Overview of 2024 Experience Study

FLORIDA RETIREMENT SYSTEM

Presented by:
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October 14, 2024

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Executive Summary

- Key proposed assumption updates driven by FRS experience data
  - Retiree life expectancy / mortality assumptions (example: retiree currently age 62)
    - Largest life expectancy increase for male Special Risk retirees (age 83.6 → age 84.9)
    - Smaller increase for "other" male non-schoolteacher retirees (age 85.3 → age 86.0)
    - Updates expected to increase Special Risk liability by 3%, other classes by 1%
  - Materially increased likelihood of future DROP entry by schoolteachers

- Current UAL amortization method is within the range of best practices
  - There are other best practice range options for duration and shape

- Current non-investment economic assumptions are reasonable
  - There are other reasonable options for those assumptions

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Requested Actions for Today

Material for the 2024 FRS Actuarial Assumption Conference on October 17th Will Use Guidance from Today's Meeting

- Approvals requested
  - Demographic assumptions as presented
  - Continued use of current actuarial cost allocation methods
- Approvals or identification of limited alternatives
  - Amortization method for unfunded liability
    - Duration
    - Shape
  - Non-investment economic assumptions
    - Inflation
    - Real wage growth
    - System payroll growth (sum of above two items)

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Agenda

- Demographic assumptions, including:
  - Retiree mortality / life expectancy
  - Timing and likelihood of retirement or DROP entry
- Actuarial methods
  - Actuarial cost allocation method
  - Amortization of unfunded actuarial liability (UAL)
- System-wide non-investment economic assumptions
  - Inflation
  - Real wage growth
  - System payroll growth

Introduction

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Overview of an Actuarial Experience Study

- Milliman received five years of FRS experience data (July 2018 – June 2023)

- An experience study is conducted every five years
  - Gives information to review and update, if appropriate, valuation **assumptions**
  - Reviews actuarial valuation **methods**, identifying alternatives for consideration

Data

Assumptions

Methods

Provisions

Projected Benefit Payments

Actuarially Calculated Contribution Rates

Funded Status

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Categories of Actuarial Valuation Assumptions

- Many assumptions affect both the FRS and HIS actuarial valuations

Demographic

Assumptions

Economic

Member-specific

System-wide

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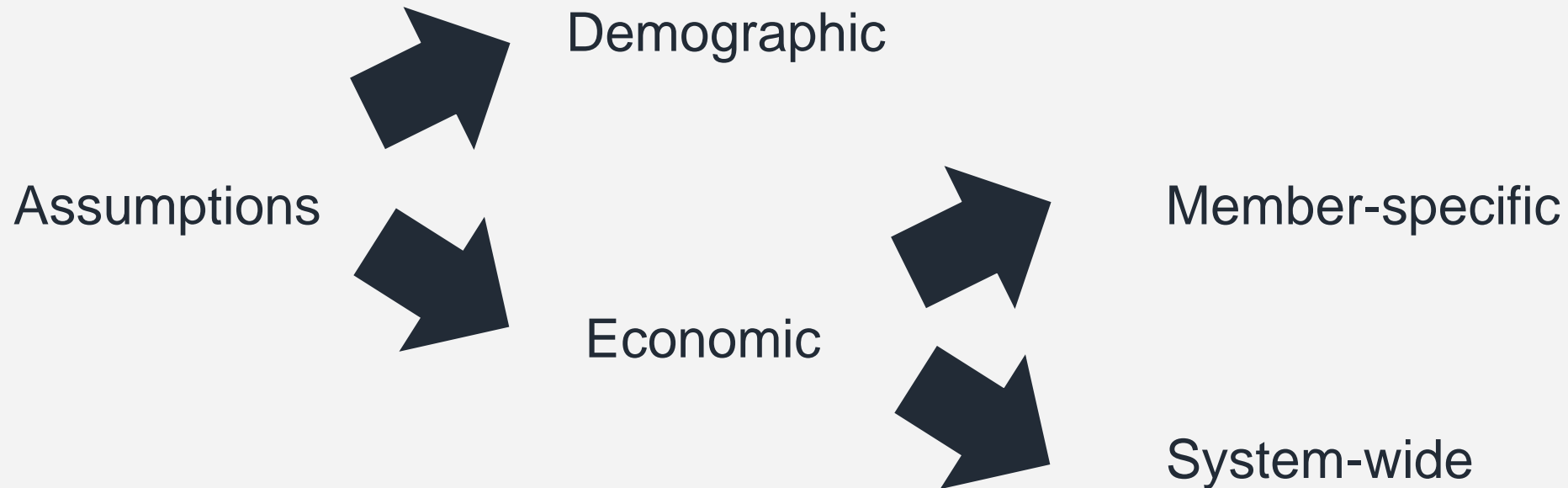
Actuary's Primary and Secondary Areas of Assumption-Setting Expertise

- We need actuarial assumptions for all areas that impact the projection of retirement benefits and the present value of those projected benefits

- An actuary's primary expertise is in developing demographic assumptions
    - Example: statistical analysis of recent mortality experience data for FRS retirees

- Actuaries also have knowledge of system-wide economic assumptions that complements the knowledge of deep subject matter experts
    - Inflation
    - Real wage growth
    - Real (before inflation) return on system investments

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Assumptions Lead To Projected FRS Pension Plan Benefit Payments

Legend: Retired, Inactive, DROP, Active
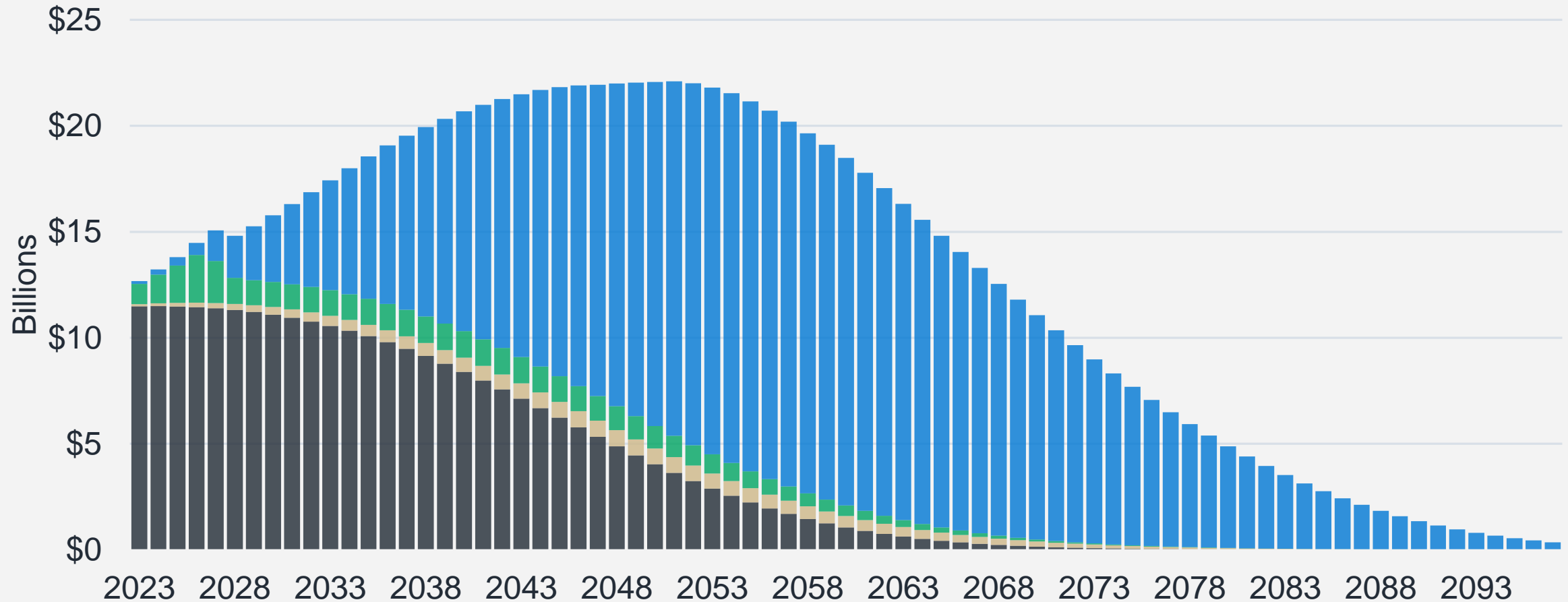
- This graph is from the 2023 Conference presentation (non-inflation-adjusted dollars)

The Fundamental Cost Equation Is the Long-Term System Cost Model
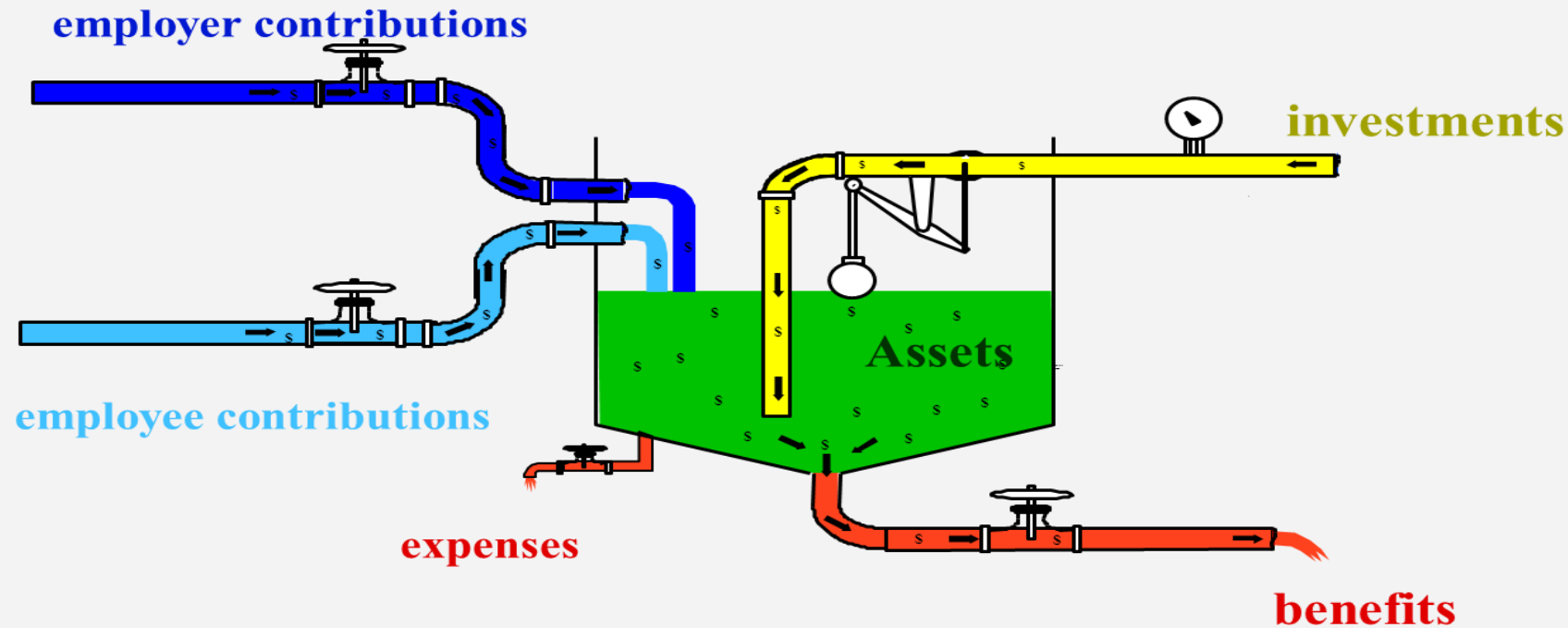
- Assumptions and methods **do not** determine long-term system cost, which is governed by the fundamental cost equation:

  ➢ **Contributions + Investments = Benefits + Expenses**

- Assumptions and methods only impact the budgetary **timing** of cost incurrence

Guiding Principles To Set Assumptions

- Given that assumptions do impact budgeting but do not impact ultimate long-term system cost, what guiding principles should be used in selecting assumptions?
    - Identify best estimates and/or prudent estimates
    - Have internal consistency among assumptions
    - Focus on the lengthy time horizon of the calculations
    - Remember the assumption selected will not affect actual future experience

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Demographic Assumptions – Introduction

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Use of Assumptions

- Demographic and salary increase assumptions for individual members are combined with census data provided by the Division of Retirement to develop projected benefit payments

- Economic assumptions are used to state those long-term projected benefit payments as a single net present value

Data

Assumptions ➡ Projected Benefit Payments ➡ Actuarially Calculated Contribution Rates

Methods

Provisions

Funded Status

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Overview of Demographic Assumptions

- While a variety of demographic assumptions are needed and have been studied, today's discussion focuses primarily on what are perhaps the two most impactful demographic assumptions
  - Retiree mortality assumption (a.k.a. retiree life expectancy)
  - Assumptions for retirement or DROP entry – timing and likelihood of each option
- These assumptions provide projected answers to two key questions:
  - When will benefits commence for each member?
  - When will each member's benefits stop being paid?

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Demographic Assumptions – Retiree Mortality / Life Expectancy

Retiree Mortality Assumption – Retiree Categories

- **Separate male and female mortality assumptions for three retiree categories**
  - K-12 instructional retirees (i.e., schoolteachers)
  - Public safety retirees (i.e., Special Risk Class)
  - All other retirees

- **Large nationwide public sector study* confirms mortality differs by category**
  - Female schoolteachers have the longest life expectancy / lowest mortality rates
  - Male public safety have the shortest life expectancy / highest mortality rates

- **Current assumption was adopted as part of 2019 Experience Study**
  - Separate assumption for each category/gender pairing noted above
  - Assumption calibrated to match the prior study's observed FRS experience

*Pub-2010 Public Retirement Plans Mortality Tables Report (January 2019 – Society of Actuaries)

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Retiree Mortality Assumption – Two Structural Components

- The assumption for each category / gender pairing has two components

- A static **base mortality table**
  - Choose best match to FRS data from set of public sector specific tables (Pub-2010)
  - Same family of tables is used for both the 2019 and 2024 studies

- A **mortality improvement projection scale** to model future advancements
  - Prior study's assumptions used the Society of Actuaries' "MP-2018" scale
  - This study's assumptions use the "MP-2021" scale, which is the newest scale
  - MP-2021 is less optimistic about the pace of improvement than MP-2018

Retiree Mortality Assumption – Data Received & Data Used in This Study

- Milliman received five plan years of FRS retiree mortality experience data
  - Period running from July 2018 to June 2023

- To set mortality assumptions, **we chose to use data for three plan years**:
  - July 2018 to June 2019 plan year
  - July 2019 to June 2020 plan year
  - July 2022 to June 2023 plan year

- The other two plan years had about 15% higher annual mortality incidence
  - Our opinion - less appropriate for setting prudent long-term assumptions

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Proposed Mortality Assumptions

- Base mortality tables which best match the study's FRS-specific experience
  - Pub-2010 tables remain the most recently published set of base mortality tables specific to public sector plans

- Most recently published mortality improvement projection scale (MP-2021)

- Each retiree base table has a parallel "active" table for employee mortality
  - At any given age, an employee will have a lower mortality rate than a retiree

- We separately reviewed the experience of disabled retirees and proposed assumptions specific to that group

- Details on the proposed assumptions are in the appendix

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Life Expectancy – Male Retiree Aged 62 in 2044
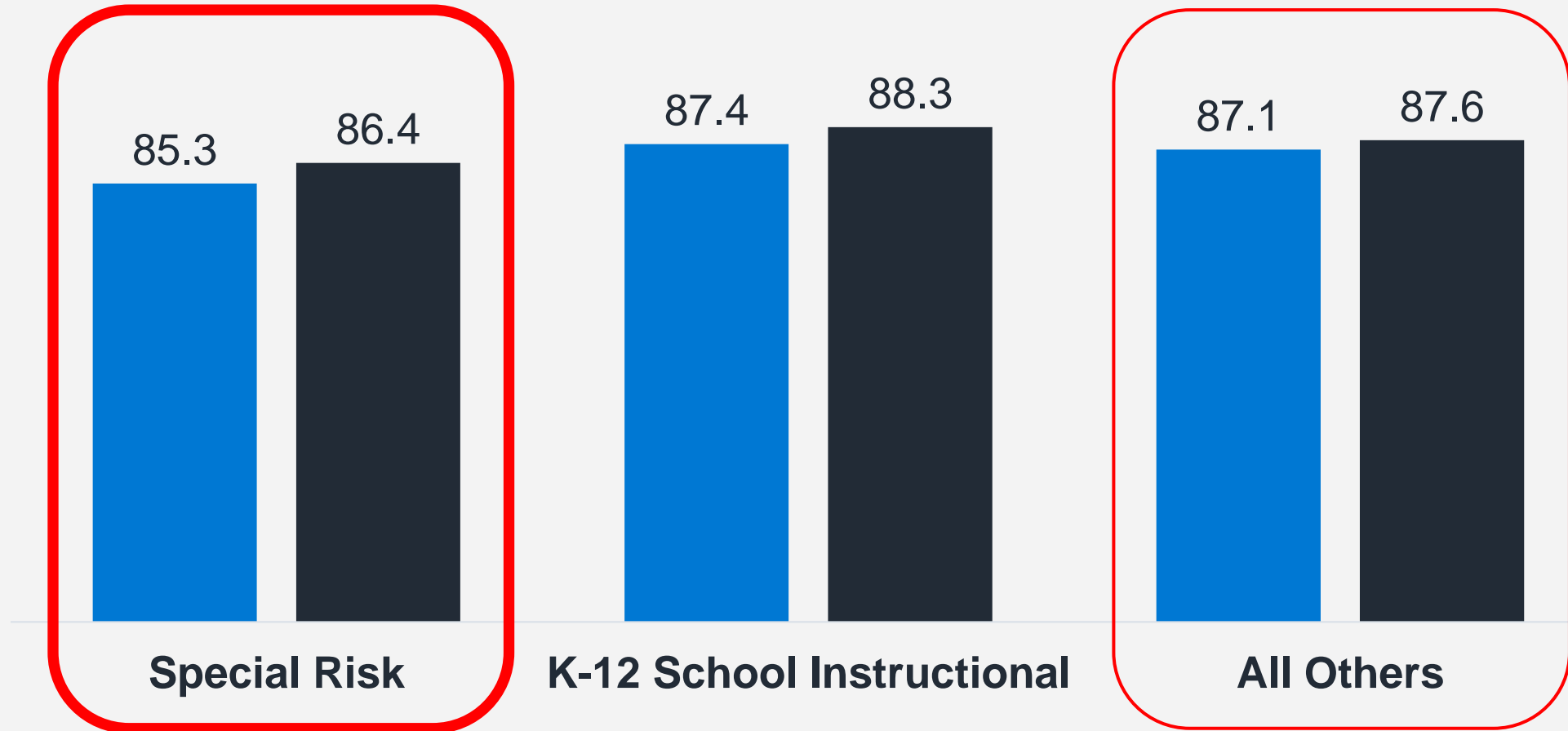
Life Expectancy – Female Retiree Aged 62 in 2024

■ Current Assumption   ■ Proposed Assumption

	Special Risk	K-12 School Instructional	All Others
Current Assumption	86.9	89.3	88.3
Proposed Assumption	87.8	89.1	88.3

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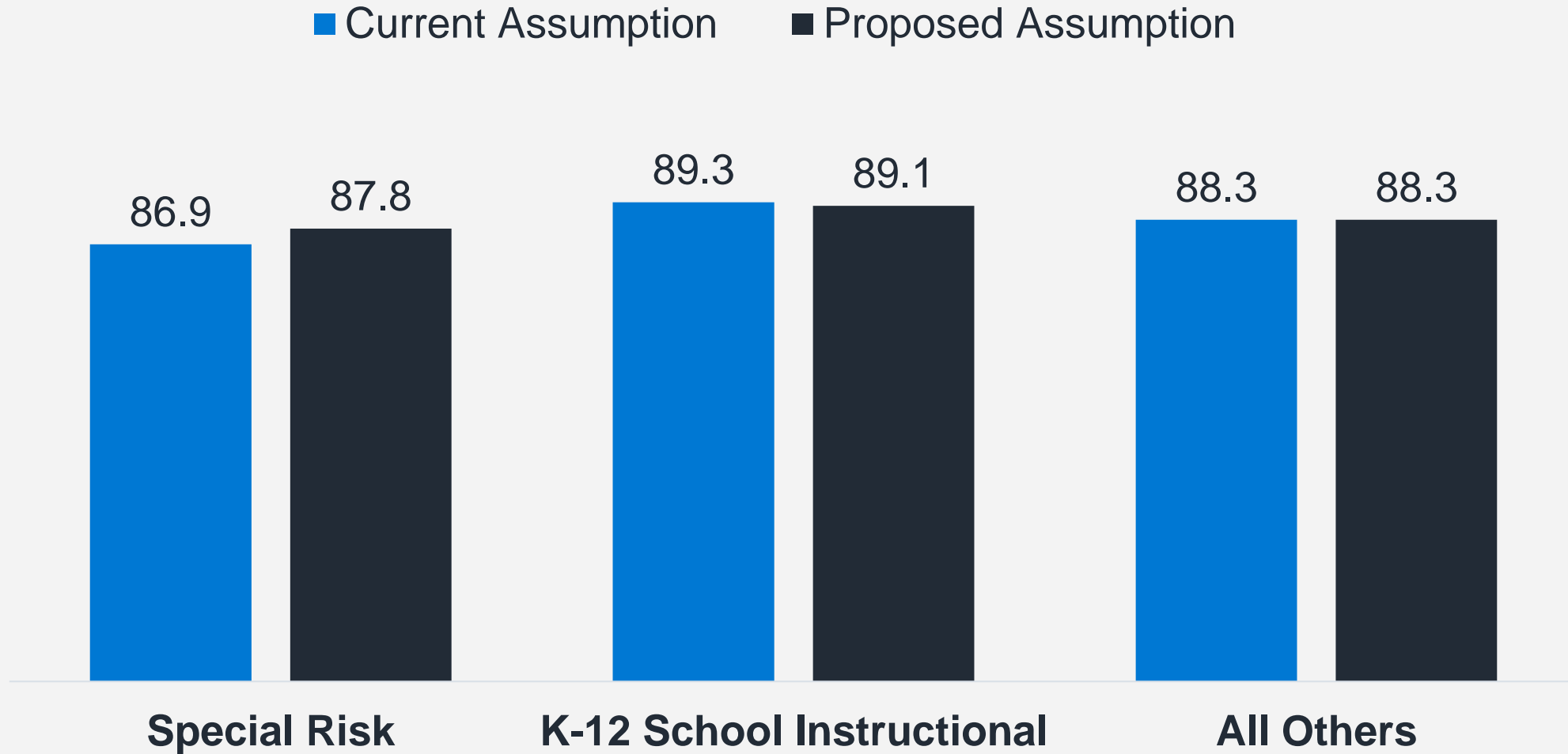
Life Expectancy – Female Retiree Aged 62 in 2044
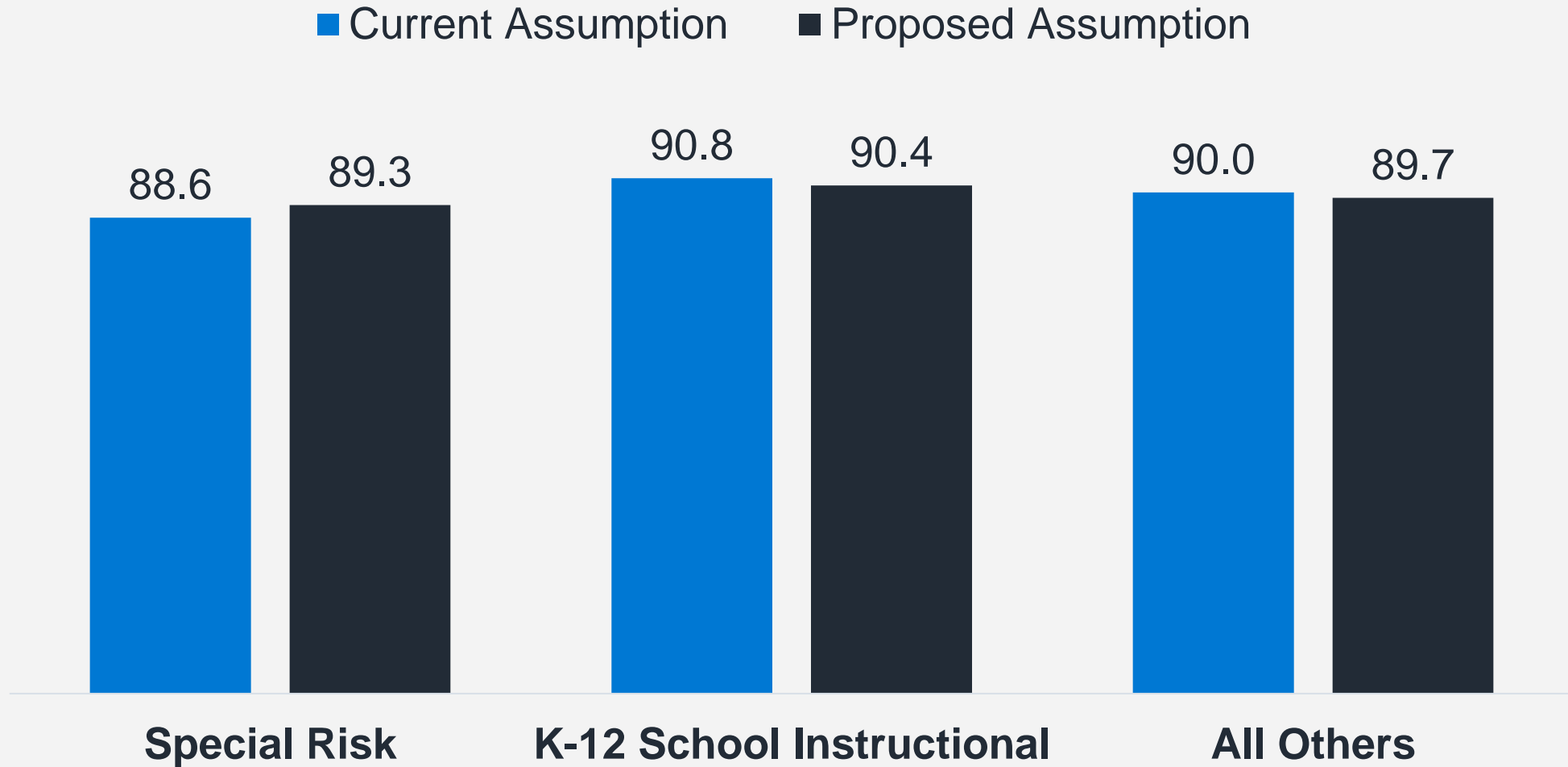
Retiree Mortality – Wrap-up / Conference Guidance Requested

- Key takeaway – male life expectancy updates will increase actuarial liability
  - Largest estimated percentage liability increase (3%) is for Special Risk Class
    - Special Risk is predominantly male
    - Male Special Risk Class member experience data had largest mortality improvement
  - Smaller estimated increases for other classes (e.g., 1% for Regular Class)
  - Percentage increases greater for already-retired members than active members

To prepare for the October 17th Actuarial Assumption Conference we request:

- Approval of the mortality assumption updates listed in the Appendix
  - Employees will use the parallel employee base mortality tables, and same mortality improvement projection scale

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Demographic Assumptions – Retirement / DROP Entry

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Retirement and DROP Assumptions - Introduction

- Once eligible, members choose <u>either</u> immediate retirement <u>or</u> DROP entry
  - For either option, the decision effectively starts the benefit payout period
  - Member can alternatively continue working and defer the choice to a later year
- Analyzing FRS experience data here is more complex than for retiree mortality
  - Unlike mortality, retirement or DROP entry is a member behavior choice
    - Retirement and DROP compete in a "zero-sum game"
  - DROP eligibility rules changed July 2023 for non-K-12 instructional members
    - Experience data (July 2018 – June 2023) – maximum age limits on DROP entry
    - July 2023 – maximum age limits on DROP entry removed via 2023 legislation
- Approach to assumption recommendations explained group by group
  - Purely data-driven approach not useful when eligibility rules have changed

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Overview of Demographic Assumptions

- We will illustrate our analysis using three large member groups
  - K-12 school instructional females (members of Regular Class)
  - Special Risk Class males
  - Regular Class females, other than K-12 school instructional
- These three groups constitute nearly 70% of system liability

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Individual Member Decisions When Eligible for DROP Entry

When a member is eligible to enter DROP, there are three possible paths the member can select

➡ Immediate Retirement

➡ DROP Entry

➡ Do neither ➡ Deferred Retirement
or
Deferred DROP Entry (if available)

Our study reviewed observed experience for each path

DROP – What It Is and How DROP Entry Eligibility Rules Changed

2023 Legislation Modified DROP Entry Eligibility Rules for Members Other Than K-12 Instructional Schoolteachers

DROP allows eligible members to cease benefit accrual and select a deferred retirement date while continuing to work

Prior to June 2023, the DROP entry eligibility window closed for full career employees other than schoolteachers at ages specified in statute

Legislation effective July 2023 removed the DROP entry eligibility "window closure" provision

Pre-July 2023 Career Tier I DROP Entry Eligibility Rules

Membership Class	Window Opens	Window Closes
Special Risk	25 Years	53rd Birthday
All Others	30 Years	58th Birthday

Post-June 2023 Career Tier I DROP Entry Eligibility Rules*

Membership Class	Window Opens	Window Closes
Special Risk	25 Years	Never
All Others	30 Years	Never

*Post-June 2023 eligibility rules applied to K-12 instructional schoolteacher members prior to 2023 legislation

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K-12 Instructional Female – Retirement / DROP Entry Assumptions

- **Instructional personnel - only group without DROP eligibility rule changes**
  - Rules during experience data period (2018 – 2023) are same as current rules
- Allows for a highly data-driven approach in proposing revised assumptions
- This study's data indicated
  - Materially higher rates of DROP entry than the prior study's data (2013 – 2018)
  - Similar rates of immediate retirement to the prior study's data
- Recommendations:
  - Materially increase assumed future DROP entry rates at most ages
  - Make minor data-driven changes to retirement rates at select ages

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DROP Entry (Tier I) – Setting the "Single Specific Age" Assumption
K-12 Instructional Female

Likelihood of Entering DROP Entry at a Single Specific Age
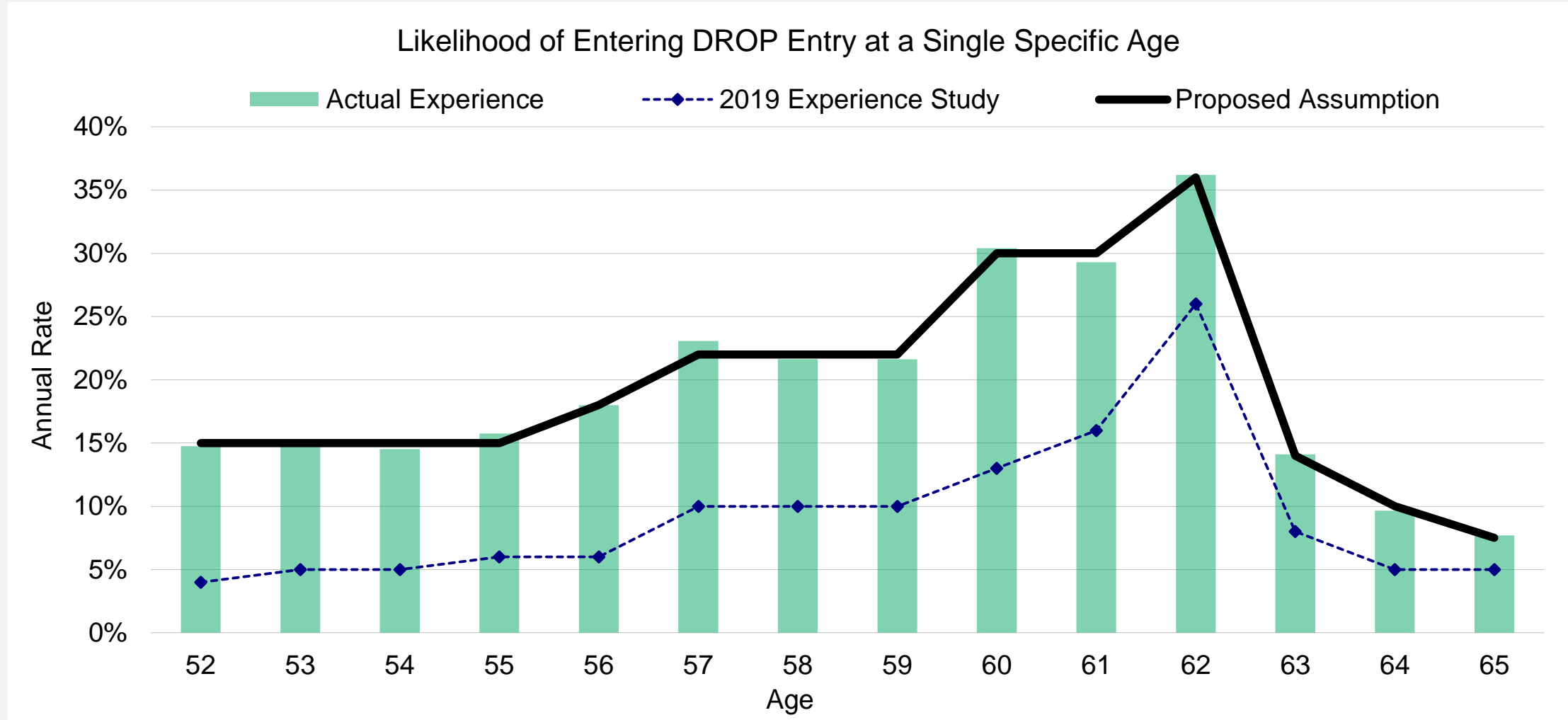
Retirement (Tier I) – Setting the "Single Specific Age" Assumption
K-12 Instructional Female

Likelihood of Immediate Retirement at a Single Specific Age

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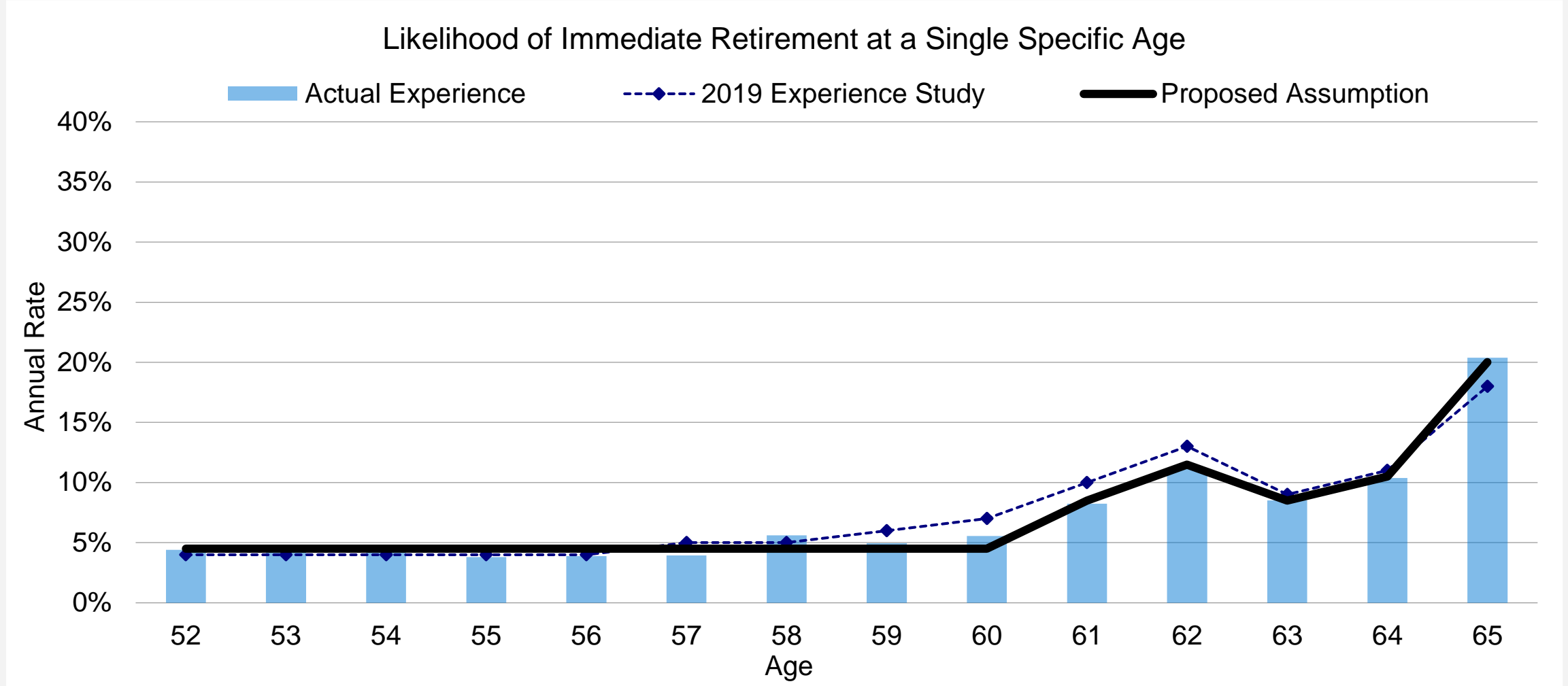
DROP Entry (Tier I) – Cumulative Likelihood of Eventual DROP Entry K-12 Instructional Female

Likelihood of Eventually Entering DROP at Some Age Based on Initial DROP Eligibility Age

■ 2019 Experience Study Assumptions   ■ Proposed Assumptions

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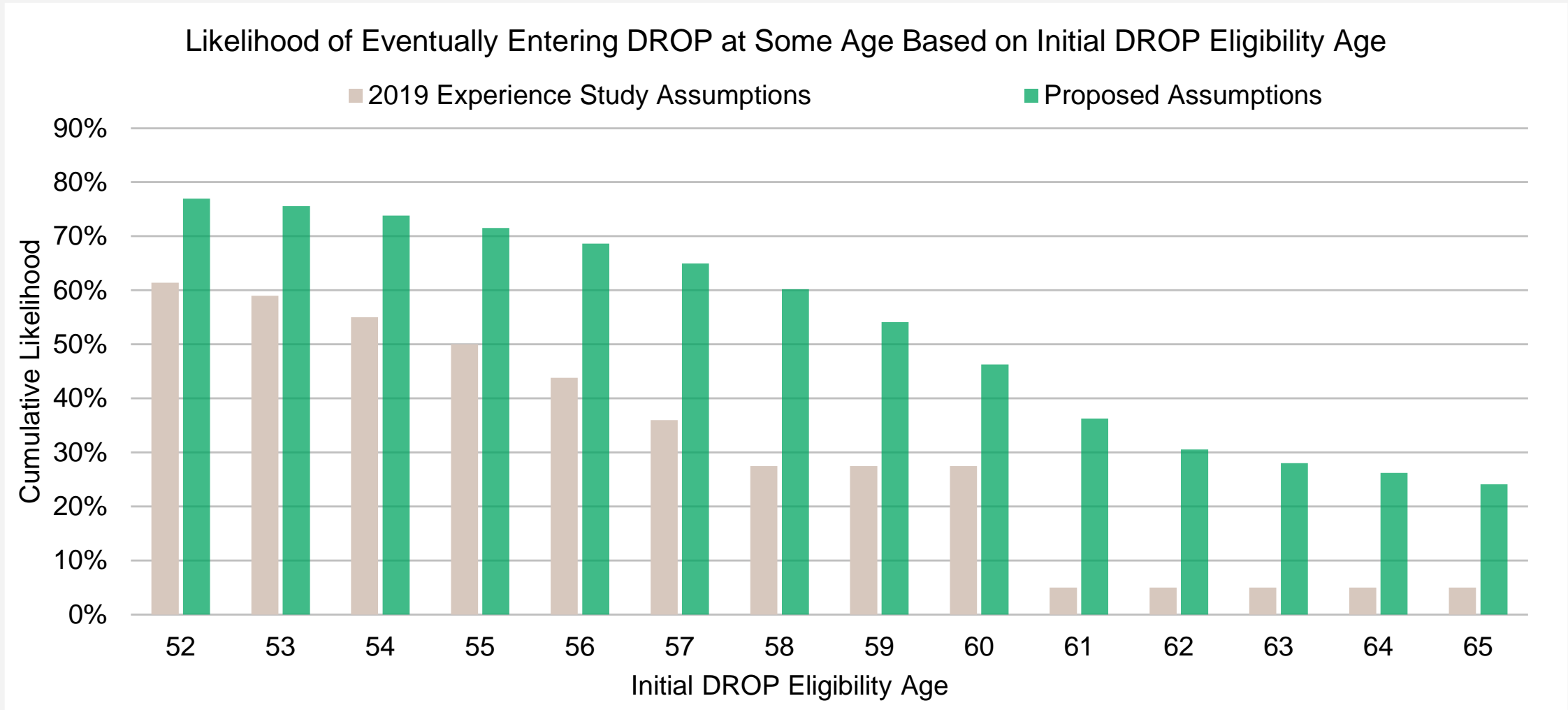
Retirement and DROP Assumptions – K-12 Instructional Female Wrap-Up

- ## This study's data showed higher DROP entry rates than the prior study
  - Material changes to DROP entry assumptions to reflect observed recent experience
- ## This study's data showed similar immediate retirement rates as the prior study
  - Minor changes to retirement assumptions at a few ages
- ## More future schoolteacher exits expected via DROP than previously assumed
  - Fewer exits expected via immediate retirement

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Special Risk Male – Retirement / DROP Entry Assumptions

- Special Risk had **DROP eligibility rule changes** first effective July 2023
  - Old rule – Full-career Tier I members had to enter DROP by age 52
  - New rule – DROP entry permitted at any age after initial DROP entry eligibility

- Milliman updated DROP and retirement assumptions for 2023 valuation
  - Updated assumptions developed as part of 2023 special study of proposed bill
    - Anticipated greater overall likelihood of entering DROP
    - Anticipated later average age of entry into DROP

- DROP rules for experience data period differ from current DROP rules
  - Experience data cannot be the key driver for setting forward-looking assumptions

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DROP Entry (Tier I) – Observation Period (2018 – 2023) Data Experience Special Risk Class Male

Likelihood of Entering DROP Entry at a Single Specific Age

Retirement (Tier I) – Observation Period (2018 – 2023) Data Experience Special Risk Class Male

Likelihood of Immediate Retirement at a Single Specific Age

DROP Entry (Tier I) – Single-Year DROP Entry Likelihood Special Risk Class Male

Likelihood of Entering DROP at a Single Specific Age

DROP Entry (Tier I) – Cumulative Likelihood of DROP Entry Special Risk Class Male

Likelihood of Eventually Entering DROP at Some Age Based on Initial DROP Eligibility Age

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38

Retirement and DROP Assumptions – Special Risk Male

- Material assumption changes already made at time of 2023 legislation
  - Changes materially increased the projected likelihood of eventual DROP entry
  - Changes increased the projected average age of DROP entry
  - Material assumption changes were first used in the 2023 actuarial valuation
- We made minor changes to 2023 valuation DROP assumptions at select ages
- We will monitor actual DROP entry levels as part of annual valuation process
  - If experience materially varies from assumptions, we will inform the Conference
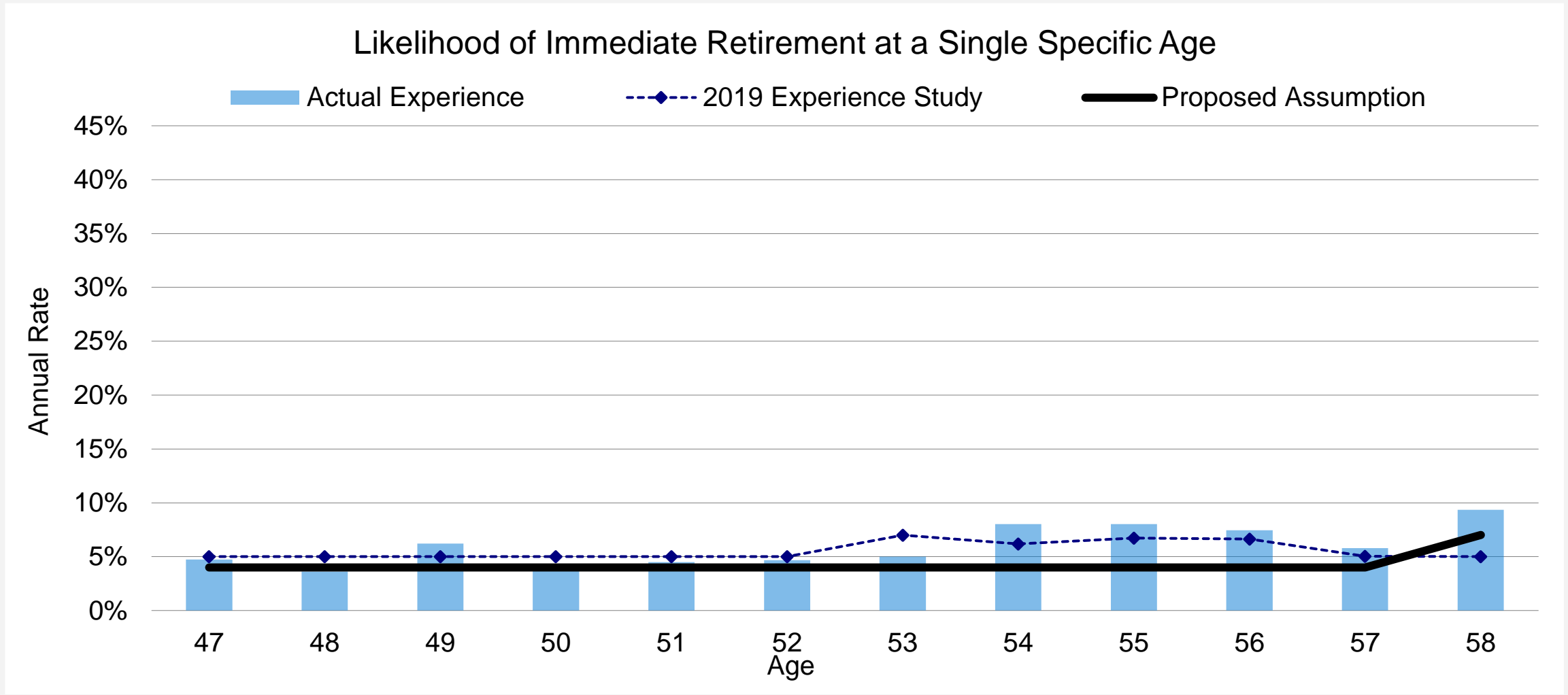
Regular Non-Instructional Female – Retirement / DROP Entry Assumptions

- **This group also had DROP eligibility rule changes first effective July 2023**
  - Old rule – Full-career Tier I members had to enter DROP by age 58
  - New rule – DROP entry permitted at any age after initial DROP entry eligibility

- Milliman updated DROP and retirement assumptions for 2023 valuation
  - Updated assumptions developed as part of 2023 special study of proposed bill
    - Anticipated greater overall likelihood of entering DROP
    - Anticipated later average age of entry into DROP

- DROP rules for experience data period differ from current DROP rules
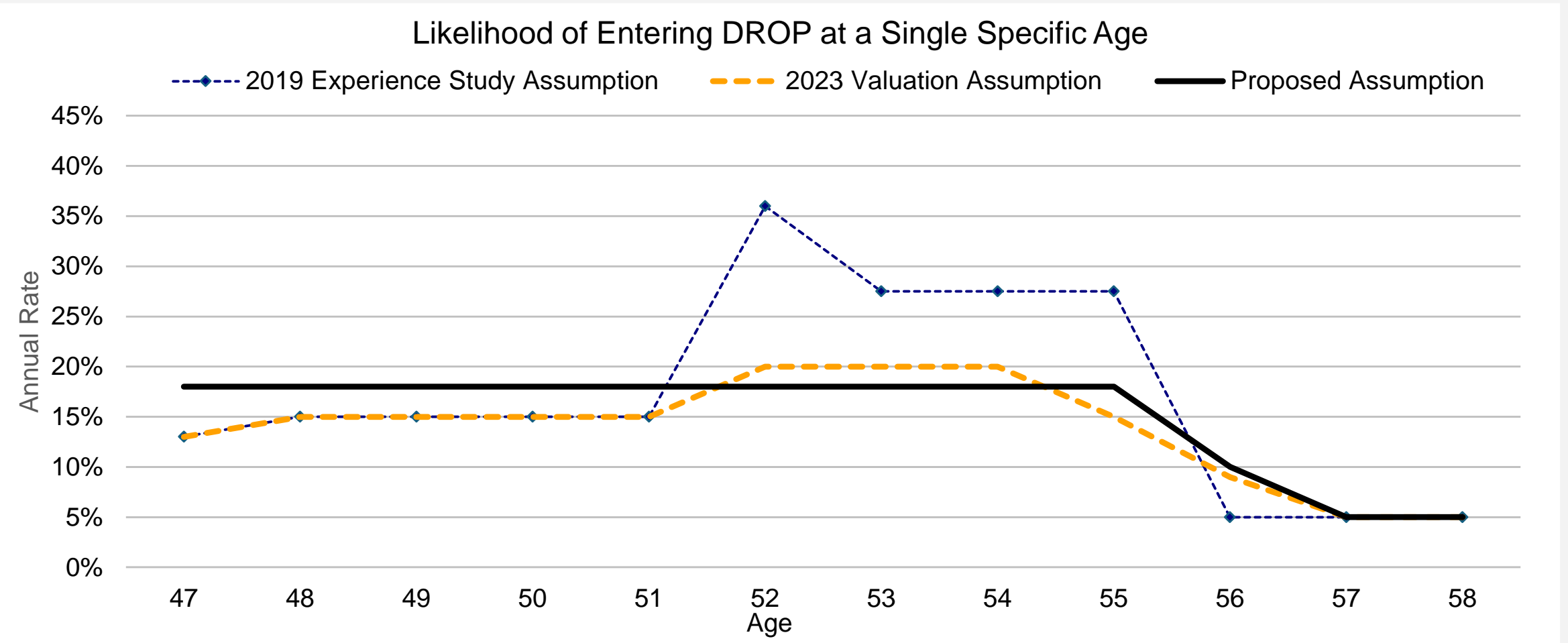 - Experience data cannot be the key driver for setting forward-looking assumptions
  - Behavior for K-12 instructional female ages above 58 provide some data insight

DROP Entry (Tier I) – Observation Period (2018 – 2023) Data Experience Regular Non-Instructional Female

Likelihood of Entering DROP Entry at a Single Specific Age

Retirement (Tier I) – Observation Period (2018 – 2023) Data Experience Regular Non-Instructional Female

Likelihood of Immediate Retirement at a Single Specific Age
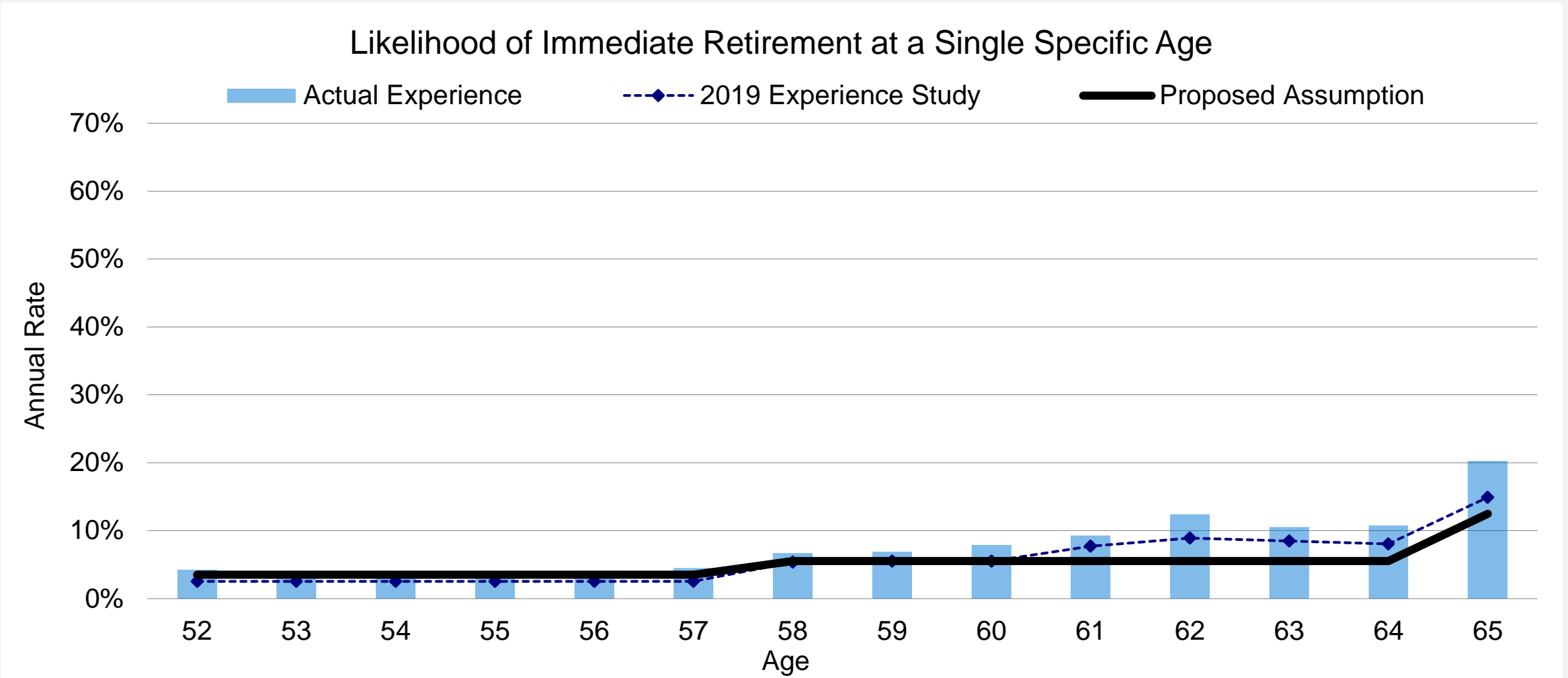
DROP Entry (Tier I) – Single-Year DROP Entry Likelihood Regular Non-Instructional Female

Likelihood of Entering DROP at Single Specific Age
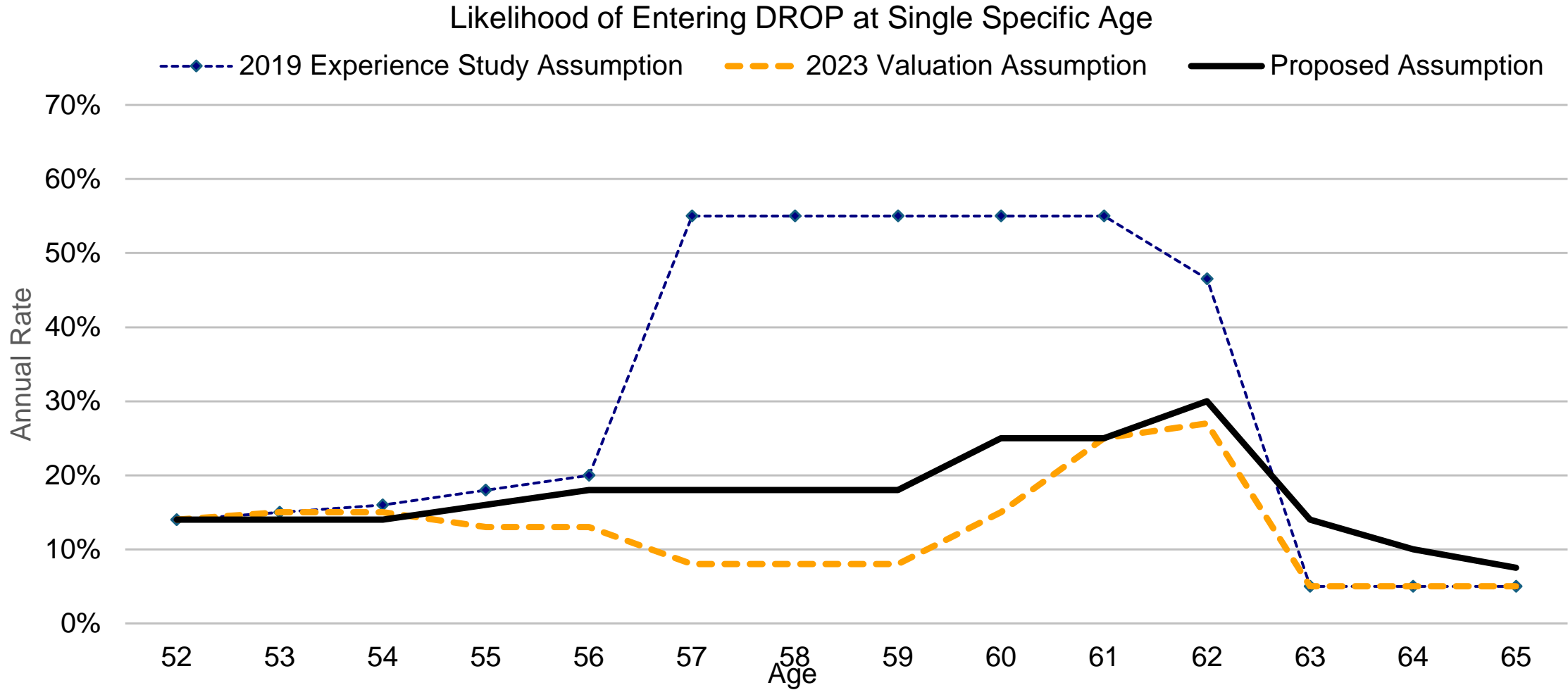
DROP Entry (Tier I) – Cumulative Likelihood of DROP Entry Regular Non-Instructional Female

Likelihood of Eventually Entering DROP at Some Age Based on Initial DROP Eligibility Age
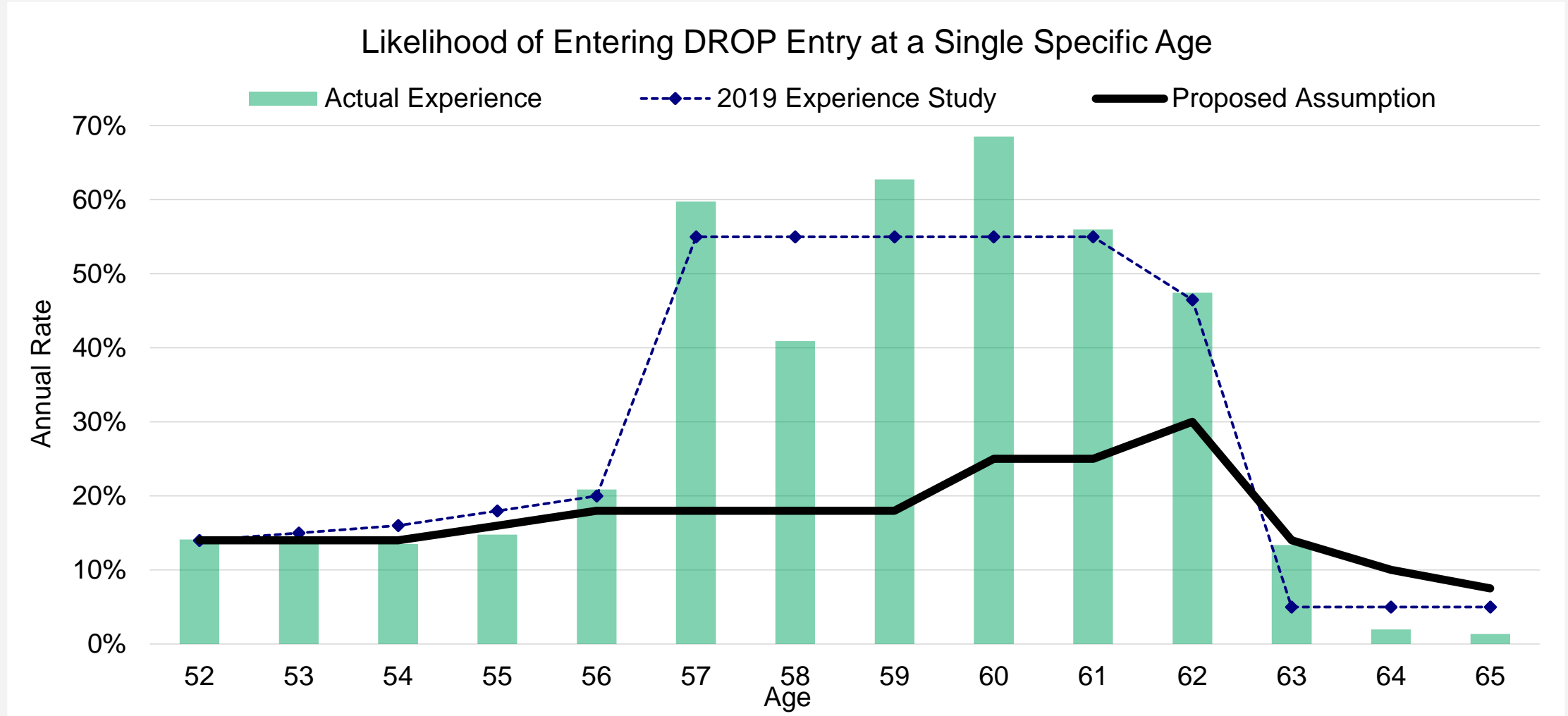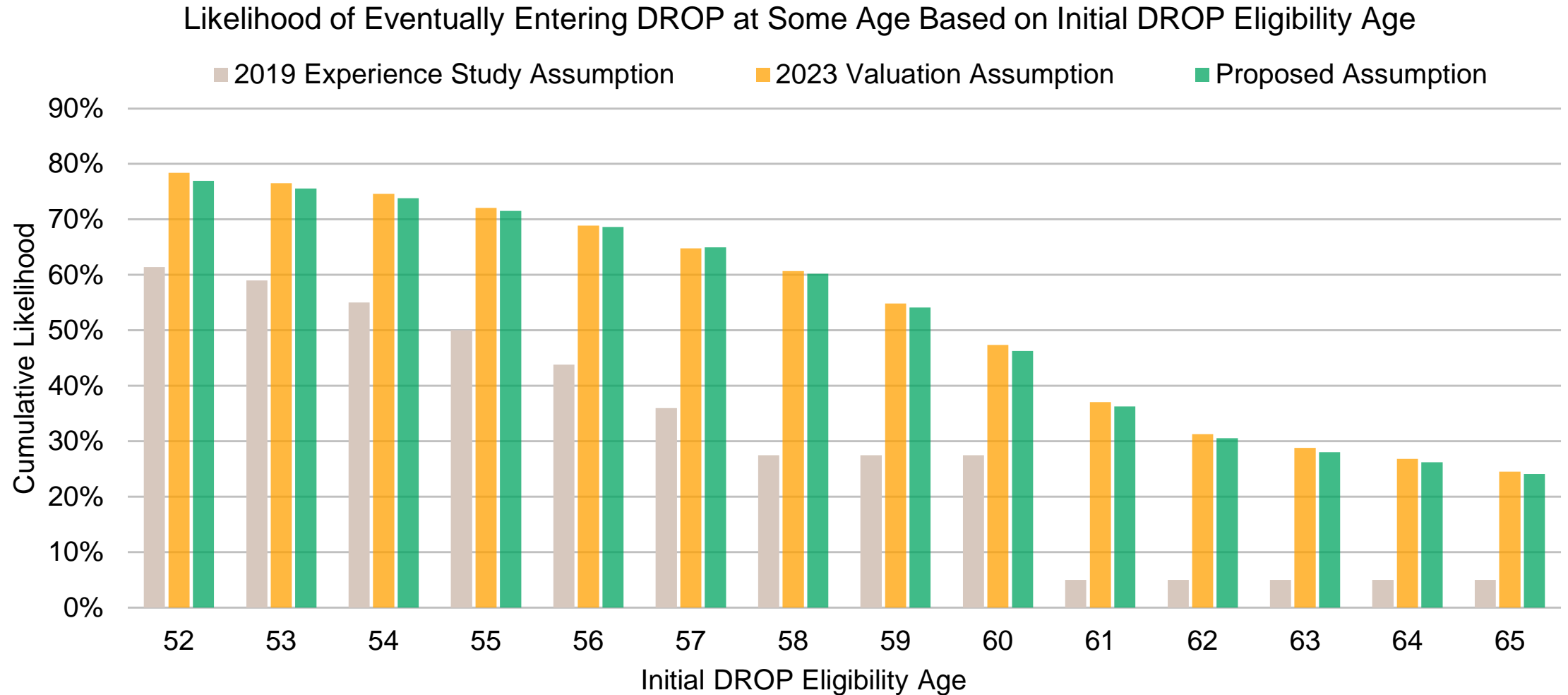
Retirement and DROP Assumptions – Regular Non-Instructional Female

- Material assumption changes already made at time of 2023 legislation
  - Changes materially increased the projected likelihood of eventual DROP entry
  - Changes increased the projected average age of DROP entry
  - Material assumption changes were first used in the 2023 actuarial valuation
- We made minor changes to 2023 valuation DROP assumptions at select ages
- We will monitor actual DROP entry levels as part of annual valuation process
  - If experience materially varies from assumptions, we will inform the Conference

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Demographic Assumptions – Other

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Other Demographic Assumptions

- We compared observed experience versus assumed experience under current assumptions for other demographic events including:
  - Termination of employment prior to unreduced retirement
  - Line-of-duty disability incidence
  - Non-duty-related disability incidence

- We will quantify overall assumption change effects at the October 17th Conference
  - Updates for these assumptions are far less material than mortality, DROP, or retirement

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Termination of Employment Prior to Unreduced Retirement

- Moderately higher observed experience than current assumption

- Assumption generally varies by class, gender, service and age
  - Smaller groups have unisex assumptions and/or rates that do not vary by age
  - Separate Instructional and non-Instructional assumptions proposed for Regular Class

- Projects likelihood and timing of members leaving active Pension Plan service before eligibility for unreduced retirement, including:
  - Early retirement
  - Second election transfer from Pension Plan to Investment Plan
  - Employment termination before or after satisfying vesting requirements

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Likelihood of Termination of Employment Prior to Unreduced Retirement

Regular Class Female Age 25-29

- - -◆- - - 2019 Experience Study Assumption
———— Proposed Assumption - K-12 Instructional
———— Proposed Assumption - Not K-12 Instructional

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Likelihood of Termination of Employment Prior to Unreduced Retirement

Regular Class Female Age 35-44

Legend:
- 2019 Experience Study Assumption
- Proposed Assumption - K-12 Instructional
- Proposed Assumption - Not K-12 Instructional

Y-axis: Annual Rate (0% to 6%)
X-axis: Years of Service (8 to 22)

Other Demographic Assumptions: Disability Incidence

- Special Risk duty disability incidence assumption increased in the 2022 valuation
  - Increase was in response to 2022 legislation modifying eligibility provisions
  - Limited experience data since those provision changes
  - No modifications proposed to that assumption

- Proposing minor changes to other disability incidence assumptions
  - Duty disability for classes other than Special Risk: slight assumption increase
  - Non-duty disability for all classes: slight assumption decrease

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Actuarial Methods – Cost Allocation Method

Introduction - Actuarial Methods

- Actuarial methods allocate the net present value of the projected benefit payments between past service and projected future service, which establishes funded status

- Methods selected, when combined with assumptions, also develop the magnitude of current contribution rates and pattern of projected future rates

Data

Assumptions

Methods → Projected Benefit Payments → Actuarially Calculated Contribution Rates

Provisions

Funded Status

Cost Allocation Method - Introduction

- A present value of projected benefit payments is calculated for every member

- For active employees, the cost allocation method divides the present value:
  - Allocation to past service is the Actuarial Liability (AL)
    - Unfunded Actuarial Liability (UAL) is difference between AL and current asset levels
  - Allocation to this year's projected service is the Normal Cost (NC)
    - A normal cost is also allocated to each future year of projected service

Current Cost Allocation Method – Individual Entry Age Normal (EAN)

- FRS uses the Individual Entry Age Normal (**Individual EAN**) method
  - Sets the normal cost as a **level percent of pay** across the full projected career
  - A normal cost rate is calculated for each individual member
    - Rate reflects tier, membership class, gender, and age at enrollment
- Normal cost rates for each membership class are in the valuation report
  - Determined by averaging individual member rates in each class
  - The valuation report's membership class rates are for the Pension Plan
    - The report's rates differ from the rates for members in the FRS Investment Plan
- Pension Plan and Investment Plan rates are blended post-valuation
  - The "Blended Rate Study" develops proposed statutory rates for both plans

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Cost Allocation Method – Wrap-up / Conference Guidance Requested

To prepare for the October 17th FRS Actuarial Assumption Conference we request:

- Approval of continued use of the Individual Entry Age Normal method
  - Individual EAN is used by the substantial majority of public pension systems
  - Individual EAN is also mandated for GASB financial reporting calculations

Actuarial Methods – Amortization Method – Duration and Shape

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Amortization of UAL – Introduction

- Unfunded Actuarial Liability (UAL) is the current difference between
  - Actuarial Liability (AL)
  - Assets
    - Smoothed Actuarial Value of Assets (AVA) measure used for contributions
- Contribution rates should target reaching a 100% or greater funded ratio
  - When the funded ratio is 100% there is no UAL (>100% is "actuarial surplus")
- To progress to the target, a UAL amortization schedule is updated annually
- UAL amortization method components that determine the schedule
  - **Duration** of the UAL amortization period
  - **Shape** of the UAL amortization schedule

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Amortization of Previously Unanticipated UAL Changes

- Previously unanticipated UAL changes <u>will</u> happen every year
- Sources of previously unanticipated UAL changes include:
  - Actual experience differing from the prior valuation's assumptions
  - Changes to the prior valuation's assumptions
  - Legislated changes to system benefit levels and/or benefit eligibility provisions
- Previously unanticipated UAL changes can either increase or decrease UAL
  - Increase - new amortization charge in the amortization schedule
  - Decrease - new amortization credit in the amortization schedule
- Amortization schedule sets the statutory UAL Cost contribution rate

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Amortization of UAL – Duration and Shape

- The current FRS amortization method for newly arising UAL is:
  - Duration – **20 years**
  - Shape – amortization schedule level as a projected **percent of pay**
- Both components of the FRS amortization method are in a model range
  - Model range for duration – 15 to 20 years
  - Model shape – schedule either a level percent of pay or a level dollar amount
- Shorter duration and/or level dollar create larger "year one" volatility
  - Level dollar creates lesser "final year" volatility than level percent of pay

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Amortization Method in Theory – Four Duration / Shape Combinations

Effect on amortization schedules of four possible approaches – amounts shown as year-by-year non-inflation-adjusted dollar amounts

■ 20 Year / Level % — $100 ... $184 (years 1–20)

■ 20 Year / Level $ — $129 ... $129 (years 1–20)

■ 15 Year / Level % — $124 ... $194 (years 1–15)

■ 15 Year / Level $ — $150 ... $150 (years 1–15)

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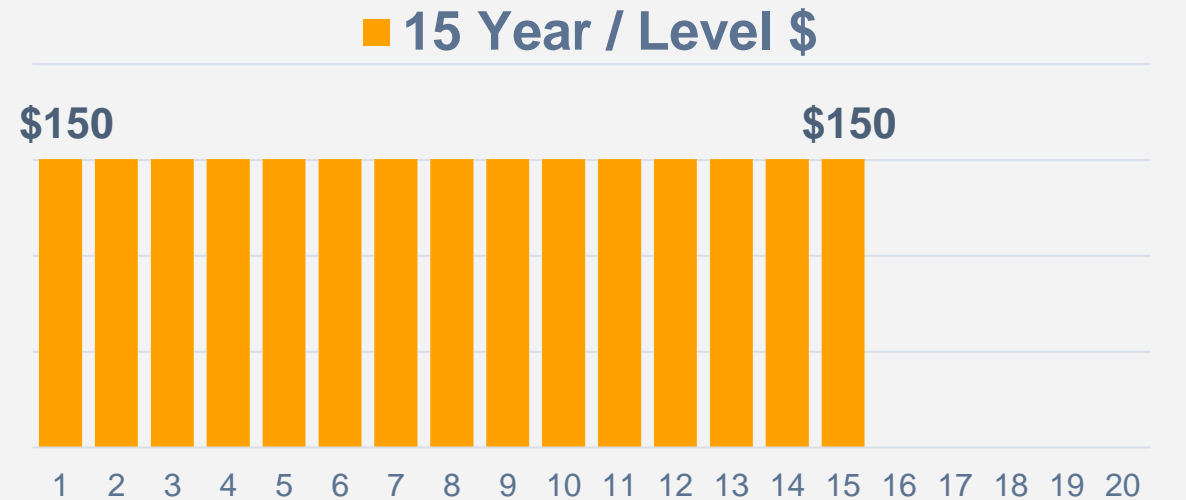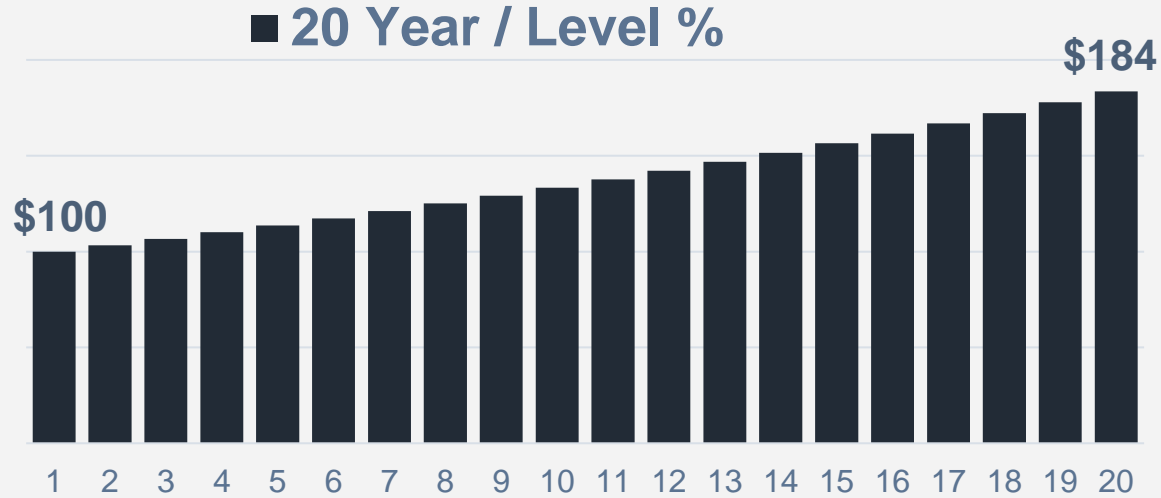
Amortization Method in Theory – Four Duration / Shape Combinations

Effect of amortization of shown as percentage of projected payroll (3.25% annual system payroll growth assumption)

⎯ 20 Year / Level %

1.00%   1.00%

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

⎯ 20 Year / Level $

1.29%

0.70%

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

⎯ 15 Year / Level %

1.24%   1.24%

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

⎯ 15 Year / Level $

1.50%

0.96%

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

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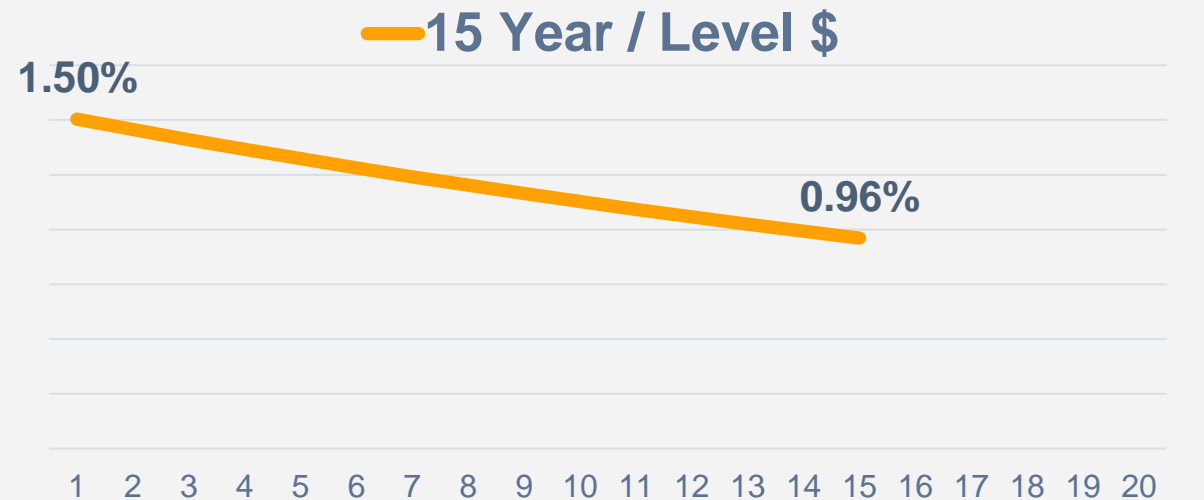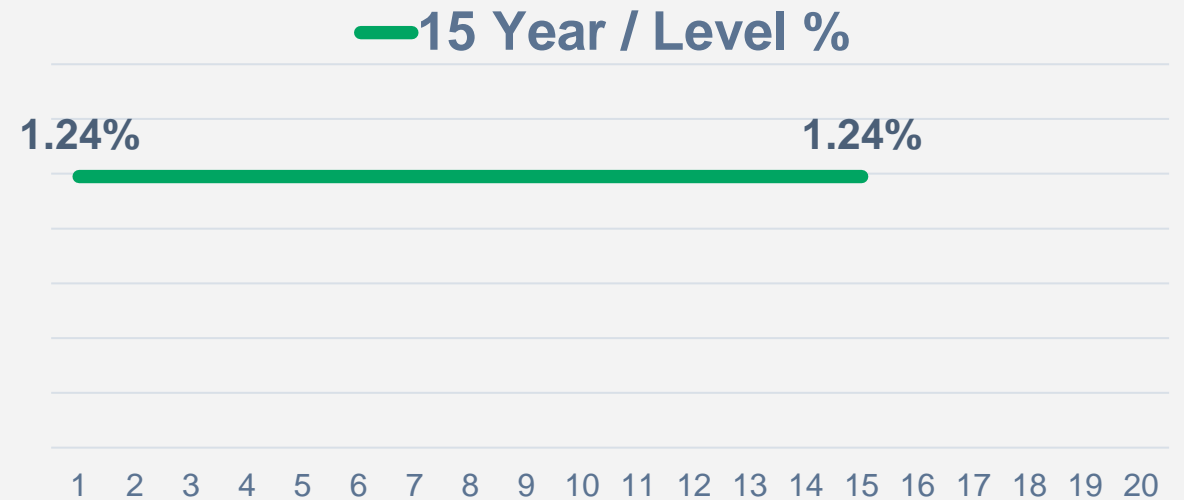
Amortization Method in Practice – Four Duration / Shape Combinations

This shows the effect different methods would have had on average proposed blended statutory 2024-2025 UAL Rates

UAL Rate is separate from the blended statutory Normal Cost Rate (8.80% of pay) charged to fund benefits earned by current year service.

Effect on 2025-2026 rates will differ and depend on 2024 actuarial valuation results.

15-year amortization assumes existing schedules with more than 15 years left are adjusted to have 15 years remaining

Rates are composite system averages. Each membership class pays its own rate.

Proposed Blended Statutory 2024-25 UAL Rate

Duration	Shape	Contribution Rate
20 Year	Level %	6.71% of payroll
15 Year	Level %	7.65% of payroll
20 Year	Level $	8.66% of payroll
15 Year	Level $	9.53% of payroll

Source: 2023 FRS actuarial valuation report, with results recalculated to reflect differing actuarial methods

Amortization Method – Wrap-up / Conference Guidance Requested

To prepare for the October 17th FRS Actuarial Assumption Conference we request:

- Approval of an amortization method for the 2024 valuation, or

- Identification of amortization methods to present at the October 17th Conference
  - Method changes can apply only to newly created amortization bases or to all existing bases

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Review of Non-Investment Economic Assumptions

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Economic Assumptions - Inflation

- Affects assumptions including system payroll growth and investment return

- Social Security's ultimate average "intermediate" assumption is **2.40%**

- In our opinion, the current assumption of **2.40%** remains reasonable

Period Ending 6/30/2024	Average Inflation
10 years	2.80%
20 years	2.55%
30 years	2.54%
40 years	2.81%

Data as of 6/30/2024	10 Year	30 Year
Treasury Yield	4.36%	4.51%
TIPS Yield	2.12%	2.28%
"Breakeven" Inflation	2.24%	2.23%

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Economic Assumptions – Real Wage Growth

- An individual member's assumed annual salary increase is composed of:
  - Inflation
  - Real wage growth
  - Individual merit/longevity component

Most Recently Available	Average Real Wage Growth
10 Years	1.08%
20 Years	0.79%
30 Years	0.95%
40 Years	0.92%

- Real wage growth represents above-inflation growth in national average wages due to productivity improvements and/or market pressures

- Social Security's long-term "intermediate" assumption is 1.14%

- In our opinion, the current assumption of **0.85%** remains reasonable

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Economic Assumptions – System Payroll Growth

- **Overall system payroll growth is assumed to equal the sum of:**
  - Inflation
  - Real wage growth

Trailing Period	Average Annualized Growth in Statutory UAL Rate Payroll
5 years	3.90%
10 years	3.26%
15 years	2.35%

- System payroll growth assumption sets the **shape** of UAL amortization payment schedule under a level percent of pay amortization method

- Given that both an inflation assumption of 2.40% and a real wage growth assumption of 0.85% are reasonable, the current system payroll growth assumption of **3.25%** also remains reasonable in our opinion

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Economic Assumptions – Wrap-up / Conference Guidance Requested

To prepare for the October 17th FRS Actuarial Assumption Conference we request:

- Approvals or identification of limited alternatives for:
  - Inflation
  - Real wage growth
  - System payroll growth (sum of above two items)

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Final Wrap-up / Requested Actions for Today

Material for the 2024 FRS Actuarial Assumption Conference on October 17th Will Use Guidance from Today's Meeting

- Approvals requested
  - Demographic assumptions presented today and listed in Appendix
  - Continued use of current actuarial cost allocation method (Individual EAN)

- Approvals or identification of limited alternatives
  - Amortization method for unfunded liability
    - Duration (currently 20 years)
    - Shape (currently level % of projected pay)
  - Non-investment economic assumptions
    - Inflation (currently 2.4%)
    - Real wage growth (currently 0.85%)
    - System payroll growth (sum of above two items)

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Appendix

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Non-Disabled Retiree Mortality

Member Category	PUB-2010 base table listed below, generational mortality using gender-specific MP-2021 mortality improvement projection scale
Female K-12 School Instructional	Benefits Weighted Teachers Healthy Retiree Female Table, set forward 1 year
Male K-12 School Instructional	Benefits Weighted Teachers Healthy Retiree Male Table, set forward 1 year
Female Special Risk	Benefits Weighted Safety Healthy Retiree Female Table
Male Special Risk	Benefits Weighted Safety Healthy Retiree Male Table, set forward 1 year
Female other than Special Risk or K-12 School Instructional	Headcount Weighted General Healthy Retiree Female Table
Male other than Special Risk or K-12 School Instructional	Headcount Weighted General Healthy Retiree Male Table, set back 1 year

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Non-Disabled Pre-Retirement Mortality

Member Category	PUB-2010 base table listed below, generational mortality using gender-specific MP-2021 mortality improvement projection scale
Female K-12 School Instructional	Benefits Weighted Teachers Healthy Employee Female Table, set forward 1 year
Male K-12 School Instructional	Benefits Weighted Teachers Healthy Employee Male Table, set forward 1 year
Female Special Risk	Benefits Weighted Safety Healthy Employee Female Table
Male Special Risk	Benefits Weighted Safety Healthy Employee Male Table, set forward 1 year
Female other than Special Risk or K-12 School Instructional	Headcount Weighted General Healthy Employee Female Table
Male other than Special Risk or K-12 School Instructional	Headcount Weighted General Healthy Employee Male Table, set back 1 year

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Disabled Retiree Mortality

Member Category	PUB-2010 base table listed below, generational mortality using gender-specific MP-2021 mortality improvement projection scale
Female Disabled Special Risk	Headcount Weighted General Disabled Retiree Female Table, set forward 1 year
Male Disabled Special Risk	Headcount Weighted General Disabled Retiree Male Table
Female Disabled (other than Special Risk)	Headcount Weighted General Disabled Retiree Female Table, set forward 4 years
Male Disabled (other than Special Risk)	Headcount Weighted General Disabled Retiree Male Table, set forward 4 years

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DROP Entry

Tier 1

Age	Regular K-12 School Instructional		Regular Not K-12 School Instructional		Special Risk and Special Risk Admin		Elected Officers' Subclasses	Senior Management Service Class
	Female	Male	Female	Male	Female	Male	Unisex	Unisex
45	5.0%	5.0%	5.0%	5.0%	15.0%	18.0%	5.0%	5.0%
46	5.0%	5.0%	5.0%	5.0%	15.0%	18.0%	5.0%	5.0%
47	5.0%	5.0%	5.0%	5.0%	15.0%	18.0%	5.0%	5.0%
48	10.0%	10.0%	12.0%	5.0%	15.0%	18.0%	15.0%	17.0%
49	10.0%	10.0%	12.0%	10.0%	15.0%	18.0%	15.0%	17.0%
50	10.0%	10.0%	12.0%	10.0%	15.0%	18.0%	15.0%	17.0%
51	10.0%	10.0%	12.0%	10.0%	15.0%	18.0%	15.0%	17.0%
52	15.0%	10.0%	14.0%	10.0%	15.0%	18.0%	15.0%	17.0%
53	15.0%	10.0%	14.0%	10.0%	15.0%	18.0%	15.0%	17.0%
54	15.0%	16.0%	14.0%	10.0%	15.0%	18.0%	15.0%	17.0%
55	15.0%	16.0%	16.0%	14.0%	15.0%	18.0%	15.0%	17.0%
56	18.0%	18.0%	18.0%	18.0%	10.0%	10.0%	15.0%	22.0%
57	22.0%	20.0%	18.0%	18.0%	5.0%	5.0%	18.0%	22.0%
58	22.0%	20.0%	18.0%	18.0%	5.0%	5.0%	18.0%	22.0%
59	22.0%	20.0%	18.0%	18.0%	5.0%	5.0%	18.0%	22.0%
60	30.0%	26.0%	25.0%	22.0%	5.0%	5.0%	22.0%	27.0%
61	30.0%	26.0%	25.0%	22.0%	5.0%	5.0%	22.0%	27.0%
62	36.0%	32.0%	30.0%	26.0%	5.0%	5.0%	26.0%	30.0%
63	14.0%	12.0%	14.0%	12.0%	5.0%	5.0%	15.0%	17.0%
64	10.0%	8.0%	10.0%	8.0%	5.0%	5.0%	4.0%	4.0%
65	7.5%	8.0%	7.5%	8.0%	5.0%	5.0%	4.0%	4.0%
66	7.5%	8.0%	7.5%	8.0%	5.0%	5.0%	4.0%	4.0%
67	6.0%	4.0%	6.0%	4.0%	5.0%	5.0%	4.0%	4.0%
68	6.0%	4.0%	6.0%	4.0%	5.0%	5.0%	4.0%	4.0%
69	4.0%	4.0%	4.0%	4.0%	5.0%	5.0%	4.0%	4.0%
70-79	4.0%	4.0%	4.0%	4.0%	0.0%	0.0%	4.0%	4.0%
80	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

DROP Entry

Tier 2

Age	Regular K-12 School Instructional		Regular Not K-12 School Instructional		Special Risk and Special Risk Admin		Elected Officers' Subclasses	Senior Management Service Class
	Female	Male	Female	Male	Female	Male	Unisex	Unisex
45	5.0%	5.0%	5.0%	5.0%	15.0%	18.0%	5.0%	5.0%
46	5.0%	5.0%	5.0%	5.0%	15.0%	18.0%	5.0%	5.0%
47	5.0%	5.0%	5.0%	5.0%	15.0%	18.0%	5.0%	5.0%
48	10.0%	10.0%	12.0%	5.0%	15.0%	18.0%	15.0%	17.0%
49	10.0%	10.0%	12.0%	10.0%	15.0%	18.0%	15.0%	17.0%
50	10.0%	10.0%	12.0%	10.0%	15.0%	18.0%	15.0%	17.0%
51	10.0%	10.0%	12.0%	10.0%	15.0%	18.0%	15.0%	17.0%
52	15.0%	10.0%	14.0%	10.0%	15.0%	18.0%	15.0%	17.0%
53	15.0%	10.0%	14.0%	10.0%	15.0%	18.0%	15.0%	17.0%
54	15.0%	16.0%	14.0%	10.0%	15.0%	18.0%	15.0%	17.0%
55	15.0%	16.0%	16.0%	14.0%	15.0%	18.0%	15.0%	17.0%
56	18.0%	18.0%	18.0%	18.0%	10.0%	10.0%	15.0%	22.0%
57	22.0%	20.0%	18.0%	18.0%	5.0%	5.0%	18.0%	22.0%
58	22.0%	20.0%	18.0%	18.0%	5.0%	5.0%	18.0%	22.0%
59	22.0%	20.0%	18.0%	18.0%	5.0%	5.0%	18.0%	22.0%
60	30.0%	26.0%	25.0%	22.0%	5.0%	5.0%	22.0%	27.0%
61	30.0%	26.0%	25.0%	22.0%	5.0%	5.0%	22.0%	27.0%
62	30.0%	26.0%	25.0%	22.0%	5.0%	5.0%	22.0%	27.0%
63	30.0%	26.0%	25.0%	22.0%	5.0%	5.0%	22.0%	27.0%
64	30.0%	26.0%	25.0%	22.0%	5.0%	5.0%	22.0%	27.0%
65	30.0%	26.0%	25.0%	22.0%	5.0%	5.0%	22.0%	27.0%
66	7.5%	8.0%	7.5%	8.0%	5.0%	5.0%	4.0%	4.0%
67	6.0%	4.0%	6.0%	4.0%	5.0%	5.0%	4.0%	4.0%
68	6.0%	4.0%	6.0%	4.0%	5.0%	5.0%	4.0%	4.0%
69	4.0%	4.0%	4.0%	4.0%	5.0%	5.0%	4.0%	4.0%
70-79	4.0%	4.0%	4.0%	4.0%	0.0%	0.0%	4.0%	4.0%
80	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Immediate Retirement

Tier 1

Age	Regular K-12 School Instructional		Regular Not K-12 School Instructional		Special Risk and Special Risk Admin		Elected Officers' Subclasses	Senior Management Service Class
	Female	Male	Female	Male	Female	Male	Unisex	Unisex
45	0.0%	0.0%	0.0%	0.0%	4.0%	4.0%	0.0%	0.0%
46	0.0%	0.0%	0.0%	0.0%	4.0%	4.0%	0.0%	0.0%
47	0.0%	0.0%	0.0%	0.0%	4.0%	4.0%	0.0%	0.0%
48	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
49	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
50	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
51	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
52	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
53	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
54	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
55	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
56	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
57	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
58	4.5%	3.5%	5.5%	5.5%	4.0%	7.0%	3.5%	7.0%
59	4.5%	3.5%	5.5%	5.5%	6.0%	7.0%	3.5%	7.0%
60	4.5%	3.5%	5.5%	5.5%	6.0%	7.0%	3.5%	7.0%
61	8.5%	9.5%	5.5%	5.5%	6.0%	9.0%	3.5%	7.0%
62	11.5%	9.5%	5.5%	5.5%	15.0%	16.0%	3.5%	7.0%
63	8.5%	6.0%	5.5%	5.5%	9.0%	16.0%	3.5%	9.5%
64	10.5%	10.5%	5.5%	5.5%	18.0%	18.0%	3.5%	9.5%
65	20.0%	16.0%	12.5%	10.5%	20.0%	20.0%	3.5%	9.5%
66	20.0%	16.0%	12.5%	10.5%	20.0%	20.0%	3.5%	9.5%
67	20.0%	16.0%	12.5%	10.5%	20.0%	20.0%	10.5%	9.5%
68	20.0%	16.0%	12.5%	10.5%	20.0%	20.0%	10.5%	9.5%
69	20.0%	16.0%	12.5%	10.5%	20.0%	20.0%	10.5%	9.5%
70-79	20.0%	16.0%	12.5%	10.5%	100.0%	100.0%	10.5%	9.5%
80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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Immediate Retirement

Tier 2

Age	Regular K-12 School Instructional		Regular Not K-12 School Instructional		Special Risk and Special Risk Admin		Elected Officers' Subclasses	Senior Management Service Class
	Female	Male	Female	Male	Female	Male	Unisex	Unisex
45	0.0%	0.0%	0.0%	0.0%	4.0%	4.0%	0.0%	0.0%
46	0.0%	0.0%	0.0%	0.0%	4.0%	4.0%	0.0%	0.0%
47	0.0%	0.0%	0.0%	0.0%	4.0%	4.0%	0.0%	0.0%
48	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
49	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
50	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
51	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
52	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
53	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
54	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
55	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
56	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
57	4.5%	3.5%	3.5%	3.5%	4.0%	4.0%	3.5%	4.5%
58	4.5%	3.5%	5.5%	5.5%	4.0%	7.0%	3.5%	7.0%
59	4.5%	3.5%	5.5%	5.5%	6.0%	7.0%	3.5%	7.0%
60	4.5%	3.5%	5.5%	5.5%	6.0%	7.0%	3.5%	7.0%
61	8.5%	9.5%	5.5%	5.5%	6.0%	9.0%	3.5%	7.0%
62	8.5%	9.5%	5.5%	5.5%	15.0%	16.0%	3.5%	7.0%
63	8.5%	9.5%	5.5%	5.5%	9.0%	16.0%	3.5%	7.0%
64	8.5%	9.5%	5.5%	5.5%	18.0%	18.0%	3.5%	7.0%
65	8.5%	9.5%	5.5%	5.5%	20.0%	20.0%	3.5%	7.0%
66	20.0%	16.0%	12.5%	10.5%	20.0%	20.0%	3.5%	9.5%
67	20.0%	16.0%	12.5%	10.5%	20.0%	20.0%	10.5%	9.5%
68	20.0%	16.0%	12.5%	10.5%	20.0%	20.0%	10.5%	9.5%
69	20.0%	16.0%	12.5%	10.5%	20.0%	20.0%	10.5%	9.5%
70-79	20.0%	16.0%	12.5%	10.5%	100.0%	100.0%	10.5%	9.5%
80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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Termination of Employment Before Normal Retirement

Combined Years of Service	Regular Not K-12 School Instructional - Male					
	Attained Age					
	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	27.5%	23.0%	19.0%	16.5%	14.5%	17.0%
1	23.5%	19.0%	16.0%	13.5%	12.0%	13.0%
2	19.5%	15.0%	13.0%	10.5%	9.5%	9.0%
3	17.5%	12.5%	10.0%	9.0%	7.0%	7.5%
4	16.5%	11.0%	9.5%	8.0%	6.0%	6.0%
5	12.5%	10.0%	8.5%	7.0%	5.5%	5.0%
6	9.0%	9.0%	7.5%	6.0%	5.0%	4.5%
7	7.5%	7.5%	6.0%	5.5%	4.0%	4.0%
8	7.0%	7.0%	6.0%	5.5%	5.0%	5.0%
9	5.0%	5.0%	6.0%	4.5%	4.5%	4.5%
10	5.0%	5.0%	5.0%	4.5%	4.5%	4.5%
11	4.5%	4.5%	4.5%	4.5%	4.5%	4.0%
12	3.5%	3.5%	3.5%	4.0%	4.0%	4.0%
13	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
14	2.5%	2.5%	2.5%	3.0%	3.5%	3.5%
15	2.5%	2.5%	2.5%	3.0%	3.0%	3.0%
16	2.5%	2.5%	2.5%	3.0%	2.5%	2.5%
17	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
18	2.0%	2.0%	2.0%	2.0%	2.5%	2.5%
19	2.0%	2.0%	2.0%	2.0%	2.5%	2.5%
20	1.5%	1.5%	1.5%	1.5%	2.0%	2.5%
21	1.5%	1.5%	1.5%	1.5%	2.0%	2.5%
22	1.5%	1.5%	1.5%	1.5%	2.0%	2.5%
23	1.0%	1.0%	1.0%	1.0%	1.5%	2.0%
24	1.0%	1.0%	1.0%	1.0%	1.5%	2.0%
25	1.0%	1.0%	1.0%	1.0%	1.5%	2.0%
26	1.0%	1.0%	1.0%	1.0%	1.5%	2.0%
27	1.0%	1.0%	1.0%	1.0%	1.0%	2.0%
28	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
29	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
30+	1.0%	1.0%	1.0%	1.0%	1.0%	0.5%

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Termination of Employment Before Normal Retirement

Combined Years of Service	Regular Not K-12 School Instructional - Female					
	Attained Age					
	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	32.5%	25.0%	22.0%	20.0%	15.5%	18.5%
1	27.0%	21.0%	18.0%	16.0%	13.0%	14.5%
2	21.5%	17.0%	14.0%	12.0%	10.5%	10.5%
3	21.5%	14.0%	12.5%	10.0%	9.0%	9.0%
4	19.5%	12.5%	11.0%	9.0%	8.0%	7.5%
5	15.0%	10.5%	9.5%	8.0%	7.0%	6.5%
6	9.5%	9.5%	8.0%	7.0%	6.0%	6.0%
7	8.0%	8.0%	7.5%	6.0%	5.5%	5.0%
8	7.5%	7.5%	7.0%	5.5%	5.0%	6.5%
9	5.5%	5.5%	6.0%	5.5%	5.0%	5.0%
10	5.5%	5.5%	5.5%	5.5%	5.0%	5.0%
11	5.0%	5.0%	5.0%	5.5%	5.0%	5.0%
12	5.0%	5.0%	5.0%	5.0%	4.5%	4.5%
13	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
14	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
15	3.5%	3.5%	3.5%	3.5%	4.0%	4.0%
16	3.5%	3.5%	3.5%	3.5%	3.5%	4.0%
17	3.0%	3.0%	3.0%	3.0%	3.0%	4.0%
18	2.5%	2.5%	2.5%	2.5%	3.0%	3.5%
19	2.5%	2.5%	2.5%	2.5%	3.0%	3.5%
20	2.0%	2.0%	2.0%	2.0%	2.5%	3.5%
21	1.5%	1.5%	1.5%	1.5%	2.0%	3.0%
22	1.5%	1.5%	1.5%	1.5%	2.0%	3.0%
23	1.5%	1.5%	1.5%	1.5%	2.0%	2.5%
24	1.5%	1.5%	1.5%	1.5%	2.0%	2.5%
25	1.5%	1.5%	1.5%	1.5%	1.5%	2.5%
26	1.5%	1.5%	1.5%	1.5%	1.5%	2.0%
27	1.0%	1.0%	1.0%	1.0%	1.0%	2.0%
28	1.0%	1.0%	1.0%	1.0%	1.0%	2.0%
29	0.5%	0.5%	0.5%	0.5%	0.5%	1.0%
30+	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%

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Termination of Employment Before Normal Retirement

Combined Years of Service	Regular K-12 School Instructional - Male					
	Attained Age					
	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	23.5%	26.5%	21.0%	19.0%	19.0%	22.0%
1	18.5%	19.5%	17.5%	15.5%	14.0%	16.5%
2	13.5%	12.5%	14.0%	12.0%	9.0%	11.0%
3	12.0%	12.0%	10.5%	9.0%	8.5%	9.5%
4	9.5%	9.5%	8.5%	8.0%	6.5%	7.5%
5	8.5%	8.5%	8.5%	7.5%	5.5%	6.0%
6	7.5%	7.5%	7.0%	6.0%	5.5%	5.0%
7	6.5%	6.5%	6.0%	5.0%	4.5%	4.0%
8	5.0%	5.0%	5.0%	5.5%	4.5%	5.0%
9	5.0%	5.0%	5.0%	5.0%	4.0%	5.0%
10	4.0%	4.0%	4.0%	5.0%	4.0%	5.0%
11	3.0%	3.0%	3.0%	4.0%	4.0%	5.0%
12	3.0%	3.0%	3.0%	3.5%	3.5%	3.0%
13	3.0%	3.0%	3.0%	3.5%	3.5%	3.0%
14	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
15	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
16	2.5%	2.5%	2.5%	2.5%	2.5%	3.0%
17	2.0%	2.0%	2.0%	2.0%	2.5%	3.0%
18	2.0%	2.0%	2.0%	2.0%	2.5%	2.5%
19	2.0%	2.0%	2.0%	2.0%	2.0%	2.5%
20	2.0%	2.0%	2.0%	2.0%	2.0%	2.5%
21	2.0%	2.0%	2.0%	2.0%	1.5%	2.5%
22	1.5%	1.5%	1.5%	1.5%	1.5%	2.5%
23	1.0%	1.0%	1.0%	1.0%	1.0%	2.5%
24	1.0%	1.0%	1.0%	1.0%	1.0%	2.5%
25	1.0%	1.0%	1.0%	1.0%	1.0%	2.5%
26	1.0%	1.0%	1.0%	1.0%	1.0%	2.5%
27	1.0%	1.0%	1.0%	1.0%	1.0%	2.5%
28	1.0%	1.0%	1.0%	1.0%	1.0%	1.5%
29	0.5%	0.5%	0.5%	0.5%	0.5%	1.5%
30+	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%

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Termination of Employment Before Normal Retirement

Combined Years of Service	Regular K-12 School Instructional - Female					
	Attained Age					
	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	18.0%	21.5%	20.5%	18.0%	16.0%	19.5%
1	16.0%	17.5%	16.5%	14.5%	13.0%	15.5%
2	14.0%	13.5%	12.5%	11.0%	10.0%	11.5%
3	13.5%	12.0%	11.5%	9.0%	9.0%	8.0%
4	13.0%	9.5%	10.0%	8.0%	7.0%	7.5%
5	10.5%	8.0%	8.5%	7.5%	6.5%	7.5%
6	8.0%	8.0%	8.0%	6.5%	6.0%	6.0%
7	6.0%	6.0%	7.5%	6.0%	5.0%	5.0%
8	6.0%	6.0%	6.5%	5.5%	5.0%	6.0%
9	6.0%	6.0%	5.5%	5.0%	5.0%	6.0%
10	5.0%	5.0%	5.0%	5.0%	5.0%	6.0%
11	4.5%	4.5%	4.5%	4.5%	4.5%	5.0%
12	3.5%	3.5%	3.5%	4.5%	4.5%	5.0%
13	3.5%	3.5%	3.5%	4.0%	4.0%	5.0%
14	3.5%	3.5%	3.5%	3.5%	3.5%	4.5%
15	3.5%	3.5%	3.5%	3.5%	3.5%	4.0%
16	3.0%	3.0%	3.0%	2.5%	3.0%	3.5%
17	3.0%	3.0%	3.0%	2.5%	3.0%	3.5%
18	2.5%	2.5%	2.5%	2.0%	2.5%	3.0%
19	2.0%	2.0%	2.0%	2.0%	2.5%	3.0%
20	2.0%	2.0%	2.0%	2.0%	2.5%	3.0%
21	1.5%	1.5%	1.5%	1.5%	2.0%	3.0%
22	1.5%	1.5%	1.5%	1.5%	2.0%	3.0%
23	1.5%	1.5%	1.5%	1.5%	1.5%	3.0%
24	1.0%	1.0%	1.0%	1.0%	1.5%	3.0%
25	1.0%	1.0%	1.0%	1.0%	1.0%	2.5%
26	1.0%	1.0%	1.0%	1.0%	1.0%	2.5%
27	1.0%	1.0%	1.0%	1.0%	1.0%	2.5%
28	0.5%	0.5%	0.5%	0.5%	0.5%	2.0%
29	0.5%	0.5%	0.5%	0.5%	0.5%	1.0%
30+	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%

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Termination of Employment Before Normal Retirement

Combined Years of Service	Special Risk and Special Risk Administrative- Male					
	Attained Age					
	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	14.0%	12.0%	13.0%	13.0%	15.0%	17.5%
1	11.5%	10.5%	11.0%	11.0%	10.5%	12.5%
2	9.0%	9.0%	9.0%	9.0%	6.0%	7.5%
3	7.5%	7.0%	7.0%	7.0%	5.0%	7.0%
4	5.0%	6.0%	6.0%	5.5%	5.0%	5.0%
5	4.0%	5.0%	5.0%	4.5%	4.0%	4.0%
6	4.0%	5.0%	4.5%	4.0%	3.5%	4.0%
7	4.0%	4.0%	3.5%	3.0%	3.5%	3.0%
8	5.0%	5.0%	4.0%	4.0%	4.0%	4.5%
9	5.0%	5.0%	3.5%	3.5%	4.0%	4.5%
10	3.0%	3.0%	3.0%	3.5%	3.5%	4.0%
11	3.0%	3.0%	3.0%	3.0%	3.5%	3.0%
12	2.5%	2.5%	2.5%	2.5%	3.0%	3.0%
13	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
14	1.5%	1.5%	1.5%	1.5%	2.5%	2.5%
15	1.5%	1.5%	1.5%	1.5%	2.0%	2.0%
16	1.0%	1.0%	1.0%	1.0%	2.0%	2.0%
17	1.0%	1.0%	1.0%	1.0%	2.0%	2.0%
18	1.0%	1.0%	1.0%	1.0%	1.5%	1.5%
19	1.0%	1.0%	1.0%	1.0%	1.5%	1.5%
20	1.0%	1.0%	1.0%	1.0%	1.5%	1.5%
21	1.0%	1.0%	1.0%	1.0%	1.5%	1.5%
22	0.8%	0.8%	0.8%	0.8%	1.5%	1.5%
23	0.8%	0.8%	0.8%	0.8%	1.5%	1.5%
24	0.8%	0.8%	0.8%	0.8%	1.0%	1.0%
25	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
26	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
27	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
28	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
29	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
30+	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%

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Termination of Employment Before Normal Retirement

Combined Years of Service	Special Risk and Special Risk Administrative- Female					
	Attained Age					
	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	22.0%	22.0%	22.5%	18.5%	19.5%	17.0%
1	18.0%	17.5%	17.0%	14.5%	15.5%	14.0%
2	14.0%	13.0%	11.5%	10.5%	11.5%	11.0%
3	10.0%	10.0%	9.5%	10.0%	9.5%	7.5%
4	9.0%	8.5%	7.5%	6.5%	7.5%	7.5%
5	6.5%	6.5%	6.5%	6.0%	5.5%	7.5%
6	5.0%	5.0%	6.0%	5.5%	4.5%	6.0%
7	5.0%	5.0%	5.0%	4.5%	4.5%	6.0%
8	5.5%	5.5%	5.5%	5.0%	7.0%	6.0%
9	3.5%	3.5%	5.0%	5.0%	6.5%	6.0%
10	3.0%	3.0%	4.0%	5.0%	6.5%	6.0%
11	3.0%	3.0%	4.0%	4.0%	5.5%	5.5%
12	3.0%	3.0%	4.0%	4.0%	4.5%	4.5%
13	3.0%	3.0%	3.0%	3.0%	4.5%	4.5%
14	2.5%	2.5%	2.5%	3.0%	4.5%	4.5%
15	2.5%	2.5%	2.5%	2.5%	3.5%	3.5%
16	2.5%	2.5%	2.5%	2.5%	3.5%	3.5%
17	2.5%	2.5%	2.5%	2.5%	3.0%	3.0%
18	1.5%	1.5%	1.5%	1.5%	2.5%	2.5%
19	1.5%	1.5%	1.5%	1.5%	2.5%	2.5%
20	1.5%	1.5%	1.5%	1.5%	2.5%	2.5%
21	1.5%	1.5%	1.5%	1.5%	2.5%	2.5%
22	1.5%	1.5%	1.5%	1.5%	2.0%	2.0%
23	1.5%	1.5%	1.5%	1.5%	2.0%	2.0%
24	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
25	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
26	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
27	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
28	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
29	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
30+	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

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Termination of Employment Before Normal Retirement

Combined Years of Service	Senior Management - Male Attained Age		Senior Management - Female Attained Age	
	Under 55	55+	Under 55	55+
0	13.0%	9.0%	12.0%	12.5%
1	13.0%	9.0%	12.0%	12.5%
2	16.5%	11.5%	12.0%	7.5%
3	18.5%	9.0%	12.0%	7.0%
4	14.0%	5.0%	14.0%	6.5%
5	11.5%	4.0%	10.0%	5.0%
6	8.0%	4.0%	8.0%	5.0%
7	6.5%	4.0%	6.5%	5.0%
8	7.0%	6.0%	6.0%	9.5%
9	5.5%	5.5%	6.0%	6.0%
10	5.5%	5.5%	6.0%	6.0%
11	5.5%	4.0%	6.0%	6.0%
12	4.5%	4.0%	6.0%	6.0%
13	4.0%	4.0%	6.0%	3.0%
14	3.5%	4.0%	4.0%	3.0%
15	3.5%	4.0%	3.0%	3.0%
16	3.5%	3.0%	3.0%	3.0%
17	3.0%	3.0%	2.5%	3.0%
18	3.0%	3.0%	2.5%	3.0%
19	3.0%	3.0%	2.5%	3.0%
20	2.0%	3.0%	2.5%	3.0%
21	2.0%	3.0%	2.5%	3.0%
22	2.0%	3.0%	2.5%	3.0%
23	2.0%	3.0%	1.5%	3.0%
24	2.0%	3.0%	1.5%	3.0%
25	2.0%	3.0%	1.5%	3.0%
26	1.0%	2.0%	1.5%	3.0%
27	1.0%	1.5%	1.5%	3.0%
28	1.0%	1.0%	1.5%	3.0%
29	1.0%	1.0%	1.0%	1.0%
30+	1.0%	1.0%	1.0%	1.0%

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Termination of Employment Before Normal Retirement

Combined Years of Service	Elected Officers' Class		
	Local	Leg-Atty-Cab	Judicial
0	10.0%	6.0%	1.5%
1	7.0%	6.0%	1.5%
2	4.0%	6.0%	1.5%
3	4.0%	6.0%	1.5%
4	12.0%	6.0%	1.5%
5	4.0%	6.0%	1.5%
6	4.0%	12.0%	1.5%
7	4.0%	12.0%	1.5%
8	17.0%	12.0%	1.5%
9	4.0%	12.0%	1.5%
10	4.0%	12.0%	1.5%
11	4.0%	6.0%	1.5%
12	7.0%	6.0%	1.5%
13	7.0%	6.0%	1.0%
14	7.0%	6.0%	1.0%
15	7.0%	6.0%	1.0%
16	7.0%	6.0%	1.0%
17	7.0%	6.0%	1.0%
18	7.0%	6.0%	1.0%
19	4.0%	6.0%	1.0%
20	4.0%	6.0%	1.0%
21	4.0%	6.0%	1.0%
22	4.0%	6.0%	1.0%
23	4.0%	6.0%	1.0%
24	4.0%	6.0%	1.0%
25	4.0%	6.0%	1.0%
26	4.0%	6.0%	1.0%
27	4.0%	6.0%	1.0%
28	4.0%	6.0%	1.0%
29	4.0%	6.0%	1.0%
30+	4.0%	6.0%	1.0%

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Disability

Line-Of-Duty Disability Annual Rates

Age	Special Risk Class	All other Classes
<20	0.000%	0.000%
20	0.025%	0.000%
21-46	0.025%	0.001%
47-50	0.250%	0.002%
51	0.450%	0.002%
52-63	0.450%	0.006%
64+	0.450%	0.001%

Non-Duty Disability Annual Rates

Age	Special Risk Class	All other Classes
<20	0.000%	0.000%
20-29	0.010%	0.000%
30-38	0.030%	0.010%
39-40	0.030%	0.020%
41-43	0.040%	0.030%
44-46	0.040%	0.040%
47-48	0.040%	0.060%
49	0.040%	0.080%
50	0.070%	0.080%
51-52	0.070%	0.110%
53-55	0.070%	0.130%
56-57	0.070%	0.170%
58-60	0.070%	0.190%
61	0.070%	0.090%
62	0.070%	0.060%
63+	0.070%	0.030%

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Certification

This presentation discusses actuarial methods and assumptions for use in the valuation of the Florida Retirement System ("FRS" or "the System"). For the most recent complete actuarial valuation results, including cautions regarding the limitations of use of valuation calculations, please refer to our formal Actuarial Valuation Report as of July 1, 2023 ("the Valuation Report") published in December 2023. The Valuation Report, including all supporting information regarding data, assumptions, methods, and provisions, is incorporated by reference into this presentation. The statements of reliance and limitations on the use of this material is reflected in the actuarial report and still apply to this presentation. The Valuation Report, along with prior presentations to the FRS Actuarial Assumption Conference Principals, including our October 2023 presentation, should be referenced for additional detail on the assumptions, methods, and plan provisions underlying this presentation.

In preparing this presentation, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, statutory provisions, member data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may differ, and our calculations may need to be revised.

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