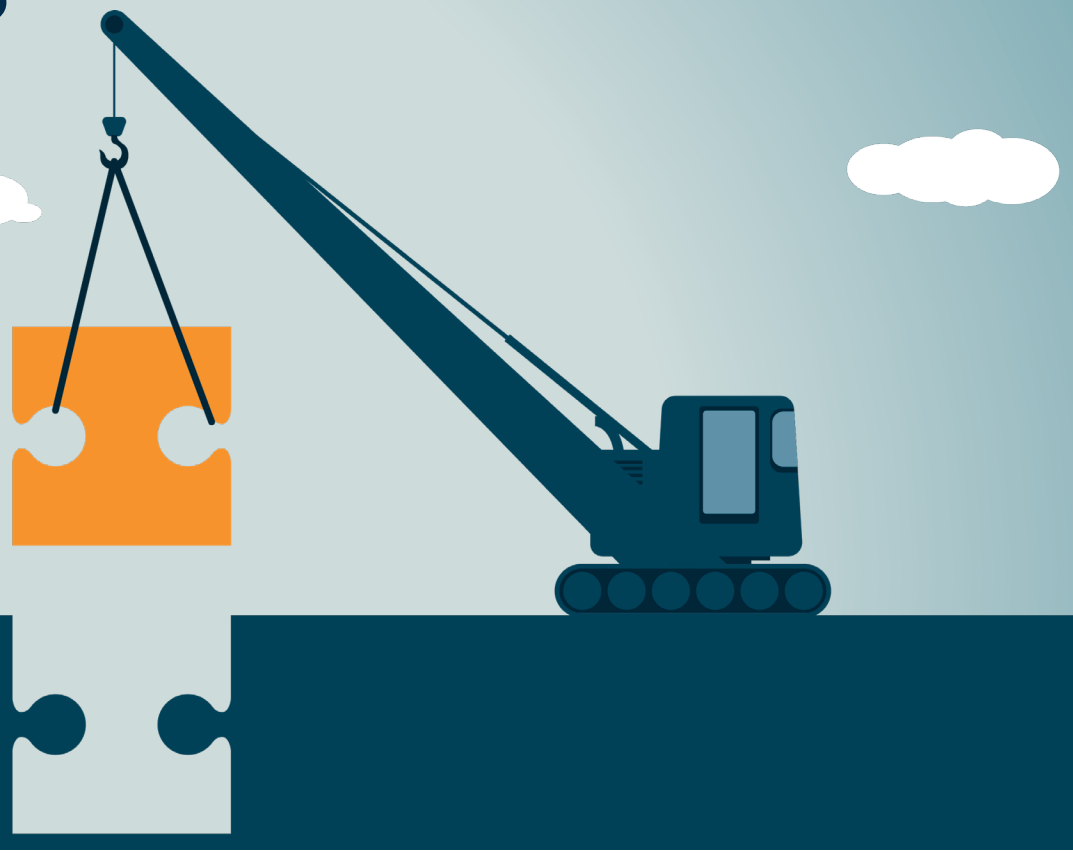
Iowa Public Employees' Retirement System

2021 – 2025 Experience Study



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CavMac
Actuarial Consulting Services

Background

- Assumptions have a significant impact on the calculation of liabilities and actuarial contribution rates
  - Benefit payments are dependent on number of contingent events that are unknown
  - Actuaries use assumptions to determine information about future benefit payments including when, how much, and how long
  - Assumptions will impact the allocation of costs so generally set neither overly conservative or aggressive
- Assumptions are just that – assumptions. If actual experience differs from the assumption over time, the costs will differ also as the valuation process captures actual experience
- Assumptions are long-term estimates

Purpose of Experience Study

- Evaluate whether to retain or change the current set of assumptions and actuarial methods

- Generally performed every 4 years for IPERS
  - New assumptions will first be used in the June 30, 2026 valuation

- Actuary's role is to make recommendations for each assumption
  - As ***fiduciaries***, the Board is responsible for the selection of actuarial assumptions
  - Board can adopt all, none, or some of actuary's recommendations

- Assumptions do not affect the true cost of the plan which is the actual benefit payments paid from the trust fund

Our philosophy:

- Don't overreact: if experience is credible, we tend to move part of the way toward actual experience.
- Anticipate trends if expected to continue e.g., mortality improvements
- Simplify when possible: ignore factors that don't improve the accuracy of the liability measurement

Experience Studies

- Compare actual experience during study period (Fiscal years 2022 through 2025) with expected results based on current assumptions
  - Key measurement tool: Actual/Expected Ratio or A/E Ratio
- Past experience provides strong guidance for some assumptions (like mortality) and weak guidance for others (like investment return)
- Assumption setting involves both science and art
  - Objective (science): number crunching of actual and expected numbers of members and rates of occurrence
  - Subjective (art): interpreting the information and deciding on appropriate changes
  - Professional judgement is involved
- The Covid pandemic did have an impact during this study period and was considered in making recommended changes

Selection of Assumptions

What Are They?

Economic

- Price Inflation
- Investment Return
- Wage Growth
- COLA
- Interest Crediting Rate on EE Contr
- Payroll Growth

Demographic

- Retirement Rates
- Promotional/Step Pay Increases
- Disability
- Turnover
- Mortality

Who Selects Them?

Economic

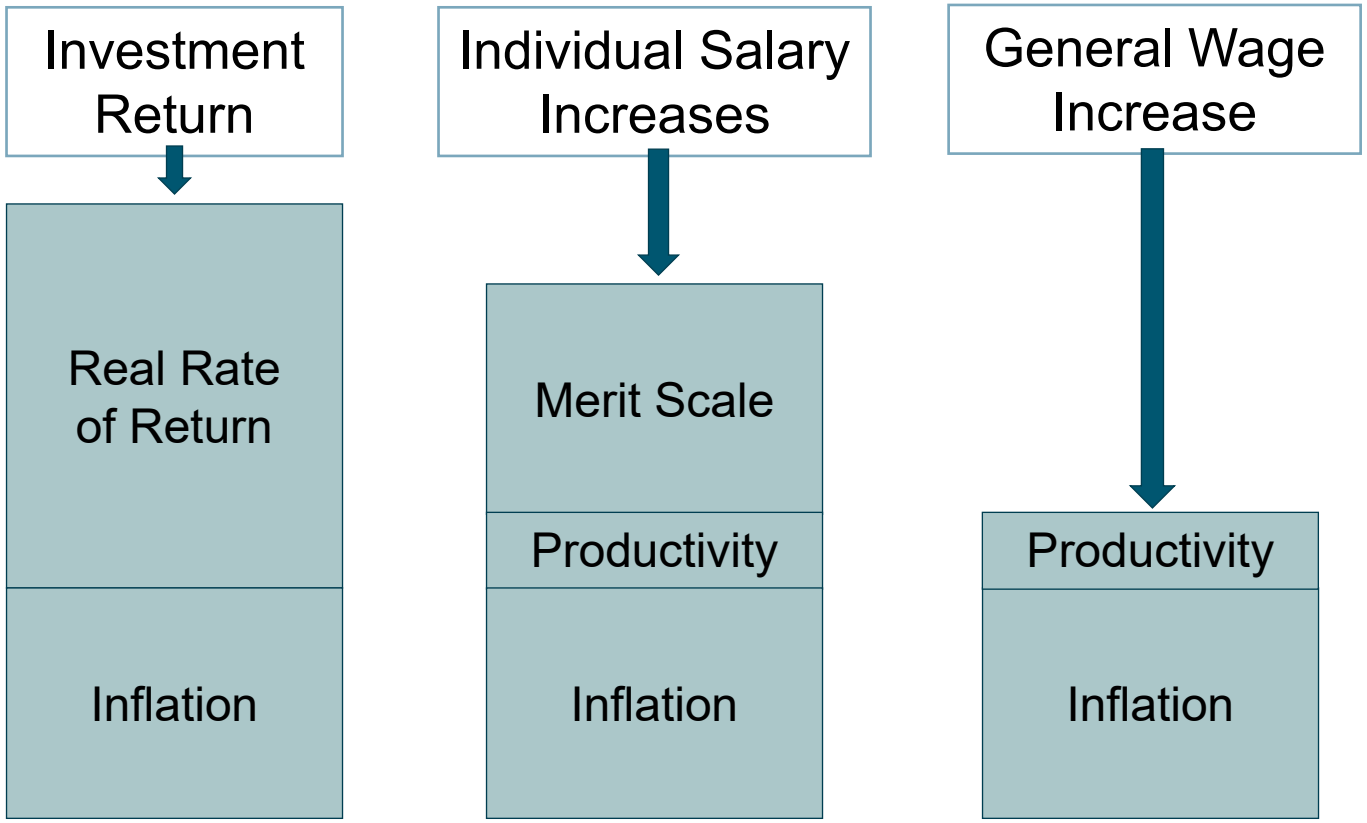
- Board
- Actuary
- Other Advisors

Demographic

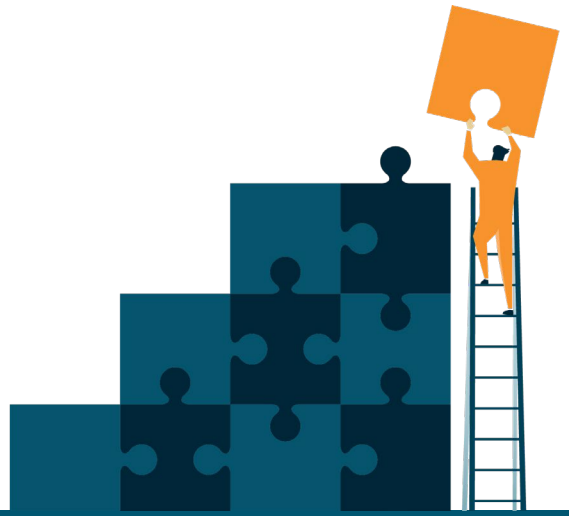
- Board Approves
- Mostly Actuary Since Data Driven

Economic Assumptions

Economic Assumptions Building Block Method



Note: inflation assumption and productivity must be consistent in all assumptions.



Inflation Assumption

- Price inflation represents annual increase in cost of living, generally measured by the Consumer Price Index (CPI)
- Current assumption is 2.60%
- Expected future inflation is slightly below 2.60%, but recent actual inflation has been higher (3.20% over the last 10 years)
- **We recommend retaining the 2.60% inflation assumption**

Interest on Member Accounts

- Law sets interest rate at 1% above 1-year CD rates

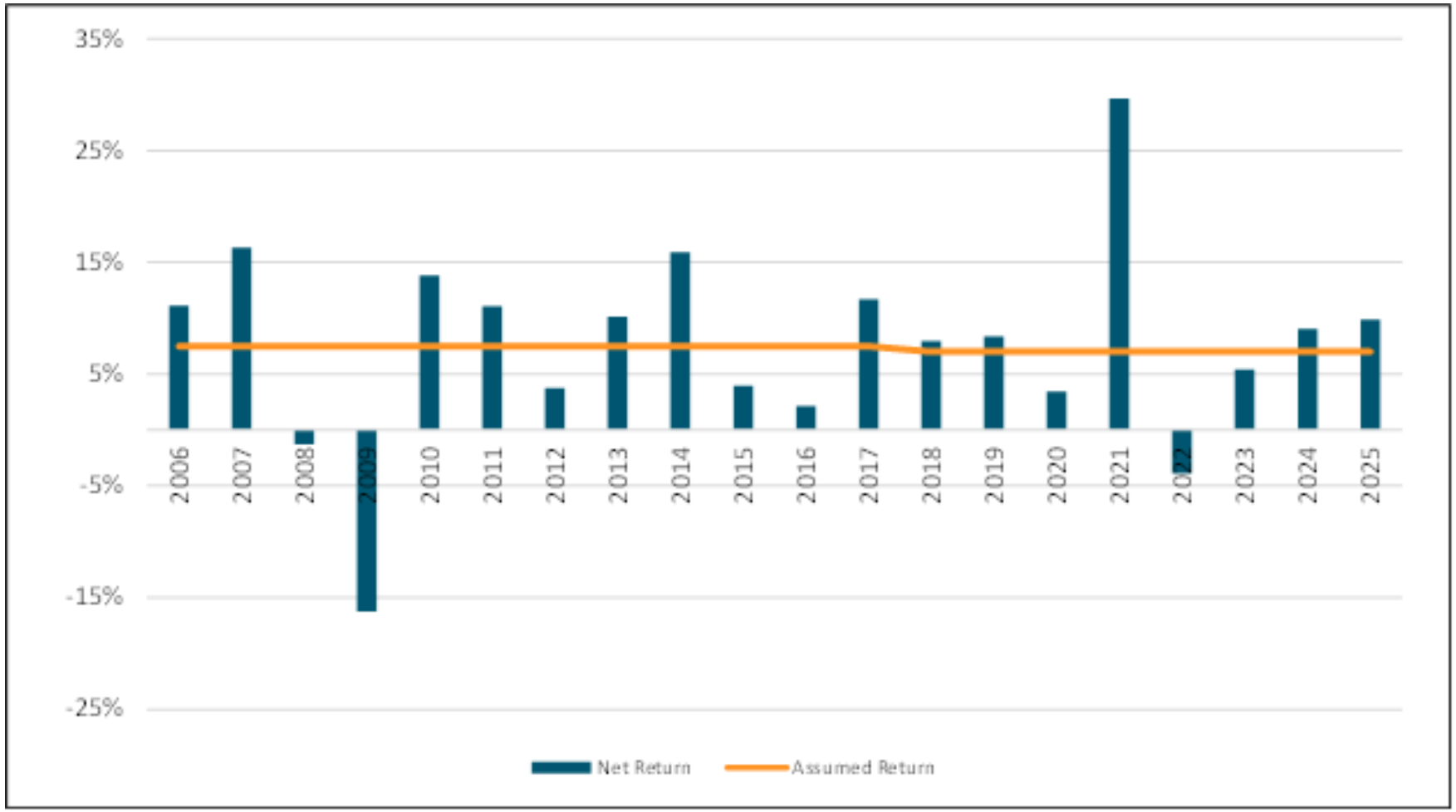
- Analyzed last 19 years of actual interest credited compared to inflation
  - Average was 0.06% below inflation, however…
  - Average was 0.78% above inflation, excluding years after 2021 when inflation spiked

- **Recommend keeping current assumption of 3.50%**

Investment Return Assumption

- Using the “building block” approach, the investment return assumption is composed of multiple components
  - Rate of price inflation (previously discussed)
  - Real rate of return
  - Administrative expenses
- Current assumption is 7.00%
  - 2.60% inflation + 4.45% real return – 0.05% administrative expenses
- Asset allocation is the key factor in setting this assumption
  - Portfolios that take risk are generally expected to be rewarded with higher returns, along with potentially greater volatility
- Most powerful assumption in the valuation
  - Small changes can have large impact on liabilities and contribution rates

Historical Investment Returns



Current assumption is 7.00%, net of investment and administrative expenses

Remember, the past is not a reliable indicator of future investment returns.

Expected Real Return

Source	Nominal Return	Consultant's Inflation Assumption	Real Rate of Return
Wilshire (10 years)	6.2%	2.3%	**3.9%**
Wilshire (30 years)	7.0%	2.4%	**4.6%**
Horizon Survey (10 years)	7.2%	2.4%	**4.8%**
Horizon Survey (20 years)	7.5%	2.4%	**5.1%**

Note: Wilshire's assumptions are from Q1 2026 while the Horizon Survey is from various early 2025 dates. Wilshire's expectations are assigned a higher level of credibility in evaluating the current assumption.

Investment Return Assumption

	Current Assumptions	Recommended Assumptions
Price inflation	2.60%	2.60%
Real return	4.45%	4.45%
Real return	(0.05%)	(0.05%)
Nominal return	**7.00%**	**7.00%**

We recommend the current investment return assumption of 7.00% be retained.

General Wage Growth Assumption

- This assumption reflects the broad wage increases that arise from increased productivity, etc.

- **Recommend retaining 3.25%** with components shown below:

	Current	Proposed
Price Inflation	2.60%	2.60%
Productivity	0.65%	0.65%
General Wage Growth	3.25%	3.25%

Payroll Growth Assumption

- Payroll growth assumption is used solely to determine the amortization payment on Unfunded Actuarial Liability
  - Unfunded Actuarial Liability is amortized as a level percent of payroll
  - Depends upon membership growth and general wage growth
- Current assumption of 3.25% based on stable population and the general wage growth assumption
- **Recommend retaining the 3.25% assumption**

Summary of Recommended Economic Assumptions

Assumption	Current	Recommended
Price inflation	2.60%	2.60%
Interest on Member Accounts	3.50%	3.50%
General wage growth	3.25%	3.25%
Payroll growth	3.25%	3.25%
Investment Return	7.00%	7.00%

Actuarial Methods

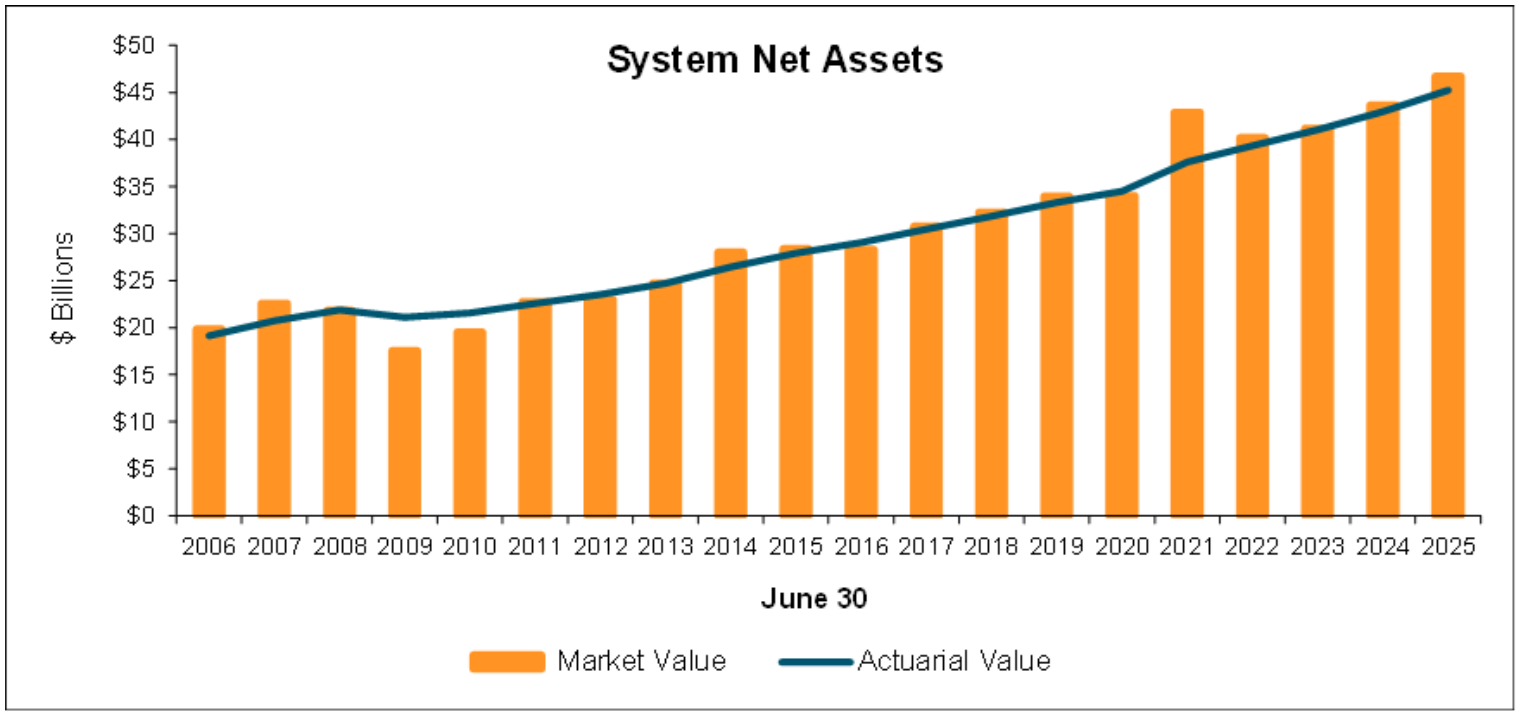
Actuarial Cost Method

- Current Method is Entry Age Normal (EAN)
  - Most common cost method used by public plans
  - EAN develops a normal cost rate that is stable as a level percent of payroll
  - Required cost method for GASB 67/68 calculations

- **Recommendation: No Change**

Asset Smoothing Method

- Current Method is 75% Expected Value + 25% Actual Market Value (corridor of 80% - 120% of market value)
- Expected value = actuarial value of assets last year projected forward using assumed rate of return and actual contributions/benefit payments



Asset Smoothing Method

- Current Method effectively smoothes market volatility as evidenced in graph on prior slide
- Quickly moves back toward actual market value when significant variations occur in actual returns, both positive and negative, over a relatively short period
- Meets actuarial standards of practice with the current corridor
- **Recommend retaining current method**

Amortization Method

- Unfunded Actuarial Liability (UAL)
  - Actuarial Liabilities minus Actuarial Assets
  - UAL exists due to benefit improvements that have not been fully paid for, experience that is less favorable than expected, assumption changes and contributions if less than full actuarial rate
- Amortization policy determines the length of time and structure of the contributions required to systematically fund the UAL
- Current Method
  - Layered Amortization Bases
  - Amortization Period: UAL at 6/30/14 amortized over closed 30 Years (19 years remaining as of 6/30/25 valuation). New pieces of UAL amortized over 20 years.
  - Payment Methodology: Level Percent of Payroll
- **Recommend retaining current method**

Favorable Experience Dividend (FED) Assumption

- Current statutes provide for FED transfers when the plan is fully funded. Experience gains are transferred to the FED Reserve and cannot be transferred back.

- Supplemental Accounts for Active Members (SAAM) is a related provision that redirects a portion of contributions to member accounts when fully funded.

- These provisions were designed at a time when contributions rates were set in statute and did not adjust with funding needs.

FED/SAAM Assumption

- The potential liability from the FED and SAAM are not reflected in the most recent valuation
- IPERS Contribution Rate Funding Policy states:

  For the purposes and only for the purposes of calculating potential transfers to the favorable experience dividend reserve account and to each member's supplemental account the term "fully funded" as specified in the relevant Iowa code and Administrative rules shall mean:

  The funding percentage, which shall not be less than 100 percent, determined by the system's actuary at which calculated transfers to the favorable experience dividend reserve account and to the member's supplemental accounts will not result in a material probability that the System will fall below 100 percent funded.

- We believe it is reasonable to continue not valuing the FED and SAAM in the funding valuation
- **Recommend the Board work with the Legislature to more directly address the issues related to the FED and SAAM**

Demographic Assumptions

Demographic Assumptions

- Studies what happened to individual members
  - Mortality
  - Retirement
  - Disability
  - Termination of employment
  - Probability of electing a deferred vested benefit
  - Merit salary scale

Measuring Demographic Experience

- Compare what actually happened to individual members with what was expected to happen based on the actuarial assumptions

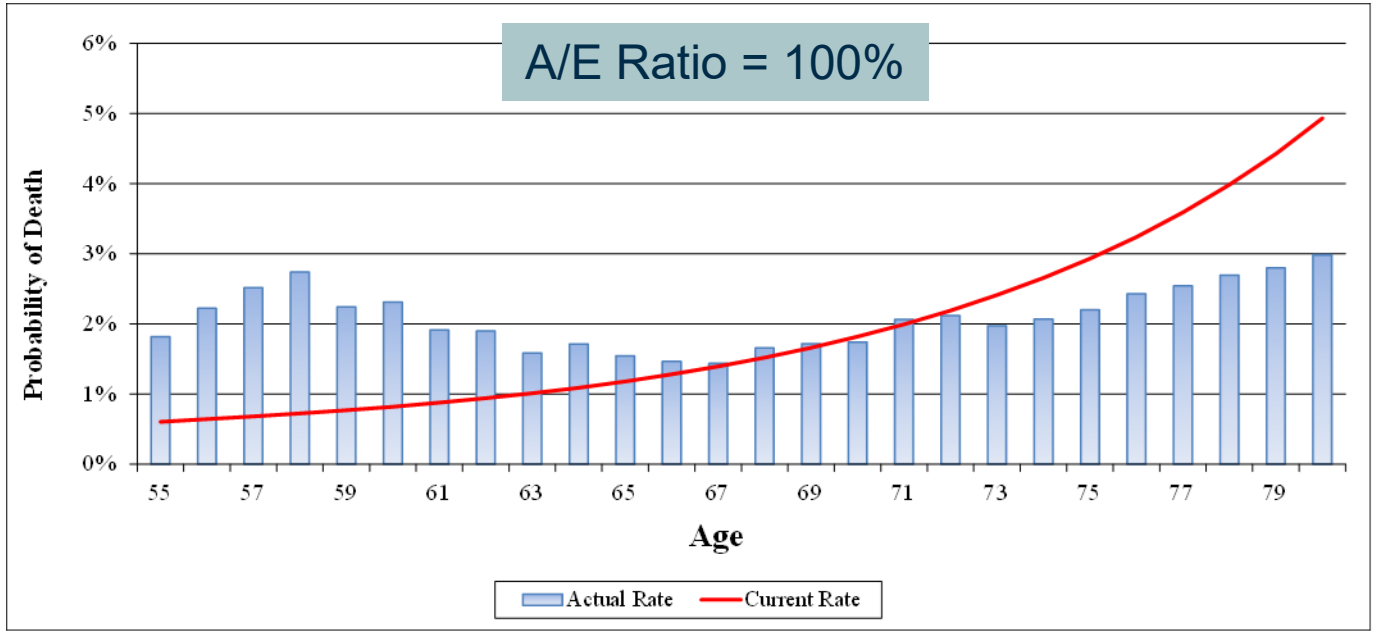
- Credibility – amount of weight assigned to the recent experience
  - Length of study period
  - Unusual events during study period (Covid for example)
  - Size of the group

- Key evaluation tool is actual decrements/expected decrements (called A/E ratio)
  - Decrement is a change in a member's status during the study period (e.g., retirement, termination, death)

Evaluating the Demographic Experience

- Generally, the closer A/E ratio is to 100%, the better the current assumption anticipated the experience

- Even if overall A/E ratio is close to 100%, pattern of the actual experience may vary significantly from the assumption, indicating a need for change



Demographic Assumptions

- When appropriate, we considered experience in the prior study period
- Experience studied separately for School, State and Other groups for Regular membership
- Aggregated Special Service groups when practical to improve credibility of results

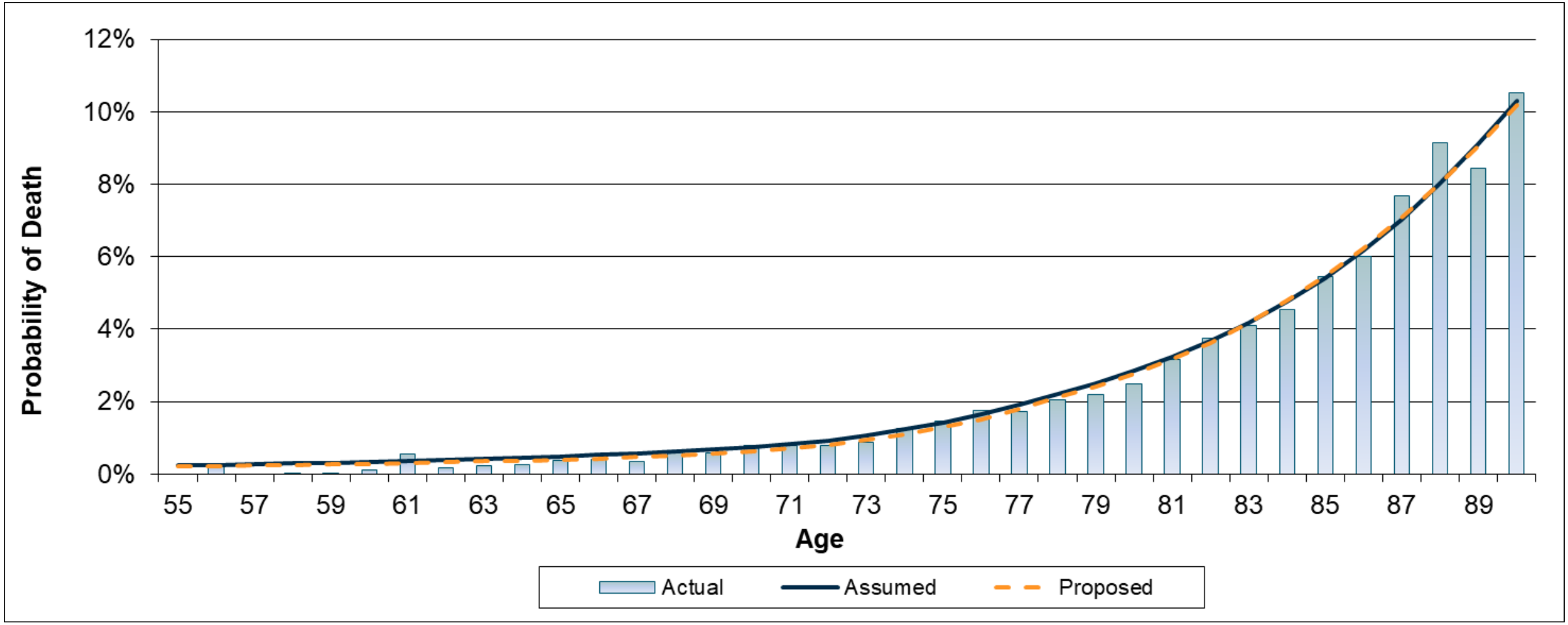
Mortality

- Critical assumption from a cost perspective because it anticipates the duration of benefit payments
  - If people live longer, benefits are paid longer, and it increases the liabilities and costs of the system
- Our focus is on mortality at key retirement ages (55-90), not life expectancy at birth
- May adjust tables in order to better fit the actual experience
  - Age setback or set forward
  - Benefit size (Below or Above Median)
  - Scaling factors

Recommended Mortality Assumptions

- New set of public plan mortality tables published in 2025 (Pub-2016 tables)
- Our recommendation is to move to the newest family of mortality tables
- Recommendation for Retiree Mortality Tables:
  - Regular Membership
    - Pub-2016 General Members Median Healthy Retiree Mortality Table
    - Various age adjustments and scaling before and after age 75 by group
  - Special Services
    - Pub-2016 Safety Median Healthy Retiree Mortality Table, set forward 3 years for males and set forward 2 years for females
- Future mortality improvements projected using Scale MP-2021 (most recent)

School Female Mortality



Current Assumption A/E Ratio: 94%
Proposed Assumption A/E Ratio : 100%

Mortality: Healthy Retirees

	A/E Ratios (weighted)	
	Current	Proposed
State		
Male	87%	98%
Female	92%	101%
School		
Male	98%	101%
Female	94%	100%
Other		
Male	86%	100%
Female	102%	100%
Special Services Males	90%	96%

Other Mortality Assumptions

- Our recommendation is to use the same Pub-2016 family of mortality tables and mortality improvement scale for Actives, Disabled and Beneficiaries

- **Recommendation for Active Base Table:**
  - Regular Members: General Members Employees Table, using same age adjustments for males and females as the retiree table and no scaling adjustments, projected generationally using Scale MP-2021
  - Special Services: Safety Members Employees Table, using same age adjustments for males and females as the retiree table, projected generationally using Scale MP-2021

- **Recommendation for Disabled Base Table:**
  - Regular Members: Non-Safety Members Disabled Table, using same age adjustments for males and females as the retiree table and no scaling adjustments, projected generationally using Scale MP-2021
  - Special Services: Safety Members Disabled Table, using same age adjustments for males and females as the retiree table, projected generationally using Scale MP-2021

- **Recommendation for Beneficiary Base Table:**
  - Regular Members: General Members Median Contingent Survivor Mortality Table, using same age adjustments for males and females as the retiree table and no scaling adjustments, projected generationally using Scale MP-2021
  - Special Services: Safety Members Median Contingent Survivor Mortality Table, using same age adjustments for males and females as the retiree table, projected generationally using Scale MP-2021

Retirement: Regular Membership

- Anticipates retirement directly from active status
- Type of retirement analyzed separately and by group
  - Early (reduced benefit)
  - Normal retirement (unreduced benefits) at either age 65, age 62 and 20 YOS or Rule of 88 (age + service >=88)
    - Select (First Eligible)
    - Ultimate

Retirement Experience

	A/E Ratio	
	Count	**Weighted**
State		
Early	48%	60%
Select	104%	111%
Ultimate	101%	111%
Total	**86%**	**94%**
School		
Early	35%	52%
Select	79%	97%
Ultimate	71%	112%
Total	**61%**	**98%**
Other		
Early	40%	52%
Select	68%	93%
Ultimate	73%	105%
Total	**63%**	**92%**
Sheriffs and Deputies	82%	87%
Protection Occupation	78%	117%

Retirement

- Count and weighted experience are different (other than State and Sheriffs/Deputies), consistent with past experience
- Covid-19 pandemic likely had an impact on retirement behavior during the early part of the study period
  - Did not significantly diminish the credibility of the data
- Recommend moving part of the way toward the observed experience

Proposed Retirement Rates

	A/E Ratio (Weighted)	
	Current	**Proposed**
State		
Early	60%	79%
Select	111%	105%
Ultimate	111%	104%
Total	**94%**	**93%**
School		
Early	52%	84%
Select	97%	97%
Ultimate	112%	106%
Total	**98%**	**101%**
Other		
Early	52%	82%
Select	93%	99%
Ultimate	103%	100%
Total	**92%**	**97%**
Sheriffs and Deputies	87%	89%
Protection Occupation	117%	104%

Disability

	A/E Ratios	
	Current	Proposed
Regular Members		
Male	36%	45%
Female	40%	50%
Special Service	69%	76%

- Number of occurrences is small, so credibility is limited
- Results are similar to the last three studies despite lowering of disability rates
- Recommend decreasing Regular Member rates by 20% and Special Service Members by 10%
- Recommend decreasing Special Service duty disabilities from 67% to 50%

Termination of Employment

Regular Membership

- Count and liability-weighted experience continue to differ, indicating lower-paid employees turn over more
- State rates up this study, reversing a downward trend
- Recommend some adjustments to the assumptions
- Observed A/E ratios:

	Male		Female	
	Count	Weighted	Count	Weighted
State	115%	116%	114%	115%
School	147%	110%	157%	119%
Other	111%	83%	111%	83%

Termination of Employment

Regular Membership

- Proposed Rates – Weighted A/E Ratios

	Male		Female	
	Current	Proposed	Current	Proposed
State	116%	105%	115%	109%
School	110%	105%	119%	109%
Other	83%	91%	83%	89%

Termination of Employment

Special Service Membership

- Separate assumptions for Sheriffs/Deputies and Protection Occupations membership groups
- Some adjustments recommended to Sheriffs/Deputies

- Sheriffs/deputies – A/E ratio moves from 165% to 133%
- Protection Occupations – A/E ratio remains at 107%

Election of Deferred Vested Benefit

- Anticipates probability an active member is vested, terminates and elects a deferred vested benefit in future
- Recommend minor adjustments to more partway to observed experience
- A/E ratio (liability-weighted)

	Male		Female	
	Current	Proposed	Current	Proposed
State	109%	102%	110%	105%
School	101%	101%	104%	102%
Other	108%	104%	111%	105%
Special Service	93%	94%	(combined with male)	

Salary Increase

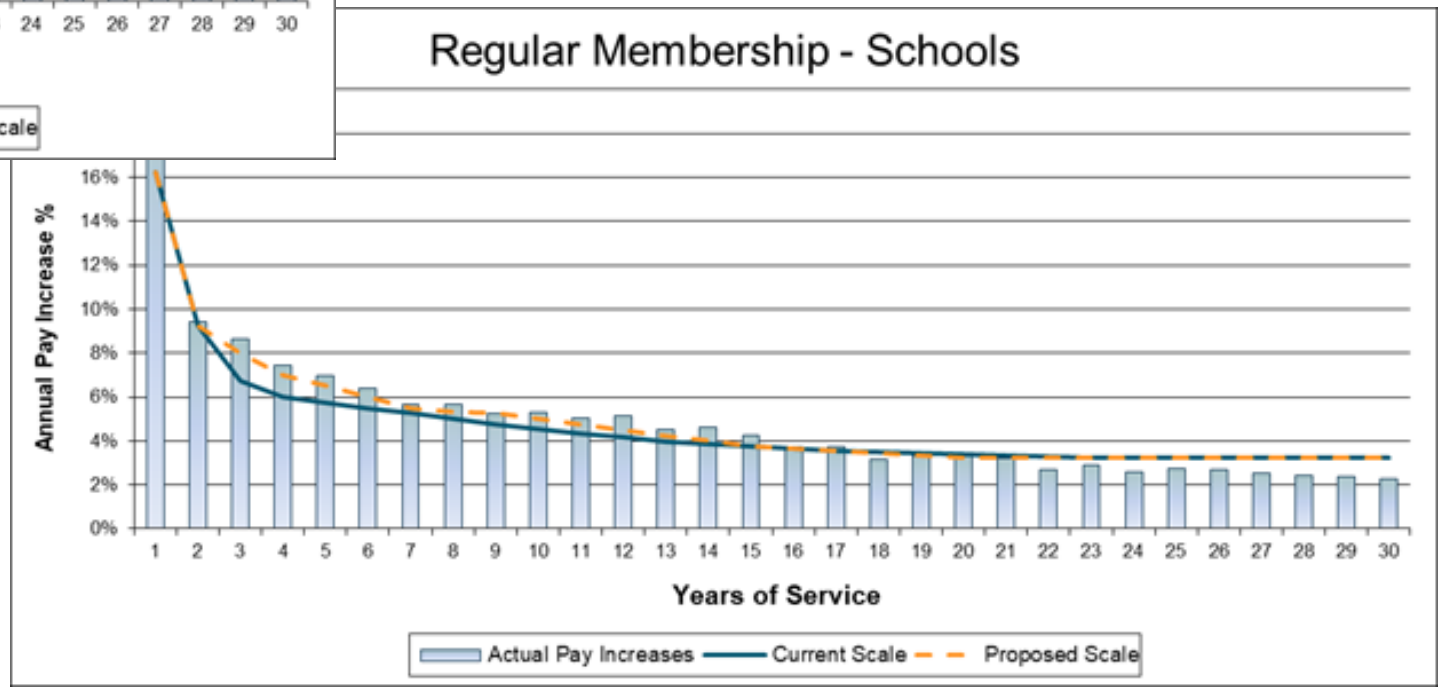
- Two components:
  - Merit (promotion/longevity)
  - General wage increase (inflation plus productivity).
    - Previously discussed
- Current assumption is service based
- Difficult to separate merit and general wage increase, so studied total salary increase during the study period

Salary Experience

Fiscal Year	State	School	Other	Special Services
2022	3.77%	5.02%	6.71%	7.00%
2023	8.20%	5.74%	8.38%	10.24%
2024	2.86%	5.30%	6.24%	6.13%
2025	5.97%	5.90%	6.59%	6.51%
2022-25	5.18%	5.50%	6.95%	7.40%
Expected	5.95%	5.03%	5.74%	5.86%

Salary

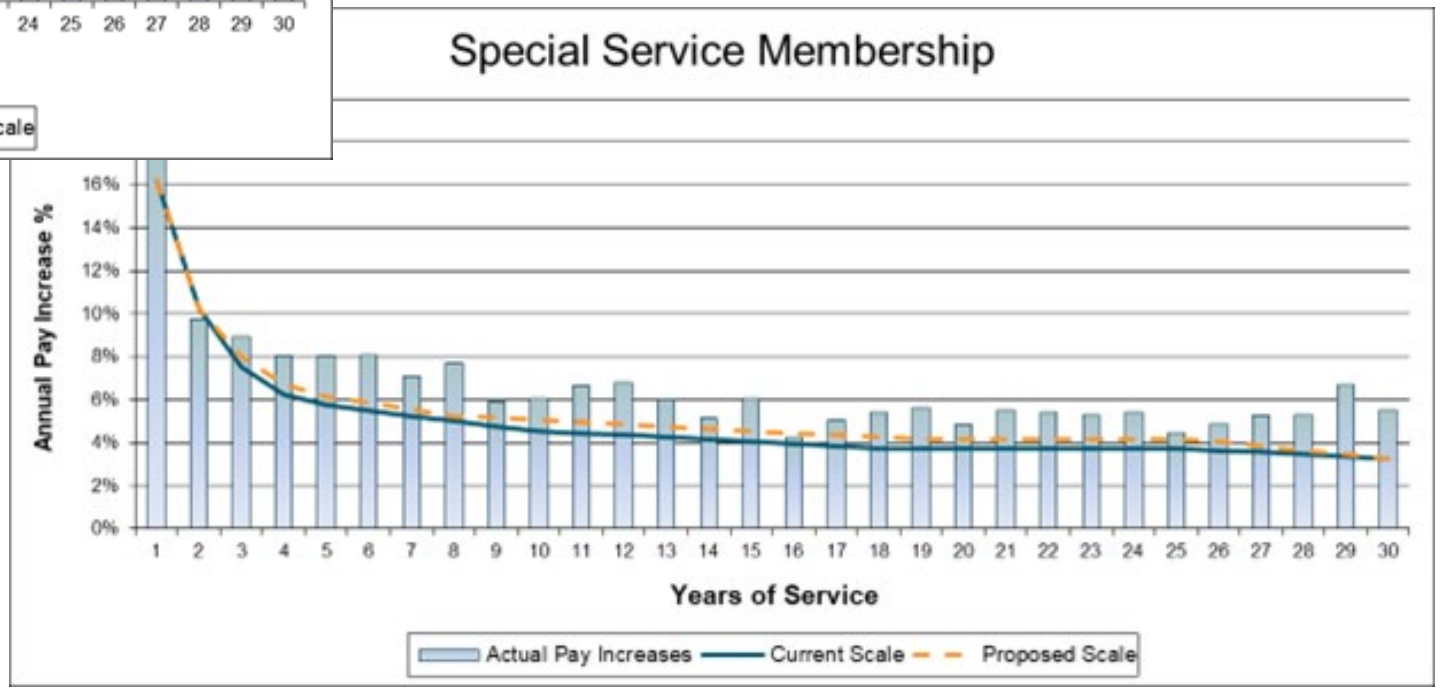
State
Current Assumption A/E Ratio: 87%
Proposed Assumption A/E Ratio: 91%



Schools
Current Assumption A/E Ratio: 109%
Proposed Assumption A/E Ratio : 105%

Salary

Other
Current Assumption A/E Ratio: 121%
Proposed Assumption A/E Ratio: 111%



Special Service
Current Assumption A/E Ratio: 126%
Proposed Assumption A/E Ratio : 119%

Conclusions/Comments

- Our philosophy is to move incrementally, especially with Covid-19 pandemic lingering effects
- Continue to modify and refine assumptions, as needed in the future
- Regular experience studies provide assurance that changes will be made in a timely manner
- Consider FED/SAAM Legislative changes

Optional Form Factors

- At retirement, members can elect the form of their retirement benefit, e.g., single life, joint and survivor, certain and life.
- Optional form factors are used to convert the formula benefit to another form of payment
- Optional form factors are “actuarial equivalent” which is based on an investment return and mortality assumption
- If mortality is changed, we recommend that the optional form factors be updated when administratively feasible

Estimated Financial Impact

	Current	Proposed
Regular Members		
Actuarial Liability	$45,527M	$45,764M
Normal Cost	10.63%	11.03%
Sheriffs and Deputies		
Actuarial Liability	$1,150M	$1,165M
Normal Cost	20.10%	20.84%
Protection Occupation		
Actuarial Liability	$2,386M	$2,434M
Normal Cost	15.42%	16.45%

Note: Based on June 30, 2025 Actuarial Valuation. The impact, as a percentage, on the June 30, 2026 actuarial valuation results is expected to be similar, but the dollar amount will be different.

Estimated Actuarial Contribution Rates

	Current	Proposed
Regular Members	13.10%	13.69%
Sheriffs and Deputies	24.42%	25.82%
Protection Occupation	15.42%	16.45%

Note: Based on June 30, 2025 Actuarial Valuation.

Actuarial Certification

We, Patrice A. Beckham, FSA, Brent A. Banister, FSA, and Bryan K. Hoge, FSA, are consulting actuaries with CavMac. We are members of the American Academy of Actuaries, Enrolled Actuaries and the Society of Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. We are available to answer any questions or provide additional information as needed.

Sincerely,

Patrice A. Beckham, FSA, EA, FCA, MAAA
Consulting Actuary

Brent A. Banister, PhD, FSA, EA, FCA, MAAA
Chief Actuary

Bryan K. Hoge, FSA, EA, FCA, MAAA
Principal and Consulting Actuary


THANK
YOU