREMENT, ORIGINAL ANNUITANTS ONLY)**

Age	Life Years Exposure	Post - Retirement Death			Post - Retirement Death Rates			A/E Ratio	
		Actual Experience	Expected		Actual	Expected		Present	Proposed
			Present	Proposed		Present	Proposed		
55-59	18,668	93.0	96.0	93.0	0.0050	0.0051	0.0050	0.9688	1.0000
60-64	41,630	277.0	294.0	278.0	0.0067	0.0071	0.0067	0.9422	0.9964
65-69	41,395	481.0	488.0	447.0	0.0116	0.0118	0.0108	0.9857	1.0761
70-74	32,286	616.0	665.0	576.0	0.0191	0.0206	0.0178	0.9263	1.0694
75-79	25,542	849.0	984.0	798.0	0.0332	0.0385	0.0312	0.8628	1.0639
80-84	18,309	1,159.0	1,217.0	1,063.0	0.0633	0.0665	0.0581	0.9523	1.0903
85-89	9,957	1,160.0	1,114.0	1,039.0	0.1165	0.1119	0.1043	1.0413	1.1165
90-94	3,504	658.0	633.0	608.0	0.1878	0.1807	0.1735	1.0395	1.0822
95-99	743	248.0	186.0	216.0	0.3338	0.2503	0.2907	1.3333	1.1481
Totals	194,262	5,551	5,685	5,125	0.0286	0.0293	0.0264	0.9764	1.0831

Current	0.0286	0.0264
Previous Investigation Results		
2006-2008	0.0280	0.0281
2003-2005	0.0296	0.0296
2000-2002	0.0322	0.0356
1997-1999	0.0352	
1994-1996	0.0375	
1991-1993	0.0365	
1988-1990	0.0372	
1985-1987	0.0393	
1982-1984	0.0430	
1979-1981	0.0489	

**FEMALE RETIRED-LIFE MORTALITY EXPERIENCE
(NORMAL RETIREMENT, ORIGINAL ANNUITANTS ONLY)**

Age	Life Years Exposure	Post - Retirement Death			Post - Retirement Death Rates			A/E Ratio	
		Actual Experience	Expected		Actual	Expected		Present	Proposed
			Present	Proposed		Present	Proposed		
55-59	23,575	68	86.0	70.0	0.0029	0.0036	0.0030	0.7907	0.9714
60-64	51,962	227	268.0	219.0	0.0044	0.0052	0.0042	0.8470	1.0365
65-69	49,178	339	385.0	325.0	0.0069	0.0078	0.0066	0.8805	1.0431
70-74	38,804	478	531.0	453.0	0.0123	0.0137	0.0117	0.9002	1.0552
75-79	30,580	688	742.0	656.0	0.0225	0.0243	0.0215	0.9272	1.0488
80-84	24,795	1,058	1,097.0	1,010.0	0.0427	0.0442	0.0407	0.9644	1.0475
85-89	17,003	1,503	1,410.0	1,368.0	0.0884	0.0829	0.0805	1.0660	1.0987
90-94	8,829	1,285	1,275.0	1,209.0	0.1455	0.1444	0.1369	1.0078	1.0629
95-99	2,593	697	586.0	613.0	0.2688	0.2260	0.2364	1.1894	1.1370
Totals	247,319	6,343	6,380	5,923.0	0.0256	0.0258	0.0239	0.9942	1.0709

Current	0.0256	0.0239
Previous Investigation Results		
2006-2008	0.0267	0.0267
2003-2005	0.0271	0.0271
2000-2002	0.0320	0.0314
1997-1999	0.0330	
1994-1996	0.0321	
1991-1993	0.0302	
1988-1990	0.0295	
1985-1987	0.0284	
1982-1984	0.0267	
1979-1981	0.0273	

**MALE RETIRED-LIFE MORTALITY EXPERIENCE
(DISABLED RETIREMENT, ORIGINAL ANNUITANTS ONLY)**

Age	Life Years Exposure	Post - Retirement Death			Post - Retirement Death Rates			A/E Ratio	
		Actual Experience	Expected		Actual	Expected		Present	Proposed
			Present	Proposed		Present	Proposed		
50-54	688	25	6.0	4.0	0.0363	0.0080	0.0056	4.1667	6.2500
55-59	1,359	35	18.0	11.0	0.0258	0.0132	0.0083	1.9444	3.1818
60-64	1,619	50	29.0	23.0	0.0309	0.0178	0.0142	1.7241	2.1739
65-69	1,379	42	43.0	33.0	0.0305	0.0313	0.0238	0.9767	1.2727
70-74	1,112	52	60.0	48.0	0.0468	0.0535	0.0430	0.8667	1.0833
75-79	857	74	88.0	69.0	0.0863	0.1028	0.0808	0.8409	1.0725
80-84	506	52	90.0	71.0	0.1028	0.1780	0.1410	0.5778	0.7324
85-89	243	41	74.0	57.0	0.1687	0.3062	0.2364	0.5541	0.7193
90-94	37	5	19.0	13.0	0.1351	0.5082	0.3516	0.2632	0.3846
95-99	6	1	4.0	2.0	0.1667	0.6991	0.3920	0.2500	0.5000
100 & Up	8	0	7.0	3.0	0.0000	0.9092	0.4000	0.0000	0.0000
Totals	7,814	377	438.0	334.0	0.0482	0.0561	0.0427	0.8607	1.1287

**FEMALE RETIRED-LIFE MORTALITY EXPERIENCE
(DISABLED RETIREMENT, ORIGINAL ANNUITANTS ONLY)**

Age	Life Years Exposure	Post - Retirement Death			Post - Retirement Death Rates			A/E Ratio	
		Actual Experience	Expected		Actual	Expected		Present	Proposed
			Present	Proposed		Present	Proposed		
50-54	959	15	3.0	3.0	0.0156	0.0034	0.0031	5.0000	5.0000
55-59	1,999	38	14.0	10.0	0.0190	0.0072	0.0048	2.7143	3.8000
60-64	2,233	49	24.0	17.0	0.0219	0.0106	0.0077	2.0417	2.8824
65-69	1,784	41	28.0	25.0	0.0230	0.0159	0.0139	1.4643	1.6400
70-74	1,553	37	44.0	40.0	0.0238	0.0286	0.0256	0.8409	0.9250
75-79	1,167	54	60.0	58.0	0.0463	0.0511	0.0494	0.9000	0.9310
80-84	850	55	79.0	83.0	0.0647	0.0927	0.0977	0.6962	0.6627
85-89	462	53	80.0	76.0	0.1147	0.1739	0.1645	0.6625	0.6974
90-94	164	31	51.0	45.0	0.1890	0.3135	0.2768	0.6078	0.6889
95-99	25	13	12.0	8.0	0.5200	0.4857	0.3158	1.0833	1.6250
100 & Up	15	2	12.0	5.0	0.1333	0.7937	0.3426	0.1667	0.4000
Totals	11,211	388	407.0	370.0	0.0346	0.0363	0.0330	0.9533	1.0486

MALE DEATH-IN-SERVICE EXPERIENCE

Age	Deaths	Exposure	Crude Rates	Sample Rates*		Expected Deaths	
				Old	New	Old	New
Under 20	-	174	0.0000	0.0002	0.0001	-	-
20-24	3	5,863	0.0005	0.0003	0.0002	2	1
25-29	6	21,715	0.0003	0.0003	0.0002	7	4
30-34	12	29,140	0.0004	0.0004	0.0003	11	9
35-39	11	36,981	0.0003	0.0004	0.0005	15	17
40-44	15	40,000	0.0004	0.0006	0.0006	23	24
45-49	50	46,387	0.0011	0.0009	0.0008	41	38
50-54	85	50,595	0.0017	0.0015	0.0014	77	71
55-59	104	41,934	0.0025	0.0025	0.0027	102	109
60-64	74	17,826	0.0042	0.0033	0.0035	60	62
65-69	33	4,777	0.0069	0.0059	0.0060	27	27
70-74	26	1,750	0.0149	0.0100	0.0097	17	17
75 and over	19	890	0.0213	0.0193	0.0170	19	18
Totals	438	298,032	0.0015	0.0013	0.0013	401	397

* Sample rates are taken from midpoint of age group.

FEMALE DEATH-IN-SERVICE EXPERIENCE

Age	Deaths	Exposure	Crude Rates	Sample Rates*		Expected Deaths	
				Old	New	Old	New
Under 20	-	445	0.0000	0.0001	0.0001	-	-
20-24	2	10,694	0.0002	0.0001	0.0001	1	1
25-29	2	38,573	0.0001	0.0001	0.0001	4	4
30-34	4	44,157	0.0001	0.0002	0.0002	7	8
35-39	14	53,793	0.0003	0.0002	0.0003	12	14
40-44	31	65,189	0.0005	0.0003	0.0004	23	26
45-49	72	79,326	0.0009	0.0005	0.0006	40	48
50-54	61	84,179	0.0007	0.0008	0.0009	70	81
55-59	104	69,633	0.0015	0.0017	0.0016	115	107
60-64	76	28,470	0.0027	0.0025	0.0023	70	63
65-69	22	6,762	0.0033	0.0038	0.0036	25	23
70-74	11	1,937	0.0057	0.0068	0.0064	13	12
75 and over	11	790	0.0139	0.0122	0.0116	10	10
Totals	410	483,948	0.0008	0.0008	0.0008	390	397

* Sample rates are taken from midpoint of age group.

SECTION F

COMPLETE LISTS OF PROPOSED DECREMENT ASSUMPTIONS

**ACTUARIAL ASSUMPTIONS
BASED ON 2009-2011 EXPERIENCE STUDY**

Select and Ultimate Withdrawal

Age	Service	% of Active Participants Withdrawing								
		General		Public Schools		University		Protective		Executive & Elected
		Male	Female	Male	Female	Male	Female	With SS	Without SS	
Under 30	0-1	17.5%	19.5%	17.7%	15.0%	18.3%	22.0%	15.0%	4.0%	20.0%
	1-2	13.0%	13.5%	11.4%	10.5%	15.0%	15.0%	7.0%	3.5%	14.0%
	2-3	8.5%	10.0%	7.3%	7.1%	11.3%	12.5%	4.3%	2.1%	14.0%
	3-4	6.8%	8.0%	5.2%	5.5%	9.6%	10.0%	3.8%	1.3%	10.0%
	4-5	6.0%	7.4%	3.9%	4.6%	8.5%	9.5%	3.4%	1.2%	10.0%
	5-6	4.5%	6.0%	3.0%	4.0%	7.5%	8.0%	2.6%	1.1%	9.0%
	6-7	4.0%	5.0%	2.8%	3.5%	7.0%	7.0%	2.5%	1.0%	8.5%
	7-8	3.5%	4.5%	2.5%	3.0%	5.5%	6.0%	2.3%	0.9%	8.0%
	8-9	3.0%	4.0%	2.0%	2.5%	4.3%	5.0%	2.0%	0.8%	7.5%
	9-10	2.5%	3.8%	1.8%	2.3%	3.2%	4.0%	1.7%	0.7%	7.0%
	10 & Up	2.5%	3.3%	1.4%	1.9%	3.2%	4.5%	1.6%	0.7%	5.1%
	31	2.5%	3.2%	1.3%	1.8%	3.2%	4.4%	1.5%	0.7%	4.8%
	32	2.5%	3.0%	1.2%	1.7%	3.2%	4.2%	1.5%	0.7%	4.5%
	33	2.4%	2.9%	1.2%	1.6%	3.2%	4.1%	1.5%	0.7%	4.4%
	34	2.2%	2.8%	1.2%	1.5%	3.2%	4.1%	1.4%	0.7%	4.3%
	35	2.1%	2.8%	1.2%	1.4%	3.1%	4.0%	1.4%	0.7%	4.2%
	36	1.9%	2.7%	1.2%	1.3%	3.1%	4.0%	1.3%	0.7%	4.1%
	37	1.8%	2.6%	1.2%	1.2%	3.1%	3.9%	1.3%	0.7%	4.0%
	38	1.7%	2.5%	1.1%	1.2%	3.0%	3.7%	1.3%	0.6%	3.9%
	39	1.7%	2.4%	1.1%	1.1%	2.9%	3.6%	1.2%	0.6%	3.8%
	40	1.6%	2.2%	1.1%	1.1%	2.7%	3.4%	1.2%	0.6%	3.7%
	41	1.6%	2.1%	1.1%	1.0%	2.6%	3.3%	1.1%	0.6%	3.6%
	42	1.5%	2.0%	1.1%	1.0%	2.5%	3.1%	1.1%	0.6%	3.5%
	43	1.4%	1.9%	1.0%	0.9%	2.4%	2.9%	1.1%	0.6%	3.4%
	44	1.4%	1.9%	1.0%	0.9%	2.2%	2.8%	1.1%	0.6%	3.4%
	45	1.3%	1.8%	1.0%	0.9%	2.1%	2.6%	1.1%	0.6%	3.3%
	46	1.3%	1.8%	1.0%	0.9%	1.9%	2.5%	1.1%	0.6%	3.3%
47	1.2%	1.7%	1.0%	0.9%	1.8%	2.3%	1.1%	0.6%	3.2%	
48	1.2%	1.7%	1.0%	0.9%	1.7%	2.1%	1.0%	0.5%	3.2%	
49	1.2%	1.6%	1.0%	0.9%	1.6%	2.0%	1.0%	0.5%	3.1%	
50	1.1%	1.6%	1.0%	0.9%	1.6%	1.8%	1.0%	0.5%	3.1%	
51	1.1%	1.5%	1.0%	0.9%	1.5%	1.7%	1.0%	0.5%	3.0%	
52	1.1%	1.5%	1.0%	0.9%	1.4%	1.5%	1.0%	0.5%	3.0%	
53	1.1%	1.5%	1.0%	0.9%	1.4%	1.5%	1.0%	0.5%	3.0%	
54	1.1%	1.5%	1.0%	0.9%	1.4%	1.5%	1.0%	0.5%	3.0%	

**ACTUARIAL ASSUMPTIONS
BASED ON 2009-201 EXPERIENCE STUDY**

Disability Rates

Age	% of Active Participants Withdrawing								Executive & Elected
	General		Public Schools		University		Protective		
	Male	Female	Male	Female	Male	Female	With SS	Without SS	
20	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
21	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
22	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
23	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
24	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
25	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
26	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
27	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
28	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
29	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
30	0.01%	0.03%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
31	0.01%	0.03%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
32	0.01%	0.03%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%	0.00%
33	0.01%	0.03%	0.01%	0.01%	0.01%	0.02%	0.02%	0.04%	0.00%
34	0.01%	0.04%	0.01%	0.01%	0.01%	0.02%	0.02%	0.04%	0.00%
35	0.01%	0.04%	0.01%	0.01%	0.01%	0.03%	0.02%	0.04%	0.01%
36	0.01%	0.04%	0.01%	0.01%	0.01%	0.03%	0.03%	0.05%	0.01%
37	0.02%	0.04%	0.01%	0.01%	0.01%	0.04%	0.03%	0.05%	0.01%
38	0.02%	0.04%	0.01%	0.01%	0.01%	0.04%	0.03%	0.05%	0.01%
39	0.03%	0.05%	0.02%	0.02%	0.01%	0.04%	0.03%	0.06%	0.01%
40	0.04%	0.05%	0.02%	0.02%	0.01%	0.04%	0.03%	0.07%	0.01%
41	0.05%	0.06%	0.02%	0.03%	0.01%	0.04%	0.03%	0.07%	0.01%
42	0.05%	0.06%	0.02%	0.03%	0.01%	0.05%	0.04%	0.08%	0.01%
43	0.06%	0.06%	0.03%	0.05%	0.02%	0.04%	0.04%	0.10%	0.01%
44	0.07%	0.07%	0.04%	0.05%	0.02%	0.04%	0.04%	0.11%	0.01%
45	0.07%	0.07%	0.04%	0.06%	0.02%	0.04%	0.05%	0.13%	0.01%
46	0.07%	0.08%	0.05%	0.08%	0.03%	0.04%	0.05%	0.14%	0.02%
47	0.07%	0.08%	0.05%	0.10%	0.03%	0.04%	0.06%	0.16%	0.02%
48	0.10%	0.09%	0.06%	0.10%	0.03%	0.05%	0.06%	0.35%	0.02%
49	0.13%	0.10%	0.08%	0.11%	0.03%	0.06%	0.07%	0.54%	0.02%
50	0.15%	0.11%	0.11%	0.12%	0.04%	0.07%	0.08%	0.74%	0.02%
51	0.17%	0.12%	0.14%	0.13%	0.04%	0.08%	0.08%	0.93%	0.03%
52	0.20%	0.13%	0.18%	0.14%	0.05%	0.09%	0.09%	1.12%	0.03%
53	0.23%	0.15%	0.18%	0.14%	0.07%	0.09%	0.46%	0.93%	0.05%
54	0.25%	0.18%	0.19%	0.16%	0.09%	0.10%	0.84%	0.74%	0.08%
55	0.29%	0.20%	0.21%	0.17%	0.11%	0.10%	1.21%	0.54%	0.09%
56	0.32%	0.22%	0.22%	0.19%	0.13%	0.11%	1.59%	0.35%	0.11%
57	0.35%	0.25%	0.23%	0.21%	0.15%	0.12%	1.96%	0.16%	0.12%
58	0.39%	0.27%	0.27%	0.23%	0.15%	0.13%	1.99%	0.16%	0.12%
59	0.43%	0.27%	0.31%	0.24%	0.14%	0.14%	2.02%	0.16%	0.11%
60	0.51%	0.29%	0.34%	0.25%	0.14%	0.15%	2.04%	0.16%	0.11%

**ACTUARIAL ASSUMPTIONS
BASED ON 2009-2011 EXPERIENCE STUDY**

Salary Scale – Service Based Rates

Service	% Merit Increases in Salaries Next Year					
	General (Not Including Schools)	University Teachers	Public School Teachers	Protective With SS	Protective Without SS	Executive & Elected
1	3.5%	3.2%	5.8%	4.8%	5.5%	2.0%
2	3.5%	3.2%	5.8%	4.8%	5.5%	2.0%
3	3.1%	3.1%	5.4%	4.1%	4.7%	2.0%
4	2.8%	3.0%	5.1%	3.5%	3.8%	1.9%
5	2.5%	2.9%	4.7%	2.8%	3.0%	1.9%
6	2.2%	2.8%	4.4%	2.2%	2.1%	1.8%
7	1.9%	2.8%	4.0%	1.5%	1.3%	1.8%
8	1.8%	2.6%	3.7%	1.4%	1.2%	1.7%
9	1.6%	2.5%	3.5%	1.3%	1.0%	1.7%
10	1.5%	2.4%	3.2%	1.1%	0.9%	1.6%
11	1.4%	2.2%	3.0%	1.0%	0.7%	1.6%
12	1.3%	2.1%	2.7%	0.9%	0.6%	1.5%
13	1.2%	2.0%	2.4%	0.9%	0.6%	1.4%
14	1.2%	1.9%	2.1%	0.9%	0.6%	1.3%
15	1.1%	1.7%	1.8%	0.8%	0.5%	1.2%
16	1.1%	1.6%	1.5%	0.8%	0.5%	1.1%
17	1.0%	1.5%	1.3%	0.8%	0.5%	1.0%
18	1.0%	1.4%	1.1%	0.8%	0.5%	0.9%
19	0.9%	1.3%	1.0%	0.8%	0.5%	0.8%
20	0.9%	1.1%	0.8%	0.7%	0.4%	0.7%
21	0.8%	1.0%	0.7%	0.7%	0.4%	0.6%
22	0.8%	0.9%	0.6%	0.7%	0.4%	0.5%
23	0.7%	0.9%	0.5%	0.7%	0.4%	0.5%
24	0.7%	0.8%	0.4%	0.7%	0.4%	0.5%
25	0.6%	0.8%	0.4%	0.6%	0.3%	0.4%
26	0.6%	0.8%	0.3%	0.6%	0.3%	0.4%
27	0.5%	0.8%	0.3%	0.6%	0.3%	0.4%
28	0.5%	0.7%	0.2%	0.6%	0.3%	0.4%
29	0.4%	0.7%	0.2%	0.6%	0.3%	0.4%
30	0.4%	0.6%	0.2%	0.5%	0.2%	0.3%
31	0.3%	0.6%	0.2%	0.5%	0.2%	0.3%
32	0.3%	0.5%	0.2%	0.5%	0.2%	0.3%
33	0.3%	0.5%	0.2%	0.5%	0.2%	0.3%
34	0.3%	0.4%	0.2%	0.5%	0.2%	0.3%
35	0.2%	0.4%	0.1%	0.4%	0.1%	0.2%
36	0.2%	0.4%	0.1%	0.4%	0.1%	0.2%
37	0.2%	0.4%	0.1%	0.4%	0.1%	0.2%
38	0.2%	0.3%	0.1%	0.4%	0.1%	0.2%
39	0.2%	0.3%	0.1%	0.3%	0.1%	0.2%
40	0.1%	0.3%	0.1%	0.3%	0.1%	0.1%

**ACTUARIAL ASSUMPTIONS
BASED ON 2009-2011 EXPERIENCE STUDY**

Normal Retirement Pattern

Age	% of Active Participants Retiring								Executive & Elected
	General		Public Schools		University		Protective		
	Male	Female	Male	Female	Male	Female	With SS *	Without SS *	
50	%						6%	4%	
51							7%	4%	
52							8%	5%	
53							23%	17%	
54							18%	25%	
55							17%	21%	
56							16%	27%	
57	20%	17%	40%	27%	13%	14%	16%	30%	5%
58	20%	17%	35%	27%	13%	14%	16%	30%	5%
59	20%	17%	25%	27%	13%	13%	16%	30%	5%
60	20%	20%	28%	27%	13%	13%	18%	26%	5%
61	20%	20%	25%	27%	13%	19%	18%	15%	5%
62	27%	27%	36%	34%	15%	19%	22%	20%	5%
63	32%	28%	32%	27%	15%	19%	29%	40%	5%
64	24%	25%	24%	23%	15%	18%	16%	40%	5%
65	24%	25%	24%	28%	15%	22%	30%	40%	5%
66	30%	29%	25%	30%	20%	23%	20%	40%	5%
67	24%	20%	24%	28%	18%	17%	15%	40%	5%
68	17%	18%	24%	26%	18%	17%	25%	40%	5%
69	17%	18%	24%	20%	18%	17%	20%	40%	5%
70	17%	18%	20%	20%	20%	20%	100%	100%	5%
71	17%	18%	20%	20%	20%	20%	100%	100%	100%
72	17%	15%	20%	20%	15%	20%	100%	100%	100%
73	17%	15%	20%	20%	15%	20%	100%	100%	100%
74	17%	15%	20%	20%	15%	20%	100%	100%	100%
75	100%	100%	100%	100%	100%	100%	100%	100%	100%

* Includes Early Retirement.

**ACTUARIAL ASSUMPTIONS
BASED ON 2009-2011 EXPERIENCE STUDY**

Early Retirement Pattern

Age	% of Active Participants Retiring						Executive & Elected
	General		Public Schools		University		
	Male	Female	Male	Female	Male	Female	
55	8%	6%	12%	11%	5%	6%	5%
56	8%	6%	12%	11%	3%	6%	5%
57	4%	4%	12%	11%	2%	4%	5%
58	5%	6%	12%	11%	3%	4%	5%
59	6%	5%	12%	11%	4%	7%	5%
60	8%	8%	12%	15%	4%	7%	5%
61	8%	7%	12%	15%	8%	8%	5%
62	14%	15%	20%	20%	7%	10%	5%
63	16%	15%	20%	20%	8%	10%	5%
64	17%	15%	20%	20%	8%	13%	5%

**ACTUARIAL ASSUMPTIONS
BASED ON 2009-2011 EXPERIENCE STUDY**

**Post-Retirement
Mortality Rates – Healthy Lives**

Age	% Dying Next Year		Age	% Dying Next Year		Age	% Dying Next Year	
	Male	Female		Male	Female		Male	Female
20	0.0281%	0.0161%	60	0.5721%	0.3519%	100	35.5859%	29.5648%
21	0.0294%	0.0160%	61	0.6033%	0.3805%	101	36.2235%	30.1294%
22	0.0303%	0.0161%	62	0.6360%	0.4113%	102	36.7983%	30.6924%
23	0.0316%	0.0165%	63	0.7074%	0.4506%	103	38.1129%	31.4210%
24	0.0325%	0.0170%	64	0.7869%	0.4936%	104	39.0047%	31.8527%
25	0.0335%	0.0177%	65	0.8752%	0.5408%	105	39.7886%	32.6189%
26	0.0351%	0.0187%	66	0.9736%	0.5923%	106	40.0000%	33.0147%
27	0.0358%	0.0195%	67	1.0829%	0.6489%	107	40.0000%	33.5879%
28	0.0368%	0.0205%	68	1.1897%	0.7288%	108	40.0000%	34.2569%
29	0.0386%	0.0217%	69	1.3138%	0.8186%	109	40.0000%	35.1544%
30	0.0416%	0.0235%	70	1.4508%	0.9194%	110	40.0000%	36.4617%
31	0.0468%	0.0279%	71	1.6020%	1.0326%	111	40.0000%	37.6246%
32	0.0527%	0.0318%	72	1.7690%	1.1596%	112	40.0000%	38.6015%
33	0.0591%	0.0355%	73	1.9768%	1.3081%	113	40.0000%	39.3507%
34	0.0658%	0.0387%	74	2.2089%	1.4756%	114	40.0000%	39.8308%
35	0.0724%	0.0419%	75	2.4683%	1.6645%	115	40.0000%	40.0000%
36	0.0788%	0.0449%	76	2.7581%	1.8777%	116	40.0000%	40.0000%
37	0.0847%	0.0479%	77	3.0820%	2.1180%	117	40.0000%	40.0000%
38	0.0894%	0.0511%	78	3.5058%	2.4073%	118	40.0000%	40.0000%
39	0.0938%	0.0549%	79	3.9879%	2.7361%	119	40.0000%	40.0000%
40	0.0981%	0.0598%	80	4.5362%	3.1097%	120	100.0000%	100.0000%
41	0.1027%	0.0655%	81	5.1600%	3.5344%			
42	0.1083%	0.0721%	82	5.8695%	4.0171%			
43	0.1146%	0.0794%	83	6.6311%	4.6470%			
44	0.1220%	0.0872%	84	7.4914%	5.3756%			
45	0.1303%	0.0943%	85	8.4634%	6.2186%			
46	0.1382%	0.1015%	86	9.5615%	7.1938%			
47	0.1469%	0.1090%	87	10.8571%	8.3218%			
48	0.1559%	0.1178%	88	12.0056%	9.1945%			
49	0.1656%	0.1274%	89	13.2754%	10.1588%			
50	0.1756%	0.1391%	90	14.6795%	11.2810%			
51	0.1992%	0.1553%	91	16.2320%	12.5273%			
52	0.2475%	0.1727%	92	17.9485%	13.9110%			
53	0.2977%	0.1927%	93	20.2386%	15.8066%			
54	0.3479%	0.2149%	94	22.8206%	17.9603%			
55	0.4050%	0.2445%	95	25.7320%	20.4074%			
56	0.4483%	0.2668%	96	29.0147%	23.1877%			
57	0.4883%	0.2848%	97	31.8149%	25.3666%			
58	0.5148%	0.3011%	98	33.5393%	27.1352%			
59	0.5427%	0.3255%	99	34.6327%	28.3281%			

**ACTUARIAL ASSUMPTIONS
BASED ON 2009-2011 EXPERIENCE STUDY**

Mortality Rates – Disabled Lives

Age	% Dying Next Year		Age	% Dying Next Year		Age	% Dying Next Year	
	Male	Female		Male	Female		Male	Female
20	0.0363%	0.0190%	60	1.1620%	0.6292%	100	40.0000%	33.0147%
21	0.0374%	0.0198%	61	1.2831%	0.6893%	101	40.0000%	33.5879%
22	0.0392%	0.0208%	62	1.4169%	0.7742%	102	40.0000%	34.2569%
23	0.0422%	0.0220%	63	1.5647%	0.8695%	103	40.0000%	35.1544%
24	0.0475%	0.0239%	64	1.7278%	0.9766%	104	40.0000%	36.4617%
25	0.0535%	0.0283%	65	1.9079%	1.0968%	105	40.0000%	37.6246%
26	0.0600%	0.0323%	66	2.1320%	1.2318%	106	40.0000%	38.6015%
27	0.0668%	0.0360%	67	2.3823%	1.3895%	107	40.0000%	39.3507%
28	0.0735%	0.0393%	68	2.6621%	1.5674%	108	40.0000%	39.8308%
29	0.0800%	0.0425%	69	2.9746%	1.7681%	109	100.0000%	100.0000%
30	0.0860%	0.0456%	70	3.3239%	1.9945%	110	100.0000%	100.0000%
31	0.0908%	0.0486%	71	3.7810%	2.2498%	111	100.0000%	100.0000%
32	0.0952%	0.0519%	72	4.3009%	2.5571%	112	100.0000%	100.0000%
33	0.0996%	0.0557%	73	4.8923%	2.9063%	113	100.0000%	100.0000%
34	0.1043%	0.0607%	74	5.5650%	3.3032%	114	100.0000%	100.0000%
35	0.1099%	0.0665%	75	6.3302%	3.7543%	115	100.0000%	100.0000%
36	0.1163%	0.0732%	76	7.1516%	4.2670%	116	100.0000%	100.0000%
37	0.1238%	0.0806%	77	8.0795%	4.9361%	117	100.0000%	100.0000%
38	0.1323%	0.0885%	78	9.1278%	5.7101%	118	100.0000%	100.0000%
39	0.1403%	0.0957%	79	10.3121%	6.6055%	119	100.0000%	100.0000%
40	0.1491%	0.1030%	80	11.6501%	7.6414%	120	100.0000%	100.0000%
41	0.1583%	0.1106%	81	12.8173%	8.8396%			
42	0.1681%	0.1196%	82	14.1014%	9.7666%			
43	0.1783%	0.1293%	83	15.5142%	10.7909%			
44	0.2022%	0.1412%	84	17.0685%	11.9225%			
45	0.2512%	0.1576%	85	18.7785%	13.1729%			
46	0.3022%	0.1753%	86	21.0679%	14.5543%			
47	0.3532%	0.1956%	87	23.6364%	16.4543%			
48	0.4111%	0.2192%	88	26.5181%	18.6023%			
49	0.4551%	0.2507%	89	29.7511%	21.0308%			
50	0.4982%	0.2750%	90	32.4589%	23.7762%			
51	0.5279%	0.2950%	91	34.2182%	25.8801%			
52	0.5593%	0.3134%	92	35.1569%	27.6845%			
53	0.5926%	0.3405%	93	36.1245%	28.7569%			
54	0.6280%	0.3700%	94	36.5879%	30.0123%			
55	0.6654%	0.4021%	95	37.1685%	30.4325%			
56	0.7439%	0.4369%	96	38.3040%	31.0012%			
57	0.8316%	0.4786%	97	39.2003%	31.5786%			
58	0.9297%	0.5243%	98	39.7886%	32.0124%			
59	1.0394%	0.5744%	99	40.0000%	32.6189%			

**ACTUARIAL ASSUMPTIONS
BASED ON 2009-2011 EXPERIENCE STUDY**

Mortality Rates – Death-in-Service

Age	% Dying Next Year		Age	% Dying Next Year		Age	% Dying Next Year	
	Male	Female		Male	Female		Male	Female
20	0.0155%	0.0089%	60	0.3147%	0.1935%	100	19.5722%	16.2606%
21	0.0162%	0.0088%	61	0.3318%	0.2093%	101	19.9229%	16.5712%
22	0.0167%	0.0089%	62	0.3498%	0.2262%	102	20.2391%	16.8808%
23	0.0174%	0.0091%	63	0.3891%	0.2478%	103	20.9621%	17.2816%
24	0.0179%	0.0094%	64	0.4328%	0.2715%	104	21.4526%	17.5190%
25	0.0184%	0.0097%	65	0.4814%	0.2974%	105	21.8837%	17.9404%
26	0.0193%	0.0103%	66	0.5355%	0.3258%	106	22.0000%	18.1581%
27	0.0197%	0.0107%	67	0.5956%	0.3569%	107	22.0000%	18.4733%
28	0.0202%	0.0113%	68	0.6543%	0.4008%	108	22.0000%	18.8413%
29	0.0212%	0.0119%	69	0.7226%	0.4502%	109	22.0000%	19.3349%
30	0.0229%	0.0129%	70	0.7979%	0.5057%	110	22.0000%	20.0539%
31	0.0257%	0.0153%	71	0.8811%	0.5679%	111	22.0000%	20.6935%
32	0.0290%	0.0175%	72	0.9730%	0.6378%	112	22.0000%	21.2308%
33	0.0325%	0.0195%	73	1.0872%	0.7195%	113	22.0000%	21.6429%
34	0.0362%	0.0213%	74	1.2149%	0.8116%	114	22.0000%	21.9069%
35	0.0398%	0.0230%	75	1.3576%	0.9155%	115	22.0000%	22.0000%
36	0.0433%	0.0247%	76	1.5170%	1.0327%	116	22.0000%	22.0000%
37	0.0466%	0.0263%	77	1.6951%	1.1649%	117	22.0000%	22.0000%
38	0.0492%	0.0281%	78	1.9282%	1.3240%	118	22.0000%	22.0000%
39	0.0516%	0.0302%	79	2.1933%	1.5049%	119	22.0000%	22.0000%
40	0.0540%	0.0329%	80	2.4949%	1.7103%	120	100.0000%	100.0000%
41	0.0565%	0.0360%	81	2.8380%	1.9439%			
42	0.0596%	0.0397%	82	3.2282%	2.2094%			
43	0.0630%	0.0437%	83	3.6471%	2.5559%			
44	0.0671%	0.0480%	84	4.1203%	2.9566%			
45	0.0717%	0.0519%	85	4.6549%	3.4202%			
46	0.0760%	0.0558%	86	5.2588%	3.9566%			
47	0.0808%	0.0600%	87	5.9714%	4.5770%			
48	0.0857%	0.0648%	88	6.6031%	5.0570%			
49	0.0911%	0.0701%	89	7.3015%	5.5873%			
50	0.0966%	0.0765%	90	8.0737%	6.2046%			
51	0.1096%	0.0854%	91	8.9276%	6.8900%			
52	0.1361%	0.0950%	92	9.8717%	7.6511%			
53	0.1637%	0.1060%	93	11.1312%	8.6936%			
54	0.1913%	0.1182%	94	12.5513%	9.8782%			
55	0.2228%	0.1345%	95	14.1526%	11.2241%			
56	0.2466%	0.1467%	96	15.9581%	12.7532%			
57	0.2686%	0.1566%	97	17.4982%	13.9516%			
58	0.2831%	0.1656%	98	18.4466%	14.9244%			
59	0.2985%	0.1790%	99	19.0480%	15.5805%			

November 20, 2012

Mr. Bob Conlin
Wisconsin Department of Employee
Trust Funds
801 West Badger Road
Madison, Wisconsin 53707

Re: 2009 – 2011 WRS Experience Study

Dear Bob:

Enclosed are 40 bound color copies and 20 stapled black and white copies of the 2009 – 2011 Wisconsin Retirement System Experience Study.

Sincerely,



Mark Buis, FSA, EA, MAAA

MB:rmn

Enclosures