

UTAH RETIREMENT SYSTEMS
ACTUARIAL EXPERIENCE STUDY
FOR THE FIVE-YEAR PERIOD ENDING DEC. 31, 2013

August 19, 2014

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Subject: Results of 2014 Actuarial Experience Study for URS

We are pleased to present our report on the results of the 2014 Actuarial Experience Study for the Utah Retirement Systems (URS). This report is generally based on plan experience during the five-year period ending December 31, 2013.

This report includes summaries and analysis of the experience data. Based on this analysis, we have recommended a new set of actuarial assumptions to be effective for the January 1, 2014 actuarial valuation. In addition, the report provides the estimated effect on the actuarial liabilities and contribution rates if our recommendations are adopted.

Using the recommended set of actuarial assumptions should present a more accurate portrayal of URS's actuarial condition and should reduce the magnitude of future experience gains and losses.

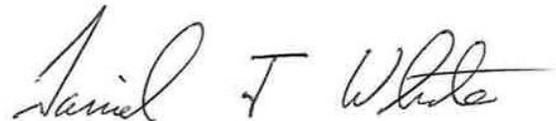
The study was conducted in accordance with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Mr. White meets the Qualification Standards of the American Academy of Actuaries. Both of the undersigned have experience with large public sector retirement systems.

We wish to thank the URS staff for their assistance in providing data for this study.

Sincerely,



Lewis Ward
Consultant



Daniel J. White, FSA, MAAA, EA
Senior Consultant

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SECTION I
EXECUTIVE SUMMARY

Executive Summary

1. Purpose
 - a. Review all current actuarial assumptions and methods and compare to actual recent experience.
 - b. Used data from the five-year period ending December 31, 2013 (data over longer or shorter periods were used, where appropriate).
 - c. Where appropriate, propose modifications to the assumptions to better reflect anticipated experience.

2. Annual (price) inflation rate
 - a. No change to the current 2.75% price inflation assumption.
 - b. Five-year average increase in CPI-U is 2.08%, 10-year average is 2.37%, 20-year average is 2.37%.
 - c. Current bond market predicts inflation of 2.36% over the next 20 years, most investment consultants' capital market assumptions are under 3.00%.
 - d. It is a component of the investment return assumption, salary increase assumption, COLA assumption, and assumed payroll growth rate.

3. Annual investment return rate
 - a. Currently 7.50% per annum.
 - b. Assumed annual rate represents total return, net of administrative and investment expenses.
 - c. Current assumption is composed of a 2.75% inflation rate and a 4.75% net real rate of return.
 - d. Actual market return was 7.30% for last 10 years and 8.99% for the last 25 years. (Returns are not reduced for expenses.)
 - e. Analyzed assumption based on the target asset allocation and forward-looking capital market expectations.
 - f. Probability of meeting or exceeding a 7.50% investment return assumption over the next 20 years is 53%.
 - g. Recommend no change in the net real rate of return component of the return assumption. The nominal investment return assumption would remain at 7.50%.

4. COLA assumption
 - a. Current assumption is 2.75% for funds with a 4.00% annual COLA max and 2.50% for funds with a 2.50% annual COLA max.
 - b. Actual increase based on annual change in price inflation, i.e. CPI-U.
 - c. Recommend no change to the COLA assumption.

5. Salary increase rate
 - a. Separate assumptions currently used for state employees, teachers, and other groups.
 - b. Assumption is composed of wage inflation and service-related increases to capture step-increases, promotions, additional degrees, etc.
 - c. Wage inflation equals price inflation plus “productivity” increases.
 - d. Currently wage inflation assumption is 3.75% for all employee groups (2.75% price inflation plus 1.00% productivity).
 - e. Recommend decreasing wage inflation from 3.75% to 3.50%, by reducing the productivity component by 0.25% to 0.75%.
 - f. Currently use graded scale based on years of service for shorter service employees.
 - g. Recommend minor changes in the service-related increases for the groups.

6. Payroll growth rate
 - a. Rate at which the total payroll is expected to grow each year.
 - b. Does not reflect any anticipated membership growth.
 - c. Current assumed payroll growth rate is 3.50%.
 - d. Only affects contribution rates, not actuarial liabilities.
 - e. Recommend decreasing assumption to 3.25%, in part to reflect the decrease in the productivity component in the wage inflation assumption.

7. Post-retirement mortality for healthy retirees:
 - a. Current table for non-educator males is based on the RP-2000 Combined Mortality Table with White Collar adjustments. The tables for educators (males and females) and non-educator females are based on the mortality experience of Utah educators.
 - b. The current mortality assumption also projects that mortality will improve with Scale AA.
 - c. The experience shows that mortality for all groups except female teachers improved reasonably close to expected improvement under Scale AA. Mortality improved more than expected during the observation period for female educators.
 - d. We are recommending a multiplier adjustment to the mortality assumption for retired female educators. We are not recommending changes to the retiree mortality assumption for the other retiree groups.

8. Disabled mortality:
 - a. Current assumption is based on the RP-2000 mortality tables for Disabled with projected improvement using Scale AA.
 - b. Relatively few disabled retirees compared to the number of service retirees, but analysis shows mortality improvement was consistent as assumed using Scale AA for all disabled member groups.
 - c. Recommend no change to the mortality assumption.

9. Pre-termination mortality:
 - a. Recommended changing the base tables to the RP-2000 Employee mortality tables for males and females to provide a better fit with experience.
 - b. This is a low-significance assumption.

10. Disability incidence:
 - a. Recommend minor adjustments to this assumption.
 - b. Rates for state and local government employees, public safety members, firefighters, and male educators were slightly reduced.

11. Retirement:
 - a. Retirement rates were reduced as a result of the 2011 experience study.
 - b. The experience shows that members are continuing to retire at a later age. The change in the working retiree rules in 2010 contributed to the behavior change during the observation period.
 - c. We are recommending decreasing the overall retirement rates.

12. Termination:
 - a. Used to model the behavior of members leaving their employer prior to being eligible to commence a retirement benefit.
 - b. Experience indicates current assumption understates the rates for female state employees and male teachers.
 - c. Recommend increasing the termination rates for these employee groups. Also recommend minor adjustments for the other groups.

13. Marriage assumption:
 - a. Current assumption: 100% of members are married. Children's benefits are ignored.
 - b. Used in valuing death benefits
 - c. Census data suggest the current assumption is reasonable.

14. Other assumptions: Recommend no changes in any of the other miscellaneous assumptions.

15. Actuarial Cost Method:
 - a. Entry Age Normal actuarial method.
 - b. Most widely used method among large public plans.
 - c. Recommend no change.

16. Actuarial Value of Assets Method:
 - a. Current method phases in differences between actual net market return and assumption over a five-year period, at 20% per year.
 - b. Actuarial value constrained to be between 75% and 125% of market value.

17. Amortization period:
- a. The policy for amortizing the unfunded actuarial accrued liability was reset to a 25-year closed funding period in 2009.
 - b. The amortization period is 20 years as of January 1, 2014.
 - c. The actuarially determined contribution rate will be a floor contribution requirement since the current contribution rates are greater than the actuarially determined contribution rate.
 - d. Recommend the actuarially determined contribution rate be determined in future years using a 20-year period (i.e. 20-year open) for all the funds except the Governors and Legislators Pension Plan.
 - e. Since the Governors and Legislators Pension Plan is funded by direct appropriations rather than through pay-period contributions, we recommend continuing to use a closed amortization period for the next three years and reevaluate the policy during the next experience study.

SECTION II
INTRODUCTION

Introduction

In determining liabilities and contribution rates for retirement plans, actuaries must make assumptions about the future. Among the assumptions that must be made are:

- Retirement rates
- Mortality rates
- Turnover rates
- Disability rates
- Investment return rate
- Salary increase rates
- Inflation rate

For some of these assumptions, such as the mortality rates, past experience provides important evidence about the future. For other assumptions, such as the investment return rate, the link between past and future results is much weaker. In either case, actuaries should review their assumptions periodically and determine whether these assumptions are consistent with actual past experience and with anticipated future experience.

URS has an experience study done every third year. The last one was prepared in conjunction with the January 1, 2011 actuarial valuation. For this experience study, we have reviewed and analyzed URS's data for the five-year period from December 31, 2008 through December 31, 2013. Note that the first two years, calendar years 2009 and 2010, were also included in the prior experience study.

In conducting experience studies, actuaries generally use data over a period of several years. This is necessary in order to gather enough data so that the results are statistically significant. In addition, if the study period is too short, the impact of the current economic conditions may lead to misleading results. It is known, for example, that the health of the general economy can impact salary increase rates and withdrawal rates. Using results gathered during a short-term boom or bust will not be representative of the long-term trends in these assumptions. Also, the adoption of legislation, such as plan improvements or changes in salary schedules, will sometimes cause a short-term distortion in the experience. For example, if an early retirement window or a significant change in benefit provision occurs during the study period, we would usually see a short-term spike in the number of retirements followed by a dearth of retirements for the following two-to-four years. On the other hand, using a much longer period would delay the recognition of real changes that may be occurring, such as mortality improvement or a change in the ages at which members retire. In our view, using a five-year period is reasonable for URS.

In a few instances, such as the analysis of individual salary increases, we looked at data over a longer period, up to ten years, in order to smooth some of the year-to-year fluctuations and in order to increase the soundness of our conclusions. For example, in the case of salary increases, we used data gathered for the last ten years because the results are quite variable from year to year.

In an experience study, we first determine the number of deaths, retirements, etc. that occurred during the period. Then we determine the number that was expected to occur, based on the current actuarial assumptions. The “expected” number is determined by multiplying the probability of the occurrence at the given age, by the “exposures” at that same age. For example, let’s look at the current rate of retirement of 18% at age 55 for local government males. The “exposures” for this assumption in each year is the number of male local government members who are age 55 and eligible for unreduced retirement at that time. The exposures are totaled for all five years of the study. Then we multiply this total by the current 18% retirement rate to determine the number expected to retire (unreduced) at age 55 during the period. Finally, we calculate the A/E ratio, where "A" is the actual number (of retirements, for example) and "E" is the expected number.

If the current assumptions were "perfect", the A/E ratio would be 100%. When the A/E ratio varies significantly from this figure, it is a sign that new assumptions may be needed. Of course, we not only look at the assumptions as a whole, but we also review how well they fit the actual results by sex, by age, and by service. In some cases, we attempt to set our assumptions to produce an A/E ratio somewhat higher or lower than 100%, in order to introduce some conservatism into the results.

If the data leads the actuary to conclude that new tables are needed, the actuary "graduates" or smoothens the results, since the raw results can be quite uneven from age to age or from service to service.

Please bear in mind that, while the recommended assumption set represents our best estimate, there are other reasonable assumption sets that could be supported. Some reasonable assumption sets would show much higher or lower liabilities or costs. For example, while our analysis concludes that the current 3.75% wage inflation assumption should be decreased to 3.50%, others might argue that a different rate is more appropriate.

Some of the recommended assumptions, such as the retirement assumption, are based on the experience of members in the Tier I Retirement Systems. These proposed rates will also be used to determine the liability and contribution rates for the Tier II Hybrid Retirement Systems (with some modifications to the retirement rates to reflect the different eligibility requirements). Based on our professional judgment, we believe these assumptions are reasonable and appropriate for predicting the future behavior of the members in the new Tier II retirement program since no credible experience will be available for many years.

ORGANIZATION OF REPORT

Section III contains our findings and recommendations for each actuarial assumption. The impact of adopting our recommendations on liabilities and contribution rates is shown in Section IV. Section V summarizes the recommended changes. Tables summarizing the analysis of the assumptions are in Section VI. We have attached an appendix summarizing the recommended actuarial assumptions and methods.

Throughout this report, the terms “teachers” and “educators” are meant to be used interchangeably, referring to members of the Contributory and Noncontributory Public Employees Retirement

Systems who are coded as educators in data supplied by URS. The terms “state employees” and “general state employees” refer to all members of the State & School funds in the Public Employees Retirement Systems who are not teachers. (Therefore, this group includes non-professional employees of the school districts.) The terms “local government employees” and “general local government employees” refer to members of the Public Employees Retirement Systems who are members of the Local Government funds. That is, “local government employees” will not be used to refer to members of the Public Safety Retirement Systems or the Firefighters Retirement System, for whom the terms “public safety employees” and “firefighters” are reserved.

SECTION VI EXHIBITS

The exhibits in Section VI should generally be self-explanatory. For example, on page 76, we show the exhibit analyzing the termination rates for male educators. The second column shows the total number of male teachers who terminated during the study period. This excludes members who died, became disabled or retired. Column (3), labeled “Total Count” shows the total exposures. This is the number of males who could have terminated during any of the years. On this exhibit, the exposures exclude anyone eligible for retirement. A member is counted in each year he could have terminated, so the total shown is the total exposures for the five-year period. Column (4) shows the probability of termination based on the raw data. That is, it is the result of dividing the actual number of terminations (col. 2) by the number exposed (col. 3). Column (5) shows the current termination rate and column (6) shows the new recommended termination rate. Columns (7) and (8) show the expected numbers of terminations based on the current and proposed termination assumptions. Columns (9) and (10) show the Actual-to-Expected ratios under the current and proposed termination assumptions.

SECTION III

ANALYSIS OF EXPERIENCE AND RECOMMENDATIONS

Analysis of Experience and Recommendations

This report will begin with a review of the economic assumptions: inflation, the investment return rate, the salary increase assumptions, the payroll growth rate, the COLA assumption, etc. Then the report will cover the demographic assumptions: mortality, disability, termination, retirement, etc. Finally, the report will discuss the recommended actuarial methods.

ECONOMIC ASSUMPTIONS

Actuaries are guided by the Actuarial Standards of Practice (ASOP) adopted by the Actuarial Standards Board (ASB). One of these standards is ASOP No. 27, Selection of Economic Assumptions for Measuring Pension Obligations. This standard provides guidance to actuaries giving advice on selecting economic assumptions for measuring obligations under defined benefit plans. The ASB adopted a revised standard in September 2013. This revised standard is applicable for measurement dates on or after September 30, 2014. However, the recommended assumptions documented herein would be reasonable and comply with all the requirements of the revised standard.

As no one knows what the future holds, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a mixture of past experience, future expectations, and professional judgment. The actuary should consider a number of factors, including the purpose and nature of the measurement, and appropriate recent and long-term historical economic data. However, the standard explicitly advises the actuary not to give undue weight to recent experience.

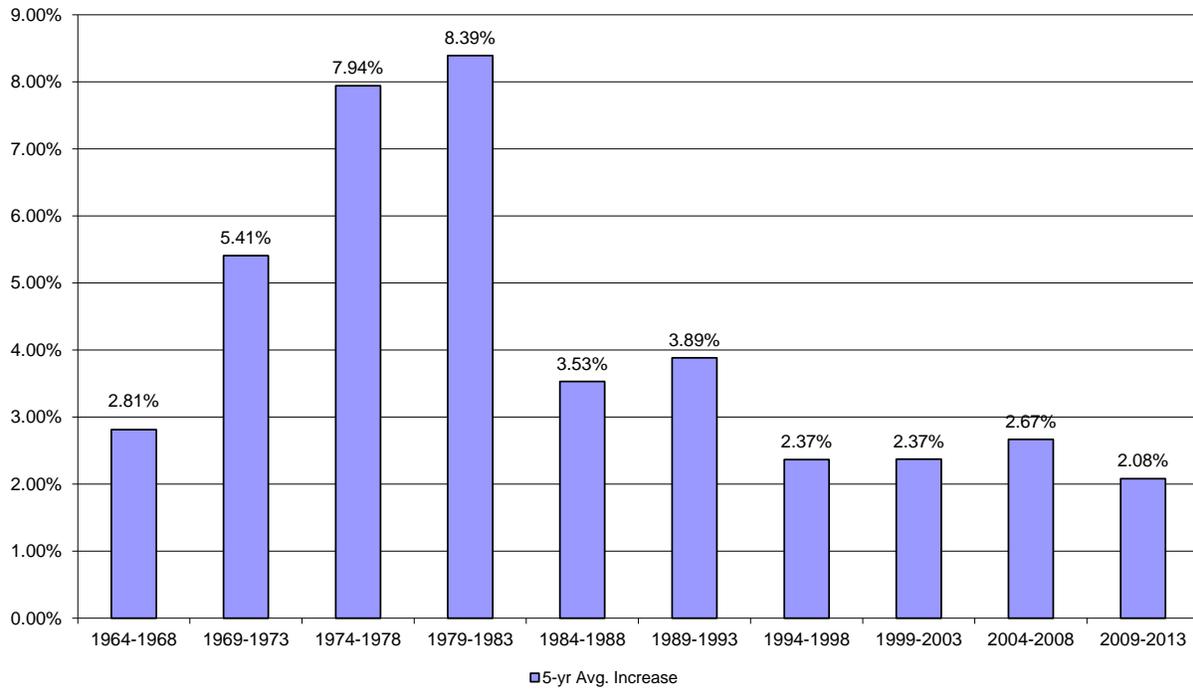
Under the revised ASOP No. 27, each economic assumption must individually, in the actuary's judgment, be deemed reasonable. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with every other economic assumption over the measurement period. Nevertheless, the economic assumptions are much more subjective in nature than the demographic assumptions, which in itself can still create a difference in opinion among individuals in the actuarial profession and possibly stakeholders of the Retirement System.

INFLATION RATE

By "inflation," we mean price inflation, as measured by annual increases in the Consumer Price Index (CPI). This inflation assumption underlies most of the other economic assumptions. It impacts investment return, salary increases, payroll growth, and cost-of-living increases. The current annual inflation assumption is 2.75%.

The chart on the next page shows the average annual inflation in each of the ten consecutive five-year periods over the last fifty years:

Average Annual Inflation
CPI-U, Five-Calendar-Year Averages



Source: Bureau of Labor Statistics, CPI-U, all items, not seasonally adjusted

The table below shows the average inflation over various periods, ending Dec. 2013:

Periods Ending Dec. 2013	Average Annual Increase in CPI-U
Last five (5) years	2.08%
Last ten (10) years	2.37%
Last fifteen (15) years	2.37%
Last twenty (20) years	2.37%
Last thirty (25) years	2.67%
Last thirty (30) years	2.82%
Since 1913 (first available year)	3.20%

Source: Bureau of Labor Statistics, CPI-U, all items, not seasonally adjusted

As you can see, inflation has been relatively low over the last thirty years.

Most of the investment consulting firms, in setting their capital market assumptions, currently assume that inflation will be less than 3.00%. We examined the 2014 capital market assumption sets for six investment consulting firms: BNY Mellon, Callan (URS's consultant), Hewitt EnnisKnupp, JP Morgan, R.V. Kuhns, and Towers Watson. The average assumption for inflation was 2.28%, with a range of 2.20% to 2.50%. However, the investment consulting firms typically set their assumptions based on a ten-year outlook, while actuaries must make much longer projections.

In the Social Security Administration's 2014 Trustees Report, the Office of the Chief Actuary is projecting a long-term average annual inflation rate of 2.8% under the intermediate cost assumption. (The low cost assumption was 1.8% and the high cost assumption was 3.8%.) These inflation assumptions forecasts have not materially changed for several years.

Another source of information about future inflation is the market for US Treasury bonds. The December 31, 2013 yield for a 20-year inflation indexed Treasury bond (20-year TIPS) was 1.36% plus actual inflation. The yield for a 20-year non-indexed US Treasury bond was 3.72%. This means that on that day the bond market was predicting that inflation over the next twenty years would average 2.36% (3.72% – 1.36%) per year. One year earlier, as of December 31, 2012, the spread between the 20-year inflation protected and constant maturity bonds was only marginally higher, with a difference of 2.39%, so there has been little change in expected inflation. The difference in yields between the 30-year TIPS, and 30-year Treasury bond was 2.32% as of December 31, 2013, so the bond market is not predicting higher inflation in the next 30 years.

However, this analysis is known to be imperfect. It ignores the inflation risk premium that buyers of US Treasury bonds should ask for, and it ignores the differences in liquidity between US Treasury bonds and TIPS.

The Philadelphia Federal Reserve conducts a quarterly survey of the Society of Professional Forecasters. Their most recent forecast, first quarter of 2014, was for inflation over the next ten years to average 2.30%. Most observers expect inflation to continue to be low as the economy works out of the recession. However, the society of Professional Forecasters are predicting inflation to average 1.80% for the calendar year 2014 and 2.00% for the 2015 calendar year, so it is not just the next two years that is depressing inflation forecasts.

Another source of information is the Public Funds Survey that is prepared on behalf of the National Association of State Retirement Administrators (NASRA) and the National Council on Teacher Retirement Systems (NCTR). This report surveys about 125 plans, including all of the largest public funds covering state employees or teachers. The current survey shows that the median inflation rate assumed for large public retirement systems in the U.S. is 3.00%. There are several large retirement systems that have an inflation assumption less than URS's current inflation assumption of 2.75%. These include retirement systems in Missouri, New York, Virginia, and Wisconsin and the inflation assumption used by each of these systems is 2.50%.

A lower inflation assumption, such as 2.50%, would be reasonable. However, because URS provides a COLA that is based on annual increases in CPI, there is a risk of setting the inflation assumption too low and plan benefits and costs could increase faster than expected if actual

inflation is higher than assumed. Some of this is mitigated in the COLA design that limits the annual COLA to 2.50% or 4.00% per year, depending on from which system the retiree receives a benefit. However, in light of the risk of assuming an inflation assumption that is too low, we recommend the Board continue to use a 2.75% inflation assumption.

INVESTMENT AND ADMINISTRATIVE EXPENSES

Since the trust fund pays investment and administrative expenses from plan assets, it is appropriate to make an assumption about expected expenses. Plan expenses may be explicitly assumed as a direct increase to the annual normal cost or implicitly assumed by developing an investment return assumption as a net return after payment of plan expenses. We believe the development of an implicit expense assumption to net against investment returns is an appropriate method for the valuation of the System.

The chart below shows the administrative expenses for the last five years expressed as a percentage of the assets, adjusted for cash flow, each year:

Annual Administrative Expenses Expressed as a Percentage Assets	
Fiscal Year	Expense
2013	0.05%
2012	0.05%
2011	0.05%
2010	0.06%
2009	0.07%
Average	0.06%

Source: Data from Utah Retirement Systems' Comprehensive Annual Financial Reports

Based on this information, we recommend assuming that investment and administrative expenses will consume 0.06% (6 basis points) of each year's investment return. This assumption is then used in setting the investment return assumption. This represents a reduction in future investment income of 6 basis points.

The Retirement System also incurs investment expenses. However, the forward-looking capital market assumptions and return forecasts developed by investment consulting firms already reflect expected investment expenses. Their return estimates for core investments (i.e., fixed income, equities, and real estate) are generally based on anticipated returns produced by passive index funds that are net of investment related fees. Investment return expectations for the alternative asset class such as private equity and hedge funds are also net of investment expenses. Therefore, we did not make any additional adjustments to account for investment related expenses.

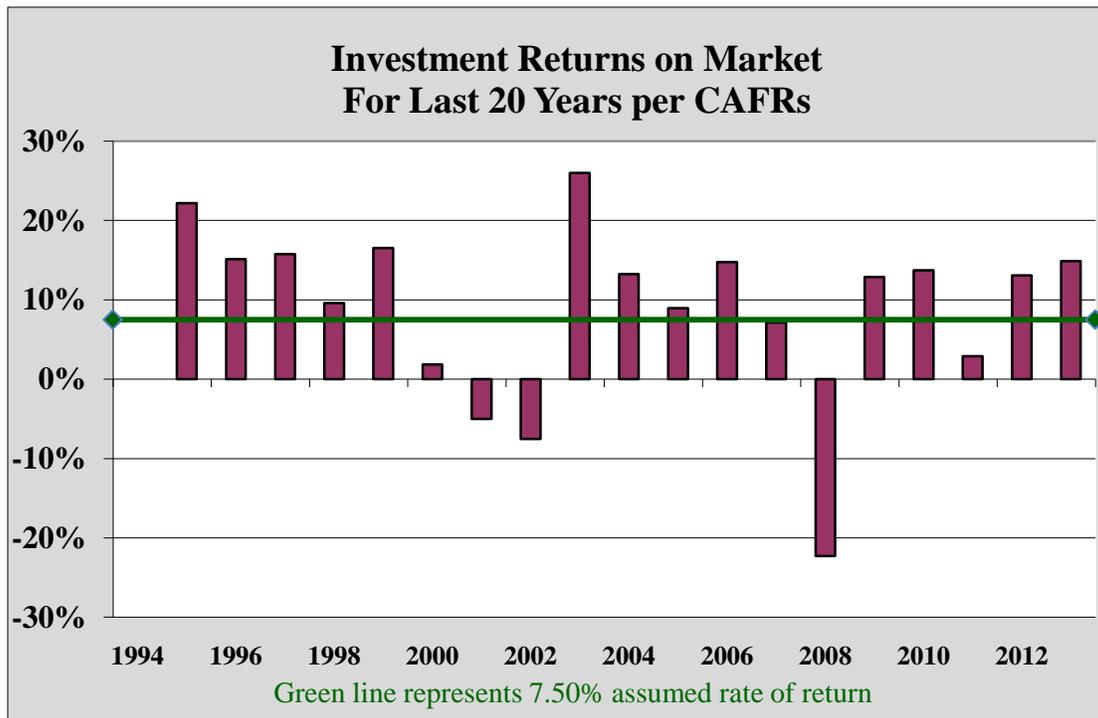
URS also utilizes some active management investment strategies that result in higher investment expenses compared to strategies that invest in passive index funds. We have assumed that those active management strategies would result in the same returns, net of investment expenses, as passive management strategies. Historically, URS's active management strategies have resulted in additional investment returns in excess of these additional investment expenses. Therefore, we believe the expense assumption is reasonable and appropriate.

INVESTMENT RETURN RATE

The investment return assumption is one of the principal assumptions in any actuarial valuation of a retirement plan. It is used to discount future expected benefit payments to the valuation date, in order to determine the liabilities of the plans. Even a small change to this assumption can produce significant changes to the liabilities and contribution rates.

Currently, we assume that future investment returns will average 7.50% per year, net of investment and administrative expenses. This is the rate used to discount future payments in calculating the actuarial present value of those payments. The current assumption assumes inflation of 2.75% per annum and an annual real rate of return of 4.75%, net of expenses.

The following chart shows the gross year-by-year returns for the last twenty fiscal years for URS, taken from the URS CAFRs.



Source: Data from Utah Retirement Systems' Comprehensive Annual Financial Reports

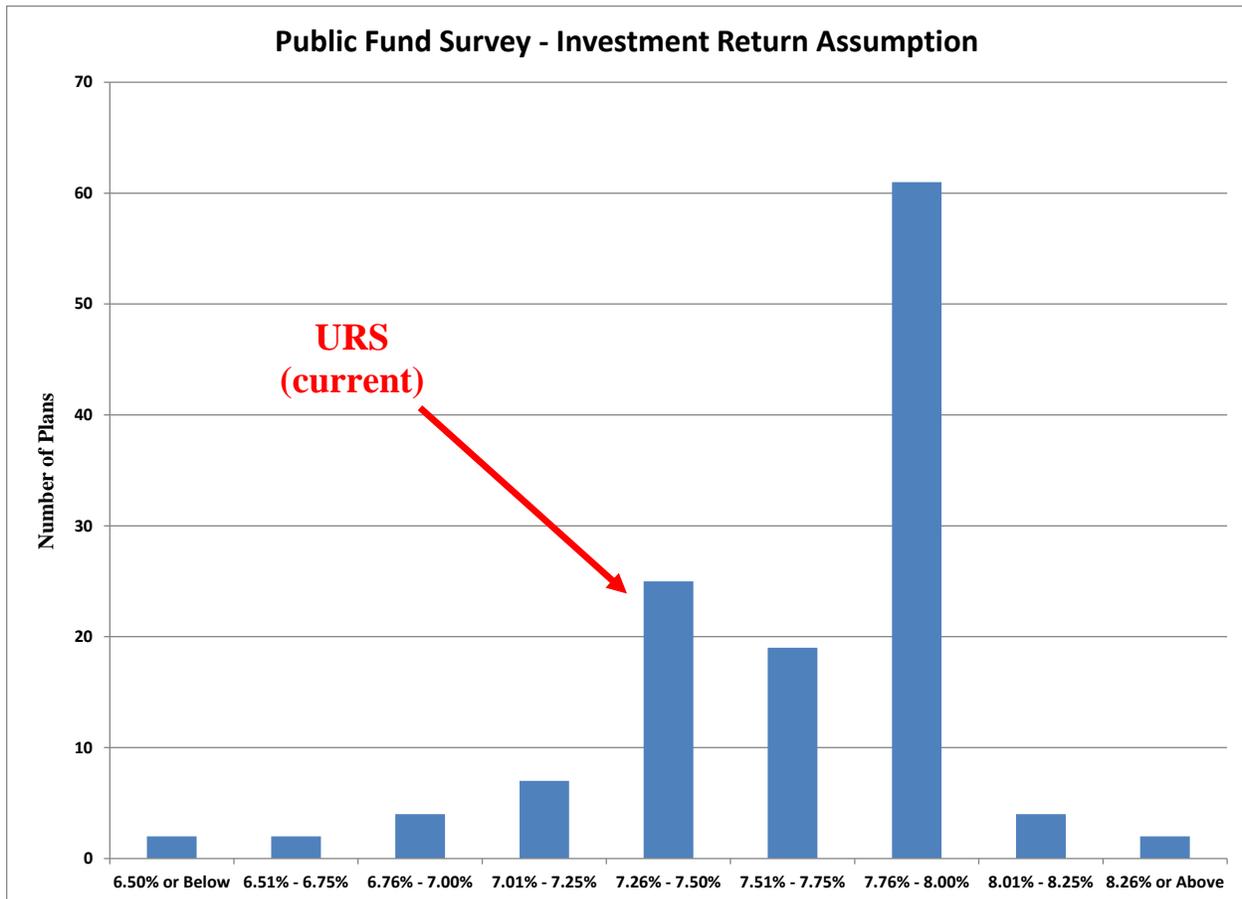
The average URS market returns (without reduction for expenses) for various periods are:

Average URS Returns for Various Periods	
Last 5 Years	11.41%
Last 10 Years	7.30%
Last 15 Years	6.74%
Last 20 Years	8.10%
Last 25 Years	8.99%

Because these returns have not been adjusted for the effect of investment and administrative expenses, they are somewhat higher than the actual net returns achieved over these periods.

However, for this assumption, past performance is not a reliable indicator of future performance, even when averaged over a twenty-five year period. The actual asset allocation of the trust fund will significantly impact the overall performance, so returns achieved under a different allocation are not meaningful.

The Public Funds survey shows that the median investment return assumption for large public plans is 7.90%. This survey median has decreased from 8.00% in the same survey conducted in the last experience study. The median assumed real rate of return for these plans is 4.50%, which is slightly more conservative than URS's assumed real rate of 4.75%. While we do not recommend the Board select an assumption based on prevalence information, it is still informative to see where URS is compared to its peers. Here is a chart showing the distribution of the investment return assumptions in the Public Funds Survey:



Source: Public Funds Survey (n=126) adjusted for known changes. Median investment return assumption: 7.90% nominal return.

We believe a more appropriate approach to selecting an investment return assumption is to determine the median expected portfolio return given the fund’s target allocation and a given set of capital market assumptions. Since we are not investment professionals, we look at the results under various sets of capital market assumptions used by several major investment consulting firms. Per the investment policy disclosed in the 2013 CAFR, URS’s current target asset allocation is:

Asset Category	Target Allocation
Equities (Domestic and International)	40%
Debt Securities	20%
Real Assets	13%
Private Equity	9%
Absolute Return	18%
Cash	0%
Total	100.0%

Because GRS is a benefits consulting firm and does not develop or maintain our own capital

market assumptions, we reviewed forward-looking assumptions developed by Callan Associates, URS's Investment Consultant, as well as the following other investment consulting firms:

- BNY Mellon
- Hewitt EnnisKnupp
- JP Morgan
- RV Kuhns
- Towers Watson

These investment consulting firms periodically issue reports that describe their capital market assumptions, that is, their estimates of expected returns, volatility, and correlations. While these assumptions are developed based upon historical analysis, many of these firms also incorporate forward looking adjustments to better reflect near-term expectations. The estimates for core investments (i.e. fixed income, equities, and real estate) are generally based on anticipated returns produced by passive index funds. The investment return expectations for the alternative asset classes, such as private equity and hedge funds are also net of investment expenses. Therefore, as mentioned previously, we are not required to make any additional adjustments to account for investment expenses.

Given the plan's target asset allocation and the investment consultant's capital market assumptions, the development of the average nominal return, net of expenses, is provided in the following table. The table shows the expected nominal return (arithmetic average) for URS using each of the investment consulting firm's capital market assumptions.

**Expected Nominal Return for URS Based on Short-Term Capital Market Assumptions
(Return Expectations for the Next 7 to 10 Years)**

Investment Consultant	Investment Consultant Expected Nominal Return	Investment Consultant Inflation Assumption	Expected Real Return (2)-(3)	Actuary Inflation Assumption	Expected Nominal Return (4)+(5)	Administrative Expense Assumption	Expected Nominal Return Net of Expenses (6)-(7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Callan	7.48%	2.25%	5.23%	2.75%	7.98%	0.06%	7.92%
1	7.10%	2.50%	4.60%	2.75%	7.35%	0.06%	7.29%
2	6.90%	2.22%	4.68%	2.75%	7.43%	0.06%	7.37%
3	7.05%	2.25%	4.80%	2.75%	7.55%	0.06%	7.49%
4	7.10%	2.26%	4.84%	2.75%	7.59%	0.06%	7.53%
5	7.41%	2.20%	5.21%	2.75%	7.96%	0.06%	7.90%
Average	7.17%	2.28%	4.89%	2.75%	7.64%	0.06%	7.58%

Note: Return assumption is based on the arithmetic average.

We have determined the expected nominal return rate using each firm's assumptions, then subtracted that firm's expected inflation to arrive at their expected real return in column (4). Then we have added back our 2.75% inflation assumption and subtracted 0.06% for administrative expenses to get a net nominal return. As the table shows, the average one-year return of the six firms, including Callan Associates, is 7.58%, which is 0.08% more than the

current assumption of 7.50%. Additionally, when we adjust for differences in inflation assumptions and for the administrative expenses, three of the six firms have an expected nominal return above 7.50% and one more firm expects a return one basis point (0.01%) below the current 7.50% return assumption.

In addition to examining the expected one-year return, it is important to review anticipated volatility of the investment portfolio and understand the range of long-term net return that could be expected to be produced by the investment portfolio.

The capital market assumptions provided by the investment consultants and used in the analysis above are based on a 7 to 10 year investment horizon. Investment consultants develop their forecast assumptions with this time horizon in part because most pension investment management teams use this time period for developing and monitoring their investment strategies. The table below provides the 25th, 50th, and 75th percentiles of the 10-year geometric average of the expected nominal return, net of expenses, as well as the probability of exceeding the current 7.50% assumption.

**Expected Annual Geometric Returns and Return Probabilities
(Based on Short-Term Capital Market Assumptions)**

Investment Consultant	Distribution of 10-Year Average Geometric Net Nominal Return			Probability of exceeding 7.50% *
	25th	50th	75th	
(1)	(2)	(3)	(4)	(5)
Callan	4.31%	7.08%	9.94%	46.0%
1	4.21%	6.64%	9.13%	40.8%
2	4.74%	6.88%	9.06%	42.3%
3	4.37%	6.84%	9.36%	42.9%
4	5.19%	7.12%	9.10%	44.9%
5	4.93%	7.30%	9.72%	47.7%
Average	4.62%	6.98%	9.38%	44.1%

*Plan's current return assumption net of expenses.

On the other hand, the investment return assumption used in the actuarial valuation has a significantly longer investment horizon. Therefore, it is necessary to identify and reflect differences in economic and financial market expectations over the short-term and long-term time horizon.

Expected investment returns can be thought of as the sum of a risk-free rate of return and a risk premium. This is the fundamental premise in the Capital Asset Pricing Model (CAPM) that is used in Modern Portfolio Theory. Riskier investments have a higher risk premium to compensate the investor for the increased uncertainty. While the risk premium for asset classes can vary with a business cycle, generally it is constant for each asset class over long periods of time. However, there are differences in the risk-free return, depending on the investor's time

horizon. We define a risk-free investment as one where the expected return is known with absolute certainty. This also means that the risk-free investment has no default and reinvestment risk. Based on this definition, we believe it is reasonable to benchmark a risk-free rate equal to the current yield of zero coupon U.S. Treasury securities. Thus, a 10-year risk-free rate is equal to the current yield of a 10-year zero coupon U.S. Treasury bond, and a 20-year zero coupon U.S. Treasury Bond is the risk-free rate for a 20-year time horizon. As of May 7, 2014, the yields of the 10-year and 20-year zero coupon Treasury Bonds were 2.74% and 3.45%, respectively. Therefore, it is reasonable to assume that as the investment time horizon expands from 10 years to 20 years, the risk free rate of return, and corresponding expected nominal return on the portfolio would be 0.71% higher over the longer, 20-year time horizon.

The table below provides the 25th, 50th, and 75th percentiles of the 20-year geometric average of the expected nominal return, net of expenses, as well as the probability of exceeding the current 7.50% assumption, based on the same short-term capital market assumptions adjusted to reflect the difference in the risk-free returns due to the different investment time horizons. We consider the results of this analysis based on a longer, 20-year, time horizon to be appropriate for purposes of reviewing the investment return assumption used in the actuarial valuation.

**Expected Annual Geometric Returns and Return Probabilities
(Based on Short-Term Capital Market Assumptions Adjusted
by GRS to Reflect a 20-Year Investment Horizon)**

Investment Consultant	Distribution of 20-Year Average Geometric Net Nominal Return			Probability of exceeding 7.50% *
	25th	50th	75th	
(1)	(2)	(3)	(4)	(5)
Callan	5.83%	7.80%	9.81%	53.1%
1	5.63%	7.36%	9.11%	47.8%
2	6.07%	7.59%	9.13%	51.6%
3	5.80%	7.55%	9.33%	50.8%
4	6.46%	7.84%	9.23%	56.5%
5	6.33%	8.01%	9.72%	58.1%
Average	6.02%	7.69%	9.39%	53.0%

*Plan's current return assumption net of expenses.

One of the investment consulting firms in the study also develops a second set of capital market assumptions with a longer 30-year investment horizon. Therefore, we are able to use this investment consulting firm's information to validate our adjustment to reflect a longer time horizon. Based on this investment consulting firms long-term assumptions the 50th percentile of the 30-year geometric return is 7.81% and URS has a 55.8% likelihood of exceeding the current 7.50% assumption. Comparing the results of these different long-term forecasts, the 50th percentiles and probability of exceeding the current 7.50% return assumption are slightly

different. However, the probabilities themselves are not certain, so for decision making purposes they provide a consistent result. Also, as the table above shows, investment professionals have different opinions regarding future outcomes. For instance, investment consultant #1 predicts URS has a 48% probability of exceeding the 7.50% return assumption, whereas investment consultant #5 predicts URS has a 58% probability of exceeding the 7.50% return assumption over the next 20 years. Therefore, for business making decisions, it is reasonable to conclude that the probability of meeting the 7.50% investment return assumption over the next 20 years is close to or slightly exceeds 50%.

Recommendation

Based on this analysis, we believe that the current 7.50% investment return assumption satisfies the best-estimate assumption requirement under ASOP No. 27 as revised and adopted in September 2013. Use of this assumption is also consistent with the recommendation regarding the use of an investment return assumption that is estimated to be realizable at least 50% of the time from a report released by the Society of Actuaries Blue Ribbon Panel on public pension plan funding in February 2014.

Therefore, we do not recommend a change to the current 7.50% investment return assumption at this time.

COST-OF-LIVING INCREASE ASSUMPTION

All annuitants in URS receive an automatic cost-of-living adjustment (COLA) each year. For members of the Tier I Public Employees Retirement Systems, the COLA is equal to the annual percentage increase in the CPI, subject to a maximum of 4.00%, multiplied by the original retirement benefit amount. That is, it is a simple interest increase, not a compounded increase. The other systems have similar COLAs, although some Tier I Public Safety units/funds have a 2.50% maximum rather than a 4.00% maximum, both of the Tier II plans have a 2.50% maximum, and Judges receive a compounded COLA with a 4.00% maximum, rather than a simple interest increase.

The COLAs in URS all have a catch-up feature, so that if COLAs are capped by the maximum, a bank is established for the member with the amount of the increase that could not be given, and in the next year that inflation is below the plan's maximum COLA, the member can receive part or all of the bank, in addition to the regular COLA, up to the applicable maximum increase. Because of this "catch-up" design, the assumption for future COLAs should be equal to the price inflation assumption, subject to the maximum for the System.

Since we are not recommending a change in the price inflation assumption, we recommend continuing to assume that COLAs will equal 2.75%, the price inflation assumption, for all of the funds except for the funds with a 2.50% maximum, the Tier I Public Safety funds and the two Tier II plans. For these, we continue to assume COLAs will equal 2.50% each year.

SALARY INCREASE RATES - GENERAL

In order to project future benefits, the actuary must project future salary increases. Employee salaries increase due to a variety of reasons:

- Across-the-board increases for all employees;
- Across-the-board increases for a given group of employees;
- Increases to a minimum salary schedule;
- Additional pay for additional duties;
- Step or service-related increases;
- Increases for acquisition of advanced degrees or specialized training;
- Promotions; or
- Merit increases, if available.

The salary increase assumption used in the actuarial valuation is meant to reflect all of these types of increases, since all of these affect the salaries used in benefit calculations and upon which contributions are made.

An actuary should not look at the overall increases in payroll in setting this assumption, because payroll can grow at a rate different from the average pay increase for individual members. There are two reasons for this. First, when older, longer-service employees terminate, retire or die, they are generally replaced with new employees who have a lower salary. Because of this, in most populations that are not growing in size, the growth in total payroll is smaller than the average

pay increase for members. Second, payroll can change due to an increase or decrease in the size of the group. Therefore, to analyze salary increases, we examine the actual increases for individuals.

We analyzed the salary increases based on the change in the member's reported pay from one year to the next. That is, we looked at each member who appeared as an active member in two consecutive valuations—these are called continuing members—and measured his/her salary increase.

Salary increases for governmental employees can vary significantly from year to year. When the employer's tax revenues stall or increase slowly, salary increases often are small or nonexistent. During good times, salary increases can be larger. Our experience across many governmental plans also shows many occasions in which salary increases will be low for a period of several years followed by a significant increase in one year. Therefore, for this assumption in particular, we prefer to use data over a longer period in establishing our assumptions. We used a ten-year period to analyze this assumption.

Below is a table showing the average increase given to continuing members by year for members in various groups:

Year	State	Teachers	Local	Public Safety	Firefighters
2004	6.3%	4.1%	5.3%	6.8%	5.4%
2005	2.1%	3.7%	5.3%	3.6%	6.4%
2006	6.7%	6.7%	5.2%	7.2%	4.9%
2007	7.8%	9.8%	7.1%	7.7%	6.8%
2008	6.9%	7.4%	6.8%	7.5%	6.4%
2009	2.9%	3.9%	3.4%	4.0%	4.0%
2010	1.4%	1.2%	1.4%	0.8%	2.1%
2011	2.3%	3.2%	2.7%	2.3%	2.5%
2012	2.7%	2.5%	3.0%	2.6%	2.7%
2013	3.0%	3.4%	3.9%	3.4%	3.4%
Average	4.2%	4.6%	4.4%	4.6%	4.5%

The average increase for continuing judges over this period was 2.7%. No salary increase assumption is set for the Legislative and Governors Plan, since neither benefits nor contributions are salary-related.

The salary assumption can be thought of as consisting of wage inflation (that part of the pay increase which is given to all employees) and an additional component to reflect step increases and other increases correlated with service. Most actuaries recommend salary increase assumptions that include an element that depends on the member's age or service, especially for

large, public retirement systems. It is typical to assume larger pay increases for younger or shorter-service employees. The experience shows salaries have been more closely correlated to service rather than age, as promotions and productivity increases tend to be greater in the first few years of a career, even if the new employee is older than the average new hire.

Our current assumptions follow this pattern for all groups other than judges (whose pays are set by position, and are unrelated to time on the bench). Therefore, we divide the task of setting the salary increase into two pieces:

1. Determining the assumption for long-service employees (wage inflation)
2. Determining the additional increases to be applied to shorter-service employees

The next two subsections will discuss these components of the salary assumption.

WAGE INFLATION

Many of the factors that result in pay increases are largely inapplicable or have diminished importance for longer-service employees. Step or service-related increases have stopped or are minimal. Promotions occur with less frequency. Additional training or acquisition of advanced degrees usually occurs early in the career. In theory, then, salary increases for longer-service employees are almost entirely driven by wage inflation. Wage inflation is the increase in the average wage of all members of the workforce. The current wage inflation assumption for all groups in URS is 3.75%.

Historically, wage inflation almost always exceeds price inflation. This is because wage inflation is in theory the result of (a) price inflation, and (b) productivity gains being passed through to wages. The current 3.75% assumption can be thought of as comprised of (a) a 2.75% inflation rate, plus (b) an additional 1.00% for productivity gains. For the last twenty years ending in 2012, for the economy as a whole, wage inflation has outpaced price inflation by about 0.9% as measured by the difference between increases in the National Average Wage (a statistic used by the Social Security Administration) and increases in the Consumer Price Index. This is not significantly different than the average rate of wage inflation since 1951. However, one cannot ignore the decline in wage inflation during the last decade. For instance, wage inflation has exceeded price inflation by about 0.5% per year over the last 10 years, and only exceeded price inflation by 0.1% per year over the last 5 years.

The Social Security intermediate assumption set assumes wage inflation of 3.9% (2.8% price inflation plus an additional 1.1%).

When we look at URS experience for members with 25 or more years, we find that over the last ten years, their increases have averaged as follows:

Group	Average Salary Increase	Price Inflation	Difference
Teachers	2.36%	2.37%	-0.01%
State	2.79%	2.37%	0.42%
Local Government	2.72%	2.37%	0.35%
Public Safety	2.91%	2.37%	0.54%
Firefighters	2.01%	2.37%	-0.36%

As you can see, on average, pay increases for long-service employees over the last 10 years were about 0.35% to 0.55% over inflation for state and local government employees as well as public safety members. However, during this same time period, average pay increases for long service teachers were about the same as increases in CPI and the average pay increase for long term firefighters has been about 0.35% less than increases in CPI. Note, this difference in the 10-year averages are approximately 0.30% to 0.80% less than the 10-year average differences observed in the last experience study performed in 2011. This means that the wage inflation during the years 2001 through 2003 were significantly higher than the wage inflation employees experienced in the years 2011 through 2013.

Based on this experience, it is hard to completely discount or ignore the experience during the last 10-years. Therefore, we recommend that the wage inflation assumption for URS be set at 3.50% (2.75% price inflation plus 0.75% productivity increase). While this is a 0.25% reduction in the productivity increase assumption, it is still more conservative than plan experience.

For Judges, who do not have assumed step increases, we propose to decrease the current 1.00% productivity increase to 0.75%, which will decrease the ultimate annual salary increase assumption from 3.75% to 3.50% (i.e. 2.75% price inflation plus a 0.75% wage inflation and merit increase).

SALARY INCREASE ASSUMPTIONS FOR SHORTER-SERVICE EMPLOYEES (STEP INCREASES)

To analyze the service-related salary assumption, we looked at the excess in the average increases for shorter-service employees over the average for longer-service employees. For example, teachers with four years of service received an average increase of 6.63%, which was 4.27% more than the average increase of 2.36% for teachers with twenty-five or more years of service.

We then determined new service-related assumptions reflecting this data. For instance, in the example above, the step for a teacher entering her fifth year under the current assumption is 4.75%.

SALARY INCREASE ASSUMPTIONS (OVERALL)

The overall effect of the changes to the wage inflation assumption and to the step increases was to decrease the average increase for each group by a small amount.

Here is a table showing the average increases, in excess of inflation, for continuing members for the last ten years, compared to the average expected increases in excess of inflation under the current and proposed assumptions:

Group	Actual Increase	Actual Inflation	Salary Increase over Inflation		
			Actual ¹	Current ²	Proposed ³
State Employees	4.19%	2.37%	1.82%	2.37%	2.12%
Teachers	4.56%	2.37%	2.19%	3.13%	2.89%
Local Gov't.	4.40%	2.37%	2.03%	2.71%	2.31%
Public Safety	4.56%	2.37%	2.19%	3.26%	2.94%
Firefighters	5.10%	2.37%	2.73%	3.50%	3.11%

¹ The actual salary increase in excess of inflation for all continuing active members during the 10-year observation period.

² The expected average increase in salary in excess of the 2.75% assumed rate of inflation.

³ The expected average increase in salary in excess of the 2.75% assumed rate of inflation. The proposed assumption reflects a 25 basis point reduction due to a decrease in the productivity component of the wage inflation assumption.

As you can see, the proposed assumptions are still generally conservative compared to the actual experience.

More detail is shown on the tables in Section VI. See pages 102-106.

PAYROLL GROWTH RATE

The salary increase rates discussed above are assumptions applied to individuals and are used in projecting future benefits. The amortization payments are calculated to be a level percentage of total payroll. Therefore, as payroll increases over time, the amortization payments do as well. Therefore, we use a separate payroll growth assumption (currently 3.50% annually) in determining the annual payment to amortize the unfunded actuarial accrued liability.

Payroll can grow at a rate different from the average pay increase for individual members. There are two reasons for this. First, when older, longer-service members terminate, retire or die, they are generally replaced with new members who have a lower salary. Because of this, in most populations that are not growing in size, the growth in total payroll will be smaller than the average pay increase for members. Second, payroll can grow due to an increase in the size of the group. However, we do not currently assume membership growth in setting the payroll growth assumption.

The following chart shows the average annual payroll growth for URS as a whole, the average annual active membership growth, and the net payroll growth not due to membership growth.

Average Annual Payroll and Membership Increase Rates			
Period	Payroll	Membership	Net
Last 5 Years	0.40%	-0.84%	1.24%
Last 10 Years	2.90%	0.56%	2.34%
Last 15 Years	3.39%	0.88%	2.51%
Last 20 Years	4.19%	1.19%	3.00%

The financial crisis in 2008 and 2009 put a considerable fiscal strain on states and local governments. Across the country, governmental employers were forced to decrease their employee workforce and depress salary increases to remaining employees. This effect is clearly evident in URS's experience over the last five years. This also depresses the System's experience over the last 10 and 15 years. Note, while payroll growth, adjusted for change in membership, was 3.00% over the last 20 years, actual inflation was also lower than assumed (2.37% actual versus 2.75% assumed). If we assume that the last 20-years was representative of the next 20 years, which coincides with the Board's funding period, and adjust the experience for the difference in inflation then we would expect payroll growth to be 3.38% (i.e. $3.00\% + (2.75\% - 2.37\%)$).

Also, in theory, payroll growth in the absence of membership growth should approximate the wage inflation assumption (proposed to be 3.75%). However, long-term projections that do not anticipate membership growth show that payroll is actually expected to grow more slowly over the next 20 years as baby boomers retire and are replaced by younger members with lower salaries.

Based on this information, we are recommending setting this assumption at 3.25%, a 25 basis point decrease from the current assumption.

DEMOGRAPHIC ASSUMPTIONS

Actuaries are guided by the Actuarial Standards of Practice (ASOP) adopted by the Actuarial Standards Board (ASB). One of these standards is ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*. This standard provides guidance to actuaries giving advice on selecting noneconomic assumptions for measuring obligations under defined benefit plans. We believe the recommended assumptions in this report were developed in compliance with this standard.

POST-RETIREMENT MORTALITY RATES (NON-DISABLED)

The longer retirees live and receive their benefits, the larger the liability of the plan and the larger the contributions must be. It may be of interest that in the 2010 Census, Utah had the third longest life expectancy, behind only Hawaii and Minnesota.

We currently use separate mortality tables for: (1) teachers, and (2) general state and local employees, public safety employees, and firefighters. Of course, we also use separate tables for males and females. Separate tables are also used for disabled retirees; and these are discussed in the following subsection. We use different tables for teachers because our studies have consistently shown that they live longer on average than other state and local government employees. We analyze the experience for public safety and firefighter retirees separately to identify whether the mortality experience for these retiree groups is materially different than that of general state and local government retirees. However, experience shows the mortality experience for these groups are not materially different. Therefore, we continue to use the same mortality assumption for these retiree groups.

The current base mortality assumptions are summarized below, and then projected forward based on projection Scale AA:

State and local government as well as public safety and firefighter retirees

- Male: RP-2000 Combined mortality table with white collar adjustment
- Female: the URS teacher mortality table for females multiplied by 120%

Retired educators

- Male: the URS teacher mortality table for males multiplied by 90%
- Female: the URS teacher mortality table for females multiplied by 107%

To analyze the data, we began by determining the expected number of retiree deaths in each year at each age for males and females. The analysis uses both retirees and beneficiaries. Disabled retirees, however, are excluded from this analysis. Next we compare the actual number to the expected number. The ratio of the actual deaths to the expected deaths—the A/E ratio—tells us whether the assumptions are reasonable. A 100% in the aggregate might indicate a match between the assumption and experience. We also examined the results in five-year age groups, checking how well the pattern in the table matched actual experience. A summary of the results of this analysis are shown below:

Group	Teachers		Public Safety & Fire		General Employees	
	Males	Females	Males	Females	Males	Females
Number of actual deaths	653	840	349	164	1,946	2,717
Number of expected deaths (under current assumptions)	649	910	324	167	1,876	2,687
A/E ratio (current)	101%	92%	108%	98%	104%	101%

Because using projection Scale AA builds in continuous improvement in life expectancy, the life expectancies for today's younger members are expected to be materially longer than those of today's retirees. The year 2000 is the base year for the mortality assumptions. That is, improvement is projected from that year to each year in the future. In setting the assumptions, we

compared the base tables, projected to the year 2011, roughly the midpoint of the experience study data, with actual deaths. This is what is shown in the detailed tables in Section VII, pages 48-53.

Reviewing the A/E ratios provides an indicator whether improvement in life expectancy is increasing at a rate that is slower or faster than assumed using projection Scale AA. An A/E ratio less than 100% indicates that life expectancy has improved faster than assumed and an A/E ratio that is greater than 100% signifies that life expectancy has improved at a rate slower than assumed. As the summary table provided above shows, with the exception for female teachers, actual life expectancy has increased at a slightly slower rate than assumed using Scale AA. Under projection Scale AA, mortality rates are projected to decrease 0.1% - 2.0% each year, depending on the age and sex. While the Society of Actuaries have recently published a new projection scale, Scale BB, based on more current mortality experience, we have some concerns regarding the underlying data process used to develop these new projection scales. Therefore, we believe it is appropriate to continue using projection Scale AA.

To better fit the mortality assumption for female teachers, we recommend decreasing the multiplier applied to the mortality rates from 107% to 100%. We propose no other changes to the healthy mortality assumption. Below is a summary of the recommended base tables:

State and local government as well as public safety and firefighter retirees

- Male: RP-2000 Combined mortality table with white collar adjustment
- Female: the URS teacher mortality table for females multiplied by 120%

Retired educators

- Male: the URS teacher mortality table for males multiplied by 90%
- Female: the URS teacher mortality table for females multiplied by 100%

Below is a table summarizing the life expectancy for a member who retires at age 65 in future years based on the recommended assumptions.

Life Expectancy (in Years) under Proposed Assumptions for an Age 65 Retiree					
Group	Year Reaching Age 65				
	2015	2020	2025	2030	2035
General Employee - Male	20.3	20.6	21.0	21.3	21.6
General Employee - Female	22.2	22.3	22.5	22.7	22.9
Teacher - Male	22.3	22.6	22.9	23.2	23.5
Teacher - Female	23.4	23.6	23.8	23.9	24.1
Public Safety/Fire - Male	20.3	20.6	21.0	21.3	21.6
Public Safety/Fire - Female	22.2	22.3	22.5	22.7	22.9

DISABLED RETIREE MORTALITY RATES

This is a relatively minor assumption, compared to the mortality assumption for non-disabled retirees, and it has minor impact on the liabilities of URS. Because of the small numbers of disabled retirees and disabled deaths, we combined all the disabled lives for our analysis. We currently use the RP-2000 Mortality Table for disabled annuitants (separate tables for males and females with the female mortality assumption adjusted with a 110% multiplier), and the generational improvement assumption Scale AA to project future improvements in mortality. Thus, mortality improvement will be projected consistently for both non-disabled and disabled retirees in the valuation.

There were a total of 167 male and 178 female disabled deaths during the analysis period, compared to 170 expected deaths for males and females each. The A/E ratio was 98% for males and 105% for females. Based on this experience we are not recommending a change to the current disability mortality assumption.

More detail is shown on the table on pages 54-55 in Section VI.

ACTIVE MORTALITY

Currently the valuation uses separate active-life mortality assumptions for male and female teachers, public safety and fire (a combined unisex table), and male and female general state and local government employees. This is the least significant of all the mortality assumptions. However, we observed that the mortality assumption, especially for female members, is losing its fit with plan experience. While we reviewed the mortality experience for each employee group separately, we combined the experience for the non-teacher groups to improve the credibility of the analysis. Therefore, we recommend updating the mortality assumption to use the RP-2000 Mortality for Employees, with a 50% multiplier applied to male teachers and an 80% multiplier applied to males in the non-teacher groups. Similarly, we recommend applying a 35% multiplier to the mortality table used for female teachers, and a 50% multiplier to the mortality table used for females in the non-teacher groups.

The valuation currently assumes that 25% of deaths in the Public Safety and Firefighters systems are classified as line of duty. During the last five years six of the 26 active deaths for public safety members were duty related and two of the 11 active deaths for firefighters were duty related. Based on this experience, we recommend no change to the assumed percentage of active mortality experience being attributable to duty-related events.

More detail is shown on the tables on pages 56-65 in Section VI.

DISABILITY INCIDENCE

The disability rates are intended to reflect the probability that a member will retire with a disability pension (Firefighters) or go onto LTD (the Public Employee and Public Safety systems). Members eligible for the 30-and-out (35-and-out in Tier II) retirement benefit in the Public Employees Systems or the 20-and-out (25-and-out in Tier II) retirement benefits in the Public Safety and

Firefighter systems are not eligible for a disability benefit. We analyzed disability separately for males and females, general state employees, general local government employees, teachers, public safety employees, and firefighters. For Public Safety and Firefighters, because of the small number of females, we combined the males and females to increase the credibility of the experience.

Again we compared the number of actual and expected disabilities by group. For this assumption, an A/E ratio less than 100% is conservative.

The overall A/E based on the current assumptions was 85% (1,077 new disabilities during the period vs. 1,264 expected). In reviewing the results for the different membership groups, we find that some of them need a slight adjustment to decrease the number of expected disabilities. The shape of the current assumption continues to provide an adequate fit, and only a change in the multiplier to the rates is necessary. There was no change to the assumption for female teachers, but the multiplier was reduced from 60% to 45% for male teachers to increase the A/E ratio from 66% to 88%. In the case of State Employees, the multiplier for the male and female assumption was reduced from 125% to 115% and from 110% to 100% respectively, which increased the A/E ratios from 86% to 94% for both groups. The multipliers applied to the assumption for local government employees were also modified to be equal to that used by State employees. This increased the A/E ratio from 87% to 95% for males and from 80% to 88% for females. Similarly, the multiplier applied to the public safety assumption was decreased from 160% to 150%. Finally, the multiplier applied to the firefighter assumption was decreased from 240% to 180%.

More detail is shown on the tables on pages 66-73 in Section VI.

RETIREMENT

The retirement rates are only applied to members eligible for retirement. Separate rates are set for the various systems and employee groups: state employees, teachers, local government employees, public safety, firefighters, judges and legislators. For most groups, separate rates are set for males and females. The valuation currently uses retirement rates that vary by age and service. For unreduced retirement, an A/E ratio under 100% is desirable for conservatism.

Before discussing the experience, we will remind readers that the Legislature had substantially reduced the ability for members who retire from URS after July 1, 2010 to concurrently receive their retirement benefit and be employed with a participating employer of URS. As a result, we have observed a reduction in the rates of retirement, especially at the earlier retirement ages, even while the raw numbers were increasing. (Keep in mind that as the baby boomers are aging, the number eligible for retirement continues to increase.) This observation did not surprise us and is consistent with our expectations.

Given the change in experience we are recommending decreases in retirement rates.

The chart, below, shows the actual retirements as well the expected retirements under the current and proposed assumptions for the various membership groups:

Group	Actual Retirements	Expected Current Assumption	Expected Proposed Assumption
Educators - males	912	1,117	1,003
Educators - females	2,527	3,044	2,739
State - males	1,959	2,732	2,461
State – females	3,582	4,830	4,076
Local - males	1,114	1,498	1,321
Local - females	971	1,294	1,147
Public Safety	856	1,258	1,054
Firefighters	172	243	191
Judges	30	34	41
Total – All Systems	12,123	16,050	14,033

These proposed rates will also be used to determine the liability and contribution rates for the Tier II Hybrid Retirement Systems. However, since retirement eligibilities and benefit provisions for the Tier II are less generous and slightly more restrictive, we recommend making some adjustments to those rates to better reflect anticipated behavior. Specifically, for the Public Employees we added a 30% increase to the retirement rate when a member first becomes eligible for an unreduced retirement benefit if that occurs prior to age 65, i.e., on reaching 35 years of service. (Because this is five years later than public employees can currently retire with an unreduced benefit, we expect increased demand when first eligible.) For Public Safety employees and Firefighters we have modified the rates used below age 60 to be equal to 60% of the rates we proposed to use for Tier I members with 30 years of service. The valuation also uses a different set of early retirement rates for both hybrid systems to account for the smaller benefits and larger early retirement reductions. These early retirement assumptions are unchanged from those used in prior actuarial valuations. Please note that all of the retirement rates are based on our professional judgment about the future retirement behavior for members in the new Tier II retirement program since no experience will be available for many years.

Section VI provides more detail about the actual and expected number of retirements. See pages 82-101.

TERMINATION RATES

Termination rates reflect members who leave for any reason other than death, disability or service retirement. They apply whether the termination is voluntary or involuntary, whether the member is vested or non-vested, and whether the member takes a refund (in the contributory systems) or keeps his/her account balance on deposit and takes a deferred benefit.

The valuation uses separate termination rates for males and females and for the various employee groups: general state employees, teachers, general local government employees, public safety, and firefighters. The current rates are structured as a function of service. No terminations are assumed once a member becomes eligible for retirement. The current tables were based on prior URS experience. An A/E ratio above 100% is considered conservative.

Our analysis showed for most of the groups that the overall expected number of terminations were fairly close to the actual experience, and the assumptions remain conservative (i.e. A/E ratios were above 100%). However, except for public safety and firefighter employees, we generally increased the overall number of terminations to more closely match experience. We also did not make any adjustment to the termination assumption for male employees of local governments.

Below is a summary of the results for the systems.

Group	Actual Terminations	Expected Current Assumption	Expected Proposed Assumption
Educators - males	1,488	1,240	1,362
Educators - females	6,542	6,128	6,235
State - males	6,424	6,104	6,147
State - females	13,910	12,192	12,793
Local - males	2,976	2,977	2,977
Local - females	3,880	3,679	3,723
Public Safety	1,210	1,211	1,187
Firefighters	144	144	134
Total – All Systems	36,574	33,675	34,558

Using the proposed assumptions, the A/E ratios now range from 102% to 109% for the various groups.

We assume no turnover for judges, and in fact, in most years no judges leave the bench.

During the last five year period, aggregate year-to-year turnover rates varied from 5% to 30%, with higher turnover experience occurring during election years. While the average turnover rate for the entire 5-year period averaged 15%, we are not recommending any changes to the current 10% turnover assumption.

More detail is shown on the tables on pages 74-81 in Section VI.

MARRIAGE ASSUMPTION

The marriage assumption is a minor one for URS. We currently assume 100% of the members are married at death, and that there are no children or other beneficiaries who will receive benefits. While we recognize that this is conservative, we did review the retiree data to identify the percentage of new retirees that had a married indicator and spousal date of birth and concluded that this assumption is not unreasonable. Therefore, we recommend making no change at this time. (Recognize that this assumption only affects some of the death and survivor benefits, particularly in the Public Safety and Firefighters Systems.)

SPOUSAL AGE DIFFERENCE

Currently, we assume that male members are three years older than their spouses and female members are three years younger than their spouses. Based on a review of the spousal age difference at the time of the member's retirement shows that male members are, on average, three years older than their spouses, female members are, on average, two years younger than their spouses. The Retirement System's experience is not materially different than the national general census statistics of a three year spousal age difference. Therefore, this assumption continues to be reasonable and we are not recommending changes.

REFUND OF CONTRIBUTIONS

We currently assume that a percentage of terminating members who participate in one of the contributory plans will take a refund, rather than leaving their funds on deposit with URS. The percentages grades down from 100% for all nonvested members to 0% after 20 years of service. Because most members participate in one of the noncontributory systems, and because the termination rates in the Public Safety and Firefighters systems are very low, this assumption has little effect on the results. We are recommending no change in the tables of refund percentages.

OTHER ASSUMPTIONS

There are other technical assumptions made in the course of a valuation, such as the timing of terminations and retirements during the year, and the timing of pay increases. We reviewed these and are recommending no changes.

ACTUARIAL COST METHOD

The individual Entry Age Normal cost method (EAN) is the current funding method being used to allocate the actuarial costs of the Fund. The Entry Age Normal method will generally produce relatively level contribution amounts as a percentage of payroll from year to year. It allocates costs among various generations of taxpayers in a reasonable fashion. It is by far the most commonly used actuarial cost method for large public retirement systems. It is also the one actuarial cost method that the Governmental Accounting Standards Board has approved for use under the new pension accounting standards. We continue to believe this is the best funding method for URS, and we recommend no change.

ACTUARIAL VALUE OF ASSETS

Actuaries generally recommend using a smoothed actuarial value of assets (AVA), rather than market value (MVA), in order to dampen the fluctuations in measurements such as the required contribution amount and the funded status of the system.

The current method smooths the difference between the expected return (based on the current 7.50% annual investment return assumption) and actual returns, net of expenses, over a five-year period. For example, if the actual return is 12.50% in one year, then 7.50% is reflected immediately in the AVA, and the other 5.00% is recognized in 20% increments over five years, beginning with 20% for the current year. Additionally, this method requires that the actuarial value of assets be no more than 125% of the market value and no less than 75% of the market value. This keeps the actuarial value from drifting to far from the underlying market value in an extended boom or downturn.

This method of determining the actuarial value of assets is very common. While some plans use a shorter or longer smoothing period, five years is by far the most common period being used by public sector plans. We believe this method is reasonable. We do not believe the method has a bias relative to market. In other words, we expect the ratio of the AVA to MVA to average about 100% over the very long term.

AMORTIZATION PERIOD

The Board's current funding policy includes the following financial objectives:

- To maintain a stable or increasing funded ratio;
- To accumulate sufficient assets to finance the benefits promised to members and beneficiaries;
- To sustain a pattern of relatively constant contribution rates expressed as a percentage of member salary;
- To provide intergenerational equity for taxpayers with respect to system costs;
- To manage investment risk with a diversified asset allocation and asset smoothing;
- To require employers to contribute the greater of the actuarial calculated contribution rate or the previous year's contribution rate until the Systems reach a 110% funded ratio. Once a 110% funded ratio is attained, the employer contribution rate shall be adjusted such that it is sufficient to maintain a 100% funded ratio.

In 2009, the Board changed the period for amortizing the unfunded actuarial accrued liability from an open 20-year period to a closed 25-year period. As of January 1, 2014, the amortization period is back to 20 years.

The issue at hand is as the amortization period becomes shorter, changes in the unfunded actuarial accrued liability due to gains, losses, and assumption changes are financed over successively shorter periods resulting in increased volatility in the actuarially determined contribution rates.

Section of 49-11-301(5) of the Utah Code gives the Board the option of setting contribution rates at the higher of the previous year's certified rate and the current year's actuarially calculated contribution rate. Therefore, the actuarially calculated rate, becomes the contribution rate floor and the amortization period used to calculate the actuarially determined rate becomes the maximum funding period. Stated differently, if the certified contribution rate is greater than the actuarially determined rate then the number of years until the plan attains a 100% funded ratio will be less than the amortization period used to determine the actuarially determined contribution rate.

To best balance the objectives of maintaining stable contribution rates and a contribution rate sufficient for the funds to attain a 100% funded ratio, we recommend the Board adopt an open 20-year amortization period for all the funds, except the Governors and Legislators Pension Plan. The combination of developing an actuarially determined contribution rate with a 20-year funding period and continuing to maintain the current contribution rate, if greater, is expected to result in contribution rates that will meet the Board's financial objectives.

Since the Governors and Legislators Pension Plan is funded by periodic direct appropriations rather than through pay-period contributions, we recommend continuing to use a closed amortization period for the next three years and reevaluate the amortization policy during the next experience study.

SECTION IV

ACTUARIAL IMPACT OF RECOMMENDATIONS

Actuarial Impact of Recommendations

We believe the Board's decision about whether or not to adopt our recommendations should be based on the appropriateness of each recommendation individually, not on their collective effect on the contribution rates or the actuarial liabilities.

The following pages have tables showing the impact of the recommended assumptions on the January 1, 2014 actuarially calculated employer contribution rates and unfunded actuarially accrued liability.

The decrease in the salary assumption and retirement rates decrease the liabilities and calculate contribution rate for all of the funds.

The contribution rates shown on the following page exclude the 401(k) contribution and the group insurance contribution on the Tier II Hybrid plans. They include the contribution for the 3% substantial substitute where applicable. These rates do not reflect any action of the Board of Trustees under U.C. §49-11-301(5) to hold employer contribution rates at the prior year's level. For firefighters and judges, the contribution rates shown are the gross rates, before applying the offsets for insurance premium tax receipts or court fees.

The funded ratio for all funds combined, as of January 1, 2014, is 81.7% under the recommended new assumptions, this compares to a funded ratio of 81.0% under the current assumptions as of January 1, 2014, and a funded ratio of 77.1% as of January 1, 2013. Also, both Tier II Hybrid Plans continue to have a funded ratio greater than 100%.

Comparison of FY 2015 Contribution Rates with the Actuarially Determined Contributions Rates Based on the 2014 Actuarial Valuation

<u>Fund</u>	<u>Actuarially Determined Contribution Rates for FY 2016</u>			
	<u>FY 2015 Certified Rates</u>	<u>Current Assumptions</u>	<u>New Assumptions</u>	<u>Increase / (Decrease) (3) - (1)</u>
	(1)	(2)	(3)	(4)
I. Public Employees Contributory				
A. Local Government	14.46%	13.60%	12.71%	-1.75%
B. State and School	17.70%	17.17%	16.64%	-1.06%
II. Public Employees Noncontributory				
A. Local Government	18.47%	17.61%	16.72%	-1.75%
B. State and School	22.19%	21.66%	21.13%	-1.06%
III. Public Safety Contributory				
A. State	29.70%	28.42%	26.62%	-3.08%
B. Other Division A (2.5% COLA)	22.75%	20.60%	18.67%	-4.08%
C. Other Division A (4% COLA)	24.33%	23.23%	21.16%	-3.17%
D. Logan	31.80%	31.41%	29.48%	-2.32%
E. Other Division B (2.5% COLA)	22.29%	20.83%	19.24%	-3.05%
F. Other Division B (4% COLA)	28.95%	24.86%	23.00%	-5.95%
IV. Public Safety Noncontributory				
A. State	41.35%	40.02%	38.23%	-3.12%
B. Other Division A (2.5% COLA)	34.04%	31.96%	30.07%	-3.97%
C. Other Division A (4% COLA)	35.71%	34.60%	32.56%	-3.15%
D. Salt Lake City	46.67%	45.60%	43.85%	-2.82%
E. Ogden	48.68%	47.83%	46.25%	-2.43%
F. Provo	42.16%	39.58%	37.76%	-4.40%
G. Logan	41.92%	41.54%	39.66%	-2.26%
H. Bountiful	47.33%	47.42%	45.94%	-1.39%
I. Other Division B (2.5% COLA)	32.20%	30.60%	28.97%	-3.23%
J. Other Division B (4% COLA)	38.94%	34.98%	33.13%	-5.81%
V. Firefighters				
A. Division A	15.53%	14.10%	10.93%	-4.60%
B. Division B	18.30%	15.54%	12.08%	-6.22%
VI. Judges	51.91%	50.91%	51.18%	-0.73%
VII. 3% Substantial Substitute	0.85%	0.69%	0.71%	-0.14%
VIII. Tier II - Hybrid Plans				
A. Public Employees	8.22%	8.22%	7.82%	-0.40%
B. Public Safety and Firefighter	10.72%	10.54%	10.01%	-0.71%

Note:

Rates shown for Firefighters and Judges exclude offsets for fire premium tax and court fees.

Rates for Tier I Public Employee Systems include the cost of the 75% of pay active death benefit.

The preliminary contribution rates for FY 2016 do not reflect application of U.C. Sec. 49-11-301(5), the Board's ability to maintain the prior year's contribution rate.

Comparison of Unfunded Actuarially Accrued Liability (UAAL)

Fund	2014 Actuarial Valuation			
	2013	Current	New Assumptions	Increase /
	Valuation	Assumptions		(Decrease)
	(1)	(2)	(3)	(3) - (2)
I. Public Employees Contributory				
A. Local Government	70,939	61,263	58,349	(2,914)
B. State and School	76,464	63,232	62,500	(732)
II. Public Employees Noncontributory				
A. Local Government	877,596	763,328	710,439	(52,889)
B. State and School	4,019,756	3,459,645	3,354,612	(105,033)
III. Public Safety Contributory				
A. State	474	307	288	(19)
B. Other Division A (2.5% COLA)	8,034	6,424	5,793	(631)
C. Other Division A (4% COLA)	546	486	440	(46)
D. Logan	1,281	1,294	1,218	(76)
E. Other Division B (2.5% COLA)	566	289	265	(24)
F. Other Division B (4% COLA)	811	610	562	(48)
IV. Public Safety Noncontributory				
A. State	307,209	271,954	254,378	(17,576)
B. Other Division A (2.5% COLA)	194,480	158,248	142,654	(15,594)
C. Other Division A (4% COLA)	62,166	57,947	52,406	(5,541)
D. Salt Lake City	101,563	94,757	90,206	(4,551)
E. Ogden	22,581	21,383	20,561	(822)
F. Provo	15,631	14,051	13,192	(859)
G. Logan	6,192	5,830	5,486	(344)
H. Bountiful	6,417	6,398	6,169	(229)
I. Other Division B (2.5% COLA)	71,032	64,796	59,416	(5,380)
J. Other Division B (4% COLA)	10,333	8,432	7,763	(669)
V. Firefighters				
A. Division A	15,429	10,158	6,130	(4,028)
B. Division B	105,302	70,161	53,817	(16,344)
VI. Judges	43,706	40,122	39,992	(130)
VII. Governors and Legislative	2,848	2,729	2,729	0
VIII. 3% Substantial Substitute	334,152	315,609	315,022	(587)
IX. Tier II - Hybrid Plans				
A. Public Employees	(1,062)	(2,525)	(3,911)	(1,386)
B. Public Safety and Firefighter	(119)	(424)	(550)	(126)
X. Grand Total	6,354,327	5,496,504	5,259,926	(236,578)

\$ in '000s

Columns may not add to total due to rounding



SECTION V

SUMMARY OF RECOMMENDATIONS

Summary of Recommendations

1. No change to the 2.75% price inflation assumption. There is also no change to the COLA assumption for any of the Systems.
2. No change to the investment return assumption of 7.50%.
3. Reduce the wage inflation component of the salary assumption by 0.25% to 3.50% and make minor adjustments to the step-rate component of the salary increases for some of the groups.
4. Decrease the payroll growth rate assumption by 0.25% from 3.50% to 3.25%.
5. Improve the post-retirement mortality assumption for female teachers. No change to the mortality assumption for the other retiree groups.
6. No change to the disabled retiree mortality assumption.
7. Update the active member mortality tables.
8. Minor modifications to the rates of disability.
9. Slightly reduce the overall rates of retirement for most employment groups, especially at the younger retirement ages. Minor increases to the rates of retirement for judges.
10. Slightly increase the overall rates of termination for most groups.
11. Make no change to the use of the individual Entry Age Normal actuarial cost method.
12. Continue to use the five-year smoothing method. Make no change to the 75% - 125% corridor around market.
13. Use a 20-year open amortization for determining the actuarially determined contribution for all the funds except the Governors and Legislators Pension Plan. The amortization period for the Governors and Legislators Pension Plan will continue to remain closed and be reevaluated during the next assumption review.

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**POST-RETIREMENT MORTALITY EXPERIENCE
MALE EDUCATORS**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	0	0	N/A	0.11%	0.11%	0.0	0.0	0%	0%
45-49	0	13	0.0000	0.16%	0.16%	0.0	0.0	0%	0%
50-54	1	197	0.0051	0.25%	0.25%	0.6	0.6	181%	181%
55-59	9	1,450	0.0062	0.37%	0.37%	5.3	5.3	170%	170%
60-64	12	4,084	0.0029	0.39%	0.39%	16.0	16.0	75%	75%
65-69	46	5,788	0.0079	0.59%	0.59%	37.1	37.1	124%	124%
70-74	66	5,122	0.0129	1.53%	1.53%	75.7	75.7	87%	87%
75-79	103	4,341	0.0237	2.39%	2.39%	107.9	107.9	95%	95%
80-84	145	2,875	0.0504	5.48%	5.48%	153.8	153.8	94%	94%
85-89	153	1,494	0.1024	10.40%	10.40%	150.5	150.5	102%	102%
90-94	91	472	0.1928	17.93%	17.93%	80.4	80.4	113%	113%
95-99	25	78	0.3205	26.36%	26.36%	19.1	19.1	131%	131%
Other	2	9	0.2222			3.0	3.0	66%	66%
Totals	653	25,923				649	649	101%	101%

**POST-RETIREMENT MORTALITY EXPERIENCE
FEMALE EDUCATORS**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	0	5	0.0000	0.08%	0.08%	0.0	0.0	0%	0%
45-49	1	49	0.0204	0.10%	0.10%	0.1	0.1	1777%	1901%
50-54	4	642	0.0062	0.20%	0.19%	1.6	1.5	251%	268%
55-59	15	2,379	0.0063	0.49%	0.46%	11.3	10.6	133%	142%
60-64	26	6,530	0.0040	0.41%	0.39%	27.6	25.8	94%	101%
65-69	51	9,681	0.0053	0.56%	0.52%	55.9	52.3	91%	98%
70-74	68	7,486	0.0091	1.14%	1.07%	82.8	77.4	82%	88%
75-79	106	5,095	0.0208	1.82%	1.70%	94.4	88.2	112%	120%
80-84	124	3,632	0.0341	4.51%	4.22%	164.4	153.6	75%	81%
85-89	178	2,105	0.0846	9.97%	9.31%	203.1	189.8	88%	94%
90-94	168	1,034	0.1625	17.29%	16.16%	173.3	162.0	97%	104%
95-99	80	315	0.2540	26.21%	24.49%	78.9	73.7	101%	109%
Other	19	46	0.4130			16.4	15.3	116%	124%
Totals	840	38,999				910	850	92%	99%

**POST-RETIREMENT MORTALITY EXPERIENCE
MALE PUBLIC SAFETY & FIREFIGHTERS**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	2	170	0.0118	0.09%	0.09%	0.2	0.2	1140%	1140%
45-49	3	1,090	0.0028	0.13%	0.13%	1.5	1.5	202%	202%
50-54	6	2,012	0.0030	0.20%	0.20%	4.1	4.1	145%	145%
55-59	14	3,454	0.0041	0.34%	0.34%	11.9	11.9	117%	117%
60-64	31	4,349	0.0071	0.62%	0.62%	28.0	28.0	111%	111%
65-69	42	3,716	0.0113	1.22%	1.22%	44.1	44.1	95%	95%
70-74	60	2,431	0.0247	2.02%	2.02%	49.2	49.2	122%	122%
75-79	49	1,514	0.0324	3.67%	3.67%	54.7	54.7	90%	90%
80-84	70	827	0.0846	6.86%	6.86%	55.6	55.6	126%	126%
85-89	43	375	0.1147	12.19%	12.19%	43.9	43.9	98%	98%
90-94	20	105	0.1905	20.52%	20.52%	20.5	20.5	97%	97%
95-99	3	19	0.1579	29.33%	29.33%	5.3	5.3	57%	57%
Other	6	75	0.0800			4.9	4.9	123%	123%
Totals	349	20,137				324	324	108%	108%

**POST-RETIREMENT MORTALITY EXPERIENCE
FEMALE PUBLIC SAFETY & FIREFIGHTERS**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	0	99	0.0000	0.09%	0.09%	0.1	0.1	0%	0%
45-49	1	346	0.0029	0.12%	0.12%	0.4	0.4	238%	238%
50-54	2	492	0.0041	0.23%	0.23%	1.2	1.2	164%	164%
55-59	2	749	0.0027	0.55%	0.55%	3.9	3.9	51%	51%
60-64	3	835	0.0036	0.46%	0.46%	4.0	4.0	75%	75%
65-69	15	751	0.0200	0.62%	0.62%	4.9	4.9	309%	309%
70-74	14	650	0.0215	1.28%	1.28%	8.1	8.1	172%	172%
75-79	8	644	0.0124	2.04%	2.04%	13.9	13.9	58%	58%
80-84	26	643	0.0404	5.06%	5.06%	32.1	32.1	81%	81%
85-89	32	364	0.0879	11.18%	11.18%	40.3	40.3	79%	79%
90-94	39	193	0.2021	19.39%	19.39%	36.1	36.1	108%	108%
95-99	14	53	0.2642	29.39%	29.39%	14.6	14.6	96%	96%
Other	8	171	0.0468			7.4	7.4	108%	108%
Totals	164	5,990				167	167	98%	98%

**POST-RETIREMENT MORTALITY EXPERIENCE
MALE GENERAL STATE & LOCAL GOVERNMENT**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	0	7	0.0000	0.09%	0.09%	0.0	0.0	0%	0%
45-49	1	142	0.0070	0.13%	0.13%	0.2	0.2	496%	496%
50-54	8	1,023	0.0078	0.20%	0.20%	2.1	2.1	374%	374%
55-59	15	2,650	0.0057	0.34%	0.34%	9.3	9.3	161%	161%
60-64	61	6,658	0.0092	0.62%	0.62%	44.9	44.9	136%	136%
65-69	169	11,943	0.0142	1.22%	1.22%	146.0	146.0	116%	116%
70-74	235	10,933	0.0215	2.02%	2.02%	222.5	222.5	106%	106%
75-79	349	8,681	0.0402	3.67%	3.67%	317.9	317.9	110%	110%
80-84	349	6,141	0.0568	6.86%	6.86%	418.1	418.1	83%	83%
85-89	452	3,552	0.1273	12.19%	12.19%	420.1	420.1	108%	108%
90-94	233	1,181	0.1973	20.52%	20.52%	231.4	231.4	101%	101%
95-99	67	212	0.3160	29.33%	29.33%	58.7	58.7	114%	114%
Other	7	13	0.5385			4.2	4.2	165%	165%
Totals	1,946	53,136				1,876	1,876	104%	104%

**POST-RETIREMENT MORTALITY EXPERIENCE
FEMALE GENERAL STATE & LOCAL GOVERNMENT**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	0	35	0.0000	0.09%	0.09%	0.0	0.0	0%	0%
45-49	3	185	0.0162	0.12%	0.12%	0.2	0.2	1288%	1288%
50-54	8	1,049	0.0076	0.23%	0.23%	2.8	2.8	289%	289%
55-59	15	2,756	0.0054	0.55%	0.55%	14.7	14.7	102%	102%
60-64	58	8,671	0.0067	0.46%	0.46%	41.0	41.0	142%	142%
65-69	125	19,156	0.0065	0.62%	0.62%	126.8	126.8	99%	99%
70-74	211	17,764	0.0119	1.28%	1.28%	221.2	221.2	95%	95%
75-79	358	14,160	0.0253	2.04%	2.04%	297.2	297.2	120%	120%
80-84	533	10,281	0.0518	5.06%	5.06%	520.4	520.4	102%	102%
85-89	696	6,558	0.1061	11.18%	11.18%	712.6	712.6	98%	98%
90-94	497	2,818	0.1764	19.39%	19.39%	528.2	528.2	94%	94%
95-99	183	692	0.2645	29.39%	29.39%	192.7	192.7	95%	95%
Other	30	102	0.2941			28.8	28.8	104%	104%
Totals	2,717	84,227				2,687	2,687	101%	101%

**POST-RETIREMENT MORTALITY EXPERIENCE
ALL DISABLED MALES**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	1	34	0.0294	2.02%	2.02%	0.7	0.7	147%	147%
45-49	1	69	0.0145	2.13%	2.13%	1.5	1.5	68%	68%
50-54	4	111	0.0360	2.53%	2.53%	2.8	2.8	141%	141%
55-59	3	178	0.0169	3.15%	3.15%	5.7	5.7	53%	53%
60-64	11	334	0.0329	3.81%	3.81%	12.9	12.9	85%	85%
65-69	33	762	0.0433	4.72%	4.72%	35.9	35.9	92%	92%
70-74	34	565	0.0602	5.88%	5.88%	32.9	32.9	103%	103%
75-79	29	390	0.0744	7.98%	7.98%	31.1	31.1	93%	93%
80-84	25	242	0.1033	11.16%	11.16%	26.6	26.6	94%	94%
85-89	18	108	0.1667	14.53%	14.53%	15.4	15.4	117%	117%
90-94	7	22	0.3182	20.96%	20.96%	4.3	4.3	163%	163%
95-99	0	1	0.0000	29.33%	29.33%	0.3	0.3	0%	0%
Other	1	39	0.0256			0.0	0.0	0%	0%
Totals	167	2,855				170	170	98%	98%

**POST-RETIREMENT MORTALITY EXPERIENCE
ALL DISABLED FEMALES**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	0	2	0.0000	0.69%	0.69%	0.0	0.0	0%	0%
45-49	0	8	0.0000	0.81%	0.81%	0.1	0.1	0%	0%
50-54	1	48	0.0208	1.27%	1.27%	0.6	0.6	157%	157%
55-59	2	117	0.0171	1.94%	1.94%	2.3	2.3	87%	87%
60-64	9	293	0.0307	2.51%	2.51%	7.5	7.5	120%	120%
65-69	32	1,056	0.0303	3.26%	3.26%	34.9	34.9	92%	92%
70-74	37	867	0.0427	4.41%	4.41%	37.8	37.8	98%	98%
75-79	30	547	0.0548	6.06%	6.06%	32.6	32.6	92%	92%
80-84	23	285	0.0807	8.38%	8.38%	23.7	23.7	97%	97%
85-89	23	147	0.1565	12.05%	12.05%	17.2	17.2	133%	133%
90-94	16	57	0.2807	17.02%	17.02%	9.5	9.5	169%	169%
95-99	5	15	0.3333	23.42%	23.42%	3.3	3.3	152%	152%
Other	0	10	0.0000			0.0	0.0	0%	0%
Totals	178	3,452				170	170	105%	105%

**ACTIVE MORTALITY EXPERIENCE
MALE STATE EMPLOYEES**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	2	2,221	0.0009	0.04%	0.03%	1.0	1.0	200%	200%
25-29	3	6,368	0.0005	0.04%	0.03%	3.0	2.0	100%	150%
30-34	7	9,015	0.0008	0.06%	0.04%	5.0	4.0	140%	175%
35-39	12	9,734	0.0012	0.08%	0.07%	7.0	7.0	171%	171%
40-44	8	8,614	0.0009	0.09%	0.10%	8.0	8.0	100%	100%
45-49	6	9,284	0.0006	0.12%	0.14%	11.0	13.0	55%	46%
50-54	21	10,677	0.0020	0.19%	0.20%	20.0	21.0	105%	100%
55-59	31	10,435	0.0030	0.31%	0.29%	33.0	31.0	94%	100%
60-64	40	8,246	0.0049	0.50%	0.47%	41.0	38.0	98%	105%
65-69	21	3,409	0.0062	0.74%	0.69%	24.0	23.0	88%	91%
70-74	6	1,066	0.0056	0.97%	0.00%	10.0	2.0	60%	300%
Totals	157	79,069				163	150	96%	105%

**ACTIVE MORTALITY EXPERIENCE
FEMALE STATE EMPLOYEES**

Age (1)	Actual Deaths (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Deaths		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
20-24	3	4,201	0.0007	0.03%	0.01%	1.0	0.0	300%	0%
25-29	1	10,287	0.0001	0.03%	0.01%	3.0	1.0	33%	100%
30-34	1	12,042	0.0001	0.03%	0.02%	4.0	2.0	25%	50%
35-39	5	13,645	0.0004	0.04%	0.03%	5.0	4.0	100%	125%
40-44	11	15,863	0.0007	0.06%	0.04%	9.0	7.0	122%	157%
45-49	12	19,791	0.0006	0.08%	0.07%	16.0	13.0	75%	92%
50-54	29	24,605	0.0012	0.12%	0.10%	30.0	24.0	97%	121%
55-59	44	24,802	0.0018	0.18%	0.15%	44.0	38.0	100%	116%
60-64	33	17,368	0.0019	0.25%	0.23%	43.0	40.0	77%	83%
65-69	11	5,523	0.0020	0.34%	0.33%	18.0	18.0	61%	61%
70-74	3	1,151	0.0026	0.42%	0.00%	5.0	2.0	60%	150%
Totals	153	149,278				178	149	86%	103%

**ACTIVE MORTALITY EXPERIENCE
MALE LOCAL GOVERNMENT EMPLOYEES**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	1,206	0.0000	0.04%	0.03%	0.0	0.0	0%	0%
25-29	2	4,263	0.0005	0.04%	0.03%	2.0	1.0	100%	200%
30-34	5	6,854	0.0007	0.06%	0.04%	4.0	3.0	125%	167%
35-39	7	7,140	0.0010	0.08%	0.07%	5.0	5.0	140%	140%
40-44	7	6,602	0.0011	0.09%	0.10%	6.0	6.0	117%	117%
45-49	6	6,869	0.0009	0.12%	0.14%	8.0	10.0	75%	60%
50-54	19	7,679	0.0025	0.19%	0.20%	15.0	15.0	127%	127%
55-59	22	7,232	0.0030	0.31%	0.29%	23.0	21.0	96%	105%
60-64	22	5,022	0.0044	0.50%	0.47%	25.0	23.0	88%	96%
65-69	12	1,742	0.0069	0.74%	0.69%	12.0	12.0	100%	100%
70-74	5	463	0.0108	0.97%	0.00%	4.0	1.0	125%	500%
Totals	107	55,072				104	97	103%	110%

**ACTIVE MORTALITY EXPERIENCE
FEMALE LOCAL GOVERNMENT EMPLOYEES**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	1,259	0.0000	0.03%	0.01%	0.0	0.0	0%	0%
25-29	0	4,076	0.0000	0.03%	0.01%	1.0	0.0	0%	0%
30-34	1	5,266	0.0002	0.03%	0.02%	2.0	1.0	50%	100%
35-39	3	5,280	0.0006	0.04%	0.03%	2.0	1.0	150%	300%
40-44	4	5,415	0.0007	0.06%	0.04%	3.0	2.0	133%	200%
45-49	4	5,959	0.0007	0.08%	0.07%	5.0	4.0	80%	100%
50-54	10	7,221	0.0014	0.12%	0.10%	9.0	7.0	111%	143%
55-59	15	7,196	0.0021	0.18%	0.15%	13.0	11.0	115%	136%
60-64	7	5,048	0.0014	0.25%	0.23%	13.0	12.0	54%	58%
65-69	5	1,731	0.0029	0.34%	0.33%	6.0	5.0	83%	100%
70-74	2	381	0.0052	0.42%	0.00%	2.0	0.0	100%	0%
Totals	51	48,832				56	43	91%	119%

**ACTIVE MORTALITY EXPERIENCE
MALE EDUCATORS**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	243	0.0000	0.01%	0.02%	0.0	0.0	0%	0%
25-29	0	2,404	0.0000	0.01%	0.02%	0.3	0.5	0%	0%
30-34	0	4,940	0.0000	0.02%	0.03%	1.0	1.4	0%	0%
35-39	2	5,112	0.0004	0.03%	0.05%	1.4	2.3	144%	87%
40-44	6	4,998	0.0012	0.05%	0.06%	2.4	3.1	250%	196%
45-49	4	4,511	0.0009	0.08%	0.09%	3.9	3.9	102%	102%
50-54	8	4,673	0.0017	0.16%	0.12%	7.8	5.7	103%	139%
55-59	6	4,525	0.0013	0.29%	0.18%	12.9	8.3	46%	72%
60-64	8	3,104	0.0026	0.42%	0.30%	12.6	9.0	63%	89%
65-69	5	922	0.0054	0.49%	0.43%	4.5	3.8	112%	132%
70-74	2	152	0.0132	0.53%	0.00%	0.8	0.3	250%	790%
Totals	41	35,584				48	38	86%	107%

**ACTIVE MORTALITY EXPERIENCE
FEMALE EDUCATORS**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	3,198	0.0000	0.04%	0.01%	0.8	0.2	0%	0%
25-29	1	13,055	0.0001	0.01%	0.01%	1.6	1.0	61%	97%
30-34	1	11,229	0.0001	0.01%	0.01%	1.1	1.4	93%	74%
35-39	4	10,626	0.0004	0.03%	0.02%	3.0	2.1	134%	192%
40-44	3	11,041	0.0003	0.06%	0.03%	6.2	3.3	49%	90%
45-49	6	11,586	0.0005	0.10%	0.05%	11.6	5.4	52%	110%
50-54	8	13,685	0.0006	0.14%	0.07%	19.6	9.5	41%	84%
55-59	21	13,980	0.0015	0.20%	0.11%	27.5	14.8	76%	142%
60-64	13	10,165	0.0013	0.27%	0.16%	27.1	16.2	48%	80%
65-69	8	2,465	0.0032	0.38%	0.23%	8.9	5.4	90%	148%
70-74	2	344	0.0058	0.48%	0.00%	1.6	0.4	124%	529%
Totals	67	101,374				109	60	61%	112%

**ACTIVE MORTALITY EXPERIENCE
PUBLIC SAFETY - MALES**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	479	0.0000	0.04%	0.03%	0.2	0.1	0%	0%
25-29	1	3,998	0.0003	0.04%	0.03%	1.8	1.3	57%	80%
30-34	4	6,624	0.0006	0.04%	0.05%	2.9	3.0	137%	132%
35-39	6	7,211	0.0008	0.05%	0.07%	3.5	5.2	172%	116%
40-44	8	6,150	0.0013	0.08%	0.10%	4.6	6.0	174%	134%
45-49	0	3,926	0.0000	0.13%	0.14%	5.0	5.4	0%	0%
50-54	3	2,446	0.0012	0.21%	0.20%	5.2	4.8	58%	63%
55-59	3	1,686	0.0018	0.31%	0.29%	5.2	4.9	57%	62%
60-64	1	964	0.0010	0.42%	0.47%	3.9	4.4	25%	23%
65-69	0	220	0.0000	0.51%	0.69%	1.1	1.4	0%	0%
70-74	0	10	0.0000	0.59%	0.00%	0.1	0.0	0%	0%
Totals	26	33,714				33	37	78%	71%

**ACTIVE MORTALITY EXPERIENCE
PUBLIC SAFETY - FEMALES**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	67	0.0000	0.04%	0.01%	0.0	0.0	0%	0%
25-29	0	383	0.0000	0.04%	0.01%	0.2	0.0	0%	0%
30-34	0	797	0.0000	0.04%	0.02%	0.4	0.1	0%	0%
35-39	1	910	0.0011	0.05%	0.03%	0.4	0.3	227%	394%
40-44	2	806	0.0025	0.08%	0.04%	0.6	0.3	329%	580%
45-49	1	668	0.0015	0.13%	0.07%	0.9	0.4	116%	227%
50-54	1	477	0.0021	0.21%	0.10%	1.0	0.5	98%	213%
55-59	0	329	0.0000	0.31%	0.15%	1.0	0.5	0%	0%
60-64	0	135	0.0000	0.42%	0.23%	0.5	0.3	0%	0%
65-69	0	40	0.0000	0.51%	0.33%	0.2	0.1	0%	0%
70-74	0	2	0.0000	0.59%	0.00%	0.0	0.0	0%	0%
Totals	5	4,614				5	3	95%	191%

**ACTIVE MORTALITY EXPERIENCE
FIREFIGHTERS - MALES**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	94	0.0000	0.04%	0.03%	0.0	0.0	0%	0%
25-29	0	848	0.0000	0.04%	0.03%	0.4	0.3	0%	0%
30-34	1	1,934	0.0005	0.04%	0.05%	0.9	0.9	118%	112%
35-39	0	1,987	0.0000	0.05%	0.07%	1.0	1.4	0%	0%
40-44	1	1,628	0.0006	0.08%	0.10%	1.2	1.6	82%	63%
45-49	2	1,043	0.0019	0.13%	0.14%	1.3	1.4	148%	139%
50-54	1	812	0.0012	0.21%	0.20%	1.7	1.6	58%	63%
55-59	3	596	0.0050	0.31%	0.29%	1.9	1.7	162%	174%
60-64	2	251	0.0080	0.42%	0.47%	1.0	1.1	198%	179%
65-69	0	30	0.0000	0.51%	0.69%	0.1	0.2	0%	0%
70-74	1	1	1.0000	0.59%	0.00%	0.0	0.0	16992%	0%
Totals	11	9,224				10	10	115%	107%

**ACTIVE MORTALITY EXPERIENCE
FIREFIGHTERS - FEMALES**

Age	Actual Deaths	Total Count	Actual Rate	Assumed Rate		Expected Deaths		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	5	0.0000	0.04%	0.01%	0.0	0.0	0%	0%
25-29	0	44	0.0000	0.04%	0.01%	0.0	0.0	0%	0%
30-34	0	56	0.0000	0.04%	0.02%	0.0	0.0	0%	0%
35-39	0	56	0.0000	0.05%	0.03%	0.1	0.0	0%	0%
40-44	0	65	0.0000	0.08%	0.04%	0.1	0.1	0%	0%
45-49	0	36	0.0000	0.13%	0.07%	0.1	0.0	0%	0%
50-54	0	10	0.0000	0.21%	0.10%	0.0	0.0	0%	0%
55-59	0	5	0.0000	0.31%	0.15%	0.0	0.0	0%	0%
60-64	0	0	N/A	0.42%	0.23%	0.0	0.0	0%	0%
65-69	0	0	N/A	0.51%	0.33%	0.0	0.0	0%	0%
70-74	0	0	N/A	0.59%	0.00%	0.0	0.0	0%	0%
Totals	0	277				0	0	0%	0%

**DISABILITY EXPERIENCE
MALE STATE EMPLOYEES**

Age	Actual Disabilities	Total Count	Actual Rate	Assumed Rate		Expected Disabilities		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	2,221	0.0000	0.03%	0.02%	0.6	0.6	0%	0%
25-29	2	6,368	0.0003	0.05%	0.05%	3.5	3.2	57%	62%
30-34	8	9,015	0.0009	0.10%	0.09%	8.8	8.1	91%	99%
35-39	10	9,734	0.0010	0.13%	0.12%	12.3	11.3	81%	88%
40-44	17	8,614	0.0020	0.19%	0.17%	16.3	15.0	104%	113%
45-49	15	9,212	0.0016	0.29%	0.26%	26.4	24.3	57%	62%
50-54	41	10,048	0.0041	0.38%	0.35%	38.7	35.6	106%	115%
55-59	54	8,870	0.0061	0.60%	0.55%	52.3	48.1	103%	112%
60-64	43	6,946	0.0062	0.74%	0.68%	51.1	47.0	84%	92%
65-69	11	2,975	0.0037	0.79%	0.72%	23.4	21.6	47%	51%
70-74	5	684	0.0073	0.79%	0.72%	5.4	5.0	93%	101%
Totals	206	74,687				239	220	86%	94%

**DISABILITY EXPERIENCE
FEMALE STATE EMPLOYEES**

Age (1)	Actual Disabilities (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Disabilities		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
20-24	0	4,201	0.0000	0.02%	0.02%	1.1	1.0	0%	0%
25-29	3	10,287	0.0003	0.04%	0.04%	4.9	4.4	62%	68%
30-34	8	12,042	0.0007	0.09%	0.08%	10.4	9.4	77%	85%
35-39	8	13,645	0.0006	0.11%	0.10%	15.4	14.0	52%	57%
40-44	27	15,863	0.0017	0.17%	0.15%	26.6	24.2	101%	112%
45-49	49	19,723	0.0025	0.25%	0.23%	49.8	45.3	98%	108%
50-54	70	23,879	0.0029	0.33%	0.30%	81.0	73.7	86%	95%
55-59	105	23,296	0.0045	0.53%	0.48%	121.1	110.0	87%	95%
60-64	98	16,043	0.0061	0.65%	0.59%	103.5	94.1	95%	104%
65-69	17	5,054	0.0034	0.69%	0.63%	35.0	31.8	49%	53%
70-74	5	1,017	0.0049	0.69%	0.63%	7.0	6.4	71%	78%
Totals	390	145,050				456	414	86%	94%

**DISABILITY EXPERIENCE
MALE EDUCATORS**

Age	Actual Disabilities	Total Count	Actual Rate	Assumed Rate		Expected Disabilities		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	243	0.0000	0.01%	0.01%	0.0	0.0	0%	0%
25-29	1	2,404	0.0004	0.02%	0.02%	0.7	0.5	148%	197%
30-34	1	4,940	0.0002	0.05%	0.04%	2.3	1.8	43%	57%
35-39	1	5,112	0.0002	0.06%	0.05%	3.1	2.3	32%	43%
40-44	0	4,998	0.0000	0.09%	0.07%	4.5	3.4	0%	0%
45-49	1	4,510	0.0002	0.14%	0.10%	6.2	4.6	16%	22%
50-54	4	4,528	0.0009	0.18%	0.14%	8.3	6.2	48%	64%
55-59	12	3,208	0.0037	0.29%	0.22%	9.0	6.8	133%	177%
60-64	7	2,039	0.0034	0.35%	0.27%	7.2	5.4	97%	130%
65-69	1	629	0.0016	0.38%	0.28%	2.4	1.8	42%	56%
70-74	1	68	0.0147	0.38%	0.28%	0.3	0.2	389%	519%
Totals	29	32,679				44	33	66%	88%

**DISABILITY EXPERIENCE
FEMALE EDUCATORS**

Age	Actual Disabilities	Total Count	Actual Rate	Assumed Rate		Expected Disabilities		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	3,198	0.0000	0.01%	0.01%	0.5	0.5	0%	0%
25-29	1	13,055	0.0001	0.02%	0.02%	3.3	3.3	30%	30%
30-34	6	11,229	0.0005	0.05%	0.05%	5.2	5.2	115%	115%
35-39	3	10,626	0.0003	0.06%	0.06%	6.5	6.5	46%	46%
40-44	6	11,041	0.0005	0.09%	0.09%	10.1	10.1	60%	60%
45-49	12	11,581	0.0010	0.14%	0.14%	15.9	15.9	75%	75%
50-54	29	12,866	0.0023	0.18%	0.18%	23.7	23.7	122%	122%
55-59	30	12,216	0.0025	0.29%	0.29%	34.7	34.7	87%	87%
60-64	31	9,083	0.0034	0.35%	0.35%	31.9	31.9	97%	97%
65-69	8	2,124	0.0038	0.38%	0.38%	8.0	8.0	100%	100%
70-74	0	206	0.0000	0.38%	0.38%	0.8	0.8	0%	0%
Totals	126	97,225				141	141	90%	90%

**DISABILITY EXPERIENCE
MALE LOCAL GOVERNMENT EMPLOYEES**

Age	Actual Disabilities	Total Count	Actual Rate	Assumed Rate		Expected Disabilities		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	1,206	0.0000	0.03%	0.02%	0.4	0.3	0%	0%
25-29	3	4,263	0.0007	0.05%	0.05%	2.4	2.2	127%	138%
30-34	3	6,854	0.0004	0.10%	0.09%	6.8	6.2	44%	48%
35-39	2	7,140	0.0003	0.13%	0.12%	9.1	8.4	22%	24%
40-44	6	6,602	0.0009	0.19%	0.17%	12.5	11.5	48%	52%
45-49	8	6,816	0.0012	0.29%	0.26%	19.5	17.9	41%	45%
50-54	25	7,137	0.0035	0.38%	0.35%	27.5	25.3	91%	99%
55-59	41	6,266	0.0065	0.60%	0.55%	36.9	33.9	111%	121%
60-64	45	4,208	0.0107	0.74%	0.68%	30.9	28.4	146%	158%
65-69	6	1,491	0.0040	0.79%	0.72%	11.7	10.8	51%	56%
70-74	0	281	0.0000	0.79%	0.72%	2.2	2.0	0%	0%
Totals	139	52,264				160	147	87%	95%

**DISABILITY EXPERIENCE
FEMALE LOCAL GOVERNMENT EMPLOYEES**

Age	Actual Disabilities	Total Count	Actual Rate	Assumed Rate		Expected Disabilities		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	1,259	0.0000	0.02%	0.02%	0.3	0.3	0%	0%
25-29	0	4,076	0.0000	0.04%	0.04%	2.0	1.8	0%	0%
30-34	7	5,266	0.0013	0.09%	0.08%	4.5	4.1	155%	170%
35-39	6	5,280	0.0011	0.11%	0.10%	5.9	5.4	101%	111%
40-44	9	5,415	0.0017	0.17%	0.15%	9.0	8.2	100%	110%
45-49	9	5,939	0.0015	0.25%	0.23%	15.0	13.6	60%	66%
50-54	21	6,975	0.0030	0.33%	0.30%	23.7	21.5	89%	98%
55-59	27	6,764	0.0040	0.53%	0.48%	35.1	31.9	77%	85%
60-64	25	4,738	0.0053	0.65%	0.59%	30.6	27.8	82%	90%
65-69	7	1,598	0.0044	0.69%	0.63%	11.1	10.1	63%	70%
70-74	1	341	0.0029	0.69%	0.63%	2.4	2.1	42%	47%
Totals	112	47,651				140	127	80%	88%

DISABILITY EXPERIENCE
PUBLIC SAFETY - MALES AND FEMALES COMBINED

Age	Actual Disabilities	Total Count	Actual Rate	Assumed Rate		Expected Disabilities		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	549	0.0000	0.03%	0.03%	0.2	0.2	0%	0%
25-29	1	4,409	0.0002	0.06%	0.06%	3.2	3.0	31%	33%
30-34	7	7,437	0.0009	0.13%	0.12%	9.4	8.8	75%	80%
35-39	9	8,117	0.0011	0.16%	0.15%	13.2	12.4	68%	73%
40-44	8	6,239	0.0013	0.24%	0.23%	14.8	13.9	54%	58%
45-49	9	2,958	0.0030	0.37%	0.35%	10.6	10.0	85%	90%
50-54	3	1,469	0.0020	0.48%	0.45%	7.1	6.6	42%	45%
55-59	16	905	0.0177	0.77%	0.72%	6.8	6.3	237%	253%
60-64	4	482	0.0083	0.94%	0.89%	4.5	4.2	89%	94%
65-69	1	0	N/A	0.00%	0.00%	0.0	0.0	0%	0%
70-74	0	0	N/A	0.00%	0.00%	0.0	0.0	0%	0%
Totals	58	32,565				70	65	83%	89%

**DISABILITY EXPERIENCE
FIREFIGHTERS - MALES AND FEMALES COMBINED**

Age	Actual Disabilities	Total Count	Actual Rate	Assumed Rate		Expected Disabilities		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	6	0.0000	0.04%	0.04%	0.0	0.0	0%	0%
25-29	0	271	0.0000	0.07%	0.07%	0.3	0.2	0%	0%
30-34	1	1,291	0.0008	0.14%	0.14%	2.5	1.9	40%	53%
35-39	2	1,760	0.0011	0.18%	0.18%	4.3	3.2	46%	62%
40-44	4	1,474	0.0027	0.27%	0.27%	5.3	4.0	76%	101%
45-49	7	748	0.0094	0.41%	0.41%	4.0	3.0	174%	231%
50-54	1	351	0.0028	0.54%	0.54%	2.5	1.9	40%	53%
55-59	1	121	0.0083	0.86%	0.86%	1.3	1.0	75%	99%
60-64	1	28	0.0357	1.06%	1.06%	0.4	0.3	253%	338%
65-69	0	0	N/A	0.00%	0.00%	0.0	0.0	0%	0%
70-74	0	0	N/A	0.00%	0.00%	0.0	0.0	0%	0%
Totals	17	6,050				21	16	82%	110%

**TERMINATION EXPERIENCE
MALE STATE EMPLOYEES**

Service (1)	Actual Terminations (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Terminations		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
0	1,144	3,548	0.3224	27.00%	28.00%	958	993	119%	115%
1	1,554	6,588	0.2359	24.50%	24.50%	1,614	1,614	96%	96%
2	894	5,520	0.1620	15.00%	15.00%	828	828	108%	108%
3	573	4,621	0.1240	12.00%	12.00%	555	555	103%	103%
4	465	4,234	0.1098	10.00%	10.00%	423	423	110%	110%
5	354	3,804	0.0931	9.00%	9.00%	342	342	104%	104%
6	256	3,221	0.0795	8.00%	7.50%	258	242	99%	106%
7	172	2,843	0.0605	7.00%	6.50%	199	185	86%	93%
8	149	2,659	0.0560	6.00%	5.50%	160	146	93%	102%
9	121	2,417	0.0501	4.50%	5.00%	109	121	111%	100%
10	101	2,349	0.0430	4.25%	4.25%	100	100	101%	101%
11	105	2,396	0.0438	4.00%	4.00%	96	96	109%	109%
12	93	2,222	0.0419	3.75%	3.75%	83	83	112%	112%
13	73	2,140	0.0341	3.50%	3.50%	75	75	97%	97%
14	64	2,033	0.0315	3.00%	3.00%	61	61	105%	105%
15	54	1,861	0.0290	2.50%	2.50%	47	47	115%	115%
16	38	1,682	0.0226	2.25%	2.25%	38	38	100%	100%
17	44	1,645	0.0267	2.00%	2.25%	33	37	133%	119%
18	31	1,579	0.0196	1.75%	2.00%	28	32	111%	97%
19	35	1,422	0.0246	1.75%	2.00%	25	28	140%	125%
20	26	1,320	0.0197	1.75%	2.00%	23	26	113%	100%
21	28	1,296	0.0216	1.50%	2.00%	19	26	147%	108%
22	25	1,181	0.0212	1.25%	2.00%	15	24	167%	104%
23	17	1,125	0.0151	1.00%	1.50%	11	17	155%	100%
24	8	525	0.0152	0.75%	1.50%	4	8	200%	100%
Total	6,424	64,231				6,104	6,147	105%	105%

**TERMINATION EXPERIENCE
FEMALE STATE EMPLOYEES**

Service (1)	Actual Terminations (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Terminations		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
0	2,220	6,758	0.3285	25.00%	30.00%	1,690	2,027	131%	109%
1	2,865	11,333	0.2528	21.00%	22.50%	2,380	2,550	120%	112%
2	1,957	10,420	0.1878	17.00%	17.00%	1,771	1,771	111%	110%
3	1,427	9,388	0.1520	14.00%	14.00%	1,314	1,314	109%	109%
4	1,043	8,658	0.1205	11.00%	11.00%	952	952	110%	110%
5	806	7,872	0.1024	9.50%	9.50%	748	748	108%	108%
6	578	6,715	0.0861	8.25%	8.50%	554	571	104%	101%
7	525	6,049	0.0868	7.00%	7.50%	423	454	124%	116%
8	399	5,678	0.0703	6.50%	6.50%	369	369	108%	108%
9	310	5,252	0.0590	6.00%	6.00%	315	315	98%	98%
10	277	5,054	0.0548	5.50%	5.50%	278	278	100%	100%
11	244	4,938	0.0494	4.75%	4.75%	235	235	104%	104%
12	209	4,720	0.0443	4.50%	4.50%	212	212	99%	98%
13	190	4,324	0.0439	4.25%	4.25%	184	184	103%	103%
14	159	3,952	0.0402	3.75%	3.75%	148	148	107%	107%
15	132	3,568	0.0370	3.50%	3.50%	125	125	106%	106%
16	104	3,248	0.0320	3.00%	3.00%	97	97	107%	107%
17	72	3,006	0.0240	2.75%	2.75%	83	83	87%	87%
18	87	2,962	0.0294	2.75%	2.75%	81	81	107%	107%
19	78	2,575	0.0303	2.75%	2.75%	71	71	110%	110%
20	67	2,290	0.0293	2.75%	2.75%	63	63	106%	106%
21	58	2,153	0.0269	2.00%	2.50%	43	54	135%	108%
22	43	1,891	0.0227	1.50%	2.25%	28	43	154%	101%
23	32	1,680	0.0190	1.25%	2.00%	21	34	152%	95%
24	28	694	0.0403	1.00%	2.00%	7	14	400%	202%
Total	13,910	125,178				12,192	12,793	114%	109%

**TERMINATION EXPERIENCE
MALE EDUCATORS**

Service	Actual Terminations	Total Count	Actual Rate	Assumed Rate		Expected Terminations		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	280	1,364	0.2053	13.00%	15.00%	177	205	158%	137%
1	299	2,004	0.1492	11.00%	13.00%	220	261	136%	115%
2	165	1,792	0.0921	9.00%	9.00%	161	161	102%	102%
3	138	1,727	0.0799	7.50%	7.50%	130	130	106%	106%
4	116	1,685	0.0688	6.50%	6.50%	110	110	105%	105%
5	83	1,571	0.0528	5.00%	5.00%	79	79	105%	105%
6	54	1,465	0.0369	4.00%	4.00%	59	59	92%	92%
7	26	1,317	0.0197	3.00%	3.50%	40	46	65%	57%
8	45	1,249	0.0360	2.75%	3.25%	34	41	132%	110%
9	37	1,143	0.0324	2.50%	3.00%	29	34	128%	109%
10	34	1,082	0.0314	2.50%	2.75%	27	30	126%	113%
11	27	1,065	0.0254	2.25%	2.50%	24	27	113%	100%
12	34	1,104	0.0308	2.25%	2.25%	25	25	136%	136%
13	24	1,073	0.0224	2.00%	2.25%	21	24	114%	100%
14	12	1,045	0.0115	2.00%	2.00%	21	21	57%	57%
15	11	1,015	0.0108	1.75%	1.75%	18	18	61%	61%
16	17	993	0.0171	1.75%	1.75%	17	17	100%	100%
17	17	932	0.0182	1.75%	1.75%	16	16	106%	106%
18	21	886	0.0237	1.50%	1.75%	13	16	162%	131%
19	10	772	0.0130	0.50%	1.50%	4	12	250%	83%
20	4	730	0.0055	0.50%	1.00%	4	7	100%	57%
21	9	708	0.0127	0.50%	1.00%	4	7	225%	129%
22	12	695	0.0173	0.50%	1.00%	3	7	400%	171%
23	12	650	0.0185	0.50%	1.00%	3	7	400%	171%
24	1	225	0.0044	0.50%	1.00%	1	2	100%	50%
Total	1,488	28,292				1,240	1,362	120%	109%

**TERMINATION EXPERIENCE
FEMALE EDUCATORS**

Service	Actual Terminations	Total Count	Actual Rate	Assumed Rate		Expected Terminations		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	905	4,188	0.2161	17.00%	18.00%	712	754	127%	120%
1	1,225	6,995	0.1751	16.00%	17.00%	1,119	1,189	109%	103%
2	929	6,692	0.1388	14.50%	13.50%	970	903	96%	103%
3	800	6,391	0.1252	12.50%	12.50%	799	799	100%	100%
4	607	5,932	0.1023	10.00%	10.00%	593	593	102%	102%
5	444	5,362	0.0828	8.50%	8.00%	456	429	97%	103%
6	362	4,687	0.0772	7.00%	7.50%	328	352	110%	103%
7	237	4,083	0.0580	5.50%	5.50%	225	225	105%	105%
8	181	3,693	0.0490	4.50%	4.50%	166	166	109%	109%
9	154	3,362	0.0458	4.00%	4.50%	134	151	115%	102%
10	129	3,097	0.0417	3.25%	4.00%	101	124	128%	104%
11	92	3,036	0.0303	2.75%	3.00%	83	91	111%	101%
12	78	3,005	0.0260	2.00%	2.50%	60	75	130%	104%
13	58	2,894	0.0200	2.00%	2.00%	58	58	100%	100%
14	58	2,719	0.0213	2.00%	2.00%	54	54	107%	107%
15	56	2,573	0.0218	2.00%	2.00%	51	51	110%	110%
16	48	2,372	0.0202	2.00%	2.00%	47	47	102%	102%
17	37	2,154	0.0172	1.80%	1.75%	39	38	95%	97%
18	28	2,091	0.0134	1.70%	1.50%	36	31	78%	90%
19	23	1,805	0.0127	1.60%	1.25%	29	23	79%	100%
20	24	1,608	0.0149	1.40%	1.25%	23	20	104%	120%
21	19	1,565	0.0121	1.30%	1.25%	20	20	95%	95%
22	25	1,450	0.0172	0.75%	1.25%	11	18	227%	139%
23	16	1,336	0.0120	0.75%	1.25%	10	17	160%	94%
24	7	528	0.0133	0.75%	1.25%	4	7	175%	100%
Total	6,542	83,618				6,128	6,235	107%	105%

**TERMINATION EXPERIENCE
MALE LOCAL GOVERNMENT EMPLOYEES**

Service	Actual Terminations	Total Count	Actual Rate	Assumed Rate		Expected Terminations		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	339	1,747	0.1940	19.00%	19.00%	332	332	102%	102%
1	539	3,482	0.1548	15.00%	15.00%	522	522	103%	103%
2	354	3,453	0.1025	11.00%	11.00%	380	380	93%	93%
3	328	3,391	0.0967	9.00%	9.00%	305	305	108%	108%
4	240	3,254	0.0738	8.00%	8.00%	260	260	92%	92%
5	187	2,996	0.0624	7.00%	7.00%	210	210	89%	89%
6	139	2,669	0.0521	6.00%	6.00%	160	160	87%	87%
7	127	2,349	0.0541	5.50%	5.50%	129	129	98%	98%
8	115	2,163	0.0532	4.75%	4.75%	103	103	112%	112%
9	82	1,986	0.0413	4.00%	4.00%	79	79	104%	104%
10	75	1,886	0.0398	3.50%	3.50%	66	66	114%	114%
11	53	1,849	0.0287	3.25%	3.25%	60	60	88%	88%
12	55	1,796	0.0306	3.00%	3.00%	54	54	102%	102%
13	54	1,715	0.0315	3.00%	3.00%	51	51	106%	106%
14	49	1,629	0.0301	3.00%	3.00%	49	49	100%	100%
15	48	1,485	0.0323	2.75%	2.75%	41	41	117%	117%
16	46	1,347	0.0341	2.75%	2.75%	37	37	124%	124%
17	33	1,172	0.0282	2.75%	2.75%	32	32	103%	103%
18	29	1,003	0.0289	2.50%	2.50%	25	25	116%	116%
19	19	889	0.0214	2.50%	2.50%	22	22	86%	86%
20	18	799	0.0225	2.00%	2.00%	16	16	113%	113%
21	12	758	0.0158	2.00%	2.00%	15	15	80%	80%
22	18	762	0.0236	1.75%	1.75%	13	13	138%	138%
23	7	752	0.0093	1.50%	1.50%	11	11	64%	64%
24	10	378	0.0265	1.25%	1.25%	5	5	200%	200%
Total	2,976	45,710				2,977	2,977	100%	100%

**TERMINATION EXPERIENCE
FEMALE LOCAL GOVERNMENT EMPLOYEES**

Service	Actual Terminations	Total Count	Actual Rate	Assumed Rate		Expected Terminations		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	452	1,755	0.2575	22.00%	24.00%	386	421	117%	107%
1	655	3,419	0.1916	18.00%	18.00%	615	615	107%	106%
2	517	3,403	0.1519	14.00%	14.00%	476	476	109%	109%
3	406	3,290	0.1234	12.00%	12.00%	395	395	103%	103%
4	347	3,100	0.1119	11.00%	11.00%	341	341	102%	102%
5	269	2,836	0.0949	9.75%	9.75%	277	277	97%	97%
6	194	2,496	0.0777	8.25%	8.00%	206	200	94%	97%
7	177	2,220	0.0797	7.50%	7.50%	167	167	106%	106%
8	130	2,014	0.0645	6.75%	6.50%	136	131	96%	99%
9	117	1,881	0.0622	6.25%	6.00%	118	113	99%	104%
10	91	1,792	0.0508	5.50%	5.50%	99	99	92%	92%
11	87	1,708	0.0509	4.75%	5.00%	81	85	107%	102%
12	82	1,620	0.0506	4.25%	4.50%	69	73	119%	112%
13	58	1,519	0.0382	4.00%	4.00%	61	61	95%	95%
14	50	1,399	0.0357	3.75%	3.75%	52	52	96%	95%
15	47	1,242	0.0378	3.50%	3.50%	43	43	109%	108%
16	40	1,119	0.0357	3.25%	3.25%	36	36	111%	110%
17	39	1,006	0.0388	3.00%	3.25%	30	33	130%	119%
18	28	899	0.0311	2.75%	3.00%	25	27	112%	104%
19	24	743	0.0323	2.50%	2.75%	19	20	126%	117%
20	17	658	0.0258	2.25%	2.50%	15	16	113%	103%
21	17	619	0.0275	2.00%	2.50%	12	15	142%	110%
22	15	547	0.0274	1.75%	2.25%	10	12	150%	122%
23	10	458	0.0218	1.50%	2.00%	7	9	143%	109%
24	11	210	0.0524	1.25%	2.00%	3	4	367%	262%
Total	3,880	41,953				3,679	3,723	105%	104%

**TERMINATION EXPERIENCE
PUBLIC SAFETY EMPLOYEES - MALES AND FEMALES COMBINED**

Service	Actual Terminations	Total Count	Actual Rate	Assumed Rate		Expected Terminations		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	101	814	0.1241	10.00%	12.00%	81	98	125%	103%
1	117	1,776	0.0659	6.50%	6.50%	115	115	102%	102%
2	100	1,898	0.0527	6.00%	5.50%	114	104	88%	96%
3	106	2,003	0.0529	5.50%	5.25%	110	105	96%	101%
4	95	2,165	0.0439	4.75%	5.00%	108	108	88%	88%
5	77	2,173	0.0354	4.75%	4.50%	103	98	75%	79%
6	93	2,008	0.0463	4.50%	4.25%	90	85	103%	109%
7	76	1,817	0.0418	4.25%	4.00%	77	73	99%	104%
8	56	1,745	0.0321	3.75%	3.50%	65	61	86%	92%
9	58	1,707	0.0340	3.25%	3.25%	55	55	105%	105%
10	49	1,683	0.0291	3.00%	3.00%	50	50	98%	98%
11	53	1,689	0.0314	2.75%	2.75%	46	46	115%	115%
12	48	1,733	0.0277	2.50%	2.50%	43	43	112%	112%
13	42	1,691	0.0248	2.25%	2.25%	38	38	111%	111%
14	24	1,625	0.0148	2.00%	1.50%	33	24	73%	100%
15	37	1,478	0.0250	1.75%	1.50%	26	22	142%	168%
16	22	1,339	0.0164	1.50%	1.50%	20	20	110%	110%
17	22	1,233	0.0178	1.50%	1.50%	18	18	122%	122%
18	18	1,157	0.0156	1.25%	1.50%	14	17	129%	106%
19	16	490	0.0327	1.00%	1.50%	5	7	320%	229%
Total	1,210	32,224				1,211	1,187	100%	102%

**TERMINATION EXPERIENCE
FIREFIGHTERS - MALES AND FEMALES COMBINED**

Service	Actual Terminations	Total Count	Actual Rate	Assumed Rate		Expected Terminations		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	14	222	0.0631	8.25%	6.00%	18.0	13.0	78%	108%
1	16	463	0.0346	3.50%	3.50%	16.0	16.0	100%	100%
2	13	526	0.0247	3.00%	3.00%	16.0	16.0	81%	81%
3	13	542	0.0240	3.00%	2.50%	16.0	14.0	81%	93%
4	17	552	0.0308	2.50%	2.50%	14.0	14.0	121%	121%
5	10	511	0.0196	2.50%	2.00%	13.0	10.0	77%	100%
6	8	459	0.0174	1.50%	1.50%	7.0	7.0	114%	114%
7	11	431	0.0255	1.50%	1.50%	6.0	6.0	183%	183%
8	5	423	0.0118	1.50%	1.50%	6.0	6.0	83%	83%
9	7	440	0.0159	1.50%	1.50%	7.0	7.0	100%	100%
10	4	424	0.0094	1.50%	1.50%	6.0	6.0	67%	67%
11	7	448	0.0156	1.50%	1.50%	7.0	7.0	100%	100%
12	4	454	0.0088	0.50%	0.50%	2.0	2.0	200%	200%
13	2	422	0.0047	0.50%	0.50%	2.0	2.0	100%	100%
14	2	395	0.0051	0.50%	0.50%	2.0	2.0	100%	100%
15	4	370	0.0108	0.50%	0.50%	2.0	2.0	200%	200%
16	1	302	0.0033	0.50%	0.50%	2.0	2.0	50%	50%
17	2	261	0.0077	0.50%	0.50%	1.0	1.0	200%	200%
18	1	220	0.0045	0.50%	0.50%	1.0	1.0	100%	100%
19	3	88	0.0341	0.50%	0.50%	0	0	0%	0%
Total	144	7,953				144	134	100%	107%

**UNREDUCED RETIREMENT EXPERIENCE
MALE STATE EMPLOYEES**

Age (1)	Actual Retirements (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Retirements		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
Under 50	20	72	0.2778	14.00%	20.00%	10.1	14.4	198%	139%
50	8	59	0.1356	16.00%	15.00%	9.4	8.9	85%	90%
51	10	91	0.1099	16.00%	15.00%	14.6	13.7	69%	73%
52	22	118	0.1864	16.00%	15.00%	18.9	17.7	117%	124%
53	25	158	0.1582	16.00%	15.00%	25.3	23.7	99%	105%
54	24	203	0.1182	16.00%	15.00%	32.5	30.5	74%	79%
55	40	253	0.1581	18.00%	16.00%	45.5	40.5	88%	99%
56	32	306	0.1046	18.00%	16.00%	55.1	49.0	58%	65%
57	45	329	0.1368	18.00%	16.00%	59.2	52.6	76%	85%
58	49	341	0.1437	18.00%	16.00%	61.4	54.6	80%	90%
59	39	336	0.1161	18.00%	16.00%	60.5	53.8	64%	73%
60	61	330	0.1848	23.00%	20.00%	75.9	66.0	80%	92%
61	61	306	0.1993	23.00%	20.00%	70.4	61.2	87%	100%
62	93	283	0.3286	35.00%	33.00%	99.1	93.4	94%	100%
63	74	218	0.3394	30.00%	33.00%	65.4	71.9	113%	103%
64	45	163	0.2761	30.00%	30.00%	48.9	48.9	92%	92%
65	168	957	0.1755	30.00%	22.00%	287.1	210.5	59%	80%
66	177	769	0.2302	30.00%	22.00%	230.7	169.2	77%	105%
67	126	558	0.2258	25.00%	22.00%	139.5	122.8	90%	103%
68	82	421	0.1948	25.00%	22.00%	105.3	92.6	78%	89%
69	70	323	0.2167	20.00%	22.00%	64.6	71.1	108%	99%
70	52	269	0.1933	20.00%	22.00%	53.8	59.2	97%	88%
71	25	221	0.1131	15.00%	22.00%	33.2	48.6	75%	51%
72	37	198	0.1869	15.00%	22.00%	29.7	43.6	125%	85%
73	29	155	0.1871	15.00%	22.00%	23.3	34.1	125%	85%
74	24	145	0.1655	15.00%	22.00%	21.8	31.9	110%	75%
Subtotal	1,438	7,582				1,741	1,584	83%	91%
75 or more	72	392	0.1837	100.00%	100.00%	392.0	392.0	18%	18%
Totals	1,510	7,974				2,133	1,976	71%	76%

**REDUCED RETIREMENT EXPERIENCE
MALE STATE EMPLOYEES**

Age	Actual Retirements	Total Count	Actual Rate	Assumed Rate		Expected Retirements		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 49	9	576	0.0156	3.00%	2.25%	17.3	12.0	52%	75%
50	5	243	0.0206	4.00%	2.25%	9.7	5.5	51%	91%
51	5	286	0.0175	4.00%	2.25%	11.4	6.4	44%	78%
52	9	326	0.0276	4.00%	2.50%	13.0	8.2	69%	110%
53	7	309	0.0227	4.00%	2.50%	12.4	7.7	57%	91%
54	8	328	0.0244	4.00%	2.50%	13.1	8.2	61%	98%
55	3	279	0.0108	4.00%	2.50%	11.2	7.0	27%	43%
56	10	270	0.0370	4.00%	4.00%	10.8	10.8	93%	93%
57	7	268	0.0261	4.00%	4.00%	10.7	10.7	65%	65%
58	9	238	0.0378	6.00%	4.00%	14.3	9.5	63%	95%
59	10	216	0.0463	6.00%	5.00%	13.0	10.8	77%	93%
60	38	583	0.0652	10.00%	7.50%	58.3	43.7	65%	87%
61	38	514	0.0739	10.00%	7.50%	51.4	38.6	74%	99%
62	110	934	0.1178	15.00%	13.00%	140.1	121.4	79%	91%
63	103	773	0.1332	15.00%	13.00%	116.0	100.5	89%	102%
64	78	643	0.1213	15.00%	13.00%	96.5	83.6	81%	93%
Totals	449	6,786				599	485	75%	93%

**UNREDUCED RETIREMENT EXPERIENCE
FEMALE STATE EMPLOYEES**

Age	Actual Retirements	Total Count	Actual Rate	Assumed Rate		Expected Retirements		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	19	68	0.2794	22.00%	17.00%	15.0	11.6	127%	164%
50	15	82	0.1829	22.00%	17.00%	18.0	13.9	83%	108%
51	27	114	0.2368	22.00%	16.00%	25.1	18.2	108%	148%
52	21	135	0.1556	22.00%	16.00%	29.7	21.6	71%	97%
53	19	179	0.1061	22.00%	16.00%	39.4	28.6	48%	66%
54	31	216	0.1435	22.00%	16.00%	47.5	34.6	65%	90%
55	35	254	0.1378	22.00%	16.00%	55.9	40.6	63%	86%
56	36	271	0.1328	22.00%	16.00%	59.6	43.4	60%	83%
57	35	303	0.1155	22.00%	16.00%	66.7	48.5	53%	72%
58	60	338	0.1775	22.00%	20.00%	74.4	67.6	81%	89%
59	79	340	0.2324	22.00%	20.00%	74.8	68.0	106%	116%
60	99	330	0.3000	32.00%	30.00%	105.6	99.0	94%	100%
61	63	297	0.2121	32.00%	30.00%	95.0	89.1	66%	71%
62	79	289	0.2734	32.00%	30.00%	92.5	86.7	85%	91%
63	80	229	0.3493	32.00%	30.00%	73.3	68.7	109%	116%
64	47	180	0.2611	32.00%	30.00%	57.6	54.0	82%	87%
65	397	1,801	0.2204	32.00%	26.00%	576.3	468.3	69%	85%
66	356	1,319	0.2699	32.00%	26.00%	422.1	342.9	84%	104%
67	191	904	0.2113	25.00%	22.00%	226.0	198.9	85%	96%
68	128	674	0.1899	25.00%	22.00%	168.5	148.3	76%	86%
69	101	530	0.1906	25.00%	22.00%	132.5	116.6	76%	87%
70	83	395	0.2101	25.00%	22.00%	98.8	86.9	84%	96%
71	46	267	0.1723	15.00%	22.00%	40.1	58.7	115%	78%
72	38	180	0.2111	15.00%	22.00%	27.0	39.6	141%	96%
73	17	143	0.1189	15.00%	22.00%	21.5	31.5	79%	54%
74	15	116	0.1293	15.00%	22.00%	17.4	25.5	86%	59%
Subtotal	2,117	9,954				2,660	2,311	80%	92%
75 or more	84	319	0.2633	100.00%	100.00%	319.0	319.0	26%	26%
Totals	2,201	10,273				2,979	2,630	74%	84%

**REDUCED RETIREMENT EXPERIENCE
FEMALE STATE EMPLOYEES**

Age	Actual Retirements	Total Count	Actual Rate	Assumed Rate		Expected Retirements		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 49	9	691	0.0130	3.00%	2.00%	20.5	13.8	44%	65%
50	5	255	0.0196	5.00%	2.50%	12.8	6.4	39%	78%
51	3	271	0.0111	5.00%	2.50%	13.6	6.8	22%	44%
52	11	281	0.0391	5.00%	2.50%	14.1	7.0	78%	157%
53	6	283	0.0212	5.00%	2.50%	14.2	7.1	42%	85%
54	8	298	0.0268	5.00%	2.50%	14.9	7.5	54%	107%
55	12	327	0.0367	5.00%	4.00%	16.4	13.1	73%	92%
56	12	365	0.0329	5.00%	4.00%	18.3	14.6	66%	82%
57	16	413	0.0387	5.00%	4.00%	20.7	16.5	77%	97%
58	16	461	0.0347	5.00%	4.00%	23.1	18.4	69%	87%
59	12	491	0.0244	5.00%	4.00%	24.6	19.6	49%	61%
60	124	1,554	0.0798	13.00%	10.00%	202.0	155.4	61%	80%
61	149	1,412	0.1055	13.00%	10.00%	183.6	141.2	81%	106%
62	417	2,603	0.1602	20.00%	16.00%	520.6	416.5	80%	100%
63	350	2,133	0.1641	20.00%	16.00%	426.6	341.3	82%	103%
64	231	1,630	0.1417	20.00%	16.00%	326.0	260.8	71%	89%
Totals	1,381	13,468				1,851	1,446	75%	96%

**UNREDUCED RETIREMENT EXPERIENCE
MALE EDUCATORS**

Age (1)	Actual Retirements (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Retirements		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
Under 50	1	1	1.0000	14.00%	20.00%	0.1	0.2	714%	500%
50	1	2	0.5000	16.00%	20.00%	0.3	0.4	313%	250%
51	3	2	1.5000	16.00%	20.00%	0.3	0.4	938%	750%
52	2	11	0.1818	16.00%	20.00%	1.8	2.2	114%	91%
53	7	38	0.1842	16.00%	20.00%	6.1	7.6	115%	92%
54	12	92	0.1304	16.00%	12.00%	14.7	11.0	82%	109%
55	19	179	0.1061	18.00%	12.00%	32.2	21.5	59%	88%
56	21	235	0.0894	18.00%	12.00%	42.3	28.2	50%	74%
57	36	290	0.1241	18.00%	12.00%	52.2	34.8	69%	103%
58	36	319	0.1129	18.00%	12.00%	57.4	38.3	63%	94%
59	41	294	0.1395	18.00%	12.00%	52.9	35.3	77%	116%
60	43	288	0.1493	23.00%	23.00%	66.2	66.2	65%	65%
61	63	267	0.2360	23.00%	23.00%	61.4	61.4	103%	103%
62	66	215	0.3070	35.00%	30.00%	75.3	64.5	88%	102%
63	51	169	0.3018	30.00%	30.00%	50.7	50.7	101%	101%
64	33	126	0.2619	30.00%	30.00%	37.8	37.8	87%	87%
65	68	309	0.2201	30.00%	30.00%	92.7	92.7	73%	73%
66	66	240	0.2750	30.00%	30.00%	72.0	72.0	92%	92%
67	50	155	0.3226	25.00%	30.00%	38.8	46.5	129%	108%
68	29	99	0.2929	25.00%	30.00%	24.8	29.7	117%	98%
69	17	68	0.2500	20.00%	25.00%	13.6	17.0	125%	100%
70	10	50	0.2000	20.00%	20.00%	10.0	10.0	100%	100%
71	8	39	0.2051	15.00%	20.00%	5.9	7.8	137%	103%
72	5	27	0.1852	15.00%	20.00%	4.1	5.4	123%	93%
73	3	17	0.1765	15.00%	20.00%	2.6	3.4	118%	88%
74	4	14	0.2857	15.00%	20.00%	2.1	2.8	190%	143%
Subtotal	695	3,546				818	748	85%	93%
75 or more	11	23	0.4783	100.00%	100.00%	23.0	23.0	48%	48%
Totals	706	3,569				841	771	84%	92%

**REDUCED RETIREMENT EXPERIENCE
MALE EDUCATORS**

Age	Actual Retirements	Total Count	Actual Rate	Assumed Rate		Expected Retirements		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 49	1	115	0.0087	3.00%	2.25%	3.5	2.6	29%	39%
50	2	175	0.0114	4.00%	2.25%	7.0	3.9	29%	51%
51	4	234	0.0171	4.00%	2.25%	9.4	5.3	43%	76%
52	6	300	0.0200	4.00%	2.25%	12.0	6.8	50%	89%
53	9	326	0.0276	4.00%	2.75%	13.0	9.0	69%	100%
54	8	300	0.0267	4.00%	2.75%	12.0	8.3	67%	97%
55	10	255	0.0392	4.00%	4.00%	10.2	10.2	98%	98%
56	6	208	0.0288	4.00%	4.00%	8.3	8.3	72%	72%
57	4	165	0.0242	4.00%	4.00%	6.6	6.6	61%	61%
58	6	145	0.0414	6.00%	4.00%	8.7	5.8	69%	103%
59	2	143	0.0140	6.00%	4.00%	8.6	5.7	23%	35%
60	15	261	0.0575	10.00%	10.00%	26.1	26.1	57%	57%
61	22	236	0.0932	10.00%	10.00%	23.6	23.6	93%	93%
62	45	343	0.1312	15.00%	13.00%	51.5	44.6	87%	101%
63	39	276	0.1413	15.00%	13.00%	41.4	35.9	94%	109%
64	27	227	0.1189	15.00%	13.00%	34.1	29.5	79%	91%
Totals	206	3,709				276	232	75%	89%

**UNREDUCED RETIREMENT EXPERIENCE
FEMALE EDUCATORS**

Age (1)	Actual Retirements (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Retirements		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
Under 50	9	5	1.8000	22.00%	30.00%	1.1	1.5	818%	600%
50	3	4	0.7500	22.00%	30.00%	0.9	1.2	341%	250%
51	11	27	0.4074	22.00%	30.00%	5.9	8.1	185%	136%
52	27	154	0.1753	22.00%	30.00%	33.9	46.2	80%	58%
53	29	282	0.1028	22.00%	14.00%	62.0	39.5	47%	73%
54	46	352	0.1307	22.00%	14.00%	77.4	49.3	59%	93%
55	51	383	0.1332	22.00%	14.00%	84.3	53.6	61%	95%
56	59	380	0.1553	22.00%	18.00%	83.6	68.4	71%	86%
57	60	354	0.1695	22.00%	18.00%	77.9	63.7	77%	94%
58	57	331	0.1722	22.00%	18.00%	72.8	59.6	78%	96%
59	50	316	0.1582	22.00%	18.00%	69.5	56.9	72%	88%
60	95	294	0.3231	32.00%	30.00%	94.1	88.2	101%	108%
61	62	244	0.2541	32.00%	30.00%	78.1	73.2	79%	85%
62	83	232	0.3578	32.00%	35.00%	74.2	81.2	112%	102%
63	56	177	0.3164	32.00%	35.00%	56.6	62.0	99%	90%
64	40	135	0.2963	32.00%	30.00%	43.2	40.5	93%	99%
65	239	945	0.2529	32.00%	30.00%	302.4	283.5	79%	84%
66	204	637	0.3203	32.00%	30.00%	203.8	191.1	100%	107%
67	105	386	0.2720	25.00%	30.00%	96.5	115.8	109%	91%
68	56	256	0.2188	25.00%	23.00%	64.0	58.9	88%	95%
69	35	181	0.1934	25.00%	23.00%	45.3	41.6	77%	84%
70	40	141	0.2837	25.00%	23.00%	35.3	32.4	113%	123%
71	19	79	0.2405	15.00%	23.00%	11.9	18.2	160%	105%
72	9	53	0.1698	15.00%	23.00%	8.0	12.2	113%	74%
73	12	45	0.2667	15.00%	23.00%	6.8	10.4	178%	116%
74	1	23	0.0435	15.00%	23.00%	3.5	5.3	29%	19%
Subtotal	1,458	6,416				1,693	1,562	86%	93%
75 or more	11	55	0.2000	100.00%	100.00%	55.0	55.0	20%	20%
Totals	1,469	6,471				1,748	1,617	84%	91%

**REDUCED RETIREMENT EXPERIENCE
FEMALE EDUCATORS**

Age	Actual Retirements	Total Count	Actual Rate	Assumed Rate		Expected Retirements		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 49	13	826	0.0157	3.00%	2.00%	24.7	16.5	53%	79%
50	8	513	0.0156	5.00%	2.00%	25.7	10.3	31%	78%
51	10	575	0.0174	5.00%	2.00%	28.8	11.5	35%	87%
52	16	520	0.0308	5.00%	3.00%	26.0	15.6	62%	103%
53	17	419	0.0406	5.00%	3.00%	21.0	12.6	81%	135%
54	8	397	0.0202	5.00%	3.00%	19.9	11.9	40%	67%
55	13	372	0.0349	5.00%	4.00%	18.6	14.9	70%	87%
56	14	364	0.0385	5.00%	4.00%	18.2	14.6	77%	96%
57	20	353	0.0567	5.00%	7.00%	17.7	24.7	113%	81%
58	30	366	0.0820	5.00%	7.00%	18.3	25.6	164%	117%
59	26	364	0.0714	5.00%	7.00%	18.2	25.5	143%	102%
60	98	1,079	0.0908	13.00%	11.00%	140.3	118.7	70%	83%
61	124	1,045	0.1187	13.00%	11.00%	135.9	115.0	91%	108%
62	281	1,653	0.1700	20.00%	18.00%	330.6	297.5	85%	94%
63	232	1,290	0.1798	20.00%	18.00%	258.0	232.2	90%	100%
64	148	974	0.1520	20.00%	18.00%	194.8	175.3	76%	84%
Totals	1,058	11,110				1,296	1,122	82%	94%

**UNREDUCED RETIREMENT EXPERIENCE
MALE LOCAL GOVERNMENT EMPLOYEES**

Age (1)	Actual Retirements (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Retirements		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
Under 50	17	53	0.3208	18.00%	15.00%	9.5	8.0	178%	214%
50	15	62	0.2419	18.00%	15.00%	11.2	9.3	134%	161%
51	9	85	0.1059	18.00%	15.00%	15.3	12.8	59%	71%
52	15	119	0.1261	18.00%	15.00%	21.4	17.9	70%	84%
53	11	130	0.0846	18.00%	15.00%	23.4	19.5	47%	56%
54	12	146	0.0822	18.00%	15.00%	26.3	21.9	46%	55%
55	21	177	0.1186	18.00%	15.00%	31.9	26.6	66%	79%
56	30	196	0.1531	18.00%	15.00%	35.3	29.4	85%	102%
57	20	206	0.0971	18.00%	15.00%	37.1	30.9	54%	65%
58	34	198	0.1717	18.00%	15.00%	35.6	29.7	95%	114%
59	28	189	0.1481	18.00%	15.00%	34.0	28.4	82%	99%
60	31	194	0.1598	25.00%	20.00%	48.5	38.8	64%	80%
61	37	189	0.1958	25.00%	20.00%	47.3	37.8	78%	98%
62	36	170	0.2118	30.00%	23.00%	51.0	39.1	71%	92%
63	35	144	0.2431	30.00%	23.00%	43.2	33.1	81%	106%
64	22	117	0.1880	30.00%	23.00%	35.1	26.9	63%	82%
65	87	545	0.1596	30.00%	23.00%	163.5	125.4	53%	69%
66	127	430	0.2953	30.00%	30.00%	129.0	129.0	98%	98%
67	60	278	0.2158	20.00%	22.00%	55.6	61.2	108%	98%
68	44	212	0.2075	20.00%	22.00%	42.4	46.6	104%	94%
69	42	171	0.2456	20.00%	22.00%	34.2	37.6	123%	112%
70	24	136	0.1765	20.00%	22.00%	27.2	29.9	88%	80%
71	16	100	0.1600	15.00%	18.00%	15.0	18.0	107%	89%
72	14	78	0.1795	15.00%	18.00%	11.7	14.0	120%	100%
73	11	67	0.1642	15.00%	18.00%	10.1	12.1	109%	91%
74	15	57	0.2632	15.00%	18.00%	8.6	10.3	175%	146%
Subtotal	813	4,449				1,003	894	81%	91%
75 or more	29	133	0.2180	100.00%	100.00%	133.0	133.0	22%	22%
Totals	842	4,582				1,136	1,027	74%	82%

**REDUCED RETIREMENT EXPERIENCE
MALE LOCAL GOVERNMENT EMPLOYEES**

Age	Actual Retirements	Total Count	Actual Rate	Assumed Rate		Expected Retirements		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 49	8	455	0.0176	4.00%	2.50%	18.2	11.4	44%	70%
50	2	147	0.0136	4.00%	2.50%	5.9	3.7	34%	54%
51	2	166	0.0120	4.00%	2.50%	6.6	4.2	30%	48%
52	1	184	0.0054	4.00%	2.50%	7.4	4.6	14%	22%
53	3	187	0.0160	4.00%	2.50%	7.5	4.7	40%	64%
54	7	195	0.0359	4.00%	2.50%	7.8	4.9	90%	144%
55	6	194	0.0309	5.00%	3.00%	9.7	5.8	62%	103%
56	6	173	0.0347	5.00%	3.00%	8.7	5.2	69%	116%
57	3	152	0.0197	5.00%	3.00%	7.6	4.6	39%	66%
58	10	155	0.0645	6.00%	5.00%	9.3	7.8	108%	129%
59	3	143	0.0210	6.00%	5.00%	8.6	7.2	35%	42%
60	14	348	0.0402	6.00%	5.00%	20.9	17.4	67%	80%
61	22	341	0.0645	6.00%	5.00%	20.5	17.1	108%	129%
62	70	615	0.1138	13.00%	13.00%	80.0	80.0	88%	88%
63	65	503	0.1292	16.00%	13.00%	80.5	65.4	81%	99%
64	50	391	0.1279	16.00%	13.00%	62.6	50.8	80%	98%
Totals	272	4,349				362	294	75%	92%

**UNREDUCED RETIREMENT EXPERIENCE
FEMALE LOCAL GOVERNMENT EMPLOYEES**

Age (1)	Actual Retirements (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Retirements		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
Under 50	2	20	0.1000	25.00%	20.00%	5.0	4.0	40%	50%
50	7	35	0.2000	25.00%	20.00%	8.8	7.0	80%	100%
51	13	50	0.2600	25.00%	20.00%	12.5	10.0	104%	130%
52	7	48	0.1458	25.00%	20.00%	12.0	9.6	58%	73%
53	10	52	0.1923	25.00%	20.00%	13.0	10.4	77%	96%
54	6	61	0.0984	25.00%	20.00%	15.3	12.2	39%	49%
55	15	78	0.1923	30.00%	25.00%	23.4	19.5	64%	77%
56	20	85	0.2353	30.00%	25.00%	25.5	21.3	78%	94%
57	13	82	0.1585	30.00%	25.00%	24.6	20.5	53%	63%
58	18	93	0.1935	30.00%	25.00%	27.9	23.3	65%	77%
59	24	94	0.2553	30.00%	25.00%	28.2	23.5	85%	102%
60	17	84	0.2024	40.00%	30.00%	33.6	25.2	51%	67%
61	20	74	0.2703	40.00%	30.00%	29.6	22.2	68%	90%
62	8	56	0.1429	40.00%	30.00%	22.4	16.8	36%	48%
63	15	49	0.3061	40.00%	30.00%	19.6	14.7	77%	102%
64	13	47	0.2766	40.00%	30.00%	18.8	14.1	69%	92%
65	134	612	0.2190	30.00%	25.00%	183.6	153.0	73%	88%
66	117	440	0.2659	30.00%	25.00%	132.0	110.0	89%	106%
67	61	269	0.2268	20.00%	25.00%	53.8	67.3	113%	91%
68	48	202	0.2376	20.00%	25.00%	40.4	50.5	119%	95%
69	35	141	0.2482	20.00%	25.00%	28.2	35.3	124%	99%
70	19	117	0.1624	20.00%	20.00%	23.4	23.4	81%	81%
71	8	82	0.0976	15.00%	15.00%	12.3	12.3	65%	65%
72	14	73	0.1918	15.00%	15.00%	11.0	11.0	128%	128%
73	6	54	0.1111	15.00%	15.00%	8.1	8.1	74%	74%
74	9	41	0.2195	15.00%	15.00%	6.2	6.2	146%	146%
Subtotal	659	3,039				819	731	80%	90%
75 or more	22	97	0.2268	100.00%	100.00%	97.0	97.0	23%	23%
Totals	681	3,136				916	828	74%	82%

**REDUCED RETIREMENT EXPERIENCE
FEMALE LOCAL GOVERNMENT EMPLOYEES**

Age	Actual Retirements	Total Count	Actual Rate	Assumed Rate		Expected Retirements		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 49	4	234	0.0171	3.00%	2.00%	6.9	4.7	58%	85%
50	1	65	0.0154	4.00%	3.00%	2.6	2.0	38%	51%
51	1	71	0.0141	4.00%	3.00%	2.8	2.1	35%	47%
52	2	83	0.0241	4.00%	3.00%	3.3	2.5	60%	80%
53	2	83	0.0241	4.00%	3.00%	3.3	2.5	60%	80%
54	3	84	0.0357	4.00%	4.00%	3.4	3.4	89%	89%
55	1	73	0.0137	4.00%	4.00%	2.9	2.9	34%	34%
56	4	93	0.0430	4.00%	4.00%	3.7	3.7	108%	108%
57	2	109	0.0183	4.00%	4.00%	4.4	4.4	46%	46%
58	7	113	0.0619	4.00%	6.00%	4.5	6.8	155%	103%
59	5	99	0.0505	4.00%	6.00%	4.0	5.9	126%	84%
60	19	326	0.0583	10.00%	6.00%	32.6	19.6	58%	97%
61	36	320	0.1125	10.00%	12.00%	32.0	38.4	113%	94%
62	84	719	0.1168	13.00%	12.00%	93.5	86.3	90%	97%
63	65	605	0.1074	16.00%	12.00%	96.8	72.6	67%	90%
64	54	509	0.1061	16.00%	12.00%	81.4	61.1	66%	88%
Totals	290	3,586				378	319	77%	91%

**RETIREMENT EXPERIENCE SERVICE < 30
FIREFIGHTERS - MALES AND FEMALES COMBINED**

Age (1)	Actual Retirements (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Retirements		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
40	0	7	0.0000	15.00%	10.00%	1.1	0.7	0%	0%
41	1	10	0.1000	15.00%	10.00%	1.5	1.0	67%	100%
42	1	18	0.0556	15.00%	10.00%	2.7	1.8	37%	56%
43	4	25	0.1600	15.00%	10.00%	3.8	2.5	107%	160%
44	3	37	0.0811	15.00%	10.00%	5.6	3.7	54%	81%
45	3	39	0.0769	15.00%	10.00%	5.9	3.9	51%	77%
46	3	53	0.0566	15.00%	10.00%	8.0	5.3	38%	57%
47	2	57	0.0351	8.00%	5.00%	4.6	2.9	44%	70%
48	3	68	0.0441	8.00%	5.00%	5.4	3.4	55%	88%
49	5	67	0.0746	8.00%	5.00%	5.4	3.4	93%	149%
50	2	68	0.0294	8.00%	5.00%	5.4	3.4	37%	59%
51	3	69	0.0435	8.00%	5.00%	5.5	3.5	54%	87%
52	4	80	0.0500	8.00%	5.00%	6.4	4.0	63%	100%
53	10	90	0.1111	8.00%	10.00%	7.2	9.0	139%	111%
54	8	83	0.0964	8.00%	10.00%	6.6	8.3	120%	96%
55	6	81	0.0741	10.00%	10.00%	8.1	8.1	74%	74%
56	6	76	0.0789	10.00%	10.00%	7.6	7.6	79%	79%
57	4	62	0.0645	10.00%	10.00%	6.2	6.2	65%	65%
58	7	45	0.1556	10.00%	10.00%	4.5	4.5	156%	156%
59	4	40	0.1000	10.00%	10.00%	4.0	4.0	100%	100%
60	5	44	0.1136	20.00%	10.00%	8.8	4.4	57%	114%
61	3	33	0.0909	20.00%	10.00%	6.6	3.3	45%	91%
62	7	25	0.2800	30.00%	25.00%	7.5	6.3	93%	112%
63	4	14	0.2857	30.00%	25.00%	4.2	3.5	95%	114%
64	2	9	0.2222	30.00%	25.00%	2.7	2.3	74%	89%
65	0	6	0.0000	60.00%	50.00%	3.6	3.0	0%	0%
66	4	7	0.5714	60.00%	50.00%	4.2	3.5	95%	114%
67	0	4	0.0000	60.00%	50.00%	2.4	2.0	0%	0%
68	2	3	0.6667	60.00%	50.00%	1.8	1.5	111%	133%
69	0	1	0.0000	60.00%	50.00%	0.6	0.5	0%	0%
70	0	0	N/A	100.00%	100.00%	0.0	0.0	0%	0%
Total	106	1,221				148	117	72%	90%

**RETIREMENT EXPERIENCE SERVICE \geq 30
FIREFIGHTERS - MALES AND FEMALES COMBINED**

Age (1)	Actual Retirements (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Retirements		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
40	0	0	N/A	0.00%	0.00%	0.0	0.0	0%	0%
41	0	0	N/A	0.00%	0.00%	0.0	0.0	0%	0%
42	0	0	N/A	0.00%	0.00%	0.0	0.0	0%	0%
43	0	0	N/A	0.00%	0.00%	0.0	0.0	0%	0%
44	0	0	N/A	0.00%	0.00%	0.0	0.0	0%	0%
45	0	0	N/A	20.00%	15.00%	0.0	0.0	0%	0%
46	0	0	N/A	20.00%	15.00%	0.0	0.0	0%	0%
47	0	0	N/A	20.00%	15.00%	0.0	0.0	0%	0%
48	0	1	0.0000	20.00%	15.00%	0.2	0.2	0%	0%
49	0	2	0.0000	20.00%	15.00%	0.4	0.3	0%	0%
50	0	6	0.0000	20.00%	15.00%	1.2	0.9	0%	0%
51	1	10	0.1000	22.00%	15.00%	2.2	1.5	45%	67%
52	3	12	0.2500	22.00%	15.00%	2.6	1.8	114%	167%
53	1	13	0.0769	22.00%	15.00%	2.9	2.0	35%	51%
54	2	16	0.1250	22.00%	15.00%	3.5	2.4	57%	83%
55	5	21	0.2381	25.00%	20.00%	5.3	4.2	95%	119%
56	7	30	0.2333	25.00%	20.00%	7.5	6.0	93%	117%
57	10	39	0.2564	25.00%	20.00%	9.8	7.8	103%	128%
58	5	38	0.1316	25.00%	20.00%	9.5	7.6	53%	66%
59	3	42	0.0714	25.00%	20.00%	10.5	8.4	29%	36%
60	10	40	0.2500	25.00%	22.50%	10.0	9.0	100%	111%
61	8	32	0.2500	30.00%	22.50%	9.6	7.2	83%	111%
62	5	22	0.2273	35.00%	25.00%	7.7	5.5	65%	91%
63	2	14	0.1429	35.00%	25.00%	4.9	3.5	41%	57%
64	1	8	0.1250	35.00%	25.00%	2.8	2.0	36%	50%
65	2	5	0.4000	50.00%	50.00%	2.5	2.5	80%	80%
66	0	2	0.0000	50.00%	50.00%	1.0	1.0	0%	0%
67	0	0	N/A	50.00%	50.00%	0.0	0.0	0%	0%
68	0	0	N/A	50.00%	50.00%	0.0	0.0	0%	0%
69	1	1	1.0000	50.00%	50.00%	0.5	0.5	200%	200%
70	0	0	N/A	100.00%	100.00%	0.0	0.0	0%	0%
Totals	66	354				95	74	70%	89%

**RETIREMENT EXPERIENCE SERVICE < 20
PUBLIC SAFETY EMPLOYEES - MALES AND FEMALES COMBINED**

Age	Actual Retirements	Total Count	Actual Rate	Assumed Rate		Expected Retirements		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
60	9	100	0.0900	12.00%	12.00%	12.0	12.0	75%	75%
61	5	81	0.0617	12.00%	12.00%	9.7	9.7	51%	51%
62	9	72	0.1250	12.00%	12.00%	8.6	8.6	104%	104%
63	10	56	0.1786	12.00%	12.00%	6.7	6.7	149%	149%
64	11	48	0.2292	12.00%	12.00%	5.8	5.8	191%	191%
65	6	40	0.1500	25.00%	25.00%	10.0	10.0	60%	60%
66	8	29	0.2759	25.00%	25.00%	7.3	7.3	110%	110%
67	6	18	0.3333	25.00%	25.00%	4.5	4.5	133%	133%
68	2	16	0.1250	25.00%	25.00%	4.0	4.0	50%	50%
69	1	12	0.0833	25.00%	25.00%	3.0	3.0	33%	33%
Subtotal	67	472				72	72	94%	94%
70 or more	5	17	0.2941	100.00%	100.00%	17	17	29%	29%
Totals	72	489				89	89	81%	81%

**RETIREMENT EXPERIENCE 20 ≤ SERVICE < 30
PUBLIC SAFETY EMPLOYEES - MALES AND FEMALES COMBINED**

Age (1)	Actual Retirements (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Retirements		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
40	0	16	0.0000	18.00%	15.00%	2.9	2.4	0%	0%
41	6	46	0.1304	18.00%	15.00%	8.3	6.9	72%	87%
42	16	132	0.1212	18.00%	15.00%	23.8	19.8	67%	81%
43	42	233	0.1803	18.00%	15.00%	41.9	35.0	100%	120%
44	44	292	0.1507	18.00%	15.00%	52.6	43.8	84%	100%
45	45	327	0.1376	18.00%	15.00%	58.9	49.1	76%	92%
46	43	348	0.1236	18.00%	15.00%	62.6	52.2	69%	82%
47	46	337	0.1365	18.00%	15.00%	60.7	50.6	76%	91%
48	30	312	0.0962	18.00%	15.00%	56.2	46.8	53%	64%
49	25	306	0.0817	18.00%	15.00%	55.1	45.9	45%	54%
50	27	300	0.0900	18.00%	15.00%	54.0	45.0	50%	60%
51	22	290	0.0759	18.00%	15.00%	52.2	43.5	42%	51%
52	33	270	0.1222	18.00%	15.00%	48.6	40.5	68%	81%
53	29	246	0.1179	18.00%	15.00%	44.3	36.9	65%	79%
54	19	232	0.0819	18.00%	15.00%	41.8	34.8	45%	55%
55	22	208	0.1058	18.00%	15.00%	37.4	31.2	59%	71%
56	22	182	0.1209	18.00%	15.00%	32.8	27.3	67%	81%
57	25	162	0.1543	18.00%	15.00%	29.2	24.3	86%	103%
58	18	147	0.1224	18.00%	15.00%	26.5	22.1	68%	82%
59	11	123	0.0894	18.00%	15.00%	22.1	18.5	50%	60%
60	19	121	0.1570	25.00%	20.00%	30.3	24.2	63%	79%
61	20	100	0.2000	30.00%	20.00%	30.0	20.0	67%	100%
62	19	77	0.2468	35.00%	30.00%	27.0	23.1	71%	82%
63	18	63	0.2857	35.00%	30.00%	22.1	18.9	82%	95%
64	9	45	0.2000	35.00%	30.00%	15.8	13.5	57%	67%
65	10	39	0.2564	50.00%	30.00%	19.5	11.7	51%	85%
66	10	28	0.3571	50.00%	30.00%	14.0	8.4	71%	119%
67	6	16	0.3750	50.00%	30.00%	8.0	4.8	75%	125%
68	4	10	0.4000	50.00%	30.00%	5.0	3.0	80%	133%
69	1	4	0.2500	50.00%	30.00%	2.0	1.2	50%	83%
Subtotal	641	5,012				985	805	65%	80%
70 or more	6	16	0.3750	100.00%	100.00%	16	16	38%	38%
Totals	647	5,028				1,001	821	65%	79%

**RETIREMENT EXPERIENCE SERVICE \geq 30
PUBLIC SAFETY EMPLOYEES - MALES AND FEMALES COMBINED**

Age	Actual Retirements	Total Count	Actual Rate	Assumed Rate		Expected Retirements		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
45	0	0	N/A	20.00%	20.00%	0.0	0.0	0%	0%
46	0	0	N/A	20.00%	20.00%	0.0	0.0	0%	0%
47	0	0	N/A	20.00%	20.00%	0.0	0.0	0%	0%
48	0	1	0.0000	20.00%	20.00%	0.2	0.2	0%	0%
49	0	4	0.0000	20.00%	20.00%	0.8	0.8	0%	0%
50	0	4	0.0000	20.00%	20.00%	0.8	0.8	0%	0%
51	2	10	0.2000	22.00%	20.00%	2.2	2.0	91%	100%
52	3	25	0.1200	22.00%	20.00%	5.5	5.0	55%	60%
53	4	35	0.1143	22.00%	20.00%	7.7	7.0	52%	57%
54	6	43	0.1395	22.00%	20.00%	9.5	8.6	63%	70%
55	8	55	0.1455	25.00%	20.00%	13.8	11.0	58%	73%
56	12	59	0.2034	25.00%	20.00%	14.8	11.8	81%	102%
57	14	63	0.2222	25.00%	20.00%	15.8	12.6	89%	111%
58	11	59	0.1864	25.00%	20.00%	14.8	11.8	75%	93%
59	6	52	0.1154	25.00%	20.00%	13.0	10.4	46%	58%
60	13	50	0.2600	25.00%	20.00%	12.5	10.0	104%	130%
61	11	49	0.2245	30.00%	20.00%	14.7	9.8	75%	112%
62	15	45	0.3333	35.00%	35.00%	15.8	15.8	95%	95%
63	12	43	0.2791	35.00%	35.00%	15.1	15.1	80%	80%
64	4	24	0.1667	35.00%	35.00%	8.4	8.4	48%	48%
65	8	19	0.4211	50.00%	50.00%	9.5	9.5	84%	84%
66	7	12	0.5833	50.00%	50.00%	6.0	6.0	117%	117%
67	2	4	0.5000	50.00%	50.00%	2.0	2.0	100%	100%
68	1	4	0.2500	50.00%	50.00%	2.0	2.0	50%	50%
69	2	4	0.5000	50.00%	50.00%	2.0	2.0	100%	100%
Subtotal	141	664				187	163	76%	87%
70 or more	2	5	0.4000	100.00%	100.00%	5	5	40%	40%
Totals	143	669				192	168	75%	85%

**RETIREMENT EXPERIENCE SERVICE < 25
JUDGES - MALES AND FEMALES COMBINED**

Age	Actual Retirements	Total Count	Actual Rate	Assumed Rate		Expected Retirements		Actual/Expected	
				Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
62	3	20	0.1500	15.00%	25.00%	3.0	5.0	100%	60%
63	5	15	0.3333	15.00%	25.00%	2.3	3.8	222%	133%
64	2	10	0.2000	15.00%	25.00%	1.5	2.5	133%	80%
65	1	6	0.1667	15.00%	20.00%	0.9	1.2	111%	83%
66	1	8	0.1250	15.00%	20.00%	1.2	1.6	83%	63%
67	2	5	0.4000	15.00%	20.00%	0.8	1.0	267%	200%
68	1	6	0.1667	15.00%	20.00%	0.9	1.2	111%	83%
69	1	4	0.2500	15.00%	20.00%	0.6	0.8	167%	125%
70	0	3	0.0000	100.00%	100.00%	3.0	3.0	0%	0%
Total	16	77				14	20	113%	80%

**RETIREMENT EXPERIENCE 25 ≤ SERVICE < 30
JUDGES - MALES AND FEMALES COMBINED**

Age (1)	Actual Retirements (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Retirements		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
45	0	0	N/A	10.00%	10.00%	0	0	0%	0%
46	0	0	N/A	10.00%	10.00%	0	0	0%	0%
47	0	1	0.0000	10.00%	10.00%	0.1	0.1	0%	0%
48	0	1	0.0000	10.00%	10.00%	0.1	0.1	0%	0%
49	0	0	N/A	10.00%	10.00%	0	0	0%	0%
50	0	1	0.0000	10.00%	10.00%	0.1	0.1	0%	0%
51	0	2	0.0000	10.00%	10.00%	0.2	0.2	0%	0%
52	0	1	0.0000	10.00%	10.00%	0.1	0.1	0%	0%
53	0	3	0.0000	10.00%	10.00%	0.3	0.3	0%	0%
54	0	2	0.0000	10.00%	10.00%	0.2	0.2	0%	0%
55	0	4	0.0000	10.00%	10.00%	0.4	0.4	0%	0%
56	0	5	0.0000	10.00%	10.00%	0.5	0.5	0%	0%
57	0	4	0.0000	10.00%	10.00%	0.4	0.4	0%	0%
58	0	5	0.0000	10.00%	10.00%	0.5	0.5	0%	0%
59	0	7	0.0000	10.00%	10.00%	0.7	0.7	0%	0%
60	0	6	0.0000	10.00%	10.00%	0.6	0.6	0%	0%
61	1	4	0.2500	10.00%	10.00%	0.4	0.4	250%	250%
62	1	3	0.3333	20.00%	20.00%	0.6	0.6	167%	167%
63	2	5	0.4000	20.00%	20.00%	1.0	1.0	200%	200%
64	0	2	0.0000	20.00%	20.00%	0.4	0.4	0%	0%
65	0	2	0.0000	20.00%	20.00%	0.4	0.4	0%	0%
66	1	3	0.3333	20.00%	20.00%	0.6	0.6	167%	167%
67	0	2	0.0000	20.00%	20.00%	0.4	0.4	0%	0%
68	1	3	0.3333	20.00%	20.00%	0.6	0.6	167%	167%
69	1	2	0.5000	20.00%	20.00%	0.4	0.4	250%	250%
70	0	1	0.0000	20.00%	100.00%	0.2	1.0	0%	0%
Total	7	69				9	10	76%	70%

**RETIREMENT EXPERIENCE SERVICE ≥ 30
JUDGES - MALES AND FEMALES COMBINED**

Age (1)	Actual Retirements (2)	Total Count (3)	Actual Rate (4)	Assumed Rate		Expected Retirements		Actual/Expected	
				Current (5)	Proposed (6)	Current (7)	Proposed (8)	Current (2) / (7) (9)	Proposed (2) / (8) (10)
45	0	0	N/A	20.00%	10.00%	0	0	0%	0%
46	0	0	N/A	20.00%	10.00%	0	0	0%	0%
47	0	0	N/A	20.00%	10.00%	0	0	0%	0%
48	0	0	N/A	20.00%	10.00%	0	0	0%	0%
49	0	0	N/A	20.00%	10.00%	0	0	0%	0%
50	0	0	N/A	20.00%	10.00%	0	0	0%	0%
51	0	0	N/A	20.00%	10.00%	0	0	0%	0%
52	0	0	N/A	20.00%	10.00%	0	0	0%	0%
53	0	0	N/A	20.00%	10.00%	0	0	0%	0%
54	0	0	N/A	20.00%	10.00%	0	0	0%	0%
55	0	1	0.0000	20.00%	10.00%	0.2	0.1	0%	0%
56	1	1	1.0000	20.00%	10.00%	0.2	0.1	500%	1000%
57	0	4	0.0000	20.00%	10.00%	0.8	0.4	0%	0%
58	1	4	0.2500	20.00%	10.00%	0.8	0.4	125%	250%
59	0	5	0.0000	20.00%	10.00%	1.0	0.5	0%	0%
60	2	6	0.3333	20.00%	10.00%	1.2	0.6	167%	333%
61	1	3	0.3333	20.00%	10.00%	0.6	0.3	167%	333%
62	0	3	0.0000	20.00%	20.00%	0.6	0.6	0%	0%
63	0	4	0.0000	20.00%	20.00%	0.8	0.8	0%	0%
64	0	4	0.0000	20.00%	20.00%	0.8	0.8	0%	0%
65	0	4	0.0000	20.00%	20.00%	0.8	0.8	0%	0%
66	0	5	0.0000	20.00%	20.00%	1.0	1.0	0%	0%
67	0	4	0.0000	20.00%	20.00%	0.8	0.8	0%	0%
68	0	3	0.0000	20.00%	20.00%	0.6	0.6	0%	0%
69	1	3	0.3333	20.00%	20.00%	0.6	0.6	167%	167%
70	1	3	0.3333	20.00%	100.00%	0.6	3.0	167%	33%
Totals	7	57				11	11	61%	61%

**SALARY INCREASE EXPERIENCE
STATE EMPLOYEES**

Service Index	Actual Increase	Current Assumption	Proposed Assumption
0	7.68%	9.00%	8.75%
1	7.24%	8.25%	8.00%
2	6.04%	7.25%	7.00%
3	5.56%	6.50%	6.25%
4	5.06%	6.25%	6.00%
5	4.72%	5.75%	5.50%
6	4.44%	5.50%	5.25%
7	4.25%	5.25%	5.00%
8	4.02%	5.25%	5.00%
9	4.07%	5.00%	4.75%
10	3.96%	5.00%	4.75%
11	3.72%	4.75%	4.50%
12	3.61%	4.75%	4.50%
13	3.63%	4.75%	4.50%
14	3.43%	4.50%	4.25%
15	3.32%	4.25%	4.00%
16	3.14%	4.25%	4.00%
17	3.20%	4.25%	4.00%
18	3.16%	4.25%	4.00%
19	3.27%	4.25%	4.00%
20	3.00%	4.00%	3.75%
21	2.87%	4.00%	3.75%
22	2.94%	4.00%	3.75%
23	2.98%	4.00%	3.75%
24	2.79%	3.75%	3.50%
25 and up	2.79%	3.75%	3.50%

**SALARY INCREASE EXPERIENCE
EDUCATORS**

Service Index	Actual Increase	Current Assumption	Proposed Assumption
0	9.45%	10.75%	10.50%
1	8.32%	10.00%	9.50%
2	6.71%	9.00%	8.50%
3	6.63%	8.50%	8.00%
4	6.42%	8.25%	7.75%
5	6.26%	7.75%	7.50%
6	6.15%	7.75%	7.50%
7	6.04%	7.50%	7.25%
8	5.65%	7.25%	7.00%
9	5.39%	7.00%	6.75%
10	5.06%	6.50%	6.25%
11	4.61%	6.00%	5.75%
12	4.14%	5.50%	5.50%
13	3.77%	5.00%	5.00%
14	3.44%	4.75%	4.75%
15	3.32%	4.50%	4.50%
16	3.15%	4.50%	4.25%
17	2.93%	4.25%	4.00%
18	3.08%	4.25%	4.00%
19	2.92%	4.25%	4.00%
20	2.79%	4.25%	4.00%
21	2.62%	4.25%	4.00%
22	2.69%	4.00%	4.00%
23	2.83%	4.00%	4.00%
24	2.69%	4.00%	3.75%
25 and up	2.36%	3.75%	3.50%

**SALARY INCREASE EXPERIENCE
LOCAL GOVERNMENT**

Service Index	Actual Increase	Current Assumption	Proposed Assumption
0	7.98%	9.75%	9.25%
1	6.70%	8.25%	7.75%
2	6.05%	7.50%	7.00%
3	5.54%	7.00%	6.50%
4	5.08%	6.50%	6.00%
5	4.81%	6.25%	5.75%
6	4.47%	6.00%	5.50%
7	4.53%	5.75%	5.25%
8	4.31%	5.50%	5.00%
9	4.18%	5.50%	5.00%
10	3.89%	5.25%	4.75%
11	3.68%	5.00%	4.50%
12	3.68%	5.00%	4.50%
13	3.50%	4.75%	4.50%
14	3.59%	4.75%	4.50%
15	3.39%	4.75%	4.50%
16	3.45%	4.50%	4.25%
17	3.38%	4.50%	4.25%
18	3.39%	4.50%	4.25%
19	3.07%	4.50%	4.25%
20	3.08%	4.25%	4.00%
21	2.94%	4.00%	3.75%
22	2.93%	4.00%	3.75%
23	2.62%	3.75%	3.50%
24	2.80%	3.75%	3.50%
25 and up	2.72%	3.75%	3.50%

**SALARY INCREASE EXPERIENCE
PUBLIC SAFETY**

Service Index	Actual Increase	Current Assumption	Proposed Assumption
0	6.85%	9.25%	8.00%
1	6.04%	7.50%	7.00%
2	5.83%	7.00%	6.75%
3	5.44%	6.50%	6.50%
4	5.31%	6.50%	6.25%
5	5.18%	6.25%	6.00%
6	5.13%	6.25%	6.00%
7	4.87%	6.00%	5.75%
8	4.83%	5.75%	5.50%
9	4.88%	5.75%	5.50%
10	4.53%	5.75%	5.25%
11	4.16%	5.25%	5.00%
12	4.10%	5.00%	4.75%
13	3.92%	5.00%	4.75%
14	3.85%	4.75%	4.50%
15	3.95%	4.75%	4.50%
16	3.74%	4.75%	4.50%
17	3.50%	4.50%	4.25%
18	3.56%	4.50%	4.25%
19	3.65%	4.50%	4.25%
20	3.57%	4.50%	4.25%
21	3.31%	4.50%	4.00%
22	3.28%	4.50%	4.00%
23	2.88%	4.00%	3.75%
24	3.32%	4.00%	3.75%
25 and up	2.91%	3.75%	3.50%

**SALARY INCREASE EXPERIENCE
FIREFIGHTERS**

Service Index	Actual Increase	Current Assumption	Proposed Assumption
0	6.65%	9.75%	9.25%
1	6.56%	9.25%	8.75%
2	6.01%	9.00%	8.50%
3	5.71%	8.75%	8.25%
4	6.44%	8.50%	8.00%
5	6.11%	8.25%	7.75%
6	6.74%	8.25%	7.75%
7	5.77%	7.75%	7.25%
8	5.58%	7.50%	7.00%
9	5.29%	7.25%	6.75%
10	4.78%	6.75%	6.25%
11	3.98%	6.00%	5.50%
12	3.66%	5.50%	5.25%
13	3.56%	5.50%	5.00%
14	3.48%	5.50%	5.00%
15	3.21%	5.00%	4.75%
16	3.23%	5.00%	4.75%
17	2.91%	4.75%	4.50%
18	2.70%	4.75%	4.25%
19	2.77%	4.50%	4.25%
20	2.45%	4.50%	4.25%
21	2.63%	4.25%	4.00%
22	2.55%	4.00%	3.75%
23	2.08%	3.75%	3.75%
24	2.27%	3.75%	3.75%
25 and up	2.01%	3.75%	3.50%

APPENDIX A

SUMMARY OF PROPOSED ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Proposed Actuarial Assumptions and Methods

1. *Investment return rate:*

7.25% per annum, compounded annually, composed of a 2.75% inflation rate, a 4.50% real rate of return, which includes administrative expenses of 0.06% per year.

2. *Active member mortality rates:*

Active member mortality rates are a function of the member's sex, occupation, and age. These rates were developed based on plan experience. For the Public Safety and Firefighters Systems, 25% of deaths are assumed to be service related. Rates at selected ages are shown:

Active Male Members		
Age	Local Government, Public Employees, Public Safety and Firefighters	Public Educators
20	.000276	.000173
25	.000301	.000188
30	.000355	.000222
35	.000618	.000387
40	.000863	.000540
45	.001206	.000754
50	.001710	.001069
55	.002423	.001515
60	.003902	.002439
65	.006058	.003787
70	.007938	.004961

Active Female Members		
Age	Local Government, Public Employees, Public Safety and Firefighters	Public Educators
20	.000096	.000067
25	.000104	.000072
30	.000132	.000092
35	.000238	.000166
40	.000353	.000247
45	.000562	.000393
50	.000838	.000587
55	.001263	.000884
60	.001966	.001376
65	.002911	.002037
70	.003807	.002665

3. *Disability rates:*

Disability rates are a function of the member's sex, occupation, and age. These rates were developed based on plan experience. Rates are applied at all ages. For the Public Safety and Firefighters Systems, 25% of disabilities are assumed to be service related. Rates at selected ages are shown:

Active Male Members					
Age	Local Government	Public Employees	Public Educators	Public Safety	Firefighters
20	.000230	.000230	.000090	.000300	.000360
25	.000345	.000345	.000135	.000450	.000540
30	.000690	.000690	.000270	.000900	.001080
35	.001035	.001035	.000405	.001350	.001620
40	.001380	.001380	.000540	.001800	.002160
45	.002300	.002300	.000900	.003000	.003600
50	.002990	.002990	.001170	.003900	.004680
55	.004715	.004715	.001845	.006150	.007380
60	.006440	.006440	.002520	.008400	.010080

Active Female Members					
Age	Local Government	Public Employees	Public Educators	Public Safety	Firefighters
20	.000200	.000200	.000120	.000300	.000360
25	.000300	.000300	.000180	.000450	.000540
30	.000600	.000600	.000360	.000900	.001080
35	.000900	.000900	.000540	.001350	.001620
40	.001200	.001200	.000720	.001800	.002160
45	.002000	.002000	.001200	.003000	.003600
50	.002600	.002600	.001560	.003900	.004680
55	.004100	.004100	.002460	.006150	.007380
60	.005600	.005600	.003360	.008400	.010080

4. Termination rates (for causes other than death, disability or retirement):

Termination rates are a function of the member's sex, occupation, and service. These rates were developed based on plan experience. Termination rates are not applied after a member becomes eligible for a reduced or unreduced retirement benefit.

Active Male Members					
Years of Service					
Service	Local Government	Public Employees	Public Educators	Public Safety	Firefighters
0	0.1900	0.2800	0.1500	0.1200	0.0600
1	0.1500	0.2450	0.1300	0.0650	0.0350
2	0.1100	0.1500	0.0900	0.0550	0.0300
3	0.0900	0.1200	0.0750	0.0525	0.0250
4	0.0800	0.1000	0.0650	0.0500	0.0250
5	0.0700	0.0900	0.0500	0.0450	0.0200
6	0.0600	0.0750	0.0400	0.0425	0.0150
7	0.0550	0.0650	0.0350	0.0400	0.0150
8	0.0475	0.0550	0.0325	0.0350	0.0150
9	0.0400	0.0500	0.0300	0.0325	0.0150
10	0.0350	0.0425	0.0275	0.0300	0.0150
11	0.0325	0.0400	0.0250	0.0275	0.0150
12	0.0300	0.0375	0.0225	0.0250	0.0050
13	0.0300	0.0350	0.0225	0.0225	0.0050
14	0.0300	0.0300	0.0200	0.0150	0.0050
15	0.0275	0.0250	0.0175	0.0150	0.0050
16	0.0275	0.0225	0.0175	0.0150	0.0050
17	0.0275	0.0225	0.0175	0.0150	0.0050
18	0.0250	0.0200	0.0175	0.0150	0.0050
19	0.0250	0.0200	0.0150	0.0150	0.0050
20	0.0200	0.0200	0.0100	0.0000	0.0000
21	0.0200	0.0200	0.0100	0.0000	0.0000
22	0.0175	0.0200	0.0100	0.0000	0.0000
23	0.0150	0.0150	0.0100	0.0000	0.0000
24	0.0125	0.0150	0.0100	0.0000	0.0000
25+	0.0000	0.0000	0.0000	0.0000	0.0000

4. Termination rates (continued):

Active Female Members					
Years of Service					
Service	Local Government	Public Employees	Public Educators	Public Safety	Firefighters
0	0.2400	0.3000	0.1800	0.1200	0.0600
1	0.1800	0.2250	0.1700	0.0650	0.0350
2	0.1400	0.1700	0.1350	0.0550	0.0300
3	0.1200	0.1400	0.1250	0.0525	0.0250
4	0.1100	0.1100	0.1000	0.0500	0.0250
5	0.0975	0.0950	0.0800	0.0450	0.0200
6	0.0800	0.0850	0.0750	0.0425	0.0150
7	0.0750	0.0750	0.0550	0.0400	0.0150
8	0.0650	0.0650	0.0450	0.0350	0.0150
9	0.0600	0.0600	0.0450	0.0325	0.0150
10	0.0550	0.0550	0.0400	0.0300	0.0150
11	0.0500	0.0475	0.0300	0.0275	0.0150
12	0.0450	0.0450	0.0250	0.0250	0.0050
13	0.0400	0.0425	0.0200	0.0225	0.0050
14	0.0375	0.0375	0.0200	0.0150	0.0050
15	0.0350	0.0350	0.0200	0.0150	0.0050
16	0.0325	0.0300	0.0200	0.0150	0.0050
17	0.0325	0.0275	0.0175	0.0150	0.0050
18	0.0300	0.0275	0.0150	0.0150	0.0050
19	0.0275	0.0275	0.0125	0.0150	0.0050
20	0.0250	0.0275	0.0125	0.0000	0.0000
21	0.0250	0.0250	0.0125	0.0000	0.0000
22	0.0225	0.0225	0.0125	0.0000	0.0000
23	0.0200	0.0200	0.0125	0.0000	0.0000
24	0.0200	0.0200	0.0125	0.0000	0.0000
25+	0.0000	0.0000	0.0000	0.0000	0.0000

5. *Refund rates:*

The percent of vested members electing to receive a refund of contributions on termination of employment. This rate is only applied to members of the contributory systems; vested members in the noncontributory systems are assumed to defer their benefits until retirement, even if they have a contribution account from service prior to the establishment of the noncontributory system. The rate is a function of the member's sex, occupation and service. These rates are based on plan experience.

Males				
Service	Local Government	Public Employees	Public Educators	Public Safety & Firefighters¹
0-3	100%	100%	100%	100%
4	75%	86%	75%	76%
5	73%	83%	73%	74%
6	70%	80%	70%	71%
7	67%	78%	66%	69%
8	65%	77%	61%	67%
9	62%	75%	57%	65%
10	61%	73%	54%	57%
11	59%	70%	50%	50%
12	58%	68%	47%	42%
13	55%	66%	42%	40%
14	52%	65%	38%	37%
15	49%	63%	33%	35%
16	48%	61%	28%	33%
17	46%	60%	22%	31%
18	45%	58%	17%	29%
19	23%	29%	09%	15%
20 or more	00%	00%	00%	00%

¹ Male and female members combined.

5. Refund rates (continued):

Females			
Service	Local Government	Public Employees	Public Educators
0-3	100%	100%	100%
4	77%	80%	65%
5	75%	79%	64%
6	72%	77%	62%
7	69%	74%	61%
8	67%	71%	59%
9	64%	68%	58%
10	61%	64%	53%
11	57%	60%	48%
12	54%	56%	43%
13	49%	55%	39%
14	45%	53%	36%
15	40%	52%	32%
16	35%	49%	27%
17	30%	46%	21%
18	25%	43%	16%
19	13%	22%	08%
20 or more	00%	00%	00%

6. *Retirement rates:*

Retirement rates are a function of the member's age, sex and occupation (and service in the case of Firefighters, Public Safety and Judges). Rates are based on plan experience. Rates are applied only at ages at which the member is eligible for a reduced or unreduced retirement benefit. Members are assumed to retire no later than age 75 (age 70 for the public safety, firefighter and judges systems). Sample rates are shown below.

Tier I - Local Government				
Age	Male		Female	
	Reduced Retirement	Unreduced Retirement	Reduced Retirement	Unreduced Retirement
50	0.025	0.150	0.030	0.200
51	0.025	0.150	0.030	0.200
52	0.025	0.150	0.030	0.200
53	0.025	0.150	0.030	0.200
54	0.025	0.150	0.040	0.200
55	0.030	0.150	0.040	0.250
56	0.030	0.150	0.040	0.250
57	0.030	0.150	0.040	0.250
58	0.050	0.150	0.060	0.250
59	0.050	0.150	0.060	0.250
60	0.050	0.200	0.060	0.300
61	0.050	0.200	0.120	0.300
62	0.130	0.230	0.120	0.300
63	0.130	0.230	0.120	0.300
64	0.130	0.230	0.120	0.300
65	N/A	0.230	N/A	0.250
66	N/A	0.300	N/A	0.250
67	N/A	0.220	N/A	0.250
68	N/A	0.220	N/A	0.250
69	N/A	0.220	N/A	0.250
70	N/A	0.220	N/A	0.200
71	N/A	0.180	N/A	0.150
72	N/A	0.180	N/A	0.150
73	N/A	0.180	N/A	0.150
74	N/A	0.180	N/A	0.150
75+	N/A	1.000	N/A	1.000

6. Retirement rates (continued):

Tier II - Local Government				
Age	Male		Female	
	Reduced	Unreduced ¹	Reduced	Unreduced ¹
50	N/A	0.150	N/A	0.200
51	N/A	0.150	N/A	0.200
52	N/A	0.150	N/A	0.200
53	N/A	0.150	N/A	0.200
54	N/A	0.150	N/A	0.200
55	N/A	0.150	N/A	0.250
56	N/A	0.150	N/A	0.250
57	N/A	0.150	N/A	0.250
58	N/A	0.150	N/A	0.250
59	N/A	0.150	N/A	0.250
60	0.020	0.200	0.020	0.300
61	0.040	0.200	0.040	0.300
62	0.060	0.230	0.060	0.300
63	0.080	0.230	0.080	0.300
64	0.100	0.230	0.100	0.300
65	N/A	0.230	N/A	0.250
66	N/A	0.300	N/A	0.250
67	N/A	0.220	N/A	0.250
68	N/A	0.220	N/A	0.250
69	N/A	0.220	N/A	0.250
70	N/A	0.220	N/A	0.200
71	N/A	0.180	N/A	0.150
72	N/A	0.180	N/A	0.150
73	N/A	0.180	N/A	0.150
74	N/A	0.180	N/A	0.150
75+	N/A	1.000	N/A	1.000

¹ The retirement rate at the age the member is first eligible for an unreduced retirement benefit prior to the age of 65 is increased by 30%.

6. Retirement rates (continued):

Tier I - Public Employees				
Age	Male		Female	
	Reduced Retirement	Unreduced Retirement	Reduced Retirement	Unreduced Retirement
50	0.0225	0.150	0.025	0.170
51	0.0225	0.150	0.025	0.160
52	0.025	0.150	0.025	0.160
53	0.025	0.150	0.025	0.160
54	0.025	0.150	0.025	0.160
55	0.025	0.160	0.040	0.160
56	0.040	0.160	0.040	0.160
57	0.040	0.160	0.040	0.160
58	0.040	0.160	0.040	0.200
59	0.050	0.160	0.040	0.200
60	0.075	0.200	0.010	0.300
61	0.075	0.200	0.010	0.300
62	0.130	0.330	0.160	0.300
63	0.130	0.330	0.160	0.300
64	0.130	0.300	0.160	0.300
65	N/A	0.220	N/A	0.260
66	N/A	0.220	N/A	0.260
67	N/A	0.220	N/A	0.220
68	N/A	0.220	N/A	0.220
69	N/A	0.220	N/A	0.220
70	N/A	0.220	N/A	0.220
71	N/A	0.220	N/A	0.220
72	N/A	0.220	N/A	0.220
73	N/A	0.220	N/A	0.220
74	N/A	0.220	N/A	0.220
75+	N/A	1.000	N/A	1.000

6. Retirement rates (continued):

Tier II - Public Employees				
Age	Male		Female	
	Reduced	Unreduced ¹	Reduced	Unreduced ¹
50	N/A	0.150	N/A	0.170
51	N/A	0.150	N/A	0.160
52	N/A	0.150	N/A	0.160
53	N/A	0.150	N/A	0.160
54	N/A	0.150	N/A	0.160
55	N/A	0.160	N/A	0.160
56	N/A	0.160	N/A	0.160
57	N/A	0.160	N/A	0.160
58	N/A	0.160	N/A	0.200
59	N/A	0.160	N/A	0.200
60	0.020	0.200	0.020	0.300
61	0.040	0.200	0.040	0.300
62	0.060	0.330	0.060	0.300
63	0.080	0.330	0.080	0.300
64	0.100	0.300	0.100	0.300
65	N/A	0.220	N/A	0.260
66	N/A	0.220	N/A	0.260
67	N/A	0.220	N/A	0.220
68	N/A	0.220	N/A	0.220
69	N/A	0.220	N/A	0.220
70	N/A	0.220	N/A	0.220
71	N/A	0.220	N/A	0.220
72	N/A	0.220	N/A	0.220
73	N/A	0.220	N/A	0.220
74	N/A	0.220	N/A	0.220
75+	N/A	1.000	N/A	1.000

¹ The retirement rate at the age the member is first eligible for an unreduced retirement benefit prior to the age of 65 is increased by 30%.

6. Retirement rates (continued):

Tier I - Public Educators				
Age	Male		Female	
	Reduced Retirement	Unreduced Retirement	Reduced Retirement	Unreduced Retirement
50	0.0225	0.200	0.020	0.300
51	0.0225	0.200	0.020	0.300
52	0.0225	0.200	0.030	0.300
53	0.0275	0.200	0.030	0.140
54	0.0275	0.120	0.030	0.140
55	0.040	0.120	0.040	0.140
56	0.040	0.120	0.040	0.180
57	0.040	0.120	0.070	0.180
58	0.040	0.120	0.070	0.180
59	0.040	0.120	0.070	0.180
60	0.100	0.230	0.110	0.300
61	0.100	0.230	0.110	0.300
62	0.130	0.300	0.180	0.350
63	0.130	0.300	0.180	0.350
64	0.130	0.300	0.180	0.300
65	N/A	0.300	N/A	0.300
66	N/A	0.300	N/A	0.300
67	N/A	0.300	N/A	0.300
68	N/A	0.300	N/A	0.230
69	N/A	0.250	N/A	0.230
70	N/A	0.200	N/A	0.230
71	N/A	0.200	N/A	0.230
72	N/A	0.200	N/A	0.230
73	N/A	0.200	N/A	0.230
74	N/A	0.200	N/A	0.230
75+	N/A	1.000	N/A	1.000

6. Retirement rates (continued):

Tier II - Public Educators				
Age	Male		Female	
	Reduced	Unreduced ¹	Reduced	Unreduced ¹
50	N/A	0.200	N/A	0.300
51	N/A	0.200	N/A	0.300
52	N/A	0.200	N/A	0.300
53	N/A	0.200	N/A	0.140
54	N/A	0.120	N/A	0.140
55	N/A	0.120	N/A	0.140
56	N/A	0.120	N/A	0.180
57	N/A	0.120	N/A	0.180
58	N/A	0.120	N/A	0.180
59	N/A	0.120	N/A	0.180
60	0.020	0.230	0.020	0.300
61	0.040	0.230	0.040	0.300
62	0.060	0.300	0.060	0.350
63	0.080	0.300	0.080	0.350
64	0.100	0.300	0.100	0.300
65	N/A	0.300	N/A	0.300
66	N/A	0.300	N/A	0.300
67	N/A	0.300	N/A	0.300
68	N/A	0.300	N/A	0.230
69	N/A	0.250	N/A	0.230
70	N/A	0.200	N/A	0.230
71	N/A	0.200	N/A	0.230
72	N/A	0.200	N/A	0.230
73	N/A	0.200	N/A	0.230
74	N/A	0.200	N/A	0.230
75+	N/A	1.000	N/A	1.000

¹ The retirement rate at the age the member is first eligible for an unreduced retirement benefit prior to the age of 65 is increased by 30%.

6. Retirement rates (continued):

Tier I - Public Safety (Unisex)				Tier I - Firefighters (Unisex)	
Age	Years of Service			Years of Service	
	0 - 19	20 - 29	30+	0 - 29	30+
40-44	0.00	0.150	0.200	0.100	0.150
45	0.00	0.150	0.200	0.100	0.150
46	0.00	0.150	0.200	0.100	0.150
47	0.00	0.150	0.200	0.050	0.150
48	0.00	0.150	0.200	0.050	0.150
49	0.00	0.150	0.200	0.050	0.150
50	0.00	0.150	0.200	0.050	0.150
51	0.00	0.150	0.200	0.050	0.150
52	0.00	0.150	0.200	0.050	0.150
53	0.00	0.150	0.200	0.100	0.150
54	0.00	0.150	0.200	0.100	0.150
55	0.00	0.150	0.200	0.100	0.200
56	0.00	0.150	0.200	0.100	0.200
57	0.00	0.150	0.200	0.100	0.200
58	0.00	0.150	0.200	0.100	0.200
59	0.00	0.150	0.200	0.100	0.200
60	0.120	0.200	0.200	0.100	0.225
61	0.120	0.200	0.200	0.100	0.225
62	0.120	0.300	0.350	0.250	0.250
63	0.120	0.300	0.350	0.250	0.250
64	0.120	0.300	0.350	0.250	0.250
65	0.250	0.300	0.500	0.500	0.500
66	0.250	0.300	0.500	0.500	0.500
67	0.250	0.300	0.500	0.500	0.500
68	0.250	0.300	0.500	0.500	0.500
69	0.250	0.300	0.500	0.500	0.500
70+	1.000	1.000	1.000	1.000	1.000

6. Retirement rates (continued):

Tier II - Public Safety (Unisex)				Tier II - Firefighters (Unisex)	
Age	Years of Service			Years of Service	
	0 - 19 ¹	20 - 29 ¹	30+	0 - 29 ¹	30+
40-44	N/A	0.090	N/A	0.060	N/A
45	N/A	0.090	0.120	0.060	0.090
46	N/A	0.090	0.120	0.060	0.090
47	N/A	0.090	0.120	0.030	0.090
48	N/A	0.090	0.120	0.030	0.090
49	N/A	0.090	0.120	0.030	0.090
50	N/A	0.090	0.120	0.030	0.090
51	N/A	0.090	0.120	0.030	0.090
52	N/A	0.090	0.120	0.030	0.090
53	N/A	0.090	0.120	0.060	0.090
54	N/A	0.090	0.120	0.060	0.090
55	N/A	0.090	0.120	0.060	0.120
56	N/A	0.090	0.120	0.060	0.120
57	N/A	0.090	0.120	0.060	0.120
58	N/A	0.090	0.120	0.060	0.120
59	N/A	0.090	0.120	0.060	0.120
60	N/A	0.250	0.250	0.200	0.400
61	N/A	0.300	0.300	0.200	0.400
62	0.120	0.350	0.350	0.300	0.400
63	0.120	0.350	0.350	0.300	0.400
64	0.120	0.350	0.350	0.300	0.400
65	0.250	0.500	0.500	0.600	0.600
66	0.250	0.500	0.500	0.600	0.600
67	0.250	0.500	0.500	0.600	0.600
68	0.250	0.500	0.500	0.600	0.600
69	0.250	0.500	0.500	0.600	0.600
70+	1.000	1.000	1.000	1.000	1.000

¹Retirement rates for reduced retirements are 50% of the rates shown in the table above.

6. Retirement rates (continued):

Judges - Males and Females			
Age	Years of Service		
	0 - 24	25 - 29	30+
45	N/A	0.100	0.100
46	N/A	0.100	0.100
47	N/A	0.100	0.100
48	N/A	0.100	0.100
49	N/A	0.100	0.100
50	N/A	0.100	0.100
51	N/A	0.100	0.100
52	N/A	0.100	0.100
53	N/A	0.100	0.100
54	N/A	0.100	0.100
55	N/A	0.100	0.100
56	N/A	0.100	0.100
57	N/A	0.100	0.100
58	N/A	0.100	0.100
59	N/A	0.100	0.100
60	N/A	0.100	0.100
61	N/A	0.100	0.100
62	0.250	0.200	0.200
63	0.250	0.200	0.200
64	0.250	0.200	0.200
65	0.200	0.200	0.200
66	0.200	0.200	0.200
67	0.200	0.200	0.200
68	0.200	0.200	0.200
69	0.200	0.200	0.200
70	1.000	1.000	1.000

7. *Salary increase rates:*

Salaries for individual members are assumed to increase each year, as a function of the member's occupation and service. Rates are composed of a 2.75% inflation rate, a 0.75% general increase rate that applies to all, and a variable promotional/longevity component that is a function of the member's service.

Active Male and Female Members - Local Government		
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.50% Wage Inflation
0	5.75%	9.25%
1	4.25	7.75
2	3.50	7.00
3	3.00	6.50
4	2.50	6.00
5	2.25	5.75
6	2.00	5.50
7	1.75	5.25
8	1.50	5.00
9	1.50	5.00
10	1.25	4.75
11	1.00	4.50
12	1.00	4.50
13	1.00	4.50
14	1.00	4.50
15	1.00	4.50
16	0.75	4.25
17	0.75	4.25
18	0.75	4.25
19	0.75	4.25
20	0.50	4.00
21	0.25	3.75
22	0.25	3.75
23	0.00	3.50
24	0.00	3.50
25 or more	0.00	3.50

7. Salary increase rates (continued):

Active Male and Female Members - Public Employees		
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.50% Wage Inflation
0	5.25%	8.75%
1	4.50	8.00
2	3.50	7.00
3	2.75	6.25
4	2.50	6.00
5	2.00	5.50
6	1.75	5.25
7	1.50	5.00
8	1.50	5.00
9	1.25	4.75
10	1.25	4.75
11	1.00	4.50
12	1.00	4.50
13	1.00	4.50
14	0.75	4.25
15	0.50	4.00
16	0.50	4.00
17	0.50	4.00
18	0.50	4.00
19	0.50	4.00
20	0.25	3.75
21	0.25	3.75
22	0.25	3.75
23	0.25	3.75
24	0.00	3.50
25 or more	0.00	3.50

7. Salary increase rates (continued):

Active Male and Female Members Public Educators		
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.50% Wage Inflation
0	7.00%	10.50%
1	6.00	9.50
2	5.00	8.50
3	4.50	8.00
4	4.25	7.75
5	4.00	7.50
6	4.00	7.50
7	3.75	7.25
8	3.50	7.00
9	3.25	6.75
10	2.75	6.25
11	2.25	5.75
12	2.00	5.50
13	1.50	5.00
14	1.25	4.75
15	1.00	4.50
16	0.75	4.25
17	0.50	4.00
18	0.50	4.00
19	0.50	4.00
20	0.50	4.00
21	0.50	4.00
22	0.50	4.00
23	0.50	4.00
24	0.25	3.75
25 or more	0.00	3.50

7. Salary increase rates (continued):

Active Male and Female Members Public Safety		
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.50% Wage Inflation
0	4.50%	8.00%
1	3.50	7.00
2	3.25	6.75
3	3.00	6.50
4	2.75	6.25
5	2.50	6.00
6	2.50	6.00
7	2.25	5.75
8	2.00	5.50
9	2.00	5.50
10	1.75	5.25
11	1.50	5.00
12	1.25	4.75
13	1.25	4.75
14	1.00	4.50
15	1.00	4.50
16	1.00	4.50
17	0.75	4.25
18	0.75	4.25
19	0.75	4.25
20	0.75	4.25
21	0.50	4.00
22	0.50	4.00
23	0.25	3.75
24	0.25	3.75
25 or more	0.00	3.50

7. *Salary increase rates (continued):*

Active Male and Female Members Firefighters		
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.50% Wage Inflation
0	5.75%	9.25%
1	5.25	8.75
2	5.00	8.50
3	4.75	8.25
4	4.50	8.00
5	4.25	7.75
6	4.25	7.75
7	3.75	7.25
8	3.50	7.00
9	3.25	6.75
10	2.75	6.25
11	2.00	5.50
12	1.75	5.25
13	1.50	5.00
14	1.50	5.00
15	1.25	4.75
16	1.25	4.75
17	1.00	4.50
18	0.75	4.25
19	0.75	4.25
20	0.75	4.25
21	0.50	4.00
22	0.25	3.75
23	0.25	3.75
24	0.25	3.75
25 or more	0.00	3.50

8. *Annuitant mortality rates (nondisabled retirees):*All non-educator groups:

Male retirees: 100% of RP-2000 Combined Healthy for Males with White Collar adjustments, projected with Scale AA from 2000.

Female retirees: 120% of rates in a GRS table based on female teacher experience, projected with Scale AA from 2000.

Educator group:

Male retirees: 90% of rates in a GRS table based on male teacher experience, projected with Scale AA from 2000.

Female retirees: 100% of rates in a GRS table based on female teacher experience, projected with Scale AA from 2000.

Mortality Rates in Base Tables before Projection (Multipliers Applied)				
Age	Non-educators		Educators	
	Males	Females	Males	Females
50	0.001978	0.001843	0.002496	0.001536
55	0.003302	0.004522	0.004282	0.003620
60	0.005583	0.005660	0.004028	0.004486
65	0.011061	0.005232	0.005139	0.004044
70	0.019275	0.010756	0.013480	0.008108
75	0.033634	0.017066	0.022424	0.011635
80	0.059412	0.038077	0.044386	0.025702
85	0.104665	0.088752	0.088040	0.059913
90	0.178273	0.166303	0.154143	0.122893

The following table provides the life expectancy for individuals retiring in future years based on the assumption with full generational projection:

Life Expectancy for an Age 65 Retiree in Years					
Group	Year of Retirement				
	2015	2020	2025	2030	2035
Noneducators - Male	20.3	20.6	21.0	21.3	21.6
Noneducators - Female	22.2	22.3	22.5	22.7	22.9
Educators - Male	22.3	22.6	22.9	23.2	23.5
Educators - Female	23.4	23.6	23.8	23.9	24.1

9. *Disabled annuitant mortality rates:*

Males: 100% of the RP-2000 for Disabled Males, projected with Scale AA from 2000.

Females: 110% of the RP-2000 for Disabled females, projected with Scale AA from 2000.

Disabled Mortality Rates in Base Table before Projections (Multipliers Applied)		
Age	Males	Females
20	0.022571	0.008195
25	0.022571	0.008195
30	0.022571	0.008195
35	0.022571	0.008195
40	0.022571	0.008195
45	0.022571	0.008195
50	0.028975	0.012689
55	0.035442	0.018198
60	0.042042	0.024023
65	0.050174	0.030829
70	0.062583	0.041398
75	0.082067	0.057453
80	0.109372	0.079543
85	0.141603	0.110223
90	0.183408	0.154054

The following table provides the life expectancy for individuals retiring in future years based on the assumption with full generational projection:

Life Expectancy for an Age 65 Disabled Retiree in Years					
Gender	Year of Retirement				
	2015	2020	2025	2030	2035
Males	14.1	14.6	15.1	15.6	16.1
Females	16.1	16.4	16.7	16.9	17.2

10. *Actuarial cost method:*

The Entry Age Normal actuarial cost method is used. This method is designed to produce a relatively level funding pattern when expressed as a percent of pay.

First, the actuarial present value of all future expected benefits is determined for each member, including retired members, beneficiaries, inactive members and active members. This takes into account both the probability that a benefit will be paid at a given age and the time value of money. The sum of these amounts--the Present Value of Future Benefits (PVFB)--is then determined.

Next, the Entry Age Normal actuarial cost method is used to allocate the PVFB between the current year (the normal cost), prior years (the Actuarial Accrued Liability), and future years (future normal costs). The current and future normal costs are determined as a level percentage of pay, except that for the Legislators and Governors plan, which is not pay related, normal costs are determined as a level dollar amount.

A portion of the normal cost may be paid by employee contributions in which case the balance becomes the normal cost portion of the employer contribution rate.

The difference between the Actuarial Accrued Liability (the portion of the total actuarial present value of future benefits allocated to prior years) and the Actuarial Value of Assets is called the Unfunded Actuarial Accrued Liability (UAAL). This is funded over 20 years from the valuation date.

The total employer cost rate is the sum of (i) the normal cost rate, net of employee contributions if applicable, and (ii) the level percent-of-pay amortization of the UAAL. For the Judges' System and the Firefighters' System, certain specified revenues (court fees and a tax on fire insurance premiums, respectively) are used as an offset to the employer contribution rate each year, as described elsewhere in this report.

All contribution rates are based upon monthly payments of contributions.

11. *Actuarial value of assets:*

The actuarial value of assets is equal to the market value, adjusted for a five-year phase in of actual investment return in excess of (or less than) expected investment return. The actual return is calculated net of investment and administrative expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's market value of assets, adjusted for contributions, benefits paid, and refunds. The actuarial value of assets is further adjusted, if necessary, so that it is not less than 75% of market value and not more than 125% of market value.

A "fresh start" was applied to the asset method on January 1, 2014.

12. *Payroll growth rate:*

In determining the level percent of payroll amortization rate, payroll is assumed to grow annually at 3.25%. No allowance is made for future growth in the number of members.

13. *Marital status:*

All nonretired members are assumed to be married with no children. Female members are assumed to be three years younger than their spouses, while male members are assumed to be three years older than their spouses.

14. *Administrative and investment expenses:*

The assumed 7.25% investment return rate represents the anticipated net return after payment of all investment and administrative expenses. Administrative expenses are assumed to be 0.06% of plan assets each year.

15. *Judges System:*

For the Judges System, no disability or withdrawal rates were used. Salaries are assumed to increase at 3.50% per year.

16. *Governors and Legislative Pension Plan:*

A 10% withdrawal rate is assumed regardless of age or service. No disability rates are used. No salary increase rate is used because the benefits do not reflect pay. Members are assumed to retire at the earlier of (i) age 65 with four years of service, or (ii) age 62 with 10 years of service. Normal cost and actuarial accrued liability are based on Level Dollar Entry Age Cost Method (not Level Percent of Pay).

17. *Interest Credited on Member Contribution Account Balances:*

In projecting member contribution account balances, we assume that the rate credited is 7.25% each year. (The actual rate is set by the Board of Trustees annually, based on investment performance.) Interest is not credited to account balances for members of the Firefighters Retirement System.

18. *Mortality Improvement:*

For post-retirement mortality, both healthy and disabled, we assume continuous (generational) mortality improvement according to Scale AA from a base year of 2000. Mortality improvement is ignored for the pre-retirement mortality assumption, since it would not have a material effect on the liabilities.

19. *Cost-of-living increases:*

Retirement benefits for all systems with a maximum 4.00% COLA are assumed to increase at 2.75% even though the maximum allowable rate is 4.00%. Retirement benefits for the funds with a maximum 2.50% COLA—e.g., some of the Public Safety funds—are assumed to increase at the maximum allowable rate of 2.50%.

For current retirees who have received cumulative COLAs less than the total of annual CPI increases since retirement, we assume higher COLAs, subject to the annual maximum, as long as the member has “banked” CPI increases left.