San Luis Obispo County Pension Trust

Actuarial Experience Study for January 1, 2017 through December 31, 2023

Produced by Cheiron

June 2024

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June 14, 2024

Board of Trustees
San Luis Obispo County Pension Trust
1000 Mill Street
San Luis Obispo, California 93408

Dear Members of the Board:

The purpose of this report is to provide the results of an Actuarial Experience Study of the San Luis Obispo County Pension Trust (SLOCPT, the Trust) covering actuarial experience from January 1, 2017, through December 31, 2023. This report is for the use of the SLOCPT Board of Trustees (the Board) in selecting assumptions to be used in actuarial valuations beginning January 1, 2024.

In preparing our report, we relied on information (some oral and some written) supplied by SLOCPT. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This report was prepared for the SLOCPT Board of Trustees for the purposes described herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any such party.

If you have any questions about the report or would like additional information, please let us know.

Sincerely,
Cheiron

Anne D. Harper, FSA, EA, MAAA
Principal Consulting Actuary

Alice I. Alsberghe, ASA, EA, MAAA
Consulting Actuary

SECTION I – EXECUTIVE SUMMARY

Actuarial assumptions (economic and demographic) are intended to be long-term in nature and should be both individually reasonable and consistent in the aggregate. The purpose of this experience study is to evaluate whether or not the current assumptions adequately reflect the long-term expectations for SLOCPT, and if not, to propose adjustments. It is important to note that frequent and significant changes in the actuarial assumptions are not typically proposed, unless there are known fundamental changes in expectations of the economy, or with respect to SLOCPT's membership or assets that would warrant such frequent or significant changes.

Table I-1 below summarizes the main actuarial assumptions reviewed and any proposed changes to the current assumptions.

Table I-1

Actuarial Assumption	Current	Proposed	Comments for Changes
Economic Assumptions			
Price Inflation	2.50%	2.50%	
Investment Return (Discount Rate)	6.75%	6.75%	
Payroll Growth	3.00%	3.00%	
COLA - Tier 1	2.75%	3.00% using banks 2.75% ultimate rate	Incorporate COLA banks for current retirees
COLA - Tier 2 & 3	2.00%	2.00%	
Wage Inflation	3.00%	3.00%	
Salary Merit Increase	0.00% to 5.25%	0.00% to 5.25%	Increases to rates for all groups
Administrative Expenses	$2.4 million/year increasing 3.00%/year	$3.0 million/year increasing 3.00%/year	Increase to reflect actual expenses
Demographic Assumptions			
Mortality			
Healthy Retiree Mortality	Pub-2010	Pub-2010	0.95/0.975 adjustments for males/females
Beneficiary Mortality	Pub-2010	Pub-2010	Beneficiary table for males with 1.025 adjustment
Disabled Retiree Mortality	Pub-2010	Pub-2010	
Active Member Mortality	Pub-2010	Pub-2010	
Mortality Improvement Projection Scale	MP-2021	MP-2021	
Retirement Rates	See Appendix B	See Appendix A	Increases to rates for all groups, except decreases for Probation with less than 25 years of service
Disability Rates	See Appendix B	CALPERS Tables	Miscellaneous: Decreases to rates Safety and Probation: Increases to rates
Vested Termination Rates	See Appendix B	See Appendix A	Increases to rates for all groups
Refunds of Employee Contributions	See Appendix B	See Appendix A	Miscellaneous: Decreases to rates
Reciprocity Assumption	30%	35%	Increase to assumed reciprocity

SECTION I – EXECUTIVE SUMMARY

SUMMARY OF ECONOMIC ASSUMPTION ANALYSIS

The specific economic assumptions analyzed in this report are price inflation, wage inflation, payroll growth, COLA growth, and the discount rate. These assumptions have a significant impact on the contribution rates in the short term and the risk of negative outcomes in the long term.

At the May 24, 2021 Board of Trustees meeting, the Board elected to reduce the discount rate from 6.875% to 6.75%, net of investment expenses only, and to add an explicit administrative expenses assumption. The Board adopted an increase to the inflation assumption from 2.25% to 2.50% based on the findings of the December 31, 2021 experience study while keeping the discount rate at 6.75%, resulting in a real rate of return of 4.25%.

It should be noted that Verus, the Trust's investment consultant, predicts a slightly higher nominal and real rate of investment return in the short-term and long-term for SLOCPT's asset allocation. Verus' most recent capital market expectations over a 10-year period indicate a 7.51% expected nominal return, with a 5.01% expected real return and 2.50% inflation. Verus' expectations over a 30-year period are similar, a 7.57% expected nominal return with a 5.17% real return and 2.40% inflation.

Based on future market expectations, we propose that the Board maintain the discount rate assumption at 6.75%, allowing for a margin of conservatism for adverse deviations. We also propose that the Board maintain the price inflation and wage inflation assumptions at 2.50% and 3.00%, respectively.

The current cost-of-living adjustment (COLA) assumptions for Tier 1 is 2.75% and for Tiers 2 and 3 is 2.00%. We propose incorporating current COLA banks for Tier 1 retirees into future assumed COLAs, up to the 3.00% cap until the bank is exhausted. Tier 2 and Tier 3 COLA provisions do not allow banking COLAs when actual inflation exceeds the cap, therefore we propose no change to the 2.00% assumption.

SECTION I – EXECUTIVE SUMMARY

SUMMARY OF DEMOGRAPHIC ASSUMPTION ANALYSIS

This experience study specifically analyzes and makes the following recommendations for the demographic assumptions.

- **Retirement rates –** Propose increasing rates for all Miscellaneous and Safety members and for Tier 1 Probation members who have 25 or more years of service. Propose decreasing rates for Tier 1 Probation members who have less than 25 years of service.

- **Termination rates** – Propose increasing termination rates for all classes - Miscellaneous, Safety, and Probation members.

- **Refund/Withdrawal rates** – Propose decreasing withdrawal rates for the Miscellaneous members with no change to withdrawal rates for Safety and Probation members.

- **Disability rates** – Propose using CalPERS State Police Officers and Firefighters Total Disability tables for Safety and Probation members. Propose using CalPERS Public Agency County Peace Officer Non-Industrial Disability table for Miscellaneous members.

- **Mortality rates** – Propose adding rate adjustments of 0.95 and 0.975, reducing mortality rates, for Miscellaneous healthy retiree males and females, respectively. Propose using the General Pub-2010 Contingent Survivor Below-Median base table with 1.025 rate adjustment for males.

- **Merit salary increases** – Propose increasing rates for all classes with an ultimate merit increase of 0.50% for all classes instead of 0.20% for Miscellaneous members and 0.25% for Probation and Safety members.

- **Other assumptions** – Minor changes to other assumptions, including assumed retirement age for vested terminated and reciprocal members.

The body of this report provides additional detail and support for our conclusions and propositions.

SECTION I – EXECUTIVE SUMMARY

COST OF ECONOMIC AND DEMOGRAPHIC ASSUMPTION CHANGES

Among the demographic assumptions, the proposed changes to the salary merit increases, disability, retirement, and mortality assumptions have the largest impact on the contribution rates. The proposed change to incorporate COLA banks into the assumption for Tier 1 members has the largest impact overall on the contribution rates. This table summarizes the estimated cost impact – for the Miscellaneous, Probation, Safety, and combined membership – of the proposed changes to the demographic and economic assumptions contained in this report.

Table I-2

Estimated Impact of Proposed Assumption Changes on Actuarially Determined Contribution Rates				
	Miscellaneous	**Probation**	**Safety**	**Total**
Proposed Demographic Assumption Changes				
Salary Merit Increases	0.73%	0.46%	0.44%	0.68%
Disability Rates	0.01%	-0.08%	0.91%	0.12%
Retirement Rates	0.16%	0.51%	0.45%	0.22%
Mortality Rates	0.21%	-0.08%	-0.03%	0.18%
Termination and Withdrawal Rates	-0.15%	-0.22%	-0.20%	-0.17%
Assumed Inactive Retirement Age	-0.39%	0.16%	0.01%	-0.32%
Reciprocity	0.05%	0.06%	0.06%	0.06%
Estimated Impact of Demographic Assumption Changes	**0.62%**	**0.81%**	**1.64%**	**0.77%**
Proposed Economic Assumption Changes				
Incorporate COLA Banks into assumption for Tier 1 members	1.08%	1.18%	1.89%	1.18%
Adminstrative Expense	0.19%	0.19%	0.19%	0.19%
Estimated Impact of Economic Assumption Changes	**1.27%**	**1.37%**	**2.08%**	**1.37%**
Estimated Impact of All Assumption Changes	**1.89%**	**2.18%**	**3.72%**	**2.14%**

SECTION II – ECONOMIC ASSUMPTIONS
PRICE INFLATION

The economic assumptions used in actuarial valuations are intended to be long-term in nature and should be both individually reasonable and consistent with each other. The specific assumptions analyzed in this report are:

- **Price inflation**– used indirectly as an underlying component of other economic assumptions.
- **Wage inflation** – across the board wage growth used to project benefits.
- **Payroll growth** – used to amortize the unfunded liability as a level percentage of expected payroll.
- **COLA growth** – rate at which inflation-linked post-retirement COLAs are expected to change.
- **Discount rate** – used both to project long-term asset growth and to discount future cash flows in calculating the liabilities and costs of the Plan.

In order to develop recommendations for each of these assumptions, we considered historical data, both nationally and for SLOCPT, and expectations for the future, as expressed by the Trust's and other external investment consultants and the Board.

PRICE INFLATION

Long-term price inflation rates are the foundation of other economic assumptions. In a growing economy, wages and investments are expected to grow at the underlying inflation rate plus some additional real growth rate, whether it reflects productivity in terms of wages or risk premiums in terms of investments.

Historical Data

Chart II-1 below shows inflation (CPI-U) for the U.S. by individual year for the last 50 years.

Chart II-1
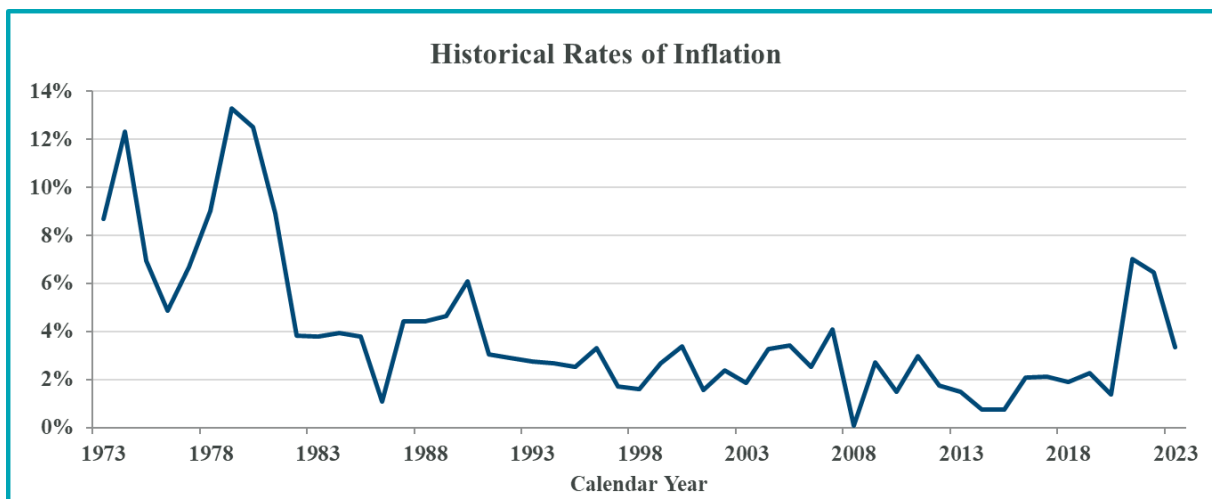
Historical Rates of Inflation

SECTION II – ECONOMIC ASSUMPTIONS
PRICE INFLATION

Over the 50 years ending December 2023, the geometric average inflation rate for the U.S. has been about 4.0%, but this average is heavily influenced by the high inflation rates in the 1970s and early 1980s. If you remove these periods of high inflation, the average inflation rate for the 30-year period is 2.5%, and it has been 2.8% over the 10 years ending December 2023. The recent spike in inflation, around 6% to 7%, in 2021 and 2022, has come down in 2023 to 3.4%.

Future Expectations

Chart II-2 below shows the distribution of the professionals' forecasts for average inflation over the next 10 years compared to the assumptions from the Horizon Actuarial Services Survey of Capital Market Assumptions (2023 Edition), the 2022 Data Survey from US Public Plan Database (PPD) maintained by the Center for Retirement Research at Boston College, and Cheiron's 2023 internal survey of California public pension plans.

The Federal Reserve publishes a quarterly survey of professional economic forecasters that includes their forecasts of inflation over the next 10 years. The survey for the fourth quarter of 2023 shows a median inflation forecast of 2.2%, a minimum forecast of 1.9% and a maximum forecast of 2.6%.

Chart II-2
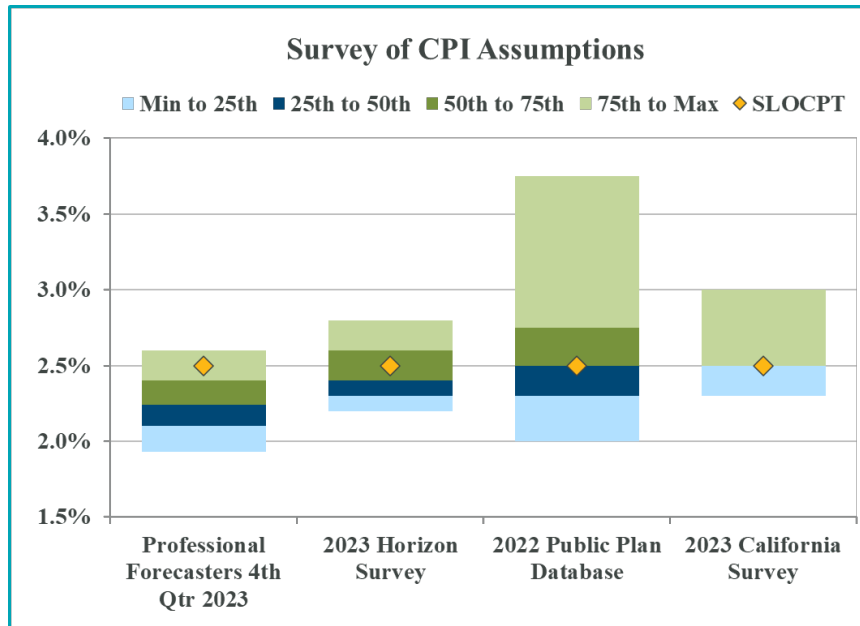
Verus, the Trust's investment consultant, uses an inflation assumption of 2.5% for the next 10 years and 2.4% over the next 30 years. A broader survey of 39 investment advisors, published by the Horizon Actuarial Services, reflects a 2.4% average assumption over the next 10 years. The median assumption for public plans both nationally and in California is 2.50%, consistent with SLOCPT's current inflation assumption.

SECTION II – ECONOMIC ASSUMPTIONS
PRICE INFLATION

Chart II-3
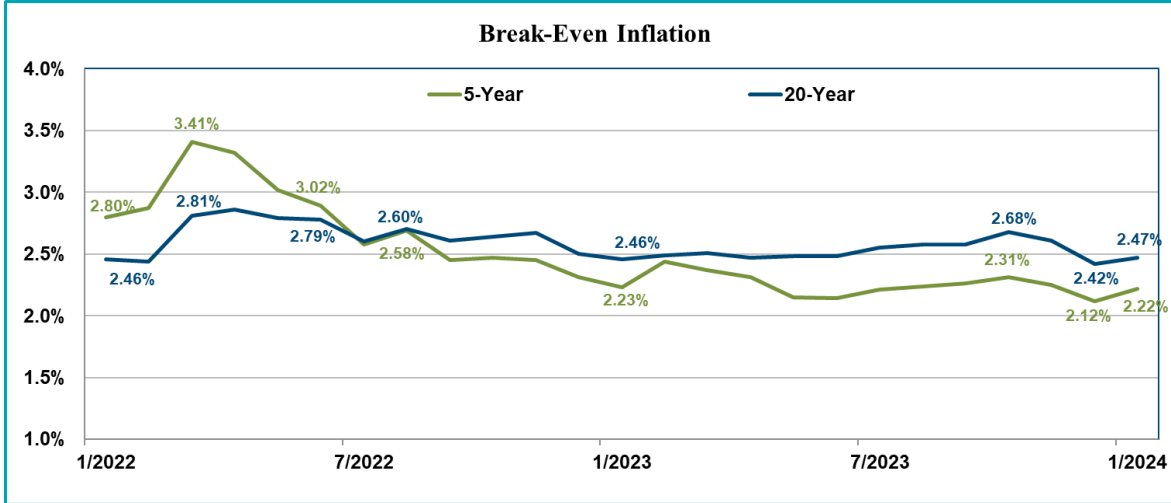
Data Source: Federal Reserve, Constant Maturity Yields, Monthly Series

Another measure of the future expectations of inflation is called "break-even inflation" which is the difference between yields on nominal Treasury securities and Treasury Inflation-Protected Securities (TIPS) at the same maturity. Break-even inflation is the level of inflation needed for an investment in TIPS to "break even" with an investment in conventional treasury bonds of the same maturity. In the last two years, break-even inflation rates for both the 5-year and 20-year maturities have generally remained between 2% to 3%. Recent market data show that the expectation is between 2.2% to 2.5% depending on the maturity.

Based on all these considerations, we believe the current price inflation assumption of 2.50% is reasonable and do not recommend a change.

WAGE INFLATION AND PAYROLL GROWTH

Wage inflation can be thought of as the annual across-the-board increase in wages. Individuals often receive salary increases in excess of the wage inflation rate, and we study these increases as a part of the merit salary scale assumption. Wage inflation generally exceeds price inflation by some margin reflecting the history of increased purchasing power.

Wage inflation is used in the actuarial valuation as the minimum expected salary increase for an individual. Payroll growth, which is equal to the wage inflation assumption for SLOCPT, is used for purposes of amortizing the Unfunded Actuarial Liability, the rate at which payroll is expected to grow over the long term, assuming a stable active member population. SLOCPT's current wage inflation and payroll growth assumptions are 3.00%, with 2.50% price inflation and 0.50% real wage growth.

It is acceptable to assume some additional level of base payroll increase beyond general inflation. Potential reasons contributing to the increase may include the presence of strong union representation in the collective bargaining process, competition in hiring among other similar employers, and regional factors – such as the local inflation index exceeding the national average, as has sometimes proven the case in parts of California. Also, the Social Security Administration projects real wage growth of 0.6% – 1.8% going forward in their Social Security solvency projections.

However, our recent experience with public sector employers in California has shown that real wage growth has remained stagnant, in some cases lagging behind inflation. In particular, the average rate of pay for SLOCPT's members has increased by 3.4% annually over the past five years compared to the San Francisco and Los Angeles area inflation (as measured by the CPI-U), which has increased at 3.2% and 3.8% per year over the same period, respectively.

We believe that the small non-inflationary base payroll increase assumption of 0.50% annually currently used by SLOCPT remains reasonable. If the 2.50% price inflation rate is also maintained, the annual expected increase in base payroll will remain at 3.00%. This rate is applied to all continuing active members, and to starting pay for new entrants when projections of future populations are required. This increase will also be used in the calculation of the unfunded liability amortization payment as a level percentage of payroll.

COLA GROWTH

Members of SLOCPT are eligible to receive Cost-of-Living Adjustments (COLAs), based on the growth in the Los Angeles-Long Beach-Anaheim and San Francisco-Oakland-Hayward Consumer Price Indices (CPI-U) with a 3.0% or 2.0% cap, depending on their Tier, and the annual COLA increase. Any increase in the CPI above the maximum increase for Tier 1 can be banked for future years in which the change in the CPI is below the maximum increase.

It is important to determine an assumed rate of COLA growth by reflecting the inflation metric that impacts the actual COLA growth rate. The Tier 1 COLA growth rate assumption of 2.75% is 0.25% higher than the price inflation assumption of 2.50% due to the expected difference in the average SLOCPT inflation and the U.S. price inflation. We propose maintaining the "California" inflation adjustment of 0.25%, plus the price inflation assumption, for the COLA growth assumption.

In addition, from 2022 to 2024, the Tier 1 COLA banks have grown from 0.00% for most retirees to between 2.0% and 4.0% for those who retired after 1980 due to the high inflationary environment. We propose incorporating these COLA banks into the calculation of the retirees' projected benefit payments. Therefore, we recommend the assumed COLAs would be 3.00% per year (2.75% plus 0.25% from the COLA banks) until their COLA banks are exhausted, then 2.75% thereafter. This methodology change will mitigate future actuarial losses that would occur if the actual COLAs granted are the 3.00% maximum but the assumption remained at only 2.75%. However, we recommend the assumption for Tier 1 current active and deferred vested members would remain at 2.75%.

Since Tiers 2 and 3 do not have COLA banks and their cap is 2.0%, given the price inflation assumption is above 2.00%, the COLA growth assumption for Tiers 2 and 3 is 2.0%. We do not recommend any changes to this assumption.

DISCOUNT RATE

The discount rate (investment rate of return) assumption is generally the most significant of all the assumptions employed in actuarial valuations. The discount rate is based on the long-term expected return on plan investments. In the short term, a higher discount rate results in lower expected contributions. However, over the long term, actual contributions will depend on actual investment returns and not the discount rate (or expected investment returns). If actual investment returns are lower than expected, contribution rates will increase in the future. It is important to set a realistic discount rate so that projections of future contributions for budgeting purposes will not be biased.

Other Large Public Retirement Plans

Based on the Public Plans Database (PPD) which covers most of the largest public retirement systems in the country, there has been a general movement over at least the last decade to reduce the discount rate used in actuarial valuations. Chart II-4 below shows the change in the distribution of assumptions since 2014. The median assumption is now 7.0% and the number of plans using a discount rate of 7.0% or lower has increased significantly. San Luis Obispo County Pension Trust has been at or lower than the 25th percentile over the entire period shown here.

Chart II-4

Discount Rate Trends
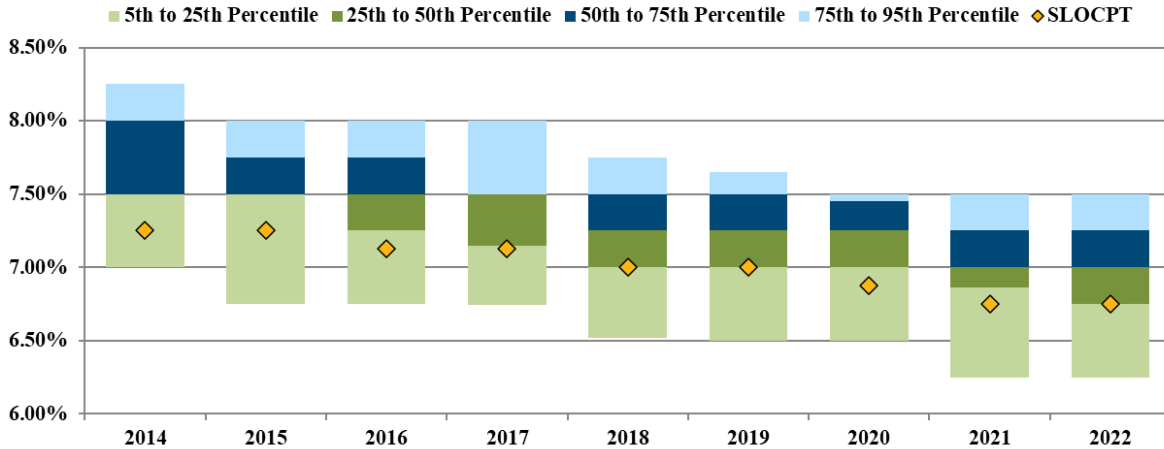
Survey Data from Public Plans Data as of 1/25/2024

SECTION II – ECONOMIC ASSUMPTIONS
DISCOUNT RATE

Chart II-5 below shows the change in discount rate assumptions for California systems from 2014 to 2023. As shown in Chart II-5 and Chart II-6 below, from Cheiron's survey of California retirement systems, the median assumption is even lower than the national median at 6.75% with 17 of the 39 systems using the median rate. Only two systems in California were using a discount rate above 7.00% in 2023.

Chart II-5

Discount Rate Trends
Cheiron Survey of California Systems
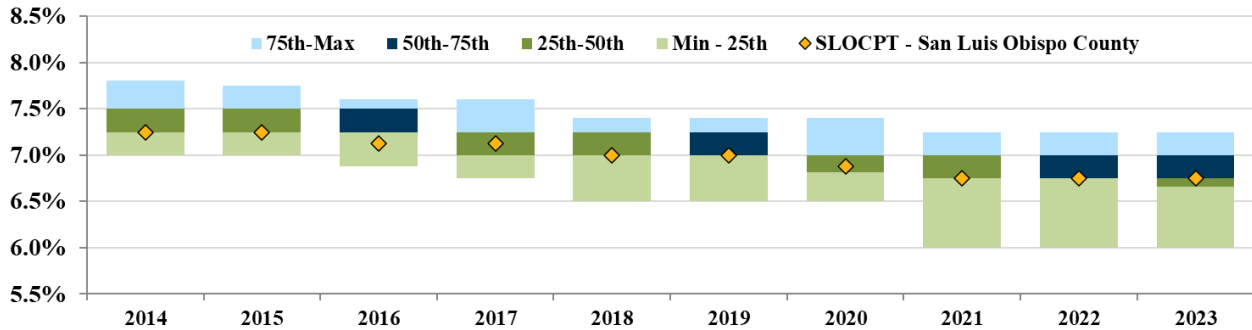
Chart II-6

Distribution of Latest Discount Rates
Cheiron Survey of California Systems
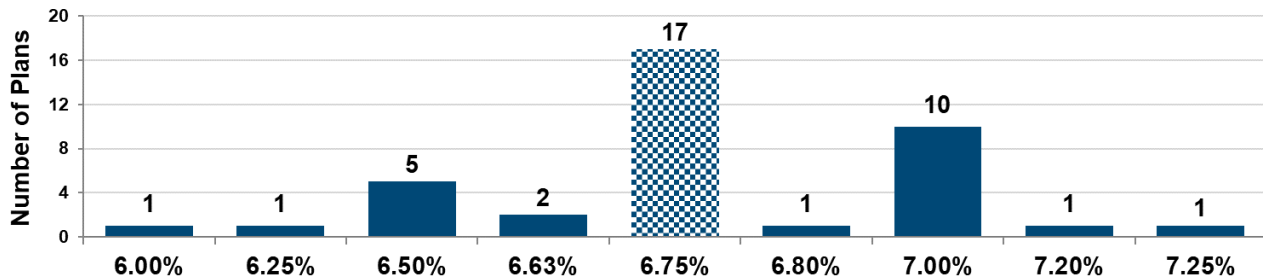
SECTION II – ECONOMIC ASSUMPTIONS
DISCOUNT RATE

Target Asset Allocation and Future Expectations

The nominal expected return on assets depends on the allocation of assets to different asset classes (e.g., stocks, bonds, etc.) and the capital market assumptions for each of the asset classes. Table II-1 below shows SLOCPT's Strategic Asset Allocation (SAA) and expected returns for each asset class and in total.

Table II-1

SLOCPT Strategic Asset Allocation (SAA) *(Verus 2024 Capital Market Assumptions)*			
Asset Category	**Target Allocation**	**Geometric Return**	**Standard Deviation**
Cash	4%	4.1%	1.1%
Global Equity	30%	6.9%	16.7%
Private Equity	18%	8.1%	25.6%
US TIPS	7%	4.7%	5.5%
US Treasury	8%	4.6%	7.1%
Short-Term Govt/Credit	6%	4.7%	3.6%
Private Credit	12%	9.2%	11.9%
Core Real Estate	5%	6.8%	12.5%
Value Add Real Estate	5%	8.8%	15.4%
Infrastructure	5%	8.4%	16.9%
Total SLOCPT Portfolio		**7.5%**	**11.6%**

Table II-2 on the next page shows the expected nominal geometric return based on the Board's current target asset allocation and the Trust's investment consultant (Verus) and a survey of multiple investment consultants published by Horizon Actuarial Services in 2023 over both a 10-year and 20-year time horizon). The table also shows the underlying inflation assumption used in the development of these capital market assumptions and computes the expected real rate of return (nominal investment return in excess of inflation).

For some classes in the SLOCPT portfolio – in particular Private Equity, Short-Term Government Fixed Income, Private Credit, and Value Add Real Estate – the Horizon survey did not include specific assumptions, therefore the Verus assumptions were used for these classes.

SECTION II – ECONOMIC ASSUMPTIONS
DISCOUNT RATE

Table II-2

SLOCPT SAA Portfolio Return Expectations			
Source	**Nominal**	**Inflation**	**Real**
Verus (10-year)	7.51%	2.50%	5.01%
Horizon Survey (10-year)	7.59%	2.55%	5.04%
Verus (30-year)	7.57%	2.40%	5.17%
Horizon Survey (20-year)	7.60%	2.46%	5.14%
Average	**7.57%**	**2.48%**	**5.09%**
Current SLOCPT Assumptions	6.75%	2.50%	4.25%

Verus' 10-year and 30-year expected nominal returns are remarkably close to one another, 7.51%and 7.57%, respectively. They are also consistent with the calculated expected returns using Horizon's 10-year and 20-year capital market assumptions. SLOCPT's current nominal rate of return of 6.75% and real rate of return of 4.25% are both about 0.8% lower than the average of the investment consultants' expectations.

However, the expected returns over the last five years have been extremely volatile. In Chart II-7 below, Verus's expected returns for SLOCPT's portfolio are shown. The bottom of the bars are the 10-year expectations while the top of the bars are the 30-year expectations. In each of the last five years there is no overlap in the range of the expected returns, which demonstrates the significant volatility in the capital market assumptions year over year. Between 2020 and 2022, SLOCPT's discount rate was higher than Verus' range of expected returns. Conversely, in 2023 SLOCPT's discount rate was lower than Verus' range of expected returns.

Chart II-7
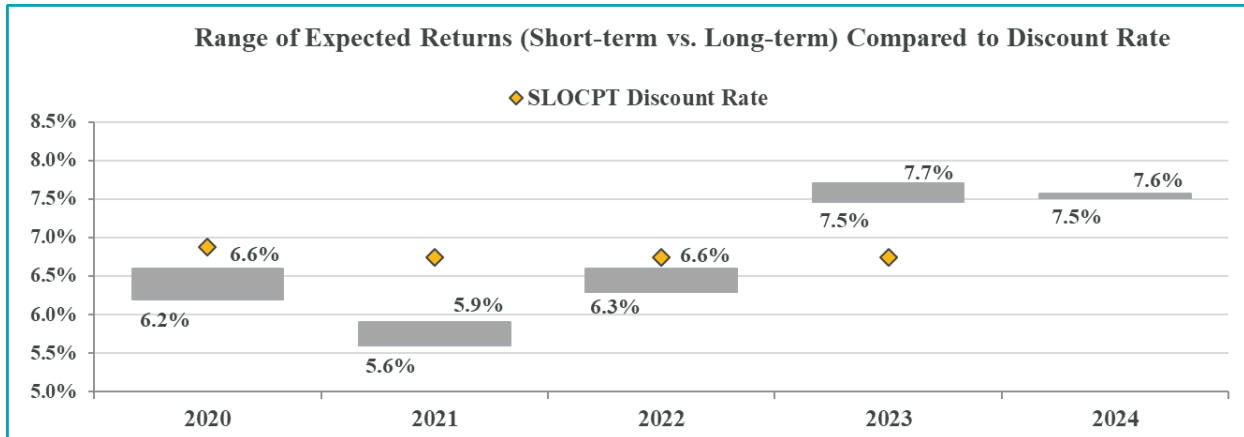
SECTION II – ECONOMIC ASSUMPTIONS
DISCOUNT RATE

Finally, we calculated the likelihood of achieving various nominal return thresholds, using the same model as described above, with the results shown in Table II-3 below.

Table II-3

Likelihood of Achieving Expected Returns				
Discount Rate	**6.50%**	**6.75%**	**7.00%**	**7.25%**
Verus (10-yr)	61%	58%	56%	53%

Even though the current discount rate of 6.75% is lower than the investment consultants' expectations, we propose that the Board retain the assumption of 6.75% to provide a margin for adverse deviation which is allowed under Actuarial Standard of Practice No. 27 *Selection of Economic Assumptions for Measuring Pension Obligations* Section 3.5.1. However, we recommend that the Board and staff continue to conduct at least a brief discussion of this assumption annually, in consultation with the Trust's actuary and investment consultant, to determine if a change is appropriate.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MERIT SALARY INCREASES

Demographic assumptions are used to predict membership behavior, including rates of retirement, termination, disability, and mortality. These assumptions are based primarily on the historical experience of SLOCPT , with some adjustments where future experience is expected to differ from historical experience and with deference to standard tables where SLOCPT experience is not fully credible, and a standard table is available. For purposes of this study, merit salary increases are also considered a demographic assumption because the assumption is based primarily on SLOCPT's historical experience.

MERIT SALARY INCREASES

Salary increases consist of three components: Increases due to cost-of-living maintenance (price inflation), increases related to non-inflationary pressures on base pay (such as productivity increases), and increases in individual pay due to merit, promotion, and longevity. Increases due to cost-of-living and non-inflationary base pay factors were addressed in an earlier section of this report.

The merit salary increase assumption is analyzed by membership class and by service. Generally, newer members are more likely to earn a longevity or step increase or receive a promotion, so their merit salary increases tend to be greater than those for longer service members.

We used a longitudinal study to analyze the merit increases, wherein we reviewed the average increase in pay for each level of service. To analyze the merit component, we subtracted the real wage growth from the total pay increases experienced by each member during the experience study period. We have computed the real wage growth by calculating the increase in the average salary across all active members (calculated separately for Miscellaneous and Safety/Probation) each year and adjusting for changes in the average service level.

Chart III-1 and Chart III-2 on the following pages analyze the pay patterns for Miscellaneous and Safety/Probation members, respectively, for the seven-year period from 2017 through 2023. Our charts will generally show the current assumption (dark blue line) compared to the actual experience (teal line) and the proposed assumption (green line).

Table III-1 and Table III-2 summarize the current and proposed merit salary increase assumptions by years of service.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MERIT SALARY INCREASES

We have proposed new assumptions with higher increases for Miscellaneous members with 0 to 24 years of service, except for one and nine years of service which are unchanged.

Chart III-1 – Miscellaneous Merit Salary Increase
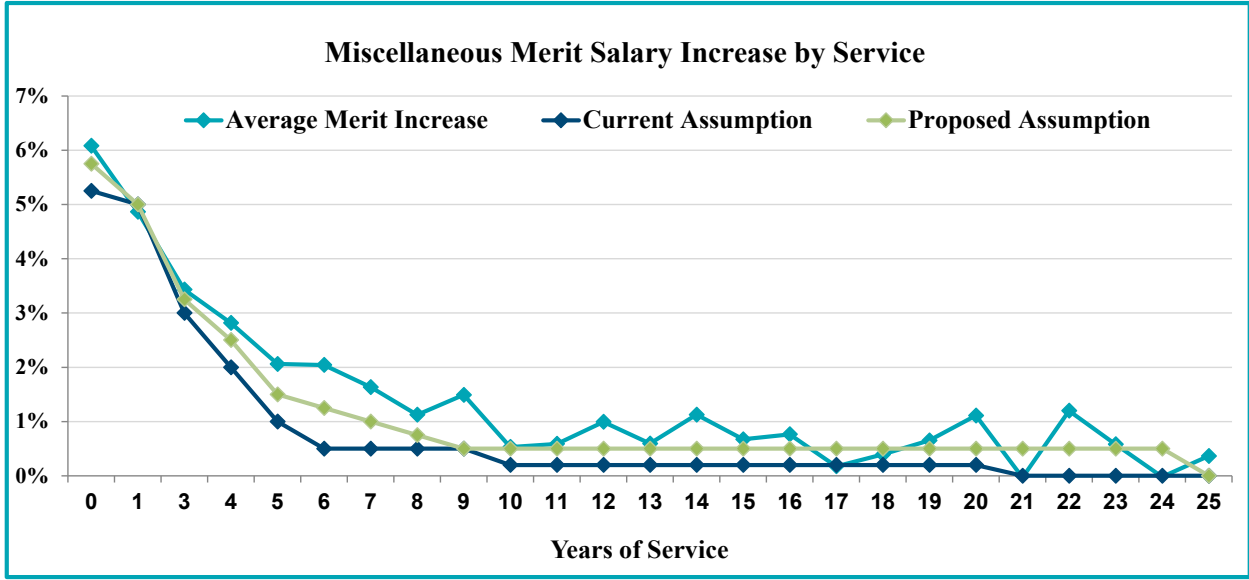
Table III-1 – Miscellaneous Merit Salary Increase

Miscellaneous - Merit Salary Increases		
Service	**Current**	**Proposed**
0	5.25%	5.75%
1	5.00%	5.00%
2	4.00%	4.25%
3	3.00%	3.25%
4	2.00%	2.50%
5	1.00%	1.50%
6	0.50%	1.25%
7	0.50%	1.00%
8	0.50%	0.75%
9	0.50%	0.50%
10 - 20	0.20%	0.50%
21 - 24	0.00%	0.50%
25+	0.00%	0.00%

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MERIT SALARY INCREASES

We have proposed new assumptions with lower increases for Safety and Probation members with 0 to three years of service and slightly higher increases for Safety and Probation members with 10 to 24 years of service.

Chart III-2 – Safety and Probation Merit Salary Increase
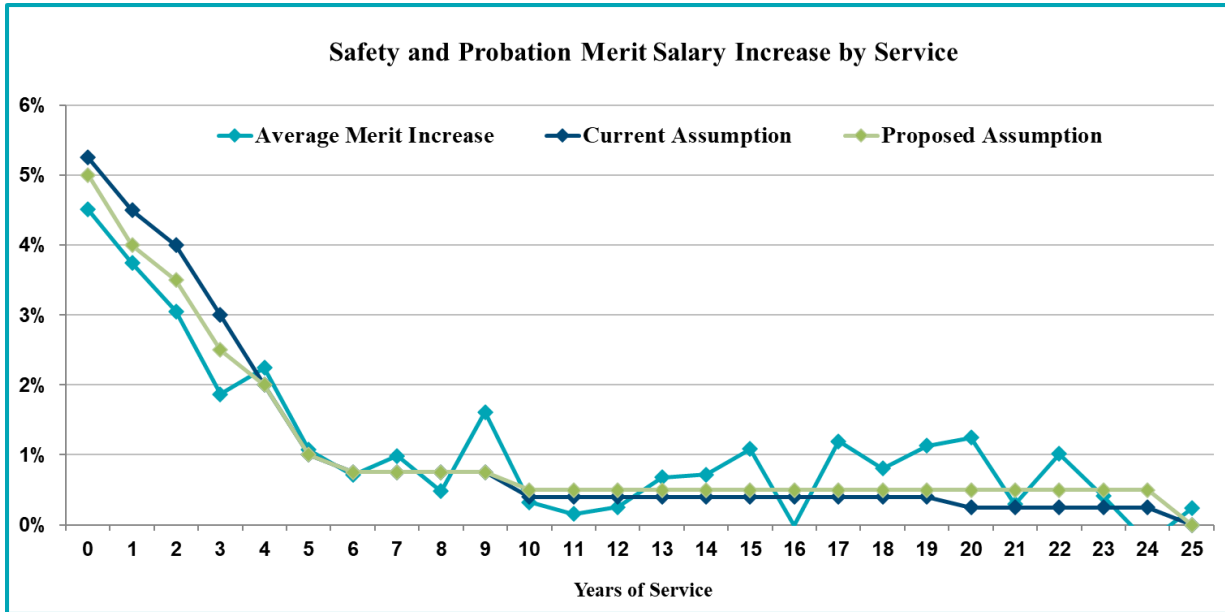
Table III-2 – Safety and Probation Merit Salary Increase

Safety and Probation - Merit Salary Increases		
Service	**Current**	**Proposed**
0	5.25%	5.00%
1	4.50%	4.00%
2	4.00%	3.50%
3	3.00%	2.50%
4	2.00%	2.00%
5	1.00%	1.00%
6 - 9	0.75%	0.75%
10 - 19	0.40%	0.50%
20 - 24	0.25%	0.50%
25+	0.00%	0.00%

ANALYSIS OF OTHER DEMOGRAPHIC ASSUMPTIONS

For all of the remaining demographic assumptions, we determined the ratio of the actual number of decrements for each membership class compared to the expected number of decrements (A/E ratio or actual-to-expected ratio). If the assumption is perfect, this ratio will be 100%. Otherwise, any proposed assumption change should move from the current A/E ratio towards 100% unless future experience is expected to be different than the experience during the period of study.

We also calculate an R-Squared statistic for each assumption. R-Squared measures how well the assumption fits the actual data and can be thought of as the percentage of the variation in actual data explained by the assumption. Ideally, R-Squared would equal 1.00 although this is never the case. Any proposed assumption change should increase the R-Squared compared to the current assumption making it closer to 1.00 unless the pattern of future decrements is expected to be different from the pattern experienced during the period of study.

In addition, we calculated the 90% confidence interval, which represents the range within which the true decrement rate during the experience study period fell with 90% confidence. (If there is insufficient data to calculate a confidence interval, the confidence interval is shown as the entire range of the graph.) We generally propose assumption changes when the current assumption is outside the 90% confidence interval of the observed experience. However, adjustments are made to account for differences between future expectations and historical experience, to account for the past experience represented by the current assumption, and to maintain a neutral to slight conservative bias in the selection of the assumption. For mortality rates, we compare SLOCPT's experience to that of a standard table and, if warranted, adjust the tables to bring the proposed assumption closer to an A/E ratio of 100%.

Additionally, we reviewed the demographic patterns of the Trust across pre-COVID (2017-2019), COVID (2020-2021) and post-COVID-19 (2022-2023) periods. We found that demographic patterns during COVID continued in 2022 and 2023.

See Appendices A and B for a full listing of all the proposed and prior assumptions.

RETIREMENT RATES

The current retirement rates vary by age, service, membership class (Miscellaneous, Probation, and Safety), and plan tier (Tier 1 and Tier 2/3) and are applied to all members who are eligible to retire. Generally, members with more service are more likely to retire than members with fewer years of service since the retirement benefit is greater, at any given age.

The current retirement assumptions are based on age with separate assumptions for each of the following two service groups, separately for Miscellaneous, Probation, and Safety members:

- Members with less than 25 years of service, and
- Members with 25 or more years of service.

In general, actual retirements rates during COVID were higher than historic rates. Those higher rates have continued into the post-COVID years. We reviewed retirement experience across the entire period (2017-2023) and did not include any adjustment for the COVID years.

As a result of the continued increased retirement experience, we are proposing to increase retirement rates across all classes, service groups and plan tiers, except for Probation members with less than 25 years of service. The experience for these members showed lower than expected retirements; therefore, we are proposing lower retirement rates for Probation members with less than 25 years of service.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R1 shows the calculation of actual-to-expected ratios and the R-Squared statistic for Miscellaneous Tier 1 members with five to 24 years of service. Chart III-R1 shows the information graphically along with the 90% confidence interval. The data shows more actual retirements than expected under the current assumption. The new assumptions result in a decrease in the aggregate A/E ratio from 130% to 108%. The R-Squared statistic (how the assumption fits the actual data) improves from 80% to 87%.

Table III-R1 – Miscellaneous Tier 1 Retirement

		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50 - 51	443	20	9	16	4.5%	2.0%	3.5%	226%	128%
52 - 53	452	25	14	23	5.5%	3.0%	5.0%	184%	111%
54 - 55	430	41	22	32	9.5%	5.0%	7.5%	191%	127%
56 - 57	422	22	21	32	5.2%	5.0%	7.5%	104%	70%
58 - 59	413	39	21	36	9.4%	5.0%	8.7%	189%	108%
60 - 61	387	60	48	53	15.5%	12.4%	13.7%	125%	113%
62 - 63	311	74	62	69	23.8%	20.0%	22.2%	119%	107%
64 - 65	204	64	66	66	31.4%	32.2%	32.2%	97%	97%
66 - 67	99	42	35	35	42.4%	35.0%	35.0%	121%	121%
68 - 69	44	19	15	15	43.2%	35.0%	35.0%	123%	123%
TOTAL	3,205	406	312	376	12.7%	9.7%	11.7%	130%	108%
Confidence Interval %			55%	90%					
R-squared			80%	87%					

Chart III-R1 – Miscellaneous Tier 1 Retirement

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R2 shows the calculation of actual-to-expected ratios and the R-Squared statistic for Miscellaneous Tier 1 members with 25 to 39 years of service. Chart III-R2 shows the information graphically along with the 90% confidence interval. The data shows more actual retirements than expected under the current assumption. The proposed assumption increases the aggregate number of assumed retirements. The new assumptions decrease the aggregate A/E ratio from 147% to 111%. The R-Squared statistic decreases slightly from 96% to 95%.

Table III-R2 – Miscellaneous Tier 1 Retirement

		Tier 1 Miscellaneous Retirement Rates - 25 to 39 Years of Service							
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50 - 51	44	2	2	2	4.5%	3.5%	5.0%	130%	91%
52 - 53	87	2	3	4	2.3%	3.5%	5.0%	66%	46%
54 - 55	136	14	10	14	10.3%	7.0%	10.0%	147%	103%
56 - 57	171	26	19	24	15.2%	11.1%	13.8%	137%	110%
58 - 59	170	37	26	30	21.8%	15.0%	17.5%	145%	124%
60 - 61	141	54	31	49	38.3%	22.3%	34.5%	172%	111%
62 - 63	78	31	20	31	39.7%	25.0%	40.0%	159%	99%
64 - 65	40	24	16	16	60.0%	40.0%	40.0%	150%	150%
66 - 67	19	9	8	8	47.4%	40.0%	40.0%	118%	118%
68 - 69	5	0	2	2	0.0%	40.0%	40.0%	0%	0%
TOTAL	891	199	135	179	22.3%	15.2%	20.1%	147%	111%
Confidence Interval %			75%	95%					
R-squared			96%	95%					

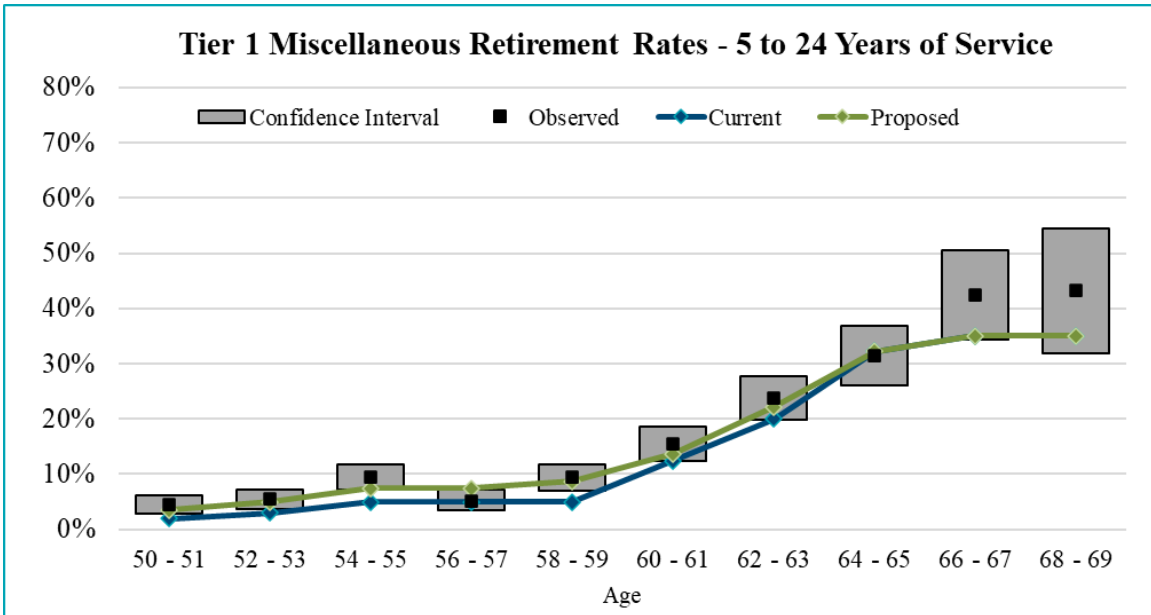**Chart III-R2 – Miscellaneous Tier 1 Retirement**

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R3 shows the calculation of actual-to-expected ratios and the R-Squared statistic for Miscellaneous Tier 2 and 3 members with five to 24 years of service. Chart III-R3 shows the information graphically along with the 90% confidence interval. The data shows more actual retirements than expected under the current assumption. The proposed assumption increases the aggregate number of assumed retirements. The new assumptions decrease the aggregate A/E ratio from 127% to 106%. The R-Squared statistic improves, increasing from 55% to 65%.

Table III-R3 – Miscellaneous Tiers 2 and 3 Retirement

Tier 2 & 3 Miscellaneous Retirement Rates - 5 to 24 Years of Service								
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50 - 51	82	5	1	2	6.1%	1.0%	3.0%	610%	203%
52 - 53	153	3	3	5	2.0%	2.0%	3.0%	98%	65%
54 - 55	170	11	5	9	6.5%	3.0%	5.0%	216%	129%
56 - 57	141	8	4	7	5.7%	3.0%	5.0%	189%	113%
58 - 59	127	8	4	6	6.3%	3.0%	5.0%	210%	126%
60 - 61	134	14	11	13	10.4%	8.0%	10.0%	131%	104%
62 - 63	107	14	16	16	13.1%	15.0%	15.0%	87%	87%
64 - 65	72	15	14	14	20.8%	20.0%	20.0%	104%	104%
66 - 67	45	10	9	9	22.2%	20.0%	20.0%	111%	111%
68 - 69	26	4	5	5	15.4%	20.0%	20.0%	77%	77%
TOTAL	**1,057**	**92**	**72**	**87**	**8.7%**	**6.8%**	**8.2%**	**127%**	**106%**
Confidence Interval %		**85%**	**100%**						
R-squared		**55%**	**65%**						

Chart III-R3 – Miscellaneous Tiers 2 and 3 Retirement
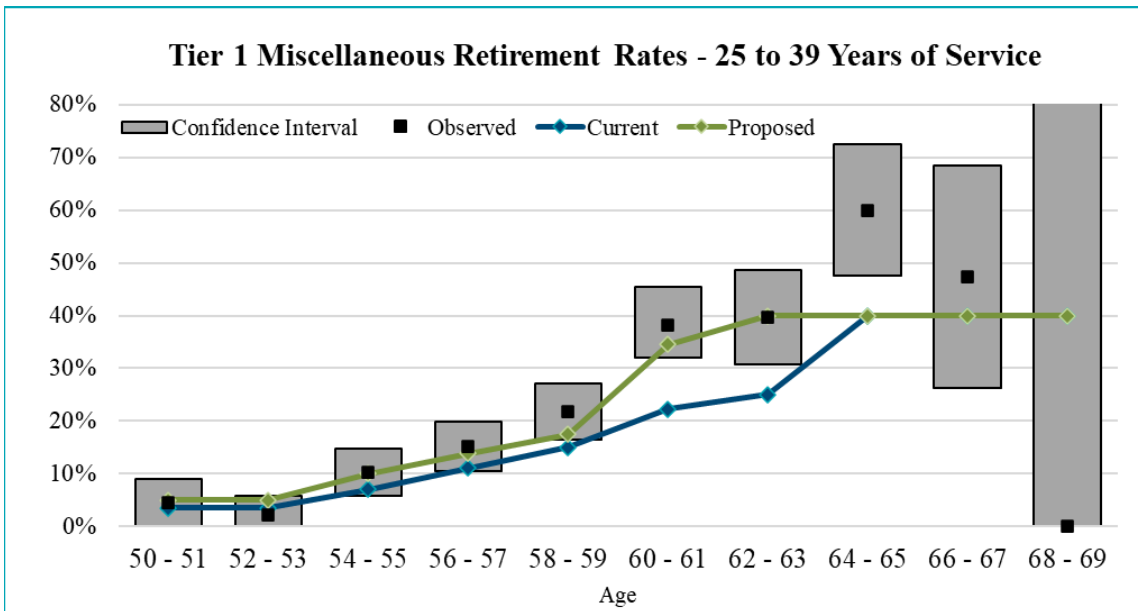
SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R4 shows the calculation of actual-to-expected ratios and the R-Squared statistic for Probation Tier 1 members with five to 24 years of service. Chart III-R4 shows the information graphically along with the 90% confidence interval. The data shows lower actual retirements than expected under the current assumption. The proposed assumption makes decreases to the aggregate expected retirements to be more in line with actual experience. The new assumptions increase the aggregate A/E ratio from 78% to 95%. The R-Squared statistic improves, increasing from 56% to 80%.

Table III-R4 – Probation Tier 1 Retirement

		Tier 1 Probation Retirement Rates - 5 to 24 Years of Service							
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50 - 52	41	1	2	1	2.4%	5.0%	2.0%	49%	122%
53 - 55	35	5	5	5	14.3%	14.4%	14.3%	99%	100%
56 - 58	16	2	3	3	12.5%	19.1%	16.9%	66%	74%
59 - 61	6	1	1	0	16.7%	9.2%	7.5%	182%	222%
62 - 64	6	0	1	0	0.0%	15.0%	7.5%	0%	0%
TOTAL	104	9	12	9	8.7%	11.2%	9.1%	78%	95%
Confidence Interval %			100%	100%					
R-squared			56%	80%					

Chart III-R4 – Probation Tier 1 Retirement

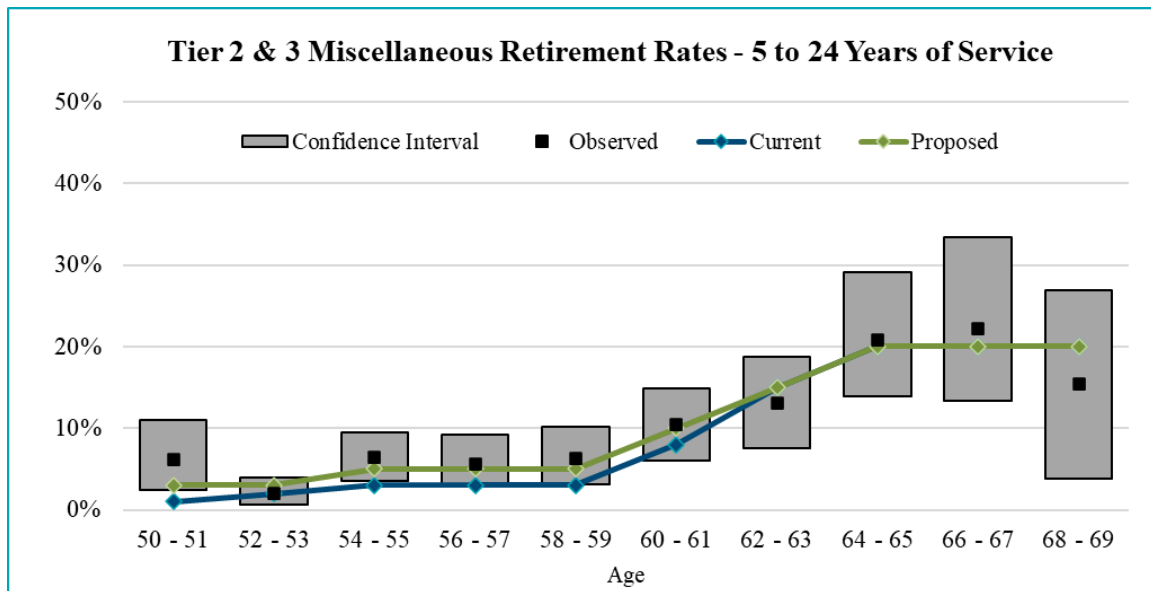Tier 1 Probation Retirement Rates - 5 to 24 Years of Service

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R5 shows the calculation of actual-to-expected ratios and the R-Squared statistic for Safety Tier 1 members with five to 24 years of service. Chart III-R5 shows the information graphically along with the 90% confidence interval. The data shows higher actual retirements than expected under the current assumption. The proposed assumption increases the aggregate number of assumed retirements to be more in line with actual experience. The new assumptions decrease the aggregate A/E ratio from 113% to 105%. The R-Squared statistic improves, increasing from 63% to 77%.

Table III-R5 – Safety Tier 1 Retirement

Tier 1 Safety Retirement Rates - 5 to 24 Years of Service								
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50 - 52	72	16	11	14	22.2%	15.0%	18.8%	148%	118%
53 - 55	52	11	13	13	21.2%	25.6%	24.8%	83%	85%
56 - 58	19	1	4	3	5.3%	22.1%	15.0%	24%	35%
59 - 61	12	7	3	4	58.3%	22.3%	35.0%	261%	167%
62 - 64	2	1	1	1	50.0%	45.0%	35.0%	111%	143%
TOTAL	157	36	32	34	22.9%	20.3%	21.8%	113%	105%
Confidence Interval %		87%	100%						
R-squared		63%	77%						

Chart III-R5 – Safety Tier 1 Retirement

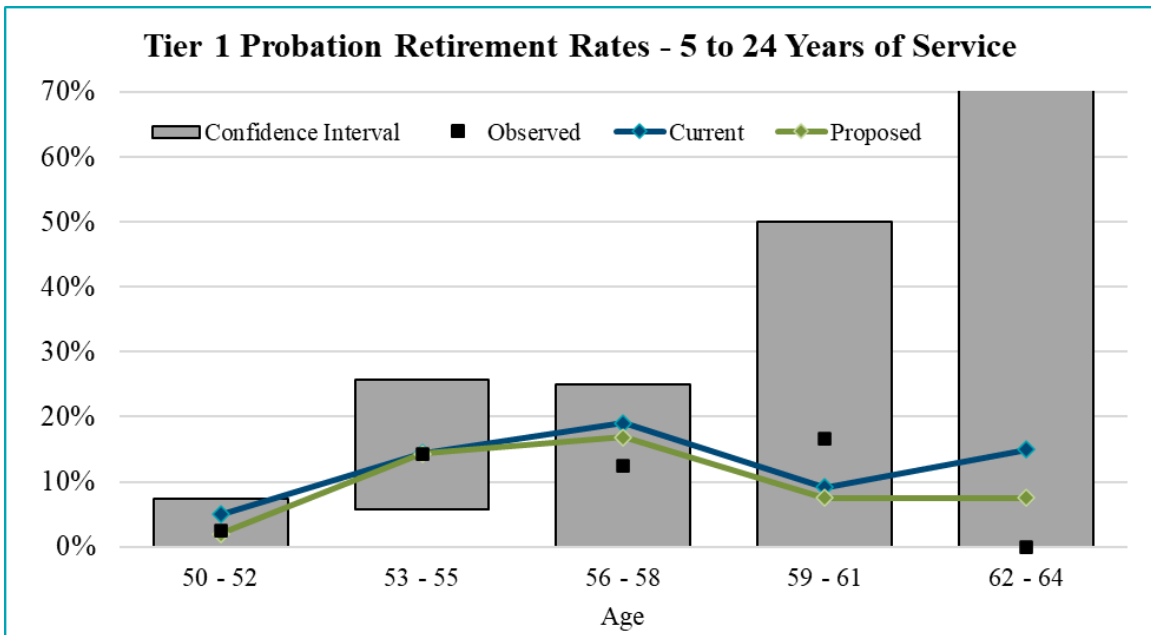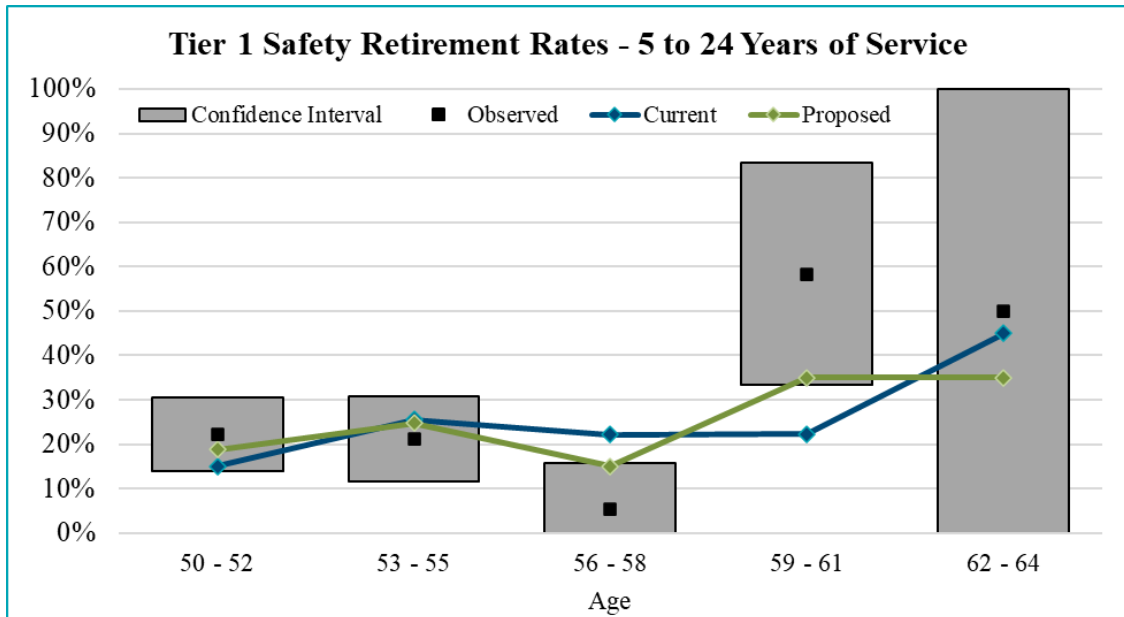Tier 1 Safety Retirement Rates - 5 to 24 Years of Service

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R6 shows the calculation of actual-to-expected ratios and the R-Squared statistic for Safety Tier 1 members with 25 to 39 years of service. Chart III-R6 shows the information graphically along with the 90% confidence interval. The data shows higher actual retirements than expected under the current assumption. The proposed assumption increases the aggregate number of assumed retirements to be more in line with actual experience. The new assumptions decrease the aggregate A/E ratio from 193% to 126%. The R-Squared statistic improves, increasing from 90% to 96%.

Table III-R6 – Safety Tier 1 Retirement

		Tier 1 Safety Retirement Rates - 25 to 39 Years of Service							
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50 - 52	37	15	9	14	40.5%	23.9%	38.5%	169%	105%
53 - 55	19	12	5	8	63.2%	27.9%	40.0%	226%	158%
56 - 58	5	3	1	2	60.0%	28.0%	40.0%	214%	150%
59 - 61	2	1	1	1	50.0%	25.0%	40.0%	200%	125%
TOTAL	63	31	16	25	49.2%	25.5%	39.1%	193%	126%
Confidence Interval %			87%	100%					
R-squared			90%	96%					

Chart III-R6 – Safety Tier 1 Retirement
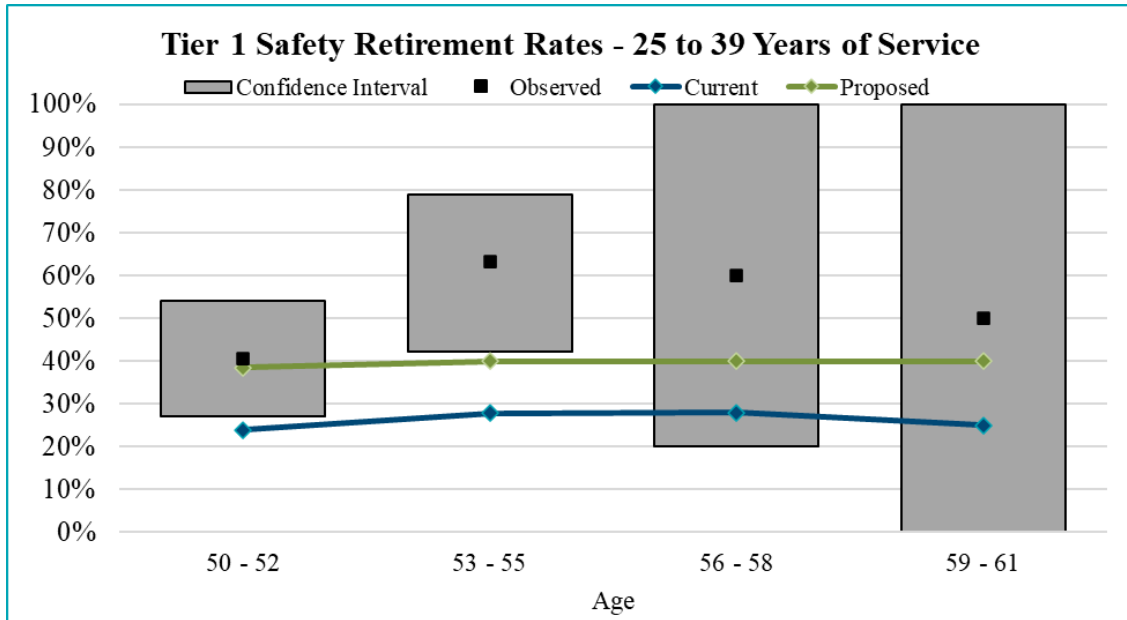
SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

We have not shown the data for Probation Tier 1 members with 25 or more years of service due to the low number of members eligible for retirements in that service group. However, the overall rate of retirement during the period was 24% while the expected overall rate was only 17%. The proposed retirement rates were increased so that the overall rate is 19%.

Also, we have not shown the data for most Tiers 2 & 3 experience due to the low number of actual retirements in those service groups. Therefore, we have used our professional judgment to propose retirement rates by age, membership class, and plan tier for these service groups based on the rate of retirement patterns exhibited by Tier 1 members in the specific group.

TERMINATION RATES

Termination rates (vested termination rates and withdrawal rates) reflect the frequency at which active members leave employment for reasons other than retirement, death, or disability. The vested termination rates and the withdrawal rates are service based for Miscellaneous members and for Safety and Probation members. We have found that the rate of termination is more related to years of service rather than age. This methodology also avoids under-weighting the liabilities that can occur if using age-based rates only. The termination rates do not apply once members are eligible for a service retirement benefit.

Vested termination rates apply to active members who are eligible for reduced or unreduced retirement benefits. Rates of withdrawal apply to active members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future benefits. When a vested member terminates employment, they have the option of receiving a refund of contributions with interest or a deferred annuity.

Vested Termination Rates

Table III-T1 shows the calculation of actual-to-expected ratios and the R-Squared statistic for Miscellaneous members. Chart III-T1 shows the information graphically along with the 90% confidence interval for the current assumption and proposed assumptions by years of service. The data shows actual vested termination rates higher than expected under the current assumption. We are proposing to increase Miscellaneous vested termination rates for five to 19 years of service, and a decrease for 20 or more years of service, to be more in line with experience. The proposed assumption increases the aggregate assumed rate of termination, and the aggregate A/E ratio decreases from 134% to 114%. The R-Squared statistic remains steady at 97%.

Table III-T1: Miscellaneous Vested Termination

Miscellaneous Vested Termination Rates								
		Terminations			Termination Rates			A/E Ratios	
Service	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
5 - 7	1,758	118	89	102	6.7%	5.1%	5.8%	133%	116%
8 - 10	1,070	67	43	54	6.3%	4.0%	5.0%	156%	125%
11 - 13	839	37	27	36	4.4%	3.3%	4.3%	135%	103%
14 - 16	666	25	20	22	3.8%	2.9%	3.3%	128%	112%
17 - 19	425	11	11	12	2.6%	2.6%	2.8%	100%	93%
20 - 22	223	2	4	4	0.9%	1.7%	1.6%	52%	55%
23 - 25	49	1	1	1	2.0%	1.5%	1.3%	136%	163%
26 - 28	16	1	0	0	6.3%	1.5%	1.3%	417%	500%
TOTAL	**5,046**	**262**	**195**	**230**	**5.2%**	**3.9%**	**4.6%**	**134%**	**114%**
Confidence Interval %			**85%**	**96%**					
R-squared			**97%**	**97%**					

Chart III-T1: Miscellaneous Vested Termination

SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Table III-T2 shows the calculation of actual-to-expected ratios and the R-Squared statistic for Safety and Probation members. Chart III-T2 shows the information graphically along with the 90% confidence interval for the current assumption and proposed assumptions by years of service. The data shows actual vested termination rates higher than expected under the current assumption. We are proposing to increase Safety and Probation vested termination rates for five to 24 years of service to be more in line with experience. The proposed assumption increases the aggregate assumed rate of termination, and the aggregate A/E ratio decreases from 160% to 135%. The R-Squared statistic improves, increasing from 74% to 78%.

Table III-T2: Safety and Probation Vested Termination

Safety and Probation Vested Termination Rates								
		Terminations			Termination Rates			A/E Ratios	
Service	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
5 - 9	575	25	14	17	4.3%	2.4%	3.0%	179%	143%
10 - 14	468	11	8	9	2.4%	1.7%	1.9%	137%	122%
15 - 19	336	4	5	5	1.2%	1.4%	1.5%	87%	79%
20 - 24	219	7	3	3	3.2%	1.3%	1.5%	256%	213%
25 - 29	47	0	0	0	0.0%	1.0%	1.0%	0%	0%
TOTAL	1,645	47	30	35	2.9%	1.8%	2.1%	160%	135%
Confidence Interval %		95%	95%						
R-squared		74%	78%						

Chart III-T2: Safety and Probation Vested Termination

SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

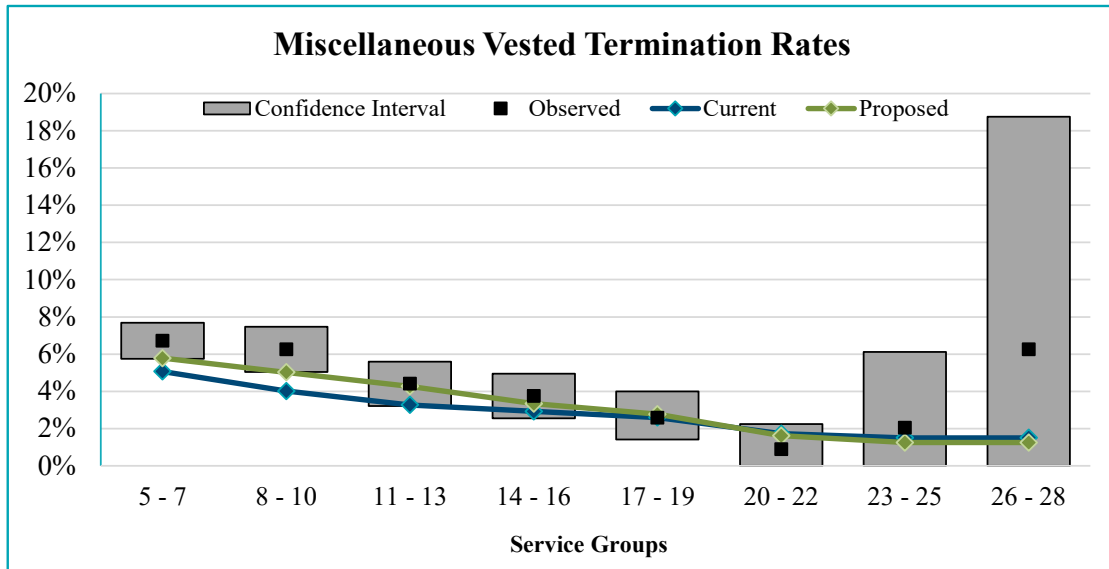## Withdrawal Rates

Table III-T3 shows the calculation of actual-to-expected ratios and the R-Squared statistic for Miscellaneous members. Chart III-T3 shows the information graphically along with the 90% confidence interval for the current and proposed assumptions by years of service. The data shows lower actual withdrawals than expected under the current assumption. The proposed assumption decreases the expected withdrawals from 0 to 14 years of service to be more in line with actual experience and increases the aggregate A/E ratio from 90% to 97%. The R-Squared statistic increases from 99% to 100%.

Table III-T3: Miscellaneous Withdrawal

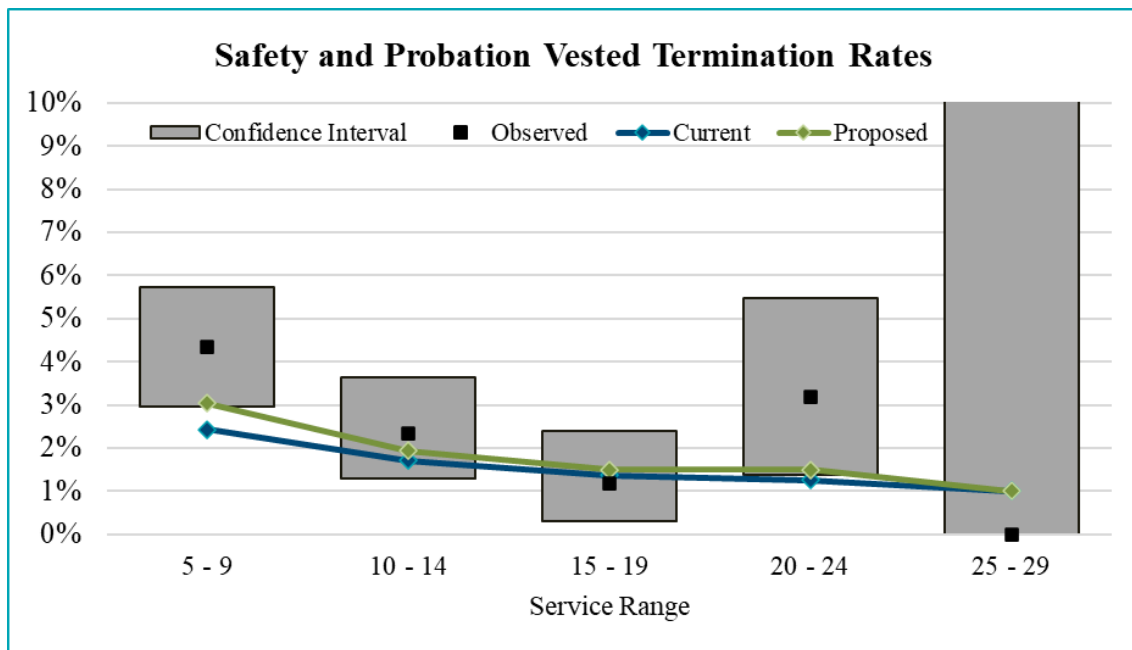|		Withdrawals			Withdrawal Rates			A/E Ratios	
Service	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
0 - 1	2,528	413	430	419	16.3%	17.0%	16.6%	96%	99%
2 - 3	2,427	234	268	247	9.6%	11.0%	10.2%	87%	95%
4 - 5	1,889	72	78	73	3.8%	4.1%	3.9%	93%	99%
6 - 7	1,428	18	25	15	1.3%	1.8%	1.0%	72%	121%
8 - 9	1,100	6	14	6	0.5%	1.3%	0.5%	43%	109%
10 - 14	2,370	15	17	12	0.6%	0.7%	0.5%	89%	127%
15 - 19	1,962	5	10	10	0.3%	0.5%	0.5%	51%	51%
20 - 24	1,194	2	6	6	0.2%	0.5%	0.5%	34%	34%
TOTAL	**14,898**	**765**	**847**	**787**	**5.1%**	**5.7%**	**5.3%**	**90%**	**97%**
Confidence Interval %			88%	100%					
R-squared			99%	100%					

Chart III-T3: Miscellaneous Withdrawal
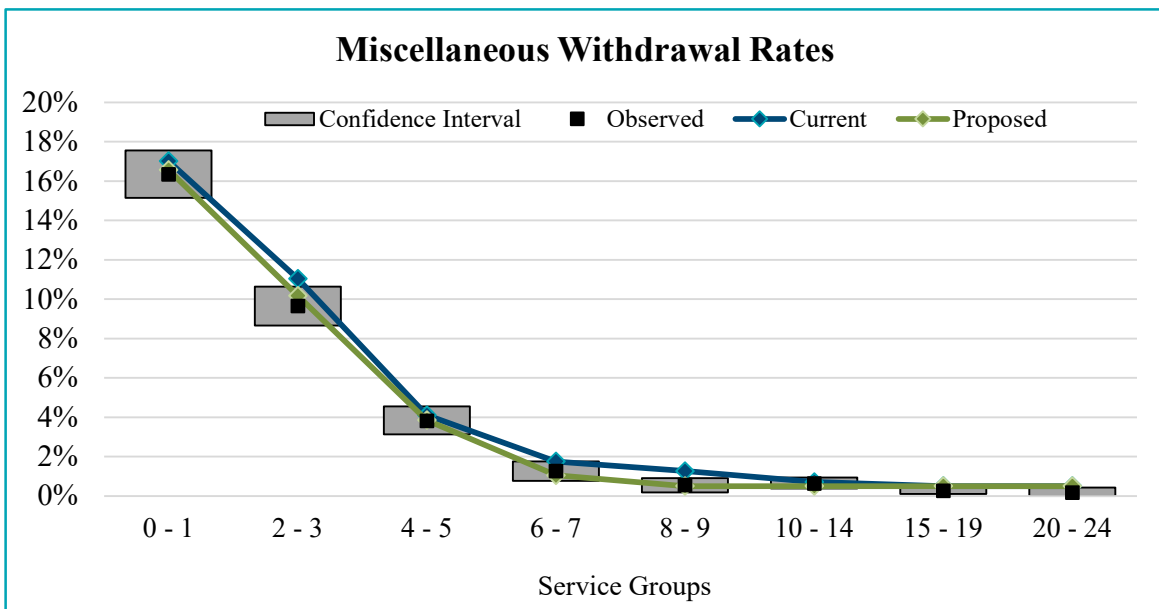
SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Table III-T4 shows the calculation of actual-to-expected ratios and the R-Squared statistic for Safety and Probation members. Chart III-T4 shows the information graphically along with the 90% confidence interval for the current assumption and proposed assumptions by years of service. The data shows actual withdrawal rates close to expected under the current assumption. We are proposing no changes to the assumption. The aggregate A/E ratio is 110% and the R-Squared statistic is 95%.

Table III-T4: Safety and Probation Withdrawal

Safety and Probation Withdrawal Rates								
		Withdrawals			Withdrawal Rates			A/E Ratios	
Service	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
0 - 1	289	33	25	25	11.4%	8.7%	8.7%	131%	131%
2 - 3	349	18	19	19	5.2%	5.5%	5.5%	94%	94%
4 - 5	313	15	11	11	4.8%	3.5%	3.5%	136%	136%
6 - 7	244	4	4	4	1.6%	1.5%	1.5%	107%	107%
8 - 9	216	1	2	2	0.5%	1.0%	1.0%	46%	46%
10 - 11	214	2	2	2	0.9%	1.0%	1.0%	93%	93%
12 - 13	190	0	2	2	0.0%	1.0%	1.0%	0%	0%
14 - 15	208	1	2	2	0.5%	1.0%	1.0%	48%	48%
TOTAL	2,023	74	67	67	3.7%	3.3%	3.3%	110%	110%
Confidence Interval %			100%	100%					
R-squared			95%	95%					

Chart III-T4: Safety and Probation Withdrawal
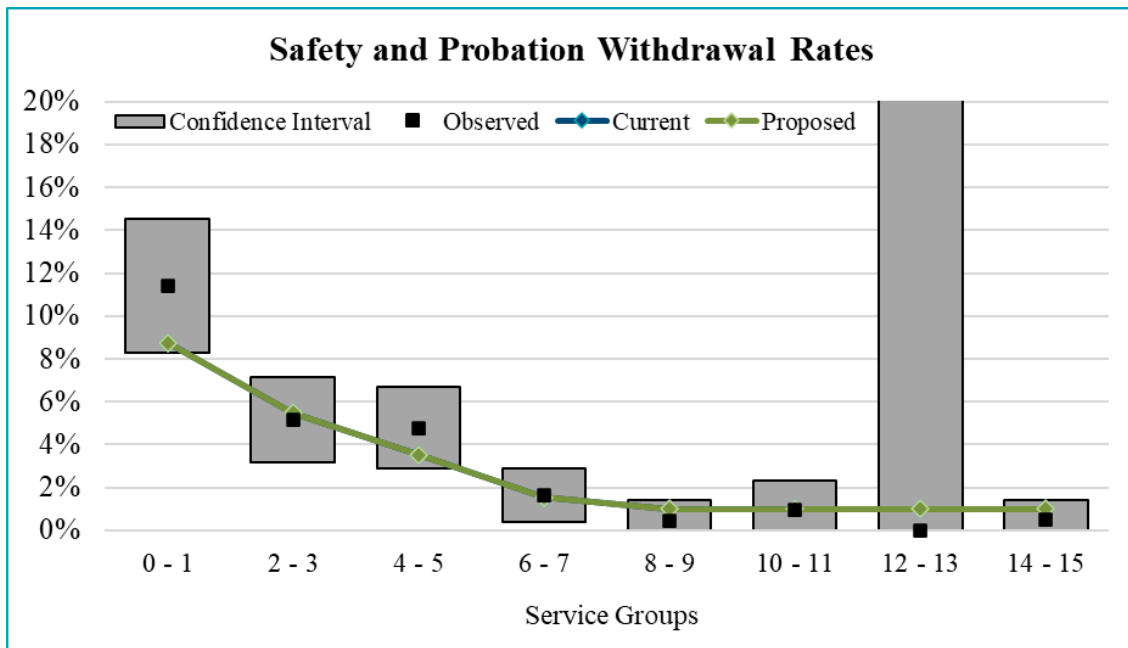
Chart III-T4: Safety and Probation Withdrawal Rates

SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Reciprocal Transfers

All members who terminate employment, regardless of length of service credited, have the option of receiving a refund of contributions with interest or leaving the accumulated contributions with interest in deposit with the Trust. The reciprocal transfer assumption assumes a member terminates employment, leaves their contributions with interest in the Trust, and works for a reciprocal employer.

Table III-T5 below shows the experience for the percentage of terminated members who retire from a reciprocal system. We performed the analysis from two different perspectives. The first method, Termination Analysis, which covers seven years of experience, looks at the number of members who notify SLOCPT that they have been employed at a reciprocal retirement system when they terminate SLOCPT employment. The second method, Retirement Analysis, which covers the five most recent years of experience, looks at the number of members who retire from a terminated status at SLOCPT but were employed at a reciprocal system.

The first analysis results in lower rates of reciprocity. This is likely due to members not reporting to SLOCPT that they were hired at a reciprocal system and the information only becoming available once the member retires from the reciprocal system.

The current assumption is that 30% of vested terminated members who leave their member contributions on deposit with the Trust are reciprocal transfers. Based on the analysis, we are proposing increasing the assumption to 35% to get closer to the experience percentage of retirements with reciprocity. In addition, all non-vested terminated members are assumed to take a refund of contributions with interest.

Table III-T5: Reciprocal Transfers

Percentage of Members With Reciprocity	
Termination Analysis	
Members who terminated and left contributions on deposit	485
Members who terminated and went to a reciprocal system	98
Percentage of terminated members with reciprocity	**20%**
Retirement Analysis	
Members who retired from terminated or reciprocal status	118
Members who retired from reciprocal status	57
Percentage of retirements with reciprocity	**48%**

SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Retirement Age of Vested Terminated and Reciprocal Members

Tables III-T6 and III-T7 show the results of our analysis of the age at which vested terminated and reciprocal transfer members retire. The current retirement age assumptions are the same regardless of class - Miscellaneous, Probation, or Safety members - and are split by tier and status. Tier 1 vested terminated members are assumed to retire at age 55, and Tiers 2 and 3 vested terminated members as well as all reciprocal members are currently assumed to retire at age 60.

We are proposing to split the assumption by class rather than by tier and status because of the difference in actual experience shown in Tables III-T6 and T7 below. Also, SLOCPT benefit multipliers are based on age and the separate classes reach their maximum multiplier at different ages which impacts retirement behavior.

Table III-T6: Miscellaneous Average Retirement Age from Terminated Status

Miscellaneous Average Retirement Age from Terminated Status						
	Tier 1		Tier 2		Tier 3	
	Deferred Vested	Reciprocal	Deferred Vested	Reciprocal	Deferred Vested	Reciprocal
Experience	62	61	58	N/A	61	55
Current Assumption	55	60	60	60	60	60
Proposed Assumption	60	60	60	60	60	60

We are proposing an assumed retirement age of 60 for all Miscellaneous vested terminated and reciprocal members, regardless of tier. For the reciprocal Tiers 2 and 3, there was only 1 member who retired during the period, so we propose the same assumed retirement age as Tier 1.

Table III-T7: Safety and Probation Average Retirement Age from Terminated Status

Safety and Probation Average Retirement Age from Terminated Status				
	Tier 1		Tiers 2 and 3	
	Deferred Vested	Reciprocal	Deferred Vested	Reciprocal
Experience	53	56	50	N/A
Current Assumption	55	60	60	60
Proposed Assumption	55	55	55	55

We are proposing an assumed retirement age of 55 for all Safety and Probation vested terminated and reciprocal members, regardless of tier. Age 55 is the age at which the benefit multiplier reaches the maximum amounts for Tier 1 and Tier 2.

DISABILITY RATES

This section analyzes the incidence of disability by the age of the member by membership class. Generally, there is a very low rate of disability, and the disability assumption only has a minor impact on the liabilities as a whole.

We are proposing the disability rates developed in the most recent 2021 CalPERS experience study for Miscellaneous, Probation and Safety members. We are proposing the 2021 CalPERS Public Agency County Peace Officer Non-Industrial Disability table for Miscellaneous members. For Safety and Probation members, we are proposing the 2021 CalPERS State Police Officers and Firefighters Total Disability table.

In addition, all disabilities for Safety members are assumed to be service-related industrial disabilities and no disabilities for Miscellaneous and Probation members are assumed to be service-related industrial disabilities. We are not proposing any change to this assumption.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
DISABILITY RATES

Table III-D1 shows the calculation of actual-to-expected ratios and the R-Squared statistic for all disabilities for Miscellaneous members. Chart III-D1 shows the information graphically along with the 90% confidence interval for the current assumption and proposed assumptions by age. The data shows actual disability rates that are lower than the current assumption. Due to the low number of actual disabilities and the lack of sufficient credible data for comparison, we are proposing to use a standard table, the CalPERS Public Agency County Peace Officers Non-Industrial Disability table. While the number of total assumed disabilities increases using this standard table, the A/E ratio improves, increasing from 67% to 81% due to the table fitting the pattern of the actual disabilities more closely than the current rates.

Table III-D1: Miscellaneous Disability

Miscellaneous Disability Rates								
Age Band	**Exposures**	**Disabilities***			**Average Disability Rates**			**A/E Ratios**	
		Actual	**Current**	**Proposed**	**Actual**	**Current**	**Proposed**	**Current**	**Proposed**
35 - 39	2,320	1	1	2	0.04%	0.05%	0.10%	95%	45%
40 - 44	2,211	3	2	3	0.14%	0.07%	0.12%	196%	114%
45 - 49	1,829	2	2	3	0.11%	0.10%	0.15%	115%	75%
50 - 54	2,142	2	3	4	0.09%	0.12%	0.17%	78%	55%
55 - 59	2,186	1	3	0	0.05%	0.14%	0.00%	32%	0%
TOTAL	**10,688**	**9**	**10**	**11**	**0.08%**	**0.09%**	**0.10%**	**67%**	**81%**
Confidence Interval %			**100%**	**100%**					
R-squared			**3%**	**7%**					

*Current and proposed values shown are rounded to the ones place. Totals may differ from visible total due to rounding.

Chart III-D1: Miscellaneous Disability

SECTION III – DEMOGRAPHIC ASSUMPTIONS
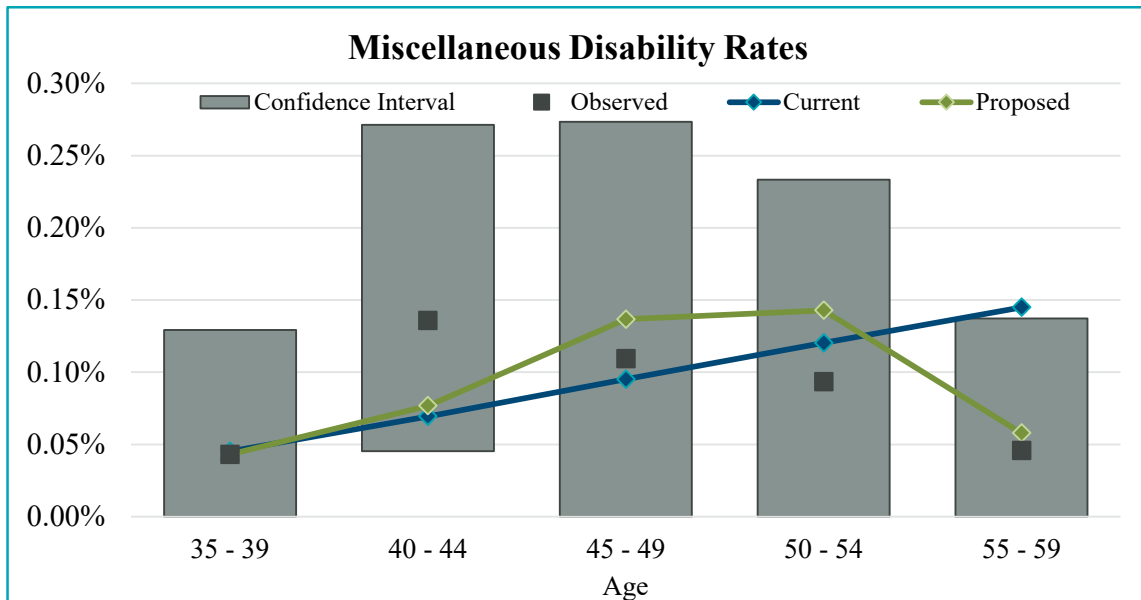### DISABILITY RATES

Table III-D2 shows the calculation of actual-to-expected ratios and the R-Squared statistic for all disabilities for Safety and Probation members. Chart III-D2 shows the information graphically along with the 90% confidence interval for the current and proposed assumptions by age. The data shows actual disability rates that are significantly higher than the current assumption. We are proposing to use the CalPERS State Police Officers and Firefighters Total Disability table. The proposed disability assumption increases the aggregate assumed rate of disability and the aggregate A/E ratio decreases from 285% to 151%.

Table III-D2: Safety and Probation Disability

Safety and Probation Disability Rates									
Age Band	Exposures	Disabilities*			Average Disability Rates			A/E Ratios	
		Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
35 - 39	551	5	1	2	0.91%	0.27%	0.39%	336%	234%
40 - 44	480	3	2	3	0.63%	0.37%	0.60%	169%	104%
45 - 49	429	6	2	4	1.40%	0.47%	0.90%	297%	155%
50 - 54	284	6	2	4	2.11%	0.57%	1.29%	372%	164%
55 - 59	124	2	1	2	1.61%	0.66%	1.74%	244%	92%
60 - 64	28	1	0	1	3.57%	0.75%	2.30%	474%	155%
TOTAL	**1,896**	**23**	**8**	**15**	**1.21%**	**0.42%**	**0.81%**	**285%**	**151%**
Confidence Interval %			67%	100%					
R-squared			31%	33%					
*Current and proposed values shown are rounded to the ones place. Totals may differ from visible total due to rounding.									

Chart III-D2: Safety and Probation Disability
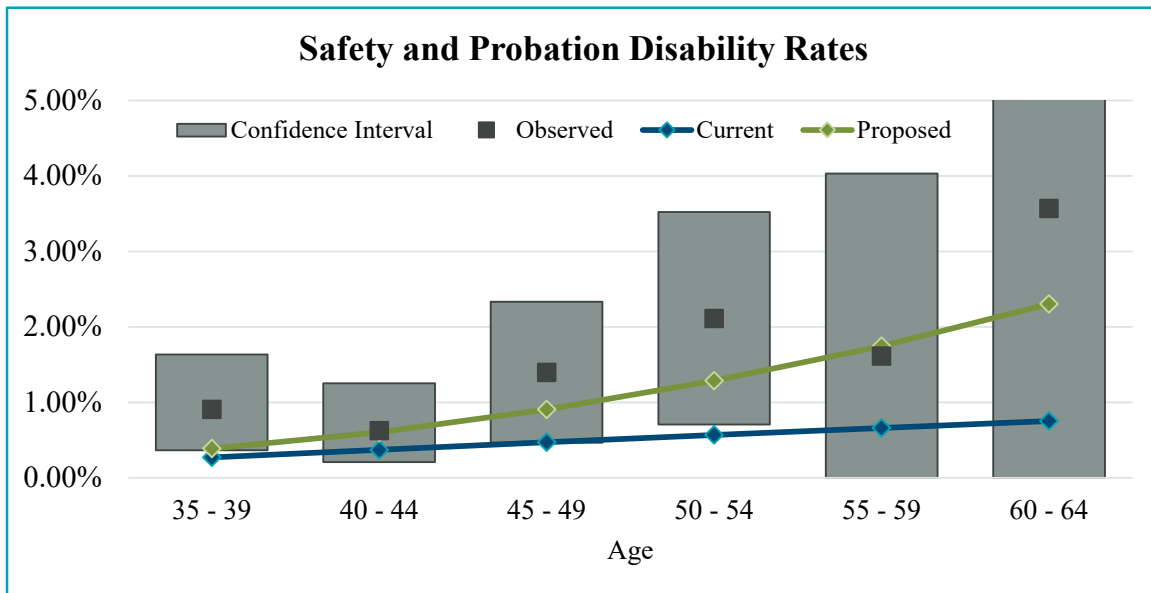
Safety and Probation Disability Rates

MORTALITY RATES

Post-retirement mortality assumptions are typically developed separately by gender for both healthy annuitants and disabled annuitants. Pre-retirement mortality assumptions are also developed separately for males and females. Unlike most of the other demographic assumptions that rely exclusively on the experience of the plan, for mortality, standard mortality tables and projection scales serve as the primary basis for the assumption. In this study, we performed a separate analysis on the beneficiary mortality since the public sector mortality tables developed by the Society of Actuary, described below, show that beneficiary mortality can be markedly different than that of healthy annuitants.

In general, we did not find that the pandemic had a material impact on SLOCPT's mortality experience, so we included all experience from 2017 to 2023.

In January 2019, the Retirement Plans Experience Committee (RPEC) of the SOA completed an extensive mortality study and published a new set of mortality tables for U.S. public pension plans, the Pub-2010 Mortality Tables, with separate tables for teachers, safety members, and other public employees. The experience covered 35 public systems with 78 plans from calendar years 2008–2013, which included approximately 46 million exposures and 580 thousand deaths. Since benefits for retirees and salaries for active members are a significant predictor of mortality differences, separate tables were also developed for Above-Median and Below-Median income. RPEC also published the most recent mortality improvement projection scale, MP-2021; no update was issued in 2022 or 2023. We used these tables as the basis for our analysis.

The steps in our analysis are as follows:

1. Select a standard mortality table that, based on experience, most closely matches the anticipated experience of SLOCPT.
2. Compare actual SLOCPT experience to what would have been predicted by the selected standard table for the period of the experience study.
3. Adjust the standard table depending on the level of credibility for SLOCPT experience. This adjusted table is called the base table.
4. Select an appropriate standard mortality improvement projection scale and apply it to the base table.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Current Mortality Assumptions – Based on the prior experience study, SLOCPT elected to use the following base tables:

Active members
- **Miscellaneous Members:** Sex Distinct Public General 2010 Amount-Weighted Above-Median Income Employee Mortality Table, without adjustment.
- **Safety and Probation Members:** Sex Distinct Public Safety 2010 Amount-Weighted Above-Median Income Employee Mortality Table, without adjustment.

Healthy retirees and beneficiaries
- **Miscellaneous Members and all beneficiaries:** Sex Distinct Public General 2010 Amount-Weighted Above-Median Income Retiree Mortality Table, without adjustment.
- **Safety and Probation Members:** Sex Distinct Public Safety 2010 Amount-Weighted Above-Median Income Retiree Mortality Table, without adjustment.

Disabled members
- **All Members:** Sex Distinct Public General 2010 Amount-Weighted Disabled Retiree Mortality Table, without adjustment.

Recommended Mortality Assumptions – Based on SLOCPT's experience, we are proposing the following base mortality tables:

Active members
- **Miscellaneous Members [no change]:** Sex Distinct Public General 2010 Amount-Weighted Above-Median Income Employee Mortality Table, without adjustment.
- **Safety and Probation Members [no change]:** Sex Distinct Public Safety 2010 Amount-Weighted Above-Median Income Employee Mortality Table, without adjustment.

Healthy retirees and beneficiaries
- **Miscellaneous Members:** Sex Distinct Public General 2010 Amount-Weighted Above-Median Income Retiree Mortality Table, with a 95% multiplier applied to male rates and a 97.5% multiplier applied to female rates.
- **Safety and Probation Members [no change]:** Sex Distinct Public Safety 2010 Amount-Weighted Above-Median Income Retiree Mortality Table, without adjustment.
- **Male Beneficiaries:** Sex Distinct Public General 2010 Amount-Weighted Below-Median Income Contingent Survivor Mortality Table for Males, with a 102.5% multiplier applied.
- **Female Beneficiaries [no change]:** Sex Distinct Public General 2010 Amount-Weighted Above-Median Income Retiree Mortality Table for Females, without adjustment.

Disabled members
- **All Members [no change]:** Sex Distinct Public General 2010 Amount-Weighted Disabled Retiree Mortality Table, without adjustment.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Mortality improvement projection scale MP-2021 continues to represent the Society of Actuaries' most advanced actuarial methodology in incorporating mortality improvement trends with actual recent mortality rates, by using rates that vary not only by age but also by calendar year – known as a two-dimensional approach to projecting mortality improvements. Scale MP-2021 was designed with the intent of being applied to mortality on a generational basis. The effect of this is to build in an automatic expectation of future improvements in mortality.

We recommend continuing use of the MP-2021 Scale for projecting mortality improvements.

SLOCPT's mortality experience over the past seven years continues to match well with the Pub-2010 mortality rates for members, after applying the improvement projections from the base year of the tables (2010) using the MP-2021 mortality improvement projections through the mid-point of the seven-year period (2021).

Rather than weighting the experience based on the number of members living and dying, we have weighted the experience based on benefit size (salary for current active members). This approach has been proposed by RPEC, since members with larger benefits are expected to live longer, and a benefit-weighted approach helps avoid underestimating the liabilities.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

As shown in Table III-M1 and Table III-M2 on the pages that follow, the current mortality rates for Miscellaneous healthy annuitants overstate the actual mortality experience, and more so for males than females. We are proposing to apply a 95% multiplier for males and a 97.5% multiplier for females to the current Sex Distinct Public General 2010 Amount-Weighted Above-Median Income Retiree Mortality Table to bring the rates closer to actual experience. These adjustments are based on the level of credibility in the data. As shown in Table III-M1 and Table III-M2, the multipliers increase the aggregate A/E ratio from 76% to 80% for males and increase the aggregate A/E ratio from 91% to 93% for females.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M1 – Miscellaneous Healthy Annuitant Male Mortality

				Weighted Deaths			A/E Ratios	
Healthy Annuitant Mortality - Base Table for Males								
Age Band	**Exposures**	**Actual Deaths**	**Weighted Exposures**	**Actual**	**Current**	**Proposed**	**Current**	**Proposed**
50 - 54	31	0	41,416	0	134	128	0%	0%
55 - 59	241	2	615,358	1,265	2,923	2,776	43%	46%
60 - 64	827	5	3,044,515	12,917	20,962	19,914	62%	65%
65 - 69	1,448	9	5,602,999	27,489	55,772	52,984	49%	52%
70 - 74	1,379	25	5,816,822	82,636	91,784	87,196	90%	95%
75 - 79	740	18	3,322,628	51,682	89,269	84,806	58%	61%
80 - 84	275	10	1,221,459	45,865	60,703	57,668	76%	80%
85 - 89	194	17	519,165	54,000	46,685	44,351	116%	122%
90 - 94	61	13	150,893	22,714	22,712	21,576	100%	105%
95 +	15	3	39,996	7,620	9,449	8,976	81%	85%
Total	**5,211**	**102**	**20,375,251**	**306,188**	**400,394**	**380,376**	**76%**	**80%**

Chart III-M1 – Miscellaneous Healthy Annuitant Male Mortality
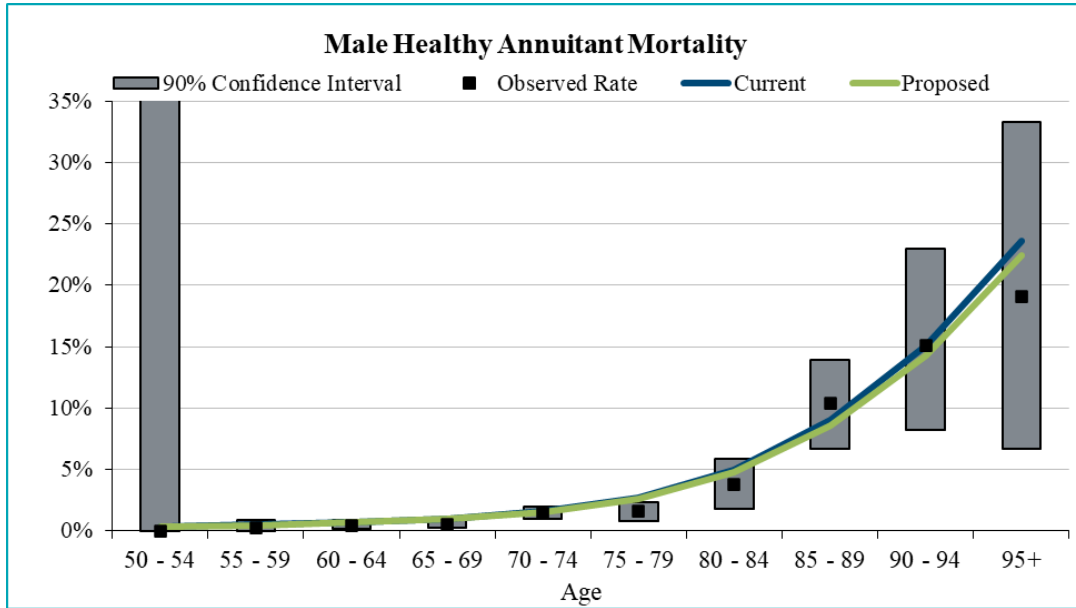
SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M2 – Miscellaneous Healthy Annuitant Female Mortality

Healthy Annuitant Mortality - Base Table for Females								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Proposed	Current	Proposed
50 - 54	113	2	169,727	1,923	404	394	476%	488%
55 - 59	564	3	1,220,562	5,272	4,070	3,968	130%	133%
60 - 64	1,710	6	4,381,456	8,697	20,320	19,813	43%	44%
65 - 69	2,648	14	6,990,580	27,108	47,986	46,785	56%	58%
70 - 74	2,296	30	5,659,569	59,528	64,220	62,616	93%	95%
75 - 79	1,388	27	3,034,018	60,127	61,309	59,777	98%	101%
80 - 84	738	26	1,333,655	41,267	50,699	49,432	81%	83%
85 - 89	401	28	588,765	46,074	43,008	41,933	107%	110%
90 - 94	245	33	334,215	43,779	43,457	42,370	101%	103%
95 +	104	27	121,136	34,424	24,663	24,046	140%	143%
Total	**10,207**	**196**	**23,833,682**	**328,199**	**360,136**	**351,135**	**91%**	**93%**

Chart III-M2 – Miscellaneous Healthy Annuitant Female Mortality
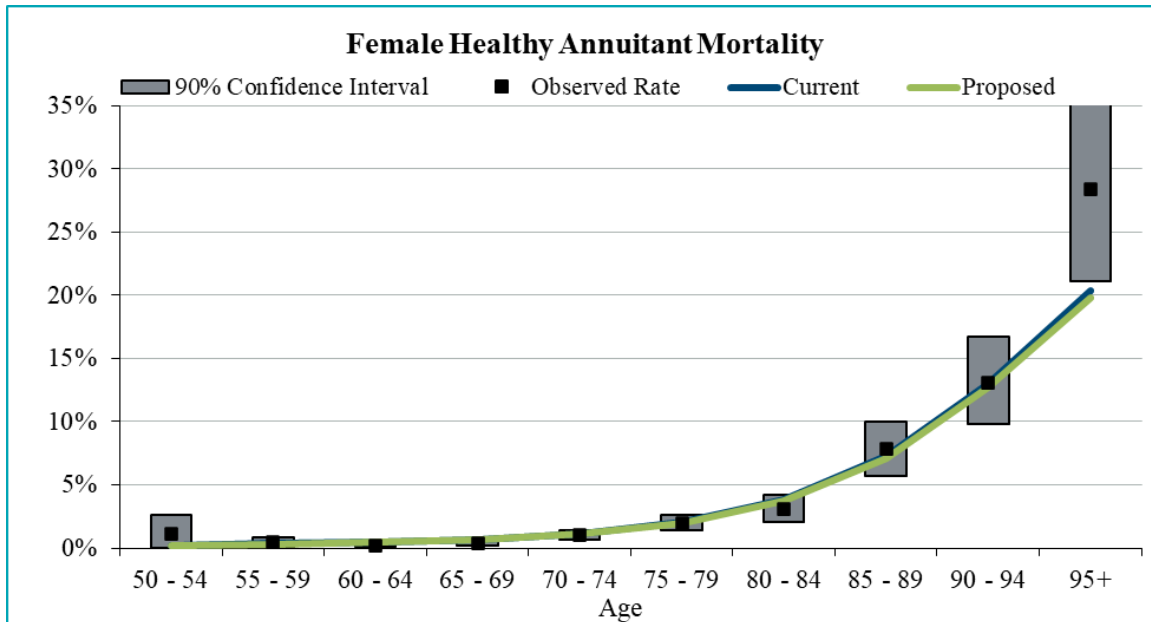
SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M3 and Table III-M4 on the pages that follow summarize our analysis and selection of the base mortality table for healthy Safety and Probation male and female retirees. As shown in Table III-M3, the current mortality rates for male Safety and Probation healthy annuitants are relatively close to recent experience with an aggregate A/E ratio of 86%. Based on the credibility level (amount of data), no adjustment could be made to increase the A/E ratio closer to 100%. As a result, we do not propose any change to the current table for males from the Sex Distinct Public Safety 2010 Amount-Weighted Above-Median Income Retiree Mortality Table. As show in Table III-M4, there are only two deaths among female Safety retirees. Given the limited experience data, we propose to continue using the female version of the male Safety mortality table.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M3 – Safety and Probation Healthy Annuitant Male Mortality

Healthy Annuitant Mortality - Base Table for Males								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Proposed	Current	Proposed
50 - 54	179	0	968,399	0	1,919	1,919	0%	0%
55 - 59	343	0	1,977,913	0	6,528	6,528	0%	0%
60 - 64	334	3	1,917,872	16,028	10,817	10,817	148%	148%
65 - 69	301	3	1,655,630	10,985	15,579	15,579	71%	71%
70 - 74	265	2	1,302,103	9,805	19,973	19,973	49%	49%
75 - 79	146	4	668,619	13,351	17,895	17,895	75%	75%
80 - 84	96	8	349,950	23,054	17,229	17,229	134%	134%
85 - 89	27	3	99,630	12,328	8,588	8,588	144%	144%
90+	19	3	29,695	2,931	4,473	4,473	66%	66%
Total	**1,710**	**26**	**8,969,811**	**88,481**	**103,001**	**103,001**	**86%**	**86%**

Chart III-M3 - Safety and Probation Healthy Annuitant Male Mortality
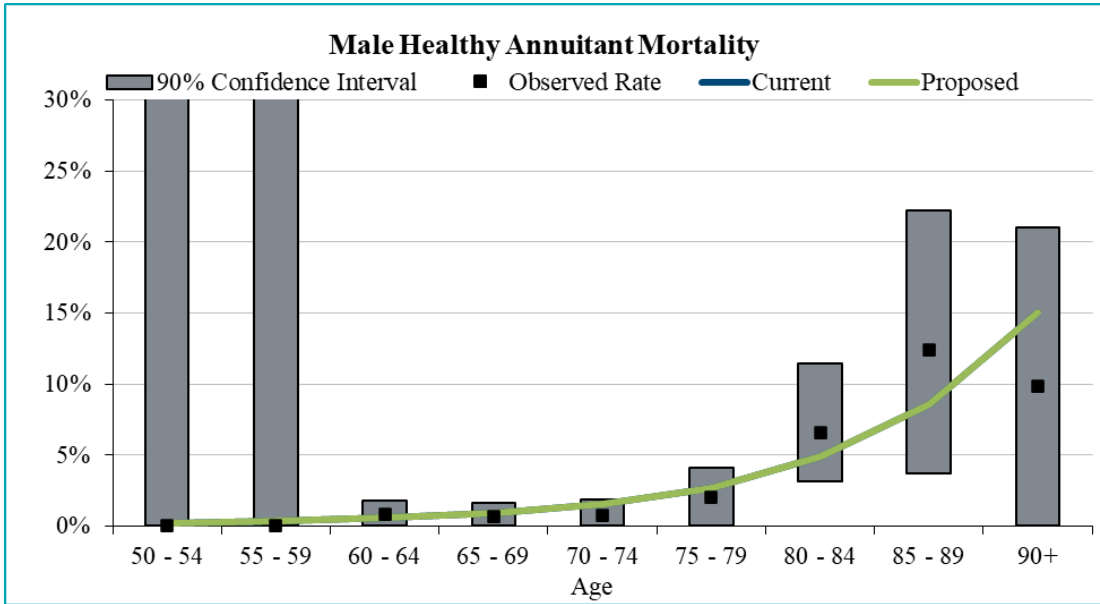
SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M4 - Safety and Probation Healthy Annuitant Female Mortality

Healthy Annuitant Mortality - Base Table for Females								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Proposed	Current	Proposed
50 - 54	43	0	159,026	0	289	289	0%	0%
55 - 59	109	1	527,186	10,322	1,696	1,696	609%	609%
60 - 64	91	0	398,357	0	2,089	2,089	0%	0%
65 - 69	60	0	245,259	0	2,039	2,039	0%	0%
70 - 74	40	0	140,200	0	1,933	1,933	0%	0%
75 - 79	32	0	112,627	0	2,621	2,621	0%	0%
80 - 84	12	1	34,978	3,136	1,497	1,497	210%	210%
85+	3	0	10,194	0	702	702	0%	0%
Total	**390**	**2**	**1,627,827**	**13,458**	**12,864**	**12,864**	**105%**	**105%**

Chart III-M4 - Safety and Probation Healthy Annuitant Female Mortality
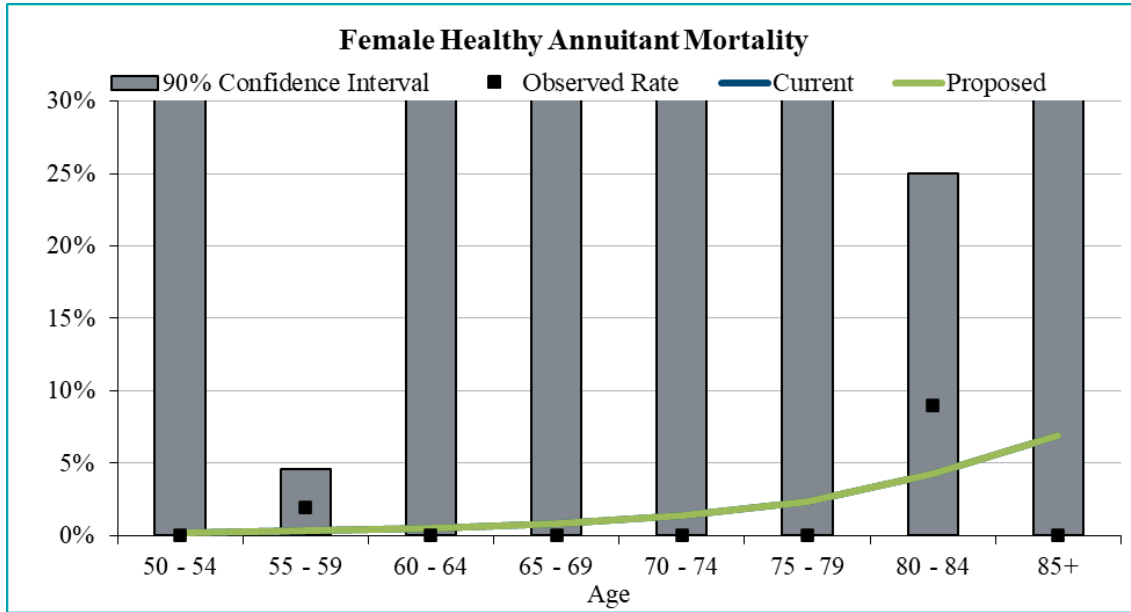
SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M5 and Table III-M6 summarize our analysis and selection of the base mortality table for disabled Miscellaneous male and female retirees. As shown in Table III-M5, the current mortality rates for male disabled Miscellaneous retirees are relatively close to recent experience with an aggregate A/E ratio of 118%. As a result, we do not propose any change to the current table for males from the Sex Distinct Public General 2010 Amount-Weighted Disabled Retiree Mortality Table. As shown in Table III-M6, there were only three deaths among female disabled Miscellaneous retirees. Given the limited experience data, we propose to continue using the same General Pub-2010 Disabled Annuitant Mortality Table for females as is used for males.

Table III-M5 – Miscellaneous Disabled Annuitant Male Mortality

Disabled Annuitant Mortality - Base Table for Males								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Proposed	Current	Proposed
50 - 59	37	0	51,718	0	1,169	1,169	0%	0%
60 - 69	73	2	143,933	2,060	4,339	4,339	47%	47%
70 - 79	16	2	45,065	4,025	1,763	1,763	228%	228%
80 - 89	18	3	20,994	4,764	1,876	1,876	254%	254%
90+	4	1	740	80	127	127	63%	63%
Total	**148**	**8**	**262,449**	**10,928**	**9,275**	**9,275**	**118%**	**118%**

Chart III-M5 – Miscellaneous Disabled Annuitant Male Mortality

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M6 – Miscellaneous Disabled Annuitant Female Mortality

Disabled Annuitant Mortality - Base Table for Females								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Proposed	Current	Proposed
40 - 49	23	1	26,280	682	274	274	249%	249%
50 - 59	88	0	97,529	0	1,768	1,768	0%	0%
60 - 69	222	0	330,836	0	7,116	7,116	0%	0%
70 - 79	87	2	110,817	1,626	3,762	3,761	43%	43%
80 - 89	16	0	29,894	0	2,580	2,580	0%	0%
90+	6	0	11,887	0	1,672	1,672	0%	0%
Total	**442**	**3**	**607,242**	**2,309**	**17,171**	**17,171**	**13%**	**13%**

Chart III-M6 – Miscellaneous Disabled Annuitant Female Mortality

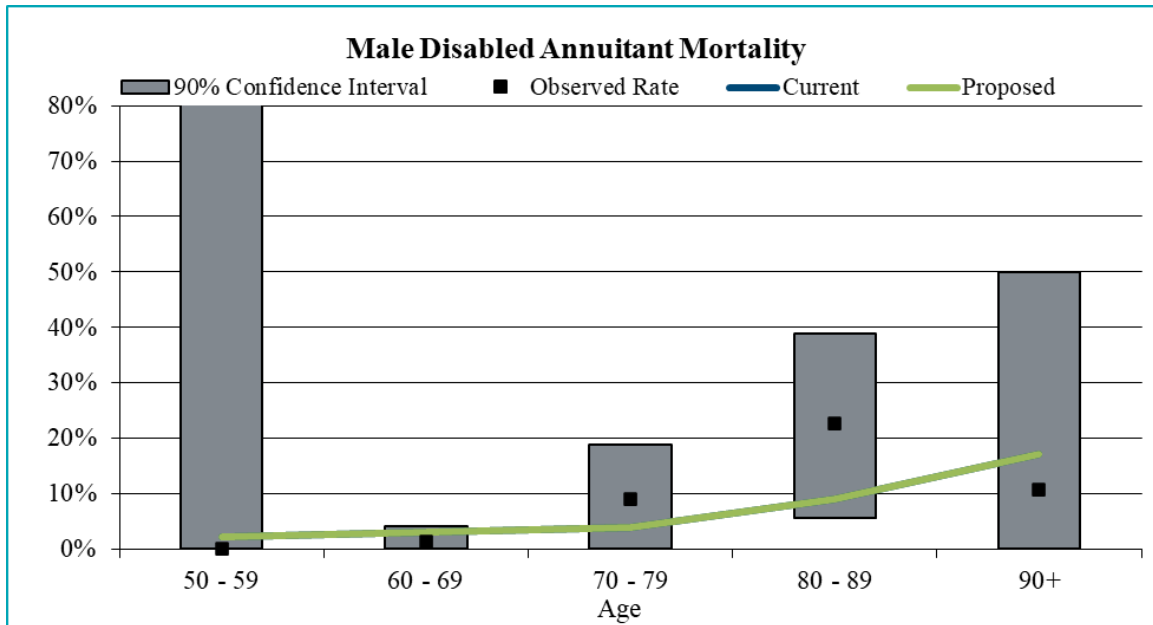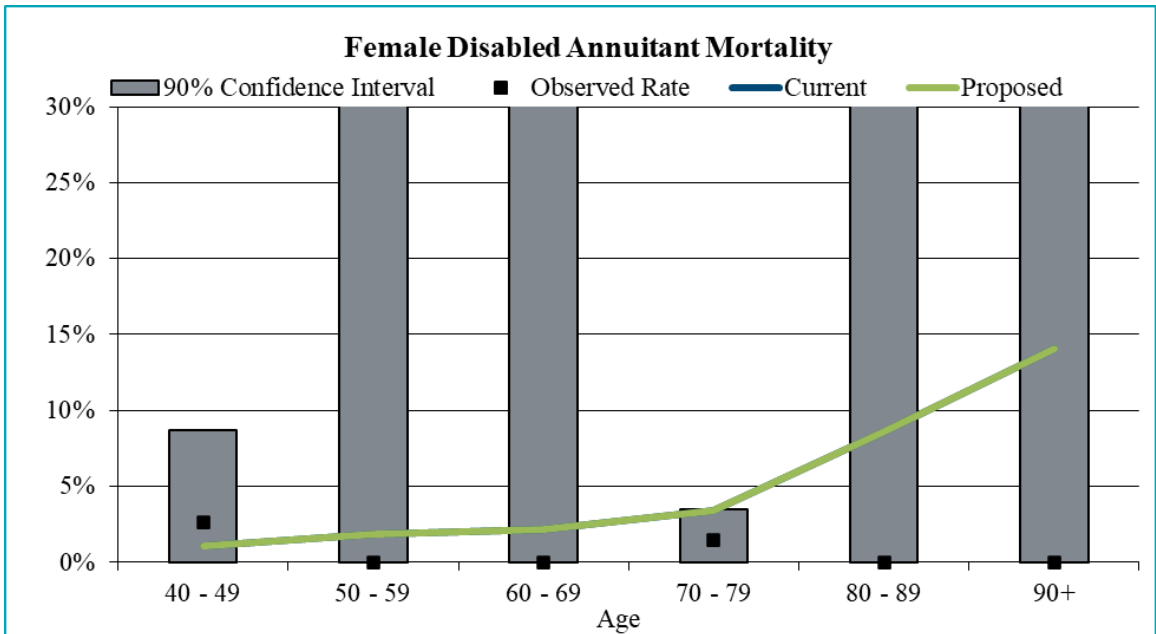## SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M7 summarizes our analysis and selection of the base mortality table for male disabled Safety and Probation retirees. As shown in Table III-M7, the current mortality rates for male disabled Safety and Probation retirees are relatively close to recent experience with an aggregate A/E ratio of 80%. We do not propose any change to the current table, and we propose to continue using the same General Pub-2010 Disabled Annuitant Table for females as is used for males.

Table III-M7 – Safety and Probation Disabled Annuitant Male Mortality

Disabled Annuitant Mortality - Base Table for Males								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Proposed	Current	Proposed
50 - 59	119	0	513,615	0	10,623	10,623	0%	0%
60 - 69	87	1	385,297	3,599	11,281	11,281	32%	32%
70 - 79	69	5	228,270	23,823	9,768	9,769	244%	244%
80 - 89	9	0	22,167	0	2,051	2,051	0%	0%
90+	2	0	3,816	0	611	611	0%	0%
Total	286	6	1,153,165	27,422	34,334	34,334	80%	80%

Chart III-M7 – Safety and Probation Disabled Annuitant Male Mortality

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M8 summarizes our analysis and selection of the base mortality table for male beneficiaries. As shown in Table III-M8, the current mortality table significantly understates actual mortality experience. We recommend changing from the General Pub-2010 Above-Median Mortality Table to the Public General 2010 Amount-Weighted Below-Median Income Contingent Survivor Mortality Table for Males with a 102.5% multiplier applied. As shown in Table III-M8, the proposed mortality rates decrease the aggregate A/E ratio from 154% to 113%.

Table III-M8 – Male Beneficiary Mortality

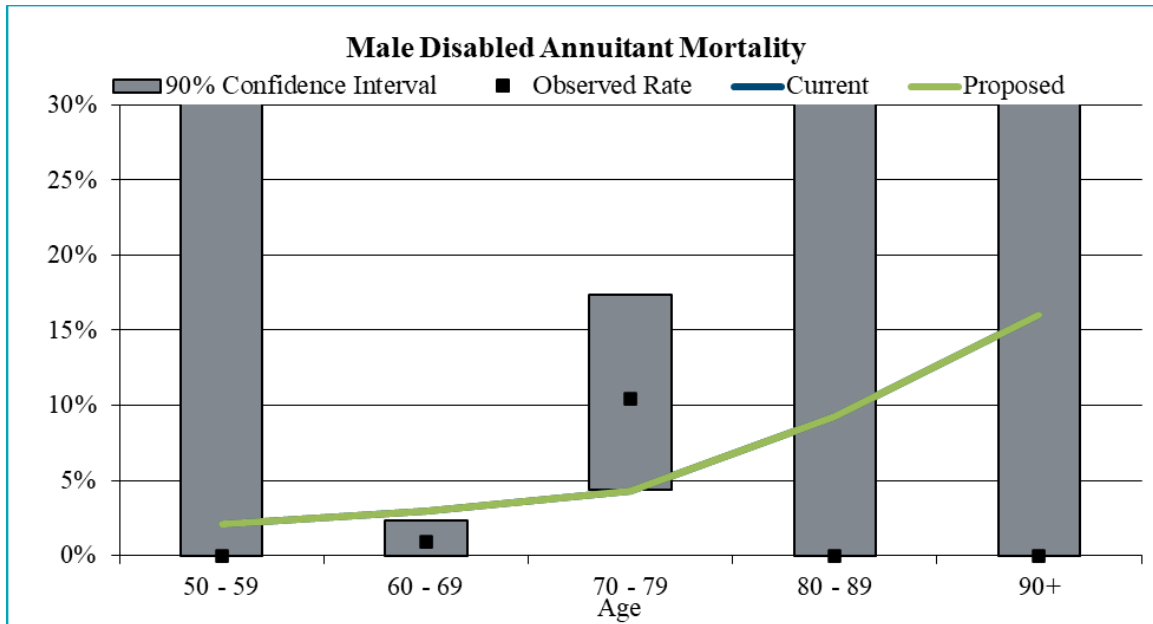| Beneficiary Mortality - Base Table for Males								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Proposed	Current	Proposed
60 - 64	60	0	64,807	0	448	980	0%	0%
65 - 69	78	0	106,642	0	1,042	2,068	0%	0%
70 - 74	108	2	112,210	5,287	1,778	3,121	297%	169%
75 - 79	104	4	129,060	5,117	3,556	5,430	144%	94%
80 - 84	74	4	67,979	6,865	3,224	4,306	213%	159%
85 - 89	40	8	38,459	6,900	3,519	4,151	196%	166%
90 - 94	31	6	35,190	6,779	5,443	6,123	125%	111%
95 +	8	2	8,322	1,379	1,854	1,984	74%	70%
Total	**534**	**26**	**599,105**	**32,327**	**21,006**	**28,549**	**154%**	**113%**

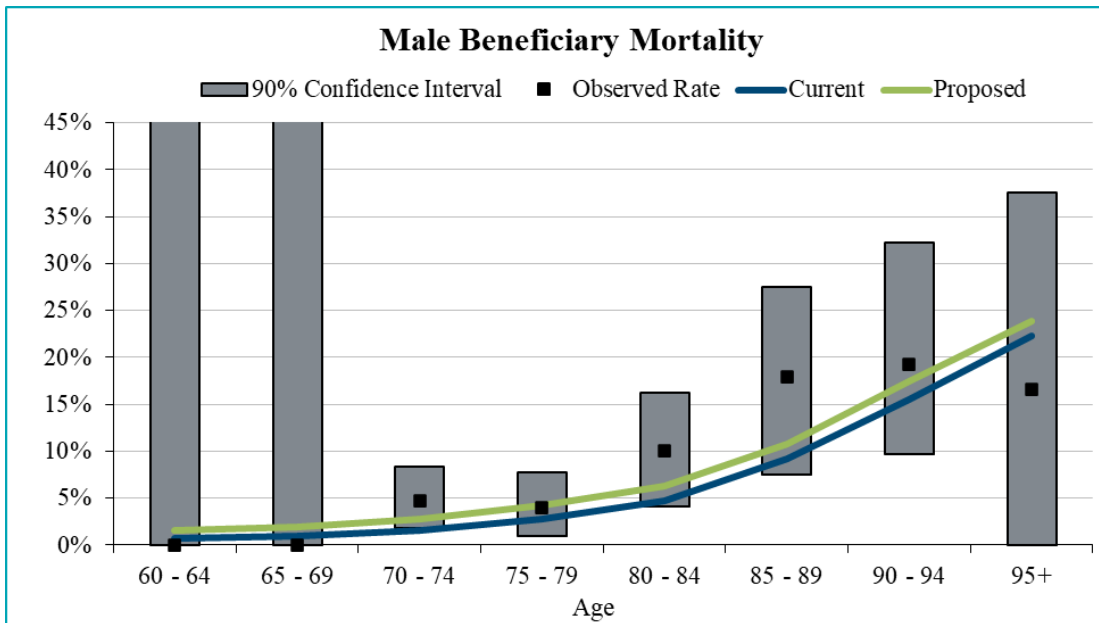### Chart III-M8 – Male Beneficiary Mortality

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M9 summarizes our analysis and selection of the base mortality table for female beneficiaries. As shown in Table III-M9, the current mortality rates for female beneficiaries are very close to recent experience with an aggregate A/E ratio of 100%. With experience closely matching the current assumptions, we are not recommending a change from the General Pub-2010 Above-Median Healthy Annuitant Mortality table for Females.

Table III-M9 – Female Beneficiary Mortality

Beneficiary Mortality - Base Table for Females								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Proposed	Current	Proposed
50 - 59	159	2	187,097	3,268	552	552	592%	592%
60 - 69	477	1	971,778	798	5,791	5,791	14%	14%
70 - 79	454	7	1,032,022	12,006	16,577	16,577	72%	72%
80 - 89	317	20	598,261	34,972	30,782	30,782	114%	114%
90+	132	24	219,672	38,393	35,734	35,734	107%	107%
Total	1,539	54	3,008,830	89,438	89,436	89,436	100%	100%

Chart III-M9 – Female Beneficiary Mortality
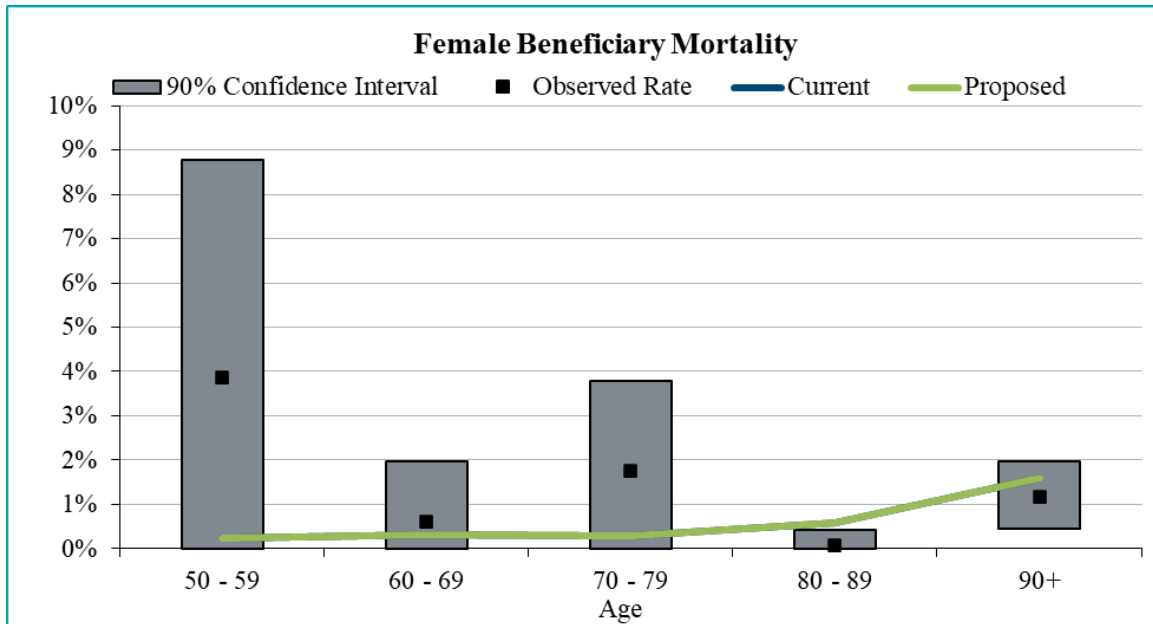
SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

We have not shown the data for the disabled Safety and Probation mortality experience for females or for any of the active mortality experience, as the number of deaths is very low and is not enough data to produce sufficiently credible assumptions. Therefore, we have used our professional judgment to propose no changes to the current appropriate base tables based on the respective General and Safety Pub-2010 Above-Median Employee mortality rates for active members according to membership class. In addition, we applied the same generational improvement scales as proposed for all other members.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
OTHER DEMOGRAPHIC ASSUMPTIONS

FAMILY COMPOSITION

The current assumption for percentage married is 70% of active male and 55% of active female SLOCPT members will have beneficiaries eligible for a surviving spouse allowance. This assumption is also applied to determine the number of active members eligible for a pre-retirement surviving spouse death benefit. We do not propose changing the current percentage married assumptions of 70% for males and 55% for females.

The current assumption for age difference of those married for surviving spouse benefits is that male members are assumed to be four years older than their spouses and female members are assumed to be two years younger than their spouses. This information is used to predict spouse age for future retirees. We do not recommend changing the current assumption for males or females as they closely match recent experience.

ADMINISTRATIVE EXPENSES

An explicit administrative expense assumption was adopted by the Board and became effective with the January 1, 2021 actuarial valuation. The administrative expense assumption was set to $2.3 million, assumed to increase annually at the payroll growth rate. With the assumed payroll growth rate of 3.00% for the 2022 and 2023 valuations, an assumption of $2,440,000 for administrative expenses was included in the annual cost calculation in the January 1, 2023 actuarial valuation.

The actual administrative expenses for fiscal year 2023 were $3,085,209. The average expenses over the last three years, indexed with actual inflation and adjusting for assumed expense growth equal to payroll growth, were $3,000,000. We recommend assumed administrative expenses of $3,000,000 for fiscal year 2024.

Administrative expenses are assumed to increase annually at the payroll growth rate of 3.00%.

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

The proposed assumptions are listed below. The assumptions are based on this experience study covering the period from January 1, 2017 through December 31, 2023.

1. **Investment Rate of Return**

   Assets are assumed to earn 6.75% net of investment expenses.

2. **Administrative Expenses**

   Administrative expenses are assumed to be $3,000,000 for the next year. Administrative expenses are assumed to increase by the payroll growth assumption each year.

3. **Price Inflation**

   The price inflation assumption as measured by the Consumer Price Index (CPI) is assumed to increase at the rate of 2.50% per year. The price inflation assumption is used for increasing the compensation limit that applies to Tier 3 (PEPRA) members.

4. **Cost-of-Living Adjustment (COLA) Growth**

   The Cost-of-Living Adjustment (COLA) growth assumption for Tier 1 members is assumed price inflation plus an additional 0.25% "California" adjustment.

   Tier 1 retired members with COLA banks are assumed to receive an additional 0.25% COLA for a total of 3.00% per year (2.75% plus 0.25% from the COLA banks) until their COLA banks are exhausted, then 2.75% thereafter.

   For Tier 2 and Tier 3 members the COLA growth assumption is 2.0%.

5. **Internal Revenue Code Section 415 Limit**

   The Internal Revenue Code Section 415 maximum benefit limitations are not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

6. **Internal Revenue Code Section 401(a)(17)**

   The Internal Revenue Code Section 401(a)(17) maximum compensation limitation is not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

7. Interest on Member Contributions

The annual credited interest rate on member contributions is assumed to be 5.75%. The actual crediting rate was changed to 5.75% at the November 2021 Board meeting, with Additional Contributions crediting rate changed to 4.60% at the November 2023 Board meeting.

8. Family Composition

Percentage married for all active members who retire, become disabled, or die during active service is shown in the table below. Male members are assumed to be four years older than their spouses and female members are assumed to be two years younger than their spouses.

Percentage Married	
Gender	Percentage
Males	70%
Females	55%

9. Payroll Growth

Price inflation component: 2.50%
Productivity increase component: 0.50%
Total Payroll Growth: 3.00%

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

10. Increases in Pay – Wage Inflation and Merit Salary Increases

Price inflation component: 2.50%
Productivity increase component: 0.50%
Wage inflation assumption: 3.00%

Additional Merit component based on service:

Miscellaneous Merit Increases		Safety and Probation Merit Increases	
Service	Rate	Service	Rate
0	5.75%	0	5.00%
1	5.00%	1	4.00%
2	4.25%	2	3.50%
3	3.25%	3	2.50%
4	2.50%	4	2.00%
5	1.50%	5	1.00%
6	1.25%	6	0.75%
7	1.00%	7	0.75%
8	0.75%	8	0.75%
9	0.50%	9	0.75%
10	0.50%	10	0.50%
11	0.50%	11	0.50%
12	0.50%	12	0.50%
13	0.50%	13	0.50%
14	0.50%	14	0.50%
15	0.50%	15	0.50%
16	0.50%	16	0.50%
17	0.50%	17	0.50%
18	0.50%	18	0.50%
19	0.50%	19	0.50%
20	0.50%	20	0.50%
21	0.50%	21	0.50%
22	0.50%	22	0.50%
23	0.50%	23	0.50%
24	0.50%	24	0.50%
25+	0.00%	25+	0.00%

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

11. Rates of Termination

Sample rates of termination are shown in the following table below.

	Rates of Vested Termination	
Service	**Miscellaneous**	**Safety/Probation**
0	0.00%	0.00%
1	0.00%	0.00%
2	0.00%	0.00%
3	0.00%	0.00%
4	0.00%	0.00%
5	6.00%	3.50%
6	5.75%	3.25%
7	5.50%	3.00%
8	5.25%	2.75%
9	5.00%	2.50%
10	4.75%	2.50%
11	4.50%	2.50%
12	4.25%	1.50%
13	4.00%	1.50%
14	3.75%	1.50%
15	3.50%	1.50%
16	3.25%	1.50%
17	3.00%	1.50%
18	2.75%	1.50%
19	2.50%	1.50%
20	2.00%	1.50%
21	1.50%	1.50%
22	1.00%	1.50%
23	1.00%	1.50%
24	1.00%	1.50%
25	1.00%	0.00%
26	1.00%	0.00%
27	1.00%	0.00%
28	1.00%	0.00%
29	1.00%	0.00%
30	1.00%	0.00%
31	1.00%	0.00%
32+	0.00%	0.00%

*Termination rates do not apply once member is
eligible for retirement*

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

12. Rates of Withdrawal

Rates of withdrawal apply to active members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future benefits.

	Rates of Withdrawal	
Service	Miscellaneous	Safety/Probation
0	20.00%	10.00%
1	14.25%	8.00%
2	11.25%	6.00%
3	9.00%	5.00%
4	5.75%	4.00%
5	1.75%	3.00%
6	1.50%	2.00%
7	1.25%	1.00%
8	0.50%	1.00%
9	0.50%	1.00%
10	0.50%	1.00%
11	0.50%	1.00%
12	0.50%	1.00%
13	0.50%	1.00%
14	0.50%	1.00%
15	0.50%	1.00%
16	0.50%	0.00%
17	0.50%	0.00%
18	0.50%	0.00%
19	0.50%	0.00%
20	0.50%	0.00%
21	0.50%	0.00%
22	0.50%	0.00%
23	0.50%	0.00%
24	0.50%	0.00%
25+	0.00%	0.00%

13. Reciprocal Transfers

35% of vested terminated members that leave their member contributions on deposit with the Trust are assumed to be reciprocal transfers.

Reciprocal members are assumed to remain with the reciprocal agency until retirement, and receive annual salary increases of 3.00%.

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

14. Rates of Disability

Miscellaneous member rates are based on the 2021 CalPERS Public Agency County Peace Officers Non-Industrial Disability table.

Safety and Probation member rates are based on the 2021 CalPERS State Police Officers and Firefighters Total Disability table.

Representative disability rates of active participants are shown below.

	Rates of Disability	
Age	**Miscellaneous**	**Safety and Probation**
20	0.009%	0.069%
25	0.009%	0.117%
30	0.011%	0.197%
35	0.034%	0.319%
40	0.059%	0.504%
45	0.112%	0.766%
50	0.160%	1.125%
55	0.085%	1.585%
60	0.051%	2.154%
65	0.051%	2.847%

All disabilities for Safety members are assumed to be service-related industrial disabilities and no disabilities for Miscellaneous and Probation members are assumed to be service-related industrial disabilities.

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

15. Rates of Mortality for Healthy Lives

Mortality rates for Miscellaneous active members are based on the sex distinct Public General 2010 Amount-Weighted Above-Median Income Employee Mortality Table, without adjustment, with generational mortality improvements projected from 2010 using Projection Scale MP-2021.

Mortality rates for Safety and Probation active members are based on the sex distinct Public Safety 2010 Amount-Weighted Above-Median Income Employee Mortality Table, without adjustment, with generational mortality improvements projected from 2010 using Projection Scale MP-2021.

Mortality rates for healthy Miscellaneous annuitants are based on the sex distinct Public General 2010 Amount-Weighted Above-Median Income Retiree Mortality Table, with a 95% multiplier for males and a 97.5% multiplier for females, with generational mortality improvements projected from 2010 using Projection Scale MP-2021.

Mortality rates for healthy Safety and Probation annuitants are based on the sex distinct Public Safety 2010 Amount-Weighted Above-Median Income Retiree Mortality Table, without adjustment, with generational improvements projected from 2010 using Projection Scale MP-2021.

Mortality rates for all male beneficiaries are based on the sex distinct Public General 2010 Amount-Weighted Below-Median Income Contingent Survivor Mortality Table, with a 102.5% multiplier, with generational mortality improvements projected from 2010 using Projection Scale MP-2021.

Mortality rates for all female beneficiaries are based on the sex distinct Public General 2010 Amount-Weighted Above-Median Income Retiree Mortality Table, without adjustment, with generational mortality improvements projected from 2010 using Projection Scale MP-2021.

16. Rates of Mortality for Disabled Lives

Mortality rates for all disabled members are based on the sex distinct Public General 2010 Amount-Weighted Disabled Retiree Mortality Table, without adjustment, with generational mortality improvements projected from 2010 using Projection Scale MP-2021.

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

17. Rates of Retirement

Rates of retirement are based on age and service according to the following tables.

	Rates of Retirement for Years of Service Less Than 25					
	Tier 1			**Tiers 2 and 3**		
Age	**Miscellaneous**	**Probation**	**Safety**	**Miscellaneous**	**Probation**	**Safety**
50	3.00%	2.00%	20.00%	3.00%	1.00%	5.00%
51	4.00%	2.00%	20.00%	3.00%	1.00%	5.00%
52	5.00%	2.00%	15.00%	3.00%	1.00%	5.00%
53	5.00%	2.00%	15.00%	3.00%	1.00%	5.00%
54	7.50%	20.00%	30.00%	5.00%	5.00%	5.00%
55	7.50%	20.00%	30.00%	5.00%	5.00%	10.00%
56	7.50%	20.00%	15.00%	5.00%	5.00%	10.00%
57	7.50%	20.00%	15.00%	5.00%	10.00%	10.00%
58	7.50%	7.50%	15.00%	5.00%	7.50%	8.25%
59	10.00%	7.50%	35.00%	5.00%	7.50%	11.25%
60	12.50%	7.50%	35.00%	10.00%	7.50%	15.00%
61	15.00%	7.50%	35.00%	10.00%	7.50%	18.75%
62	20.00%	7.50%	35.00%	15.00%	7.50%	20.00%
63	25.00%	7.50%	35.00%	15.00%	7.50%	20.00%
64	30.00%	7.50%	35.00%	20.00%	7.50%	20.00%
65	35.00%	100.00%	100.00%	20.00%	100.00%	100.00%
66	35.00%			20.00%		
67	35.00%			20.00%		
68	35.00%			20.00%		
69	35.00%			20.00%		
70+	100.00%			100.00%		

	Rates of Retirement for 25 or more Years of Service					
	Tier 1			**Tiers 2 and 3**		
Age	**Miscellaneous**	**Probation**	**Safety**	**Miscellaneous**	**Probation**	**Safety**
50	5.00%	5.00%	50.00%	3.00%	2.50%	5.00%
51	5.00%	5.00%	25.00%	3.00%	2.50%	5.00%
52	5.00%	5.00%	25.00%	3.00%	2.50%	5.00%
53	5.00%	5.00%	40.00%	3.00%	2.50%	5.00%
54	10.00%	20.00%	40.00%	5.00%	10.00%	5.00%
55	10.00%	35.00%	40.00%	10.00%	10.00%	15.00%
56	10.00%	35.00%	40.00%	10.00%	10.00%	15.00%
57	17.50%	35.00%	40.00%	10.00%	15.00%	15.00%
58	17.50%	20.00%	40.00%	10.00%	10.00%	10.00%
59	17.50%	20.00%	40.00%	10.00%	10.00%	12.50%
60	30.00%	15.00%	40.00%	15.00%	10.00%	18.00%
61	40.00%	15.00%	40.00%	15.00%	10.00%	20.00%
62	40.00%	20.00%	40.00%	20.00%	20.00%	30.00%
63	40.00%	20.00%	40.00%	20.00%	20.00%	30.00%
64	40.00%	20.00%	40.00%	25.00%	20.00%	30.00%
65	40.00%	100.00%	100.00%	25.00%	100.00%	100.00%
66	40.00%			25.00%		
67	40.00%			25.00%		
68	40.00%			25.00%		
69	40.00%			25.00%		
70+	100.00%			100.00%		

Miscellaneous Vested Terminated and Reciprocal members are assumed to retire at the later of age 60 or attained age. Safety and Probation Vested Terminated and Reciprocal members are assumed to retire at the later of age 55 or attained age.

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

The investment rate of return and administrative expenses assumptions were adopted by the Board at their May 24, 2021 meeting, based on the information presented by Cheiron and the Trust's investment consultant (Verus) updated capital market assumptions. The other assumptions reflect the results of an Experience Study performed by Cheiron, covering the period from January 1, 2017 through December 31, 2021, and adopted by the Board at their May 23, 2022 meeting for the January 1, 2022 actuarial valuation. More details on the rationale for these assumptions can be found in the Actuarial Experience Study dated June 2, 2022.

1. **Investment Rate of Return**

    Assets are assumed to earn 6.75% net of investment expenses.

2. **Administrative Expenses**

    Administrative expenses are assumed to be $2,440,000 for the next year. Administrative expenses are assumed to increase by the assumed payroll growth rate of 3.00% each year.

3. **Price Inflation**

    The price inflation as measured by the Consumer Price Index (CPI) is assumed to increase at the rate of 2.50% per year. The price inflation assumption is used for increasing the compensation limit that applies to Tier 3 (PEPRA) members.

4. **Cost-of-Living Adjustment (COLA) Growth**

    The COLA growth assumption for Tier 1 members is assumed price inflation plus an additional 0.25% "California" adjustment. For Tier 2 and Tier 3 members the COLA growth assumption is 2.0%.

5. **Internal Revenue Code Section 415 Limit**

    The Internal Revenue Code Section 415 maximum benefit limitations are not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

6. **Internal Revenue Code Section 401(a)(17)**

    The Internal Revenue Code Section 401(a)(17) maximum compensation limitation is not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

7. Interest on Member Contributions

The annual credited interest rate on member contributions is assumed to be 5.75%. The actual crediting rate was changed to 5.75% at the November 2021 Board meeting, with Additional Contributions credited at 0.98%.

8. Family Composition

Percentage married for all active members who retire, become disabled, or die during active service is shown in the table below. Male members are assumed to be four years older than their spouses and female members are assumed to be two years younger than their spouses.

Percentage Married	
Gender	Percentage
Males	70%
Females	55%

9. Payroll Growth

Price inflation component: 2.50%
Productivity increase component: 0.50%
Total Payroll Growth: 3.00%

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

10. Increases in Pay

Price inflation component: 2.50%
Productivity increase component: 0.50%
Wage inflation assumption: 3.00%

Additional Merit component based on service:

Miscellaneous Merit Increases		Safety Merit Increases	
Service	Rate	Service	Rate
0	5.25%	0	5.25%
1	5.00%	1	4.50%
2	4.00%	2	4.00%
3	3.00%	3	3.00%
4	2.00%	4	2.00%
5	1.00%	5	1.00%
6	0.50%	6	0.75%
7	0.50%	7	0.75%
8	0.50%	8	0.75%
9	0.50%	9	0.75%
10	0.20%	10	0.40%
11	0.20%	11	0.40%
12	0.20%	12	0.40%
13	0.20%	13	0.40%
14	0.20%	14	0.40%
15	0.20%	15	0.40%
16	0.20%	16	0.40%
17	0.20%	17	0.40%
18	0.20%	18	0.40%
19	0.20%	19	0.40%
20	0.20%	20	0.25%
21+	0.00%	21	0.25%
		22	0.25%
		23	0.25%
		24	0.25%
		25+	0.00%

Increases are compound rather than additive.

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

11. Rates of Termination

Sample rates of termination are shown in the following table below.

	Rates of Vested Termination	
Service	Miscellaneous	Safety/Probation
0	0.00%	0.00%
1	0.00%	0.00%
2	0.00%	0.00%
3	0.00%	0.00%
4	0.00%	0.00%
5	5.50%	2.75%
6	5.00%	2.50%
7	4.50%	2.25%
8	4.25%	2.25%
9	4.00%	2.25%
10	3.75%	2.00%
11	3.50%	2.00%
12	3.25%	1.50%
13	3.00%	1.50%
14	3.00%	1.50%
15	3.00%	1.50%
16	2.75%	1.50%
17	2.75%	1.25%
18	2.50%	1.25%
19	2.50%	1.25%
20	2.00%	1.25%
21	1.50%	1.25%
22	1.50%	1.25%
23	1.50%	1.25%
24	1.50%	1.25%
25	1.50%	1.00%
26	1.50%	1.00%
27	1.50%	1.00%
28	1.50%	1.00%
29	1.50%	1.00%
30	1.50%	0.00%
31	1.50%	0.00%
32	1.50%	0.00%
33	1.50%	0.00%
34	1.50%	0.00%
35+	0.00%	0.00%

Termination rates do not apply once member is eligible for retirement

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

12. Rates of Withdrawal

Rates of withdrawal apply to active members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future benefits.

Rates of Withdrawal		
Service	General	Safety
0	20.00%	10.00%
1	15.00%	8.00%
2	12.00%	6.00%
3	10.00%	5.00%
4	6.00%	4.00%
5	2.00%	3.00%
6	1.75%	2.00%
7	1.75%	1.00%
8	1.50%	1.00%
9	1.00%	1.00%
10	1.00%	1.00%
11	1.00%	1.00%
12	0.50%	1.00%
13	0.50%	1.00%
14	0.50%	1.00%
15	0.50%	1.00%
16	0.50%	0.00%
17	0.50%	0.00%
18	0.50%	0.00%
19	0.50%	0.00%
20	0.50%	0.00%
21	0.50%	0.00%
22	0.50%	0.00%
23	0.50%	0.00%
24	0.50%	0.00%
25	0.00%	0.00%
26	0.00%	0.00%
27	0.00%	0.00%
28	0.00%	0.00%
29	0.00%	0.00%
30+	0.00%	0.00%

13. Reciprocal Transfers

30% of vested terminated members that leave their member contributions on deposit with the Trust are assumed to be reciprocal transfers.

Reciprocal members are assumed to remain with the reciprocal agency until retirement, and receive annual salary increases of 3.00%.

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

14. Rates of Disability

Representative disability rates of active participants are shown below.

Rates of Disability		
Age	Miscellaneous	Safety and Probation
25 or less	0.010%	0.030%
26	0.010%	0.050%
27	0.010%	0.070%
28	0.010%	0.090%
29	0.010%	0.110%
30	0.010%	0.130%
31	0.015%	0.150%
32	0.020%	0.170%
33	0.025%	0.190%
34	0.030%	0.210%
35	0.035%	0.230%
36	0.040%	0.250%
37	0.045%	0.270%
38	0.050%	0.290%
39	0.055%	0.310%
40	0.060%	0.330%
41	0.065%	0.350%
42	0.070%	0.370%
43	0.075%	0.390%
44	0.080%	0.410%
45	0.085%	0.430%
46	0.090%	0.450%
47	0.095%	0.470%
48	0.100%	0.490%
49	0.105%	0.510%
50	0.110%	0.530%
51	0.115%	0.550%
52	0.120%	0.570%
53	0.125%	0.590%
54	0.130%	0.610%
55	0.135%	0.630%
56	0.140%	0.650%
57	0.145%	0.670%
58	0.150%	0.690%
59	0.155%	0.710%
60	0.160%	0.730%
61	0.165%	0.750%
62	0.170%	0.770%
63	0.175%	0.790%
64	0.180%	0.810%
65 or more	0.000%	0.000%

All disabilities for Safety members are assumed to be service-related industrial disabilities and no disabilities for Miscellaneous and Probation members are assumed to be service-related industrial disabilities.

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

15. Rates of Mortality for Healthy Lives

Mortality rates for Miscellaneous active members are based on the sex distinct Public General 2010 Amount-Weighted Above-Median Income Employee Mortality Table, without adjustment, with generational mortality improvements projected from 2010 using Projection Scale MP-2021.

Mortality rates for Safety and Probation active members are based on the sex distinct Public Safety 2010 Amount-Weighted Above-Median Income Employee Mortality Table, without adjustment, with generational mortality improvements projected from 2010 using Projection Scale MP-2021.

Mortality rates for healthy Miscellaneous annuitants and all beneficiaries are based on the sex distinct Public General 2010 Amount-Weighted Above-Median Income Retiree Mortality Table, without adjustment, with generational mortality improvements projected from 2010 using Projection Scale MP-2021.

Mortality rates for healthy Safety and Probation annuitants are based on the sex distinct Public Safety 2010 Amount-Weighted Above-Median Income Retiree Mortality Table, without adjustment, with generational improvements projected from 2010 using Projection Scale MP-2021.

16. Rates of Mortality for Disabled Lives

Mortality rates for all disabled members are based on the sex distinct Public General 2010 Amount-Weighted Disabled Retiree Mortality Table, without adjustment, with generational mortality improvements projected from 2010 using Projection Scale MP-2021.

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

17. Rates of Retirement

Rates of retirement are based on age, group, and tier according to the following table.

	Rates of Retirement for YOS Less Than 25					
	Tier 1			Tiers 2 and 3		
Age	Miscellaneous	Probation	Safety	Miscellaneous	Probation	Safety
50	2.00%	5.00%	15.00%	1.00%	2.50%	6.75%
51	2.00%	5.00%	15.00%	1.00%	2.50%	6.75%
52	3.00%	5.00%	15.00%	2.00%	2.50%	7.50%
53	3.00%	5.00%	15.00%	2.00%	2.50%	7.50%
54	5.00%	15.00%	25.00%	3.00%	5.00%	7.50%
55	5.00%	25.00%	40.00%	3.00%	5.00%	7.50%
56	5.00%	25.00%	30.00%	3.00%	5.00%	7.50%
57	5.00%	20.00%	20.00%	3.00%	10.00%	7.50%
58	5.00%	7.50%	12.00%	3.00%	7.50%	8.25%
59	5.00%	7.50%	18.00%	3.00%	7.50%	11.25%
60	10.00%	10.00%	25.00%	8.00%	7.50%	15.00%
61	15.00%	10.00%	30.00%	8.00%	7.50%	18.75%
62	20.00%	15.00%	40.00%	15.00%	15.00%	22.50%
63	20.00%	15.00%	50.00%	15.00%	15.00%	30.00%
64	30.00%	15.00%	75.00%	20.00%	15.00%	45.00%
65	35.00%	100.00%	100.00%	20.00%	100.00%	100.00%
66	35.00%			20.00%		
67	35.00%			20.00%		
68	35.00%			20.00%		
69	35.00%			20.00%		
70+	100.00%			100.00%		

	Rates of Retirement for YOS 25 or More					
	Tier 1			Tiers 2 and 3		
Age	Miscellaneous	Probation	Safety	Miscellaneous	Probation	Safety
50	3.50%	7.50%	25.00%	1.75%	5.00%	12.00%
51	3.50%	7.50%	25.00%	1.75%	5.00%	12.00%
52	3.50%	7.50%	20.00%	2.50%	5.00%	12.00%
53	3.50%	7.50%	20.00%	2.50%	5.00%	12.00%
54	7.00%	15.00%	30.00%	5.50%	10.00%	12.00%
55	7.00%	35.00%	40.00%	5.50%	10.00%	12.00%
56	7.00%	25.00%	40.00%	6.00%	10.00%	12.00%
57	15.00%	25.00%	30.00%	10.00%	15.00%	12.00%
58	15.00%	12.00%	20.00%	10.00%	10.00%	10.00%
59	15.00%	12.00%	20.00%	10.00%	10.00%	12.50%
60	20.00%	15.00%	30.00%	15.00%	10.00%	18.00%
61	25.00%	15.00%	35.00%	15.00%	10.00%	20.00%
62	25.00%	20.00%	50.00%	20.00%	20.00%	30.00%
63	25.00%	20.00%	50.00%	20.00%	20.00%	30.00%
64	40.00%	20.00%	75.00%	25.00%	20.00%	45.00%
65	40.00%	100.00%	100.00%	25.00%	100.00%	100.00%
66	40.00%			25.00%		
67	40.00%			25.00%		
68	40.00%			25.00%		
69	40.00%			25.00%		
70+	100.00%			100.00%		

Tier 1 Reserve Members are assumed to retire at the later of age 55 or attained age. All other Reciprocal and Reserve members are assumed to retire at the later of age 60 or attained age.