San Bernardino County Employees' Retirement Association

Actuarial Experience Study

Analysis of Experience During the Period June 1, 2022 through May 31, 2025

Segal

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Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience for the San Bernardino County Employees' Retirement Association (SBCERA). This study utilizes the census data for the period June 1, 2022 to May 31, 2025 as well as prior periods for certain assumptions, examines other relevant inputs, and provides the recommended actuarial assumptions, both economic and demographic, to be used in the June 30, 2026 valuation.

The actuarial calculations were completed under the supervision of Molly Calcagno, ASA, MAAA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

Segal makes no representation or warranty as to the future status of the Plan and does not guarantee any particular result. This document does not constitute legal, tax, accounting or investment advice or create or imply a fiduciary relationship. The Board is encouraged to discuss any issues raised in this report with the Plan's legal, tax and other advisors before taking, or refraining from taking, any action.

We look forward to reviewing this report with you and answering any questions you may have.

Sincerely,

Todd Tauzer, FSA, MAAA, FCA, CERA
Senior Vice President and Actuary

Molly Calcagno, ASA, MAAA, EA
Senior Actuary

JY/sm

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Section 1: Introduction and Summary

To project the cost and liabilities of a pension plan, assumptions are made about all future events that could affect the amount and timing of the benefits to be paid and the assets to be accumulated. Each year actual experience is compared against the projected experience, and to the extent there are differences, the future contribution requirement is adjusted.

If assumptions are modified, contribution requirements are adjusted to take into account a change in the projected experience in all future years. There is a difference in both philosophy and cost impact between recognizing actuarial deviations as they occur annually and changing the actuarial assumptions. Taking into account one year's gains or losses without making a change in the assumptions treats that years' experience as temporary and assumes that, over the long run, experience will return to what was originally assumed. Changing assumptions reflects a fundamental change in thinking about the future, and has a much greater effect on the current contribution requirements than recognizing gains or losses as they occur.

The use of realistic actuarial assumptions is important in maintaining adequate funding, while paying the promised benefit amounts to participants already retired and to those near retirement. The actuarial assumptions used do not determine the "actual cost" of the plan. The actual cost is determined solely by the benefits and administrative expenses paid out, offset by investment income received. However, it is desirable to estimate as closely as possible what the actual cost will be so as to permit an orderly method for setting aside contributions today to provide benefits in the future, and to maintain equity among generations of participants and taxpayers.

This study was undertaken in order to review the economic and demographic actuarial assumptions and to compare the actual experience with that expected under the current assumptions during the three-year experience period from June 1, 2022 through May 31, 2025. The study was performed in accordance with Actuarial Standard of Practice (ASOP) No. 27 "Selection of Assumptions for Measuring Pension Obligations". This Standard of Practice provides guidance for the selection of the various actuarial assumptions utilized in a pension plan actuarial valuation. Based on the results of this study and expected future experience, we are recommending various changes in the current actuarial assumptions.

Section 2 provides background on the basic principles and methodology used in the review of the economic and demographic actuarial assumptions. A detailed discussion of each assumption and reasons for the recommended changes is found in *Section 3* for the economic assumptions and *Section 4* for the demographic assumptions. The cost impact of the recommended changes is detailed in *Section 5*. Lastly, a summary of the current actuarial assumptions is provided in *Appendix A*, and a summary of the recommended actuarial assumptions is provided in *Appendix B*.

Section 1: Introduction and Summary

Summary of recommendations

Page	Actuarial Assumption	Recommendation
11	**Inflation:** Future increases in the Consumer Price Index (CPI), which drives investment returns and active member salary increases.	Maintain the inflation assumption at 2.50% per annum as discussed in *Section 3(A)*.
13	**Cost-of-living adjustment (COLA):** Future increases to a member's retirement benefit.	Maintain the COLA assumption at 2.00% per annum as discussed in *Section 3(A)*.
14	**Investment return:** The estimated average net rate of return on current and future assets of the Association as of the valuation date. This rate is used to discount liabilities.	Reduce the investment return assumption from 7.25% to 7.00% per annum as discussed in *Section 3(B)*.
21	**Salary increases:** Increases in the salary of a member between the date of the valuation to the date of separation from active service. This assumption has three components: • Inflationary salary increases • Real "across-the-board" salary increases • Merit and promotion increases	Maintain the inflationary salary increase assumption at 2.50% and maintain the real "across-the-board" salary increase assumption at 0.50%. Adjust the merit and promotion salary increases as developed in *Section 3(C)* to reflect past experience. This includes introducing separate merit and promotion salary increases for Tier 1 members and Tier 2 members. The recommended total rates of salary increase anticipate higher increases than the current assumptions for General and Safety members.
27	**Payroll growth:** Used to amortize the UAAL in determining the UAAL contribution rate.	Maintain the payroll growth assumption (combined inflationary and real "across-the-board" salary increases) at 3.00%.
31	**Administrative expenses:** Expenses incurred in connection with the plan's operation.	Increase the explicit administrative expense load from 0.90% to 1.05% of projected payroll as discussed in *Section 3(D)*.

Section 1: Introduction and Summary

Page	Actuarial Assumption	Recommendation
32	**Mortality rates – healthy:** The probability of dying at each age for non-disabled members. Mortality rates are used to anticipate life expectancies.	**Healthy retirees:** Change base tables from Pub-2010 Healthy Retiree Amount-Weighted Above-Median mortality tables to Pub-2016 Healthy Retiree Amount-Weighted Above-Median mortality tables. Adjust the base tables to reflect partial credibility of SBCERA's experience. Overall, the recommended assumptions anticipate fewer deaths for General members and more deaths for Safety members than previously projected. **Beneficiaries not in pay status:** Change mortality tables to be consistent with the mortality tables recommended for General healthy retirees. **Beneficiaries in pay status:** Change base tables from Pub-2010 Contingent Survivor Amount-Weighted Above-Median mortality tables to Pub-2016 Contingent Survivor Amount-Weighted mortality tables. Adjust the base tables to reflect partial credibility of SBCERA's experience. Overall, the recommended assumptions anticipate more deaths than previously projected. **Pre-retirement mortality:** Change base tables from Pub-2010 Employee Amount-Weighted Above-Median mortality tables to Pub-2016 Employee Amount-Weighted Above-Median mortality tables. Adjust the base tables to reflect partial credibility of SBCERA's experience. Overall, the recommended assumptions anticipate more deaths than previously projected. **Mortality projection:** Maintain two-dimensional mortality improvement scale MP-2021 to project tables generationally. **Mortality for member contribution rates, optional forms and reserves:** Adjust the mortality rates to those developed in *Section 4(A)* for member contribution rates. A discussion of mortality rates for optional forms and reserves is also provided in *Section 4(A)*. **Pre-retirement death type:** Maintain the assumption that pre-retirement deaths are non-service-connected for General members and introduce an assumption that half of the pre-retirement deaths for Safety members are service-connected.
42	**Mortality rates – disabled:** The probability of dying at each age for disabled members. Mortality rates are used to project life expectancies.	**Disabled retirees:** Change base tables from Pub-2010 Disabled Retiree Amount-Weighted mortality tables to Pub-2016 Disabled Retiree Amount-Weighted mortality tables. Adjust the base tables to reflect partial credibility of SBCERA's experience. Overall, the recommended assumptions anticipate fewer deaths than previously projected. **Mortality projection:** Maintain two-dimensional mortality improvement scale MP-2021 to project tables generationally.
46	**Disability incidence rates:** The probability of becoming disabled at each age.	Adjust the disability rates to those developed in *Section 4(C)* to reflect a lower incidence of disability overall for General members and a higher incidence of disability overall for Safety members. Increase the percentage of General non-service-connected disabled retirees expected to receive the supplemental disability benefit.

Section 1: Introduction and Summary

Page	Actuarial Assumption	Recommendation
51	**Termination rates:** The probability of leaving employment at each age and receiving either a refund of member contributions or a deferred vested retirement benefit.	Adjust the withdrawal and vested termination rates to those developed in *Section 4(D)* to reflect a higher incidence of termination overall for both General and Safety members. In addition, we recommend decreasing the proportion of members assumed to elect a refund of member contributions.
58	**Retirement rates:** The probability of retirement at each age at which participants are eligible to retire. Includes retirement age for deferred vested members.	For active members, adjust the current retirement rates to those developed in *Section 4(E)*. For deferred vested members that work for a reciprocal employer, increase the assumed retirement age from 59 to 60 for General members and increase the assumed retirement age from 53 to 54 for Safety members. For deferred vested members that do not work for a reciprocal employer, maintain the assumed retirement age at 59 for General members and decrease the assumed retirement age from 52 to 51 for Safety members.
71	**Miscellaneous assumptions including:** • Reciprocity • Future benefit accruals • Unreported data for members • Form of payment • Percentage with eligible survivor • Eligible survivor age and gender • Leave cashouts	Maintain the current proportion of future deferred vested members expected to be covered by a reciprocal system at 40% for General members and decrease the current proportion of future deferred vested members expected to be covered by a reciprocal system from 65% to 55% for Safety members. Maintain the current future benefit accrual assumption, adjust the assumption for members with unknown gender, and maintain the form of payment assumption as outlined in *Section 4(G)*. For active and deferred vested members, decrease the current percentage with eligible survivor assumption from 65% to 60% for males and maintain the current percentage with eligible survivor assumption at 50% for females. Maintain the spouse age difference assumption that male retirees are three years older than their spouses and that female retirees are two years younger than their spouses. Decrease the current leave cashout percentage from 0.75% to 0.70% for General Tier 1 members and from 1.75% to 1.50% for Safety Tier 1 members.
75	**Survivor assumptions for Survivor Benefit valuation**	Adjust the survivor assumption to those developed in *Section (4)(G)* to be consistent with the 2023 U.S. Census data. Overall, there will be slight decreases in the assumed percent of members with survivors.

Cost impact summary

We have estimated the impact of the recommended assumption changes as if they were applied to the June 30, 2025 actuarial valuation. The tables below show the impact on key results due to the recommended assumption changes separately for the economic assumptions (including the merit and promotion salary increases) and demographic assumptions. More details, including the contribution impact by cost group, can be found in *Section 5*.

Section 1: Introduction and Summary

The cost associated with the administrative expense load has continued to be allocated to both the employer and the member based on the components of the total contribution rate (before administrative expenses) for the employer and the member. [1]

Cost Impact Based on June 30, 2025 Actuarial Valuation ($ in '000s)

Assumption	Impact on Average Employer Contribution Rates	Impact on Average Member Contribution Rates
Changes in economic assumptions	3.06%	0.89%
Changes in demographic assumptions	(0.57%)	(0.04%)
Total increase in average contribution rate	**2.49%**	**0.85%**
Total increase in annual dollar amount[2]	**$56,077**	**$19,053**

Assumption	Impact on Funded Status
Increase in UAAL due to changes in economic assumptions	$623,920
Decrease in UAAL due to changes in demographic assumptions	(97,112)
Increase in UAAL for Survivor Benefit valuation	1,205
Total increase in UAAL	**$528,013**
Change in funded ratio on VVA basis	**(2.47%)**

Of the various assumption changes, the most significant rate increase is due to the change in the investment return assumption.

[1] The actual allocation of contribution rates for administrative expenses will be determined in each actuarial valuation to reflect the relative proportion of employer and member contributions.

[2] Based on June 30, 2025 projected annual payroll as determined under each set of assumptions.

Section 2: Background and Methodology

In this report, we analyzed both economic and demographic assumptions.

The primary economic assumptions reviewed are inflation, investment return, salary increases, and administrative expenses. Demographic assumptions include the probabilities of certain events occurring in the population of members, referred to as "decrements" (e.g., termination from service, disability retirement, service retirement, and death before and after retirement).

In addition to decrements, other demographic assumptions reviewed in this study include the percentage of members assumed to go on to work for a reciprocal system, reciprocal salary increases, percentage of members with an eligible spouse or domestic partner, survivor age difference, leave cashouts, percent of members receiving supplemental disability, and survivor assumptions for use in the Survivor Benefit valuation.

It should be noted that with the exception of selecting the merit and promotion salary increases, the mortality assumptions, and the percentage with an eligible survivor assumption on an amount-weighted or benefit-weighted basis, all the demographic assumptions in this report have been selected on a headcount-weighted basis. A value of "N/A" represents a service bucket for which there were no exposure over the time-period measured.

Economic assumptions

Economic assumptions consist of:

- **Inflation:** Increases in the price of goods and services. The inflation assumption reflects the basic return that investors expect from securities markets. It also reflects the expected basic salary increase for active employees and drives increases in the allowances of retired members (if any).
- **Investment return:** Expected long-term rate of return on the Association's investments after accounting for certain investment expenses. This assumption has a significant impact on contribution rates.
- **Salary increases:** In addition to inflationary increases, it is assumed that salaries will also grow by real "across-the-board" pay increases in excess of price inflation. It is also assumed that employees will receive raises above these average increases as they advance in their careers, which are commonly referred to as merit and promotion increases. Payments to amortize any unfunded actuarial accrued liability (UAAL) are calculated to increase each year by the price inflation rate plus any real "across-the-board" pay increases that are assumed.
- **Administrative Expenses:** These include expenses incurred in connection with the Association's operation.

The setting of the economic assumptions is described in *Section 3*.

Section 2: Background and Methodology

Demographic assumptions

To determine the probability of an event occurring, we examine the "decrements" and "exposures" of that event. For example, when considering termination from service, we compare the number of employees who actually terminate in a specific service category/group (the number of "decrements") with those who could have terminated (the number of "exposures"). If there were 500 active employees in the 3–4 service category at the beginning of the year and 50 of them left during the year, the probability of termination in that service category is 50 ÷ 500, or 10%.

The reliability of the resulting probability depends heavily on both the number of decrements and the number of exposures. For instance, if there are only a few people in a high service category at the beginning of the year (number of exposures), the probability of termination developed for that service category may be less credible, particularly if it does not align with the pattern shown for the other service categories. Similarly, when considering the death decrement, if an age category has a large number of exposures but very few decrements (actual deaths), then the probability developed for that category would also be considered less reliable.

One reason we use several years of experience for such a study is to enhance statistical reliability by increasing the number of exposures and decrements. Another reason for using several years of data is to smooth out any fluctuations that may occur from one year to the next. Nevertheless, we also calculate the rates on a yearly basis to check for any emerging trends in the recent years.

Segal has routinely reviewed the experience over the most recent three-year period and the prior three-year period when setting assumptions, for a total of six years. (We note that for setting the mortality assumptions, we have actually used the data for a thirteen-year period.) As noted above, using more years of data tends to smooth out year-to-year fluctuations in the actual experience.

The setting of the demographic assumptions is provided in *Section 4*.

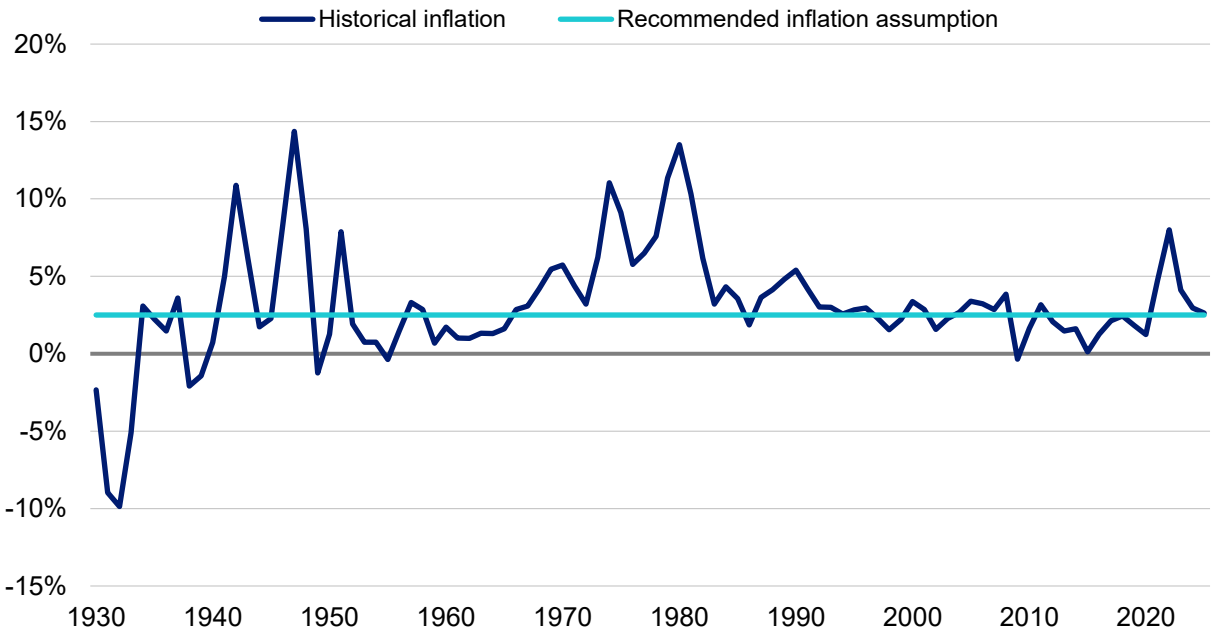
Section 3: Economic Assumptions

A. Inflation

Unless an investment grows at least as fast as prices increase, investors will experience a reduction in the inflation-adjusted value of their investment. There may be times when "riskless" investments return more or less than inflation, but over the long term, investment market forces will generally require an issuer of fixed income securities to maintain a minimum return which protects investors from inflation.

The inflation assumption is long term in nature, so our analysis begins with a review of historical information. The following graph compares historical inflation rates with the recommended inflation assumption of 2.50%. We then proceed with a discussion of other sources of inflation data to provide additional context to our recommendation.

Historical Consumer Price Index (CPI) — 1930 to 2025[3]
(U.S. City Average — All Urban Consumers)



There was a spike in inflation that started in the second quarter of 2021 and continued into 2022. The rate of inflation started to decrease after the Federal Reserve began raising interest rates around the second quarter of 2022. As inflation continued to decrease, the Federal Reserve changed course in late 2024 and reduced interest rates three times. After a period of no changes, the Federal Reserve cut interest rates again three times in late 2025.[4] Based on the most recent data, the change in the CPI from December 2024 to December 2025 was 2.7%.

[3] Source: Bureau of Labor Statistics – Based on CPI for All Items in U.S. city average, all urban consumers, not seasonally adjusted (Series ID: CUUR0000SA0).

[4] As of early 2026, the Federal Reserve's median projection of the interest rate for the year-end target range is 3.25%-3.50%. This target implies one additional 25-basis-point cut in 2026, building on the series of reductions that occurred in late 2024 and 2025.

Section 3: Economic Assumptions

According to the Public Plans Database,[5] the median inflation assumption was 2.50% in the 2024 fiscal year valuations for 243[6] public pension plans across the U.S. In California, CalSTRS and four[7] 1937 Act CERL systems currently use an inflation assumption of 2.75%, while CalPERS and the 16 remaining 1937 Act CERL systems (including SBCERA) use an assumption of 2.50%.[8]

SBCERA's investment consultant, New England Pension Consultants (NEPC), anticipates an annual inflation rate of 2.70% over a 30-year horizon.[9] The average inflation assumption provided by NEPC and five other investment advisory firms retained by Segal's California public sector clients, as well as Segal's investment advisory division (Segal Marco Advisors), was 2.49%. The time horizon used by the investment consultants included in our review, with the exception of one investment consultant that uses a one-year horizon, generally ranges from 20 years to 30 years.

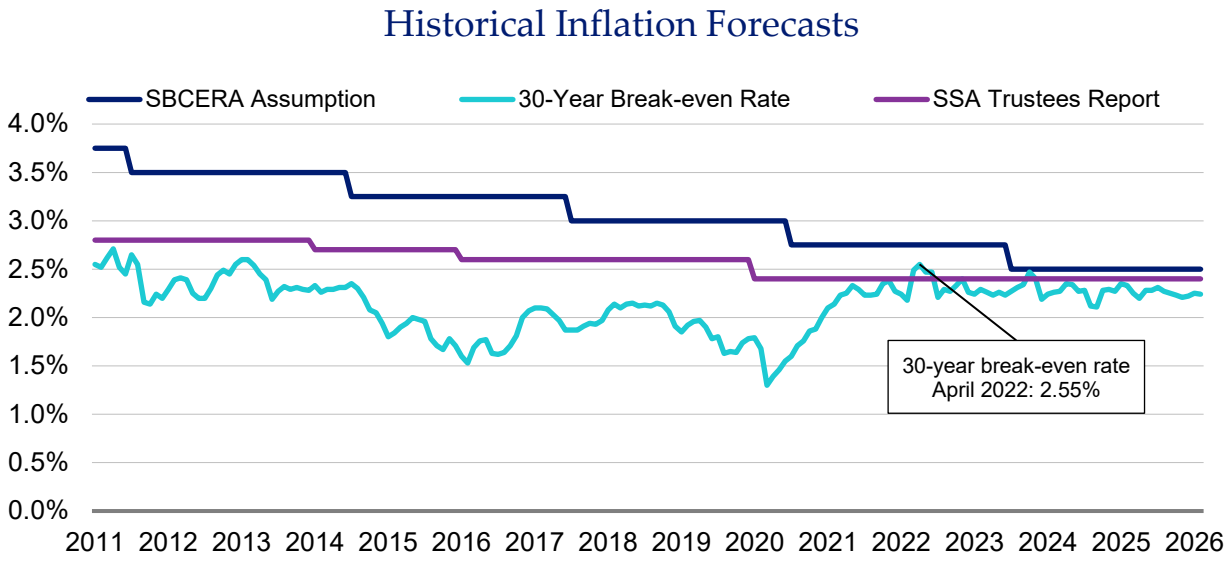
To find a forecast of inflation based on a longer time horizon, we referred to the Social Security Administration's (SSA) 2025 report on the financial status of the Social Security program.[10] The projected average increase in the CPI over the next 75 years under the intermediate cost assumptions used in that report was 2.40%, which the SSA has maintained for several years. The SSA report also includes alternative projections using lower and higher inflation assumptions of 1.80% and 3.00%, respectively.

Finally, we also compared the yields on the 30-year inflation indexed U.S. Treasury bonds to comparable traditional U.S. Treasury bonds.[11] This "break-even rate" is commonly regarded as a market-based gauge of future inflation expectations. While this measure can be quite volatile, it is worth noting that during the peak of the most recent inflation spike this break-even rate exceeded 2.50% in only a single month, April 2022 (2.55%). As of March 2026, the difference in yields was 2.23%.

The following graph shows SBCERA's historical and recommended inflation assumptions as well as the two metrics just discussed. In effect, this compares SBCERA's assumption to two separate independent forecasts, one based on market observations and one developed by economists at the SSA. The graph shows that over the observed period, SBCERA's assumption has been gradually decreasing as it converges with the other metrics and seems to be in a stable place at this point in time.

[5] Public Plans Data is produced by the Center for Retirement Research at Boston College in partnership with the MissionSquare Research Institute, National Association of State Retirement Administrators, and the Government Finance Officers Association.
[6] Among 253 large public retirement funds, the 2024 fiscal year inflation assumption was not available for 10 of the public retirement funds in the survey data as of March 2026.
[7] We note that none of these four 1937 Act CERL Systems are served by Segal.
[8] Eight of these 1937 Act CERL systems use a 2.50% inflation assumption with a 2.75% COLA assumption.
[9] The annual inflation assumption used by NEPC is 2.5% over a 10-year horizon.
[10] Source: "Social Security Administration: The 2025 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds."
[11] Source: Board of Governors of the Federal Reserve System.

Section 3: Economic Assumptions



The setting of the inflation assumption using the information outlined above is a somewhat subjective process, and Segal does not apply a specific weight to each of the metrics in determining our recommended inflation assumption. Based on a consideration of all the above metrics, beginning in 2021 we have been recommending the same 2.50% inflation assumption in our experience studies for our California public retirement system clients.

We recommend maintaining the annual inflation assumption at 2.50%.

Retiree cost-of-living increases

In our last economic assumptions review as of May 31, 2022, the Board maintained the recommended cost-of-living adjustments (COLA) assumption of 2.00% for all General and Safety Tiers. We continue to recommend setting the COLA assumptions based on the lesser of the provision adopted by the employers to provide an up to 2.0% retiree cost-of-living adjustment or the maximum annual long-term annual inflation assumption, as we have in prior years.

We recommend maintaining the retiree COLA assumption of 2.00% per year in the June 30, 2026 valuation for all tiers.

B. Investment return

The investment return assumption is comprised of two primary components, inflation, and real rate of return, with adjustments for certain expenses and risk.

Real rate of return

This component represents the portfolio's expected incremental investment market returns over inflation. Generally, when an investor takes on greater investment risk, the return on the investment is expected to also be greater, at least in the long run.[12] This additional risk and return is expected to vary by asset class and empirical data supports that expectation. For that reason, real rate of return assumptions are developed for each asset class and the resulting assumption for a retirement plan's portfolio will vary based on the Board's asset allocation.

The Association's target asset allocation and corresponding real rate of return assumptions (net of investment management expenses) are shown in the following table. The first column of returns are determined by reducing NEPC's nominal 30-year arithmetic return assumptions by their assumed 2.70% inflation rate. The second column of returns shows the average real rate of return assumptions provided to us by NEPC, five other investment advisors to Segal's California public sector retirement clients, and Segal Marco Advisors. We believe these averages are a reasonable consensus of long-term future market returns in excess of inflation.

[12] However, an argument can also be made that taking on more risk in the portfolio could justify a greater risk margin in the actuarial assumption used, to help manage that risk.

Section 3: Economic Assumptions

SBCERA's Asset Allocation and Arithmetic Real Rate of Return Assumptions

Asset Class	SBCERA's Target Asset Allocation	NEPC's Real Rate of Return Assumption	Average Real Rate of Return Assumption from Seven Investment Firms
Large Cap U.S. Equity	14.50%	5.37%	5.33%
Small Cap U.S. Equity	2.50%	6.15%	6.23%
Developed International Equity	7.00%	5.44%	5.88%
Emerging Markets Equity	6.00%	8.33%	7.36%
U.S. Core Fixed Income	2.00%	2.73%	2.48%
Emerging Market Debt	6.00%	5.35%	4.55%
Real Estate - Core	2.50%	4.63%	4.57%
Cash & Equivalents	2.00%	0.77%	0.85%
Private Equity	18.00%	10.11%	9.18%
High Yield/Credit Strategies	13.00%	6.97%	5.98%[13]
Absolute Return	7.00%	6.97%	5.98%[13]
International Credit	11.00%	6.97%	5.98%[13]
Real Estate - Non Core	2.50%	8.04%	8.04%[14]
Real Assets	6.00%	9.85%	9.85%[14]
Total	**100.00%**	**7.09%**	**6.53%**

Generally, the above are representative of "indexed" returns for securities that are publicly traded, returns net of fees for securities that are non-publicly traded and do not include any additional returns ("alpha") from active management. Consideration of returns without alpha is consistent with the Actuarial Standard of Practice No. 27, Section 3.7.3.d, which states:

> "Investment Manager Performance — Anticipating superior (or inferior) investment manager performance may be unduly optimistic (or pessimistic). The actuary should not assume that superior or inferior returns will be achieved, net of investment expenses, from an active investment management strategy compared to a passive investment management strategy unless the actuary believes, based on relevant supporting data, that such superior or inferior returns represent a reasonable expectation over the measurement period."

The following are some observations about the returns provided above:

- The investment consultants and Segal's investment advisory division included in our sample provided us with their expected real rates of return for each asset class over varying time horizons. In general, the time horizon used by an individual investment consultant is not

[13] Classified as Private Credit (Private Debt) per NEPC.
[14] There is a larger disparity in returns for this asset class among the firms surveyed, so NEPC's assumption is applied in lieu of the average to more closely reflect the underlying investments made specifically for SBCERA.

necessarily consistent with the time horizon of the actuarial assumption, which is used to discount cashflows over the expected lifetime of each plan member.

- Using an average of real rate of return assumptions allows SBCERA's investment return assumption to reflect a broad range of capital market information and to help reduce year to year volatility in the investment return assumption.
- We recommend the 6.53% portfolio net real rate of return, as calculated above, be used in the determination of SBCERA's investment return assumption.
  - This return is 0.59% lower than the 7.12% net return that was used three years ago in the review of the recommended investment return assumption for the June 30, 2023 valuation.
  - The 0.59% decrease in the portfolio net real rate of return since 2023 is due to changes in the real rate of return assumptions provided by the investment advisory firms (-0.59% under the 2023 asset allocation).
  - Even though there is a reduction in the real rates of return between the 2023 study and the current study, it is worth noting that the real rates of return provided in the capital market assumptions in the current study are generally higher than those in the ten-year period following the Global Financial Crisis, and so altogether should be used with caution in selecting a long-term investment return assumption.

Investment expenses

For funding purposes, the real rate of return assumption for the portfolio needs to be adjusted for investment expenses expected to be paid from investment income. As the investment consultants discussed in the prior section provide us with real rates of return that are net of expected investment manager fees, we only need to make adjustments for investment consulting fees, custodian fees and other miscellaneous investment expenses.

The following table shows these investment expenses as a percentage of the beginning of year actuarial value of assets.

Investment Expenses as a Percentage of Actuarial Value of Assets ($ in '000s)

Year Ended June 30	Actuarial Value of Assets[15]	Investment Expenses[16]	Investment Expenses as %
2020	$10,642,401	$54,091	0.51%
2021	11,133,173	28,383	0.25%
2022	12,258,925	50,792	0.41%
2023	13,260,596	53,511	0.40%
2024	14,157,370	62,728	0.44%
2025	15,159,420	67,952	0.45%

[15] As of beginning of plan year.
[16] Equals the sum of investment consulting fees, custodian fees, legal fees, and other miscellaneous investment expenses. Excludes investment manager fees.

Section 3: Economic Assumptions

Investment Expenses Averages and Assumptions

Averaging Period and Assumption	Investment Expense Percentage
Current assumption	0.50%
Three-year average (2023–2025)	0.43%
Six-year average (2020–2025)	0.41%
Recommended assumption	**0.50%**

We recommend maintaining the investment expense assumption at 0.50%.

Adjustment to expected geometric real rate of return

The recommended 6.53% real rate of return assumption was based on expected arithmetic average returns. A retirement system using an expected arithmetic average return as the discount rate in a funding valuation is expected, over long periods of time, to have no surplus or asset shortfall relative to its expected obligations assuming all other actuarial assumptions are met in the future.[17]

Beginning with the previous study, we have converted the portfolio's arithmetic average return to a geometric average return. A retirement system using a geometric average return as the discount rate in a funding valuation will, over long periods of time, have an equal likelihood of having a surplus or asset shortfall relative to its expected obligations assuming all actuarial assumptions are met in the future.[18]

For any given asset portfolio, the geometric average return will be less than the arithmetic average return.[19] The difference depends on the variability of the portfolio as measured by its standard deviation. Based on the portfolio's standard deviation of 10.85% provided by NEPC, the adjustment to a geometric average return reduces the expected return by 0.55%. The strong majority of public plans across the United States use the geometric average return to determine the expected return on assets.

Risk adjustment

The real rate of return assumption for the portfolio is adjusted to reflect the potential risk of shortfalls in the return assumptions. SBCERA's asset allocation determines this portfolio risk, since risk levels are driven by the variability of returns for the various asset classes and the correlation of returns among those asset classes. This portfolio risk is incorporated into the real rate of return assumption through a risk adjustment.

The purpose of the risk adjustment (as measured by the corresponding confidence level) is to increase the likelihood of achieving the actuarial investment return assumption in the long

[17] The mathematical terminology for this is that the mean (or average) surplus or asset shortfall is expected to be zero.
[18] The mathematical terminology for this is that over time the median surplus or asset shortfall is expected to be zero.
[19] This is because the expected geometric average return reflects expected median outcomes, while the expected arithmetic average return reflects expected average or mean outcomes. Expected median outcomes are lower than expected average outcomes because they are less affected by the possibility of extraordinary ("outlier") favorable outcomes.

Section 3: Economic Assumptions

term.[20] It also acknowledges that investment results carry significant volatility over time, and yet the recommended assumption is a static number that does not explicitly convey this risk or its ramifications. The practice of including a risk adjustment helps mitigate some of this risk and is consistent with our experience that retirement plan fiduciaries would generally prefer that returns exceed the assumed rate more often than not.

The confidence level associated with a particular risk adjustment represents a relative likelihood that future investment earnings would equal or exceed the assumed earnings over a 15-year period. The 15-year time horizon represents an approximation of the "duration" of the fund's liabilities, where the duration of a liability represents the sensitivity of that liability to interest rate variations.

Three years ago, the Board adopted an investment return assumption of 7.25%. That return implied a risk adjustment of 1.27%, corresponding to a 15-year confidence level of 67%, based on an annual portfolio return standard deviation of 11.40% provided by NEPC in 2023.

If we use the same 67% 15-year confidence level from our last study to set this year's risk adjustment, based on the current annual portfolio return standard deviation of 10.85% provided by NEPC, the corresponding risk adjustment would be 1.21%. Together with the other investment return components, this would result in an investment return assumption of 6.77%, which is lower than the current assumption of 7.25%.

Based on Segal's general practice of using one-quarter percentage point increments for economic assumptions, we considered an investment return assumption of 7.00% which would produce a risk adjustment of 0.98% and a corresponding confidence level of 64%. For comparison, the current net investment return assumption of 7.25% would have a confidence level of 60% under this model.

Recommended investment return assumption

The following table summarizes the components of the recommended investment return assumption. For comparison purposes, we have also included similar values from the last study.

Assumption Component	June 30, 2026 Recommended Value	June 30, 2023 Adopted Value
Inflation	2.50%	2.50%
Arithmetic real rate of return	6.53%	7.12%
Expense adjustment	(0.50%)	(0.50%)
Geometric return adjustment	(0.55%)	(0.60%)
Risk adjustment	(0.98%)	(1.27%)
Total	**7.00%**	**7.25%**
Confidence level	**64%**	**67%**

[20] This type of risk adjustment is referred to in the Actuarial Standards of Practice as a "margin for adverse deviation."

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We recommend reducing the investment return assumption from 7.25% to 7.00% per annum.

Comparison with historical assumptions

The table below shows SBCERA's recommended investment return assumption and the corresponding risk adjustment and confidence level compared to similar values from prior studies.

Years Ended June 30[21]	Investment Return[22]	Risk Adjustment	Confidence Level
2008 - 2010	8.00%	0.94%	64%
2011 - 2013	7.75%	0.38%	56%
2014 - 2016	7.50%	0.26%	53%
2017 - 2019	7.25%	0.05%	51%
2020 - 2022	7.25%	0.26%	53%
2023 – 2025	7.25%	1.27%	67%
2026 (Recommended)	**7.00%**	**0.98%**	**64%**

As we have discussed in prior experience studies, the risk adjustment model and associated confidence level is most useful as a means for comparing how SBCERA has positioned itself relative to risk over periods of time.[23] The use of a 64% confidence level should be considered in context with other factors, including:

- As noted above, the confidence level is more of a relative measure than an absolute measure, and so can be reevaluated and reset for future comparisons. This is particularly true when comparing confidence levels developed using different models, as we have shown above between 2022 and 2023 when we transitioned from the arithmetic model to the geometric model.
- The confidence level is based on the standard deviation of the portfolio that is determined and provided to us by NEPC. The standard deviation is a statistical measure of the future volatility of the portfolio and so is itself based on assumptions about future portfolio volatility and can be considered somewhat of a "soft" number.
- We have not taken into account any additional returns ("alpha") that might be earned on active management. If active management generates enough alpha to cover its related expenses, returns would increase.
- As with any model, the results of the risk adjustment model should be evaluated for reasonableness and consistency. This is discussed in the later section on "Comparison with other public retirement systems".

[21] Based on expected geometric average returns starting in 2023.
[22] The investment returns prior to 2014 are net of administrative expenses.
[23] In particular, it would not be appropriate to use this type of risk adjustment as a measure of determining an investment return rate that is "risk-free."

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Comparison with alternative model

To maintain a robust analytical framework, we have employed an alternative model for comparison by evaluating the recommended 7.00% assumption based on the expected geometric return for the entire portfolio net of investment management expenses, but using a fully stochastic approach and a different source for capital market assumptions.

Under this alternative model, over a 15-year period, there is a 62% likelihood that future average geometric returns will meet or exceed 7.00%[24] developed using the capital market assumptions compiled by Horizon Actuarial Services based on their most recent survey published in August 2025. This 62% likelihood of achieving a 7.00% is greater than the corresponding likelihood of 56% (for achieving a 7.25% return) that we observed in this comparison during the assumption review in 2023. Note that the likelihood of 56% we calculated in the prior study was based on the capital market assumptions provided in the Horizon Survey updated through August 2022.

Comparison with other public retirement systems

One final review of the recommended investment return assumption is to compare it against those used by other public retirement systems, both in California and nationwide.

An investment return of 6.75% or lower is becoming more common among California public sector retirement systems. Of the twenty 1937 Act CERL systems, one (SBCERA) uses a 7.25% investment assumption, six use 7.00%, eight use 6.75%, four use 6.50%, and one uses 6.25%. Furthermore, CalSTRS currently uses a 7.00% investment return assumption, CalPERS uses a 6.80% investment return assumption, while the San Jose and San Diego City retirement systems use investment return assumptions of 6.625% and 6.50%, respectively.

The following table compares SBCERA's recommended investment return assumption against those of the 239[25] large public retirement funds in their 2024 fiscal year valuations based on information found in the Public Plans Database,[26] which is produced in partnership with NASRA.

Assumption	SBCERA	Public Plan Data Low	Public Plan Data Median	Public Plan Data High
Investment return	7.00%	4.31%	7.00%	7.50%

The detailed survey results show that 72% of the systems have reduced their investment return assumption from 2017 to 2024. State systems outside of California tend to change their economic assumptions less frequently and so may lag behind emerging practices in this area. NCPERS also conducts an annual survey of public plans nationwide, and their 2026 survey reports an average investment return assumption of 6.67%.

[24] We performed this stochastic simulation using the capital market assumptions included in the 2025 survey prepared by Horizon Actuarial Services. That simulation was performed using 10,000 trial outcomes of future market returns, using assumptions from 20-year arithmetic returns, standard deviations and correlation matrix that were found in the 2025 survey that included responses from 41 investment advisors.

[25] Among 246 large public retirement funds, the 2024 fiscal year investment return assumption was not available for 7 of the public retirement funds in the Public Plans Database as of March 2026.

[26] Public Plans Data website – Produced in partnership with the National Association of State Retirement Administrators (NASRA).

C. Salary increases

Salary increases impact plan costs in two ways:

1. Increasing members' benefits (since benefits are a function of the members' highest average pay) and future normal cost collections; and
2. Increasing total active member payroll which in turn generates lower UAAL contribution rates as a percentage of payroll.

As an employee progresses through his or her career, increases in pay are expected to come from three sources, inflation, real "across-the-board" increases and merit and promotion increases. Each of these assumptions is discussed in more detail below.

Inflation

Unless pay grows at least as fast as consumer prices grow, employees will experience a reduction in their standard of living. There may be times when pay increases lag or exceed inflation, but over the long term, labor market forces may require an employer to maintain its employees' standards of living.

As discussed earlier in this report, we recommend maintaining the annual inflation assumption at 2.50%.

Real "across-the-board" pay increases

These increases are typically termed productivity increases since they are considered to be derived from the ability of an organization or an economy to produce goods and services in a more efficient manner. As that occurs, at least some portion of the value of these improvements can provide a source for pay increases. These increases are typically assumed to extend to all employees "across the board." The State and Local Government Workers Employment Cost Index produced by the Department of Labor provides evidence that real "across-the-board" pay increases have averaged about 0.1% – 0.4% annually during the last ten to twenty years.

We also referred to the annual report on the financial status of the Social Security program published in June 2025. In that report, real "across-the-board" pay increases are forecast to be 1.13% per year under the intermediate assumptions.

The real pay increase assumption is generally considered a more "macroeconomic" assumption that is not necessarily based on individual plan experience. However, the following table compares SBCERA's recent salary experience to the change in CPI over the three-year and six-year period ending June 30, 2025. We note that the actual average salary increase was lower than the average change in the CPI over the six-year period ending June 30, 2025 in part due to the spike in inflation in 2021–2022.

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Valuation Date	Actual Average[27] Wage Inflation	Actual Annual Average Change in CPI[28]
June 30, 2020	3.22%	1.93%
June 30, 2021	4.98%	7.90%
June 30, 2022	2.38%	7.49%
June 30, 2023	5.78%	4.28%
June 30, 2024	4.61%	1.13%
June 30, 2025	4.70%	4.51%
Three-year average (2023 – 2025)	**5.03%**	**3.29%**
Six-year average (2020 – 2025)	**4.27%**	**4.51%**

Based on the above information, we recommend maintaining the real "across-the-board" salary increase assumption at 0.50%.

Merit and promotion increases

As the name implies, these increases come from an employee's career advancement. This form of pay increase differs from the previous two, since it is specific to the individual. For SBCERA, we continue to recommend service-specific merit and promotion increase assumptions.

The annual merit and promotion increases are determined by measuring the actual increases received by members over the experience period, net of the inflationary and real "across-the-board" pay increases. This is accomplished by:

1. Measuring each continuing member's actual salary increase over each year of the experience period on a salary-weighted basis, with higher weights assigned to experience from members with larger salaries;
2. Excluding any members with increases of more than 50% or decreases of more than 10% during any particular year;
3. Categorizing these increases into groups by years of service;
4. Removing the wage inflation component from these increases (assumed to be the total 3.00% assumed inflation and real "across-the-board" increases each year);
5. Averaging these annual increases over the experience period; and
6. Modifying current assumptions to reflect some portion of these measured increases reflective of their "credibility."

To be consistent with the other economic assumptions, these merit and promotion assumptions should be used in combination with the total 3.00% assumed inflation and real "across-the-board" increases recommended in this study.

[27] Reflects the increase in average salary for members at the beginning of the year versus those at the end of the year. It does not reflect the average salary increases received by members who worked the full year.
[28] Based on the change in the November CPI for the Riverside-San Bernardino-Ontario Area compared to the prior year.

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Merit and promotion increases are measured separately for General and Safety members. Note that beginning with this experience study, we are also recommending separate merit and promotion increase assumptions for Tier 1 and Tier 2 members.

Due to the high variability of the actual salary increases, we have analyzed this assumption using data for the past six years. We believe that when the experience from the current and prior study is combined, it provides a more reasonable representation of potential future merit and promotion salary increases over the long term.

The following table shows the General Tier 1 members' actual average merit and promotion increases by years of service over the three-year period from June 1, 2022 through May 31, 2025. As mentioned above, we have also included the actual average increases based on the past six years (July 1, 2019 through May 31, 2025) for General Tier 1 members. These actual increases were reduced by the assumed average inflation plus "across-the-board" increase. The current and recommended assumptions are also shown.

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General Tier 1 — Merit and Promotion Salary Increase Rates

Years of Service	Current Expected Increase	Actual 3 Year Average	Actual 6 Year Average	Recommended Expected Increase
Less than 1	5.00%	(2.03%)	(2.03%)	5.00%
1 – 2	6.50%	3.72%	0.76%	6.50%
2 – 3	4.75%	0.20%	1.50%	4.75%
3 – 4	4.25%	2.48%	2.85%	4.25%
4 – 5	4.00%	5.00%	3.44%	4.00%
5 – 6	3.50%	(0.28%)	2.30%	3.50%
6 – 7	3.25%	3.62%	3.53%	3.25%
7 – 8	3.25%	5.17%	4.03%	3.25%
8 – 9	3.00%	6.52%	4.27%	3.00%
9 – 10	2.50%	6.60%	4.46%	2.50%
10 – 11	2.00%	5.54%	3.87%	2.25%
11 – 12	1.75%	5.21%	3.50%	2.00%
12 – 13	1.50%	4.85%	3.13%	1.90%
13 – 14	1.40%	4.85%	2.85%	1.80%
14 – 15	1.35%	4.88%	3.28%	1.75%
15 – 16	1.30%	4.64%	3.60%	1.70%
16 – 17	1.30%	4.11%	3.02%	1.65%
17 – 18	1.30%	3.52%	2.60%	1.60%
18 – 19	1.30%	3.58%	2.32%	1.55%
19 – 20	1.30%	3.78%	2.29%	1.50%
20 and over	1.30%	3.69%	2.56%	1.45%
Actual / Expected (6 years)	**101.4%**			**101.2%**

For General Tier 1 members with less than ten years of service, we recommend maintaining the current merit and promotion salary increases due to the overall low level of experience for those service categories. For General Tier 1 members with ten or more years of service, we recommend increasing the current merit and promotion salary increases.

Chart 1 on page 29 compares the actual merit and promotion increase experience for General Tier 1 members with the current and recommended assumptions.

The following table shows similar information for General Tier 2 members.

Section 3: Economic Assumptions

General Tier 2 — Merit and Promotion Salary Increase Rates

Years of Service	Current Expected Increase	Actual 3 Year Average	Actual 6 Year Average	Recommended Expected Increase
Less than 1	5.00%	4.99%	4.53%	5.00%
1 – 2	6.50%	8.90%	7.47%	6.75%
2 – 3	4.75%	8.11%	6.53%	5.00%
3 – 4	4.25%	8.25%	6.54%	4.75%
4 – 5	4.00%	7.47%	6.11%	4.50%
5 – 6	3.50%	6.76%	5.57%	4.00%
6 – 7	3.25%	6.74%	5.79%	3.75%
7 – 8	3.25%	6.51%	5.86%	3.75%
8 – 9	3.00%	6.27%	6.03%	3.50%
9 – 10	2.50%	5.87%	5.82%	3.00%
10 – 11	2.00%	5.54%	5.49%	2.50%
11 – 12	1.75%	3.86%	4.19%	2.00%
12 – 13	1.50%	3.25%	3.90%	1.90%
13 – 14	1.40%	8.23%	7.95%	1.80%
14 – 15	1.35%	7.19%	5.18%	1.75%
15 – 16	1.30%	2.73%	2.67%	1.70%
16 – 17	1.30%	4.94%	2.73%	1.65%
17 – 18	1.30%	2.46%	2.34%	1.60%
18 – 19	1.30%	0.38%	0.46%	1.55%
19 – 20	1.30%	1.66%	1.86%	1.50%
20 and over	1.30%	4.59%	7.86%	1.45%
Actual / Expected (6 years)	**101.6%**			**101.2%**

For General Tier 2 members with less than eleven years of service, we recommend increasing the merit and promotion salary increases for most service categories. For General Tier 2 members with eleven or more years of service, we recommend the same merit and promotion salary increases that are recommended for General Tier 1 members with eleven or more years of service due to the overall low level of experience for General Tier 2 members in those service categories.

Chart 2 on page 29 compares the actual merit and promotion increase experience for General Tier 2 members with the current and recommended assumptions.

The following table shows the Safety Tier 1 members' actual average merit and promotion increases by years of service over the three-year period from June 1, 2022 through May 31, 2025. As mentioned above, we have also included the actual average increases based on the past six years (July 1, 2019 through May 31, 2025) for Safety Tier 1 members. These

Section 3: Economic Assumptions

actual increases were reduced by the assumed average inflation plus "across-the-board" increase. The current and recommended assumptions are also shown.

Safety Tier 1 — Merit and Promotion Salary Increase Rates

Years of Service	Current Expected Increase	Actual 3 Year Average	Actual 6 Year Average	Recommended Expected Increase
Less than 1	7.00%	N/A	N/A	7.00%
1 – 2	4.75%	N/A	N/A	4.75%
2 – 3	3.75%	N/A	6.68%	3.75%
3 – 4	3.75%	N/A	4.70%	3.75%
4 – 5	3.75%	N/A	5.63%	3.75%
5 – 6	3.75%	8.56%	5.53%	3.75%
6 – 7	3.75%	6.92%	8.74%	3.75%
7 – 8	3.75%	11.99%	8.76%	3.75%
8 – 9	3.50%	9.86%	7.67%	3.50%
9 – 10	3.25%	11.79%	8.40%	3.25%
10 – 11	2.50%	8.49%	7.15%	3.00%
11 – 12	2.00%	4.59%	4.44%	2.80%
12 – 13	1.90%	6.00%	5.21%	2.60%
13 – 14	1.85%	5.84%	4.45%	2.40%
14 – 15	1.80%	5.75%	4.39%	2.20%
15 – 16	1.75%	5.84%	4.44%	2.00%
16 – 17	1.75%	5.09%	4.58%	2.00%
17 – 18	1.75%	4.12%	4.06%	2.00%
18 – 19	1.75%	3.62%	3.83%	2.00%
19 – 20	1.75%	5.15%	4.94%	2.00%
20 and over	1.75%	5.22%	4.92%	2.00%
Actual / Expected (6 years)	**102.9%**			**102.6%**

For Safety Tier 1 members with less than ten years of service, we recommend maintaining the current merit and promotion salary increases due to the overall low level of experience for those service categories. For Safety Tier 1 members with ten or more years of service, we recommend increasing the current merit and promotion salary increases.

Chart 3 on page 30 compares the actual merit and promotion increase experience for Safety Tier 1 members with the current and recommended assumptions.

The following table shows similar information for Safety Tier 2 members.

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Safety Tier 2 — Merit and Promotion Salary Increase Rates

Years of Service	Current Expected Increase	Actual 3 Year Average	Actual 6 Year Average	Recommended Expected Increase
Less than 1	7.00%	5.49%	7.18%	7.00%
1 – 2	4.75%	8.61%	7.12%	5.00%
2 – 3	3.75%	8.85%	7.13%	4.50%
3 – 4	3.75%	6.98%	6.08%	4.50%
4 – 5	3.75%	8.17%	7.30%	4.50%
5 – 6	3.75%	8.35%	7.71%	4.50%
6 – 7	3.75%	8.56%	8.18%	4.50%
7 – 8	3.75%	6.97%	6.84%	4.50%
8 – 9	3.50%	7.14%	7.12%	4.25%
9 – 10	3.25%	6.64%	6.64%	4.00%
10 – 11	2.50%	4.82%	4.89%	3.00%
11 – 12	2.00%	2.04%	2.04%	2.80%
12 – 13	1.90%	(2.16%)	(0.16%)	2.60%
13 – 14	1.85%	N/A	10.14%	2.40%
14 – 15	1.80%	N/A	N/A	2.20%
15 – 16	1.75%	N/A	N/A	2.00%
16 – 17	1.75%	N/A	N/A	2.00%
17 – 18	1.75%	N/A	N/A	2.00%
18 – 19	1.75%	10.49%	10.49%	2.00%
19 – 20	1.75%	N/A	N/A	2.00%
20 and over	1.75%	N/A	3.00%	2.00%
Actual / Expected (6 years)	**102.9%**			**102.3%**

For Safety Tier 2 members with less than eleven years of service, we recommend increasing the merit and promotion salary increases for most service categories. For Safety Tier 2 members with eleven or more years of service, we recommend the same merit and promotion salary increases that are recommended for Safety Tier 1 members with eleven or more years of service due to the overall low level of experience for Safety Tier 2 members in those service categories.

Chart 4 on page 30 compares the actual merit and promotion increase experience for Safety Tier 2 members with the current and recommended assumptions.

Total payroll growth

Projected active member payrolls are used to develop the UAAL contribution rate. Future values are determined as a product of the number of employees in the workforce and the average pay

Section 3: Economic Assumptions

for all employees. The average pay for all employees increases only by inflation and real "across-the-board" pay increases. The merit and promotion increases are not included, because this average pay is not specific to an individual.

Under the Board's current practice, the UAAL contribution rate is developed by assuming that the number of active members will remain about the same, so that the total payroll for all active members will increase annually over the amortization periods at the same assumed rates of inflation plus real "across-the-board" salary increase assumptions as are used to project the members' future benefits. Note again that this does not include the assumed merit and promotion increases, because longer service members are assumed to be replaced by new members.

As part of reviewing the current practice, we have summarized in the table below how the number of active members and total payroll has changed over the last six valuations.

Active Members and Projected Payroll[29]

Year Ended June 30	Number of Active Members	Projected Payroll ($ in '000s)
2020	$21,814	$1,587,324
2021	21,500	1,626,449
2022	21,276	1,663,991
2023	22,084	1,812,216
2024	23,131	1,985,692
2025	24,121	2,168,104
Average Annual Rate of Increase	**2.03%**	**6.43%**

As can be observed from the above table, the average annual rate of increase in the projected payroll during the above period was 6.43% before accounting for the 2.03% average growth in the total active workforce (and 4.40% after netting out the impact due to the growth in the active workforce). It is also worth noting that the past few years may have been affected by the inflation spike that occurred at the end of COVID.

After considering the above factors and experience, we recommend maintaining the payroll growth assumption at 3.00% annually (consistent with the combined recommended inflation and real "across-the-board" salary increase assumptions).

[29] Projected payroll is used to develop the UAAL contribution rate in the actuarial valuation.

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Chart 1: Merit and Promotion Salary Increase Rates
General Tier 1 Members

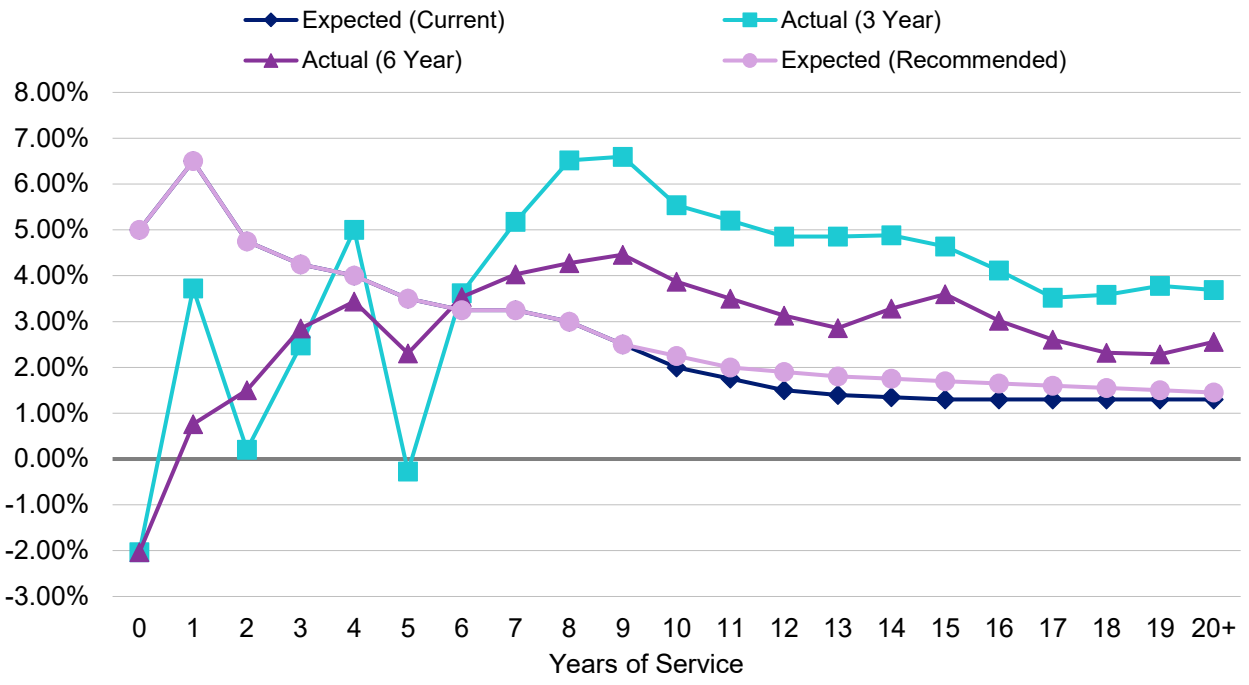
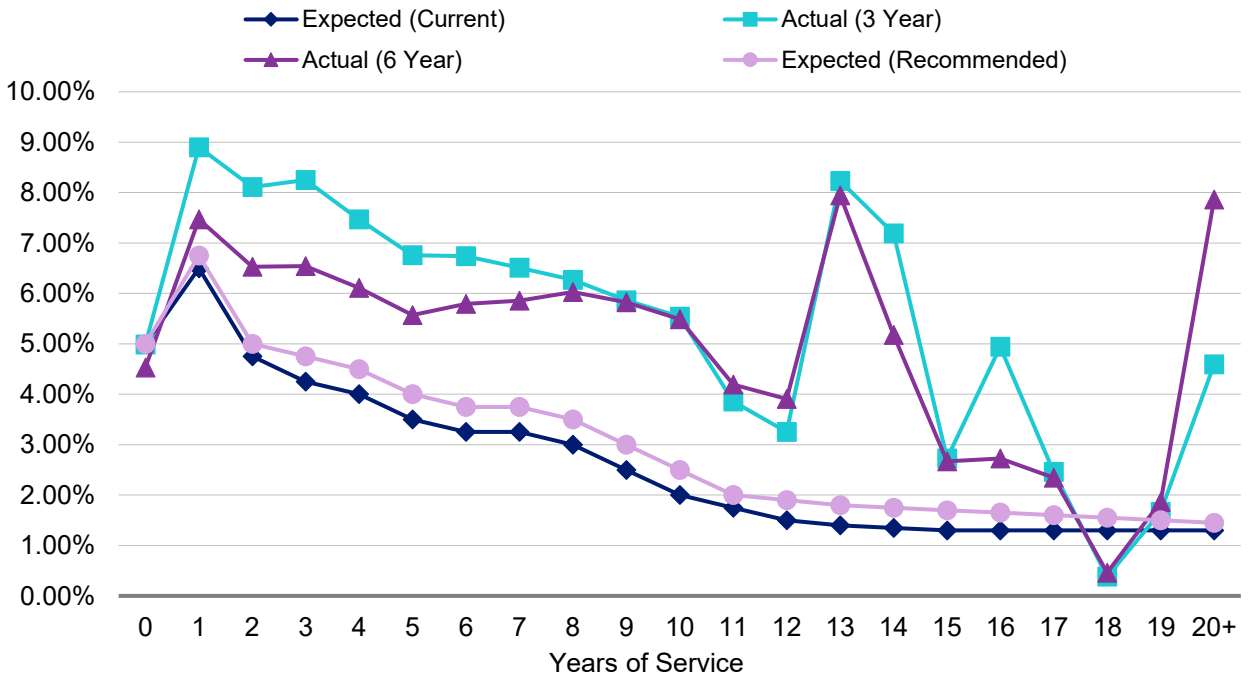


Chart 2: Merit and Promotion Salary Increase Rates
General Tier 2 Members



Section 3: Economic Assumptions

Chart 3: Merit and Promotion Salary Increase Rates
Safety Tier 1 Members

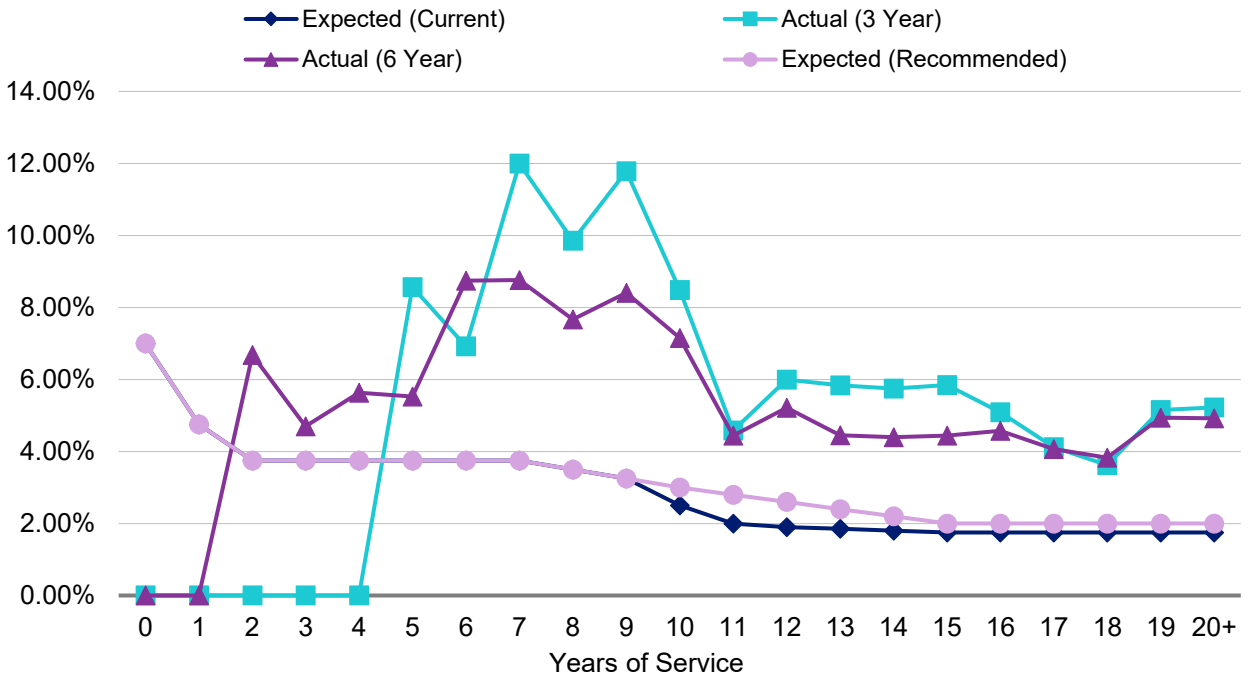
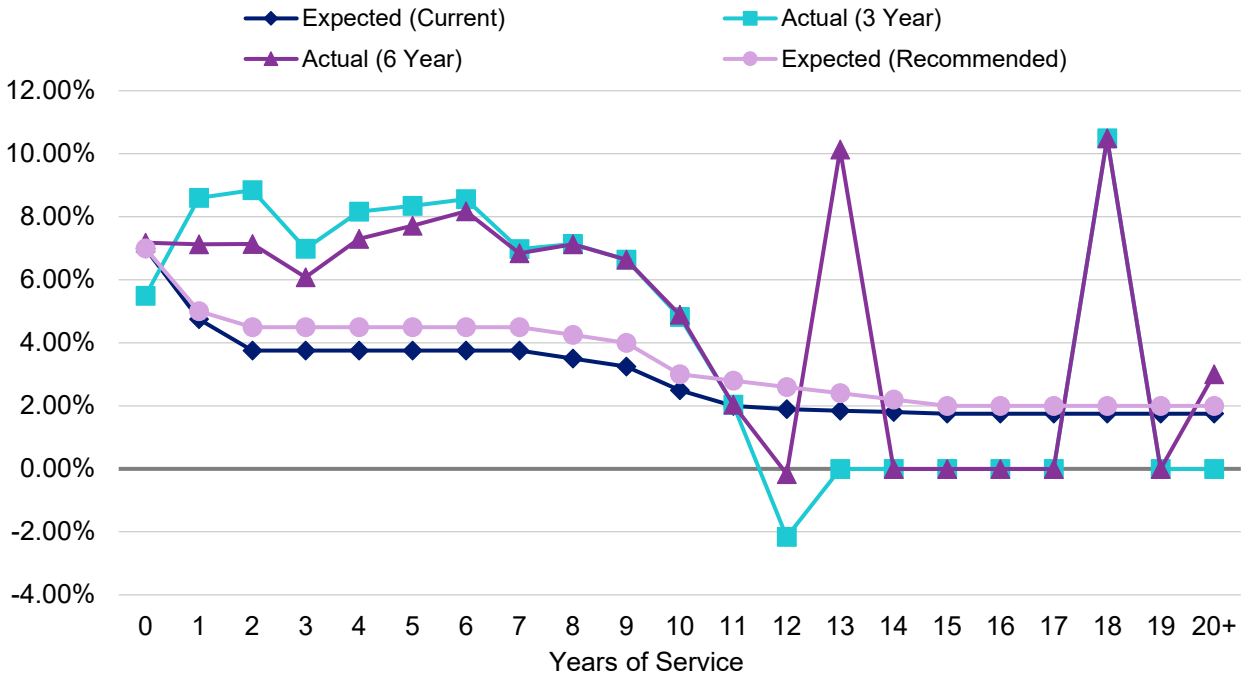


Chart 4: Merit and Promotion Salary Increase Rates
Safety Tier 2 Members



D. Administrative expenses

Administrative expenses incurred in connection with the plan's operation are paid from the Association's assets. These expenses include fees for administrative, legal, accounting, and actuarial services, as well as routine costs for printing, mailings, computer-related activities, and other functions carried out by the Association. They do not include investment-related expenses.

In order to reflect future administrative expenses in the contribution rates, the total administrative expense load is allocated between the employer and member based on contribution rates (before expenses) for the employer and member in each actuarial valuation.

The following table shows actual administrative expenses as a percentage of payroll.

Administrative Expenses as a Percentage of Payroll ($ in '000s)

Year Ended June 30	Payroll	Administrative Expenses	Administrative Expenses as %
2020	$1,542,495	$14,627	0.95%
2021	1,587,324	14,511	0.91%
2022	1,626,449	14,323	0.88%
2023	1,663,991	17,360	1.04%
2024	1,812,216	20,386	1.12%
2025	1,985,692	20,973	1.06%

Administrative Expenses Averages and Assumptions

Averaging Period and Assumption	Administrative Expense Percentage
Current assumption	0.90%
Three-year average (2023 – 2025)	1.07%
Six-year average (2020 – 2025)	0.99%
Recommended assumption	**1.05%**

We recommend increasing the administrative expense assumption from 0.90% to 1.05% of payroll.

This expense will be allocated to the employer and member based on the total average contribution rates in the upcoming June 30, 2026 actuarial valuation, as determined before including the administrative expenses. The allocation of the total administrative expenses between employer and member is subject to change with each actuarial valuation.

Section 4: Demographic Assumptions

A. Mortality rates — healthy

The "healthy" mortality rates project the life expectancy of a member who retires from service (i.e., who did not retire on a disability pension). Also, the "healthy" pre-retirement (employee) mortality rates project what proportion of members will live to retirement.

In 2019, the Retirement Plans Experience Committee (RPEC) of the SOA published the first family of mortality tables based exclusively on public sector pension plan experience in the United States referred to as the Pub-2010 Public Retirement Plans Mortality Tables (Pub-2010). In 2025, RPEC published and the SOA approved an updated family of mortality tables, referred to as the Pub-2016 Public Retirement Plans Mortality Tables (Pub-2016).[30]

Within the Pub-2010 and Pub-2016 family of mortality tables, there are separate tables by job categories of General, Safety and Teachers. Included with the mortality tables is the analysis prepared by RPEC that continues to observe that benefit amount for healthy retirees and salary for employees are the most significant predictors of mortality differences within the job categories. Therefore, Pub-2010 and Pub-2016 include mortality rates developed on an "amount-weighted" basis, with higher credibility assigned to experience from annuitants and employees receiving larger benefits and salaries, respectively.

We recommend the "amount-weighted" tables from the Pub-2016 family of mortality tables be used (adjusted for SBCERA experience as discussed herein), as well as using the "above-median" tables where applicable.

A generational mortality table provides dynamic projections of mortality experience for each cohort of retirees. For example, the mortality rate for someone who is 65 next year will be slightly less than for someone who is 65 this year. In general, using generational mortality anticipates increases in the cost of the plan over time as participants' life expectancies are projected to increase and is now the established practice within the actuarial profession.

RPEC has historically published annual updates to their mortality improvement scale. However, the mortality data observed during 2020 was severely impacted by the COVID-19 pandemic and RPEC has not released a new mortality improvement scale that incorporates the substantially higher rate of mortality experience from 2020. Therefore, Scale MP-2021 remains the most recent mortality improvement scale published as of the date of this report.

We recommend continuing to apply Scale MP-2021 generationally where each future year has its own mortality table that reflects the forecasted improvements.

In order to reflect more SBCERA experience in our analysis of the mortality assumption, we have used experience over a 13 year period by using data from the current experience study

[30] The Pub-2016 family of mortality tables have been developed without experience from the COVID-19 pandemic.

period (from June 1, 2022 through May 31, 2025) and the last four experience study periods (from July 1, 2019 through May 31, 2022; from July 1, 2016 through June 30, 2019; from July 1, 2013 through June 30, 2016; and from July 1, 2010 through June 30, 2013). While we did not have information on the number of COVID-19 related deaths from July 1, 2019 through June 30, 2022, we noticed a spike in the number of deaths for 2020-2021 and 2021-2022. We have excluded the mortality data from 2020-2021 and 2021-2022 in setting our recommended mortality assumptions because it appears the data was severely impacted by COVID and showed substantially higher rates of population mortality experience during this two-year period.

In 2008 the SOA published an article recommending that mortality assumptions include an adjustment for credibility. Under this approach, the number of deaths needed for full credibility for a headcount-weighted mortality table is just over 1,000,[31] where full credibility means a 90% confidence that the actual experience will be within 5% of the expected value. For SBCERA, the number of actual deaths differs for each cohort and varies from no deaths for Safety active females to 1,373 deaths for General healthy retiree females over the 13-year period studied. In our recommended assumptions, we have adjusted the Pub-2016 mortality tables to fit SBCERA's experience based on the partial credibility for each cohort.

Post-retirement mortality (service retirements)

The current mortality tables used for post-retirement mortality are as follows:

- **General members**
  - Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected generationally with Scale MP-2021.
- **Safety members**
  - Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates unadjusted for males and decreased by 5% for females, projected generationally with Scale MP-2021.

The following table shows the observed benefit-weighted deaths for heathy retired members based on the actual experience during the 13-year period. Also shown are the expected benefit-weighted deaths under the current and recommended assumptions.

[31] The number of deaths needed for full credibility for an "amount" weighted mortality table is generally higher and based on the dispersion of the benefit amount for a given retiree group.

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Healthy Retiree Mortality – Benefit-Weighted Deaths ($ in millions)

Gender	General Current Expected	General Actual	General Recomm. Expected	Safety Current Expected	Safety Actual	Safety Recomm. Expected
Male	$45.05	$45.53	$44.27	$9.65	$11.78	$9.88
Female	36.48	37.26	36.41	0.59	0.14	0.57
Total	**$81.53**	**$82.79**	**$80.67**	**$10.25**	**$11.92**	**$10.45**
Actual / Expected	**101.6%**		**102.6%**[32]	**116.3%**		**114.0%**[33]

Notes

1. Experience shown above is weighted by annual benefit amounts for deceased members.
2. Expected amounts under the current and recommended generational mortality tables are based on mortality rates from the base year projected with mortality improvements to the year the death occurred (or was expected to occur).
3. Results may not add due to rounding.

As shown in the table above, the recommended mortality tables have an actual to expected ratio of about 103% and 114% for General and Safety, respectively, after adjustments for partial credibility. In future years the ratios should remain around these levels as long as actual mortality improves at the same rates as anticipated by the generational mortality tables.

Based on standard statistical theory, the data used in our analysis is only partially credible under the recommended "amount-weighted" basis when dispersion of retirees' benefit amounts is considered, particularly for the Safety membership groups (for example, a credibility of 6% for Safety females). Therefore, the recommended mortality tables reflect only a partial adjustment for actual SBCERA experience.

We recommend updating the post-retirement mortality assumptions to the following:

- **General members**
  - Pub-2016 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected generationally with Scale MP-2021.
- **Safety members**
  - Pub-2016 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and decreased by 5% for females, projected generationally Scale MP-2021.

Chart 5 on page 40 compares the actual to expected deaths on an amount-weighted basis for General service retirement members over the 13-year period for the current and recommended assumptions.

[32] If we used the benchmark Pub-2016 General Healthy Retiree table without any adjustment, the recommended actual to expected ratio would be 113%.

[33] If we used the benchmark Pub-2016 Safety Healthy Retiree table without any adjustment, the recommended actual to expected ratio would be 124%.

Section 4: Demographic Assumptions

Chart 6 on page 40 compares the actual to expected deaths on an amount-weighted basis for Safety service retirement members over the 13-year period for the current and recommended assumptions.

Chart 7 and Chart 8 on page 41 show the life expectancies (i.e., expected future lifetime) under the current and recommended tables for General service retirement members and Safety service retirement members, respectively, on an amount-weighted basis. Life expectancies under the current and recommended generational mortality rates are based on age in 2026. In practice, assumed life expectancies will increase in accordance with the mortality improvement scale.

Beneficiary mortality

The current mortality tables used for beneficiary mortality are as follows:

- **Beneficiaries not in pay status as of valuation**
  - Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected generationally with Scale MP-2021.
- **Beneficiaries in pay status as of valuation**
  - Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5% for males and increased by 15% for females, projected generationally with Scale MP-2021.

The Pub-2016 Contingent Survivor mortality tables (as well as the Pub-2010 Contingent Survivor mortality tables) are developed based only on beneficiary data after the death of the member. This is consistent with the data that we have available for SBCERA's beneficiaries and we have confirmed that the Pub-2016 Contingent Survivor mortality rates are comparable to SBCERA's actual mortality experience for beneficiaries.

Because the Contingent Survivor mortality tables reflect beneficiary mortality experience only **after** the death of the member, in the prior study we recommended the use of two separate mortality tables for beneficiaries, based on the pay status of the beneficiary. In particular, we recommended that the General Healthy Retiree mortality tables be used for beneficiary mortality (both before and after the expected death of the General or Safety member) when calculating the liability for the continuance to a beneficiary of a surviving member. Upon the actual death of the member (i.e., for all beneficiaries in pay status as of the valuation date), we recommended that the Contingent Survivor mortality tables, adjusted for SBCERA experience, be used. We note that the use of different mortality tables (before and after the death of the member) has been found by the RPEC to be reasonable.

The following table shows the observed benefit-weighted deaths for beneficiaries based on the actual experience during the 13 years studied. Also shown are the expected benefit-weighted deaths under the current and recommended assumptions.

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Beneficiary Mortality – Benefit-Weighted Deaths ($ in millions)

Gender	Current Expected	Actual	Recomm. Expected
Male	$2.82	$3.40	$3.09
Female	13.04	14.25	13.31
Total	**$15.86**	**$17.64**	**$16.39**
Actual / Expected	**111.2%**		**107.6%**[34]

Notes

1. Experience shown above is weighted by annual benefit amounts for deceased beneficiaries.
2. Expected amounts under the current and recommended generational mortality table are based on mortality rates from the base year projected with mortality improvements to the year the death occurred (or was expected to occur).
3. Results may not add due to rounding.

As shown in the table above, the recommended mortality table has an actual to expected ratio of about 108% after adjustments for partial credibility. In future years the ratios should remain around these levels as long as actual mortality improves at the same rates as anticipated by the generational mortality tables.

The recommended mortality table reflects current experience to the extent that the experience is credible based on standard statistical theory. For SBCERA, there is less data available for beneficiaries than there is for retirees, so it is given relatively less credibility.

We recommend updating the beneficiary mortality assumption to the following:

- **Beneficiaries not in pay status as of valuation**
  - Pub-2016 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected generationally with Scale MP-2021.
- **Beneficiaries in pay status as of valuation**
  - Pub-2016 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5% for males and increased by 15% females, projected generationally with Scale MP-2021.

As noted above, we continued to recommend the use of separate mortality tables for beneficiaries before and after the actual death of the member.

Pre-retirement mortality

The current mortality tables used for pre-retirement mortality are as follows:

[34] If we used the benchmark Pub-2016 Contingent Survivor table without any adjustment, the recommended actual to expected ratio would be 122%.

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- **General members**
  - Pub-2010 General Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with Scale MP-2021.
- **Safety members**
  - Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with Scale MP-2021.

The table below shows the observed salary-weighted deaths for active members based on the actual experience during the four years studied.[35] Also shown are the expected salary-weighted deaths under the current and recommended assumptions.

Pre-Retirement Mortality – Salary-Weighted Deaths ($ in millions)

Gender	General Current Expected	General Actual	General Recomm. Expected	Safety Current Expected	Safety Actual	Safety Recomm. Expected
Male	$2.76	$3.61	$3.01	$0.86	$0.89	$0.86
Female	2.77	4.19	3.30	0.06	0.00	0.06
Total	**$5.53**	**$7.80**	**$6.31**	**$0.92**	**$0.89**	**$0.93**
Actual / Expected	**141.0%**		**123.6%**[36]	**96.5%**		**96.0%**

Notes

1. Experience shown above is weighted by annual salary for deceased members.
2. Expected amounts under the current and recommended generational mortality table are based on mortality rates from the base year projected with mortality improvements to the year the death occurred (or was expected to occur).
3. Results may not add due to rounding.

As shown in the table above, the recommended mortality tables have an actual to expected ratio of about 124% and 96% for General and Safety, respectively after adjustments for partial credibility. In future years the ratios should remain around these levels as long as actual mortality improves at the same rates as anticipated by the generational mortality tables.

The recommended mortality tables reflect current experience to the extent that the experience is credible based on standard statistical theory. For many plans, there is generally less mortality experience available for actives, so it is given little credibility and the recommended tables are only slightly adjusted.

[35] Using data from the current experience study period (from June 1, 2022 through May 31, 2025) and the last experience study period (from July 1, 2019 through May 31, 2022, but excluding data from July 1, 2020 through May 31, 2022 due to the impact of COVID).

[36] If we used the benchmark Pub-2016 General Employee table without any adjustment, the recommended actual to expected ratio would be 133%.

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We recommend updating the pre-retirement mortality assumption to the following:

- **General members**
  - Pub-2016 General Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5% for males and increased by 10% females, projected generationally with Scale MP-2021.
- **Safety members**
  - Pub-2016 Safety Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates unadjusted for males and females, projected generationally with Scale MP-2021.

Currently, our assumption is that 100% of pre-retirement deaths are non-service-connected. Observed experience over the past six years for active member deaths is limited. In particular, there were 209 General member pre-retirement deaths, of which one death was service-connected, and only 12 Safety member pre-retirement deaths, of which seven deaths were service-connected.

Service vs. Non-Service-Connected Death

Service-Connected Death %	General	Safety
Current assumption	0%	0%
Actual experience	0%	58%
Recommended assumption	**0%**	**50%**

We recommend maintaining the current assumption that 100% of General member pre-retirement deaths are non-service-connected. However, we are recommending an assumption that 50% of Safety member pre-retirement deaths are service-connected while the remaining 50% are assumed to be non-service-connected.

Mortality table for member contributions, optional forms of payment and reserves

There are administrative reasons why a generational mortality table is more difficult to implement for determining member contributions for the legacy tiers, optional forms of payment and reserves. For determining member contributions, one emerging practice is to approximate the use of a generational mortality table by the use of a static table with projection of the mortality improvement from the measurement year over a period that is close to the duration of the benefit payments for active legacy members. We recommend the use of this approximation for determining member contributions for employees in the legacy tiers.

We recommend updating the mortality tables used for determining contributions to the following:

- **General members**
  - Pub-2016 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and

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females, projected 30 years (from 2016) with Scale MP-2021, weighted 30% male and 70% female.

- **Safety members**
  - Pub-2016 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and decreased by 5% for females, projected 30 years (from 2016) with Scale MP-2021, weighted 90% male and 10% female.

For optional forms of payment, there are some administrative issues that we may need to resolve with the Association and its vendor maintaining the pension administration software before we would recommend a comparable generational scale to anticipate future mortality improvement. We will continue to have discussions with the Association and its vendor following the Board's adoption of the assumptions recommended in this study before we finalize the recommended assumptions for use in in determining the optional forms of payment.

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Chart 5: Service Retired Benefit-Weighted Deaths ($ in millions)

General Members

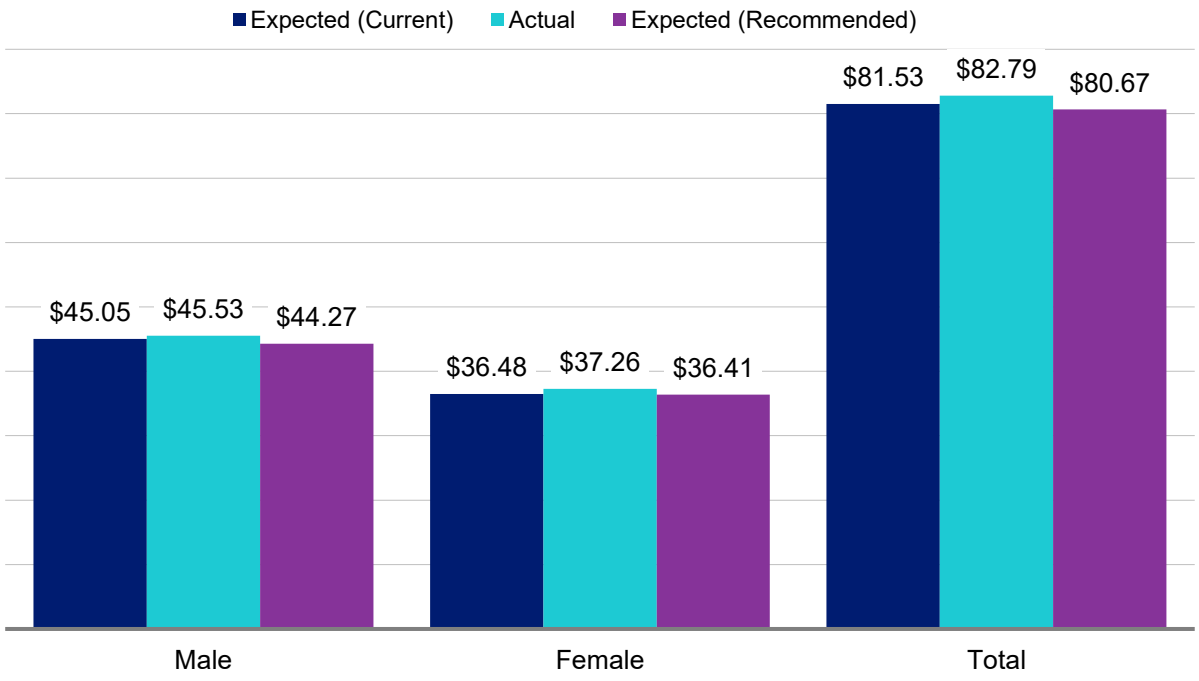


Chart 6: Service Retired Benefit-Weighted Deaths ($ in millions)

Safety Members

Section 4: Demographic Assumptions

Chart 7: Service Retired Benefit-Weighted Life Expectancies in 2026

General Members

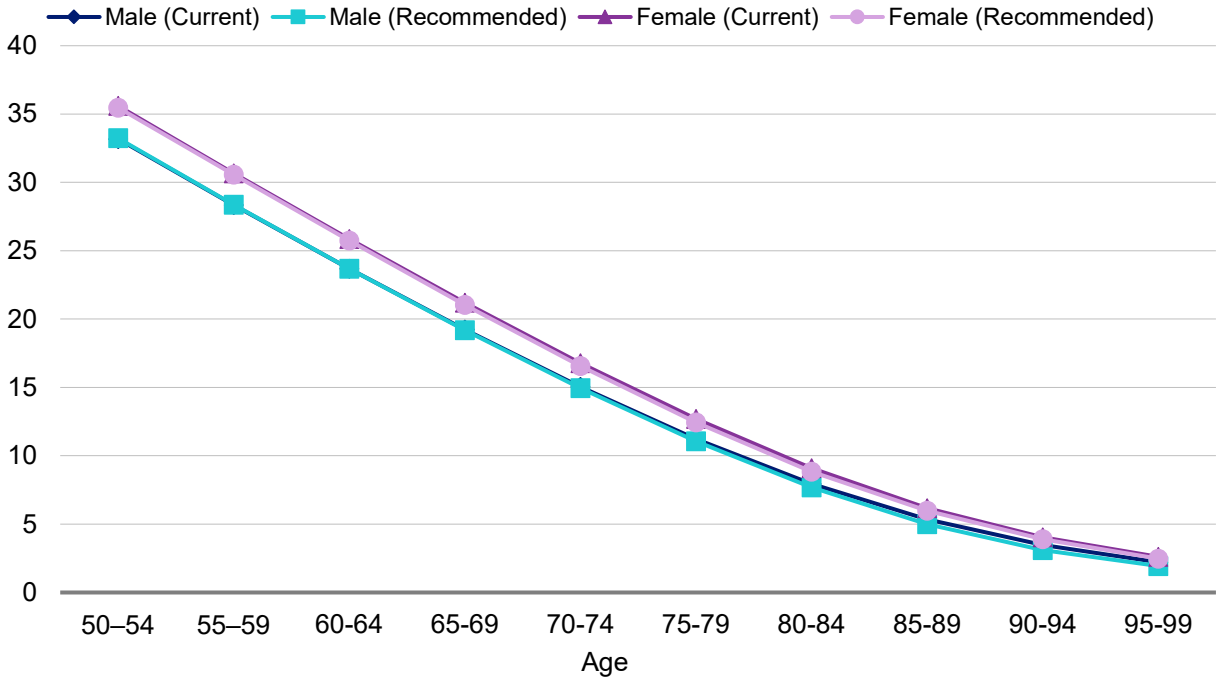
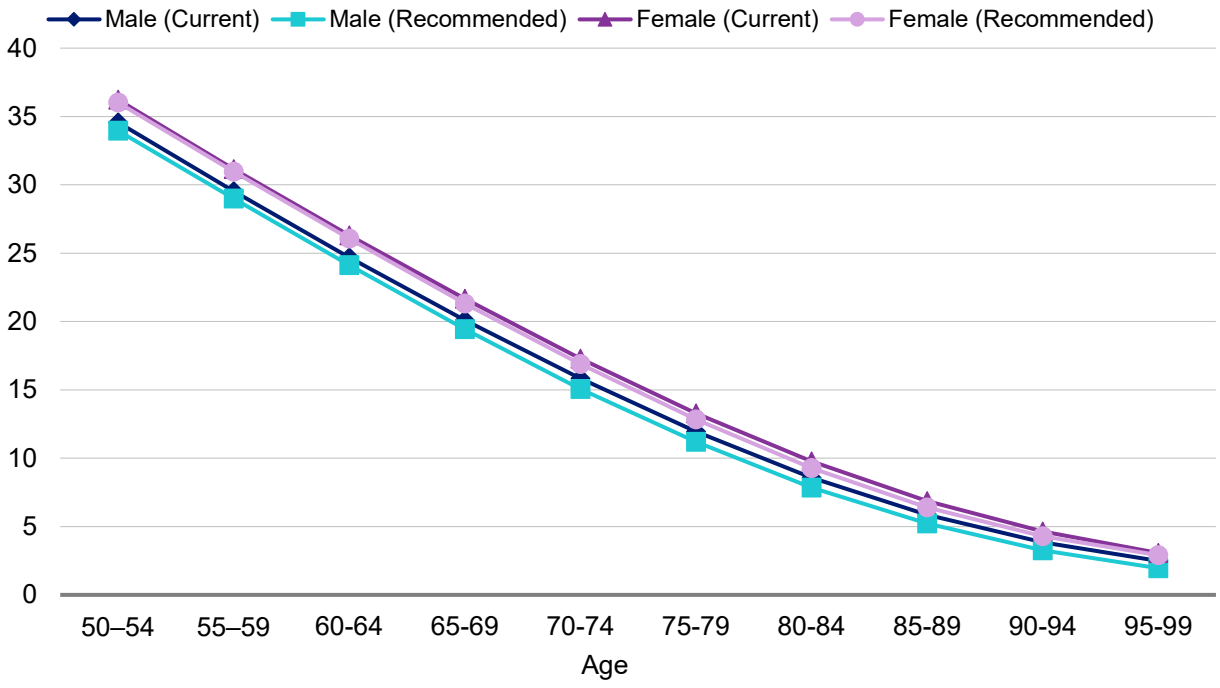


Chart 8: Service Retired Benefit-Weighted Life Expectancies in 2026

Safety Members



B. Mortality rates — disabled

Since mortality rates for disabled members can vary from those of healthy members, a different mortality assumption is often used.

The current mortality tables used for disabled mortality are as follows:

- **General members**
  - Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates unadjusted for males and decreased by 5% for females, projected generationally with Scale MP-2021.
- **Safety members**
  - Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates unadjusted for males and females, projected generationally with Scale MP-2021.

The following table shows the observed benefit-weighted deaths for disability retired members based on the actual experience during the 13 years studied. Also shown are the expected benefit-weighted deaths under the current and recommended assumptions.

The recommended mortality tables have an actual to expected ratio of 110% and 93% for General and Safety, respectively, after adjustments for partial credibility. In future years the ratios should remain around these levels as long as actual mortality improves at the same rates as anticipated by the generational mortality tables.

Disabled Retiree Mortality – Benefit-Weighted Deaths ($ in millions)

Gender	General Current Expected	General Actual	General Recomm. Expected	Safety Current Expected	Safety Actual	Safety Recomm. Expected
Male	$4.28	$4.44	$3.78	$7.73	$7.22	$7.65
Female	4.58	4.23	4.14	0.56	0.49	0.61
Total	**$8.85**	**$8.67**	**$7.92**	**$8.29**	**$7.71**	**$8.26**
Actual / Expected	**97.9%**		**109.5%**[37]	**93.0%**		**93.3%**

Notes

1. Experience shown above is weighted by annual benefit amounts for deceased members.
2. Expected amounts under the current and recommended generational mortality table are based on mortality rates from the base year projected with mortality improvements to the year the death occurred (or was expected to occur).
3. Results may not add due to rounding.

Similar to mortality rates for service retirees, the recommended mortality tables reflect current experience to the extent that the experience is credible based on standard statistical theory. For

[37] If we used the benchmark Pub-2016 Non-Safety Disabled Retiree table without any adjustment, the recommended actual to expected ratio would be 112%.

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SBCERA, there is much less data available for disabled retirees, so it is given little credibility and the recommended tables are only slightly adjusted.

We recommend updating the mortality tables used for disabled mortality to the following:

- **General members**
  - Pub-2016 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates increased by 5% for males and unadjusted for females, projected generationally with Scale MP-2021.
- **Safety members**
  - Pub-2016 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates unadjusted for males and females, projected generationally with Scale MP-2021.

Chart 9 on page 44 compares the actual to expected deaths on an amount-weighted basis for General disabled retirement members over the 13-year period for the current and recommended assumptions.

Chart 10 on page 44 compares the actual to expected deaths on an amount-weighted basis for Safety disabled retirement members over the 13-year period for the current and recommended assumptions.

Chart 11 and Chart 12 on page 45 show the life expectancies (i.e., expected future lifetime) under the current and recommended tables for General disabled retirement members and Safety disabled retirement members, respectively, on an amount-weighted basis. Life expectancies under the current and recommended generational mortality rates are based on age in 2026. In practice, assumed life expectancies will increase in accordance with the mortality improvement scale.

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Chart 9: Disability Retired Benefit-Weighted Deaths ($ in millions)

General Members

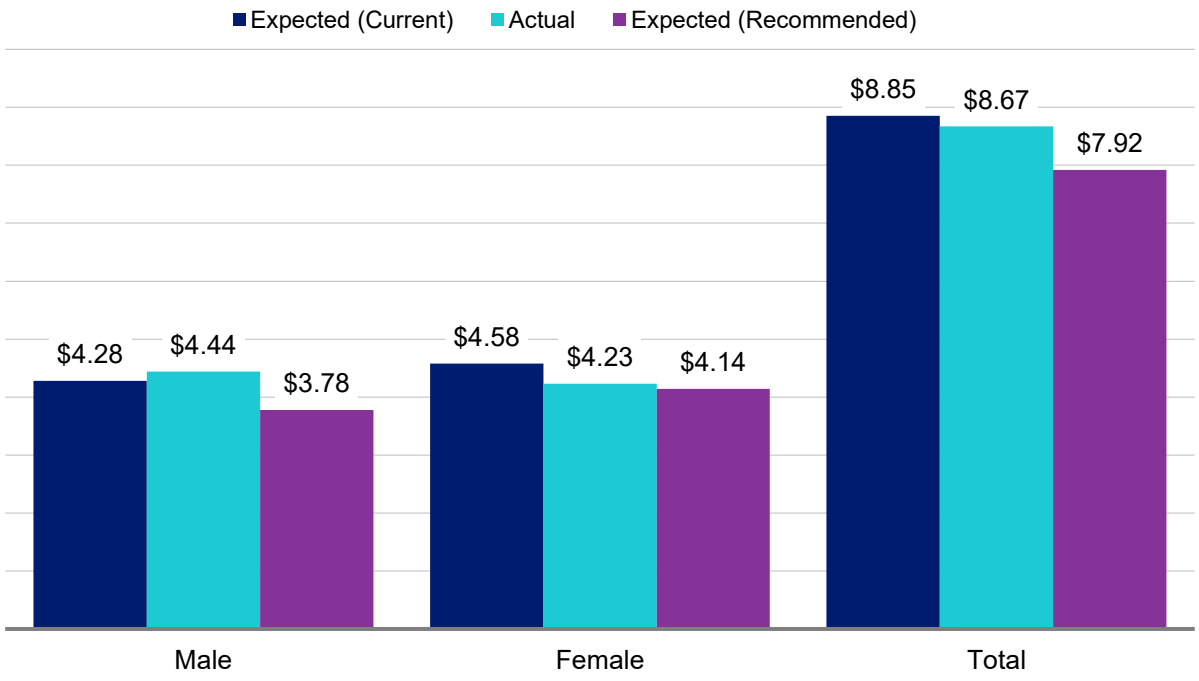

Chart 10: Disability Retired Benefit-Weighted Deaths ($ in millions)

Safety Members

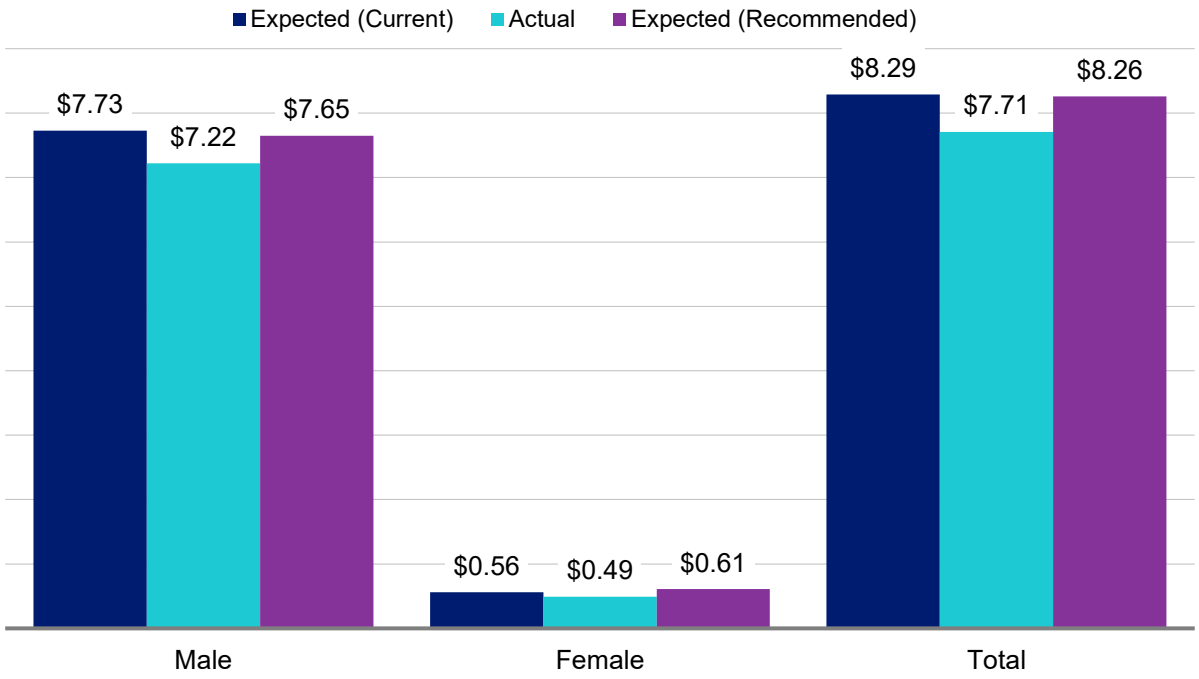

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Chart 11: Disability Retired Benefit-Weighted Life Expectancies in 2026

General Members

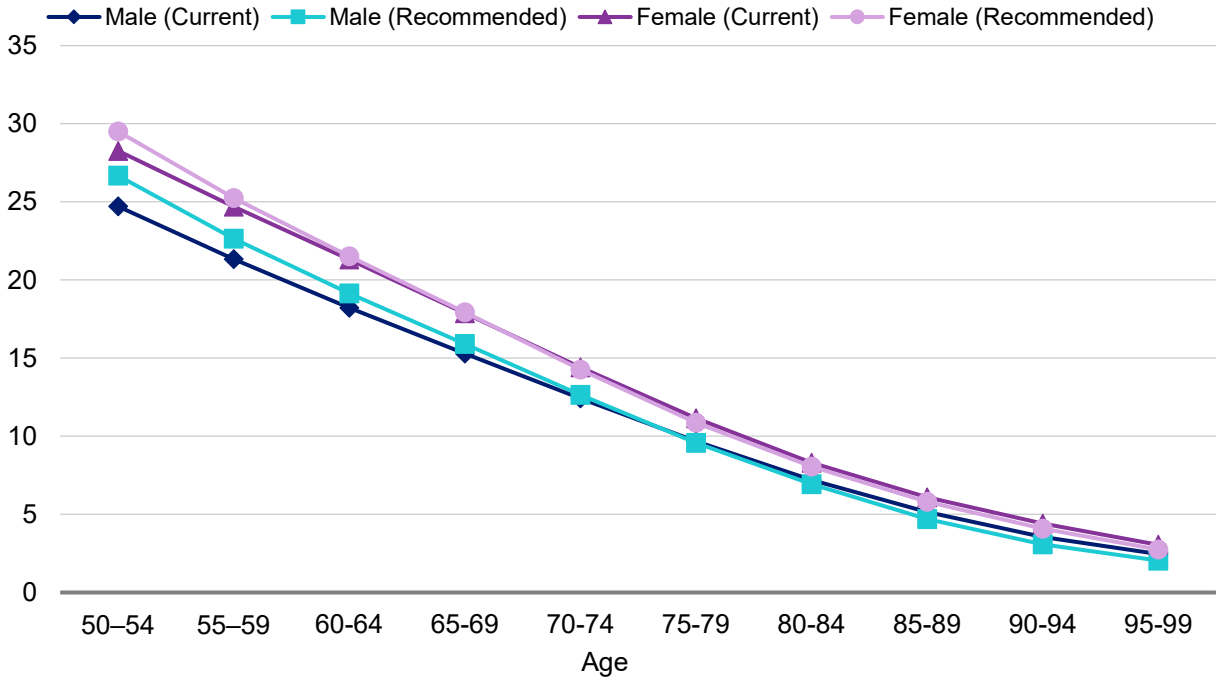
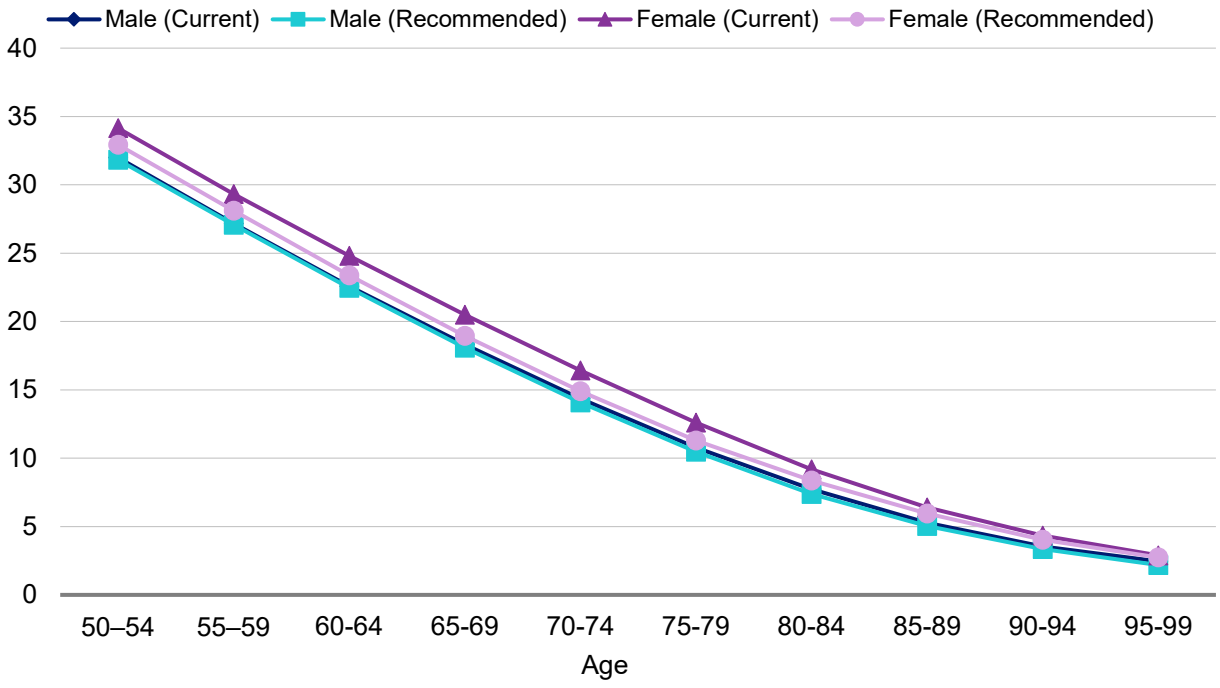


Chart 12: Disability Retired Benefit-Weighted Life Expectancies in 2026

Safety Members



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C. Disability incidence rates

When a member becomes disabled, he or she may be entitled to at least a 50% of pay pension (service-connected disability), or a pension that depends upon the member's years of service (non-service-connected disability).

Under current assumptions, there is an overall incidence of disability assumed, combined with an assumption that a member will receive a service-connected disability or a non-service-connected disability. Furthermore, the disability incidence rates are a function of the member's age.

We recommend maintaining the current structure of the disability incidence rate assumption.

To increase the credibility of the data, particularly for Safety members, we have also included and considered the actual experience over the past six years. The following tables show the observed overall rate of disability incidence based on actual experience during the three-year period from June 1, 2022 through May 31, 2025 as well as the six-year period from July 1, 2019 through May 31, 2025. Also shown are the current and recommended assumptions.

General — Disability Incidence Rates

Age	Current Expected Rate	Actual Rate (3 Years)	Actual Rate (6 Years)	Recommended Expected Rate
20 – 24	0.02%	0.00%	0.00%	0.02%
25 – 29	0.03%	0.00%	0.04%	0.03%
30 – 34	0.04%	0.00%	0.01%	0.04%
35 – 39	0.08%	0.03%	0.09%	0.08%
40 – 44	0.10%	0.02%	0.05%	0.08%
45 – 49	0.20%	0.05%	0.09%	0.12%
50 – 54	0.25%	0.20%	0.19%	0.22%
55 – 59	0.35%	0.22%	0.23%	0.30%
60 – 64	0.60%	0.51%	0.45%	0.55%
65 – 69	1.00%	0.81%	0.81%	0.80%
70 – 74	1.00%	1.20%	0.62%	1.00%
Actual / Expected (6 Years)	**69.4%**			**83.1%**

We recommend decreasing the disability incidence assumption at most ages for General members.

Chart 13 on page 49 compares the number of actual disabilities for General members over the past six years to the current and recommended assumptions.

Chart 15 on page 50 compares the actual disability incidence experience for General members with the current and recommended assumptions.

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Safety — Disability Incidence Rates

Age	Current Expected Rate	Actual Rate (3 Years)	Actual Rate (6 Years)	Recommended Expected Rate
20 – 24	0.15%	0.00%	0.00%	0.15%
25 – 29	0.25%	0.16%	0.19%	0.25%
30 – 34	0.35%	0.61%	0.44%	0.40%
35 – 39	0.70%	0.17%	0.55%	0.70%
40 – 44	0.80%	0.53%	0.70%	0.80%
45 – 49	1.20%	0.95%	0.96%	1.20%
50 – 54	3.50%	6.40%	5.23%	4.50%
55 – 59	7.00%	10.81%	9.41%	9.00%
60 – 64	7.00%	12.41%	9.16%	9.00%
65 – 69	12.50%	23.53%	27.55%	20.00%
Actual / Expected (6 Years)	**121.0%**			**102.7%**

We recommend increasing the disability incidence assumption at certain ages for Safety members.

Chart 14 on page 49 compares the number of actual disabilities for Safety members over the past six years to the current and recommended assumptions.

Chart 16 on page 50 compares the actual disability incidence experience for Safety members with the current and recommended assumptions.

Service-connected vs. non-service-connected disability

The following table shows the observed percentage of new disabled members that received a service-connected disability based on the actual experience over the past three years as well as the actual experience over the past six years. Also shown are the current and recommended assumptions.

Disabled Members Receiving a Service-Connected Disability

Line Description	General	Safety
Current assumption	60%	100%
Actual percentage (3 years)	51%	100%
Actual percentage (6 years)	62%	100%[38]
Recommended assumption	**60%**	**100%**

We recommend maintaining the assumption for future disabled members receiving a service-connected disability for General members at 60% and maintaining the

[38] One out of 261 disabled members are non-service-connected.

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assumption for Safety members at 100%. The remaining percentages are assumed to be non-service-connected disabilities (40% for General members and 0% for Safety members).

In prior valuations, it was assumed that 40% of future General service-connected disabled retirees would be eligible for the Supplemental Disability benefit and 75% of future General non-service-connected disabled retirees would be eligible for the Supplemental Disability benefit. Based on the last three years of experience, about 40% of General service-connected disabled retirees (35% in the last study) and 84% of General non-service-connected disabled retirees (89% in the last study) received this benefit. **We recommend maintaining the assumption at 40% for General service-connected disabled retirees and increasing the assumption to 80% for General non-service-connected disabled retirees.**

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Chart 13: Actual Number of Disabilities Compared to Expected
General Members

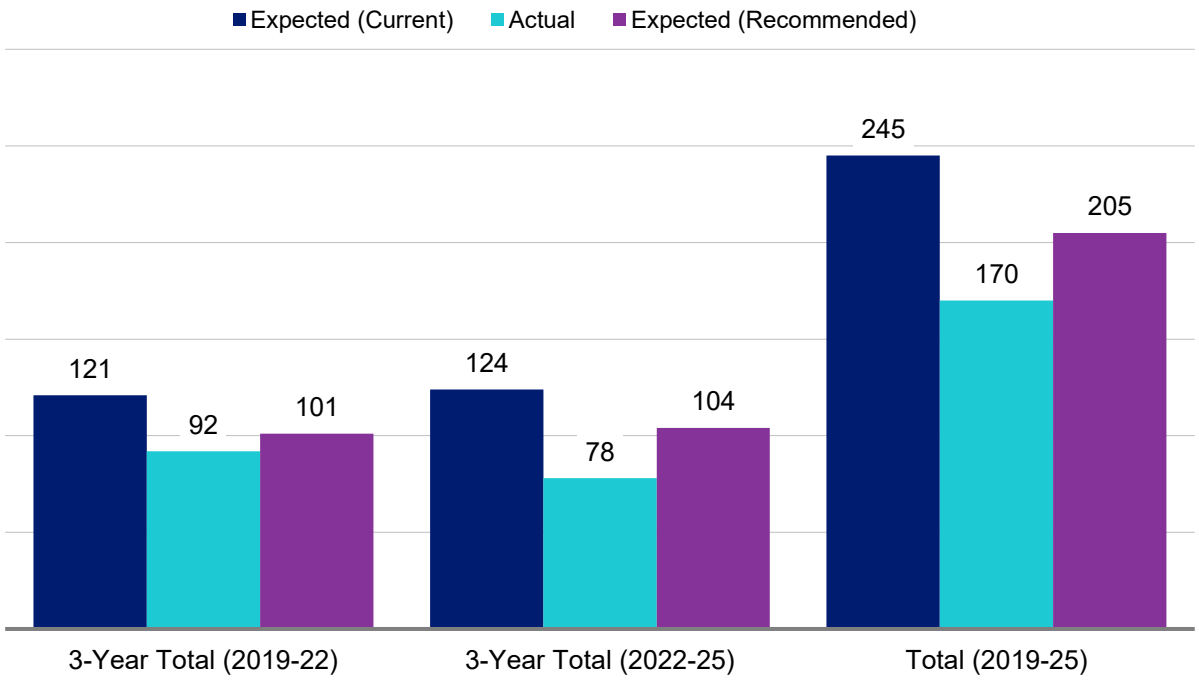

Chart 14: Actual Number of Disabilities Compared to Expected
Safety Members

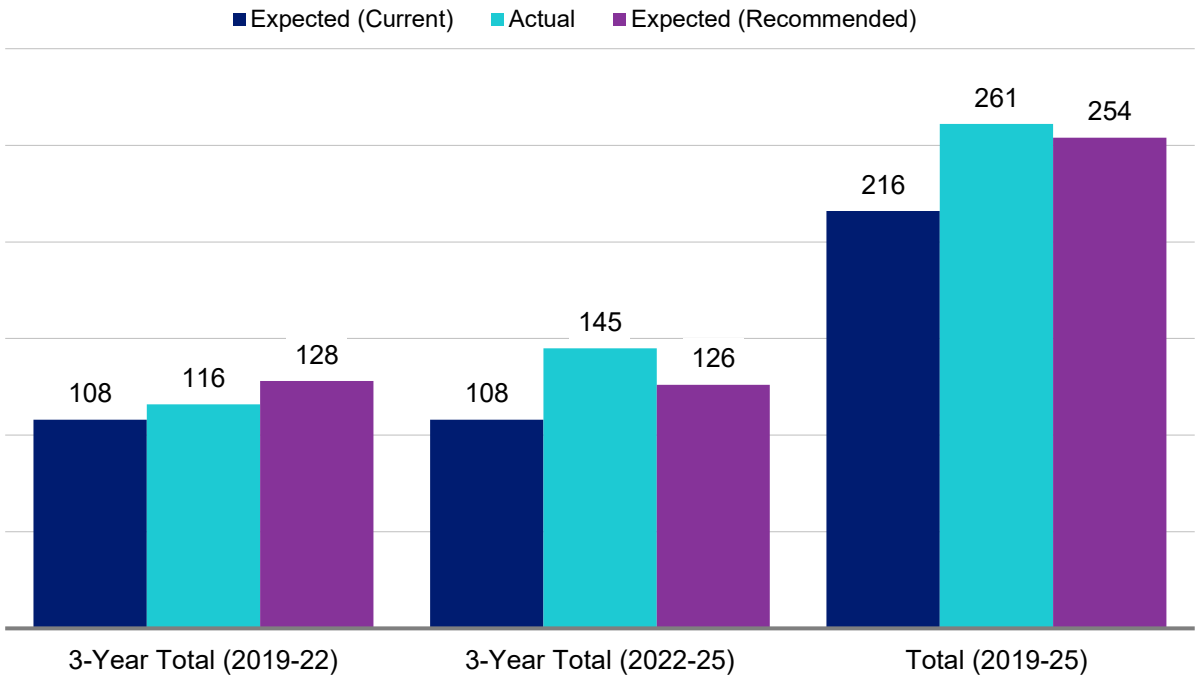

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Chart 15: Disability Rates
General Members

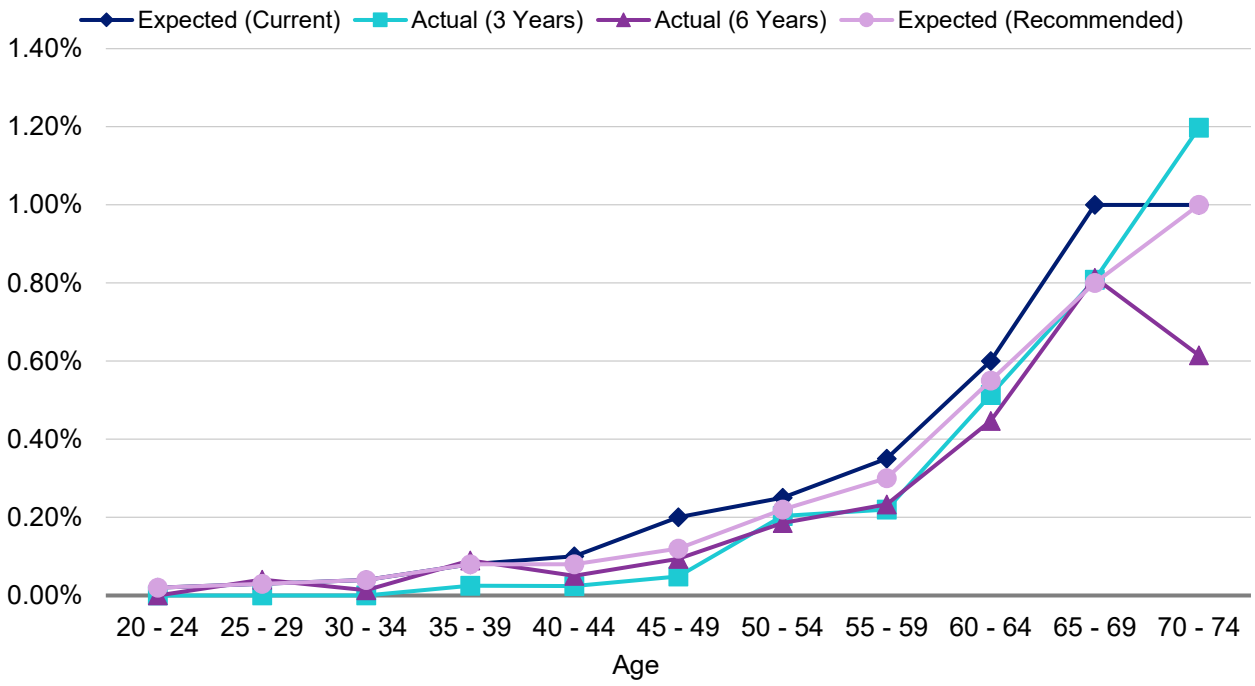
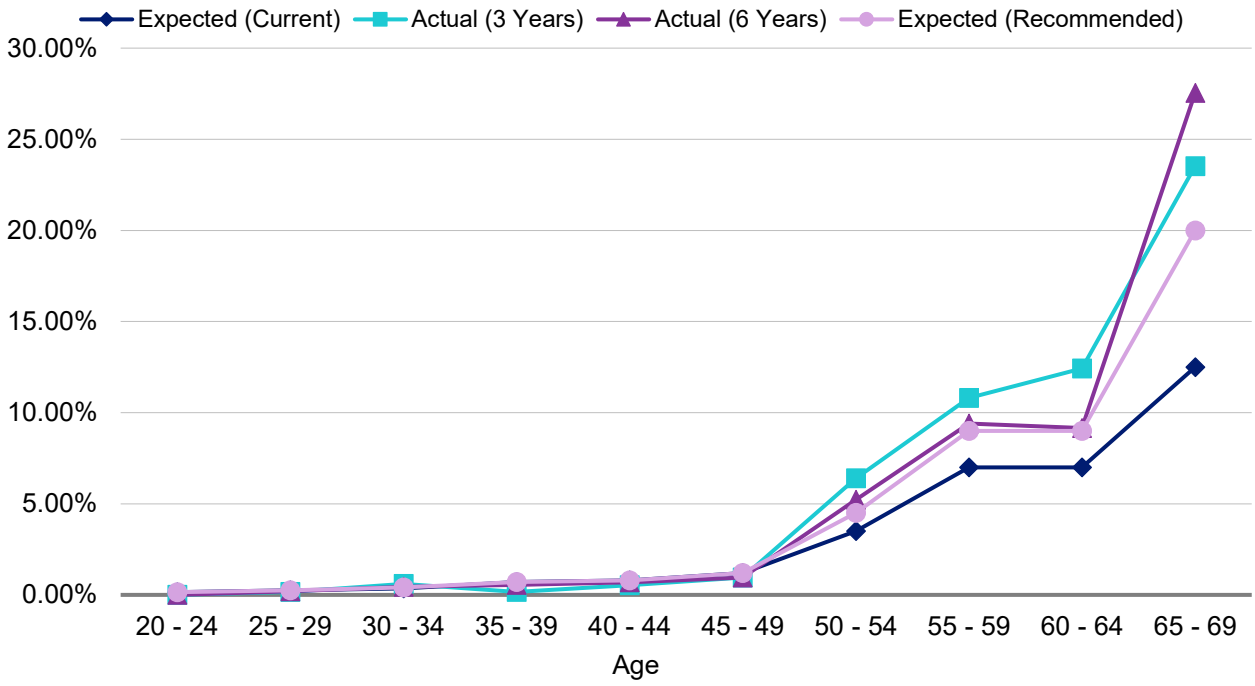


Chart 16: Disability Rates
Safety Members



D. Termination rates

Termination rates include all terminations for reasons other than death, disability, or retirement. Additionally, when a member terminates from service, they can choose between receiving an immediate refund of member contributions or, if they leave their contributions on deposit they will be entitled to a deferred vested benefit.

Under current assumptions, there is an overall incidence of termination assumed, combined with an assumption that a member will choose between a refund of member contributions and a deferred vested benefit. The latter assumption is also based on plan membership and years of service, as well as whether the member elected refundable contributions.

Furthermore, the termination rates are a function of the member's years of service and are applied until the member is first eligible, and assumed, to retire.

We recommend maintaining the current structure of the termination rate assumption.

It is important to note that not every years of service category has enough exposures and/or decrements such that the results for that category are statistically credible even when looking at six years' worth of experience. This is mainly the case for the higher service categories, since most members in those categories are eligible to retire and therefore have been excluded from our review of termination experience.

The following tables show the observed overall rate of termination based on actual experience during the three-year period from June 1, 2022 through May 31, 2025 as well as the six-year period from July 1, 2019 through May 31, 2025. Also shown are the current and recommended assumptions.

Section 4: Demographic Assumptions

General — Termination Rates

Years of Service	Current Expected Rate	Actual Rate (3 Years)	Actual Rate (6 Years)	Recommended Expected Rate
Less than 1	15.00%	17.00%	16.92%	16.00%
1 – 2	12.00%	11.80%	12.64%	12.00%
2 – 3	11.00%	11.46%	11.77%	11.00%
3 – 4	9.00%	9.86%	9.94%	9.50%
4 – 5	7.50%	7.66%	7.85%	7.75%
5 – 6	7.00%	9.12%	9.18%	7.50%
6 – 7	6.50%	8.41%	8.34%	7.25%
7 – 8	5.50%	7.71%	7.59%	7.00%
8 – 9	5.00%	6.56%	6.47%	6.00%
9 – 10	5.00%	6.11%	6.07%	5.50%
10 – 11	5.00%	5.30%	5.54%	5.50%
11 – 12	5.00%	6.71%	6.42%	5.50%
12 – 13	4.50%	7.06%	5.63%	5.50%
13 – 14	4.50%	5.77%	6.36%	5.50%
14 – 15	4.25%	6.70%	5.65%	5.00%
15 – 16	4.00%	5.05%	4.73%	4.50%
16 – 17	3.75%	5.34%	5.71%	4.50%
17 – 18	3.50%	3.57%	3.96%	3.50%
18 – 19	3.25%	5.63%	4.56%	3.50%
19 – 20	3.25%	2.94%	3.91%	3.50%
20 and over	3.25%	4.88%	5.02%	3.50%
Actual / Expected (6 Years)	**115.1%**			**108.2%**

We recommend increasing the termination rates at certain service categories for General members.

Chart 17 on page 56 compares the number of actual terminations for General members over the past six years to the current and recommended assumptions.

Chart 19 on page 57 compares the actual terminations experience for General members with the current and recommended assumptions.

Section 4: Demographic Assumptions

Safety — Termination Rates

Years of Service	Current Expected Rate	Actual Rate (3 Years)	Actual Rate (6 Years)	Recommended Expected Rate
Less than 1	8.00%	12.36%	12.24%	10.00%
1 – 2	7.50%	8.60%	9.83%	8.50%
2 – 3	6.50%	8.80%	8.00%	7.50%
3 – 4	6.00%	7.28%	7.31%	6.50%
4 – 5	5.00%	4.94%	5.28%	5.00%
5 – 6	4.00%	6.00%	6.43%	4.50%
6 – 7	3.00%	4.58%	4.52%	4.00%
7 – 8	2.00%	5.01%	3.91%	3.50%
8 – 9	1.90%	2.80%	3.04%	2.50%
9 – 10	1.80%	4.15%	3.96%	2.00%
10 – 11	1.60%	0.50%	1.90%	1.75%
11 – 12	1.40%	2.33%	2.63%	1.50%
12 – 13	1.20%	3.00%	1.24%	1.40%
13 – 14	1.20%	1.05%	1.36%	1.20%
14 – 15	1.20%	2.53%	1.97%	1.20%
15 – 16	1.10%	2.38%	1.66%	1.20%
16 – 17	1.10%	1.27%	1.90%	1.20%
17 – 18	1.10%	0.68%	0.45%	1.00%
18 – 19	1.10%	0.81%	0.70%	1.00%
19 – 20	1.10%	0.00%	0.00%	1.00%
20 and over	1.10%	100.00%	100.00%[39]	1.00%
Actual / Expected (6 Years)	**135.8%**			**118.0%**

We recommend increasing the termination rates at most service categories and decreasing the termination rates at the later service categories for Safety members.

Chart 18 on page 56 compares the number of actual terminations for Safety members over the past six years to the current and recommended assumptions.

Chart 20 on page 57 compares the actual terminations experience for Safety members with the current and recommended assumptions.

[39] The 100% actual termination rate for Safety members with over 20 years of service is based on six members during the six-year period.

Section 4: Demographic Assumptions

Election of refund of member contributions

As mentioned above, when a member terminates from service, they can choose between receiving an immediate refund of member contributions or, if they leave their contributions on deposit they will be entitled to a deferred vested benefit.

We have utilized the Refundable Code provided by SBCERA indicating whether the member has elected refundable or non-refundable contributions as of the valuation date. Please note that this refundable code may change year by year depending on the member's election for that year.

The following tables show the observed percentage of members who elected a refund of contributions based on the actual experience during the three-year period from June 1, 2022 through May 31, 2025 as well as the six-year period from July 1, 2019 through May 31, 2025. Also shown are the current and recommended assumptions.

General — Percentage of Total Terminations Assumed to Receive Refund of Contributions

Years of Service[40]	Current Expected Rate if Elected Refundable Contribution	Actual Rate if Elected Refundable Contribution (3 Years)	Actual Rate if Elected Refundable Contribution (6 Years)	Recomm. Expected Rate if Elected Refundable Contribution	Current Expected Rate if Elected Non-Refundable Contribution	Actual Rate if Elected Non-Refundable Contribution (3 Years)	Actual Rate if Elected Non-Refundable Contribution (6 Years)	Recomm. Expected Rate if Elected Non-Refundable Contribution
5 – 6	35.00%	26.34%	26.76%	30.00%	17.50%	N/A	0.00%	10.00%
6 – 7	35.00%	26.88%	26.47%	30.00%	17.50%	N/A	33.33%	10.00%
7 – 8	35.00%	29.68%	24.91%	30.00%	17.50%	N/A	0.00%	10.00%
8 – 9	35.00%	27.19%	24.75%	30.00%	17.50%	N/A	0.00%	10.00%
9 – 10	35.00%	34.48%	30.63%	30.00%	17.50%	0.00%	0.00%	10.00%
10 – 11	30.00%	22.00%	22.68%	25.00%	15.00%	0.00%	0.00%	10.00%
11 – 12	30.00%	14.81%	18.11%	25.00%	15.00%	N/A	0.00%	10.00%
12 – 13	30.00%	8.51%	16.51%	25.00%	15.00%	0.00%	0.00%	10.00%
13 – 14	30.00%	21.62%	22.83%	25.00%	15.00%	0.00%	0.00%	10.00%
14 – 15	30.00%	8.93%	13.76%	25.00%	15.00%	0.00%	0.00%	10.00%
15 – 16	15.00%	12.77%	11.39%	15.00%	7.50%	0.00%	0.00%	5.00%
16 – 17	15.00%	18.52%	11.49%	15.00%	7.50%	N/A	0.00%	5.00%
17 – 18	15.00%	10.71%	9.43%	15.00%	7.50%	N/A	0.00%	5.00%
18 – 19	15.00%	10.00%	11.11%	15.00%	7.50%	N/A	0.00%	5.00%
19 – 20	15.00%	18.18%	9.52%	15.00%	7.50%	N/A	N/A	5.00%
20 and over	15.00%	3.96%	8.50%	10.00%	7.50%	N/A	0.00%	5.00%
Actual / Expected (6 Years)	**71.7%**			**84.0%**	**24.2%**			**39.2%**

[40] All members with less than five years of service are assumed to elect a refund of contributions.

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Safety — Percentage of Total Terminations Assumed to Receive Refund of Contributions

Years of Service[41]	Current Expected Rate if Elected Refundable Contribution	Actual Rate if Elected Refundable Contribution (3 Years)	Actual Rate if Elected Refundable Contribution (6 Years)	Recomm. Expected Rate if Elected Refundable Contribution	Current Expected Rate if Elected Non-Refundable Contribution	Actual Rate if Elected Non-Refundable Contribution (3 Years)	Actual Rate if Elected Non-Refundable Contribution (6 Years)	Recomm. Expected Rate if Elected Non-Refundable Contribution
5 – 6	15.00%	14.81%	13.21%	15.00%	7.50%	N/A	N/A	7.50%
6 – 7	15.00%	13.64%	14.29%	15.00%	7.50%	N/A	N/A	7.50%
7 – 8	15.00%	28.57%	24.00%	15.00%	7.50%	N/A	N/A	7.50%
8 – 9	15.00%	22.22%	30.77%	15.00%	7.50%	N/A	0.00%	7.50%
9 – 10	15.00%	18.18%	14.29%	15.00%	7.50%	N/A	0.00%	7.50%
10 – 11	15.00%	0.00%	0.00%	5.00%	7.50%	N/A	N/A	2.50%
11 – 12	10.00%	0.00%	12.50%	5.00%	5.00%	N/A	N/A	2.50%
12 – 13	10.00%	50.00%	66.67%	5.00%	5.00%	0.00%	0.00%	2.50%
13 – 14	10.00%	0.00%	0.00%	5.00%	5.00%	N/A	N/A	2.50%
14 – 15	10.00%	0.00%	0.00%	5.00%	5.00%	N/A	N/A	2.50%
15 – 16	10.00%	0.00%	16.67%	5.00%	5.00%	0.00%	0.00%	2.50%
16 – 17	5.00%	25.00%	11.11%	5.00%	2.50%	N/A	N/A	2.50%
17 – 18	5.00%	0.00%	0.00%	5.00%	2.50%	N/A	N/A	2.50%
18 – 19	5.00%	0.00%	0.00%	5.00%	2.50%	N/A	N/A	2.50%
19 – 20	5.00%	N/A	N/A	5.00%	2.50%	N/A	N/A	2.50%
20 and over	0.00%	0.00%	0.00%	0.00%	0.00%	N/A	N/A	0.00%
Actual / Expected (6 Years)	**112.0%**			**122.6%**	**0.0%**			**0.0%**

We recommend decreasing the rates of members electing a refund of contributions at certain service categories. The assumed percentage of members who leave their contributions on deposit and receive a deferred vested benefit is equal to 100% minus the percentage assumed to elect a refund of contributions.

[41] All members with less than five years of service are assumed to elect a refund of contributions.

Section 4: Demographic Assumptions

Chart 17: Actual Number of Terminations Compared to Expected
General Members

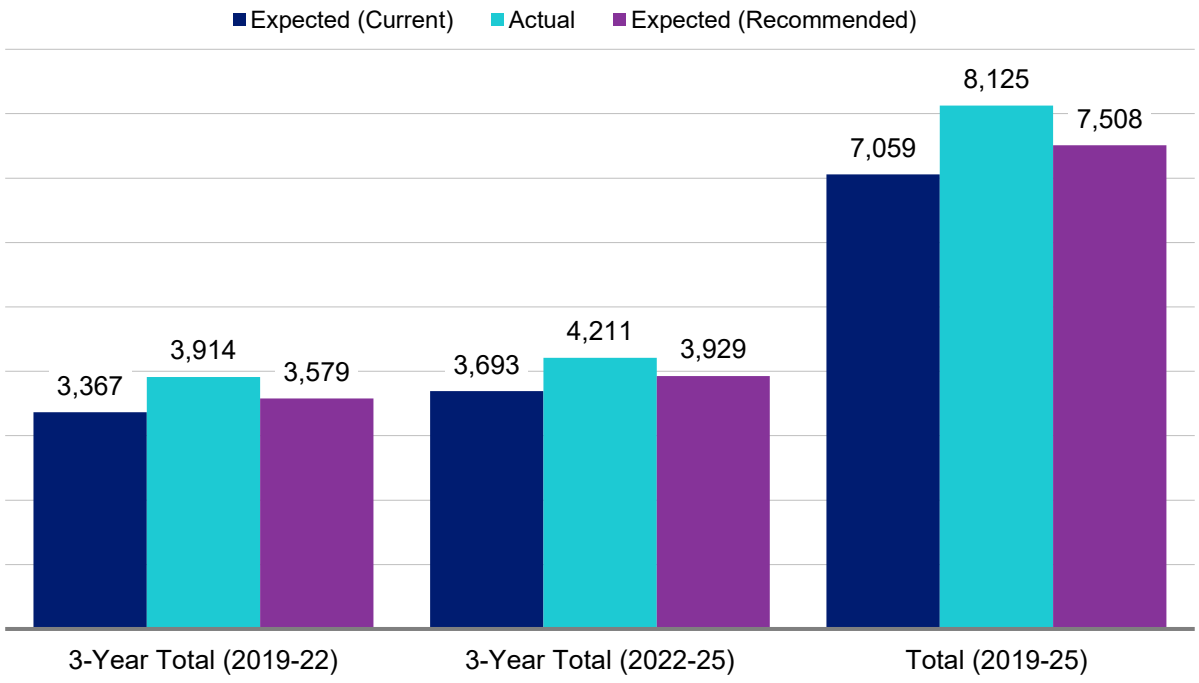
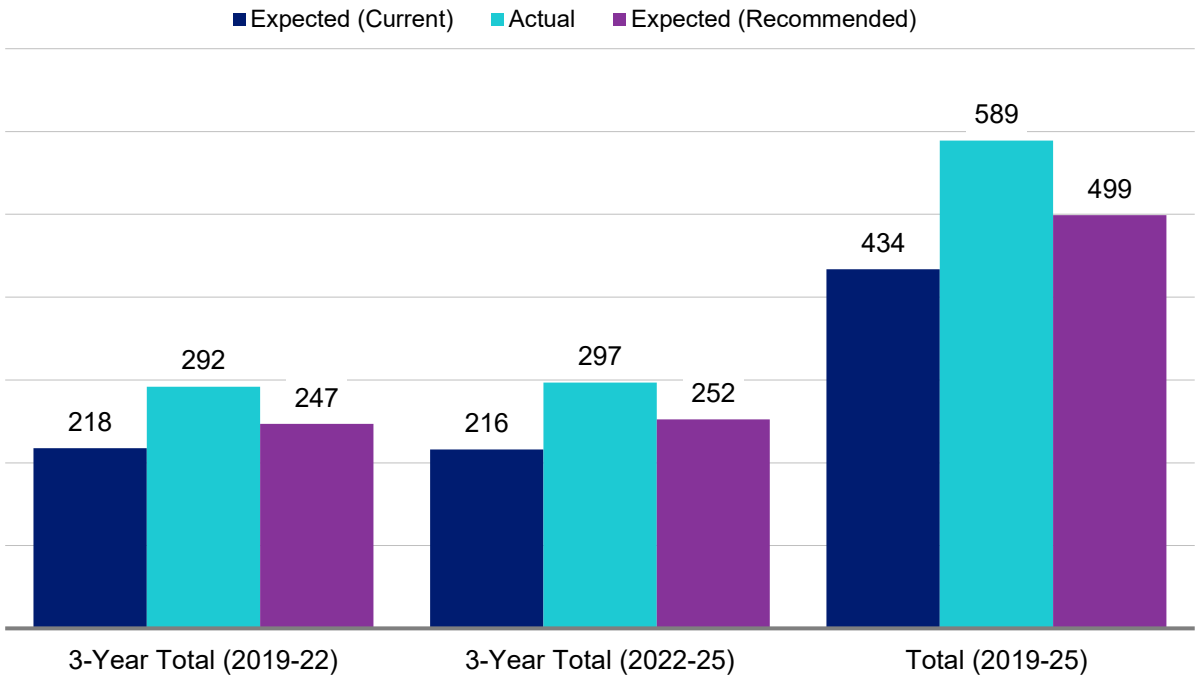


Chart 18: Actual Number of Terminations Compared to Expected
Safety Members



Section 4: Demographic Assumptions

Chart 19: Termination Rates
General Members

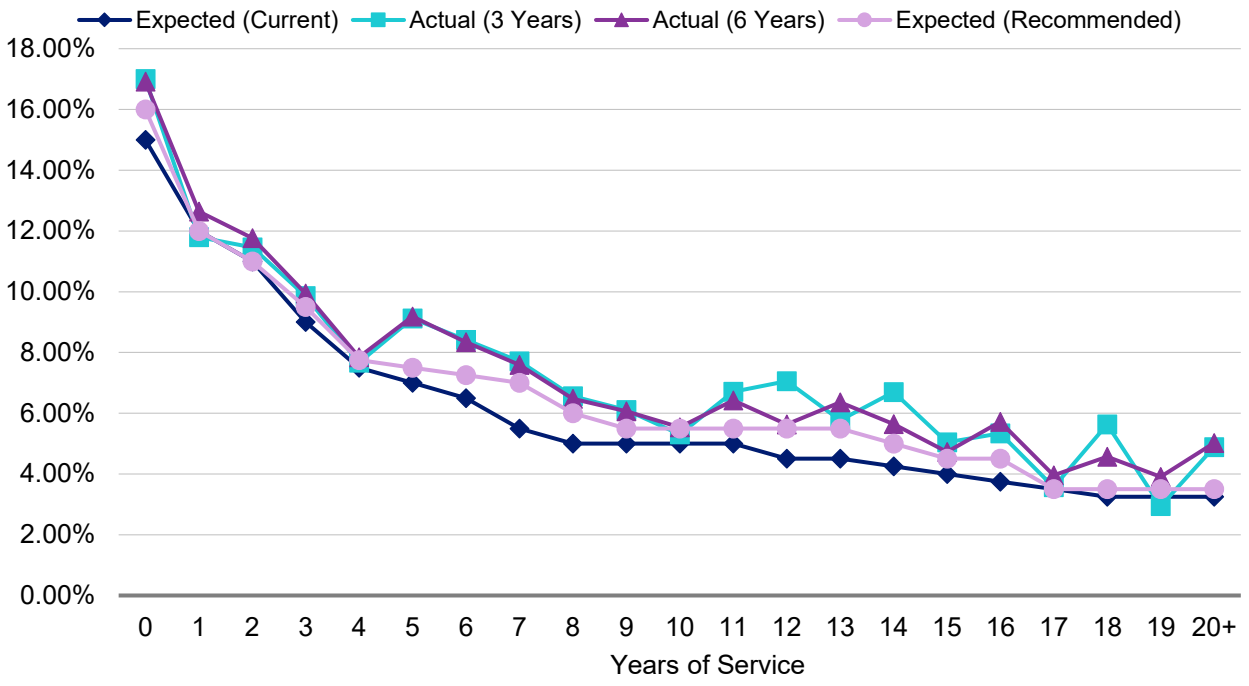
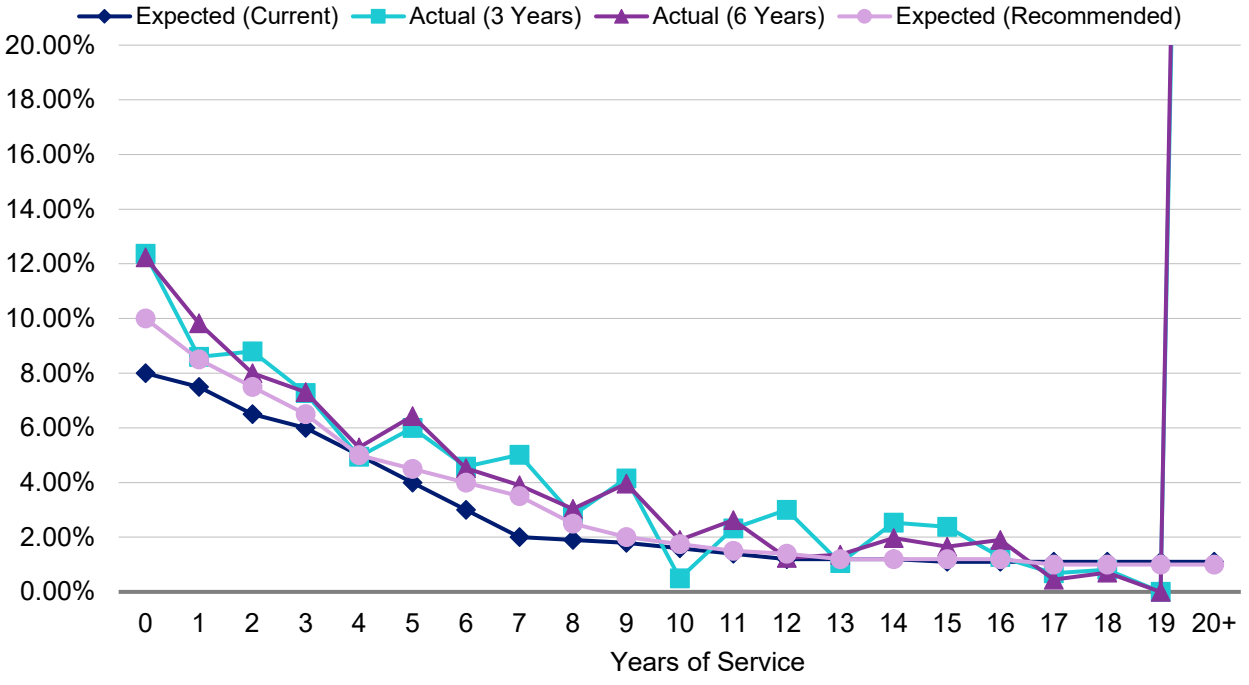


Chart 20: Termination Rates
Safety Members



E. Retirement rates

The age at which a member retires from service will affect both the amount of benefits that will be paid to that member as well as the period over which funding must take place.

Under current assumptions, retirement rates for General Tier 1 and Safety Tier 1 members are based on a function of age and service while retirement rates for General Tier 2 and Safety Tier 2 members are based only on age.

We recommend maintaining the retirement rates as a function of age and service for Tier 1 members. We recommend introducing retirement rates based on a function of age and service for General Tier 2 and Safety Tier 2 members.

To increase the credibility of the data, particularly for Safety members, we have also included and considered the actual experience over the past six years. The following tables show the observed service retirement rates based on actual experience during the three-year period from July 1, 2022 through May 31, 2025 as well as the six-year period from July 1, 2019 through May 31, 2025. Also shown are the current and recommended assumptions.

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General Tier 1 — Retirement Rates by Years of Service (YOS)

Age	<30 YOS Current Expected Rate	<30 YOS Actual Rate (3 Years)	<30 YOS Actual Rate (6 Years)	<30 YOS Recomm. Expected Rate	30+ YOS Current Expected Rate	30+ YOS Actual Rate (3 Years)	30+ YOS Actual Rate (6 Years)	30+ YOS Recomm. Expected Rate
49	0.00%	100.00%	100.00%	0.00%	50.00%	0.00%	43.12%	50.00%
50	2.50%	2.10%	2.12%	2.50%	2.50%	0.00%	7.78%	3.50%
51	2.00%	1.79%	1.47%	1.75%	2.00%	9.68%	5.04%	2.50%
52	2.50%	2.48%	2.29%	2.50%	2.50%	4.65%	2.32%	2.50%
53	2.50%	2.88%	2.55%	2.50%	2.50%	2.90%	1.50%	2.50%
54	2.50%	3.03%	2.63%	2.50%	2.50%	4.60%	4.46%	3.50%
55	4.50%	4.00%	4.11%	4.25%	10.00%	9.57%	11.10%	11.00%
56	5.00%	6.11%	5.63%	5.00%	10.00%	11.85%	10.47%	11.00%
57	5.50%	4.63%	4.74%	5.25%	10.00%	12.08%	12.42%	11.00%
58	6.00%	5.26%	5.15%	5.75%	17.00%	16.86%	17.29%	17.00%
59	8.50%	9.66%	9.17%	8.75%	21.50%	17.11%	19.65%	20.00%
60	11.00%	11.26%	10.70%	11.00%	27.50%	32.14%	28.66%	27.50%
61	11.00%	10.25%	10.35%	11.00%	27.50%	31.71%	27.04%	27.50%
62	15.00%	17.11%	15.87%	15.00%	35.00%	25.66%	29.99%	35.00%
63	15.00%	18.25%	15.46%	15.00%	35.00%	45.87%	37.92%	35.00%
64	24.00%	24.40%	25.07%	24.00%	42.00%	47.44%	42.35%	42.00%
65	36.00%	32.20%	33.72%	35.00%	50.00%	52.73%	49.45%	50.00%
66	30.00%	24.54%	27.77%	30.00%	40.00%	33.33%	37.46%	35.00%
67	30.00%	25.43%	33.46%	30.00%	40.00%	29.63%	34.26%	35.00%
68	26.00%	28.97%	28.78%	26.00%	35.00%	15.79%	18.85%	30.00%
69	26.00%	19.18%	21.90%	26.00%	35.00%	31.25%	26.17%	30.00%
70	26.00%	34.48%	31.81%	26.00%	35.00%	27.27%	32.13%	30.00%
71	24.00%	25.49%	28.05%	26.00%	30.00%	0.00%	0.00%	30.00%
72	22.00%	20.00%	23.76%	22.00%	30.00%	37.50%	36.04%	30.00%
73	22.00%	14.29%	20.46%	22.00%	30.00%	0.00%	0.00%	30.00%
74	22.00%	11.76%	19.29%	22.00%	30.00%	25.00%	45.30%	30.00%
75 and over	100.00%	22.86%	21.29%	100.00%	100.00%	9.09%	7.72%	100.00%
Actual / Expected (6 Years)	**94.2%**			**94.9%**	**97.3%**			**97.8%**

We recommend adjusting the retirement rates slightly for General Tier 1 members with less than 30 years of service and with 30 or more years of service.

Chart 21 on page 65 compares the number of actual to expected retirements for General Tier 1 members over the past six years for the current and recommended assumptions.

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Chart 25 on page 67 compares the actual retirement experience with the current and recommended assumptions for General Tier 1 members with less than 30 years of service.

Chart 26 on page 67 compares the actual retirement experience with the current and recommended assumptions for General Tier 1 members with 30 or more years of service.

General Tier 2 — Retirement Rates

Age	<30 YOS Current Expected Rate	<30 YOS Actual Rate (3 Years)	<30 YOS Actual Rate (6 Years)	<30 YOS Recomm. Expected Rate	30+ YOS Current Expected Rate	30+ YOS Actual Rate (3 Years)	30+ YOS Actual Rate (6 Years)	30+ YOS Recomm. Expected Rate
52	1.50%	0.75%	0.77%	1.00%	1.50%	N/A	N/A	1.50%
53	1.50%	1.24%	0.89%	1.00%	1.50%	N/A	N/A	1.50%
54	1.50%	1.61%	1.75%	1.50%	1.50%	N/A	N/A	2.00%
55	3.50%	2.08%	1.80%	2.50%	3.50%	N/A	N/A	3.00%
56	3.50%	1.38%	1.69%	2.50%	3.50%	N/A	N/A	3.00%
57	5.50%	2.79%	2.35%	4.00%	5.50%	N/A	N/A	4.50%
58	6.50%	0.61%	2.06%	4.50%	6.50%	N/A	N/A	5.00%
59	7.00%	4.86%	4.25%	5.00%	7.00%	N/A	N/A	6.50%
60	8.00%	2.65%	2.65%	5.50%	8.00%	N/A	N/A	7.00%
61	10.50%	4.27%	5.90%	8.00%	10.50%	N/A	N/A	10.50%
62	16.00%	8.55%	8.39%	12.00%	16.00%	N/A	N/A	16.00%
63	16.00%	6.57%	8.30%	12.00%	16.00%	N/A	N/A	16.00%
64	18.00%	8.26%	10.30%	16.00%	18.00%	N/A	N/A	18.00%
65	22.00%	22.34%	21.51%	22.00%	22.00%	N/A	N/A	25.00%
66	22.00%	29.58%	26.69%	25.00%	22.00%	N/A	N/A	25.00%
67	25.00%	9.30%	12.79%	25.00%	25.00%	N/A	N/A	25.00%
68	20.00%	16.22%	16.46%	18.00%	20.00%	N/A	N/A	25.00%
69	20.00%	12.90%	11.96%	18.00%	20.00%	N/A	N/A	25.00%
70	35.00%	13.16%	19.53%	22.00%	35.00%	N/A	N/A	25.00%
71	25.00%	17.24%	13.26%	22.00%	25.00%	N/A	N/A	25.00%
72	25.00%	0.00%	0.00%	22.00%	25.00%	N/A	N/A	25.00%
73	25.00%	23.53%	20.00%	22.00%	25.00%	N/A	N/A	25.00%
74	25.00%	28.57%	20.23%	22.00%	25.00%	N/A	N/A	25.00%
75 and over	100.00%	20.83%	17.78%	100.00%	100.00%	N/A	N/A	100.00%
Actual / Expected (6 Years)	**57.4%**			**68.9%**	**N/A**			**N/A**

Based on this experience, we recommend decreasing the retirement rates overall for General 2 members with less than 30 years of service and introducing higher retirement rates for members with 30 or more years of service. There were no active retirements

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from General Tier 2 with 30 or more years of service over the past six years, so no actual rates are shown in the above table. We have based our recommended rates for General Tier 2 with 30 or more years of service on a combination of the current assumptions and the actual retirement experience that occurred for General Tier 1 members with 30 or more years of service.

Chart 22 on page 65 compares the number of actual to expected retirements for General Tier 2 members over the past six years for the current and recommended assumptions.

Chart 27 on page 68 compares the actual retirement experience with the current and recommended assumptions for General Tier 2 members with less than 30 years of experience.

Chart 28 on page 68 compares the current and recommended assumptions for General Tier 2 members with 30 or more years of experience.

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Safety Tier 1 — Retirement Rates by Years of Service (YOS)

Age	<30 YOS Current Expected Rate	<30 YOS Actual Rate (3 Years)	<30 YOS Actual Rate (6 Years)	<30 YOS Recomm. Expected Rate	30+ YOS Current Expected Rate	30+ YOS Actual Rate (3 Years)	30+ YOS Actual Rate (6 Years)	30+ YOS Recomm. Expected Rate
44	0.00%	2.05%	1.92%	2.00%	0.00%	N/A	N/A	2.00%
45	2.00%	2.25%	2.93%	2.00%	2.00%	N/A	N/A	2.00%
46	2.50%	0.00%	2.05%	2.00%	2.50%	N/A	N/A	2.00%
47	2.50%	0.87%	0.97%	2.00%	2.50%	N/A	N/A	2.00%
48	2.50%	5.04%	4.24%	3.50%	2.50%	N/A	N/A	3.50%
49	9.00%	9.82%	8.76%	9.00%	9.00%	N/A	0.00%	9.00%
50	13.00%	14.47%	12.03%	13.00%	35.00%	75.00%	50.71%	40.00%
51	10.50%	14.19%	12.72%	11.00%	30.00%	33.33%	16.90%	30.00%
52	12.00%	8.51%	10.65%	11.50%	30.00%	40.00%	45.40%	30.00%
53	12.50%	9.09%	10.90%	12.00%	30.00%	25.00%	36.57%	30.00%
54	14.00%	14.94%	14.48%	14.00%	30.00%	8.33%	12.65%	30.00%
55	14.00%	8.06%	8.96%	14.00%	37.50%	31.25%	28.42%	37.50%
56	15.00%	10.00%	15.58%	15.00%	37.50%	9.09%	35.78%	37.50%
57	15.00%	11.43%	11.04%	15.00%	37.50%	50.00%	57.05%	37.50%
58	17.00%	26.92%	22.06%	17.00%	37.50%	42.86%	32.33%	37.50%
59	17.00%	14.81%	17.05%	17.00%	37.50%	14.29%	21.90%	37.50%
60	25.00%	11.11%	18.77%	20.00%	45.00%	25.00%	50.43%	42.50%
61	25.00%	22.22%	22.06%	20.00%	45.00%	0.00%	25.27%	42.50%
62	25.00%	15.38%	19.33%	20.00%	45.00%	33.33%	40.51%	42.50%
63	25.00%	20.00%	10.67%	30.00%	45.00%	0.00%	28.92%	42.50%
64	25.00%	33.33%	41.67%	30.00%	45.00%	20.00%	37.90%	42.50%
65	100.00%	33.33%	33.33%	50.00%	100.00%	25.00%	20.00%	50.00%
66	100.00%	0.00%	50.00%	50.00%	100.00%	33.33%	25.00%	50.00%
67	100.00%	N/A	50.00%	50.00%	100.00%	N/A	N/A	50.00%
68	100.00%	N/A	0.00%	50.00%	100.00%	N/A	N/A	50.00%
69	100.00%	N/A	0.00%	50.00%	100.00%	N/A	N/A	50.00%
70 and over	100.00%	100.00%	33.33%	100.00%	100.00%	N/A	N/A	100.00%
Actual / Expected (6 Years)	**94.6%**			**95.9%**	**86.1%**			**90.6%**

We recommend adjusting the retirement rates slightly for Safety Tier 1 members with less than 30 years of service and with 30 or more years of service.

Chart 23 on page 66 compares the number of actual to expected retirements for Safety Tier 1 members over the past six years for the current and recommended assumptions.

Section 4: Demographic Assumptions

Chart 29 on page 69 compares the actual retirement experience with the current and recommended assumptions for Safety Tier 1 members with less than 30 years of service.

Chart 30 on page 69 compares the current and recommended assumptions for Safety Tier 1 members with 30 or more years of service.

Safety Tier 2 — Retirement Rates by Years of Service (YOS)

Age	<30 YOS Current Expected Rate	<30 YOS Actual Rate (3 Years)	<30 YOS Actual Rate (6 Years)	<30 YOS Recomm. Expected Rate	30+ YOS Current Expected Rate	30+ YOS Actual Rate (3 Years)	30+ YOS Actual Rate (6 Years)	30+ YOS Recomm. Expected Rate
50	5.00%	0.00%	7.79%	5.00%	5.00%	N/A	N/A	10.00%
51	4.00%	0.00%	0.00%	3.00%	4.00%	N/A	N/A	10.00%
52	5.00%	0.00%	0.00%	4.00%	5.00%	N/A	N/A	15.00%
53	6.00%	0.00%	0.00%	5.00%	6.00%	N/A	N/A	15.00%
54	12.00%	0.00%	0.00%	10.00%	12.00%	N/A	N/A	15.00%
55	18.00%	0.00%	0.00%	12.00%	18.00%	N/A	N/A	25.00%
56	20.00%	0.00%	5.31%	15.00%	20.00%	N/A	N/A	25.00%
57	22.00%	6.67%	5.27%	15.00%	22.00%	N/A	N/A	25.00%
58	25.00%	15.79%	12.59%	16.00%	25.00%	N/A	N/A	25.00%
59	25.00%	15.38%	14.29%	16.00%	25.00%	N/A	N/A	25.00%
60	25.00%	28.57%	25.07%	22.00%	25.00%	N/A	N/A	30.00%
61	25.00%	0.00%	9.13%	22.00%	25.00%	N/A	N/A	30.00%
62	25.00%	20.00%	22.43%	22.00%	25.00%	N/A	N/A	30.00%
63	25.00%	0.00%	0.00%	22.00%	25.00%	N/A	N/A	30.00%
64	25.00%	0.00%	0.00%	22.00%	25.00%	N/A	N/A	30.00%
65	100.00%	50.00%	50.00%	50.00%	100.00%	N/A	N/A	50.00%
66	100.00%	0.00%	0.00%	50.00%	100.00%	N/A	N/A	50.00%
67	100.00%	N/A	N/A	50.00%	100.00%	N/A	N/A	50.00%
68	100.00%	N/A	0.00%	50.00%	100.00%	N/A	N/A	50.00%
69	100.00%	N/A	0.00%	50.00%	100.00%	N/A	N/A	50.00%
70 and over	100.00%	33.33%	25.00%	100.00%	100.00%	N/A	N/A	100.00%
Actual / Expected (6 Years)	**37.0%**			**49.0%**	**N/A**			**N/A**

Based on this experience, we recommend decreasing the retirement rates overall for Safety 2 members with less than 30 years of service and introducing higher retirement rates for members with 30 or more years of service. There were no active retirements from Safety Tier 2 with 30 or more years of service over the past six years, so no actual rates are shown in the above table. We have based our recommended rates for Safety Tier 2 with 30 or more years of service on a combination of the current assumptions and

the actual retirement experience that occurred for Safety Tier 1 members with 30 or more years of service.

Chart 24 on page 66 compares the number of actual to expected retirements for Safety Tier 2 members over the past six years for the current and recommended assumptions.

Chart 31 on page 70 compares the actual retirement experience with the current and recommended assumptions for Safety Tier 2 members with less than 30 years of service.

Chart 32 on page 70 compares the current and recommended assumptions for Safety Tier 2 members with 30 or more years of service.

Deferred vested members

The following tables show the observed deferred vested retirement age based on the actual experience over the past three years, separately for those who went on to work at a reciprocal retirement system and those that did not. Also shown are the current and recommended assumptions.

General Members' Deferred Vested Retirement Age

Line Description	Reciprocal Members	Non-Reciprocal Members
Current assumption	59.0	59.0
Actual average age (three years)	60.7	59.7
Recommended assumption	**60.0**	**59.0**

We recommend increasing the General deferred vested retirement age assumption from age 59 to age 60 for those covered by a reciprocal retirement system and maintaining the General deferred vested retirement age assumption at age 59 for those who are non-reciprocal.

Safety Members' Deferred Vested Retirement Age

Line Description	Reciprocal Members	Non-Reciprocal Members
Current assumption	53.0	52.0
Actual average age (three years)	54.5	50.5
Recommended assumption	**54.0**	**51.0**

We recommend increasing the Safety deferred vested retirement age assumption from age 53 to age 54 for those covered by a reciprocal retirement system and decreasing the Safety deferred vested retirement age assumption from age 52 to age 51 for those who are non-reciprocal.

Section 4: Demographic Assumptions

Chart 21: Actual Number of Retirements Compared to Expected
General Tier 1 Members

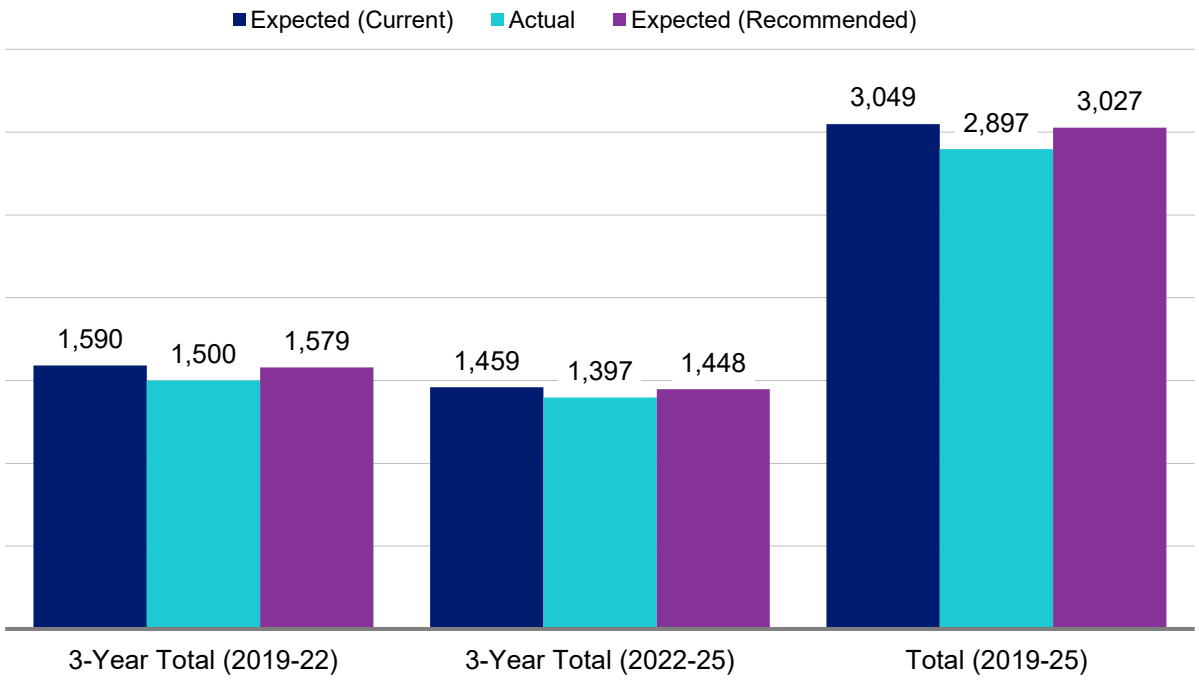
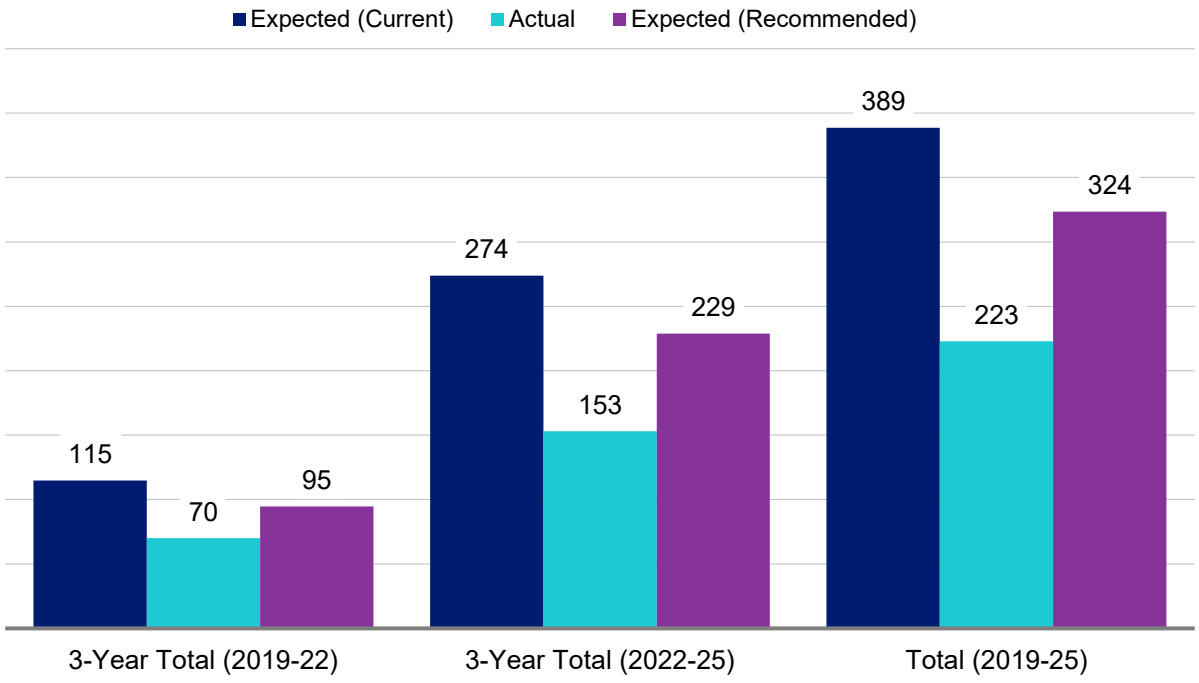


Chart 22: Actual Number of Retirements Compared to Expected
General Tier 2 Members



Section 4: Demographic Assumptions

Chart 23: Actual Number of Retirements Compared to Expected
Safety Tier 1 Members

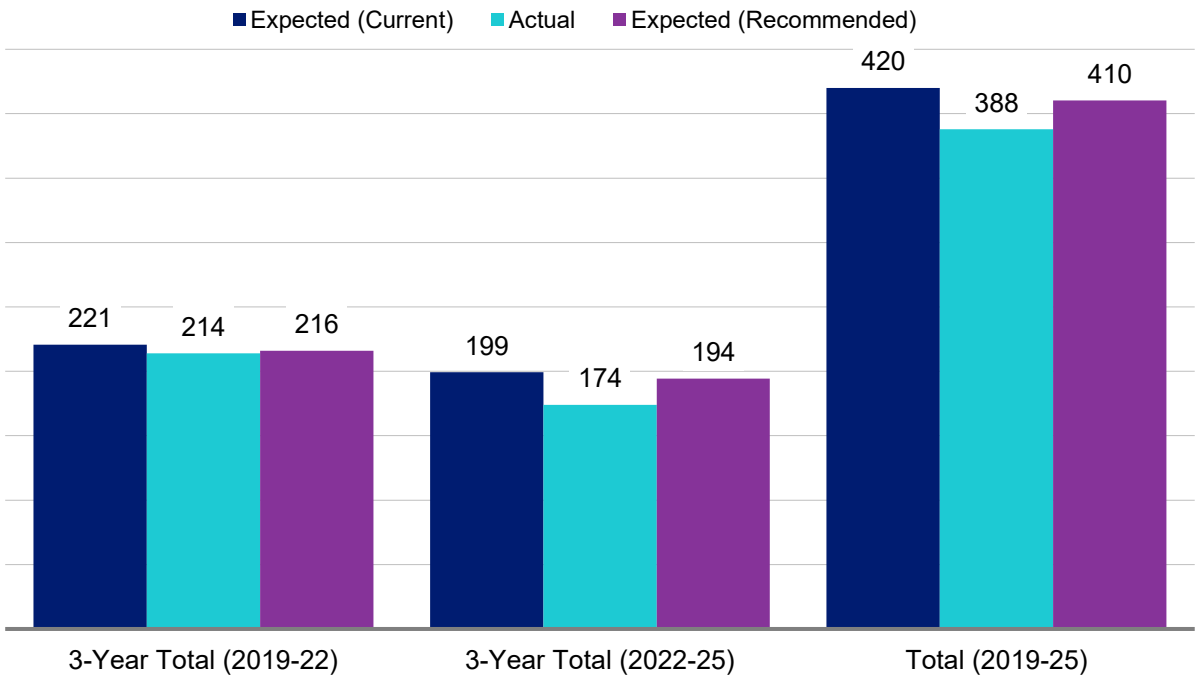
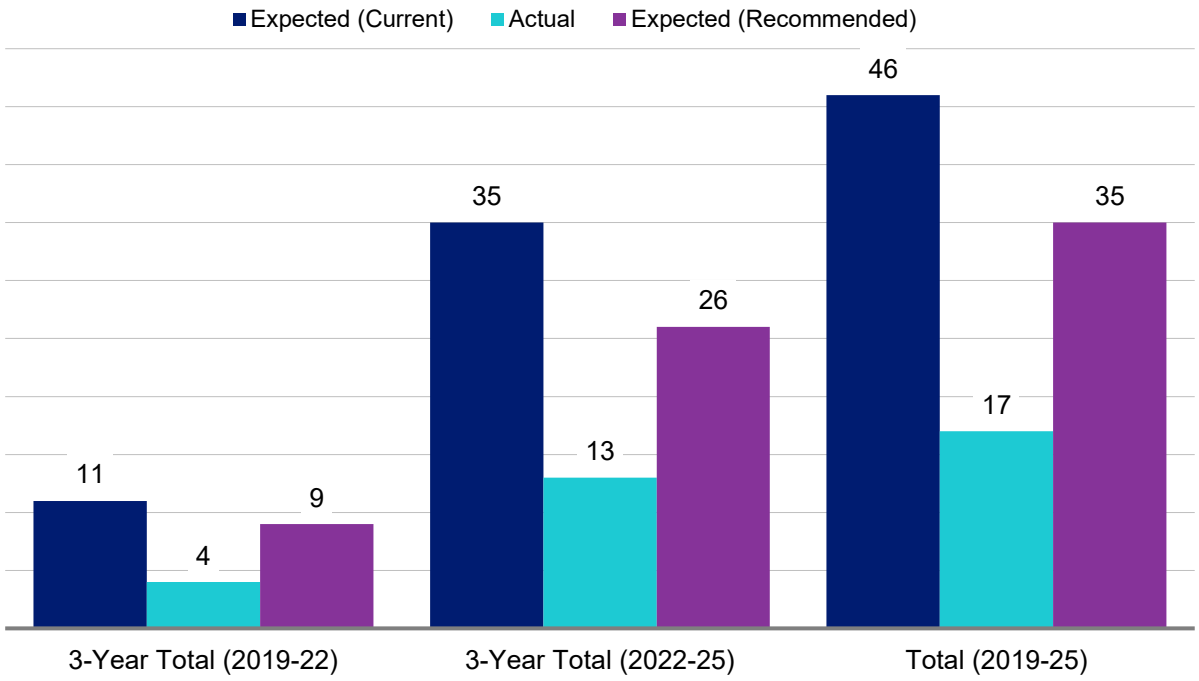


Chart 24: Actual Number of Retirements Compared to Expected
Safety Tier 2 Members



Section 4: Demographic Assumptions

Chart 25: Retirement Rates

General Tier 1 Members with less than 30 Years of Service

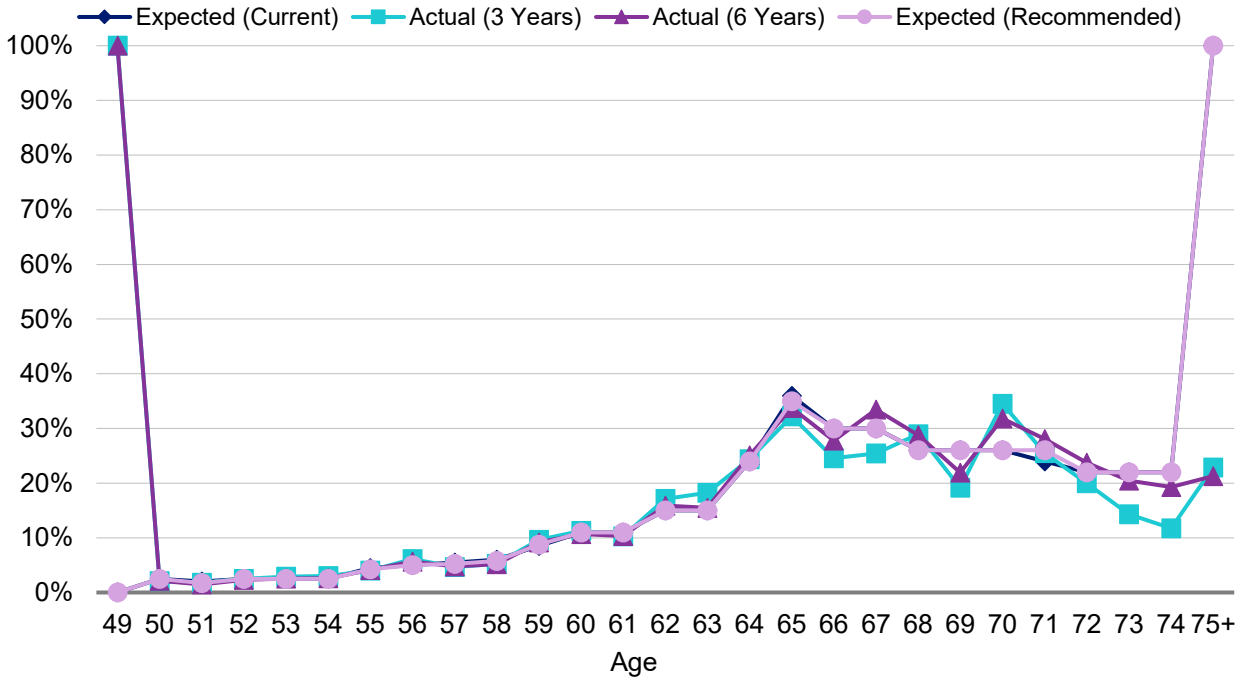
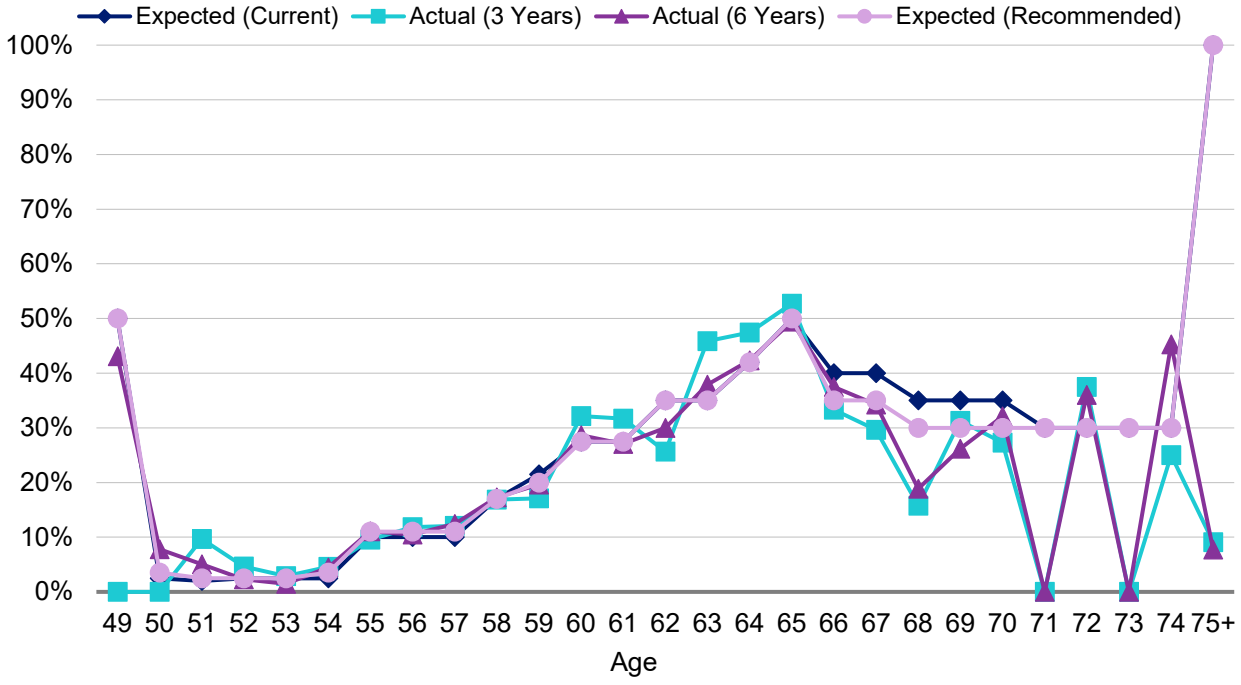


Chart 26: Retirement Rates

General Tier 1 Members with 30 or more Years of Service



Section 4: Demographic Assumptions

Chart 27: Retirement Rates

General Tier 2 Members with less than 30 Years of Service

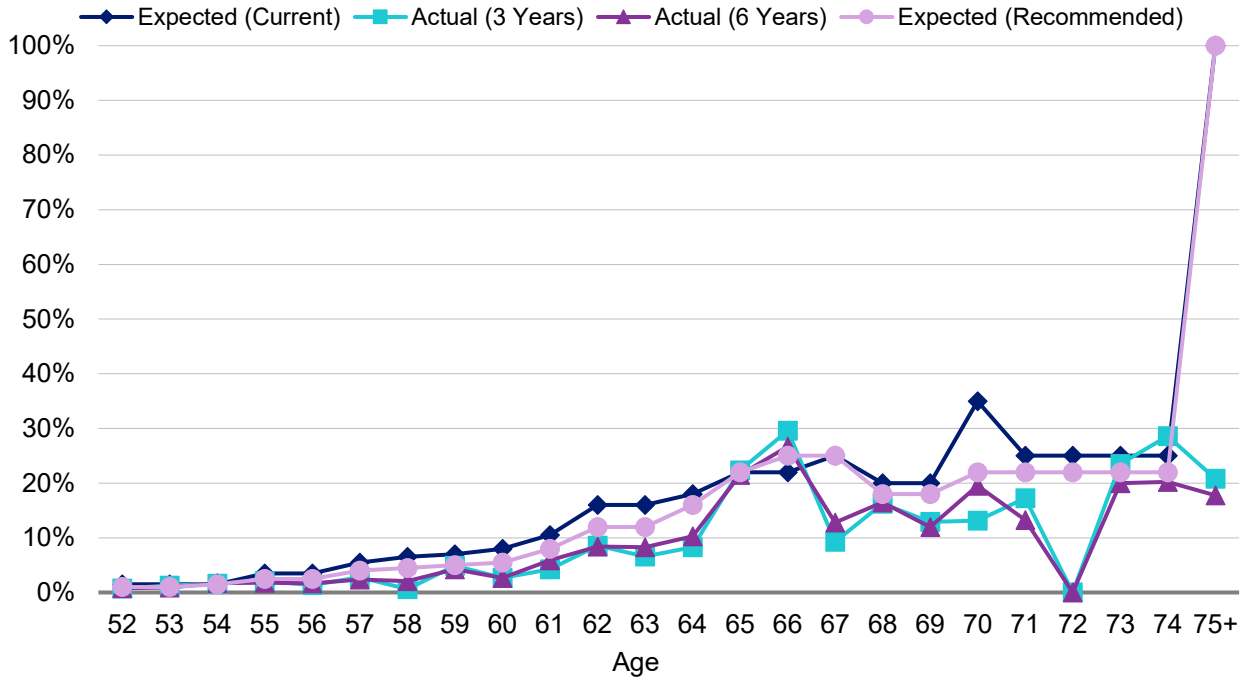
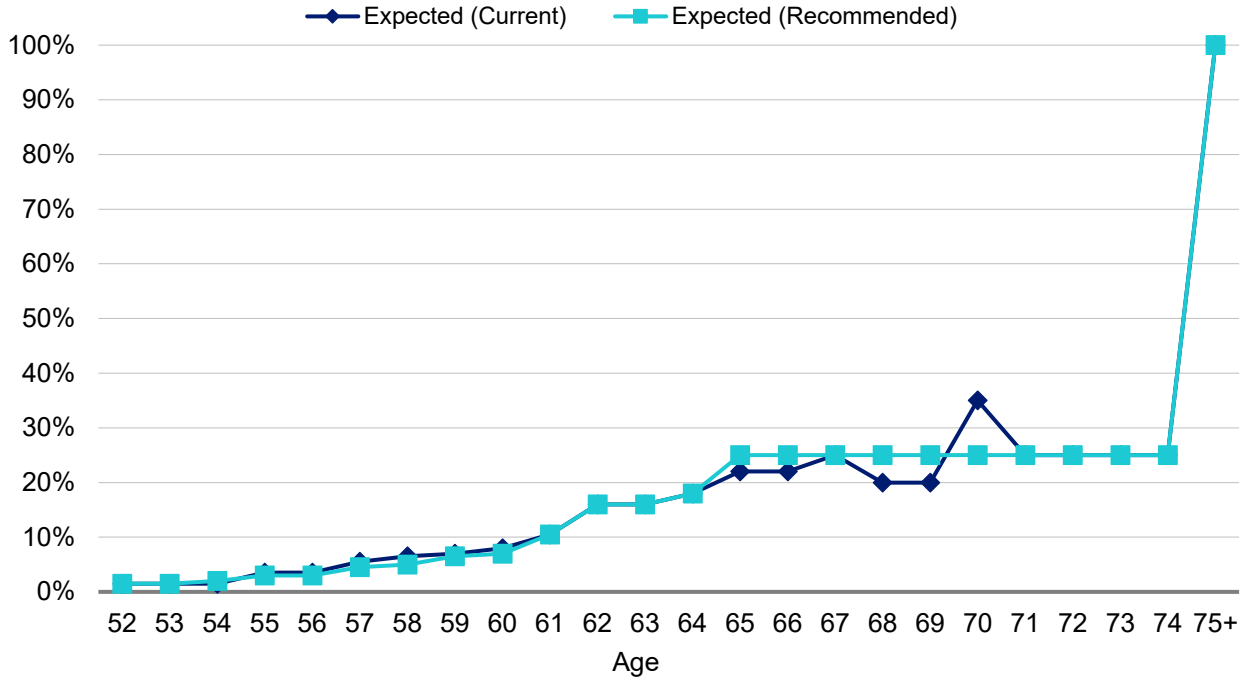


Chart 28: Retirement Rates

General Tier 2 Members with 30 or more Years of Service



Section 4: Demographic Assumptions

Chart 29: Retirement Rates

Safety Tier 1 Members with less than 30 Years of Service

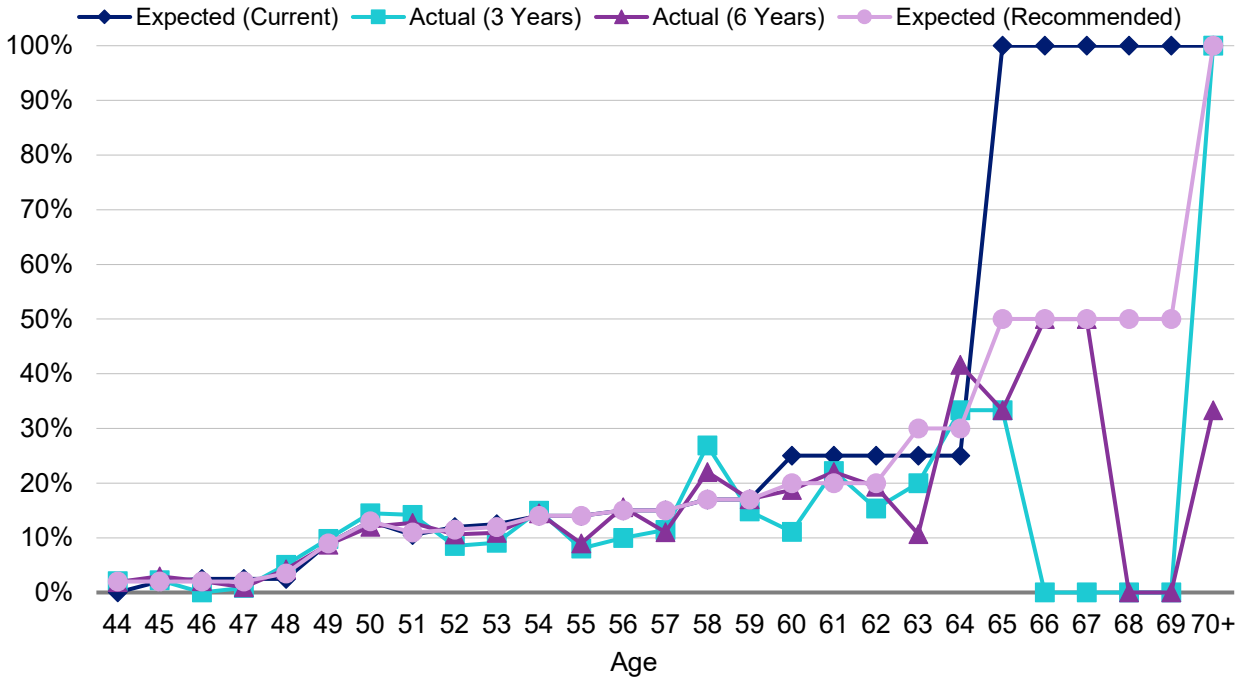
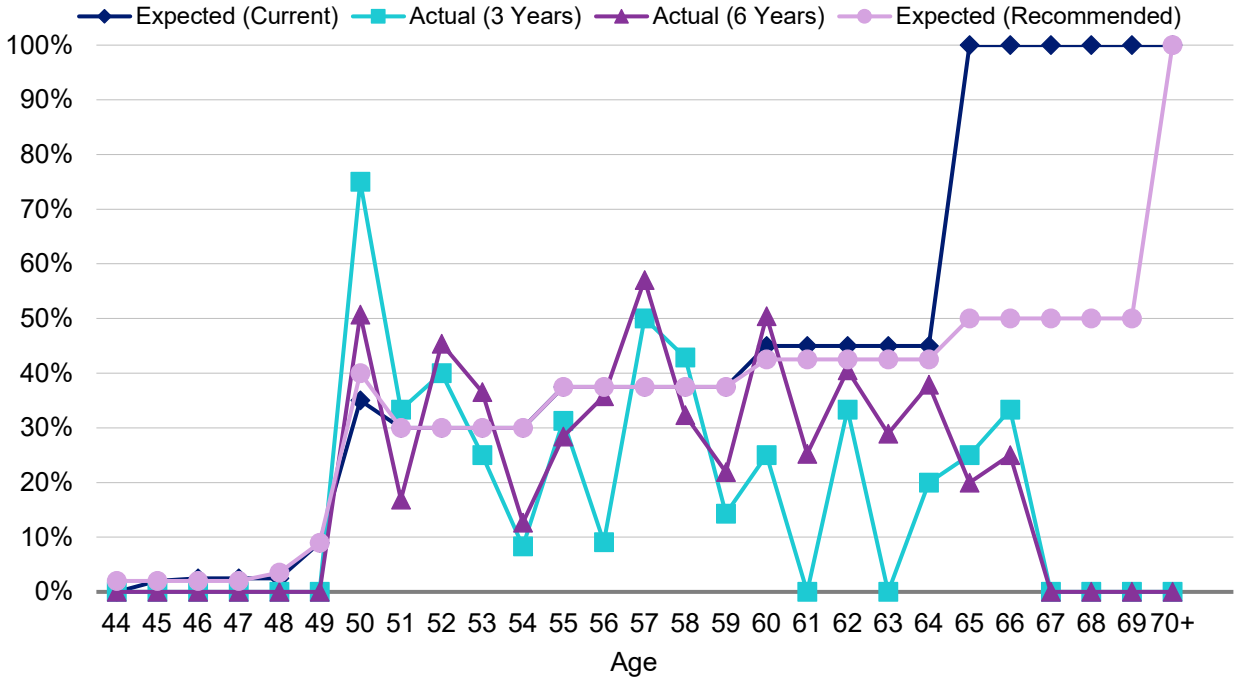


Chart 30: Retirement Rates

Safety Tier 1 Members with 30 or more Years of Service



Section 4: Demographic Assumptions

Chart 31: Retirement Rates

Safety Tier 2 Members with less than 30 Years of Service

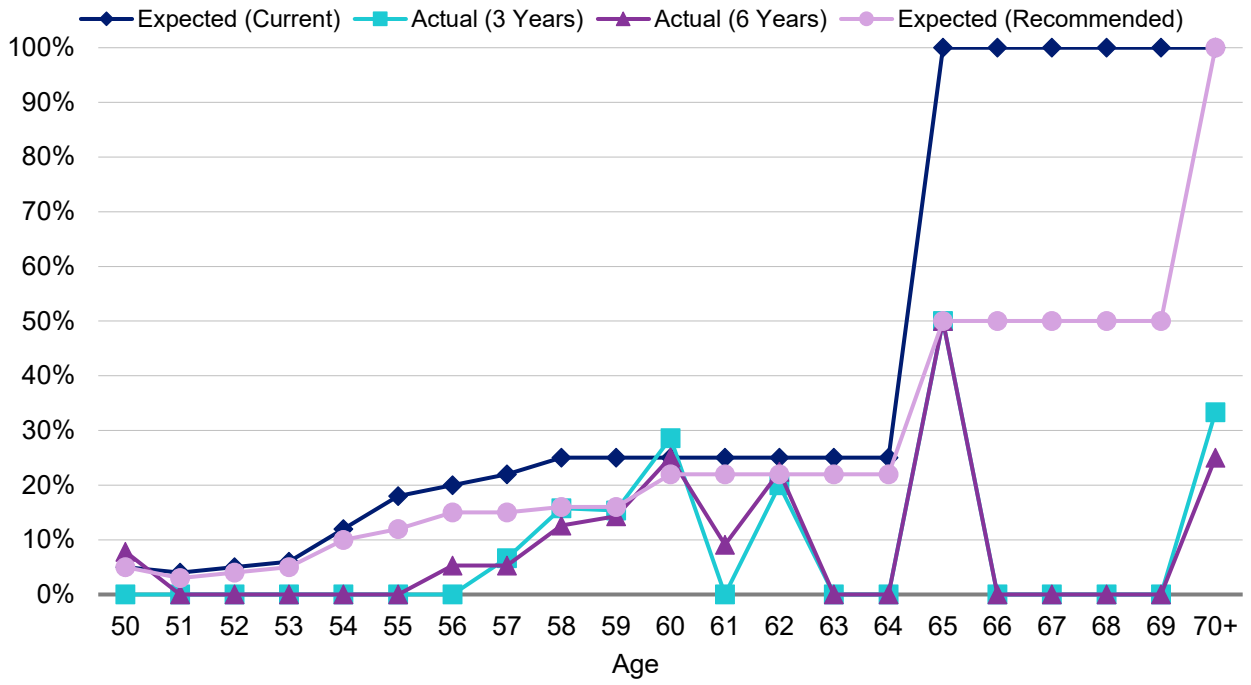
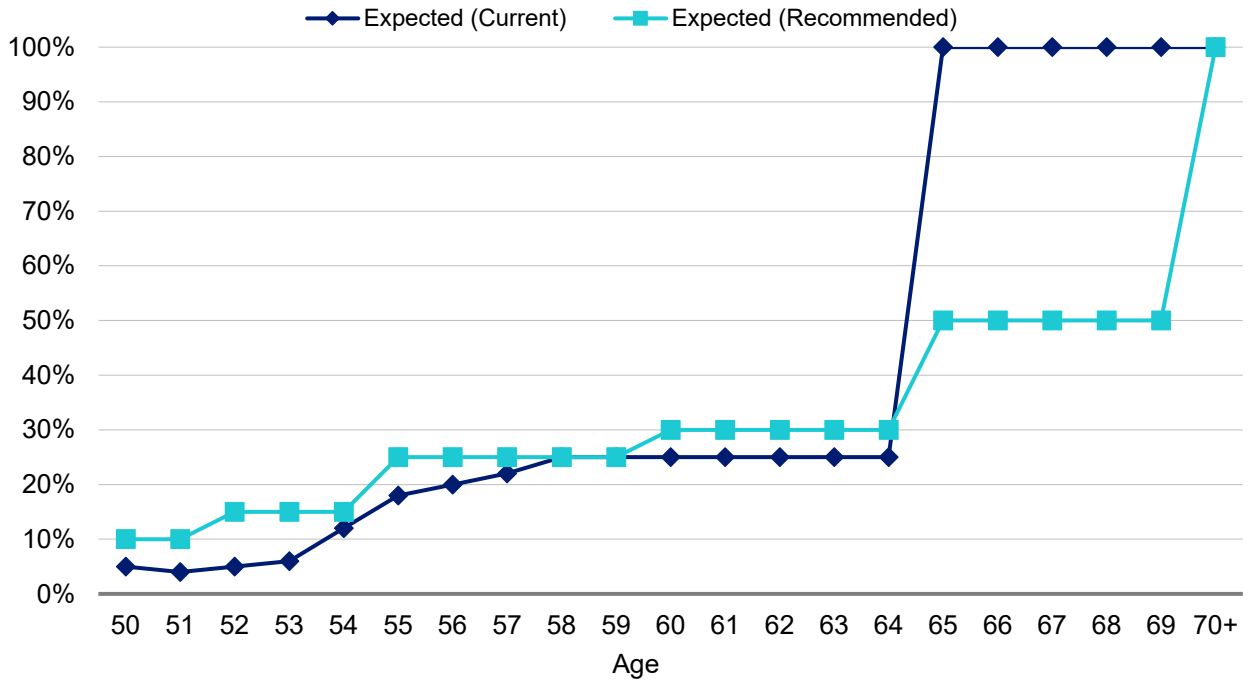


Chart 32: Retirement Rates

Safety Tier 2 Members with 30 or more Years of Service



F. Miscellaneous assumptions

Reciprocity

Under the current assumptions, a percentage of future deferred vested members are assumed to be covered by a reciprocal system.

Unlike other assumptions, we do not review only new deferred vested members during the three-year period because there is typically a lag between a member's date of termination and the time that it is known that they are covered by a reciprocal system. Therefore, the following table shows the observed reciprocity percentage based on the actual experience of all deferred vested members as of May 31, 2025. Also shown are the current and recommended assumptions.

Percentage of Inactive Members at Reciprocal System as of May 31, 2025

Line Description	General	Safety
Current assumption	40.0%	65.0%
Actual experience	39.6%	54.5%
Recommended assumption	**40.0%**	**55.0%**

We recommend maintaining the reciprocal assumption at 40% for General members and decreasing the reciprocal assumption from 65% to 55% for Safety members.

Under the current assumptions, we assume reciprocal members will receive annual salary increase from the date of termination to the expected date of retirement based on the ultimate salary increase assumptions for actives.

We recommend maintaining the annual reciprocal salary assumption to be the same as the ultimate salary increase assumptions for active members.

Future benefit accruals

Benefits are based on the years of service and compensation earned by the member. In order to project benefits and determine the liabilities, an assumption about the amount of service earned by members each year is necessary.

We recommend maintaining the current assumption that employees accrue 1.0 year of service annually.

Unreported data for members

When various elements of valuation data are not available, an assumption must be made in order to project benefits and determine liabilities.

Section 4: Demographic Assumptions

The following table shows the gender of active members based on actual experience as of May 31, 2025. Also shown are the current and recommended assumptions for members with unreported gender.

Assumption for Unreported Gender

Line Description	General Male Member	General Female Member	Safety Male Member	Safety Female Member
Current assumption	100.0%	0.0%	100.0%	0.0%
Actual percentage as of May 31, 2025	30.5%	69.5%	88.6%	11.4%
Recommended assumption	**0.0%**	**100.0%**	**100.0%**	**0.0%**

We recommend updating the assumption for members with unreported gender to assume General members are female and Safety members are male.

Form of payment

In prior valuations, it was assumed that all members would select the unmodified option at retirement. Actual experience for recent new retirees over the past three years shows that around 84% select the unmodified option at retirement.

We recommend maintaining the assumption that all members will elect the unmodified option at retirement.

Percentage with eligible survivor

The value of a member's retirement, disability, or death benefit depends on the percentage of members who are assumed to have an eligible spouse or domestic partner.

The following table shows the observed percentage of new retirees, weighted by benefit amounts, who were reported with an eligible spouse or domestic partner at the time of retirement based on the actual experience over the past three years. Also shown are the current and recommended assumptions.

New Retirees with Eligible Spouse or Domestic Partner who Elected the Unmodified Option

Line Description	Male Member	Female Member
Current assumption	65.0%	50.0%
Actual percentage (three years)	58.0%	47.7%
Recommended assumption	**60.0%**	**50.0%**

We recommend decreasing the percentage with eligible survivor assumption for male members from 65% to 60% and maintaining the percentage with eligible survivor assumption for female members at 50%.

Section 4: Demographic Assumptions

Eligible survivor age and gender

Since the present value of the survivor's automatic continuance benefit is dependent on the survivor's age and gender, we must also have assumptions for these demographics of the survivor.

The following table shows the member's age as compared to the survivor's age for new retirees who elected the unmodified option with an eligible spouse or domestic partner at the time of retirement based on the actual experience over the past three years. Also shown are the current and recommended assumptions.

Member's Age as Compared to Survivor's Age

Line Description	Male Retiree	Female Retiree
Current assumption	3 years older	2 years younger
Actual difference (three years)	2.5 years older	2.3 years younger
Recommended assumption	**3 years older**	**2 years younger**

We recommend maintaining the survivor assumption that male retirees are three years older than their survivor and that female retirees are two years younger than their survivor.

We recommend maintaining the survivor assumption that male retirees have a female survivor, and female retirees have a male survivor. This recommendation is consistent with the actual data for most members as of May 31, 2025, even with the inclusion of domestic partners.

Leave cashouts

Certain SBCERA Tier 1 members are eligible for leave cashouts on an annual basis. These cashouts are included as part of a member's Earnable Compensation at retirement. There are two categories within which these leave cashouts may fall:

- Ongoing Pay Elements – Those that are expected to be received relatively uniformly over a member's employment years; and
- Terminal Pay Elements – Those that are expected to be received only during the member's final average earnings pay period.

The first category is recognized in the actuarial calculations by virtue of being included in the current pay of active members. Any year to year fluctuation in the amount of leave cashouts would be incorporated in the salary scale assumptions discussed in the prior section of this report. The second category requires a separate actuarial assumption to anticipate its impact on a member's retirement benefit.

We compared the average cashouts in the year prior to retirement (which are used in the benefit calculation) to the average cashouts made in the year prior to that (which were already reflected in the actuarial valuation) for each member who retired during the three-year period from

Section 4: Demographic Assumptions

June 1, 2022 through May 31, 2025. The difference between them was the basis for our actuarial assumption for the "terminal pay element" described above.

The following tables show the actual cashouts that are expected to be received only during the member's final average earnings pay period for General and Safety Tier 1 members compared to the current and recommended assumptions.

Leave Cashout Percentage

Line Description	General	Safety
Current assumption	0.75%	1.75%
Actual percentage (three years)	0.68%	1.33%
Recommended assumption	**0.70%**	**1.50%**

We recommend decreasing the cashout load assumption from 0.75% to 0.70% for General Tier 1 and from 1.75% to 1.50% for Safety Tier 1.

Note that the leave cashout assumptions are not applied to Tier 2 members.

G. Survivor assumptions for Survivor Benefit valuation

Additional assumptions concerning the probability of being married or having eligible children upon pre-retirement death are needed for the Survivor Benefit valuation. The current assumptions are based on the 2021 U.S. Census data. We have recommended changes to these assumptions that reflect the 2023 U.S. Census data. The recommended assumptions are shown at the end of *Appendix B*. Overall, the recommended assumptions reflect slight decreases in the percent of members with survivors.

Section 5: Cost Impact

This section presents the estimated impact of the recommended economic assumptions from *Section 3* and the recommended demographic assumptions from *Section 4*. The cost impact is estimated by recalculating the June 30, 2025 actuarial valuation using the recommended assumptions. The actual impact of the recommended assumptions will be measured as of the June 30, 2026 valuation.

The results include the change in the administrative expense load from 0.90% to 1.05% of payroll. The cost associated with the administrative expense load has continued to be allocated to both the employer and the member based on the components of the total contribution rate (before administrative expenses) for the employer and the member.[42]

Cost Impact Based on June 30, 2025 Actuarial Valuation ($ in '000s)

Assumption	Impact on Average Employer Contribution Rates	Impact on Average Member Contribution Rates
Changes in economic assumptions	3.06%	0.89%
Changes in demographic assumptions	(0.57%)	(0.04%)
Total increase in average contribution rate	**2.49%**	**0.85%**
Total increase in annual dollar amount[43]	**$56,077**	**$19,053**

Assumption	Impact on Funded Status
Increase in UAAL due to changes in economic assumptions	$623,920
Decrease in UAAL due to changes in demographic assumptions	(97,112)
Increase in UAAL for Survivor Benefit valuation	1,205
Total increase in UAAL	**$528,013**
Change in funded ratio on VVA basis	**(2.47%)**

Of the various assumption changes, the most significant rate increase is due to the change in the investment return assumption.

The tables below show the total impact on the employer and average member contribution rates for each cost group due to the recommended assumptions.

[42] The actual allocation of contribution rates for administrative expenses will be determined in each actuarial valuation to reflect the relative proportions of employer and member contributions.
[43] Based on June 30, 2025 projected annual payroll as determined under each set of assumptions.

Section 5: Cost Impact

Employer Contribution Rate Increases/(Decreases) (% of Payroll)

Cost Group	Normal Cost	UAAL	Total	Annual Amount ($ in '000s)[44]
County General Tier 1	0.75%	1.51%	2.26%	$12,908
County General Tier 2	0.66%	1.51%	2.17%	21,742
Safety Tier 1	2.05%	2.20%	4.25%	7,720
Safety Tier 2	1.25%	2.20%	3.45%	7,225
Superior Court Tier 1	0.75%	1.69%	2.44%	1,036
Superior Court Tier 2	0.66%	1.69%	2.35%	1,396
SCAQMD Tier 1	0.78%	1.67%	2.45%	1,052
SCAQMD Tier 2	0.51%	1.67%	2.18%	1,496
SBCTA Tier 1	0.73%	1.34%	2.07%	105
SBCTA Tier 2	0.49%	1.34%	1.83%	107
CSAC Tier 1	0.52%	1.46%	1.98%	166
CSAC Tier 2	0.51%	1.46%	1.97%	137
Other General Tier 1	0.73%	1.94%	2.67%	485
Other General Tier 2	0.64%	1.94%	2.58%	502
All Categories Combined	**0.84%**	**1.65%**	**2.49%**	**$56,077**

[44] Based on June 30, 2025 projected annual payroll as determined under each set of assumptions.

Section 5: Cost Impact

Average Member Contribution Rate Increases/(Decreases) (% of Payroll)

Cost Group	Total	Annual Amount ($ in '000s)[45]
County General Tier 1	0.93%	$5,331
County General Tier 2	0.66%	6,700
Safety Tier 1	1.34%	2,419
Safety Tier 2	1.25%	2,601
Superior Court Tier 1	0.92%	394
Superior Court Tier 2	0.66%	398
SCAQMD Tier 1	0.89%	378
SCAQMD Tier 2	0.51%	350
SBCTA Tier 1	0.95%	48
SBCTA Tier 2	0.49%	29
CSAC Tier 1	1.01%	83
CSAC Tier 2	0.51%	35
Other General Tier 1	0.89%	161
Other General Tier 2	0.64%	126
All Categories Combined	**0.85%**	**$19,053**

[45] Based on June 30, 2025 projected annual payroll as determined under each set of assumptions.

Appendix A: Current Actuarial Assumptions

Economic assumptions

Net investment return

7.25%, net of investment expenses.

Administrative expenses

0.90% of payroll allocated to both the employer and member based on the components of the total contribution rate (before expenses) for the employer and member.

Member contribution crediting rate

2.50% (Actual rate is based on six-month Treasury rate).

Inflation

2.50% per year.

Cost-of-Living Adjustment (COLA)

2.00% per year.

Increase in IRC Section 401(a)(17) compensation limit

2.50% per year from the valuation date.

Increase in Section 7522.10 compensation limit

2.50% per year from the valuation date.

Payroll growth

Inflation of 2.50% per year plus “across-the-board” salary increases of 0.50% per year.

Salary Increases

The annual rate of compensation increase includes inflation of 2.50%, “across-the-board” increase of 0.50%, and a merit and promotion increase that varies by service.

Appendix A: Current Actuarial Assumptions

Merit and Promotion Salary Increases

Years of Service	General	Safety
Less than 1	5.00%	7.00%
1–2	6.50%	4.75%
2–3	4.75%	3.75%
3–4	4.25%	3.75%
4–5	4.00%	3.75%
5–6	3.50%	3.75%
6–7	3.25%	3.75%
7–8	3.25%	3.75%
8–9	3.00%	3.50%
9–10	2.50%	3.25%
10–11	2.00%	2.50%
11–12	1.75%	2.00%
12–13	1.50%	1.90%
13–14	1.40%	1.85%
14–15	1.35%	1.80%
15–16	1.30%	1.75%
16–17	1.30%	1.75%
17–18	1.30%	1.75%
18–19	1.30%	1.75%
19–20	1.30%	1.75%
20 and over	1.30%	1.75%

Demographic assumptions

Mortality

The Pub-2010 mortality tables and adjustments shown below reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Post-retirement mortality rates

- **Service retirees**
  - **General**
    - Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected generationally with Scale MP-2021.

Appendix A: Current Actuarial Assumptions

  - **Safety**
    - Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates decreased by 5% for females, projected generationally with Scale MP-2021.

- **Disabled retirees**
  - **General**
    - Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates decreased by 5% for females, projected generationally with Scale MP-2021.
  - **Safety**
    - Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with Scale MP-2021.
- **Beneficiaries**
  - **Not currently in pay status**
    - Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected generationally with Scale MP-2021.
  - **In pay status**
    - Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5% for males and 15% for females, projected generationally with Scale MP-2021.

Pre-retirement mortality rates

- **General**
  - Pub-2010 General Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with Scale MP-2021.
- **Safety**
  - Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with Scale MP-2021.

Appendix A: Current Actuarial Assumptions

Pre-Retirement Mortality Rates – Before Generational Projection from 2010

Age	General Male	General Female	Safety Male	Safety Female
20	0.04%	0.01%	0.04%	0.02%
25	0.02%	0.01%	0.03%	0.02%
30	0.03%	0.01%	0.04%	0.02%
35	0.04%	0.02%	0.04%	0.03%
40	0.06%	0.03%	0.05%	0.04%
45	0.09%	0.05%	0.07%	0.06%
50	0.13%	0.08%	0.10%	0.08%
55	0.19%	0.11%	0.15%	0.11%
60	0.28%	0.17%	0.23%	0.14%
65	0.41%	0.27%	0.35%	0.20%
70	0.61%	0.44%	0.66%	0.39%

Pre-Retirement Death Type

Pre-Retirement Death Type	General	Safety
Service-connected	0%	0%
Non-service-connected	100%	100%

Mortality rates for member contributions

- **General**
  - Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected 30 years (from 2010) with Scale MP-2021, weighted 30% male and 70% female.
- **Safety**
  - Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates decreased by 5% for females, projected 30 years (from 2010) with Scale MP-2021, weighted 90% male and 10% female.

Appendix A: Current Actuarial Assumptions

Disability

Disability Rates from Active Status

Age	General	Safety
20	0.03%	0.15%
25	0.03%	0.21%
30	0.04%	0.31%
35	0.06%	0.56%
40	0.09%	0.76%
45	0.16%	1.04%
50	0.23%	2.58%
55	0.31%	5.60%
60	0.50%	7.00%
65	0.84%	10.30%
70	1.00%	0.00%

Disability Type

Disability Type	General	Safety
Service-connected	60%	100%
Non-service-connected	40%	0%

Appendix A: Current Actuarial Assumptions

Termination

Termination rates are set to zero once a member is eligible and assumed to retire.

Termination Rates from Active Status

Years of Service	General	Safety
Less than 1	15.00%	8.00%
1–2	12.00%	7.50%
2–3	11.00%	6.50%
3–4	9.00%	6.00%
4–5	7.50%	5.00%
5–6	7.00%	4.00%
6–7	6.50%	3.00%
7–8	5.50%	2.00%
8–9	5.00%	1.90%
9–10	5.00%	1.80%
10–11	5.00%	1.60%
11–12	5.00%	1.40%
12–13	4.50%	1.20%
13–14	4.50%	1.20%
14–15	4.25%	1.20%
15–16	4.00%	1.10%
16–17	3.75%	1.10%
17–18	3.50%	1.10%
18–19	3.25%	1.10%
19–20	3.25%	1.10%
20 and over	3.25%	1.10%

Refer to the next table that contains rates for electing a refund of contributions upon termination.

Appendix A: Current Actuarial Assumptions

Rates of Electing a Refund of Contributions

Years of Service	General Member Currently Electing Refundable Contributions	General Member Currently Electing Non-Refundable Contributions	Safety Member Currently Electing Refundable Contributions	Safety Member Currently Electing Non-Refundable Contributions
Less than 5	100.00%	100.00%	100.00%	100.00%
5–6	35.00%	17.50%	15.00%	7.50%
6–7	35.00%	17.50%	15.00%	7.50%
7–8	35.00%	17.50%	15.00%	7.50%
8–9	35.00%	17.50%	15.00%	7.50%
9–10	35.00%	17.50%	15.00%	7.50%
10–11	30.00%	15.00%	15.00%	7.50%
11–12	30.00%	15.00%	10.00%	5.00%
12–13	30.00%	15.00%	10.00%	5.00%
13–14	30.00%	15.00%	10.00%	5.00%
14–15	30.00%	15.00%	10.00%	5.00%
15–16	15.00%	7.50%	10.00%	5.00%
16–17	15.00%	7.50%	5.00%	2.50%
17–18	15.00%	7.50%	5.00%	2.50%
18–19	15.00%	7.50%	5.00%	2.50%
19–20	15.00%	7.50%	5.00%	2.50%
20 and over	15.00%	7.50%	0.00%	0.00%

Assumptions for Current and Future Inactives with a Deferred Benefit

Assumption Type	General	Safety
Retirement age		
Non-reciprocal members	59	52
Non-vested non-reciprocal members	70	70
Reciprocal members	59	53
Reciprocity assumptions		
Future inactives assumed to work for reciprocal employer	40%	65%
Annual salary increases from separation date	4.30%	4.75%

Appendix A: Current Actuarial Assumptions

Retirement Rates

Retirement rates apply to members who are eligible to retire at the age shown.

General – Retirement Rates from Active Status

Age	Tier 1 (§31676.15) Less than 30 Years of Service	Tier 1 (§31676.15) 30 or More Years of Service	Tier 2 (§7522.20(a))
49	0.00%	50.00%	0.00%
50	2.50%	2.50%	0.00%
51	2.00%	2.00%	0.00%
52	2.50%	2.50%	1.50%
53	2.50%	2.50%	1.50%
54	2.50%	2.50%	1.50%
55	4.50%	10.00%	3.50%
56	5.00%	10.00%	3.50%
57	5.50%	10.00%	5.50%
58	6.00%	17.00%	6.50%
59	8.50%	21.50%	7.00%
60	11.00%	27.50%	8.00%
61	11.00%	27.50%	10.50%
62	15.00%	35.00%	16.00%
63	15.00%	35.00%	16.00%
64	24.00%	42.00%	18.00%
65	36.00%	50.00%	22.00%
66	30.00%	40.00%	22.00%
67	30.00%	40.00%	25.00%
68	26.00%	35.00%	20.00%
69	26.00%	35.00%	20.00%
70	26.00%	35.00%	35.00%
71	24.00%	30.00%	25.00%
72	22.00%	30.00%	25.00%
73	22.00%	30.00%	25.00%
74	22.00%	30.00%	25.00%
75 and over	100.00%	100.00%	100.00%

Appendix A: Current Actuarial Assumptions

Safety – Retirement Rates from Active Status

Age	Tier 1 (§31664.1) Less than 30 Years of Service	Tier 1 (§31664.1) 30 or More Years of Service	Tier 2 (§7522.20(d))
45	2.00%	2.00%	0.00%
46	2.50%	2.50%	0.00%
47	2.50%	2.50%	0.00%
48	2.50%	2.50%	0.00%
49	9.00%	9.00%	0.00%
50	13.00%	35.00%	5.00%
51	10.50%	30.00%	4.00%
52	12.00%	30.00%	5.00%
53	12.50%	30.00%	6.00%
54	14.00%	30.00%	12.00%
55	14.00%	37.50%	18.00%
56	15.00%	37.50%	20.00%
57	15.00%	37.50%	22.00%
58	17.00%	37.50%	25.00%
59	17.00%	37.50%	25.00%
60	25.00%	45.00%	25.00%
61	25.00%	45.00%	25.00%
62	25.00%	45.00%	25.00%
63	25.00%	45.00%	25.00%
64	25.00%	45.00%	25.00%
65 and over	100.00%	100.00%	100.00%

Survivor assumptions

Survivor Assumptions for Actives and Inactives

Member Gender	% with Survivor at Retirement or Pre-Retirement Death	Survivor Age	Survivor Gender
Male	65%	3 years younger than member	Female
Female	50%	2 years older than member	Male

Unknown data for members

Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

Appendix A: Current Actuarial Assumptions

Inclusion of deferred vested members

All deferred vested members are included in the valuation.

Definition of active members

First day of employment.

Data adjustment

Data as of May 31 has been adjusted to June 30 by adding one month of age and, for active members, one month or two biweekly periods of service.

Form of payment

All active and inactive members are assumed to elect the unmodified option at retirement.

Supplemental disability benefit

Percent Eligible for Supplemental Disability Benefit

Disability Type	Percent Eligible
General service-connected (duty) disabled retirees	40%
General non-service-connected (ordinary) disabled retirees	75%

Leave cashouts

Additional compensation amounts are expected to be received during a member's final average earnings period. The percentages are as follows:

Leave Cashout Assumptions

Membership	Leave Cashout
General Tier 1	0.75%
Safety Tier 1	1.75%
Tier 2	0.00%

Appendix A: Current Actuarial Assumptions

Survivor assumptions for Survivor Benefit valuation

Survivor Benefit Assumptions

Member's Age at Death	Percent Married	Not Married No Children	Not Married One Child	Not Married Two Children	Married No Children	Married One Child	Married Two Children	1st Child's Age	2nd Child's Age
Under 25	17%	73%	7%	3%	9%	5%	3%	3	1
25-34	52%	35%	5%	8%	19%	13%	20%	6	4
35-44	75%	14%	5%	5%	15%	17%	44%	10	8
45-54	75%	21%	3%	2%	37%	18%	19%	14	12
55-59	69%	30%	1%	0%	61%	5%	3%	18	16
60-64	69%	30%	1%	0%	61%	5%	3%	21	19
65-74	68%	31%	0%	0%	67%	1%	1%	N/A	N/A
75 and over	49%	52%	0%	0%	48%	0%	0%	N/A	N/A

Note 1: Derived from 2021 U.S. Census data.

Note 2: Child payments are assumed to end when the child reaches age 22.

Note 3: Widows or widowers are assumed to start payment at age 62 (or later if they are caring for an eligible child).

Appendix B: Recommended Actuarial Assumptions

Economic assumptions

Net investment return

7.00%, net of investment expenses.

Administrative expenses

1.05% of payroll allocated to both the employer and member based on the components of the total contribution rate (before expenses) for the employer and member.

Member contribution crediting rate

2.50% (Actual rate is based on six-month Treasury rate).

Inflation

2.50% per year.

Cost-of-Living Adjustment (COLA)

2.00% per year.

Increase in IRC Section 401(a)(17) compensation limit

2.50% per year from the valuation date.

Increase in Section 7522.10 compensation limit

2.50% per year from the valuation date.

Payroll growth

Inflation of 2.50% per year plus “across-the-board” salary increases of 0.50% per year.

Salary Increases

The annual rate of compensation increase includes inflation of 2.50%, “across-the-board” increase of 0.50%, and a merit and promotion increase that varies by service.

Appendix B: Recommended Actuarial Assumptions

Merit and Promotion Salary Increases

Years of Service	General Tier 1	General Tier 2	Safety Tier 1	Safety Tier 2
Less than 1	5.00%	5.00%	7.00%	7.00%
1–2	6.50%	6.75%	4.75%	5.00%
2–3	4.75%	5.00%	3.75%	4.50%
3–4	4.25%	4.75%	3.75%	4.50%
4–5	4.00%	4.50%	3.75%	4.50%
5–6	3.50%	4.00%	3.75%	4.50%
6–7	3.25%	3.75%	3.75%	4.50%
7–8	3.25%	3.75%	3.75%	4.50%
8–9	3.00%	3.50%	3.50%	4.25%
9–10	2.50%	3.00%	3.25%	4.00%
10–11	2.25%	2.50%	3.00%	3.00%
11–12	2.00%	2.00%	2.80%	2.80%
12–13	1.90%	1.90%	2.60%	2.60%
13–14	1.80%	1.80%	2.40%	2.40%
14–15	1.75%	1.75%	2.20%	2.20%
15–16	1.70%	1.70%	2.00%	2.00%
16–17	1.65%	1.65%	2.00%	2.00%
17–18	1.60%	1.60%	2.00%	2.00%
18–19	1.55%	1.55%	2.00%	2.00%
19–20	1.50%	1.50%	2.00%	2.00%
20 and over	1.45%	1.45%	2.00%	2.00%

Demographic assumptions

Mortality

The Pub-2016 mortality tables and adjustments shown below reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Appendix B: Recommended Actuarial Assumptions

Post-retirement mortality rates

- **Service retirees**
  - **General**
    - Pub-2016 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected generationally with Scale MP-2021.
  - **Safety**
    - Pub-2016 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and decreased by 5% for females, projected generationally with Scale MP-2021.
- **Disabled retirees**
  - **General**
    - Pub-2016 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates increased by 5% for males, projected generationally with Scale MP-2021.
  - **Safety**
    - Pub-2016 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with Scale MP-2021.
- **Beneficiaries**
  - **Not currently in pay status**
    - Pub-2016 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected generationally with Scale MP-2021.
  - **In pay status**
    - Pub-2016 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5% for males and 15% for females, projected generationally with Scale MP-2021.

Pre-retirement mortality rates

- **General**
  - Pub-2016 General Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5% for males and 10% for females, projected generationally with Scale MP-2021.
- **Safety**
  - Pub-2016 Safety Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with Scale MP-2021.

Appendix B: Recommended Actuarial Assumptions

Pre-Retirement Mortality Rates – Before Generational Projection from 2016

Age	General Male	General Female	Safety Male	Safety Female
20	0.03%	0.01%	0.02%	0.01%
25	0.03%	0.01%	0.03%	0.01%
30	0.03%	0.02%	0.04%	0.02%
35	0.04%	0.03%	0.04%	0.03%
40	0.06%	0.04%	0.05%	0.04%
45	0.09%	0.06%	0.07%	0.06%
50	0.13%	0.09%	0.10%	0.09%
55	0.20%	0.14%	0.16%	0.13%
60	0.31%	0.20%	0.27%	0.20%
65	0.47%	0.32%	0.45%	0.32%
70	0.72%	0.50%	0.84%	0.50%

Pre-Retirement Death Type

Pre-Retirement Death Type	General	Safety
Service-connected	0%	50%
Non-service-connected	100%	50%

Mortality rates for member contributions

- **General**
  - Pub-2016 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected 30 years (from 2016) with Scale MP-2021, weighted 30% male and 70% female.
- **Safety**
  - Pub-2016 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for males and decreased by 5% for females, projected 30 years (from 2016) with Scale MP-2021, weighted 90% male and 10% female.

Appendix B: Recommended Actuarial Assumptions

Disability

Disability Rates from Active Status

Age	General	Safety
20	0.03%	0.15%
25	0.03%	0.21%
30	0.04%	0.34%
35	0.06%	0.58%
40	0.08%	0.76%
45	0.10%	1.04%
50	0.18%	3.18%
55	0.27%	7.20%
60	0.45%	9.00%
65	0.70%	15.60%
70	1.00%	0.00%

Disability Type

Disability Type	General	Safety
Service-connected	60%	100%
Non-service-connected	40%	0%

Appendix B: Recommended Actuarial Assumptions

Termination

Termination rates are set to zero once a member is eligible and assumed to retire.

Termination Rates from Active Status

Years of Service	General	Safety
Less than 1	16.00%	10.00%
1–2	12.00%	8.50%
2–3	11.00%	7.50%
3–4	9.50%	6.50%
4–5	7.75%	5.00%
5–6	7.50%	4.50%
6–7	7.25%	4.00%
7–8	7.00%	3.50%
8–9	6.00%	2.50%
9–10	5.50%	2.00%
10–11	5.50%	1.75%
11–12	5.50%	1.50%
12–13	5.50%	1.40%
13–14	5.50%	1.20%
14–15	5.00%	1.20%
15–16	4.50%	1.20%
16–17	4.50%	1.20%
17–18	3.50%	1.00%
18–19	3.50%	1.00%
19–20	3.50%	1.00%
20 and over	3.50%	1.00%

Refer to the next table that contains rates for electing a refund of contributions upon termination.

Appendix B: Recommended Actuarial Assumptions

Rates of Electing a Refund of Contributions

Years of Service	General Member Currently Electing Refundable Contributions	General Member Currently Electing Non-Refundable Contributions	Safety Member Currently Electing Refundable Contributions	Safety Member Currently Electing Non-Refundable Contributions
Less than 5	100.00%	100.00%	100.00%	100.00%
5–6	30.00%	10.00%	15.00%	7.50%
6–7	30.00%	10.00%	15.00%	7.50%
7–8	30.00%	10.00%	15.00%	7.50%
8–9	30.00%	10.00%	15.00%	7.50%
9–10	30.00%	10.00%	15.00%	7.50%
10–11	25.00%	10.00%	5.00%	2.50%
11–12	25.00%	10.00%	5.00%	2.50%
12–13	25.00%	10.00%	5.00%	2.50%
13–14	25.00%	10.00%	5.00%	2.50%
14–15	25.00%	10.00%	5.00%	2.50%
15–16	15.00%	5.00%	5.00%	2.50%
16–17	15.00%	5.00%	5.00%	2.50%
17–18	15.00%	5.00%	5.00%	2.50%
18–19	15.00%	5.00%	5.00%	2.50%
19–20	15.00%	5.00%	5.00%	2.50%
20 and over	10.00%	5.00%	0.00%	0.00%

Assumptions for Current and Future Inactives with a Deferred Benefit

Assumption Type	General	Safety
Retirement age		
Non-reciprocal members	59	51
Non-vested non-reciprocal members	70	70
Reciprocal members	60	54
Reciprocity assumptions		
Future inactives assumed to work for reciprocal employer	40%	55%
Annual salary increases from separation date	4.45%	5.00%

Appendix B: Recommended Actuarial Assumptions

Retirement Rates

Retirement rates apply to members who are eligible to retire at the age shown.

General – Retirement Rates from Active Status

Age	Tier 1 (§31676.15) Less than 30 Years of Service	Tier 1 (§31676.15) 30 or More Years of Service	Tier 2 (§7522.20(a)) Less than 30 Years of Service	Tier 2 (§7522.20(a)) 30 or More Years of Service
49	0.00%	50.00%	0.00%	0.00%
50	2.50%	3.50%	0.00%	0.00%
51	1.75%	2.50%	0.00%	0.00%
52	2.50%	2.50%	1.00%	1.50%
53	2.50%	2.50%	1.00%	1.50%
54	2.50%	3.50%	1.50%	2.00%
55	4.25%	11.00%	2.50%	3.00%
56	5.00%	11.00%	2.50%	3.00%
57	5.25%	11.00%	4.00%	4.50%
58	5.75%	17.00%	4.50%	5.00%
59	8.75%	20.00%	5.00%	6.50%
60	11.00%	27.50%	5.50%	7.00%
61	11.00%	27.50%	8.00%	10.50%
62	15.00%	35.00%	12.00%	16.00%
63	15.00%	35.00%	12.00%	16.00%
64	24.00%	42.00%	16.00%	18.00%
65	35.00%	50.00%	22.00%	25.00%
66	30.00%	35.00%	25.00%	25.00%
67	30.00%	35.00%	25.00%	25.00%
68	26.00%	30.00%	18.00%	25.00%
69	26.00%	30.00%	18.00%	25.00%
70	26.00%	30.00%	22.00%	25.00%
71	26.00%	30.00%	22.00%	25.00%
72	22.00%	30.00%	22.00%	25.00%
73	22.00%	30.00%	22.00%	25.00%
74	22.00%	30.00%	22.00%	25.00%
75 and over	100.00%	100.00%	100.00%	100.00%

Appendix B: Recommended Actuarial Assumptions

Safety – Retirement Rates from Active Status

Age	Tier 1 (§31664.1) Less than 30 Years of Service	Tier 1 (§31664.1) 30 or More Years of Service	Tier 2 (§7522.20(d)) Less than 30 Years of Service	Tier 2 (§7522.20(d)) 30 or More Years of Service
44	2.00%	2.00%	0.00%	0.00%
45	2.00%	2.00%	0.00%	0.00%
46	2.00%	2.00%	0.00%	0.00%
47	2.00%	2.00%	0.00%	0.00%
48	3.50%	3.50%	0.00%	0.00%
49	9.00%	9.00%	0.00%	0.00%
50	13.00%	40.00%	5.00%	10.00%
51	11.00%	30.00%	3.00%	10.00%
52	11.50%	30.00%	4.00%	15.00%
53	12.00%	30.00%	5.00%	15.00%
54	14.00%	30.00%	10.00%	15.00%
55	14.00%	37.50%	12.00%	25.00%
56	15.00%	37.50%	15.00%	25.00%
57	15.00%	37.50%	15.00%	25.00%
58	17.00%	37.50%	16.00%	25.00%
59	17.00%	37.50%	16.00%	25.00%
60	20.00%	42.50%	22.00%	30.00%
61	20.00%	42.50%	22.00%	30.00%
62	20.00%	42.50%	22.00%	30.00%
63	30.00%	42.50%	22.00%	30.00%
64	30.00%	42.50%	22.00%	30.00%
65	50.00%	50.00%	50.00%	50.00%
66	50.00%	50.00%	50.00%	50.00%
67	50.00%	50.00%	50.00%	50.00%
68	50.00%	50.00%	50.00%	50.00%
69	50.00%	50.00%	50.00%	50.00%
70 and over	100.00%	100.00%	100.00%	100.00%

Appendix B: Recommended Actuarial Assumptions

Spousal assumptions

Current Active and Inactive Member Spousal Assumptions

Member Gender	% with Spouse at Retirement or Pre-Retirement Death	Spouse Age	Spouse Gender
Male	60%	3 years younger than member	Female
Female	50%	2 years older than member	Male

Future benefit accruals

1.0 year of service per year of employment.

Unknown data for members

Same as those exhibited by members with similar known characteristics. If not specified, General members are assumed to be female and Safety members are assumed to be male.

Inclusion of deferred vested members

All deferred vested members are included in the valuation.

Definition of active members

First day of employment.

Data adjustment

Data as of May 31 has been adjusted to June 30 by adding one month of age and, for active members, one month or two biweekly periods of service.

Form of payment

All active and inactive members are assumed to elect the unmodified option at retirement.

Supplemental disability benefit

Percent Eligible for Supplemental Disability Benefit

Disability Type	Percent Eligible
General service-connected (duty) disabled retirees	40%
General non-service-connected (ordinary) disabled retirees	80%

Appendix B: Recommended Actuarial Assumptions

Leave cashouts

Additional compensation amounts are expected to be received during a member's final average earnings period. The percentages are as follows:

Leave Cashout Assumptions

Membership	Leave Cashout
General Tier 1	0.70%
Safety Tier 1	1.50%
Tier 2	0.00%

Appendix B: Recommended Actuarial Assumptions

Survivor assumptions for Survivor Benefit valuation

Survivor Benefit Assumptions

Member's Age at Death	Percent Married	Not Married No Children	Not Married One Child	Not Married Two Children	Married No Children	Married One Child	Married Two Children	1st Child's Age	2nd Child's Age
Under 25	16%	74%	5%	5%	11%	2%	3%	3	1
25-34	50%	39%	6%	5%	17%	13%	20%	6	4
35-44	71%	18%	6%	5%	15%	22%	34%	10	8
45-54	73%	22%	3%	3%	36%	14%	22%	14	12
55-59	65%	32%	1%	1%	58%	3%	5%	18	16
60-64	65%	32%	1%	1%	58%	3%	5%	21	19
65-74	61%	39%	0%	0%	60%	0%	1%	N/A	N/A
75 and over	48%	52%	0%	0%	47%	0%	1%	N/A	N/A

Note 1: Derived from 2023 U.S. Census data.

Note 2: Child payments are assumed to end when the child reaches age 22.

Note 3: Widows or widowers are assumed to start payment at age 62 (or later if they are caring for an eligible child).

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