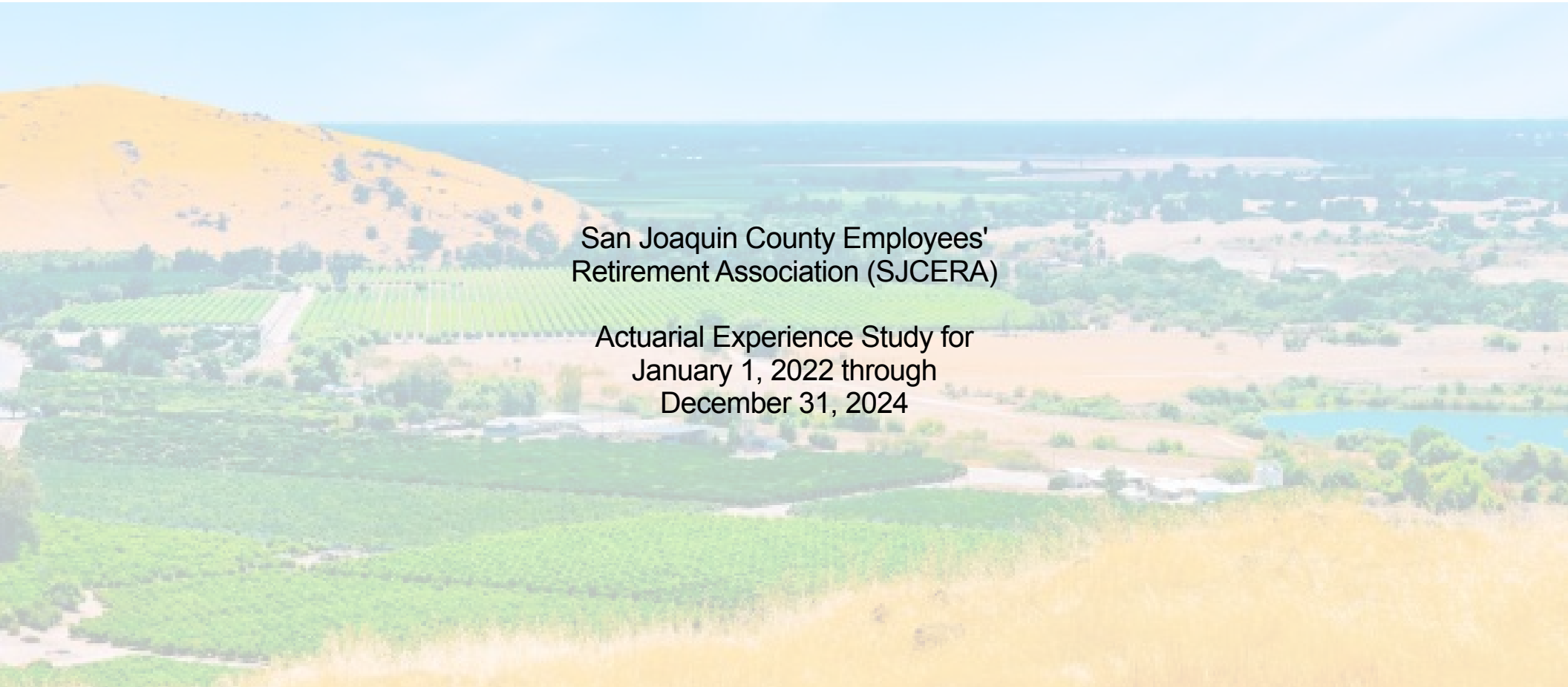


San Joaquin County Employees' Retirement Association (SJCERA)

Actuarial Experience Study for January 1, 2022 through December 31, 2024

Economic Assumptions

- Inflation
- Discount Rate
- Wage Inflation\Payroll Growth
- COLAs

Demographic Assumptions

- Decrements
- Other Assumptions

Cost Impact

- Overall Plan
- Valuation Subgroups

These are the current economic assumptions.

Inflation Rate
Current: 2.75%

Price inflation; building block for other assumptions

Return on Assets
Current: 6.75%

Assumed annual return on investments; net of investment expenses

Wage Growth
Current: 3.00%

Price inflation plus real wage growth

COLA Rates
Current: 2.60% (actives); 2.75% (retirees)

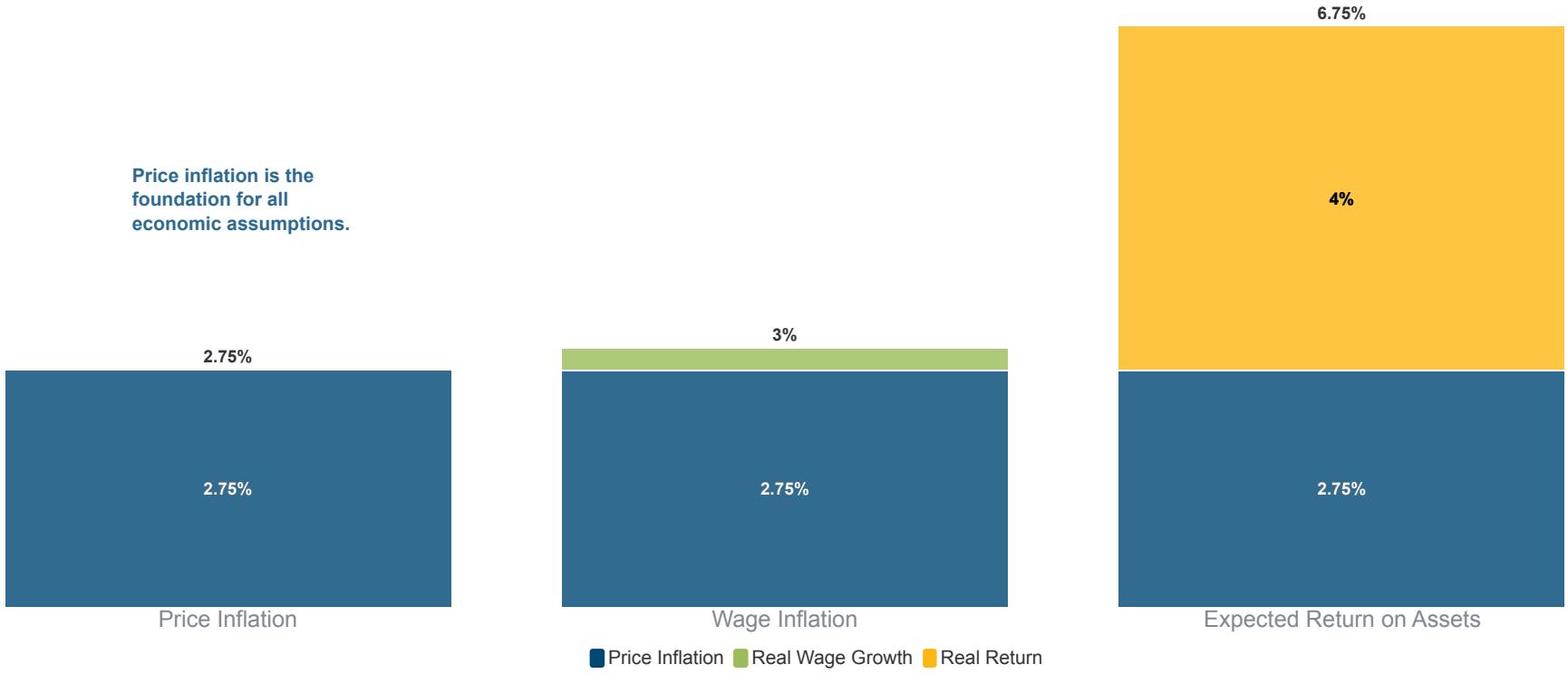
Increases in post-retirement COLAs; affected by caps and banking provisions

Summary

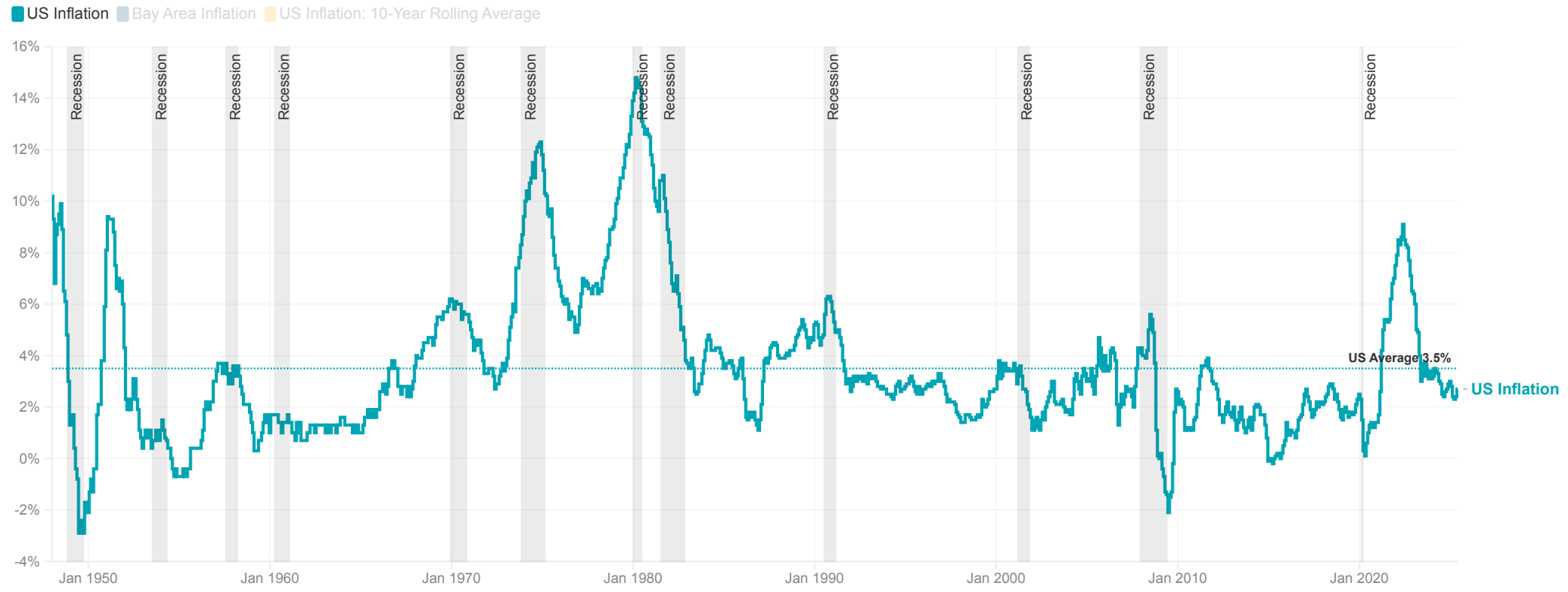
Assumption	Current	Baseline (Banking change only)	Alternative 1 (Lower inflation / COLA)	Alternative 2 (Lower inflation / Alt COLA)
Price Inflation	2.75%	2.75%	2.50%	2.50%
Discount Rate or Nominal Return (net of investment expenses)	6.75%	6.75%	6.75%	6.75%
Real Return	4.00%	4.00%	4.25%	4.25%
Wage / Payroll Growth	3.00%	3.00%	3.00%	3.00%
COLA Growth (No COLA Bank)	2.60%	2.60%	2.40%	2.50%
COLA Growth (Existing COLA Bank)	2.75%	3.00% until bank depleted, 2.60% thereafter	3.00% until bank depleted, 2.40% thereafter	3.00% until bank depleted, 2.50% thereafter

Assumptions must be reasonable, both individually AND in aggregate.

Traditional Building Block Approach



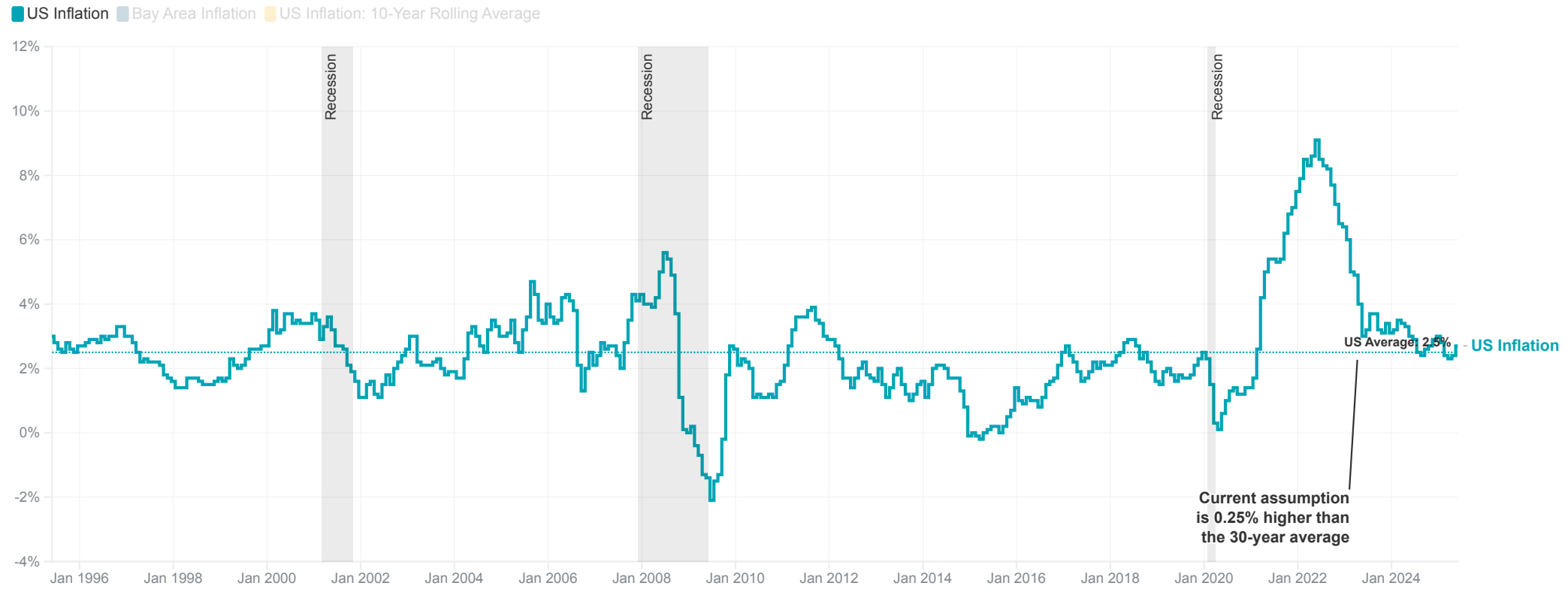
We start by reviewing historical inflation, as measured by CPI-U. The long-term history provides perspective on recent inflation.



Source: US Inflation - U.S. Bureau of Labor Statistics, Bay Area Inflation - U.S. Bureau of Labor Statistics
Inflation measured by CPI-U, All Items, not seasonally adjusted, percent change from year ago

CHEIRON

However, we focus more on recent history when evaluating the current assumption.



Source: US Inflation - U.S. Bureau of Labor Statistics, Bay Area Inflation - U.S. Bureau of Labor Statistics
Inflation measured by CPI-U, All Items, not seasonally adjusted, percent change from year ago

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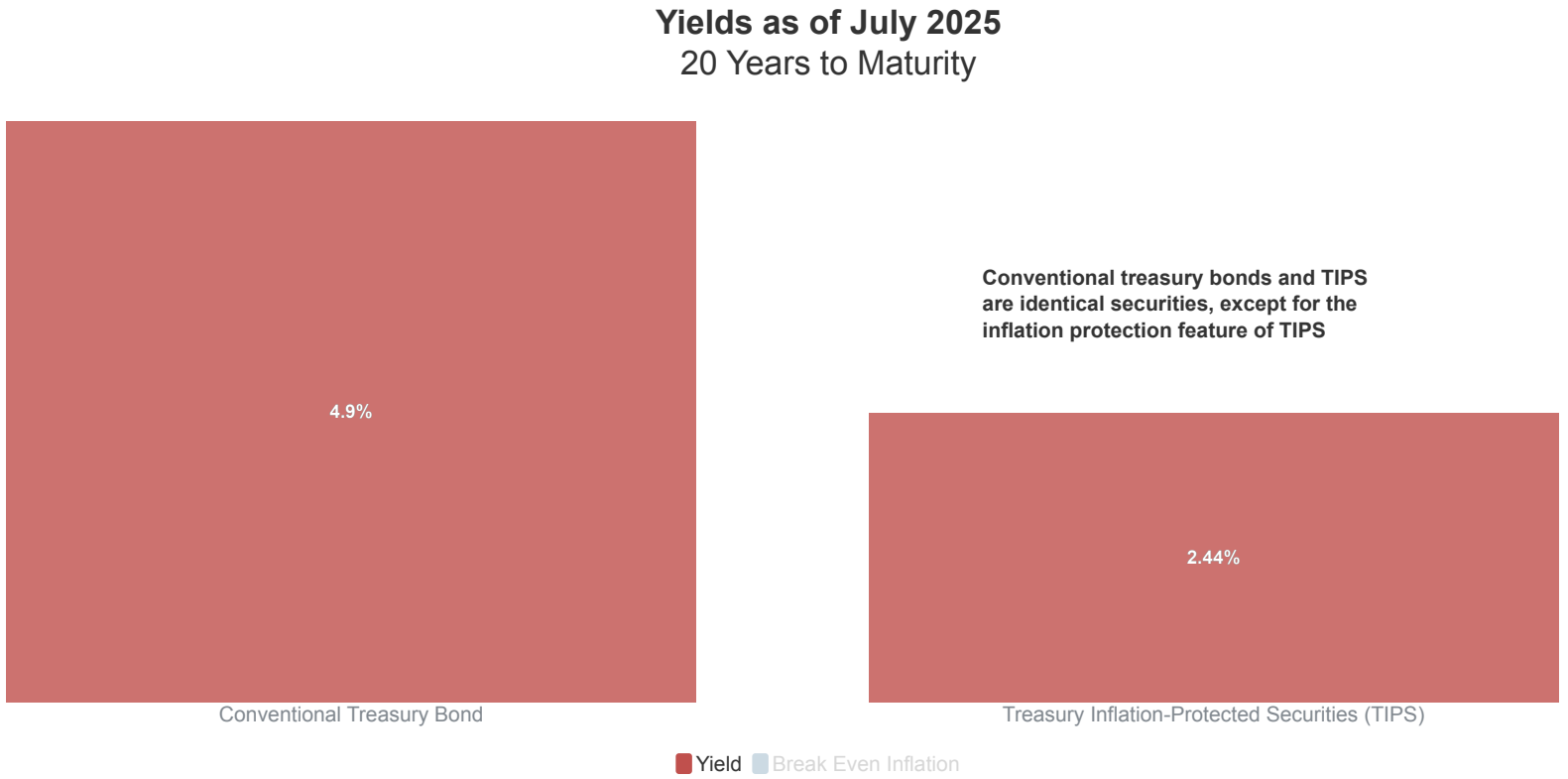
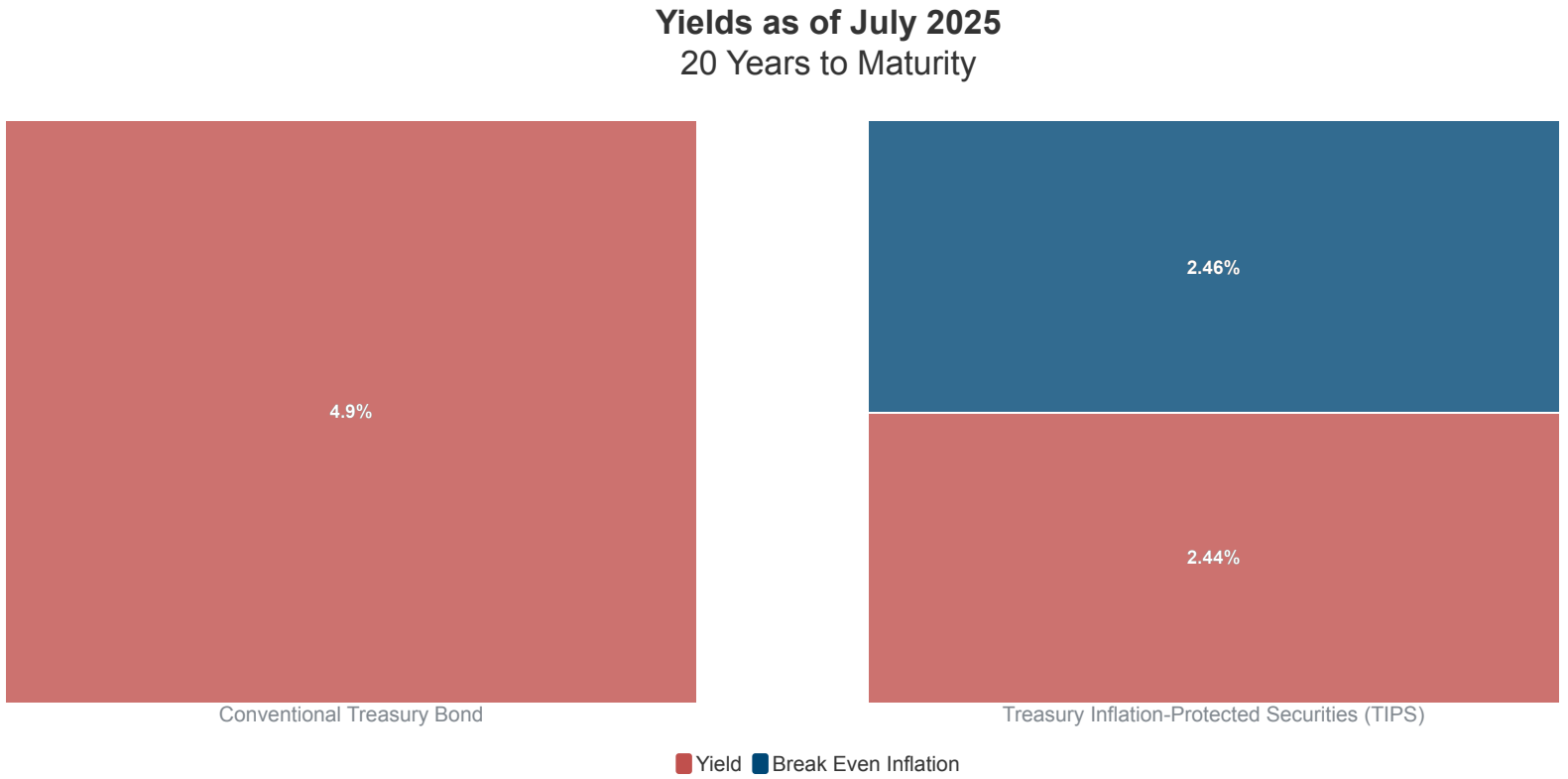
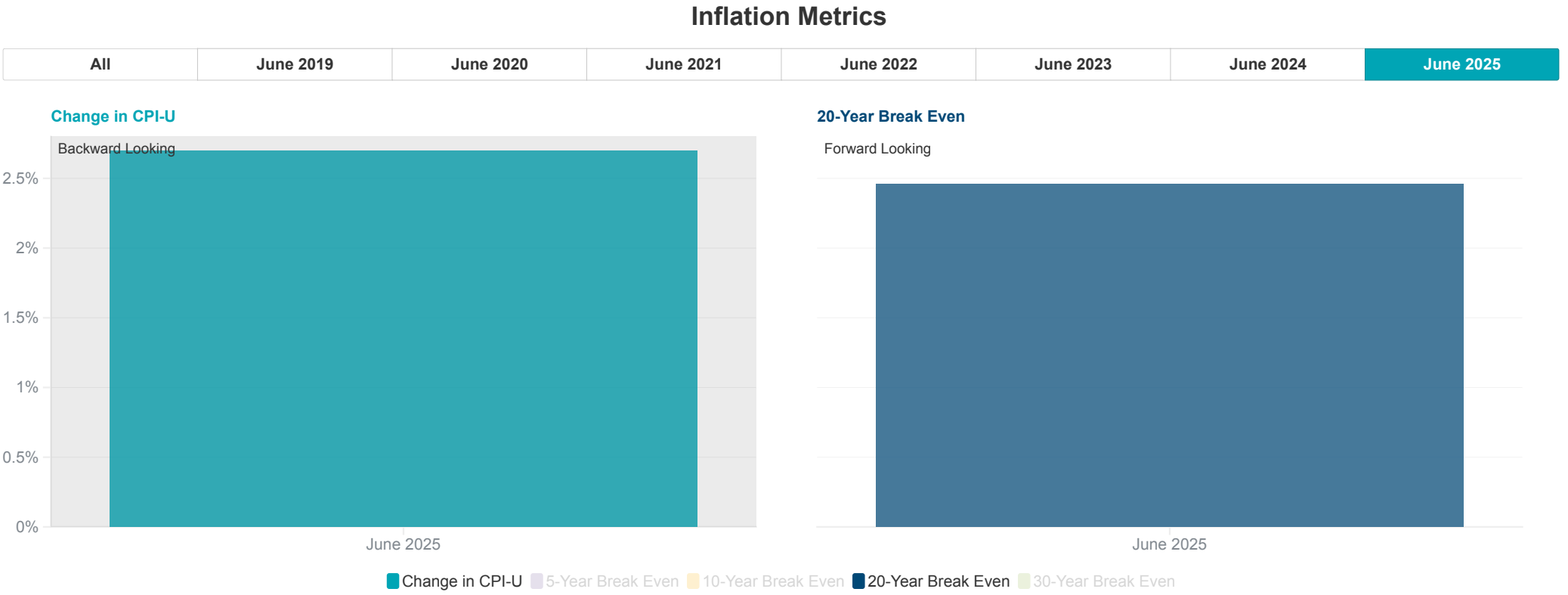

Yields as of July 2025
20 Years to Maturity
4.9%
Conventional Treasury Bond
Conventional treasury bonds and TIPS are identical securities, except for the inflation protection feature of TIPS
2.44%
Treasury Inflation-Protected Securities (TIPS)
Yield
Break Even Inflation

The difference between the yields on TIPS and conventional treasury bonds is a proxy for investors' inflation expectation.

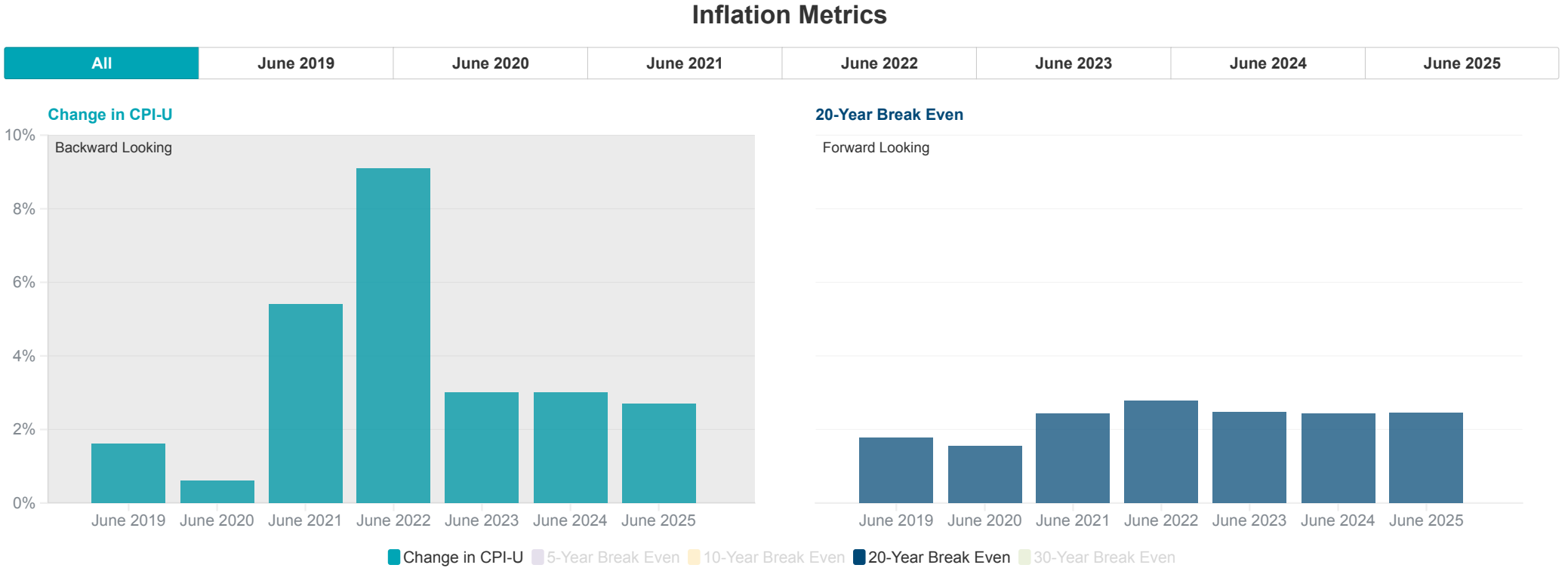


It can be helpful to consider the current level of break even inflation relative to recent inflation readings.



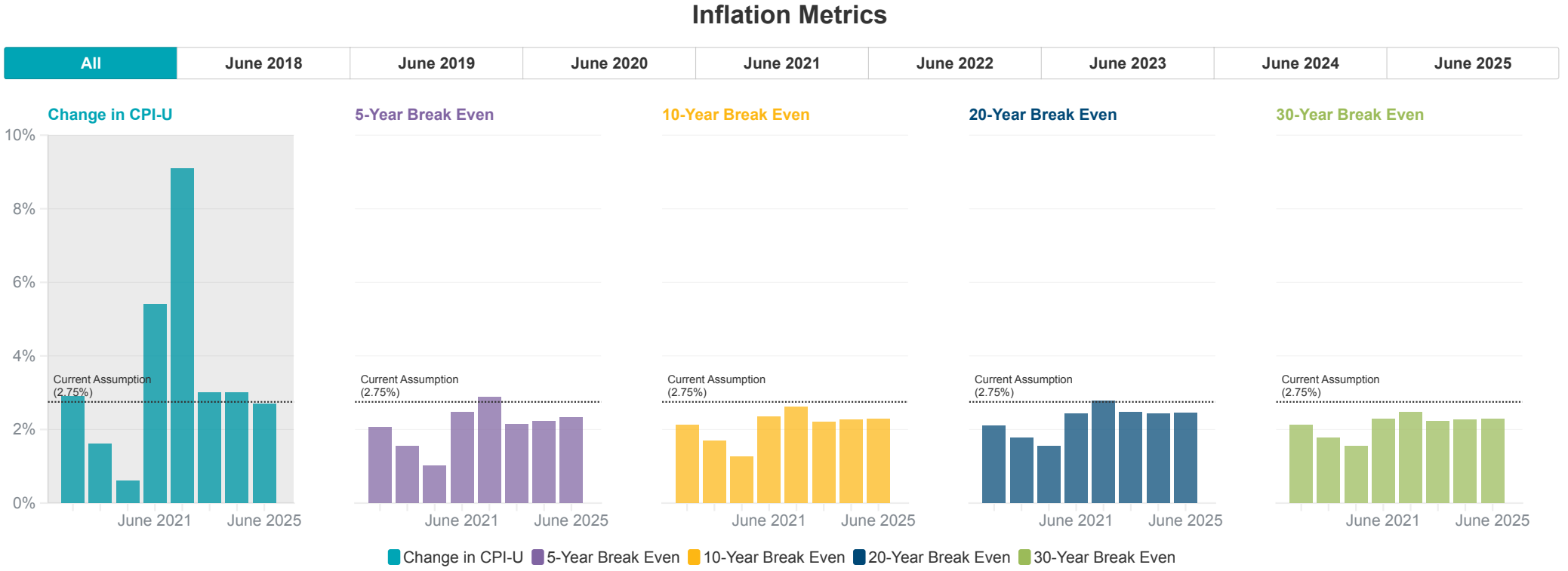
Source: Board of Governors of the Federal Reserve System

And to understand the changes in those metrics over time. Inflation has fluctuated significantly over the last five years but inflation expectations have remained steadier.



Source: Board of Governors of the Federal Reserve System

That remains true across different time horizons. Notably, the expectations have generally remained modestly below the current assumption.



Source: Board of Governors of the Federal Reserve System

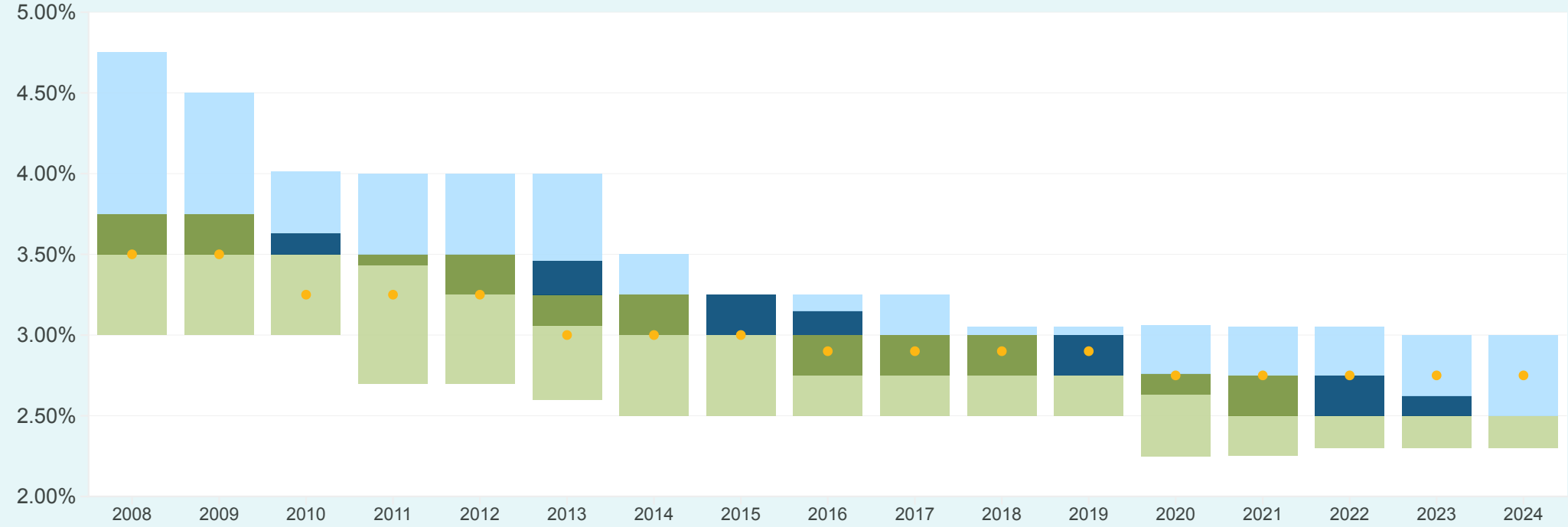
CHEIRON

Another important consideration is the trend among peer retirement systems.

California Public Retirement Systems - Distribution of Price Inflation Assumptions

Gold dot = San Joaquin CERA

Percentiles of Distribution: Min to 25th | 25th to 50th | 50th to 75th | 75th to Max



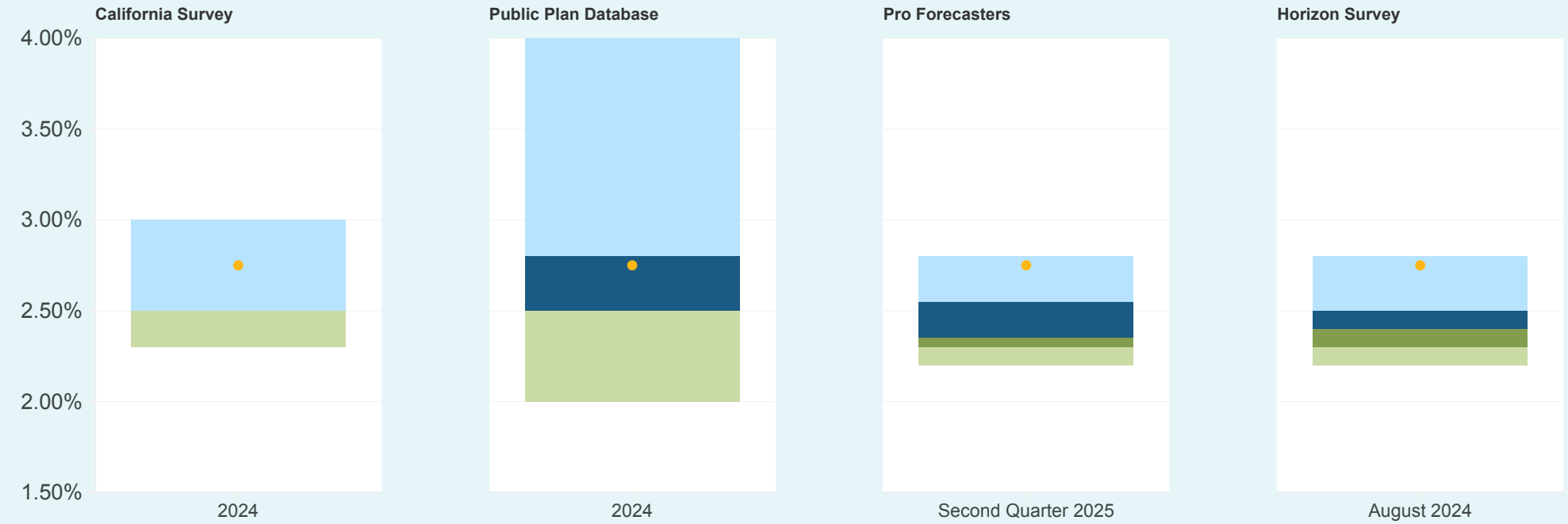
CHEIRON Source: Cheiron Survey of California Public Retirement Systems • **Hover over a bar** to see the statistics for that year. **Click on a bar** to see a bee swarm of the plans for the year.

We also look at a wider universe of public retirement systems, professional economic forecasters and investment consultants' capital market assumptions.

Distribution of Price Inflation Forecasts and Assumptions

Gold dot = SJCERA

Percentiles of Distribution: Min to 25th | 25th to 50th | 50th to 75th | 75th to Max



CHEIRON Source: Survey of Professional Forecasters, Horizon Survey of Capital Market Assumptions, Public Plans Data • **Hover over a bar** to see the statistics.

The current price inflation assumption of 2.75% is slightly higher than the Federal Reserve's inflation target of 2.40%.

The Fed's interprets its statutory mandate of stable prices as "inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures (PCE)".

Since 2000, the annual change in CPI-U has been higher than the annual change in PCE by about 40 bps, on average.

So, over this period, the goal would have been achieved with average annual inflation of about 2.40%, based on CPI-U.

Source: The Fed Explained: What the Central Bank Does, U.S. Bureau of Economic Analysis, Personal Consumption Expenditures: Chain-type Price Index [PCEPI], retrieved from FRED, Federal Reserve Bank of St. Louis, June 27, 2024.

Recommendation: Consider a reduction in the price inflation assumption from 2.75% to 2.50%

- Reasonable from a **historical perspective**
- In line with **financial market expectations**
- Similar to **professional forecasts**
- **Trend for public plans** toward lower assumptions
- Consistent with the Fed's **inflation target**
- Current assumption is also **still reasonable**, but higher slightly higher than market expectations and median of professional forecasters

> National average of 2.50% annually over last 30 years

Real Return & Discount Rate

Expected Risk Premium

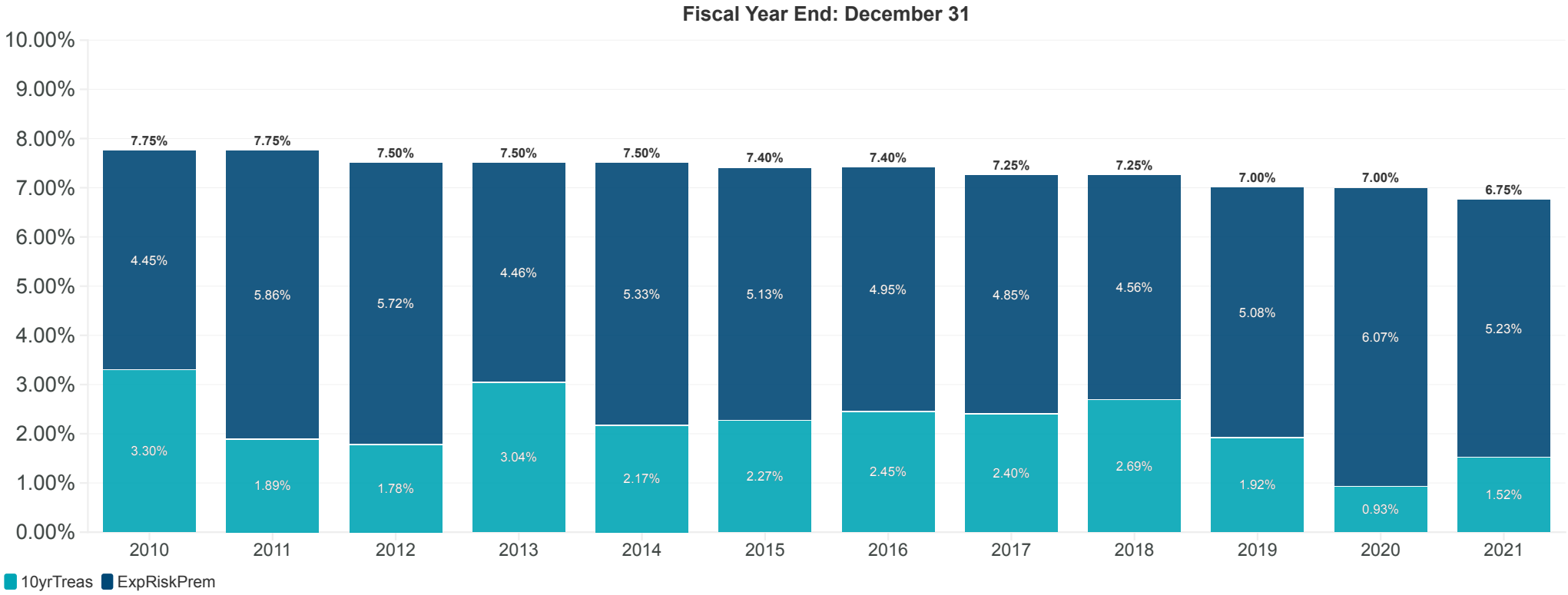
Capital Market Expectations

Trends among California Public Plans

From 2010 to 2021 the discount rate was lowered to maintain a relatively steady expected risk premium.

Expected Risk Premium = Discount Rate - 10-Year Treasury Yield

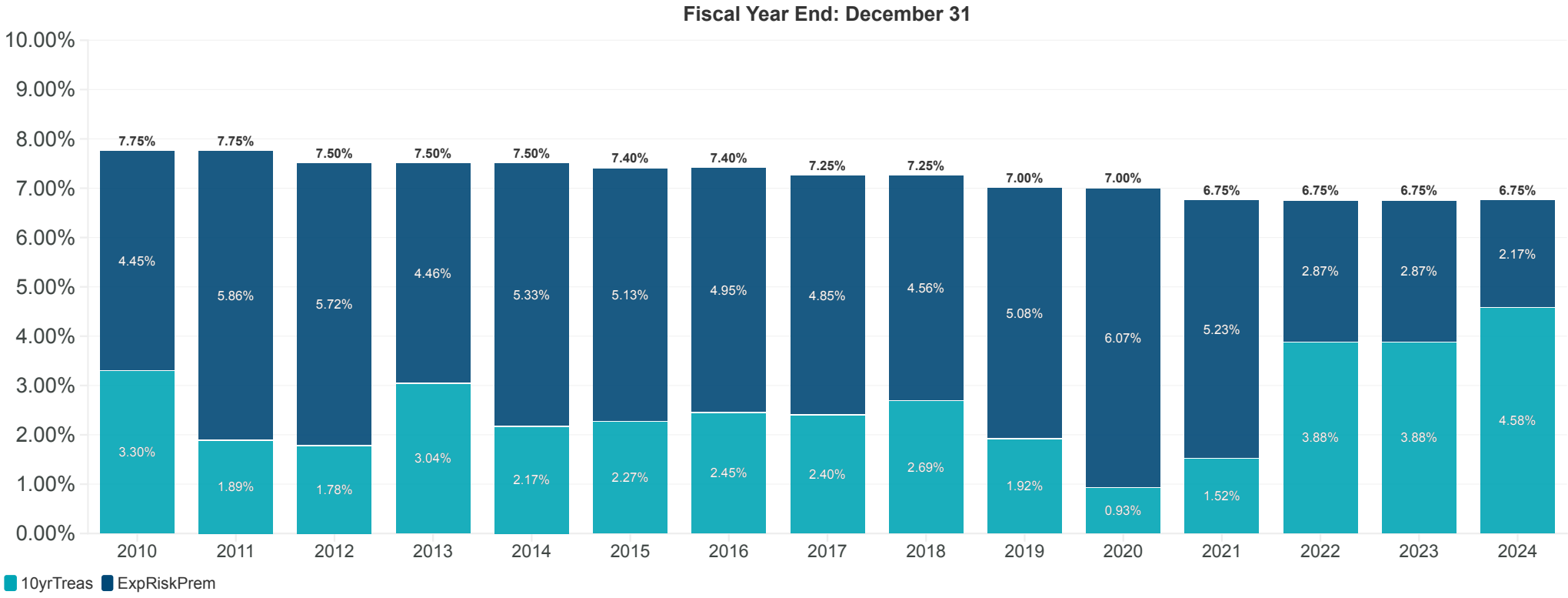
Pre-2022



In recent years, the risk-free rate has increased and the expected risk premium is relatively low.

Expected Risk Premium = Discount Rate - 10-Year Treasury Yield

All Years



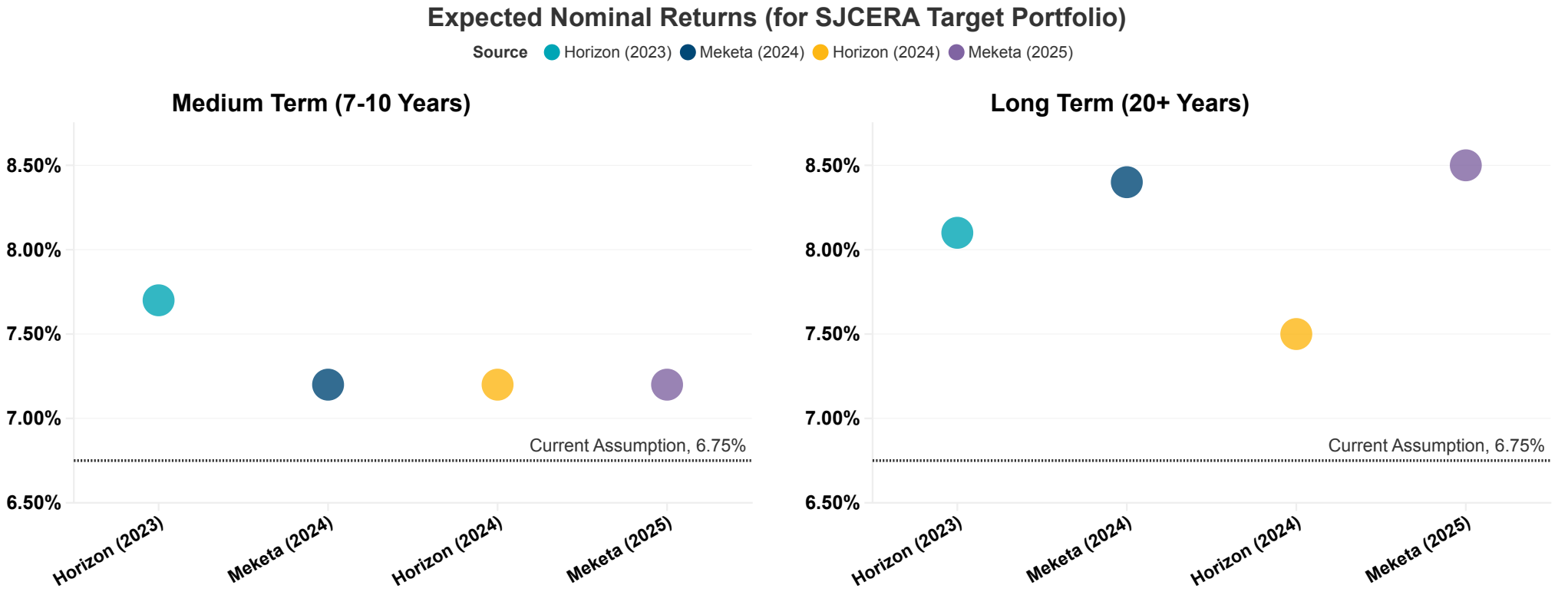
Capital Market Expectations

- Collect assumptions of returns, risks, and correlations from **investment consultants**
- **Adjust for investment expenses** of consultant, custodian and fees for passively-managed assets
- Model SJCERA's target portfolio using these assumptions

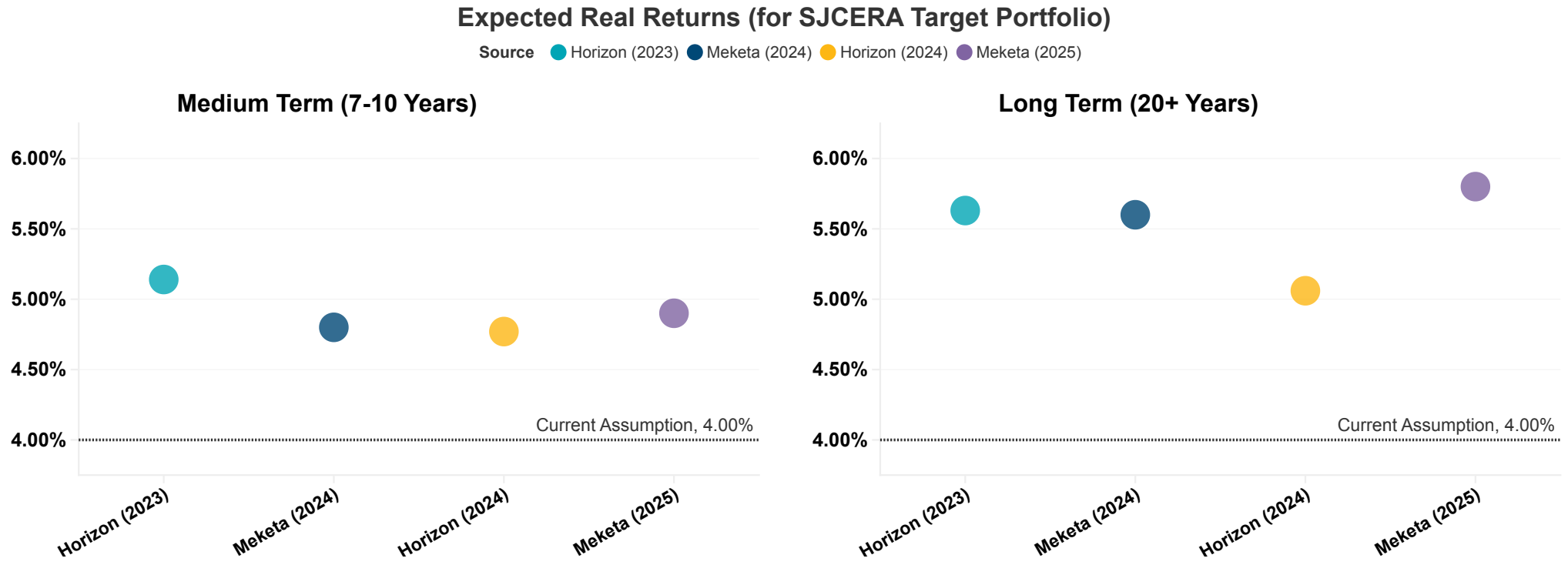
Meketa (10- and 20-year assumptions from February 2024 and 2025)

Horizon Actuarial Services Survey of Capital Market Assumptions (10- and 20-year assumptions based on 2023 and 2024 data from about 40 firms)

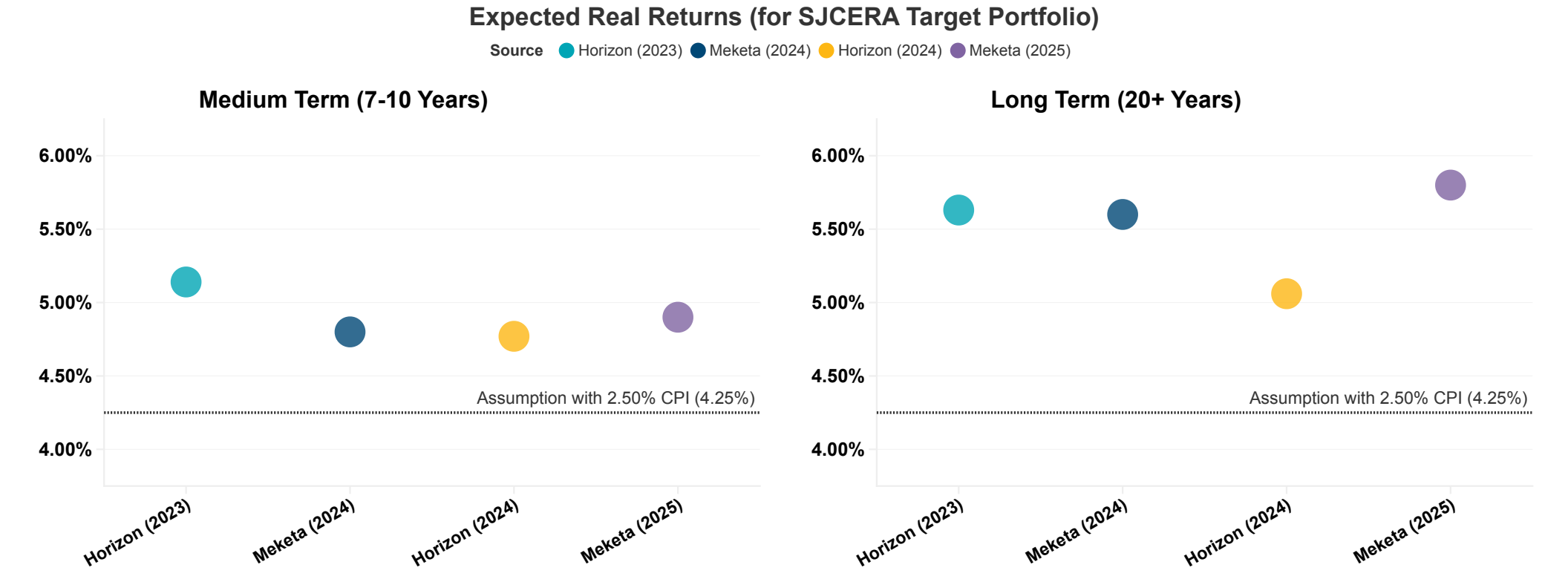
We modeled the expected nominal returns for all eight sets of capital market assumptions. The current assumption of 6.75% is still reasonable, with a modest (<0.5%) margin for conservatism for the 10-year outlook.



If we look at the real returns (the return above the inflation assumption underlying each set of CMAs), the margins for conservatism are greater: at least 0.75% above the Plan's current assumption of 4.00% (using a 6.75% expected nominal return and a 2.75% inflation assumption).



However, if the inflation for the Plan is reduced to 2.50%, and the nominal return stays the same at 4.75%, the resulting new real return assumption of 4.50% is now closer to the consultant expectations (within 0.5% for the 10-year period).

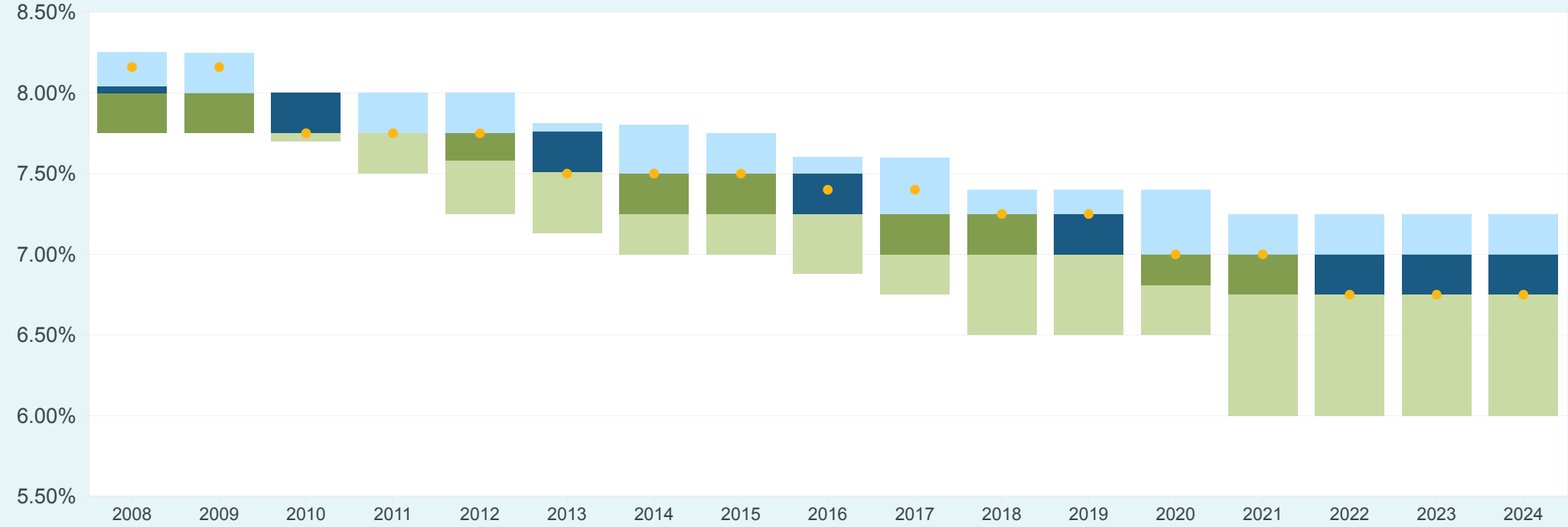


We examine the trends among similar systems. The current discount rate is at the median but the lower quartile has begun to decrease.

California Public Retirement Systems - Distribution of Discount Rates

Gold dot = San Joaquin CERA

Percentiles of Distribution Min to 25th | 25th to 50th | 50th to 75th | 75th to Max



CHEIRON Source: Cheiron Survey of California Public Retirement Systems • **Hover over a bar** to see the statistics for that year. **Click on a bar** to see a bee swarm of the plans for the year.

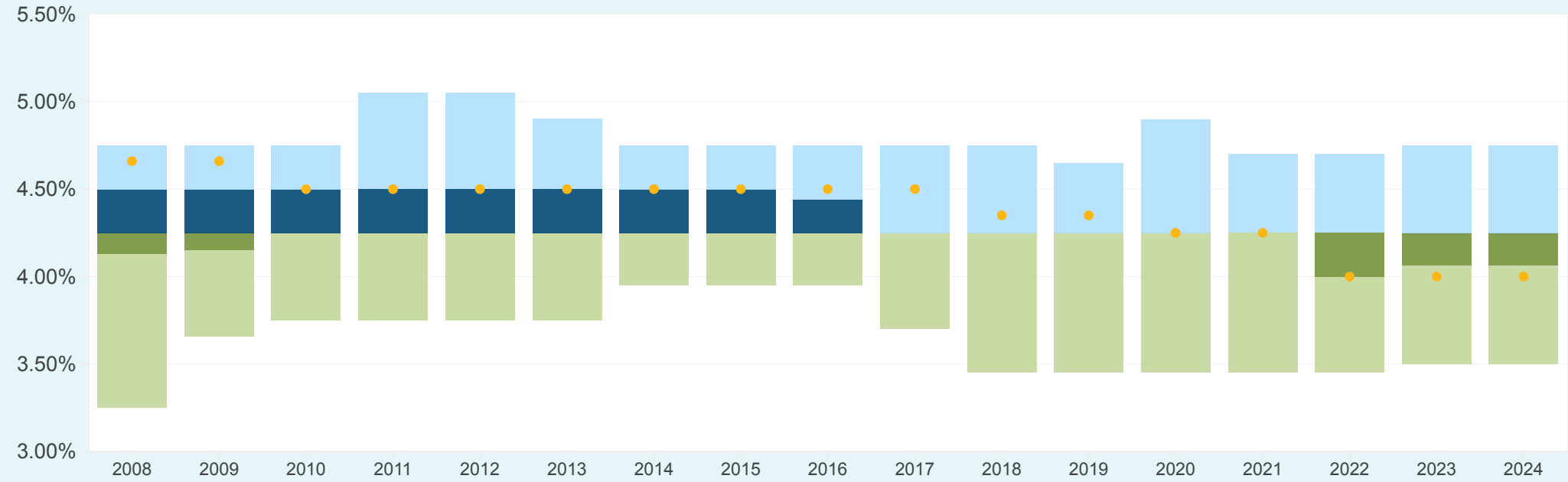
The real return is in the lower quartile, but would equal the median (4.25%), if the inflation assumption is reduced and the nominal return remains at 6.75%.

California Public Retirement Systems - Distribution of Real Return Assumptions

Real Return = Discount Rate - Price Inflation

Gold dot = San Joaquin CERA

Percentiles of Distribution Min to 25th | 25th to 50th | 50th to 75th | 75th to Max



CHEIRON Source: Cheiron Survey of California Public Retirement Systems • **Hover over a bar** to see the statistics for that year. **Click on a bar** to see a bee swarm of the plans for the year.

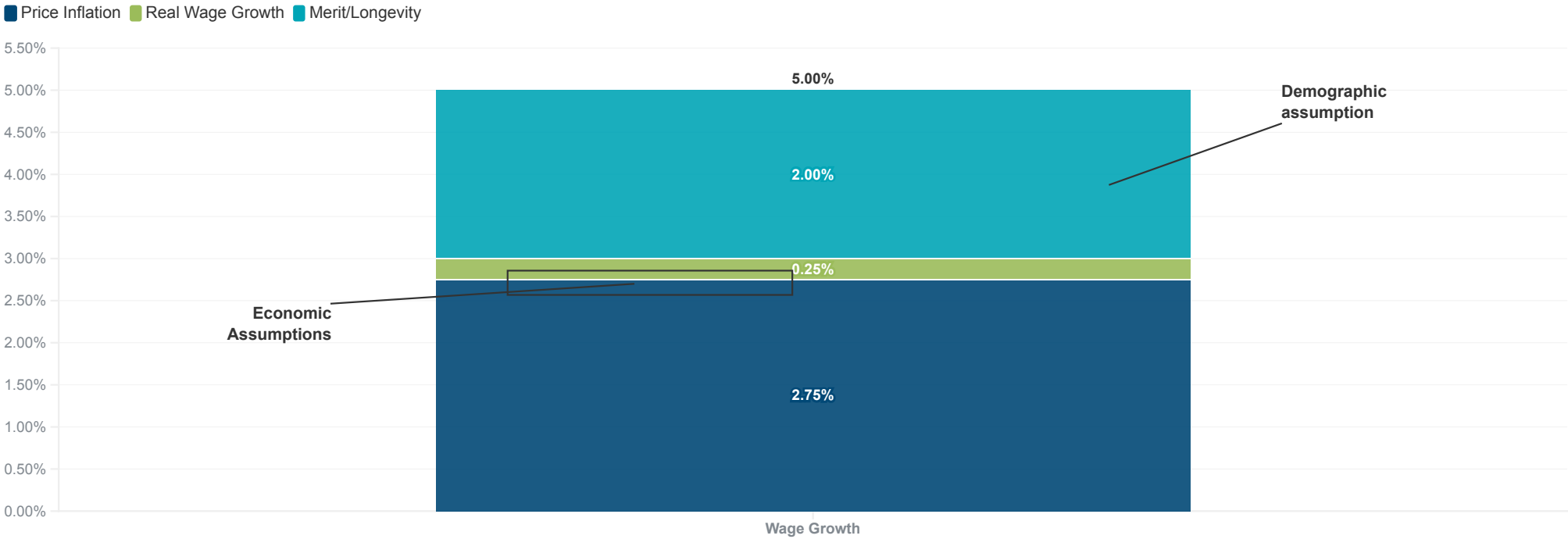
Recommendation: Leave the nominal return assumption at 6.75%, which results in an increase in the real return assumption from 4.00% to 4.25% if the inflation assumption is reduced

- Current expected risk premium is relatively low, but this measure can be very volatile
- Current discount rate is less than Meketa's short- and long-term expectations
- Current discount rate at the median for California public plans.
- Current real return rate under the median for California public plans.

> Also reasonable to leave both assumptions as-is (6.75% nominal, 4.00% real) if inflation remains at 2.75%

Salary increases are made of three components: base price inflation, plus "real" wage growth (for productivity or other reasons), plus increases in individual pay due to merit, promotion, and longevity.

Total Assumed Pay Increase Rate (General Member, 5 Years of Service)



For historical real wage growth, we consider data from both SJCERA and Local Governments across the country.

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Average Weekly Wages • Local Governments data as of 2024 Q4, SJCERA data as of 2023 Q4
Local Government wage growth compared to national CPI-U, SJCERA wage growth compared to Bay Area CPI-U

We calculate historical real wage growth by subtracting inflation from total wage growth. SJCERA members have lagged local inflation over 10 and 15 year periods, but recent wage growth has exceeded inflation.

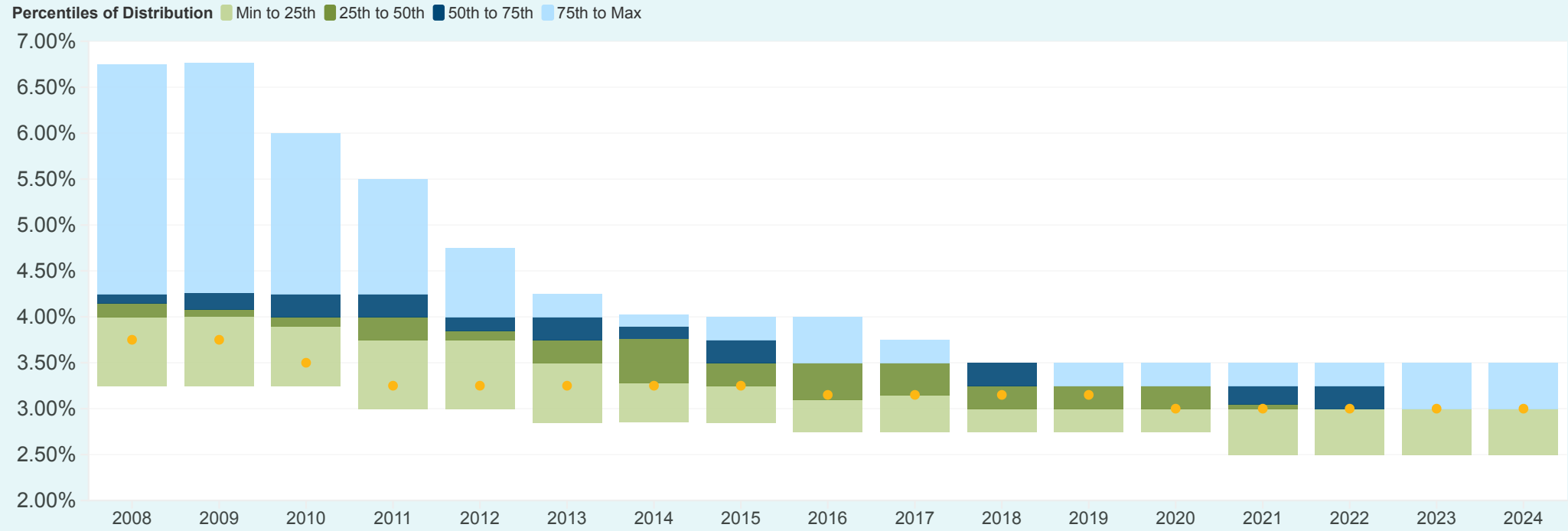
Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Average Weekly Wages • Local Governments data as of 2024 Q4, SJCERA data as of 2023 Q4
Local Government wage growth compared to national CPI-U, SJCERA wage growth compared to Bay Area CPI-U

When compared to peer systems, SJCERA's current overall wage inflation assumption is at the median. **30/81**

California Public Retirement Systems - Distribution of Wage Inflation Assumptions

Wage Inflation = Price Inflation + Real Wage Growth

Gold dot = San Joaquin CERA



CHEIRON Source: Cheiron Survey of California Public Retirement Systems • **Hover over a bar** to see the statistics for that year. **Click on a bar** to see a bee swarm of the plans for the year.

Recommendation: If inflation reduced to 2.50%, increase real wage growth assumption from 0.25% to 0.50%

- Reasonable from a **historical perspective** but near the lower end of the range
- Current assumption slightly lower than many other **California pension systems**
- Lower than some **expert forecasts**
- Use the same assumption for growth in **overall payroll**.

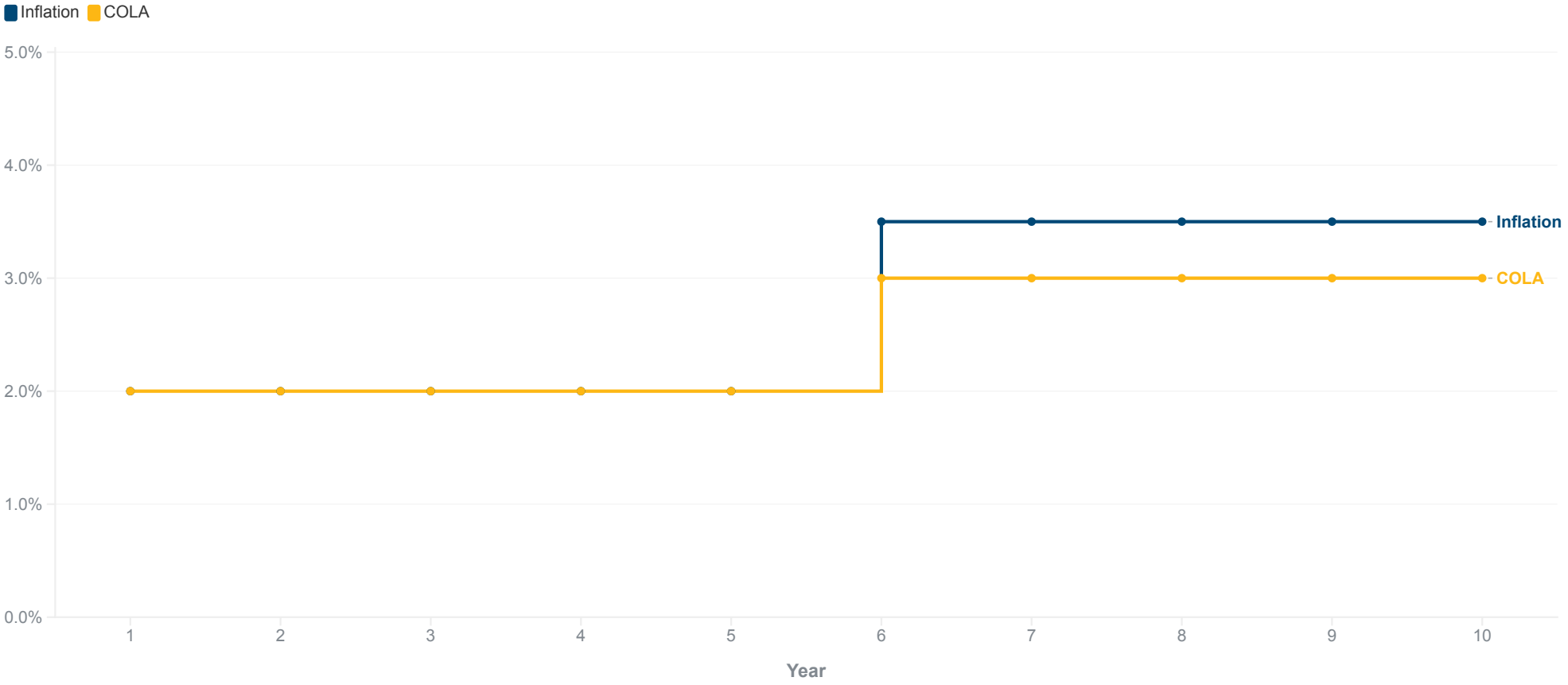
> 3.00% wage inflation assumption if price inflation of 2.50%

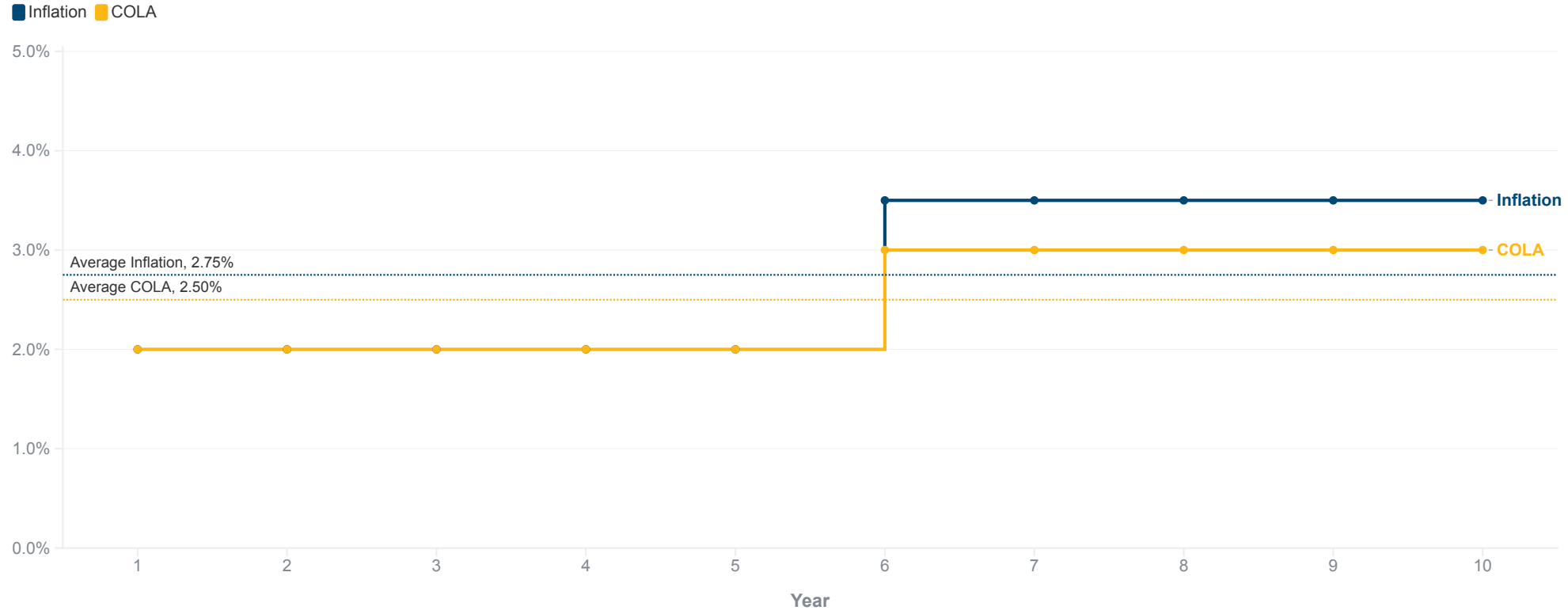
Source: Office of the Chief Actuary, Social Security Administration: The Long-Range Economic Assumptions For the 2025 Trustees Report

Cost of Living Adjustments (COLAs)

- Members are eligible for COLAs, based on increase in the Bay Area Consumer Price Index (CPI-U)
- 3% cap on the annual COLA increase
- Increases in the CPI above the maximum can be banked for future years in which the change in the CPI is below the cap

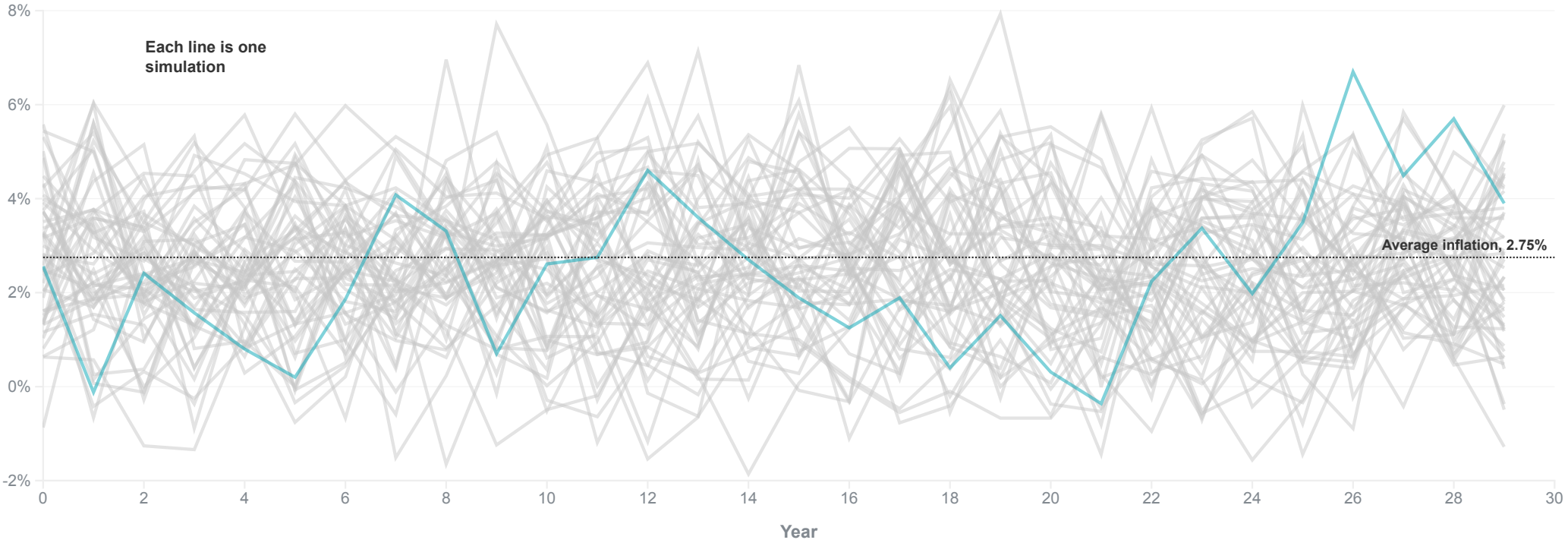
Since the current price inflation assumption of 2.75% is less than the maximum COLA of 3.00%, it seems natural to use 2.75% as the COLA assumption.




Inflation
COLA
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
Average Inflation, 2.75%
Average COLA, 2.50%
Inflation
COLA
1
2
3
4
5
6
7
8
9
10
Year

To better analyze the relationship between inflation and COLAs, we produced stochastic simulations of inflation.

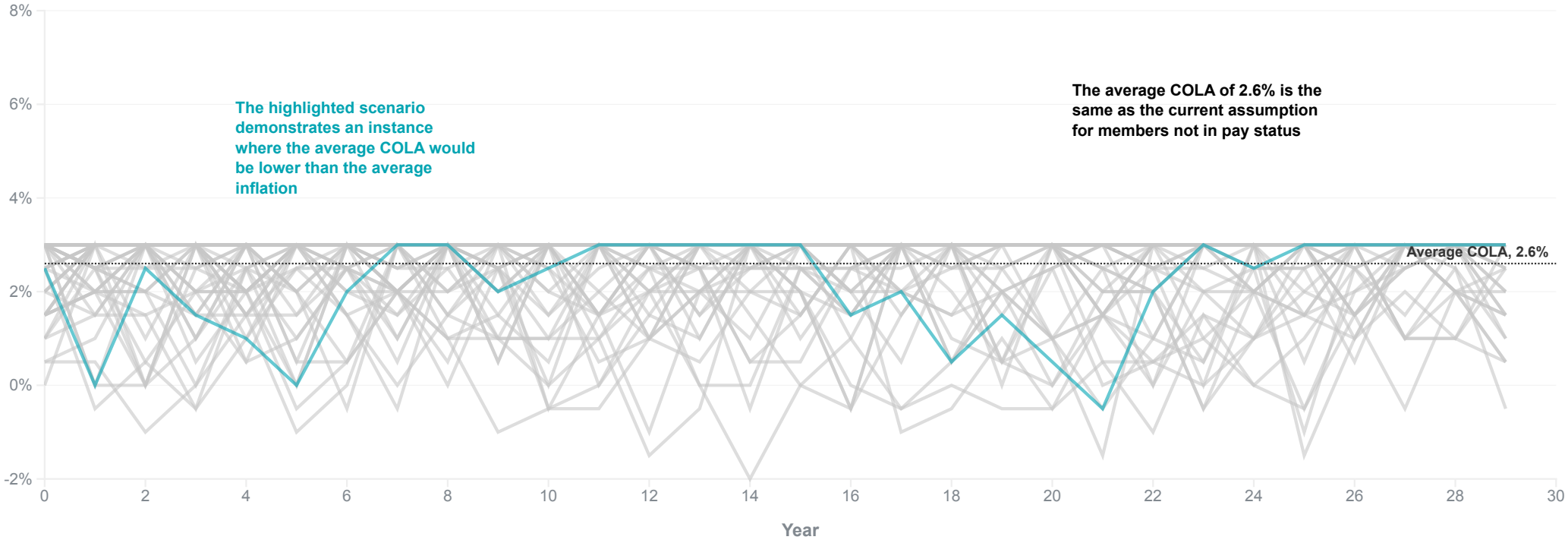
Inflation Simulations



For a given long-term estimate of inflation, simulations based on a 30% autocorrelation factor with 1.50% annual inflation volatility (expressed as a standard normal error).
This model is intended only for use in analyzing the relationship between long-term average COLAs and CPI. These assumptions may result in an unrealistically narrow distribution of annual inflation rates.

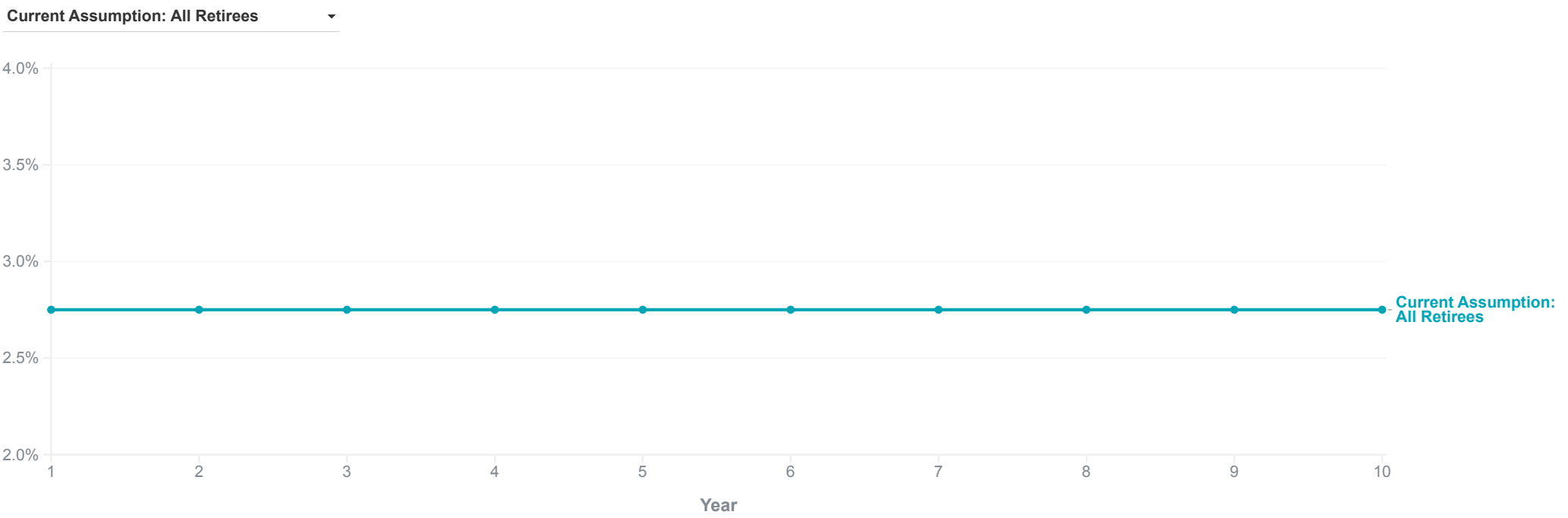
And modeled how the COLA maximum and the banking process interacts with the changes in CPI.

Modeled COLAs

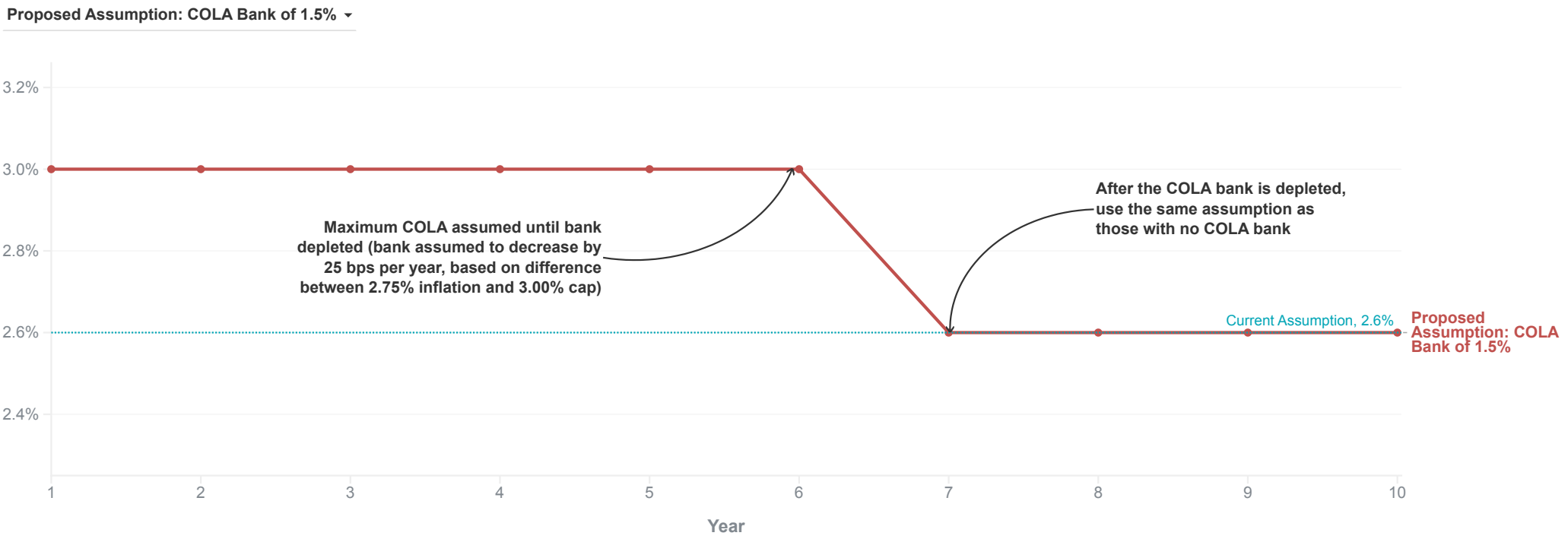


The current assumption for members in pay status is 2.75% COLA per year, not above the inflation assumption but greater than the active member assumption of 2.60% to consider the varying COLA banks for current retirees.

COLA Assumptions for Members In Pay Status

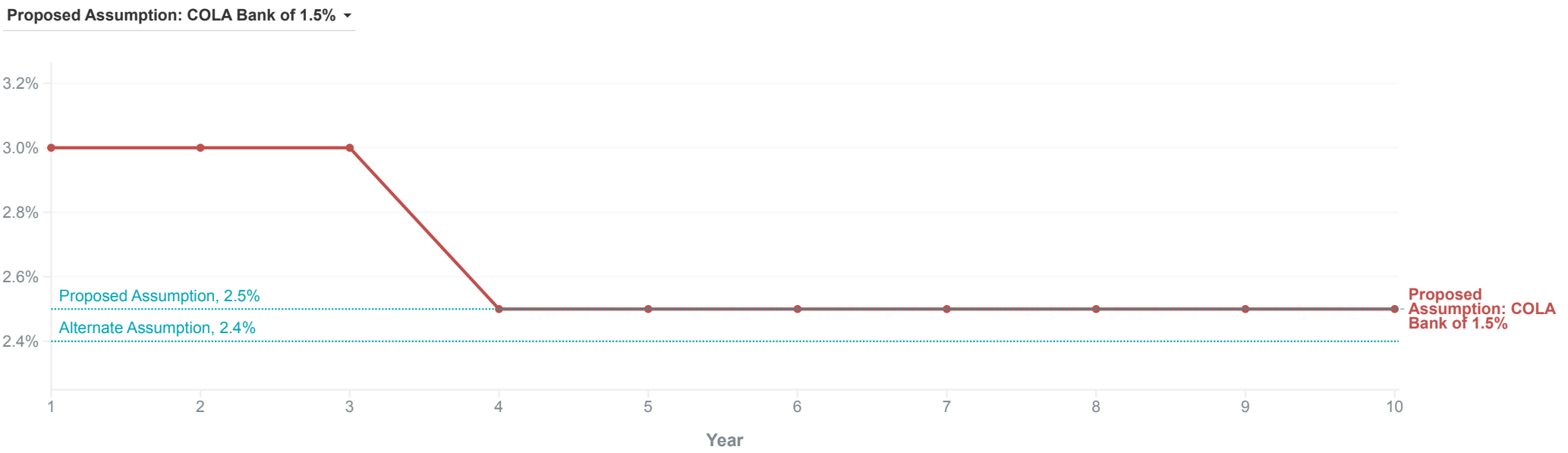


COLA Assumptions for Members In Pay Status (2.75% Inflation)



If the inflation assumption is reduced from 2.75% to 2.50%, several things change. First, for someone in pay status, the COLA bank is assumed to be drawn down quicker. The long-term assumption without a bank also drops. Typically, we would propose a rate of 2.4% (slightly less than the inflation assumption). We believe a 2.5% assumption is also reasonable (and provides a small margin for conservatism).

COLA Assumptions for Members In Pay Status (2.50% Inflation)



Recommendation: If inflation assumption reduced from 2.75% to 2.50%, reduce the COLA assumption for members with no COLA bank to 2.40% or 2.50%.

For members with an existing bank, set COLA assumption equal to the 3.0% max COLA until the bank is depleted then use the long term assumption. The bank is assumed to decrease annually by the difference between the inflation assumption and the 3.0% cap.

- The interaction of inflation with the COLA cap and the banking mechanism justifies a COLA assumption lower than inflation when no bank exists.
- The recommended assumption captures the impact of existing COLA banks more precisely.
- The recommended assumption is dynamic, incorporating future inflation experience without any additional analysis.

> Simulation shows long-term average of COLA with no bank, 3% cap, and 2.50% inflation is expected to be 2.40%. So 2.50% assumption would provide small margin of conservatism.

For the demographic assumptions, we again start with a summary of our recommendations to provide context for our discussion.

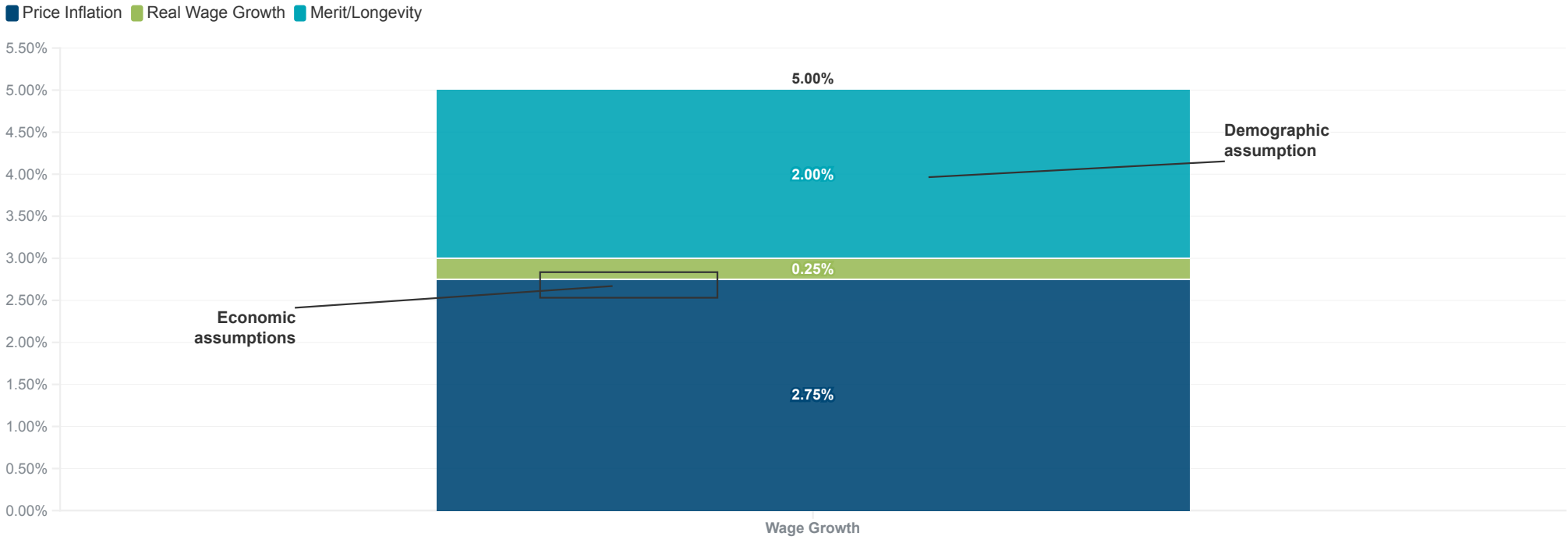
Assumption	Group	Recommendation
Merit/Longevity Pay	General	No changes proposed
Merit/Longevity Pay	Safety	No changes proposed
Retirement	General Non-PEPRA	Females decrease for 10-29 years of service (YOS), increase for 30+ YOS, males decrease for 10+ YOS
Retirement	General PEPRA	Females decrease for 5-29 YOS, males increase from 5-9 YOS; use non-PEPRA rates at all other service levels
Retirement	Safety Non-PEPRA	Increase rates
Retirement	Safety PEPRA	No changes proposed
Termination	General	Increase rates
Termination	Safety	Increase rates
Disability	General	Use adjusted CalPERS State Non-Industrial rates (reduction in rates). Increase % assumed to be duty-related for females.
Disability	Safety	Use unadjusted CalPERS State Safety rates (reduction in rates).
Mortality	Healthy Retirees & Beneficiaries	Continue to use same CalPERS base and mortality improvement tables. Increase adjustment to base tables for females from 100% to 105% (maintain 105% adjustment for males)
Mortality	Disabled Retirees	No changes proposed
Mortality	Active Employees	No changes proposed

Demographic Assumption Recommendations

Assumption	Group	Recommendation
Withdrawal of Employee Contribution Account	General	Reduce rates at most service levels
Withdrawal of Employee Contribution Account	Safety	Reduce rates at most service levels
Reciprocity	General	No changes proposed
Reciprocity	Safety	No changes proposed
Deferral Age	General	No changes proposed
Deferral Age	Safety	No changes proposed
Family Composition & Form of Benefit	All	No changes proposed
Terminal Pay Loads	All	No load applied (reduction from 1% load for Safety Tier 1 members)
Plan Administrative Expenses	All	Increase

As discussed earlier, salary increases are made of three components: base price inflation, plus "real" wage growth (for productivity or other reasons), plus increases in individual pay due to merit, promotion, and longevity.

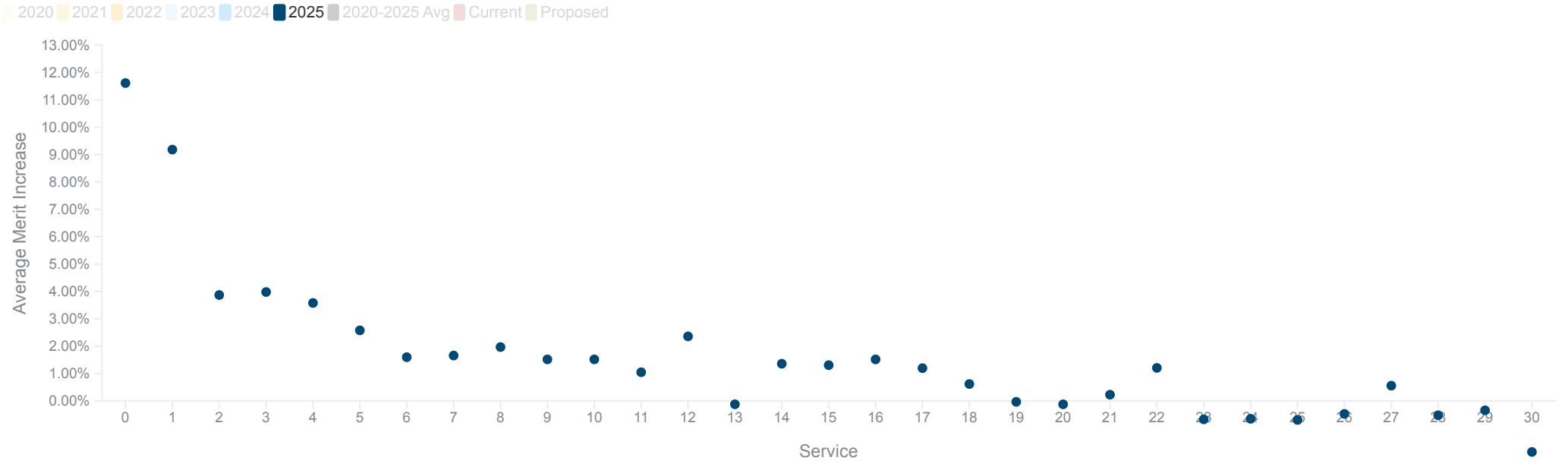
Total Assumed Pay Increase Rate (General Member, 5 Years of Service)



To analyze the merit salary increase assumption, we calculate the average year-over-year rate of salary growth at each service level, and then back out the base wage growth to get the average merit increase. We do this for each of the last six years.

Merit Pay Increase Rates

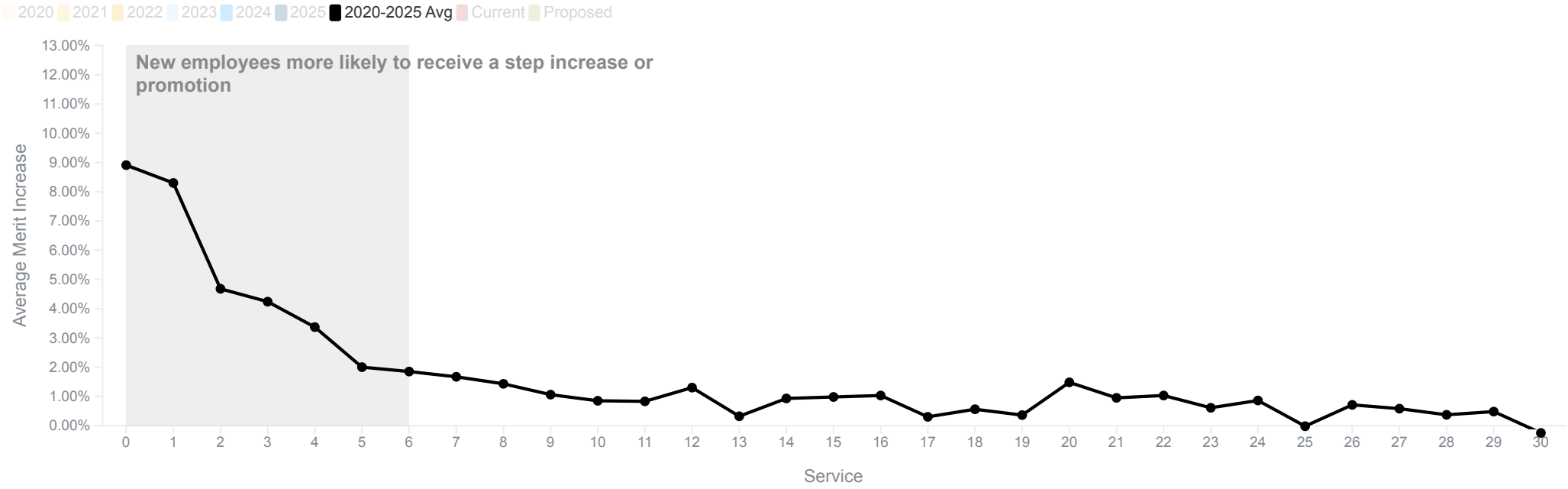
General



Then calculate the average merit increase over the six-year period for General members.

Merit Pay Increase Rates

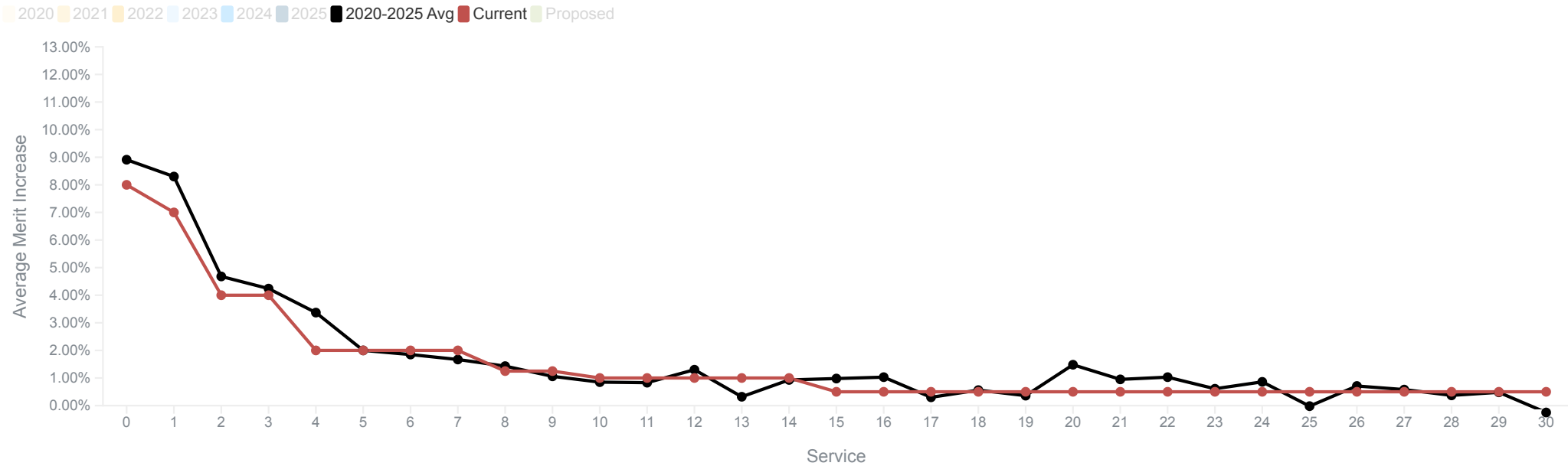
General



We compare the actual data to our current assumption. For the General members, the current assumption fits the overall pattern relatively closely.

Merit Pay Increase Rates

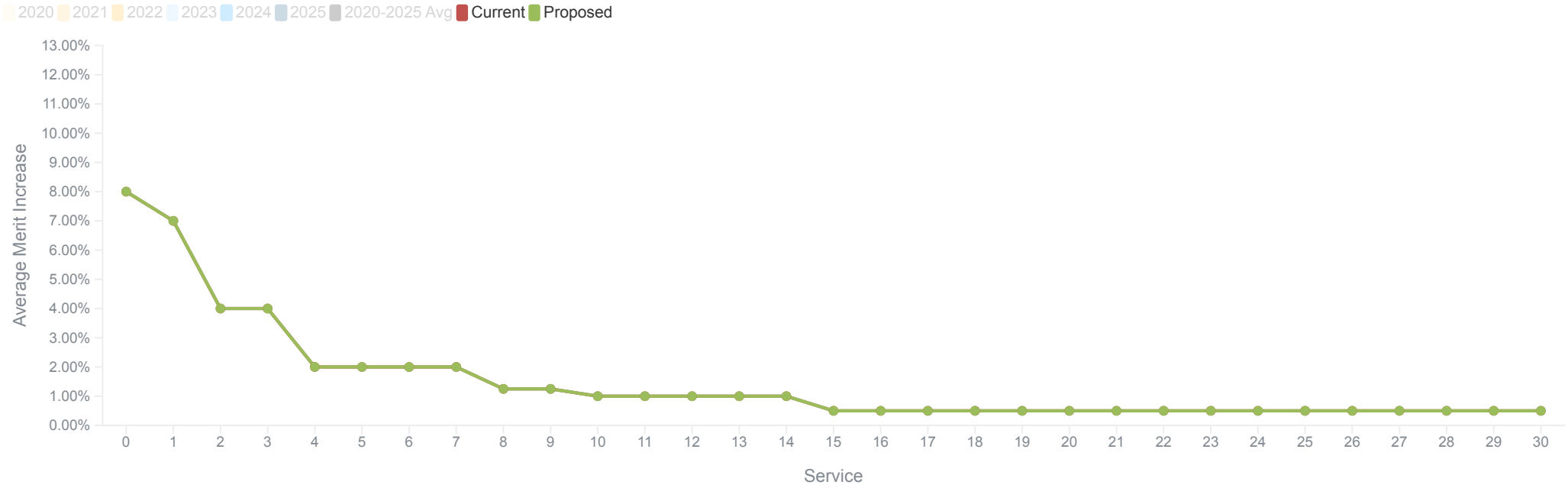
General



Thus no changes are recommended.

Merit Pay Increase Rates

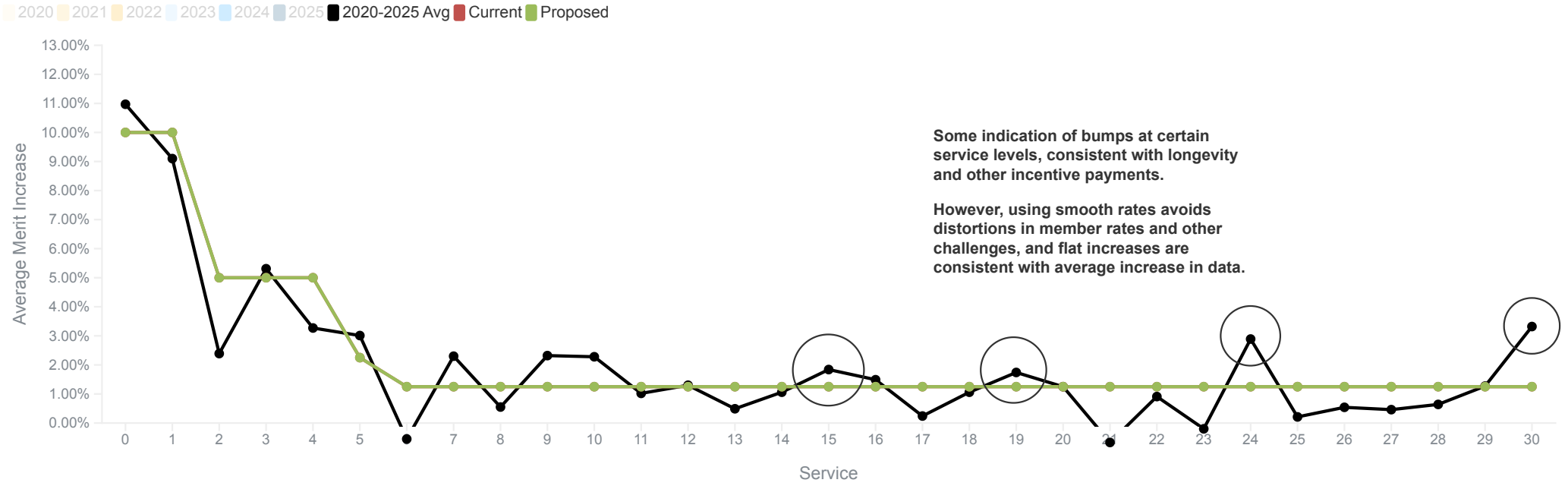
General



For Safety members, the experience also matches the assumptions relatively closely, and no changes are recommended.

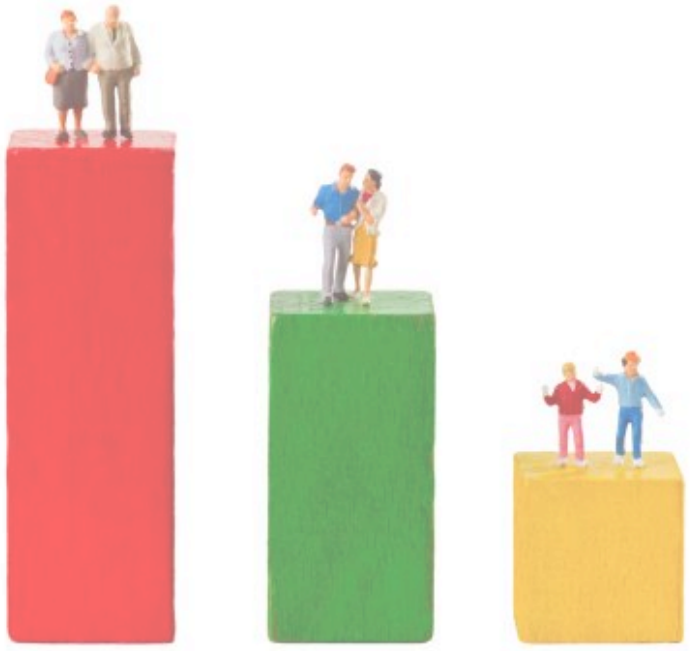
Merit Pay Increase Rates

Safety



Our analyses for retirement, termination, disability, and mortality experience includes data from calendar years 2016 through 2024. We also reviewed the assumptions looking just at the most recent period (2022-2024), as well as other periods, as indicated in the slides that follow. Using longer periods allows us to mitigate impact of COVID-relate experience on assumptions.

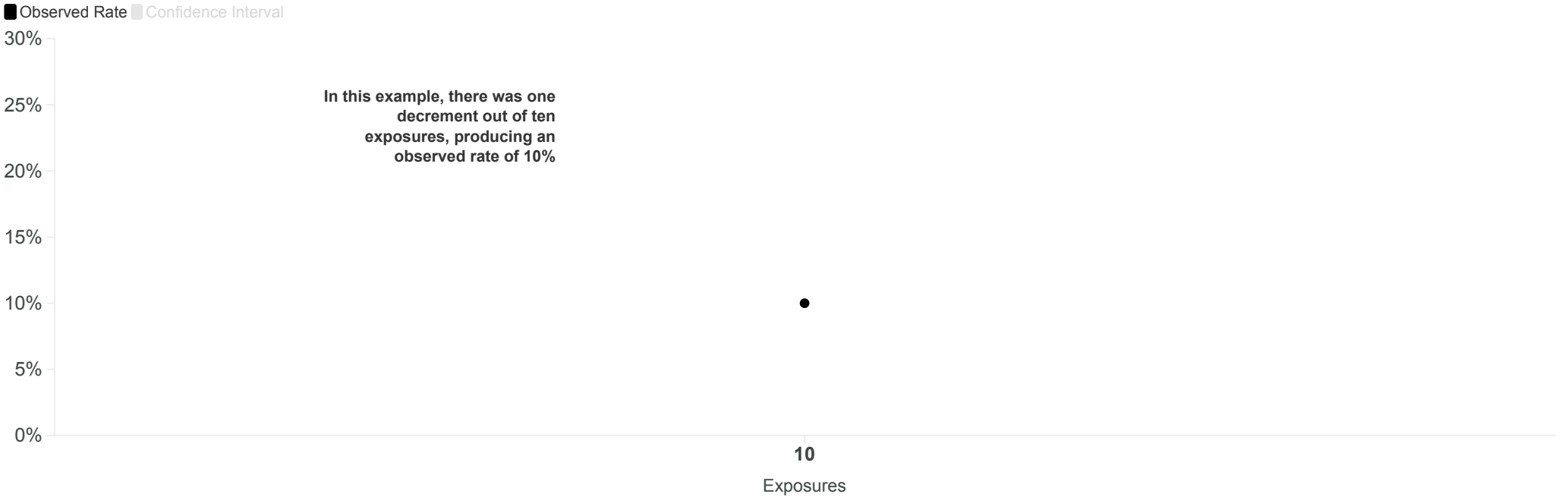
Retirement / Termination / Disability / Mortality Rates



For each *decrement*- i.e., retirement, termination, disability, or death - we first calculate the observed rate of decrement, which equals the number who left active service divided by the number who could have done so (i.e., the number **exposed** to the decrement).

Confidence Interval Illustration

All | 10 | 100 | 1000



Statistically, 1 decrement out of 10 exposures doesn't tell us very much about the "*true*" rate of decrement because small random variations have a significant impact on the observed rate.

Confidence Interval Illustration

All | 10 | 100 | 1000

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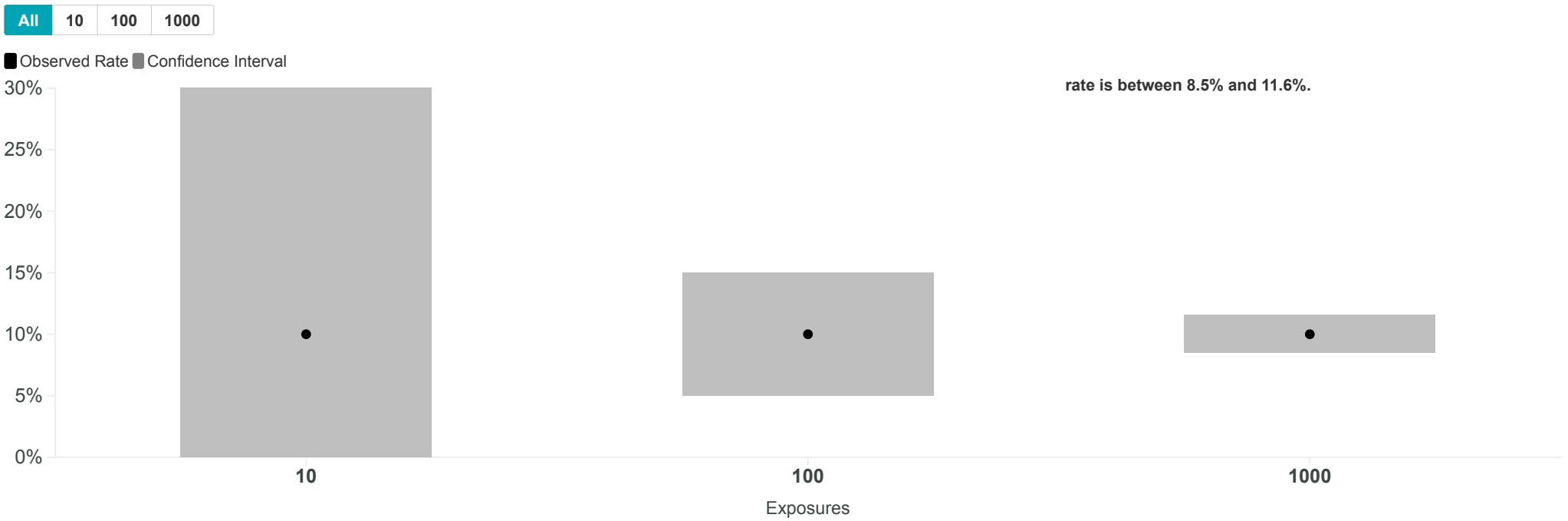
With more exposures, the confidence interval narrows. We generally propose assumption changes if the current assumption is outside the confidence interval. However, we also adjust for observations that appear to be anomalous or for future expectations that may differ from historical experience.

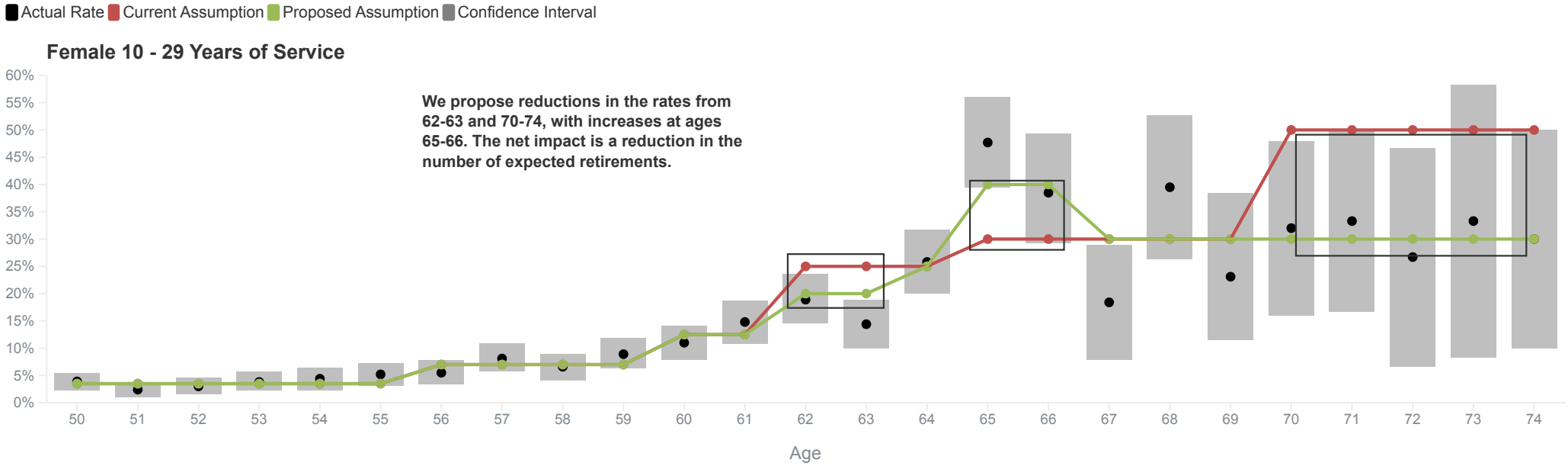
Confidence Interval Illustration



As an example, we are recommending changes to the assumptions for General females members with 10-29 years of service, where the experience of the last six years lies outside (or on the edge of) the 90% confidence intervals.

General Non-PEPRA Retirement Rates (2019-2024)

All | Female 10 - 29 Years of Service | Female 30+ Years of Service | Male 10 - 29 Years of Service | Male 30+ Years of Service



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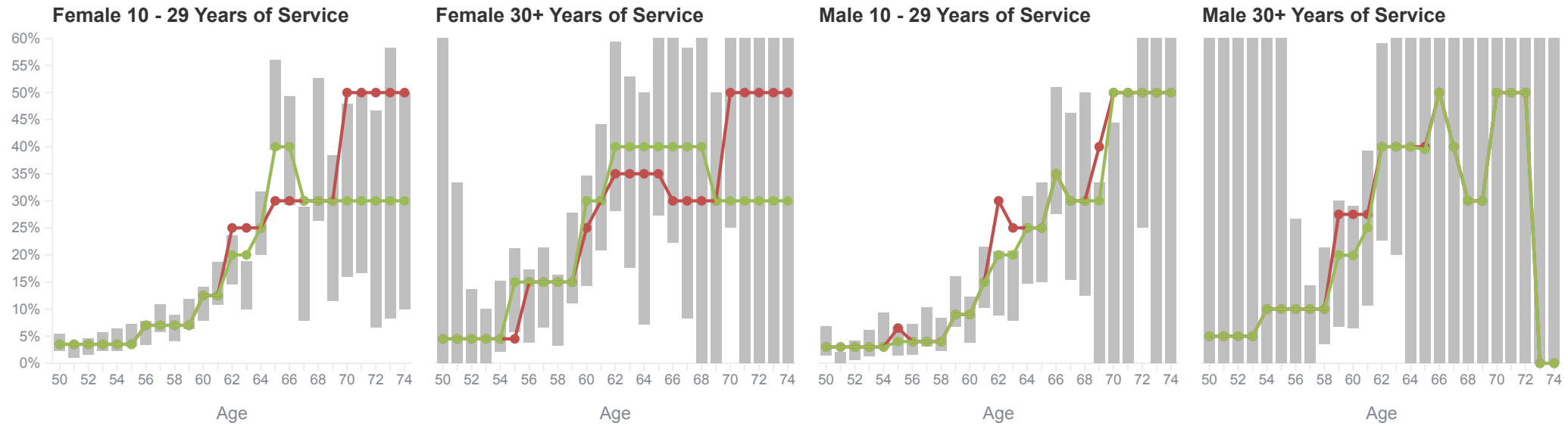
We are recommending other modest changes for the different gender and service levels. Overall, the recommendations are reducing the total expected number of retirements.

General Non-PEPRA Retirement Rates (2019-2024)

All | Female 10 - 29 Years of Service | Female 30+ Years of Service | Male 10 - 29 Years of Service | Male 30+ Years of Service

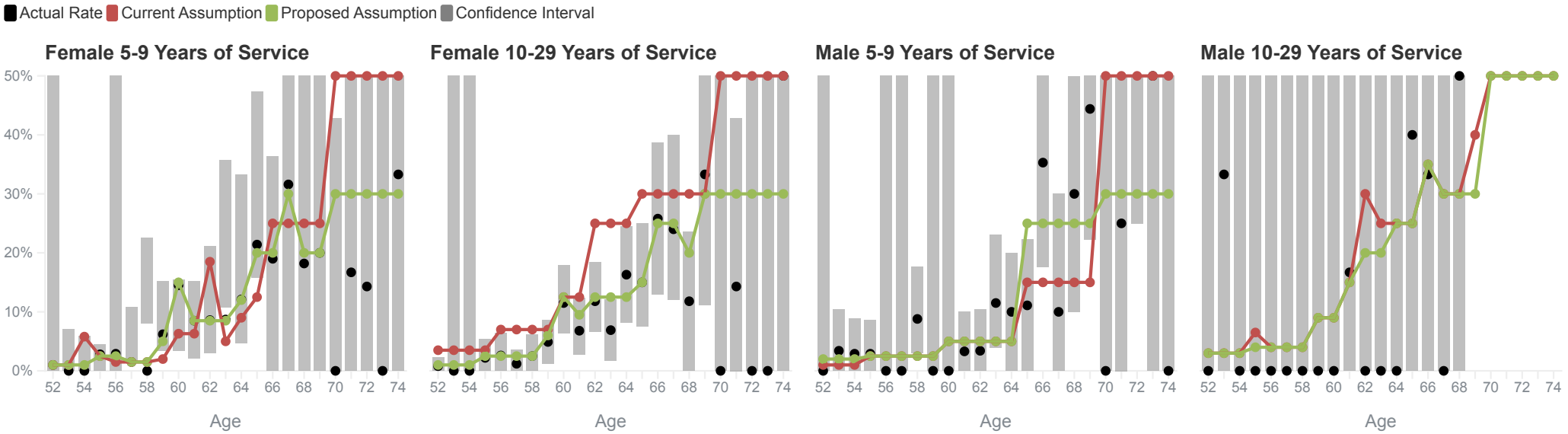
Actual Rate | Current Assumption | Proposed Assumption | Confidence Interval



PEPRA retirement experience is beginning to emerge, with over 140 retirements over the past six years. We have recommended new rates for females with 5-9 years of service and 10-29 years of service, and for males with less than 10 years of service. The recommended rates at higher service levels are the same as the rates we have proposed for Tier 1 members.

General PEPRA Retirement Rates (2019-2024)

All | Female 5-9 Years of Service | Female 10-29 Years of Service | Male 5-9 Years of Service | Male 10-29 Years of Service

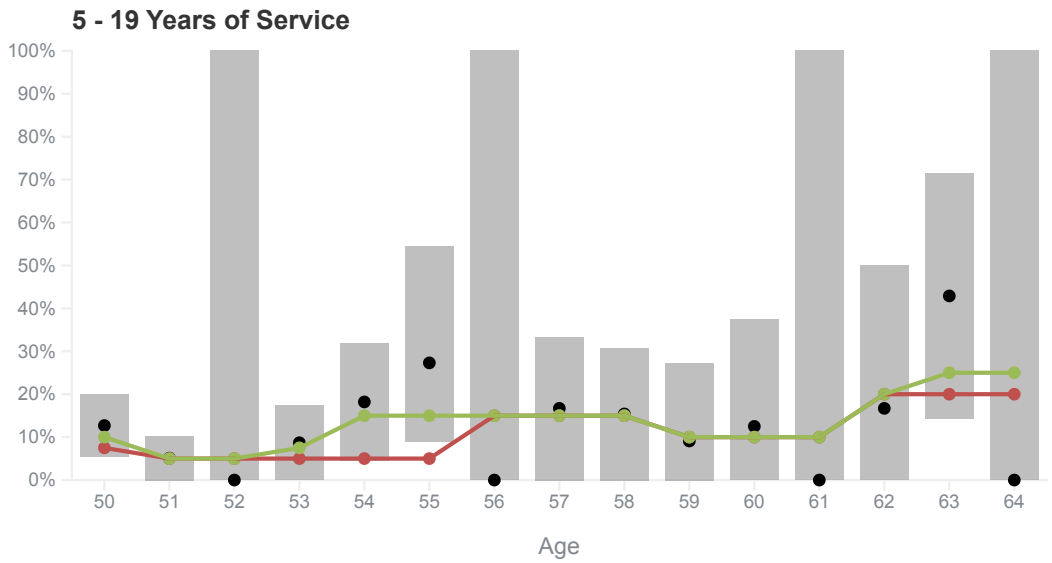


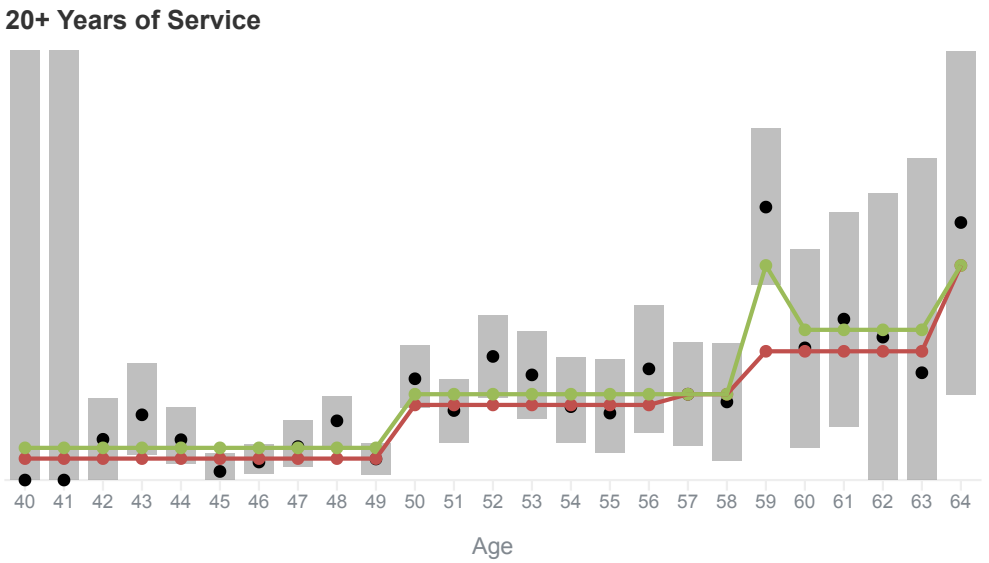
For the Safety Non-PEPRA members, we are recommending increases in the retirement rates to bring the assumptions closer in line with experience.

Safety Non-PEPRA Retirement Rates (2019-2024)

All | 5 - 19 Years of Service | 20+ Years of Service

Actual Rate | Current Assumption | Proposed Assumption | Confidence Interval





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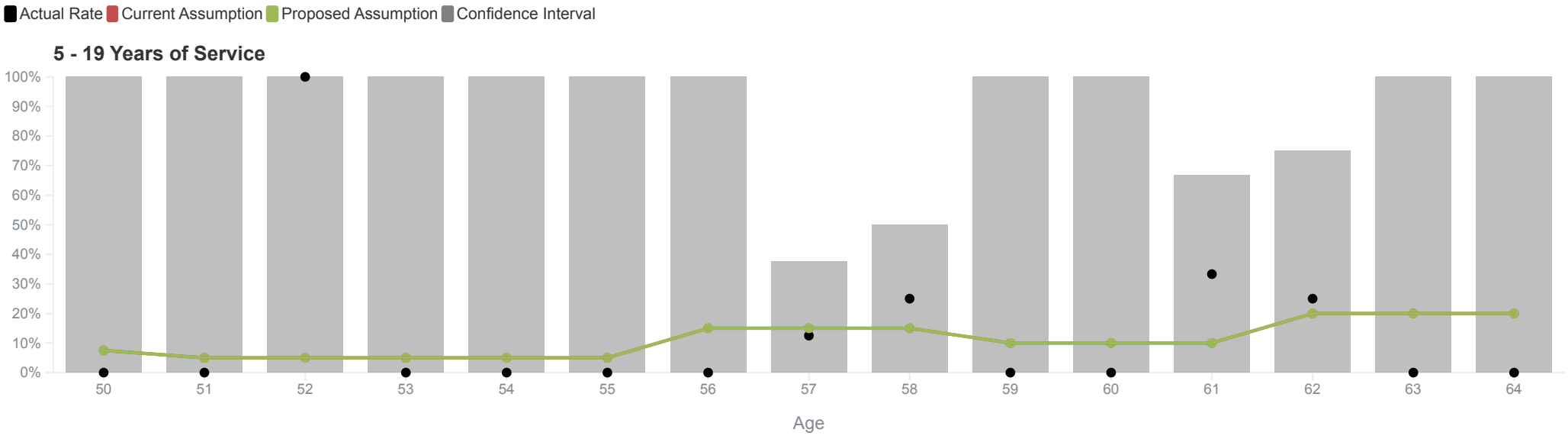
For the PEPRA members, the experience is limited (only eight retirements during the six-year period). However, given the overall number of retirements for the PEPRA members was close to the number expected, we recommend maintaining the current rates, and not increasing them up to the level of the new Legacy rates.

Safety PEPRA Retirement Rates (2019-2024)

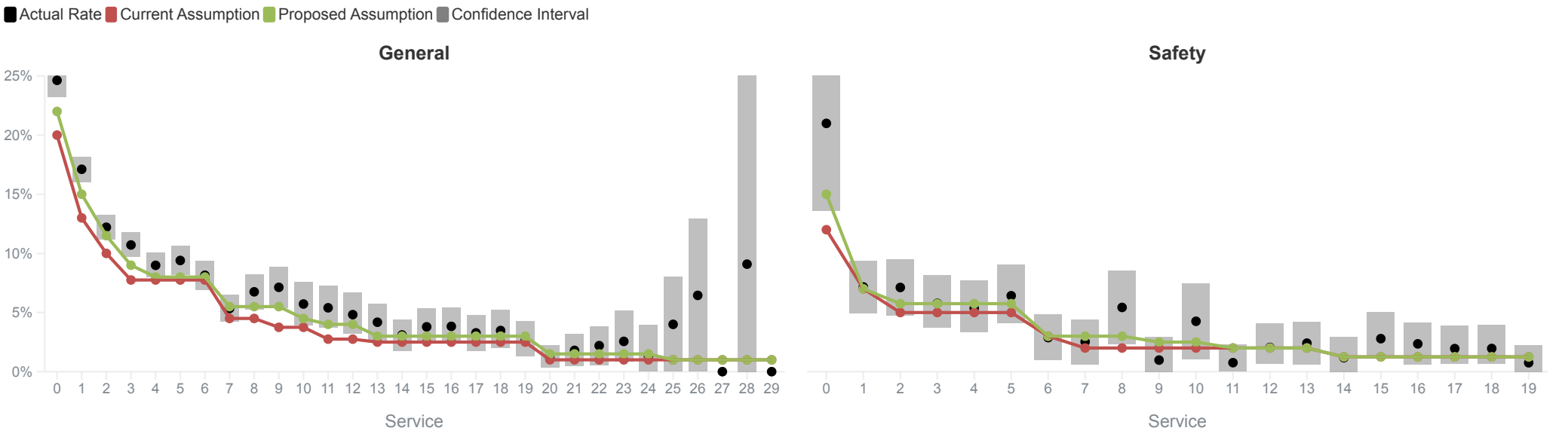
All | 5 - 19 Years of Service



Below we show the termination rates for the past six years. We have proposed increases to the rates for General and Safety at various service levels. The new assumptions bring the expected number of terminations closer to the data, but not all the way, in part because of the likelihood that some of the excess terminations the last few years were due to COVID-related issues.

Termination Rates

All | General | Safety

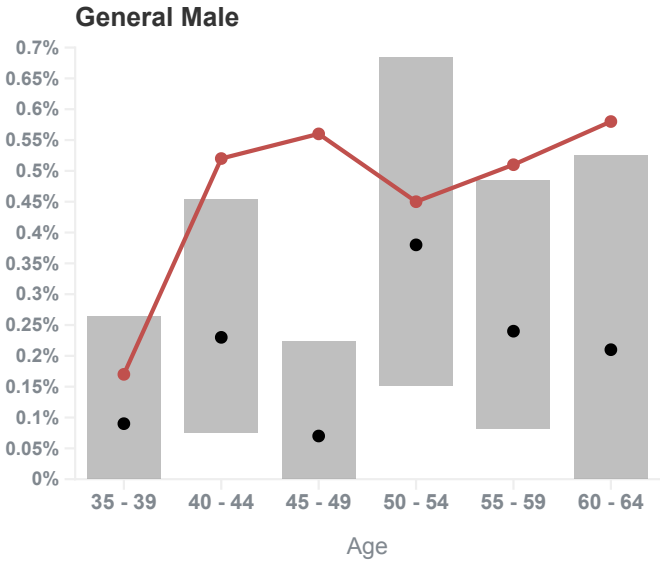


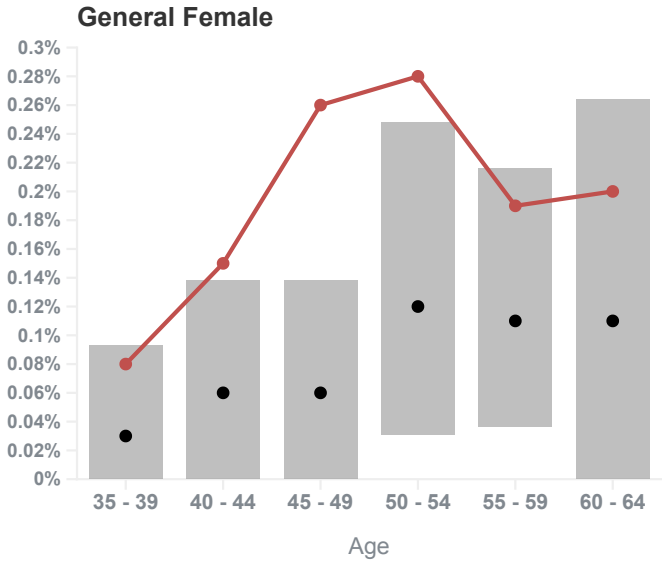
There is little disability experience, with fewer than 60 total disabilities over the last 6 years. The SJCERA membership has experienced declining levels of disabilities across all groups, which is consistent with what we have seen with other SACRS clients.

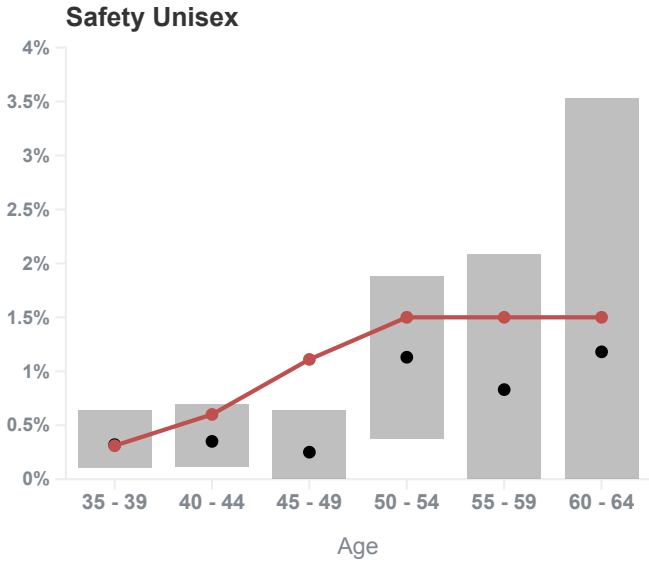
Total Disability Rates (2019 - 2024, Service and Non-Service Connected)

All | General Male | General Female | Safety Unisex

Actual Rate | Current Rate | Proposed Rate | Confidence Interval



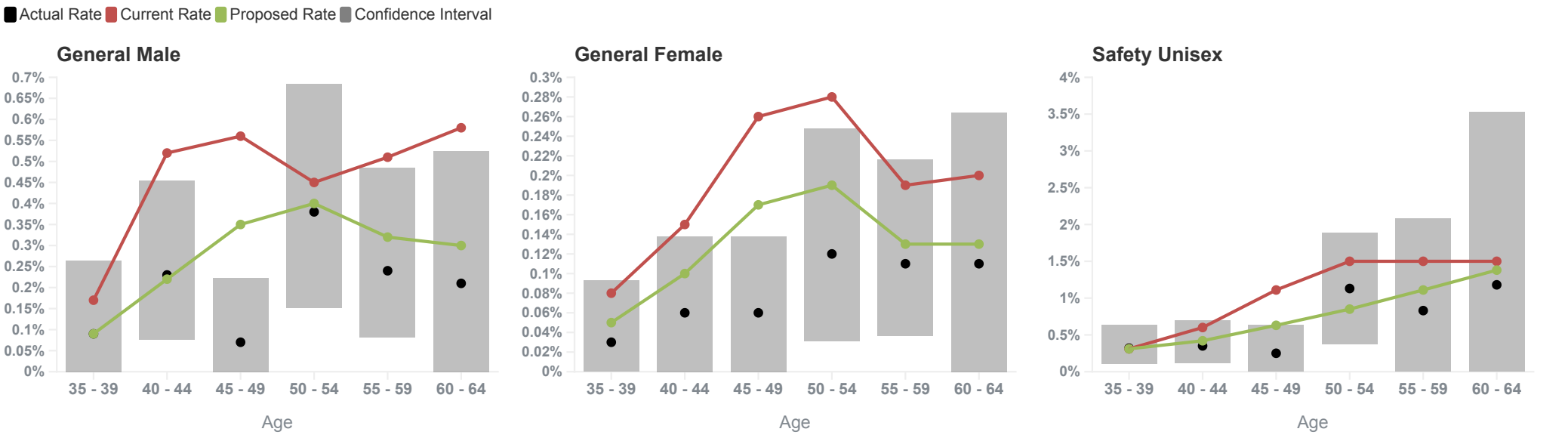




We recommend adopting the CalPERS State Miscellaneous and Safety disability tables, with a 150% adjustment for General males, 50% for General females, and no adjustment for Safety. We also recommend increasing the rate of General females receiving a service-connected disability from 35% to 50%, but leaving General male and Safety member rates at 80% / 95%, respectively.

Total Disability Rates (2019 - 2024, Service and Non-Service Connected)

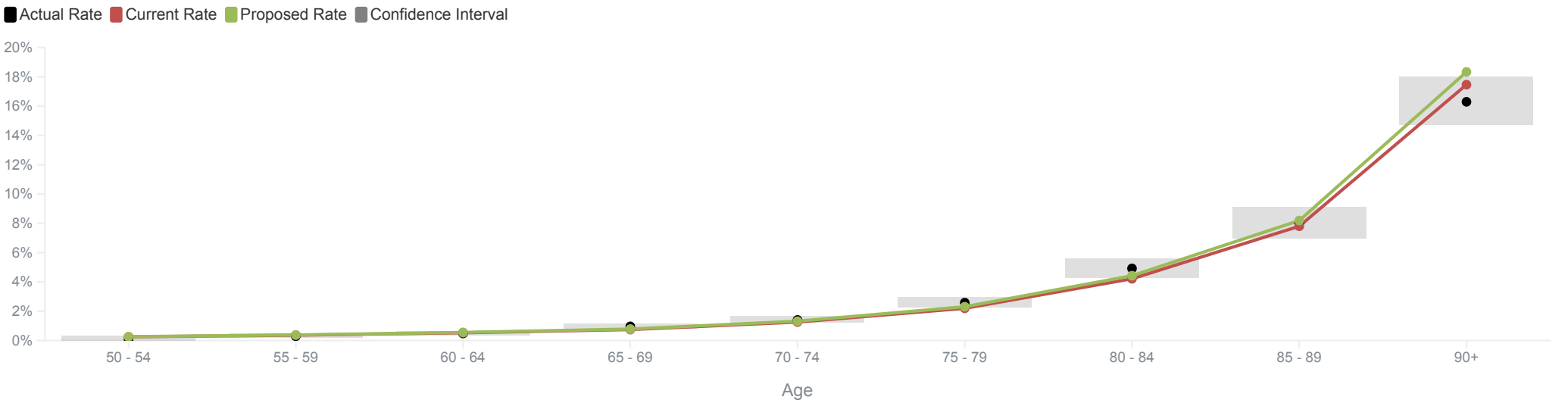
All | General Male | General Female | Safety Unisex



For mortality, we review the experience based on benefit amount, not headcount, since members with higher incomes are expected to live longer. We continue to recommend mortality rates based on the CalPERS tables, with adjustments where necessary to reflect differences in SJCERA's population. The only change we are recommending is an increase in the adjustment from 1.00 to 1.05 for female retirees and beneficiaries (matching the adjustment for male retirees).

Mortality Rates (2016 - 2024)

Healthy Female Annuitants



Mortality rates are generationally projected from the base year using generational mortality from 2017 using 80% of Scale MP-2020.

To perform these comparisons, the CalPERS base rates (without projection) were projected from their base year (2017) to the midpoint of the combined 9 year study period (2020).

We summarize the mortality experience below. For the non-PEPRA member contribution rate calculations, the mortality rates are projected statically using 80% of Scale MP-2020 from 2017 to 2045 for General members and to 2046 for Safety members. The projection periods are based upon the duration of liabilities for the respective groups as of December 31, 2024 and the mid-point of the time period (2027) to which the assumptions will apply.

Summary of Base Mortality Assumptions (2016-2024)

Group	Assumption	Exposures	Deaths	Benefit/Salary Weighted Exposures	Weighted Deaths	Expected Weighted Deaths	Weighted A/E Ratio
Male Healthy Annuitants	2021 CalPERS Healthy Annuitant table, adjusted by 105%	18,737	557	911,879,330	21,627,495	20,709,435	104%
Female Healthy Annuitants	2021 CalPERS Healthy Annuitant table, adjusted by 105%	30,988	855	101,968,7252	22,728,200	22,283,413	102%
Active Males	2021 CalPERS Preretirement Non-Industrial Mortality table, plus Industrial Death table for Safety (10% of active Safety deaths assumed Line of Duty)	19,680	27	1,711,329,031	1,903,807	2,407,213	79%
Active Females	2021 CalPERS Preretirement Non-Industrial Mortality table, plus Industrial Death table for Safety (10% of active Safety deaths assumed Line of Duty)	36,838	44	2,658,652,135	2,635,565	2,253,629	117%
General Duty-Related Disabled and all Safety Disabled Males	2021 CalPERS Industrially Disabled Annuitant table, no adjustment	2,380	54	110,416,742	2,455,387	2,471,987	99%
General Duty-Related Disabled and all Safety Disabled Females	2021 CalPERS Industrially Disabled Annuitant table, no adjustment	1,728	35	56,013,760	1,043,797	959,859	109%

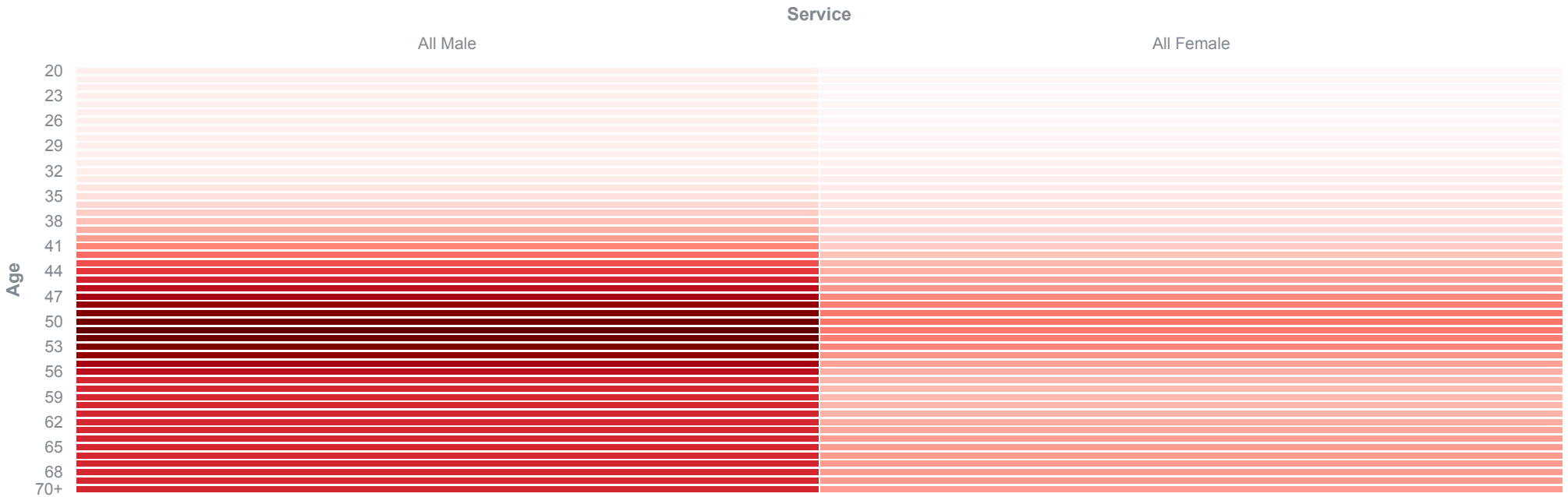
Rates of mortality for future General disabled retirees, both duty- and non-duty-related, are specified by mortality tables consisting of blends of the mortality assumptions for current duty- and non-duty-related disabled retirees. The blend for future disabled General retirees is 80%/20% for males and 50%/50% for females, respectively. The proportions reflect the expected splits in future disabled retirees between duty- and non-duty-related disablements.

Future disabled Safety retirees are assumed to follow the same rates of mortality as the duty-related disabled retirees.

Heatmaps for each decrement used in the valuation can be accessed below. The underlying data can also be downloaded from the link shown.

Disability, General

Current Assumption 0% 0.45%



Mortality rates are generationally projected from the base year using generational mortality from 2017 using 80% of Scale MP-2020.
Click to download data

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Withdrawal / Refund Rates

Transfers / Reciprocity

Commencement Age for Deferred Members

Family Composition

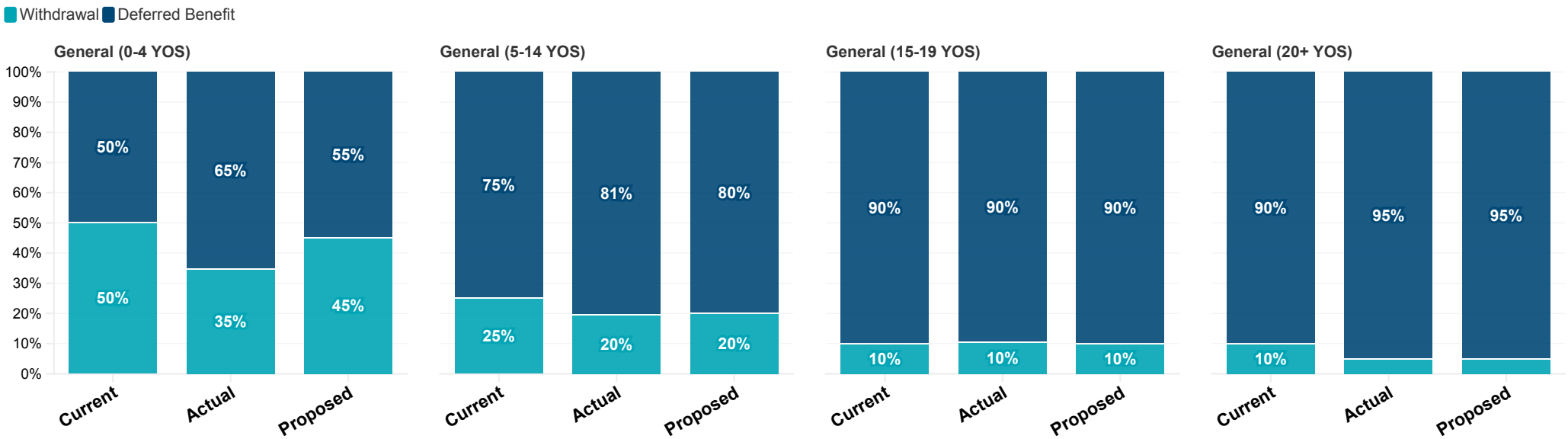
Terminal Pay Loads

Administrative Expenses

For the members who terminate prior to retirement, we studied the percentage of those who withdraw their contributions, versus those who leave them on deposit and receive a deferred benefit. Members with less service at termination are more likely to take a refund. We are recommending small reductions in the refund rates for those with less than 15 years or more than 20 years of service.

Refunds as a % of General Terminations (2019 - 2024)

All | General (0-4 YOS) | General (5-14 YOS) | General (15-19 YOS) | General (20+ YOS)



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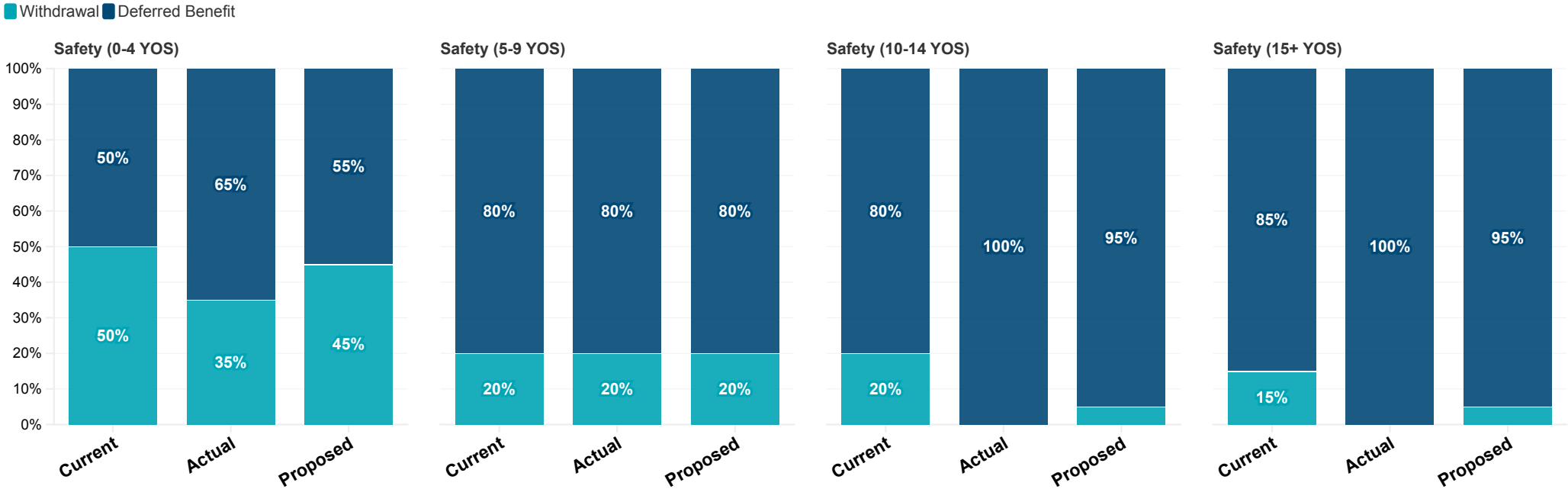
With a similar recommendation to reduce the refund rates for Safety members with less than 5 years or more than 10 years of service.

Refunds as a % of Safety Terminations (2019 - 2024)

All | Safety (0-4 YOS) | Safety (5-9 YOS) | Safety (10-14 YOS) | Safety (15+ YOS)



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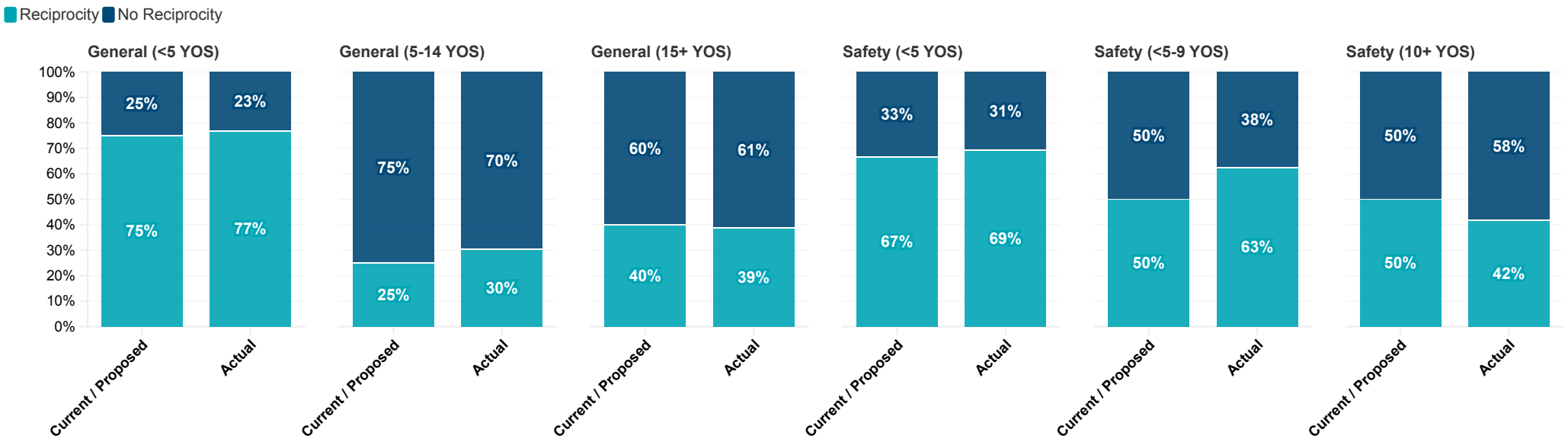
Similarly, we reviewed the likelihood that members who terminate and leave their contributions on deposit will establish reciprocity with another system. This generally results in higher liabilities, because we assume that the pay for members with reciprocity will continue to grow until their final expected retirement date. We are not proposing any changes to these assumptions.

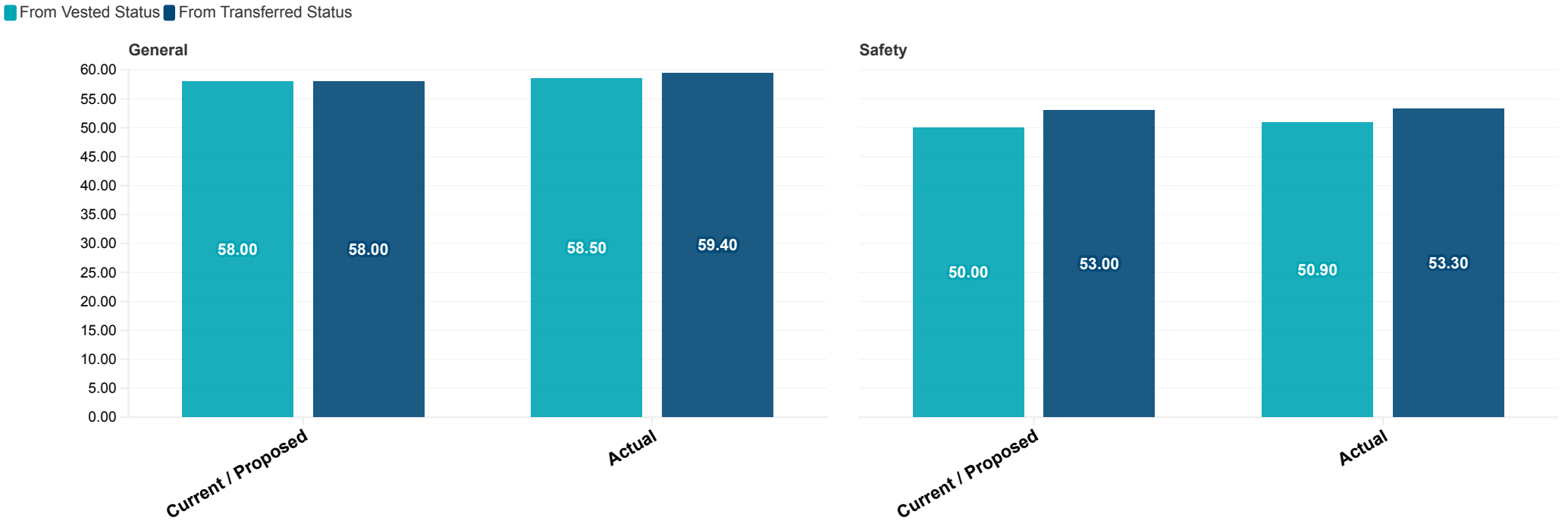
Reciprocity as a % of Deferred Retirements (2019 - 2024)

All | General (<5 YOS) | General (5-14 YOS) | General (15+ YOS) | Safety (<5 YOS) | Safety (<5-9 YOS) | Safety (10+ YOS)



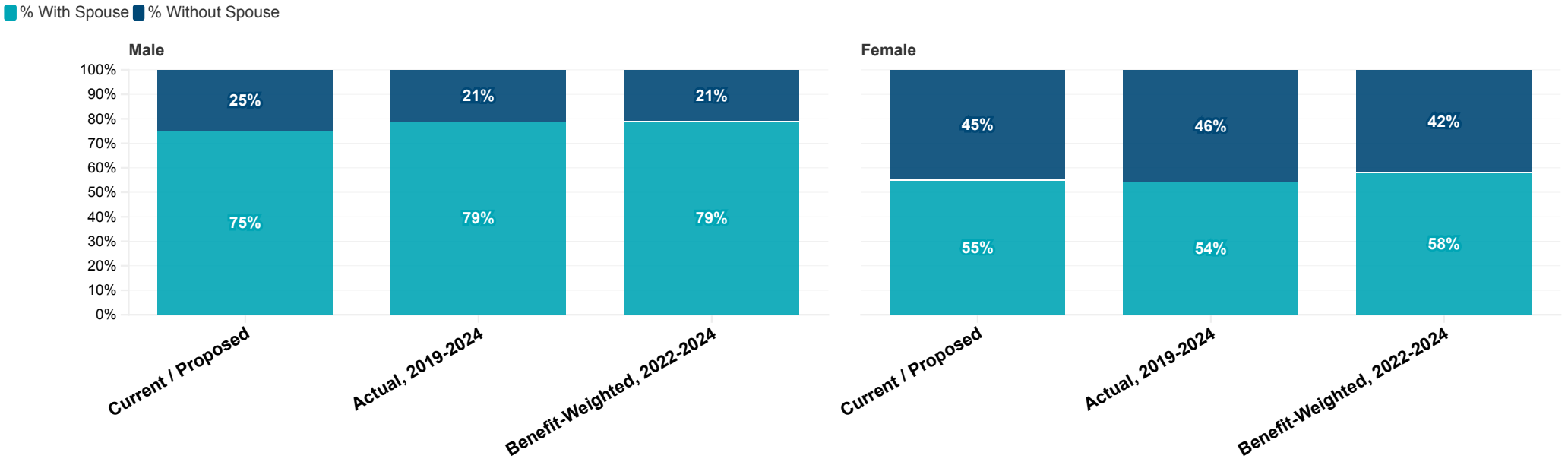
We reviewed the commencement ages for those who retired from a deferred status, analyzing the data separately those who had established reciprocity with another employer. No changes to the assumptions are recommended.

Age at Commencement from Deferred Status (2019-2024)



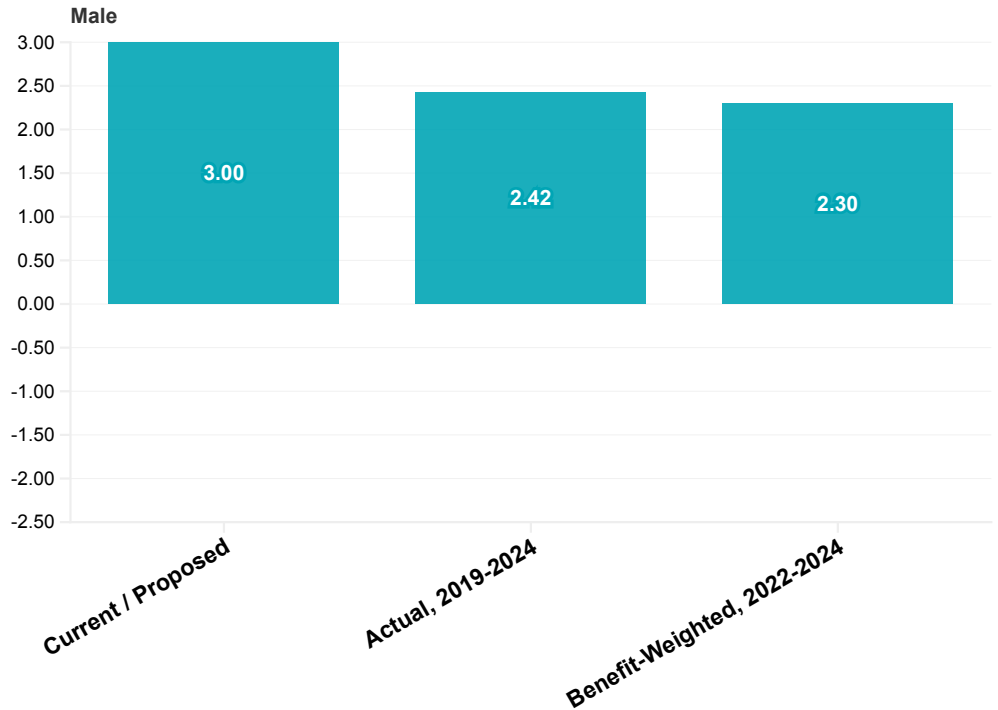
We reviewed the data over the past six years on the number of new retirees reporting a spouse beneficiary, and performed a similar analysis for the prior six years weighted by the benefit amounts for those with and without spouses. We are not recommending any changes to the percentage of those assumed to be married (and thus eligible for a spousal death benefit or subsidized optional benefit form).

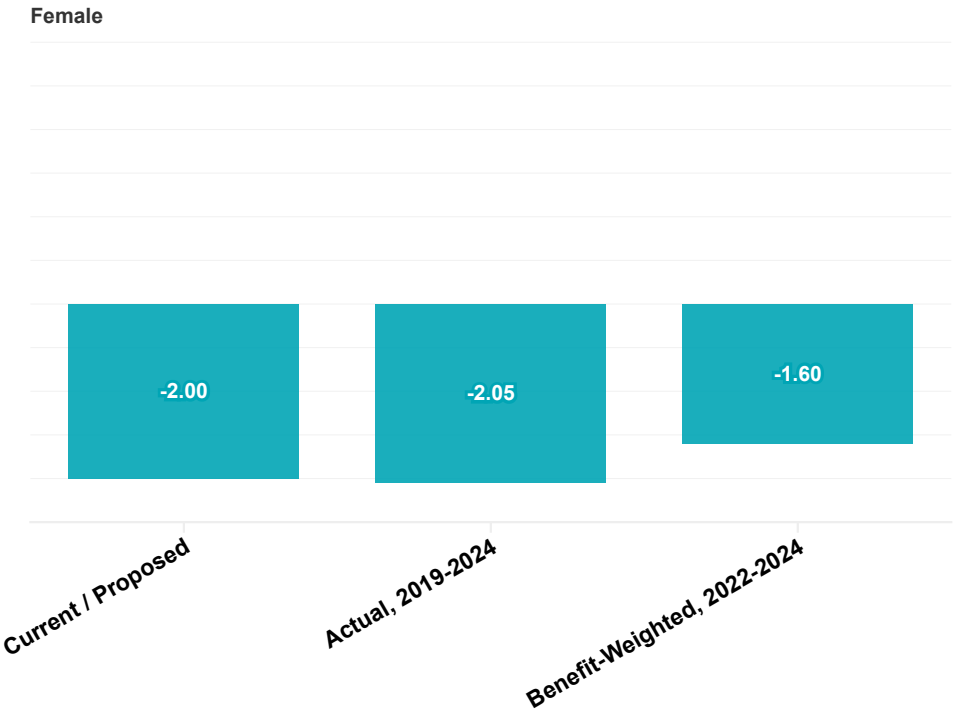
Family Composition (% Married)



Nor are we recommending any changes to the assumptions regarding the age difference between future retirees and their spouses.

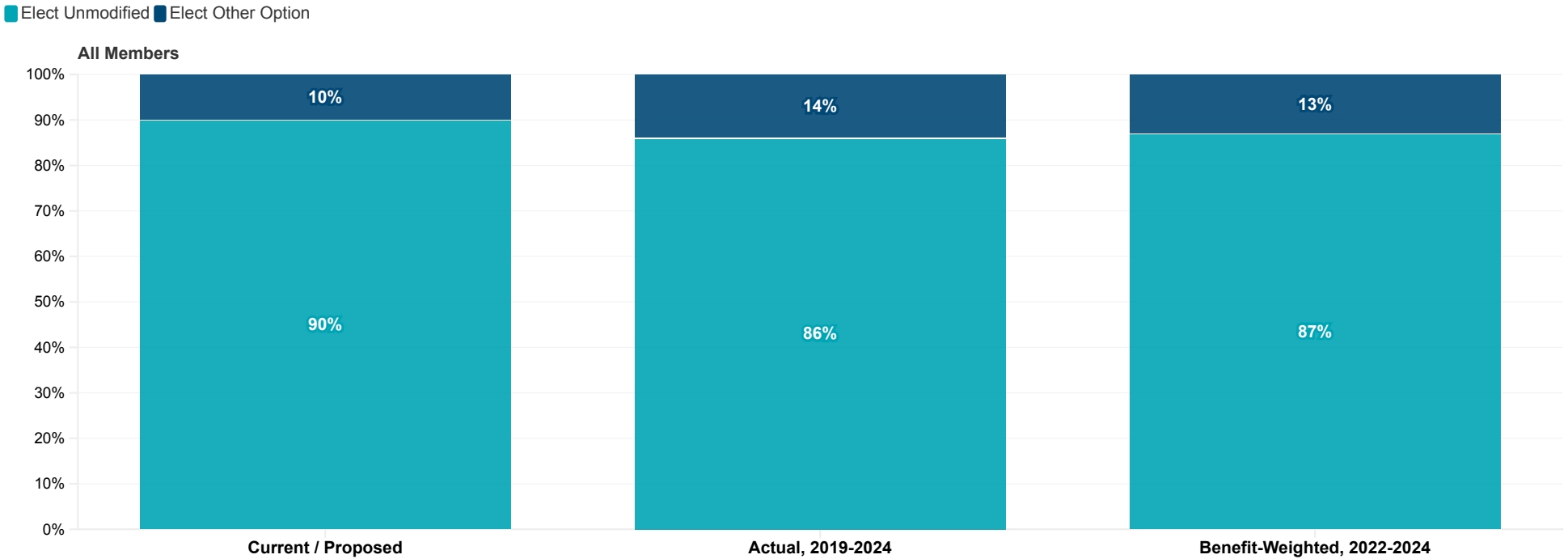
Family Composition (Spouse Age Difference)





Nor are we recommending any changes to the percentage of married members who are assumed to elect the unmodified (i.e., subsidized) benefit option at retirement.

Family Composition (% of Married Electing Unmodified)

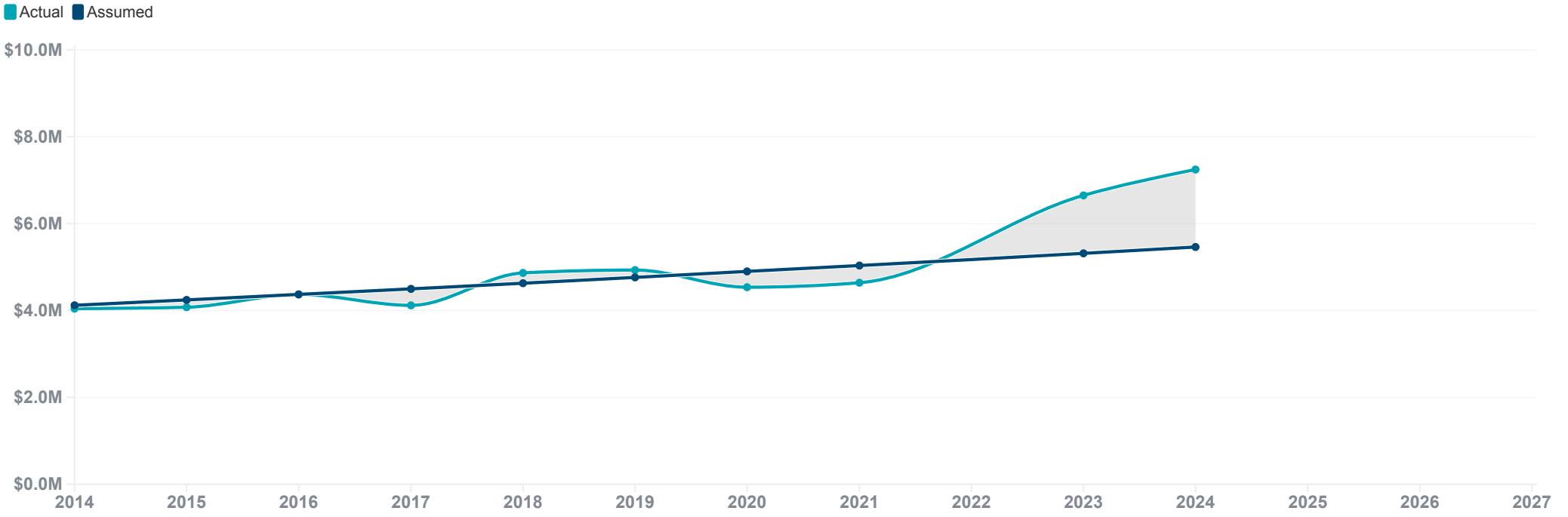


We reviewed the retirements from active status for the past six years, and found that the overall expected final average pay was close to the actual pay included in the members' benefit calculations. We recommend that no terminal pay load be applied to service retirements, which does not represent a change (except for Safety Tier 1 members, who previously had a 1% load applied).

Group	Year of Retirement	Retirements from Active Status	Total Final Average Pay	Expected Final Average Pay	Actual / Expected
General	2019	174	1,229,028	1,227,777	100.1%
	2020	187	1,359,234	1,355,398	100.3%
	2021	203	1,383,914	1,392,984	99.3%
	2022	183	1,309,877	1,317,713	99.4%
	2023	145	1,065,638	1,095,049	97.3%
	2024	142	1,167,984	1,185,599	98.5%
	Total	1,034	7,515,675	7,574,520	99.2%
Safety	2019	37	338,893	330,700	102.5%
	2020	33	277,577	274,844	101.0%
	2021	32	237,175	243,356	97.5%
	2022	25	222,879	220,379	101.1%
	2023	16	139,502	142,015	98.2%
	2024	32	340,780	348,661	97.7%

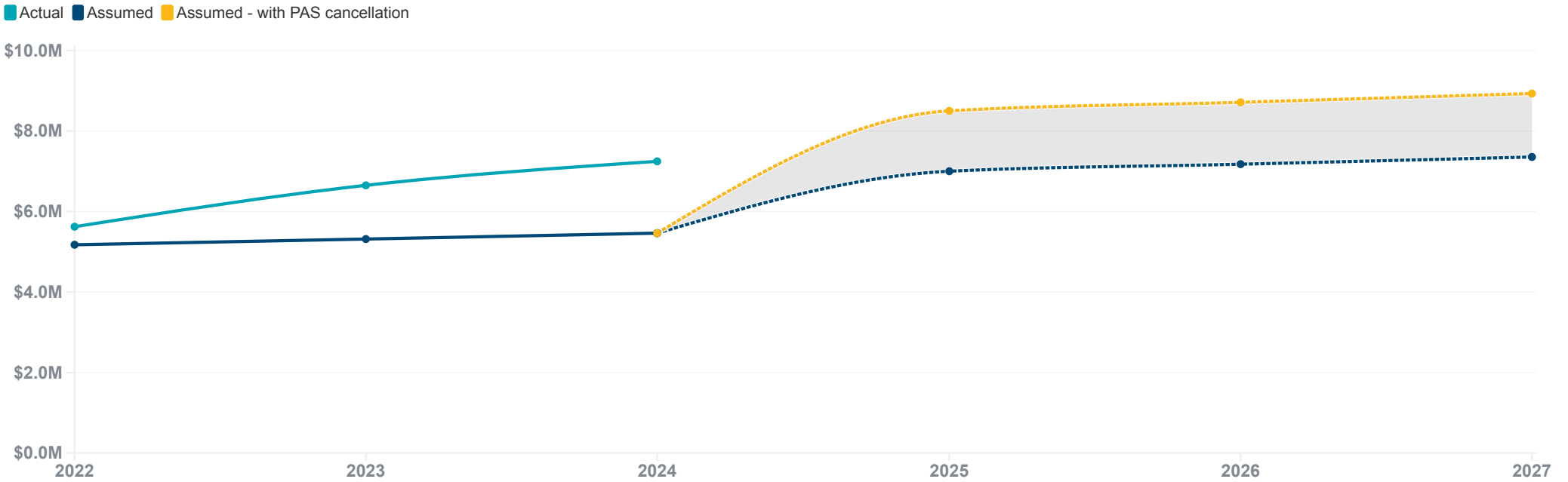
Finally, we review the administrative expenses. The employer contribution rate includes an allowance for these expenses. In the last two years, actual administrative expenses have significantly exceed the assumed expenses, which are expected to grow with inflation.

Administrative Expenses



After discussion with Staff, we are recommending an increase to the administrative expense assumption. The recommended assumption reflects a baseline level of expenses starting at $7 million for 2025, plus an additional expense amount of $1.5 million for each of the next three years, to cover the $4.5 million payment required in 2025 to cover the additional Pension Administration System expenses.

Administrative Expenses (Recommendation)



The following slides show the effect of the assumption changes on the *total* actuarial cost of the Plan and the funded status, as of December 31, 2024.

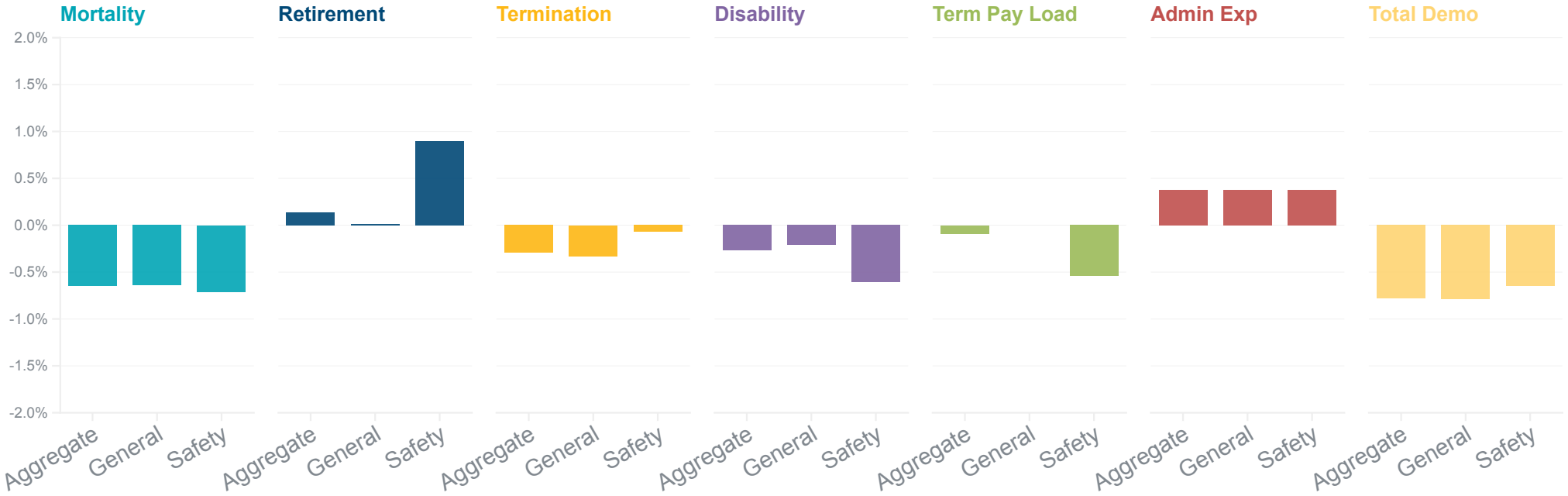
The total impact is made up of the impact on the overall **Normal Cost** plus the changes in the **Unfunded Actuarial Liability** (UAL) payments and the **Administrative Expenses**.

The employer is responsible for any changes in the UAL payment, but any changes in the Normal Cost and Expense will affect both employer and member contributions.

The Actuarial Valuation Report will show the overall impact on member and employer rates.

The recommended changes in the demographic assumptions all have a relatively minor impact on total plan cost, with the largest changes from the 5% mortality rate load for females and the changes in the retirement and disability rates and terminal pay load for Safety members (which were offsetting). The net impact on the total contribution is a reduction of 0.8% for General and 0.7% for Safety.

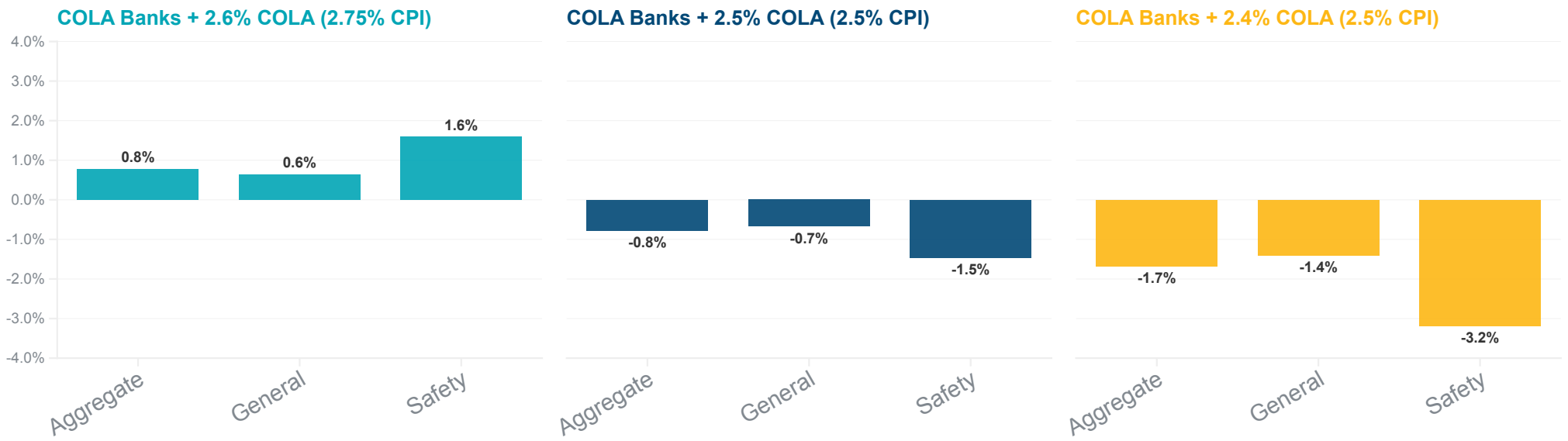
Contribution Rate Change by Source (Demographics)



The impact from the three different scenarios discussed for inflation and long-term COLA growth are shown below. If the current COLA banks are valued explicitly and inflation remains at 2.75%, the total cost will increase. If inflation is reduced to 2.5%, there will be a net reduction in the cost.

Contribution Rate Change by Source (Economics)

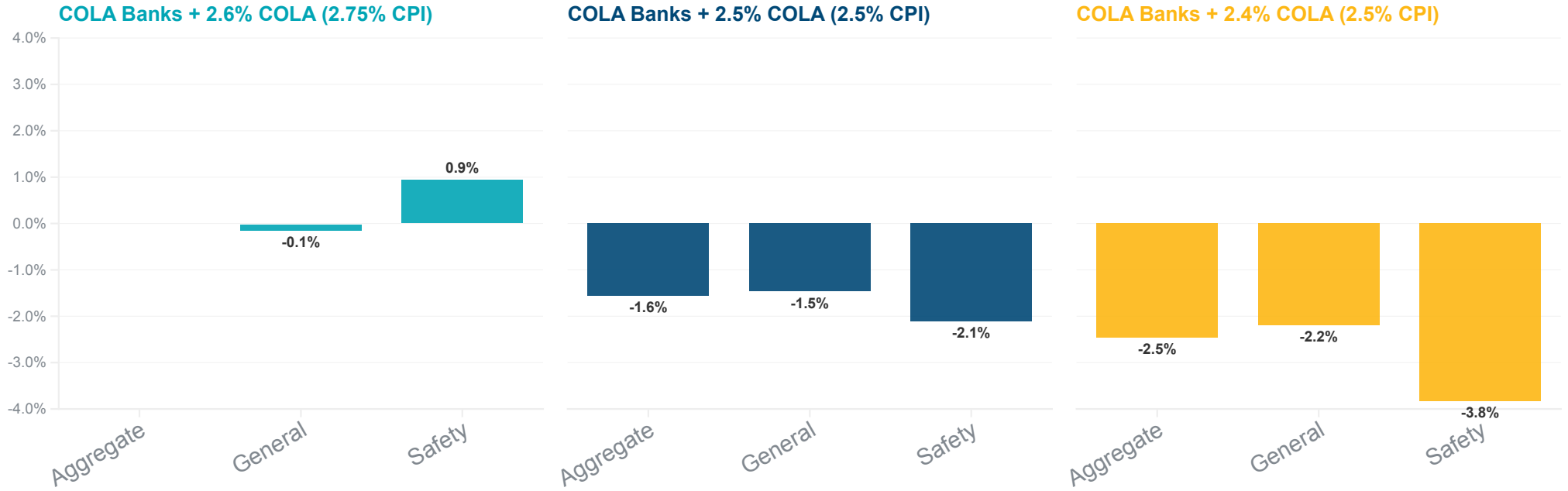
Without Demographic Changes



Below we show the impact on the total contribution rate under all three scenarios, including the demographic assumption changes.

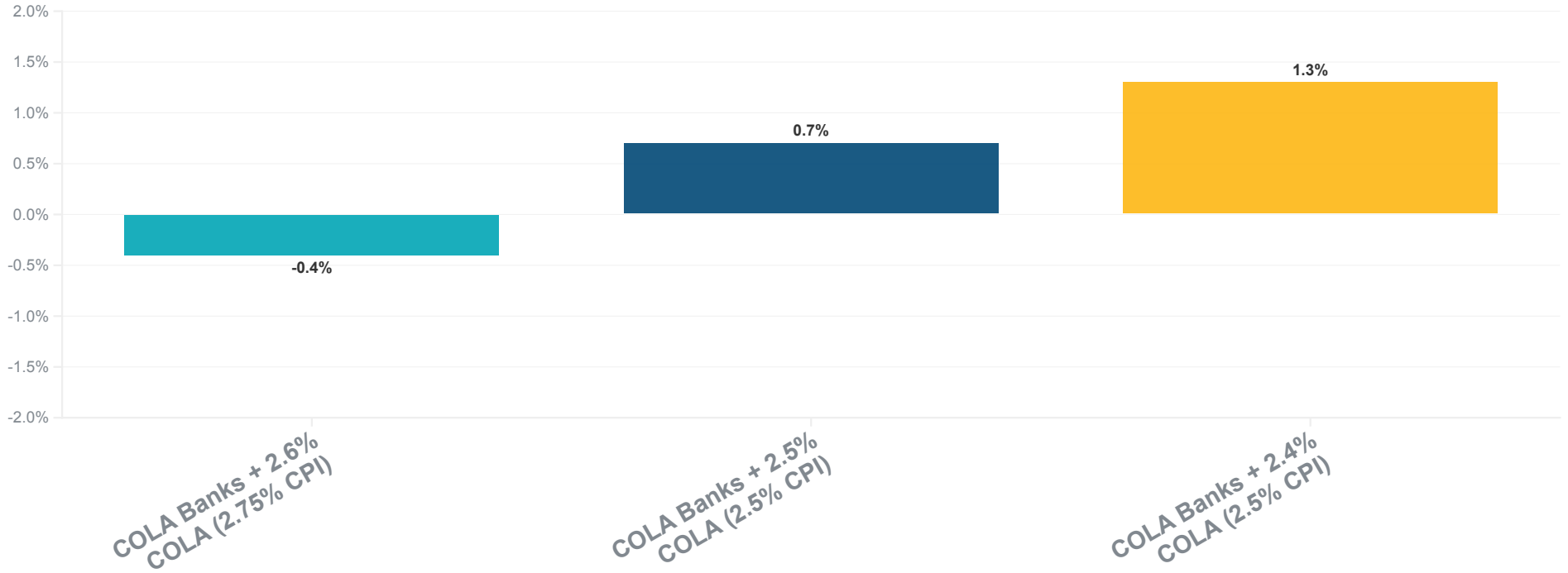
Contribution Rate Change by Source (Economics)

Including Demographic Changes



Finally, we show the impact on the funded ratio.

Funded Ratio Change (Demo + Econ)



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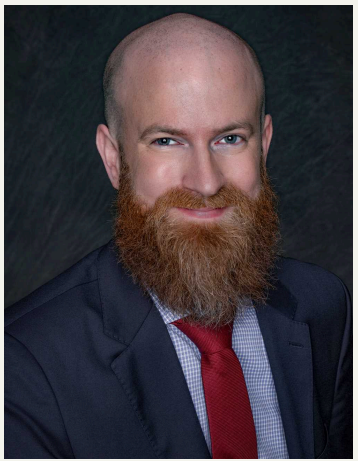

Timothy Doyle
Associate Actuary

Portland, OR

Certification

The purpose of this presentation is to present documentation related to the review of the demographic and economic assumptions for the San Joaquin County Employees' Retirement Association (SJCERA) as part of the triennial experience study. This presentation is for the use of SJCERA in selecting assumptions to be used in actuarial valuations beginning December 31, 2024. Any other user of this report is not an intended user and is considered a third party.

In preparing our presentation, we relied on information (some oral and some written) supplied by SJCERA. This information includes, but is not limited to, the Plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23, Data Quality. *The actuarial assumptions, data, and methods are those that will be used in the preparation of the actuarial valuation report as of December 31, 2024.*

Cheiron utilizes ProVal actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have a basic understanding of ProVal and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this valuation

Future results may differ significantly from the projections presented in this report due to such factors as the following: plan experience different from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

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

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