Utah Retirement Systems

Actuarial Experience Study

For the Period Ending December 31, 2025



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August 20, 2026

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Subject: Results of 2026 Actuarial Experience Study for URS

We are pleased to present our report on the results of the 2026 Actuarial Experience Study for the Utah Retirement Systems (URS). This report is generally based on plan experience for the period ending December 31, 2025.

This report includes summaries and analyses of the experience data. Based on these analyses, we have recommended a new set of actuarial assumptions to be effective for the January 1, 2026 actuarial valuation. In addition, the report provides the estimated effect on the actuarial liabilities and contribution rates if our recommendations are adopted.

In accordance with the Board's policy, an experience study that reviews the economic and demographic assumptions is performed every three years. 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.

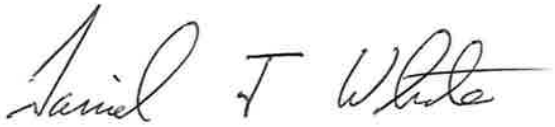
The study was conducted in accordance with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Mr. White and Ms. Shaw meet the Qualification Standards of the American Academy of Actuaries. All of the undersigned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

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

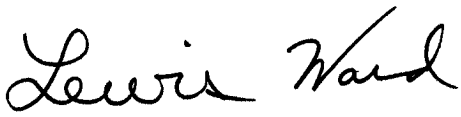
Sincerely,



Janie Shaw, ASA, MAAA, EA
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SECTION A

EXECUTIVE SUMMARY

Executive Summary

1. Purpose
   a. Reviewed all current demographic actuarial assumptions and methods and compare to actual recent experience.
   b. Reviewed all economic actuarial assumptions and compared to forward-looking expectations.
   c. Generally used data from the five-year period ending December 31, 2025 (data over longer or shorter periods were used, where appropriate).
   d. Where appropriate, proposed modifications to the assumptions to better reflect anticipated experience.

2. Annual (price) inflation rate
   a. It is a component of the investment return assumption, salary increase assumption, and COLA assumption.
   b. Recommend a 0.10% increase in the price inflation assumption from 2.50% to 2.60%.

3. Annual investment return rate
   a. Current assumption is 6.85% per annum and represents total return, net of administrative and investment expenses and is composed of a 2.50% inflation rate and a 4.35% net real rate of return.
   b. The current assumption continues to remain reasonable but the Board could consider increasing the current 6.85% investment return assumption to 6.95% as a result of the 0.10% increase in the price inflation assumption.

4. COLA assumption
   a. Current assumption is 2.50% per annum for all funds.
   b. Actual benefit increases are based on annual change in price inflation, with some funds capped at 2.50% per year and some funds capped at 4.00% per year.
   c. We recommend increasing the assumed COLA to be 2.60% to be consistent with the change in the inflation assumption. Note that for retirees where benefits increases are capped at 2.50% per year, the recommended COLA assumption remains at 2.50%.

5. Salary increase rate
    a. Separate assumptions currently used for state employees, local government employees, teachers, public safety, and firefighters.
    b. The current wage inflation assumption is 3.50% for state employees, local government employees, educators, and firefighters. The wage inflation assumption for public safety members is 3.75%. We recommend a 0.10% increase in the wage inflation assumption to 3.60% (2.60% price inflation plus 1.00% productivity increase) for state employees, local government employees, educators, and firefighters.
    c. Finally, we also recommend additional increases to the merit-based portion of the salary increase assumption for local government, state employees, and public safety members.

6. Payroll growth rate
    a. Assumption used for projecting the rate at which the total payroll is expected to grow each year and the assumption only affects the amortization cost and has no impact on the actuarial liabilities.
    b. We recommend no change to the 2.90% payroll growth assumption.

7. Post-retirement mortality for healthy retirees:
    a. Current assumption is based on URS retiree experience through December 31, 2019. We also use a multiplier adjustment for any differences between the different employee groups (such as educators and general employees).
    b. Based on analysis of the last nine years of mortality experience, which includes three years with retiree exposure to COVID-19, mortality for all retiree groups was slightly higher than expected when compared to the current assumption.
    c. We recommend continued use of the custom 2020 base retiree mortality table and the same mortality improvement assumption, which is the ultimate improvement rates in Scale MP-2020, while the impact of the COVID on long-term mortality rates continues to be studied.

8. Disabled mortality:
   a. Current assumption is based on 120% of the PUB-2010 mortality table for Disabled Annuitants for males and 125% of the PUB-2010 mortality table for Disabled Annuitants for females. Mortality is projected with the ultimate improvement rates from the MP-2020 mortality improvement scale using a base year of 2010.
   b. We recommend updating the base mortality table to the PUB-2016 mortality table issued by the Society of Actuaries for Disabled lives. We also recommend an increase to the multipliers applied to the base assumption to 140% for males and 135% for females. Finally, we recommend the continued use of the mortality improvement assumption that is used for healthy retirees.

9. Pre-retirement mortality:
   a. We recommend updating the base mortality table to the family of PUB-2016 employee mortality tables that are matched to employee type (i.e. teachers, general employees, public safety).

10. Disability incidence:
   a. We recommend a reduction in the disability rates for males in each of the public employee groups (state, local government, and educators) as well as female educators. We recommend no change to the assumption applicable to public safety members and firefighters.

11. Retirement:
   a. The experience shows that the current retirement assumption for the Tier 1 funds reasonably models the retirement behavior for most employee types. However, we recommend slight reductions in the reduced retirement rates for state employees (male and female) and local government members (female only). We also recommend slight reductions in the normal retirement rates for state females, male educators, and public safety members.
   b. We recommend no change to the rates of retirement for members in either Tier II hybrid funds.

12. Termination:
   a. Experience shows that actual terminations were more than currently assumed and we recommend maintaining this margin in the assumption. Specifically, we recommend no changes to the termination rates for all membership groups, except firefighters, where we are recommending a slight increase in the rates of termination.

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

14. Actuarial Cost Method:
    a. Valuation currently uses the Entry Age Normal actuarial method, which is the most widely used method among large public plans. We recommend no change.

15. 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.
    c. We recommend no change.

16. Amortization period:
    a. The calculated contribution rates for most funds are determined using a maximum 20-year amortization period (some funds have a different closed amortization period).
    b. The actuarially determined contribution rate is a floor contribution requirement.
    c. Current statute allows for the Board to certify the contribution rate at the greater of the prior year's certified rate or the calculated rate as long as the funds are less than 110% funded. The actual funding period for most funds is less than 20 years.
    d. As long as the Board continues to certify contribution rates at the greater of the prior year's rate or the actuarially determined rate, we recommend the actuarially determined contribution rate to continue to be determined in future years using a 20-year period (i.e. 20-year open) for all funds except for the Governors and Legislators Pension Plan, which currently uses a closed funding period.
    e. We recommend using a 20-year open amortization period for the Higher Education funds, while the funds are over 100% funded. If the funds become less than 100% funded, we recommend reverting back to the previous closed amortization period.

SECTION B

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.

In accordance with URS Board policy, an experience study is performed every three years. The last one was prepared in conjunction with the January 1, 2023 actuarial valuation. For this experience study, we have reviewed and analyzed URS's data for the five-year period from December 31, 2020 through December 31, 2025. Note that the first two years, calendar years 2021 and 2022, 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 provisions 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 most assumptions.

In a few instances, such as the analysis of individual salary increases and the rates at which active members withdrawal from active service, we looked at data over a longer period, up to fifteen years, in order better capture the experience over an entire business cycle, to increase the soundness of our conclusions.

Introduction

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 or years of service, by the "exposures" at that same age or service band. For example, let's look at the current rate of retirement of 15% at age 60 for local government males. The "exposures" for this assumption in each year is the number of male local government members who are age 60 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 15% retirement rate to determine the number expected to retire (unreduced) at age 60 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. Note, this example is a headcount-based approach. This experience study uses various "weighted" approaches to more closely mimic the liability impact of each assumption. See Section C for additional discussion of the basis used to review each assumption.

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 smooths 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 assumptions 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 a 3.60% wage inflation assumption is appropriate, others might argue that a different rate is a better assumption.

Organization of Report

Section C contains our findings and recommendations for each actuarial assumption. The impact of adopting our recommendations on liabilities and contribution rates is shown in Section D. Section E summarizes the recommended changes. Tables summarizing the analysis of the assumptions are in Section F. We have attached an appendix containing all 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 F Exhibits

The exhibits in Section F should generally be self-explanatory. For example, on page 78, we show the exhibit analyzing the termination rates for male state employees. The second column shows the sum of the salary of all male teachers who terminated during the study period. This excludes members who died, became disabled, or retired. Column (3) shows the total exposures. This is the sum of the salary of all 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 ten-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 number of terminations, weighted by salary, 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 C

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 assumption, 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.

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 Assumptions for Measuring Pension Obligations. This standard provides guidance to actuaries giving advice on selecting economic and noneconomic assumptions for measuring obligations under defined benefit plans. We believe the recommended assumptions in this report were developed in compliance with this standard.

Economic Assumptions

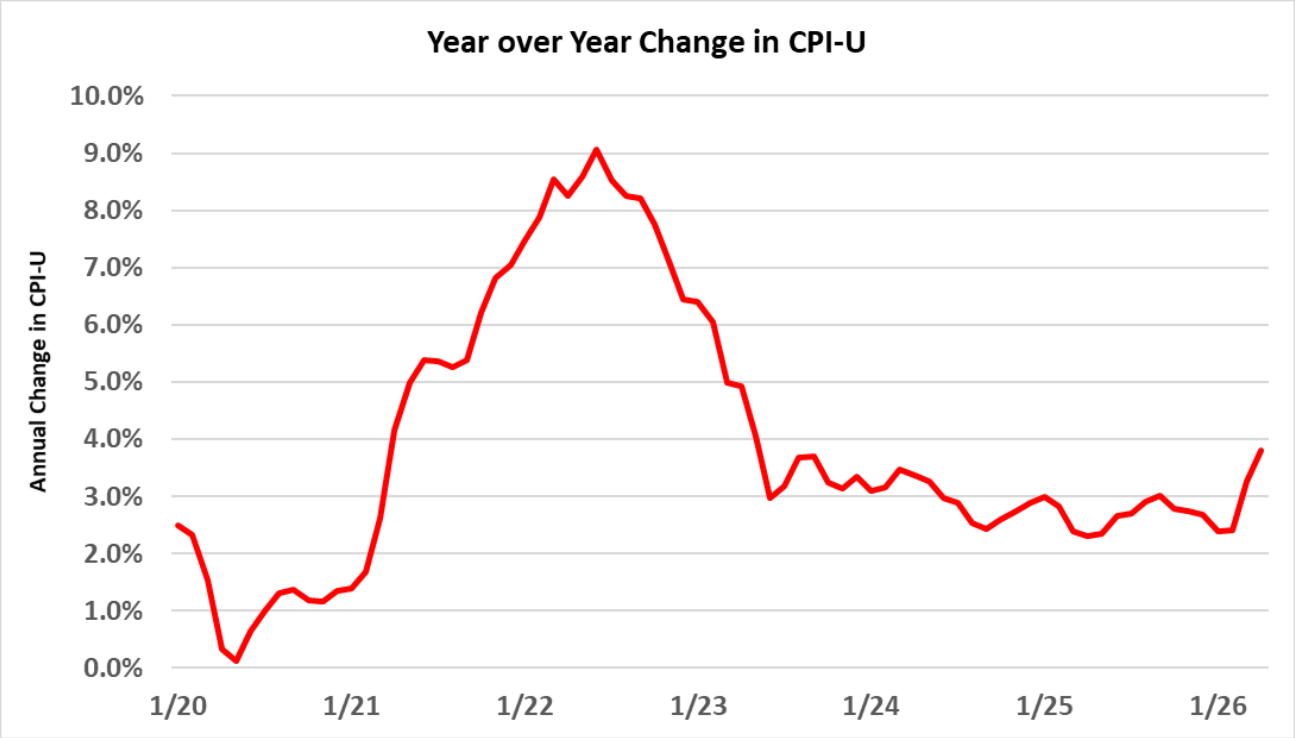
As no one knows what the future holds, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a mixture of past experience, future expectations, and professional judgment. The actuary should consider a number of factors, 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 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.

Analysis of Experience and Recommendations

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 2.50%. The following chart shows the year-over-year change in CPI-U over the last six years ending April 30, 2026:



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

As the charts show, actual inflation as measured by CPI has been higher than the current 2.50% assumption since early 2021. The following is a discussion of the various sources of forward-looking inflation expectations.

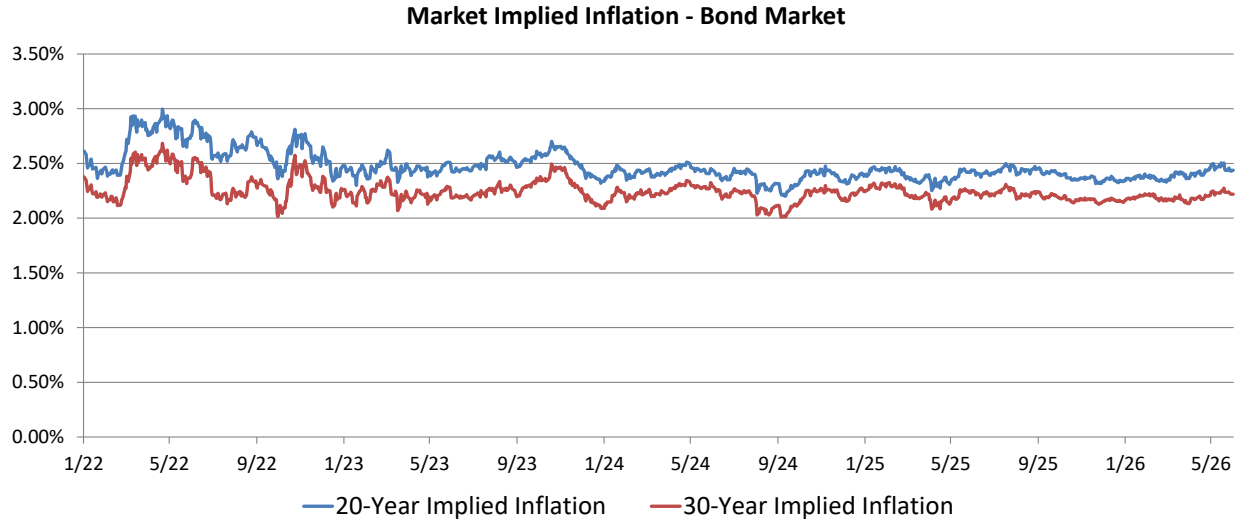
Forward-Looking Expectations Developed by Investment Consulting Firms

Most investment consulting firms, in setting their capital market assumptions, make a price inflation assumption as a building block for developing forward-looking return expectations. Based on a survey of 2026 capital market assumptions of ten investment consulting firms, the average expected price inflation for the next ten years is 2.43%. Of these firms, the minimum expectation was 2.30% and the maximum was 2.70%.

Analysis of Experience and Recommendations

Expectations Implied in the Bond Market

Another source of information about future inflation is the market for US Treasury bonds. For example, the May 1, 2026 yield for 20-year inflation indexed Treasury bonds was 2.41% plus actual inflation. The yield for 20-year non-indexed US Treasury bonds was 4.96%. Simplistically, this means that on that day the bond market was predicting that inflation over the next twenty years would average 2.49% [(1 + 4.96%) / (1 + 2.41%) - 1] per year. The difference in yield for 30-year bonds implies 2.24% inflation over the next 30 years. This is consistent with most forecasts that inflation is expected to be higher for the next few years before settling down near the Federal Reserve's 2.00% target. Below is a chart with the history of the implied inflation for 20-year and 30-year Treasury securities from January 2019 through February 2023. However, this analysis is known to be imperfect as it ignores the inflation risk premium that buyers of US Treasury bonds often demand as well as possible differences in liquidity between US Treasury bonds and TIPS.



Forecasts from Social Security Administration

In the Social Security Administration's 2026 Trustees Report, the Office of the Chief Actuary is projecting a long-term average annual inflation rate of 2.40% under the intermediate cost assumption and low-cost and high-cost scenarios are 1.80% and 3.00%, respectively. The Chief Actuary for the Social Security Administration has kept this assumption unchanged for at least the last six years.

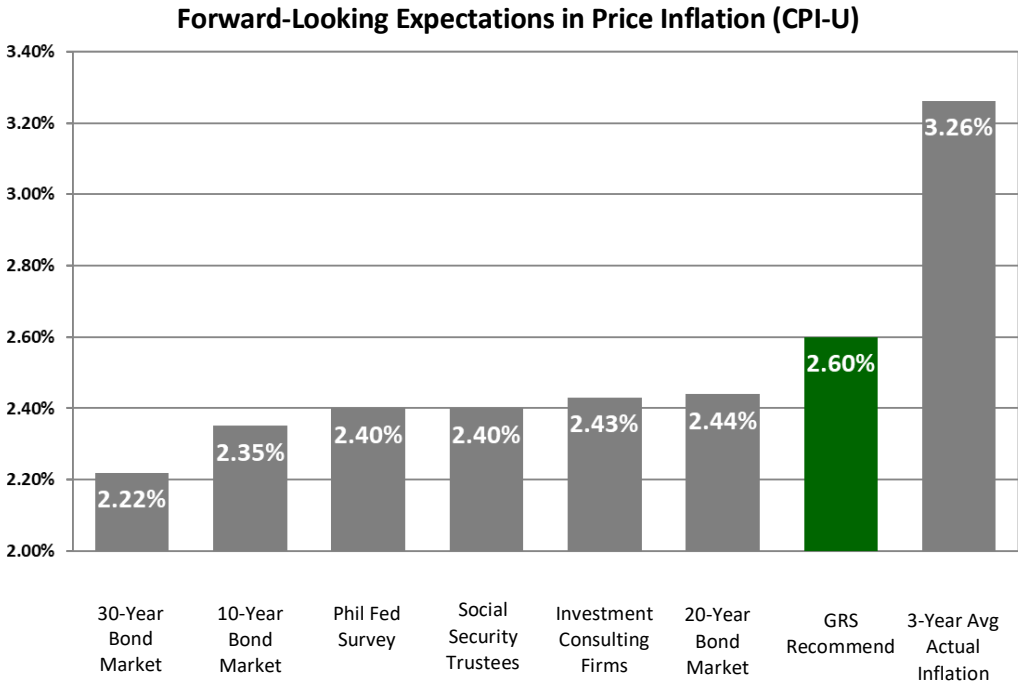
Survey of Professional Forecasters

The Philadelphia Federal Reserve conducts a quarterly survey of the Society of Professional Forecasters. Their forecast for the second quarter of 2026 was for inflation over the next ten years (2026 to 2035) to average 2.40%. This survey average was relatively unchanged from the 2.30% expectation in the first quarter of 2026 and 2.38% for the fourth quarter 2025 survey.

Analysis of Experience and Recommendations

Recommendation

The following is a chart to summarize the various forward-looking expectations.



When reviewing the inflation assumption for URS, it is important to consider that URS provides retirees CPI-indexed cost-of-living adjustments. Therefore, considering these forward-looking assumptions, as well as recognizing that actual inflation has consistently been higher than 2.50% over the last five years, we recommend a 0.10% increase in the price inflation assumption to 2.60%. Increasing the inflation assumption would result in an increase in the COLA assumption for Tier 1 public employees and the Tier 1 public safety funds with a 4.00% COLA.

Analysis of Experience and Recommendations

Investment and administrative expenses

The trust fund pays investment and administrative expenses from plan assets. 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. Given the relatively small size of administrative expenses compared to plan assets (i.e. approximately 3 basis points), we believe the development of an investment return assumption net of administrative expenses remains reasonable.

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. However, our analysis will not advance recognize an excess return attributable to URS's active management activity for developing future return expectations.

Analysis of Experience and Recommendations

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 6.85% 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 2.50% per annum and an annual real rate of return of 4.35%, net of expenses.

The table below shows the average URS market returns (reduced for expenses) for various periods as calculated by GRS. These returns are determined on a dollar-weighted basis and can differ from the time-weighted basis used by URS.

Average URS Returns for Various Periods	
Last 5 Years	7.9%
Last 10 Years	8.7%
Last 15 Years	8.3%
Last 20 Years	7.2%
Last 25 Years	7.0%

However, for this assumption, past performance is not a reliable indicator of future performance, even when averaged over a 25-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.

Analysis of Experience and Recommendations

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 2025 annual report, URS's current target asset allocation is:

Asset Category	Target Allocation
Equities (Domestic and International)	35%
Debt Securities	20%
Real Assets	18%
Private Equity	12%
Absolute Return	15%
Cash	0%
Total	100%

Because GRS is a benefit 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:

- Aon
- BNY Mellon
- Blackrock
- Cambridge
- Mercer Consulting
- NEPC
- RV Kuhns
- Verus
- Wilshire

Each of these investment consultants provided forward-looking return expectations for the next 7 to 10 years. Additionally, six of these firms (Aon, Blackrock, Cambridge, Mercer, and NEPC, RV Kuhns) develop return expectations over a longer, 20- to 30-year period.

URS theoretically has an indefinite life span which may result in some stakeholders believing that emphasis should be placed solely on long-term expectations, even if short-term expectations are materially different. While URS is expected to have an indefinite life span, this system is relatively mature with material shorter-term liability attributable to current retirees. We believe it is important for decision makers to also consider return expectations over the next seven to ten years.

Given the changes in economic conditions over the last several years, we are mindful of the possibility that some of the investment consultants will make adjustments in the return expectations from year to year. As a result, we believe it is prudent to view and compare the return expectations based on the 2024, 2025, and 2026 capital market assumptions for decision making purposes.

Analysis of Experience and Recommendations

The following table provides the expected return (i.e. 50th percentile) and the probability of exceeding the current 6.85% return assumption.

		50th Percentiale Expected Return (Geometric)			Probability of Exeeding 6.85%		
	Investment Consultant	2026	2025	2024	2026	2025	2024
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
7 to 10 Year Expectations	1	5.7%	6.3%	6.0%	38%	44%	41%
	2	5.8%	5.8%	6.2%	39%	38%	43%
	3	6.5%	6.8%	7.0%	46%	50%	52%
	4	6.6%	6.4%	6.7%	47%	45%	48%
	5	6.9%	7.0%	7.1%	50%	52%	53%
	6	7.1%	7.2%	6.8%	53%	54%	50%
	7	7.1%	7.1%	7.3%	53%	53%	55%
	8	7.1%	6.8%	6.3%	53%	50%	44%
	9	7.2%	7.2%	6.8%	54%	55%	50%
20 to 30 Year Expectations	1	5.7%	5.9%	5.8%	37%	38%	37%
	2	7.2%	7.2%	7.1%	53%	53%	53%
	3	7.2%	7.4%	6.7%	54%	56%	49%
	4	7.4%	7.3%	7.1%	56%	55%	54%
	5	7.4%	7.3%	7.1%	56%	55%	52%
	6	7.4%	7.5%	7.2%	57%	58%	54%
7-10 Year Expectation Avg:		**6.7%**	**6.7%**	**6.7%**	**48%**	**49%**	**48%**
20-30 Year Expectation Avg:		**7.1%**	**7.1%**	**6.8%**	**52%**	**53%**	**50%**

Recommendation

The average short-term and long-term investment return expectations have remained relatively stable over the last three years. The probability of exceeding the current investment return assumption of 6.85% is slightly lower than 50% for the short-term assumption, but slightly greater than 50% based on the long-term assumptions. Based on this information we believe a return assumption that is between 6.75% and 7.00%, inclusive, is reasonable. We have modeled the fiscal impact of the recommended assumptions based on the current 6.85% assumption as well as a 6.95% return assumption.

Given the recommended 0.10% increase in the price inflation assumption, a 6.85% return assumption would be based on a 2.60% price inflation and a 4.25% real rate of return (a 10-basis point decrease in the real rate of return assumption). Similarly, a 6.95% return assumption would be based on 2.60% price inflation and the current 4.35% real rate of return assumption (no change in the real rate of return assumption).

Analysis of Experience and Recommendations

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 recommending a 2.60% price inflation assumption, we recommend the use of a 2.50% COLA assumption for the funds with a 2.50% annual maximum, and a 2.60% COLA for those funds that are subject to a 4.00% annual maximum COLA.

Analysis of Experience and Recommendations

Salary increase assumption for individuals

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 members in URS 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 with working with Systems across the country 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 that encompasses a full economic cycle when analyzing this assumption.

Analysis of Experience and Recommendations

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

	Average Increases for Continuing Members				
Year	**State**	**Teachers**	**Local**	**Public Safety**	**Firefighters**
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%
2014	3.4%	3.7%	3.7%	3.9%	3.7%
2015	4.6%	4.5%	4.6%	4.6%	4.7%
2016	4.8%	6.0%	4.6%	5.4%	5.1%
2017	4.6%	6.7%	4.9%	5.7%	5.4%
2018	5.2%	7.8%	5.4%	6.1%	5.1%
2019	5.3%	7.5%	5.8%	7.1%	6.1%
2020	4.2%	7.7%	4.9%	5.2%	5.5%
2021	6.0%	8.6%	6.0%	7.7%	6.1%
2022	7.9%	7.0%	9.9%	16.4%	9.4%
2023	10.5%	10.0%	10.2%	12.3%	10.7%
2024	10.0%	9.4%	6.9%	8.9%	9.2%
2025	5.4%	5.4%	6.4%	6.7%	8.0%
15-Year Average	**5.3%**	**6.2%**	**5.5%**	**6.6%**	**5.8%**

New experience since last analysis (2023, 2024, 2025)

As the table shows, the average salary increases members received each year after 2020 have been noticeably higher than prior years with the last year of experience trending down to more normal increases. In order to capture a full economic cycle of salary increases for analysis to identify an appropriate assumption to project salary increases for members in future years, we included the last 15 years of experience (the red boxed numbers).

Analysis of Experience and Recommendations

The salary assumption can be thought of as consisting of wage inflation (the 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. Note that a salary increase assumption is not applicable for members earning benefits in the Legislative and Governors Plan, since neither benefits nor contributions are salary-related.

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, or what employers think of as an "across-the-board salary increase".

Historically, wage inflation almost always exceeds price inflation. This is because wage inflation is in theory the result of (1) price inflation, and (2) productivity gains being passed through to wages. The current 3.50% assumption can be thought of as comprised of (1) a 2.50% inflation rate, plus (2) an additional 1.00% for productivity gains. For the last twenty years ending in 2024, for the economy as a whole, wage inflation has outpaced price inflation by about 0.84% 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.

Analysis of Experience and Recommendations

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

Group	Average Salary Increase	Actual Price Inflation	Difference
Teachers	3.47%	2.64%	0.83%
State	3.66%	2.64%	1.02%
Local Government	3.72%	2.64%	1.08%
Public Safety	3.59%	2.64%	0.95%
Firefighters	3.72%	2.64%	1.08%

As the analysis shows, average pay increases for long-service employees over the last 15 years was between 0.83% and 1.08% over price inflation for all employee groups. Historically, salary increases have remained consistently elevated for the last five years. This experience is not limited to members of URS, as we have also observed similar type increases for public employees in many other States across the country. However, the rate of salary increases appears to begin to trend down starting with last year for URS and public employees across the country as government budgets have recently become more constrained. Taking into account all this information, we recommend a 0.10% increase in the wage inflation assumption to 3.60% (2.60% price inflation plus 1.00% productivity increase) for state employees, local government employees, educators, and firefighters.

The average total salary increase for continuing judges over the 15-year period was 3.08%. For Judges, who do not have assumed step increases, we propose to maintain the current 0.75% productivity increase, which will keep the annual salary increase assumption at 3.35% (i.e. 2.60% price inflation plus a 0.75% wage inflation and merit increase).

Salary increase assumption for shorter-service employees (step increases)

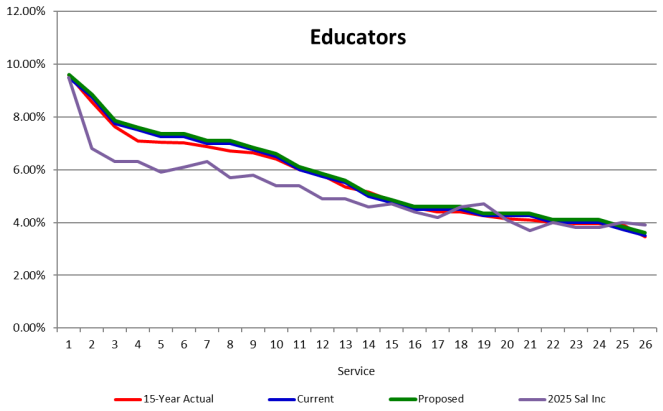
To analyze the service-related salary assumption, we looked at the excess in the average increases for shorter-service employees over the average for longer-service employees. For example, teachers with three years of service received an average increase of 7.08%, or a 3.61% increase above than the average increase of 3.47% for teachers with twenty-five or more years of service.

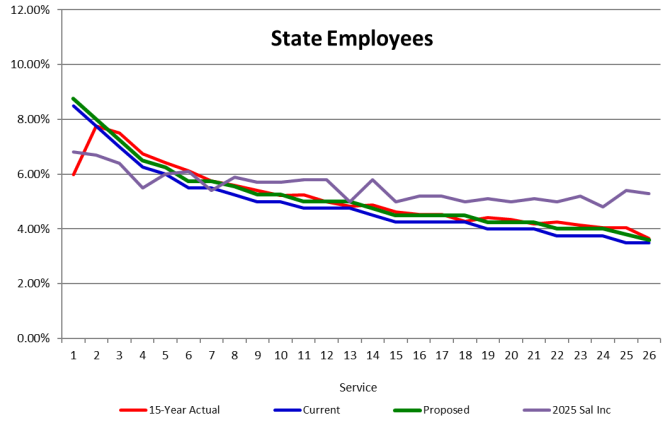
We then determined new service-related assumptions reflecting this data. For instance, in the example above, the step for a teacher entering her fourth year under the current assumption is 4.00% (versus the 3.62% actual).

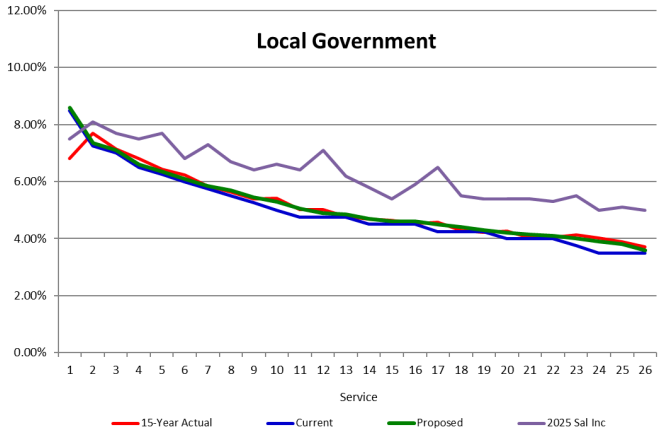
Analysis of Experience and Recommendations

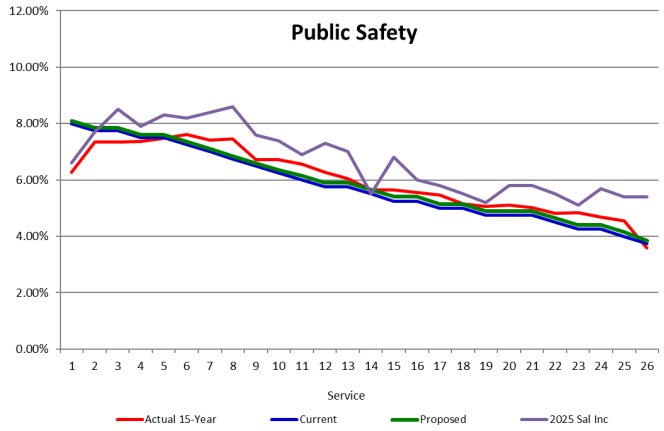
Salary increase assumptions (overall)

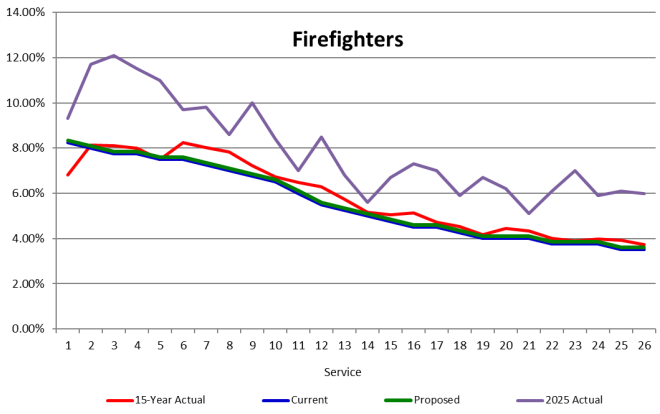
The overall effect of the changes to the wage inflation will result in an increase to the assumed rate of salary increases for each employee group. We believe the level of increase for these employee groups will more accurately model the salary increases that will be provided to these members for the foreseeable future. The following are charts illustrate the change in the salary increase assumption for each employee group as well as the average actual increase provided to these members for 2025, which (with the exception of Educators) has been higher than historical increases as well as the recommended assumption. More detail is shown on the tables in Section F. See pages 105-109.











Analysis of Experience and Recommendations

Payroll growth rate

The salary increase assumption discussed above is applied to individuals and is used in projecting future benefits. When calculating the employer contribution rates, the amortization payments that pay off the unfunded liability are calculated to be a level percentage of total payroll. Therefore, as payroll increases over time, the amortization payments do as well. Note, as the financial condition of the system continues to improve and become fully funded, the calculated amortization cost decreases and becomes a less material assumption in the actuarial valuation. Also, it is conservative to assume a payroll growth assumption that is lower than actual experience because it results in greater contributions than expected to finance 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 or retire, 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 active population. However, we do not currently assume membership growth in setting the payroll growth assumption.

The following table 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	7.6%	1.3%	6.3%
Last 10 Years	6.5%	1.1%	5.4%
Last 15 Years	4.7%	0.6%	4.1%
Last 20 Years	4.6%	0.7%	3.9%

In our opinion, the strength of the economy and government budgets during the last four years resulted in an abnormal increase in covered payroll. However, given the relative insignificance of this assumption in the actuarial valuation because the benefit funds are well funded and the calculated amortization cost is relatively small, we are recommending no change to the current 2.90% assumption.

Analysis of Experience and Recommendations

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. 27, *Selection of Assumptions for Measuring Pension Obligations*. This standard provides guidance to actuaries giving advice on selecting economic and 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)

URS's actuarial liabilities depend in part on how long retirees live. If members live longer, benefits will be paid for a longer period of time, and the liability will be larger.

The current assumption uses separate mortality assumptions based on gender and for educators and noneducators. We use different tables for educators because our studies (for URS and other statewide retirement systems) have consistently shown that they live longer on average than other state and local government employees. This statement is also supported by the fact that the Society of Actuaries (SOA) publishes separate mortality tables for educators with regard to the family of public retirement plan mortality tables (PUB-10 and PUB-16). Also, we find that the mortality experience for public safety members and firefighters in URS is not materially different than that of state and local government employees.

The current base mortality assumptions for URS were developed using actual URS retiree mortality experience through December 31, 2019. A multiplier was then applied to the mortality table based on employee group.

<u>Current Assumption: State and local government retirees as well as public safety and firefighter retirees</u>

- Male: 2020 PR Utah Retiree Mortality Table for males multiplied by 110%
- Female: 2020 PR Utah Retiree Mortality Table for females multiplied by 110%

<u>Current Assumption: Retired educators as well as retired judges</u>

- Male: 2020 PR Utah Retiree Mortality Table for males multiplied by 90%
- Female: 2020 PR Utah Retiree Mortality Table for females multiplied by 90%

The base mortality table is projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2020.

Analysis of Credibility of the Retirement Systems' Mortality Experience

When selecting an appropriate mortality assumption, actuaries often use standard, published, mortality tables. As the size of the retiree population increases, actuaries often also adjust these published mortality tables with multipliers or age setbacks to better reflect characteristics of the covered group and to provide for expectations of future mortality improvement (both up to and after the measurement date). On the other hand, a retirement system with a sufficiently large number of

retirees may be able to best model mortality experience by using a mortality table constructed based on the system's own experience. Factors that may be considered in selecting and/or adjusting a mortality table include the demographics of the retiree group, the number of retirees in the system, the statistical credibility of its experience, and the anticipated rate of future mortality improvement.

In our analysis of the mortality experience for the Utah Retirement Systems, we first measured the credibility of the dataset to determine whether standard published tables should be used or if a statistical analysis of the Retirement Systems' data was warranted. Based on a practice note issued by the American Academy of Actuaries in June 2015, a dataset needs 96 expected deaths for each gender to be within +/- 20% of the actual pattern with 95% confidence. However, we believe a +/- 20% range is too large to be considered fully credible for the mortality selection. Other sources suggest higher requirements, such as 1,000 deaths per gender is necessary to be considered fully credible. The following table gives the number of deaths needed by gender to have a given level of confidence that the data is +/- X% of the actual pattern.

Standard Score	Confidence	99% - 101%	97% - 103%	95% - 105%	90% - 110%	80% - 120%
1.150	75%	13,233	1,470	529	132	33
1.282	80%	16,424	1,825	657	164	41
1.645	90%	27,055	3,006	1,082	271	68
1.960	95%	38,415	4,268	1,537	384	96
2.576	99%	66,349	7,372	2,654	663	166

Using this information, 1,082 deaths are needed by gender to have 90% confidence that the data is within +/- 5% of the actual pattern. The Utah Retirement Systems (all funds combined) had 4,737 male deaths and 5,320 female deaths during the five-year period ending December 31, 2025. Based on the statistical credibility table, we are 99% confident that we are between 3% and 5% of the true mortality experience for males and females, respectively. However, in this instance we intentionally used a nine-year period for this analysis to improve the credibility at the non-core ages of the retiree mortality assumption.

Recommended Base Mortality Assumption

We performed our analysis using a benefit-weighted approach, where we measure the exposures and actual deaths using the retiree's benefit amount, rather than a headcount approach that applies an equal weighting to all retirees. Developing a base table using a benefit-weighted approach is preferable because: (1) research studies have consistently shown that higher wage earners generally have a longer life expectancy than lower wage earners and (2) this approach should better model the actual liability that is released when retirees die. As a reference, a benefit-weighted approach is regularly used by the Society of Actuaries (SOA) when they develop published mortality tables for pension plans.

Analysis of Experience and Recommendations

A mortality table based on actual URS experience was constructed during the experience study conducted in 2020, which was immediately prior to the COVID-19 pandemic. To provide perspective of the impact of COVID-19 on the URS retiree mortality experience, below is a table with the raw mortality experience for each membership group for the last eight years with the first two years being prior to the pandemic. As the table shows, the crude mortality experience for the last three years is somewhat higher than the in the first two years of the table but are beginning to decrease from the levels in 2020-2022.

Crude Mortality Rate for Non-Disabled Retirees
by Fiscal Year Ending December 31,

FY Ending	Males	Females
(1)	(2)	(3)
2018	2.41%	1.89%
2019	2.46%	1.86%
2020	2.90%	1.94%
2021	3.18%	1.95%
2022	2.85%	2.24%
2023	2.75%	2.03%
2024	2.82%	2.12%
2025	2.74%	1.96%

Elevated crude mortality rates due to COVID-19

The analysis below includes nine years of mortality experience. As to be expected, the actual mortality experience of URS retirees was higher than assumed, with the most noticeable difference being for retirees over the age of 80, which were particularly negatively impacted by COVID-19. Below is a table comparing the actual and expected deaths for each employee group.

Non-Disabled Retiree Mortality Experience			
Group	Actual Deaths	Expected Deaths	Actual / Expected Ratio
State and Loc - males	93,345	88,565	105%
State and Loc - females	71,087	69,736	102%
Educators - males	56,712	49,871	114%
Educators – females	52,533	48,581	108%
Public Safety and Firefighters - males	39,288	38,013	103%
Public Safety and Firefighters - females	2,177	1,820	120%

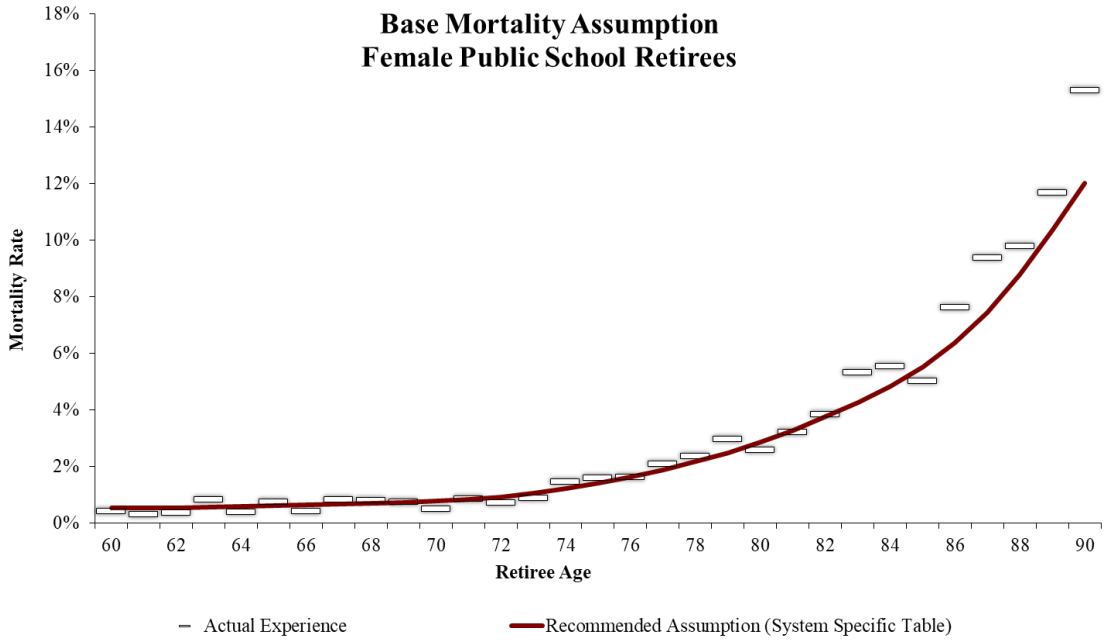
Amounts in thousands.

Analysis of Experience and Recommendations

The actuarial profession has been very mindful of the inclusion or exclusion of the mortality experience post-2019 for developing forward-looking assumptions. Specifically, the COVID-19 event caused what is expected to be an extraordinary and temporary increase in mortality experience. As a profession, to fully incorporate this experience into the forward-looking assumptions will likely result in a mortality assumption that could underestimate the plan's retirees' life expectancies. As such, we believe it is most appropriate to leave the base mortality assumption unchanged. We note, that this decision is also consistent with the SOA's internal decisions to exclude post 2019 experience when releasing updated publishes base mortality tables and improvement assumptions.

Additionally, the SOA published the Pub-2016 Public Retirement Plans Mortality Tables in May 2025. URS mortality experience has been compared against these most recent standard tables, and the current URS-specific mortality table provided a better fit to URS retiree experience. The standard tables would generally project higher life expectancies than the current URS-specific table.

The following is a chart that shows the actual mortality experience assumption for female public school retirees, the largest group in the System.



Recommended Mortality Improvement Assumption

We also recommend the continued use of the ultimate rates in the MP-2020 improvement assumption, applied for all years, which we refer to as the "2020MP-Ultimate" improvement assumption. While the SOA has issued a MP-2021 improvement assumption that includes mortality experience for 2019, the ultimate projection rates are the same as the MP-2020 improvement assumption.

Analysis of Experience and Recommendations

Recommended Non-Disabled Mortality Assumption

Proposed Assumption: State and local government retirees as well as public safety and firefighter retirees (no change to the current assumption)

Males: 2020 PR UTAH for Males multiplied by 110%
Females: 2020 PR UTAH for Females multiplied by 110%

Proposed Assumption: Retired educators as well as retired judges (no change to the current assumption)
Males: 2020 PR UTAH for Males multiplied by 90%
Females: 2020 PR UTAH for Females multiplied by 90%

The base mortality table is projected using the ultimate rates in the MP-2020 improvement assumption using a base year of 2020.

The following table summarizes the life expectancy for a member who retires at age 65 in future years based on the recommended assumptions.

Life Expectancy (in Years) under Recommended Assumptions for an Age 65 Retiree					
Employee Group	Year Reaching Age 65				
	2030	**2035**	**2040**	**2045**	**2050**
Educators - Male	23.3	23.6	24.0	24.3	24.6
Educators - Female	24.9	25.2	25.5	25.8	26.1
Noneducators – Male	21.8	22.1	22.5	22.8	23.1
Noneducators – Female	23.4	23.7	24.0	24.3	24.6

More detail is shown on the table on pages 51-56 in Section F.

Analysis of Experience and Recommendations

Disabled retiree mortality rates

This is a relatively minor assumption compared to the mortality assumption for non-disabled retirees, and has a minor impact on the liabilities of URS. Because of the relatively small number of disabled retirees and deaths, we combined all the disabled lives for our analysis and also used nine years of experience. The analysis was also performed on a benefit-weighted basis. The valuation currently uses the PUB-2010 Mortality Table for disabled annuitants (separate tables for males and females with the base table adjusted with a 120% multiplier for disabled males and a 125% multiplier for disabled females), and the generational improvement assumption is the same as non-disabled retirees, ultimate rates in the MP-2020 improvement assumption, to project future improvements in mortality.

Based on the current experience (on a benefit weighted basis), the A/E ratio was 131% for males and 117% for females. However, because there were only 331 and 387 male and female deaths, respectively, during the observation period, the experience is just approximately 55%-60% statistically credible. Based on this analysis, we recommend updating to the more recently issued PUB-2016 base mortality assumption and to increase the multiplier to 140% for males and 135% for females. We also recommend the continued use of the same mortality improvement assumption that is used for non-disabled retirees, but with a base year of 2016.

More detail is shown on the table on pages 57-58 in Section F.

Active mortality

This is the least significant of all the mortality assumptions. Also, due to the small number of deaths occurring to active members the data lacks statistical credibility, which means we must rely on published mortality tables. The current assumption is based on the PUB-2010 public employee mortality tables developed by the SOA, which is a family of mortality tables for state and local government employees (as well as judges, governors, and legislators), a teacher mortality table for educators, and a public safety mortality table for public safety members and firefighters. Since the prior experience study, the SOA has published a new family of tables referred to as PUB-2016. We recommend moving the PUB-2016 public employee mortality tables for the active mortality assumption.

More detail is shown on the tables on pages 59-68 in Section F.

Analysis of Experience and Recommendations

Disability incidence

The disability rates are intended to reflect the probability that a member will retire with a disability pension (Firefighters) or enter into the Long-Term Disability Program (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. Because of the small number of female public safety members and firefighters, we combined the male and female experience to increase the statistical credibility of the analysis for these membership groups.

We compared the number of actual and expected disabilities by group for the last six years (i.e. 2020 through 2025). The overall A/E ratio based on the current assumptions was 60% (291 new disabilities during the study period vs. 485 expected), which is a decrease in the number of disabilities since each of the last three experience studies. The current disability assumption is based on the same age-based rates but a different multiplier is applied to these rates by gender and employee type. The shape of the current disability rates continues to provide an adequate fit, and we believe a change in the multiplier applied to the rates is necessary, as shown in the table below. Under the new recommended assumptions, the overall A/E ratio is now 67% (432 expected disabilities).

Group	Current Multiplier	Proposed Multiplier
State & Local - males	50%	40%
State – females	50%	50%
Local – females	40%	40%
Educators - males	30%	20%
Educators - females	30%	25%
Public Safety	75%	75%
Firefighters	135%	135%

No disability rates are used for the Judges System or the Governors and Legislative Plan. More detail is shown on the tables on pages 69-76 in Section F.

Analysis of Experience and Recommendations

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 purposes of performing this analysis, we reviewed the actual and expected retirements on a salary weighted basis for the last six years (i.e. 2020 through 2025). This is preferable to reviewing the experience on a headcount basis because a salary weighted basis provides greater weight to those members with a larger salary (and liability). Also, retirements from the Tier 2 Hybrid System (public employee and public safety and firefighters) account for less than 10% of the total retirements in URS. Due to this lack of statistical credibility to review the Tier 2 experience, the analysis below only reflects retirements from the Tier I funds and we recommend no changes to the retirement assumption for both Tier 2 Hybrid funds at this time.

The following table shows the actual retirements (on a salary weighted basis) as well as the expected retirements under the current and recommended assumptions (reduced retirement and unreduced retirement combined) for the various membership groups:

Tier 1 Retirement Experience			
Group	Actual Retirements	Expected Current Assumption	Expected Proposed Assumption
Educators - males	84,101	113,546	107,764
Educators - females	210,523	246,451	246,451
State - males	134,717	180,594	179,680
State – females	177,008	243,417	226,485
Local - males	114,709	137,331	137,331
Local - females	73,190	96,963	92,417
Public Safety	106,091	136,854	124,685
Firefighters	26,066	31,475	31,475
Judges	5,999	8,629	8,629

Amounts in thousands.

As the table shows, the expected retirements were greater than the actual retirements on a salary weighted basis. It is generally conservative in the valuation for the expected retirements to exceed the actual retirements. We made minor adjustments to the retirement rates at certain ages for the membership groups that resulted in a slight decrease in the expected retirements for male educators, state employees (males and females), female local government members, and public safety.

Analysis of Experience and Recommendations

There is no statistically credible retirement experience for either one of the Tier II Hybrid Retirement Systems, and those members who have retired entered these systems late in their career making their retirement behavior unreliable for establishing retirement patterns for all members earning Tier II retirement benefits. For instance, less than 10% of total retirements in URS are Tier II members. Retirement benefits provided in the Tier II Systems are slightly lower than benefits provided in the Tier I Systems. Additionally, members must work longer to be eligible to commence their retirement benefit. In our professional judgement, relatively few Tier II members will retire with a reduced early retirement benefit. However, without credible experience to base retirement rates upon, we believe the current retirement pattern of members earning benefits in the Tier II Systems (Public Employee and Public Safety and Firefighters) is reasonable.

More detail is shown on pages 85-104 in Section F.

Analysis of Experience and Recommendations

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.

Similar to our analysis of the retirement behavior, we reviewed the actual and expected terminations on a salary weighted basis because a salary weighted basis provides greater weight to those members with a larger salary (and liability). Below is a summary of the results for the systems. Similar to the retirement table above, the table shows the actual terminations and expected terminations under the current and proposed assumptions on a salary weighted basis. We also used nine years of experience in performing this analysis to better reflect the turnover experience over an entire economic cycle (i.e. don't overreact to short-term turnover behaviors in setting long-term forward-looking turnover expectations).

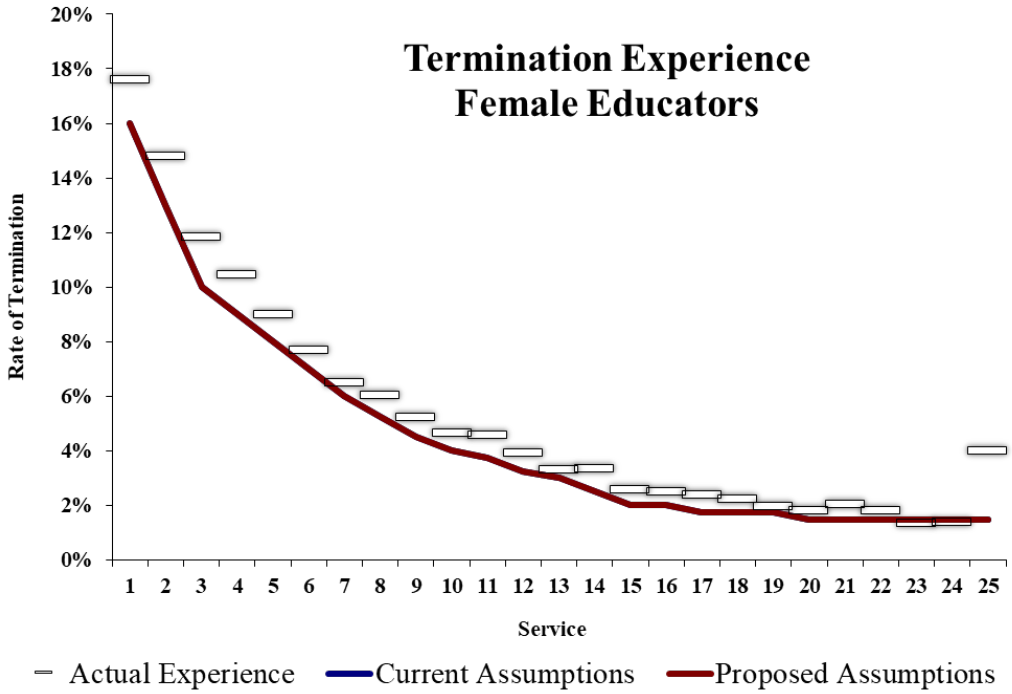
Group	Actual Terminations	Expected Current Assumption	Expected Proposed Assumption
Educators - males	243,922	207,385	207,385
Educators - females	731,893	634,742	634,742
State - males	337,201	303,810	303,810
State - females	498,319	441,499	441,499
Local - males	401,523	333,346	333,346
Local - females	359,682	330,255	330,255
Public Safety	164,901	138,955	138,955
Firefighters	34,712	23,519	27,693

Amounts in thousands.

The analysis shows that the actual turnover was higher than currently assumed for all the membership groups. It is preferable to have an assumption where there is more turnover than expected, as this will reduce the likelihood of future liability losses due to termination as well as members being rehired with prior service. We recommend no change in the termination assumption, except we believe it is warranted to slightly reduce the margin for firefighters, who experience some of the lowest turnover rates of all the employee groups.

Analysis of Experience and Recommendations

The following is a chart showing the actual experience, current assumption, and recommended assumption (which is the same as the current assumption) for female educators, which is one of the largest membership groups in URS.



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

For the Legislative/Governor group during the last five-year period the year-to-year turnover has been very low (less than 5%). Most legislators that leave appear to be retiring. We are not recommending any changes to the current 10% turnover assumption.

More detail is shown on the tables on pages 77-84 in Section F.

Analysis of Experience and Recommendations

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. (This assumption only affects some of the death and survivor benefits, particularly in the Public Safety and Firefighters Systems.)

Spousal age difference

This assumption applies only prior to retirement. When a member retires, the actual spousal information is provided and used. 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, the data 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 a change.

Refund of contributions

The valuation currently assumes that a percentage of terminating members who participate in one of the Tier 1 contributory plans will take a refund, rather than leaving their funds on deposit with URS. The percentage grades down from 100% for all non-vested members to 0% after 20 years of service. As of January 1, 2026, there were only 147 and 1,098 active members in the Tier I contributory public employee and firefighter systems, respectively. Since most of these Tier I members have a significant amount of service, this is not a material assumption and we are not recommending changes to this assumption with respect to the Tier 1 funds.

The Tier 2 Public Employee Hybrid fund and the Tier 2 Public Safety and Firefighter Hybrid fund requires employees to contribute 1.30% of pay and 5.98% of pay, respectively. Given these are growing and maturing funds, it is appropriate to make a different refund assumption for these members and we recommend the valuation to continue to include a refund assumption where members receive a refund when the value of their employee contribution balance exceeds the actuarial value of their pension benefit.

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.

Analysis of Experience and Recommendations

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 and actual returns, net of expenses, over a five-year period. For example, if the actual return is 12.00% in one year, then the current 6.85% investment return assumption is reflected immediately in the AVA, and the other 5.15% 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. Therefore, we are recommending no change to this method.

Analysis of Experience and Recommendations

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 reaches 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.

The current Board policy (except the Governors and Legislators Pension Plan and the Higher Education funds) is to have the calculated contribution rates determined using an open 20-year amortization period. 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.

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.

The Governors and Legislators Pension Plan is relatively small and funded by periodic direct appropriations rather than through pay-period contributions. It is also approaching a 110% funded ratio and the contribution requirement for that fund is expected to decrease in the next year or two.

The Higher Education funds contain employers who are no longer enrolling their new employees in URS, which has resulted in these funds being financed by a declining payroll. These funds have previously been funded using a closed amortization period. However, both of these funds are now over 100% funded. Since the funding policy will be amortizing a funding surplus (a credit against the normal cost rate), we recommend amending the funding policy to utilize a 20-year open amortization period while the funds are over 100% funded. This increases the likelihood that the funds will remain in a funding surplus position. If the funded ratio for the Higher Education funds is reduced below 100%, we recommend resuming the previous closed amortization period.

SECTION D

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, 2026 actuarially calculated employer contribution rates and unfunded actuarially accrued liability based on the recommended demographic assumptions along with a 6.85% or a 6.95% investment return assumption.

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.

Actuarial Impact of Recommendations

Exhibit 1
Comparison of Preliminary Contribution Rates

Fund/Division	FY 26/27 Board Certified Contribution Rates	2026 Current Assumptions	2026 Recommended Assumptions 6.85% Interest	2026 Recommended Assumptions 6.95% Interest
(1)	(2)	(3)	(4)	(5)
I. Public Employees Contributory				
A. Local Government	**10.96%**	9.64%	10.30%	9.60%
B. State and School	**16.70%**	12.70%	13.41%	12.58%
C. Higher Education	**17.70%**	0.34%	4.26%	2.53%
II. Public Employees Noncontributory				
A. Local Government	**14.97%**	13.65%	14.31%	13.61%
B. State and School	**21.19%**	17.19%	17.90%	17.07%
C. Higher Education	**22.19%**	4.83%	8.75%	7.02%
III. Public Safety Contributory				
A. Other Division A (2.5% COLA)	**21.79%**	17.75%	17.66%	16.42%
IV. Public Safety Noncontributory				
A. State	**39.85%**	30.66%	31.14%	29.79%
B. Other Division A (2.5% COLA)	**32.54%**	29.09%	28.99%	27.73%
C. Other Division A (4% COLA)	**34.21%**	29.23%	29.72%	28.31%
D. Salt Lake City	**46.71%**	32.30%	32.13%	30.74%
E. Ogden	**48.72%**	31.68%	31.59%	30.25%
F. Provo	**42.23%**	31.07%	31.02%	29.63%
G. Logan	**40.47%**	31.26%	31.15%	29.60%
H. Bountiful	**50.38%**	33.62%	33.37%	31.95%
I. Other Division B (2.5% COLA)	**32.57%**	30.64%	30.52%	29.24%
J. Other Division B (4% COLA)	**33.97%**	16.03%	16.92%	14.58%
V. Firefighters				
A. Division A	**12.67%**	10.74%	11.33%	9.68%
B. Division B	**11.40%**	0.00%	0.00%	0.00%
VI. Judges	**51.91%**	45.57%	47.09%	45.49%
VII. Tier II - Hybrid Plans				
A. Public Employees	**11.30%**	10.88%	11.21%	10.75%
B. Public Safety and Firefighter	**19.98%**	19.45%	19.57%	18.83%

Note: Rates shown include contribution for 3% Substantial Substitute, if applicable.
Rates shown for Firefighters and Judges exclude offsets for fire insurance premium tax and court fees.
Rates for Tier II Hybrid Plans exclude the cost of the 75% of pay active death benefit and include required member contributions.

Actuarial Impact of Recommendations

Exhibit 2
Comparison of Unfunded Actuarial Accrued Liability
($ in millions)

Fund/Division	2025 Valuation	2026 Valuation Current Assumptions	2026 Valuation Recommended Assump 6.85%	2026 Valuation Recommended Assump 6.95%
(1)	(2)	(3)	(4)	(5)
I. Public Employees Contributory				
A. Local Government	$ 10	$ 8	$ 9	$ 8
B. State and School	7	6	6	6
C. Higher Education	(1)	(1)	0	(1)
II. Public Employees Noncontributory				
A. Local Government	373	326	402	300
B. State and School	2,445	2,138	2,366	2,023
C. Higher Education	(104)	(141)	(130)	(160)
III. Public Safety Contributory				
A. Other Division A (2.5% COLA)	2	2	1	1
IV. Public Safety Noncontributory				
A. State	153	123	130	106
B. Other Division A (2.5% COLA)	125	88	82	60
C. Other Division A (4% COLA)	33	23	25	18
D. Salt Lake City	66	44	43	37
E. Ogden	12	8	8	7
F. Provo	10	6	6	5
G. Logan	2	3	2	2
H. Bountiful	4	3	3	3
I. Other Division B (2.5% COLA)	72	62	60	49
J. Other Division B (4% COLA)	(7)	(7)	(7)	(8)
V. Firefighters				
A. Division A	(15)	(7)	(3)	(8)
B. Division B	(166)	(187)	(173)	(190)
VI. Judges	58	58	61	57
VII. Governors and Legislative	0	0	0	0
VIII. 3% Substantial Substitute	258	255	257	253
IX. Tier II - Hybrid Plans				
A. Public Employees	336	337	377	313
B. Public Safety and Firefighter	108	100	103	88
X. Grand Total	$ 3,781	$ 3,247	$ 3,628	$ 2,969
		Total Change:	381	(278)

Actuarial Impact of Recommendations

Exhibit 3
Comparison of Funded Ratio

Fund/Division	2025 Valuation	2026 Valuation Current Assumptions	2026 Valuation Recommended Assump 6.85%	2026 Valuation Recommended Assump 6.95%
(1)	(2)	(3)	(4)	(5)
I. Public Employees Contributory				
A. Local Government	98%	98%	98%	98%
B. State and School	99%	99%	99%	99%
C. Higher Education	100%	101%	100%	100%
II. Public Employees Noncontributory				
A. Local Government	95%	96%	95%	96%
B. State and School	92%	93%	92%	93%
C. Higher Education	104%	106%	105%	106%
III. Public Safety Contributory				
A. Other Division A (2.5% COLA)	98%	99%	99%	99%
IV. Public Safety Noncontributory				
A. State	92%	94%	94%	95%
B. Other Division A (2.5% COLA)	93%	95%	95%	97%
C. Other Division A (4% COLA)	94%	96%	96%	97%
D. Salt Lake City	87%	92%	92%	93%
E. Ogden	89%	92%	92%	93%
F. Provo	89%	93%	94%	95%
G. Logan	95%	95%	95%	96%
H. Bountiful	88%	91%	91%	92%
I. Other Division B (2.5% COLA)	91%	93%	93%	94%
J. Other Division B (4% COLA)	109%	109%	108%	109%
V. Firefighters				
A. Division A	104%	102%	101%	102%
B. Division B	112%	113%	112%	113%
VI. Judges	84%	85%	84%	85%
VII. Governors and Legislative	98%	99%	99%	100%
VIII. 3% Substantial Substitute	49%	49%	49%	49%
IX. Tier II - Hybrid Plans				
A. Public Employees	86%	89%	87%	89%
B. Public Safety and Firefighter	79%	85%	84%	86%
X. Grand Total	93%	94%	93%	95%

SECTION E

SUMMARY OF RECOMMENDATIONS

Summary of Recommendations

1. Price Inflation: Increase the price inflation assumption from 2.50% to 2.60%. This will impact the COLA assumption for the 4.0% maximum COLA funds.

2. Investment Return Assumption: The 6.85% investment return assumption continues to remain reasonable as well as an investment return assumption between 6.75% and 7.00%, inclusive. We recommend the Board consider increasing the investment return assumption to 6.95% as a result of the 0.10% increase in the price inflation assumption.

3. Individual Salary Increase Assumption: We recommend a 0.10% increase in the wage inflation assumption to 3.60% (2.60% price inflation plus 1.00% productivity increase) for state employees, local government employees, educators, and firefighters. We also recommend some additional increases to the merit-based portion of the salary increase assumption for certain employee groups, including public safety members.

4. Payroll Growth Assumption: No change to the 2.90% payroll growth rate assumption. Note, this assumption used for projecting the rate at which the total payroll is expected to grow each year and the assumption only affects the amortization cost and has no impact on the actuarial liabilities.

5. Post-retirement mortality for healthy retirees: We recommend continued use of the custom 2020 base retiree mortality table and the same mortality improvement assumption, which is the ultimate improvement rates in Scale MP-2020.

6. Disabled retiree mortality: We recommend updating the base table to the PUB-2016 disabled retiree mortality assumption and increase the multipliers applied to the base assumption to 140% for males and 135% for females. Finally, we recommend continued use of the mortality improvement assumption that is used for the mortality assumption of healthy retirees.

7. Active member mortality: We recommend updating the employee mortality assumption to be the PUB-2016 family of mortality tables as applicable for each employee group.

8. Disability Incidence: We recommend overall decreases to the rates of disability incidence for males in each of the public employee groups (state, local government, and educators) as well as female educators. We recommend no change to the assumption applicable to public safety members and firefighters.

9. Retirement Rates: We recommend small decrease in the rates of early retirement for state employees (male and female) and local government members (female only). We also recommend slight reductions in the normal retirement rates for state females, male educators, and public safety members. We recommend no change to the retirement assumption for both Tier II Hybrid funds.

Summary of Recommendations

10. Termination rates: We recommend a reduction in the rates for firefighters. We recommend no change to the termination assumption for any other employee groups.

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

12. Actuarial Cost Method: We recommend no change to the use of the individual Entry Age Normal actuarial cost method.

13. Actuarial Value of Assets Method: We recommend the continued use of the five-year smoothing method and recommend no change to the 75% - 125% corridor around market.

14. Amortization Period: We recommend the use a 20-year open amortization for determining the actuarially determined contribution for all the funds expect the Governors and Legislators Pension Plan. We recommend using a 20-year open amortization period for the Higher Education funds, while the funds are over 100% funded. If the funds become less than 100% funded, we recommend reverting back to the previous closed amortization period.

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Summary of Data and Experience

POST-RETIREMENT MORTALITY EXPERIENCE
MALE GENERAL STATE & LOCAL GOVERNMENT
WEIGHTED BY AMOUNT OF ANNUITY

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	$ -	$ 37.27	0.0000	0.08%	0.08%	$ 0.03	$ 0.03	0%	0%
45-49	0	3,153	0.0000	0.16%	0.16%	7	7	0%	0%
50-54	135	30,151	0.0045	0.35%	0.35%	110	110	123%	123%
55-59	1,083	129,799	0.0083	0.50%	0.50%	700	700	155%	155%
60-64	2,792	392,864	0.0071	0.83%	0.83%	3,240	3,240	86%	86%
65-69	8,855	772,154	0.0115	0.94%	0.94%	7,601	7,601	116%	116%
70-74	13,285	782,707	0.0170	1.65%	1.65%	12,836	12,836	103%	103%
75-79	16,565	552,848	0.0300	2.93%	2.93%	16,258	16,258	102%	102%
80-84	19,002	318,443	0.0597	6.08%	6.08%	18,844	18,844	101%	101%
85-89	17,491	149,982	0.1166	10.72%	10.72%	15,608	15,608	112%	112%
90-94	10,907	56,371	0.1935	19.57%	19.57%	10,588	10,588	103%	103%
95-99	3,093	8,452	0.3659	32.15%	32.15%	2,657	2,657	116%	116%
Other	136	324	0.4209			116	116	118%	118%
Totals	$ 93,345	$ 3,197,287				$ 88,565	$ 88,565	105%	105%

*$ in thousands

*Column may not add due to rounding.

*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

POST-RETIREMENT MORTALITY EXPERIENCE
FEMALE GENERAL STATE & LOCAL GOVERNMENT
WEIGHTED BY AMOUNT OF ANNUITY

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	$ -	$ -	N/A	0.04%	0.04%	$ -	$ -	0%	0%
45-49	27	1,915	0.0141	0.11%	0.11%	3	3	929%	929%
50-54	0	25,436	0.0000	0.25%	0.25%	73	73	0%	0%
55-59	439	109,429	0.0040	0.54%	0.54%	607	607	72%	72%
60-64	1,930	384,313	0.0050	0.67%	0.67%	2,630	2,630	73%	73%
65-69	6,648	859,966	0.0077	0.82%	0.82%	7,124	7,124	93%	93%
70-74	10,138	832,537	0.0122	1.13%	1.13%	9,621	9,621	105%	105%
75-79	13,133	528,876	0.0248	2.30%	2.30%	11,939	11,939	110%	110%
80-84	13,263	290,628	0.0456	4.59%	4.59%	13,020	13,020	102%	102%
85-89	12,699	140,260	0.0905	9.09%	9.09%	12,517	12,517	101%	101%
90-94	9,454	51,349	0.1841	18.68%	18.68%	9,055	9,055	104%	104%
95-99	2,898	11,239	0.2579	24.61%	24.61%	2,696	2,696	107%	107%
Other	457	1,406	0.3252			451	451	101%	101%
Totals	$ 71,087	$ 3,237,352				$ 69,736	$ 69,736	102%	102%

*$ in thousands
*Column may not add due to rounding.
*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

POST-RETIREMENT MORTALITY EXPERIENCE
MALE EDUCATORS
WEIGHTED BY AMOUNT OF ANNUITY

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	$ -	$ -	N/A	0.06%	0.06%	$ -	$ -	0%	0%
45-49	0	0	N/A	0.13%	0.13%	0	0	0%	0%
50-54	0	6,261	0.0000	0.28%	0.28%	19	19	0%	0%
55-59	143	48,915	0.0029	0.41%	0.41%	218	218	66%	66%
60-64	990	161,762	0.0061	0.68%	0.68%	1,092	1,092	91%	91%
65-69	2,803	334,963	0.0084	0.77%	0.77%	2,706	2,706	104%	104%
70-74	4,747	403,993	0.0117	1.35%	1.35%	5,459	5,459	87%	87%
75-79	9,240	344,134	0.0268	2.40%	2.40%	8,374	8,374	110%	110%
80-84	13,323	233,960	0.0569	4.97%	4.97%	11,428	11,428	117%	117%
85-89	14,129	137,776	0.1025	8.77%	8.77%	11,776	11,775	120%	120%
90-94	9,019	46,436	0.1942	16.01%	16.01%	7,049	7,049	128%	128%
95-99	2,200	6,544	0.3362	26.30%	26.30%	1,686	1,686	131%	131%
Other	120	219	0.5455			64	64	187%	187%
Totals	$ 56,712	$ 1,724,962				$ 49,871	$ 49,871	114%	114%

*$ in thousands
*Column may not add due to rounding.
*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

POST-RETIREMENT MORTALITY EXPERIENCE
FEMALE EDUCATORS
WEIGHTED BY AMOUNT OF ANNUITY

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	$ -	$ -	N/A	0.04%	0.04%	$ -	$ -	0%	0%
45-49	0	406	0.0000	0.09%	0.09%	0	0	0%	0%
50-54	71	16,079	0.0044	0.20%	0.20%	39	39	181%	181%
55-59	736	109,188	0.0067	0.44%	0.44%	498	498	148%	148%
60-64	1,775	377,513	0.0047	0.54%	0.54%	2,109	2,109	84%	84%
65-69	5,141	723,908	0.0071	0.67%	0.67%	4,904	4,904	105%	105%
70-74	6,189	723,965	0.0085	0.93%	0.93%	6,865	6,865	90%	90%
75-79	9,272	455,915	0.0203	1.88%	1.88%	8,415	8,415	110%	110%
80-84	9,559	246,854	0.0387	3.75%	3.75%	9,050	9,050	106%	106%
85-89	9,685	118,945	0.0814	7.43%	7.43%	8,640	8,640	112%	112%
90-94	7,166	42,722	0.1677	15.28%	15.28%	6,132	6,132	117%	117%
95-99	2,588	8,598	0.3010	20.13%	20.13%	1,688	1,688	153%	153%
Other	350	932	0.3755			239	239	146%	146%
Totals	$ 52,533	$ 2,825,025				$ 48,581	$ 48,580	108%	108%

*$ in thousands
*Column may not add due to rounding.
*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

POST-RETIREMENT MORTALITY EXPERIENCE
MALE PUBLIC SAFETY & FIREFIGHTERS
WEIGHTED BY AMOUNT OF ANNUITY

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	$ -	$ 16,988	0.0000	0.08%	0.08%	$ 15	$ 15	0%	0%
45-49	216	124,001	0.0017	0.16%	0.16%	229	229	94%	94%
50-54	656	235,021	0.0028	0.35%	0.35%	824	824	80%	80%
55-59	964	276,268	0.0035	0.50%	0.50%	1,430	1,430	67%	67%
60-64	1,672	323,414	0.0052	0.83%	0.83%	2,623	2,623	64%	64%
65-69	3,885	391,035	0.0099	0.94%	0.94%	3,825	3,825	102%	102%
70-74	4,988	368,354	0.0135	1.65%	1.65%	6,020	6,020	83%	83%
75-79	8,715	249,179	0.0350	2.93%	2.93%	7,281	7,281	120%	120%
80-84	8,225	120,990	0.0680	6.08%	6.08%	7,124	7,124	115%	115%
85-89	5,830	50,694	0.1150	10.72%	10.72%	5,225	5,225	112%	112%
90-94	3,385	15,371	0.2202	19.57%	19.57%	2,886	2,886	117%	117%
95-99	689	1,597	0.4313	32.15%	32.15%	502	502	137%	137%
Other	65	206	0.3144			29	29	224%	224%
Totals	$ 39,288	$ 2,173,120				$ 38,013	$ 38,013	103%	103%

*$ in thousands

*Column may not add due to rounding.

*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

POST-RETIREMENT MORTALITY EXPERIENCE
FEMALE PUBLIC SAFETY & FIREFIGHTERS
WEIGHTED BY AMOUNT OF ANNUITY

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	$ -	$ 2,856	0.0000	0.04%	0.04%	$ 1	$ 1	0%	0%
45-49	0	13,065	0.0000	0.11%	0.11%	16	16	0%	0%
50-54	106	26,945	0.0039	0.25%	0.25%	72	72	147%	147%
55-59	0	33,722	0.0000	0.54%	0.54%	180	180	0%	0%
60-64	202	37,352	0.0054	0.67%	0.67%	252	252	80%	80%
65-69	227	38,146	0.0060	0.82%	0.82%	314	314	72%	72%
70-74	493	25,997	0.0189	1.13%	1.13%	297	297	166%	166%
75-79	479	11,725	0.0408	2.30%	2.30%	259	259	185%	185%
80-84	374	4,389	0.0852	4.59%	4.59%	193	193	194%	194%
85-89	248	1,969	0.1257	9.09%	9.09%	173	173	143%	143%
90-94	49	350	0.1391	18.68%	18.68%	63	63	78%	78%
95-99	0	0	N/A	24.61%	24.61%	0	0	0%	0%
Other	0	89	0.0000			0	0	0%	0%
Totals	$ 2,177	$ 196,605				$ 1,820	$ 1,820	120%	120%

*$ in thousands

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*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

POST-RETIREMENT MORTALITY EXPERIENCE
ALL DISABLED MALES
WEIGHTED BY AMOUNT OF ANNUITY

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	$ 31	$ 2,258	0.0137	0.79%	0.58%	$ 19	$ 14	167%	227%
45-49	0	4,499	0.0000	1.26%	0.88%	58	40	0%	0%
50-54	125	6,566	0.0191	1.88%	1.34%	124	89	101%	140%
55-59	91	9,219	0.0098	2.36%	2.05%	219	194	41%	47%
60-64	430	14,725	0.0292	2.77%	2.88%	415	427	104%	101%
65-69	1,401	26,358	0.0531	3.49%	3.32%	925	881	151%	159%
70-74	1,458	23,437	0.0622	4.56%	4.22%	1,071	998	136%	146%
75-79	1,438	16,536	0.0870	6.26%	6.49%	1,032	1,067	139%	135%
80-84	1,116	8,130	0.1373	9.19%	10.12%	730	802	153%	139%
85-89	642	3,488	0.1840	13.89%	16.25%	475	553	135%	116%
90-94	289	1,340	0.2155	21.62%	26.90%	276	342	105%	84%
95-99	66	189	0.3505	31.05%	39.57%	54	69	122%	96%
Other	0	874	0.0000			5	4	0%	0%
Totals	$ 7,086	$ 117,620				$ 5,403	$ 5,480	131%	129%

*$ in thousands

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*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

POST-RETIREMENT MORTALITY EXPERIENCE
ALL DISABLED FEMALES
WEIGHTED BY AMOUNT OF ANNUITY

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40-44	$ -	$ 492	0.0000	0.81%	0.47%	$ 4	$ 2	0%	0%
45-49	0	1,057	0.0000	1.26%	0.71%	13	8	0%	0%
50-54	0	1,197	0.0000	1.71%	1.09%	21	13	0%	0%
55-59	194	3,955	0.0491	1.97%	1.66%	79	70	246%	278%
60-64	606	13,782	0.0440	2.21%	2.23%	309	309	196%	196%
65-69	729	34,332	0.0212	2.66%	2.50%	924	869	79%	84%
70-74	1,332	35,697	0.0373	3.54%	3.30%	1,262	1,183	106%	113%
75-79	1,604	25,471	0.0630	5.15%	5.40%	1,300	1,357	123%	118%
80-84	1,247	13,802	0.0903	7.99%	8.73%	1,089	1,185	115%	105%
85-89	787	4,608	0.1708	12.65%	13.44%	554	589	142%	134%
90-94	220	978	0.2251	18.41%	20.25%	173	190	127%	116%
95-99	62	221	0.2822	26.96%	30.27%	57	64	109%	97%
Other	0	98	0.0000			1	0	0%	0%
Totals	$ 6,782	$ 135,690				$ 5,786	$ 5,840	117%	116%

*$ in thousands
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Summary of Data and Experience

ACTIVE MORTALITY EXPERIENCE
MALE STATE EMPLOYEES

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	1	926	0.0011	0.03%	0.03%	0.3	0.3	338%	302%
25-29	0	2,353	0.0000	0.03%	0.05%	0.7	1.1	0%	0%
30-34	5	3,711	0.0013	0.04%	0.05%	1.5	1.8	334%	275%
35-39	7	5,293	0.0013	0.05%	0.06%	2.9	3.1	245%	229%
40-44	4	7,708	0.0005	0.08%	0.08%	6.0	6.2	66%	64%
45-49	12	8,298	0.0014	0.12%	0.12%	9.7	9.6	124%	125%
50-54	16	7,875	0.0020	0.18%	0.17%	13.8	13.8	116%	116%
55-59	22	7,471	0.0029	0.26%	0.27%	19.1	20.1	115%	110%
60-64	22	6,589	0.0033	0.37%	0.40%	24.4	26.0	90%	85%
65-69	20	3,252	0.0062	0.55%	0.57%	17.2	18.0	116%	111%
70-74	8	896	0.0089	0.84%	0.87%	7.3	7.6	110%	105%
Totals	117	54,372				103	108	114%	109%

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Summary of Data and Experience

ACTIVE MORTALITY EXPERIENCE
FEMALE STATE EMPLOYEES

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	1,426	0.0000	0.01%	0.01%	0.1	0.2	0%	0%
25-29	0	4,044	0.0000	0.01%	0.02%	0.4	0.6	0%	0%
30-34	1	5,146	0.0002	0.02%	0.02%	0.9	1.2	108%	87%
35-39	6	6,679	0.0009	0.03%	0.03%	1.9	2.2	320%	272%
40-44	6	9,435	0.0006	0.04%	0.05%	4.1	4.6	145%	129%
45-49	15	12,004	0.0012	0.07%	0.07%	8.0	8.7	188%	172%
50-54	18	13,228	0.0014	0.10%	0.11%	12.9	14.4	139%	125%
55-59	17	13,637	0.0012	0.14%	0.16%	19.8	22.2	86%	77%
60-64	42	13,664	0.0031	0.22%	0.24%	30.4	33.2	138%	126%
65-69	20	6,218	0.0032	0.36%	0.37%	21.4	22.1	93%	91%
70-74	4	1,391	0.0029	0.60%	0.56%	7.9	7.5	51%	53%
Totals	129	86,872				108	117	119%	110%

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Summary of Data and Experience

ACTIVE MORTALITY EXPERIENCE
MALE LOCAL GOVERNMENT EMPLOYEES

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	1	2,736	0.0004	0.03%	0.03%	0.9	1.0	113%	104%
25-29	1	4,670	0.0002	0.03%	0.05%	1.5	2.1	68%	48%
30-34	4	5,783	0.0007	0.04%	0.05%	2.3	2.8	172%	141%
35-39	4	6,965	0.0006	0.05%	0.06%	3.8	4.0	107%	100%
40-44	11	8,407	0.0013	0.08%	0.08%	6.5	6.7	168%	163%
45-49	17	8,448	0.0020	0.12%	0.12%	9.9	9.8	173%	174%
50-54	22	7,467	0.0029	0.18%	0.17%	13.1	13.1	168%	168%
55-59	17	6,339	0.0027	0.26%	0.27%	16.2	17.0	105%	100%
60-64	11	5,720	0.0019	0.37%	0.40%	21.2	22.6	52%	49%
65-69	17	2,725	0.0062	0.55%	0.57%	14.3	15.0	119%	114%
70-74	6	549	0.0109	0.84%	0.87%	4.4	4.6	137%	132%
Totals	111	59,809				94	99	118%	113%

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Summary of Data and Experience

ACTIVE MORTALITY EXPERIENCE
FEMALE LOCAL GOVERNMENT EMPLOYEES

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	1,678	0.0000	0.01%	0.01%	0.2	0.2	0%	0%
25-29	0	3,874	0.0000	0.01%	0.02%	0.4	0.6	0%	0%
30-34	1	4,301	0.0002	0.02%	0.02%	0.8	1.0	130%	104%
35-39	3	4,756	0.0006	0.03%	0.03%	1.3	1.6	226%	192%
40-44	5	6,139	0.0008	0.04%	0.05%	2.7	3.0	186%	166%
45-49	3	6,615	0.0005	0.07%	0.07%	4.4	4.8	68%	63%
50-54	8	6,568	0.0012	0.10%	0.11%	6.4	7.1	125%	113%
55-59	7	5,743	0.0012	0.14%	0.16%	8.3	9.3	84%	75%
60-64	12	5,109	0.0023	0.22%	0.24%	11.4	12.4	106%	96%
65-69	6	2,332	0.0026	0.36%	0.37%	8.0	8.3	75%	73%
70-74	6	471	0.0127	0.60%	0.56%	2.7	2.5	224%	236%
Totals	51	47,586				47	51	110%	100%

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Summary of Data and Experience

ACTIVE MORTALITY EXPERIENCE
MALE EDUCATORS

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	1,062	0.0000	0.03%	0.02%	0.2	0.3	0%	0%
25-29	0	3,612	0.0000	0.02%	0.03%	0.7	0.9	0%	0%
30-34	1	5,197	0.0002	0.03%	0.03%	1.3	1.6	76%	63%
35-39	2	5,963	0.0003	0.03%	0.04%	2.1	2.3	97%	86%
40-44	5	7,315	0.0007	0.05%	0.05%	3.7	4.0	134%	124%
45-49	8	7,060	0.0011	0.08%	0.08%	5.8	5.9	138%	136%
50-54	8	6,266	0.0013	0.13%	0.13%	8.4	8.3	95%	97%
55-59	10	5,045	0.0020	0.20%	0.21%	10.2	10.4	98%	96%
60-64	12	3,500	0.0034	0.32%	0.32%	11.1	11.1	108%	108%
65-69	7	1,542	0.0045	0.53%	0.49%	7.9	7.2	89%	97%
70-74	3	485	0.0062	0.84%	0.75%	4.0	3.6	75%	84%
Totals	56	47,047				55	56	101%	101%

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Summary of Data and Experience

ACTIVE MORTALITY EXPERIENCE
FEMALE EDUCATORS

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	3,298	0.0000	0.01%	0.01%	0.3	0.3	0%	0%
25-29	1	13,315	0.0001	0.01%	0.01%	1.4	1.3	72%	75%
30-34	1	12,685	0.0001	0.02%	0.02%	2.1	2.0	49%	50%
35-39	1	14,173	0.0001	0.02%	0.02%	3.5	3.5	29%	29%
40-44	12	20,030	0.0006	0.04%	0.04%	7.6	7.6	159%	158%
45-49	5	22,429	0.0002	0.06%	0.06%	13.0	12.8	38%	39%
50-54	14	20,195	0.0007	0.09%	0.09%	17.2	17.2	81%	82%
55-59	20	14,482	0.0014	0.12%	0.13%	18.0	18.0	111%	111%
60-64	9	10,052	0.0009	0.20%	0.19%	19.4	18.9	46%	48%
65-69	10	3,376	0.0030	0.34%	0.31%	10.7	10.0	93%	100%
70-74	4	604	0.0066	0.63%	0.52%	3.5	3.0	114%	134%
Totals	77	134,639				97	95	80%	81%

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Summary of Data and Experience

ACTIVE MORTALITY EXPERIENCE
PUBLIC SAFETY - MALE

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	1	1,387	0.0007	0.04%	0.03%	0.5	0.4	185%	228%
25-29	1	4,928	0.0002	0.04%	0.04%	1.9	1.8	52%	56%
30-34	4	5,582	0.0007	0.04%	0.04%	2.4	2.4	167%	169%
35-39	3	5,683	0.0005	0.05%	0.05%	2.9	2.9	103%	103%
40-44	8	6,350	0.0013	0.07%	0.07%	4.3	4.2	188%	190%
45-49	6	5,284	0.0011	0.10%	0.09%	5.0	4.8	120%	125%
50-54	5	3,383	0.0015	0.14%	0.14%	4.7	4.6	107%	109%
55-59	3	1,583	0.0019	0.21%	0.22%	3.2	3.4	94%	89%
60-64	3	752	0.0040	0.32%	0.35%	2.3	2.6	130%	116%
65-69	1	196	0.0051	0.53%	0.60%	1.0	1.1	105%	91%
70-74	0	0	N/A	0.98%	1.12%	-	-	0%	0%
Totals	35	35,128				28	28	124%	124%

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Summary of Data and Experience

ACTIVE MORTALITY EXPERIENCE
PUBLIC SAFETY - FEMALE

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	308	0.0000	0.02%	0.01%	0.1	0.0	0%	0%
25-29	0	726	0.0000	0.02%	0.02%	0.2	0.1	0%	0%
30-34	0	757	0.0000	0.03%	0.03%	0.2	0.2	0%	0%
35-39	0	732	0.0000	0.04%	0.04%	0.3	0.3	0%	0%
40-44	0	810	0.0000	0.06%	0.05%	0.5	0.4	0%	0%
45-49	2	727	0.0028	0.08%	0.08%	0.5	0.6	367%	352%
50-54	0	415	0.0000	0.10%	0.12%	0.4	0.5	0%	0%
55-59	0	293	0.0000	0.14%	0.18%	0.4	0.5	0%	0%
60-64	1	147	0.0068	0.19%	0.27%	0.3	0.4	366%	262%
65-69	1	44	0.0227	0.30%	0.41%	0.1	0.2	811%	587%
70-74	0	0	N/A	0.60%	0.62%	-	-	0%	0%
Totals	4	4,959				3	3	135%	126%

*Column may not add due to rounding.
*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

ACTIVE MORTALITY EXPERIENCE
FIREFIGHTERS - MALE

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	421	0.0000	0.04%	0.03%	0.2	0.1	0%	0%
25-29	0	1,414	0.0000	0.04%	0.04%	0.6	0.5	0%	0%
30-34	1	1,628	0.0006	0.04%	0.04%	0.7	0.7	143%	145%
35-39	1	1,587	0.0006	0.05%	0.05%	0.8	0.8	123%	123%
40-44	0	2,211	0.0000	0.07%	0.07%	1.5	1.5	0%	0%
45-49	1	2,028	0.0005	0.10%	0.09%	1.9	1.8	52%	54%
50-54	3	1,332	0.0023	0.14%	0.14%	1.8	1.8	163%	165%
55-59	1	685	0.0015	0.21%	0.22%	1.4	1.5	72%	68%
60-64	2	339	0.0059	0.32%	0.35%	1.0	1.2	193%	173%
65-69	0	82	0.0000	0.53%	0.60%	0.4	0.4	0%	0%
70-74	0	0	N/A	0.98%	1.12%	-	-	0%	0%
Totals	9	11,727				10	10	87%	87%

*Column may not add due to rounding.

*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

ACTIVE MORTALITY EXPERIENCE
FIREFIGHTERS - FEMALE

				Assumed Rate		Expected Deaths		Actual/Expected	
Age	Actual Deaths	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	92	0.0000	0.02%	0.01%	0.0	0.0	0%	0%
25-29	1	196	0.0051	0.02%	0.02%	0.1	0.1	1140%	1419%
30-34	0	142	0.0000	0.03%	0.03%	0.1	0.1	0%	0%
35-39	0	98	0.0000	0.04%	0.04%	0.1	0.1	0%	0%
40-44	0	96	0.0000	0.06%	0.05%	0.1	0.1	0%	0%
45-49	0	55	0.0000	0.08%	0.08%	0.1	0.1	0%	0%
50-54	0	52	0.0000	0.10%	0.12%	0.1	0.1	0%	0%
55-59	0	22	0.0000	0.14%	0.18%	0.1	0.1	0%	0%
60-64	0	5	0.0000	0.19%	0.27%	0.0	0.0	0%	0%
65-69	0	1	0.0000	0.30%	0.41%	0.0	0.0	0%	0%
70-74	0	0	N/A	0.60%	0.62%	-	-	0%	0%
Totals	1	759				1	1	151%	152%

*Column may not add due to rounding.

*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

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	926	0.0000	0.01%	0.01%	0.1	0.1	0%	0%
25-29	0	2,353	0.0000	0.02%	0.02%	0.5	0.4	0%	0%
30-34	0	3,711	0.0000	0.04%	0.03%	1.5	1.2	0%	0%
35-39	1	5,293	0.0002	0.05%	0.04%	2.7	2.2	37%	46%
40-44	1	7,708	0.0001	0.08%	0.06%	5.9	4.7	17%	21%
45-49	0	8,265	0.0000	0.12%	0.09%	9.4	7.5	0%	0%
50-54	6	7,435	0.0008	0.15%	0.12%	11.4	9.1	53%	66%
55-59	5	5,957	0.0008	0.24%	0.19%	14.0	11.2	36%	45%
60-64	14	4,832	0.0029	0.30%	0.24%	14.2	11.4	98%	123%
65-69	0	2,444	0.0000	0.32%	0.25%	7.7	6.2	0%	0%
70-74	1	709	0.0014	0.32%	0.25%	2.2	1.8	45%	56%
Totals	28	49,633				70	56	40%	50%

*Column may not add due to rounding.

*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

DISABILITY EXPERIENCE
FEMALE 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	1,426	0.0000	0.01%	0.01%	0.2	0.2	0%	0%
25-29	0	4,044	0.0000	0.02%	0.02%	0.9	0.9	0%	0%
30-34	0	5,146	0.0000	0.04%	0.04%	2.0	2.0	0%	0%
35-39	0	6,679	0.0000	0.05%	0.05%	3.4	3.4	0%	0%
40-44	6	9,435	0.0006	0.08%	0.08%	7.3	7.3	82%	82%
45-49	5	11,969	0.0004	0.12%	0.12%	13.7	13.7	37%	37%
50-54	16	12,571	0.0013	0.15%	0.15%	19.3	19.3	83%	83%
55-59	30	11,986	0.0025	0.24%	0.24%	28.4	28.4	106%	106%
60-64	26	11,706	0.0022	0.30%	0.30%	34.5	34.5	75%	75%
65-69	2	5,100	0.0004	0.32%	0.32%	16.1	16.1	12%	12%
70-74	1	1,058	0.0009	0.32%	0.32%	3.3	3.3	30%	30%
Totals	86	81,120				129	129	67%	67%

*Column may not add due to rounding.

*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

DISABILITY EXPERIENCE
MALE LOCAL GOVERNMENT EMPLOYEES

				Assumed Rate		Expected Disabilities		Actual/Expected	
Age	Actual Disabilities	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	2,736	0.0000	0.01%	0.01%	0.3	0.2	0%	0%
25-29	0	4,670	0.0000	0.02%	0.02%	1.0	0.8	0%	0%
30-34	0	5,783	0.0000	0.04%	0.03%	2.3	1.8	0%	0%
35-39	2	6,965	0.0003	0.05%	0.04%	3.6	2.9	56%	70%
40-44	1	8,407	0.0001	0.08%	0.06%	6.4	5.1	16%	19%
45-49	8	8,432	0.0009	0.12%	0.09%	9.6	7.7	83%	104%
50-54	11	7,155	0.0015	0.15%	0.12%	10.9	8.8	101%	126%
55-59	8	5,496	0.0015	0.24%	0.19%	12.9	10.4	62%	77%
60-64	18	4,484	0.0040	0.30%	0.24%	13.2	10.6	136%	170%
65-69	0	2,175	0.0000	0.32%	0.25%	6.9	5.5	0%	0%
70-74	0	467	0.0000	0.32%	0.25%	1.5	1.2	0%	0%
Totals	48	56,770				69	55	70%	87%

*Column may not add due to rounding.

*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

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	1,678	0.0000	0.01%	0.01%	0.2	0.2	0%	0%
25-29	0	3,874	0.0000	0.02%	0.02%	0.7	0.7	0%	0%
30-34	0	4,301	0.0000	0.03%	0.03%	1.3	1.3	0%	0%
35-39	0	4,756	0.0000	0.04%	0.04%	1.9	1.9	0%	0%
40-44	1	6,139	0.0002	0.06%	0.06%	3.8	3.8	26%	26%
45-49	5	6,596	0.0008	0.09%	0.09%	6.0	6.0	83%	83%
50-54	7	6,363	0.0011	0.12%	0.12%	7.8	7.8	90%	90%
55-59	10	5,252	0.0019	0.19%	0.19%	9.9	9.9	101%	101%
60-64	12	4,495	0.0027	0.24%	0.24%	10.6	10.6	113%	113%
65-69	0	2,027	0.0000	0.25%	0.25%	5.1	5.1	0%	0%
70-74	0	390	0.0000	0.25%	0.25%	1.0	1.0	0%	0%
Totals	35	45,871				48	48	72%	72%

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*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

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	1,062	0.0000	0.01%	0.00%	0.1	0.0	0%	0%
25-29	0	3,612	0.0000	0.01%	0.01%	0.5	0.3	0%	0%
30-34	0	5,197	0.0000	0.02%	0.02%	1.2	0.8	0%	0%
35-39	0	5,963	0.0000	0.03%	0.02%	1.8	1.2	0%	0%
40-44	1	7,315	0.0001	0.05%	0.03%	3.4	2.2	30%	45%
45-49	1	7,060	0.0001	0.07%	0.05%	4.8	3.2	21%	31%
50-54	2	6,162	0.0003	0.09%	0.06%	5.7	3.8	35%	53%
55-59	2	4,028	0.0005	0.14%	0.10%	5.6	3.8	35%	53%
60-64	8	2,600	0.0031	0.18%	0.12%	4.6	3.1	174%	261%
65-69	0	1,262	0.0000	0.19%	0.13%	2.4	1.6	0%	0%
70-74	0	441	0.0000	0.19%	0.13%	0.8	0.6	0%	0%
Totals	14	44,702				31	21	45%	68%

*Column may not add due to rounding.

*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

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	3,298	0.0000	0.01%	0.01%	0.2	0.2	0%	0%
25-29	0	13,315	0.0000	0.01%	0.01%	1.7	1.4	0%	0%
30-34	0	12,685	0.0000	0.02%	0.02%	3.0	2.5	0%	0%
35-39	2	14,173	0.0001	0.03%	0.03%	4.4	3.6	46%	55%
40-44	3	20,030	0.0001	0.05%	0.04%	9.2	7.7	33%	39%
45-49	1	22,429	0.0000	0.07%	0.06%	15.3	12.8	7%	8%
50-54	15	19,607	0.0008	0.09%	0.08%	17.9	14.9	84%	101%
55-59	18	12,732	0.0014	0.14%	0.12%	17.9	14.9	101%	121%
60-64	11	8,702	0.0013	0.18%	0.15%	15.3	12.8	72%	86%
65-69	0	2,935	0.0000	0.19%	0.16%	5.5	4.6	0%	0%
70-74	0	485	0.0000	0.19%	0.16%	0.9	0.8	0%	0%
Totals	50	130,391				91	76	55%	66%

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*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

DISABILITY EXPERIENCE
PUBLIC SAFETY - MALE & FEMALE COMBINED

				Assumed Rate		Expected Disabilities		Actual/Expected	
Age	Actual Disabilities	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	1,695	0.0000	0.02%	0.02%	0.3	0.3	0%	0%
25-29	0	5,654	0.0000	0.03%	0.03%	1.8	1.8	0%	0%
30-34	0	6,339	0.0000	0.06%	0.06%	3.7	3.7	0%	0%
35-39	1	6,400	0.0002	0.08%	0.08%	4.9	4.9	20%	20%
40-44	7	6,312	0.0011	0.11%	0.11%	7.1	7.1	98%	98%
45-49	5	3,407	0.0015	0.17%	0.17%	5.7	5.7	87%	87%
50-54	6	1,431	0.0042	0.23%	0.23%	3.2	3.2	188%	188%
55-59	4	594	0.0067	0.36%	0.36%	2.1	2.1	193%	193%
60-64	1	264	0.0038	0.44%	0.44%	1.2	1.2	87%	87%
65-69	0	0	N/A	0.47%	0.47%	0	0	0%	0%
70-74	0	0	N/A	0.47%	0.47%	0	0	0%	0%
Totals	24	32,096				30	30	80%	80%

*Column may not add due to rounding.

*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

DISABILITY EXPERIENCE
FIREFIGHTERS - MALE & FEMALE COMBINED

				Assumed Rate		Expected Disabilities		Actual/Expected	
Age	Actual Disabilities	Total Count	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
20-24	0	513	0.0000	0.03%	0.03%	0.2	0.2	0%	0%
25-29	0	1,610	0.0000	0.05%	0.05%	0.9	0.9	0%	0%
30-34	0	1,765	0.0000	0.11%	0.11%	1.9	1.9	0%	0%
35-39	1	1,678	0.0006	0.14%	0.14%	2.3	2.3	43%	43%
40-44	1	2,043	0.0005	0.20%	0.20%	4.2	4.2	24%	24%
45-49	4	1,228	0.0033	0.31%	0.31%	3.7	3.7	108%	108%
50-54	0	492	0.0000	0.41%	0.41%	2.0	2.0	0%	0%
55-59	0	159	0.0000	0.65%	0.65%	1.0	1.0	0%	0%
60-64	0	89	0.0000	0.80%	0.80%	0.7	0.7	0%	0%
65-69	0	0	N/A	0.85%	0.85%	0	0	0%	0%
70-74	0	0	N/A	0.85%	0.85%	0	0	0%	0%
Totals	6	9,577				17	17	36%	36%

*Column may not add due to rounding.

*Column (5) and (6) represent the rate at the age mid-point for the quintet group

Summary of Data and Experience

TERMINATION EXPERIENCE
MALE STATE EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Terminations		Actual/Expected	
Service	Actual Terminations	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	$ 50,807	$ 148,282	0.3426	27.00%	27.00%	$ 40,036	$ 40,036	127%	127%
1	52,881	243,526	0.2171	20.00%	20.00%	48,705	48,705	109%	109%
2	26,353	221,179	0.1191	12.00%	12.00%	26,541	26,541	99%	99%
3	21,525	213,174	0.1010	10.00%	10.00%	21,317	21,317	101%	101%
4	18,583	207,890	0.0894	9.00%	9.00%	18,710	18,710	99%	99%
5	17,294	211,834	0.0816	8.00%	8.00%	16,947	16,947	102%	102%
6	16,121	211,651	0.0762	7.00%	7.00%	14,816	14,816	109%	109%
7	12,665	213,486	0.0593	6.00%	6.00%	12,809	12,809	99%	99%
8	11,444	212,948	0.0537	5.00%	5.00%	10,647	10,647	107%	107%
9	11,491	219,020	0.0525	5.00%	5.00%	10,951	10,951	105%	105%
10	12,289	218,937	0.0561	4.50%	4.50%	9,852	9,852	125%	125%
11	10,358	213,204	0.0486	4.50%	4.50%	9,594	9,594	108%	108%
12	9,497	216,470	0.0439	4.00%	4.00%	8,659	8,659	110%	110%
13	8,136	216,333	0.0376	3.75%	3.75%	8,112	8,112	100%	100%
14	8,056	213,599	0.0377	3.50%	3.50%	7,476	7,476	108%	108%
15	8,646	212,113	0.0408	3.00%	3.00%	6,363	6,363	136%	136%
16	7,112	208,925	0.0340	2.75%	2.75%	5,745	5,745	124%	124%
17	5,795	210,446	0.0275	2.50%	2.50%	5,261	5,261	110%	110%
18	4,159	201,428	0.0206	2.00%	2.00%	4,029	4,029	103%	103%
19	4,942	188,853	0.0262	2.00%	2.00%	3,777	3,777	131%	131%
20	4,276	175,046	0.0244	2.00%	2.00%	3,501	3,501	122%	122%
21	4,185	165,643	0.0253	2.00%	2.00%	3,313	3,313	126%	126%
22	3,349	160,348	0.0209	2.00%	2.00%	3,207	3,207	104%	104%
23	2,675	160,887	0.0166	1.50%	1.50%	2,413	2,413	111%	111%
24	4,562	68,585	0.0665	1.50%	1.50%	1,029	1,029	443%	443%
Total	$ 337,201	$ 4,933,807				$ 303,810	$ 303,810	111%	111%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

TERMINATION EXPERIENCE
FEMALE STATE EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Terminations		Actual/Expected	
Service	Actual Terminations	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	$ 66,131	$ 193,098	0.3425	28.00%	28.00%	$ 54,068	$ 54,068	122%	122%
1	76,708	317,757	0.2414	21.00%	21.00%	66,729	66,729	115%	115%
2	41,099	285,180	0.1441	15.00%	15.00%	42,777	42,777	96%	96%
3	33,330	267,926	0.1244	13.00%	13.00%	34,830	34,830	96%	96%
4	28,302	262,410	0.1079	11.00%	11.00%	28,865	28,865	98%	98%
5	26,809	265,602	0.1009	10.00%	10.00%	26,560	26,560	101%	101%
6	24,292	263,859	0.0921	8.50%	8.50%	22,428	22,428	108%	108%
7	20,985	262,880	0.0798	7.25%	7.25%	19,059	19,059	110%	110%
8	19,866	267,573	0.0742	6.25%	6.25%	16,723	16,723	119%	119%
9	18,501	272,608	0.0679	5.75%	5.75%	15,675	15,675	118%	118%
10	15,747	265,503	0.0593	5.25%	5.25%	13,939	13,939	113%	113%
11	15,261	263,602	0.0579	4.50%	4.50%	11,862	11,862	129%	129%
12	12,150	265,566	0.0458	4.25%	4.25%	11,287	11,287	108%	108%
13	11,615	267,252	0.0435	4.00%	4.00%	10,690	10,690	109%	109%
14	11,706	268,099	0.0437	3.75%	3.75%	10,054	10,054	116%	116%
15	11,130	266,790	0.0417	3.50%	3.50%	9,338	9,338	119%	119%
16	9,612	268,718	0.0358	3.00%	3.00%	8,062	8,062	119%	119%
17	10,337	264,296	0.0391	2.75%	2.75%	7,268	7,268	142%	142%
18	8,126	248,274	0.0327	2.75%	2.75%	6,828	6,828	119%	119%
19	8,374	218,350	0.0384	2.75%	2.75%	6,005	6,005	139%	139%
20	7,960	195,969	0.0406	2.75%	2.75%	5,389	5,389	148%	148%
21	6,744	182,734	0.0369	2.50%	2.50%	4,568	4,568	148%	148%
22	4,899	171,733	0.0285	2.25%	2.25%	3,864	3,864	127%	127%
23	4,548	164,390	0.0277	2.00%	2.00%	3,288	3,288	138%	138%
24	4,087	67,129	0.0609	2.00%	2.00%	1,343	1,343	304%	304%
Total	$ 498,319	$ 6,037,298				$ 441,499	$ 441,499	113%	113%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

TERMINATION EXPERIENCE
MALE LOCAL GOVERNMENT EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Terminations		Actual/Expected	
Service	Actual Terminations	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	$ 66,700	$ 253,745	0.2629	19.00%	19.00%	$ 48,211	$ 48,211	138%	138%
1	72,873	418,228	0.1742	13.00%	13.00%	54,370	54,370	134%	134%
2	41,163	363,286	0.1133	10.00%	10.00%	36,329	36,329	113%	113%
3	30,207	321,817	0.0939	9.00%	9.00%	28,963	28,963	104%	104%
4	25,161	284,524	0.0884	8.00%	8.00%	22,762	22,762	111%	111%
5	19,438	264,097	0.0736	7.00%	7.00%	18,487	18,487	105%	105%
6	18,332	252,565	0.0726	6.50%	6.50%	16,417	16,417	112%	112%
7	12,879	236,849	0.0544	5.50%	5.50%	13,027	13,027	99%	99%
8	12,447	227,624	0.0547	5.00%	5.00%	11,381	11,381	109%	109%
9	10,577	222,187	0.0476	4.50%	4.50%	9,998	9,998	106%	106%
10	10,138	215,355	0.0471	4.00%	4.00%	8,614	8,614	118%	118%
11	7,836	216,609	0.0362	3.50%	3.50%	7,581	7,581	103%	103%
12	9,475	214,066	0.0443	3.25%	3.25%	6,957	6,957	136%	136%
13	7,437	210,129	0.0354	3.00%	3.00%	6,304	6,304	118%	118%
14	7,388	210,539	0.0351	3.00%	3.00%	6,316	6,316	117%	117%
15	6,655	207,601	0.0321	2.75%	2.75%	5,709	5,709	117%	117%
16	7,412	210,367	0.0352	2.75%	2.75%	5,785	5,785	128%	128%
17	6,598	205,391	0.0321	2.50%	2.50%	5,135	5,135	128%	128%
18	6,023	195,441	0.0308	2.50%	2.50%	4,886	4,886	123%	123%
19	5,252	175,605	0.0299	2.50%	2.50%	4,390	4,390	120%	120%
20	5,186	159,606	0.0325	2.00%	2.00%	3,192	3,192	162%	162%
21	3,770	154,343	0.0244	2.00%	2.00%	3,087	3,087	122%	122%
22	3,188	146,197	0.0218	1.75%	1.75%	2,558	2,558	125%	125%
23	3,314	140,700	0.0236	1.50%	1.50%	2,111	2,111	157%	157%
24	2,074	62,056	0.0334	1.25%	1.25%	776	776	267%	267%
Total	$ 401,523	$ 5,568,927				$ 333,346	$ 333,346	120%	120%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

TERMINATION EXPERIENCE
FEMALE LOCAL GOVERNMENT EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Terminations		Actual/Expected	
Service	Actual Terminations	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	$ 63,962	$ 204,338	0.3130	26.00%	26.00%	$ 53,128	$ 53,128	120%	120%
1	67,148	324,656	0.2068	18.00%	18.00%	58,438	58,438	115%	115%
2	41,388	277,413	0.1492	15.00%	15.00%	41,612	41,612	99%	99%
3	30,473	242,135	0.1259	13.00%	13.00%	31,478	31,478	97%	97%
4	23,466	206,387	0.1137	11.50%	11.50%	23,734	23,734	99%	99%
5	16,425	183,942	0.0893	9.50%	9.50%	17,474	17,474	94%	94%
6	14,203	170,517	0.0833	9.00%	9.00%	15,347	15,347	93%	93%
7	12,744	157,101	0.0811	8.00%	8.00%	12,568	12,568	101%	101%
8	10,285	145,670	0.0706	7.00%	7.00%	10,197	10,197	101%	101%
9	10,070	141,007	0.0714	6.00%	6.00%	8,460	8,460	119%	119%
10	8,572	134,877	0.0636	5.50%	5.50%	7,418	7,418	116%	116%
11	7,049	131,541	0.0536	5.00%	5.00%	6,577	6,577	107%	107%
12	7,088	130,757	0.0542	4.75%	4.75%	6,211	6,211	114%	114%
13	6,058	124,824	0.0485	4.50%	4.50%	5,617	5,617	108%	108%
14	6,054	120,730	0.0501	4.00%	4.00%	4,829	4,829	125%	125%
15	4,415	118,176	0.0374	4.00%	4.00%	4,727	4,727	93%	93%
16	5,167	117,770	0.0439	3.75%	3.75%	4,416	4,416	117%	117%
17	4,268	115,118	0.0371	3.50%	3.50%	4,029	4,029	106%	106%
18	4,011	111,301	0.0360	3.00%	3.00%	3,339	3,339	120%	120%
19	3,771	97,485	0.0387	3.00%	3.00%	2,925	2,925	129%	129%
20	3,022	83,853	0.0360	2.50%	2.50%	2,096	2,096	144%	144%
21	3,108	78,149	0.0398	2.50%	2.50%	1,954	1,954	159%	159%
22	2,342	75,256	0.0311	2.25%	2.25%	1,693	1,693	138%	138%
23	2,456	69,335	0.0354	2.00%	2.00%	1,387	1,387	177%	177%
24	2,137	30,037	0.0711	2.00%	2.00%	601	601	356%	356%
Total	$ 359,682	$ 3,592,375				$ 330,255	$ 330,255	109%	109%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

TERMINATION EXPERIENCE
MALE EDUCATORS
WEIGHTED BY SALARY

Service	Actual Terminations	Total Exposures	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	$ 32,984	$ 173,662	0.1899	16.00%	16.00%	$ 27,786	$ 27,786	119%	119%
1	40,900	293,527	0.1393	12.00%	12.00%	35,223	35,223	116%	116%
2	28,259	277,433	0.1019	8.50%	8.50%	23,582	23,582	120%	120%
3	21,385	255,533	0.0837	7.00%	7.00%	17,887	17,887	120%	120%
4	16,878	232,236	0.0727	6.50%	6.50%	15,095	15,095	112%	112%
5	15,204	220,951	0.0688	6.00%	6.00%	13,257	13,257	115%	115%
6	12,448	208,433	0.0597	5.50%	5.50%	11,464	11,464	109%	109%
7	9,608	197,231	0.0487	4.50%	4.50%	8,875	8,875	108%	108%
8	8,233	187,887	0.0438	4.00%	4.00%	7,515	7,515	110%	110%
9	7,227	173,902	0.0416	3.50%	3.50%	6,087	6,087	119%	119%
10	6,316	168,418	0.0375	3.00%	3.00%	5,053	5,053	125%	125%
11	6,276	167,296	0.0375	2.75%	2.75%	4,601	4,601	136%	136%
12	4,329	167,327	0.0259	2.50%	2.50%	4,183	4,183	103%	103%
13	4,243	169,185	0.0251	2.00%	2.00%	3,384	3,384	125%	125%
14	3,813	163,440	0.0233	1.75%	1.75%	2,860	2,860	133%	133%
15	4,986	162,095	0.0308	1.75%	1.75%	2,837	2,837	176%	176%
16	3,221	157,033	0.0205	1.50%	1.50%	2,356	2,356	137%	137%
17	2,542	156,086	0.0163	1.50%	1.50%	2,341	2,341	109%	109%
18	2,469	152,862	0.0162	1.50%	1.50%	2,293	2,293	108%	108%
19	2,261	144,808	0.0156	1.50%	1.50%	2,172	2,172	104%	104%
20	2,320	136,790	0.0170	1.50%	1.50%	2,052	2,052	113%	113%
21	2,455	132,754	0.0185	1.50%	1.50%	1,991	1,991	123%	123%
22	2,302	128,161	0.0180	1.50%	1.50%	1,922	1,922	120%	120%
23	2,061	123,490	0.0167	1.50%	1.50%	1,852	1,852	111%	111%
24	1,202	47,814	0.0251	1.50%	1.50%	717	717	168%	168%
Total	$ 243,922	$ 4,398,354				$ 207,385	$ 207,385	118%	118%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

TERMINATION EXPERIENCE
FEMALE EDUCATORS
WEIGHTED BY SALARY

Service	Actual Terminations	Total Exposures	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	$ 82,129	$ 466,916	0.1759	16.00%	16.00%	$ 74,707	$ 74,707	110%	110%
1	116,695	789,744	0.1478	13.00%	13.00%	102,667	102,667	114%	114%
2	90,577	765,284	0.1184	10.00%	10.00%	76,528	76,528	118%	118%
3	74,888	715,470	0.1047	9.00%	9.00%	64,392	64,392	116%	116%
4	58,794	654,181	0.0899	8.00%	8.00%	52,334	52,334	112%	112%
5	47,610	618,973	0.0769	7.00%	7.00%	43,328	43,328	110%	110%
6	37,702	581,659	0.0648	6.00%	6.00%	34,900	34,900	108%	108%
7	33,166	549,232	0.0604	5.25%	5.25%	28,835	28,835	115%	115%
8	27,395	524,057	0.0523	4.50%	4.50%	23,583	23,583	116%	116%
9	23,128	498,183	0.0464	4.00%	4.00%	19,927	19,927	116%	116%
10	22,131	482,468	0.0459	3.75%	3.75%	18,093	18,093	122%	122%
11	18,254	465,588	0.0392	3.25%	3.25%	15,132	15,132	121%	121%
12	14,958	452,246	0.0331	3.00%	3.00%	13,567	13,567	110%	110%
13	14,729	441,800	0.0333	2.50%	2.50%	11,045	11,045	133%	133%
14	10,953	425,179	0.0258	2.00%	2.00%	8,504	8,504	129%	129%
15	10,324	410,026	0.0252	2.00%	2.00%	8,201	8,201	126%	126%
16	9,393	391,431	0.0240	1.75%	1.75%	6,850	6,850	137%	137%
17	8,110	365,961	0.0222	1.75%	1.75%	6,404	6,404	127%	127%
18	6,701	338,780	0.0198	1.75%	1.75%	5,929	5,929	113%	113%
19	5,434	299,537	0.0181	1.50%	1.50%	4,493	4,493	121%	121%
20	5,470	267,035	0.0205	1.50%	1.50%	4,006	4,006	137%	137%
21	4,411	244,692	0.0180	1.50%	1.50%	3,670	3,670	120%	120%
22	3,003	223,000	0.0135	1.50%	1.50%	3,345	3,345	90%	90%
23	2,878	210,304	0.0137	1.50%	1.50%	3,155	3,155	91%	91%
24	3,060	76,444	0.0400	1.50%	1.50%	1,147	1,147	267%	267%
Total	$ 731,893	$ 11,258,190				$ 634,742	$ 634,742	115%	115%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

TERMINATION EXPERIENCE
PUBLIC SAFETY - MALE & FEMALE COMBINED
WEIGHTED BY SALARY

				Assumed Rate		Expected Terminations		Actual/Expected	
Service	Actual Terminations	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	$ 18,214	$ 113,716	0.1602	15.00%	15.00%	$ 17,057	$ 17,057	107%	107%
1	21,125	220,275	0.0959	8.00%	8.00%	17,622	17,622	120%	120%
2	14,928	208,529	0.0716	7.00%	7.00%	14,597	14,597	102%	102%
3	14,469	198,617	0.0728	6.00%	6.00%	11,917	11,917	121%	121%
4	12,074	188,900	0.0639	5.50%	5.50%	10,390	10,390	116%	116%
5	11,727	178,366	0.0657	5.00%	5.00%	8,918	8,918	131%	131%
6	8,055	169,219	0.0476	4.50%	4.50%	7,615	7,615	106%	106%
7	8,805	164,502	0.0535	4.00%	4.00%	6,580	6,580	134%	134%
8	6,839	158,914	0.0430	3.50%	3.50%	5,562	5,562	123%	123%
9	6,077	160,959	0.0378	3.00%	3.00%	4,829	4,829	126%	126%
10	5,847	164,250	0.0356	2.50%	2.50%	4,106	4,106	142%	142%
11	5,622	167,776	0.0335	2.50%	2.50%	4,194	4,194	134%	134%
12	4,751	170,708	0.0278	2.50%	2.50%	4,268	4,268	111%	111%
13	3,255	175,557	0.0185	2.00%	2.00%	3,511	3,511	93%	93%
14	4,470	183,356	0.0244	2.00%	2.00%	3,667	3,667	122%	122%
15	3,876	185,386	0.0209	2.00%	2.00%	3,708	3,708	105%	105%
16	2,699	198,170	0.0136	1.50%	1.50%	2,973	2,973	91%	91%
17	3,752	207,717	0.0181	1.50%	1.50%	3,116	3,116	120%	120%
18	2,724	199,062	0.0137	1.50%	1.50%	2,986	2,986	91%	91%
19	5,592	89,295	0.0626	1.50%	1.50%	1,339	1,339	418%	418%
Total	$ 164,901	$ 3,503,274				$ 138,955	$ 138,955	119%	119%

*$ in thousands

*Column may not add due to rounding.

Summary of Data and Experience

TERMINATION EXPERIENCE
FIREFIGHTERS - MALE & FEMALE COMBINED
WEIGHTED BY SALARY

				Assumed Rate		Expected Terminations		Actual/Expected	
Service	Actual Terminations	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	$ 3,653	$ 30,270	0.1207	7.00%	8.50%	$ 2,119	$ 2,573	172%	142%
1	5,543	67,892	0.0816	5.50%	6.50%	3,734	4,413	148%	126%
2	3,814	63,453	0.0601	4.00%	5.00%	2,538	3,173	150%	120%
3	2,728	59,120	0.0461	3.75%	4.25%	2,217	2,513	123%	109%
4	2,475	52,930	0.0468	3.00%	3.75%	1,588	1,985	156%	125%
5	1,999	51,552	0.0388	2.50%	3.00%	1,289	1,547	155%	129%
6	1,897	49,135	0.0386	2.25%	2.50%	1,106	1,228	172%	154%
7	1,125	45,792	0.0246	2.00%	2.25%	916	1,030	123%	109%
8	1,326	46,248	0.0287	1.75%	2.00%	809	925	164%	143%
9	1,038	47,373	0.0219	1.75%	2.00%	829	947	125%	110%
10	1,029	50,837	0.0202	1.75%	2.00%	890	1,017	116%	101%
11	1,078	52,858	0.0204	1.50%	1.75%	793	925	136%	117%
12	1,018	52,671	0.0193	1.25%	1.50%	658	790	155%	129%
13	933	56,699	0.0165	1.25%	1.50%	709	850	132%	110%
14	403	58,627	0.0069	1.00%	1.25%	586	733	69%	55%
15	1,129	59,010	0.0191	1.00%	1.25%	590	738	191%	153%
16	679	63,204	0.0107	1.00%	1.25%	632	790	107%	86%
17	695	62,370	0.0111	1.00%	1.00%	624	624	111%	111%
18	707	60,312	0.0117	1.00%	1.00%	603	603	117%	117%
19	1,443	28,947	0.0498	1.00%	1.00%	289	289	499%	499%
Total	$ 34,712	$ 1,059,300				$ 23,519	$ 27,693	148%	125%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

UNREDUCED RETIREMENT EXPERIENCE
MALE STATE EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ 474	$ 2,616	0.1812	20.00%	20.00%	$ 523	$ 523	91%	91%
50	646	2,867	0.2253	15.00%	15.00%	430	430	150%	150%
51	1,090	4,947	0.2203	15.00%	15.00%	742	742	147%	147%
52	669	6,275	0.1066	15.00%	15.00%	941	941	71%	71%
53	822	10,052	0.0818	15.00%	15.00%	1,508	1,508	55%	55%
54	2,078	14,170	0.1466	15.00%	15.00%	2,125	2,125	98%	98%
55	2,428	20,118	0.1207	16.00%	16.00%	3,219	3,219	75%	75%
56	3,012	23,911	0.1260	16.00%	16.00%	3,826	3,826	79%	79%
57	3,413	29,029	0.1176	16.00%	16.00%	4,645	4,645	73%	73%
58	4,059	32,405	0.1253	16.00%	16.00%	5,185	5,185	78%	78%
59	5,354	33,742	0.1587	16.00%	16.00%	5,399	5,399	99%	99%
60	5,826	34,784	0.1675	20.00%	20.00%	6,957	6,957	84%	84%
61	4,903	35,181	0.1394	20.00%	20.00%	7,036	7,036	70%	70%
62	8,175	35,748	0.2287	30.00%	30.00%	10,724	10,724	76%	76%
63	5,412	30,207	0.1792	30.00%	30.00%	9,062	9,062	60%	60%
64	5,826	27,546	0.2115	30.00%	30.00%	8,264	8,264	70%	70%
65	11,602	67,183	0.1727	22.00%	22.00%	14,780	14,780	78%	78%
66	12,066	54,972	0.2195	22.00%	22.00%	12,094	12,094	100%	100%
67	10,382	42,220	0.2459	22.00%	22.00%	9,288	9,288	112%	112%
68	5,254	28,053	0.1873	22.00%	22.00%	6,172	6,172	85%	85%
69	4,400	21,747	0.2023	22.00%	22.00%	4,784	4,784	92%	92%
70	3,666	16,659	0.2201	22.00%	22.00%	3,665	3,665	100%	100%
71	3,146	13,072	0.2407	22.00%	22.00%	2,876	2,876	109%	109%
72	1,863	9,642	0.1932	22.00%	22.00%	2,121	2,121	88%	88%
73	1,690	7,182	0.2353	22.00%	22.00%	1,580	1,580	107%	107%
74	627	6,439	0.0974	22.00%	22.00%	1,417	1,417	44%	44%
Subtotal	$ 108,883	$ 610,767				$ 129,363	$ 129,363	84%	84%
75 or more	4,989	19,947	0.2501	100.00%	100.00%	19,947	19,947	25%	25%
Totals	$ 113,872	$ 630,714				$ 149,310	$ 149,310	76%	76%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

REDUCED RETIREMENT EXPERIENCE
MALE STATE EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ 331	$ 59,009	0.0056	2.30%	2.00%	$ 1,357	$ 1,180	24%	28%
50	145	24,744	0.0059	2.30%	2.00%	569	495	25%	29%
51	453	31,370	0.0144	2.30%	2.00%	722	627	63%	72%
52	395	35,244	0.0112	2.50%	2.00%	881	705	45%	56%
53	288	38,163	0.0075	2.50%	2.00%	954	763	30%	38%
54	407	40,252	0.0101	2.50%	2.00%	1,006	805	40%	51%
55	632	39,190	0.0161	2.50%	2.50%	980	980	64%	64%
56	667	36,077	0.0185	2.50%	2.50%	902	902	74%	74%
57	452	31,270	0.0145	2.50%	2.50%	782	782	58%	58%
58	530	29,912	0.0177	2.50%	2.50%	748	748	71%	71%
59	289	27,356	0.0106	4.00%	4.00%	1,094	1,094	26%	26%
60	1,712	41,524	0.0412	5.00%	5.00%	2,076	2,076	82%	82%
61	2,545	37,983	0.0670	5.00%	5.00%	1,899	1,899	134%	134%
62	3,889	58,986	0.0659	11.00%	11.00%	6,488	6,488	60%	60%
63	3,657	51,708	0.0707	11.00%	11.00%	5,688	5,688	64%	64%
64	4,453	46,706	0.0953	11.00%	11.00%	5,138	5,138	87%	87%
Totals	$ 20,845	$ 629,494				$ 31,284	$ 30,370	67%	69%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

UNREDUCED RETIREMENT EXPERIENCE
FEMALE STATE EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ 317	$ 2,286	0.1387	17.00%	15.00%	$ 389	$ 343	81%	92%
50	222	3,388	0.0655	17.00%	15.00%	576	508	39%	44%
51	665	5,942	0.1119	16.00%	15.00%	951	891	70%	75%
52	986	9,494	0.1039	16.00%	15.00%	1,519	1,424	65%	69%
53	1,674	14,767	0.1134	16.00%	15.00%	2,363	2,215	71%	76%
54	1,479	20,482	0.0722	16.00%	15.00%	3,277	3,072	45%	48%
55	2,989	23,687	0.1262	16.00%	15.00%	3,790	3,553	79%	84%
56	2,734	25,864	0.1057	16.00%	15.00%	4,138	3,880	66%	70%
57	3,169	26,215	0.1209	16.00%	15.00%	4,194	3,932	76%	81%
58	3,697	28,981	0.1276	20.00%	15.00%	5,796	4,347	64%	85%
59	3,379	28,945	0.1167	20.00%	15.00%	5,789	4,342	58%	78%
60	4,831	27,963	0.1728	25.00%	22.00%	6,991	6,152	69%	79%
61	5,449	29,389	0.1854	25.00%	22.00%	7,347	6,466	74%	84%
62	6,576	30,739	0.2139	33.00%	30.00%	10,144	9,222	65%	71%
63	5,297	28,272	0.1874	33.00%	30.00%	9,330	8,482	57%	62%
64	6,468	25,851	0.2502	33.00%	30.00%	8,531	7,755	76%	83%
65	20,010	98,498	0.2032	28.00%	28.00%	27,580	27,580	73%	73%
66	19,765	79,108	0.2498	28.00%	28.00%	22,150	22,150	89%	89%
67	15,273	56,425	0.2707	28.00%	28.00%	15,799	15,799	97%	97%
68	9,156	39,002	0.2348	22.00%	22.00%	8,581	8,581	107%	107%
69	5,792	28,236	0.2051	22.00%	22.00%	6,212	6,212	93%	93%
70	5,742	21,020	0.2732	22.00%	22.00%	4,624	4,624	124%	124%
71	3,309	14,737	0.2245	22.00%	22.00%	3,242	3,242	102%	102%
72	2,102	10,233	0.2054	22.00%	22.00%	2,251	2,251	93%	93%
73	1,551	7,923	0.1958	22.00%	22.00%	1,743	1,743	89%	89%
74	794	5,858	0.1355	22.00%	22.00%	1,289	1,289	62%	62%
Subtotal	$ 133,426	$ 693,305				$ 168,596	$ 160,055	79%	83%
75 or more	2,905	14,634	0.1985	100.00%	100.00%	14,634	14,634	20%	20%
Totals	$ 136,331	$ 707,939				$ 183,230	$ 174,689	74%	78%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

REDUCED RETIREMENT EXPERIENCE
FEMALE STATE EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ 665	$ 89,936	0.0074	2.00%	2.00%	$ 1,799	$ 1,799	37%	37%
50	135	33,674	0.0040	2.00%	2.00%	673	673	20%	20%
51	132	35,058	0.0038	2.00%	2.00%	701	701	19%	19%
52	154	35,546	0.0043	2.00%	2.00%	711	711	22%	22%
53	791	33,421	0.0237	2.00%	2.00%	668	668	118%	118%
54	153	29,604	0.0052	2.00%	2.00%	592	592	26%	26%
55	553	26,689	0.0207	4.00%	4.00%	1,068	1,068	52%	52%
56	321	23,596	0.0136	4.00%	4.00%	944	944	34%	34%
57	131	22,104	0.0059	4.00%	4.00%	884	884	15%	15%
58	359	24,575	0.0146	4.00%	4.00%	983	983	37%	37%
59	659	26,912	0.0245	4.00%	4.00%	1,076	1,076	61%	61%
60	4,011	60,411	0.0664	9.00%	9.00%	5,437	5,437	74%	74%
61	4,980	61,033	0.0816	9.00%	9.00%	5,493	5,493	91%	91%
62	10,410	103,736	0.1004	14.00%	11.00%	14,523	11,411	72%	91%
63	9,324	93,455	0.0998	14.00%	11.00%	13,084	10,280	71%	91%
64	7,899	82,507	0.0957	14.00%	11.00%	11,551	9,076	68%	87%
Totals	$ 40,677	$ 782,257				$ 60,187	$ 51,796	68%	79%

*$ in thousands
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Summary of Data and Experience

UNREDUCED RETIREMENT EXPERIENCE
MALE LOCAL GOVERNMENT EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ 430	$ 1,506	0.2855	15.00%	15.00%	$ 226	$ 226	190%	190%
50	164	2,140	0.0766	15.00%	15.00%	321	321	51%	51%
51	305	4,194	0.0727	15.00%	15.00%	629	629	48%	48%
52	689	6,091	0.1131	15.00%	15.00%	914	914	75%	75%
53	972	8,032	0.1210	12.00%	12.00%	964	964	101%	101%
54	914	9,213	0.0992	12.00%	12.00%	1,106	1,106	83%	83%
55	1,606	11,554	0.1390	12.00%	12.00%	1,386	1,386	116%	116%
56	1,536	13,968	0.1100	12.00%	12.00%	1,676	1,676	92%	92%
57	1,604	15,619	0.1027	12.00%	12.00%	1,874	1,874	86%	86%
58	2,153	18,322	0.1175	12.00%	12.00%	2,199	2,199	98%	98%
59	3,457	21,917	0.1577	15.00%	15.00%	3,288	3,288	105%	105%
60	3,402	23,284	0.1461	15.00%	15.00%	3,493	3,493	97%	97%
61	3,760	26,349	0.1427	15.00%	15.00%	3,952	3,952	95%	95%
62	5,522	27,361	0.2018	25.00%	25.00%	6,840	6,840	81%	81%
63	5,707	25,550	0.2234	25.00%	25.00%	6,387	6,387	89%	89%
64	4,305	21,700	0.1984	25.00%	25.00%	5,425	5,425	79%	79%
65	13,478	61,629	0.2187	25.00%	25.00%	15,407	15,407	87%	87%
66	12,866	48,098	0.2675	30.00%	30.00%	14,429	14,429	89%	89%
67	11,855	35,480	0.3341	30.00%	30.00%	10,644	10,644	111%	111%
68	5,833	23,665	0.2465	30.00%	30.00%	7,100	7,100	82%	82%
69	3,838	16,861	0.2276	30.00%	30.00%	5,058	5,058	76%	76%
70	3,955	12,509	0.3162	30.00%	30.00%	3,753	3,753	105%	105%
71	2,200	8,133	0.2705	30.00%	30.00%	2,440	2,440	90%	90%
72	1,701	5,217	0.3260	30.00%	30.00%	1,565	1,565	109%	109%
73	1,383	3,853	0.3589	30.00%	30.00%	1,156	1,156	120%	120%
74	436	2,474	0.1762	30.00%	30.00%	742	742	59%	59%
Subtotal	$ 94,071	$ 454,719				$ 102,974	$ 102,974	91%	91%
75 or more	1,371	8,249	0.1662	100.00%	100.00%	8,249	8,249	17%	17%
Totals	$ 95,442	$ 462,968				$ 111,223	$ 111,223	86%	86%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

REDUCED RETIREMENT EXPERIENCE
MALE LOCAL GOVERNMENT EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ 1,501	$ 72,660	0.0207	2.50%	2.50%	$ 1,816	$ 1,816	83%	83%
50	268	19,838	0.0135	2.50%	2.50%	496	496	54%	54%
51	434	23,526	0.0184	2.50%	2.50%	588	588	74%	74%
52	331	27,937	0.0118	2.50%	2.50%	698	698	47%	47%
53	356	26,856	0.0133	2.50%	2.50%	671	671	53%	53%
54	379	28,024	0.0135	2.50%	2.50%	701	701	54%	54%
55	245	26,813	0.0091	3.00%	3.00%	804	804	30%	30%
56	422	23,939	0.0176	3.00%	3.00%	718	718	59%	59%
57	898	24,055	0.0373	3.00%	3.00%	722	722	124%	124%
58	769	24,692	0.0311	4.00%	4.00%	988	988	78%	78%
59	548	21,899	0.0250	4.00%	4.00%	876	876	63%	63%
60	1,387	37,483	0.0370	4.00%	4.00%	1,499	1,499	93%	93%
61	1,067	36,313	0.0294	4.00%	4.00%	1,453	1,453	73%	73%
62	3,975	52,121	0.0763	10.00%	10.00%	5,212	5,212	76%	76%
63	3,825	46,011	0.0831	10.00%	10.00%	4,601	4,601	83%	83%
64	2,862	42,647	0.0671	10.00%	10.00%	4,265	4,265	67%	67%
Totals	$ 19,267	$ 534,814				$ 26,108	$ 26,108	74%	74%

*$ in thousands

*Column may not add due to rounding.

Summary of Data and Experience

UNREDUCED RETIREMENT EXPERIENCE
FEMALE LOCAL GOVERNMENT EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ 649	$ 1,502	0.4321	12.00%	12.00%	$ 180	$ 180	361%	361%
50	39	2,000	0.0195	20.00%	20.00%	400	400	10%	10%
51	840	3,146	0.2670	20.00%	20.00%	629	629	134%	134%
52	560	3,612	0.1550	20.00%	20.00%	722	722	78%	78%
53	1,009	4,344	0.2323	20.00%	20.00%	869	869	116%	116%
54	461	4,045	0.1140	15.00%	15.00%	607	607	76%	76%
55	542	6,401	0.0847	15.00%	15.00%	960	960	56%	56%
56	1,051	7,427	0.1415	15.00%	15.00%	1,114	1,114	94%	94%
57	1,018	8,313	0.1225	15.00%	15.00%	1,247	1,247	82%	82%
58	589	8,590	0.0686	15.00%	15.00%	1,288	1,288	46%	46%
59	1,310	9,227	0.1420	20.00%	20.00%	1,845	1,845	71%	71%
60	1,777	9,276	0.1916	20.00%	20.00%	1,855	1,855	96%	96%
61	2,192	10,177	0.2154	20.00%	20.00%	2,035	2,035	108%	108%
62	2,155	9,614	0.2242	30.00%	30.00%	2,884	2,884	75%	75%
63	2,213	9,637	0.2296	30.00%	30.00%	2,891	2,891	77%	77%
64	1,951	8,511	0.2292	30.00%	30.00%	2,553	2,553	76%	76%
65	11,231	39,692	0.2830	30.00%	30.00%	11,907	11,907	94%	94%
66	7,383	29,596	0.2495	30.00%	30.00%	8,879	8,879	83%	83%
67	6,143	20,741	0.2962	30.00%	30.00%	6,222	6,222	99%	99%
68	3,731	14,152	0.2636	30.00%	30.00%	4,246	4,246	88%	88%
69	2,760	10,843	0.2545	30.00%	30.00%	3,253	3,253	85%	85%
70	1,763	7,712	0.2286	30.00%	30.00%	2,314	2,314	76%	76%
71	1,488	5,827	0.2554	30.00%	30.00%	1,748	1,748	85%	85%
72	808	4,105	0.1968	30.00%	30.00%	1,232	1,232	66%	66%
73	519	2,842	0.1826	25.00%	25.00%	710	710	73%	73%
74	249	2,688	0.0926	25.00%	25.00%	672	672	37%	37%
Subtotal	$ 54,431	$ 244,020				$ 63,262	$ 63,262	86%	86%
75 or more	1,511	7,724	0.1956	100.00%	100.00%	7,724	7,724	20%	20%
Totals	$ 55,942	$ 251,744				$ 70,986	$ 70,986	79%	79%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

REDUCED RETIREMENT EXPERIENCE
FEMALE LOCAL GOVERNMENT EMPLOYEES
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ 462	$ 37,140	0.0124	3.00%	3.00%	$ 1,114	$ 1,114	41%	41%
50	266	12,727	0.0209	4.00%	3.00%	509	382	52%	70%
51	153	12,975	0.0118	4.00%	3.00%	519	389	29%	39%
52	0	14,070	0.0000	4.00%	3.00%	563	422	0%	0%
53	400	13,716	0.0292	4.00%	3.00%	549	411	73%	97%
54	506	13,747	0.0368	4.00%	4.00%	550	550	92%	92%
55	356	11,643	0.0306	4.00%	4.00%	466	466	76%	76%
56	154	10,955	0.0141	4.00%	4.00%	438	438	35%	35%
57	228	10,337	0.0221	4.00%	4.00%	413	413	55%	55%
58	664	10,170	0.0653	6.00%	6.00%	610	610	109%	109%
59	232	10,373	0.0224	6.00%	6.00%	622	622	37%	37%
60	1,536	22,447	0.0684	10.00%	10.00%	2,245	2,245	68%	68%
61	1,256	23,086	0.0544	13.00%	10.00%	3,001	2,309	42%	54%
62	3,773	39,614	0.0952	13.00%	10.00%	5,150	3,961	73%	95%
63	2,853	37,426	0.0762	13.00%	10.00%	4,865	3,743	59%	76%
64	4,409	33,564	0.1314	13.00%	10.00%	4,363	3,356	101%	131%
Totals	$ 17,248	$ 313,990				$ 25,977	$ 21,431	66%	80%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

UNREDUCED RETIREMENT EXPERIENCE
MALE EDUCATORS
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ -	$ -	N/A	25.00%	25.00%	$ -	$ -	0%	0%
50	70	309	0.2265	25.00%	25.00%	77	77	91%	91%
51	123	418	0.2943	25.00%	25.00%	104	104	118%	118%
52	275	950	0.2895	25.00%	25.00%	237	237	116%	116%
53	218	2,477	0.0880	20.00%	20.00%	495	495	44%	44%
54	1,072	7,291	0.1470	18.00%	18.00%	1,312	1,312	82%	82%
55	3,360	16,009	0.2099	18.00%	18.00%	2,882	2,882	117%	117%
56	2,668	19,636	0.1359	18.00%	18.00%	3,534	3,534	75%	75%
57	3,165	25,140	0.1259	18.00%	18.00%	4,525	4,525	70%	70%
58	4,522	27,595	0.1639	22.00%	22.00%	6,071	6,071	74%	74%
59	4,492	27,680	0.1623	22.00%	22.00%	6,090	6,090	74%	74%
60	4,673	24,668	0.1894	30.00%	30.00%	7,400	7,400	63%	63%
61	5,277	23,118	0.2283	30.00%	30.00%	6,936	6,936	76%	76%
62	5,048	20,268	0.2491	35.00%	30.00%	7,094	6,080	71%	83%
63	4,624	16,770	0.2757	35.00%	30.00%	5,869	5,031	79%	92%
64	3,808	13,161	0.2893	35.00%	30.00%	4,606	3,948	83%	96%
65	6,951	27,897	0.2492	35.00%	30.00%	9,764	8,369	71%	83%
66	5,523	20,051	0.2754	35.00%	30.00%	7,018	6,015	79%	92%
67	4,643	14,595	0.3181	35.00%	33.00%	5,108	4,816	91%	96%
68	2,451	9,722	0.2521	35.00%	33.00%	3,403	3,208	72%	76%
69	2,155	7,002	0.3078	35.00%	33.00%	2,451	2,311	88%	93%
70	1,452	3,790	0.3831	35.00%	33.00%	1,326	1,251	110%	116%
71	404	2,509	0.1610	35.00%	33.00%	878	828	46%	49%
72	440	2,134	0.2062	35.00%	33.00%	747	704	59%	63%
73	347	2,097	0.1655	35.00%	33.00%	734	692	47%	50%
74	551	1,834	0.3004	35.00%	33.00%	642	605	86%	91%
Subtotal	$ 68,312	$ 317,121				$ 89,303	$ 83,521	76%	82%
75 or more	987	5,474	0.1803	100.00%	100.00%	5,474	5,474	18%	18%
Totals	$ 69,299	$ 322,595				$ 94,777	$ 88,995	73%	78%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

REDUCED RETIREMENT EXPERIENCE
MALE EDUCATORS
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ 387	$ 18,470	0.0210	1.00%	1.00%	$ 185	$ 185	209%	209%
50	319	20,722	0.0154	2.00%	2.00%	414	414	77%	77%
51	439	34,175	0.0128	2.00%	2.00%	683	683	64%	64%
52	486	39,586	0.0123	2.00%	2.00%	792	792	61%	61%
53	772	46,198	0.0167	2.00%	2.00%	924	924	84%	84%
54	385	43,863	0.0088	2.00%	2.00%	877	877	44%	44%
55	502	37,235	0.0135	2.00%	2.00%	745	745	67%	67%
56	201	31,612	0.0064	2.50%	2.50%	790	790	25%	25%
57	690	25,516	0.0270	3.00%	3.00%	765	765	90%	90%
58	390	18,952	0.0206	3.00%	3.00%	569	569	69%	69%
59	451	14,567	0.0310	3.00%	3.00%	437	437	103%	103%
60	1,432	20,156	0.0710	8.00%	8.00%	1,612	1,612	89%	89%
61	1,097	17,081	0.0642	8.00%	8.00%	1,366	1,366	80%	80%
62	2,361	25,949	0.0910	13.00%	13.00%	3,373	3,373	70%	70%
63	3,253	22,448	0.1449	13.00%	13.00%	2,918	2,918	111%	111%
64	1,637	17,839	0.0918	13.00%	13.00%	2,319	2,319	71%	71%
Totals	$ 14,802	$ 434,369				$ 18,769	$ 18,769	79%	79%

*$ in thousands

*Column may not add due to rounding.

Summary of Data and Experience

UNREDUCED RETIREMENT EXPERIENCE
FEMALE EDUCATORS
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ -	$ -	N/A	25.00%	25.00%	$ -	$ -	0%	0%
50	-	693	0.0000	25.00%	25.00%	173	173	0%	0%
51	264	2,392	0.1104	25.00%	25.00%	598	598	44%	44%
52	1,516	8,612	0.1760	25.00%	25.00%	2,153	2,153	70%	70%
53	3,197	20,395	0.1568	25.00%	25.00%	5,099	5,099	63%	63%
54	3,780	26,506	0.1426	18.00%	18.00%	4,771	4,771	79%	79%
55	4,024	30,526	0.1318	18.00%	18.00%	5,495	5,495	73%	73%
56	5,504	33,936	0.1622	18.00%	18.00%	6,108	6,108	90%	90%
57	5,664	37,475	0.1511	18.00%	18.00%	6,746	6,746	84%	84%
58	5,869	34,803	0.1686	22.00%	22.00%	7,657	7,657	77%	77%
59	6,848	34,040	0.2012	22.00%	22.00%	7,489	7,489	91%	91%
60	8,547	34,935	0.2447	30.00%	30.00%	10,481	10,481	82%	82%
61	8,723	28,945	0.3014	30.00%	30.00%	8,683	8,683	100%	100%
62	8,363	26,154	0.3198	35.00%	35.00%	9,154	9,154	91%	91%
63	8,665	20,925	0.4141	35.00%	35.00%	7,324	7,324	118%	118%
64	4,207	14,782	0.2846	35.00%	35.00%	5,174	5,174	81%	81%
65	23,859	75,682	0.3153	35.00%	35.00%	26,489	26,489	90%	90%
66	18,821	54,760	0.3437	35.00%	35.00%	19,166	19,166	98%	98%
67	13,436	37,591	0.3574	35.00%	35.00%	13,157	13,157	102%	102%
68	7,951	25,643	0.3101	35.00%	35.00%	8,975	8,975	89%	89%
69	4,783	17,423	0.2745	35.00%	35.00%	6,098	6,098	78%	78%
70	4,676	12,941	0.3613	35.00%	35.00%	4,529	4,529	103%	103%
71	1,889	7,892	0.2394	35.00%	35.00%	2,762	2,762	68%	68%
72	1,383	5,873	0.2355	35.00%	35.00%	2,056	2,056	67%	67%
73	1,419	4,636	0.3061	35.00%	35.00%	1,622	1,622	87%	87%
74	700	3,247	0.2156	35.00%	35.00%	1,136	1,136	62%	62%
Subtotal	$ 154,088	$ 600,807				$ 173,095	$ 173,095	89%	89%
75 or more	1,552	6,750	0.2299	100.00%	100.00%	6,750	6,750	23%	23%
Totals	$ 155,640	$ 607,557				$ 179,845	$ 179,845	87%	87%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

REDUCED RETIREMENT EXPERIENCE
FEMALE EDUCATORS
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Under 50	$ 360	$ 88,462	0.0041	2.00%	2.00%	$ 1,769	$ 1,769	20%	20%
50	388	53,030	0.0073	2.00%	2.00%	1,061	1,061	37%	37%
51	216	61,918	0.0035	2.00%	2.00%	1,238	1,238	17%	17%
52	1,055	62,237	0.0170	2.00%	2.00%	1,245	1,245	85%	85%
53	977	52,251	0.0187	2.00%	2.00%	1,045	1,045	93%	93%
54	789	46,363	0.0170	2.00%	2.00%	927	927	85%	85%
55	803	38,160	0.0210	3.00%	3.00%	1,145	1,145	70%	70%
56	1,188	32,196	0.0369	3.00%	3.00%	966	966	123%	123%
57	852	25,307	0.0337	6.00%	6.00%	1,518	1,518	56%	56%
58	391	25,436	0.0154	6.00%	6.00%	1,526	1,526	26%	26%
59	882	26,527	0.0332	6.00%	6.00%	1,592	1,592	55%	55%
60	5,892	58,685	0.1004	11.00%	11.00%	6,455	6,455	91%	91%
61	7,598	56,814	0.1337	11.00%	11.00%	6,250	6,250	122%	122%
62	11,922	96,660	0.1233	16.00%	16.00%	15,466	15,466	77%	77%
63	11,491	81,218	0.1415	16.00%	16.00%	12,995	12,995	88%	88%
64	10,079	71,302	0.1414	16.00%	16.00%	11,408	11,408	88%	88%
Totals	$ 54,883	$ 876,566				$ 66,606	$ 66,606	82%	82%

*$ in thousands

*Column may not add due to rounding.

Summary of Data and Experience

RETIREMENT EXPERIENCE SERVICE < 20
PUBLIC SAFETY EMPLOYEES - MALES AND FEMALES COMBINED
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
60	$ 392	$ 5,351	0.0733	14.00%	10.00%	$ 749	$ 535	52%	73%
61	128	3,841	0.0333	14.00%	10.00%	538	384	24%	33%
62	208	3,326	0.0625	14.00%	10.00%	466	333	45%	62%
63	173	1,548	0.1118	14.00%	10.00%	217	155	80%	112%
64	132	1,457	0.0906	14.00%	10.00%	204	146	65%	90%
65	281	1,680	0.1673	28.00%	20.00%	470	336	60%	84%
66	149	727	0.2050	28.00%	20.00%	203	145	73%	103%
67	0	331	0.0000	28.00%	20.00%	93	66	0%	0%
68	267	334	0.7994	28.00%	20.00%	93	67	287%	399%
69	0	76	0.0000	28.00%	20.00%	21	15	0%	0%
Subtotal	$ 1,730	$ 18,671				$ 3,054	$ 2,182	57%	79%
70 or more	0	0	N/A	100.00%	100.00%	0	0	0%	0%
Totals	$ 1,730	$ 18,671				$ 3,054	$ 2,182	57%	79%

*$ in thousands

*Column may not add due to rounding.

Summary of Data and Experience

RETIREMENT EXPERIENCE 20 ≤ SERVICE < 30
PUBLIC SAFETY EMPLOYEES - MALES AND FEMALES COMBINED
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40	$ 241	$ 1,618	0.1489	18.00%	15.00%	$ 291	$ 243	83%	99%
41	580	4,823	0.1203	18.00%	15.00%	868	724	67%	80%
42	1,970	13,604	0.1448	18.00%	15.00%	2,449	2,041	80%	97%
43	3,283	23,508	0.1397	18.00%	15.00%	4,231	3,526	78%	93%
44	4,870	33,145	0.1469	18.00%	15.00%	5,966	4,972	82%	98%
45	4,982	41,675	0.1195	18.00%	15.00%	7,501	6,251	66%	80%
46	7,759	47,672	0.1628	18.00%	15.00%	8,581	7,151	90%	109%
47	7,223	51,758	0.1396	18.00%	15.00%	9,317	7,764	78%	93%
48	6,599	53,032	0.1244	18.00%	15.00%	9,546	7,955	69%	83%
49	4,290	50,207	0.0854	15.00%	15.00%	7,531	7,531	57%	57%
50	6,005	51,436	0.1167	15.00%	15.00%	7,715	7,715	78%	78%
51	4,971	46,990	0.1058	15.00%	15.00%	7,048	7,048	71%	71%
52	4,258	40,337	0.1056	15.00%	15.00%	6,051	6,051	70%	70%
53	4,678	34,346	0.1362	15.00%	15.00%	5,152	5,152	91%	91%
54	3,961	27,360	0.1448	15.00%	15.00%	4,104	4,104	97%	97%
55	2,532	20,615	0.1228	15.00%	15.00%	3,092	3,092	82%	82%
56	1,742	16,519	0.1055	15.00%	15.00%	2,478	2,478	70%	70%
57	2,215	12,881	0.1720	15.00%	15.00%	1,932	1,932	115%	115%
58	1,982	11,880	0.1668	15.00%	15.00%	1,782	1,782	111%	111%
59	1,548	10,102	0.1532	15.00%	15.00%	1,515	1,515	102%	102%
60	1,654	8,242	0.2007	20.00%	20.00%	1,648	1,648	100%	100%
61	1,130	6,277	0.1800	20.00%	20.00%	1,255	1,255	90%	90%
62	932	4,953	0.1882	30.00%	30.00%	1,486	1,486	63%	63%
63	1,114	5,050	0.2206	30.00%	30.00%	1,515	1,515	74%	74%
64	643	3,188	0.2017	30.00%	30.00%	957	957	67%	67%
65	346	1,809	0.1913	30.00%	30.00%	543	543	64%	64%
66	414	1,494	0.2771	30.00%	30.00%	448	448	92%	92%
67	509	1,354	0.3759	30.00%	30.00%	406	406	125%	125%
68	449	695	0.6460	30.00%	30.00%	208	208	216%	216%
69	0	416	0.0000	30.00%	30.00%	125	125	0%	0%
Subtotal	$ 82,880	$ 626,986				$ 105,741	$ 97,618	78%	85%
70 or more	94	659	0.1426	100.00%	100.00%	659	659	14%	14%
Totals	$ 82,974	$ 627,645				$ 106,400	$ 98,277	78%	84%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

RETIREMENT EXPERIENCE SERVICE ≥ 30
PUBLIC SAFETY EMPLOYEES - MALES AND FEMALES COMBINED
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
45	$ -	$ -	N/A	18.00%	15.00%	$ -	$ -	0%	0%
46	0	0	N/A	18.00%	15.00%	0	0	0%	0%
47	0	0	N/A	18.00%	15.00%	0	0	0%	0%
48	0	72	0.0000	18.00%	15.00%	13	11	0%	0%
49	0	326	0.0000	15.00%	15.00%	49	49	0%	0%
50	106	706	0.1501	15.00%	15.00%	106	106	100%	100%
51	204	1,740	0.1172	15.00%	15.00%	261	261	78%	78%
52	631	6,089	0.1036	15.00%	15.00%	913	913	69%	69%
53	960	8,432	0.1139	18.00%	15.00%	1518	1265	63%	76%
54	1,684	11,047	0.1524	18.00%	15.00%	1988	1657	85%	102%
55	1,424	11,352	0.1254	18.00%	15.00%	2043	1703	70%	84%
56	1,408	11,198	0.1257	18.00%	15.00%	2016	1680	70%	84%
57	1,653	10,686	0.1547	18.00%	15.00%	1924	1603	86%	103%
58	1,991	9,634	0.2067	18.00%	15.00%	1734	1445	115%	138%
59	1,458	7,329	0.1989	18.00%	15.00%	1319	1099	111%	133%
60	1,608	6,931	0.2320	20.00%	20.00%	1386	1386	116%	116%
61	829	7,474	0.1109	20.00%	20.00%	1495	1495	55%	55%
62	1,749	6,962	0.2512	30.00%	30.00%	2089	2089	84%	84%
63	1,313	5,951	0.2206	30.00%	30.00%	1785	1785	74%	74%
64	1,102	4,288	0.2570	30.00%	30.00%	1286	1286	86%	86%
65	882	3,525	0.2502	30.00%	30.00%	1058	1058	83%	83%
66	750	2,484	0.3019	40.00%	30.00%	994	745	75%	101%
67	946	2,293	0.4126	50.00%	30.00%	1147	688	82%	138%
68	147	1,000	0.1470	50.00%	30.00%	500	300	29%	49%
69	98	867	0.1130	50.00%	30.00%	434	260	23%	38%
Subtotal	$ 20,943	$ 120,386				$ 26,058	$ 22,884	80%	92%
70 or more	444	1,342	0.3308	100.00%	100.00%	1,342	1,342	33%	33%
Totals	$ 21,387	$ 121,728				$ 27,400	$ 24,226	78%	88%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

RETIREMENT EXPERIENCE SERVICE < 30
FIREFIGHTERS - MALES AND FEMALES COMBINED
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
40	$ -	$ 1,083	0.0000	7.50%	7.50%	$ 81	$ 81	0%	0%
41	201	2,751	0.0731	7.50%	7.50%	206	206	98%	98%
42	361	4,152	0.0869	7.50%	7.50%	311	311	116%	116%
43	389	6,758	0.0576	7.50%	7.50%	507	507	77%	77%
44	679	9,303	0.0730	7.50%	7.50%	698	698	97%	97%
45	171	11,484	0.0149	7.50%	7.50%	861	861	20%	20%
46	998	16,327	0.0611	7.50%	7.50%	1,225	1,225	81%	81%
47	1,351	18,315	0.0738	7.50%	7.50%	1,374	1,374	98%	98%
48	882	19,060	0.0463	7.50%	7.50%	1,430	1,430	62%	62%
49	1,057	19,453	0.0543	7.50%	7.50%	1,459	1,459	72%	72%
50	1,012	18,429	0.0549	7.50%	7.50%	1,382	1,382	73%	73%
51	1,408	17,861	0.0788	7.50%	7.50%	1,340	1,340	105%	105%
52	729	17,187	0.0424	7.50%	7.50%	1,289	1,289	57%	57%
53	1,505	16,534	0.0910	7.50%	7.50%	1,240	1,240	121%	121%
54	1,571	13,999	0.1122	7.50%	7.50%	1,050	1,050	150%	150%
55	972	10,671	0.0911	7.50%	7.50%	800	800	122%	122%
56	372	9,047	0.0411	7.50%	7.50%	679	679	55%	55%
57	757	8,138	0.0930	15.00%	15.00%	1,221	1,221	62%	62%
58	1,187	7,128	0.1665	15.00%	15.00%	1,069	1,069	111%	111%
59	457	5,948	0.0768	15.00%	15.00%	892	892	51%	51%
60	572	5,711	0.1002	15.00%	15.00%	857	857	67%	67%
61	612	4,365	0.1402	15.00%	15.00%	655	655	93%	93%
62	470	2,981	0.1577	25.00%	25.00%	745	745	63%	63%
63	275	2,083	0.1320	25.00%	25.00%	521	521	53%	53%
64	612	2,149	0.2848	25.00%	25.00%	537	537	114%	114%
65	223	1,256	0.1775	50.00%	50.00%	628	628	36%	36%
66	284	1,214	0.2339	50.00%	50.00%	607	607	47%	47%
67	211	734	0.2875	50.00%	50.00%	367	367	57%	57%
68	91	321	0.2835	50.00%	50.00%	161	161	57%	57%
69	83	83	1.0000	50.00%	50.00%	42	42	198%	198%
Subtotal	$ 19,492	$ 254,525				$ 24,234	$ 24,234	80%	80%
70 or more	0	78	0.0000	100.00%	100.00%	78	78	0%	0%
Total	$ 19,492	$ 254,603				$ 24,312	$ 24,312	80%	80%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

RETIREMENT EXPERIENCE SERVICE ≥ 30
FIREFIGHTERS - MALES AND FEMALES COMBINED
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
45	$ -	$ -	N/A	12.00%	12.00%	$ -	$ -	0%	0%
46	0	0	N/A	12.00%	12.00%	0	0	0%	0%
47	0	0	N/A	12.00%	12.00%	0	0	0%	0%
48	0	0	N/A	12.00%	12.00%	0	0	0%	0%
49	0	95	0.0000	12.00%	12.00%	11.0	11.0	0%	0%
50	0	357	0.0000	12.00%	12.00%	43.0	43.0	0%	0%
51	140	730	0.1918	12.00%	12.00%	88.0	88.0	159%	159%
52	244	1,426	0.1711	12.00%	12.00%	171.0	171.0	143%	143%
53	209	1,110	0.1883	12.00%	12.00%	133.0	133.0	157%	157%
54	315	1,689	0.1865	12.00%	12.00%	203.0	203.0	155%	155%
55	299	2,429	0.1231	12.00%	12.00%	292.0	292.0	102%	102%
56	311	2,449	0.1270	12.00%	12.00%	294.0	294.0	106%	106%
57	271	3,024	0.0896	12.00%	12.00%	363.0	363.0	75%	75%
58	320	3,028	0.1057	15.00%	15.00%	454.0	454.0	70%	70%
59	159	2,361	0.0673	15.00%	15.00%	354.0	354.0	45%	45%
60	664	3,989	0.1665	15.00%	15.00%	598.0	598.0	111%	111%
61	1,032	2,973	0.3471	15.00%	15.00%	446.0	446.0	231%	231%
62	489	2,429	0.2013	20.00%	20.00%	486.0	486.0	101%	101%
63	525	2,294	0.2289	20.00%	20.00%	459.0	459.0	114%	114%
64	203	2,164	0.0938	25.00%	25.00%	541.0	541.0	38%	38%
65	363	1,448	0.2507	40.00%	40.00%	579.0	579.0	63%	63%
66	291	1,132	0.2571	40.00%	40.00%	453.0	453.0	64%	64%
67	311	598	0.5201	50.00%	50.00%	299.0	299.0	104%	104%
68	106	324	0.3272	50.00%	50.00%	162.0	162.0	65%	65%
69	124	216	0.5741	50.00%	50.00%	108.0	108.0	115%	115%
Subtotal	$ 6,376	$ 36,265				$ 6,537	$ 6,537	98%	98%
70 or more	198	626	0.3163	100.00%	100.00%	626	626	32%	32%
Total	$ 6,574	$ 36,891				$ 7,163	$ 7,163	92%	92%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

RETIREMENT EXPERIENCE SERVICE < 25
JUDGES - MALES AND FEMALES COMBINED
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
62	$ 178	$ 2,054	0.0867	15.00%	15.00%	$ 308	$ 308	58%	58%
63	354	2,228	0.1589	15.00%	15.00%	334	334	106%	106%
64	198	2,074	0.0955	15.00%	15.00%	311	311	64%	64%
65	0	1,849	0.0000	15.00%	15.00%	277	277	0%	0%
66	200	1,909	0.1048	15.00%	15.00%	286	286	70%	70%
67	623	1,917	0.3250	15.00%	15.00%	288	288	216%	216%
68	0	1,297	0.0000	15.00%	15.00%	195	195	0%	0%
69	928	2,019	0.4596	15.00%	15.00%	303	303	306%	306%
Subtotal	$ 2,481	$ 15,347				$ 2,302	$ 2,302	108%	108%
70 or more	1,119	2,435	0.4595	100.00%	100.00%	2,435	2,435	46%	46%
Total	$ 3,600	$ 17,782				$ 4,737	$ 4,737	76%	76%

*$ in thousands

*Column may not add due to rounding.

Summary of Data and Experience

RETIREMENT EXPERIENCE 25 ≤ SERVICE < 30
JUDGES - MALES AND FEMALES COMBINED
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
45	$ -	$ -	N/A	10.00%	10.00%	$ -	$ -	0%	0%
46	0	0	N/A	10.00%	10.00%	0	0	0%	0%
47	0	0	N/A	10.00%	10.00%	0	0	0%	0%
48	0	0	N/A	10.00%	10.00%	0	0	0%	0%
49	0	176	0.0000	10.00%	10.00%	18	18	0%	0%
50	0	184	0.0000	10.00%	10.00%	18	18	0%	0%
51	0	198	0.0000	10.00%	10.00%	20	20	0%	0%
52	0	386	0.0000	10.00%	10.00%	39	39	0%	0%
53	0	177	0.0000	10.00%	10.00%	18	18	0%	0%
54	0	556	0.0000	10.00%	10.00%	56	56	0%	0%
55	0	1,398	0.0000	10.00%	10.00%	140	140	0%	0%
56	0	351	0.0000	10.00%	10.00%	35	35	0%	0%
57	0	758	0.0000	10.00%	10.00%	76	76	0%	0%
58	0	1,152	0.0000	10.00%	10.00%	115	115	0%	0%
59	0	814	0.0000	10.00%	10.00%	81	81	0%	0%
60	0	185	0.0000	10.00%	10.00%	19	19	0%	0%
61	0	173	0.0000	10.00%	10.00%	17	17	0%	0%
62	176	176	1.0000	10.00%	10.00%	18	18	978%	978%
63	0	412	0.0000	10.00%	10.00%	41	41	0%	0%
64	0	213	0.0000	20.00%	20.00%	43	43	0%	0%
65	0	196	0.0000	20.00%	20.00%	39	39	0%	0%
66	0	377	0.0000	25.00%	25.00%	94	94	0%	0%
67	0	594	0.0000	25.00%	25.00%	149	149	0%	0%
68	0	809	0.0000	25.00%	25.00%	202	202	0%	0%
69	200	384	0.5208	25.00%	25.00%	96	96	208%	208%
Subtotal	$ 376	$ 9,669				$ 1,334	$ 1,334	28%	28%
70 or more	0	411	0.0000	100.00%	100.00%	411	411	0%	0%
Total	$ 376	$ 10,080				$ 1,745	$ 1,745	22%	22%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

RETIREMENT EXPERIENCE SERVICE ≥ 30
JUDGES - MALES AND FEMALES COMBINED
WEIGHTED BY SALARY

				Assumed Rate		Expected Retirements		Actual/Expected	
Age	Actual Retirements	Total Exposures	Actual Rate	Current	Proposed	Current	Proposed	Current (2) / (7)	Proposed (2) / (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
45	$ -	$ -	N/A	10.00%	10.00%	$ -	$ -	0%	0%
46	0	0	N/A	10.00%	10.00%	0	0	0%	0%
47	0	0	N/A	10.00%	10.00%	0	0	0%	0%
48	0	0	N/A	10.00%	10.00%	0	0	0%	0%
49	0	0	N/A	10.00%	10.00%	0	0	0%	0%
50	0	0	N/A	10.00%	10.00%	0	0	0%	0%
51	0	0	N/A	10.00%	10.00%	0	0	0%	0%
52	0	0	N/A	10.00%	10.00%	0	0	0%	0%
53	0	0	N/A	10.00%	10.00%	0	0	0%	0%
54	0	0	N/A	10.00%	10.00%	0	0	0%	0%
55	0	0	N/A	10.00%	10.00%	0	0	0%	0%
56	0	574	0.0000	10.00%	10.00%	57.0	57.0	0%	0%
57	0	557	0.0000	10.00%	10.00%	56.0	56.0	0%	0%
58	371	934	0.3972	10.00%	10.00%	93.0	93.0	399%	399%
59	180	941	0.1913	10.00%	10.00%	94.0	94.0	191%	191%
60	0	574	0.0000	10.00%	10.00%	57.0	57.0	0%	0%
61	401	584	0.6866	10.00%	10.00%	58.0	58.0	691%	691%
62	0	371	0.0000	10.00%	10.00%	37.0	37.0	0%	0%
63	176	176	1.0000	10.00%	10.00%	18.0	18.0	978%	978%
64	171	171	1.0000	20.00%	20.00%	34.0	34.0	503%	503%
65	0	0	N/A	20.00%	20.00%	0	0	0%	0%
66	0	0	N/A	25.00%	25.00%	0	0	0%	0%
67	172	345	0.4986	25.00%	25.00%	86.0	86.0	200%	200%
68	0	360	0.0000	25.00%	25.00%	90.0	90.0	0%	0%
69	0	369	0.0000	25.00%	25.00%	92.0	92.0	0%	0%
Subtotal	$ 1,471	$ 5,956				$ 772	$ 772	191%	191%
70 or more	552	1,375	0.4015	100.00%	100.00%	1,375	1,375	40%	40%
Total	$ 2,023	$ 7,331				$ 2,147	$ 2,147	94%	94%

*$ in thousands
*Column may not add due to rounding.

Summary of Data and Experience

SALARY INCREASE EXPERIENCE
STATE EMPLOYEES

Service Index	Actual Increase	Current Assumption	Proposed Assumption
0	5.97%	8.50%	8.75%
1	7.76%	7.75%	8.00%
2	7.50%	7.00%	7.25%
3	6.75%	6.25%	6.50%
4	6.42%	6.00%	6.25%
5	6.13%	5.50%	5.75%
6	5.75%	5.50%	5.75%
7	5.60%	5.25%	5.55%
8	5.40%	5.00%	5.25%
9	5.23%	5.00%	5.25%
10	5.25%	4.75%	5.00%
11	4.99%	4.75%	5.00%
12	4.83%	4.75%	5.00%
13	4.87%	4.50%	4.75%
14	4.62%	4.25%	4.50%
15	4.54%	4.25%	4.50%
16	4.52%	4.25%	4.50%
17	4.28%	4.25%	4.50%
18	4.42%	4.00%	4.25%
19	4.35%	4.00%	4.25%
20	4.19%	4.00%	4.25%
21	4.25%	3.75%	4.00%
22	4.13%	3.75%	4.00%
23	4.05%	3.75%	4.00%
24	4.05%	3.50%	3.80%
25 and up	3.66%	3.50%	3.60%

Summary of Data and Experience

SALARY INCREASE EXPERIENCE
LOCAL GOVERNMENT

Service Index	Actual Increase	Current Assumption	Proposed Assumption
0	6.80%	8.50%	8.60%
1	7.70%	7.25%	7.35%
2	7.13%	7.00%	7.10%
3	6.80%	6.50%	6.60%
4	6.43%	6.25%	6.35%
5	6.22%	6.00%	6.10%
6	5.84%	5.75%	5.85%
7	5.63%	5.50%	5.70%
8	5.40%	5.25%	5.45%
9	5.42%	5.00%	5.30%
10	5.03%	4.75%	5.05%
11	5.02%	4.75%	4.90%
12	4.78%	4.75%	4.85%
13	4.69%	4.50%	4.70%
14	4.65%	4.50%	4.60%
15	4.53%	4.50%	4.60%
16	4.57%	4.25%	4.50%
17	4.28%	4.25%	4.40%
18	4.23%	4.25%	4.30%
19	4.26%	4.00%	4.20%
20	4.02%	4.00%	4.15%
21	4.04%	4.00%	4.10%
22	4.14%	3.75%	4.00%
23	4.01%	3.50%	3.90%
24	3.89%	3.50%	3.80%
25 and up	3.72%	3.50%	3.60%

Summary of Data and Experience

SALARY INCREASE EXPERIENCE
EDUCATORS

Service Index	Actual Increase	Current Assumption	Proposed Assumption
0	9.58%	9.50%	9.60%
1	8.57%	8.75%	8.85%
2	7.64%	7.75%	7.85%
3	7.08%	7.50%	7.60%
4	7.05%	7.25%	7.35%
5	7.01%	7.25%	7.35%
6	6.87%	7.00%	7.10%
7	6.70%	7.00%	7.10%
8	6.65%	6.75%	6.85%
9	6.40%	6.50%	6.60%
10	6.01%	6.00%	6.10%
11	5.78%	5.75%	5.85%
12	5.35%	5.50%	5.60%
13	5.15%	5.00%	5.10%
14	4.83%	4.75%	4.85%
15	4.58%	4.50%	4.60%
16	4.39%	4.50%	4.60%
17	4.40%	4.50%	4.60%
18	4.26%	4.25%	4.35%
19	4.14%	4.25%	4.35%
20	4.09%	4.25%	4.35%
21	4.01%	4.00%	4.10%
22	3.95%	4.00%	4.10%
23	3.94%	4.00%	4.10%
24	3.94%	3.75%	3.85%
25 and up	3.47%	3.50%	3.60%

Summary of Data and Experience

SALARY INCREASE EXPERIENCE
PUBLIC SAFETY

Service Index	Actual Increase	Current Assumption	Proposed Assumption
0	6.27%	8.00%	8.10%
1	7.35%	7.75%	7.85%
2	7.35%	7.75%	7.85%
3	7.37%	7.50%	7.60%
4	7.47%	7.50%	7.60%
5	7.62%	7.25%	7.35%
6	7.41%	7.00%	7.10%
7	7.45%	6.75%	6.85%
8	6.72%	6.50%	6.60%
9	6.71%	6.25%	6.35%
10	6.56%	6.00%	6.15%
11	6.26%	5.75%	5.90%
12	6.06%	5.75%	5.90%
13	5.64%	5.50%	5.65%
14	5.64%	5.25%	5.40%
15	5.56%	5.25%	5.40%
16	5.47%	5.00%	5.15%
17	5.15%	5.00%	5.15%
18	5.05%	4.75%	4.90%
19	5.11%	4.75%	4.90%
20	5.01%	4.75%	4.90%
21	4.81%	4.50%	4.65%
22	4.83%	4.25%	4.40%
23	4.68%	4.25%	4.40%
24	4.56%	4.00%	4.15%
25 and up	3.59%	3.75%	3.85%

Summary of Data and Experience

SALARY INCREASE EXPERIENCE
FIREFIGHTERS

Service Index	Actual Increase	Current Assumption	Proposed Assumption
0	6.80%	8.25%	8.35%
1	8.12%	8.00%	8.10%
2	8.09%	7.75%	7.85%
3	7.99%	7.75%	7.85%
4	7.49%	7.50%	7.60%
5	8.24%	7.50%	7.60%
6	8.01%	7.25%	7.35%
7	7.82%	7.00%	7.10%
8	7.22%	6.75%	6.85%
9	6.73%	6.50%	6.60%
10	6.47%	6.00%	6.10%
11	6.29%	5.50%	5.60%
12	5.74%	5.25%	5.35%
13	5.17%	5.00%	5.10%
14	5.05%	4.75%	4.85%
15	5.13%	4.50%	4.60%
16	4.71%	4.50%	4.60%
17	4.53%	4.25%	4.35%
18	4.17%	4.00%	4.10%
19	4.46%	4.00%	4.10%
20	4.33%	4.00%	4.10%
21	4.01%	3.75%	3.85%
22	3.91%	3.75%	3.85%
23	3.99%	3.75%	3.85%
24	3.92%	3.50%	3.60%
25 and up	3.72%	3.50%	3.60%

APPENDIX A

SUMMARY OF PROPOSED ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Proposed Actuarial Assumptions and Methods

1. *Investment return rate*:

   6.95% per annum, compounded annually, composed of a 2.60% inflation rate and a 4.35% net real rate of return.

2. *Active member mortality rates*:

   The mortality assumption for active members is the PUB-2016 Employees Mortality Table for public employees, teachers, and public safety members, respectively. Rates at selected ages are shown:

	Active Male Members		
Age	Public Educators	All Public Employees Except Educators	Public Safety and Firefighters
20	0.00023	0.00028	0.00026
25	0.00024	0.00042	0.00034
30	0.00028	0.00048	0.00040
35	0.00035	0.00052	0.00047
40	0.00047	0.00069	0.00059
45	0.00070	0.00099	0.00079
50	0.00109	0.00147	0.00116
55	0.00174	0.00226	0.00180
60	0.00271	0.00341	0.00291

	Active Female Members		
Age	Public Educators	All Public Employees Except Educators	Public Safety and Firefighters
20	0.00008	0.00010	0.00011
25	0.00008	0.00013	0.00016
30	0.00013	0.00019	0.00022
35	0.00020	0.00028	0.00031
40	0.00032	0.00041	0.00045
45	0.00048	0.00061	0.00067
50	0.00073	0.00092	0.00100
55	0.00107	0.00137	0.00150
60	0.00159	0.00207	0.00226

3. *Disability rates*:

Disability 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 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	0.000080	0.000080	0.000040	0.000150	0.000270
25	0.000120	0.000120	0.000060	0.000225	0.000405
30	0.000240	0.000240	0.000120	0.000450	0.000810
35	0.000360	0.000360	0.000180	0.000675	0.001215
40	0.000480	0.000480	0.000240	0.000900	0.001620
45	0.000800	0.000800	0.000400	0.001500	0.002700
50	0.001040	0.001040	0.000520	0.001950	0.003510
55	0.001640	0.001640	0.000820	0.003075	0.005535
60	0.002240	0.002240	0.001120	0.004200	0.007560

	Active Female Members				
Age	Local Government	Public Employees	Public Educators	Public Safety	Firefighters
20	0.000080	0.000100	0.000050	0.000150	0.000270
25	0.000120	0.000150	0.000075	0.000225	0.000405
30	0.000240	0.000300	0.000150	0.000450	0.000810
35	0.000360	0.000450	0.000225	0.000675	0.001215
40	0.000480	0.000600	0.000300	0.000900	0.001620
45	0.000800	0.001000	0.000500	0.001500	0.002700
50	0.001040	0.001300	0.000650	0.001950	0.003510
55	0.001640	0.002050	0.001025	0.003075	0.005535
60	0.002240	0.002800	0.001400	0.004200	0.007560

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	0.2700	0.1600	0.1500	0.0850
1	0.1300	0.2000	0.1200	0.0800	0.0650
2	0.1000	0.1200	0.0850	0.0700	0.0500
3	0.0900	0.1000	0.0700	0.0600	0.0425
4	0.0800	0.0900	0.0650	0.0550	0.0375
5	0.0700	0.0800	0.0600	0.0500	0.0300
6	0.0650	0.0700	0.0550	0.0450	0.0250
7	0.0550	0.0600	0.0450	0.0400	0.0225
8	0.0500	0.0500	0.0400	0.0350	0.0200
9	0.0450	0.0500	0.0350	0.0300	0.0200
10	0.0400	0.0450	0.0300	0.0250	0.0200
11	0.0350	0.0450	0.0275	0.0250	0.0175
12	0.0325	0.0400	0.0250	0.0250	0.0150
13	0.0300	0.0375	0.0200	0.0200	0.0150
14	0.0300	0.0350	0.0175	0.0200	0.0125
15	0.0275	0.0300	0.0175	0.0200	0.0125
16	0.0275	0.0275	0.0150	0.0150	0.0125
17	0.0250	0.0250	0.0150	0.0150	0.0100
18	0.0250	0.0200	0.0150	0.0150	0.0100
19	0.0250	0.0200	0.0150	0.0150	0.0100
20	0.0200	0.0200	0.0150	0.0100	0.0100
21	0.0200	0.0200	0.0150	0.0100	0.0100
22	0.0175	0.0200	0.0150	0.0100	0.0100
23	0.0150	0.0150	0.0150	0.0100	0.0100
24	0.0125	0.0150	0.0150	0.0100	0.0100
25+	0.0100	0.0100	0.0100	N/A	N/A

Summary of Proposed Actuarial Assumptions and Methods

4. *Termination rates (continued)*:

	Active Female Members				
	Years of Service				
Service	Local Government	Public Employees	Public Educators	Public Safety	Firefighters
0	0.2600	0.2800	0.1600	0.1500	0.0850
1	0.1800	0.2100	0.1300	0.0800	0.0650
2	0.1500	0.1500	0.1000	0.0700	0.0500
3	0.1300	0.1300	0.0900	0.0600	0.0425
4	0.1150	0.1100	0.0800	0.0550	0.0375
5	0.0950	0.1000	0.0700	0.0500	0.0300
6	0.0900	0.0850	0.0600	0.0450	0.0250
7	0.0800	0.0725	0.0525	0.0400	0.0225
8	0.0700	0.0625	0.0450	0.0350	0.0200
9	0.0600	0.0575	0.0400	0.0300	0.0200
10	0.0550	0.0525	0.0375	0.0250	0.0200
11	0.0500	0.0450	0.0325	0.0250	0.0175
12	0.0475	0.0425	0.0300	0.0250	0.0150
13	0.0450	0.0400	0.0250	0.0200	0.0150
14	0.0400	0.0375	0.0200	0.0200	0.0125
15	0.0400	0.0350	0.0200	0.0200	0.0125
16	0.0375	0.0300	0.0175	0.0150	0.0125
17	0.0350	0.0275	0.0175	0.0150	0.0100
18	0.0300	0.0275	0.0175	0.0150	0.0100
19	0.0300	0.0275	0.0150	0.0150	0.0100
20	0.0250	0.0275	0.0150	0.0100	0.0100
21	0.0250	0.0250	0.0150	0.0100	0.0100
22	0.0225	0.0225	0.0150	0.0100	0.0100
23	0.0200	0.0200	0.0150	0.0100	0.0100
24	0.0200	0.0200	0.0150	0.0100	0.0100
25+	0.0100	0.0100	0.0100	N/A	N/A

5. *Refund rates*:

The refund rates for Tier 1 members are the percentage of vested members electing to receive a refund of contributions upon termination of employment. This rate is only applied to members of the Tier 1 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.

Males				
Service	**Local Government**	**Public Employees**	**Public Educators**	**Public Safety & Firefighters[1]**
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	0%	0%	0%	0%

[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	0%	0%	0%

Members in the Tier 2 Hybrid Systems (public employee and public safety and firefighter system) are assumed to elect a refund at their termination of employment if the value of their employee contribution balance (with interest) is greater than the value of their pension benefit.

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				
	Male		Female	
Age	Reduced	Unreduced	Reduced	Unreduced
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	0.120	0.030	0.200
54	0.025	0.120	0.040	0.150
55	0.030	0.120	0.040	0.150
56	0.030	0.120	0.040	0.150
57	0.030	0.120	0.040	0.150
58	0.040	0.120	0.060	0.150
59	0.040	0.150	0.060	0.200
60	0.040	0.150	0.100	0.200
61	0.040	0.150	0.100	0.200
62	0.100	0.250	0.100	0.300
63	0.100	0.250	0.100	0.300
64	0.100	0.250	0.100	0.300
65	N/A	0.250	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	0.300
69	N/A	0.300	N/A	0.300
70	N/A	0.300	N/A	0.300
71	N/A	0.300	N/A	0.300
72	N/A	0.300	N/A	0.300
73	N/A	0.300	N/A	0.250
74	N/A	0.300	N/A	0.250
75+	N/A	1.000	N/A	1.000

6. *Retirement rates (continued)*:

Tier II - Local Government				
	Male		Female	
Age	Reduced	Unreduced[1]	Reduced	Unreduced[1]
50	N/A	0.150	N/A	0.120
51	N/A	0.150	N/A	0.120
52	N/A	0.150	N/A	0.120
53	N/A	0.150	N/A	0.120
54	N/A	0.150	N/A	0.120
55	N/A	0.150	N/A	0.150
56	N/A	0.150	N/A	0.150
57	N/A	0.150	N/A	0.150
58	N/A	0.150	N/A	0.150
59	N/A	0.150	N/A	0.200
60	0.020	0.200	0.020	0.200
61	0.040	0.200	0.040	0.200
62	0.060	0.230	0.060	0.280
63	0.080	0.230	0.080	0.280
64	0.100	0.230	0.100	0.280
65	N/A	0.230	N/A	0.280
66	N/A	0.230	N/A	0.280
67	N/A	0.220	N/A	0.280
68	N/A	0.220	N/A	0.280
69	N/A	0.220	N/A	0.280
70	N/A	0.220	N/A	0.300
71	N/A	0.220	N/A	0.300
72	N/A	0.220	N/A	0.300
73	N/A	0.220	N/A	0.250
74	N/A	0.220	N/A	0.250
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				
	Male		Female	
Age	Reduced	Unreduced	Reduced	Unreduced
50	0.020	0.150	0.020	0.150
51	0.020	0.150	0.020	0.150
52	0.020	0.150	0.020	0.150
53	0.020	0.150	0.020	0.150
54	0.020	0.150	0.020	0.150
55	0.025	0.160	0.040	0.150
56	0.025	0.160	0.040	0.150
57	0.025	0.160	0.040	0.150
58	0.025	0.160	0.040	0.150
59	0.040	0.160	0.040	0.150
60	0.050	0.200	0.090	0.220
61	0.050	0.200	0.090	0.220
62	0.110	0.300	0.110	0.300
63	0.110	0.300	0.110	0.300
64	0.110	0.300	0.110	0.300
65	N/A	0.220	N/A	0.280
66	N/A	0.220	N/A	0.280
67	N/A	0.220	N/A	0.280
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				
	Male		Female	
Age	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	0.250
61	0.040	0.200	0.040	0.250
62	0.060	0.300	0.060	0.330
63	0.080	0.300	0.080	0.330
64	0.100	0.300	0.100	0.330
65	N/A	0.220	N/A	0.280
66	N/A	0.220	N/A	0.280
67	N/A	0.220	N/A	0.280
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				
	Male		Female	
Age	Reduced	Unreduced	Reduced	Unreduced
50	0.020	0.250	0.020	0.250
51	0.020	0.250	0.020	0.250
52	0.020	0.250	0.020	0.250
53	0.020	0.200	0.020	0.250
54	0.020	0.180	0.020	0.180
55	0.020	0.180	0.030	0.180
56	0.025	0.180	0.030	0.180
57	0.030	0.180	0.060	0.180
58	0.030	0.220	0.060	0.220
59	0.030	0.220	0.060	0.220
60	0.080	0.300	0.110	0.300
61	0.080	0.300	0.110	0.300
62	0.130	0.300	0.160	0.350
63	0.130	0.300	0.160	0.350
64	0.130	0.300	0.160	0.350
65	N/A	0.300	N/A	0.350
66	N/A	0.300	N/A	0.350
67	N/A	0.330	N/A	0.350
68	N/A	0.330	N/A	0.350
69	N/A	0.330	N/A	0.350
70	N/A	0.330	N/A	0.350
71	N/A	0.330	N/A	0.350
72	N/A	0.330	N/A	0.350
73	N/A	0.330	N/A	0.350
74	N/A	0.330	N/A	0.350
75+	N/A	1.000	N/A	1.000

6. *Retirement rates (continued)*:

Tier II - Public Educators				
	Male		Female	
Age	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	0.150	N/A	0.140
55	N/A	0.150	N/A	0.140
56	N/A	0.150	N/A	0.180
57	N/A	0.150	N/A	0.180
58	N/A	0.150	N/A	0.180
59	N/A	0.150	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	0.330	0.060	0.350
63	0.080	0.330	0.080	0.350
64	0.100	0.330	0.100	0.350
65	N/A	0.330	N/A	0.350
66	N/A	0.330	N/A	0.350
67	N/A	0.300	N/A	0.350
68	N/A	0.300	N/A	0.280
69	N/A	0.250	N/A	0.280
70	N/A	0.200	N/A	0.280
71	N/A	0.200	N/A	0.280
72	N/A	0.200	N/A	0.280
73	N/A	0.200	N/A	0.280
74	N/A	0.200	N/A	0.280
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)	
	Years of Service			Years of Service	
Age	0 – 19	20 – 29	30+	0 – 29	30+
40-44	0.100	0.150	0.150	0.075	0.120
45	0.100	0.150	0.150	0.075	0.120
46	0.100	0.150	0.150	0.075	0.120
47	0.100	0.150	0.150	0.075	0.120
48	0.100	0.150	0.150	0.075	0.120
49	0.100	0.150	0.150	0.075	0.120
50	0.100	0.150	0.150	0.075	0.120
51	0.100	0.150	0.150	0.075	0.120
52	0.100	0.150	0.150	0.075	0.120
53	0.100	0.150	0.150	0.075	0.120
54	0.100	0.150	0.150	0.075	0.120
55	0.100	0.150	0.150	0.075	0.120
56	0.100	0.150	0.150	0.075	0.120
57	0.100	0.150	0.150	0.150	0.120
58	0.100	0.150	0.150	0.150	0.150
59	0.100	0.150	0.150	0.150	0.150
60	0.100	0.200	0.200	0.150	0.150
61	0.100	0.200	0.200	0.150	0.150
62	0.100	0.300	0.300	0.250	0.200
63	0.100	0.300	0.300	0.250	0.200
64	0.100	0.300	0.300	0.250	0.250
65	0.200	0.300	0.300	0.500	0.400
66	0.200	0.300	0.300	0.500	0.400
67	0.200	0.300	0.300	0.500	0.500
68	0.200	0.300	0.300	0.500	0.500
69	0.200	0.300	0.300	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)		
	Years of Service			Years of Service		
Age	0 – 25	25 – 29[1]	30+[1]	0 – 25	25 - 29[1]	30+[1]
40-44	N/A	0.180	N/A	N/A	0.075	N/A
45	N/A	0.180	0.180	N/A	0.075	0.120
46	N/A	0.180	0.180	N/A	0.075	0.120
47	N/A	0.180	0.180	N/A	0.075	0.120
48	N/A	0.180	0.180	N/A	0.075	0.120
49	N/A	0.150	0.150	N/A	0.075	0.120
50	N/A	0.150	0.150	N/A	0.075	0.120
51	N/A	0.150	0.150	N/A	0.075	0.120
52	N/A	0.150	0.150	N/A	0.075	0.120
53	N/A	0.150	0.180	N/A	0.075	0.120
54	N/A	0.150	0.180	N/A	0.075	0.120
55	N/A	0.150	0.180	N/A	0.075	0.120
56	N/A	0.150	0.180	N/A	0.075	0.120
57	N/A	0.150	0.180	N/A	0.150	0.120
58	N/A	0.150	0.180	N/A	0.150	0.150
59	N/A	0.150	0.180	N/A	0.150	0.150
60	0.050	0.200	0.200	0.050	0.150	0.150
61	0.050	0.200	0.200	0.050	0.150	0.150
62	0.050	0.300	0.300	0.050	0.250	0.200
63	0.100	0.300	0.300	0.100	0.250	0.200
64	0.100	0.300	0.300	0.100	0.250	0.250
65	0.300	0.300	0.300	0.500	0.500	0.400
66	0.300	0.300	0.400	0.500	0.500	0.400
67	0.300	0.300	0.500	0.500	0.500	0.500
68	0.300	0.300	0.500	0.500	0.500	0.500
69	0.300	0.300	0.500	0.500	0.500	0.500
70+	1.000	1.000	1.000	1.000	1.000	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 10%.

6. *Retirement rates (continued)*:

Judges - Males and Females			
	Years of Service		
Age	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	0.150	0.100	0.100
63	0.150	0.100	0.100
64	0.150	0.200	0.200
65	0.150	0.200	0.200
66	0.150	0.250	0.250
67	0.150	0.250	0.250
68	0.150	0.250	0.250
69	0.150	0.250	0.250
70	1.000	1.000	1.000

Summary of Proposed Actuarial Assumptions and Methods

7. *Salary increase rates*:

Active Male and Female Members - Local Government		
Years of Service	**Annual Promotional/Longevity Rates of Increase**	**Total Annual Rate of Increase Including 3.60% Wage Inflation**
0	5.00%	8.60%
1	3.75	7.35
2	3.50	7.10
3	3.00	6.60
4	2.75	6.35
5	2.50	6.10
6	2.25	5.85
7	2.10	5.70
8	1.85	5.45
9	1.70	5.30
10	1.45	5.05
11	1.30	4.90
12	1.25	4.85
13	1.10	4.70
14	1.00	4.60
15	1.00	4.60
16	0.90	4.50
17	0.80	4.40
18	0.70	4.30
19	0.60	4.20
20	0.55	4.15
21	0.50	4.10
22	0.40	4.00
23	0.30	3.90
24	0.20	3.80
25 or more	0.00	3.60

Summary of Proposed Actuarial Assumptions and Methods

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 3.60% Wage Inflation**
0	5.15%	8.75%
1	4.40	8.00
2	3.65	7.25
3	2.90	6.50
4	2.65	6.25
5	2.15	5.75
6	2.15	5.75
7	1.95	5.55
8	1.65	5.25
9	1.65	5.25
10	1.40	5.00
11	1.40	5.00
12	1.40	5.00
13	1.15	4.75
14	0.90	4.50
15	0.90	4.50
16	0.90	4.50
17	0.90	4.50
18	0.65	4.25
19	0.65	4.25
20	0.65	4.25
21	0.40	4.00
22	0.40	4.00
23	0.40	4.00
24	0.20	3.80
25 or more	0.00	3.60

Summary of Proposed Actuarial Assumptions and Methods

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 3.60% Wage Inflation**
0	6.00%	9.60%
1	5.25	8.85
2	4.25	7.85
3	4.00	7.60
4	3.75	7.35
5	3.75	7.35
6	3.50	7.10
7	3.50	7.10
8	3.25	6.85
9	3.00	6.60
10	2.50	6.10
11	2.25	5.85
12	2.00	5.60
13	1.50	5.10
14	1.25	4.85
15	1.00	4.60
16	1.00	4.60
17	1.00	4.60
18	0.75	4.35
19	0.75	4.35
20	0.75	4.35
21	0.50	4.10
22	0.50	4.10
23	0.50	4.10
24	0.25	3.85
25 or more	0.00	3.60

Summary of Proposed Actuarial Assumptions and Methods

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 3.75% Wage Inflation**
0	4.35%	8.10%
1	4.10	7.85
2	4.10	7.85
3	3.85	7.60
4	3.85	7.60
5	3.60	7.35
6	3.35	7.10
7	3.10	6.85
8	2.85	6.60
9	2.60	6.35
10	2.40	6.15
11	2.15	5.90
12	2.15	5.90
13	1.90	5.65
14	1.65	5.40
15	1.65	5.40
16	1.40	5.15
17	1.40	5.15
18	1.15	4.90
19	1.15	4.90
20	1.15	4.90
21	0.90	4.65
22	0.65	4.40
23	0.65	4.40
24	0.40	4.15
25+	0.10	3.85

Summary of Proposed Actuarial Assumptions and Methods

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 3.60% Wage Inflation**
0	4.75%	8.35%
1	4.50	8.10
2	4.25	7.85
3	4.25	7.85
4	4.00	7.60
5	4.00	7.60
6	3.75	7.35
7	3.50	7.10
8	3.25	6.85
9	3.00	6.60
10	2.50	6.10
11	2.00	5.60
12	1.75	5.35
13	1.50	5.10
14	1.25	4.85
15	1.00	4.60
16	1.00	4.60
17	0.75	4.35
18	0.50	4.10
19	0.50	4.10
20	0.50	4.10
21	0.25	3.85
22	0.25	3.85
23	0.25	3.85
24	0.00	3.60
25 or more	0.00	3.60

8. *Annuitant mortality rates (nondisabled retirees)*:

All non-educator groups except judges:
Male retirees: 110% of 2020 PR UTAH Retiree Mortality Table for males, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2020.
Female retirees: 110% of 2020 PR UTAH Retiree Mortality Table for females, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2020.
Educators and judges:
Male retirees: 90% of 2020 PR UTAH Retiree Mortality Table for males, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2020.
Female retirees: 90% of 2020 PR UTAH Retiree Mortality Table for females, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2020.

Mortality Rates in Base Tables before Projection (Multipliers Applied)				
	Non-educators except judges		Educators and judges	
Age	Males	Females	Males	Females
50	0.003025	0.002254	0.002475	0.001844
55	0.004355	0.004018	0.003563	0.003288
60	0.007073	0.006557	0.005787	0.005365
65	0.008903	0.007696	0.007285	0.006296
70	0.013176	0.009556	0.010780	0.007818
75	0.022862	0.017380	0.018706	0.014220
80	0.046980	0.35345	0.038438	0.028919
85	0.086607	0.067895	0.070861	0.055551
90	0.147313	0.147706	0.120529	0.120850

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					
	Year of Retirement				
Group	2030	2035	2040	2045	2050
Noneducators - Male	21.8	22.1	22.5	22.8	23.1
Noneducators - Female	23.4	23.7	24.0	24.3	24.6
Educators/Judges - Male	23.3	23.6	24.0	24.3	24.6
Educators/Judges - Female	24.9	25.2	25.5	25.8	26.1

9. *Disabled annuitant mortality rates*:

Males: 140% of the PUB-2016 for Disabled Males (General Employees), projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2016.
Females: 135% of the PUB-2016 for Disabled Females (General Employees), projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2016.

Disabled Mortality Rates in Base Table before Projections (Multipliers Applied)		
Age	**Males**	**Females**
20	0.003038	0.0001067
25	0.004690	0.001256
30	0.004102	0.001944
35	0.004158	0.002943
40	0.005362	0.004320
45	0.007994	0.006426
50	0.012110	0.009896
55	0.018494	0.015053
60	0.028224	0.022923
65	0.033684	0.025299

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					
	Year of Retirement				
Gender	**2030**	**2035**	**2040**	**2045**	**2050**
Males	16.2	16.6	17.1	17.5	17.9
Females	18.0	18.5	18.9	19.3	19.8

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 (except for the Legislators and Governors plan). The development of the amortization cost for the Tier 2 Public Safety and Firefighter Hybrid System includes the projected increase in cost due to an 18 month delay in the effective date of the contribution rate determined by this actuarial valuation. Additionally, the amortization period for the Higher Education Risk Pool will revert back to a closed amortization period should be the funds become less than 100% funded.

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.

12. *Payroll growth rate*:

    In determining the level percent of payroll amortization rate, payroll is assumed to grow annually at 2.90%. The payroll growth assumption is 0.00% for the Higher Ed risk pools and the Governors and Legislative Pension Plan.

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 6.95% investment return rate represents the anticipated net return after payment of all investment and administrative expenses.

15. *Judges System*:

    For the Judges System, no disability or withdrawal rates were used. Salaries are assumed to increase at 3.35% 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 6.95% 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 using the ultimate rates from the MP-2020 mortality improvement scale. Mortality improvement is ignored for the pre-retirement mortality assumption, since it would not have a material effect on the liabilities.

19. *LTD Benefit Protection Contracts*:

It is assumed that all members of the Tier I Public Employee Retirement Systems are covered by an LTD Benefit Protection Contract. LTD benefit protection contract coverage for the Tier II Hybrid Retirement Systems (Public Employees and Public Safety and Firefighters) is being valued for those members who are employed by a participating employer that elected to provide coverage to their workforce.

20. *Cost-of-living increases:*

Retirement benefits for all systems with a maximum 4.00% COLA are assumed to increase at 2.60% 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.