



Mendocino County Employees Retirement Association

Actuarial Experience Study

**Analysis of Experience During the Period
July 1, 2022 through June 30, 2025**



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June 4, 2026

Board of Retirement
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Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience for Mendocino County Employees Retirement Association (MCERA). This study utilizes the census data for the period July 1, 2022 through June 30, 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 Daniel Siblik, ASA, MAAA, FCA, 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,

A handwritten signature in black ink, appearing to read "Todd Tauzer".

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

A handwritten signature in black ink, appearing to read "Daniel Siblik".

Daniel Siblik, ASA, MAAA, FCA, EA
Vice President and Actuary

DNA/jl

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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 year's 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 July 1, 2022 through June 30, 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 <i>Section 3(A)</i> .
13	Cost-of-living adjustment (COLA): Future increases to a member's retirement benefit.	Maintain the COLA assumption at 2.75% per annum for the Legacy tiers as discussed in <i>Section 3(A)</i> . ¹
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 6.50% to 6.25% per annum as discussed in <i>Section 3(B)</i> .
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 <i>Section 3(C)</i> to reflect past experience. This includes introducing separate merit and promotion salary increases for Legacy and PEPRAs 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 unfunded actuarial accrued liability (UAAL) in determining the UAAL contribution rate.	Maintain the payroll growth assumption (combined inflationary and real “across-the-board” salary increases) at 3.00%.

¹ The Legacy tiers are General Tiers 1, 2 and 3, Safety Tiers 1 and 2, and Probation Tiers 1 and 2. There are no COLA increases for the California Public Employees' Pension Reform Act (PEPRA) tiers (i.e., General Tier 4, Safety Tier 3, and Probation Tier 3).

Section 1: Introduction and Summary

Page	Actuarial Assumption	Recommendation
31	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 mortality tables to Pub-2016 Healthy Retiree Amount-Weighted mortality tables. Adjust the base tables to reflect partial credibility of MCERA's experience. Overall, the recommended assumptions anticipate more deaths for General members and fewer 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 mortality tables to Pub-2016 Contingent Survivor Amount-Weighted mortality tables. Adjust the base tables to reflect partial credibility of MCERA's experience. Overall, the recommended assumptions anticipate more deaths than previously projected. Pre-retirement mortality: Change base tables from Pub-2010 Employee Amount-Weighted mortality tables to Pub-2016 Employee Amount-Weighted mortality tables. Due to relatively limited experience, the base tables were not adjusted. Mortality projection: Maintain two-dimensional mortality improvement scale MP-2021 to project tables generationally. Mortality for member contribution rates: Adjust the mortality rates to those developed in <i>Section 4(A)</i> for member contribution rates. Pre-retirement death type: Maintain the assumption that pre-retirement deaths are nonservice-connected for General members and service-connected for Safety and Probation members.
40	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 MCERA's experience. Overall, the recommended assumptions anticipate fewer deaths for General members and more deaths for Safety members than previously projected. Mortality projection: Maintain two-dimensional mortality improvement scale MP-2021 to project tables generationally.
44	Disability incidence rates: The probability of becoming disabled at each age.	Adjust the disability rates to those developed in <i>Section 4(C)</i> to reflect a slightly lower incidence of disability overall for General and Safety and Probation members.

Section 1: Introduction and Summary

Page	Actuarial Assumption	Recommendation
49	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 <i>Section 4(D)</i> to reflect a slightly lower incidence of termination for General members and a higher incidence for Safety and Probation members. In addition, we recommend maintaining the proportion of members assumed to elect a refund of member contributions.
55	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 <i>Section 4(E)</i> . For deferred vested members, maintain the assumed retirement age at 61 for General members and maintain the assumed retirement age at 54 for Safety and Probation members.
68	Miscellaneous assumptions including: • Reciprocity • Future benefit accruals • Unreported data for members • Form of payment • Percent with eligible survivor • Eligible survivor age and gender • Sick leave conversion	Reduce the current proportion of future deferred vested members expected to be covered by a reciprocal system from 65% to 50%. Maintain the current future benefit accrual assumption and adjust the assumption for members with unknown gender as outlined in <i>Section 4(F)</i> . Maintain the assumption that all active and inactive members will elect the unmodified assumption at retirement. For active and deferred vested members, maintain the current percent with eligible survivor assumption at 70% for males and increase the current percentage with eligible survivor assumption from 50% to 55% for females. Maintain the spouse age difference assumption that male retirees are two years older than their female spouses and that female retirees are two years younger than their male spouses. Maintain the current assumption that members will convert 0.017 years of unused sick leave credit per year of employment.

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

Cost Impact of the Recommended Assumptions Based on June 30, 2025 Actuarial Valuation (\$ in '000s)

Assumption	Impact on Average Employer Contribution Rates	Impact on Weighted Average Member Contribution Rates
Change in investment return assumption	2.93%	0.62%
Change in salary scale assumption	1.04%	0.45%
Changes in demographic assumptions	(0.88%)	(0.06%)
Total increase in average contribution rate	3.09%	1.01%
Total increase in annual dollar amount²	\$3,066	\$987

Assumption	Impact on UAAL	Impact on Funded Percentage
Change due to change in investment return assumption	\$29,799	(2.2%)
Change due to change in salary scale assumption	7,434	(0.6%)
Change due to changes in demographic assumptions	(7,669)	0.6%
Total estimated change	\$29,564	(2.2%)

The recommended assumption changes are estimated to increase the UAAL by \$29.6 million and decrease the funded ratio from 76.4% to 74.2%. Of the various assumption changes, the most significant rate increase is due to the change in the investment return assumption.

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, and salary increases. 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 percent 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 and conversion of service from unused sick leave.

It should be noted that with the exception of selecting the merit and promotion salary increases and the mortality assumptions 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 and all administrative 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.

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

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

Section 2: Background and Methodology

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 years of 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 $50 \div 500$, 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 14-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*.

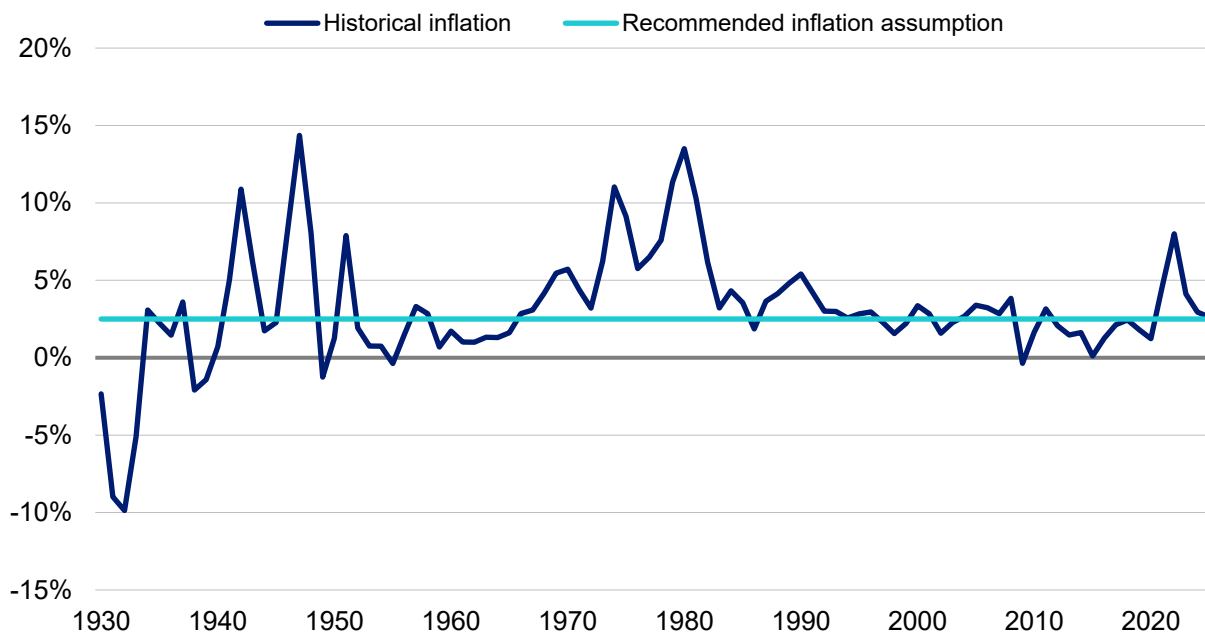
Section 3: Economic Assumptions

A. Inflation

Investments that do not grow at least as fast as prices increase will cause investors to experience a reduction in the inflation-adjusted value of such investments. “Riskless” investments may return more or less than inflation, but over the long term, investment market forces typically require issuers of fixed income securities to maintain a minimum return, protecting investors from inflation.

As the inflation assumption is long term in nature, our analysis begins with a review of historical information. The graph below 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 2025³
(U.S. City Average — All Urban Consumers)



There was a spike in inflation that went from the second quarter of 2021 into 2022. The rate of inflation decreased after the Federal Reserve began raising interest rates around the second quarter of 2022. As inflation declined, 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 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 243⁶ public pension plans across the U.S. In California, CalSTRS and four⁷ 1937 Act CERL systems currently use an inflation assumption of 2.75%, while CalPERS and the 16 remaining 1937 Act CERL systems (including MCERA) use an assumption of 2.50%.⁸

MCERA's investment consultant, Callan, anticipates an annual inflation rate of 2.50% over a 10-year horizon. The average inflation assumption provided by Callan 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 Callan 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.⁹ 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.¹⁰ 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 April 2026, the difference in yields was 2.25%.

The graph on the following page shows MCERA's historical and recommended inflation assumptions as well as the two metrics noted above. In effect, this compares MCERA'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, MCERA'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.

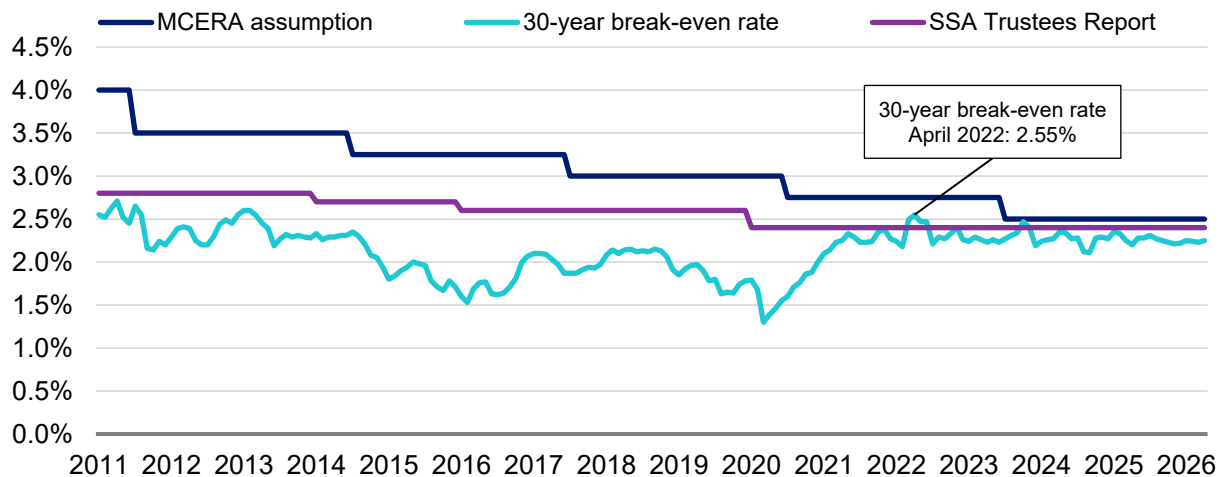
⁸ Eight of these 1937 Act CERL systems use a 2.50% inflation assumption with a 2.75% COLA assumption.

⁹ 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."

¹⁰ Source: Board of Governors of the Federal Reserve System.

Section 3: Economic Assumptions

Historical Inflation Forecasts



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 the experience study as of June 30, 2022, the Board maintained the recommended cost-of-living adjustments (COLA) assumption at 2.75% for all Legacy tiers. The assumption of 2.75% included a 0.25% margin above the recommended inflation assumption, to reflect the experience from the December CPI based on the Western Region used by the Board to set COLAs. The table below shows the change in December CPI for the Western Region and the U.S. City Average for the most recent 5, 10, and 20-year periods ending December 31, 2025:

Comparison of Changes in December CPI

Period	Change in December CPI for Western Region	Change in December CPI for U.S. City Average
5-Year Average	4.45%	4.46%
10-Year Average	3.51%	3.20%
20-Year Average	2.75%	2.52%

Accordingly, for the Legacy retirees with a maximum 3.00% COLA, we recommend maintaining the retiree COLA assumption of 2.75% per year in the June 30, 2026 valuation, which includes a 0.25% margin above our recommended inflation assumption to mitigate actuarial losses which may arise from future COLA increases greater than the inflation assumption. Note that no COLAs are provided for PEPRA members in General Tier 4, Safety Tier 3, and Probation Tier 3.

Section 3: Economic Assumptions

B. Investment return

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

Real rate of return

The real rate of return represents the portfolio's expected incremental investment market returns over inflation. Generally, taking on greater investment risk means the return on the investment is expected to also be greater, at least in the long run.¹¹ The additional risk and return is expected to vary by asset class and empirical data supports this. 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 arithmetic real rate of return assumptions (net of investment management expenses) are detailed in the following table. The first column of returns are determined by reducing Callan's nominal 2026 return assumptions by their assumed 2.50% inflation rate. The second column of returns shows the average real rate of return assumptions provided to us by Callan, 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.

**MCERA's Target Asset Allocation and
Arithmetic Real Rate of Return Assumptions**

Asset Class	MCERA's Target Asset Allocation	Callan's Real Rate of Return Assumption	Average Real Rate of Return Assumption from Seven Investment Firms
Large cap U.S. equity	25.90%	6.00%	5.33%
Small cap U.S. equity	11.10%	7.10%	6.23%
Global ex-U.S. equity	25.00%	6.95%	5.99%
Core U.S. fixed income	21.00%	2.35%	2.48%
Core real estate	11.00%	4.65%	4.57%
Private infrastructure	6.00%	4.90%	4.90% ¹²
Total	100.00%	5.38%	4.89%

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

¹¹ 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.

¹² There is a larger disparity in returns for this asset class among the firms surveyed compared to other classes, so Callan's assumption is applied in lieu of the average to more closely reflect the underlying investments made specifically for MCERA.

Section 3: Economic Assumptions

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 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 MCERA’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 4.89% portfolio net real rate of return, as calculated above, be used in the determination of MCERA’s investment return assumption.
 - This return is 0.28% lower than the 5.17% net return that was used three years ago in the review of the recommended investment return assumption for the June 30, 2023 valuation.
 - The 0.28% 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.
 - 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.

Association 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. Current practice for MCERA also adjusts for expected administrative expenses. 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 and the administrative expenses as a percentage of the beginning of year actuarial value of assets.

Section 3: Economic Assumptions

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

Year Ended June 30	Actuarial Value of Assets ¹³	Investment Expenses ¹⁴	Admin. Expenses	Investment Expenses as %	Admin. Expenses as %	Total Expenses as %
2020	\$532,692	\$434	\$1,226	0.08%	0.23%	0.31%
2021	556,717	359	1,372	0.06%	0.25%	0.31%
2022	605,390	382	1,463	0.06%	0.24%	0.30%
2023	643,850	392	1,550	0.06%	0.24%	0.30%
2024	677,877	423	1,639	0.06%	0.24%	0.30%
2025	714,967	438	1,496	0.06%	0.21%	0.27%

Investment and Administrative Expenses Averages and Assumptions

Averaging Period and Assumption	Total Expense Percentage
Current assumption	0.30%
Three-year average (2023–2025)	0.29%
Six-year average (2020–2025)	0.30%
Recommended assumption	0.30%

We recommend maintaining the investment and administrative expense assumption at 0.30%.

Adjustment to expected geometric real rate of return

The recommended 4.89% 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.¹⁵

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.¹⁶

¹³ As of beginning of plan year.

¹⁴ Equals the sum of investment consulting fees, custodian fees, actuarial expense, and other miscellaneous investment expenses. Excludes investment manager fees.

¹⁵ The mathematical terminology for this is that the mean (or average) surplus or asset shortfall is expected to be zero.

¹⁶ The mathematical terminology for this is that over time the median surplus or asset shortfall is expected to be zero.

Section 3: Economic Assumptions

For any given asset portfolio, the geometric average return will be less than the arithmetic average return.¹⁷ The difference depends on the variability of the portfolio as measured by its standard deviation. Based on the portfolio's standard deviation of 12.40% provided by Callan, the adjustment to a geometric average return reduces the expected return by 0.73%. 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. MCERA'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 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 term.¹⁸ 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 6.50%. That return implied a risk adjustment of 0.10%, corresponding to a 15-year confidence level of 51%, based on an annual portfolio return standard deviation of 12.80% provided by Callan in 2023.

If we use 51% again for a 15-year confidence level to set this year's risk adjustment, based on the current annual portfolio return standard deviation of 12.40% provided by Callan, the corresponding risk adjustment would remain 0.10%. Together with the other investment return components, this would result in an investment return assumption of 6.26%, which is lower than the current assumption of 6.50%.

Based on Segal's general practice of using one-quarter percentage point increments for economic assumptions, we arrived at an investment return of 6.25% which would produce a risk adjustment of 0.11% and a corresponding confidence level of 51%. For comparison, the current net investment return assumption of 6.50% results in a confidence level of 48% under this model and we would not recommend an investment return assumption with a confidence level under 50%.

¹⁷ 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.

¹⁸ This type of risk adjustment is referred to in the Actuarial Standards of Practice as a "margin for adverse deviation."

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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	4.89%	5.17%
Expense adjustment	(0.30%)	(0.30%)
Geometric return adjustment	(0.73%)	(0.77%)
Risk adjustment	(0.11%)	(0.10%)
Total	6.25%	6.50%
Confidence level	51%	51%

We recommend reducing the investment return assumption from 6.50% to 6.25% per annum.

Comparison with historical assumptions

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

Adopted for the Valuation as of	Investment Return ¹⁹	Risk Adjustment	Confidence Level
June 30, 2011	7.75%	0.32%	54%
June 30, 2014	7.25%	0.30%	53%
June 30, 2017	7.00%	0.48%	55%
June 30, 2020	6.75%	0.47%	55%
June 30, 2023	6.50%	0.10%	51%
June 30, 2026 (Recommended)	6.25%	0.11%	51%

As we have discussed in prior experience studies, the risk adjustment model and associated confidence level are most useful as a means for comparing how MCERA has positioned itself relative to risk over periods of time.²⁰ The use of a 51% confidence level should be considered in context with other factors, including:

- The confidence level is more of a relative measure than an absolute measure and can be reevaluated and reset for future comparisons. This is particularly true when comparing

¹⁹ Based on expected geometric average returns starting in 2023.

²⁰ 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."

Section 3: Economic Assumptions

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 Callan. The standard deviation is a statistical measure of the future volatility of the portfolio and is based on assumptions about future portfolio volatility and may be considered somewhat of a “soft” number.
- We have not included any additional returns (“alpha”) that might be earned on active management. If active management generates enough alpha to more than 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.”

Comparison with alternative model

To maintain a robust analytical framework, we have employed an alternative model for comparison by evaluating the recommended 6.25% 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 59% likelihood that future average geometric returns will meet or exceed 6.25%²¹ developed using the capital market assumptions compiled by Horizon Actuarial Services based on their most recent survey published in August 2025. This 59% likelihood of achieving a 6.25% return is higher than the corresponding likelihood of 51% (for achieving a 6.50% return) that we observed in this comparison during the assumption review in 2023. Note that the likelihood of 51% 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 assumptions 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 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.

²¹ 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.

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The following table compares MCERA's recommended investment return assumption against those of the 239²² large public retirement funds in their 2024 fiscal year valuations based on information found in the Public Plans Database²³, which is produced in partnership with NASRA.

Assumption	MCERA	Public Plan Data Low	Public Plan Data Median	Public Plan Data High
Investment return	6.25%	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 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%.

²² 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.

²³ Public Plans Data website — Produced in partnership with the National Association of State Retirement Administrators (NASRA).

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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 percent of payroll.

As employees progress through their careers, 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 MCERA's recent salary experience to the change in CPI over the three-year and six-year period ending June 30, 2025.

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Valuation Date	Actual Average ²⁴ Wage Inflation	Actual Annual Average Change in CPI ²⁵
June 30, 2020	6.71%	2.78%
June 30, 2021	7.75%	1.47%
June 30, 2022	6.15%	7.05%
June 30, 2023	4.48%	6.25%
June 30, 2024	1.48%	3.60%
June 30, 2025	6.53%	2.50%
Three-year average (2023–2025)	4.16%	4.12%
Six-year average (2020–2025)	5.52%	3.94%

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 MCERA, 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;
2. Excluding any members with increases of more than 50% or decreases of more than 25% during any particular year;
3. Categorizing these increases into groups by years of service;
4. Removing the assumed inflation and real “across-the-board” increases each year;
5. Averaging these annual increases over the experience period on a salary-weighted basis, with higher weights assigned to experience from members with larger salaries; 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 assumed inflation and real “across-the-board” increases recommended earlier in this study.

²⁴ 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.

²⁵ Based on the change in the December CPI for the West Region compared to the prior year.

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Merit and promotion increases are measured separately for General and Safety/Probation members. Note that beginning with this experience study, we are also recommending separate merit and promotion increase assumptions for Legacy (General Tiers 1, 2, and 3, as well as Safety and Probation Tiers 1 and 2) and PEPRA (General Tier 4, Safety and Probation Tier 3) 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 Tiers 1, 2, and 3 members' actual average merit and promotion increases by years of service over the three-year period from July 1, 2022 through June 30, 2025. As mentioned above, we have also included the actual average increases based on the past six years (July 1, 2019 through June 30, 2025). 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 Tiers 1, 2, and 3 — Merit and Promotion Increases

Years of Service	Current Expected Increase	Actual 3 Year Average	Actual 6 Year Average	Recommended Expected Increase
Less than 1	5.00%	7.88%	7.31%	5.00%
1–2	4.75%	4.37%	7.83%	4.75%
2–3	4.50%	3.67%	7.47%	4.50%
3–4	4.25%	7.15%	4.88%	4.25%
4–5	3.50%	0.21%	3.39%	3.50%
5–6	2.75%	1.52%	4.83%	2.75%
6–7	2.25%	5.72%	4.83%	2.25%
7–8	1.75%	4.74%	4.95%	1.75%
8–9	1.50%	6.51%	6.87%	1.50%
9–10	1.00%	5.35%	4.92%	1.50%
10–11	1.00%	2.09%	3.26%	1.50%
11–12	1.00%	1.86%	3.06%	1.50%
12–13	1.00%	0.28%	3.65%	1.50%
13–14	1.00%	4.97%	4.85%	1.50%
14–15	1.00%	5.14%	5.41%	1.50%
15 and over	1.00%	2.44%	3.23%	1.50%
Actual / Expected (6 Years)	102.6%			102.1%

For General Tiers 1, 2, and 3 members with less than nine 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 Tiers 1, 2, and 3 members with nine 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 Tiers 1, 2, and 3 members with the current and recommended assumptions.

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The following table shows similar information for General Tier 4 members.

General Tier 4— Merit and Promotion Salary Increases

Years of Service	Current Expected Increase	Actual 3 Year Average	Actual 6 Year Average	Recommended Expected Increase
Less than 1	5.00%	6.61%	6.76%	5.50%
1–2	4.75%	8.32%	9.06%	5.25%
2–3	4.50%	6.77%	7.30%	5.00%
3–4	4.25%	4.71%	6.73%	4.75%
4–5	3.50%	4.31%	6.11%	4.00%
5–6	2.75%	4.24%	5.52%	3.25%
6–7	2.25%	2.34%	4.04%	2.50%
7–8	1.75%	2.39%	3.41%	2.25%
8–9	1.50%	2.89%	3.24%	2.00%
9–10	1.00%	2.32%	2.32%	1.50%
10–11	1.00%	2.65%	2.65%	1.50%
11–12	1.00%	0.26%	0.26%	1.50%
12–13	1.00%	N/A	N/A	1.50%
13–14	1.00%	N/A	N/A	1.50%
14–15	1.00%	N/A	N/A	1.50%
15 and over	1.00%	N/A	N/A	1.50%
Actual / Expected (6 Years)	102.4%			101.9%

For General Tier 4 members with less than nine years of service, we recommend increasing the current merit and promotion salary increases. For General Tier 4 members with nine or more years of service, we recommend the same merit and promotion salary increases that are recommended for General Tiers 1, 2, and 3 members with nine or more years of service due to the overall low level of experience for General Tier 4 members in those service categories.

Chart 2 on page 29 compares the actual merit and promotion increase experience for General Tier 4 members with the current and recommended assumptions.

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The following table shows the Safety and Probation Tiers 1 and 2 members' actual average merit and promotion increases by years of service over the three-year period from July 1, 2022 through June 30, 2025. As mentioned above, we have also included the actual average increases based on the past six years (July 1, 2019 through June 30, 2025) for Safety and Probation Tiers 1 and 2 members. These actual increases were reduced by the assumed average inflation plus "across-the-board" increase. The current and recommended assumptions are also shown.

Safety and Probation Tiers 1 and 2 — Merit and Promotion Increases

Years of Service	Current Expected Increase	Actual 3 Year Average	Actual 6 Year Average	Recommended Expected Increase
Less than 1	5.25%	N/A	11.34%	5.25%
1–2	5.00%	6.33%	6.40%	5.00%
2–3	4.50%	5.82%	5.11%	4.50%
3–4	3.25%	13.26%	12.45%	3.25%
4–5	3.00%	8.71%	8.22%	3.00%
5–6	2.25%	4.19%	4.02%	2.25%
6–7	2.00%	8.94%	7.81%	2.00%
7–8	1.50%	N/A	8.26%	1.75%
8–9	1.25%	N/A	6.06%	1.75%
9–10	1.25%	8.56%	8.89%	1.75%
10–11	1.25%	1.75%	2.33%	1.75%
11–12	1.25%	2.75%	4.14%	1.75%
12–13	1.00%	11.00%	6.83%	1.50%
13–14	1.00%	N/A	4.87%	1.50%
14–15	1.00%	7.22%	7.03%	1.50%
15 and over	1.00%	5.01%	5.37%	1.50%
Actual / Expected (6 Years)	104.4%			104.0%

For Safety and Probation Tiers 1 and 2 members with less than seven 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 and Probation Tiers 1 and 2 members with seven 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 and Probation Tiers 1 and 2 members with the current and recommended assumptions.

Section 3: Economic Assumptions

The following table shows similar information for Safety and Probation Tier 3 members.

Safety and Probation Tier 3 — Merit and Promotion Salary Increases

Years of Service	Current Expected Increase	Actual 3 Year Average	Actual 6 Year Average	Recommended Expected Increase
Less than 1	5.25%	5.82%	7.93%	5.50%
1–2	5.00%	10.57%	11.18%	5.25%
2–3	4.50%	7.50%	8.54%	5.00%
3–4	3.25%	7.09%	7.87%	4.25%
4–5	3.00%	13.73%	11.81%	4.00%
5–6	2.25%	8.21%	7.68%	3.25%
6–7	2.00%	4.27%	6.28%	3.00%
7–8	1.50%	3.99%	5.27%	2.50%
8–9	1.25%	5.13%	4.51%	2.25%
9–10	1.25%	6.59%	6.59%	1.75%
10–11	1.25%	11.35%	11.35%	1.75%
11–12	1.25%	8.32%	8.32%	1.75%
12–13	1.00%	N/A	N/A	1.50%
13–14	1.00%	N/A	N/A	1.50%
14–15	1.00%	N/A	N/A	1.50%
15 and over	1.00%	N/A	N/A	1.50%
Actual / Expected (6 Years)	104.8%			104.1%

For Safety and Probation Tier 3 members with less than nine years of service, we recommend increasing the current merit and promotion salary increases. For Safety and Probation Tier 3 members with nine or more years of service, we recommend the same merit and promotion salary increases that are recommended for Safety and Probation Tiers 1 and 2 members with nine or more years of service due to the overall low level of experience for Safety and Probation Tier 3 members in those service categories.

Chart 4 on page 30 compares the actual merit and promotion increase experience for Safety and Probation Tier 3 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 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.

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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 Payroll²⁶

Year Ended June 30	Number of Active Members	Projected Payroll (\$ in '000s)
2020	1,140	\$75,317
2021	1,142	80,909
2022	1,123	84,829
2023	1,150	90,739
2024	1,107	88,663
2025	1,094	93,246
Average Annual Rate of Increase / (Decrease)	(0.80)%	4.42%

As observable from the above table, the average annual rate of increase in the projected payroll during the above period was 4.42% before accounting for the 0.80% average decrease in the total active workforce (and 5.22% after netting out the impact due to the decrease in the active workforce).

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).

²⁶ 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 Tiers 1, 2, and 3 Members

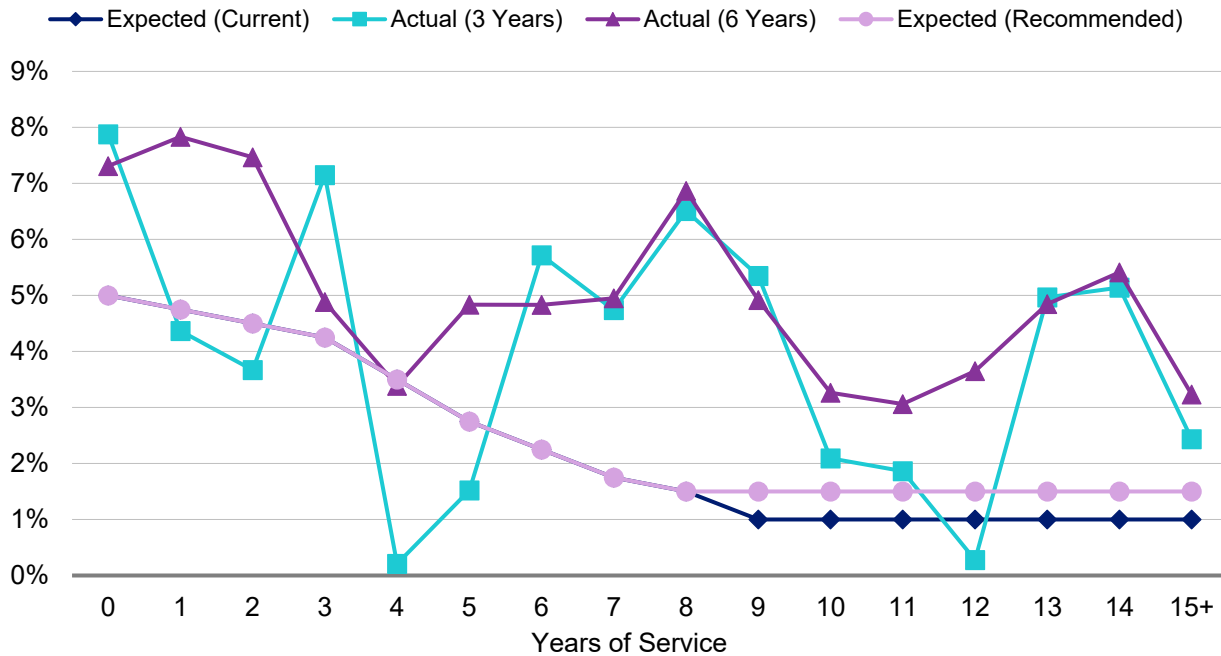
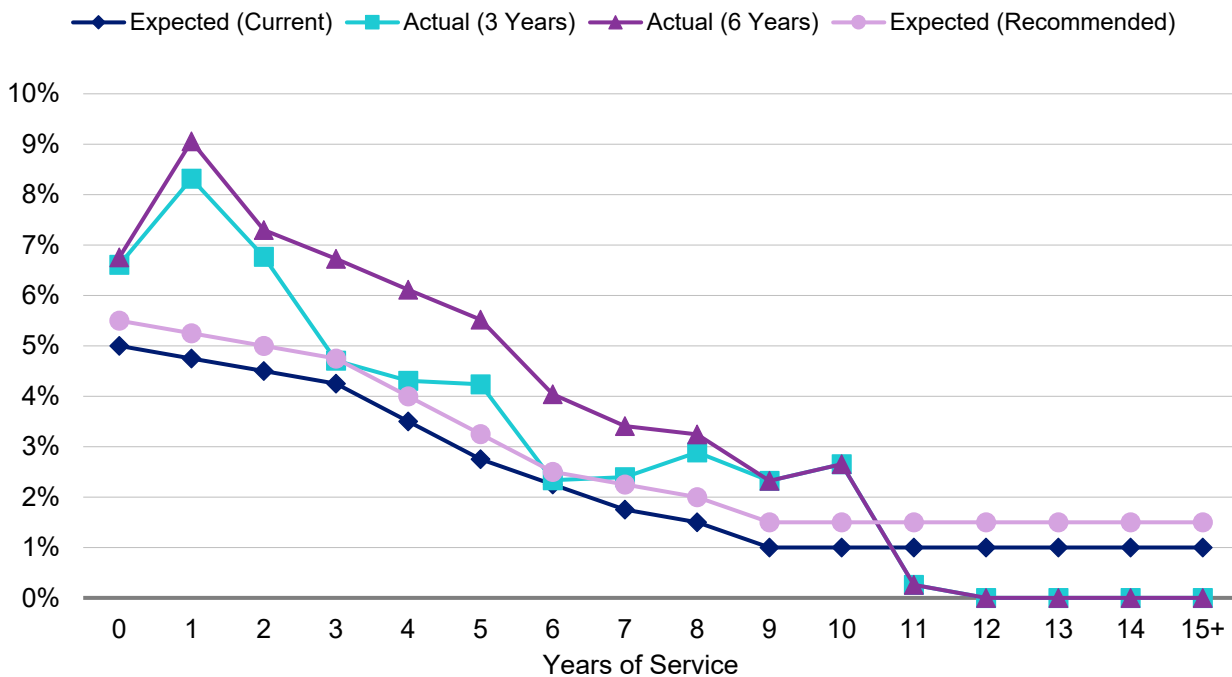


Chart 2: Merit and Promotion Salary Increase Rates
General Tier 4 Members



Section 3: Economic Assumptions

Chart 3: Merit and Promotion Salary Increase Rates
Safety and Probation Tiers 1 and 2 Members

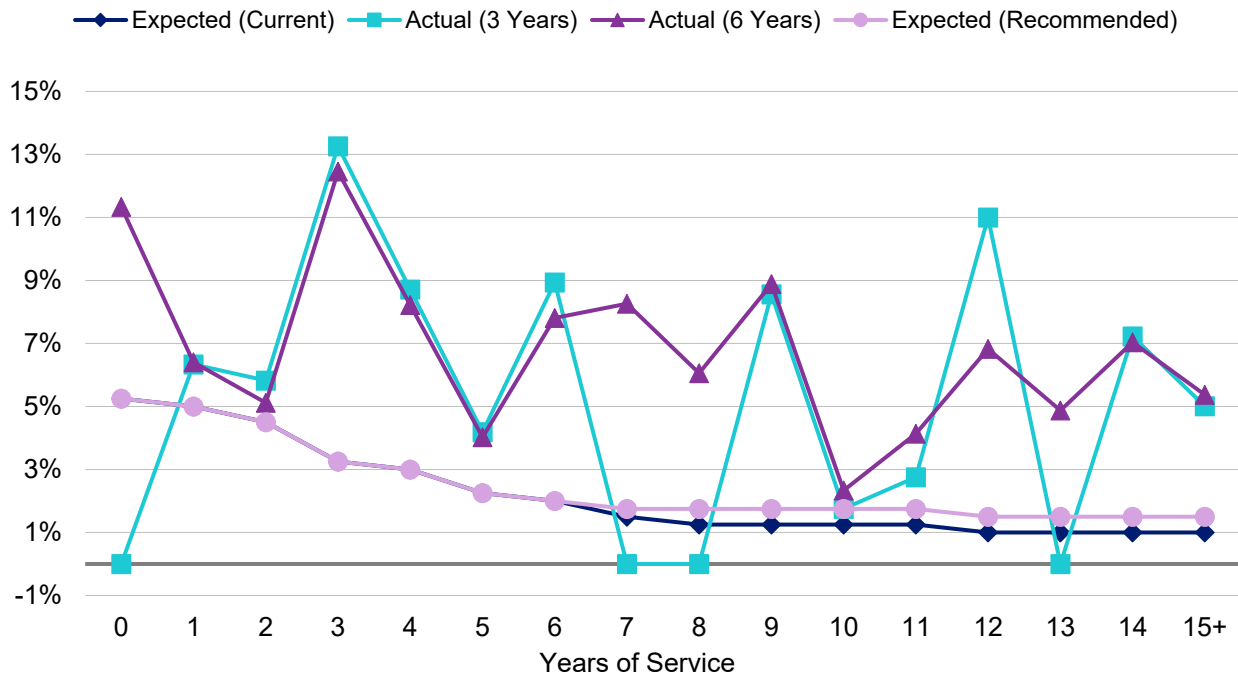
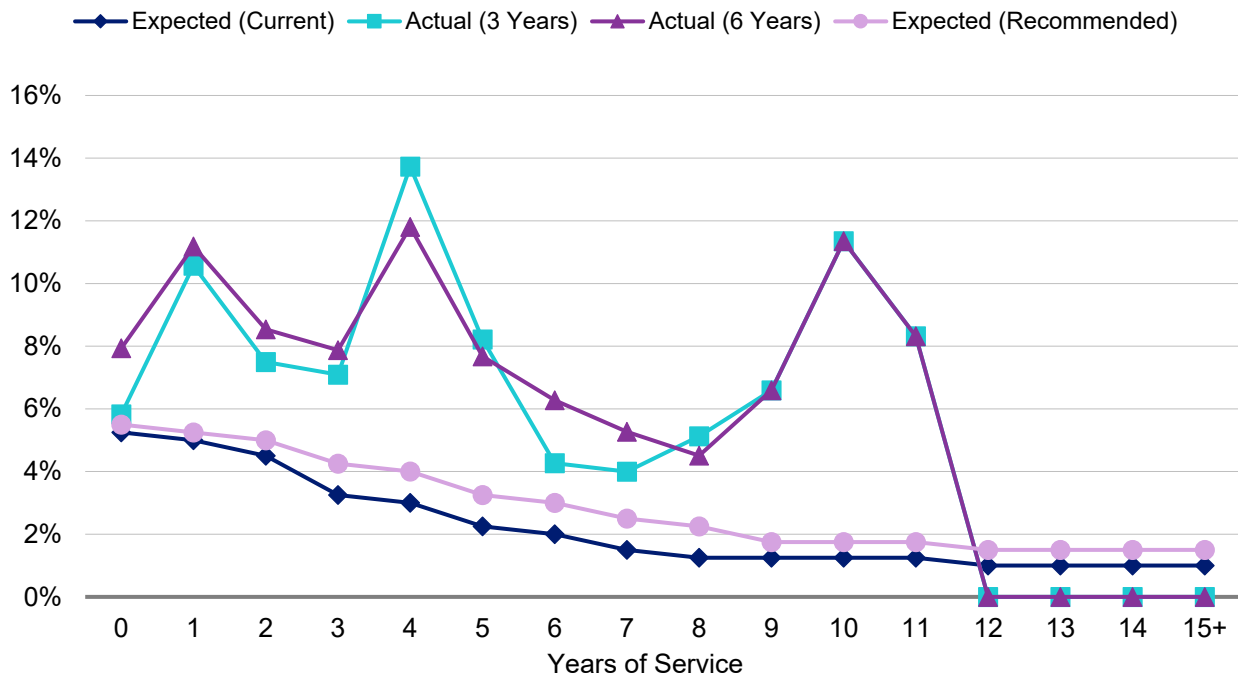


Chart 4: Merit and Promotion Salary Increase Rates
Safety and Probation Tier 3 Members



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 Society of Actuaries (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 an updated family of mortality tables, referred to as the Pub-2016 Public Retirement Plans Mortality Tables (Pub-2016).²⁷

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 MCERA experience as discussed herein).

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 MCERA experience in our analysis of the mortality assumption, we have used experience over a 14-year period by using data from the current experience study period (from July 1, 2022 through June 30, 2025) and the last four experience study periods (from

²⁷ The Pub-2016 family of mortality tables have been developed without experience from the COVID-19 pandemic.

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July 1, 2019 through June 30, 2022; from July 1, 2016 through June 30, 2019; from July 1, 2013 through June 30, 2016; and from July 1, 2011 through June 30, 2014).

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 1,000,²⁸ where full credibility means a 90% confidence that the actual experience will be within 5% of the expected value. For MCERA, the number of actual deaths differs for each cohort and varies from no deaths for Safety/Probation active females²⁹ to 179 deaths for General healthy retiree females over the 14-year period studied. In our recommended assumptions, we have adjusted the Pub-2016 mortality tables to fit MCERA'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 Mortality Tables (separate tables for males and females) with rates decreased by 5% for males and increased by 5% for females, projected generationally with Scale MP-2021.
- **Safety and Probation members**
 - Pub-2010 Safety Healthy Retiree Amount-Weighted Mortality Tables (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 healthy retired members based on the actual experience during the 14-year period. Also shown are the expected benefit-weighted deaths under the current and recommended assumptions.

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

Gender	General Current Expected	General Actual	General Recomm. Expected	Safety and Probation Current Expected	Safety and Probation Actual	Safety and Probation Recomm. Expected
Male	\$3.64	\$3.58	\$3.88	\$0.76	\$0.62	\$0.70
Female	2.86	3.03	2.89	0.10	0.10	0.09
Total	\$6.49	\$6.61	\$6.77	\$0.86	\$0.72	\$0.79
Actual / Expected	101.8%		97.6%³⁰	83.5%		90.2%

²⁸ 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.

²⁹ Pre-retirement death experience was reviewed in this study based on the recent three-year experience only.

³⁰ If we used the benchmark Pub-2016 General Healthy Retiree table without any adjustment, the recommended actual to expected ratio would be 100% in total (92% for males and 110% for females).

Section 4: Demographic Assumptions

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 98% and 90% for General and Safety/Probation, 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 and Probation membership groups (for example, a credibility of 5% for Safety/Probation females). Therefore, the recommended mortality tables reflect only a partial adjustment for actual MCERA experience.

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

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

Chart 5 on page 38 compares the actual to expected deaths on an amount-weighted basis for General service retirement members over the 14-year period for the current and recommended assumptions.

Chart 6 on page 38 compares the actual to expected deaths on an amount-weighted basis for Safety and Probation service retirement members over the 14-year period for the current and recommended assumptions.

Chart 7 and Chart 8 on page 39 show the life expectancies (i.e., expected future lifetime) under the current and recommended tables for General service retirement members and Safety/Probation 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.

Section 4: Demographic Assumptions

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 Mortality Tables (separate tables for males and females) with rates decreased by 5% for males and increased by 5% for females, projected generationally with Scale MP-2021.
- **Beneficiaries in pay status as of valuation**
 - Pub-2010 Contingent Survivor Amount-Weighted Mortality Tables (separate tables for males and females) with rates increased by 5% for males and 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 MCERA beneficiaries and we have confirmed that the Pub-2016 Contingent Survivor mortality rates are comparable to MCERA'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/Probation 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 MCERA 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 actual experience during the 14 years studied. Also shown are the expected benefit-weighted deaths under the current and recommended assumptions.

Beneficiary Mortality — Benefit-Weighted Deaths (\$ in millions)

Gender	Current Expected	Actual	Recomm. Expected
Male	\$0.38	\$0.44	\$0.41
Female	1.11	1.27	1.15
Total	\$1.49	\$1.71	\$1.56
Actual / Expected	114.8%		109.5%³¹

³¹ If we used the benchmark Pub-2016 Contingent Survivor table without any adjustment, the recommended actual to expected ratio would be 114%.

Section 4: Demographic Assumptions

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 110% after adjustments for partial credibility. In future years the ratios should remain around this level 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 MCERA, there is less data available for beneficiaries than there is for retirees, so it is given relatively less credibility and the recommended tables are only slightly adjusted.

We recommend updating the beneficiary mortality assumptions to the following:

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

- **General members**
 - Pub-2010 General Employee Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and females, projected generationally with Scale MP-2021.
- **Safety and Probation members**
 - Pub-2010 Safety Employee Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and females, projected generationally with Scale MP-2021.

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The table below shows the observed salary-weighted deaths for active members based on the actual experience during the 3 years studied.³² 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 and Probation Current Expected	Safety and Probation Actual	Safety and Probation Recomm. Expected
Male	\$0.13	\$0.07	\$0.14	\$0.04	-	\$0.04
Female	0.14	0.42	0.15	0.01	-	0.01
Total	\$0.27	\$0.50	\$0.29	\$0.05	-	\$0.05
Actual / Expected	181.3%		170.3%	N/A		N/A

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 170% for General after adjustments for partial credibility. For Safety and Probation, there were no deaths recorded during the three-year study period. In future years the General ratio should remain around this level 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.

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

- **General members**
 - Pub-2016 General Employee Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and females, projected generationally with Scale MP-2021.
- **Safety and Probation members**
 - Pub-2016 Safety Employee Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and females, projected generationally with Scale MP-2021.

³² Using data from the current experience study period (from July 1, 2022 through June 30, 2025).

Section 4: Demographic Assumptions

Currently, our assumption is that 100% of General member pre-retirement deaths are nonservice-connected. For Safety and Probation members, 100% are assumed to be service-connected deaths.

Observed experience over the past 14 years for active member deaths is limited. In particular, there were 27 General member pre-retirement deaths, and each of the active General deaths reported by MCERA over this period have been classified as nonservice-connected. There was one service-connected death and one nonservice-connected death for Safety/Probation members.

Service-Connected vs. Nonservice-Connected Death

Service-Connected Death %	General	Safety and Probation
Current Assumption	0%	100%
Actual Experience	0%	50% ³³
Recommended Assumption	0%	100%

Due in part to the limited actual experience, we recommend maintaining the current assumption that 100% of General member pre-retirement deaths are nonservice-connected and that 100% of Safety and Probation member pre-retirement deaths are service-connected.

Mortality table for member contributions

There are administrative reasons why a generational mortality table is more difficult to implement for determining member contributions for the legacy tiers. 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 member contributions to the following:

- **General members**
 - Pub-2016 General Healthy Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and increased by 5% for females, projected 30 years (from 2016) with Scale MP-2021, weighted 30% male and 70% female.
- **Safety and Probation members**
 - Pub-2016 Safety Healthy Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and females, projected 30 years (from 2016) with Scale MP-2021, weighted 80% male and 20% female.

³³ There were no new active Safety/Probation deaths during the current three-year period.

Section 4: Demographic Assumptions

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

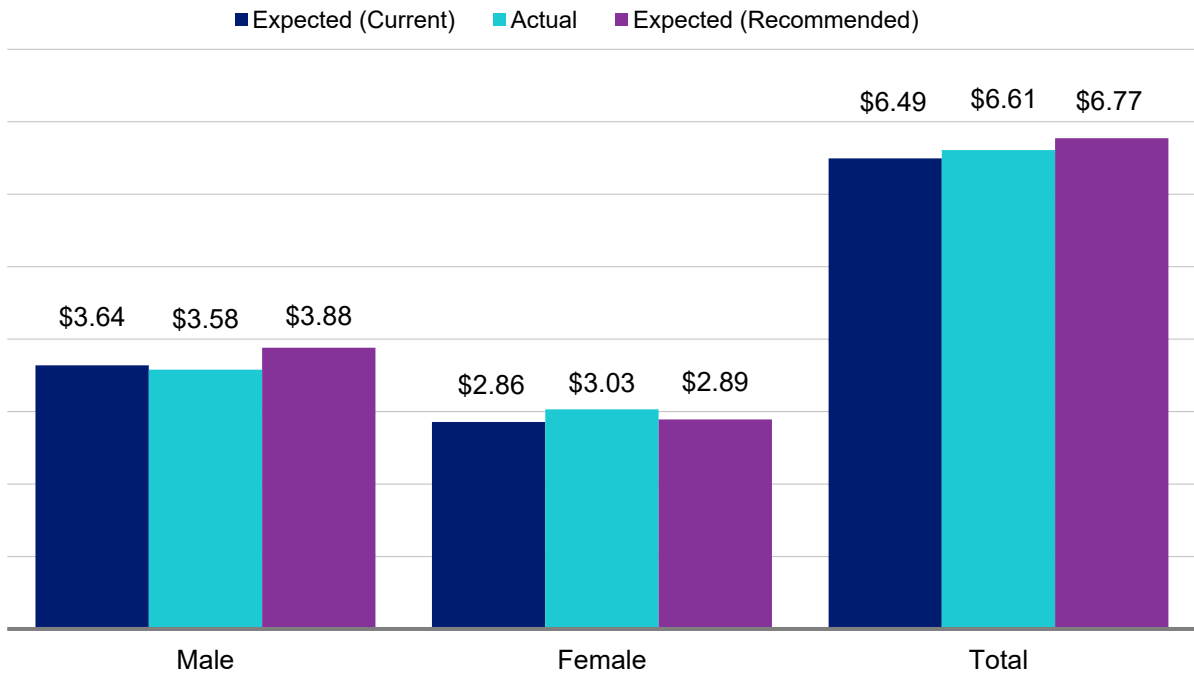
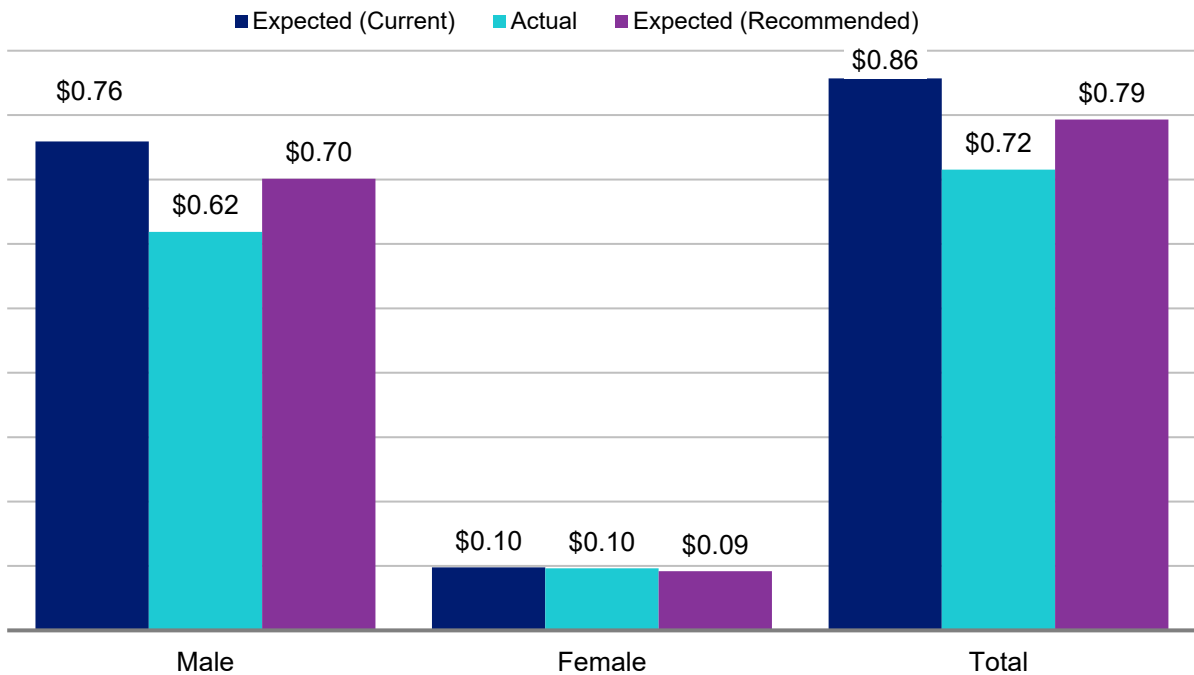


Chart 6: Service Retired Benefit-Weighted Deaths (\$ in millions)
Safety and Probation Members



Section 4: Demographic Assumptions

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

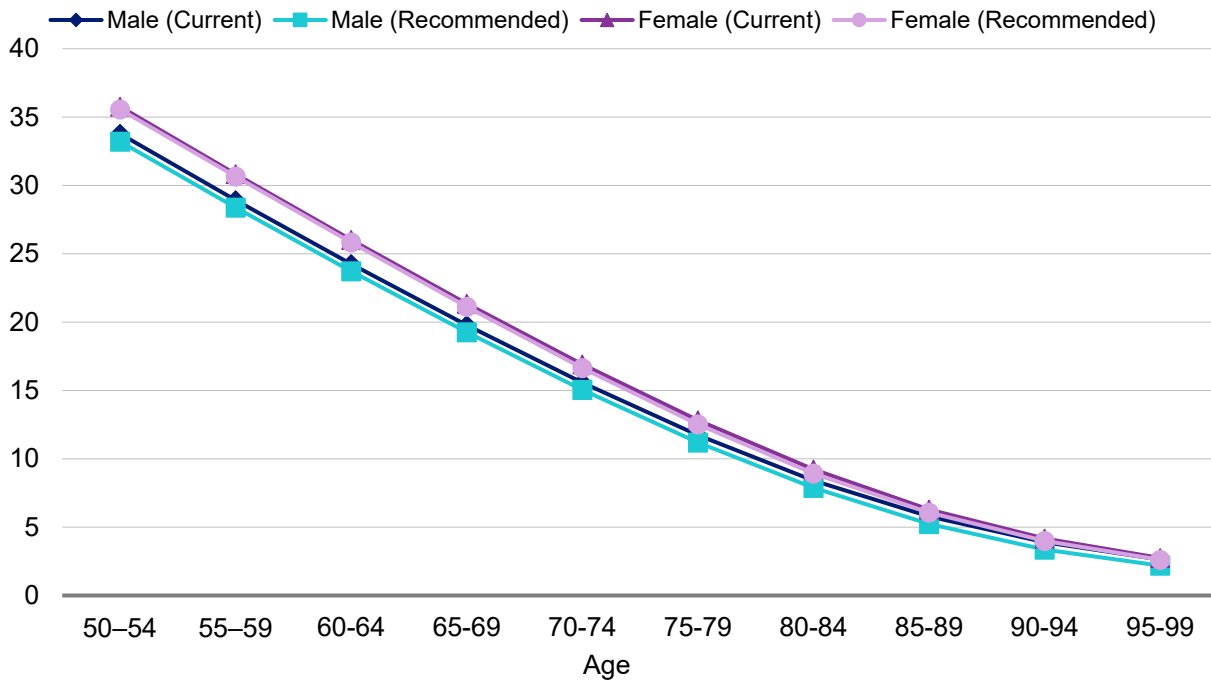
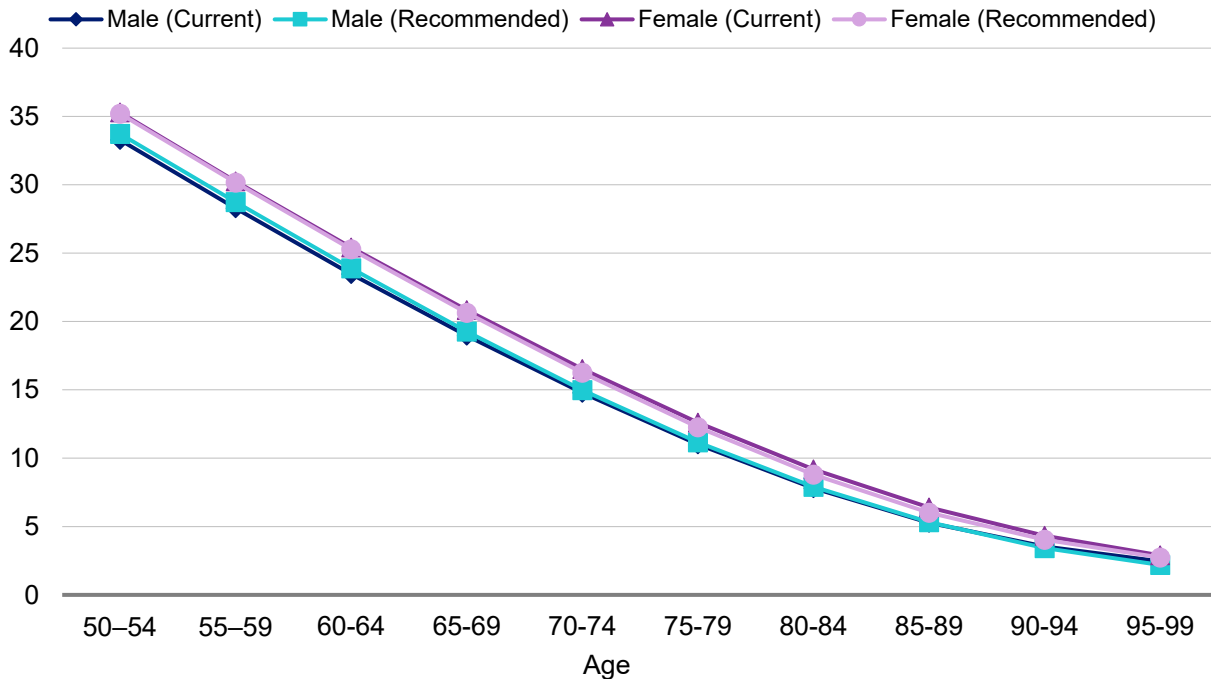


Chart 8: Service Retired Benefit-Weighted Life Expectancies in 2026
Safety and Probation Members



Section 4: Demographic Assumptions

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 Tables (separate tables for males and females) with rates decreased by 5% for males and females, projected generationally with Scale MP-2021.
- **Safety and Probation members**
 - Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Tables (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 14 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 107% and 106% for General and Safety/Probation, 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 and Probation Current Expected	Safety and Probation Actual	Safety and Probation Recomm. Expected
Male	\$0.63	\$0.52	\$0.57	\$0.77	\$0.85	\$0.78
Female	0.42	0.51	0.39	0.02	0.01	0.02
Total	\$1.05	\$1.03	\$0.96	\$0.79	\$0.85	\$0.80
Actual / Expected	98.0%		107.1%³⁴	107.6%		106.3%

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.

³⁴ If we used the benchmark Pub-2016 General Disabled Retiree table without any adjustment, the recommended actual to expected ratio would be 109%.

Section 4: Demographic Assumptions

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

Chart 9 on page 42 compares the actual to expected deaths on an amount-weighted basis for General disabled retirement members over the 14-year period for the current and recommended assumptions.

Chart 10 on page 42 compares the actual to expected deaths on an amount-weighted basis for Safety and Probation disabled retirement members over the 14-year period for the current and recommended assumptions.

Chart 11 and Chart 12 on page 43 show the life expectancies (i.e., expected future lifetime) under the current and recommended tables for General disabled retirement members and Safety/Probation 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.

Section 4: Demographic Assumptions

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

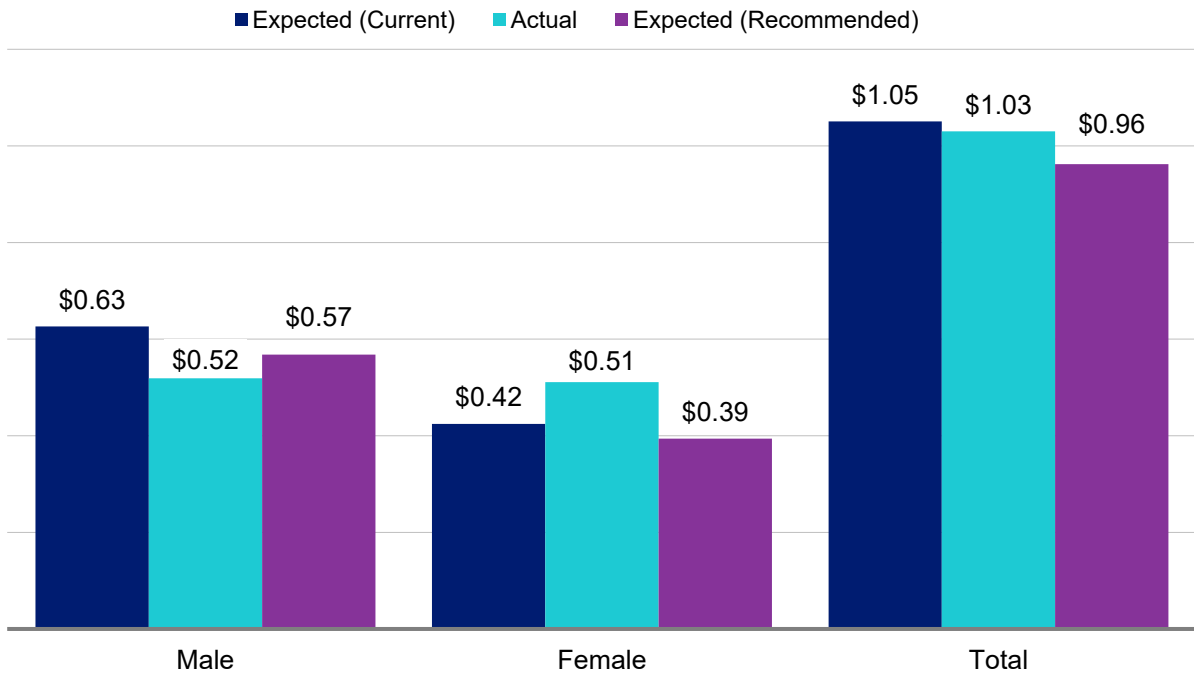


Chart 10: Disability Retired Benefit-Weighted Deaths (\$ in millions)
Safety and Probation Members



Section 4: Demographic Assumptions

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

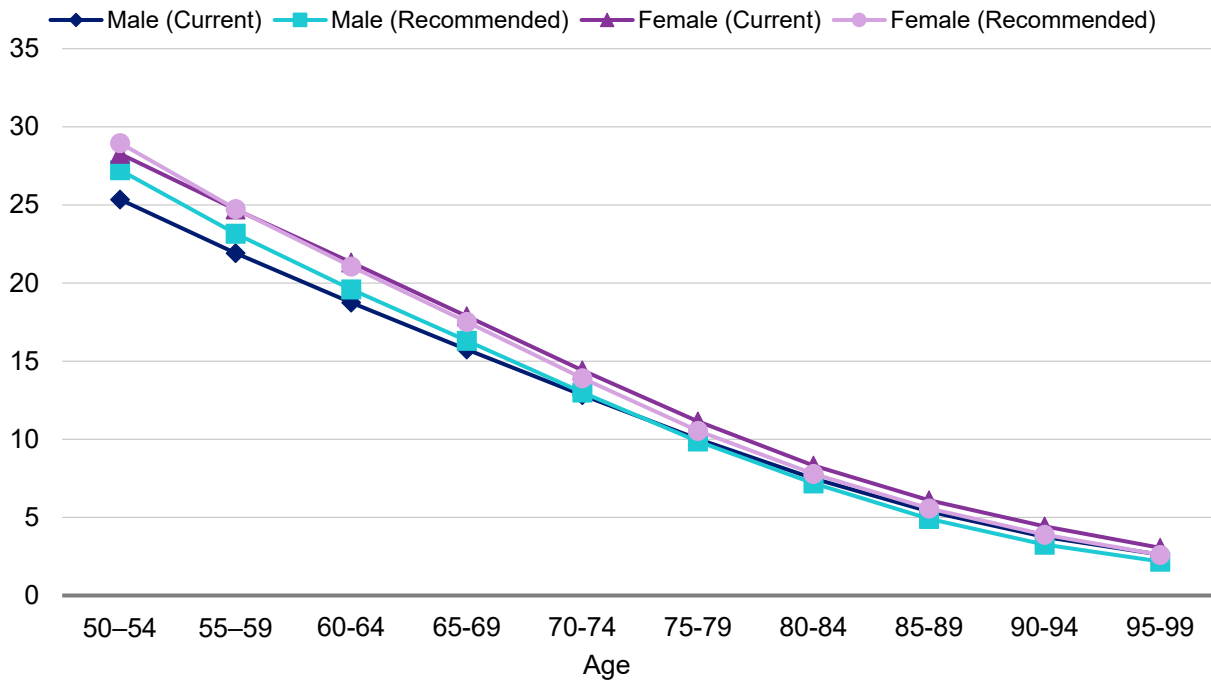
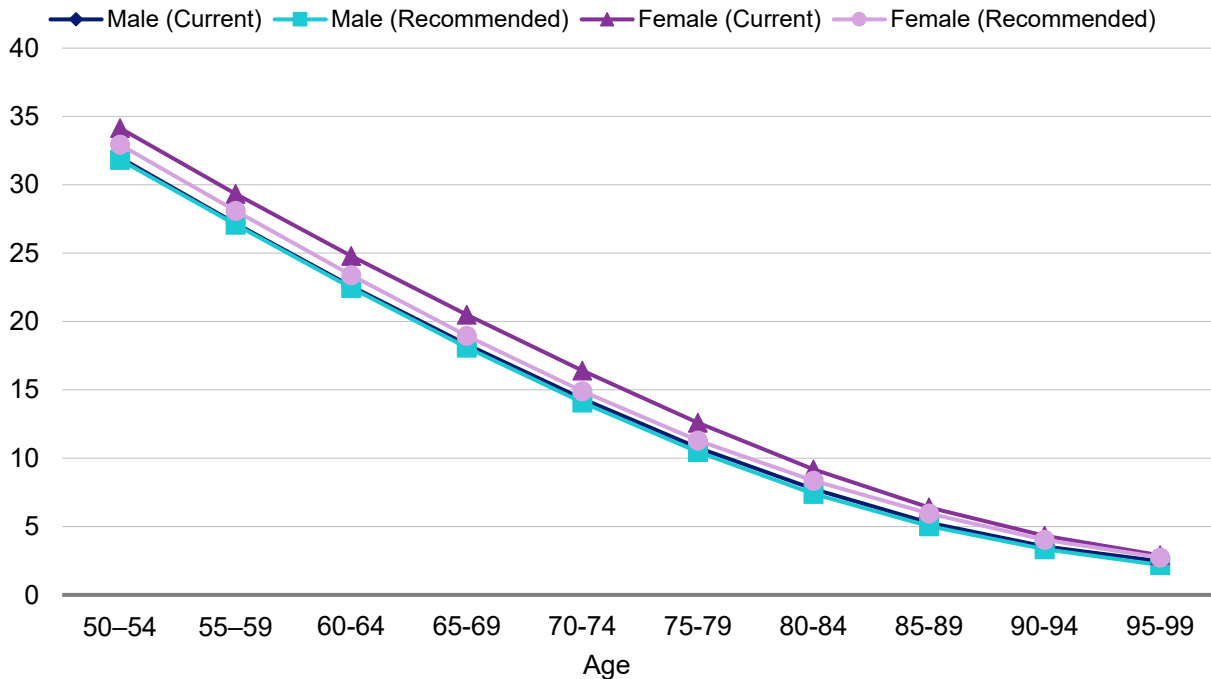


Chart 12: Disability Retired Benefit-Weighted Life Expectancies in 2026
Safety and Probation Members



Section 4: Demographic Assumptions

C. Disability incidence rates

When a member becomes disabled, they 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 (nonservice-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 nonservice-connected disability. Furthermore, the disability incidence rates are based as 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 and Probation 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 July 1, 2022 through June 30, 2025 as well as the six-year period from July 1, 2019 through June 30, 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	0.01%	0.00%	0.00%	0.01%
25–29	0.01%	0.00%	0.00%	0.01%
30–34	0.01%	0.00%	0.00%	0.01%
35–39	0.02%	0.00%	0.00%	0.01%
40–44	0.20%	0.00%	0.00%	0.15%
45–49	0.30%	1.01%	0.60%	0.35%
50–54	0.50%	0.70%	0.59%	0.50%
55–59	0.50%	0.27%	0.38%	0.50%
60–64	0.60%	0.00%	0.32%	0.50%
65–69	0.60%	0.00%	0.00%	0.50%
70–74	0.60%	0.00%	0.00%	0.50%
Actual / Expected (6 Years)	79.3%			84.3%

We recommend adjusting the disability incidence assumption at some ages for General members. Overall, the recommended rates anticipate slightly fewer General disabilities.

Chart 13 on page 47 compares the number of actual disabilities for General members over the past three years and six years to the current and recommended assumptions.

Section 4: Demographic Assumptions

Chart 15 on page 48 compares the actual disability incidence experience for General members with the current and recommended assumptions.

Safety and Probation — Disability Incidence Rates

Age	Current Expected Rate	Actual Rate (3 Years)	Actual Rate (6 Years)	Recommended Expected Rate
20–24	0.10%	0.00%	0.00%	0.05%
25–29	0.15%	0.00%	0.00%	0.10%
30–34	0.20%	1.18%	0.56%	0.25%
35–39	1.50%	0.00%	1.26%	1.40%
40–44	1.80%	2.22%	1.18%	1.60%
45–49	1.80%	0.00%	0.00%	1.60%
50–54	2.75%	3.13%	2.19%	2.50%
55–59	2.75%	0.00%	1.32%	2.50%
60–64	3.50%	7.69%	7.41%	4.00%
65–69	0.00%	0.00%	7.14%	0.00%
Actual / Expected (6 Years)	81.9%			88.3%

We recommend adjusting the disability incidence assumption at some ages for Safety and Probation members. Overall, the recommended rates anticipate slightly fewer Safety and Probation disabilities.

Chart 14 on page 47 compares the number of actual disabilities for Safety and Probation members over the past three years and six years to the current and recommended assumptions.

Chart 16 on page 48 compares the actual disability incidence experience for Safety and Probation members with the current and recommended assumptions.

Service-connected vs. nonservice-connected disability

The following table shows the observed percent 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.

Section 4: Demographic Assumptions

Disabled Members Receiving a Service-Connected Disability

Line Description	General	Safety and Probation
Current assumption	60%	95%
Actual percent (3 years)	71%	100%
Actual percent (6 years)	71%	100%
Recommended assumption	65%	95%

We recommend increasing the assumption for future disabled members receiving a service-connected disability for General members from 60% to 65% and maintaining the assumption for Safety and Probation members at 95%. The remaining percentages are assumed to be nonservice-connected disabilities (35% for General members and 5% for Safety and Probation members).

Section 4: Demographic Assumptions

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

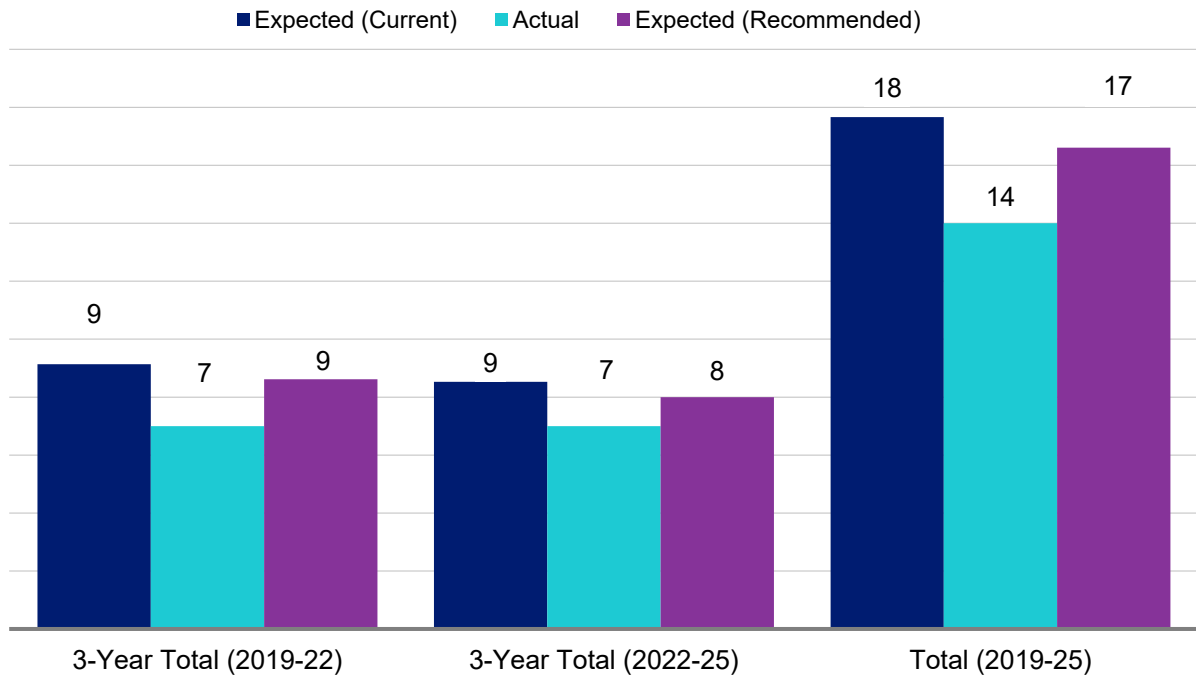
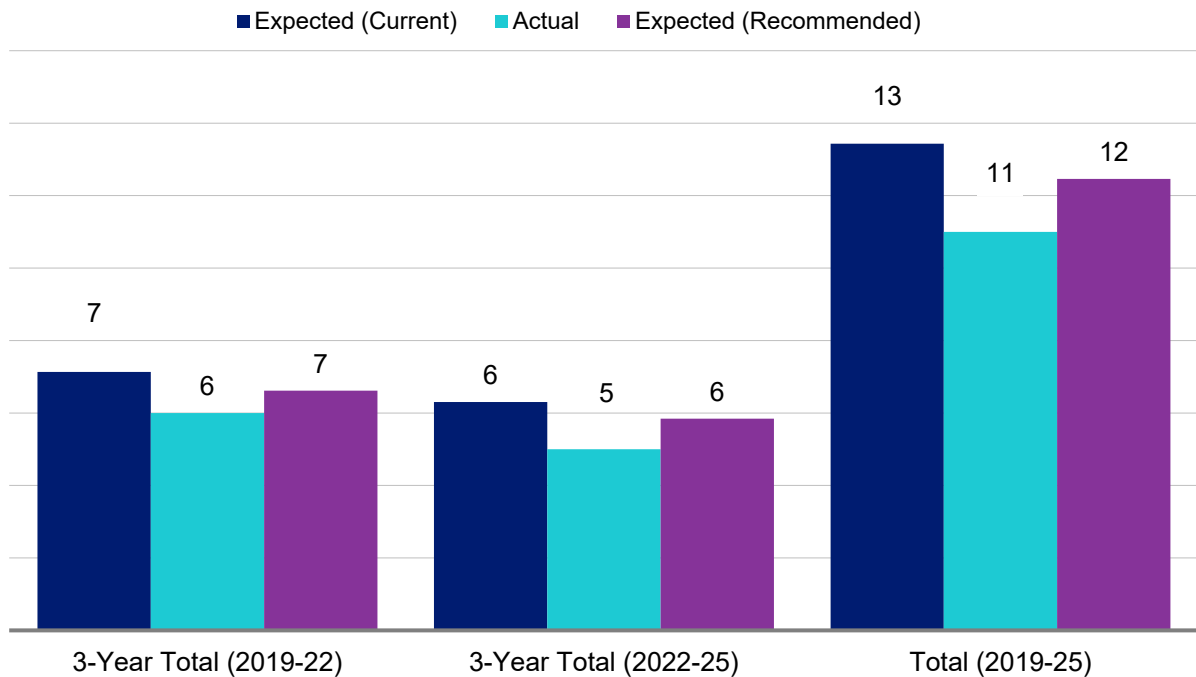


Chart 14: Actual Number of Disabilities Compared to Expected
Safety and Probation Members



Section 4: Demographic Assumptions

Chart 15: Disability Rates
General Members

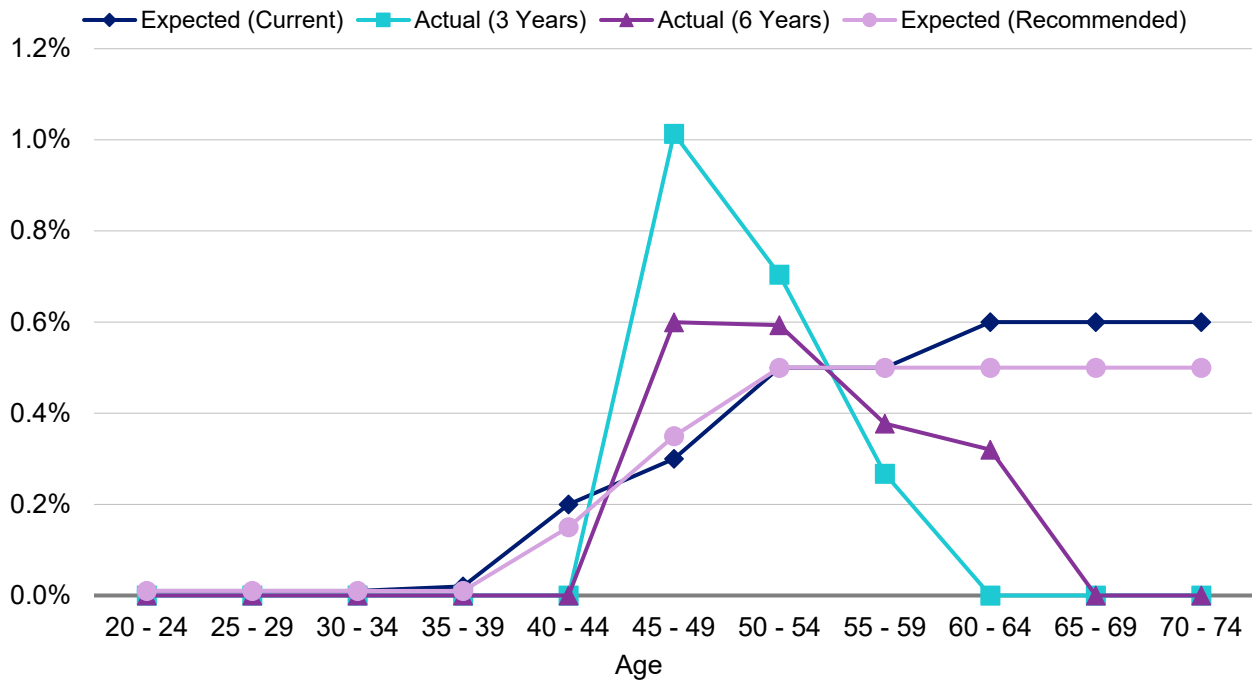
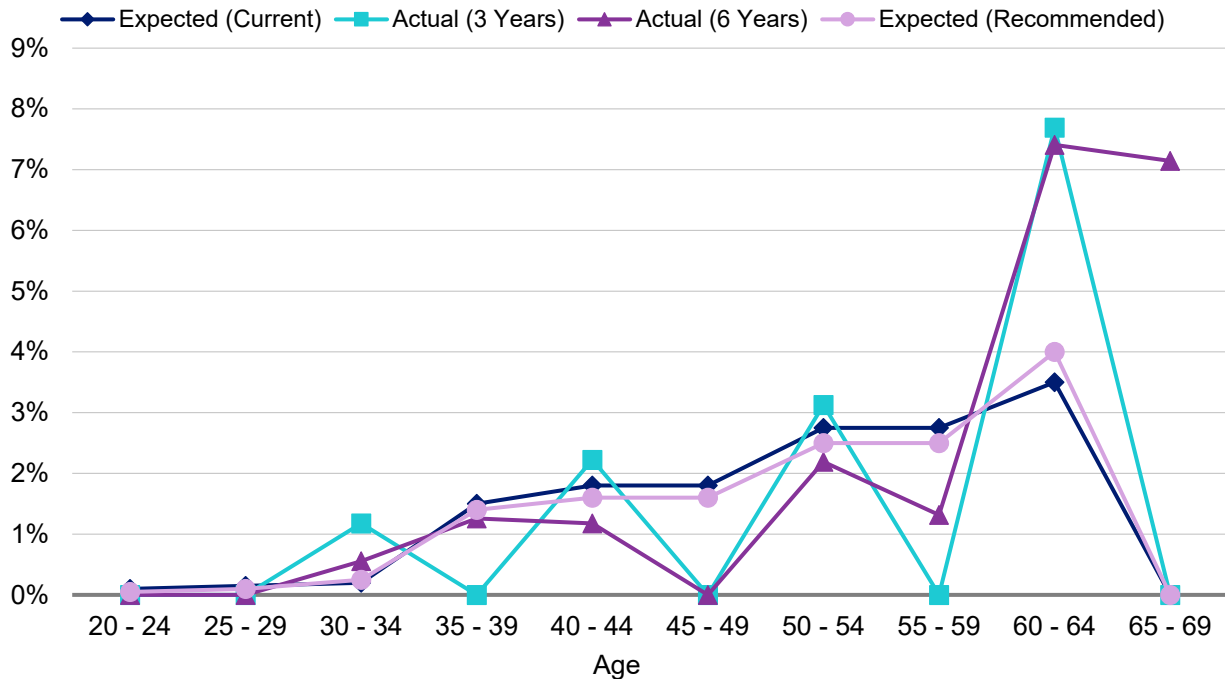


Chart 16: Disability Rates
Safety and Probation Members



Section 4: Demographic Assumptions

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. Furthermore, the termination rates are based as 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 year 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 July 1, 2022 through June 30, 2025 as well as the six-year period from July 1, 2019 through June 30, 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	23.00%	24.69%	23.88%	23.50%
1–2	19.00%	14.24%	17.74%	18.00%
2–3	14.00%	12.99%	13.62%	14.00%
3–4	12.00%	7.58%	9.93%	11.00%
4–5	9.00%	12.69%	10.17%	9.50%
5–6	8.00%	12.61%	8.98%	8.50%
6–7	7.00%	8.74%	7.80%	7.50%
7–8	7.00%	4.00%	6.56%	7.00%
8–9	7.00%	8.42%	6.99%	7.00%
9–10	6.50%	11.84%	9.71%	7.00%
10–11	6.50%	13.04%	10.91%	7.00%
11–12	6.50%	5.00%	2.33%	5.00%
12–13	6.50%	0.00%	7.14%	5.00%
13–14	6.50%	0.00%	0.00%	5.00%
14–15	6.50%	0.00%	4.17%	5.00%
15–16	6.50%	3.85%	4.55%	5.00%
16–17	6.50%	0.00%	0.00%	5.00%
17–18	6.50%	4.55%	2.50%	5.00%
18–19	6.50%	0.00%	6.67%	5.00%
19–20	6.50%	0.00%	0.00%	5.00%
20 and over	6.50%	2.00%	3.96%	5.00%
Actual / Expected (6 Years)	97.6%			99.1%

We recommend adjusting the termination rates at certain service categories for General members. Overall, the recommended rates anticipate slightly fewer General terminations.

Chart 17 on page 53 compares the number of actual to expected terminations for General members over the past three years and six years for the current and recommended assumptions.

Chart 19 on page 54 compares the actual terminations experience for General members with the current and recommended assumptions.

Section 4: Demographic Assumptions

Safety and Probation — Termination Rates

Years of Service	Current Expected Rate	Actual Rate (3 Years)	Actual Rate (6 Years)	Recommended Expected Rate
Less than 1	16.00%	15.38%	14.91%	17.00%
1–2	15.00%	17.78%	21.21%	17.00%
2–3	14.00%	37.50%	22.08%	17.00%
3–4	13.00%	27.59%	20.00%	17.00%
4–5	12.00%	12.00%	17.86%	14.00%
5–6	7.00%	16.00%	10.87%	9.00%
6–7	6.00%	12.50%	10.26%	7.00%
7–8	5.00%	0.00%	0.00%	4.00%
8–9	5.00%	12.50%	7.41%	4.00%
9–10	4.00%	0.00%	0.00%	4.00%
10–11	2.50%	7.14%	6.25%	4.00%
11–12	2.50%	11.11%	8.33%	4.00%
12–13	2.50%	0.00%	5.56%	4.00%
13–14	2.50%	N/A	7.14%	3.00%
14–15	2.00%	0.00%	0.00%	3.00%
15–16	2.00%	18.18%	14.29%	3.00%
16–17	1.50%	0.00%	0.00%	1.00%
17–18	1.50%	0.00%	0.00%	1.00%
18–19	1.50%	0.00%	0.00%	1.00%
19–20	1.50%	0.00%	0.00%	1.00%
20 and over	1.50%	N/A	N/A	1.00%
Actual / Expected (6 Years)	133.3%			116.0%

For Safety and Probation members it is especially important to note that due to the overall low level of termination, many of the years of service categories do not have enough decrements to be statistically credible. Therefore, while we are recommending adjustments based on the actual rates we have seen over the past six years, we have not increased or decreased the rates (after considering credibility) by as much as the actual rates may seem to imply.

We recommend increasing the termination rates at most of the lower service categories and decreasing the termination rates at the higher service categories, for Safety and Probation members. Overall, the recommended rates anticipate more Safety and Probation terminations.

Chart 18 on page 53 compares the number of actual to expected terminations for Safety and Probation members over the past three years and six years for the current and recommended assumptions.

Section 4: Demographic Assumptions

Chart 20 on page 54 compares the actual withdrawal experience for Safety and Probation members under the current and recommended 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.

The following table shows the observed percent of members who elected a refund of contributions based on the actual experience during the three-year period from July 1, 2022 through June 30, 2025 as well as the six-year period from July 1, 2019 through June 30, 2025. Also shown are the current and recommended assumptions.

Percent of Total Terminations Assumed to Receive Refund of Contributions

Years of Service	Current Expected Rate	Actual Rate (3 Years)	Actual Rate (6 Years)	Recommended Expected Rate
Less than 5	90%	84.8%	88.2%	90%
5 and over	20%	27.9%	24.1%	20%

We recommend maintaining the rates of members electing a refund of contributions. The assumed percent of members who leave their contributions on deposit and receive a deferred vested benefit is equal to 100% minus the percent assumed to elect a refund of contributions.

Section 4: Demographic Assumptions

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

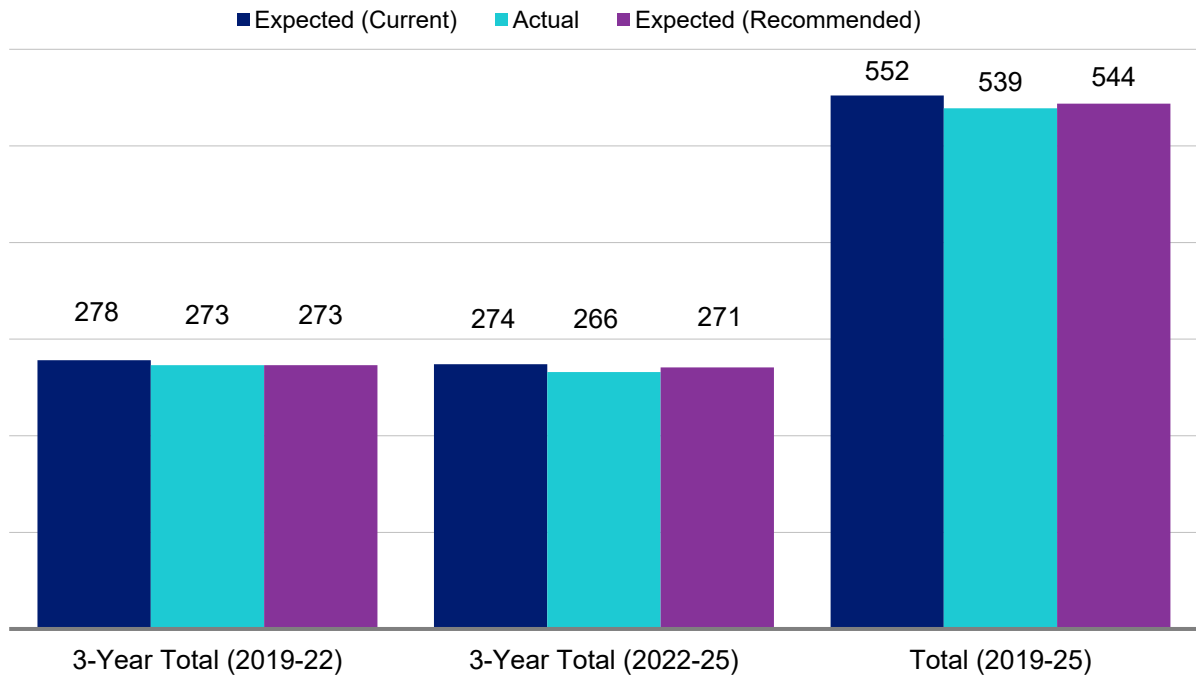
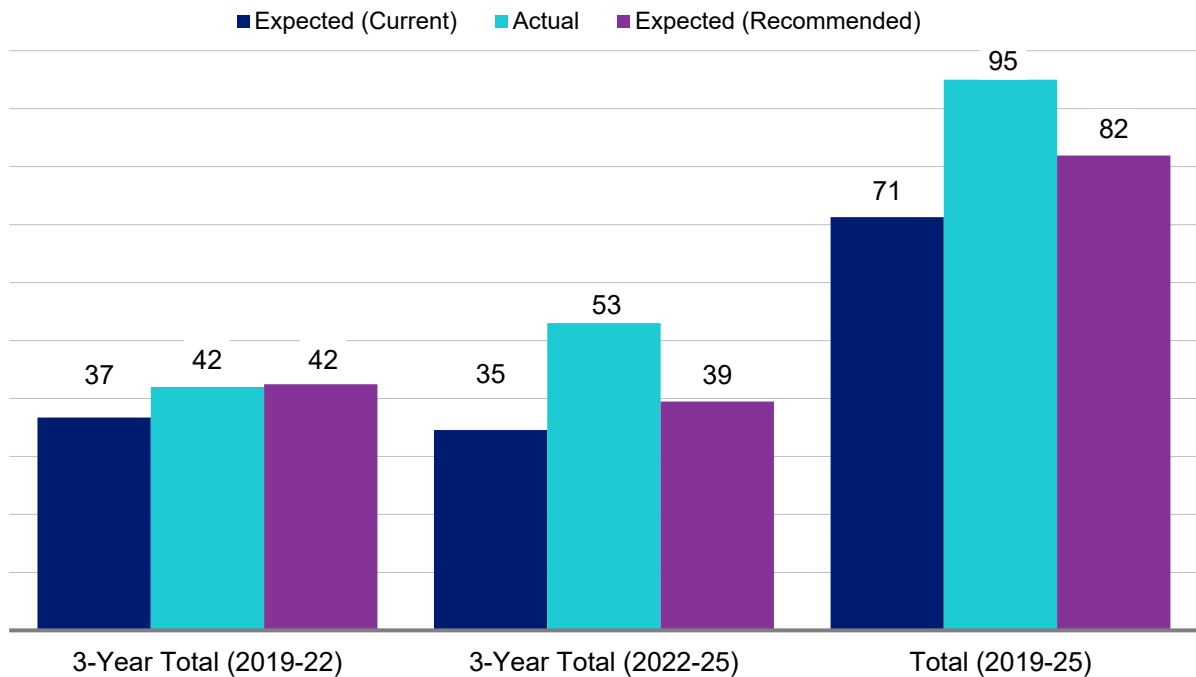


Chart 18: Actual Number of Terminations Compared to Expected
Safety and Probation Members



Section 4: Demographic Assumptions

Chart 19: Termination Rates
General Members

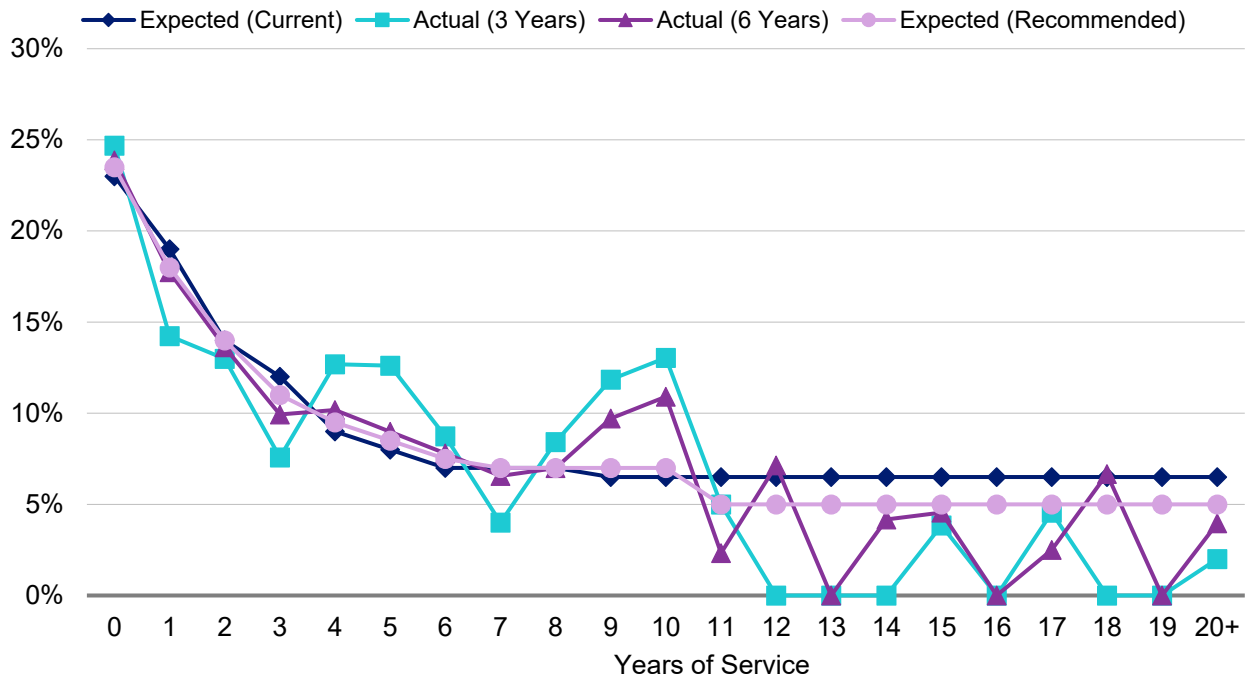
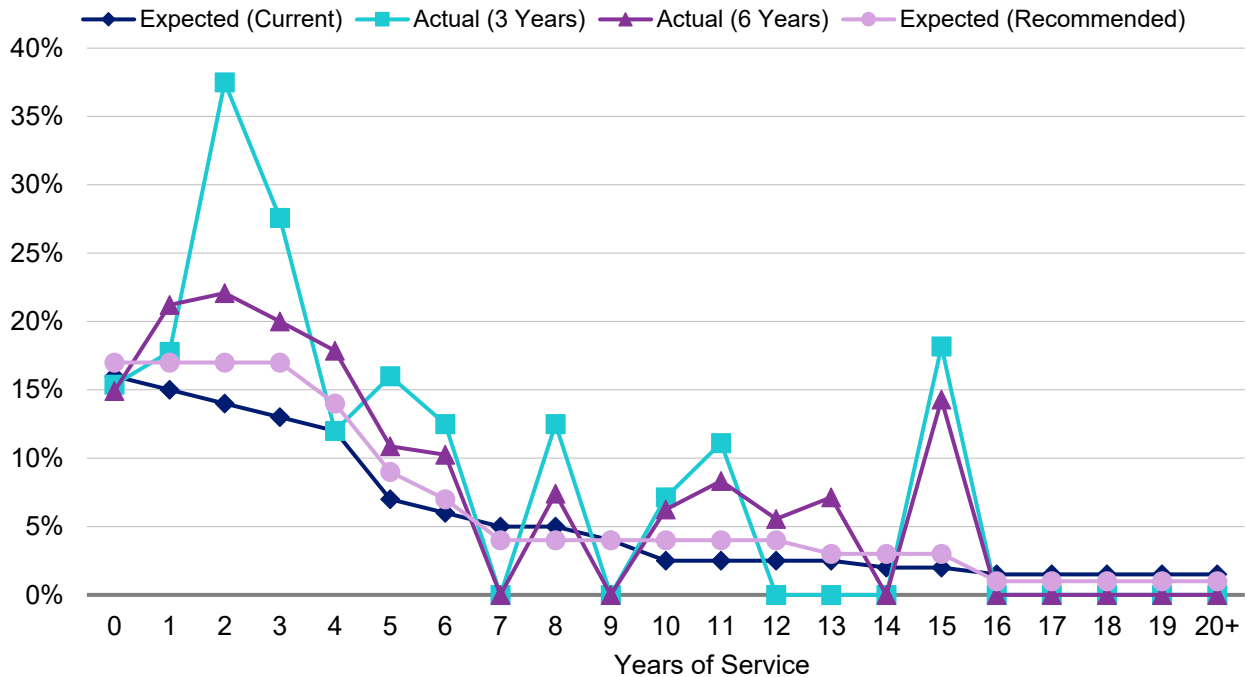


Chart 20: Termination Rates
Safety and Probation Members



Section 4: Demographic Assumptions

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 Tiers 1, 2, and 3, and Safety Tiers 1 and 2 members are based on a function of age and service. Furthermore, current retirement rates for General Tier 4, Safety Tier 3 members, and all Probation members are based only on age due to relatively limited retirement experience during the current three-year period (i.e., there was only 1 retirement for Safety Tier 3 and 4 retirements for Probation).

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

To increase the credibility of the data, particularly for Safety and Probation 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 June 30, 2025 as well as the six-year period from July 1, 2019 through June 30, 2025. Also shown are the current and recommended assumptions.

Section 4: Demographic Assumptions

General Tiers 1, 2, and 3 — 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%	7.41%	6.15%	5.00%	5.00%	N/A	0.00%	5.00%
51	5.00%	4.17%	6.06%	5.00%	5.00%	N/A	0.00%	5.00%
52	5.00%	3.70%	4.84%	5.00%	5.00%	0.00%	0.00%	5.00%
53	5.00%	2.94%	3.17%	5.00%	5.00%	0.00%	0.00%	5.00%
54	5.00%	0.00%	1.43%	5.00%	5.00%	0.00%	0.00%	5.00%
55	5.00%	6.25%	2.82%	5.00%	5.00%	0.00%	0.00%	5.00%
56	5.00%	8.00%	5.80%	5.00%	5.00%	0.00%	0.00%	5.00%
57	10.00%	3.33%	8.22%	9.00%	15.00%	20.00%	25.00%	15.00%
58	10.00%	2.94%	6.94%	9.00%	15.00%	0.00%	16.67%	15.00%
59	10.00%	9.09%	8.82%	9.00%	15.00%	25.00%	14.29%	15.00%
60	12.00%	17.14%	13.43%	13.00%	25.00%	0.00%	20.00%	20.00%
61	14.00%	28.00%	20.75%	17.00%	25.00%	0.00%	0.00%	20.00%
62	22.00%	27.27%	21.57%	22.00%	35.00%	50.00%	50.00%	40.00%
63	20.00%	29.41%	22.64%	20.00%	25.00%	0.00%	0.00%	20.00%
64	20.00%	9.09%	16.67%	20.00%	25.00%	0.00%	25.00%	20.00%
65	40.00%	37.50%	34.78%	40.00%	45.00%	50.00%	25.00%	40.00%
66	40.00%	46.67%	45.45%	40.00%	45.00%	100.00%	66.67%	40.00%
67	40.00%	66.67%	45.00%	40.00%	45.00%	N/A	50.00%	40.00%
68	40.00%	33.33%	28.57%	40.00%	45.00%	0.00%	0.00%	40.00%
69	40.00%	66.67%	33.33%	40.00%	45.00%	0.00%	0.00%	40.00%
70	50.00%	50.00%	33.33%	40.00%	50.00%	50.00%	50.00%	40.00%
71	50.00%	50.00%	58.33%	40.00%	50.00%	N/A	N/A	40.00%
72	50.00%	33.33%	14.29%	40.00%	50.00%	N/A	N/A	40.00%
73	50.00%	33.33%	33.33%	40.00%	50.00%	N/A	N/A	40.00%
74	50.00%	0.00%	0.00%	40.00%	50.00%	N/A	N/A	40.00%
75 and over	100.00%	66.67%	50.00%	100.00%	100.00%	N/A	N/A	100.00%
Actual / Expected (6 Years)	90.4%			92.7%	77.6%			84.3%

We recommend decreasing the retirement rates overall for General Tiers 1, 2, and 3 members with less than 30 years of service and with 30 or more years of service.

Chart 21 on page 62 compares the number of actual to expected retirements for General Tiers 1, 2, and 3 members over the past three years and six years for the current and recommended assumptions.

Section 4: Demographic Assumptions

Chart 25 on page 64 compares the actual retirement experience with the current and recommended assumptions for General Tiers 1, 2, and 3 members with less than 30 years of service.

Chart 28 on page 65 compares the actual retirement experience with the current and recommended assumptions for General Tiers 1, 2, and 3 members with 30 or more years of service.

General Tier 4 — Retirement Rates

Age	Current Expected Rate	Actual Rate (3 Years)	Actual Rate (6 Years)	Recomm. Expected Rate
52	6.00%	0.00%	0.00%	2.00%
53	3.00%	0.00%	0.00%	2.00%
54	3.00%	0.00%	0.00%	2.00%
55	5.00%	20.00%	16.67%	5.00%
56	5.00%	0.00%	4.00%	5.00%
57	6.00%	0.00%	0.00%	5.00%
58	6.00%	0.00%	0.00%	5.00%
59	6.00%	0.00%	3.85%	5.00%
60	6.00%	0.00%	0.00%	5.00%
61	10.00%	5.00%	3.70%	8.00%
62	12.00%	20.00%	16.13%	14.00%
63	14.00%	9.52%	7.14%	12.00%
64	12.00%	12.50%	14.29%	12.00%
65	30.00%	8.33%	15.79%	30.00%
66	30.00%	36.36%	35.71%	30.00%
67	30.00%	20.00%	14.29%	30.00%
68	30.00%	28.57%	25.00%	30.00%
69	30.00%	0.00%	28.57%	30.00%
70	50.00%	25.00%	28.57%	40.00%
71	50.00%	50.00%	28.57%	40.00%
72	50.00%	0.00%	16.67%	40.00%
73	50.00%	0.00%	0.00%	40.00%
74	50.00%	50.00%	50.00%	40.00%
75 and over	100.00%	0.00%	0.00%	100.00%
Actual / Expected (6 Years)	66.6%			74.3%

Section 4: Demographic Assumptions

Based on this experience, we recommend decreasing the retirement rates overall for General Tier 4 members.

Chart 22 on page 62 compares the number of actual to expected retirements for General Tier 4 members over the past three years and six years for the current and recommended assumptions.

Chart 27 on page 65 compares the actual retirement experience with the current and recommended assumptions for General Tier 4 members.

Safety Tiers 1 and 2 — Retirement Rates by Years of Service (YOS)

Age	<25 YOS Current Expected Rate	<25 YOS Actual Rate (3 Years)	<25 YOS Actual Rate (6 Years)	<25 YOS Recomm. Expected Rate	25+ YOS Current Expected Rate	25+ YOS Actual Rate (3 Years)	25+ YOS Actual Rate (6 Years)	25+ YOS Recomm. Expected Rate
50	6.00%	0.00%	0.00%	5.00%	15.00%	20.00%	16.67%	12.00%
51	6.00%	0.00%	0.00%	5.00%	15.00%	0.00%	0.00%	12.00%
52	6.00%	0.00%	0.00%	5.00%	15.00%	0.00%	0.00%	12.00%
53	8.00%	0.00%	0.00%	5.00%	20.00%	0.00%	9.09%	12.00%
54	12.00%	0.00%	9.09%	10.00%	30.00%	11.11%	30.77%	30.00%
55	15.00%	0.00%	20.00%	15.00%	35.00%	66.67%	50.00%	40.00%
56	20.00%	0.00%	0.00%	15.00%	45.00%	0.00%	0.00%	40.00%
57	25.00%	33.33%	33.33%	30.00%	45.00%	0.00%	50.00%	40.00%
58	30.00%	50.00%	33.33%	30.00%	45.00%	0.00%	25.00%	40.00%
59	40.00%	0.00%	50.00%	40.00%	45.00%	100.00%	100.00%	40.00%
60	50.00%	N/A	N/A	50.00%	50.00%	N/A	N/A	50.00%
61	50.00%	N/A	N/A	50.00%	50.00%	N/A	N/A	50.00%
62	50.00%	N/A	N/A	50.00%	50.00%	N/A	0.00%	50.00%
63	50.00%	N/A	0.00%	50.00%	50.00%	N/A	0.00%	50.00%
64	50.00%	N/A	100.00%	50.00%	50.00%	N/A	0.00%	50.00%
65 and over	100.00%	N/A	100.00%	100.00%	100.00%	25.00%	14.29%	100.00%
Actual / Expected (6 Years)	71.4%			77.2%	62.4%			66.6%

We recommend decreasing the retirement rates overall for Safety Tiers 1 and 2 members with less than 25 years of service and with 25 or more years of service.

Chart 23 on page 63 compares the number of actual to expected retirements for Safety Tiers 1 and 2 members over the past three years and six years for the current and recommended assumptions.

Section 4: Demographic Assumptions

Chart 28 on page 65 compares the actual retirement experience with the current and recommended assumptions for Safety Tiers 1 and 2 members with less than 25 years of service.

Chart 29 on page 66 compares the actual retirement experience with the current and recommended assumptions for Safety Tiers 1 and 2 members with 25 or more years of service.

Safety Tier 3 — Retirement Rates

Age	Current Expected Rate	Recomm. Expected Rate
50	3.00%	3.00%
51	3.00%	3.00%
52	3.00%	3.00%
53	3.00%	3.00%
54	4.00%	4.00%
55	6.00%	6.00%
56	12.00%	12.00%
57	15.00%	15.00%
58	18.00%	18.00%
59	40.00%	40.00%
60	50.00%	50.00%
61	50.00%	50.00%
62	50.00%	50.00%
63	50.00%	50.00%
64	50.00%	50.00%
65 and over	100.00%	100.00%
Actual / Expected (6 Years)	N/A	N/A

There was only one active retirement from Safety Tier 3 over the past three years, so no actual rates are shown in the above table. **We recommend maintaining the retirement rates for Safety Tier 3 members due to lack of retirement experience during the current three-year experience study period.**

Chart 30 on page 66 compares the current and recommended assumptions for Safety Tier 3 members.

Section 4: Demographic Assumptions

Probation— Retirement Rates

Age	Tiers 1 and 2 Current Expected Rate	Tiers 1 and 2 Actual Rate (3 Years)	Tiers 1 and 2 Actual Rate (6 Years)	Tiers 1 and 2 Recomm. Expected Rate	Tier 3 Current Expected Rate	Tier 3 Recomm. Expected Rate
50	5.00%	0.00%	0.00%	10.00%	4.00%	5.00%
51	5.00%	0.00%	0.00%	10.00%	4.00%	5.00%
52	5.00%	50.00%	66.67%	10.00%	4.00%	5.00%
53	5.00%	100.00%	100.00%	10.00%	4.00%	5.00%
54	5.00%	N/A	0.00%	10.00%	4.00%	5.00%
55	20.00%	N/A	0.00%	15.00%	12.00%	10.00%
56	20.00%	N/A	0.00%	15.00%	21.00%	15.00%
57	20.00%	0.00%	0.00%	15.00%	21.00%	15.00%
58	20.00%	0.00%	0.00%	20.00%	21.00%	20.00%
59	20.00%	100.00%	25.00%	20.00%	21.00%	20.00%
60	50.00%	N/A	0.00%	40.00%	50.00%	40.00%
61	50.00%	N/A	0.00%	40.00%	50.00%	40.00%
62	50.00%	0.00%	25.00%	40.00%	50.00%	40.00%
63	50.00%	33.33%	33.33%	40.00%	50.00%	40.00%
64	50.00%	0.00%	0.00%	40.00%	50.00%	40.00%
65 and over	100.00%	0.00%	0.00%	100.00%	100.00%	100.00%
Actual / Expected (6 Years)	46.7%			50.2%	N/A	N/A

We recommend slightly decreasing the retirement rates overall for Probation Tiers 1 and 2 members.

We do not have any experience from the latest three years for Probation Tier 3. However, we recommend decreasing the retirement rates overall for Probation Tier 3 members consistent with the changes in the retirement rates for Probation Tiers 1 and 2.

Chart 24 on page 63 compares the number of actual to expected retirements for Probation Tiers 1 and 2 members over the past three years and six years for the current and recommended assumptions.

Chart 31 on page 67 compares the actual retirement experience with the current and recommended assumptions for Probation Tiers 1 and 2 members.

Chart 32 on page 67 compares the current and recommended assumptions for Probation Tier 3 members.

Section 4: Demographic Assumptions

Deferred vested members

Under the current assumptions, all current and future deferred vested General members are assumed to retire at age 61, and all current and future deferred vested Safety and Probation members are assumed to retire at age 54, regardless of a member's reciprocity status. For this study, we considered examining the deferred vested retirement age separately for reciprocal and non-reciprocal members, though as we noted in the prior experience study report, we were informed by MCERA that they would be reviewing how outbound reciprocities were identified starting with the June 30, 2023 valuation, as they may have been mis-identified by their pension administration system in the past. Following that review, MCERA changed how outbound reciprocities were identified and the actual incidence of reciprocity reported to us was substantially reduced. Accordingly, we have not bifurcated the recommended retirement age assumption for those covered by a reciprocal retirement system and those who are non-reciprocal in this study.

The following tables show the observed deferred vested retirement age based on the actual experience over the past three years. Also shown are the current and recommended assumptions.

General Members' Deferred Vested Retirement Age

Line Description	Retirement Age
Current assumption	61
Actual average age (three years)	61.7
Recommended assumption	61

We recommend maintaining the General deferred vested retirement assumption at age 61 for those covered by a reciprocal retirement system and those who are non-reciprocal.

Safety and Probation Members' Deferred Vested Retirement Age

Line Description	Retirement Age
Current assumption	54
Actual average age (three years)	53.5
Recommended assumption	54

We recommend maintaining the Safety and Probation deferred vested retirement assumption at age 54 for those covered by a reciprocal retirement system and those who are non-reciprocal.

Section 4: Demographic Assumptions

Chart 21: Actual Number of Retirements Compared to Expected
General Tiers 1, 2, and 3 Members

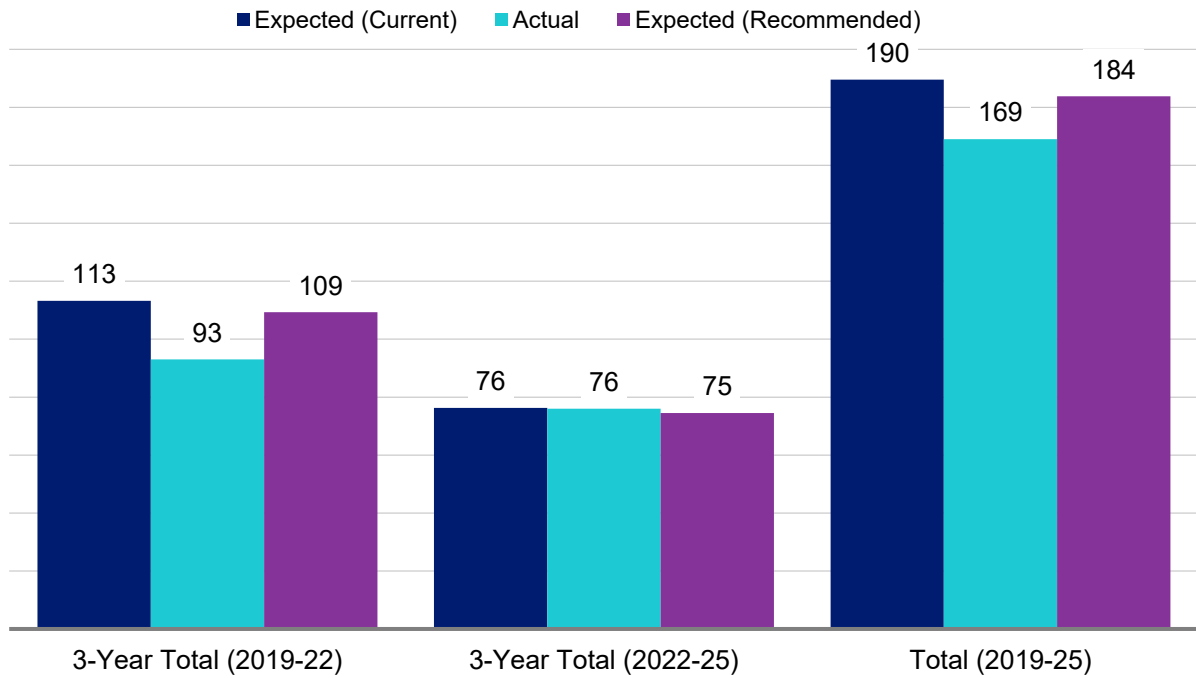
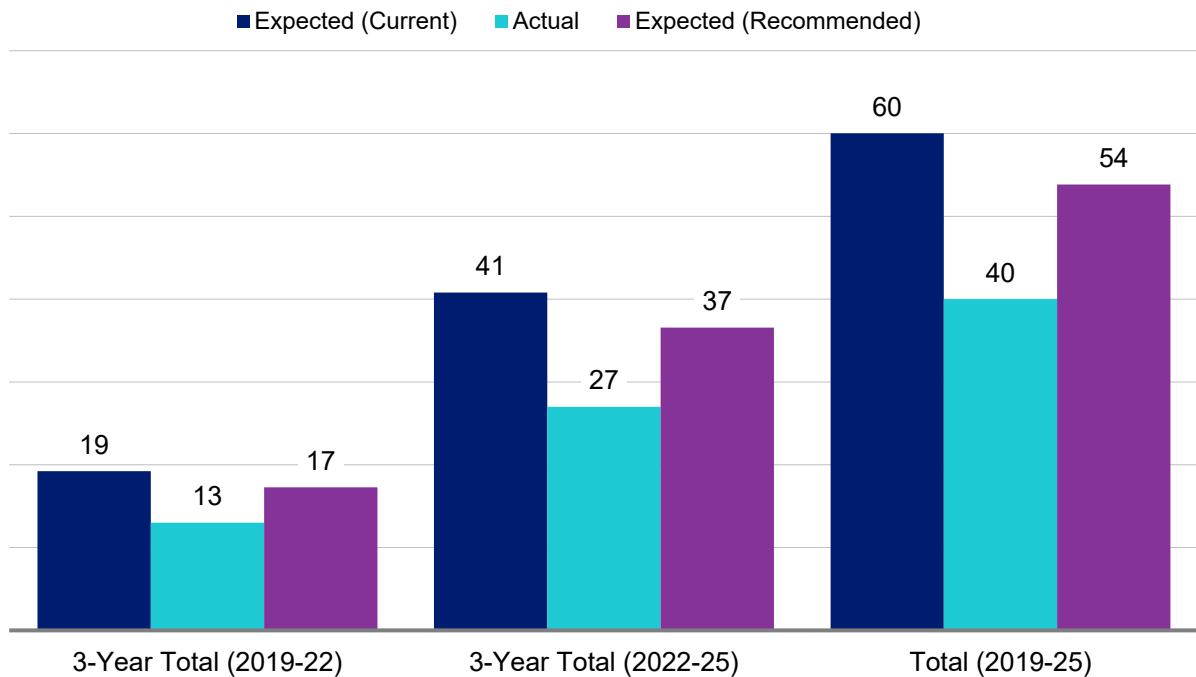


Chart 22: Actual Number of Retirements Compared to Expected
General Tier 4 Members



Section 4: Demographic Assumptions

Chart 23: Actual Number of Retirements Compared to Expected
Safety Tiers 1 and 2 Members

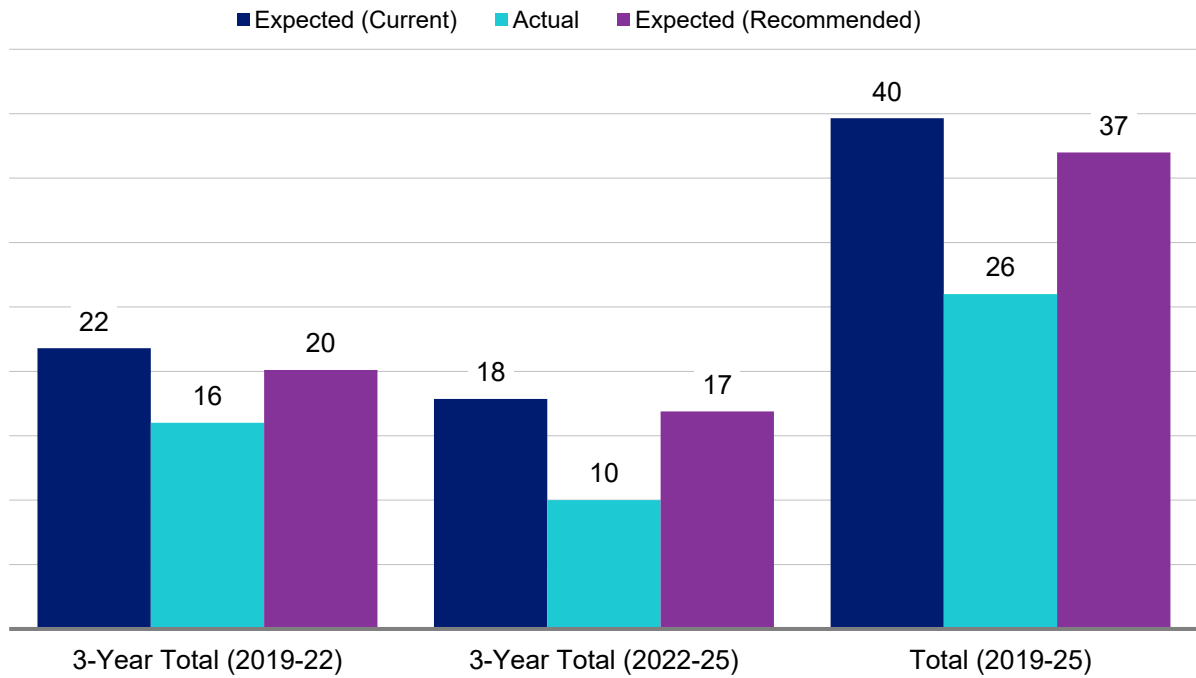
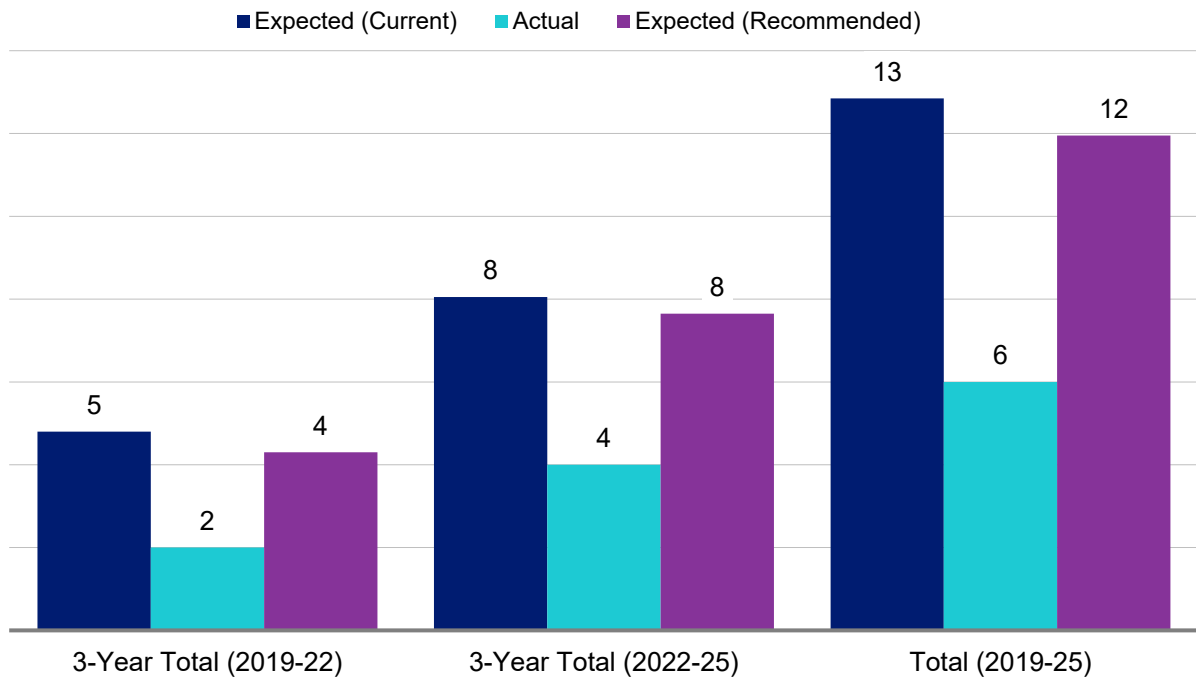


Chart 24: Actual Number of Retirements Compared to Expected
Probation Tiers 1 and 2 Members



Section 4: Demographic Assumptions

Chart 25: Retirement Rates

General Tiers 1, 2, and 3 Members with less than 30 Years of Service

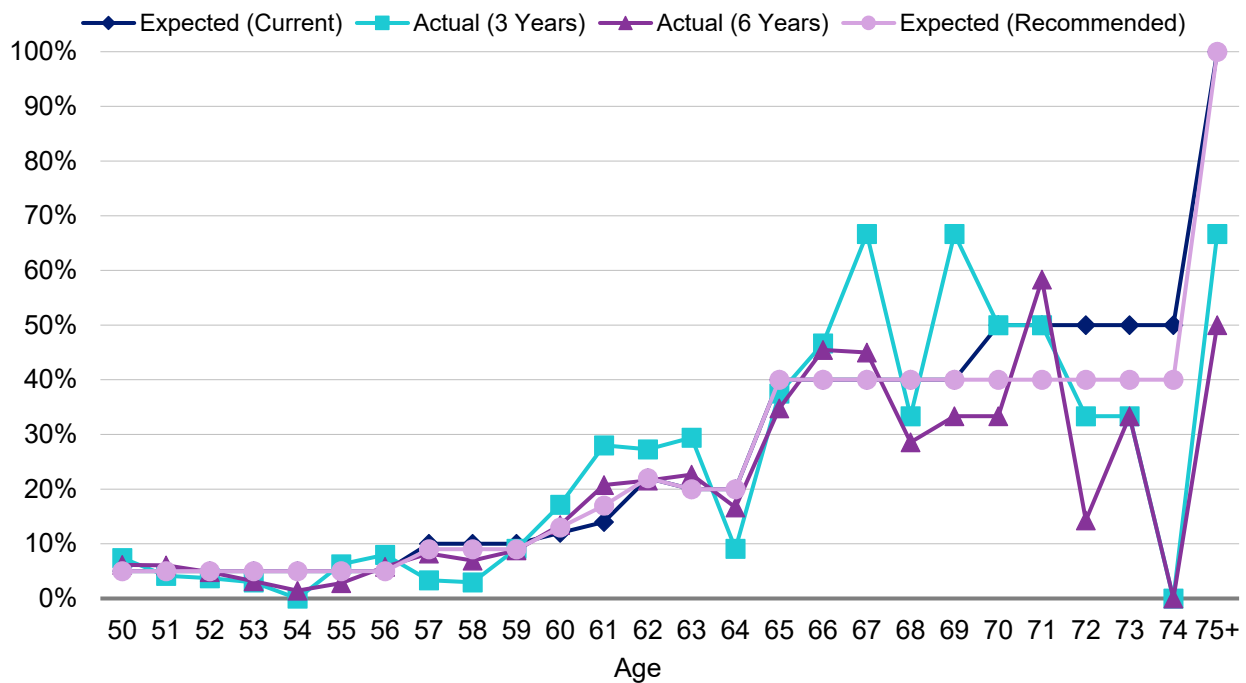
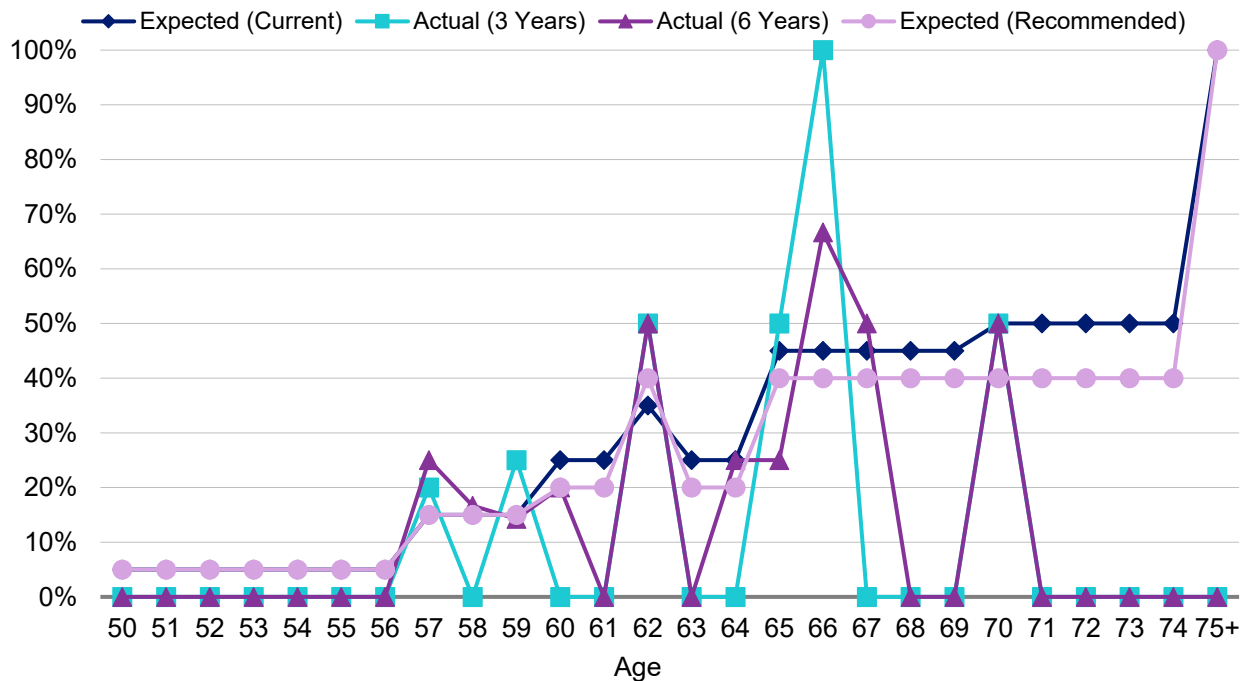


Chart 26: Retirement Rates

General Tiers 1, 2, and 3 Members with 30 or more Years of Service



Section 4: Demographic Assumptions

Chart 27: Retirement Rates
General Tier 4 Members

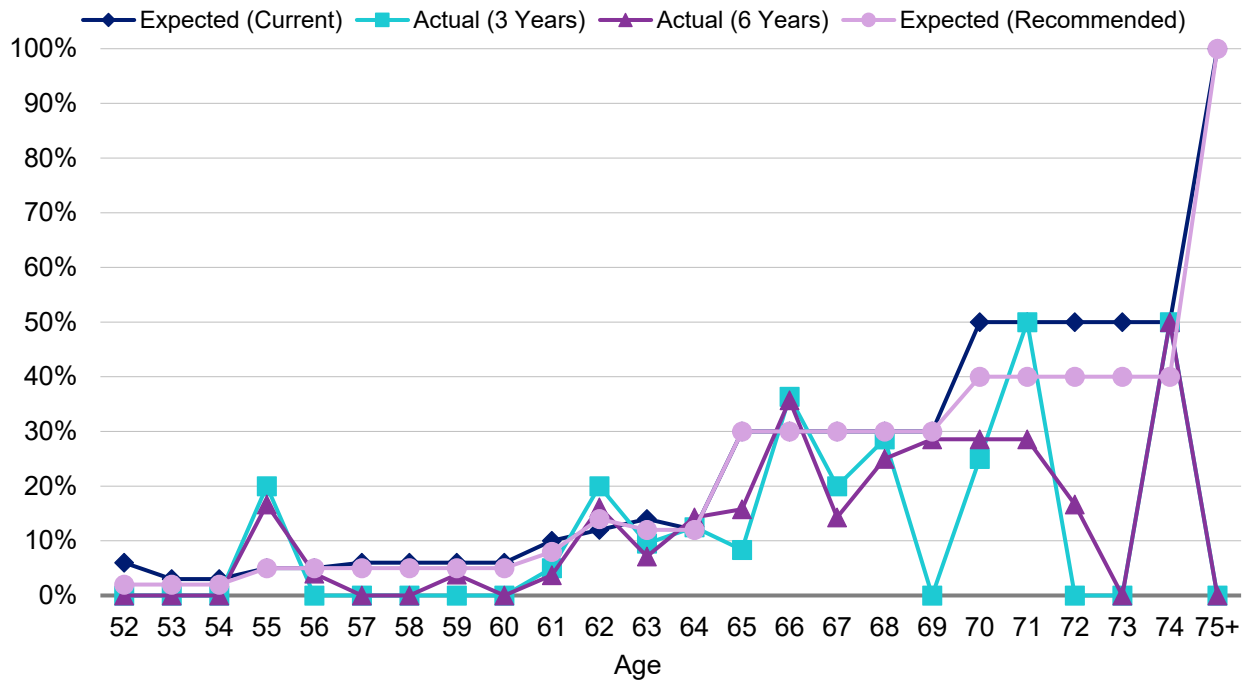
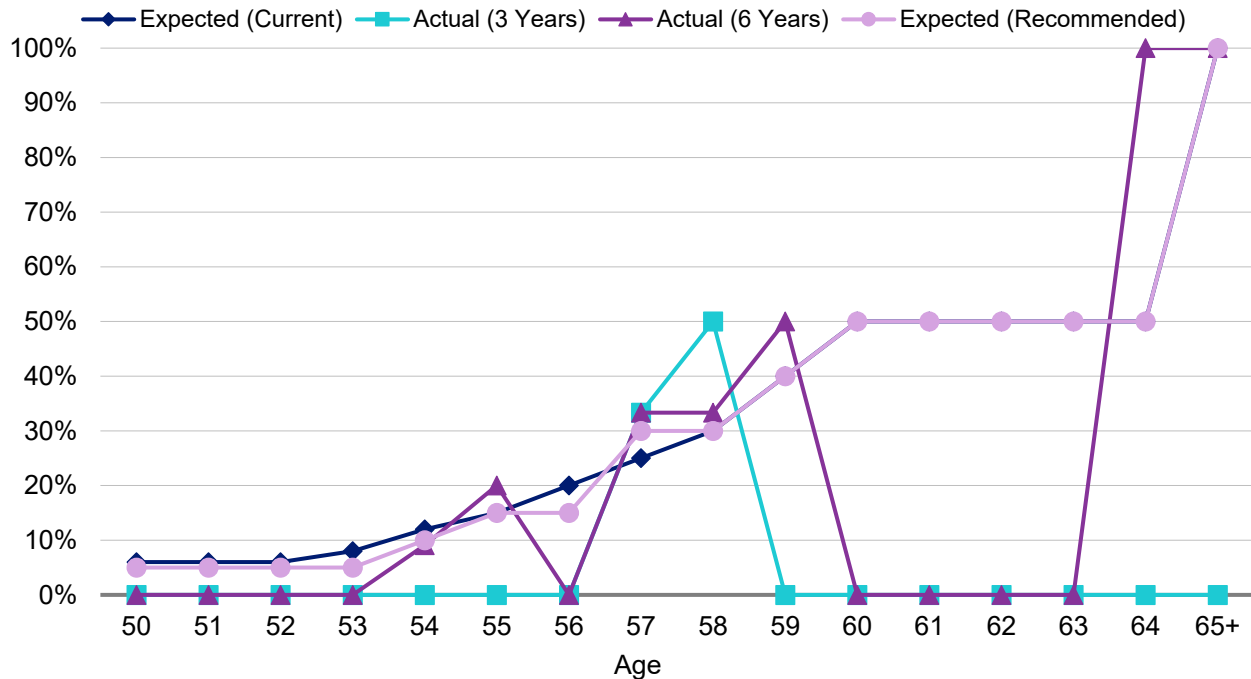


Chart 28: Retirement Rates
Safety Tiers 1 and 2 Members with less than 25 Years of Service



Section 4: Demographic Assumptions

Chart 29: Retirement Rates

Safety Tiers 1 and 2 Members with 25 or more Years of Service

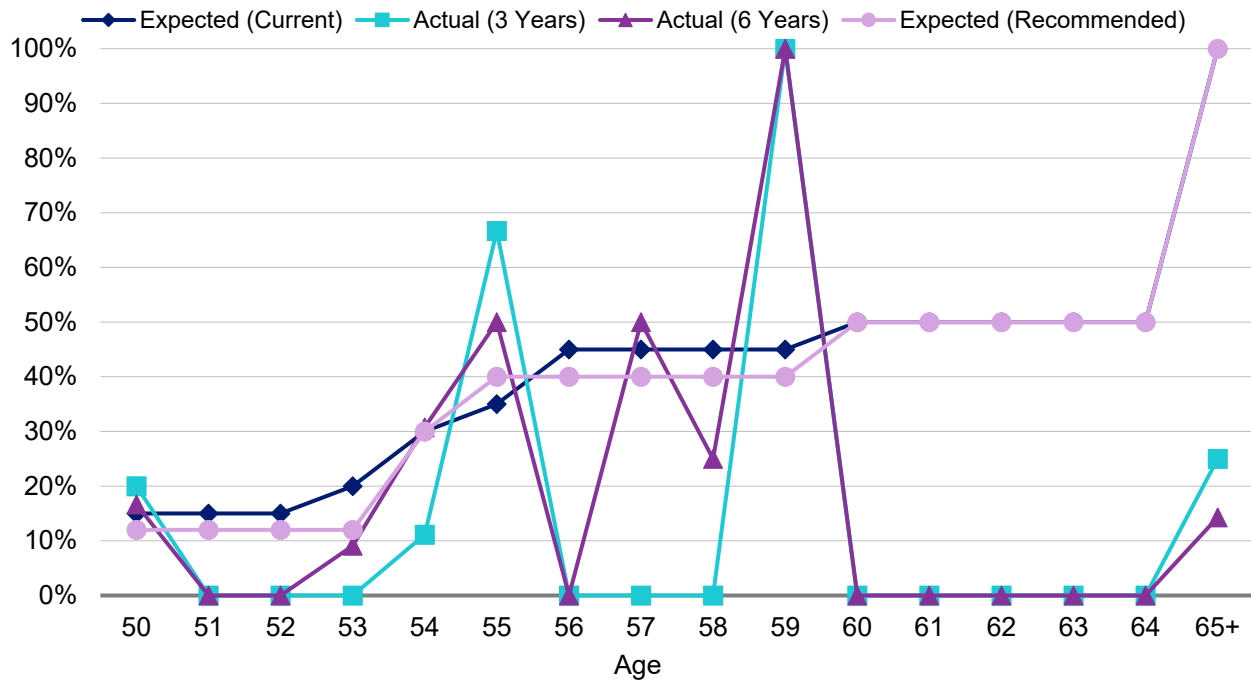
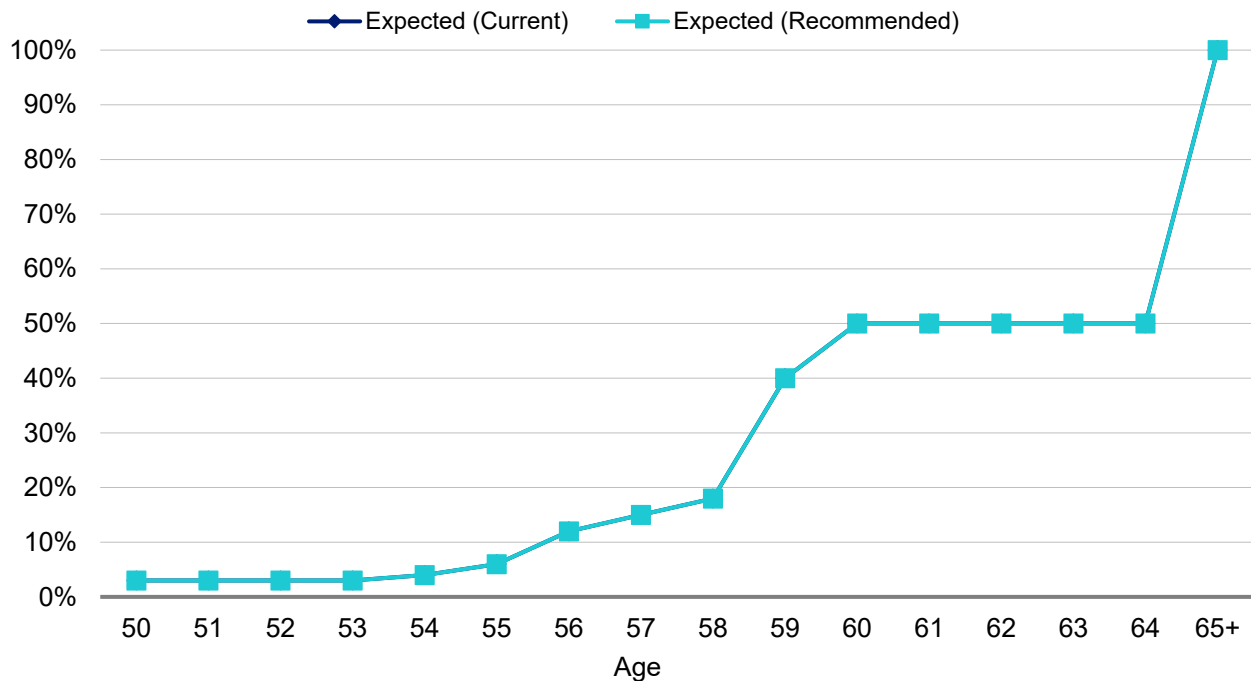


Chart 30: Retirement Rates

Safety Tier 3 Members



Section 4: Demographic Assumptions

Chart 31: Retirement Rates
Probation Tiers 1 and 2 Members

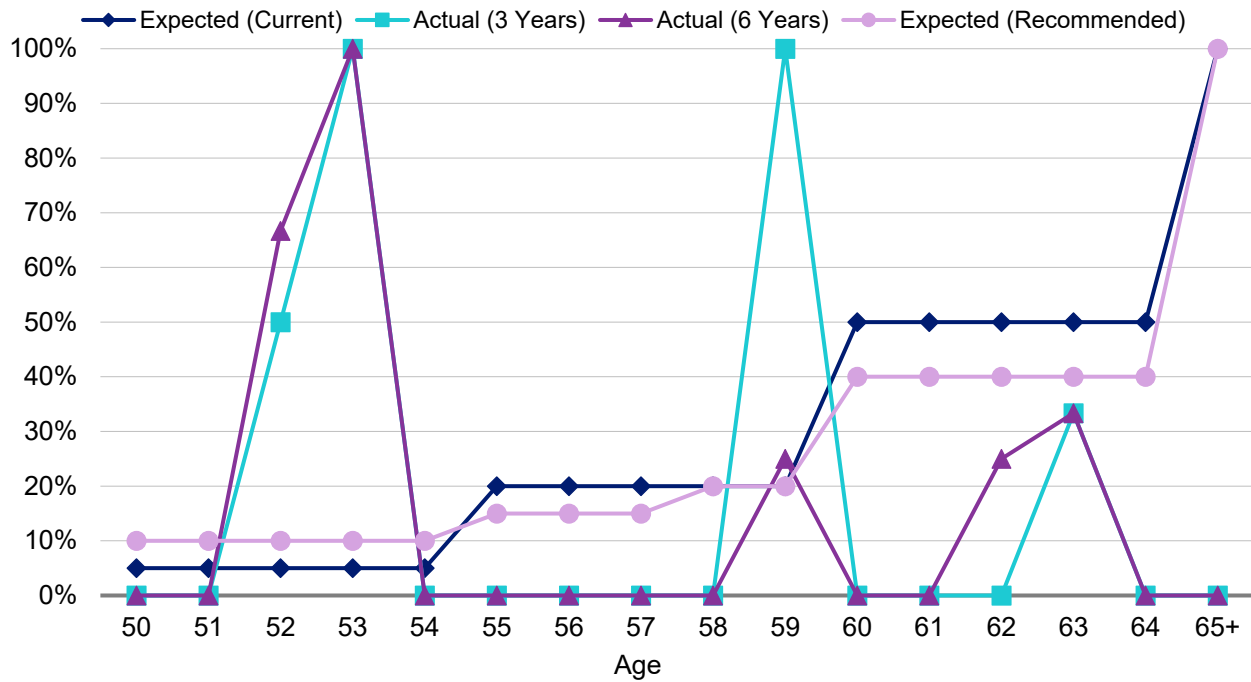
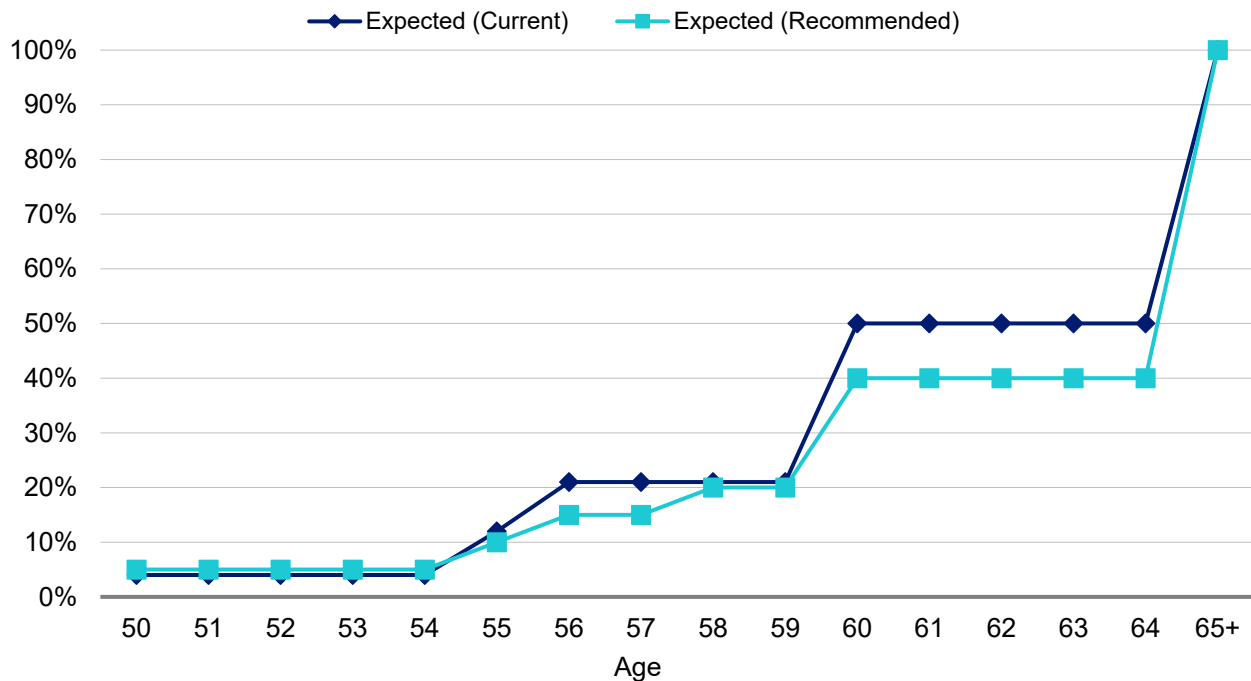


Chart 32: Retirement Rates
Probation Tier 3 Members



Section 4: Demographic Assumptions

F. Miscellaneous assumptions

Reciprocity

Under the current assumptions, a percentage of future deferred vested members are assumed to be covered by a reciprocal retirement 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 percent based on the actual experience of all deferred vested members as of June 30, 2025. Also shown are the current and recommended assumptions.

Percent of Inactive Members at Reciprocal System as of June 30, 2025

Line Description	Percent Reciprocal
Current assumption	65%
Actual experience	28% ³⁵
Recommended assumption	50%

Note that during the prior experience study, we were informed by MCERA that they would be reviewing how outbound reciprocities were identified in the annual valuations beginning with the June 30, 2023 valuation. Following that review, we observed that MCERA reclassified many continuing inactive vested members from reciprocal status to deferred non-reciprocal status for the June 30, 2023 valuation, and the lower incidence of reciprocity has continued through the June 30, 2025 valuation. Accordingly, we recommend lowering the reciprocal assumption from 65% to 50%.

It is assumed that all current and future members covered under a reciprocal retirement system will receive annual salary increase from the date of termination (or the date that MCERA reported updated salary) to the expected date of retirement. Under the current assumption, these annual salary increases are 4.00% per year. This salary increase assumption is based on the current ultimate merit and promotion salary increase assumption (1.00%), together with the current inflation (2.50%) and "across-the-board" salary increase (0.50%) assumptions.

Based on the recommended ultimate 1.50% merit and promotion salary increase assumption, together with the recommended 2.50% inflation assumption and 0.50% "across-the-board" salary increase assumption, we recommend increasing the reciprocal salary increase assumption from 4.00% to 4.50%.

³⁵ Based on all deferred vested members as of June 30, 2025. However, for members with less than 5 years of service, most (i.e., 90%) are assumed to receive a refund of contributions rather than a deferred annuity. For members with 5 or more years of service, this percentage increases to about 41%.

Section 4: Demographic Assumptions

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.

The following table shows the gender of active members based on actual experience as of June 30, 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 and Probation Male Member	Safety and Probation Female Member
Current assumption	100.0%	0.0%	100.0%	0.0%
Actual percent with reported gender as of June 30, 2025	32.8%	67.2%	81.1%	18.9%
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 and Probation 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 shows that around 81% select the unmodified option at retirement.

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

Percent 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 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 and the past six years. Also shown are the current and recommended assumptions.

New Retirees with Eligible Spouse or Domestic Partner

Line Description	Male Member	Female Member
Current assumption	70.0%	50.0%
Actual percent (3 years)	72.4%	60.0%
Actual percent (6 years)	71.3%	56.5%
Recommended assumption	70.0%	55.0%

Section 4: Demographic Assumptions

We recommend maintaining the percent with eligible survivor assumption for male members at 70% and increasing the assumption for female members from 50% to 55%.

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 with an eligible spouse or domestic partner at the time of retirement based on the actual experience over the past three years and the past six 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	2 years older	2 years younger
Actual percent (3 years)	1.5 years older	1.5 years younger
Actual percent (6 years)	1.5 years older	1.8 years younger
Recommended assumption	2 years older	2 years younger

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

We also 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 June 30, 2025, even with the inclusion of domestic partners.

Sick leave conversion

Members who retire directly from active employment and receive a service retirement benefit can convert their unused sick leave to increase the service credit used in the calculation of their retirement benefit. To anticipate this additional benefit, the actuarial valuation includes an assumption for the number of years of sick leave that will be converted at retirement.

The following table shows the average years of converted unused sick leave per year of employment over the past three years and the past six years. Also shown are the current and recommended assumptions.

Section 4: Demographic Assumptions

Average Years of Converted Unused Sick Leave per Year of Employment

Line Description	Average Years
Current Assumption	0.017
Actual Experience (3 years)	0.016
Actual Experience (6 years)	0.016
Recommended Assumption	0.017

We recommend maintaining the current unused sick leave assumption of 0.017 years of additional service credit at retirement for each year of employment.

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 would be measured as of the June 30, 2026 valuation.

Cost Impact of the Recommended Assumptions Based on June 30, 2025 Actuarial Valuation (\$ in '000s)

Assumption	Impact on Average Employer Contribution Rates	Impact on Weighted Average Member Contribution Rates
Change in investment return assumption	2.93%	0.62%
Change in salary scale assumption	1.04%	0.45%
Changes in demographic assumptions	(0.88%)	(0.06%)
Total increase in average contribution rate	3.09%	1.01%
Total increase in annual dollar amount³⁶	\$3,066	\$987

Assumption	Impact on UAAL	Impact on Funded Percentage
Change due to change in investment return assumption	\$29,799	(2.2%)
Change due to change in salary scale assumption	7,434	(0.6%)
Change due to changes in demographic assumptions	(7,669)	0.6%
Total estimated change	\$29,564	(2.2%)

The recommended assumption changes are estimated to increase the UAAL by \$29.6 million and decrease the funded ratio from 76.4% to 74.2%. 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.

³⁶ 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) ³⁷
General				
Tier 1	3.19%	1.56%	4.75%	\$5
Tier 2/3	1.48%	1.56%	3.04%	\$681
Tier 4	0.87%	1.56%	2.43%	\$1,391
Safety				
Tier 1: Not Calculated ³⁸				
Tier 2	1.37%	4.25%	5.62%	\$344
Tier 3	0.68%	4.25%	4.93%	\$460
Probation				
Tier 1: Not Calculated ³⁸				
Tier 2	0.85%	3.82%	4.67%	\$86
Tier 3	0.90%	3.82%	4.72%	\$99
Total Plan	1.02%	2.07%	3.09%	\$3,066

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

Cost Group	Rate	Annual Amount (\$ in '000s) ³⁷
General		
Tier 1	0.00%	\$0
Tier 2/3	1.32%	\$291
Tier 4	0.87%	\$491
Safety		
Tier 1: Not Calculated ³⁸		
Tier 2	1.50%	\$90
Tier 3	0.68%	\$66
Probation		
Tier 1: Not Calculated ³⁸		
Tier 2	1.59%	\$29
Tier 3	0.90%	\$20
Total Plan	1.01%	\$987

³⁷ Based on June 30, 2025 projected annual payroll as determined under each set of assumptions.

³⁸ There were no Safety Tier 1 or Probation Tier 1 active members reported for the June 30, 2025 valuation.

Appendix A: Current Actuarial Assumptions

Economic assumptions

Net investment return

6.50%, net of administrative and investment expenses.

Employee contribution crediting rate

2.50%, credited semi-annually.

Inflation

2.50% per year.

Cost-of-living adjustment (COLA)

Retiree benefits for General Tiers 1, 2, and 3, Safety Tiers 1 and 2, and Probation Tiers 1 and 2 are assumed to increase at 2.75% per year (for non-PEPRA members with a sufficient COLA bank, withdrawals from the bank can be made to increase the retiree COLA up to 3% per year).

No COLA increases for General Tier 4, Safety Tier 3, and Probation Tier 3.

Increase in Internal Revenue Code Section 401(a)(17) compensation limit

Increase of 2.50% per year from the valuation date.

Increase in Section 7522.10 compensation limit

Increase of 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, used to amortize the unfunded actuarial accrued liability as a level percentage of payroll.

Appendix A: Current Actuarial Assumptions

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.

Merit and Promotion Salary Increases

Years of Service	General	Safety and Probation
Less than 1	5.00%	5.25%
1–2	4.75%	5.00%
2–3	4.50%	4.50%
3–4	4.25%	3.25%
4–5	3.50%	3.00%
5–6	2.75%	2.25%
6–7	2.25%	2.00%
7–8	1.75%	1.50%
8–9	1.50%	1.25%
9–10	1.00%	1.25%
10–11	1.00%	1.25%
11–12	1.00%	1.25%
12 and over	1.00%	1.00%

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

Appendix A: Current Actuarial Assumptions

- **Disabled retirees**
 - **General:** Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates decreased by 5% for males and females, projected generationally with Scale MP-2021.
 - **Safety and Probation:** Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Tables (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 Mortality Tables (separate tables for males and females) with rates decreased by 5% for males and increased by 5% for females, projected generationally with Scale MP-2021.
 - **In pay status:** Pub-2010 Contingent Survivor Amount-Weighted Mortality Tables (separate tables for males and females) with rates increased by 5% for males and females, projected generationally with Scale MP-2021.

Pre-retirement mortality rates

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

Pre-Retirement Mortality Rates — Before Generational Projection from 2010

Age	General Male	General Female	Safety and Probation Male	Safety and Probation Female
25	0.03%	0.01%	0.04%	0.02%
30	0.04%	0.02%	0.04%	0.03%
35	0.05%	0.02%	0.05%	0.04%
40	0.07%	0.04%	0.06%	0.05%
45	0.10%	0.06%	0.08%	0.07%
50	0.15%	0.08%	0.12%	0.09%
55	0.22%	0.12%	0.18%	0.12%
60	0.32%	0.19%	0.26%	0.17%
65	0.47%	0.30%	0.41%	0.23%
70	0.70%	0.49%	0.77%	0.45%

Pre-Retirement Death Type

Pre-Retirement Death Type	General	Safety and Probation
Service-connected	0%	100%
Nonservice-connected	100%	0%

Appendix A: Current Actuarial Assumptions

Mortality rates for legacy member contributions

- **General:** Pub-2010 General Healthy Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates decreased by 5% for males and increased by 5% for females, projected 30 years (from 2010) with Scale MP-2021, weighted 30% male and 70% female.
- **Safety and Probation:** Pub-2010 Safety Healthy Retiree Amount-Weighted Mortality Tables (separate tables for males and females), projected 30 years (from 2010) with Scale MP-2021, weighted 80% male and 20% female.

Disability

Disability Rates from Active Status

Age	General	Safety	Probation
20	0.01%	0.10%	0.10%
25	0.01%	0.13%	0.13%
30	0.01%	0.18%	0.18%
35	0.02%	0.98%	0.98%
40	0.13%	1.68%	1.68%
45	0.26%	1.80%	1.80%
50	0.42%	2.37%	2.37%
55	0.50%	2.75%	2.75%
60	0.56%	3.20%	3.20%
65	0.60%	0.00%	0.00%

Disability Type

Disability Type	General	Safety and Probation
Service-connected	60%	95%
Nonservice-connected	40%	5%

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	Probation
Less than 1	23.00%	16.00%	16.00%
1–2	19.00%	15.00%	15.00%
2–3	14.00%	14.00%	14.00%
3–4	12.00%	13.00%	13.00%
4–5	9.00%	12.00%	12.00%
5–6	8.00%	7.00%	7.00%
6–7	7.00%	6.00%	6.00%
7–8	7.00%	5.00%	5.00%
8–9	7.00%	5.00%	5.00%
9–10	6.50%	4.00%	4.00%
10–11	6.50%	2.50%	2.50%
11–12	6.50%	2.50%	2.50%
12–13	6.50%	2.50%	2.50%
13–14	6.50%	2.50%	2.50%
14–15	6.50%	2.00%	2.00%
15–16	6.50%	2.00%	2.00%
16–17	6.50%	1.50%	1.50%
17–18	6.50%	1.50%	1.50%
18–19	6.50%	1.50%	1.50%
19–20	6.50%	1.50%	1.50%
20 and over	6.50%	1.50%	1.50%

Benefit Election for Future Inactives

Years of Service	Refund of Member Contributions	Deferred Benefit
Less than 5	90%	10%
5 and over	20%	80%

Appendix A: Current Actuarial Assumptions

Assumptions for Current and Future Inactives with a Deferred Benefit

Assumption Type	General	Safety and Probation
Retirement age		
Non-reciprocal members with less than 5 years of service	70	70
Non-reciprocal members with 5 or more years of service	61	54
Reciprocal members	61	54
Reciprocity assumptions		
Future inactives assumed to work for reciprocal employer	65%	65%

For reciprocals, 4.00% compensation increases are assumed per annum.

Appendix A: Current Actuarial Assumptions

Retirement rates

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

Retirement Rates from Active Status — General

Age	Tiers 1, 2, and 3: Less than 30 Years of Service	Tiers 1, 2, and 3: 30 or More Years of Service	Tier 4
50	5.00%	5.00%	0.00%
51	5.00%	5.00%	0.00%
52	5.00%	5.00%	6.00%
53	5.00%	5.00%	3.00%
54	5.00%	5.00%	3.00%
55	5.00%	5.00%	5.00%
56	5.00%	5.00%	5.00%
57	10.00%	15.00%	6.00%
58	10.00%	15.00%	6.00%
59	10.00%	15.00%	6.00%
60	12.00%	25.00%	6.00%
61	14.00%	25.00%	10.00%
62	22.00%	35.00%	12.00%
63	20.00%	25.00%	14.00%
64	20.00%	25.00%	12.00%
65	40.00%	45.00%	30.00%
66	40.00%	45.00%	30.00%
67	40.00%	45.00%	30.00%
68	40.00%	45.00%	30.00%
69	40.00%	45.00%	30.00%
70	50.00%	50.00%	50.00%
71	50.00%	50.00%	50.00%
72	50.00%	50.00%	50.00%
73	50.00%	50.00%	50.00%
74	50.00%	50.00%	50.00%
75 and over	100.00%	100.00%	100.00%

Appendix A: Current Actuarial Assumptions

Retirement Rates from Active Status — Safety and Probation

Age	Safety Tiers 1 and 2: Less Than 25 Years of Service	Safety Tiers 1 and 2: 25 or More Years of Service	Safety Tier 3	Probation Tiers 1 and 2	Probation Tier 3
50	6.00%	15.00%	3.00%	5.00%	4.00%
51	6.00%	15.00%	3.00%	5.00%	4.00%
52	6.00%	15.00%	3.00%	5.00%	4.00%
53	8.00%	20.00%	3.00%	5.00%	4.00%
54	12.00%	30.00%	4.00%	5.00%	4.00%
55	15.00%	35.00%	6.00%	20.00%	12.00%
56	20.00%	45.00%	12.00%	20.00%	21.00%
57	25.00%	45.00%	15.00%	20.00%	21.00%
58	30.00%	45.00%	18.00%	20.00%	21.00%
59	40.00%	45.00%	40.00%	20.00%	21.00%
60	50.00%	50.00%	50.00%	50.00%	50.00%
61	50.00%	50.00%	50.00%	50.00%	50.00%
62	50.00%	50.00%	50.00%	50.00%	50.00%
63	50.00%	50.00%	50.00%	50.00%	50.00%
64	50.00%	50.00%	50.00%	50.00%	50.00%
65 and over	100.00%	100.00%	100.00%	100.00%	100.00%

Spouse assumptions

Spousal Assumptions for Actives and Inactives

Member Gender	% with Spouse at Retirement or Pre-Retirement Death	Spouse Age	Spouse Gender
Male	70%	2 years younger than member	Female
Female	50%	2 years older than member	Male

Form of payment

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

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

Future benefit accruals

1.0 year of service per year of employment, plus 0.017 years of additional service to anticipate conversion of unused sick leave for each year of employment, for members expected to retire directly from active employment and to receive a service retirement benefit.

Inclusion of deferred vested members

All deferred vested members are included in the valuation.

Appendix B: Recommended Actuarial Assumptions

Economic assumptions

Net investment return

6.25%, net of administrative and investment expenses.

Employee contribution crediting rate

2.50%, credited semi-annually.

Inflation

2.50% per year.

Cost-of-living adjustment (COLA)

Retiree benefits for General Tiers 1, 2, and 3, Safety Tiers 1 and 2, and Probation Tiers 1 and 2 are assumed to increase at 2.75% per year (for non-PEPRA members with a sufficient COLA bank, withdrawals from the bank can be made to increase the retiree COLA up to 3% per year).

No COLA increases for General Tier 4, Safety Tier 3, and Probation Tier 3.

Increase in Internal Revenue Code Section 401(a)(17) compensation limit

Increase of 2.50% per year from the valuation date.

Increase in Section 7522.10 compensation limit

Increase of 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, used to amortize the unfunded actuarial accrued liability as a level percentage of payroll.

Appendix B: Recommended Actuarial Assumptions

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.

Merit and Promotion Salary Increases

Years of Service	General Tiers 1, 2, and 3	General Tier 4	Safety and Probation Tiers 1 and 2	Safety and Probation Tier 3
Less than 1	5.00%	5.50%	5.25%	5.50%
1–2	4.75%	5.25%	5.00%	5.25%
2–3	4.50%	5.00%	4.50%	5.00%
3–4	4.25%	4.75%	3.25%	4.25%
4–5	3.50%	4.00%	3.00%	4.00%
5–6	2.75%	3.25%	2.25%	3.25%
6–7	2.25%	2.50%	2.00%	3.00%
7–8	1.75%	2.25%	1.75%	2.50%
8–9	1.50%	2.00%	1.75%	2.25%
9–10	1.50%	1.50%	1.75%	1.75%
10–11	1.50%	1.50%	1.75%	1.75%
11–12	1.50%	1.50%	1.75%	1.75%
12 and over	1.50%	1.50%	1.50%	1.50%

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.

Post-retirement mortality rates

- **Service retirees**
 - **General:** Pub-2016 General Healthy Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and increased by 5% for females, projected generationally with Scale MP-2021.
 - **Safety and Probation:** Pub-2016 Safety Healthy Retiree Amount-Weighted Mortality Tables (separate tables for males and females), projected generationally with Scale MP-2021.

Appendix B: Recommended Actuarial Assumptions

- **Disabled retirees**
 - **General:** Pub-2016 Non-Safety Disabled Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and increased by 5% for females, projected generationally with Scale MP-2021.
 - **Safety and Probation:** Pub-2016 Safety Disabled Retiree Amount-Weighted Mortality Tables (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 Mortality Tables (separate tables for males and females) with rates unadjusted for males and increased by 5% for females, projected generationally with Scale MP-2021.
 - **In pay status:** Pub-2016 Contingent Survivor Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and increased by 5% for females, projected generationally with Scale MP-2021.

Pre-retirement mortality rates

- **General:** Pub-2016 General Employee Amount-Weighted Mortality Tables (separate tables for males and females), projected generationally with Scale MP-2021.
- **Safety and Probation:** Pub-2016 Safety Employee Amount-Weighted Mortality Tables (separate tables for males and females), projected generationally with Scale MP-2021.

Pre-Retirement Mortality Rates — Before Generational Projection from 2016

Age	General Male	General Female	Safety and Probation Male	Safety and Probation Female
25	0.04%	0.01%	0.03%	0.02%
30	0.05%	0.02%	0.04%	0.02%
35	0.05%	0.03%	0.05%	0.03%
40	0.07%	0.04%	0.06%	0.04%
45	0.10%	0.06%	0.08%	0.07%
50	0.15%	0.09%	0.12%	0.10%
55	0.23%	0.14%	0.18%	0.15%
60	0.34%	0.21%	0.29%	0.23%
65	0.49%	0.31%	0.47%	0.34%
70	0.73%	0.48%	0.87%	0.52%

Pre-Retirement Death Type

Pre-Retirement Death Type	General	Safety and Probation
Service-connected	0%	100%
Nonservice-connected	100%	0%

Appendix B: Recommended Actuarial Assumptions

Mortality rates for legacy member contributions

- **General:** Pub-2016 General Healthy Retiree Amount-Weighted Mortality Tables (separate tables for males and females) with rates unadjusted for males and increased by 5% for females, projected 30 years (from 2016) with Scale MP-2021, weighted 30% male and 70% female.
- **Safety and Probation:** Pub-2016 Safety Healthy Retiree Amount-Weighted Mortality Tables (separate tables for males and females), projected 30 years (from 2016) with Scale MP-2021, weighted 80% male and 20% female.

Disability

Disability Rates from Active Status

Age	General	Safety	Probation
20	0.01%	0.05%	0.05%
25	0.01%	0.08%	0.08%
30	0.01%	0.19%	0.19%
35	0.01%	0.94%	0.94%
40	0.09%	1.52%	1.52%
45	0.27%	1.60%	1.60%
50	0.44%	2.14%	2.14%
55	0.50%	2.50%	2.50%
60	0.50%	3.40%	3.40%
65	0.50%	0.00%	0.00%

Disability Type

Disability Type	General	Safety and Probation
Service-connected	65%	95%
Nonservice-connected	35%	5%

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	Probation
Less than 1	23.50%	17.00%	17.00%
1–2	18.00%	17.00%	17.00%
2–3	14.00%	17.00%	17.00%
3–4	11.00%	17.00%	17.00%
4–5	9.50%	14.00%	14.00%
5–6	8.50%	9.00%	9.00%
6–7	7.50%	7.00%	7.00%
7–8	7.00%	4.00%	4.00%
8–9	7.00%	4.00%	4.00%
9–10	7.00%	4.00%	4.00%
10–11	7.00%	4.00%	4.00%
11–12	5.00%	4.00%	4.00%
12–13	5.00%	4.00%	4.00%
13–14	5.00%	3.00%	3.00%
14–15	5.00%	3.00%	3.00%
15–16	5.00%	3.00%	3.00%
16–17	5.00%	1.00%	1.00%
17–18	5.00%	1.00%	1.00%
18–19	5.00%	1.00%	1.00%
19–20	5.00%	1.00%	1.00%
20 and over	5.00%	1.00%	1.00%

Benefit Election for Future Inactives

Years of Service	Refund of Member Contributions	Deferred Benefit
Less than 5	90%	10%
5 and over	20%	80%

Appendix B: Recommended Actuarial Assumptions

Assumptions for Current and Future Inactives with a Deferred Benefit

Assumption Type	General	Safety and Probation
Retirement age		
Non-reciprocal members with less than 5 years of service	70	70
Non-reciprocal members with 5 or more years of service	61	54
Reciprocal members	61	54
Reciprocity assumptions		
Future inactives assumed to work for reciprocal employer	50%	50%

For reciprocals, 4.50% compensation increases are assumed per annum.

Appendix B: Recommended Actuarial Assumptions

Retirement rates

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

Retirement Rates from Active Status — General

Age	Tiers 1, 2, and 3: Less than 30 Years of Service	Tiers 1, 2, and 3: 30 or More Years of Service	Tier 4
50	5.00%	5.00%	0.00%
51	5.00%	5.00%	0.00%
52	5.00%	5.00%	2.00%
53	5.00%	5.00%	2.00%
54	5.00%	5.00%	2.00%
55	5.00%	5.00%	5.00%
56	5.00%	5.00%	5.00%
57	9.00%	15.00%	5.00%
58	9.00%	15.00%	5.00%
59	9.00%	15.00%	5.00%
60	13.00%	20.00%	5.00%
61	17.00%	20.00%	8.00%
62	22.00%	40.00%	14.00%
63	20.00%	20.00%	12.00%
64	20.00%	20.00%	12.00%
65	40.00%	40.00%	30.00%
66	40.00%	40.00%	30.00%
67	40.00%	40.00%	30.00%
68	40.00%	40.00%	30.00%
69	40.00%	40.00%	30.00%
70	40.00%	40.00%	40.00%
71	40.00%	40.00%	40.00%
72	40.00%	40.00%	40.00%
73	40.00%	40.00%	40.00%
74	40.00%	40.00%	40.00%
75 and over	100.00%	100.00%	100.00%

Appendix B: Recommended Actuarial Assumptions

Retirement Rates from Active Status — Safety and Probation

Age	Safety Tiers 1 and 2: Less Than 25 Years of Service	Safety Tiers 1 and 2: 25 or More Years of Service	Safety Tier 3	Probation Tiers 1 and 2	Probation Tier 3
50	5.00%	12.00%	3.00%	10.00%	5.00%
51	5.00%	12.00%	3.00%	10.00%	5.00%
52	5.00%	12.00%	3.00%	10.00%	5.00%
53	5.00%	12.00%	3.00%	10.00%	5.00%
54	10.00%	30.00%	4.00%	10.00%	5.00%
55	15.00%	40.00%	6.00%	15.00%	10.00%
56	15.00%	40.00%	12.00%	15.00%	15.00%
57	30.00%	40.00%	15.00%	15.00%	15.00%
58	30.00%	40.00%	18.00%	20.00%	20.00%
59	40.00%	40.00%	40.00%	20.00%	20.00%
60	50.00%	50.00%	50.00%	40.00%	40.00%
61	50.00%	50.00%	50.00%	40.00%	40.00%
62	50.00%	50.00%	50.00%	40.00%	40.00%
63	50.00%	50.00%	50.00%	40.00%	40.00%
64	50.00%	50.00%	50.00%	40.00%	40.00%
65 and over	100.00%	100.00%	100.00%	100.00%	100.00%

Spouse assumptions

Spousal Assumptions for Actives and Inactives

Member Gender	% with Spouse at Retirement or Pre-Retirement Death	Spouse Age	Spouse Gender
Male	70%	2 years younger than member	Female
Female	55%	2 years older than member	Male

Form of payment

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

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 and Probation members are assumed to be male.

Appendix B: Recommended Actuarial Assumptions

Future benefit accruals

1.0 year of service per year of employment, plus 0.017 years of additional service to anticipate conversion of unused sick leave for each year of employment, for members expected to retire directly from active employment and to receive a service retirement benefit.

Inclusion of deferred vested members

All deferred vested members are included in the valuation.

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