Florida Retirement System
Actuarial Assumption Estimating Conference
Executive Summary

The Florida Retirement System Actuarial Assumption Conference met on October 20, 2022, to consider the demographic, methodological, and economic assumptions to be used for the actuarial valuation of the Florida Retirement System (FRS) Pension Plan. The preliminary results for July 1, 2022, show that the FRS continues to have an unfunded actuarial liability (UAL). Using the 2022 data and 2021 assumptions, the projected UAL shows a slight increase from the $34.7 billion shown in 2021's final valuation to $35.6 billion in the 2022 preliminary valuation. The system's funded status remains essentially the same as the 2021 final valuation at 83.4%. These results were derived using a 6.8% investment return assumption (as adopted in 2021), the individual entry age normal (Individual EAN) cost allocation method and a 20-year (level percent of pay) closed amortization period for all bases. The Conference discussed several possible changes to the current assumptions, but ultimately decided only to modify the investment return assumption, decreasing it by 10 basis points to 6.70 percent. This change will affect the final results reported in December 2022.

Working against the market downturn caused by the rise in inflation, the war in Ukraine and global supply chain shortages, the return for the FRS pension plan came in lower than assumed for the past year. After a period of extremely strong market value investment performance in 2021, the pension plan return was -6.27% for the period ending June 2022. On a smoothed actuarial value of assets basis, the 2021-22 result was +7.0%, as this calculation is determined by returns over the prior five years. The tables below show the actual investment returns for the past five fiscal years and the cumulative returns over a 5-year, 10-year, 15-year, and 20-year timeframe.

Fiscal Year	Investment Return
2017-18	8.98%
2018-19	6.26%
2019-20	3.08%
2020-21	29.46%
2021-22	-6.27%

	Investment Return
3-year	7.74%
5-year	7.69%
10-year	8.59%
15-year	6.20%
20-year	7.50%

The state's actuary (Milliman) and the State Board of Administration's (SBA) financial consultant Aon Investments USA Inc. (Aon), presented their respective outlooks for longer term investment returns. Their projections for median returns ranged from 6.87% (Aon, 4.38% real) to 7.21% (Milliman, 4.70% real), both of which are higher than the the 2021 return assumption of 6.80%. As a counterpoint, SBA's presentation emphasized the current challenges and headwinds in the investment market, as well as the structural challenges caused by the following factors:

- Participant growth is slowing significantly due to change in default plan.
- Plan now has more annuitants than active members.

- Net negative cash flow is projected to grow from approximately $7 billion today, to over $10 billion by 2033 and over $17 billion by 2045.

After discussion, the conference principals agreed to lower the investment return assumption to 6.70%, while maintaining the inflation assumption at 2.40%. That portion of the assumption matches the long-range inflation assumption used by the Social Security Administration. The following table displays the nominal returns, inflation rates, and real returns adopted at the three most recent conferences and the new assumptions applicable to the July 1, 2022 Actuarial Valuation.

2019	2020	2021	2022
7.20% Investment Return	7.00% Investment Return	6.80% Investment Return	6.70% Investment Return
2.60% Inflation	2.40% Inflation	2.40% Inflation	2.40% Inflation
4.48% Real Return	4.49% Real Return	4.30% Real Return	4.20% Real Return

Note: The real return takes into account administrative expenses, so the numbers in this table are not additive.

The conference principals also noted that the 2022 Legislature fully funded the UAL at the recommended contribution rate provided as part of the 2021 valuation report. This action and continued full funding of the recommended UAL rate, as committed to by the Legislature, will result—all else being equal—in the gradual increase of the funded ratio over time. Further, the contribution rates should remain stable so long as contributions are made as recommended and actual experience mirrors projections. Nonetheless, many factors affect these calculations and can cause the contribution rates to increase or decrease. Most importantly, investment returns have been and will continue to be a relatively volatile factor. If actual investment results are lower than assumed, they could significantly impact the UAL and future contribution rates.

All other assumptions were left unchanged; however, to evaluate a potential future change in the current amortization policy which uses a level percent of projected payroll over a maximum 20-year period to level dollar amortization over a yet-to-be-determined time period, the conference principals requested that staff from the Department of Management Services, Division of Retirement, work with the state's actuary (Milliman) to develop a study of backcasted results under various scenarios.

The final actuarial valuation for July 1, 2022, will be released in December 2022. Those results will differ from the preliminary numbers reviewed by the Conference principals.

Florida Retirement System

2022 FRS Actuarial Assumption Estimating Conference
Including Preliminary July 1, 2022 Actuarial Funding Valuation Results

Matt Larrabee, FSA, EA, MAAA

OCTOBER 20, 2022

Executive Summary

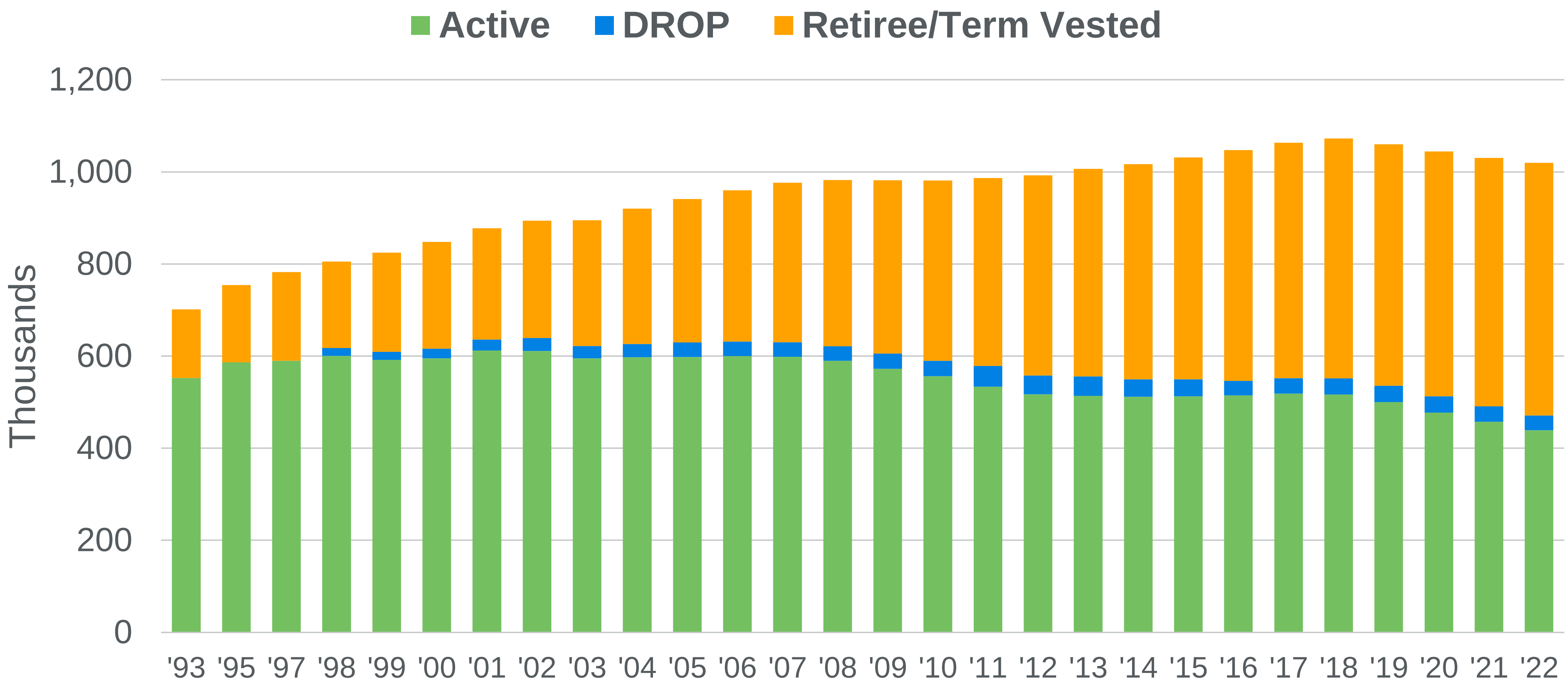
- HB 5007 increased 2022-2023 blended composite rates by approximate 0.73% of payroll
- Preliminary July 1, 2022 valuation / 2023-2024 contribution rates determined at a 6.8% return assumption:
  - -7.2% plan year return on a fair market basis; fair market asset measure still $1.0 billion above the smoothed asset measure used to calculate contribution rates; July 2022 funded status on the fair market asset measure is 83.9%
  - July 2022 funded status using the smoothed asset measure is unchanged year-over-year at 83.4%
  - The blended Pension Plan/Investment Plan composite employer contribution rate increases by 0.20% of payroll to 13.78% of payroll due to plan year 2021-2022 experience and projected 2023-2024 employer contributions increase by $225 million to $5.33 billion
- Aon's "SBA Approach" investment return outlook model has a median projected geometric average return of 6.87%, which is slightly above the current 6.8% return assumption
- The 2023-2024 contribution rate increase for a 0.10% decrease in the investment return assumption would be an additional 0.61% of payroll (estimated as an additional $240 million contribution cost increase for 2023-2024)
- Current policy, which was first adopted at the 2021 Conference, amortizes newly arising unfunded actuarial liability (UAL) charge and credit bases over 20 years as a level percent of projected system UAL payroll

Agenda

- Preliminary 2022 actuarial funding valuation results
- Investment return assumption for FRS Pension Plan funding actuarial valuation
- Discount rate for Health Insurance Subsidy & Florida National Guard GASB actuarial valuations
- Needed guidance from Conference Principals

FRS Pension Plan Assets, Member Demographics

FRS Pension Plan Membership



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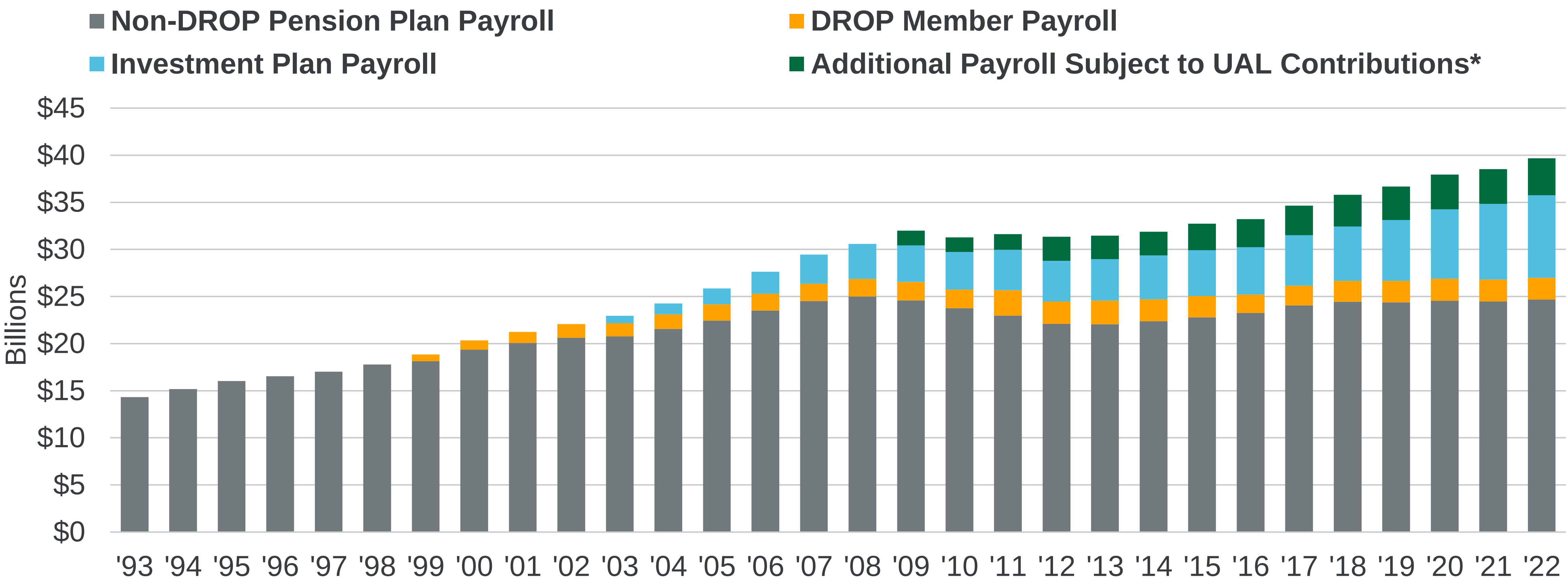
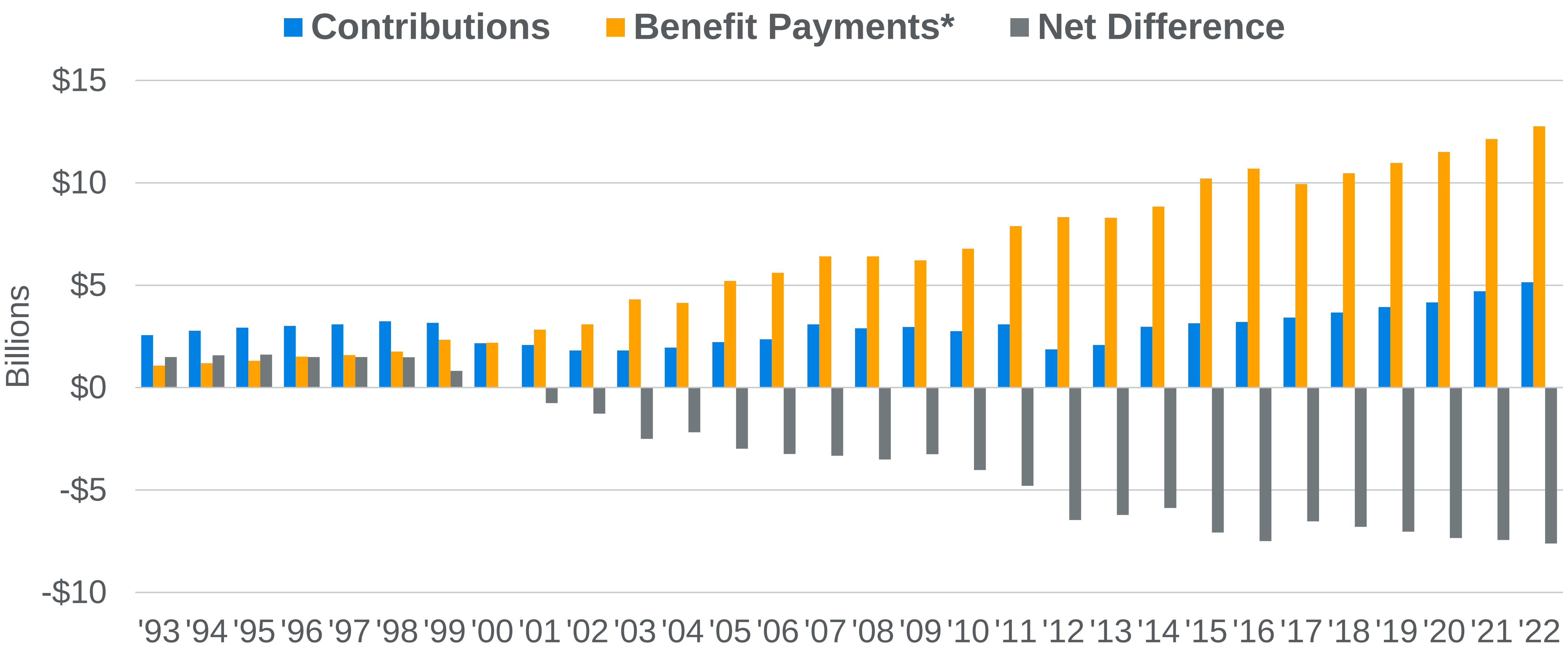
Payroll: FRS + Non-FRS UAL Contributory



- Payroll increased by 3.0% last year; with 10-year annualized growth of 2.4%

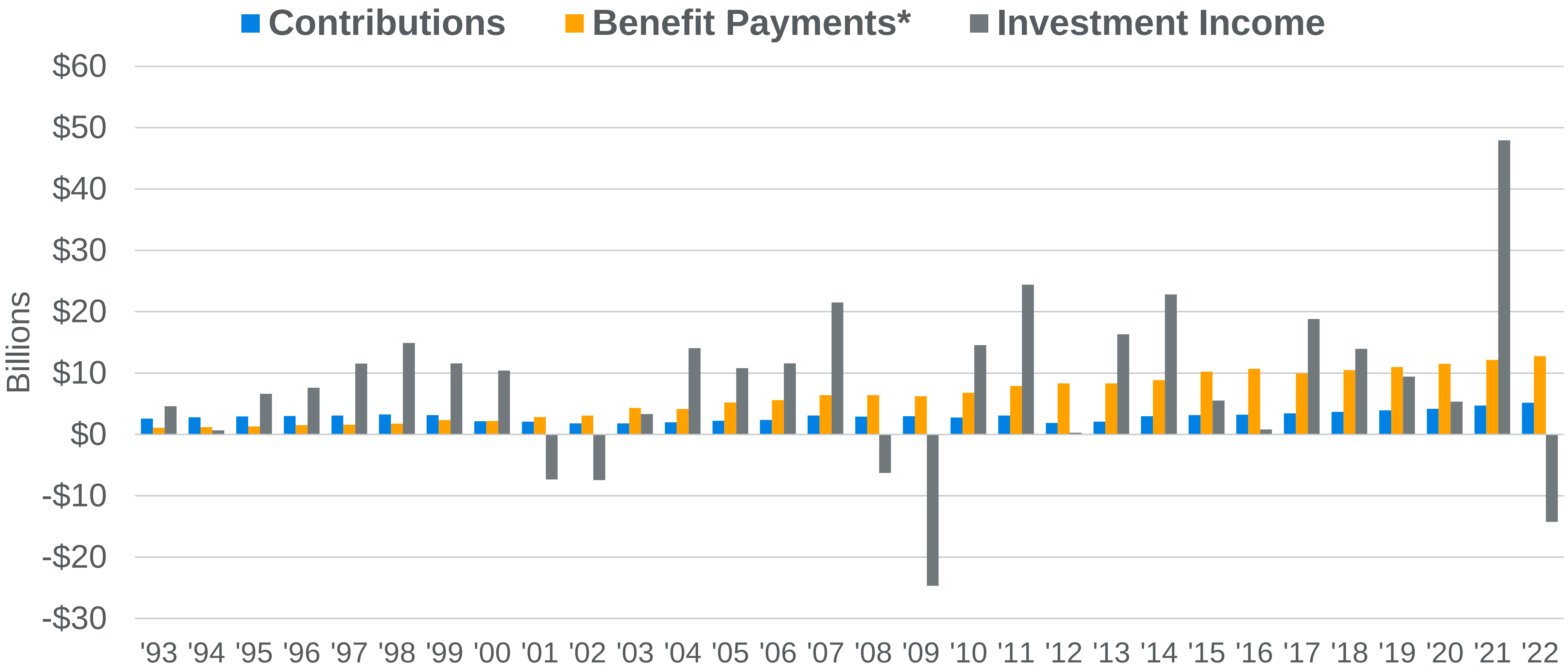
*Includes payroll for participants in certain non-FRS defined contribution plans upon which UAL Rate contributions to the FRS Pension Plan are made. This payroll component is anticipated to be $3.9B in the 2022-23 plan year.

Contributions and Benefit Payments



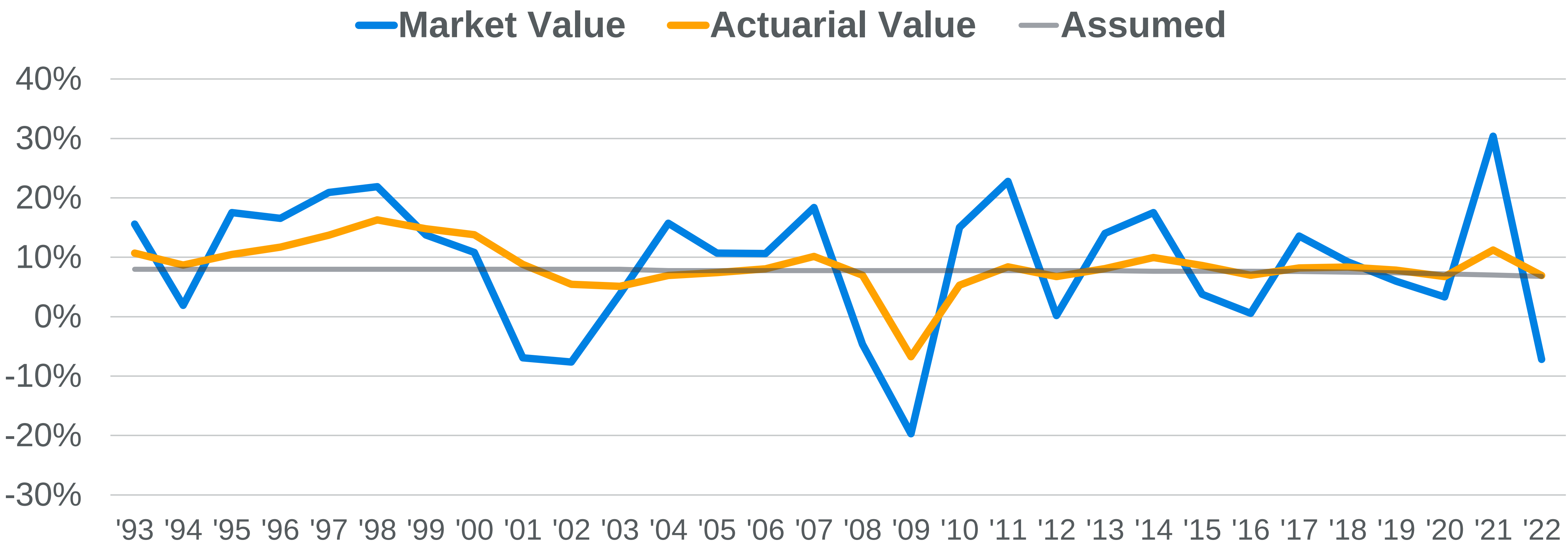
* Includes transfers to Investment Plan in 2013 and subsequent years.

Pension Plan Cash Flows



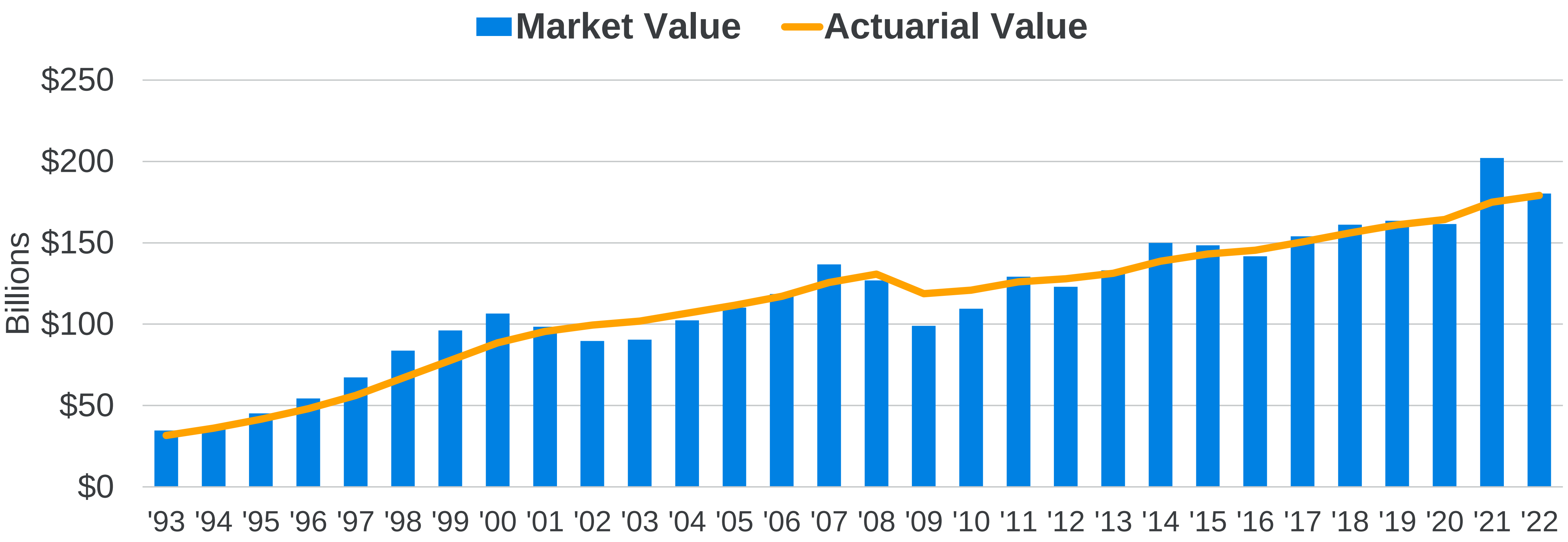
* Includes transfers to Investment Plan

Historic Asset Returns



- The 2021-22 return was **-7.2%** on a market value of assets (MVA) basis and +7.0% on a smoothed actuarial value of assets (AVA) basis
  - AVA return is determined by market value returns over the prior five years

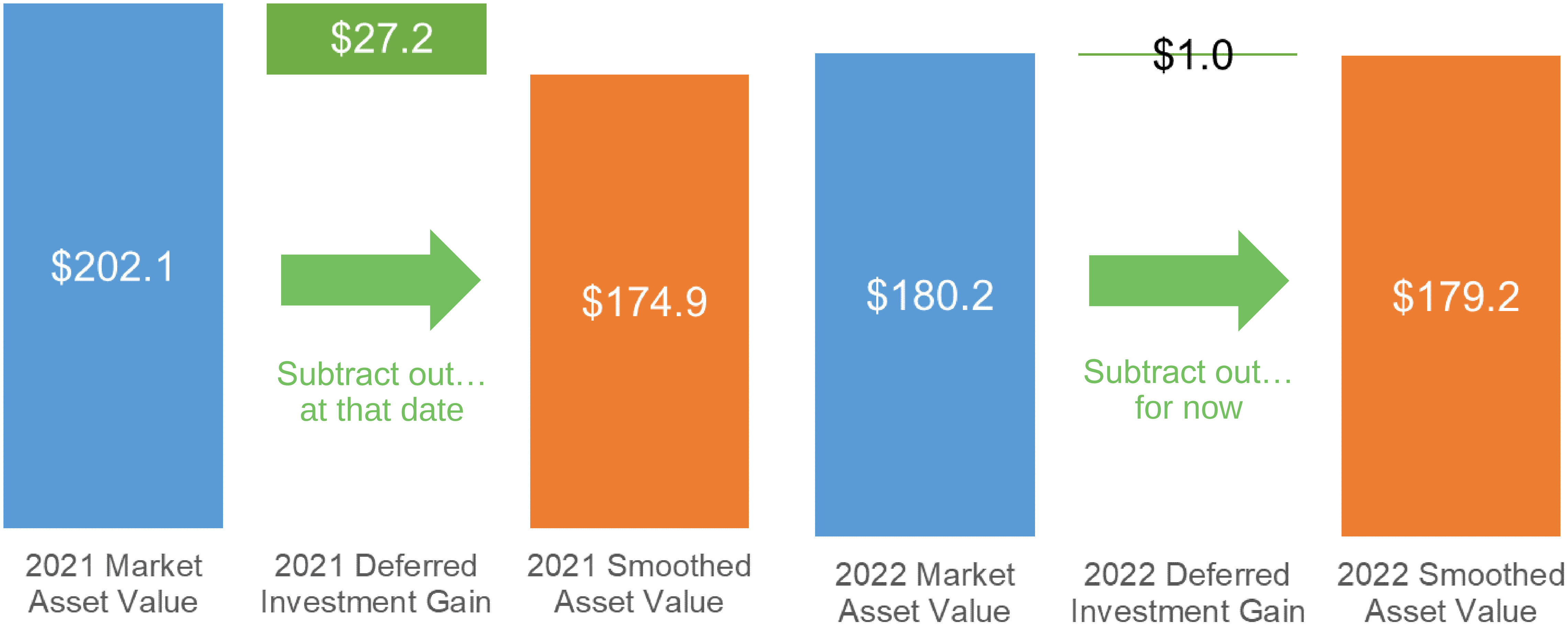
Market & Actuarial Value of Assets



- Market value of assets (MVA) is **$1.0 billion above** the Actuarial Value of Assets (AVA) at July 2022. That **deferred investment gain** will be recognized in higher AVA returns (and associated **contribution rate decreases**) in future valuations if future market investment performance meets current assumption and valuation assumptions are not changed.

Fair Market and Smoothed Asset Measures for 2021 & 2022

(Amounts in billions)

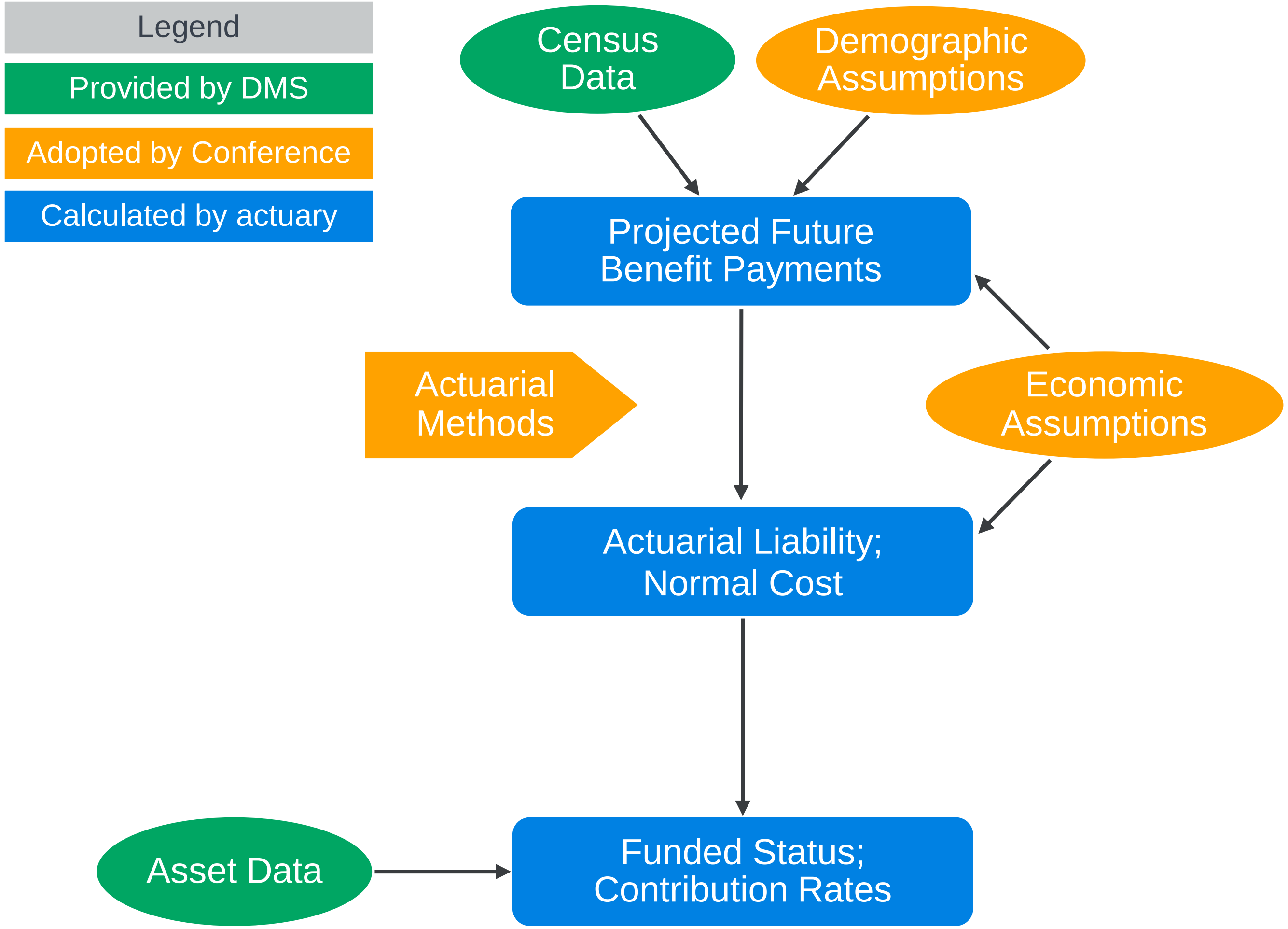


- The **smoothed asset value** is used to set actuarially determined contribution rates

Valuation Process and Projected Benefit Payments

Actuarial Valuation Process

- Today: Discuss preliminary 2022 valuation results, select assumptions and methods for 2022 system funding valuation
- By December 1: Complete 2022 actuarial valuation report, including actuarially calculated contribution rates
- Demographic assumptions, census data, and benefit provisions determine projected future year-by-year benefit payments
- Methods and economic assumptions affect calculations of funded status and contribution rates



Overview of an Actuarial Valuation

Two Pension Plan valuations are conducted annually in parallel to:

- Calculate funded status and develop actuarially calculated contribution rates (funding valuation)
- Satisfy financial reporting requirements (separate GASB valuation)

Data

Assumptions

Methods

Provisions

→

Projected Benefit Payments

→

Funded Status

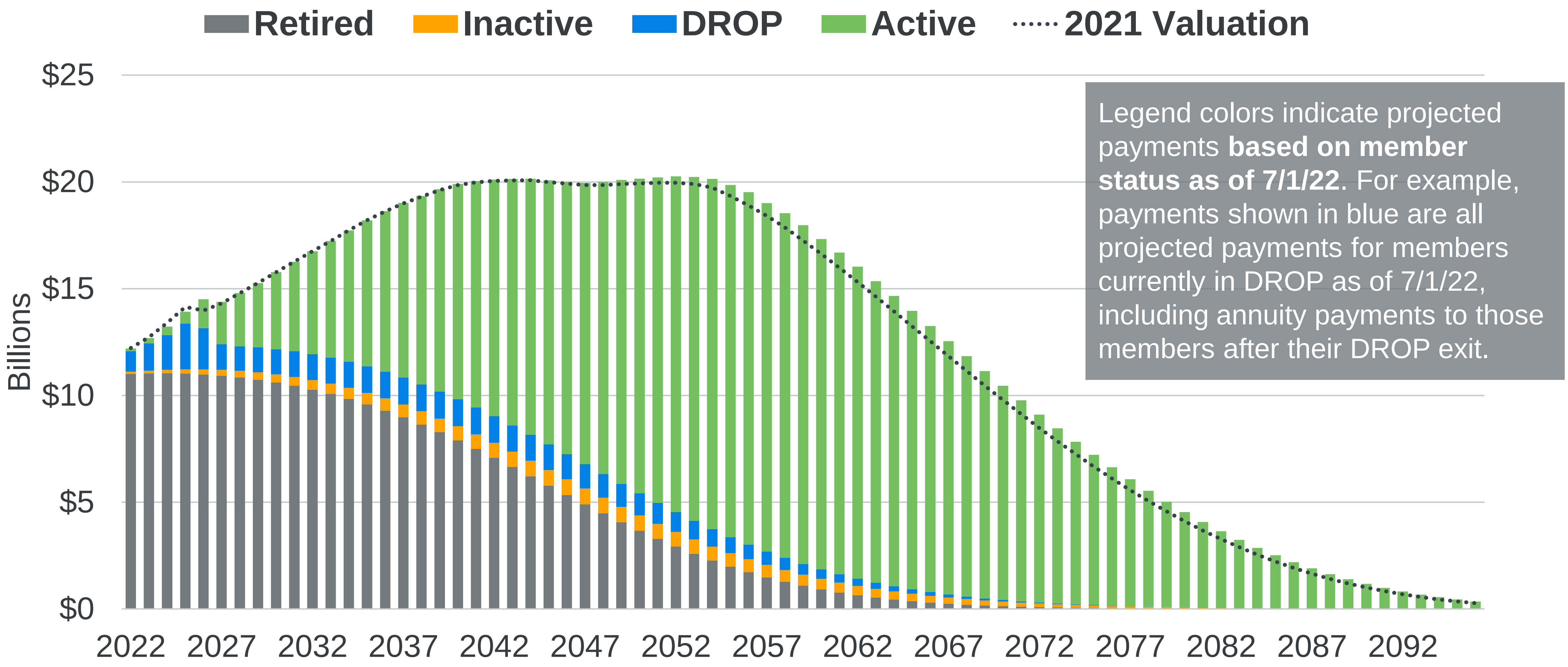
Actuarially Calculated Contribution Rates

GASB Reporting

Projected Benefit Payments

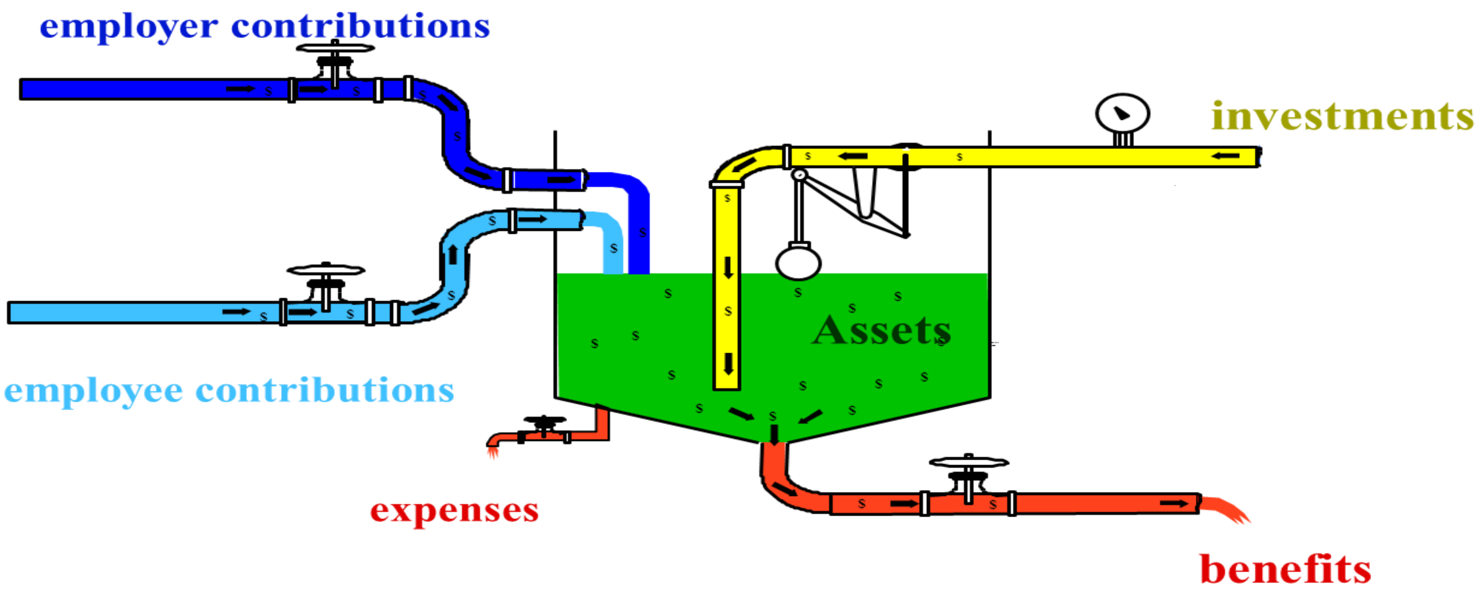
- Projected benefit payments are developed using:
  - Census data provided by the Division of Retirement
  - Demographic assumptions
    - Life expectancy (i.e., mortality)
    - Likelihood and timing of immediate unreduced retirement or DROP entry
    - Likelihood of termination of employment prior to unreduced retirement eligibility
    - Annual salary increase assumption for individual members
    - Incidence of disability
- Membership demographic data is provided annually by the Division of Retirement
- Assumptions listed above are typically formally reviewed in detail every five years as part of an actuarial experience study

Projected Benefit Payments – 2022 Valuation



Actuarial Methods and Assumptions for System Funding Calculations

The Fundamental Cost Equation



- Methods & assumptions do not determine ultimate long-term System cost, only the budgetary **timing** of cost incurrence

Ultimately, the Fundamental Cost Equation always governs:

Contributions + Investments = Benefits + Expenses

Key Actuarial Methods Previously Adopted

- Individual Entry Age Normal (Individual EAN) cost allocation method
  - First adopted in 2019
  - This method sets the normal cost rate as a level percent of payroll contribution needed during a member's full career to fund that member's projected cost of total benefits if experience follows assumptions. As such, Tier I members have higher normal cost rates than Tier II members.
- 20-year amortization over a closed period, as a level percent of projected payroll, of previously unanticipated changes in UAL that arise since the prior actuarial valuation
  - First adopted in 2021, for both existing and new bases
  - Because of this approach, each year's amortization payments on charge bases will be large enough to cover at least the interest on the UAL of those bases

Preliminary
2022 Actuarial Funding Valuation Results

Calculation of Valuation Results

- Projected year-by-year benefit payments are converted to a present value projected cost of total benefits using the return assumption
  - The present value is allocated between past (Actuarial Liability) and projected future service (Normal Costs) via the cost allocation method
- This establishes “2022 Preliminary” funding valuation results using:
  - Actual 2021-22 investment returns
  - Member demographic census data as of July 2022
  - Methods and assumptions as adopted by the 2021 FRS Actuarial Assumption Conference, based in part on the 2019 Experience Study
    - An experience study is conducted every five years
  - Plan changes adopted as of July 1, 2022 in HB 5007, which increases IP employer contribution rates by 3.00% and extends the maximum length of DROP participation by 36 months for Special Risk Class Law Enforcement Officer Members
- “2022 Preliminary” funding valuation results exclude any effect of plan changes for PTSD presumption for correctional officers (HB 689) and Firefighter Cancer presumption (SB 838)

Pension Plan UAL and Funded Status

	2021 Final (2021 data; 2021 assumptions)	2022 Preliminary (2022 data; 2021 assumptions)
Actuarial Liability (AL)	$ 209.6	$ 214.8
Actuarial Value of Assets (AVA)	174.9	179.2
Unfunded Actuarial Liability (UAL)	**$ 34.7**	**$ 35.6**
Funded Status	**83.4%**	**83.4%**

(Amounts in $ billions)

- Market Value of Assets (MVA) is $1.0 billion above AVA at July 2022. That deferred investment gain will be recognized in higher future AVA returns (and associated future UAL contribution rate decreases) if future market value investment performance meets or exceeds 6.80%.
- On a market value of assets basis, the unfunded liability is $34.6 billion and the funded status is 83.9%
- Results shown above use the 6.80% investment return assumption from the 2021 funding valuation

Blended Proposed Statutory Rates at 6.80% Return

Weighted Average of Rates Across All Membership Classes	Final 2022-23 Rates (6.80% Assumption)			Preliminary 2023-24 Rates (6.80% Assumption)		
	NC	UAL	Total	NC	UAL	Total
PP composite employer rate	7.79%	7.35%	15.14%	7.83%	7.72%	15.55%
IP composite employer rate	7.64%	0.00%	7.64%	7.57%	0.00%	7.57%
Blended PP / IP employer rate	**7.76%**	**5.82%**	**13.58%**	**7.77%**	**6.01%**	**13.78%**
Employee contribution rate			3.00%			3.00%
Composite blended employer plus employee rate			16.58%			16.78%

- Pension Plan (PP) contribution rates are blended with Investment Plan (IP) contribution rates to create blended PP/IP proposed statutory employer rates
- Statutory IP rates by membership class are unchanged, but the 2023-24 IP payroll is more heavily weighted to Regular Class, which decreases the IP composite employer rate
- Both the 2022-23 and 2023-24 rates reflect HB5007, which increased IP employer contribution rates by 3.00% of pay and extended DROP by 36 months for Special Risk Class Law Enforcement Officers

Projected Employer Contributions in Dollars at 6.80% Return

Total For All Membership Classes	Normal Cost Rate	Applicable Normal Cost Payroll	UAL Rate	Applicable UAL Payroll	Blended PP/IP Rate	Employer Contribution
Final 2022-23	7.76%	$36.0 billion	5.82%	$39.8 billion	**13.58%**	**$5.11 billion**
Preliminary 2023-24	7.77%	$36.9 billion	6.01%	$41.0 billion	**13.78%**	**$5.33 billion**
Change	+0.01%		+0.19%		**+0.20%**	**+$0.22 billion**

- (Employer normal cost rate x normal cost payroll) + (UAL rate x UAL payroll) = Employer contribution
- Pension Plan (PP) contribution rates are blended with Investment Plan (IP) contribution rates to create blended PP/IP proposed statutory employer rates
- Preliminary 2023-24 rates above reflect actual 2021-22 investment performance and July 1, 2022 FRS member census, along with all actuarial methods and assumptions used in the July 1, 2021 valuation and HB5007.

Results Under Current Methods at 6.80% Return

Valuation Results at 6.80% Assumption	Blended PP/IP Employer Rate	UAL (AVA)	Funded Status
Final 2022-23	**13.58%**	$34.7 B	83.4%
Preliminary 2023-24:			
- 6.80% return assumption, 20-year level % of projected pay amortization of newly established UAL amortization bases	**13.78%**	$35.6 B	83.4%

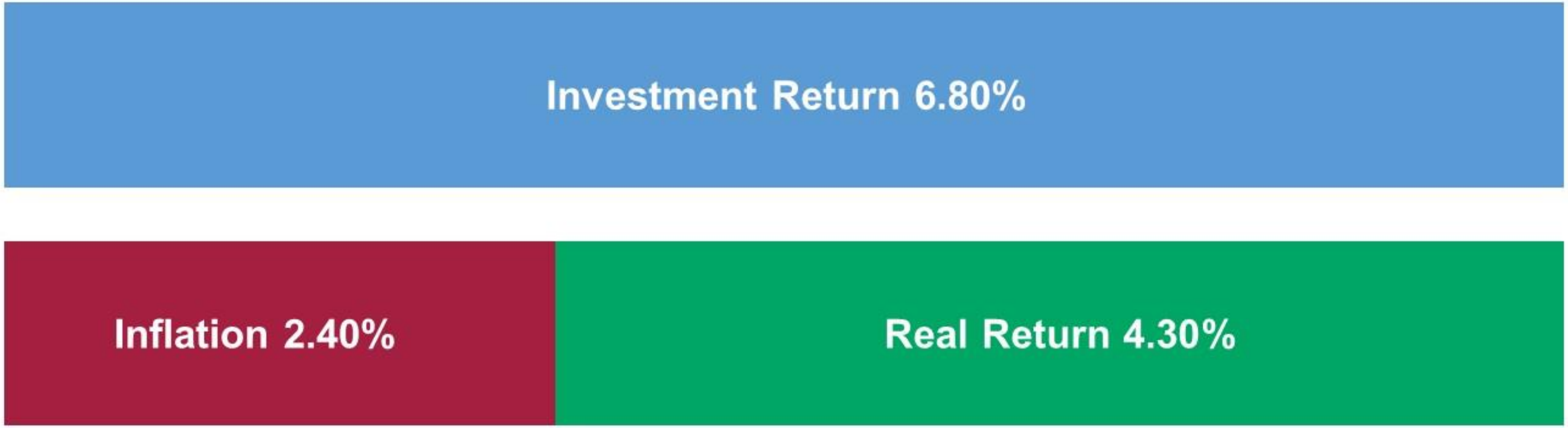
- Based on projected 2023-24 PP/IP payroll of $41.0 billion (including payroll subject to only UAL contributions), estimated combined 2023-24 PP/IP employer contribution of:
  - **$5.33 billion** reflecting actual 2021-22 investment performance and July 1, 2022 FRS member census, but before any potential modification to the return assumption or amortization policy

Investment Return Assumption for System Funding

Note: Today’s Milliman speaker is not a credentialed investment advisor

Components of 2021 Conference’s Return Assumption

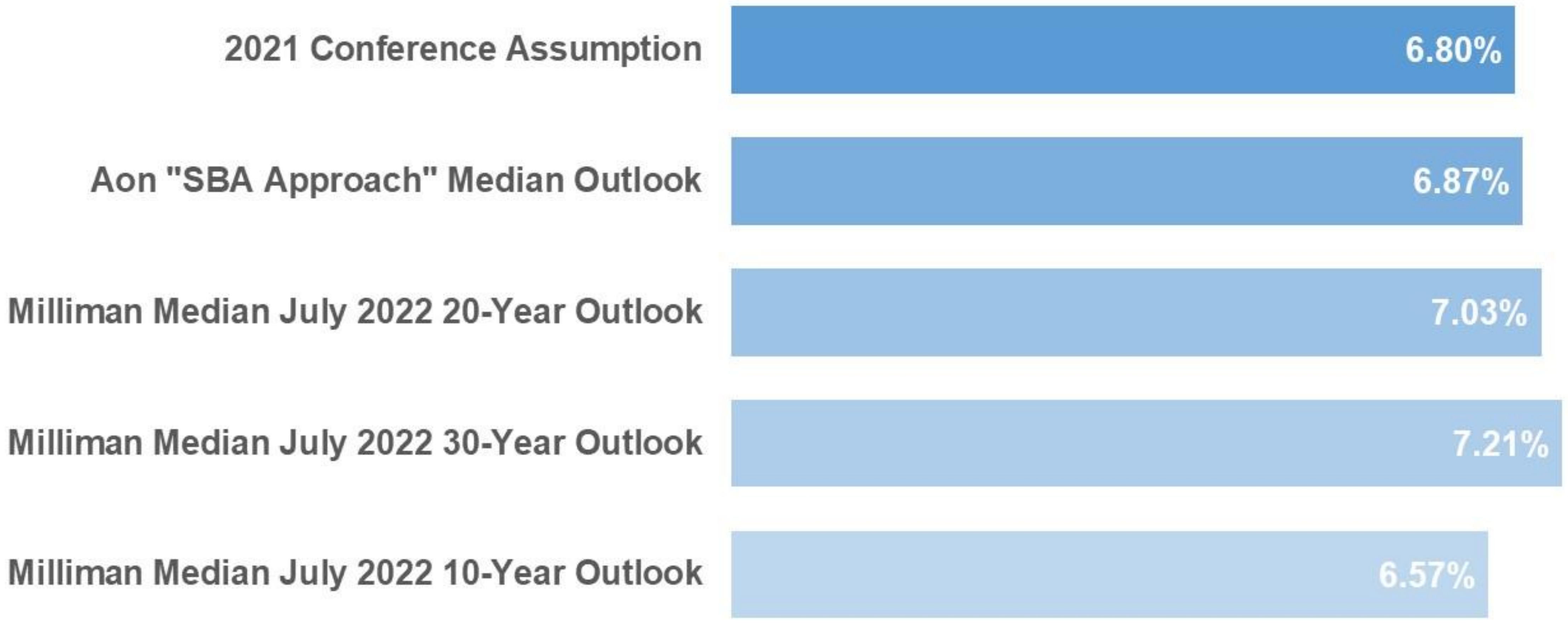
- The Conference identifies investment return and inflation assumptions
- From that, the Conference’s implied real return assumption can be mathematically inferred



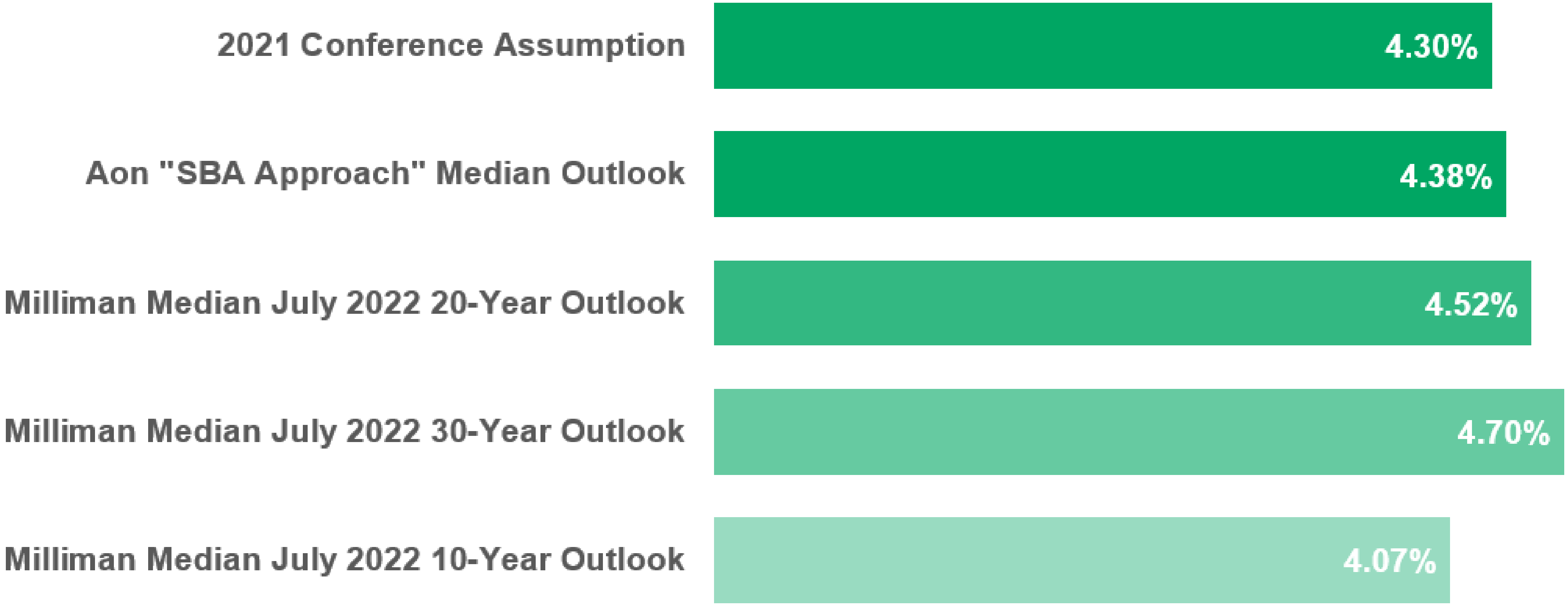
- The governing mathematical formula is:

$$(1 + \text{Investment Return}) = (1 + \text{Inflation}) \times (1 + \text{Real Return})$$

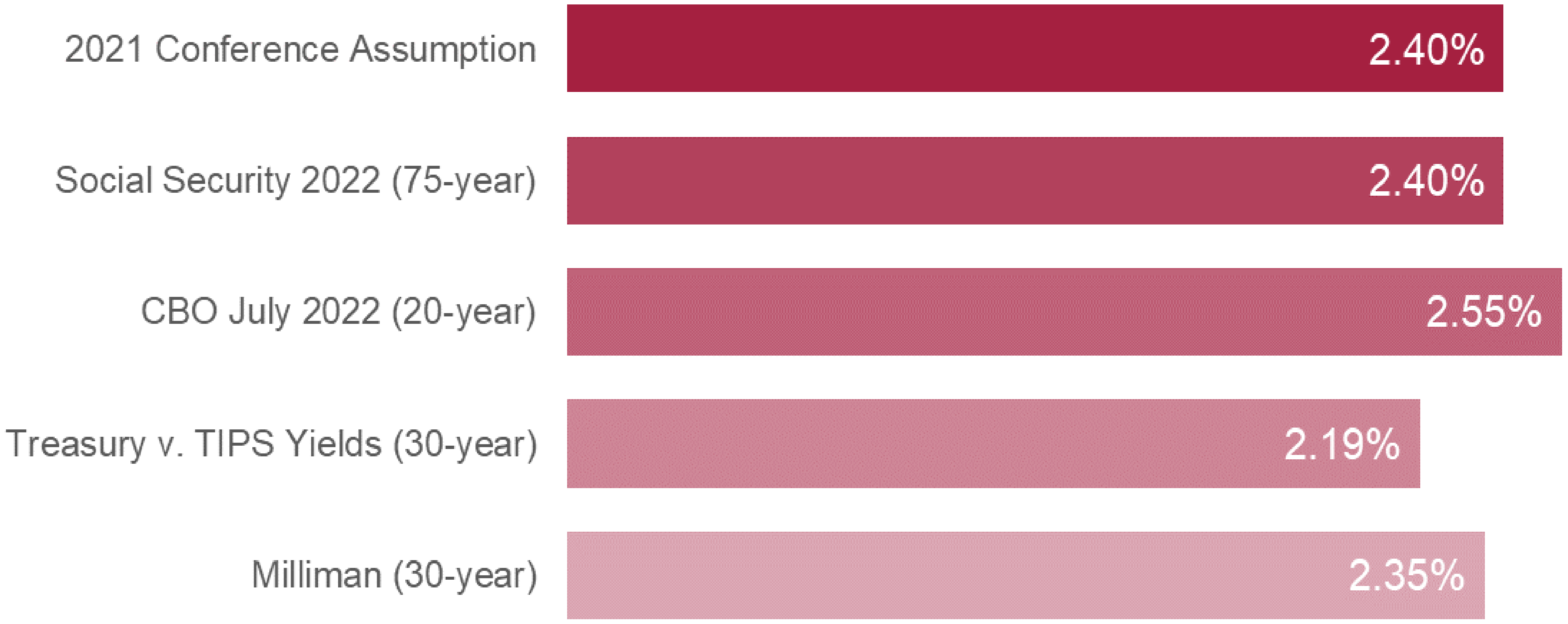
Guidance on Nominal Return Assumption



Guidance on Real Return Assumption



Guidance on Inflation Assumption



What Are FRS's Jumbo Peer Systems Doing?

Assumptions in 2010

Assumptions in 2022

Source: NASRA Public Fund Survey (July '22)

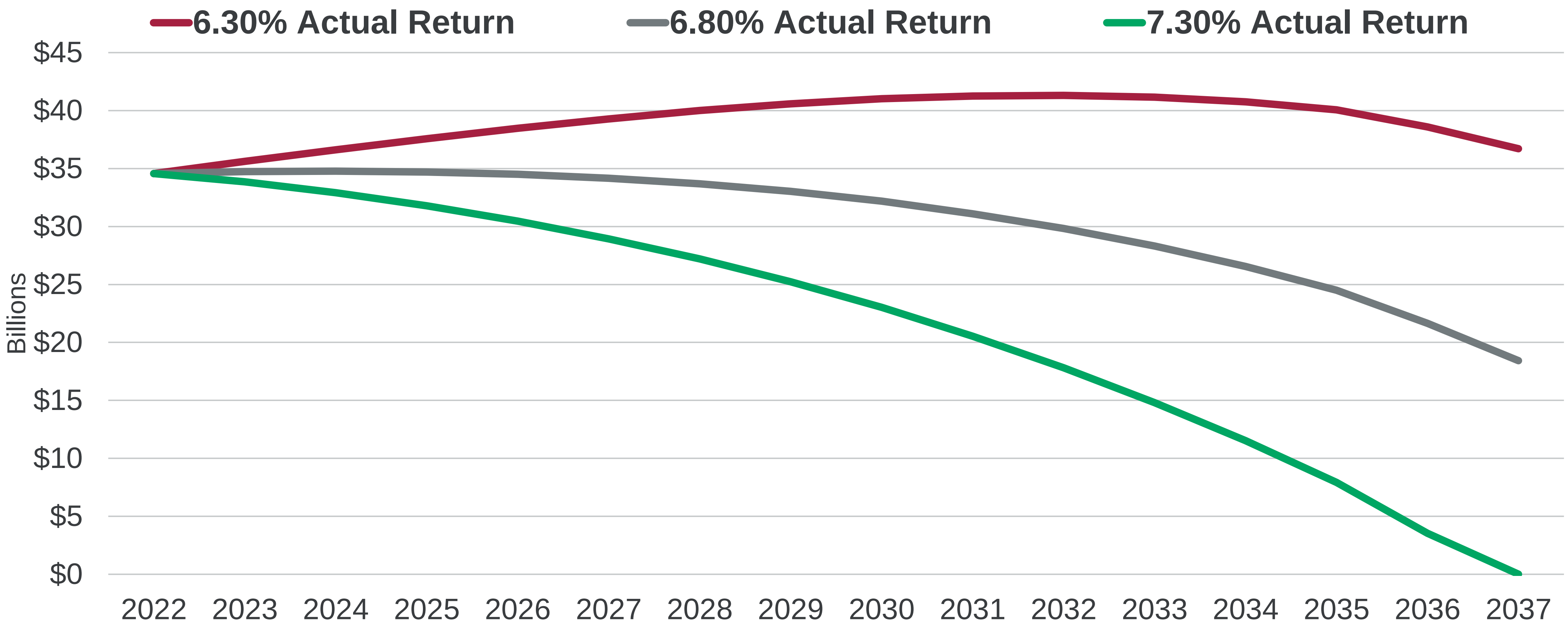
2021 Valuation – Last Year’s Return Models and Assumption

- Median (50th percentile) average annual long-term future investment returns from two real return investment models presented at the 2021 Conference are summarized below:
  - Aon’s “SBA Approach” model from its August 2021 asset-liability study that blends the global equity risk premiums of three large investment consultancies: **6.13%** median return
    - Reflects Aon’s current outlook for inflation of 2.1%
    - Inferred: Aon median real (in excess of inflation) return outlook of **3.95%**
  - Milliman model: **6.67%** median return
    - Uses the Conference’s most recently adopted inflation assumption of **2.4%**
    - Inferred: Milliman median real (in excess of inflation) return outlook of **4.17%**
      - The current default inflation assumption in Milliman’s outlook model is 2.3%
- Last year’s Conference lowered the return assumption from **7.0%** to **6.8%** for the 2021 actuarial valuation for funding purposes

2022 Valuation - Updated Return Models for This Year

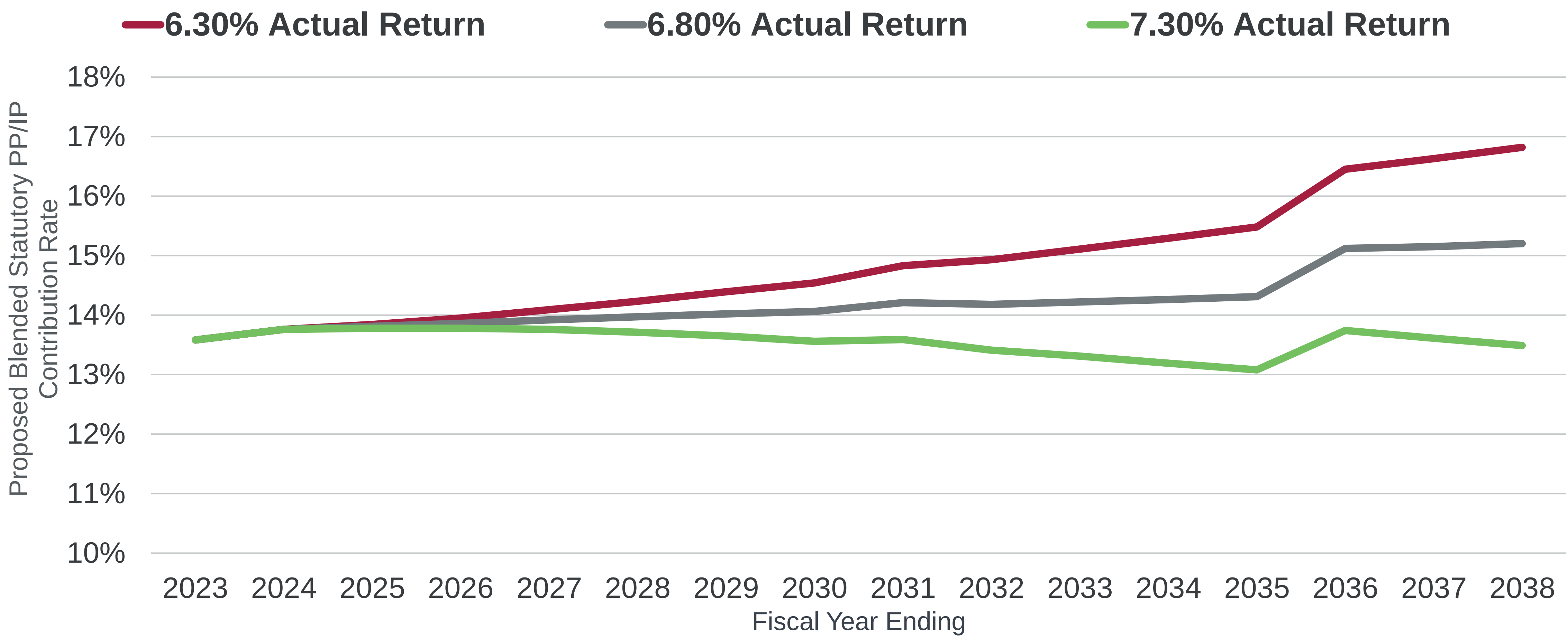
- Aon's "SBA Approach" model from its September 2022 asset-liability study that blends the global equity risk premiums of three large investment consultancies: **6.87%** median return
  - Reflects Aon's current outlook for inflation of 2.4%
  - Inferred: Aon median real (in excess of inflation) return outlook of **4.38%**
- Milliman 30-year outlook model: **7.21%** median return
  - Uses the Conference's most recently adopted inflation assumption of **2.40%**
  - Inferred: Milliman median real (in excess of inflation) return outlook of **4.70%**
    - The current default inflation assumption in Milliman's 30-year outlook model is 2.35%

Unfunded Liability (MVA Basis) for Various Actual Return Levels



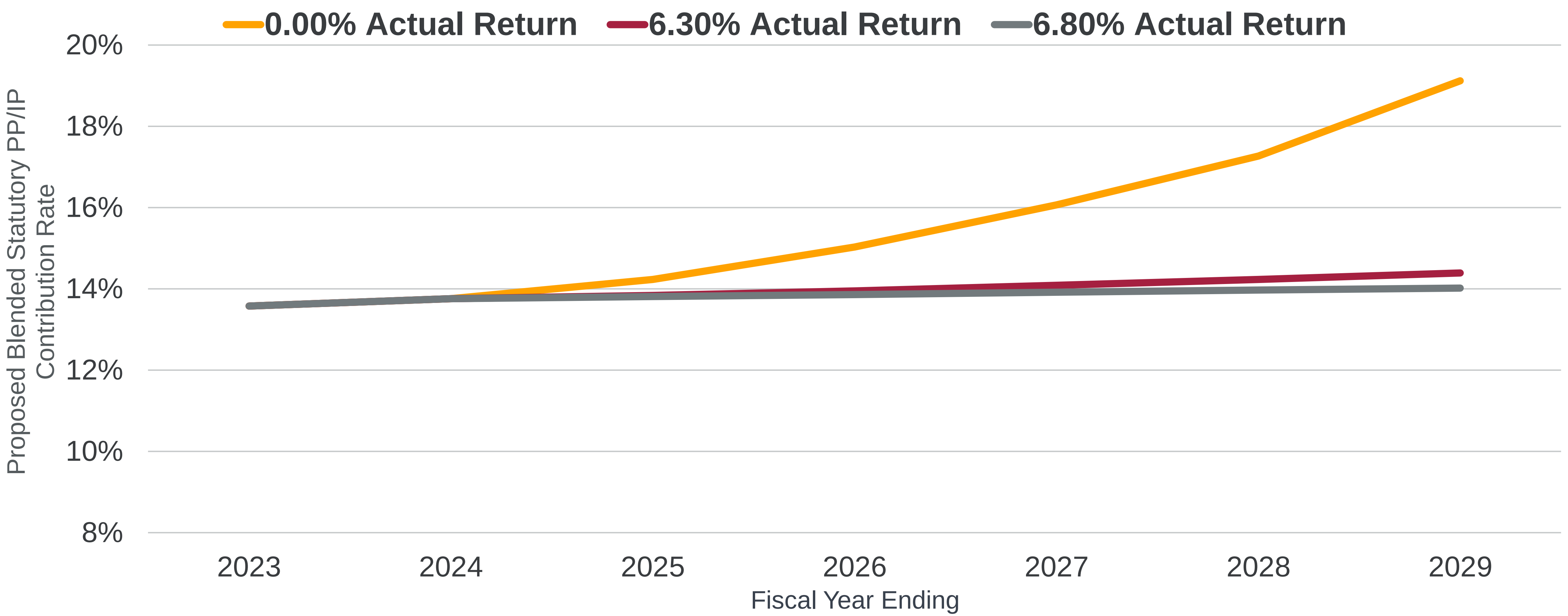
Using a 6.80% adopted assumption for the actuarial valuation's assumed return, this chart projects unfunded liability on a **market value of assets basis** under three scenarios for the level of actual annual future investment return on a market value of assets basis

Contribution Rate for Various Actual Return Levels



Using a 6.80% adopted assumption for the actuarial valuation's assumed return, this chart projects the proposed blended statutory composite Pension Plan/Investment Plan employer contribution rate under three scenarios for actual annual investment return on a fair market value of assets basis

Near-Term Contribution Rate for Various Actual Return Levels



Using a 6.80% adopted assumption for the actuarial valuation's assumed return, this chart projects the proposed blended statutory composite Pension Plan/Investment Plan employer contribution rate under three scenarios for actual annual investment return on a fair market value of assets basis

Sensitivity of Results to Return Assumption

System Average Valuation Results	Blended PP/IP Employer Rate	UAL (AVA)	Funded Status
Final 2022-23 at 6.80% assumption	13.58%	$34.7 B	83.4%
Preliminary 2023-24:			
- At 6.80% assumption[1]	**13.78%**	$35.6 B	83.4%
- At 6.75% assumption[2]	**14.09%**	$36.9 B	82.9%
- At 6.70% assumption[3]	**14.39%**	$38.1 B	82.5%
- At 6.60% assumption[4]	**15.00%**	$40.6 B	81.5%

- Based on projected 2023-24 PP/IP payroll of $41.0 billion (including payroll subject to only UAL contributions), estimated combined 2023-24 PP/IP contribution of:

  [1] **$5.33 billion** at 6.80% return assumption
  [2] **$5.45 billion** at 6.75% return assumption [**$120 million** increase from 6.80% return assumption]
  [3] **$5.57 billion** at 6.70% return assumption [**$240 million** increase from 6.80% return assumption]
  [4] **$5.81 billion** at 6.60% return assumption [**$480 million** increase from 6.80% return assumption]

Discount Rate Assumption for HIS and National Guard Accounting Valuations

GASB Discount Rate Assumption

- Currently, the Florida Health Insurance Subsidy (HIS) and Florida National Guard benefits are effectively funded on a pay-as-you-go basis
- Accounting standards first effective several years ago (GASB 67 & 68) give direction on the discount rate assumption to be used for financial reporting of programs funded on a pay-as-you-go basis
  - The assumption should reflect an **index of 20-year, tax exempt, high quality (AA/Aa or higher) general obligation municipal bonds**
  - The assumption selected should be based on **market conditions as of the measurement date** of the financial reporting in question
- After consideration of these requirements at the time of initial implementation of the accounting standards, the Conference adopted the **Bond Buyer General Obligation 20-Bond Municipal Bond Index** for use in HIS and National Guard GASB calculations
  - That index has been used for pay-as-you-go GASB financial reporting valuations by all public systems with which I am familiar

Historical Values of the Bond Index

- The table below shows the value of the Bond Buyer General Obligation 20-Bond Municipal Bond Index as of the last five fiscal year-end measurement dates

June 30	Index
2022	**3.54%**
2021	2.16%
2020	2.21%
2019	3.50%
2018	3.87%

- The **higher** the index, the **lower** the calculated present value liability, with an index **increase** from 2.16% to 3.54% estimated to **decrease** HIS liability and National Guard liability by approximately $2.1 billion and $315 million, respectively

Needed Guidance

Needed Guidance for FRS Pension Plan

- From Conference Principals for system funding calculations, identification of **methods** and **assumptions** to use in the 2022 FRS Pension Plan valuation calculations for system funding purposes to calculate blended proposed 2023-24 statutory contribution rates, including:
  - Investment return assumption (currently 6.80%)
  - Inflation assumption (currently 2.40%)
  - Amortization policy - currently 20-year amortization as a level percent of projected future payroll for newly arising UAL (unfunded actuarial liability) bases
    - All pre-existing UAL bases were recalculated at July 1, 2021 to be no more than 20-year amortizations as a level percent of projected future payroll

Needed Guidance for the HIS and National Guard Programs

- From Conference Principals for GASB accounting valuations of the Health Insurance Subsidy (HIS) and Florida National Guard programs:
  - Re-confirmation of the Bond Buyer General Obligation 20-Bond Municipal Bond Index as the discount rate for the two programs' GASB valuations

- Demographic assumptions will be consistent with those used in the prior valuation whenever appropriate, taking into consideration current provisions and currently available data

Appendix

Milliman 30-Year Capital Market Outlook Assumptions

Asset Class	Policy Allocation:	Annual Arithmetic Mean	**Annualized Geometric Mean**	**Annual Standard Deviation**
US Cash	1.00%	2.57%	2.56%	1.10%
US Government Bonds	0.57%	3.46%	3.35%	4.93%
US Interm (1-10 Yr) Government Bonds	9.00%	3.35%	3.29%	3.59%
US Interm (1-10 Yr) Credit Bonds	9.00%	4.76%	4.67%	4.33%
Private Credit	1.19%	9.46%	8.80%	12.00%
Global Equity	54.05%	8.75%	7.29%	17.75%
US REITs	1.00%	8.62%	6.56%	21.07%
Private Real Estate Property - Core	9.33%	7.24%	6.00%	16.23%
Private Equity	9.07%	13.08%	9.03%	30.00%
Timber	0.34%	7.09%	6.30%	13.00%
Infrastructure - Public	1.29%	7.48%	6.12%	17.07%
Commodities	0.39%	4.92%	3.56%	16.81%
Hedge Funds - MultiStrategy	1.67%	6.60%	6.17%	8.99%
Hedge Funds - Event-Driven	0.14%	6.65%	6.12%	9.40%
Hedge Funds - Equity Hedge	0.27%	7.24%	6.42%	11.84%
Hedge Funds - Macro	1.24%	5.20%	4.79%	7.57%
Hedge Funds - Distressed	0.45%	6.56%	5.99%	9.78%
US Inflation*		2.40%	2.40%	1.25%
Total Fund	100.00%	8.12%	**7.21%**	**12.94%**

For assessing the expected portfolio return under Milliman's capital market assumptions, we considered FRS investments to be allocated among the model's asset classes as shown below. This allocation is based on our understanding of the current target allocation policy, as provided to us by Aon Hewitt Investment Consulting via email on August 4, 2022.

*2.4% is the inflation assumption most recently adopted by the FRS Actuarial Assumption Conference. That 2.4% assumption is then applied to real return assumptions in Milliman's capital market outlook model to calculate a median (50^{th}) percentile return.

Real return assumptions in the Milliman model are set semi-annually by a committee of credentialed investment professionals.

The default inflation assumption in the Milliman 30-year model is currently 2.35%.

Milliman 30-Year Investment Return Model

Percentile	30-Year Average
65th	8.13%
60th	7.82%
55th	7.52%
50th	**7.21%**
45th	6.93%
40th	6.63%
35th	6.32%

- Based on the current target asset allocation, model results are geometric annual average net returns based on:
  - A series of average annual real returns by asset class, plus asset class correlations
  - The 2021 Conference's 2.4% inflation assumption
  - The 45th percentile means that in the Milliman model 45% of possible 30-year average annualized returns are at or below 6.93%
  - Details on the model inputs on the previous slide

Regular Class - Various Return Assumptions

Regular Membership Class	Blended PP/IP Employer Rate	Estimated PP/IP Contribution
Final 2022-23 at 6.80% assumption	10.19%	$2.92 B
Preliminary 2023-24:		
- At 6.80% assumption	10.33%	$3.05 B
- At 6.75% assumption	10.59%	$3.12 B
- At 6.70% assumption	10.84%	$3.20 B
- At 6.60% assumption	11.35%	$3.36 B

- Based on projected 2023-24 PP/IP payroll subject to UAL contributions of $31.8 billion
  - Does not include projected contributions on DROP payroll (estimated for 2022-23 to be $0.221 billion in contributions on $2.42 billion of applicable payroll)

Special Risk Class - Various Return Assumptions

Special Risk Membership Class	Blended PP/IP Employer Rate	Estimated PP/IP Contribution
Final 2022-23 at 6.80% assumption	26.11%	$1.43 B
Preliminary 2023-24:		
- At 6.80% assumption	26.38%	$1.50 B
- At 6.75% assumption	26.92%	$1.53 B
- At 6.70% assumption	27.46%	$1.56 B
- At 6.60% assumption	28.51%	$1.62 B

- Based on projected 2023-24 PP/IP payroll subject to UAL contributions of $5.72 billion
  - Does not include projected contributions on DROP payroll (estimated for 2022-23 to be $0.221 billion in contributions on $2.42 billion of applicable payroll)

Level Dollar Amortization at 6.80% Return

Preliminary 2023-24 Valuation[1] at 6.80%:	Blended PP/IP Employer Rate	Employer Contribution
Level % of pay – 20-year max amortization on all bases	13.78%	$5.33 B
Level $ – 25-year level $ amortization on **new** bases[2]	13.81%	$5.34 B
Level $ – 20-year level $ amortization on **new** bases[2]	13.82%	$5.35 B
Level $ – 20-year level $ amortization on **all** bases[3]	15.65%	$6.10 B

[1] Reflecting current demographic assumptions and individual entry age normal cost method, and based on projected 2023-24 PP/IP payroll of $41.0 billion (including payroll subject only to UAL contributions)

[2] Under this scenario, only bases newly established with this valuation would be amortized on a level-dollar basis. All bases established in prior valuations would continue to be amortized as a level % of projected payroll.

[3] Under this scenario, all bases would be amortized on a level-dollar basis. The remaining amortization period for each base would be unchanged.

Setting the Investment Return Assumption

Actual future investment returns are not knowable in advance, so how should the assumption be set?

- Prudently select a best estimate
- Review return models from credentialed investment professionals
- Remain cognizant that hoping for a result does not make it happen; the assumption selected does not affect actual investment returns
- Avoid myopia – the objective is to make a prudent long-term estimate, not to get a single individual year right
- Neither ignore historical results nor be beholden to them
- Since actual results will vary from assumption, review a return model's probability range and consider a margin for variance

Contribution Rate Calculations

- Pension Plan-specific contribution rates have two components:
  - Normal cost rate - Cost assigned to current year benefits by the allocation method
  - UAL rate - Rate calculated to eliminate UAL in a systematic manner over a specified time period if future experience follows assumptions
- To calculate the UAL rate, an additional assumption and an additional method are needed
  - For amortizations as a level percentage of projected payroll, the system’s **general wage increase** assumption affects the rate
  - In addition, the length of the **amortization period** affects the rate

Asset Smoothing

- Contribution rates established annually based on the reported unfunded actuarial liability (UAL)
  - UAL compares Actuarial Liability against a system asset measure
- The Actuarial Value of Assets (AVA) measure used by FRS to calculate UAL is specified by statute, and employs an “asset smoothing” technique
  - The mandated method annually recognizes 20% of investment return deviations from assumption
- The statutory calculation approach includes a “corridor” to ensure smoothed assets vary no more than 20% from fair market value
- The objective of asset smoothing is to keep long-term contribution levels appropriately linked to actual investment performance, and to have year-to-year contribution rate changes be less volatile and more predictable
- Five-year smoothing method recognizes heavy losses gradually following times of unfavorable asset performance
- The smoothing is symmetrical, so that any large investment gains are also not “felt” all at once, but instead serve as a cushion against potential future unfavorable asset performance

Disclaimer

At your request, we have provided these draft results prior to completion of the July 1, 2022 Actuarial Valuation Report. Because these are draft results, Milliman does not make any representation or warranty regarding the contents of the presentation. Milliman advises any reader not to take any action in reliance on anything contained in this presentation. All draft results from this presentation are subject to revision or correction prior to the release of the finalized July 1, 2022 Actuarial Valuation Report, and such changes or corrections may be material.

Certification

This presentation summarizes key preliminary results of an actuarial valuation of the Florida Retirement System ("FRS" or "the System") as of July 1, 2022. The valuation, when finalized, will develop actuarially calculated contribution rates for the Plan Year ending June 30, 2024. The results in this presentation are preliminary in nature and may not be relied upon to, for example, prepare the System's Annual Consolidated Financial Report. The reliance document will be the formal July 1, 2022 Actuarial Valuation Report.

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

Preliminary results have been determined on the basis of actuarial assumptions and methods as most recently adopted by the 2021 FRS Actuarial Assumption Conference. At the time of their review and adoption, in our professional opinion those assumptions were individually reasonable (taking into account the experience of the System and reasonable expectations); and offered a reasonable estimate of anticipated future experience affecting the System.

Future actuarial measurements may differ significantly from the current measurements presented in this presentation due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The FRS Actuarial Assumption Conference has the final decision regarding the selection of assumptions for System funding calculations.

Certification

Computations presented in this presentation are for purposes of preliminarily estimating the actuarially calculated contribution rates for funding the System. Computations prepared for other purposes may differ. The calculations in the presentation have been made on a basis consistent with our understanding of the System's funding requirements and goals. The calculations in this presentation have been made on a basis consistent with our understanding of the plan provisions described in the appendix of our formal actuarial valuation report as of July 1, 2021, as modified by HB 5007 effective July 1, 2022. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this presentation. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the Florida Department of Management Services ("DMS"). To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third-party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s):

(a) The System may provide a copy of Milliman's work, in its entirety, to the System's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.

(b) The System may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third-party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel. The presenting actuaries are independent of the plan sponsors. I am not aware of any relationship that would impair the objectivity of Milliman's work.

On the basis of the foregoing, I hereby certify that, to the best of my knowledge and belief, this presentation has been prepared in accordance with generally recognized and accepted actuarial principles and practices. I am a member of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Actuarial Basis

Data

We have based our calculations on demographic member census data as of July 1, 2022 as supplied by the Division of Retirement ("Division"). That data will be summarized in our formal actuarial valuation report for funding purposes as of July 1, 2022, which will be published in the 4th quarter of this year. Assets as of June 30, 2022, were based on values provided by the Division.

Methods / Policies

Actuarial Cost Method: Individual Entry Age Normal, as initially adopted by the 2019 FRS Actuarial Assumption Conference and most recently adopted by the 2021 FRS Actuarial Assumption Conference

UAL Amortization: Newly arising UAL each plan year is amortized as a level percentage of projected payroll over a closed 20-year period, except where explicitly modeled as a policy alternative in the body of the presentation.

Actuarial Value of Assets: A smoothed asset value specified by Florida Statutes that annually recognizes 20% of deviations in investment performance from the long-term assumption systematically over time. The statutory calculation approach includes a "corridor" to ensure smoothed assets vary no more than 20% from fair market value.

Assumptions

Assumptions for preliminary 2022 valuation calculations use assumptions as detailed July 1, 2021 Actuarial Valuation Report for funding purposes. For the projections 75% of new Special Risk members are assumed to enroll in the Pension Plan and 25% are assumed to enroll in the Investment Plan, while for non-Special Risk members 25% are assumed to enroll in the Pension Plan and 75% in the Investment Plan.

Provisions

Provisions valued are as summarized in the July 1, 2021 Actuarial Valuation Report for system funding purposes as subsequently modified by HB 5007.

Historical Review of Florida State Board of Administration (SBA) Expected Return on Pension Assets

Florida Retirement System (FRS) Assumption Conference

October 20, 2022

Table of Contents

1

Executive Summary

Executive Summary

Purpose

Review SBA's approach to capital market expectations and its implications on the 2022 asset-liability study

Assumptions

SBA uses the equity risk premiums from three consulting firms (Aon, Mercer, and Wilshire) to remove any biases from any one firm

Using the SBA approach, the assumed equity risk premium decreased from 3.92% in 2021 to 3.30% in 2022 resulting in an expected return assumption of 6.87% for the 2022 asset-liability study

- The equity risk premium applies to 81% of the target asset allocation (i.e., the "return-seeking assets")

Aon benchmarks its assumptions annually against the Horizon Survey; our assumptions tend to be middle of the pack relative to other investment advisors, with a few minor exceptions

Portfolio Construction

The current portfolio is well-diversified; return-seeking assets are broadly diversified while safety / risk-reducing assets should withstand stressed markets

Compared to the public pension universe, FRS' assumed rate of return for FYE 2021 (6.80%) was below the median (7.00%) relative to U.S. public pension plans; using NASRA's assumptions as of July 2022, the median return assumption remains 7.00%

If FRS exceeds (or falls short of) the actuarial return assumption, lower (or higher) funding will be needed in future years

2

Assumptions

- Development
- Benchmarking via Horizon Survey

Assumptions | Development

Overview

The SBA approach averages the global equity risk premiums[1] from three investment advisors (Aon Investments, Mercer, and Wilshire)

Building block approach is used

- Price inflation and fixed income returns reflect market conditions and yields
- For all other asset classes ("risk assets"), a risk premium is added to fixed income returns

Average risk premium is used to scale Aon Investments' expected returns for the "risk assets"

The difference between Aon Investments' equity risk premium and the average equity risk premium is added to all of the "risk asset" capital market assumptions from Aon Investments to normalize the expected returns

[1] Equity Risk Premium is defined as the excess return earned over bonds that compensates investors for taking on higher risk; all returns are 15-year geometric average (compounded) expected returns

Assumptions | Development

Equity Risk Premium

The SBA averages the global equity risk premiums[1] from three consulting firms[2] and then uses that average risk premium to scale Aon Investments' expected returns for the "risk assets"

2022 Average Global Equity Risk Premium = Average (Global Equity Return – U.S. Bond Return) = 3.30%

	Aon Investments	Mercer	Wilshire	Callan[2]	Average
2022 Assumptions (15-year geometric average expected returns)					
- As of Date	June 2022	July 2022	June 2022		
- Global Equity	7.75%	6.97%	6.60%	N/A	7.11%
- Core U.S. Bonds	3.80%	3.57%	4.05%	N/A	3.81%
- Global Equity Risk Premium	3.95%	3.40%	2.55%	N/A	**3.30%**
2021 Global Equity Risk Premium	4.55%	3.67%	3.55%	N/A	3.92%
Change 2022 vs. 2021	-0.60%	-0.27%	-1.00%	N/A	-0.62%
Prior Years:					
- 2020	5.50%	4.77%	5.20%	N/A	5.15%
- 2019	4.55%	3.70%	3.40%	N/A	3.88%
- 2018	4.10%	3.53%	2.90%	3.93%	3.62%

[1] Equity Risk Premium is defined as the excess return earned over bonds that compensates investors for taking on higher risk.

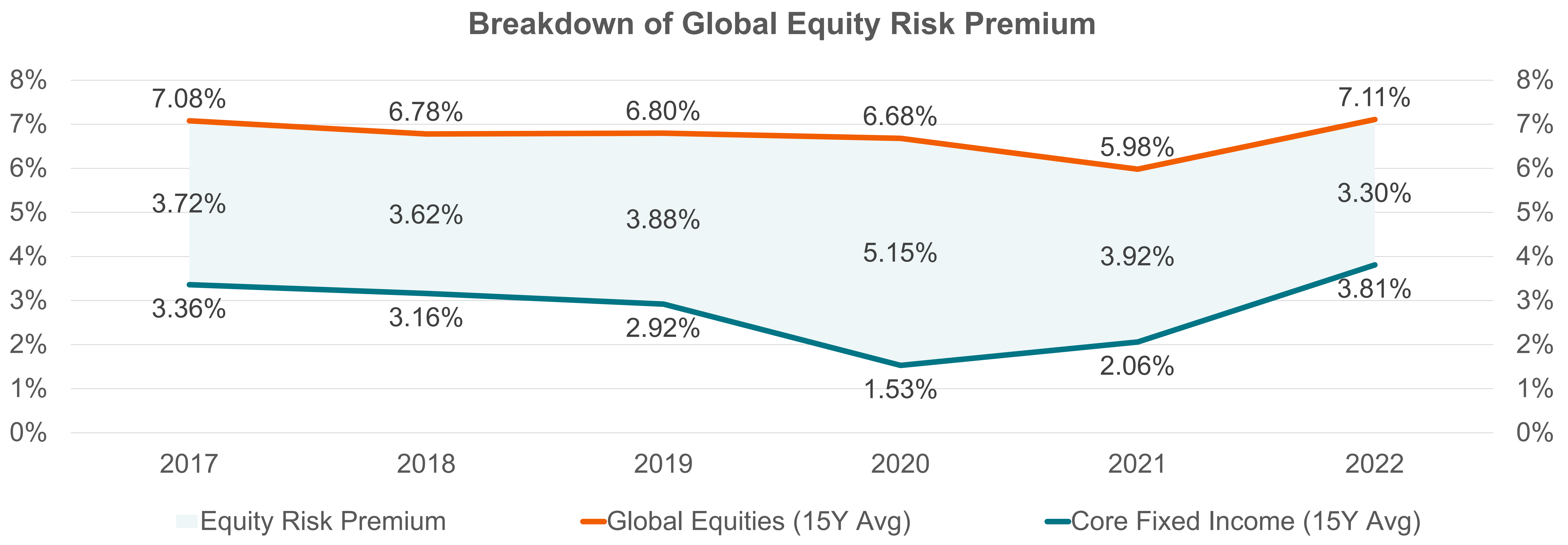
[2] Callan was previously included in the averaging but removed starting in 2019 because its capital market assumption date did not coincide with the same timeframe as the other consultants and the asset-liability study; Callan only updates their capital market assumptions once a year while the other consultants update quarterly

Calculations may not sum to total due to rounding

Assumptions | Development
Breakdown of Equity Risk Premium Assumption

The decrease in the 2022 equity risk premium[1] was driven by the increase in projected fixed income returns outpacing the increase in projected equity returns

- Below is a 6-year historical look at the breakdown of the global equity risk premium

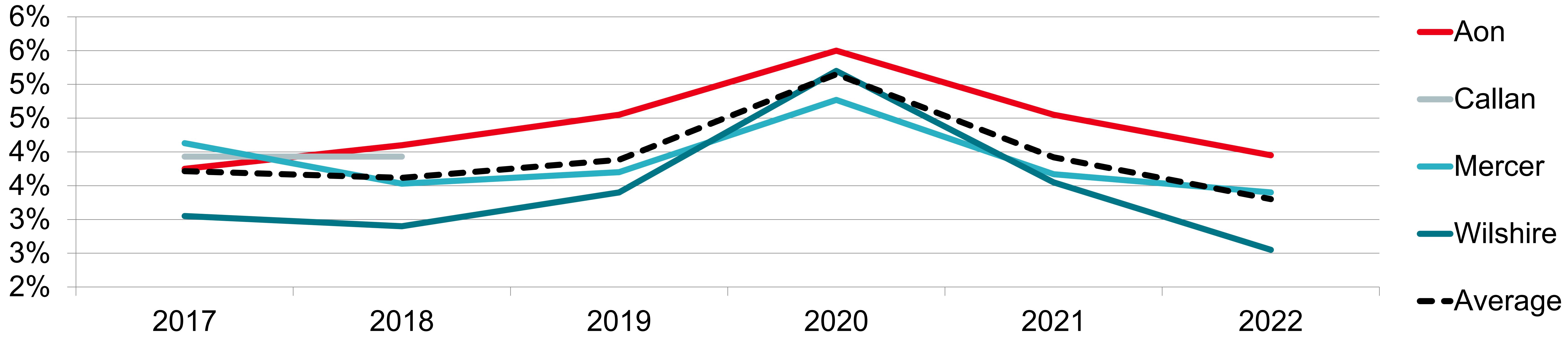


[1] Equity Risk Premium is defined as the excess return earned over bonds that compensates investors for taking on higher risk; all returns are 15-year geometric average (compounded) expected returns

Assumptions | Development

Historical Equity Risk Premium Assumption

Average Global Equity Risk Premium = Average (Global Equity Return – U.S. Bond Return)



Equity Risk Premium[1]	Asset-Liability Study					
	2017	2018	2019	2020	2021	2022
Aon	3.75%	4.10%	4.55%	5.50%	4.55%	3.95%
Callan	3.93%	3.93%	N/A	N/A	N/A	N/A
Mercer	4.13%	3.53%	3.70%	4.77%	3.67%	3.40%
Wilshire	3.05%	2.90%	3.40%	5.20%	3.55%	2.55%
Average	3.72%	3.62%	3.88%	5.15%	3.92%	3.30%

Aon Investments' capital market assumptions for risk assets were scaled by **-65bps** in the 2022 asset-liability study

[1] Equity Risk Premium is defined as the excess return earned over bonds that compensates investors for taking on higher risk; all returns are 15-year geometric average (compounded) expected returns

Benchmarking Our Assumptions vs. Peers

2022 Horizon Survey Results

What is the Horizon Survey?

Since 2010, Horizon Actuarial Services, LLC has conducted a capital market assumption survey of investment firms to aid in determining reasonable assumptions for a pension plan's expected return on assets

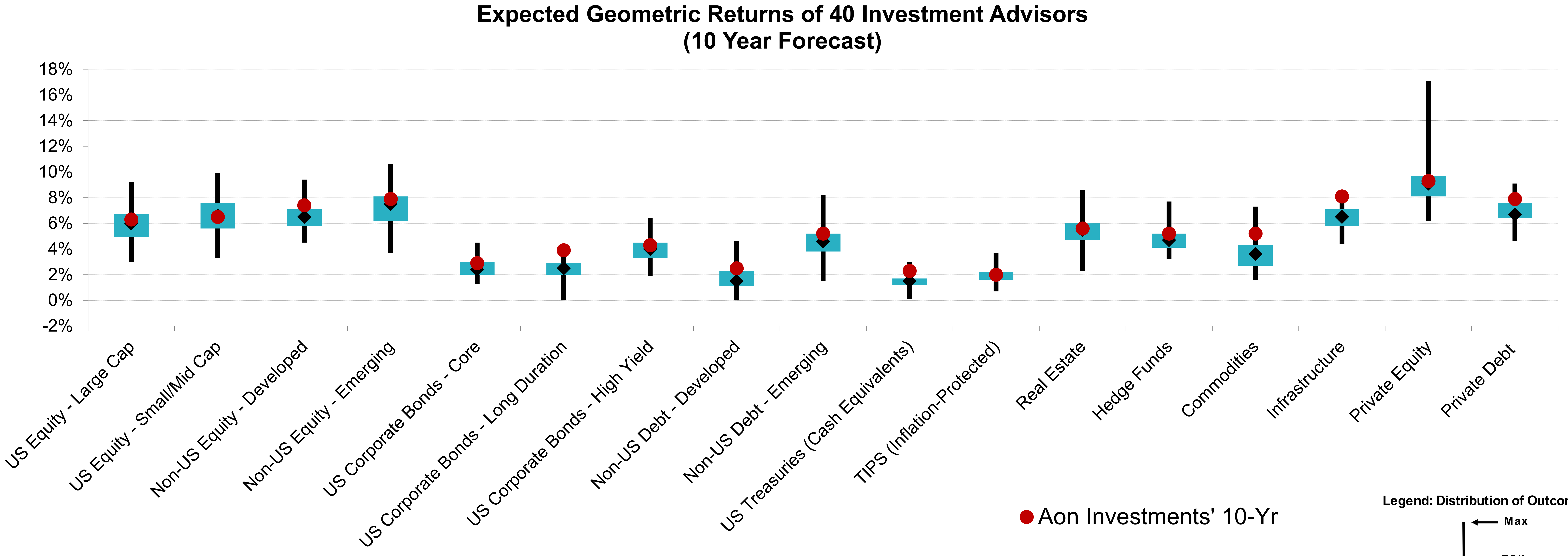
- While Aon does not seek to change our approach based on how we stack up to peers, it is a helpful double-check to make sure we are not too far off from others in the industry

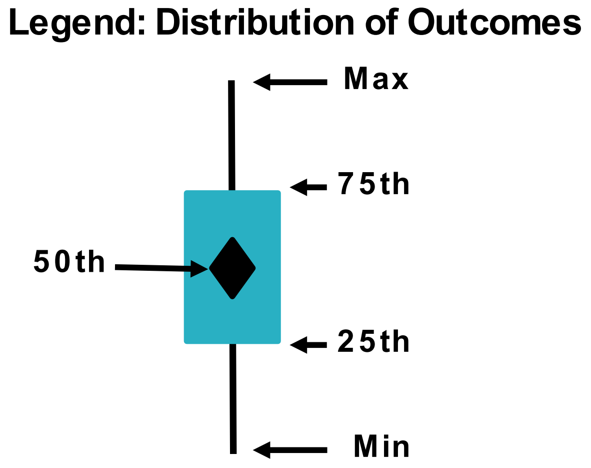
How does Aon compare to the 2022 survey results?

Aon Investments' 2022 10-year forecast assumptions (as of March 31, 2022)

- ***Equities:*** approximately middle of the pack for U.S. and Non-U.S. equities; higher for Non-US Developed
- ***Fixed Income:*** approximately middle of the pack relative to the survey's median level; higher for Long Duration Credit, U.S. Treasuries, and Non-US Debt
- ***Alternatives:*** approximately middle of the pack relative to the survey's median level; higher for Commodities, Infrastructure, and Private Debt

Aon Investments' Capital Market Assumptions vs. Horizon Survey
10-Year Forecast





Source: Horizon Actuarial Solutions, LLC survey of 2022 capital market assumptions from 40 independent investment advisors
Expected returns of the survey are annualized over 10-years (geometric).
Aon Investments' expected returns are annualized over 10-years as of 2Q 2022 (3/31/2022)

3

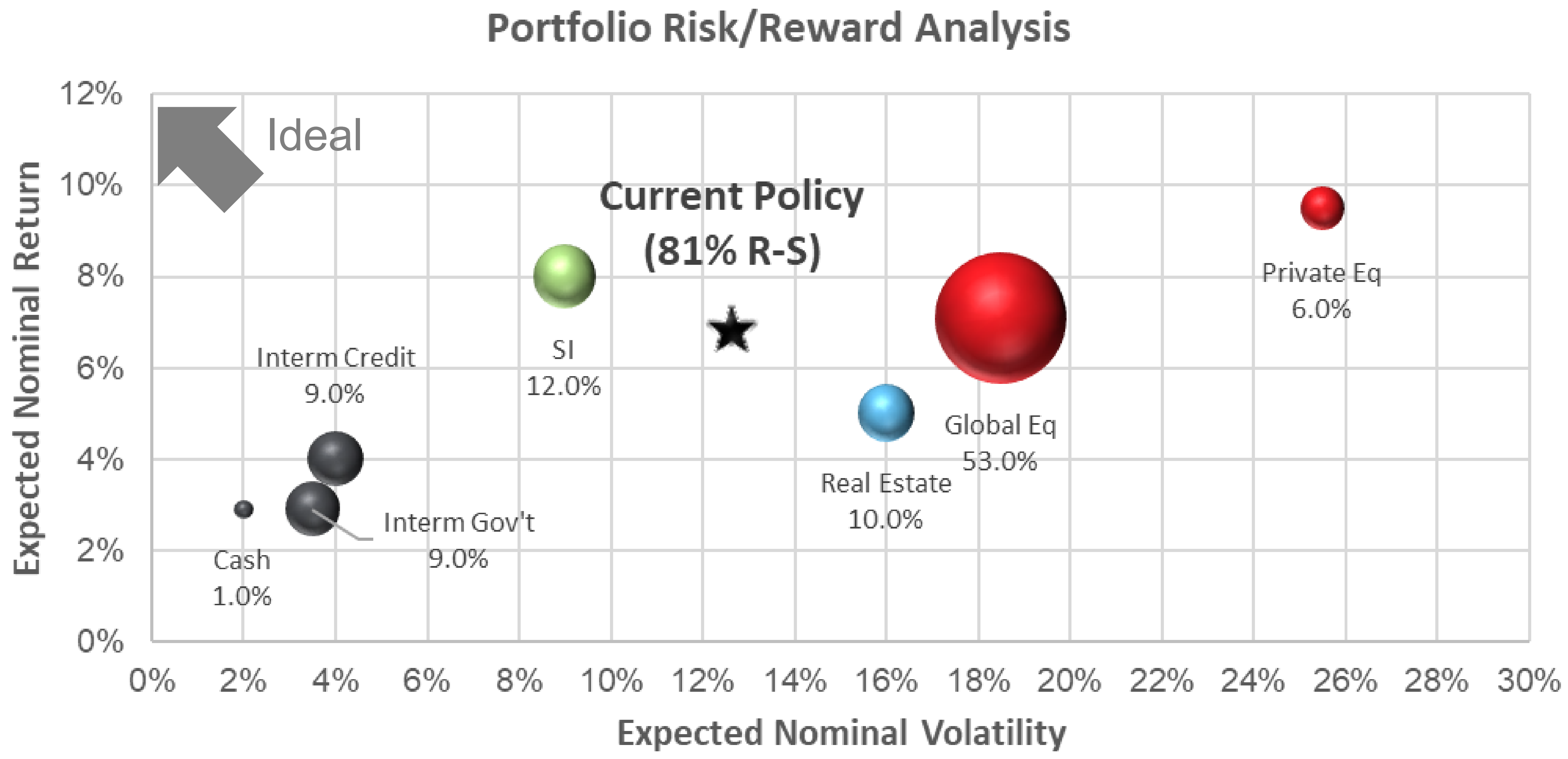
Portfolio Construction

- SBA Portfolio Analysis
- Peer Comparison
- Asset-Liability Projection Analysis

AON

SBA Portfolio Analysis | Current Portfolio

Current Diversification Results in an Expected Return of 6.87%[1]



Legend:

Bubble size proportional to current asset allocation (i.e., larger bubbles = larger allocations); Asset classes are color coded:

- Equities (red), **Strategic Investments (green)**, **Real Assets (blue)**, Safety (black)

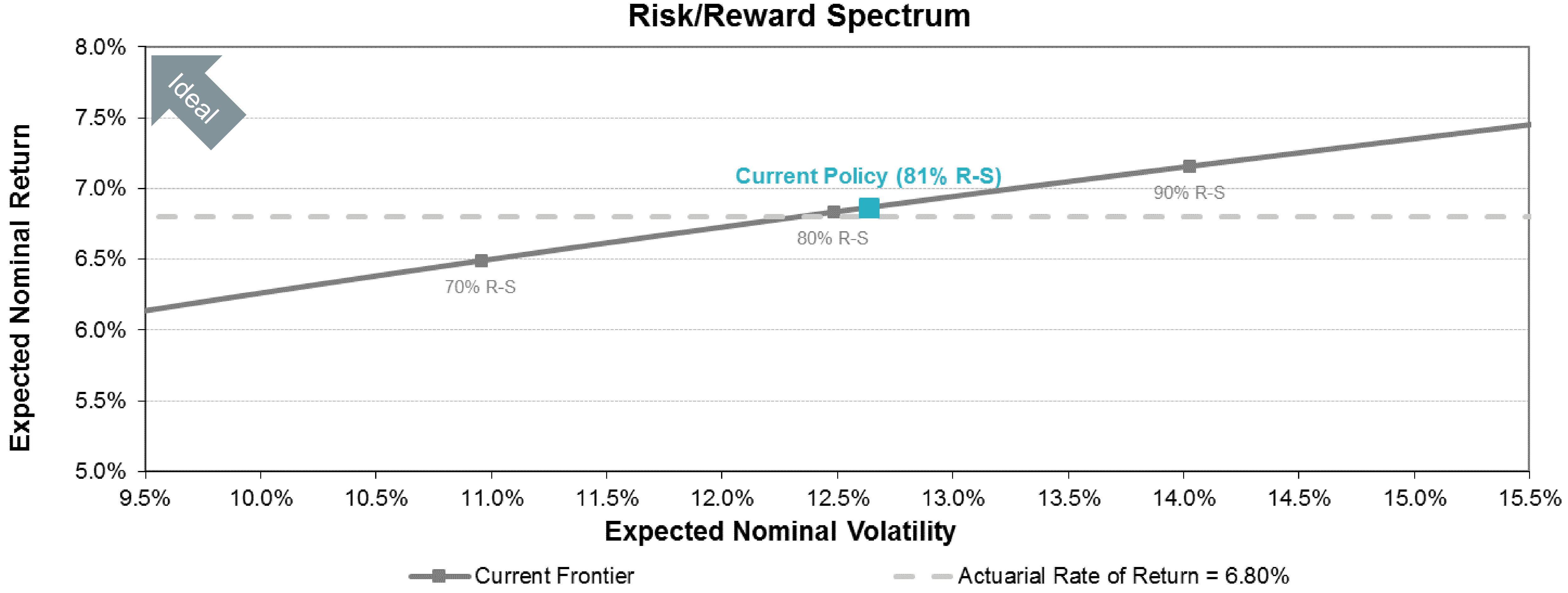
Asset Class – Target %	Expected Real Return[1]	Expected Nominal Return[1]	Expected Nominal Volatility
Equity			
Global Equity – 53%	4.6%	7.1%	18.5%
Fixed Income			
Cash – 1%	0.5%	2.9%	2.0%
Intermediate Gov't Bonds – 9%	0.5%	2.9%	3.5%
Intermediate Corporate Bonds – 9%	1.6%	4.0%	4.0%
Alternatives			
Strategic Investments – 12%	5.5%	8.0%	9.0%
Real Estate – 10%	2.5%	5.0%	16.0%
Private Equity – 6%	6.9%	9.5%	25.5%
Portfolio Metrics (30-Year Assumptions)			
Total Fund[2]	**4.38%**	**6.87%**	**12.64%**

[1] Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs) as of June 30, 2022 adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment), which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

[2] The portfolio's expected return of 6.87% is based upon current policy target weights for each asset class and the asset classes' expected returns and correlations. The portfolio's expected return is subject to change should the current policy targets change and/or the investment objective of an asset class change. Currently, the State Board of Administration (SBA) is performing a structural review of the Strategic Investments asset class and its role in the portfolio. Results of the structural review may lead to a different investment objective for the asset class and/or changes in policy target weights.

SBA Portfolio Analysis

Risk/Reward Spectrum (From 2022 Asset-Liability Study)



Key Takeaways:

- Current portfolio has an expected return of **6.87%**
- The current portfolio is well-diversified
  - Return-seeking assets are broadly diversified
  - Safety asset allocation should withstand stressed markets

Strategy	Expected Nominal Return[1,2]	Expected Nominal Volatility	Sharpe Ratio	Return-Seeking Assets: Public Equity	Return-Seeking Assets: Private Equity	Return-Seeking Assets: Strategic Allocation	Return-Seeking Assets: Real Estate	Risk-Reducing / Safety Assets: Cash	Risk-Reducing / Safety Assets: Interm. Duration Gov't Bonds	Risk-Reducing / Safety Assets: Interm. Duration Credit Bonds
Current Policy (81% R-S)	6.87%	12.64%	0.314	53%	6%	12%	10%	1%	9%	9%
Current Efficient Frontier										
60% Return-Seeking	6.13%	9.45%	0.341	39%	4%	9%	7%	1%	20%	20%
70% Return-Seeking	6.49%	10.95%	0.328	46%	5%	10%	9%	1%	15%	15%
80% Return-Seeking	6.84%	12.48%	0.315	52%	6%	12%	10%	1%	10%	10%
90% Return-Seeking	7.16%	14.03%	0.304	59%	7%	13%	11%	1%	5%	5%
100% Return-Seeking	7.47%	15.58%	0.293	65%	7%	15%	12%	0%	0%	0%

[1] Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs) as of June 30, 2022 adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment), which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

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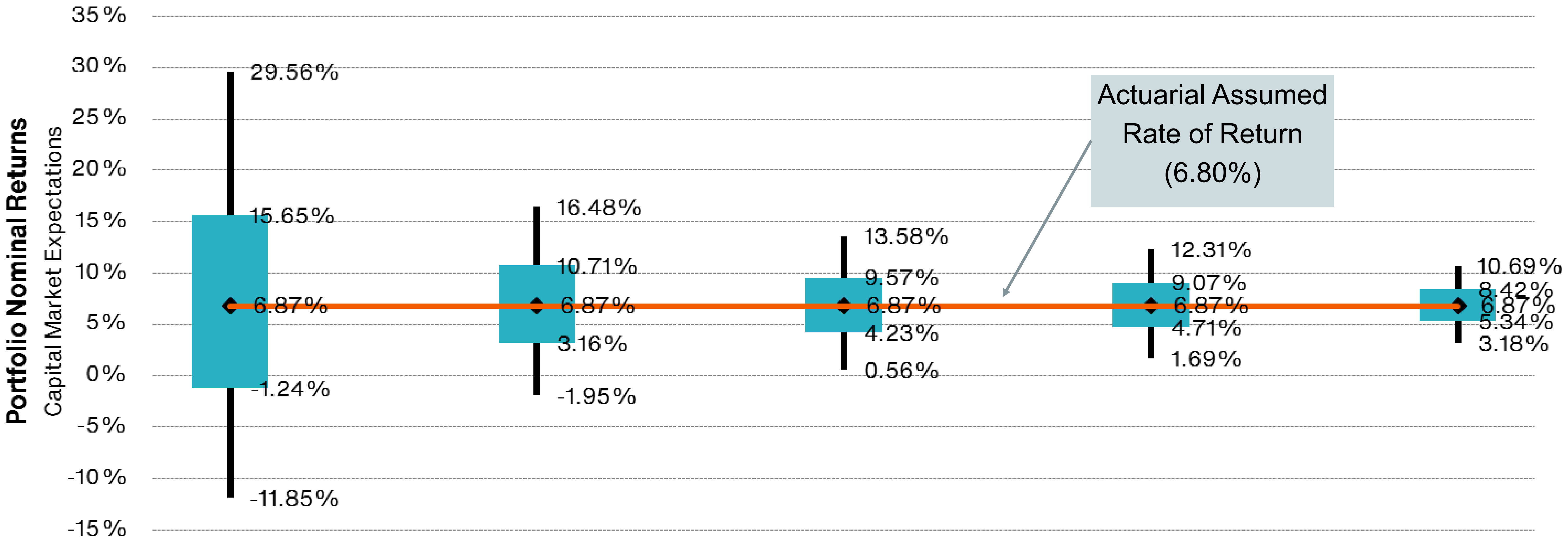
Percentages may not sum to 100% due to rounding.

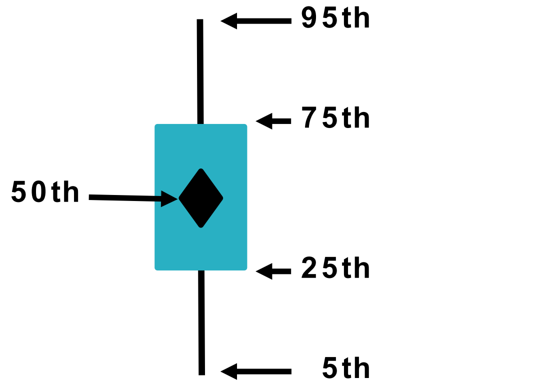
SBA Portfolio Analysis

Range of Nominal Returns[1] (From 2022 Asset-Liability Study)



Percentile	Current Policy – 1 Year	Current Policy – 5 Year	Current Policy – 10 Year	Current Policy – 15 Year	Current Policy – 30 Year
5th	-11.85%	-1.95%	0.56%	1.69%	3.18%
25th	-1.24%	3.26%	4.23%	4.71%	5.34%
50th	6.87%	6.87%	6.87%	6.87%	6.87%
75th	15.65%	10.71%	9.57%	9.07%	8.42%
95th	29.56%	16.48%	13.58%	12.31%	10.69%

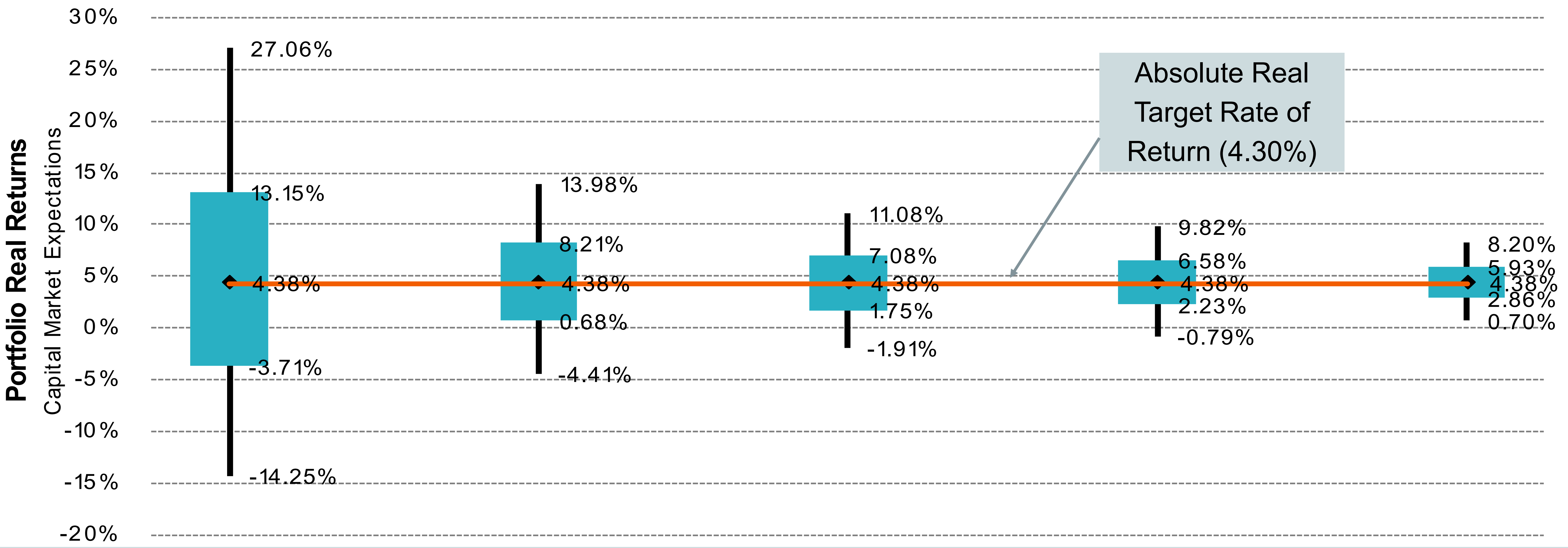
Legend: Distribution of Outcomes



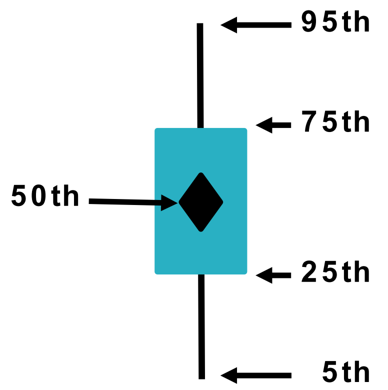
[1] Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs) as of June 30, 2022 adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment), which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

SBA Portfolio Analysis

Range of Real Returns[1] (From 2022 Asset-Liability Study)



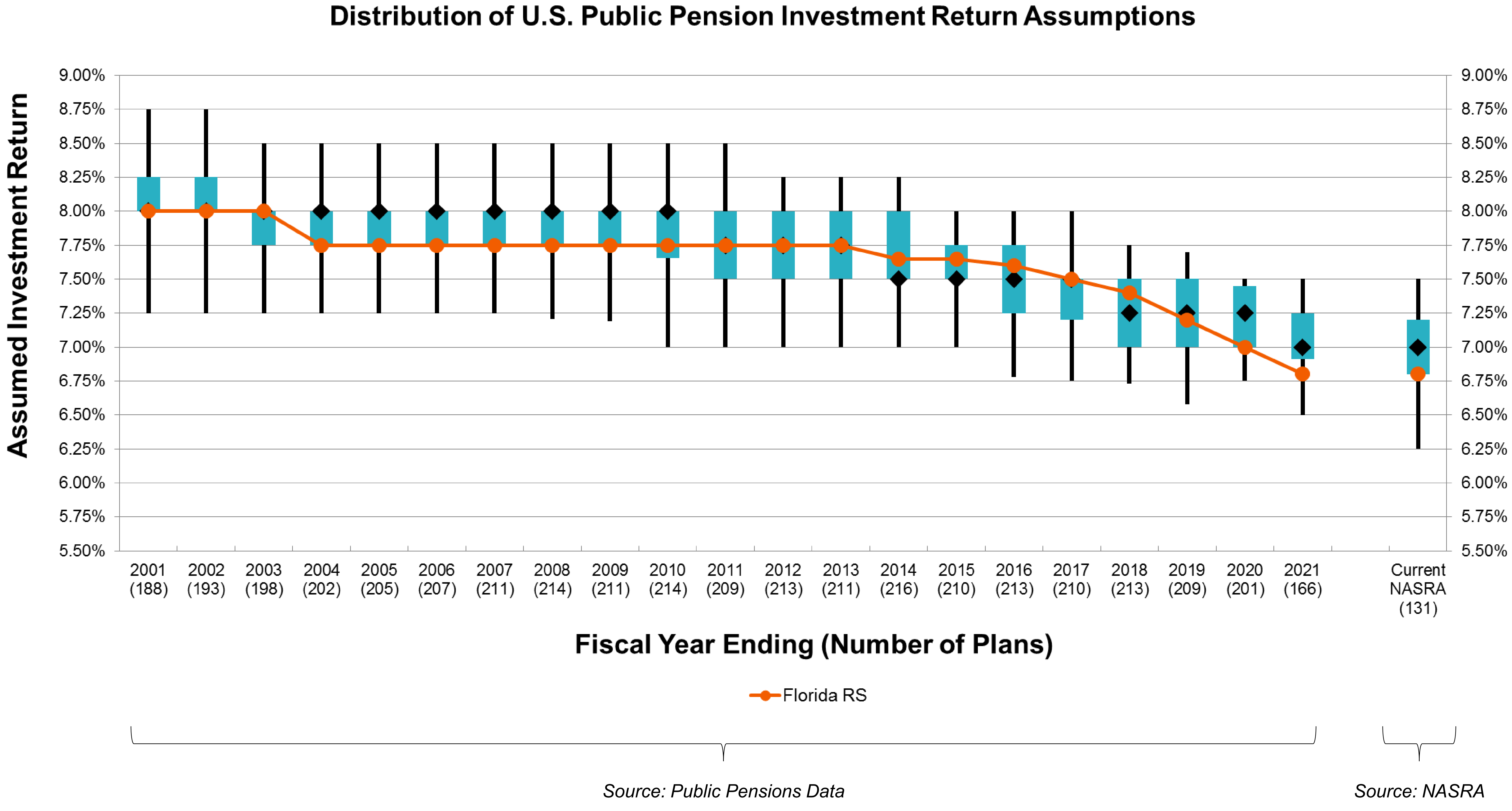
Percentile	Current Policy – 1 Year	Current Policy – 5 Year	Current Policy – 10 Year	Current Policy – 15 Year	Current Policy – 30 Year
5th	-14.25%	-4.41%	-1.91%	-0.79%	0.70%
25th	-3.71%	0.68%	1.75%	2.23%	2.86%
50th	4.38%	4.38%	4.38%	4.38%	4.38%
75th	13.15%	8.21%	7.08%	6.58%	5.93%
95th	27.06%	13.98%	11.08%	9.82%	8.20%



[1] Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs) as of June 30, 2022 adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment), which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

Peer Comparison

Expected Return Assumption versus Peers[1]



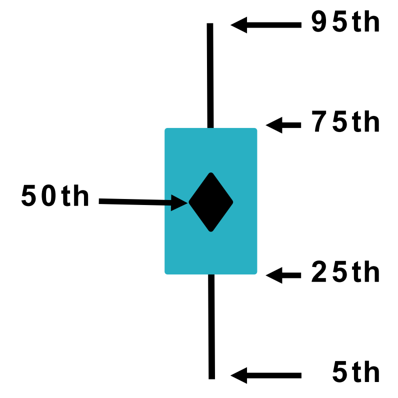
Sources: Public Plans Data (publicplansdata.org) as of July 2022; NASRA downloadable investment return assumptions as of July 2022

[1] Peers defined as public funds published within publicplansdata.org as of July 2022; Number of plans per year are shown in parentheses

Key Takeaways:

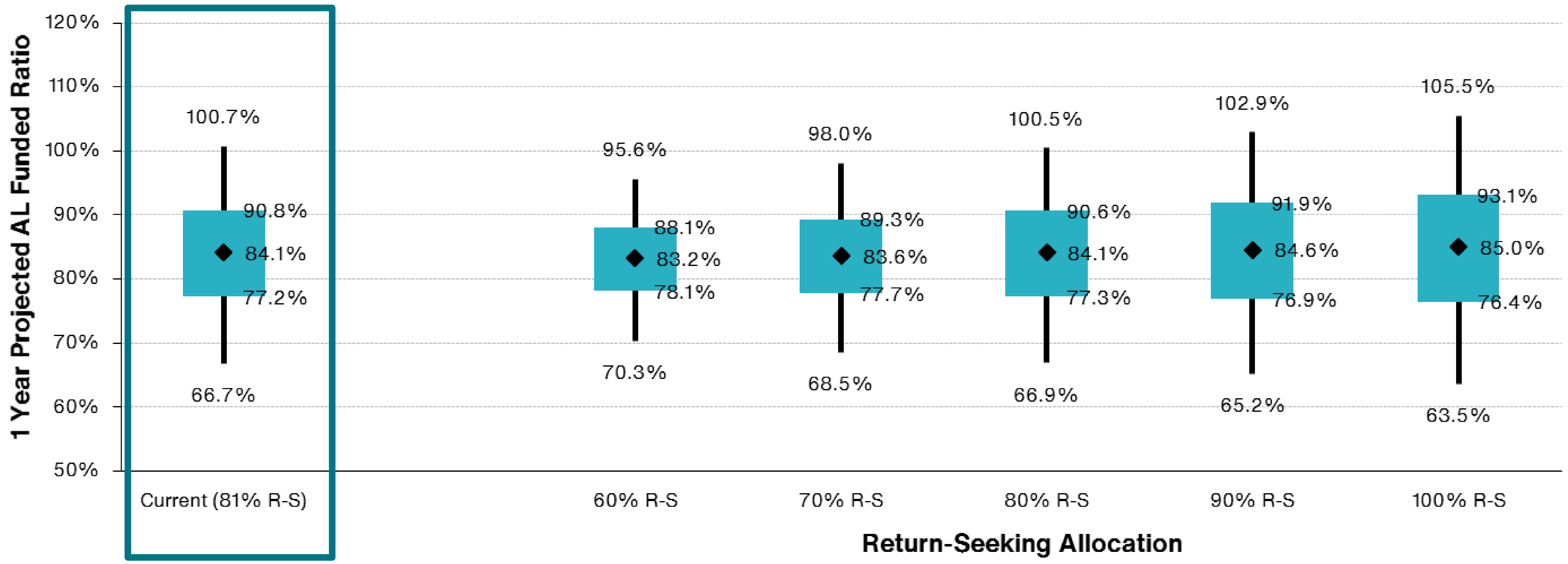
- The historical actuarial assumption trend for investment returns has declined from an 8.00% median in FYE 2001-2010 to 7.00% as of FYE 2021, per Public Plans Data[1]
- Current actuarial assumptions, as tracked by NASRA as of July 2022, have a median actuarial assumption of 7.00%

Legend: Distribution of Outcomes



Asset-Liability Projection Analysis

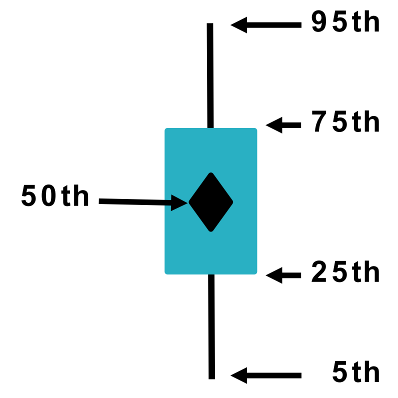
Short-Term (1 Year) | Market Value of Assets / Actuarial Liability Funded Ratio



Key Takeaways:

- Higher risk portfolios are projected to have both more upside and downside potential over a short time horizon (1 year in this exhibit)
- Similarly, lower risk portfolios will have a narrower range of potential outcomes

Legend: Distribution of Outcomes

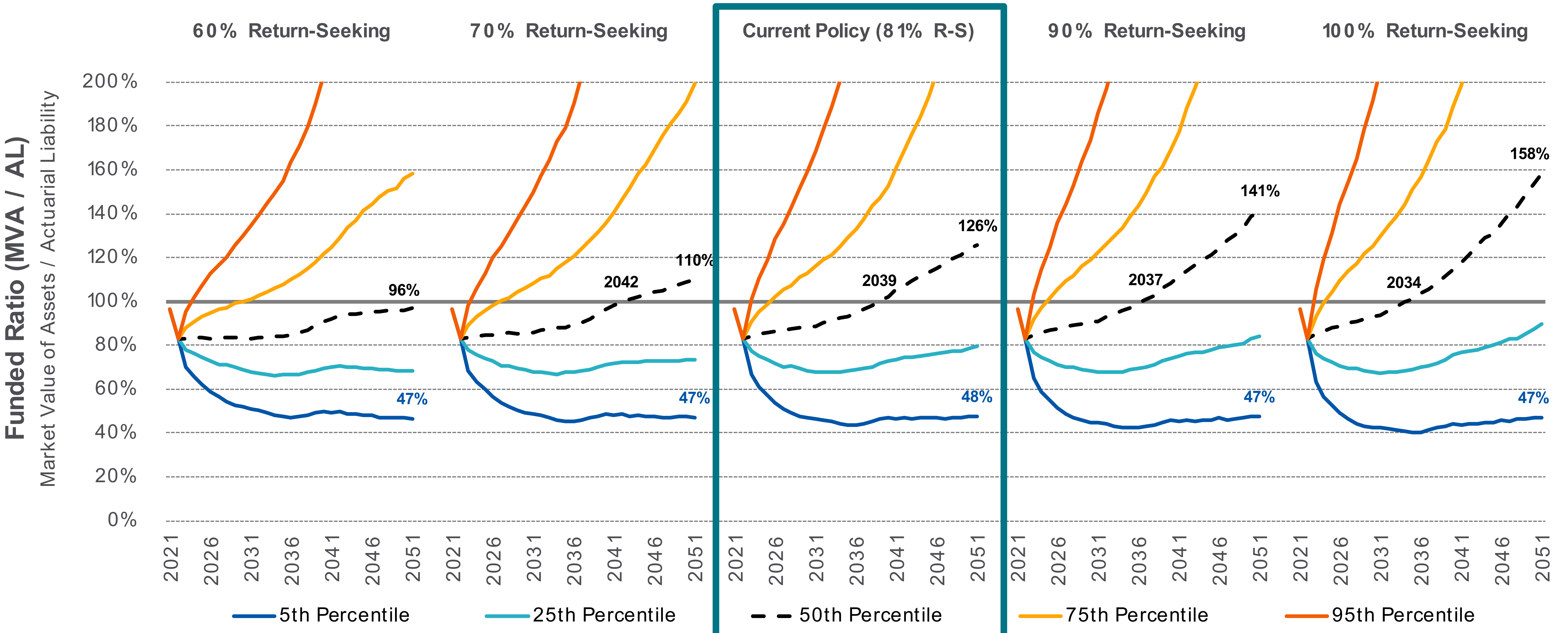


* Projections assume constant 6.80% discount rate for pension liabilities for all investment policies studied

AON

Asset-Liability Projection Analysis

Long-Term | Market Value of Assets / Actuarial Liability Funded Ratio



Strategy	60% Return-Seeking			70% Return-Seeking			Current Policy (81% R-S)			90% Return-Seeking			100% Return-Seeking		
Year	2031	2041	2051	2031	2041	2051	2031	2041	2051	2031	2041	2051	2031	2041	2051
5th Percentile	51%	49%	47%	49%	48%	47%	47%	47%	48%	45%	45%	47%	43%	44%	47%
25th Percentile	68%	70%	68%	68%	72%	74%	68%	74%	79%	68%	75%	84%	67%	77%	89%
50th Percentile	83%	92%	97%	86%	98%	110%	89%	105%	126%	91%	111%	141%	94%	118%	158%
75th Percentile	101%	125%	159%	108%	140%	199%	116%	160%	>200%	122%	178%	>200%	130%	199%	>200%
95th Percentile	135%	>200%	>200%	150%	>200%	>200%	169%	>200%	>200%	186%	>200%	>200%	>200%	>200%	>200%

* Projections assume constant 6.80% discount rate for pension liabilities for all investment policies studied

Key Takeaways:

- Under the Current Policy (81% R-S), the funded ratio is expected to decrease with FYE 2022 performance, then increase over the projection period in the central expectation (50th percentile outcome)
- Higher return-seeking allocations will increase the central trendline of funded ratio faster, albeit with more volatility
- Downside risk (5th percentile outcomes) illustrates a small likelihood of significant funded ratio deterioration over the projection period

4

Conclusions

Conclusions

Assumptions

SBA uses an averaging approach to reduce the bias of any one firm's capital market assumptions

Using the SBA approach, averaging the equity risk premiums from three consulting firms, the expected return on pension assets from the 2022 asset-liability study was 6.87%

Aon's assumptions tend to be middle of the pack relative to other investment advisors in the Horizon Survey, with a few minor exceptions

Portfolio Construction

The current portfolio is well-diversified; return-seeking assets are broadly diversified while safety/risk-reducing assets should withstand stressed markets

FRS' assumption for FYE 2021 (6.80%) was below the median (7.00%) relative to its peers; using NASRA's assumptions as of July 2022, the median return assumption remains 7.00%

5
Appendix

Asset-Liability Management Overview

What is an Asset-Liability Study?

What?

A comprehensive toolkit for making decisions on a fund's asset allocation and investment risk that align with the liabilities those funds support

Why?

Aon believes optimal decisions regarding pension plan management are made when they are based on a clear understanding of the assets and liabilities and how they interact

When?

Aon suggests conducting asset-liability studies every 3 to 5 years depending on client specifics, or more frequently should circumstances dictate

How?

Identify future trends in the financial health of the fund based on economic uncertainties that may not be evident from an actuarial valuation

Portfolio Construction | SBA Portfolio Analysis

Rationale for Diversification | Variability in Top Performing Asset Classes

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
SI Investments 28.9	Global Equity 31.0	Real Estate 12.8	Global Equity 18.6	Global Equity 23.5	Private Equity 14.6	Real Estate 12.7	Global Equity 19.7	Private Equity 17.3	Private Equity 16.0	Fixed Income 6.8	Private Equity 68.5	Private Equity 24.2
Private Equity 21.5	Total Fund 22.1	Fixed Income 7.8	SI Investments 16.2	Private Equity 19.9	Real Estate 11.9	Private Equity 6.2	Private Equity 18.3	Global Equity 11.6	Real Estate 7.1	Private Equity 3.4	Global Equity 41.8	Real Estate 22.4
Global Equity 15.2	SI Investments 19.2	Private Equity 6.8	Real Estate 14.9	Total Fund 17.4	SI Investments 6.8	Fixed Income 4.3	Total Fund 13.8	Total Fund 9.0	Fixed Income 6.8	Total Fund 3.1	Total Fund 29.5	SI Investments 7.8
Fixed Income 14.9	Real Estate 18.4	SI Investments 3.7	Total Fund 13.1	Real Estate 14.9	Total Fund 3.7	SI Investments 1.8	SI Investments 9.9	SI Investments 7.8	Total Fund 6.3	Global Equity 2.1	SI Investments 17.2	Cash 0.2
Total Fund 14.0	Private Equity 18.0	Total Fund 0.3	Private Equity 10.7	SI Investments 13.2	Fixed Income 2.0	Total Fund 0.5	Real Estate 8.7	Real Estate 7.2	SI Investments 5.2	Real Estate 1.6	Real Estate 8.6	Total Fund -6.3
Cash 2.0	Fixed Income 6.1	Cash 0.3	Fixed Income 0.4	Fixed Income 3.8	Global Equity 1.9	Cash 0.3	Cash 0.6	Cash 1.4	Global Equity 5.0	Cash 1.5	Fixed Income 0.9	Fixed Income -8.0
Real Estate -10.2	Cash 0.4	Global Equity -5.1	Cash 0.3	Cash 0.2	Cash 0.2	Global Equity -3.1	Fixed Income 0.3	Fixed Income -0.2	Cash 2.3	SI Investments 0.0	Cash 0.1	Global Equity -17.1

Ultimate Retirement Benefit Cost Equation

The cost ultimately borne by the Plan will be represented by the financing equation shown below:

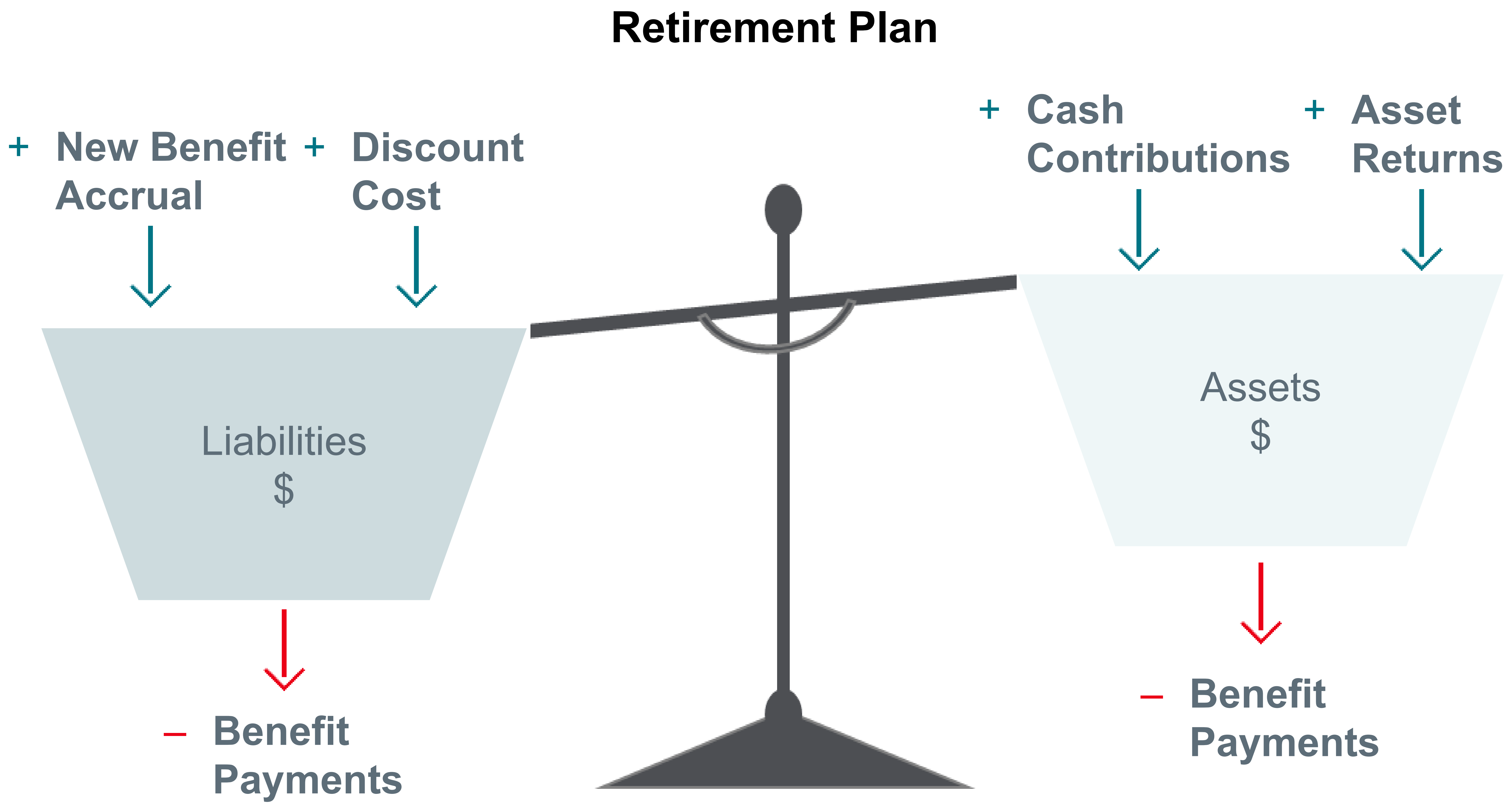
Ultimate Plan Cost = (Benefits Paid *plus* Administrative Expenses *less* Investment Returns *less* Employee Contributions)

The asset-liability study will analyze the variability of future investment returns on the Plan financials

Higher than expected returns will result in lower future Plan costs

Lower than expected returns will result in higher future Plan costs

Balance of Liabilities and Assets



Key Takeaways:

Plan Liabilities will grow in two ways:

- New benefit accruals (or Normal Cost)
- One less year of interest discounting (or Discount Cost)

Assets will grow in two ways:

- Cash Contributions to the Plan
- Asset Returns

Both liabilities and assets will be reduced by benefits paid to participants

Aon’s Capital Market Assumptions
Background

Long-term (10- and 30-year forecasts) forward-looking assumptions (asset class geometric return, volatility, and correlations)

Building Block approach, primarily based on consensus expectations and market-based inputs

Best estimates of annualized returns (50/50 better or worse)

Market returns: no active management value added (except for certain assets classes, such as hedge funds)

Net of investment fees

Updated quarterly

We show Aon’s long-term (i.e., 30-year) capital market assumptions throughout this material

Custom FRS Capital Market Assumptions

As of June 30, 2022 (30 Years)

		Expected Real Return[1]	Expected Nominal Return[1]	Expected Nominal Volatility
	Equity			
1	Global Equity IMI	4.6%	7.1%	18.5%
	Fixed Income			
2	Cash (Gov't)	0.5%	2.9%	2.0%
3	Intermediate Gov't Bonds (4-Year Duration)	0.5%	2.9%	3.5%
4	Intermediate Corporate Bonds (4-Year Duration)	1.6%	4.0%	4.0%
	Alternatives			
5	Strategic (Custom)[2]	5.5%	8.0%	9.0%
6	Real Estate (Custom)[3]	2.5%	5.0%	16.0%
7	Private Equity	6.9%	9.5%	25.5%
	Inflation			
8	Inflation	0.0%	2.4%	2.0%

[1] Expected returns are using Aon Investments Q3 2022 30-Year Capital Market Assumptions adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment). Assumptions do not include fees/expenses. All expected returns are geometric (long-term compounded; rounded to the nearest decimal) and net of investment fees. Expected returns presented are models and do not represent the returns of an actual client account. Not a guarantee of future results.

[2] Strategic assumption breakdown is found on the next page

[3] Real Estate assumption was modeled as follows:

- 76.5% Core Real Estate
- 13.5% Non-Core Real Estate
- 10.0% REITs

FRS Capital Market Assumptions – Strategic Investment Allocation

As of June 30, 2022

The Strategic Investment allocation was modeled as follows, per Staff input:

Strategic Investment Allocation	% of Total Asset Allocation	% of Strategic Investment
Commodities	0.38%	3.21%
Global Public Equities	1.05%	8.77%
Hedge Funds - Buy List (Diversified Portfolio of Direct HFs)	1.67%	13.94%
Hedge Funds - CTAs (Buy List)	0.99%	8.27%
Hedge Funds - Distressed Debt (Buy List)	0.45%	3.78%
Hedge Funds - Equity Long/Short (Buy List)	0.27%	2.23%
Hedge Funds - Event Driven (Buy List)	0.14%	1.15%
Hedge Funds - Global Macro (Buy List)	0.24%	2.02%
Infrastructure	1.29%	10.75%
Insurance-Linked Securities (Catastrophe Bonds)	0.57%	4.76%
Non-Core Real Estate	0.33%	2.77%
Private Debt - Commercial Mortgages	0.33%	2.77%
Private Debt - Direct Lending	0.86%	7.20%
Private Equity	0.88%	7.32%
Private Equity - Distressed Debt	1.41%	11.74%
Private Equity - Mezzanine	0.78%	6.52%
Timberland	0.34%	2.81%
Total	12.00%	100.00%

Aon’s Capital Market Assumptions
As of June 30, 2022

	Nominal Correlations	1	2	3	4	5	6	7	8
1	Global Equity IMI	**1.00**	0.06	-0.08	0.05	0.87	0.44	0.63	0.08
2	Cash (Gov't)	0.06	**1.00**	0.55	0.43	0.08	0.13	0.07	0.29
3	Intermediate Gov't Bonds (4-Year Duration)	-0.08	0.55	**1.00**	0.80	-0.10	0.01	-0.06	0.01
4	Intermediate Corporate Bonds (4-Year Duration)	0.05	0.43	0.80	**1.00**	0.15	0.06	0.05	0.00
5	Strategic (Custom)	0.87	0.08	-0.10	0.15	**1.00**	0.47	0.71	0.11
6	Real Estate (Custom)	0.44	0.13	0.01	0.06	0.47	**1.00**	0.36	0.07
7	Private Equity	0.63	0.07	-0.06	0.05	0.71	0.36	**1.00**	0.06
8	Inflation	0.08	0.29	0.01	0.00	0.11	0.07	0.06	**1.00**

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Aon Investments USA Inc.
200 E. Randolph Street
Suite 700
Chicago, IL 60601
ATTN: Aon Investments Compliance Officer

State Board of Administration

FRS Pension Plan Review

Actuarial Assumptions Estimating Conference

October 20, 2022

Executive Summary

- Rising interest rates in response to the highest inflation rate in 40 years have significantly impacted valuations in both public equities and fixed income markets, resulting in lower performance for the FRS Pension Plan in 2022
- Funded status appears will remain flat given significant positive performance in 2021; Florida's Pension Plan remains healthy at over 80% funded
- Structural challenges continue to impact the plan
  - Participant growth is slowing significantly due to change in default plan
  - Plan now has more annuitants than active members
  - Net negative cash flow is projected to grow from approximately $7 billion today, to over $10 billion by 2033 and over $17 billion by 2045
- Current SBA projected rate of return is 6.87%, but volatility around expected return, combined with path dependency risk, current investment environment and statutory investment constraints support more conservative assumed rate of return assumption than current equity risk premium and capital market assumptions indicate
- Considerations: Increase contributions, reduce amortization period, switch to level dollar amortization

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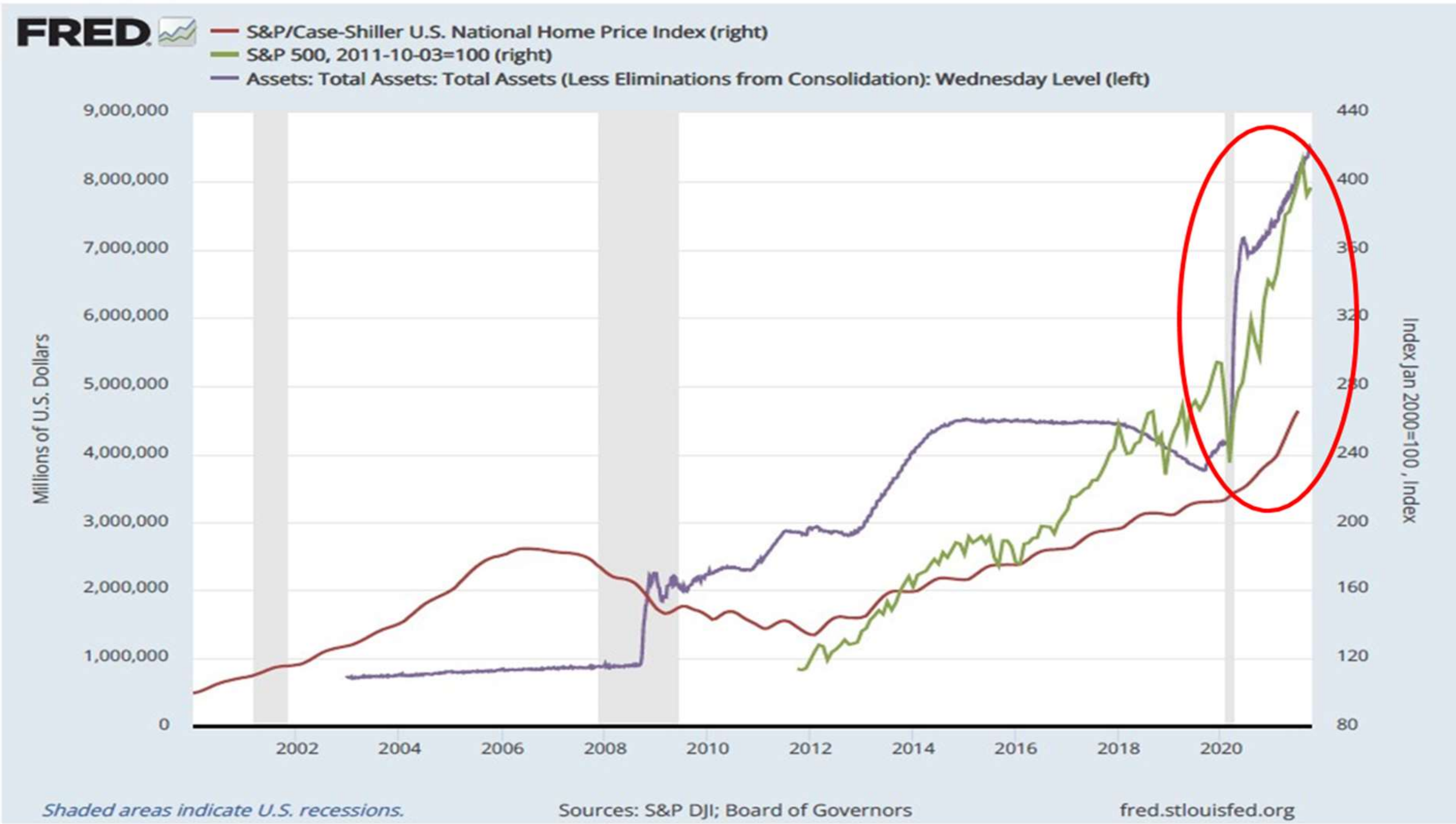
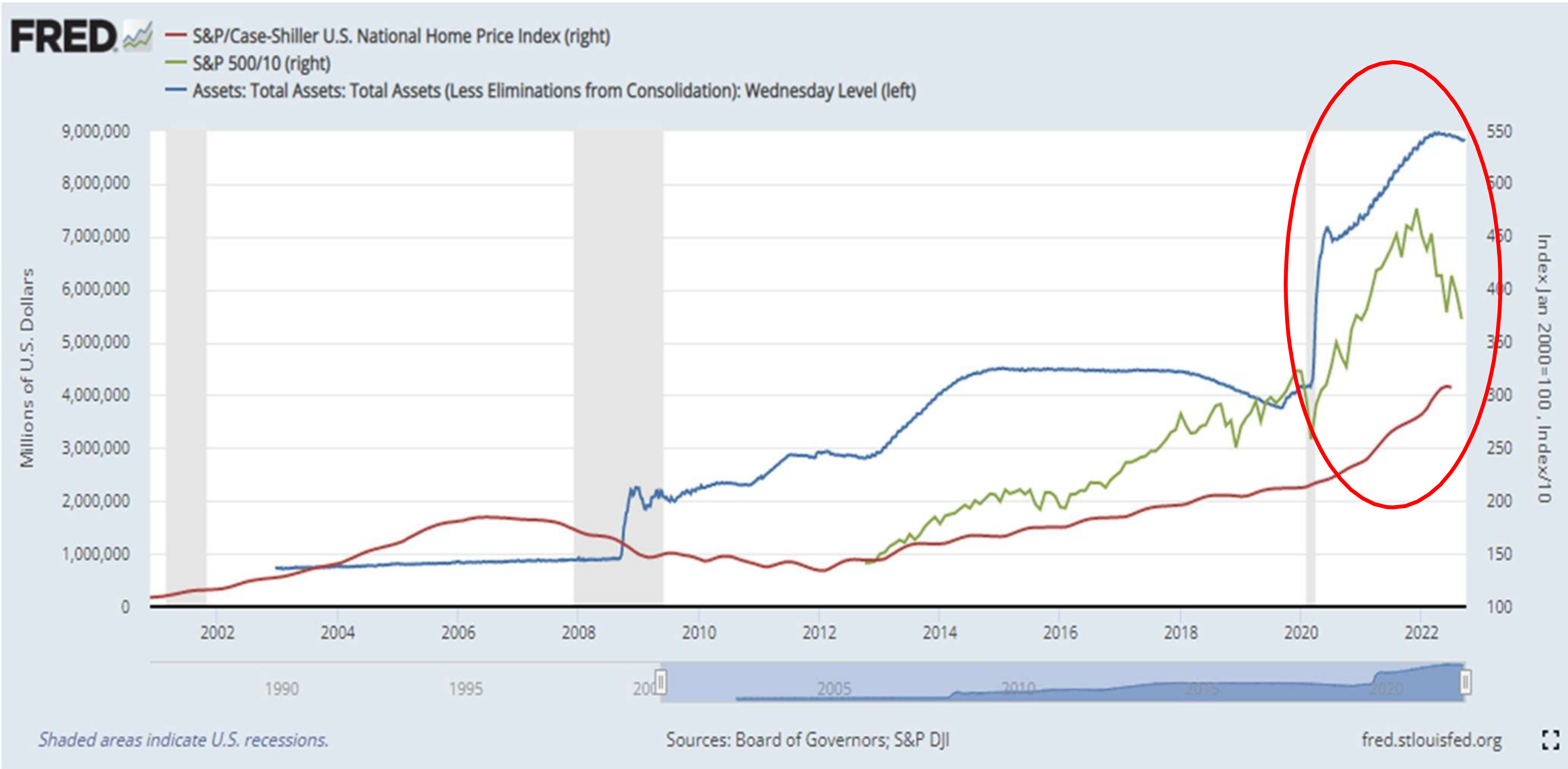
This Time Last Year

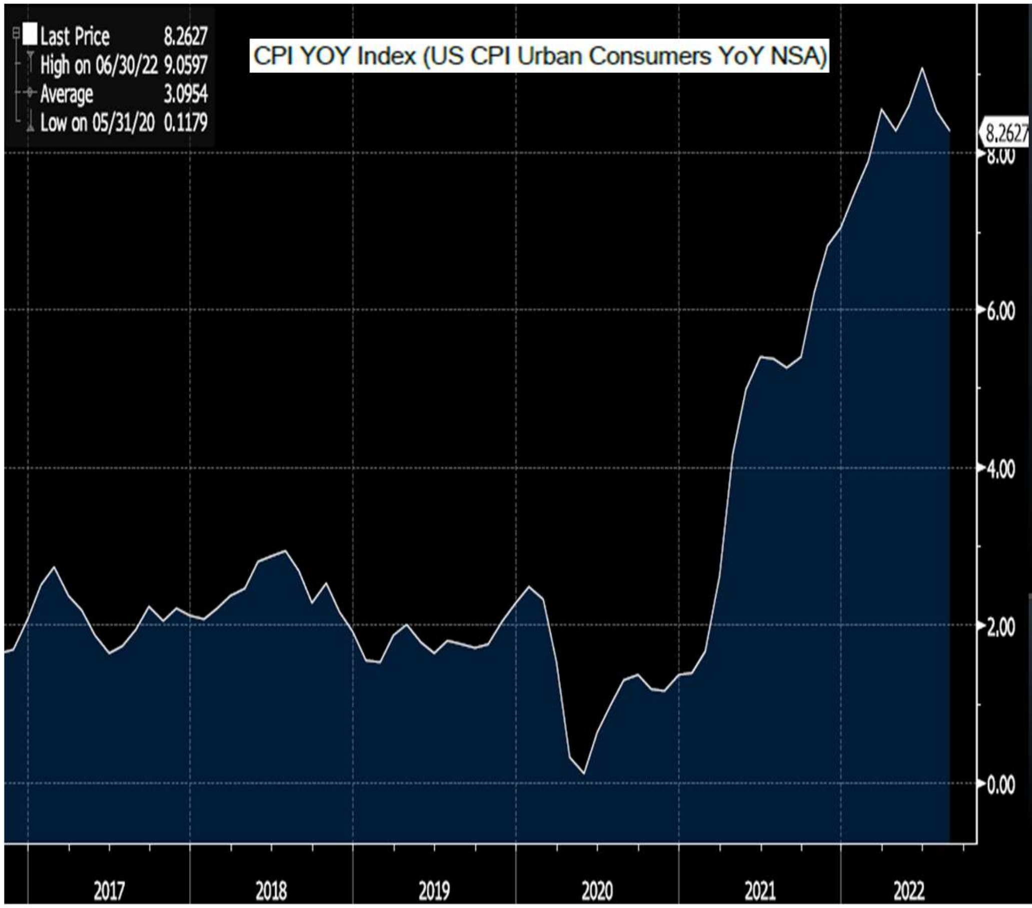


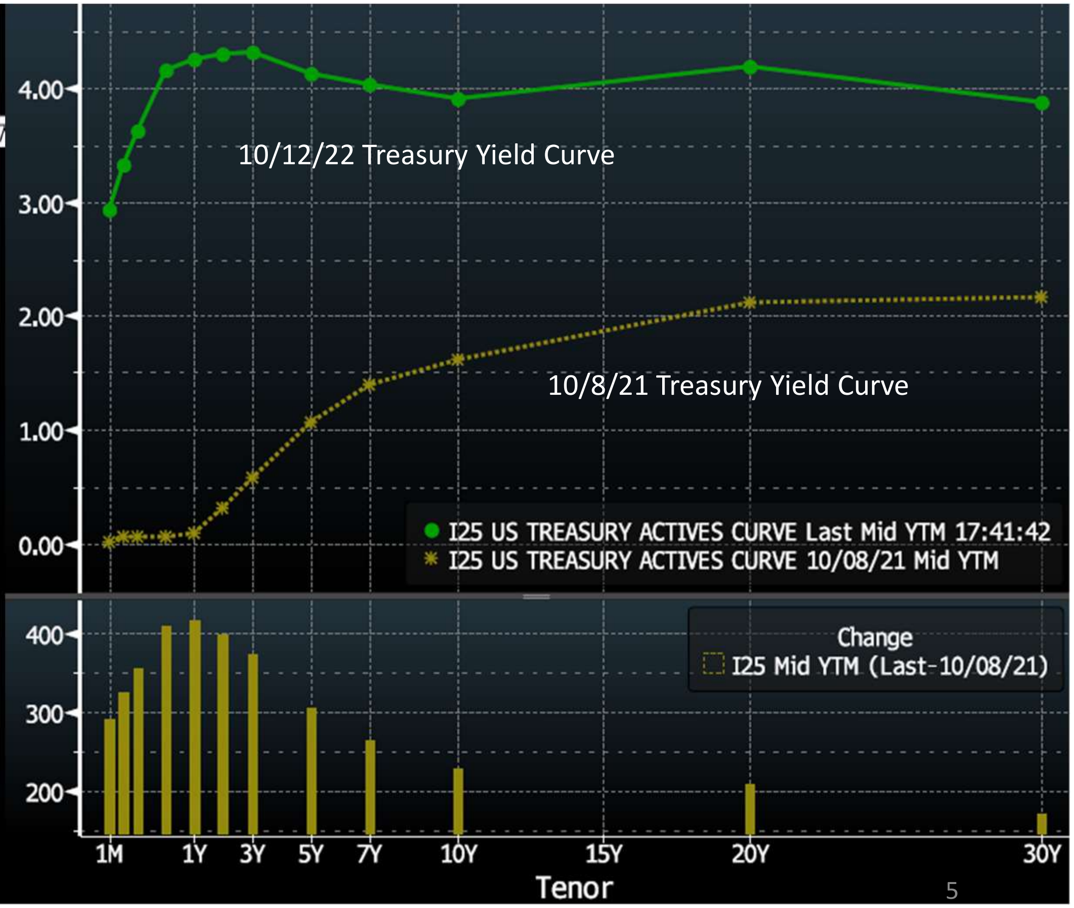
This Is Now



FRED
S&P/Case-Shiller U.S. National Home Price Index (right)
S&P 500/10 (right)
Assets: Total Assets: Total Assets (Less Eliminations from Consolidation): Wednesday Level (left)
Millions of U.S. Dollars
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
550
100
Index Jan 2000=100 , Index/10
1990
1995
2005
Shaded areas indicate U.S. recessions.
Sources: Board of Governors; S&P DJI
fred.stlouisfed.org

What Changed?





Bond Math Is Driving Correlations

Bloomberg

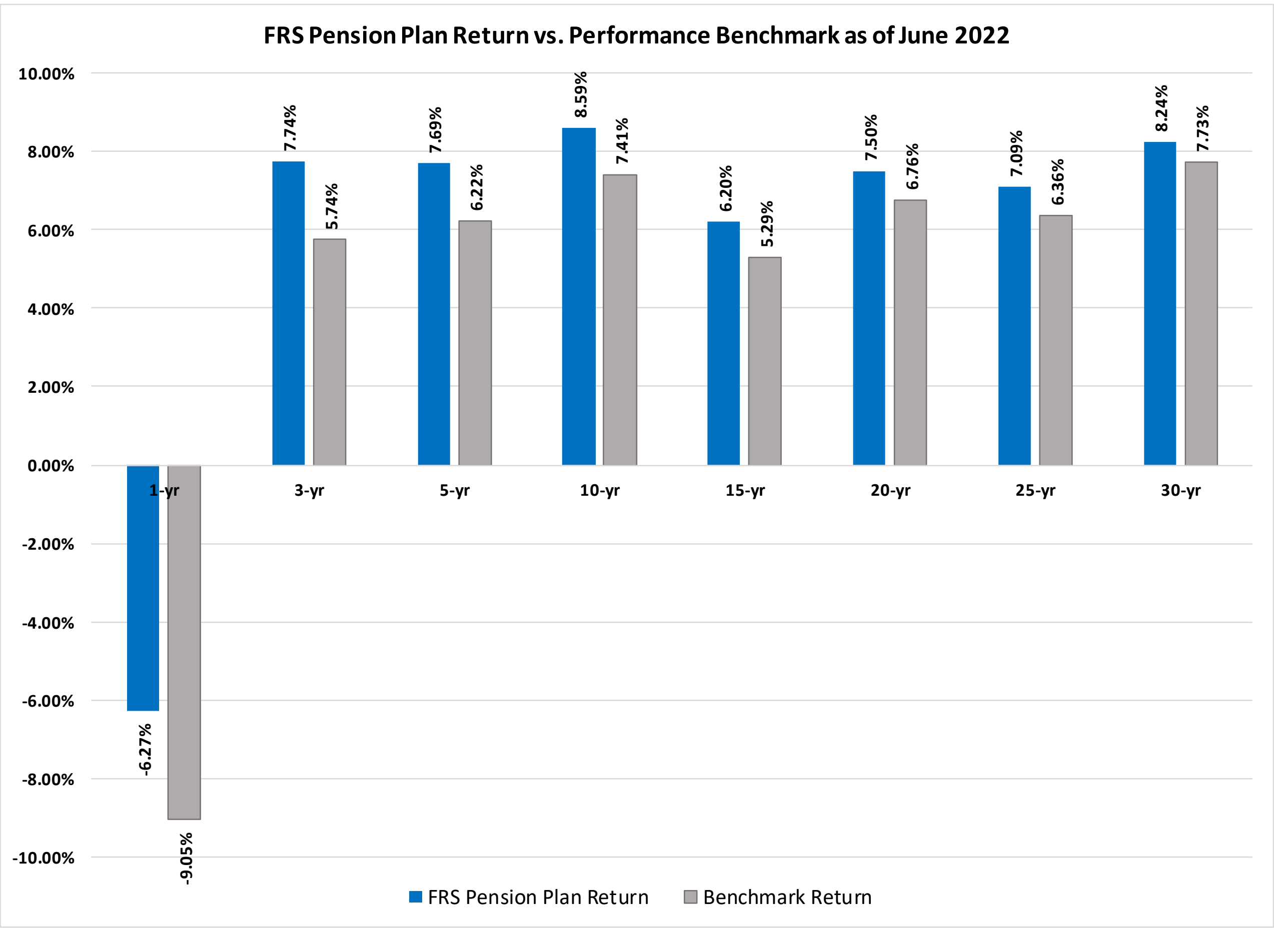
SPX Index (S&P 500 INDEX)
SPX Index (S&P 500 INDEX)
RTY Index (Russell 2000 Index)
MXWD Index (MSCI ACWI Index)

LBUSTRUU Index (Bloomberg US Agg Total Return Value Unhedged USD)

Bloomberg ®Charts

1 - 1

FRS Pension Plan Return vs. Performance Benchmark 2022



- The FRS Pension Plan has outperformed its performance benchmark over all time periods.
- A dramatic rise in inflation, the war in Ukraine and global supply chain shortages have stressed financial markets.
- The Fed's policy to fight inflation and shrink its balance sheet, even at the risk of causing a recession, has also contributed to the market downturn.

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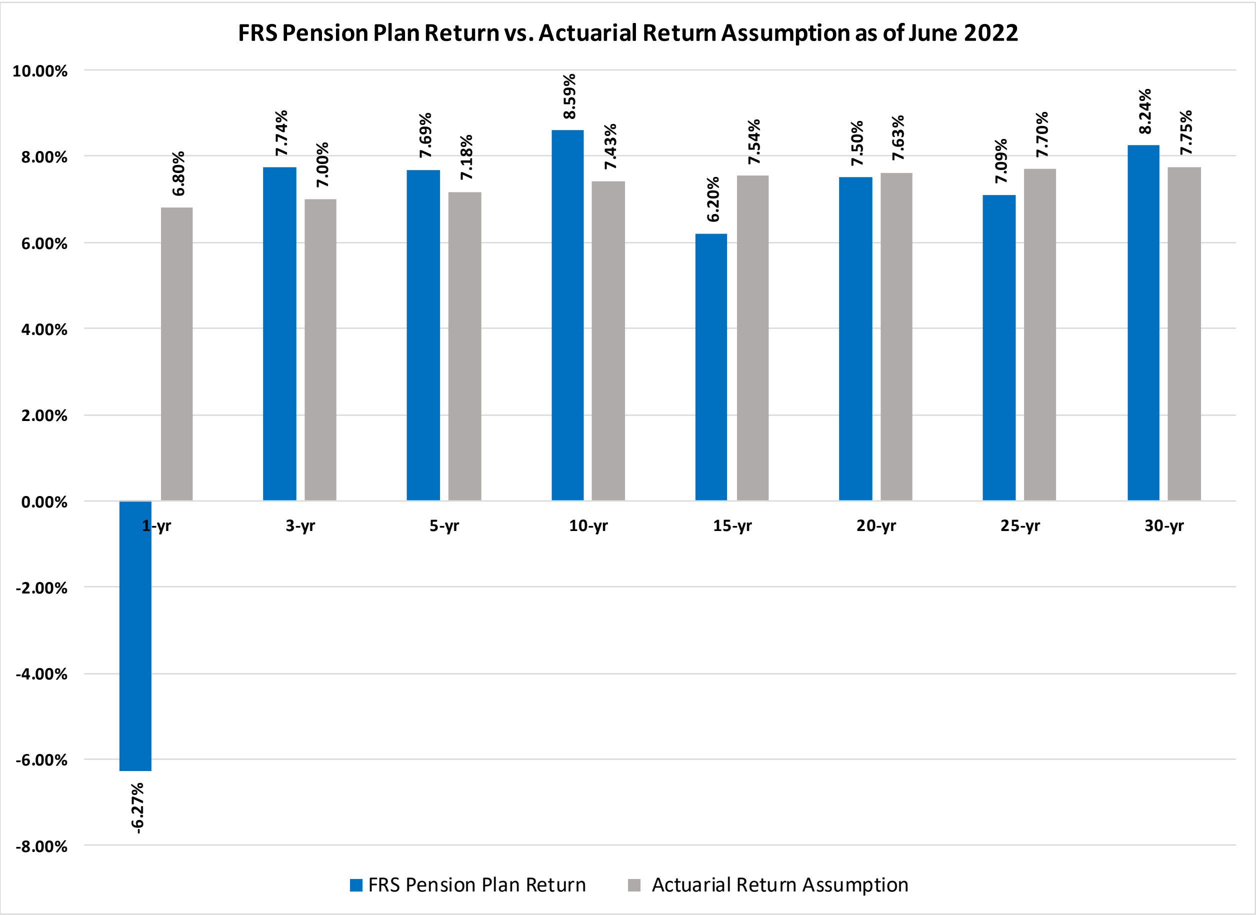
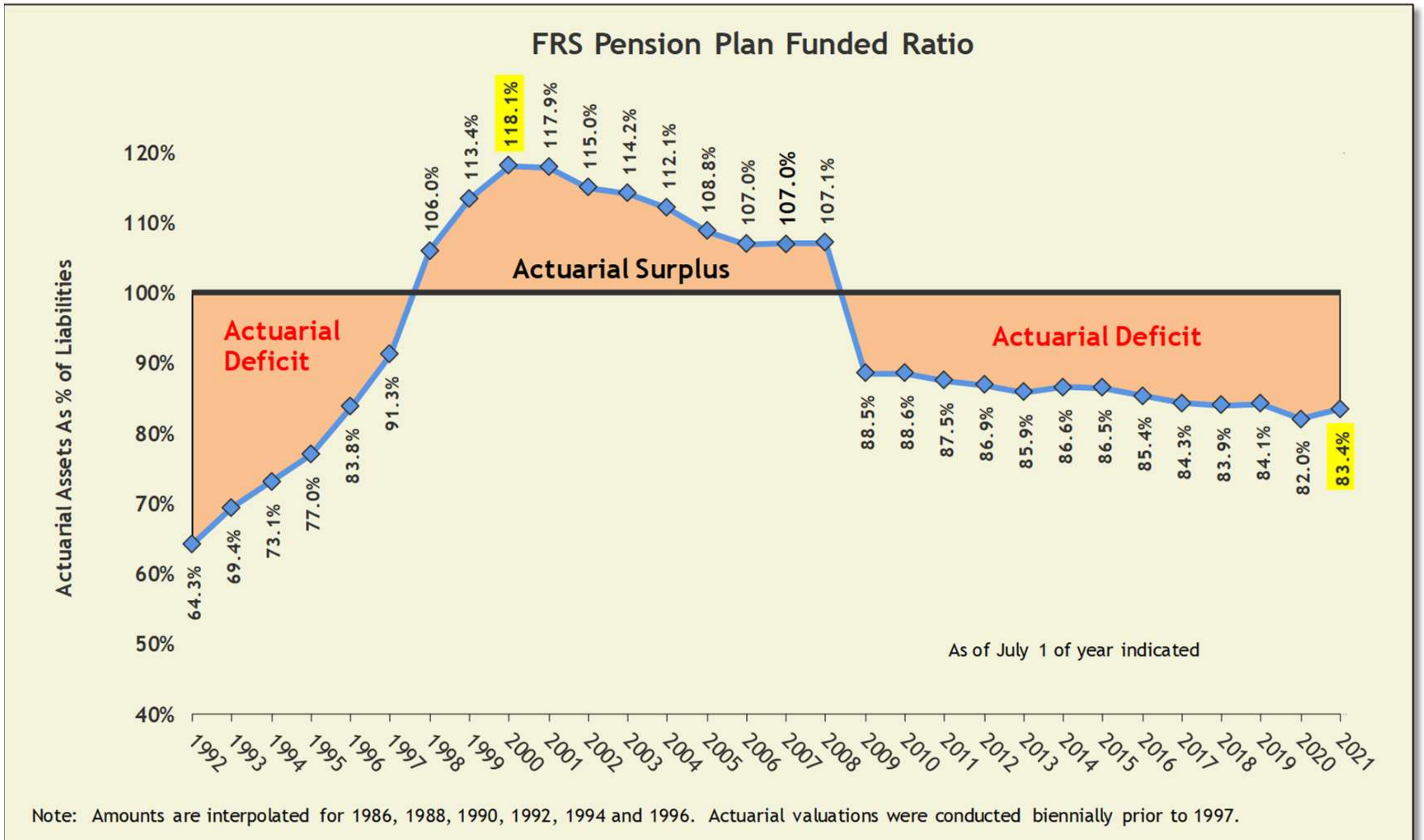
FRS Pension Plan Return vs. Actuarial Return Assumptions



- The FRS Pension Plan has exceeded actuarial return assumptions for the 3, 5, 10 and 30-year time periods.
- Actuarial return assumptions are long-term projections, so short-term performance comparisons, i.e., less than 10-years, are less relevant.
- SBA is projecting a long-term nominal return assumption of 6.87% based on current equity risk premia and capital market assumptions, but there are reasons to be cautious.

FRS Pension Plan's Funded Status Remains Strong



- The "Global Financial Crisis" that began in 2007 led to marked-to-market asset value declines, creating an unfunded liability.
- The FRS Pension Plan's funded status continues to be in actuarial deficit.

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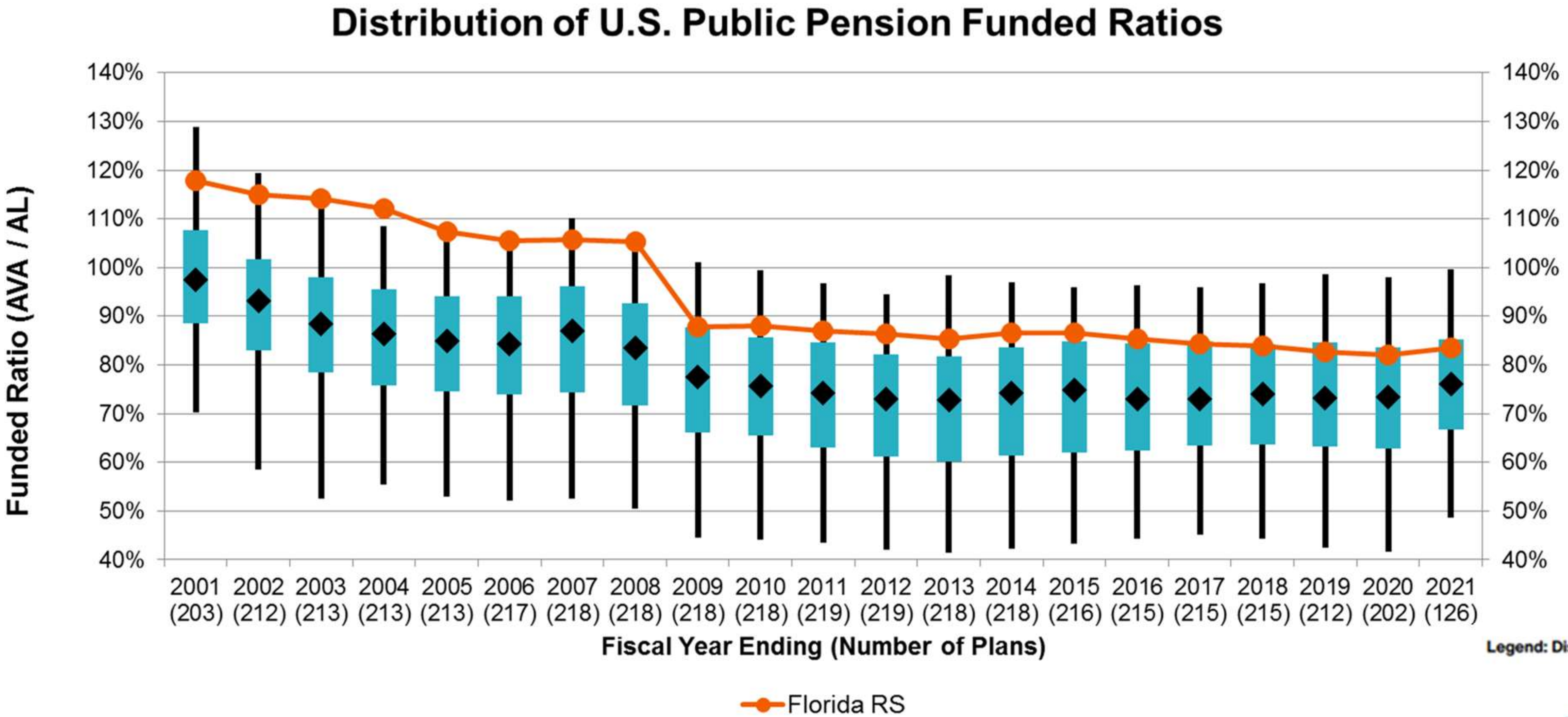
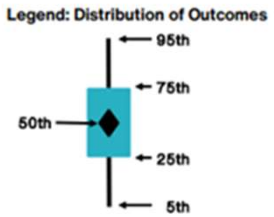
Florida Retirement System Public Plan Peer Comparison Funded Ratio (Based on Actuarial Value of Assets)



- The median funded ratio as of FYE 2021 was 76% based on the latest survey data
- FRS' FYE 2021 funded ratio (83%) fell just below the 75th percentile relative to its peers[1]



Sources: Public Plans Data (publicplansdata.org) as of July 2022

[1]Peers defined as public funds published within publicplansdata.org as of July 2022; Number of plans per year are shown in parentheses

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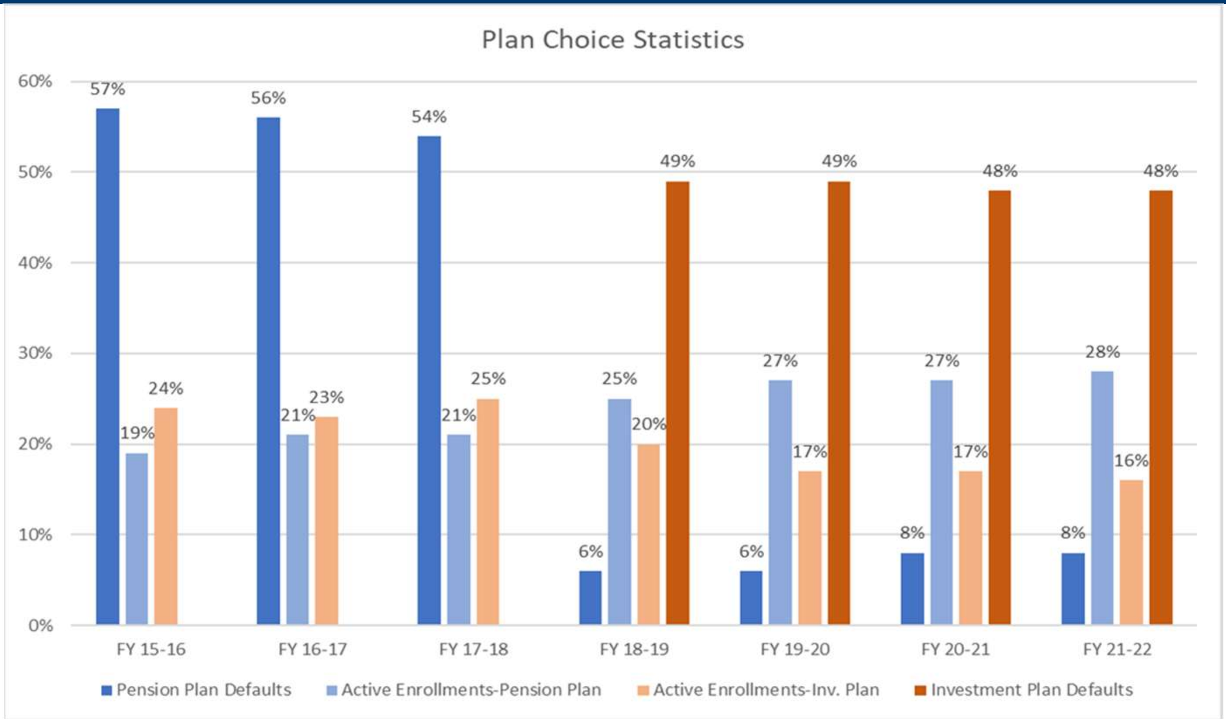
Challenges - Growth in the Investment Plan



- In 2018, the Legislature designated the Investment Plan as the default retirement plan for non-Special Risk new hires

- Approximately two thirds of all new hires either default or elect into the Investment Plan, slowing the growth of contributions into the Pension Plan and reducing its liability duration

Sources: State Board of Administration of Florida

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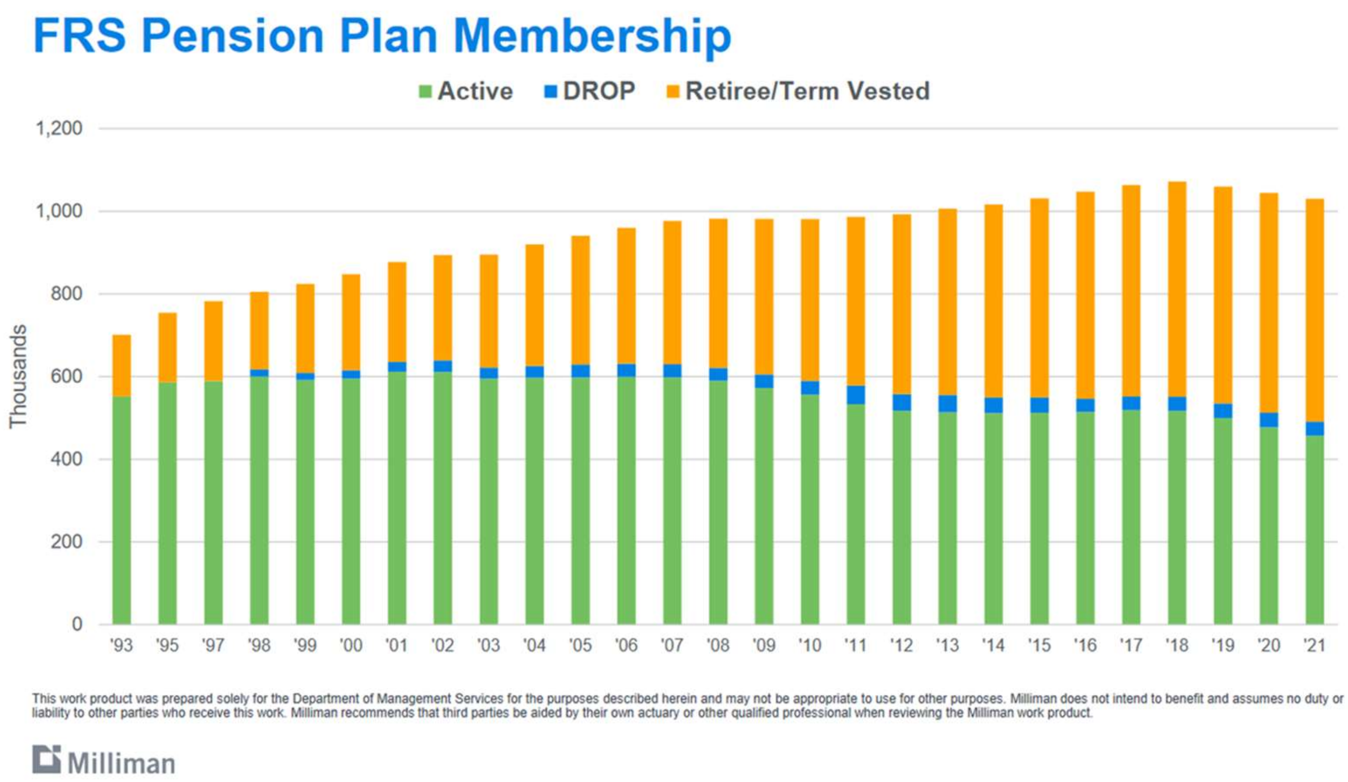
Challenges - Maturity of Pension Plan



- Most recent numbers from Division of Retirement indicate more Pension Plan Retirees than Active Pension Plan Members

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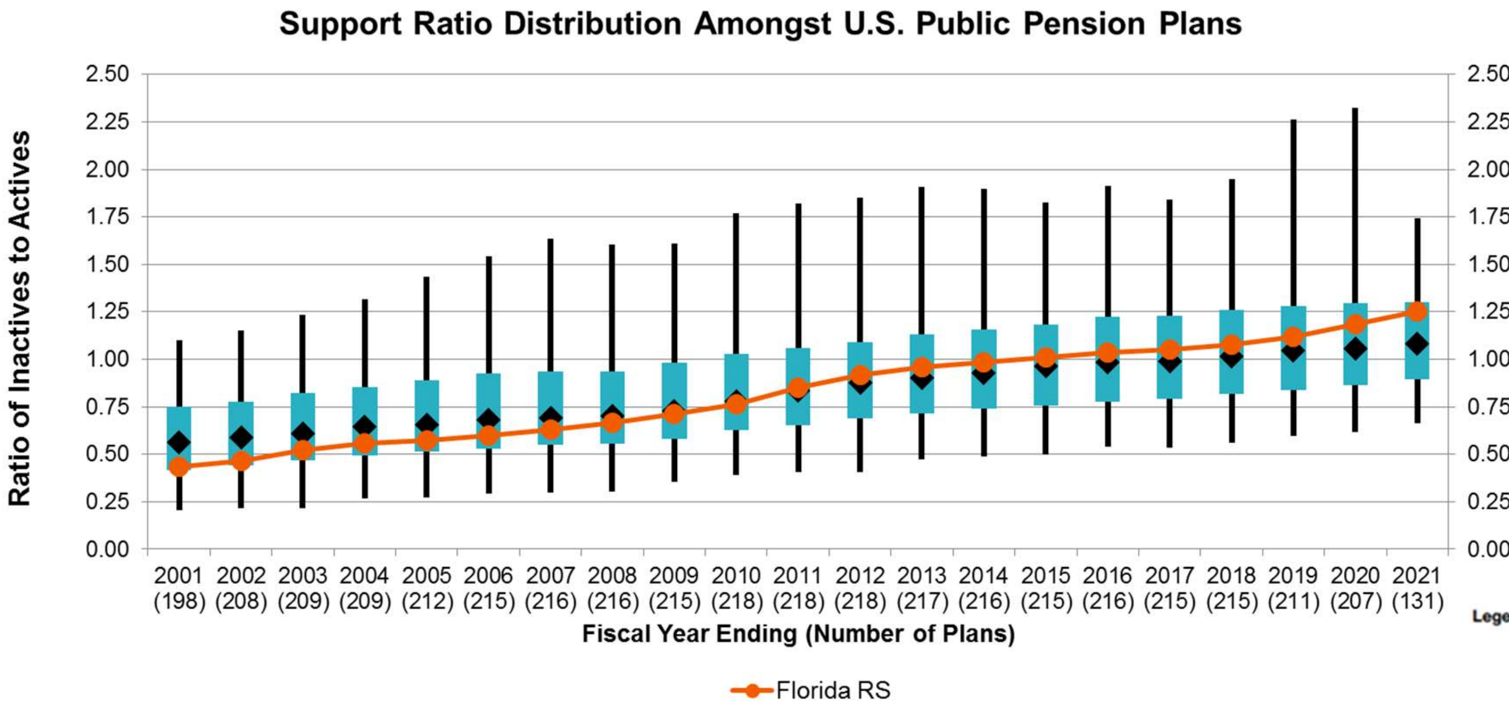
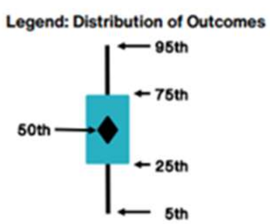
Florida Retirement System Public Plan Peer Comparison Support Ratio versus Peers[1]



- "Support Ratio" defined as the ratio of inactive participants to active participants
- The ability for new hires to elect the Investment Plan has subdued the increase in active participants, increasing the Support Ratio over time



Sources: Public Plans Data (publicplansdata.org) as of July 2022

[1]Peers defined as public funds published within publicplansdata.org as of July 2022; Number of plans per year are shown in parentheses

Historical Cash Flows

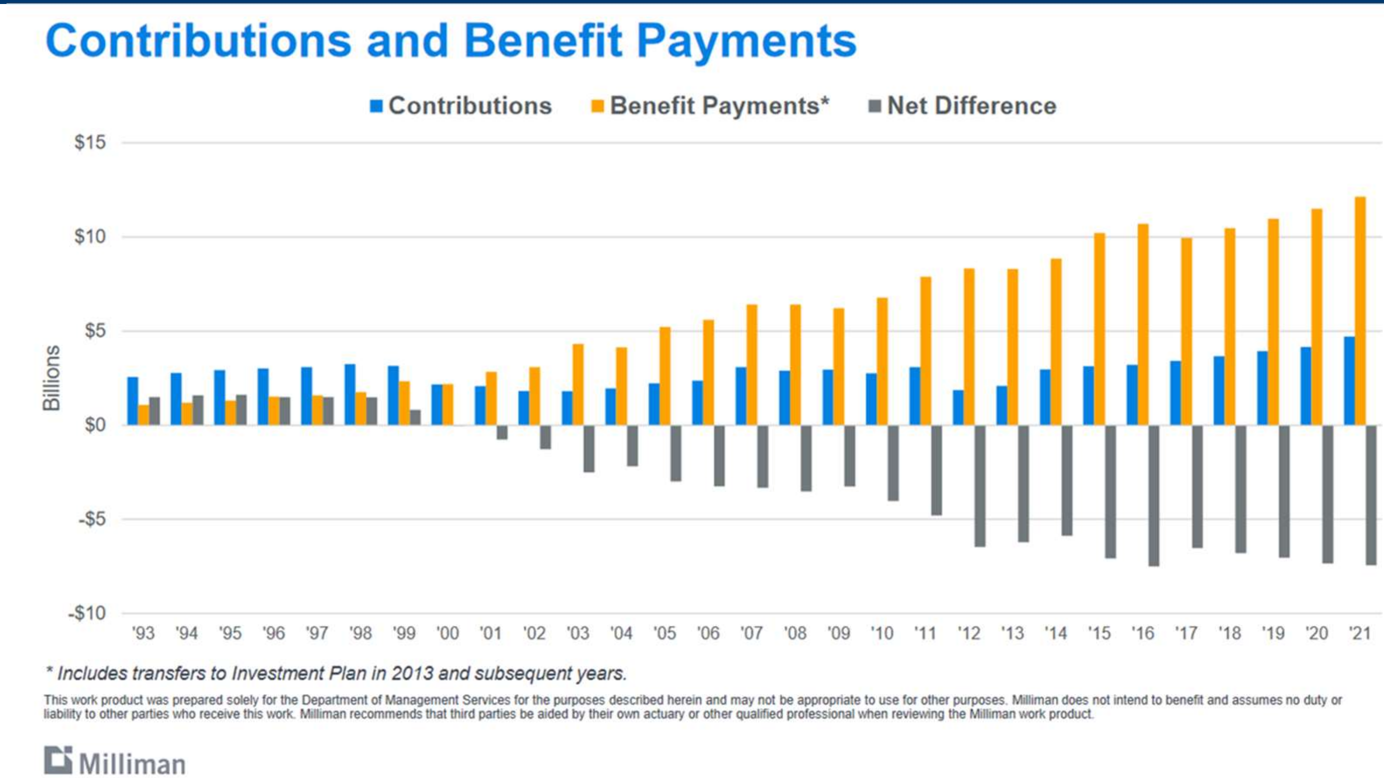


Chart from Milliman showing the progression of negative cash flow since 2001

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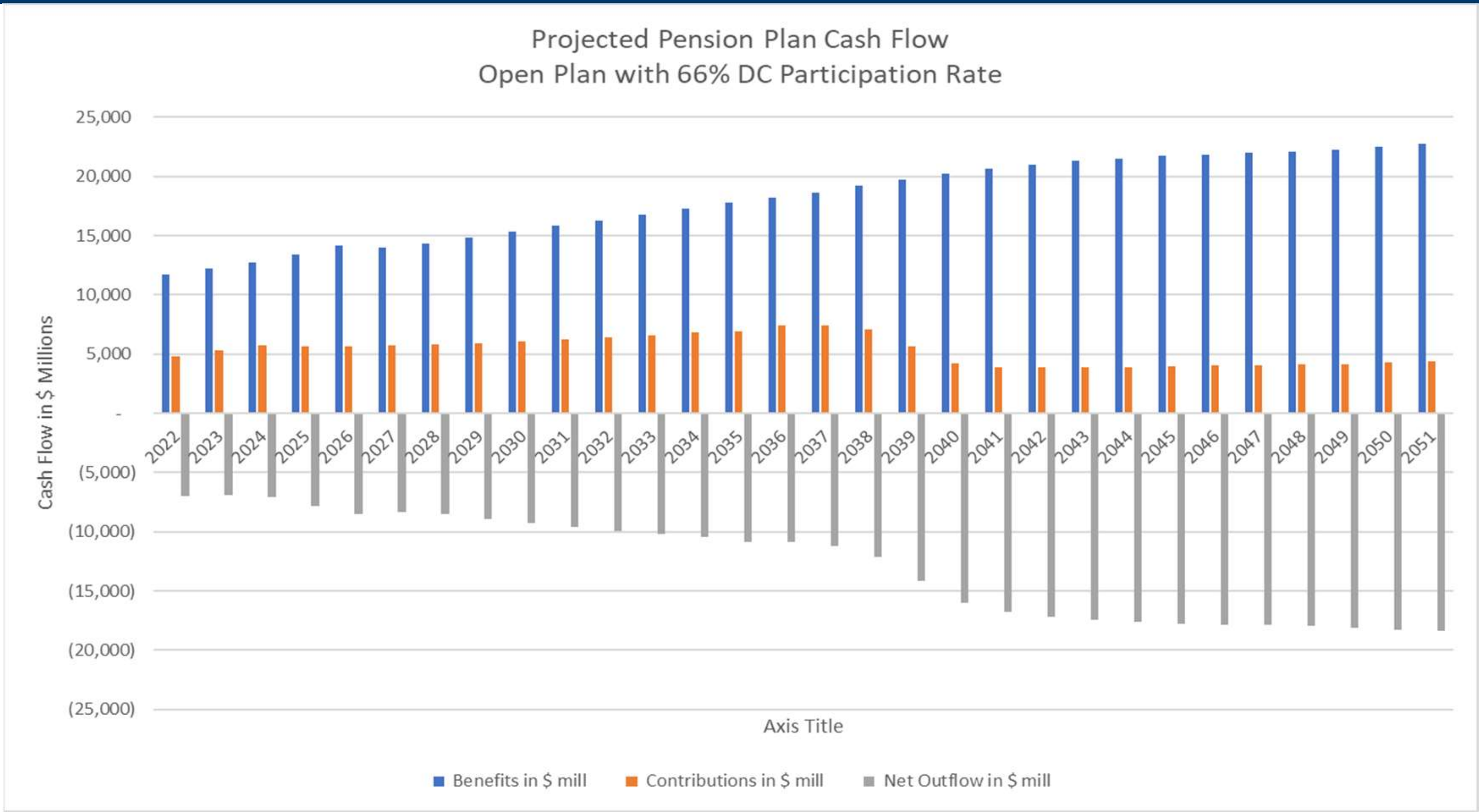
Projected Cash Flows



Sources: Aon, State Board of Administration of Florida

- Chart showing projected cash flows going forward
- Increasing from negative $7 billion today to over negative $18 billion in 2045
- Large projected increase in 2038 (nearly doubling) as amortization of 2009 UAL rolls off

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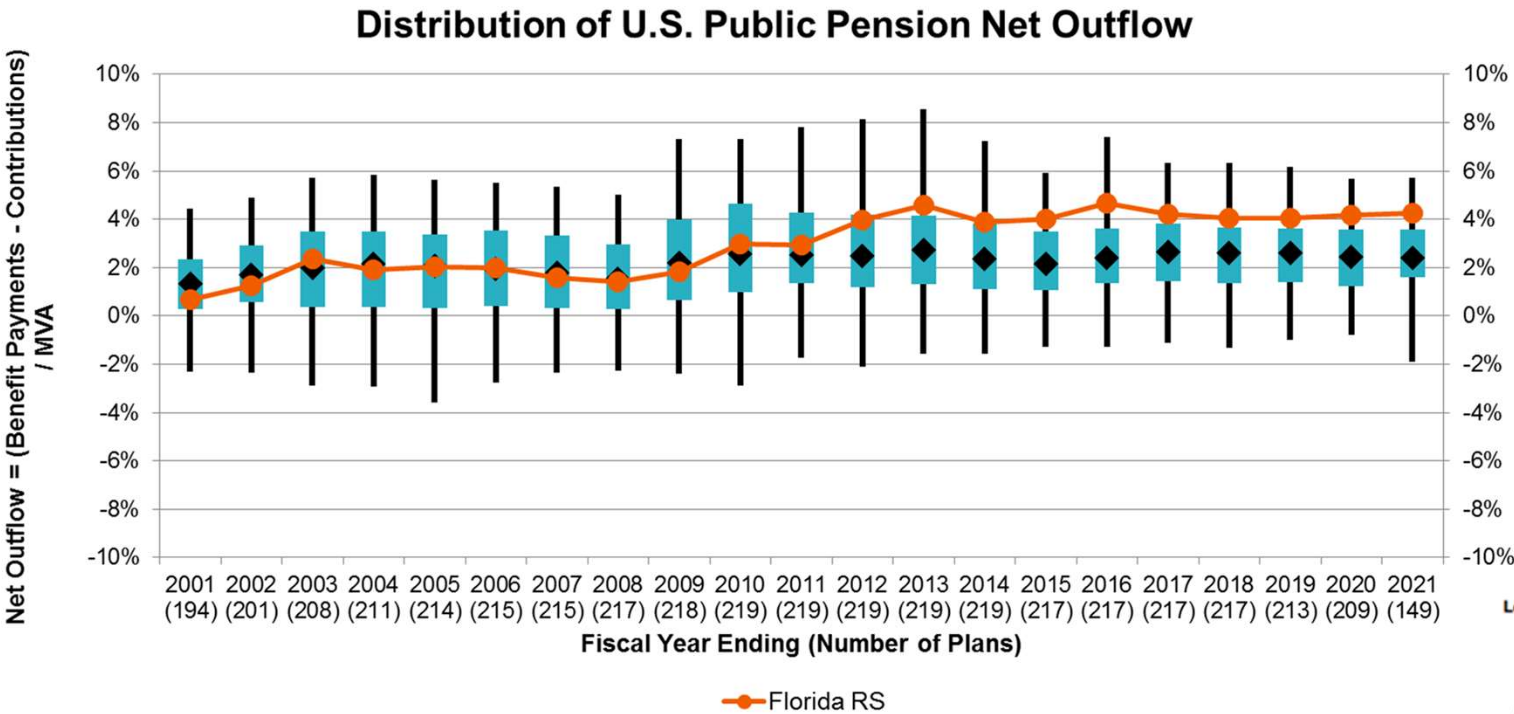
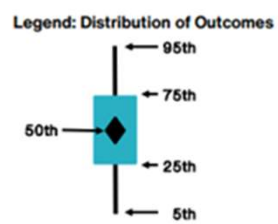
Florida Retirement System Public Plan Peer Comparison Net Outflow versus Peers



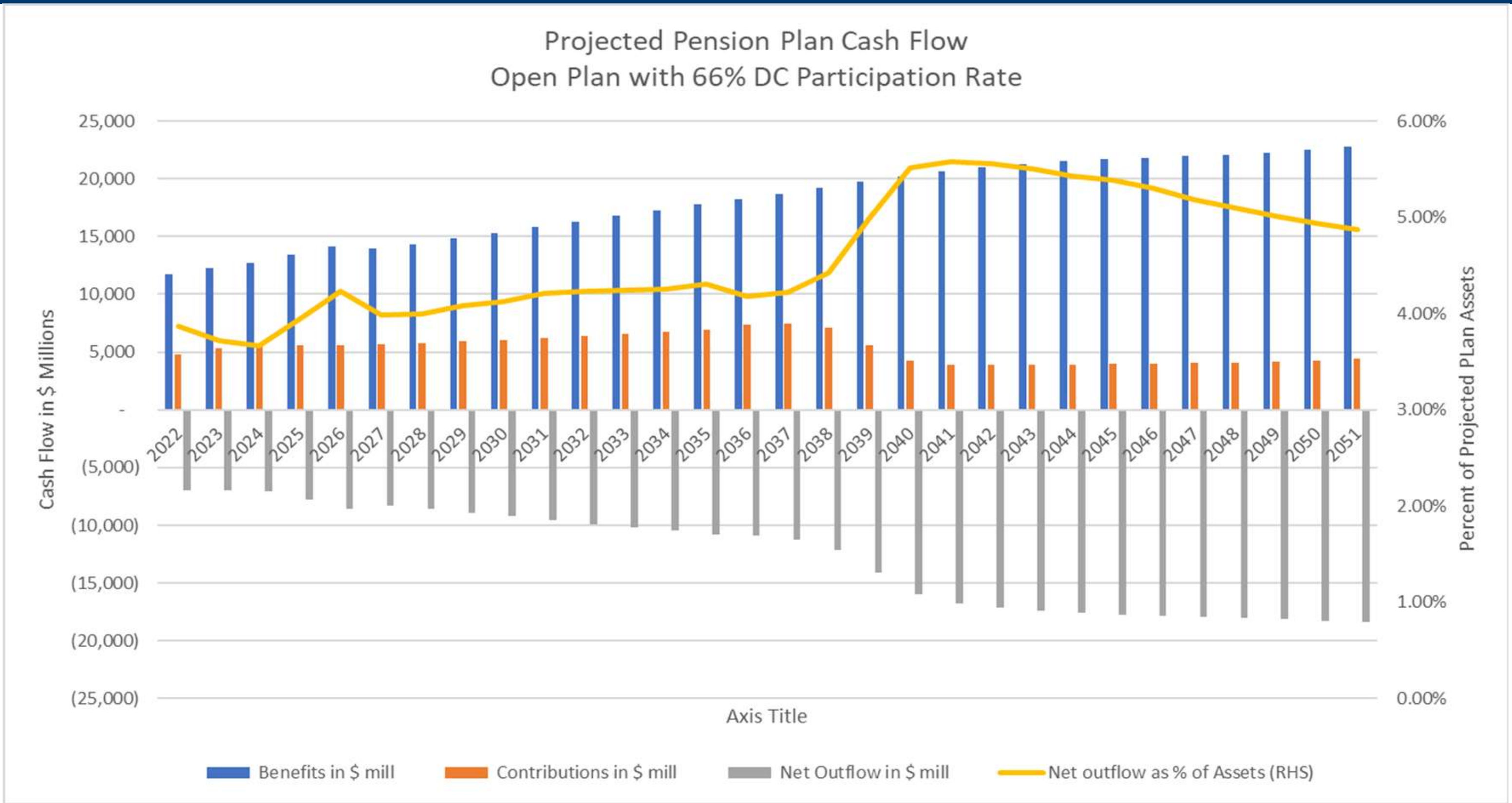
- The median net outflow as of FYE 2021 was 2.4% based on the latest survey data.
- FRS' FYE 2021 net outflow (4.3%) fell between the 75th and 95th percentile relative to its peers.[1]
- Higher net outflows, contribute to higher funding and liquidity risks.



Sources: Public Plans Data (publicplansdata.org) as of July 2022

[1]Peers defined as public funds published within publicplansdata.org as of July 2022; Number of plans per year are shown in parentheses

Projected Cash Flows As A Percent Of Projected Assets



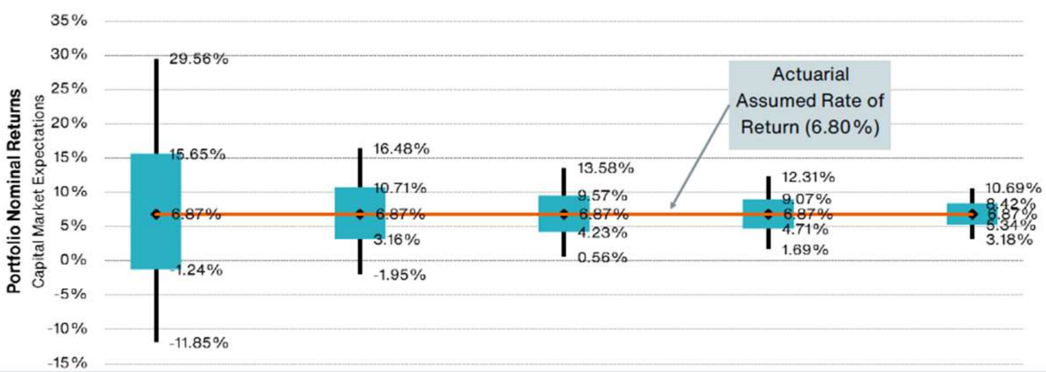
Sources: Aon, State Board of Administration of Florida, based on 2021 Asset/Liability presentation

- Net negative cash flows are projected to increase as a percentage of assets as well

Estimated Forward Rate of Return Is A Median Expectation

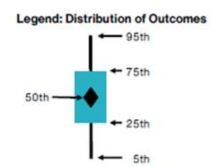
Portfolio Analysis

Range of Nominal Returns[1]



Percentile	Current Policy – 1 Year	Current Policy – 5 Year	Current Policy – 10 Year	Current Policy – 15 Year	Current Policy – 30 Year
5th	-11.85%	-1.95%	0.56%	1.69%	3.18%
25th	-1.24%	3.26%	4.23%	4.71%	5.34%
50th	6.87%	6.87%	6.87%	6.87%	6.87%
75th	15.65%	10.71%	9.57%	9.07%	8.42%
95th	29.56%	16.48%	13.58%	12.31%	10.69%

[1] Expected returns are using AIUSA Q3 2022 30-Year Capital Market Assumptions (CMAs) as of June 30, 2022 adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-65bps adjustment), which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.



- Expected 6.87% Rate of Return is the 50th percentile expectation
- There is a large range of possible outcomes in the early years that narrows over time

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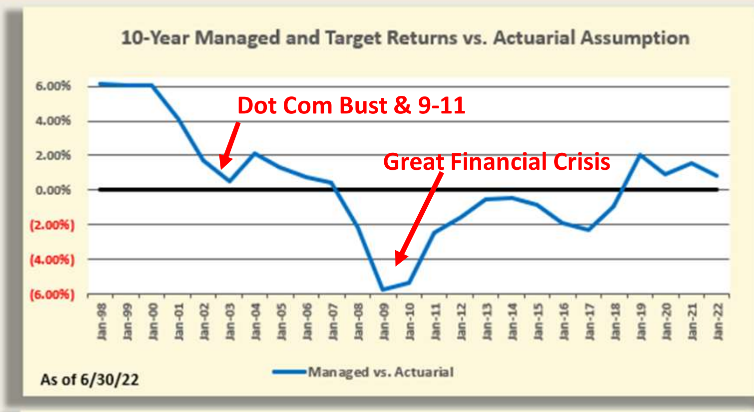
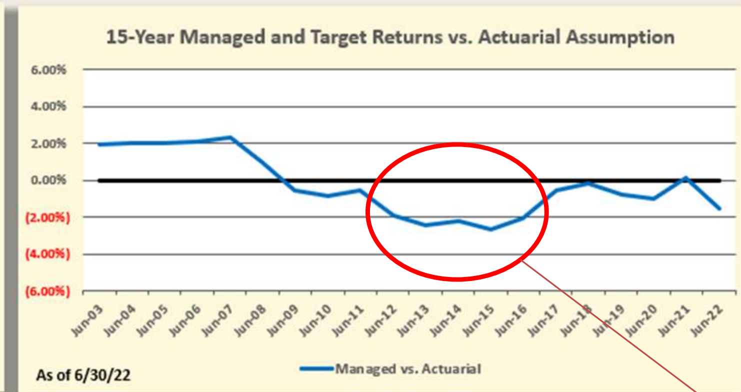
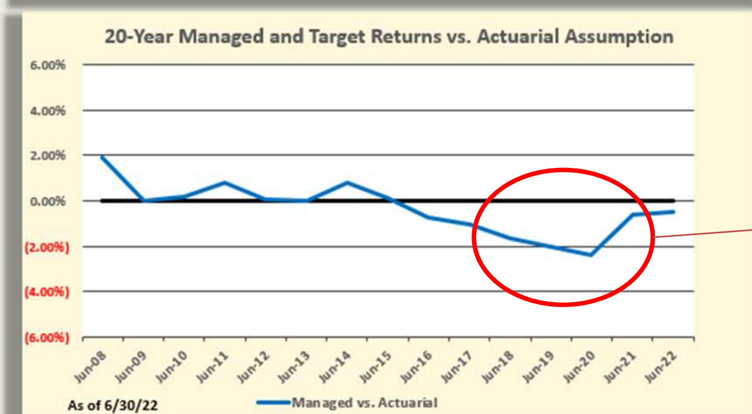
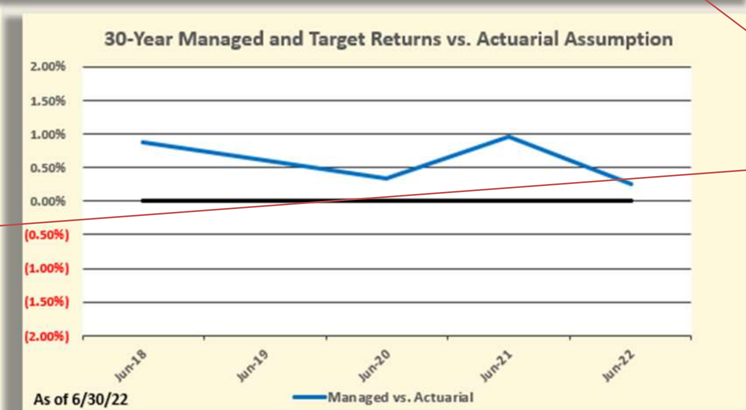
Actual Ensuing Returns Compared to Previous Actuarially Assumed Rates of Return (How Did We Actually Do)









- SBA has achieved the Actuarial Rate of Return in the long run, but volatility can impact medium term results

Dot Com Bust/9-11 and Great Financial Crisis smoothing out over time

Purpose	This chart shows whether prior actuarial return expectations were realized, over rolling 10-, 15-, 20- & 30-year periods following return predictions (e.g., 15 year realized return – point in time expectation from 15 years prior = chart data point)

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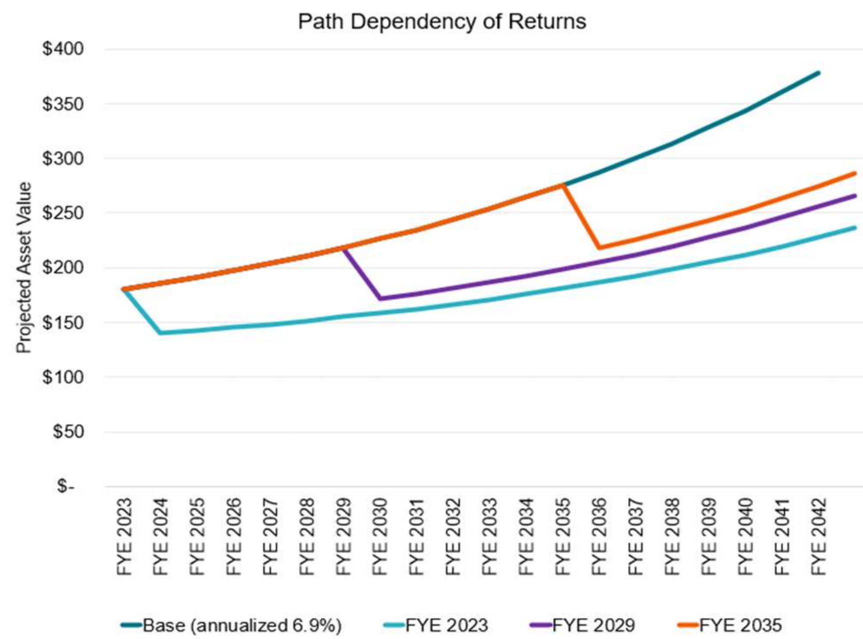
Ending Investment Balances Are Path Dependent

Path Dependency – Isolating Returns (Illustrative Example)

Assuming a Similar Return Series, the Specific Path Implicates Asset Value

- The chart to the right assumes an annualized 6.87% return and static cash flows over a 30-year time horizon, testing one negative period of returns (-18.4%, representing a two standard deviation event) in various years
  - Each line refers to the year in which the negative event occurs
  - The earlier the negative event occurs, the lower the ultimate ending market value of assets



- This example uses a static level of cash flows and does not take into account contribution funding policy, which could materially affect results.

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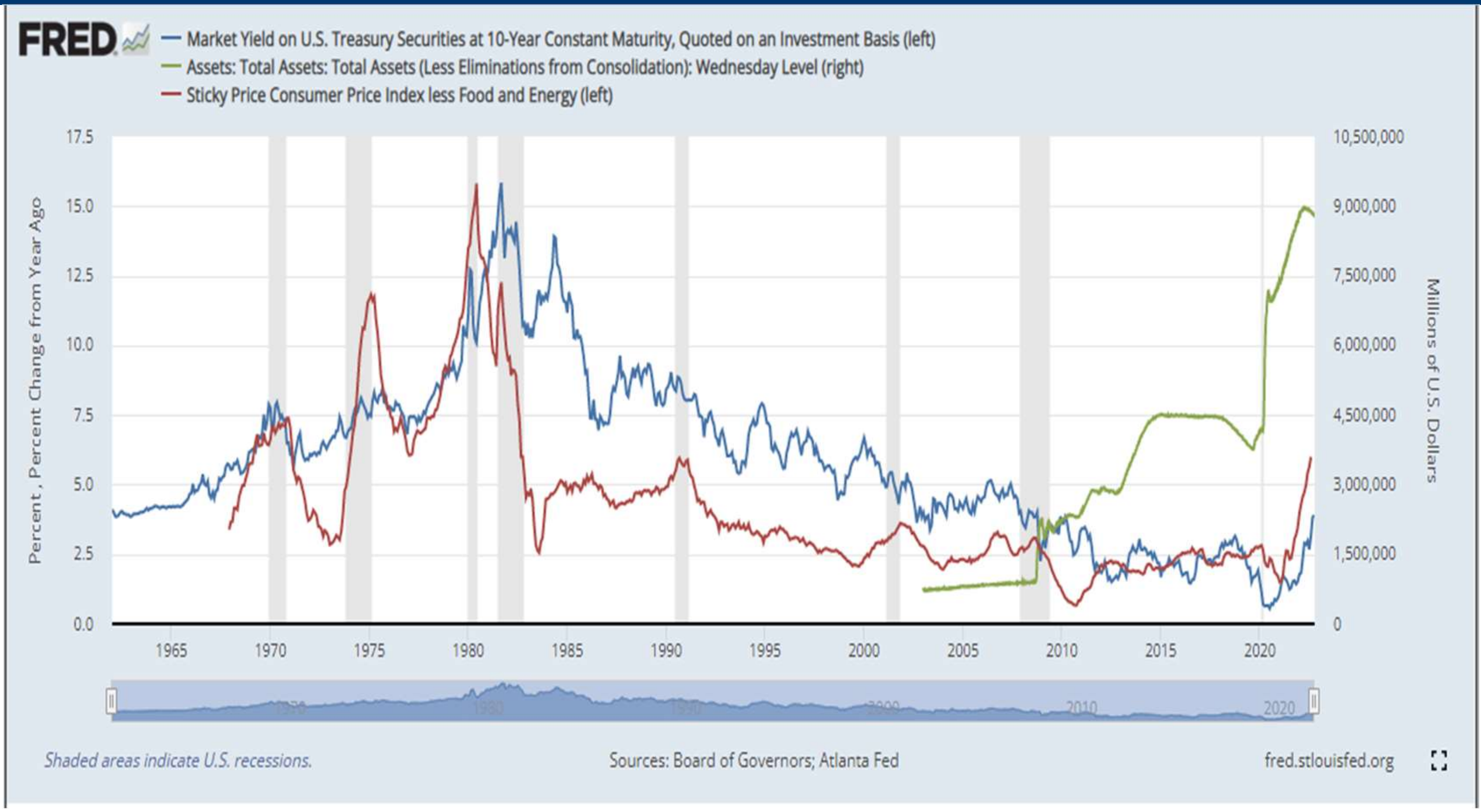
Change in Secular Rate Environment



- This chart shows headwinds from rising rates, namely rising inflation and Fed deleveraging
- Additionally, Global macro factors suggest higher inflation in the future
- Portends higher correlation and lower returns for Equity and Fixed Income in short to medium term

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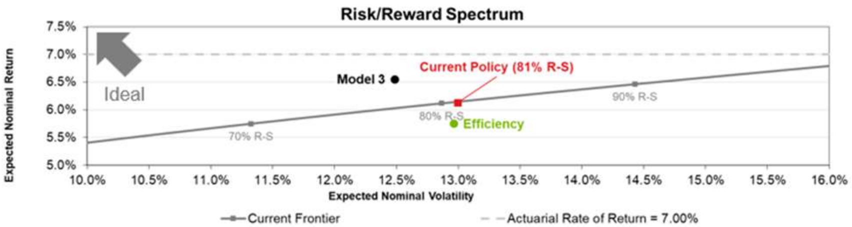
Alternative Investments Could Help But We Are Capped

Portfolio Construction | SBA Portfolio Analysis

Investment Analysis | Current Frontier (From 2021 A-L Study)



Key Takeaways:

The current portfolio is well-diversified

- Return-seeking assets are broadly diversified
- Safety asset allocation should withstand stressed markets

Additional diversification via illiquid assets is expected to improve the risk/return profile, although statutory limits preclude Aon's Model 3 portfolio

				Return-Seeking Assets							Risk-Reducing / Safety Assets			
	Expected Nominal Return[1]	Expected Nominal Volatility	Sharpe Ratio	Public Equity	Private Equity	Strategic Allocation[2]	Multi Asset Credit	Private Debt	Real Estate[3]	Infra-structure	Cash	Core/ Core Plus Bonds	Interm. Duration Gov't Bonds	Interm. Duration Credit
Current Policy (81% R-S)	**6.13%**	**12.99%**	**0.325**	**53%**	**6%**	**12%**	**0%**	**0%**	**10%**	**0%**	**1%**	**0%**	**9%**	**9%**
Efficiency	**5.75%**	**12.96%**	**0.297**	**61%**	**0%**	**0%**	**8%**	**0%**	**12%**	**0%**	**1%**	**18%**	**0%**	**0%**
Model 3	**6.55%**	**12.49%**	**0.373**	**35%**	**15%**	**10%**	**0%**	**5%**	**10%**	**5%**	**1%**	**18%**	**0%**	**0%**
Current Frontier														
60% Return-Seeking	5.36%	9.82%	0.352	39%	4%	9%	0%	0%	7%	0%	1%	39%	0%	0%
70% Return-Seeking	5.75%	11.33%	0.340	46%	5%	10%	0%	0%	9%	0%	1%	29%	0%	0%
80% Return-Seeking	6.12%	12.87%	0.328	52%	6%	12%	0%	0%	10%	0%	1%	19%	0%	0%
90% Return-Seeking	6.47%	14.43%	0.316	59%	7%	13%	0%	0%	11%	0%	1%	9%	0%	0%
100% Return-Seeking	6.80%	16.01%	0.306	65%	7%	15%	0%	0%	12%	0%	0%	0%	0%	0%

[1] Expected return assumptions are based upon the Aon Investments capital market assumptions adjusted for the delta in Global Equity Risk Premium (ERP) among three investment advisors: Mercer, Wilshire, and Aon Investments (-63bps adjustment)
[2] Strategic assumption breakdown is found in the Appendix
[3] Current Real Estate assumption was modeled as 76.5% Core Real Estate / 13.5% Non-Core Real Estate / 10.0% REITs
Percentages in table may not sum to 100% due to rounding

Investment advice and consulting services provided by Aon Investments USA Inc.

Empower Results®

- As shown in last year's Assumption Conference Presentation, increasing alternative investments improves risk-adjusted returns, but current statute caps SBA to 20% of portfolio

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Considerations

- Increase employer and employee contribution rates. FRS employers and employees currently contribute 12.85% (composite rate) and 3.00%, respectively (combined 15.85%). The median public pension plan employer and employee contribution rates are 14.90% and 6.30%, respectively (combined 21.20%).
- Reduce further the amortization period for UAL. The Conference of Consulting Actuaries has recommended that an amortization period of 20 years ***or less*** as a best practice for public pension plans[1].
- Switch amortizing unfunded liabilities (UAL) from level percentage of payroll to level dollar method. Reduces underfunding risk if actual payroll is less than projected payroll.

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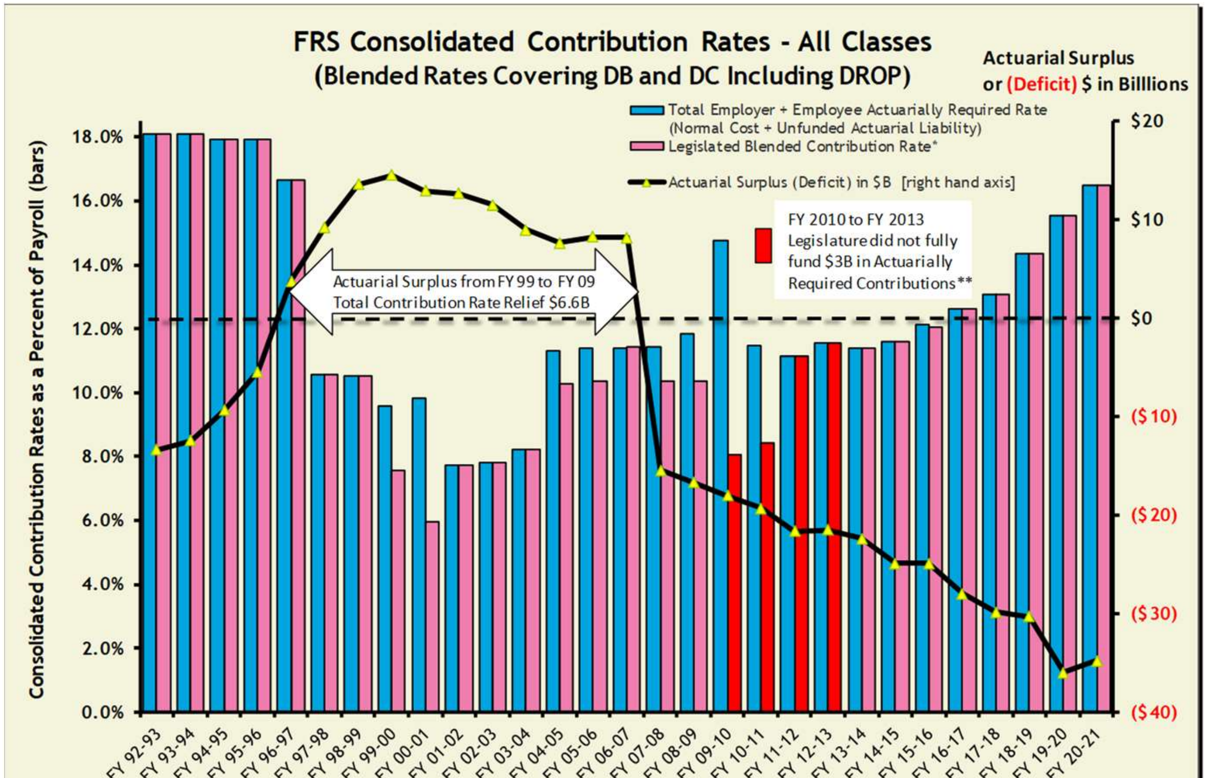
[1]Conference of Consulting Actuaries, Public Plans Community (CCA PPC), Actuarial Funding Policies and Practices for Public Pension Plans, October 2014

State Board of Administration

Appendix

Appendix: Contributions and Funded Status



*Weighted average blended rates for employer and employee contributions using total payroll.
** In fiscal years 2009-10 through 2012-13, the Legislature failed to make actuarially required contributions, exacerbating the system deficit caused by diminished asset valuations during the Global Financial Crisis.

- 11-years of actuarial surpluses from 1998 thru 2008 and employers saving a cumulative $6.6B through reduced contributions.
- From FY 2009-10 through 2012-13, the Legislature failed to make $3 billion in actuarially required contributions. Had the Legislature fully funded the required contributions, the FRS Pension Plan's market value would have been approximately $7.3B. higher by June 30, 2022. The FRS Pension Plan lost an opportunity for an investment gain of $4.3B (on $3B in missing contributions).
- Plan contributions have been approximately $285 million to $1.8 billion less (actuarial return assumption vs. SBA return forecast) than they should have been every year for the past 11-years (cumulative total $11.5B). The FRS-PP lost out on an opportunity for an investment gain of $5.0B on $11.5B in missing legislative contributions.
- Through time, the funding shortfalls have contributed to the increase in the UAL.

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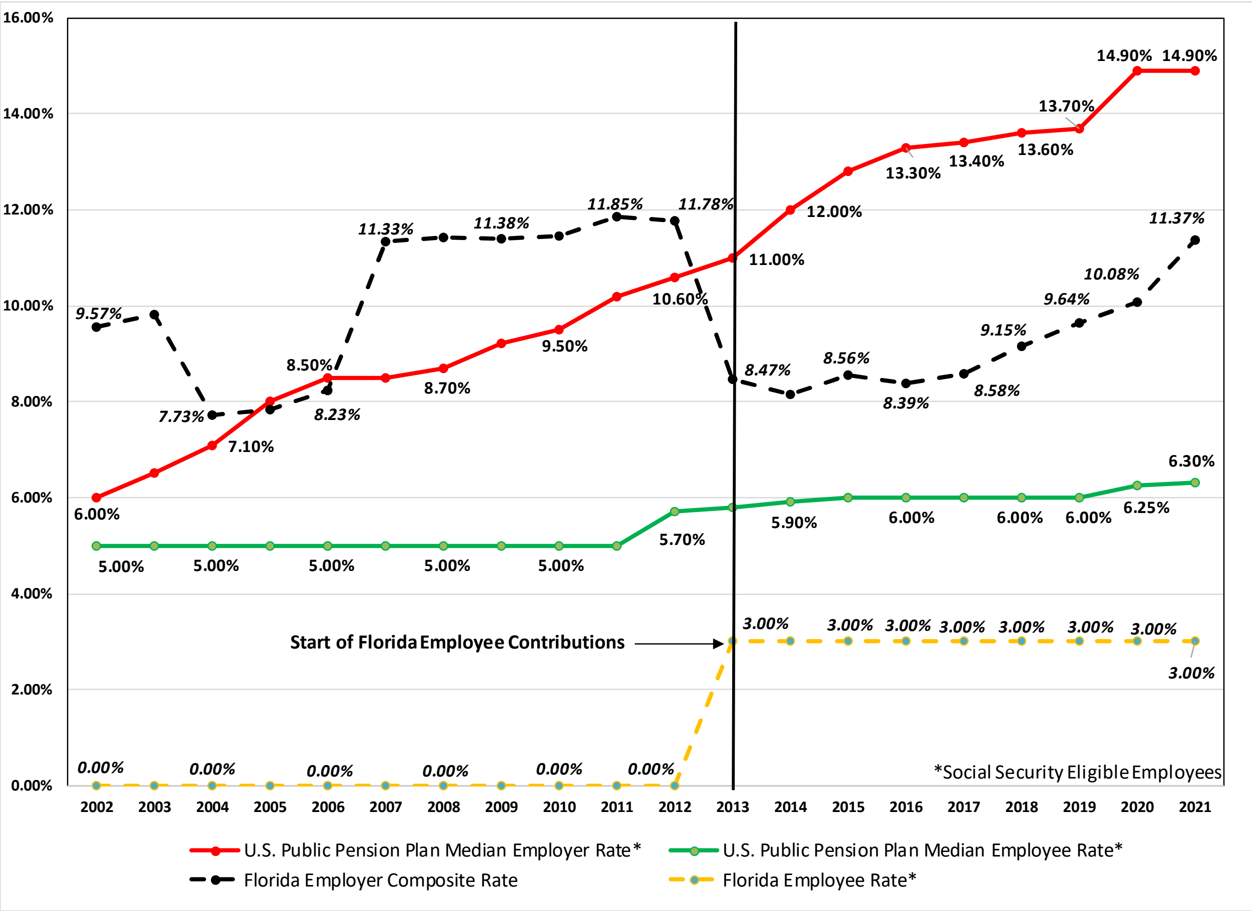
Appendix: Florida's Contribution Rates Continue to Be Significantly Lower Than Other States



- When employees started contributing 3%, employers' composite contribution rate was lowered by more than 3%.
- FRS' composite contribution rate (2021) was 14.37% and the median U.S. public pension plan contribution rate (2021) was 21.20%.

Note: This chart shows only information through 2021, the latest date available for comparative data. For Fiscal Year 2022, the FRS blended (DB and DC) employer contribution rate was 12.85%, compared to 11.37% for Fiscal Year 2021. The FRS employer contribution may not be comparable to other Public Pension Plans that do not blend DB and DC contributions.

Source: NASRA (National Association of State Retirement Administrators)

Appendix: Investment Policy and Investment Objective

- The FRS Pension Plan's investment objectives:

To achieve this, a long-term real return approximating 4.0% per annum (compounded and net of investment expenses) should be attained -

a. A real return objective instead of a nominal return objective.
b. An investment objective defined as a nominal amount will force risk levels to change as inflation ebbs and flows. To illustrate:

	High Inflation	Low Inflation
Nominal Return Objective	8.0%	8.0%
Inflation	5.5%	3.5%
Real Return Objective	2.5%	4.5%

c. Ever changing levels of risk will constantly alter (not so long-term) asset allocation mix.
d. A real return objective will target a consistent long-term asset allocation mix and risk level.

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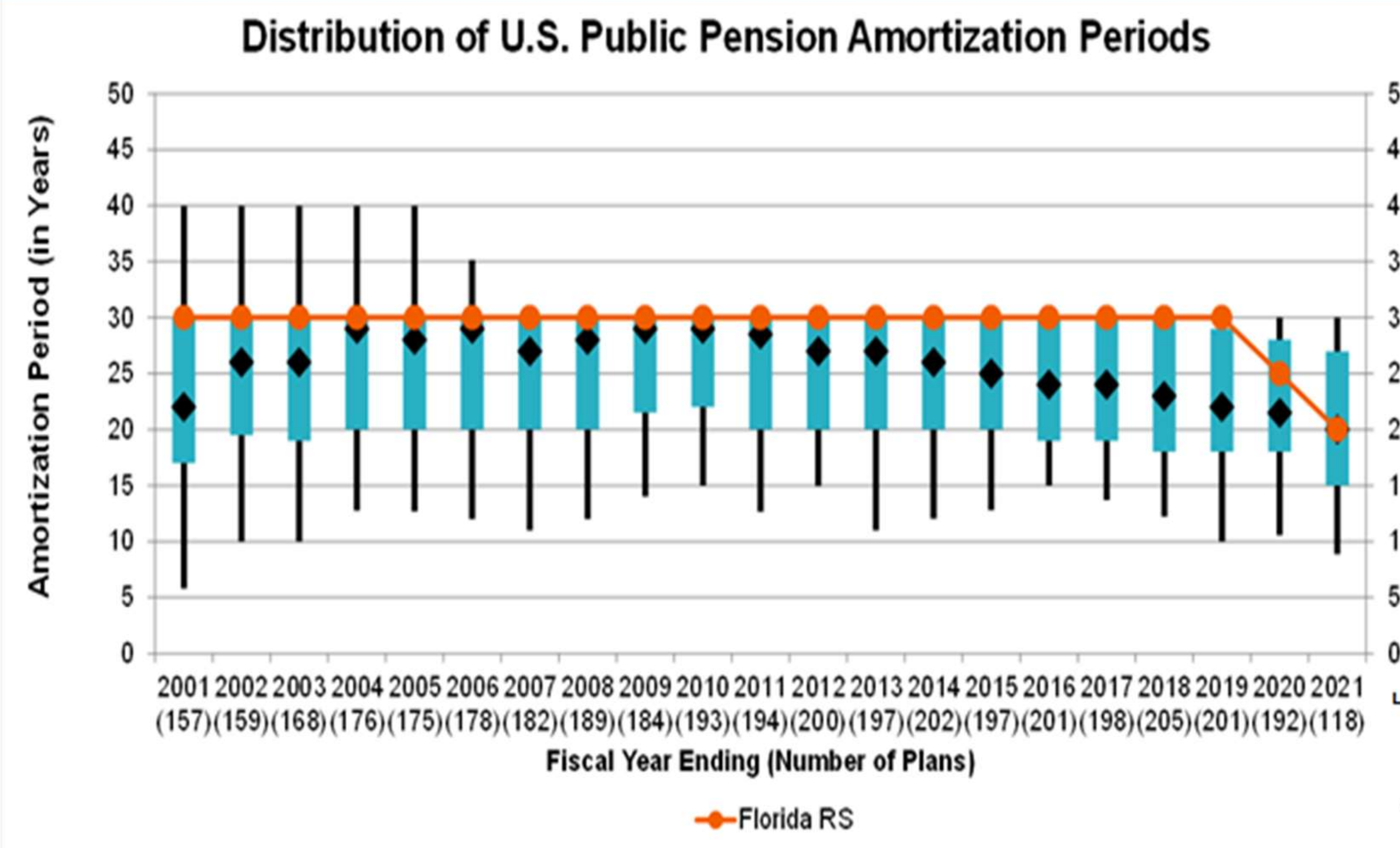
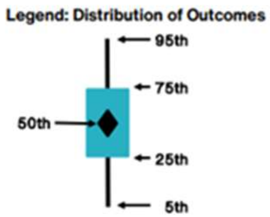
Sources: Public Plans Data (publicplansdata.org) as of July 2022
[1]Peers defined as public funds published within publicplansdata.org as of July 2022; Number of plans per year are shown in parentheses

Appendix: Median Amortization Periods U.S. Public Pension Plans





Milliman

Florida Retirement System Pension Plan

Actuarial Valuation as of July 1, 2022

Prepared by:

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

Daniel Wade, FSA, EA, MAAA
Principal and Consulting Actuary

Kathryn Hunter, FSA, EA, MAAA
Consulting Actuary

1455 SW Broadway Street, Suite 1600
Portland OR 97201
Tel 503 227 0634

1301 Fifth Avenue, Suite 3800
Seattle, WA 98101
Tel 206 624 7940

milliman.com

Issued December 1, 2022

1455 SW Broadway Street, Suite 1600
Portland, OR 97201
Tel 503 227 0634

1301 Fifth Avenue, Suite 3800
Seattle, WA 98101
Tel 206 624 7940

milliman.com

December 1, 2022

Andrea Simpson
State Retirement Director
Florida Department of Management Services, Division of Retirement

Re: **Actuarial Valuation as of July 1, 2022**

Dear Director Simpson:

We have conducted an annual actuarial valuation of the Florida Retirement System (FRS) Pension Plan as of July 1, 2022, for assessing plan funded status and determining actuarially calculated contribution rates prior to blending with FRS Investment Plan contribution rates to create proposed blended statutory contribution rates for the July 2023 - June 2024 plan year. The major findings of the valuation are contained in the following report.

Section 1 contains an Executive Summary of the results of our valuation followed by four sections containing detailed information on Assets (Section 2), Liabilities (Section 3), Contributions (Section 4), and Accounting Statements (Section 5). In the Appendices, we provide information regarding actuarial methods and assumptions, a summary of plan provisions, membership statistics, cost projections, comparisons/reconciliation, risk disclosure and a glossary of terms.

All costs and liabilities shown in this report have been determined on the basis of actuarial assumptions and methods set forth in Appendix A. Preliminary 2022 valuation results were presented by the actuary to the 2022 FRS Actuarial Assumption Conference held on October 20, 2022. The assumptions are based on Milliman's most recent review of the System's experience, which was for the observation period from July 1, 2013 through June 30, 2018. Additional details on that review of System experience can be located in our October 8, October 23, and October 28, 2019 presentation materials to the 2019 FRS Actuarial Assumption Conference and our formal 2019 Experience Study report, which was issued on December 20, 2019. The economic assumptions used in this valuation are unchanged from those used in the prior valuation as of July 1, 2021 except for a decrease to the assumption for investment return, as adopted by the 2022 FRS Actuarial Assumption Conference. The investment return assumption for purposes of developing actuarially calculated contribution rates decreased from 6.80% to 6.70%. Additionally, the demographic assumptions used in this valuation are unchanged from those used in the prior valuation as of July 1, 2021 with the exception of changes made for qualifying members of the Special Risk Membership Class to reflect plan changes enacted by House Bill 5007, House Bill 689, and Senate Bill 838.

In our professional opinion we believe the assumptions and methods used in this report for purposes of developing actuarially calculated contribution rates are reasonable. The accounting calculations for the FRS Pension Plan's financial reporting and its June 30, 2022 ACFR in compliance with the GASB Statement No. 67 use the same investment return assumption as used in this report. The GASB financial reporting information is issued under separate cover. The results of this report are dependent upon future experience conforming to the assumptions disclosed in this report. Future actuarial measurements may differ significantly from the current measurements presented in this report due to many factors, including: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

The valuation results were developed using models intended for valuations that use standard actuarial techniques.

Actuarial computations presented in this report are for purposes of assessing funded status and determining the actuarially calculated contribution rates for the FRS Pension Plan. The calculations in the enclosed report have been made on a basis consistent with our understanding of the FRS Pension Plan's funding requirements and goals. Determinations for purposes other than meeting those requirements referenced in this paragraph may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

In preparing our report we relied, without audit, on information (some oral and some written) supplied by the Florida Department of Management Services, Division of Retirement. This information includes, but is not limited to, statutory provisions, employee census, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

This actuarial valuation was prepared and completed by us and those under our direct supervision, and we acknowledge responsibility for the results. To the best of our knowledge, the results are complete and accurate. In our opinion, the techniques and assumptions used are reasonable. In our opinion this valuation meets the requirements and intent of Part VII, Chapter 112 and Chapter 121, Florida Statutes. There is no benefit provision or related expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. To the best of our knowledge, there were no known events that were not taken into account in the valuation.

Milliman's work product was prepared exclusively for the internal business use of Florida Department of Management Services, Division of Retirement, for a specific and limited purpose. It is a complex technical analysis that assumes a high level of knowledge concerning the Florida Retirement System's operations, and uses Division data, which Milliman has not audited. To the extent that Milliman's work is not subject to disclosure under applicable public record laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third-party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions:

(a) The Division of Retirement may provide a copy of Milliman's work, in its entirety, to the System's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.

(b) The Division of Retirement may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third-party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are retirement actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board and the *Code of Professional Conduct* and *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* published by the American Academy of Actuaries.

We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Respectfully submitted,

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

Daniel Wade, FSA, EA, MAAA
Principal and Consulting Actuary

Kathryn Hunter, FSA, EA, MAAA
Consulting Actuary

ML/DW/KH

Table of Contents

1. Executive Summary

This report presents the results of our July 1, 2022 actuarial valuation of the defined benefit Florida Retirement System (FRS) Pension Plan. This valuation is used to determine actuarially calculated Pension Plan-specific employer contribution rates for the July 1, 2023 – June 30, 2024 plan year. The Pension Plan-specific rates developed in this valuation report are then combined with contribution rates from the defined contribution FRS Investment Plan to create blended proposed statutory employer contribution rates. The actual contribution rates paid by employers during the 2023-2024 plan year will be determined by Florida Statutes.

The statutory contribution rates in effect for the current 2022-2023 plan year are based on those developed in conjunction with the July 1, 2021 actuarial valuation. While consistent with that valuation's results, the statutory rates additionally reflect the effect on actuarially calculated rates of the enactment of House Bill 5007 (HB 5007) as passed by the 2022 Florida Legislature which extended the maximum length of DROP participation by 36 months for law enforcement officer members and increased the employer allocations to Investment Plan accounts effective July 1, 2022. Because of HB 5007's effect, the proposed statutory rates are higher than those developed in conjunction with the 2021 valuation for Special Risk and DROP members.

The statutory contribution rates in effect for the current 2022-2023 plan year reflect neither the enactment of House Bill 689 (HB 689) which classifies post-traumatic stress disorder (PTSD) as a compensable occupational disease for correctional officers for benefits effective July 1, 2022, nor Senate Bill 838 (SB 838) which provides cancer presumption for fire investigators for benefits effective July 1, 2022. Those two bills affected the Normal Cost Rate for Special Risk and DROP, but did not increase actuarial accrued liability. The actuarially calculated rates for 2023-2024 developed in this July 1, 2022 valuation do reflect the effects of all three pieces of legislation.

On the smoothed Actuarial Value of Assets (AVA) basis used to determine actuarially calculated contribution rates and the Unfunded Actuarial Liability (UAL), Pension Plan funded status decreased from 83.4% to 82.4%. On a Market Value of Assets (MVA) basis, Pension Plan funded status calculated on the assumptions and methods in this report for system funding purposes decreased from 96.4% to 82.9% due to actual plan year investment return of approximately -7.18%, which is 13.98% below the assumed prior year return of 6.80%. The Pension Plan funded status decrease was also due in part to the 0.10% decrease in the investment return assumption.

As noted above, actuarially calculated employer contribution rates for the Pension Plan are combined with FRS Investment Plan contribution rates to create proposed blended statutory employer contribution rates. At a system-wide composite level, the blended employer contribution rate increased by 0.90% of payroll from 13.58% of payroll in the 2022-2023 plan year (after reflection of HB 5007) to 14.48% in the 2023-2024 plan year. Please note that the blended rate study is issued under separate cover shortly after the publication of this valuation report. The 0.90% of payroll increase was primarily due to the assumption and plan changes adopted effective July 1, 2022, and secondarily attributable to other experience losses.

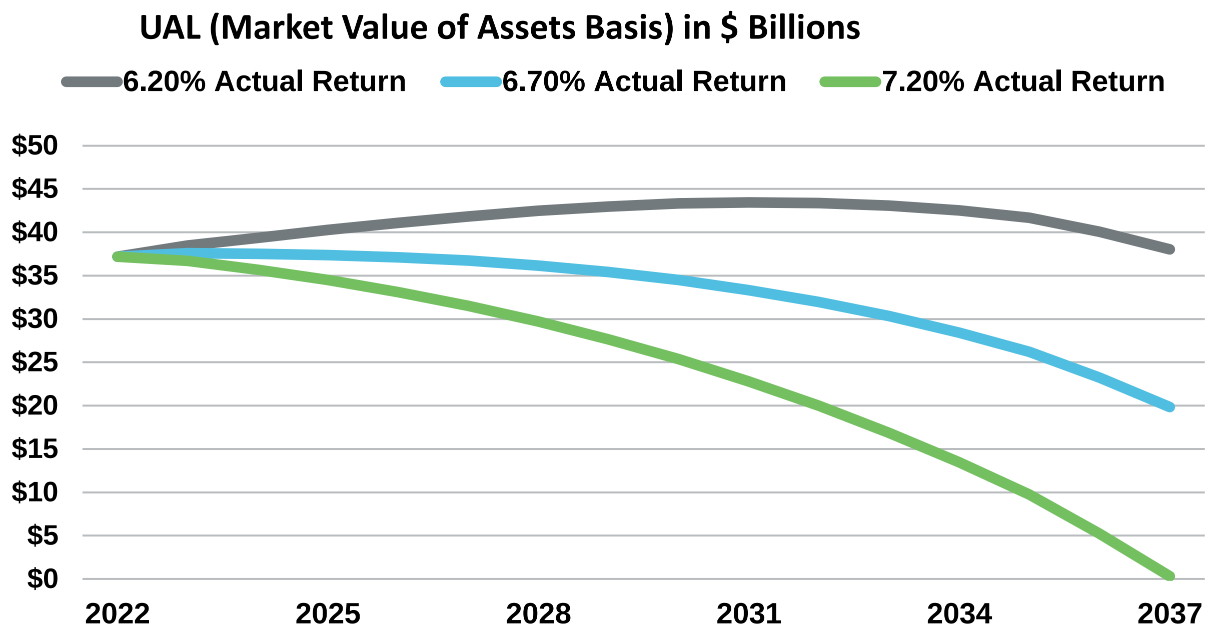
After a strong market value investment performance in the 2020-2021 plan year of +30.38% and the negative investment return in the 2021-2022 plan year of -7.18%, the MVA is greater than the smoothed AVA used for funded status and contribution rate calculations by approximately $1.0 billion as of July 1, 2022. That $1.0 billion not yet recognized market investment gain will be systematically recognized as a sequence of actuarial investment gains in the UAL via recognition in the AVA. The actual market value investment experience during the 2021-2022 period failed to meet the 6.80% assumption, however, the prior year's gains served as a buffer, somewhat mitigating increases in actuarially calculated employer contribution rates.

For this valuation, a long-term average annual future investment return assumption of 6.70% was selected by the 2022 FRS Actuarial Assumption Conference. That assumption is 0.10% lower than the assumption used in the previous valuation. In our professional opinion, the 6.70% assumption constitutes a reasonable assumption for the purpose of the measurement as defined by Actuarial Standard of Practice No. 27 (ASOP 27). Our basis for that opinion is that both the 4.38% 50th percentile geometric average annual long-term future real return assumption developed by Aon's 2022 capital outlook model and the 2.40% average annual future inflation assumption selected by the Conference are individually reasonable. Combined, those two individually reasonable assumption components would produce a geometric average annual nominal return assumption of 6.89%, which in our opinion is clearly reasonable. The Conference's selected 6.70% investment return assumption does not significantly conflict with the clearly reasonable 6.89% assumption level. The selected assumption is also conservative compared to the 6.89% model outlook. More details on the return assumption are shown in our 2022 FRS Actuarial Assumption Conference presentation materials.

All else being equal, the lower the selected investment return assumption, the higher the likelihood the FRS Pension Plan will meet or exceed its assumed investment return in future years. A lower assumption would result in higher short-term actuarially calculated contribution rates for employers but would also serve to lessen the magnitude of actuarially calculated contribution rate increases if actual future investment performance fails to meet the assumption.

Actual future investment return experience for the FRS Pension Plan is not affected by the assumption used in the actuarial valuation. Applying the 6.70% assumption used in this valuation, the following graph illustrates the UAL (Unfunded Actuarial Liability) on a Market Value of Assets basis under three scenarios for steady actual future investment returns on a market value basis:

- 6.70%, which is the assumption selected for this valuation by the 2022 FRS Actuarial Assumption Conference
- 6.20%, which is 0.50% lower than the assumption selected by the 2022 FRS Actuarial Assumption Conference.
- 7.20%, which is 0.50% higher than the assumption selected by the 2022 FRS Actuarial Assumption Conference. It is also equal to the assumption selected by the 2019 FRS Actuarial Assumption Conference.



As illustrated in the graph, if actual future investment returns match the 6.70% assumption the UAL on a market value of assets basis is projected to be fairly level (in non-inflation-dollars) over the next several years and then systematically decline as the amortization periods for the existing bases shorten.

If actual market returns are 6.20% and thus underperform the 6.70% assumption by 0.50%, the UAL on a market value basis is projected to increase during the first several years and then start to decrease around the year 2032. After 15 years, the market value assets basis UAL is projected to be approximately the same as the current UAL.

If actual market investment returns are 7.20% and thus overperform the 6.70% assumption by 0.50%, the UAL on a market value basis is projected to be approximately zero at the end of the 15-year projection period.

This 2022 actuarial valuation uses the Individual Entry Age Normal (Individual EAN) actuarial cost allocation method. The actuarial cost allocation method divides the present value of total projected benefits for each active member between past service (Actuarial Liability, or AL) and future service (present value of future normal costs). The actuarial cost allocation method does not impact the calculation of the present value of total projected benefits. Prior to the 2019 valuation, the Ultimate Entry Age Normal (Ultimate EAN) actuarial cost allocation method was used. The 2019 change in the actuarial cost allocation method increased the Normal Cost Rate and decreased the Actuarial Liability and UAL Rate when compared to the prior method. The Individual EAN method is mandated by GASB for financial reporting calculations under GASB Statements Nos. 67 & 68 and has been used for GASB reporting in all years those two statements have been in effect.

The tables immediately following compare July 1, 2021 actuarial valuation results with July 1, 2022 actuarial valuation results. The difference column shows the change between the July 1, 2021 valuation results and the July 1, 2022 valuation results. Please note, the July 1, 2021 actuarial valuation results in these tables do not reflect liabilities associated with legislation enacted during the 2022 legislative session.

A. Assets, Liabilities, and Funded Status

A comparison of the Actuarial Liability and Actuarial Value of Assets (AVA) follows. These figures are based upon the actuarial assumptions used to determine the actuarial costs of the FRS Pension Plan (see Appendix A). Under current methodology, and as required by Florida law, the AVA cannot be less than 80% or greater than 120% of the Market Value of Assets (MVA). This corridor restriction does not come into play unless there are dramatic asset gains or losses in the prior plan year. The purpose of the corridor is to ensure that the “smoothed” value of assets does not vary from the market value by more than 20%. As of July 1, 2022, the AVA is 99.4% of the MVA.

		Valuation Results (numbers in $ billions)		
		July 1, 2021	**July 1, 2022**	**Difference**
1.	Actuarial Liability	$209.6	$217.4	$7.8
2.	Actuarial Value of Assets	$174.9	$179.2	$4.3
3.	Unfunded Actuarial Liability (1 - 2)	$34.7	$38.3	$3.5
4.	Funded Percentage (2 / 1)	83.4%	82.4%	-1.0%

3. The UAL on a smoothed Actuarial Value of Assets basis decreased from $34,737,594,000 to $38,255,546,000, the difference of which is a $3.518 increase when rounded to the nearest million.

In Section 5 of this report, we present an additional measure of funded status based on a different liability measure, the "Accumulated Benefit Obligation" (ABO), comparing the ABO to both the AVA and the MVA.

B. Contributions

Actuarially calculated contribution rates by class are determined annually in the actuarial valuation. Actual contribution rates paid by employers for each class are set by statute and consist of Normal Cost and UAL Cost components. For the 2022-2023 plan year, the legislated rates are consistent with the actuarially calculated rates determined by the July 1, 2021 valuation, as subsequently modified to reflect the effects of House Bill 5007. The 2023-2024 actual contribution rates will be set by the 2023 session of the Florida Legislature, with advice from this valuation and the associated 2023-2024 Blended Rate Study that will be issued subsequent to the publication of this valuation. The Unfunded Actuarial Liability (UAL) amortization payment will consist primarily of costs or savings associated with plan changes, assumption changes, differences between actual and assumed experience, and changes in actuarial methodology. As of July 1, 2022, the FRS Pension Plan has a UAL of $38.3 billion on a smoothed Actuarial Value of Assets basis. The UAL Cost is calculated to systematically eliminate the UAL over a pre-determined amortization period if actual future experience follows assumptions and contributions are made in accordance with the funding policy.

The comparative FRS Pension Plan-specific employer contribution rates for the Regular and Special Risk membership classes resulting from this valuation and the prior valuation are as follows. See Section 4 for more details on rate development and valuation results for all membership classes.

	July 1, 2021 Valuation (2022-2023 Rates)		July 1, 2022 Valuation (2023-2024 Rates)		Difference	
	Regular	Special Risk [1]	Regular	Special Risk	Regular	Special Risk
Employer Normal Cost Rate	5.73%	16.32%	5.96%	17.13%	0.23%	0.81%
UAL Contribution Rate [2]	5.52%	11.16%	6.27%	12.62%	0.75%	1.46%
Employer Contribution Rate Prior to Blending with FRS IP Payroll	11.25%	27.48%	12.23%	29.75%	0.98%	2.27%

[1] 2022-2023 Special Risk rates shown above are as developed in the July 1, 2021 valuation report and do not reflect extending the maximum length of DROP participation by 36 months for Special Risk Class law enforcement officer members (HB 5007).

[2] The 0.75% increase in UAL Contribution Rate for the Regular class represents a 0.45% increase in rates due to assumption changes and a 0.30% increase due to other experience. The 1.46% increase in UAL Contribution rate for the Special Risk Class represents a 0.16% increase due to plan change (HB 5007), a 0.70% increase in rates due to assumption changes, and a 0.60% increase in rates due to other experience.

C. Membership

The total membership (active, terminated vested, retired, and DROP) of the FRS Pension Plan decreased by 6,828 members from 1,030,435 as of July 1, 2021 to 1,023,607 as of July 1, 2022, a decrease of 0.7%. The total annualized projected payroll of non-DROP active Pension Plan members increased by 0.1%, from $24.46 billion for the 2021-2022 plan year to $24.77 billion for the 2022-2023 plan year, a $310 million increase in payroll. Note that the payroll on which UAL Cost rates are determined is higher and includes the payroll of DROP members and participants in Optional Retirement Plans subject to the statutory UAL Cost payroll rate contribution.

A summary of Pension Plan membership change by status follows:

	Valuation Results: Counts		
	July 1, 2021	July 1, 2022	% Change
Active Members	457,249	442,762	-3.2%
Terminated Vested Members	103,472	105,041	1.5%
Retired Members	435,944	443,654	1.8%
DROP Members	33,770	32,150	-4.8%
Total Members	1,030,435	1,023,607	-0.7%

D. Experience

Changes to assets and liabilities between July 1, 2021 and July 1, 2022 are described in this section.

1. Assets:

Changes in the smoothed Actuarial Value of Assets (AVA) during the plan year were due to:

▪ Contributions received	$ 5.148	
▪ Payment of benefits and administrative expenses	(12.764)	
▪ Assumed plan year investment returns	11.634	
▪ Investment plan year gain/(loss) experience (on smoothed asset measure)	0.262	
Total plan year Actuarial Value of Assets increase	$ 4.280	Billion

The actual plan investment return on the AVA was +6.95% compared to the prior valuation's assumed return of 6.80%. On a market-value basis, the assets earned -7.18%. On a year-by-year basis, asset returns were as follows:

	Rates of Return[1]		
	2019/2020	2020/2021	2021/2022
Market Value	3.34%	30.38%	-7.18%
Actuarial Value	6.77%	11.23%	6.95%

[1] *Assumes net cash flow occurs mid-year*

2. Actuarial Liability (AL):

Changes in the Actuarial Liability during the plan year were due to:

▪ Expected increase, due to combined effects of Normal Cost plus interest-related growth in Actuarial Liability less benefit payments during plan year	$ 3.879	
▪ Changes in plan provisions[1]	0.099	
▪ Changes in assumptions	2.438	
Liability Plan Year (Gain) / Loss Experience		
▪ Active member salary increases different than assumption	0.989	
▪ New active members	0.376	
▪ Retirement and DROP entry behavior	0.424	
▪ Inactive mortality	(0.322)	
▪ Other demographic sources not noted above[2]	(0.085)	
▪ Liability plan year (gain) / loss experience	1.382	
Total plan year Actuarial Liability increase	$ 7.798	Billion

1. *Includes the effects of extending the maximum length of DROP participation by 36 months for Special Risk Class law enforcement officer members (HB 5007).*
2. *Reflects the combined effects of all other liability (gain)/loss sources for actuarial experience compared to assumptions used in the July 1, 2021 actuarial valuation. These include actual experience for pre-retirement turnover, second election transfers to the Investment Plan, active member death and disability, and all other actual experience not otherwise noted in the table above compared to assumed on the demographic assumptions used to calculate July 1, 2021 actuarial valuation results. It also includes the effect of assumption changes due to reflecting the modified benefit treatment of qualifying PTSD classifications for correctional officers (HB 689) and modified cancer presumption rules for fire investigators (SB 838).*

3. Unfunded Actuarial Liability (UAL):

The net change in the UAL of the FRS Pension Plan was an increase of $3.518 billion, from $34.738 billion to $38.256 billion. The net increase is attributable to the following:

Change due to:

▪ Expected increase, based on the net combined effect of plan contributions received, interest, and assumed investment and demographic experience	$(0.139)	
▪ Changes in plan provisions[1]	0.099	
▪ Changes in assumptions	2.438	
▪ Investment plan year (gain)/loss experience (on smoothed asset measure)	(0.262)	
▪ Liability plan year (gain)/loss experience	1.382	
Total plan year increase/(decrease) in UAL	$3.518	Billion

See table on the following page for total gains/losses by class.

2021-2022 Plan Year (Gain)/Loss Experience[1]

($ in Thousands)

	Regular	Special Risk	Special Risk Administrative	-- Elected Officers' Class -- Judicial	Leg-Atty-Cab	Local	Senior Management	Grand Total
Investment plan year (gain)/loss experience	**($196,598)**	**($57,523)**	**($118)**	**($1,624)**	**($101)**	**($505)**	**($5,410)**	**($261,879)**
Liability plan year (gain) / loss experience by source								
Assumption changes	1,744,906	592,982	891	16,867	1,408	7,633	72,950	2,437,637
Plan changes [2]	0	99,285	0	0	0	0	0	99,285
Active member salary increases different than assumption	562,529	395,451	(327)	(3,855)	2,024	4,416	28,972	989,210
New active Pension Plan members [3]	301,162	2,306	3,128	3,037	(6)	1,814	64,248	375,689
Retirement and Drop Entry Behavior	230,360	173,658	107	8,371	70	(627)	11,979	423,918
Inactive Mortality	(329,450)	(9,504)	494	875	(139)	1,807	14,083	(321,834)
Other demographic sources not noted above [4]	(131,344)	42,507	(393)	(2,987)	1,094	4,289	1,945	(84,889)
Liability plan year (gain) / loss experience	**$2,378,163**	**$1,296,685**	**$3,900**	**$22,308**	**$4,451**	**$19,332**	**$194,177**	**$3,919,016**

[1] *For purposes of this exhibit, liabilities and assets associated with members in DROP are allocated to their respective membership classes. This differs from their representation in Section 4, where UAL bases are tracked separately for the DROP.*

[2] *Includes the effects of extending the maximum length of DROP participation by 36 months for Special Risk Class law enforcement officer members (HB 5007).*

[3] *Includes re-hires, transfers from the Investment Plan, and the net liability effect of class-to-class transfers of Pension Plan members.*

[4] *Reflects the combined effects of all other liability (gain)/loss sources for actuarial demographic experience compared to assumptions used in the July 1, 2021 valuation. This includes the effects of second election transfers to the Investment Plan and changes to census data reporting. It also reflects the PTSD presumption for correctional officers (HB 689) and firefighter cancer presumption (SB 838).*

4. Actuarially Calculated FRS Pension Plan-specific Contribution Rates prior to blending with the FRS Investment Plan:

On a level-rate-of-pay basis, the FRS Pension Plan-specific employer contribution rates for each membership class changed as follows:

				-- Elected Officers' Class --			
	Regular	Special Risk	Special Risk Administrative	Judicial	Leg-Atty-Cab	Local	Senior Management
A. 1. July 1, 2021 Employer Normal Cost Rate	5.73%	16.32%	11.70%	14.48%	9.00%	10.98%	7.59%
2. UAL Contribution Rate	5.52%	11.32%	36.66%	33.24%	80.39%	63.41%	31.03%
3. Total July 1, 2021 Actuarially Calculated Employer Contribution Rate (1.+2.)	11.25%	27.64%	48.36%	47.72%	89.39%	74.39%	38.62%
B. 1. July 1, 2022 Employer Normal Cost Rate	5.96%	17.13%	11.57%	14.77%	9.54%	11.63%	7.86%
2. UAL Contribution Rate (See Table 4-11)	6.27%	12.62%	33.81%	33.52%	76.48%	64.87%	33.53%
3. Total July 1, 2022 Actuarially Calculated Employer Contribution Rate (1.+2.)	12.23%	29.75%	45.38%	48.29%	86.02%	76.50%	41.39%
C. Change in Total Actuarially Calculated Employer Contribution Rate (B.3.-A.3.)	0.98%	2.11%	-2.98%	0.57%	-3.37%	2.11%	2.77%

E. Graphs

Chart A: Assets / Liabilities

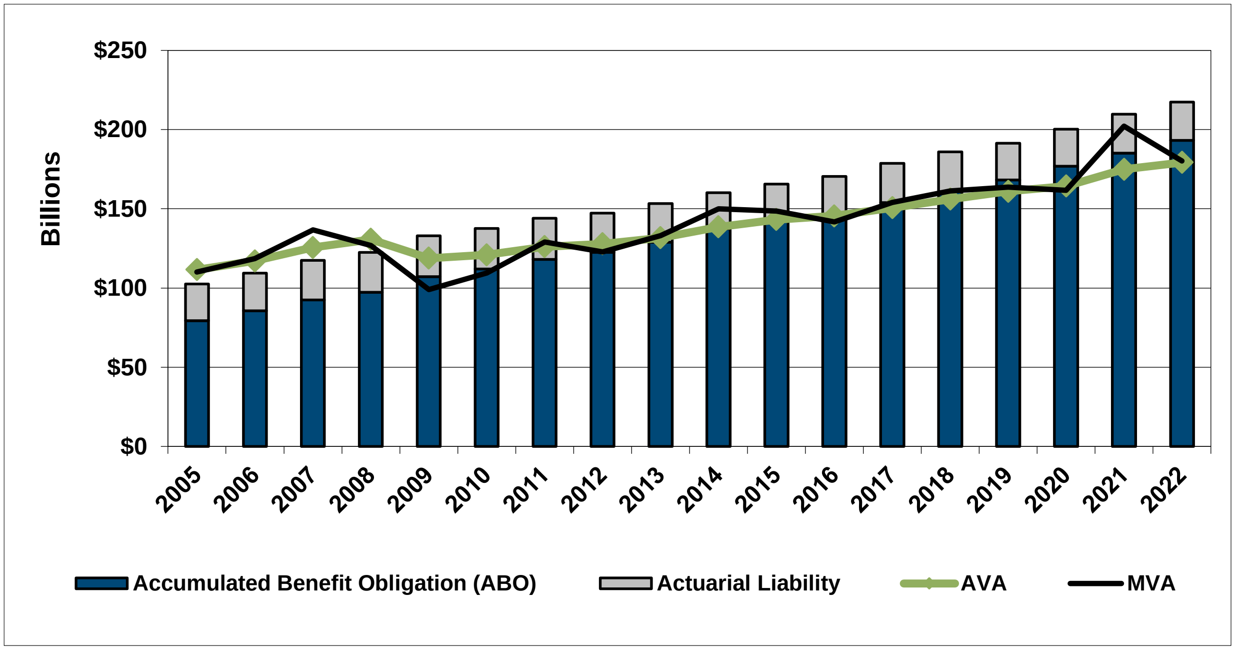


Chart B: Cash Flows

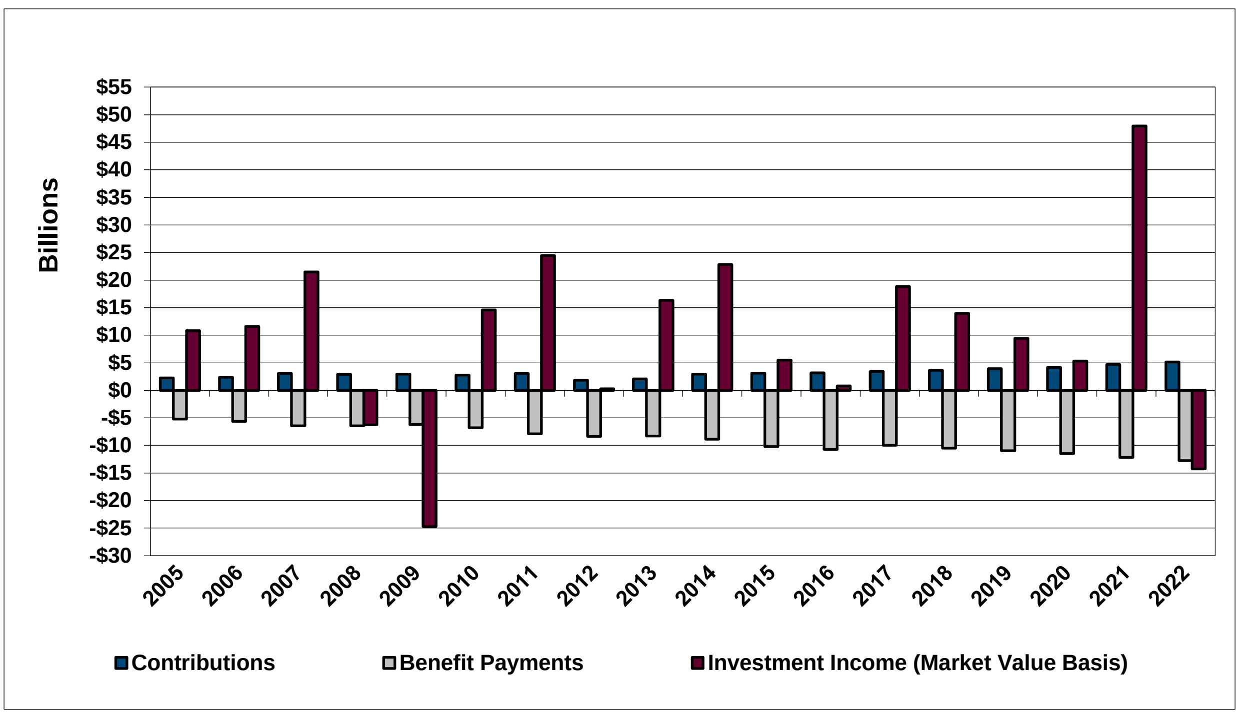


Chart C: Actuarially Calculated Pension Plan Contribution Rates[1] (as % of Payroll)

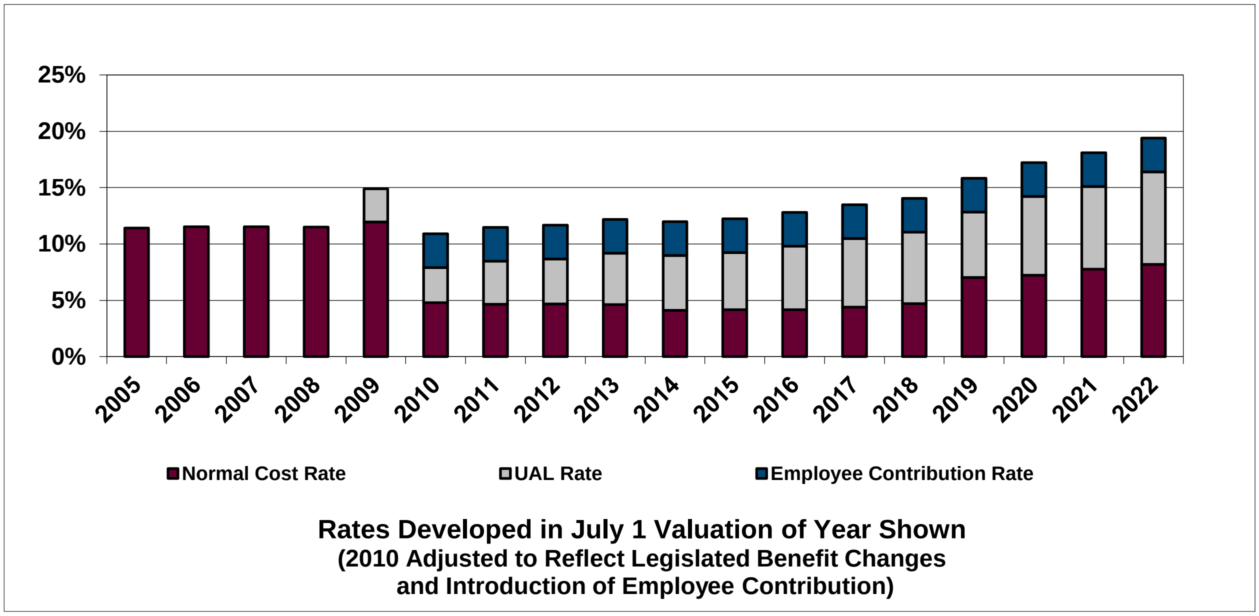
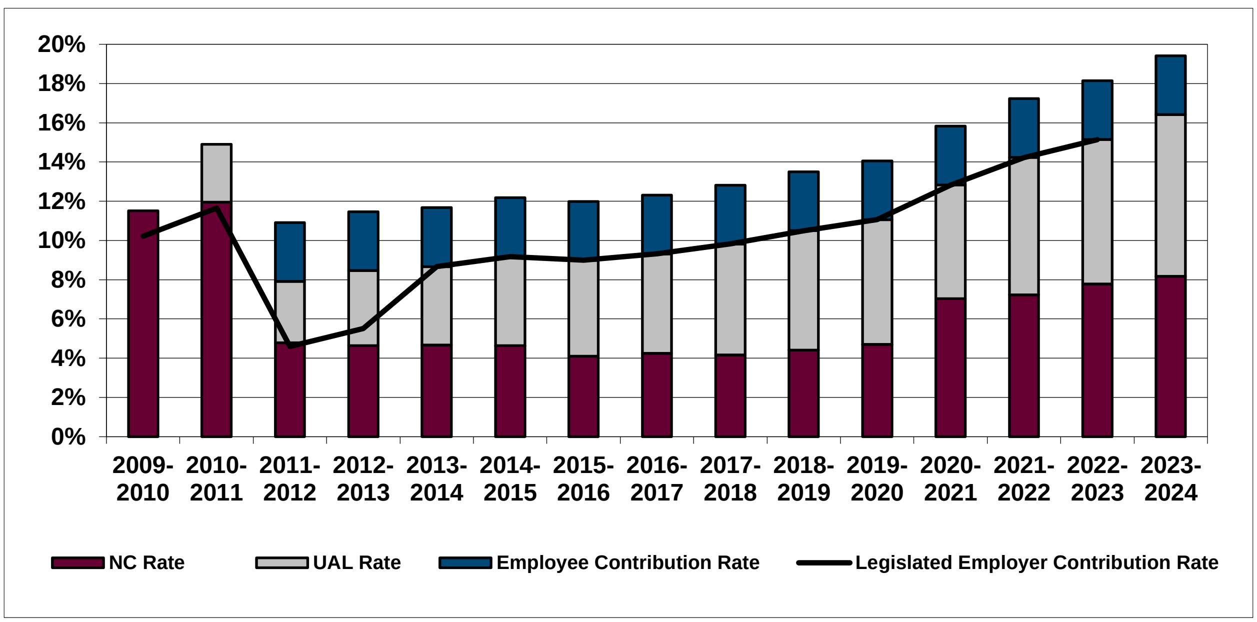


Chart D: Actuarially Calculated vs. Legislated Employer Contribution Rates[1] (as % of Payroll)



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[1] *Charts C and D show the Pension Plan components of proposed contribution rates prior to blending with Investment Plan contribution rates to create proposed statutory contribution rates. Historically, the Florida Legislature has enacted contribution rates which are charged uniformly on combined Investment Plan and Pension Plan payroll. Charts C and D reflect the Pension Plan component of proposed blended statutory rates, consistent with Table 4-12.*

F. Summary Comments

We caution that the results herein are applicable only for the next plan year. More than anything, actual future investment results will impact long-term future contribution rates. The investment return assumption selected affects the timing and pattern of contributions but does not affect the long-term cost of the plan, which is governed by the Fundamental Cost Equation [Benefit Payments + Expenses = Contributions + Actual Investment Returns].

- The most recent experience study covered the period from July 1, 2013 to June 30, 2018. Experience studies are performed every five years and compare actual plan experience to the assumptions used in the annual valuations. This valuation reflects the method and assumptions changes proposed by the 2019 Experience Study and adopted by the 2019 FRS Actuarial Assumption Conference for use in the July 1, 2019 valuation.
- This valuation reflects further changes to the assumptions for inflation and individual member pay increases adopted by the 2020 FRS Actuarial Assumption Conference.
- This valuation also reflects further changes to the assumption for investment return adopted by the 2021 FRS Actuarial Assumption Conference. The Conference also adopted a 20-year amortization period for bases established on or after July 1, 2021. Additionally, and apart from the 2019 actuarial cost allocation method change established June 30, 2019, bases established before July 1, 2021 were modified to have a remaining amortization period of the lesser of their current remaining amortization period and a 20-year amortization period effective with the amortization payment for the 2022-2023 fiscal year.
- This valuation also reflects plan changes effective July 1, 2022 including the enactment of House Bill 5007 which extended the maximum length of DROP participation by 36 months for law enforcement officer members (HB 5007), House Bill 689 which classifies post-traumatic stress disorder (PTSD) as a compensable occupational disease for correctional officers (HB 689), and Senate Bill 838 which provides an in-line-of-duty cancer presumption for fire investigators (SB 838).
- Subsequent FRS Assumption Conferences may, at the discretion of the Conference Principals, consider changes to items such as the investment return assumption or modifications to other assumptions and methods.

Future proposed blended statutory rates for the System will be impacted by choice elections for the defined contribution FRS Investment Plan (IP), which is available as an alternative to the defined benefit FRS Pension Plan for members. The existence of the IP affects the FRS Pension Plan contribution rates insomuch as active members can elect to participate in either the FRS Pension Plan or the IP. Thus, member plan election decisions can affect the demographic composition of the FRS Pension Plan. Current IP membership is between 29% and 30% of total active membership on a headcount basis. Based on legislation effective January 1, 2018 the default plan for newly enrolled non-Special Risk members who do not make an active plan election is now the FRS Investment Plan. House Bill 5007 increased the allocations to IP member accounts by 3% of payroll for each membership class effective July 1, 2022, which may encourage active members to participate in the IP over the Pension Plan.

We mention these caveats because the actuarial valuation process merely measures the impact of these factors on FRS Pension Plan costs and liabilities after they have occurred. Unanticipated benefit or salary changes, changes in member behavior (e.g., withdrawal rates, rates of retirement, etc.), or variations in actual investment return could necessitate changes in the actuarially calculated contribution rates.

Finally, we caution the readers of this report not to overemphasize the results of any single valuation as long-term trends are more important.

G. DROP Contribution Rate

The DROP (Deferred Retirement Option Program) started in 1998, with a study completed prior to the DROP's implementation showing an anticipated material cost increase due to its introduction. Since its introduction and consistent with legislative directive, employers have been charged a uniform DROP contribution rate on all DROP payroll without regard to a participant's membership class. In addition, the asset allocation developed in Table 2-5 is performed so that the DROP's funded percentage is set equal to the composite funded percentage of the FRS Pension Plan.

The DROP contribution rate has two components: Normal Cost and UAL Cost. The Normal Cost is set to the composite FRS Pension Plan average employer-paid Normal Cost Rate of 8.18%. The calculation of the UAL Cost for the DROP is consistent with the calculation of the UAL Cost component of the other membership classes. Essentially, the DROP is allocated a share of plan assets such that the DROP's funded percentage is equal to the composite FRS Pension Plan's funded percentage. This asset allocation to DROP results in a UAL Cost for DROP payroll of 10.01%. The total DROP contribution rate (Normal Cost plus UAL Cost) in this valuation is 18.19%, compared to a DROP contribution rate of 16.92% in the prior valuation.

2. Assets

In many respects, an actuarial valuation can be considered similar to an inventory process. The inventory is taken annually as of the actuarial valuation date, which for this valuation is July 1, 2022. On that date, the assets available for the payment of current and future benefits are appraised. These assets are compared with the inventory of Actuarial Liability. This inventory process leads to a method of calculating what contributions by members and/or their employers are needed to systematically eliminate any shortfall if future experience follows assumptions. Prior to publication of this report, preliminary 2022 valuation results were presented by the actuary to the 2022 FRS Actuarial Assumption Conference.

This section of the report deals with the asset determination. In the next section, the Actuarial Liability will be discussed. Section 4 will deal with the process for determining actuarially calculated contribution rates in order to systematically eliminate any shortfall between the assets and Actuarial Liability.

Two measures of FRS Pension Plan assets are presented in the valuation:

1. The Market Value of Assets (MVA) provides the most accurate fair market "snapshot date" assessment of plan resources at a given date, and will be used on the balance sheet statements of position for the FRS Pension Plan and its participating employers for GASB financial reporting purposes. It tends to be the more volatile of the two asset measures and is not used for determining the actuarially calculated contribution rates.
2. The Actuarial Value of Assets (AVA) is a second measure of FRS Pension Plan asset holdings. It is related to the MVA, but uses a smoothing technique applied to mitigate year-to-year market fluctuations by recognizing actual single year investment returns different from the long-term assumption systematically over a multi-year period. The AVA is the basis for determining actuarially calculated contribution rates, and the smoothing technique is used to stabilize year-to-year contribution rate changes.

The actuarial smoothed asset valuation measure, implemented in 1989, reflects a five-year averaging methodology, as required by Section 121.031(3)(a) of Florida Statutes. Under this method, the expected actuarial value of assets is determined by crediting the rate of investment return assumed in the prior valuation (6.80%) to the prior year's AVA. Then, 20% of the difference between the actual market value and the expected actuarial value of assets is immediately recognized in the AVA. The AVA is also restricted by a 20% corridor around the MVA, so that the AVA cannot be greater than 120% or less than 80% of the MVA. Table 2-3 presents the details of this calculation. As of July 1, 2022, the AVA is 99.4% of the MVA.

Six tables are presented in this section, summarizing the financial resources of the FRS Pension Plan on July 1, 2022. Table 2-1 shows the reconciliation of valuation assets from June 30, 2021 to June 30, 2022. The assets are presented by category in Table 2-2. Table 2-3 provides a detailed development of the July 1, 2022 AVA. In Table 2-4, the AVA is initially allocated to each membership class, based on estimated cash flows. The table also shows the allocation of assets to/from the various classes from/to the DROP. Table 2-5 shows the derivation of the allocation of assets to/from the DROP in order that the DROP's funded percentage is equal to the funded percentage of the FRS Pension Plan as a whole. Finally, Table 2-6 presents rates of return for the 2021-2022 plan year and the two prior plan years.

The Market Value of Assets as of July 1, 2022 was based on information furnished to us by the Division of Retirement, Florida Department of Management Services. The values have been accepted for use in this report without audit but have been reviewed for consistency and reasonableness, when compared to prior reports.

Table 2-1
Florida Retirement System
Reconciliation of Market Value of Assets Used for Valuation
DB Plan Trust

Market Value of Assets for Actuarial Valuation as of June 30, 2021		**$202,082,182,546**
Contributions by Source:		
	Pension Contributions - Employer	4,267,181,943
	Pension Contributions - Employees	763,674,943
	Transfers from IP - Second Elections	111,923,645
	Purchase of Time by Employees	5,552,831
Investment Income		
	Interest Income	767,130,564
	Dividend Income	1,982,410,068
	Real Estate Income	608,771,652
	Securities Lending Income	24,032,150
	Other	4,235,517,111
	Less Investment Activity Expense	(752,370,818)
	Less Securities Lending Expense	(4,221,334)
Other Income		3,198,024
Net Realized and Unrealized Appreciation		(21,104,646,474)
Pension Payments [1]		(11,944,986,866)
Contribution Refunds		(28,343,757)
Disbursements to IP - Second Elections		(768,106,850)
Administrative Expenses		(22,494,571)
Market Value of Assets for Actuarial Valuation as of June 30, 2022		**$180,226,404,807**

[1] *Includes Accrued DROP Liability of $295,813,603 representing single sum DROP benefits of members who retired from DROP on or before June 30, 2022.*

Table 2-2
Florida Retirement System Pension Plan
Summary of Market Value of Assets for Actuarial Valuation [1]

(by Asset Category; $ in Thousands)

	Market Value as of July 1,	
ASSETS	**2021**	**2022**
Cash and cash equivalents	$84,368	$102,144
State Treasury Investment Pool	93,812	101,321
Total cash and cash equivalents	$178,180	$203,464
Investments:		
Certificates of Deposit	$0	$403,384
U.S. Government and Federally Guaranteed Obligations	17,884,329	11,684,983
Federal Agencies	9,467,240	7,741,991
Commercial Paper	2,828,161	5,305,755
Repurchase Agreements	1,000,000	1,200,000
International Bonds and Notes	3,152,081	3,072,594
Bonds and Notes	9,359,596	9,550,418
Real Estate Contracts	10,663,262	16,722,305
Mutual Funds	9,997,729	0
Short Term Investment Funds	55,851	28,558
Domestic Equity / Domestic Equity Commingled	62,378,794	50,373,390
Alternative Investment	39,472,450	40,680,622
International Equity	39,304,609	35,024,200
Other Investments	79,306	41,728
Total Investments	$205,643,408	$181,829,929
Receivables:		
Contributions receivable	331,687	363,429
Pending Investment Sales	1,078,133	859,607
Forward Contracts receivable	0	0
Other Receivables	843,187	680,625
Total receivables	$2,253,007	$1,903,661
Security Lending Collateral	$1,983,381	$943,509
Prepaid items; Furniture & Equipment net Accumulated Depreciation	6,382	9,564
Right-of-Use Lease	0	17,116
Restatement of beginning net position	N/A	N/A
Total Assets	$210,064,359	$184,907,243
LIABILITIES		
Accrued DROP liability [2]	308,788	295,814
Obligations under Security Lending Agreements	2,015,232	960,930
Pending Investment Purchases	4,907,134	2,970,691
Pending Spot for Trades Payable	344,928	146,378
Lease Liability	0	16,285
Other Liabilities and Payables	381,864	267,813
Total Liabilities	$7,957,946	$4,657,911
DEFERRED INFLOWS AND OUTFLOWS OF RESOURCES		
Deferred outflows related to other postemployment benefits	2,204	4,561
Deferred inflows related to pension amounts	(20,104)	(21,107)
Deferred inflows related to other post employment benefits	(6,330)	(6,381)
Net Deferred Inflows and Outflows of Resources	($24,230)	($22,927)
FIDUCIARY NET POSITION		
Held in trust for pension benefits	**$202,082,183**	**$180,226,405**

[1] *Amounts shown in exhibit are rounded to the nearest thousand. As such, sums may differ from amounts displayed due to rounding.*

[2] *Per our understanding, the accrued DROP liability represents lump sum DROP exit payments made early in the subsequent plan year for members exiting the DROP on or shortly before the asset measurement date.*

Table 2-3
Florida Retirement System Pension Plan
Development of 2022 Actuarial Value of Assets

1. FRS Market Value of Assets on June 30, 2021 for Actuarial Valuation	$202,082,182,546
2. Actuarial Value of Assets on July 1, 2021	$174,898,452,216
3. 2021/2022 Net Cash Flow (Contributions less Benefits and Administrative Expenses)	($7,615,598,682)
4. Preliminary Actuarial Value of Assets, July 1, 2022, if Items 2 and 3 earned an assumed rate of 6.80%	$178,917,017,930
5. Market Value of Assets, June 30, 2022 for Actuarial Valuation	$180,226,404,807
6. Net Assets (Actuarial Value Basis) Available for Benefits Prior to Application of 80%/20% Corridor 4 + ((5 - 4) x 20%)	$179,178,895,305
7. 120% of Market Value [120% (5)]	$216,271,685,768
8. 80% of Market Value [80% (5)]	$144,181,123,846
9. Actuarial Value of Assets on July 1, 2022 Lesser of (6) and (7), but not less than (8)	**$179,178,895,305**
10. Ratio of July 1, 2022 Actuarial Value of Assets to Market Value on June 30, 2022 for Actuarial Valuation	**99.42%**

Table 2-4
Florida Retirement System Pension Plan
Development of Actuarial Value of Assets
by Membership Class[1]

($ in Thousands)

	Regular	Special Risk	Special Risk Administrative	-- Elected Officers' Class -- Judicial	Leg-Atty-Cab	Local	Senior Management	DROP	Total System
1. Allocated Actuarial Value of Assets by Class, July 1, 2021	$120,398,491	$34,509,145	$71,923	$987,855	$61,126	$309,666	$3,187,907	$15,372,339	$174,898,452
2. Total Contribution for the Plan Year	2,980,066	1,354,235	5,163	57,857	6,607	36,150	290,406	417,849	5,148,333
3. Benefit Payments and other Disbursements	(8,967,096)	(2,423,470)	(8,090)	(105,844)	(9,442)	(53,526)	(338,864)	(857,600)	(12,763,932)
4. Allocated Investment Earnings on AVA Basis	8,163,242	2,362,271	4,899	67,018	4,152	20,927	219,973	1,053,560	11,896,042
5. Unadjusted Actuarial Value of Assets (1) + (2) + (3) + (4)	122,574,703	35,802,181	73,895	1,006,886	62,443	313,217	3,359,422	15,986,148	179,178,895
6. Net Reallocation (see Table 2-5)	670,660	258,680	276	11,191	585	3,206	31,897	(976,495)	0
7. Allocated Actuarial Value of Assets by Class, July 1, 2022: (5) + (6)	$123,245,363	$36,060,861	$74,171	$1,018,077	$63,028	$316,423	$3,391,319	$15,009,653	$179,178,895

[1] Information provided that aligns plan year contributions and disbursements to the individual membership classes does not sum to the exact total of the system-level totals reported in the financial statements. As a result, lines 2 and 3 above are allocated to the membership classes in proportion to class-level information provided, and then are "trued-up" to the totals reported at the system level. These lines also reflect the effect of active Pension Plan members moving from one membership class to another since the previous valuation date.

Table 2-5
Florida Retirement System Pension Plan
Reallocation of Actuarial Value of Assets to/from DROP
by Membership Class

($ in Thousands)

	Regular	Special Risk	Special Risk Administrative	Judicial	-- Elected Officers' Class -- Leg-Atty-Cab	Local	Senior Management	DROP	Total System
1. Actuarial Accrued Liability, July 1, 2022								$18,213,388	$217,434,441
2. Unadjusted Actuarial Value of Assets, July 1, 2022 prior to reallocation								15,986,148	179,178,895
3. Unfunded Actuarial Liability (UAL): (1) - (2)								$2,227,240	$38,255,546
4. Aggregate Funded Percentage: (2) / (1)								87.77%	82.41%
5. DROP Assets Required to Meet Aggregate Funded Percentage: (1) x (4) [Total System] - (2)								($976,495)	
6. Proportion of DROP Liability by Class	0.6868	0.2649	0.0003	0.0115	0.0006	0.0033	0.0327	N/A	1.0000
7. Assets to be Reallocated	$670,660	$258,680	$276	$11,191	$585	$3,206	$31,897	($976,495)	$0

Table 2-6
Florida Retirement System Pension Plan
Rates of Return on Investments
(Assumes net cash flow occurs mid-year)

	Rates of Return		
Asset Bases	2019/2020	2020/2021	2021/2022
Market Value	3.34%	30.38%	-7.18%
Actuarial Value	6.77%	11.23%	6.95%

3. Liabilities

In the previous section, an actuarial valuation was compared to an inventory process, and an analysis was given of the inventory of assets of the FRS Pension Plan as of the valuation date, July 1, 2022. In this section, the discussion will focus on the projected future benefit commitments of the FRS Pension Plan allocated to service already performed under the actuarial cost allocation method, which will be referred to as its Actuarial Liability. In Section 5 other liability measures are presented based on accounting principles of the Financial Accounting Standards Board (FASB). Calculations required by the Governmental Accounting Standards Board (GASB) are developed and issued as part of a separate report. It is important to note that the accounting liabilities shown in Section 5 of this report and in the separate GASB report are for informational disclosure and comparison purposes, while the Actuarial Liability calculated in this section is used for determining the FRS Pension Plan actuarially calculated contribution rates prior to blending with FRS Investment Plan contribution rates to create blended proposed statutory rates.

A fundamental principle in financing a retirement program is that the projected cost of future retirement benefits should be allocated to the period in which service is performed, rather than during the post-retirement period of benefit distribution. There are several methods that can be used in making such an allocation.

Beginning with the July 1, 2019 actuarial valuation for funding purposes, the Individual Entry Age Normal (Individual EAN) actuarial cost allocation method was selected by the FRS Actuarial Assumption Conference. The actuarial cost allocation method used does not affect the calculation of overall projected Pension Plan benefits (Present Value of Benefits), but it does affect the allocation of those benefits over a member’s projected working career between past (Actuarial Liability), current year (Normal Cost) and all future projected service (Present Value of Future Normal Costs). The Present Value of Benefits is equal to the sum of the Actuarial Liability and the Present Value of Future Normal Costs.

Members initially enrolled on or after July 1, 2011 (Tier II) have different benefit and retirement eligibility provisions than Tier I members. Under the Individual EAN method, the Normal Cost is calculated separately for each of the individual members, based on their ages at entry into the System, and the tier-specific benefit provisions. The individual Normal Costs of all members are then aggregated and divided by the total current compensation of the individuals included in the valuation to determine the Normal Cost rate as a percentage of compensation. The actuarial Present Value of Benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit. The portion of this actuarial present value allocated to a valuation year is called the Normal Cost. Individual EAN sets normal cost in a manner that is representative of the tier in which the member actually participates.

The difference between the Actuarial Liability and the Actuarial Value of Assets accumulated as of the actuarial valuation date is referred to as the Unfunded Actuarial Liability (UAL). (If the difference is negative, the excess of the funds accumulated over the liabilities may be referred to as the surplus.) The UAL Contribution Rate is calculated in a manner such that the UAL will fully amortize in accordance with the schedules in Section 4 of this report if actual future experience follows the assumptions used in the valuation and contributions are made each year at levels equal to actuarially calculated contribution rates.

The UAL will grow with interest and Normal Cost while contributions will reduce it.

Benefit improvements, actuarial gains and losses (variations in investment results and demographic changes from assumption), and changes in actuarial assumptions and methods will also have an effect on the Actuarial Liability and on the UAL.

After the amount of the UAL has been determined, as part of the rate calculation methodology, the actuarially calculated contribution rates include a component for the amortization of the UAL. A schedule of contributions is established to amortize the UAL. In Section 4 of the report, we discuss the contribution schedules in detail.

Table 3-1 contains a breakdown of the Actuarial Liabilities and Unfunded Actuarial Liabilities in the FRS Pension Plan for the 2021 valuation and the 2022 valuation. In Table 3-2, the 2022 liabilities are shown for each membership class.

Legislation enacted in 2001 “walls off,” for 25 years, the actuarial gains arising from former FRS Pension Plan participants electing to participate in the FRS Investment Plan. The “walled off” amount is called the contingent liability. The Actuarial Liabilities generally do not include the contingent liability. However, surplus, if any, used for contribution rate reductions is net of the contingent liability. Table 3-3 shows the contingent liability and the number of current active participants, by class, who elected to transfer from the FRS Pension Plan to the FRS Investment Plan during the original 2002-2003 election periods available to FRS Pension Plan members who were active when the FRS Investment Plan first became available for participation.

Table 3-1
Florida Retirement System Pension Plan
Actuarial Liabilities

($ in Thousands)

	July 1, 2021 Valuation [1]	July 1, 2022 Valuation [2]
1. Actuarial Liabilities for:		
(a) Active Members	$62,337,458	$64,658,073
(b) Retired, Disabled and Beneficiary Members	122,991,730	128,290,848
(c) Terminated Vested Members	5,881,425	6,272,132
(d) DROP	18,425,433	18,213,388
2. Total Actuarial Liability	$209,636,046	$217,434,441
3. Actuarial Value of Assets	$174,898,452	$179,178,895
4. Unfunded Actuarial Liability / (Surplus)	$34,737,594	$38,255,546
5. Investment Plan Contingent Liability [3]	$212,699	$205,401
6. Surplus Available for Rate Reduction	$0	$0

[1] Values as developed in July 1, 2021 valuation; do not reflect liabilities associated with legislation enacted during the 2022 legislative session.

[2] Values as of July 1, 2022 valuation reflect all legislation enacted during the 2022 legislative session: Extension of the maximum length of DROP participation by 36 months for law enforcement officers (HB 5007), PTSD classification for correctional officers (HB 689), and cancer presumption for fire investigators (SB 838).

[3] See Table 3-3.

Table 3-2
Florida Retirement System Pension Plan
Actuarial Liabilities by Membership Class
July 1, 2022
($ in Thousands)

	Regular	Special Risk	Special Risk Administrative	-- Elected Officers' Class -- Judicial	Leg-Atty-Cab	Local	Senior Management	DROP	Total System
1. Present Value of Benefits for:									
a. Active Members	$61,401,860	$27,189,902	$21,001	$592,938	$28,374	$209,429	$2,334,358	$0	$91,777,862
b. Retired, Disabled and Beneficiary Members	94,697,836	27,748,858	72,511	1,108,948	101,399	565,841	3,995,455	18,213,388	146,504,236
c. Terminated Vested Members	5,257,436	731,891	1,530	25,765	14,010	21,924	219,576	0	6,272,132
d. Total Present Value of Benefits (a)+(b)+(c)	161,357,132	55,670,651	95,042	1,727,651	143,783	797,194	6,549,389	18,213,388	244,554,230
2. Present Value of Future Normal Cost (Actives):	$15,771,609	$10,599,878	$4,705	$182,303	$5,775	$45,831	$509,688	$0	$27,119,789
3. Actuarial Liabilities for:									
a. Active Members (1a) - (2)	$45,630,251	$16,590,024	$16,296	$410,635	$22,599	$163,598	$1,824,670	$0	$64,658,073
b. Retired, Disabled and Beneficiary Members (1b)	94,697,836	27,748,858	72,511	1,108,948	101,399	565,841	3,995,455	18,213,388	146,504,236
c. Terminated Vested Members (1c)	5,257,436	731,891	1,530	25,765	14,010	21,924	219,576	0	6,272,132
d. Total Actuarial Liability (a)+(b)+(c)	$145,585,523	$45,070,773	$90,337	$1,545,348	$138,008	$751,363	$6,039,701	$18,213,388	$217,434,441
4. Actuarial Value of Assets	$123,245,363	$36,060,861	$74,171	$1,018,077	$63,028	$316,423	$3,391,319	$15,009,653	$179,178,895
5. Unfunded Actuarial Liability / (Surplus)	$22,340,160	$9,009,912	$16,166	$527,271	$74,980	$434,940	$2,648,382	$3,203,735 [1]	$38,255,546
6. Present Value of Future Pay	$183,555,682	$55,407,546	$34,359	$1,048,677	$47,192	$322,563	$4,851,389	$0	$245,267,408

[1] *This is a bookkeeping item. DROP liabilities include the total present value of benefits to all members currently in DROP. When a member leaves DROP, their liability is transferred to the class of membership from which they retired.*

Table 3-3
Florida Retirement System Investment Plan
Contingent Actuarial Liabilities
July 1, 2022
($ in Thousands)

	Regular	Special Risk	Special Risk Administrative	-- Elected Officers' Class -- Judicial	Leg-Atty-Cab	Local	Senior Management	DROP	Total System
As of July 1, 2021									
Contingent Liability	$196,665	$7,829	$0	($752)	$77	$19	$8,861	NA	$212,699
Participant Counts	3,667	97	0	3	1	1	89	NA	3,858
As of July 1, 2022									
Contingent Liability [1 & 2]	$189,189	$7,586	$0	($535)	$82	$41	$9,038	NA	$205,401
Participant Counts	3,303	88	0	2	1	2	85	NA	3,481

[1] *The contingent liability is not included in the actuarial liabilities of FRS and is removed from the surplus.*

[2] *The contingent liability as of July 1, 2022 is calculated as the July 1, 2003 contingent liability increased by 19 years of interest, adjusted for the proportion of original transfers remaining in the Investment Plan.*

4. Contributions

Differences between the Actuarial Liabilities and the assets can be made up through (1) future contributions in excess of the Normal Costs to amortize the shortfall and/or (2) actual future investment returns in excess of assumed returns. An actuarial valuation sets out a schedule of future contributions that will fully amortize the Unfunded Actuarial Liability (UAL) in a systematic manner if future experience follows the assumptions. By contrast, in prior years when the FRS Pension Plan had an actuarial surplus, legislated contribution rates were generally below the Normal Cost Rate. In this section we develop and present the FRS Pension Plan-specific contribution rates proposed to be effective for the Plan Year beginning July 1, 2023 based on the July 1, 2022 membership data. Under separate cover, the FRS Pension Plan-specific contribution rates calculated in this valuation are blended with contribution rates for the FRS Investment Plan to develop proposed blended statutory contribution rates for the Plan Year beginning July 1, 2023.

First, we present a description of the actuarial method used to determine the actuarially calculated FRS Pension Plan-specific contribution rates for the 2023-2024 plan year. This is followed by a series of tables presenting the details of our calculations.

A. Funding Methods

The actuarial cost method used to determine the pattern of future contributions is called the Individual Entry Age Normal (Individual EAN) actuarial cost allocation method. Under this method (as is the case for most actuarial cost allocation methods), the contribution rates calculated have two components:

- Normal Cost Rate
- UAL Contribution Rate, which amortizes the UAL if future experience follows assumptions.

These components are described in more detail below.

1. Normal Cost Rate

Under the Individual EAN method, the Normal Cost Rate is that level percentage of pay which would fully fund a member's benefit at retirement, if paid from the year of entry (i.e., "entry age") to the year of retirement if future experience were to exactly match the actuarial assumptions. Individual EAN sets normal cost in a manner that is representative of the tier in which the member actually participates.

We have determined the Normal Cost Rates for the FRS Pension Plan separately by membership class and type of benefit (e.g., retirement, disability). These are summarized in Table 4-1.

2. UAL Contribution Rate

The Actuarial Liability is the difference between the Total Present Value of Benefits (PVB) and the Present Value of Future Normal Costs (PVFNC).

The term "fully funded" can be used for a system where contributions at the Normal Cost Rate are projected to be completely adequate to fully fund the projected future benefits of all existing members if future experience follows assumptions. Currently, most systems are not fully funded. This can be because contributions for the estimated value of benefits earned in a year have not been fully made, benefit improvements for past service are granted but then are funded gradually over future years, actual experience has not been as favorable as assumed, or assumptions have been updated which increase liability compared to assumptions used in prior valuations. Under these circumstances, a UAL exists. For the FRS Pension Plan, there has been a UAL for every valuation since the July 1, 2009 valuation. Prior to that time, the Actuarial Value of Assets exceeded the Actuarial Liability for the valuations from 1998 through 2008 and the UAL for those valuations was considered fully amortized.

Tables 4-2 through 4-10 show how the FRS Pension Plan-specific UAL contribution rates are derived. The FRS Pension Plan-specific contribution rates calculated in this valuation are blended with contribution rates for the FRS Investment Plan to develop proposed blended statutory contribution rates for the Plan Year beginning July 1, 2023. Table 4-2 shows the calculations on a composite basis, while Tables 4-3 through 4-10 show the calculations for each individual membership class and sub-class and for the DROP.

The funding policy approved by the FRS Actuarial Assumption Conference includes UAL amortization via a set of closed, layered amortization bases. Starting in the 1998 actuarial valuation, the Legislature required all UAL bases in existence at that time to be considered fully amortized, since the Plan was in surplus position. Since then, new amortization bases were created whenever there were changes in plan provisions or changes in assumptions pursuant to an experience study or other action by the FRS Actuarial Assumption Conference to modify actuarial assumptions or methods. Since a UAL currently exists, all experience gains and losses are also subject to amortization. In this valuation, we show the amortization base of each plan/assumption/method change since 1998 and amortization bases for experience gains/losses starting in 2009, when the plan no longer had an actuarial surplus. Beginning with the July 1, 2021 valuation, the Conference approved amortization of newly established bases over a closed 20-year period. Additionally, and apart from the 2019 Method Changes established June 30, 2019, bases established before July 1, 2021 were modified to have a remaining amortization period of the lesser of their current remaining amortization period and a 20-year amortization period effective with the amortization payment for the 2022-2023 fiscal year.

For a given base of UAL amortization, annual amortization payments in non-inflation-adjusted dollars are calculated as increasing by 3.25% per year (“level percent of projected payroll amortization”), consistent with the valuation’s long-term annual UAL payroll growth assumption as adopted by the FRS Actuarial Assumption Conference. If future experience follows the actuarial assumptions, this should result in amortization payments that align with the assumed growth in overall UAL payroll. Please note that with the current closed amortization period of 20 years for new and current bases, amortization payments will be large enough to cover interest on the UAL of those bases. This means that the amortization payments will cover both interest and principal, and the unamortized UAL as a dollar amount will be projected to decrease in each subsequent year. For each newly established amortization base, after approximately 7.5 years, the unamortized balance for the base will be approximately at the same level (in non-inflation-adjusted dollars) as the initial amount of the base.

The benefit changes effective in 2011 reduced the Normal Cost, PVFNC, and the PVB for current and future active members. All members initially enrolled before July 1, 2011 (Tier I) will continue to earn benefits at levels greater than those annually earned by members initially enrolled on or after July 1, 2011 (Tier II). While the base benefits are higher for Tier I members than Tier II members, the projected benefit levels for Tier I members are decreased from what they would have been before benefit changes in 2011 due to the determination of the annual COLA percentage being based on the ratio of pre-July 2011 service to total service.

As noted on the prior page, the Actuarial Liability is defined as PVB less PVFNC. In 2011, for some membership classes the decrease in the PVFNC from the 2011 benefit changes was larger than the decrease in the PVB, resulting in an increase in an Actuarial Liability. For the remaining membership classes, the decrease in the PVFNC was smaller than the decrease in the PVB, resulting in a decrease in the Actuarial Liability. The variation is due to the different demographics, benefit multipliers and unique interrelation of the modified benefit provisions of each membership class under the actuarial cost allocation method approved for use in 2011 (Ultimate Entry Age Normal) by the FRS Actuarial Assumption Conference. The PVB will be lower in future valuations than it would have been had the 2011 benefit changes not been adopted.

Effective July 1, 2019, the FRS Actuarial Assumption Conference adopted the use of Individual Entry Age Normal (Individual EAN) for system funding calculations. The change in the actuarial cost allocation method increased the cost allocation of projected benefits to future service (via a higher normal cost rate than the prior method) and decreased the allocation of projected benefits to past service, meaning decreased actuarial accrued liability and UAL when compared to the prior method. The decrease in UAL arising from the cost method change is amortized separately from other UAL change amortization bases. The increase in Normal Cost and the decrease in UAL due to the actuarial cost allocation method change is specific to active Tier I Pension Plan members. There is no change, however, in the projected benefits for Tier I active members. Given this financial dynamic, the decrease in the UAL due to the July 1, 2019 actuarial valuation’s cost allocation method change was amortized over a closed 30-year period in a manner that mirrors the projected payroll of the closed Tier I population in the FRS Pension Plan. This method was discussed and illustrated in Milliman’s October 23, 2019 and October 28, 2019 presentation materials to the 2019 FRS Actuarial Assumption Conference.

B. FRS Pension Plan-Specific Employer Contribution Rates

Table 4-11 presents the actuarially calculated 2023-2024 employer contribution rates for the FRS Pension Plan prior to blending with FRS Investment Plan contribution rates to create 2023-2024 blended proposed statutory rates.

The reader should note that the payroll base for UAL Cost contributions is larger than the payroll base for Normal Cost contributions. Florida Statute requires the employers of certain defined contribution program participants and reemployed retirees who are not eligible for renewed membership to make UAL Cost contributions based on their payroll. The payroll base for UAL Cost contributions includes approximately $3.9 billion of payroll for employees who are not currently participating in the FRS Pension Plan or the FRS Investment Plan. Thus, the total contribution rate shown is an arithmetic sum, but the actual contribution percentages will be determined on a blended rate basis so that employers pay the same contribution rate for FRS Pension Plan members and FRS Investment Plan members in the same membership class or subclass.

Table 4-12 compares the legislated FRS Pension Plan-specific employer contribution rates to those calculated in the actuarial valuations for the two prior plan years. The legislated rates for all plan years since and including 2013-2014 have been equivalent to the actuarially calculated rates determined in the prior year valuations, except when rates have been subsequently modified to reflect the effects of legislation enacted subsequent to publication of the valuation report.

Table 4-1
Florida Retirement System Pension Plan
Normal Cost Rates by Decrement
July 1, 2022

	Regular	Special Risk	Special Risk Administrative	----- Elected Officers' Class ----- Judicial	Leg-Atty-Cab	Local	Senior Management	DROP	Total
1. Vested Benefits and Early Retirement	1.37%	2.05%	2.91%	1.32%	4.91%	3.33%	1.94%	NA	1.52%
2. Regular Retirement	7.08%	15.93%	11.15%	15.53%	7.04%	10.57%	8.37%	NA	8.83%
3. Non-Duty Death	0.17%	0.24%	0.25%	0.60%	0.32%	0.42%	0.24%	NA	0.19%
4. Line of Duty Death	0.01%	0.44%	0.01%	0.03%	0.02%	0.03%	0.02%	NA	0.10%
5. Non-Duty Disability	0.13%	0.18%	0.17%	0.27%	0.17%	0.17%	0.15%	NA	0.14%
6. Line of Duty Disability	0.01%	1.16%	0.01%	0.01%	0.01%	0.01%	0.01%	NA	0.23%
7. Refund of Employee Contributions	0.19%	0.13%	0.07%	0.01%	0.07%	0.10%	0.13%	NA	0.17%
8. Total Normal Cost Rate	8.96%	20.13%	14.57%	17.77%	12.54%	14.63%	10.86%	NA	11.18%
9. Expected Employee Contributions	-3.00%	-3.00%	-3.00%	-3.00%	-3.00%	-3.00%	-3.00%	NA	-3.00%
10. Employer Normal Cost Rate	5.96%	17.13%	11.57%	14.77%	9.54%	11.63%	7.86%	8.18% [1]	8.18%

[1] *DROP Normal Cost Rate is set equivalent to the Pension Plan composite Normal Cost rate.*

Table 4-2
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2022
Composite Plan
($ in Thousands)

(a) Date Established	(b) Description	(c) Remaining Payments as of Valuation Date	(d) Balance as of Valuation Date	(e) Amortization Factor[1]	(f) = (d) / (e) Amortization Payment for FY 2022-2023	(g) Remaining Payments one year after Valuation Date	(h) Balance One Year After Valuation Date	(i) Amortization Factor[1]	(j) = (h) / (i) Amortization Payment for FY 2023-2024
June 30, 1999	Assumption Change from 1998 Experience Study	8	($291,142)	6.8980	($42,207)	7	($267,051)	6.1536	($43,397)
June 30, 2000	Special Risk 65% In-Line-Of-Duty Disability (2000)	9	(1,996)	7.6363	(261)	8	(1,860)	6.9227	(269)
June 30, 2000	Special Risk-Regular 12% Pre-2000 Retired Benefit Increase (2000)	9	254,277	7.6363	33,298	8	236,918	6.9227	34,223
June 30, 2004	Assumption Change from 2003 Experience Study	13	(3,207,438)	10.3524	(309,827)	12	(3,102,299)	9.7585	(317,908)
June 30, 2009	Assumption Change from 2008 Experience Study	18	6,881,889	13.2695	518,624	17	6,807,260	12.8170	531,111
June 30, 2009	2008-2009 Experience (Gains) / Losses	18	21,596,306	13.2695	1,627,511	17	21,362,110	12.8170	1,666,698
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	18	(6,317,110)	13.2695	(476,061)	17	(6,248,606)	12.8170	(487,524)
June 30, 2009	2009-2010 Plan Changes (HB 479)	18	(1,305,953)	13.2695	(98,417)	17	(1,291,791)	12.8170	(100,787)
June 30, 2010	2009-2010 Experience (Gains) / Losses	19	1,182,577	13.7961	85,718	18	1,173,267	13.3707	87,749
June 30, 2010	2010-2011 Plan Changes (SB 2100)	19	(1,295,345)	13.7961	(93,892)	18	(1,285,147)	13.3707	(96,117)
June 30, 2011	2010-2011 Experience (Gains) / Losses	20	2,904,070	14.3052	203,009	19	2,888,943	13.9065	207,741
June 30, 2012	2011-2012 Experience (Gains) / Losses	20	(117,570)	14.3052	(8,219)	19	(116,957)	13.9065	(8,410)
June 30, 2013	2012-2013 Experience (Gains) / Losses	20	2,978,221	14.3052	208,192	19	2,962,709	13.9065	213,045
June 30, 2014	Assumption/Method Change from 2013 Experience Study	20	2,147,087	14.3052	150,092	19	2,135,904	13.9065	153,591
June 30, 2014	2013-2014 Experience (Gains) / Losses	20	(2,911,967)	14.3052	(203,561)	19	(2,896,800)	13.9065	(208,306)
June 30, 2015	2014-2015 Experience (Gains) / Losses	20	597,666	14.3052	41,780	19	594,553	13.9065	42,754
June 30, 2016	Special Risk 100% In-Line-Of-Duty Death (2016)	20	45,643	14.3052	3,191	19	45,405	13.9065	3,265
June 30, 2016	2016 Assumption Changes	20	1,209,458	14.3052	84,547	19	1,203,158	13.9065	86,518
June 30, 2016	2015-2016 Experience (Gains) / Losses	20	1,331,930	14.3052	93,108	19	1,324,993	13.9065	95,279
June 30, 2017	Special Risk 100% In-Line-Of-Duty Death (2017)	20	95,208	14.3052	6,656	19	94,712	13.9065	6,811
June 30, 2017	2017 Assumption Changes	20	2,378,671	14.3052	166,281	19	2,366,282	13.9065	170,157
June 30, 2017	2016-2017 Experience (Gains) / Losses	20	524,891	14.3052	36,692	19	522,157	13.9065	37,548
June 30, 2018	2018 Assumption Changes	20	2,435,972	14.3052	170,286	19	2,423,284	13.9065	174,256
June 30, 2018	2017-2018 Experience (Gains) / Losses	20	(817,956)	14.3052	(57,179)	19	(813,696)	13.9065	(58,512)
June 30, 2019	Special Risk Cancer Presumption Disability and Death (2019)	20	11,889	14.3052	831	19	11,827	13.9065	850
June 30, 2019	2019 Assumption Changes	20	4,384,618	14.3052	306,506	19	4,361,780	13.9065	313,651
June 30, 2019	2019 Method Changes	n/a [2]	(3,348,759)	8.8010	(380,499)	n/a [2]	(3,180,087)	8.6058	(369,529)
June 30, 2019	2018-2019 Experience (Gains) / Losses	20	(437,830)	14.3052	(30,606)	19	(435,549)	13.9065	(31,320)
June 30, 2020	2020 Assumption Changes	20	4,187,438	14.3052	292,722	19	4,165,627	13.9065	299,546
June 30, 2020	2019-2020 Experience (Gains) / Losses	20	1,733,123	14.3052	121,154	19	1,724,096	13.9065	123,978
June 30, 2021	2021 Assumption Changes	20	5,019,069	14.3052	350,857	19	4,992,926	13.9065	359,036
June 30, 2021	2020-2021 Experience (Gains) / Losses	20	(7,030,865)	14.3052	(491,492)	19	(6,994,243)	13.9065	(502,949)
June 30, 2022	2022-2023 Plan Changes (HB 5007, HB 689, and SB 838)		99,285			20	105,938	14.4249	7,344
June 30, 2022	2022 Assumption Changes		2,437,637			20	2,600,959	14.4249	180,310
June 30, 2022	2021-2022 Experience (Gains) / Losses		902,552 [3]			20	963,023	14.4249	66,761
		UAL as of Valuation Date	$38,255,546		$2,308,833		$38,433,743	Total:	$2,637,193
							Projected FY 2023-2024 UAL Payroll Excluding FRS Investment Plan Payroll:		$32,026,524
							FY 2023-2024 UAL Contribution Rate Prior to Blending with FRS Investment Plan Payroll:		8.23%

[1] The 2022-2023 amortization factors are based on the assumptions used in the July 1, 2021 actuarial valuation, which determined actuarially calculated contribution rates for 2022-2023.
The 2023-2024 amortization factors are based on the assumptions used in this July 1, 2022 actuarial valuation, which determines actuarially calculated contribution rates for 2023-2024.

[2] Unlike all other bases, which are amortized as a level percentage of UAL payroll over a specified period, this credit base is amortized over a closed period in a manner that mirrors the projected payroll for the closed Tier I population of the FRS Pension Plan. Please see page A-2 for further explanation and page A-3 for amortization schedule. That schedule amortizes a greater percentage of the remaining balance in each plan year illustrated than would a 20-year level percentage of pay amortization factor.

[3] The experience (gains)/losses developed on this table and the subsequent tables in this section are derived using a methodology which assumes 2021-2022 UAL contributions precisely equaled the scheduled UAL amortization payments.
Actual System contributions differ somewhat from the amortization schedules in this section, and there is no clear delineation in actual contributions received between Normal Cost and UAL contributions.
The UAL (gain)/loss shown in the Executive Summary is derived using a methodology which incorporates actual 2021-2022 contributions.

Table 4-3
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2022
Regular Class
($ in Thousands)

(a) Date Established	(b) Description	(c) Remaining Payments as of Valuation Date	(d) Balance as of Valuation Date	(e) Amortization Factor	(f) = (d) / (e) Amortization Payment for FY 2022-2023	(g) Remaining Payments one year after Valuation Date	(h) Balance One Year After Valuation Date	(i) Amortization Factor	(j) = (h) / (i) Amortization Payment for FY 2023-2024
June 30, 1999	Assumption Change from 1998 Experience Study	8	($221,791)	6.8980	($32,153)	7	($203,438)	6.1536	($33,060)
June 30, 2004	Assumption Change from 2003 Experience Study	13	(2,833,606)	10.3524	(273,716)	12	(2,740,721)	9.7585	(280,855)
June 30, 2009	Assumption Change from 2008 Experience Study	18	5,598,025	13.2695	421,871	17	5,537,319	12.8170	432,028
June 30, 2009	2008-2009 Experience (Gains) / Losses	18	34,389,532	13.2695	2,591,617	17	34,016,602	12.8170	2,654,017
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	18	(26,975,469)	13.2695	(2,032,888)	17	(26,682,940)	12.8170	(2,081,836)
June 30, 2009	2009-2010 Plan Changes (HB 479)	18	(1,026,693)	13.2695	(77,372)	17	(1,015,559)	12.8170	(79,235)
June 30, 2010	2009-2010 Experience (Gains) / Losses	19	1,318,278	13.7961	95,554	18	1,307,899	13.3707	97,818
June 30, 2010	2010-2011 Plan Changes (SB 2100)	19	(1,673,509)	13.7961	(121,303)	18	(1,660,333)	13.3707	(124,177)
June 30, 2011	2010-2011 Experience (Gains) / Losses	20	1,436,538	14.3052	100,421	19	1,429,055	13.9065	102,762
June 30, 2012	2011-2012 Experience (Gains) / Losses	20	521,637	14.3052	36,465	19	518,920	13.9065	37,315
June 30, 2013	2012-2013 Experience (Gains) / Losses	20	1,809,136	14.3052	126,467	19	1,799,712	13.9065	129,415
June 30, 2014	Assumption/Method Change from 2013 Experience Study	20	628,646	14.3052	43,945	19	625,372	13.9065	44,970
June 30, 2014	2013-2014 Experience (Gains) / Losses	20	(1,319,221)	14.3052	(92,220)	19	(1,312,350)	13.9065	(94,370)
June 30, 2015	2014-2015 Experience (Gains) / Losses	20	790,125	14.3052	55,234	19	786,010	13.9065	56,521
June 30, 2016	2016 Assumption Changes	20	819,689	14.3052	57,300	19	815,420	13.9065	58,636
June 30, 2016	2015-2016 Experience (Gains) / Losses	20	1,370,249	14.3052	95,787	19	1,363,112	13.9065	98,020
June 30, 2017	2017 Assumption Changes	20	1,595,900	14.3052	111,561	19	1,587,587	13.9065	114,162
June 30, 2017	2016-2017 Experience (Gains) / Losses	20	(328,407)	14.3052	(22,957)	19	(326,697)	13.9065	(23,492)
June 30, 2018	2018 Assumption Changes	20	1,616,206	14.3052	112,981	19	1,607,787	13.9065	115,614
June 30, 2018	2017-2018 Experience (Gains) / Losses	20	(1,171,590)	14.3052	(81,900)	19	(1,165,488)	13.9065	(83,809)
June 30, 2019	2019 Assumption Changes	20	4,249,090	14.3052	297,032	19	4,226,958	13.9065	303,956
June 30, 2019	2019 Method Changes	n/a	(1,868,850)	8.8010	(212,346)	n/a	(1,774,718)	8.6058	(206,224)
June 30, 2019	2018-2019 Experience (Gains) / Losses	20	(605,354)	14.3052	(42,317)	19	(602,200)	13.9065	(43,304)
June 30, 2020	2020 Assumption Changes	20	2,751,033	14.3052	192,311	19	2,736,704	13.9065	196,794
June 30, 2020	2019-2020 Experience (Gains) / Losses	20	1,213,591	14.3052	84,836	19	1,207,269	13.9065	86,813
June 30, 2021	2021 Assumption Changes	20	3,324,397	14.3052	232,391	19	3,307,081	13.9065	237,809
June 30, 2021	2020-2021 Experience (Gains) / Losses	20	(5,164,898)	14.3052	(361,051)	19	(5,137,996)	13.9065	(369,468)
June 30, 2022	2022 Assumption Changes		1,620,698			20	1,729,285	14.4249	119,882
June 30, 2022	2021-2022 Experience (Gains) / Losses		476,777			20	508,722	14.4249	35,267
		UAL as of Valuation Date	**$22,340,160**		$1,305,549		$22,488,375	Total:	$1,501,970

Projected FY 2023-2024 UAL Payroll Excluding FRS Investment Plan Payroll: $23,957,991

FY 2023-2024 UAL Contribution Rate Prior to Blending with FRS Investment Plan Payroll: 6.27%

Table 4-4
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2022
Special Risk Class
($ in Thousands)

(a)	(b)	(c)	(d)	(e)	(f) = (d) / (e)	(g)	(h)	(i)	(j) = (h) / (i)
Date Established	**Description**	**Remaining Payments as of Valuation Date**	**Balance as of Valuation Date**	**Amortization Factor**	**Amortization Payment for FY 2022-2023**	**Remaining Payments one year after Valuation Date**	**Balance One Year After Valuation Date**	**Amortization Factor**	**Amortization Payment for FY 2023-2024**
June 30, 1999	Assumption Change from 1998 Experience Study	8	($67,149)	6.8980	($9,735)	7	($61,592)	6.1536	($10,009)
June 30, 2000	Special Risk 65% In-Line-Of-Duty Disability (2000)	9	(2,036)	7.6363	(267)	8	(1,897)	6.9227	(274)
June 30, 2000	Special Risk-Regular 12% Pre-2000 Retired Benefit Increase (2000)	9	254,277	7.6363	33,298	8	236,918	6.9227	34,223
June 30, 2004	Assumption Change from 2003 Experience Study	13	(578,880)	10.3524	(55,918)	12	(559,905)	9.7585	(57,376)
June 30, 2009	Assumption Change from 2008 Experience Study	18	549,845	13.2695	41,437	17	543,882	12.8170	42,434
June 30, 2009	2008-2009 Experience (Gains) / Losses	18	7,576,732	13.2695	570,987	17	7,494,568	12.8170	584,735
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	18	(2,514,164)	13.2695	(189,469)	17	(2,486,900)	12.8170	(194,031)
June 30, 2009	2009-2010 Plan Changes (HB 479)	18	(191,760)	13.2695	(14,451)	17	(189,681)	12.8170	(14,799)
June 30, 2010	2009-2010 Experience (Gains) / Losses	19	(418,829)	13.7961	(30,359)	18	(415,531)	13.3707	(31,078)
June 30, 2010	2010-2011 Plan Changes (SB 2100)	19	468,009	13.7961	33,923	18	464,325	13.3707	34,727
June 30, 2011	2010-2011 Experience (Gains) / Losses	20	267,715	14.3052	18,715	19	266,321	13.9065	19,151
June 30, 2012	2011-2012 Experience (Gains) / Losses	20	(581,691)	14.3052	(40,663)	19	(578,661)	13.9065	(41,611)
June 30, 2013	2012-2013 Experience (Gains) / Losses	20	517,805	14.3052	36,197	19	515,108	13.9065	37,041
June 30, 2014	Assumption/Method Change from 2013 Experience Study	20	1,417,072	14.3052	99,060	19	1,409,691	13.9065	101,369
June 30, 2014	2013-2014 Experience (Gains) / Losses	20	(923,987)	14.3052	(64,591)	19	(919,174)	13.9065	(66,097)
June 30, 2015	2014-2015 Experience (Gains) / Losses	20	(18,232)	14.3052	(1,275)	19	(18,137)	13.9065	(1,304)
June 30, 2016	Special Risk 100% In-Line-Of-Duty Death (2016)	20	45,643	14.3052	3,191	19	45,405	13.9065	3,265
June 30, 2016	2016 Assumption Changes	20	260,892	14.3052	18,238	19	259,533	13.9065	18,663
June 30, 2016	2015-2016 Experience (Gains) / Losses	20	228,317	14.3052	15,960	19	227,128	13.9065	16,333
June 30, 2017	Special Risk 100% In-Line-Of-Duty Death (2017)	20	95,208	14.3052	6,656	19	94,712	13.9065	6,811
June 30, 2017	2017 Assumption Changes	20	518,831	14.3052	36,269	19	516,129	13.9065	37,114
June 30, 2017	2016-2017 Experience (Gains) / Losses	20	517,661	14.3052	36,187	19	514,964	13.9065	37,031
June 30, 2018	2018 Assumption Changes	20	544,118	14.3052	38,036	19	541,283	13.9065	38,923
June 30, 2018	2017-2018 Experience (Gains) / Losses	20	209,409	14.3052	14,639	19	208,318	13.9065	14,980
June 30, 2019	Special Risk Cancer Presumption Disability and Death (2019)	20	11,889	14.3052	831	19	11,827	13.9065	850
June 30, 2019	2019 Assumption Changes	20	(26,931)	14.3052	(1,883)	19	(26,791)	13.9065	(1,926)
June 30, 2019	2019 Method Changes	n/a	(1,380,848)	8.8010	(156,898)	n/a	(1,311,297)	8.6058	(152,374)
June 30, 2019	2018-2019 Experience (Gains) / Losses	20	128,433	14.3052	8,978	19	127,764	13.9065	9,187
June 30, 2020	2020 Assumption Changes	20	889,870	14.3052	62,206	19	885,235	13.9065	63,656
June 30, 2020	2019-2020 Experience (Gains) / Losses	20	248,393	14.3052	17,364	19	247,099	13.9065	17,769
June 30, 2021	2021 Assumption Changes	20	1,109,225	14.3052	77,540	19	1,103,447	13.9065	79,348
June 30, 2021	2020-2021 Experience (Gains) / Losses	20	(1,162,865)	14.3052	(81,290)	19	(1,156,808)	13.9065	(83,185)
June 30, 2022	2022-2023 Plan Changes (HB 5007, HB 689, and SB 838)		99,285			20	105,938	14.4249	7,344
June 30, 2022	2022 Assumption Changes		539,523			20	575,671	14.4249	39,908
June 30, 2022	2021-2022 Experience (Gains) / Losses		379,132			20	404,533	14.4249	28,044
	UAL as of Valuation Date		**$9,009,912**		$522,916		$9,073,426	Total:	$618,842

Projected FY 2023-2024 UAL Payroll Excluding FRS Investment Plan Payroll: $4,904,404

FY 2023-2024 UAL Contribution Rate Prior to Blending with FRS Investment Plan Payroll: 12.62%

Table 4-5
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2022
Special Risk Administrative Support Class
($ in Thousands)

(a) Date Established	(b) Description	(c) Remaining Payments as of Valuation Date	(d) Balance as of Valuation Date	(e) Amortization Factor	(f) = (d) / (e) Amortization Payment for FY 2022-2023	(g) Remaining Payments one year after Valuation Date	(h) Balance One Year After Valuation Date	(i) Amortization Factor	(j) = (h) / (i) Amortization Payment for FY 2023-2024
June 30, 1999	Assumption Change from 1998 Experience Study	8	($241)	6.8980	($35)	7	($221)	6.1536	($36)
June 30, 2000	Special Risk 65% In-Line-Of-Duty Disability (2000)	9	40	7.6363	5	8	37	6.9227	5
June 30, 2004	Assumption Change from 2003 Experience Study	13	9,664	10.3524	934	12	9,347	9.7585	958
June 30, 2009	Assumption Change from 2008 Experience Study	18	1,323	13.2695	100	17	1,308	12.8170	102
June 30, 2009	2008-2009 Experience (Gains) / Losses	18	19,883	13.2695	1,498	17	19,667	12.8170	1,534
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	18	(22,065)	13.2695	(1,663)	17	(21,826)	12.8170	(1,703)
June 30, 2009	2009-2010 Plan Changes (HB 479)	18	0	13.2695	0	17	0	12.8170	0
June 30, 2010	2009-2010 Experience (Gains) / Losses	19	1,205	13.7961	87	18	1,196	13.3707	89
June 30, 2010	2010-2011 Plan Changes (SB 2100)	19	(550)	13.7961	(40)	18	(545)	13.3707	(41)
June 30, 2011	2010-2011 Experience (Gains) / Losses	20	2,927	14.3052	205	19	2,912	13.9065	209
June 30, 2012	2011-2012 Experience (Gains) / Losses	20	612	14.3052	43	19	609	13.9065	44
June 30, 2013	2012-2013 Experience (Gains) / Losses	20	2,948	14.3052	206	19	2,932	13.9065	211
June 30, 2014	Assumption/Method Change from 2013 Experience Study	20	(6,120)	14.3052	(428)	19	(6,088)	13.9065	(438)
June 30, 2014	2013-2014 Experience (Gains) / Losses	20	6,934	14.3052	485	19	6,898	13.9065	496
June 30, 2015	2014-2015 Experience (Gains) / Losses	20	(6,118)	14.3052	(428)	19	(6,086)	13.9065	(438)
June 30, 2016	2016 Assumption Changes	20	515	14.3052	36	19	512	13.9065	37
June 30, 2016	2015-2016 Experience (Gains) / Losses	20	2,050	14.3052	143	19	2,040	13.9065	147
June 30, 2017	2017 Assumption Changes	20	999	14.3052	70	19	994	13.9065	71
June 30, 2017	2016-2017 Experience (Gains) / Losses	20	2,516	14.3052	176	19	2,503	13.9065	180
June 30, 2018	2018 Assumption Changes	20	1,018	14.3052	71	19	1,013	13.9065	73
June 30, 2018	2017-2018 Experience (Gains) / Losses	20	697	14.3052	49	19	694	13.9065	50
June 30, 2019	2019 Assumption Changes	20	(2,889)	14.3052	(202)	19	(2,874)	13.9065	(207)
June 30, 2019	2019 Method Changes	n/a	(1,828)	8.8010	(208)	n/a	(1,736)	8.6058	(202)
June 30, 2019	2018-2019 Experience (Gains) / Losses	20	2,148	14.3052	150	19	2,137	13.9065	154
June 30, 2020	2020 Assumption Changes	20	1,647	14.3052	115	19	1,638	13.9065	118
June 30, 2020	2019-2020 Experience (Gains) / Losses	20	1,053	14.3052	74	19	1,048	13.9065	75
June 30, 2021	2021 Assumption Changes	20	1,717	14.3052	120	19	1,708	13.9065	123
June 30, 2021	2020-2021 Experience (Gains) / Losses	20	(4,089)	14.3052	(286)	19	(4,067)	13.9065	(292)
June 30, 2022	2022 Assumption Changes		836			20	892	14.4249	62
June 30, 2022	2021-2022 Experience (Gains) / Losses		(666)			20	(710)	14.4249	(49)
		UAL as of Valuation Date	**$16,166**		$1,278		$15,929	Total:	$1,333

Projected FY 2023-2024 UAL Payroll Excluding FRS Investment Plan Payroll: $3,943

FY 2023-2024 UAL Contribution Rate Prior to Blending with FRS Investment Plan Payroll: 33.81%

Table 4-6
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2022
Elected Officers' Class: Judicial Subclass
($ in Thousands)

(a)	(b)	(c)	(d)	(e)	(f) = (d) / (e)	(g)	(h)	(i)	(j) = (h) / (i)
Date Established	**Description**	**Remaining Payments as of Valuation Date**	**Balance as of Valuation Date**	**Amortization Factor**	**Amortization Payment for FY 2022-2023**	**Remaining Payments one year after Valuation Date**	**Balance One Year After Valuation Date**	**Amortization Factor**	**Amortization Payment for FY 2023-2024**
June 30, 1999	Assumption Change from 1998 Experience Study	8	$31	6.8980	$5	7	$29	6.1536	$5
June 30, 2004	Assumption Change from 2003 Experience Study	13	25,536	10.3524	2,467	12	24,699	9.7585	2,531
June 30, 2009	Assumption Change from 2008 Experience Study	18	20,209	13.2695	1,523	17	19,990	12.8170	1,560
June 30, 2009	2008-2009 Experience (Gains) / Losses	18	511,245	13.2695	38,528	17	505,701	12.8170	39,455
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	18	(277,331)	13.2695	(20,900)	17	(274,324)	12.8170	(21,403)
June 30, 2009	2009-2010 Plan Changes (HB 479)	18	(25,541)	13.2695	(1,925)	17	(25,264)	12.8170	(1,971)
June 30, 2010	2009-2010 Experience (Gains) / Losses	19	(22,492)	13.7961	(1,630)	18	(22,315)	13.3707	(1,669)
June 30, 2010	2010-2011 Plan Changes (SB 2100)	19	3,233	13.7961	234	18	3,208	13.3707	240
June 30, 2011	2010-2011 Experience (Gains) / Losses	20	86,529	14.3052	6,049	19	86,078	13.9065	6,190
June 30, 2012	2011-2012 Experience (Gains) / Losses	20	6,842	14.3052	478	19	6,806	13.9065	489
June 30, 2013	2012-2013 Experience (Gains) / Losses	20	112,010	14.3052	7,830	19	111,426	13.9065	8,013
June 30, 2014	Assumption/Method Change from 2013 Experience Study	20	25,735	14.3052	1,799	19	25,601	13.9065	1,841
June 30, 2014	2013-2014 Experience (Gains) / Losses	20	(56,908)	14.3052	(3,978)	19	(56,611)	13.9065	(4,071)
June 30, 2015	2014-2015 Experience (Gains) / Losses	20	5,714	14.3052	399	19	5,684	13.9065	409
June 30, 2016	2016 Assumption Changes	20	7,630	14.3052	533	19	7,591	13.9065	546
June 30, 2016	2015-2016 Experience (Gains) / Losses	20	37,338	14.3052	2,610	19	37,144	13.9065	2,671
June 30, 2017	2017 Assumption Changes	20	14,789	14.3052	1,034	19	14,712	13.9065	1,058
June 30, 2017	2016-2017 Experience (Gains) / Losses	20	(2,714)	14.3052	(190)	19	(2,700)	13.9065	(194)
June 30, 2018	2018 Assumption Changes	20	15,590	14.3052	1,090	19	15,508	13.9065	1,115
June 30, 2018	2017-2018 Experience (Gains) / Losses	20	38,086	14.3052	2,662	19	37,887	13.9065	2,724
June 30, 2019	2019 Assumption Changes	20	(47,179)	14.3052	(3,298)	19	(46,933)	13.9065	(3,375)
June 30, 2019	2019 Method Changes	n/a	(22,709)	8.8010	(2,580)	n/a	(21,565)	8.6058	(2,506)
June 30, 2019	2018-2019 Experience (Gains) / Losses	20	32,850	14.3052	2,296	19	32,679	13.9065	2,350
June 30, 2020	2020 Assumption Changes	20	26,806	14.3052	1,874	19	26,667	13.9065	1,918
June 30, 2020	2019-2020 Experience (Gains) / Losses	20	(9,834)	14.3052	(687)	19	(9,783)	13.9065	(703)
June 30, 2021	2021 Assumption Changes	20	31,326	14.3052	2,190	19	31,162	13.9065	2,241
June 30, 2021	2020-2021 Experience (Gains) / Losses	20	209	14.3052	15	19	208	13.9065	15
June 30, 2022	2022 Assumption Changes		14,897			20	15,895	14.4249	1,102
June 30, 2022	2021-2022 Experience (Gains) / Losses		(24,625)			20	(26,275)	14.4249	(1,821)
		UAL as of Valuation Date	**$527,271**		$38,427		$522,904	Total:	$38,758

Projected FY 2023-2024 UAL Payroll Excluding FRS Investment Plan Payroll: $115,638

FY 2023-2024 UAL Contribution Rate Prior to Blending with FRS Investment Plan Payroll: 33.52%

Table 4-7
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2022
Elected Officers' Class: Legislature/Attorney/Cabinet Subclass
($ in Thousands)

(a)	(b)	(c)	(d)	(e)	(f) = (d) / (e)	(g)	(h)	(i)	(j) = (h) / (i)
Date Established	**Description**	**Remaining Payments as of Valuation Date**	**Balance as of Valuation Date**	**Amortization Factor**	**Amortization Payment for FY 2022-2023**	**Remaining Payments one year after Valuation Date**	**Balance One Year After Valuation Date**	**Amortization Factor**	**Amortization Payment for FY 2023-2024**
June 30, 1999	Assumption Change from 1998 Experience Study	8	$2	6.8980	$0	7	$2	6.1536	$0
June 30, 2004	Assumption Change from 2003 Experience Study	13	1,923	10.3524	186	12	1,860	9.7585	191
June 30, 2009	Assumption Change from 2008 Experience Study	18	2,028	13.2695	153	17	2,006	12.8170	157
June 30, 2009	2008-2009 Experience (Gains) / Losses	18	62,121	13.2695	4,681	17	61,448	12.8170	4,794
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	18	(35,527)	13.2695	(2,677)	17	(35,142)	12.8170	(2,742)
June 30, 2009	2009-2010 Plan Changes (HB 479)	18	(806)	13.2695	(61)	17	(798)	12.8170	(62)
June 30, 2010	2009-2010 Experience (Gains) / Losses	19	2,928	13.7961	212	18	2,905	13.3707	217
June 30, 2010	2010-2011 Plan Changes (SB 2100)	19	133	13.7961	10	18	132	13.3707	10
June 30, 2011	2010-2011 Experience (Gains) / Losses	20	8,722	14.3052	610	19	8,677	13.9065	624
June 30, 2012	2011-2012 Experience (Gains) / Losses	20	(4,126)	14.3052	(288)	19	(4,104)	13.9065	(295)
June 30, 2013	2012-2013 Experience (Gains) / Losses	20	19,883	14.3052	1,390	19	19,779	13.9065	1,422
June 30, 2014	Assumption/Method Change from 2013 Experience Study	20	(3,088)	14.3052	(216)	19	(3,072)	13.9065	(221)
June 30, 2014	2013-2014 Experience (Gains) / Losses	20	(952)	14.3052	(67)	19	(947)	13.9065	(68)
June 30, 2015	2014-2015 Experience (Gains) / Losses	20	(7,589)	14.3052	(531)	19	(7,550)	13.9065	(543)
June 30, 2016	2016 Assumption Changes	20	642	14.3052	45	19	639	13.9065	46
June 30, 2016	2015-2016 Experience (Gains) / Losses	20	10,823	14.3052	757	19	10,767	13.9065	774
June 30, 2017	2017 Assumption Changes	20	1,302	14.3052	91	19	1,295	13.9065	93
June 30, 2017	2016-2017 Experience (Gains) / Losses	20	4,171	14.3052	292	19	4,150	13.9065	298
June 30, 2018	2018 Assumption Changes	20	1,345	14.3052	94	19	1,338	13.9065	96
June 30, 2018	2017-2018 Experience (Gains) / Losses	20	2,820	14.3052	197	19	2,805	13.9065	202
June 30, 2019	2019 Assumption Changes	20	(2,827)	14.3052	(198)	19	(2,812)	13.9065	(202)
June 30, 2019	2019 Method Changes	n/a	(738)	8.8010	(84)	n/a	(701)	8.6058	(81)
June 30, 2019	2018-2019 Experience (Gains) / Losses	20	1,048	14.3052	73	19	1,042	13.9065	75
June 30, 2020	2020 Assumption Changes	20	2,490	14.3052	174	19	2,477	13.9065	178
June 30, 2020	2019-2020 Experience (Gains) / Losses	20	4,096	14.3052	286	19	4,075	13.9065	293
June 30, 2021	2021 Assumption Changes	20	2,618	14.3052	183	19	2,604	13.9065	187
June 30, 2021	2020-2021 Experience (Gains) / Losses	20	(1,379)	14.3052	(96)	19	(1,371)	13.9065	(99)
June 30, 2022	2022 Assumption Changes		1,296			20	1,383	14.4249	96
June 30, 2022	2021-2022 Experience (Gains) / Losses		1,620			20	1,729	14.4249	120
		UAL as of Valuation Date	**$74,980**		$5,216		$74,615	Total:	$5,560
								Projected FY 2023-2024 UAL Payroll Excluding FRS Investment Plan Payroll:	$7,270
								FY 2023-2024 UAL Contribution Rate Prior to Blending with FRS Investment Plan Payroll:	**76.48%**

Table 4-8
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2022
Elected Officers' Class: Local Subclass
($ in Thousands)

(a)	(b)	(c)	(d)	(e)	(f) = (d) / (e)	(g)	(h)	(i)	(j) = (h) / (i)
Date Established	**Description**	**Remaining Payments as of Valuation Date**	**Balance as of Valuation Date**	**Amortization Factor**	**Amortization Payment for FY 2022-2023**	**Remaining Payments one year after Valuation Date**	**Balance One Year After Valuation Date**	**Amortization Factor**	**Amortization Payment for FY 2023-2024**
June 30, 1999	Assumption Change from 1998 Experience Study	8	$4	6.8980	$1	7	$3	6.1536	$1
June 30, 2004	Assumption Change from 2003 Experience Study	13	32,322	10.3524	3,122	12	31,263	9.7585	3,204
June 30, 2009	Assumption Change from 2008 Experience Study	18	11,792	13.2695	889	17	11,664	12.8170	910
June 30, 2009	2008-2009 Experience (Gains) / Losses	18	242,041	13.2695	18,240	17	239,417	12.8170	18,680
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	18	(59,928)	13.2695	(4,516)	17	(59,278)	12.8170	(4,625)
June 30, 2009	2009-2010 Plan Changes (HB 479)	18	(7,316)	13.2695	(551)	17	(7,237)	12.8170	(565)
June 30, 2010	2009-2010 Experience (Gains) / Losses	19	2,143	13.7961	155	18	2,126	13.3707	159
June 30, 2010	2010-2011 Plan Changes (SB 2100)	19	306	13.7961	22	18	304	13.3707	23
June 30, 2011	2010-2011 Experience (Gains) / Losses	20	14,411	14.3052	1,007	19	14,336	13.9065	1,031
June 30, 2012	2011-2012 Experience (Gains) / Losses	20	(5,930)	14.3052	(415)	19	(5,899)	13.9065	(424)
June 30, 2013	2012-2013 Experience (Gains) / Losses	20	114,821	14.3052	8,027	19	114,223	13.9065	8,214
June 30, 2014	Assumption/Method Change from 2013 Experience Study	20	(24,551)	14.3052	(1,716)	19	(24,423)	13.9065	(1,756)
June 30, 2014	2013-2014 Experience (Gains) / Losses	20	(10,908)	14.3052	(763)	19	(10,851)	13.9065	(780)
June 30, 2015	2014-2015 Experience (Gains) / Losses	20	(10,912)	14.3052	(763)	19	(10,855)	13.9065	(781)
June 30, 2016	2016 Assumption Changes	20	3,428	14.3052	240	19	3,410	13.9065	245
June 30, 2016	2015-2016 Experience (Gains) / Losses	20	22,609	14.3052	1,580	19	22,491	13.9065	1,617
June 30, 2017	2017 Assumption Changes	20	7,187	14.3052	502	19	7,149	13.9065	514
June 30, 2017	2016-2017 Experience (Gains) / Losses	20	40,666	14.3052	2,843	19	40,455	13.9065	2,909
June 30, 2018	2018 Assumption Changes	20	7,331	14.3052	512	19	7,293	13.9065	524
June 30, 2018	2017-2018 Experience (Gains) / Losses	20	11,226	14.3052	785	19	11,168	13.9065	803
June 30, 2019	2019 Assumption Changes	20	(9,010)	14.3052	(630)	19	(8,963)	13.9065	(645)
June 30, 2019	2019 Method Changes	n/a	(5,367)	8.8010	(610)	n/a	(5,097)	8.6058	(592)
June 30, 2019	2018-2019 Experience (Gains) / Losses	20	(2,139)	14.3052	(149)	19	(2,127)	13.9065	(153)
June 30, 2020	2020 Assumption Changes	20	12,342	14.3052	863	19	12,278	13.9065	883
June 30, 2020	2019-2020 Experience (Gains) / Losses	20	3,651	14.3052	255	19	3,632	13.9065	261
June 30, 2021	2021 Assumption Changes	20	14,471	14.3052	1,012	19	14,396	13.9065	1,035
June 30, 2021	2020-2021 Experience (Gains) / Losses	20	17,382	14.3052	1,215	19	17,291	13.9065	1,243
June 30, 2022	2022 Assumption Changes		7,030			20	7,501	14.4249	520
June 30, 2022	2021-2022 Experience (Gains) / Losses		5,837			20	6,228	14.4249	432
		UAL as of Valuation Date	**$434,940**		$31,158		$431,896	Total:	$32,887
							Projected FY 2023-2024 UAL Payroll Excluding FRS Investment Plan Payroll:		$50,695
							FY 2023-2024 UAL Contribution Rate Prior to Blending with FRS Investment Plan Payroll:		**64.87%**

Table 4-9
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2022
Senior Management Service Class
($ in Thousands)

(a)	(b)	(c)	(d)	(e)	(f) = (d) / (e)	(g)	(h)	(i)	(j) = (h) / (i)
Date Established	**Description**	**Remaining Payments as of Valuation Date**	**Balance as of Valuation Date**	**Amortization Factor**	**Amortization Payment for FY 2022-2023**	**Remaining Payments one year after Valuation Date**	**Balance One Year After Valuation Date**	**Amortization Factor**	**Amortization Payment for FY 2023-2024**
June 30, 1999	Assumption Change from 1998 Experience Study	8	($1,998)	6.8980	($290)	7	($1,833)	6.1536	($298)
June 30, 2004	Assumption Change from 2003 Experience Study	13	198,538	10.3524	19,178	12	192,030	9.7585	19,678
June 30, 2009	Assumption Change from 2008 Experience Study	18	65,011	13.2695	4,899	17	64,306	12.8170	5,017
June 30, 2009	2008-2009 Experience (Gains) / Losses	18	1,266,182	13.2695	95,420	17	1,252,451	12.8170	97,718
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	18	(287,398)	13.2695	(21,658)	17	(284,281)	12.8170	(22,180)
June 30, 2009	2009-2010 Plan Changes (HB 479)	18	(53,836)	13.2695	(4,057)	17	(53,253)	12.8170	(4,155)
June 30, 2010	2009-2010 Experience (Gains) / Losses	19	35,485	13.7961	2,572	18	35,206	13.3707	2,633
June 30, 2010	2010-2011 Plan Changes (SB 2100)	19	(92,968)	13.7961	(6,739)	18	(92,236)	13.3707	(6,898)
June 30, 2011	2010-2011 Experience (Gains) / Losses	20	135,341	14.3052	9,461	19	134,636	13.9065	9,682
June 30, 2012	2011-2012 Experience (Gains) / Losses	20	70,063	14.3052	4,898	19	69,698	13.9065	5,012
June 30, 2013	2012-2013 Experience (Gains) / Losses	20	396,327	14.3052	27,705	19	394,262	13.9065	28,351
June 30, 2014	Assumption/Method Change from 2013 Experience Study	20	(156,584)	14.3052	(10,946)	19	(155,768)	13.9065	(11,201)
June 30, 2014	2013-2014 Experience (Gains) / Losses	20	63,180	14.3052	4,417	19	62,851	13.9065	4,520
June 30, 2015	2014-2015 Experience (Gains) / Losses	20	54,309	14.3052	3,796	19	54,026	13.9065	3,885
June 30, 2016	2016 Assumption Changes	20	32,401	14.3052	2,265	19	32,232	13.9065	2,318
June 30, 2016	2015-2016 Experience (Gains) / Losses	20	101,723	14.3052	7,111	19	101,193	13.9065	7,277
June 30, 2017	2017 Assumption Changes	20	61,150	14.3052	4,275	19	60,831	13.9065	4,374
June 30, 2017	2016-2017 Experience (Gains) / Losses	20	82,935	14.3052	5,798	19	82,503	13.9065	5,933
June 30, 2018	2018 Assumption Changes	20	63,205	14.3052	4,418	19	62,876	13.9065	4,521
June 30, 2018	2017-2018 Experience (Gains) / Losses	20	81,727	14.3052	5,713	19	81,301	13.9065	5,846
June 30, 2019	2019 Assumption Changes	20	23,274	14.3052	1,627	19	23,153	13.9065	1,665
June 30, 2019	2019 Method Changes	n/a	(68,418)	8.8010	(7,774)	n/a	(64,972)	8.6058	(7,550)
June 30, 2019	2018-2019 Experience (Gains) / Losses	20	130,231	14.3052	9,104	19	129,552	13.9065	9,316
June 30, 2020	2020 Assumption Changes	20	112,644	14.3052	7,874	19	112,057	13.9065	8,058
June 30, 2020	2019-2020 Experience (Gains) / Losses	20	140,394	14.3052	9,814	19	139,663	13.9065	10,043
June 30, 2021	2021 Assumption Changes	20	134,725	14.3052	9,418	19	134,023	13.9065	9,637
June 30, 2021	2020-2021 Experience (Gains) / Losses	20	(75,675)	14.3052	(5,290)	19	(75,281)	13.9065	(5,413)
June 30, 2022	2022 Assumption Changes		66,829			20	71,307	14.4249	4,943
June 30, 2022	2021-2022 Experience (Gains) / Losses		69,585			20	74,248	14.4249	5,147
		UAL as of Valuation Date	**$2,648,382**		$183,010		$2,636,783	Total:	$197,879
							Projected FY 2023-2024 UAL Payroll Excluding FRS Investment Plan Payroll:		$590,145
							FY 2023-2024 UAL Contribution Rate Prior to Blending with FRS Investment Plan Payroll:		**33.53%**

Table 4-10
Florida Retirement System Pension Plan
Unfunded Actuarial Liability (UAL) Bases
July 1, 2022
DROP
($ in Thousands)

(a) Date Established	(b) Description	(c) Remaining Payments as of Valuation Date	(d) Balance as of Valuation Date	(e) Amortization Factor	(f) = (d) / (e) Amortization Payment for FY 2022-2023	(g) Remaining Payments one year after Valuation Date	(h) Balance One Year After Valuation Date	(i) Amortization Factor	(j) = (h) / (i) Amortization Payment for FY 2023-2024
June 30, 2004	Assumption Change from 2003 Experience Study	13	($62,935)	10.3524	($6,079)	12	($60,872)	9.7585	($6,238)
June 30, 2009	Assumption Change from 2008 Experience Study	18	633,656	13.2695	47,753	17	626,784	12.8170	48,902
June 30, 2009	2008-2009 Experience (Gains) / Losses	18	(22,471,431)	13.2695	(1,693,461)	17	(22,227,744)	12.8170	(1,734,236)
June 30, 2009	Unrecognized (Gains)/Losses while in Surplus	18	23,854,773	13.2695	1,797,711	17	23,596,085	12.8170	1,840,995
June 30, 2010	2009-2010 Experience (Gains) / Losses	19	263,857	13.7961	19,125	18	261,780	13.3707	19,579
June 30, 2011	2010-2011 Experience (Gains) / Losses	20	951,887	14.3052	66,541	19	946,928	13.9065	68,093
June 30, 2012	2011-2012 Experience (Gains) / Losses	20	(124,977)	14.3052	(8,736)	19	(124,326)	13.9065	(8,940)
June 30, 2013	2012-2013 Experience (Gains) / Losses	20	5,292	14.3052	370	19	5,265	13.9065	379
June 30, 2014	Assumption/Method Change from 2013 Experience Study	20	265,977	14.3052	18,593	19	264,592	13.9065	19,027
June 30, 2014	2013-2014 Experience (Gains) / Losses	20	(670,106)	14.3052	(46,844)	19	(666,616)	13.9065	(47,936)
June 30, 2015	2014-2015 Experience (Gains) / Losses	20	(209,631)	14.3052	(14,654)	19	(208,539)	13.9065	(14,996)
June 30, 2016	2016 Assumption Changes	20	84,260	14.3052	5,890	19	83,821	13.9065	6,028
June 30, 2016	2015-2016 Experience (Gains) / Losses	20	(441,179)	14.3052	(30,841)	19	(438,881)	13.9065	(31,559)
June 30, 2017	2017 Assumption Changes	20	178,514	14.3052	12,479	19	177,584	13.9065	12,770
June 30, 2017	2016-2017 Experience (Gains) / Losses	20	208,063	14.3052	14,545	19	206,979	13.9065	14,884
June 30, 2018	2018 Assumption Changes	20	187,159	14.3052	13,083	19	186,184	13.9065	13,388
June 30, 2018	2017-2018 Experience (Gains) / Losses	20	9,668	14.3052	676	19	9,618	13.9065	692
June 30, 2019	2019 Assumption Changes	20	201,089	14.3052	14,057	19	200,041	13.9065	14,385
June 30, 2019	2018-2019 Experience (Gains) / Losses	20	(125,046)	14.3052	(8,741)	19	(124,395)	13.9065	(8,945)
June 30, 2020	2020 Assumption Changes	20	390,605	14.3052	27,305	19	388,570	13.9065	27,942
June 30, 2020	2019-2020 Experience (Gains) / Losses	20	131,779	14.3052	9,212	19	131,093	13.9065	9,427
June 30, 2021	2021 Assumption Changes	20	400,591	14.3052	28,003	19	398,504	13.9065	28,656
June 30, 2021	2020-2021 Experience (Gains) / Losses	20	(639,550)	14.3052	(44,708)	19	(636,219)	13.9065	(45,750)
June 30, 2022	2022 Assumption Changes		186,528			20	199,025	14.4249	13,797
June 30, 2022	2021-2022 Experience (Gains) / Losses		(5,108)			20	(5,450)	14.4249	(378)
		UAL as of Valuation Date	**$3,203,735**		$221,280		$3,189,813	Total:	$239,964

Projected FY 2023-2024 UAL Payroll Excluding FRS Investment Plan Payroll: $2,396,438

FY 2023-2024 UAL Contribution Rate Prior to Blending with FRS Investment Plan Payroll: 10.01%

Table 4-11
Florida Retirement System Pension Plan
Actuarially Calculated Employer Contribution Rates
Prior to Blending with FRS Investment Plan
July 1, 2022 Valuation for Fiscal Year Beginning July 1, 2023

No surplus available for rate reduction

				-- Elected Officers' Class --						
	Regular	Special Risk	Special Risk Administrative	Judicial	Leg-Atty-Cab	Local	Senior Management	Composite (excluding DROP)	DROP [1]	Composite (including DROP)
1. Employer Normal Cost Rate	5.96%	17.13%	11.57%	14.77%	9.54%	11.63%	7.86%	8.18%	8.18%	8.18%
2. UAL Contribution Rate [2]	6.27%	12.62%	33.81%	33.52%	76.48%	64.87%	33.53%	8.09%	10.01%	8.23%
3. Total Employer Contribution Rate [(1) + (2)]	12.23%	29.75%	45.38%	48.29%	86.02%	76.50%	41.39%	16.27%	18.19%	16.41%
4. UAL Cost Paid from Surplus	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5. Rate Reduction from Surplus	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6. Total Adjusted Employer Contribution Rate for FRS Trust Fund [(3) + (4) + (5)]	12.23%	29.75%	45.38%	48.29%	86.02%	76.50%	41.39%	16.27%	18.19%	16.41%

[1] *DROP rates are special charges to cover the assumed cost of DROP participants; they are not Normal Cost or UAL in the traditional sense. See Section G of Executive Summary for discussion of the DROP contribution rate.*

[2] *Prior to blending with FRS Investment Plan Payroll.*

Table 4-12
Florida Retirement System Pension Plan
Actuarially Calculated vs. Legislated Defined Benefit Plan Contribution Rates (Before Blending) [1 & 2 & 3 & 4]

	Membership Class	Plan Year 2021-2022 Actuarially Calculated	Plan Year 2021-2022 Legislated	Plan Year 2022-2023 Actuarially Calculated	Plan Year 2022-2023 Legislated	Plan Year 2023-2024 Actuarially Calculated	Plan Year 2023-2024 Legislated
1.	Regular	10.68%	10.68%	11.25%	11.25%	12.23%	TBD
2.	Special Risk	26.02%	26.02%	27.74%	27.74%	29.75%	TBD
3.	Special Risk Administrative	47.22%	47.22%	48.36%	48.36%	45.38%	TBD
4.	Elected Officers' Class - Judicial	44.50%	44.50%	47.72%	47.72%	48.29%	TBD
5.	Elected Officers' Class - Leg-Atty-Cab	84.66%	84.66%	89.39%	89.39%	86.02%	TBD
6.	Elected Officers' Class - Local	68.78%	68.78%	74.39%	74.39%	76.50%	TBD
7.	Senior Management Service	36.01%	36.01%	38.62%	38.62%	41.39%	TBD
8.	Composite without DROP	14.03%	14.03%	14.99%	14.99%	16.27%	TBD
9.	DROP	16.68%	16.68%	16.94%	16.94%	18.19%	TBD
10.	Composite with DROP	14.23%	14.23%	15.14%	15.14%	16.41%	TBD

[1] The above rates (applied to DB plan payroll) are combined with the Investment Plan contribution rates (applied to IP payroll) to derive the uniform blended rates employers contribute.

[2] Contribution rates shown above do not include the 3% required employee contribution rate.

[3] The plan year 2022-2023 rates shown in this table differ from those developed in the July 1, 2021 actuarial valuation due to HB 5007, which extended the maximum length of DROP participation by 36 months for law enforcement officer members.

[4] The plan year 2023-2024 rates shown in this table reflect the PTSD classification for correctional officers (HB 689) and cancer presumption for fire investigators (SB 838).

5. Accounting Statement

The liabilities presented in this report differ by section regarding whether future anticipated salary increases, or service credits, are included in the calculation. Actuarial Liabilities in Sections 3 and 4 are determined for plan funding purposes and include a provision for the projected effects of future salary increases and future service expected to be performed by current FRS Pension Plan members.

Statement No. 67 of the Governmental Accounting Standards Board (GASB) is the current standard for pension plan accounting disclosure by governmental pension systems. GASB 67 information for the FRS Pension Plan as of June 30, 2022 was provided under separate cover in November 2022.[1] GASB 67 liability calculations also include a provision for the projected effects of future salary increases and future service performed by current FRS Pension Plan members.

Accounting Standards Codification (ASC) 960 – Plan Accounting – Defined Benefit Pension Plans, formerly titled Statement No. 35 of the Financial Accounting Standards Board (FASB), specifies a different methodology for disclosure of certain information regarding pension plan funded status. Accounting liabilities calculated under ASC 960 do not include the effects of either projected future salary increases or projected future service performed.

The ASC 960 disclosures are intended to provide a “snapshot” view of how the Plan’s assets compare to its liabilities if contributions stopped and accrued benefit claims had to be satisfied. The Accumulated Benefit Obligation (ABO) is determined based on each member’s accrued benefit, that is, the benefit based on employee service performed and compensation earned up to the valuation date. We assume that the plan is ongoing and that members continue to terminate employment, retire, and otherwise act in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 6.70% per annum.

Table 5-1 presents the ABO for the FRS Pension Plan determined as of July 1, 2022. All of the calculations presented in that table are based on the actuarial assumptions used in the valuation, as described in Appendix A, except salaries are not projected to increase and no future benefit service is credited for service performed after the valuation date. Values of the ABO are shown by type of member and by class. The active members' values are also divided between the employee-financed (accumulated member contributions) and employer-financed portions, with the employer-financed portions shown separately for vested benefits and non-vested benefits. For purposes of calculating the ABO post-Senate Bill 2100, we estimated the COLA percentage for each member as 3% multiplied by service through June 30, 2011, divided by projected total service at the time of retirement.

Table 5-2 presents the total ABO for the FRS Pension Plan for the current and two prior valuations. The trend of the Pension Plan’s ASC 960 funded status, as measured by the ABO over a period of time, is one indication of the progress being made in accumulating sufficient assets to pay benefits when due. Past and future results are affected by changes in actuarial assumptions, benefit provisions, and accounting policies.

Table 5-3 reconciles the ABO determined as of the prior valuation, July 1, 2021, to the ABO as of July 1, 2022. This reconciliation indicates the impact of the assumption changes and plan changes, if any.

[1] *The valuation report in prior years included Table 5-4 which showed the Net Pension Obligation under GASB Statement No. 27. That exhibit has been discontinued since GASB Statement No. 27 is not applicable after plan year 2013-2014. Please refer to the separate GASB 67 report for financial reporting information.*

Table 5-1
Florida Retirement System Pension Plan
Accumulated Benefit Obligation - ASC 960
July 1, 2022
($ in Thousands)

	Regular	Special Risk	Special Risk Administrative	-- Elected Officers' Class -- Judicial	Leg-Atty-Cab	Local	Senior Management	DROP	Total
A. Accumulated Benefit Obligation									
1. Active Members									
a. Accumulated Member Contributions	$4,013,008	$869,585	$1,030	$24,032	$1,232	$9,178	$117,386	$0	$5,035,451
b. Employer-Financed Vested Benefits	21,534,587	8,313,971	10,525	238,991	13,989	99,970	934,688	0	31,146,721
c. Employer-Financed Non-Vested Benefits	2,882,119	1,172,318	984	21,554	888	8,925	140,137	0	4,226,925
d. Total	$28,429,714	$10,355,874	$12,539	$284,577	$16,109	$118,073	$1,192,211	$0	$40,409,097
2. Annuitants	$94,697,836	$27,748,858	$72,511	$1,108,948	$101,399	$565,841	$3,995,455	$18,213,388	$146,504,236
3. Other Inactive Members	$5,257,436	$731,891	$1,530	$25,765	$14,010	$21,924	$219,576	$0	$6,272,132
4. Total Accumulated Benefit Obligation	$128,384,986	$38,836,623	$86,580	$1,419,290	$131,518	$705,838	$5,407,242	$18,213,388	$193,185,465
B. Assets Available for Benefits									
1. Market	$123,965,876	$36,271,679	$74,605	$1,024,029	$63,396	$318,273	$3,411,145	$15,097,402	$180,226,405
2. Actuarial Basis	$123,245,363	$36,060,861	$74,171	$1,018,077	$63,028	$316,423	$3,391,319	$15,009,653	$179,178,895
C. Unfunded / (Surplus) Total Accumulated Benefit Obligation, Assets at:									
1. Market	$4,419,110	$2,564,944	$11,975	$395,261	$68,122	$387,565	$1,996,097	$3,115,986	$12,959,060
2. Actuarial Basis	$5,139,623	$2,775,762	$12,409	$401,213	$68,490	$389,415	$2,015,923	$3,203,735	$14,006,570
D. Percent of Accumulated Obligation Funded, Assets at:									
1. Market	96.56%	93.40%	86.17%	72.15%	48.20%	45.09%	63.08%	82.89%	93.29%
2. Actuarial Basis	96.00%	92.85%	85.67%	71.73%	47.92%	44.83%	62.72%	82.41%	92.75%

Table 5-2
Florida Retirement System Pension Plan
Analysis of Funding Progress - ASC 960
($ in Thousands)

	July 1, 2020 Valuation Basis	July 1, 2021 Valuation Basis [1]	July 1, 2022 Valuation Basis [2]
A. Accumulated Benefit Obligation			
1. Active Members			
a. Accumulated Member Contributions	$4,443,217	$4,773,111	$5,035,451
b. Employer-Financed Vested Benefits	28,454,185	29,232,716	31,146,721
c. Employer-Financed Non-Vested Benefits	3,671,536	3,939,916	4,226,925
d. Total	$36,568,938	$37,945,743	$40,409,097
2. Annuitants	$116,598,497	$122,991,730	$128,290,848
3. Other Inactive Members	$5,516,966	$5,881,425	$6,272,132
4. DROP	$18,106,528	$18,425,433	$18,213,388
5. Total Accumulated Benefit Obligation	$176,790,929	$185,244,331	$193,185,465
B. Assets Available for Benefits			
1. Market	$161,568,265	$202,082,183	$180,226,405
2. Actuarial Basis	$164,302,519	$174,898,452	$179,178,895
C. Unfunded/(Surplus) Total Accumulated Benefit Obligation, Assets at:			
1. Market	$15,222,664	($16,837,852)	$12,959,060
2. Actuarial Basis	$12,488,410	$10,345,879	$14,006,570
D. Percent of Accumulated Benefit Obligation Funded, Assets at:			
1. Market	91.39%	109.09%	93.29%
2. Actuarial Basis	92.94%	94.42%	92.75%
E. Annual Salaries [3]	$26,905,267	$26,806,544	$27,093,776
F. Unfunded/(Surplus) Accumulated Benefit Obligation as a Percent of Salary, Assets at:			
1. Market	56.58%	-62.81%	47.83%
2. Actuarial Basis	46.42%	38.59%	51.70%

[1] *Values as developed in July 1, 2021 valuation; do not reflect liabilities associated with legislation enacted during the 2022 legislative session*

[2] *Values as of July 1, 2022 valuation reflect all legislation enacted during the 2022 legislative session: Extension of the maximum length of DROP participation by 36 months for law enforcement officers (HB 5007), PTSD classification for correctional officers (HB 689), and cancer presumption for fire investigators (SB 838).*

[3] *Includes Drop Salaries.*

Table 5-3
Florida Retirement System Pension Plan
Statement of Changes in Accumulated
Benefit Obligation
($ in Thousands)

	ASC 960 Basis
Accumulated Benefit Obligation at July 1, 2021	$185,244,331
Increase (Decrease) During Year Attributable to:	
Increase for Interest Due to Passage of Time	$12,173,521
Benefits Paid - PY 2022	($12,652,008)
Benefits Accrued, & Other Gains/Losses	$6,165,625
Plan Provision / Assumption Changes [1]	$2,253,996
Net Increase (Decrease)	$7,941,134
Accumulated Benefit Obligation [1] at July 1, 2022	$193,185,465

[1] *Values as of July 1, 2022 valuation reflect all legislation enacted during the 2022 legislative session: Extension of the maximum length of DROP participation by 36 months for law enforcement officers (HB 5007), PTSD classification for correctional officers (HB 689), and cancer presumption for fire investigators (SB 838).*

Appendix A: Actuarial Methods, Procedures, and Assumptions

The actuarial assumptions are intended to estimate the future experience of FRS Pension Plan members, employers and investments. Any variations in future actual experience from these assumptions will result in corresponding changes in actuarially calculated contribution rates.

Assumption Tables

A complete listing of all the assumptions, methods, and procedures that are used in the 2022 actuarial valuation of the FRS Pension Plan are summarized on the following pages. These assumptions, methods, and procedures were approved by the 2022 FRS Actuarial Assumption Conference and the demographic assumptions are based on the 2019 Experience Study. Special Risk membership class demographic assumptions were updated for this July 1, 2022 valuation to reflect plan changes enacted by House Bill 5007, House Bill 689, and Senate Bill 838.The investment rate of return, inflation, and individual salary increase assumptions were lowered since the 2019 actuarial valuation.

Data

Except where noted, the analysis in this valuation was based on data as of June 30, 2022, as provided by the Division of Retirement, Florida Department of Management Services. The data used in this valuation consists of financial information and records of age, service and income of active members, annuitants, and other inactive members entitled to future benefits. The Division of Retirement, Florida Department of Management Services is solely responsible for the validity, accuracy and comprehensiveness of this information; the results of our analysis can be expected to differ and may need to be revised if the underlying data supplied is incomplete or inaccurate.

Methods and Procedures

Actuarial cost allocation method: The total cost of the FRS Pension Plan, over time, will be equal to the benefits paid and expenses less actual investment earnings and is not affected directly by the actuarial cost allocation method. The actuarial cost allocation method is simply a tool to allocate costs to past, current, or future years and thus primarily affects the timing of cost recognition.

The FRS Pension Plan uses Entry Age Normal (EAN), which is the most commonly used general cost method approach for state pension systems. Conceptually, EAN sets the normal cost rate level as a percent of payroll over a member's full projected working career. There are different categories of EAN, including Individual EAN, which is by far the most commonly used EAN category, and Ultimate EAN, which was the category of EAN used by the FRS Pension Plan prior to the 2019 actuarial valuation. Even each category of EAN contains different interpretations of how to calculate the key metrics. GASB Statements Nos. 67 & 68 mandate the use of a particular interpretation of Individual EAN for financial reporting purposes. GASB 67 & 68 information is provided under separate cover.

In October 2019, the FRS Actuarial Assumption Conference adopted the use of Individual EAN for system funding calculations starting with the 2019 valuation. The system now uses the same actuarial cost allocation method and interpretation for financial reporting purposes and for purposes of setting system funding policy.

Individual EAN sets normal cost in a manner that is representative of the tier in which the member actually participates. Members initially enrolled on or after July 1, 2011 (Tier II) have different benefit and retirement eligibility criteria than Tier I members initially enrolled prior to July 1, 2011. Cost methods do allocate benefits between past and projected future service, but do not affect the level of projected benefits; projected benefits are based on the actual tier of membership under both Ultimate EAN and Individual EAN. Compared to the Ultimate

EAN method, the Individual EAN method allocates more of the cost of projected benefits to future service (via higher Normal Cost) and hence produces a lower Actuarial Liability for past service as a counterbalance.

UAL amortization method: The Unfunded Actuarial Liability (UAL) is amortized as a level percentage of projected payroll on which UAL Rates are charged in an effort to maintain level contribution rates as a percentage of payroll during the specified amortization period if future experience follows assumptions.

New UAL arises each year and is calculated in each new actuarial valuation. The newly arising UAL can be either positive or negative and can be due either to experience varying from assumptions or to changes in Actuarial Liability from modifications to assumptions, plan provisions, or actuarial methods. Each year's newly arising UAL is currently amortized over a closed 20-year period as a level percent of the projected payroll on which UAL rates are charged. Prior to the 2020 actuarial valuation, a closed 30-year period as a level percent of projected payroll was used for each newly arising UAL base. For the 2020 actuarial valuation, a closed 25-year period as a level percent of projected payroll was used for each newly arising UAL base. Beginning with the 2021 actuarial valuation, except for the 2019 Method Changes established June 30, 2019, all existing bases established before July 1, 2021 were modified to have a remaining amortization period of the lesser of their current remaining amortization period and a 20-year amortization period effective with the amortization payment for the 2022-2023 fiscal year.

The decrease in UAL arising as a result of changing the actuarial cost allocation method from Ultimate EAN to Individual EAN in 2019 is amortized separately from other UAL bases. The change in UAL due to the actuarial cost allocation method change is specific to active Tier I members whose calculated normal costs are higher under Individual EAN than under Ultimate EAN. Since there is no change in the projected benefits for Tier I members, there is a corresponding decrease in Actuarial Liability. Therefore, the decrease in the UAL due to the actuarial cost allocation method change is amortized over a closed 30-year period in a manner than mirrors the projected payroll of the closed Tier I population in the FRS Pension Plan. This method was discussed and illustrated in Milliman's October 23, 2019 and October 28, 2019 presentation materials to the FRS Actuarial Assumption Conference, including quantified year-by-year detail on the amortization schedule. The schedule adopted is summarized below:

Contribution Year	Percent of Total Amortization	Contribution Year	Percent of Total Amortization
2020 - 2021	6.1%	2035 - 2036	3.3%
2021 - 2022	6.0%	2036 - 2037	3.0%
2022 - 2023	5.9%	2037 - 2038	2.8%
2023 - 2024	5.7%	2038 - 2039	2.5%
2024 - 2025	5.6%	2039 - 2040	2.2%
2025 - 2026	5.4%	2040 - 2041	2.0%
2026 - 2027	5.3%	2041 - 2042	1.7%
2027 - 2028	5.1%	2042 - 2043	1.5%
2028 - 2029	4.9%	2043 - 2044	1.3%
2029 - 2030	4.7%	2044 - 2045	1.1%
2030 - 2031	4.5%	2045 - 2046	1.0%
2031 - 2032	4.3%	2046 - 2047	0.8%
2032 - 2033	4.1%	2047 - 2048	0.7%
2033 - 2034	3.8%	2048 - 2049	0.6%
2034 - 2035	3.6%	2049 - 2050	0.5%
			100.0%

When newly arising UAL is amortized as a level percent of the projected payroll, amortization periods longer than 20 years can incur significant negative amortization, wherein the calculated UAL increases for an extended period of time prior to final payoff even if all contributions are made and all assumptions are met. This was discussed and illustrated in Milliman's October 7, 2021 presentation materials to the FRS Actuarial Assumption Conference. In October 2021, the FRS Actuarial Assumption Conference adopted a maximum 20-year amortization period for existing and future amortization bases, except for the 2019 Method Changes established June 30, 2019 which is amortized separately from other UAL bases. There are no amortization bases that incur a negative amortization.

Asset valuation method: This method recognizes actual investment performance different from the long-term assumption systematically. The expected Actuarial Value of Assets (AVA) is determined by crediting the rate of investment return assumed in the prior valuation to the prior year's AVA. Then, 20% of the difference between the actual Market Value of Assets (MVA) and the expected AVA is immediately recognized in the AVA. To ensure that the AVA remains reasonably close to the MVA, the asset method includes a corridor whereby the AVA must remain within 80% to 120% of MVA.

Economic Assumptions

Assumption	
Inflation	2.40%
Payroll growth	3.25%
Investment Return	6.70%

Demographic Assumptions

Mortality

Healthy Inactive Mortality (Post-Employment)

Member Category (Non-Disabled Inactive)	PUB-2010 base table listed below, generational mortality using gender-specific MP-2018 mortality improvement projection scale
Female K-12 School Instructional Personnel	Headcount Weighted Teachers Healthy Retiree Female Table, set forward 1 year
Male K-12 School Instructional Personnel	Benefits Weighted Teachers Below Median Healthy Retiree Male Table, set forward 2 years
Female Special Risk	Headcount Weighted Safety Healthy Retiree Female Table, set forward 1 year
Male Special Risk	Headcount Weighted Safety Below Median Healthy Retiree Male Table, set forward 1 year
Female (other than Special Risk or K-12 School Instructional Personnel)	Headcount Weighted General Below Median Healthy Retiree Female Table
Male (other than Special Risk or K-12 School Instructional Personnel)	Headcount Weighted General Below Median Healthy Retiree Male Table, set back 1 year

Healthy Active Mortality (During Employment)

- For Special Risk members, 30% of future active member deaths are assumed to be in the line of duty.
- For all other members, 2% of future active member deaths are assumed to be in the line of duty.

Member Category (Non-Disabled Active)	PUB-2010 base table listed below, generational mortality using gender-specific MP-2018 mortality improvement projection scale
Female K-12 School Instructional Personnel	Headcount Weighted Teachers Employee Female Table, set forward 1 year
Male K-12 School Instructional Personnel	Benefits Weighted Teachers Below Median Employee Male Table, set forward 2 years
Female Special Risk	Headcount Weighted Safety Employee Female Table, set forward 1 year
Male Special Risk	Headcount Weighted Safety Below Median Employee Male Table, set forward 1 year
Female (other than Special Risk or K-12 School Instructional Personnel)	Headcount Weighted General Below Median Employee Female Table
Male (other than Special Risk or K-12 School Instructional Personnel)	Headcount Weighted General Below Median Employee Male Table, set back 1 year

Disabled Mortality

Member Category (Disabled Inactive)	PUB-2010 base table listed below, without mortality improvement projection
Female Disabled Special Risk	80% Headcount Weighted General Disabled Retiree Female Table; 20% Headcount Weighted Safety Disabled Retiree Female Table
Male Disabled Special Risk	80% Headcount Weighted General Disabled Retiree Male Table; 20% Headcount Weighted Safety Disabled Retiree Male Table
Female Disabled (other than Special Risk)	Headcount Weighted General Disabled Retiree Female Table, set forward 3 years
Male Disabled (other than Special Risk)	Headcount Weighted General Disabled Retiree Male Table, set forward 3 years

Retirement for Vested Terminated Members (Tier I and Tier II)

All current vested terminated members are assumed to begin receiving benefits on the normal retirement benefit age for the appropriate class and tier. All future members who terminate employment with a vested benefit are also assumed to commence benefit at the normal retirement benefit age.

Time in DROP for Active Members

Law enforcement officer members (a subset of the Special Risk Class) who are eligible for DROP entry are assumed upon entry to remain in DROP for 60 months. All other current active members who are eligible for DROP entry are assumed upon entry to remain in DROP for 48 months.

Optional Form of Payment

All future retirees are assumed to elect the straight life (Option 1) form of benefit. For current retirees and members in DROP, the actual elected form is used.

Retirement Assumptions (Tier I)
DROP Entry

	Regular K-12 School Instructional		Regular Not K-12 School Instructional		Special Risk (non-LEO) and Special Risk Admin		Law Enforcement Officers (LEO) - subset of Special Risk		All Other	
Age	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
45	0.0%	0.0%	0.0%	0.0%	8.0%	13.0%	11.0%	18.0%	5.0%	5.0%
46	0.0%	0.0%	0.0%	0.0%	8.0%	13.0%	11.0%	18.0%	5.0%	5.0%
47	0.0%	0.0%	0.0%	0.0%	8.0%	13.0%	11.0%	18.0%	5.0%	5.0%
48	4.0%	4.0%	5.0%	5.0%	11.0%	15.0%	14.0%	20.0%	16.0%	16.0%
49	4.0%	4.0%	10.0%	9.0%	11.0%	15.0%	14.0%	20.0%	16.0%	16.0%
50	4.0%	4.0%	10.0%	9.0%	11.0%	15.0%	14.0%	20.0%	16.0%	16.0%
51	4.0%	4.0%	12.0%	9.0%	11.0%	15.0%	14.0%	20.0%	16.0%	16.0%
52	4.0%	4.0%	14.0%	9.0%	15.0%	36.0%	18.0%	41.0%	16.0%	16.0%
53	5.0%	4.0%	15.0%	11.0%	15.0%	27.5%	18.0%	32.5%	16.0%	16.0%
54	5.0%	4.0%	16.0%	12.0%	15.0%	27.5%	22.0%	35.0%	16.0%	16.0%
55	6.0%	4.0%	18.0%	12.0%	32.0%	27.5%	40.0%	35.0%	16.0%	16.0%
56	6.0%	5.0%	20.0%	15.0%	5.0%	5.0%	5.0%	5.0%	16.0%	16.0%
57	10.0%	8.0%	55.0%	55.0%	5.0%	5.0%	5.0%	5.0%	55.0%	55.0%
58	10.0%	8.0%	55.0%	50.0%	5.0%	5.0%	5.0%	5.0%	55.0%	55.0%
59	10.0%	9.0%	55.0%	50.0%	5.0%	5.0%	5.0%	5.0%	55.0%	55.0%
60	13.0%	9.0%	55.0%	50.0%	5.0%	5.0%	5.0%	5.0%	55.0%	55.0%
61	16.0%	14.0%	55.0%	50.0%	5.0%	5.0%	5.0%	5.0%	55.0%	55.0%
62	26.0%	19.0%	46.5%	42.5%	5.0%	5.0%	5.0%	5.0%	43.0%	43.0%
63	8.0%	6.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
64	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
65	5.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
66	3.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
67	3.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
68	3.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
69	3.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
70-79	3.0%	3.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	3.0%	3.0%
80	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Retirement Assumptions (Tier I) (continued)

Immediate Retirement when eligible for DROP

	Regular K-12 School Instructional		Regular Not K-12 School Instructional		Special Risk and Special Risk Admin		Elected Officers' Subclasses		Senior Management Service Class	
Age	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
45	0.0%	0.0%	0.0%	0.0%	4.0%	5.0%	0.0%	0.0%	0.0%	0.0%
46	0.0%	0.0%	0.0%	0.0%	4.0%	5.0%	0.0%	0.0%	0.0%	0.0%
47	0.0%	0.0%	0.0%	0.0%	4.0%	5.0%	0.0%	0.0%	0.0%	0.0%
48	4.0%	4.0%	2.5%	2.5%	4.0%	5.0%	3.0%	3.0%	3.0%	3.0%
49	4.0%	4.0%	2.5%	2.5%	4.0%	5.0%	3.0%	3.0%	3.0%	3.0%
50	4.0%	4.0%	2.5%	2.5%	4.0%	5.0%	3.0%	3.0%	3.0%	3.0%
51	4.0%	4.0%	2.5%	2.5%	5.0%	5.0%	3.0%	3.0%	3.0%	3.0%
52	4.0%	4.0%	2.5%	2.5%	5.0%	5.0%	3.0%	3.0%	3.0%	3.0%
53	4.0%	4.0%	2.5%	2.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
54	4.0%	4.0%	2.5%	2.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
55	4.0%	5.0%	2.5%	2.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
56	4.0%	5.0%	2.5%	2.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
57	5.0%	5.0%	2.5%	2.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
58	5.0%	6.0%	6.0%	7.0%	7.0%	7.0%	3.0%	3.0%	10.0%	10.0%
59	6.0%	6.0%	6.0%	8.0%	7.0%	7.0%	3.0%	3.0%	10.0%	10.0%
60	7.0%	6.0%	6.0%	8.0%	7.0%	7.0%	3.0%	3.0%	10.0%	10.0%
61	10.0%	10.0%	9.0%	8.0%	7.0%	7.0%	3.0%	3.0%	10.0%	10.0%
62	13.0%	12.0%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	10.0%	10.0%
63	9.0%	9.0%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
64	11.0%	11.0%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
65	18.0%	15.0%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
66	20.0%	17.5%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
67	20.0%	17.5%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
68	20.0%	17.5%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
69	20.0%	17.5%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
70-79	20.0%	17.5%	9.0%	9.5%	100.0%	100.0%	3.0%	3.0%	3.0%	3.0%
80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Retirement Assumptions (Tier I) (continued)

Immediate Retirement when not eligible for DROP

	Regular Not K-12 School Instructional		Special Risk and Special Risk Admin		Elected Officers' Subclasses		Senior Management Service Class	
Age	Female	Male	Female	Male	Female	Male	Female	Male
52	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
53	0.0%	0.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%
54	0.0%	0.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%
55	0.0%	0.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%
56	0.0%	0.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%
57	0.0%	0.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%
58	2.0%	2.0%	5.0%	5.0%	3.0%	3.0%	6.0%	6.0%
59	5.0%	2.0%	5.0%	5.0%	3.0%	3.0%	6.0%	6.0%
60	5.0%	5.0%	7.0%	7.0%	3.0%	3.0%	6.0%	6.0%
61	5.0%	5.0%	9.0%	9.0%	3.0%	3.0%	6.0%	6.0%
62	8.0%	11.0%	20.0%	20.0%	3.0%	3.0%	6.0%	6.0%
63	8.0%	8.0%	14.0%	14.0%	5.0%	5.0%	11.0%	11.0%
64	8.0%	8.0%	14.0%	14.0%	5.0%	5.0%	11.0%	11.0%
65	15.0%	13.0%	20.0%	20.0%	5.0%	5.0%	11.0%	11.0%
66	15.0%	13.0%	25.0%	25.0%	5.0%	5.0%	11.0%	11.0%
67	15.0%	13.0%	25.0%	25.0%	12.0%	12.0%	11.0%	11.0%
68	15.0%	13.0%	25.0%	25.0%	12.0%	12.0%	11.0%	11.0%
69	15.0%	13.0%	25.0%	25.0%	12.0%	12.0%	11.0%	11.0%
70-79	15.0%	13.0%	100.0%	100.0%	12.0%	12.0%	11.0%	11.0%
80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Retirement Assumptions (Tier II)

DROP Entry

	Regular K-12 School Instructional		Regular Not K-12 School Instructional		Special Risk (non-LEO) and Special Risk Admin		Law Enforcement Officers (LEO) - subset of Special Risk		All Other	
Age	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
45	0.0%	0.0%	0.0%	0.0%	8.0%	13.0%	8.0%	13.0%	5.0%	5.0%
46	0.0%	0.0%	0.0%	0.0%	8.0%	13.0%	8.0%	13.0%	5.0%	5.0%
47	0.0%	0.0%	0.0%	0.0%	8.0%	13.0%	8.0%	13.0%	5.0%	5.0%
48	4.0%	4.0%	5.0%	5.0%	11.0%	15.0%	11.0%	15.0%	16.0%	16.0%
49	4.0%	4.0%	10.0%	9.0%	11.0%	15.0%	11.0%	15.0%	16.0%	16.0%
50	4.0%	4.0%	10.0%	9.0%	11.0%	15.0%	15.0%	21.0%	16.0%	16.0%
51	4.0%	4.0%	12.0%	9.0%	11.0%	15.0%	15.0%	21.0%	16.0%	16.0%
52	4.0%	4.0%	14.0%	9.0%	11.0%	15.0%	15.0%	21.0%	16.0%	16.0%
53	5.0%	4.0%	15.0%	11.0%	11.0%	15.0%	15.0%	21.0%	16.0%	16.0%
54	5.0%	4.0%	16.0%	12.0%	11.0%	15.0%	15.0%	21.0%	16.0%	16.0%
55	6.0%	4.0%	18.0%	12.0%	17.0%	36.0%	23.0%	42.0%	16.0%	16.0%
56	6.0%	5.0%	20.0%	15.0%	11.0%	5.0%	13.0%	7.0%	16.0%	16.0%
57	10.0%	8.0%	20.0%	15.0%	11.0%	5.0%	13.0%	7.0%	16.0%	16.0%
58	10.0%	8.0%	20.0%	15.0%	11.0%	5.0%	13.0%	7.0%	16.0%	16.0%
59	10.0%	9.0%	20.0%	15.0%	11.0%	5.0%	13.0%	7.0%	16.0%	16.0%
60	13.0%	9.0%	55.0%	55.0%	20.0%	5.0%	22.0%	7.0%	55.0%	55.0%
61	16.0%	14.0%	55.0%	49.0%	5.0%	5.0%	5.0%	5.0%	50.0%	50.0%
62	16.0%	14.0%	49.5%	43.0%	5.0%	5.0%	5.0%	5.0%	45.0%	45.0%
63	16.0%	14.0%	43.0%	37.0%	5.0%	5.0%	5.0%	5.0%	40.0%	40.0%
64	16.0%	14.0%	36.5%	31.0%	5.0%	5.0%	5.0%	5.0%	35.0%	35.0%
65	16.0%	14.0%	30.0%	25.0%	5.0%	5.0%	5.0%	5.0%	30.0%	30.0%
66	3.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
67	3.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
68	3.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
69	3.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
70-79	3.0%	3.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	3.0%	3.0%
80	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Retirement Assumptions (Tier II) (continued)

Immediate Retirement when eligible for DROP

	Regular K-12 School Instructional		Regular Not K-12 School Instructional		Special Risk and Special Risk Admin		Elected Officers' Subclasses		Senior Management Service Class	
Age	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
50	4.0%	4.0%	2.5%	2.5%	4.0%	5.0%	3.0%	3.0%	3.0%	3.0%
51	4.0%	4.0%	2.5%	2.5%	5.0%	5.0%	3.0%	3.0%	3.0%	3.0%
52	4.0%	4.0%	2.5%	2.5%	5.0%	5.0%	3.0%	3.0%	3.0%	3.0%
53	4.0%	4.0%	2.5%	2.5%	5.0%	5.0%	3.0%	3.0%	3.0%	3.0%
54	4.0%	4.0%	2.5%	2.5%	5.0%	5.0%	3.0%	3.0%	3.0%	3.0%
55	4.0%	5.0%	2.5%	2.5%	5.0%	5.0%	3.0%	3.0%	3.0%	3.0%
56	4.0%	5.0%	2.5%	2.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
57	5.0%	5.0%	2.5%	2.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
58	5.0%	6.0%	2.5%	2.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
59	6.0%	6.0%	2.5%	2.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
60	7.0%	6.0%	2.5%	2.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
61	10.0%	10.0%	9.0%	8.0%	7.0%	7.0%	3.0%	3.0%	10.0%	10.0%
62	10.0%	10.0%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	10.0%	10.0%
63	10.0%	10.0%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	10.0%	10.0%
64	10.0%	10.0%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	10.0%	10.0%
65	20.0%	17.5%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	10.0%	10.0%
66	20.0%	17.5%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
67	20.0%	17.5%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
68	20.0%	17.5%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
69	20.0%	17.5%	9.0%	9.5%	7.0%	7.0%	3.0%	3.0%	3.0%	3.0%
70-79	20.0%	17.5%	9.0%	9.5%	100.0%	100.0%	3.0%	3.0%	3.0%	3.0%
80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Retirement Assumptions (Tier II) (continued)

Immediate Retirement when not eligible for DROP

	Regular Not K-12 School Instructional		Special Risk and Special Risk Admin		Elected Officers' Subclasses		Senior Management Service Class	
Age	Female	Male	Female	Male	Female	Male	Female	Male
55	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
56	0.0%	0.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%
57	0.0%	0.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%
58	0.0%	0.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%
59	0.0%	0.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%
60	0.0%	0.0%	7.0%	7.0%	0.0%	0.0%	0.0%	0.0%
61	5.0%	5.0%	9.0%	9.0%	3.0%	3.0%	6.0%	6.0%
62	5.0%	5.0%	20.0%	20.0%	3.0%	3.0%	6.0%	6.0%
63	5.0%	5.0%	14.0%	14.0%	3.0%	3.0%	6.0%	6.0%
64	5.0%	5.0%	14.0%	14.0%	3.0%	3.0%	6.0%	6.0%
65	15.0%	13.0%	20.0%	20.0%	3.0%	3.0%	11.0%	11.0%
66	15.0%	13.0%	25.0%	25.0%	5.0%	5.0%	11.0%	11.0%
67	15.0%	13.0%	25.0%	25.0%	12.0%	12.0%	11.0%	11.0%
68	15.0%	13.0%	25.0%	25.0%	12.0%	12.0%	11.0%	11.0%
69	15.0%	13.0%	25.0%	25.0%	12.0%	12.0%	11.0%	11.0%
70-79	15.0%	13.0%	100.0%	100.0%	12.0%	12.0%	11.0%	11.0%
80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Line-of-Duty Disability Annual Rates

Age	Special Risk Class	All Other Classes
<42	0.025%	0.001%
42-46	0.250%	0.001%
47-50	0.250%	0.002%
51-54	0.450%	0.004%
55-56	0.450%	0.005%
57-58	0.450%	0.006%
59	0.450%	0.007%
60-61	0.450%	0.006%
62	0.450%	0.003%
63	0.450%	0.002%
64+	0.450%	0.001%

Non-Duty Disability Annual Rates

Age	Special Risk Class	All Other Classes
20	0.020%	0.000%
21-27	0.020%	0.010%
28-35	0.040%	0.010%
36-40	0.040%	0.020%
41-44	0.040%	0.030%
45-46	0.040%	0.040%
47-50	0.070%	0.080%
51-54	0.070%	0.130%
55	0.070%	0.160%
56	0.070%	0.170%
57-58	0.070%	0.190%
59	0.070%	0.230%
60	0.070%	0.210%
61	0.070%	0.200%
62	0.070%	0.110%
63	0.070%	0.080%
64+	0.070%	0.040%

Withdrawal – Other Terminations of Employment Annual Rates

Regular – Male						
Combined Years of Service	Attained Age: Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	27.0%	25.0%	23.0%	22.0%	21.0%	27.0%
1	19.0%	17.0%	15.0%	13.5%	12.5%	12.5%
2	17.5%	13.5%	12.0%	10.5%	9.5%	9.0%
3	16.0%	11.5%	10.0%	9.0%	7.8%	7.8%
4	15.5%	10.0%	8.5%	8.0%	6.5%	6.5%
5	10.5%	9.0%	8.5%	7.5%	6.0%	6.0%
6	10.5%	8.5%	7.5%	6.5%	6.0%	6.0%
7	8.0%	8.0%	6.5%	6.0%	5.0%	5.0%
8	5.5%	5.5%	5.0%	5.5%	5.0%	4.0%
9	5.0%	5.0%	5.0%	4.5%	4.0%	4.0%
10	4.0%	4.0%	4.0%	4.0%	4.0%	3.0%
11	3.5%	3.5%	3.0%	3.5%	3.5%	3.0%
12	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
13	3.0%	3.0%	3.0%	3.0%	3.0%	2.5%
14	2.5%	2.5%	1.5%	2.5%	2.5%	2.5%
15	2.5%	2.5%	1.5%	2.0%	2.5%	2.5%
16	2.0%	2.0%	1.5%	2.0%	2.0%	2.0%
17	2.0%	2.0%	1.5%	2.0%	2.0%	2.0%
18	2.0%	2.0%	1.5%	1.5%	2.0%	2.0%
19	2.0%	2.0%	1.5%	1.5%	2.0%	2.0%
20	1.5%	1.5%	1.5%	1.0%	1.5%	1.5%
21	1.3%	1.3%	1.3%	1.0%	1.3%	1.3%
22	1.3%	1.3%	1.3%	1.0%	1.3%	1.3%
23	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
24	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
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	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
29	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
30+	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%

Withdrawal (continued)

Regular – Female						
Combined Years	Attained Age					
of Service	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	28.0%	28.0%	27.0%	26.0%	25.0%	30.0%
1	18.0%	17.0%	16.0%	15.0%	12.5%	12.5%
2	16.0%	13.5%	12.5%	11.5%	10.0%	10.0%
3	16.0%	11.5%	10.5%	9.5%	9.0%	9.0%
4	16.0%	10.0%	9.0%	8.0%	7.5%	7.5%
5	13.0%	8.0%	8.0%	7.5%	7.5%	7.5%
6	12.0%	8.0%	8.0%	7.5%	7.5%	7.5%
7	7.5%	7.5%	7.5%	6.5%	6.5%	6.5%
8	6.0%	6.0%	6.0%	5.5%	5.5%	5.5%
9	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
10	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
11	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
12	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
13	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
14	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
15	3.0%	3.0%	3.0%	2.8%	2.8%	2.8%
16	3.0%	3.0%	3.0%	2.5%	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%	2.0%	2.0%
19	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
20	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
21	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
22	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
23	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
24	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
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	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	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
30+	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%

Withdrawal (continued)

Elected Officers' Class: Local						
Combined Years of Service	Attained Age					
	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
1	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
2	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
3	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
4	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
5	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
6	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
7	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
8	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
9	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
10	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
11	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
12	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
13	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
14	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
15	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
16	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
17	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
18	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
19	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
20	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
21	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
22	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
23	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
24	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
25	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
26	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
27	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
28	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
29	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
30+	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%

Withdrawal (continued)

Elected Officers' Class: Leg-Atty-Cab						
Combined Years	Attained Age					
of Service	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
1	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
2	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
3	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
4	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
5	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
6	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
7	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
8	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
9	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
10	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
11	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
12	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
13	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
14	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
15	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
16	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
17	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
18	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
19	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
20	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
21	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
22	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
23	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
24	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
25	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
26	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
27	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
28	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
29	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
30+	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%

Withdrawal (continued)

Elected Officers' Class: Judges						
Combined Years	Attained Age					
of Service	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
1	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
2	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
3	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
4	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
5	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
6	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
7	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
8	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
9	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
10	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
11	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
12	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
13	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
14	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
15	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
16	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
17	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
18	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
19	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
20	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
21	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
22	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
23	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
24	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
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%

Withdrawal (continued)

Senior Management – Male						
Combined Years	Attained Age					
of Service	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	9.0%	9.0%	9.0%	9.0%	9.0%	11.0%
1	10.5%	10.5%	10.5%	10.5%	10.5%	11.0%
2	17.0%	17.0%	17.0%	17.0%	17.0%	14.5%
3	16.0%	16.0%	16.0%	16.0%	16.0%	10.5%
4	12.0%	12.0%	12.0%	12.0%	12.0%	7.0%
5	10.0%	10.0%	10.0%	10.0%	10.0%	5.0%
6	9.5%	9.5%	9.5%	9.5%	9.5%	5.0%
7	7.0%	7.0%	7.0%	7.0%	7.0%	5.0%
8	6.0%	6.0%	6.0%	6.0%	6.0%	4.0%
9	6.0%	6.0%	6.0%	6.0%	6.0%	4.0%
10	5.0%	5.0%	5.0%	5.0%	5.0%	4.0%
11	5.0%	5.0%	5.0%	5.0%	5.0%	4.0%
12	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
13	4.0%	4.0%	4.0%	4.0%	4.0%	3.5%
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	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
17	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
18	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
19	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
20	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
21	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
22	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
23	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
24	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
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%

Withdrawal (continued)

Senior Management – Female						
Combined Years	Attained Age					
of Service	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
1	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
2	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
3	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
4	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
5	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
6	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
7	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
8	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
9	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
10	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
11	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
12	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
13	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
14	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
15	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
16	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
17	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
18	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
19	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
20	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
21	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
22	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
23	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
24	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
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%

Withdrawal (continued)

Special Risk & Special Risk Administrative – Male						
Combined Years	Attained Age					
of Service	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	17.5%	15.5%	15.5%	17.5%	17.5%	17.5%
1	10.0%	9.0%	9.0%	10.0%	9.0%	9.0%
2	8.0%	8.0%	8.0%	8.0%	7.0%	8.0%
3	7.0%	7.0%	7.0%	7.0%	5.5%	7.0%
4	5.0%	6.0%	6.0%	6.0%	5.5%	6.0%
5	4.0%	5.0%	5.0%	5.0%	4.0%	5.0%
6	4.0%	5.0%	5.0%	5.0%	4.0%	5.0%
7	4.0%	5.0%	4.0%	4.0%	3.5%	4.0%
8	3.5%	4.5%	3.5%	3.5%	3.0%	3.5%
9	3.0%	3.5%	3.0%	3.0%	3.0%	3.0%
10	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
11	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
12	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
13	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
14	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
15	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
16	1.0%	1.0%	1.0%	1.0%	1.5%	1.5%
17	1.0%	1.0%	1.0%	1.0%	1.5%	1.5%
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%	1.0%	1.0%
23	0.5%	0.5%	0.5%	0.5%	1.0%	1.0%
24	0.5%	0.5%	0.5%	0.5%	1.0%	1.0%
25	0.5%	0.5%	0.5%	0.5%	1.0%	1.0%
26	0.5%	0.5%	0.5%	0.5%	1.0%	1.0%
27	0.5%	0.5%	0.5%	0.5%	1.0%	1.0%
28	0.5%	0.5%	0.5%	0.5%	1.0%	1.0%
29	0.5%	0.5%	0.5%	0.5%	1.0%	1.0%
30+	0.5%	0.5%	0.5%	0.5%	1.0%	1.0%

Withdrawal (continued)

Special Risk & Special Risk Administrative – Female						
Combined Years	Attained Age					
of Service	Under 25	25 to 29	30 to 34	35 to 44	45 to 54	55+
0	24.0%	24.0%	24.0%	26.0%	30.0%	30.0%
1	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%
2	11.0%	11.0%	9.0%	10.5%	10.5%	10.5%
3	8.0%	8.0%	8.5%	10.5%	10.0%	10.0%
4	8.0%	8.0%	7.0%	7.0%	10.0%	10.0%
5	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%
6	6.5%	6.5%	6.5%	6.0%	6.0%	6.0%
7	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
8	5.0%	5.0%	4.5%	4.5%	6.0%	6.0%
9	3.5%	3.5%	3.5%	3.5%	6.0%	6.0%
10	3.5%	3.5%	3.5%	3.5%	5.0%	5.0%
11	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
12	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
13	2.5%	2.5%	2.5%	2.5%	3.0%	3.0%
14	2.5%	2.5%	2.5%	2.5%	3.0%	3.0%
15	2.3%	2.3%	2.3%	2.3%	3.0%	3.0%
16	2.0%	2.0%	2.0%	2.0%	3.0%	3.0%
17	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
18	1.5%	1.5%	1.5%	1.5%	2.0%	2.0%
19	1.5%	1.5%	1.5%	1.5%	2.0%	2.0%
20	1.5%	1.5%	1.5%	1.5%	2.0%	2.0%
21	1.5%	1.5%	1.5%	1.5%	2.0%	2.0%
22	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
23	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
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%

Individual Member Salary Increase Assumptions

(Based on 2.40% inflation assumption)

Combined Years of Service	Regular	Special Risk	Special Risk Admin	ECO	ESO	Judges	Senior Management
0	7.80%	7.40%	3.70%	3.50%	3.25%	3.50%	8.20%
1	5.80%	5.70%	3.70%	3.50%	3.25%	3.50%	8.20%
2	5.40%	5.40%	3.70%	3.50%	3.25%	3.50%	7.30%
3	5.10%	5.40%	3.70%	3.50%	3.25%	3.50%	6.50%
4	4.70%	5.40%	3.70%	3.50%	3.25%	3.50%	6.10%
5	4.60%	5.40%	3.70%	3.50%	3.25%	3.50%	5.80%
6	4.60%	5.40%	3.70%	3.50%	3.25%	3.50%	5.40%
7	4.50%	5.30%	3.70%	3.50%	3.25%	3.50%	5.10%
8	4.40%	5.30%	3.70%	3.50%	3.25%	3.50%	4.60%
9	4.40%	5.30%	3.70%	3.50%	3.25%	3.50%	4.60%
10	4.40%	5.30%	3.70%	3.50%	3.25%	3.50%	4.60%
11	4.30%	5.10%	3.70%	3.50%	3.25%	3.50%	4.60%
12	4.20%	5.10%	3.70%	3.50%	3.25%	3.50%	4.60%
13	4.20%	5.00%	3.70%	3.50%	3.25%	3.50%	4.60%
14	4.20%	5.00%	3.70%	3.50%	3.25%	3.50%	4.60%
15	4.20%	5.00%	3.70%	3.50%	3.25%	3.50%	4.60%
16	4.20%	4.80%	3.70%	3.50%	3.25%	3.50%	4.60%
17	4.20%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
18	4.10%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
19	4.10%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
20	4.10%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
21	4.00%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
22	4.00%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
23	3.90%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
24	3.90%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
25	3.80%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
26	3.70%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
27	3.60%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
28	3.50%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
29	3.40%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%
30+	3.40%	4.80%	3.70%	3.50%	3.25%	3.50%	4.10%

Unused Annual Leave Available at Retirement

Membership Class	Hours
Regular	230
Special Risk	270
Senior Management Service	310
Others Not Listed Above	230

Eligible Survivors

It is assumed that 80% of deceased active members will have survivors eligible for lifetime benefits upon their deaths. Survivors are assumed to be opposite sex of the deceased member and males are assumed to be three years older than their female spouses.

Commencement of Survivor Benefits

It is assumed that survivors of deceased active members will defer commencement of benefits until the following:

Membership Class / Tier	Member Age
Special Risk / Tier 1	45
Special Risk / Tier 2	50
Other classes / Tier 1 and 2	55

Military Service and Out-of-State Service Credits

Active members are assumed to have purchased the following additional years of service credit.

Type of Service Credit	Special Risk Class		All other classes	
	Men	Women	Men	Women
Military Service Credit [1]	0.2818	0	0.1853	0
Out-of-State Service Credit [2]	0	0	0.0910	0.0910

[1] *Pre-1987 hires only; service is eligible for the COLA.*
[2] *Service for pre-July 1, 2011 enrollees is eligible for the COLA; assumption applies to both tiers.*

No extra service credit was assumed for TRS and IFAS participants.

Changes to the Actuarial Assumptions and Methods

Demographic assumptions for Special Risk Class members were updated to reflect plan changes due to the enactment of House Bill 5007, House Bill 689, and Senate Bill 838. Specifically, HB 5007 resulted in the development of separate rates of DROP Entry for law enforcement officers, and an assumed 60-month duration of DROP participation for law enforcement officers who enter DROP in the future. HB 689 and SB 838 resulted in updated line-of-duty disability rates and an increase in the portion of all future active member deaths assumed to occur in the line of duty from 25% to 30% for all Special Risk Class members.

Changes to investment rate of return were adopted by the 2022 FRS Actuarial Assumption Conference during its meeting in October 2022. The investment return decreased from 6.80% to 6.70%

Appendix B: Summary of Plan Provisions

All actuarial calculations are based upon our understanding of Florida Statutes regarding the benefit and eligibility provisions of the retirement systems. These provisions are briefly summarized below for reference purposes, along with corresponding references to the Statutes. This summary encompasses the major provisions; it does not attempt to cover all of the detailed provisions.

Florida Retirement System (FRS)

The benefit, eligibility, and contribution provisions of the FRS are set forth in Chapter 121 of the Florida Statutes. Provisions relating to other State-administered retirement systems are set forth in other sections of the Florida Statutes, under Chapters 112, 122, and 238.

Effective Date

The effective date of the FRS was December 1, 1970. The FRS was created with closure and consolidation of the Teachers' Retirement System, the State and County Officers and Employees' Retirement System, and the Highway Patrol Pension Fund. In 1972, the Judicial Retirement System was also consolidated with the FRS. The FRS was created to provide a defined benefit retirement, disability, and survivor program for participating public employees. Social Security coverage is also required for all members.

Beginning in 2002, the FRS became one system with two primary programs, the existing defined benefit FRS Pension Plan and a defined contribution plan alternative known as the FRS Investment Plan (IP). The earliest that any member could participate in the IP was July 1, 2002.

As of July 1, 2007, the Institute for Food and Agricultural Sciences Supplemental Retirement Program was consolidated under the FRS as a closed group.

(Section 121.011(2))

Membership

Membership is a condition of employment for all new state, county, or other participating agency employees filling regularly established positions and employed on or after December 1, 1970, or who elected to transfer from an existing system. Employees may be full-time or part-time and can be elected, appointed, or employed in state government, county government, a state university, or a community college. A city or special district may join the FRS at its option.

Effective July 1, 1978, a member in an existing retirement system who is re-employed after termination of employment may remain in that system, provided his or her member contributions have not been withdrawn.

Members of the FRS Pension Plan when the FRS Investment Plan was created were provided an educational period about their plan choice options prior to a 90-day election period to elect between the FRS Pension Plan and the FRS Investment Plan (IP). Members newly hired after the IP became effective are provided eight months after their month of hire to file an election between the two primary programs. Members who do not make an election default into the FRS Investment Plan except for Special Risk Class members who default into the FRS Pension Plan.

After the initial active or default election to participate in the FRS Pension Plan or the FRS Investment Plan, the employee has one opportunity, at the employee's discretion before termination or retirement, to choose to move from the FRS Pension Plan to the FRS Investment Plan or vice versa, except for renewed members initially enrolled on or after July 1, 2017.

(Sections 121.051, 121.4501, 121.122)

Classification

There are five separate classes of members: Regular Class, Special Risk Class, Special Risk Administrative Support Class, Elected Officers' Class, and Senior Management Service Class. In addition, the Deferred Retirement Option Program (DROP) is available to FRS Pension Plan members who meet the requirements for normal retirement under the FRS Pension Plan.

Regular Class – members who are not classified as members of the Special Risk Class, Special Risk Administrative Support Class, Elected Officers' Class, or Senior Management Service Class.

Special Risk Class – members employed as law enforcement officers, emergency medical technicians, paramedics, firefighters, firefighter trainers, fire prevention inspectors, correctional officers, correctional probation officers, certain professional health care positions within the Department of Children and Family Services and the Department of Corrections, or certain forensic positions within a law enforcement agency, or a medical examiner’s office who meet the criteria set forth in the Florida Retirement System law and administrative rules.

Special Risk Administrative Support Class – former Special Risk Class members employed as law enforcement officers, firefighters, correctional officers, or emergency medical technicians who have been moved or been re-assigned to non-Special Risk administrative support positions within a Florida Retirement System Special Risk employing agency.

Elected Officers' Class – members include the Governor, Lieutenant Governor, cabinet officers, legislators, Supreme Court justices, district court of appeals judges, circuit judges, county court judges, state attorneys, public defenders, and elected county officers. Also included are city and special district officers if the employer chose to place their elected officials in this class. All such elected officers may withdraw from the Florida Retirement System, elect membership in the Senior Management Service Class or, if state officers, elect membership in the Senior Management Service Optional Annuity Program if initially enrolled before July 1, 2017.

Senior Management Service Class – members who hold positions in the Senior Management Service of the State of Florida; community college presidents; appointed school board superintendents; county and city managers; selected managerial staff of the Legislature; the Auditor General and managerial staff; the Executive Director of the Ethics Commission; the State University System Executive Service and university presidents; selected managerial staff of the State Board of Administration; judges of compensation claims; selected managerial staff with the Judicial Branch; Chief Deputy Court Administrator; capital collateral regional counsels and assistant capital collateral regional counsels; assistant state attorneys; assistant public defenders; assistant statewide prosecutors or assistant attorneys general; appointed criminal conflict and civil regional counsel, assistant regional counsel chiefs, administrative directors, and chief investigators in each district; and non-elective managerial positions designated for SMSC membership by local government agencies. Members in this class have either chosen not to participate or are not eligible to participate in the elective Senior Management Service Optional Annuity Program for state senior managers or to withdraw from the FRS if employed by non-state employers. This class became effective February 1, 1987, and members of an existing retirement system and members of the Special Risk or Special Risk Administrative Support Classes who were employed prior to February 1, 1987, could elect to remain in such system or class.

Deferred Retirement Option Program (DROP) – allows members of the FRS Pension Plan in any of the above five classes to elect to retire when they reach normal retirement and have their FRS benefits accumulate in the FRS Trust Fund, earning interest, while the member continues to work for an FRS employer. DROP membership is for a specific and limited period.

(Sections 121.021(12), 121.0515, 121.052, 121.055, 121.091 (13))

Contributions

From January 1, 1975, for the state and for school boards, and from October 1, 1975, for other agencies, through June 30, 2011, the total cost of the System was paid by the participating employers.

Beginning July 1, 2011, all FRS Pension Plan and FRS Investment Plan members, except those FRS Pension Plan members participating in DROP, are required to pay member contributions equal to 3% of compensation. TRS members already pay required employee contributions. Member contributions do not accrue interest except for TRS members.

(Sections 121.071 (2), 121.71)

The employer contribution rates enacted for the July 1, 2022 – June 30, 2023 plan year are as follows:

		Special	Special Risk	Elected Officers Class			Senior	
	Regular	Risk	Administrative	Judicial	Leg-Atty-Cab	Local	Management	DROP
Defined Benefit Plan								
- Normal Cost Rate	5.73%	16.42%	11.70%	14.48%	9.00%	10.98%	7.59%	7.79%
- UAL Rate	5.52	11.32	36.66	33.24	80.39	63.41	31.03	9.15
- Total DB Rate	11.25%	27.74%	48.36%	47.72%	89.39%	74.39%	38.62%	16.94%
Investment Plan								
- Employer Rate	6.60%	16.54%	8.43%	14.05%	9.94%	11.95%	7.98%	n/a
- UAL Rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/a
- Total IP Rate	6.60%	16.54%	8.43%	14.05%	9.94%	11.95%	7.98%	n/a
Blended Uniform Contribution Rates								
- Normal Cost Rate	5.96%	16.44%	10.77%	14.41%	9.31%	11.30%	7.70%	7.79%
- UAL Rate	4.23	9.67	26.16	27.64	56.76	43.98	22.15	9.15
- Total Rate	10.19%	26.11%	36.93%	42.05%	66.07%	55.28%	29.85%	16.94%

The above rates exclude the 0.06% administrative charge for Investment Plan administration and education (except DROP), and the 1.66% for the financing of the Florida Retiree Health Insurance Subsidy program.

(Sections 121.071, 121.71, 121.74)

Compensation

"Compensation" means the monthly salary paid a member by his or her employer for work performed arising from that employment.

(a) Compensation shall include:

1. Overtime payments paid from a salary fund.
2. Accumulated annual leave payments.
3. Payments in addition to the employee's base rate of pay if all the following apply:
   a. The payments are paid according to a formal written policy that applies to all eligible employees equally;
   b. The policy provides that payments shall commence no later than the 11th year of employment;
   c. The payments are paid for as long as the employee continues his or her employment; and
   d. The payments are paid at least annually.
4. Amounts withheld for tax sheltered annuities or deferred compensation programs, or any other type of salary reduction plan authorized under the Internal Revenue Code.
5. Payments made in lieu of a permanent increase in the base rate of pay, whether made annually or in 12 or 26 equal payments within a 12-month period, when the member's base pay is at the maximum of his or her pay range. When a portion of a member's annual increase raises his or her pay range and the excess is paid as a lump sum payment, such lump sum payment shall be compensation for retirement purposes.

(b) Compensation for a member participating in the FRS Pension Plan or the FRS Investment Plan may not include:

1. Fees paid professional persons for special or particular services or salary payments made from a faculty practice plan authorized by the Board of Governors of the State University System for eligible clinical faculty at a college in a state university that has a faculty practice plan; or
2. Any bonuses or other payments prohibited from inclusion in the member's average final compensation.

(c) For all purposes under this chapter, the member's compensation or gross compensation contributed as employee-elective salary reductions or deferrals to any salary reduction, deferred compensation, or tax-sheltered annuity program authorized under the Internal Revenue Code shall be deemed to be the compensation or gross compensation which the member would receive if he or she were not participating in such program and shall be treated as compensation for retirement purposes under this chapter. Any public funds otherwise paid by an employer into an employee's salary reduction, deferred compensation, or tax-sheltered annuity program on or after July 1, 1990 (the date as of which all employers were notified in writing by the division to cease making contributions to the System Trust Fund based on such amounts), shall be considered a fringe benefit and shall not be treated as compensation for retirement purposes under this chapter. However, if an employer was notified in writing by the division to cease making such contributions as of a different date, that employer shall be subject to the requirements of said written notice.

(d) For any person who first becomes a member on or after July 1, 1996, compensation for any plan year shall not include any amounts in excess of the Section 401(a)(17), Internal Revenue Code limitation (as amended by the Omnibus Budget Reconciliation Act of 1993), which limitation of $150,000 effective July 1, 1996, shall be adjusted as required by federal law for qualified government plans and shall be further adjusted for changes in the cost of living in the manner provided by Section 401(a)(17)(B), Internal Revenue Code. For any person who first became a member prior to July 1, 1996, compensation for all plan years beginning on or after July 1, 1990, shall not include any amounts in excess of the compensation limitation (originally $200,000) established by Section 401(a)(17), Internal Revenue Code prior to the Omnibus Budget Reconciliation Act of 1993, which limitation shall be adjusted for changes in the cost of living since 1989, in the manner provided by Section 401(a)(17) of the Internal Revenue Code of 1991. This limitation, which has been part of the Florida Retirement System since plan years beginning on or after July 1, 1990, shall be adjusted as required by federal law for qualified government plans.

“Annual compensation” means the total compensation paid a member during a year. A “year” is 12 continuous months.

(Section 121.021(22) and (23))

FRS Pension Plan

Normal Retirement Benefit

Eligibility – Members initially enrolled before July 1, 2011 (Tier I)

- Regular Class
  1. 30 years of creditable service at any age.
  2. Age 62 and 6 or more years of creditable service.

  (Section 121.021(29)(a)(1))
- Special Risk Class
  1. 25 years of special risk service at any age; or
  2. Age 55 and 6 or more years of special risk service; or
  3. Age 52 and 25 years of creditable service, including special risk service and up to a maximum of four years of active duty wartime military service credit.
  4. 30 years of any creditable service, at any age, or age 62 and 6 or more years of creditable service when the member has service in any other membership class in addition to Special Risk Class (same requirement as the Regular Class).

  (Section 121.021(29)(b)(1))
- Special Risk Administrative Support Class

  (with six or more years of Special Risk Class service, the same requirements as apply to the Special Risk Class, otherwise same as apply to the Regular Class)

  (Sections 121.0515(8) and 121.021(29)(b)(1))
- Elected Officers’ Class

  (same requirements as apply to Regular Class)

  (Section 121.021(29)(a)(1))
- Senior Management Service Class

  (same requirements as apply to Regular Class)

  (Section 121.021(29)(a)(1))

Eligibility – Members initially enrolled on and after July 1, 2011 (Tier II)

- Regular Class
  1. 33 years of creditable service at any age.
  2. Age 65 and 8 or more years of creditable service.

  (Section 121.021(29)(a)(2))
- Special Risk Class
  1. 30 years of special risk service at any age; or
  2. Age 60 and 8 or more years of special risk service; or
  3. 33 years of any creditable service, at any age, or age 65 and 8 or more years of creditable service (same requirement as the Regular Class).

  (Section 121.021(29)(b)(2))
- Special Risk Administrative Support Class

  (with eight or more years of Special Risk Class service, the same requirements as apply to the Special Risk Class, otherwise same as apply to the Regular Class)

  (Sections 121.0515(8) and 121.021(29)(b)(2))
- Elected Officers' Class

(same requirements as apply to Regular Class)

(Section 121.021(29)(a)(2))

- Senior Management Service Class

(same requirements as apply to Regular Class)

(Section 121.021(29)(a)(2))

Normal Form

Straight life benefit (Option 1), payable on the last state working day of each month, with a guarantee that benefits paid will at least equal member contributions.

(Section 121.091(1))

Optional Forms

10-year certain and life benefit (Option 2), 100% joint and contingent benefit (Option 3), or 66-2/3% joint and survivor benefit (Option 4). If the joint annuitant is the member's non-disabled child, payment ceases upon attainment of the joint annuitant's 25th birthday under the 100% and 66- 2/3% joint and survivor benefit.

(Section 121.091(6))

Dual Retirement

In the event a member accumulates retirement benefits to commence at different normal retirement ages by virtue of having performed duties for an employer which would entitle him or her to benefits as both a Special Risk Class member and a member of another class, the amount of the benefits payable shall be computed separately with respect to each such age, and the sum of such computed amounts shall be paid. Note that this does not apply to a Special Risk Administrative Support Class member with at least 6 years of Special

Risk Class Membership (8 years for members enrolled on or after July 1, 2011) when the Special Risk and Special Risk Administrative Support Classes are the only memberships held because such a member is treated as a Special Risk Class member.

(Section 121.091(2))

Regular Benefit Amount

The monthly FRS Pension Plan allowance is the product of:

1. Average final compensation
   a. For members initially enrolled before July 1, 2011, the average of the highest five plan years of creditable service;
   b. For members initially enrolled on or after July 1, 2011, the average of the highest eight plan years of creditable service;
2. Creditable service during the applicable period; and
3. The appropriate benefit percentage for periods of service.

All benefits are limited to 100% of average final compensation.

(Sections 121.021(17), (24) and (25), 121.091(1))

The appropriate benefit percentages are as follows:

- For Members initially enrolled before July 1, 2011, for Creditable Service as a Regular Class member Subsequent to November 30, 1970:

Retirement at:	Percentage
Age 62 with 6 years of creditable service, or 30 years of creditable service	1.60%
Age 63 with 6 years of creditable service, or 31 years of creditable service	1.63%
Age 64 with 6 years of creditable service, or 32 years of creditable service	1.65%
Age 65 with 6 years of creditable service, or 33 years of creditable service	1.68%

- For Members initially enrolled on or after July 1, 2011, for Creditable Service as a Regular Class member Subsequent to November 30, 1970:

Retirement at:	Percentage
Age 65 with 8 years of creditable service, or 33 years of creditable service	1.60%
Age 66 with 8 years of creditable service, or 34 years of creditable service	1.63%

Age 67 with 8 years of creditable service, or 35 years of creditable service	1.65%
Age 68 with 8 years of creditable service, or 36 years of creditable service	1.68%

(Section 121.091(1))

Service as a Special Risk Class member:

Retirement on or After July 1, 2001 with Service Performed During:	Percentage
December 1, 1970 to September 30, 1974	2.00%
October 1, 1974 and thereafter	3.00%

(Section 121.091(1))

- For Members initially enrolled before July 1, 2011, for Creditable Service as a Special Risk Administrative Support Class member Subsequent to November 30, 1970:

Retirement at:	Percentage
Age 55 with 6 years of creditable special risk service, or age 52 with 25 years of creditable service, which may include up to four years of active duty wartime military service, or 25 years of creditable special risk service	1.60%
Age 56 with 6 years of creditable special risk service, or age 53 with 26 years of creditable service, which may include up to four years of active duty wartime military service, or 26 years of creditable special risk service	1.63%
Age 57 with 6 years of creditable special risk service, or age 54 with 27 years of creditable service, which may include up to four years of active duty wartime military service, or 27 years of creditable special risk service	1.65%
Age 58 with 6 years of creditable special risk service, or age 55 with 28 years of creditable service, which may include up to four years of active duty wartime military service, or 28 years of creditable special risk service	1.68%

- For Members initially enrolled on or after July 1, 2011, for Creditable Service as a Special Risk Administrative Support Class member Subsequent to November 30, 1970:

Retirement at:	Percentage
Age 60 with 8 years of creditable special risk service or 30 years of creditable special risk service	1.60%
Age 61 with 8 years of creditable special risk service or 31 years of creditable special risk service	1.63%
Age 62 with 8 years of creditable special risk service or 32 years of creditable special risk service	1.65%
Age 63 with 8 years of creditable special risk service or 33 years of creditable special risk service	1.68%

(Section 121.0515(8) and 121.091(1))

- For Service as an Elected Officers' Class member:
  3% for each year of creditable service in such class, except 3⅓% for service in the judicial class. Military service credit is at the rate for Regular Class members.

  (Sections 121.052(5)(a) and (d), 121.091(1))
- For Service as a Senior Management Service Class member:
  2% for each year of creditable service in such class, after January 31, 1987.

  (Section 121.055(4)(d))

Early Retirement

Eligibility

For members initially enrolled before July 1, 2011, six years of creditable service for all classes of membership.

For members initially enrolled on or after July 1, 2011, eight years of creditable service for all classes of membership.

(Section 121.021(30))

Benefit Amount

The normal retirement benefit accrued to the date of early retirement, reduced by 5/12% for each month that the early retirement date precedes the normal retirement date based upon age. The normal retirement date is as follows:

1. Special Risk Class members:
   a. Initially enrolled before July 1, 2011: Age 55
   b. Initially enrolled on or after July 1, 2011: Age 60

2. Members in all other Classes
   a. Initially enrolled before July 1, 2011: Age 62
   b. Initially enrolled on or after July 1, 2011: Age 65

(Sections 121.021(30), 121.091(3))

Non-Duty Disability Retirement

Eligibility

Members are eligible if totally and permanently disabled after completing at least eight years of creditable service (or after six years if disability retirement is ordered for a judge by the Supreme Court).

Benefit Amount

Same as for normal retirement but based on average final compensation and creditable service to the date of disability retirement.

Minimum Benefit Amount

25% of average final compensation.

If the Supreme Court orders disability retirement for a judge, the minimum is two-thirds of compensation at disability. This benefit for a defined benefit plan member is not paid from the FRS Trust Fund. This benefit for an Investment Plan member is paid from the FRS Trust Fund after the member's IP account balance is transferred to the FRS Trust Fund.

(Section 121.091(4))

Line-of-Duty Disability

Eligibility

Members are eligible if totally and permanently disabled during the actual performance of duty. There is no service credit requirement. This benefit for an Investment Plan member is paid from the FRS Trust Fund after the member's IP account balance is transferred to the FRS Trust Fund.

Benefit Amount

Same as for normal retirement but based on average final compensation and creditable service to the date of disability retirement.

Minimum Benefit Amount

42% of average final compensation, except for the Special Risk and the Special Risk Administrative Support classes whose members are entitled to 65% of average final compensation.

If the Supreme Court orders disability retirement for a judge, the minimum is two-thirds of compensation at disability. This benefit for a defined benefit plan member is not paid from the FRS Trust Fund.

(Section 121.091(4))

Post-Retirement Death Benefits

Based on the optional form elected.

Non-Duty Pre-Retirement Death Benefits

Eligibility

Employment is terminated by death after vested for all classes of membership.

Benefit Amount

The normal or early retirement benefit amount for which the member would have been eligible had the member retired on his or her date of death and elected the 100% joint and survivor (Option 3) form of payment in favor of his or her beneficiary who is the surviving spouse or other eligible dependent. The monthly benefit is normally payable to the member's beneficiary for the beneficiary's lifetime. If the beneficiary is the member's non-disabled child, payment ceases upon attainment of the beneficiary's 25th birthday.

If the member is more than 10 years away from normal retirement eligibility, the reduction is 5% for each year the member would be younger than the normal retirement age at retirement. There are exceptions if within 10 years of normal retirement eligibility:

1. For members initially enrolled before July 1, 2011, who were within 10 years of normal retirement eligibility, the reduction for early retirement is applied from the earlier of age 62 (age 55 for Special Risk Class and Special Risk Administrative Support Class members) or the date on which the member would have completed 30 years of creditable service, had he or she continued employment.
2. For members initially enrolled on or after July 1, 2011, who were within 10 years of normal retirement eligibility, the reduction for early retirement is applied from the earlier of age 65 (age 60 for Special Risk Class and Special Risk Administrative Support Class members) or the date on which the member would have completed 33 years of creditable service, had he or she continued employment. The value of this benefit may not be less than the member's accumulated contributions, if any.

(Sections 121.091(3) and (7))

Line-of-Duty Pre-Retirement Death Benefits

Eligibility

Member died during the actual performance of duty. There is no service credit requirement.

Benefit Amount

For members in all classes except the Special Risk Class, the surviving spouse will receive one-half of the member's base monthly compensation at death. If the spouse dies, or if there is no surviving spouse, the monthly benefits continue until the youngest child is 18.

For members in the Special Risk Class the surviving spouse will receive a benefit equal to 100% of the member’s base monthly compensation at death. If there is no surviving spouse, the monthly benefits continue until the youngest child is age 18 and surviving child payments may be extended up to age 25 if the child is unmarried and enrolled as a full-time student.[1]

A surviving spouse may elect to receive a non-duty death benefit in lieu of the duty death benefit.

(Section 121.091(7))

Vesting

Eligibility

For members initially enrolled before July 1, 2011, six years of creditable service for all classes of membership. For members initially enrolled on or after July 1, 2011, eight years of creditable service for all membership classes.

Benefit Amount

The normal or early retirement benefit amount based on average final compensation and creditable service to the date of termination.

(Sections 121.021(45), 121.091(5))

DROP – Deferred Retirement Option Program

Eligibility

Except as allowed by statute, notably for K-12 instructional personnel[2], members have a limited eligibility window during which they can elect to enter the DROP. A member initially becomes eligible to enter DROP in the same month he or she first becomes eligible to file for unreduced immediate retirement benefits. Eligibility windows differ by tier and membership class and are initially reached via satisfying either service-only criteria or age-plus-service criteria.

[1] *Effective July 1, 2016 and retroactive to the survivors of Special Risk Class members killed in the line of duty on or after July 1, 2013, the benefit increased from 50% to 100% of the member's base pay. Effective July 1, 2017 the same benefits were provided retroactively to the survivors of Special Risk Class members killed in the line of duty between July 1, 2002 and June 30, 2013.*

[2] *Instructional personnel in grades K-12 may defer DROP participation to any age.*

For most members achieving DROP entry eligibility via service-only criteria, the window to enter DROP lasts more than 12 months, with the window's length varying by individual. (The window must be at least 12 months in length.) The window for members satisfying service-only eligibility criteria is shown in the table below.

DROP Entry Eligibility Window for Members Satisfying Service-Only Criteria			
Membership Class	Tier	Window Opens	Window Closes
Special Risk	Tier I	25 Years of Service	53rd Birthday[1]
Special Risk	Tier II	30 Years of Service	56th Birthday[1]
All Other Classes	Tier I	30 Years of Service	58th Birthday[1]
All Other Classes	Tier II	33 Years of Service	61st Birthday[1]

[1]*Or 12 months after the window opens, if later than the date listed above for the member*

Members who do not reach unreduced retirement eligibility through service-only eligibility criteria become eligible to enter DROP upon satisfaction of age-plus-service criteria. For those members, the eligibility window to enter DROP lasts for 12 months.

DROP Entry Eligibility Window for Members Satisfying Age-Plus-Service Criteria			
Membership Class	Tier	Window Opens	Window Closes
Special Risk	Tier I	Age 55 and 6 Years of Service	After 12 months
Special Risk	Tier II	Age 60 and 8 Years of Service	After 12 months
All Other Classes	Tier I	Age 62 and 6 Years of Service	After 12 months
All Other Classes	Tier II	Age 65 and 8 Years of Service	After 12 months

Generally, the maximum length of DROP participation is five years. As such, members who satisfy service-only criteria and enter DROP prior to age 60 are required to exit DROP and terminate FRS-covered employment and cease providing services to FRS employers prior to becoming eligible for Medicare benefits at age 65. As noted below, instructional personnel and law enforcement officers may participate in DROP for up to 36 calendar months beyond the 60-month period.

Benefit Amount

Effective July 1, 1998, eligible members can retire without terminating their employment during DROP participation. Monthly retirement benefits will be invested in the FRS Trust Fund, earning tax-deferred interest while the member continues to work for a maximum of 60 months. The interest credit for those entering the DROP prior to July 1, 2011, is 6.5% annually. For those entering the DROP after that date, it is 1.3% annually. Upon completion of the maximum five-year period, DROP participation ends and participants must terminate employment with all FRS employers. At that time, the participant will receive payment of the accumulated DROP benefits and begin receiving his FRS monthly retirement benefit (in the same amount as determined at retirement, plus annual cost-of-living increases).

Effective July 1, 2003, participants employed in eligible instructional positions with a district school board, the Florida School for the Deaf and Blind, or a developmental research school can extend their participation beyond their initial 60-month period, for up to an additional 36 months. The employer must approve the request for DROP extension as well as the period of extension granted to an eligible DROP participant, if any, within the 36-month limit. Effective July 1, 2018, K-12 instructional personnel granted extended DROP participation must complete their DROP at the end of the school year and K-12 school administrators whose DROP participation ends before the end of the school year may have their DROP participation extended to the end of that school year.

Effective July 1, 2022, law enforcement officer members of the Special Risk Class who enter DROP on or after July 1, 2022 and on or before June 30, 2028 may participate in DROP for up to 36 months beyond the 60-month period.

Disabled While in DROP

Participants that became disabled while participating in DROP will continue to accumulate the same monthly benefit in the FRS Trust Fund until termination. Since the normal retirement benefit commenced upon DROP participation, the participant is not eligible for a disability benefit.

Death While in DROP

The designated beneficiary of a participant who dies while participating in DROP will receive all accumulated DROP benefits, and a continuing monthly benefit, if the participant had elected Option 2, 3, or 4. Survivors of DROP participants are not eligible for FRS line-of-duty death benefits.

(Section 121.091 (13))

Return of Employee Contributions

A member who terminates employment but is not eligible to retire, receive a vested retirement allowance, or receive a disability pension will be entitled to a refund of any employee contributions. The beneficiary of a member who passes away before satisfying the requirement for a pre-retirement death benefit will be entitled to a refund of any employee contributions made by the member. No interest is credited on employee contribution accounts.

A vested terminated participant may elect to receive a return of employee contributions in lieu of a retirement benefit.

(Sections 121.071(2)(b), 121.091(7)(a), Sections 121.091(5)(a) and (c))

Cost-of-Living Adjustment

Legislation enacted in 2011 eliminated post-retirement benefit increases on service credit earned on and after July 1, 2011. FRS Pension Plan members who retired before July 1, 2011 receive post-retirement benefit increases of 3% per year. Tier II members (those initially enrolled on and after July 1, 2011) will receive no post-retirement benefit increases. Tier I members (those initially enrolled before July 1, 2011) who retire after July 1, 2011 will receive individual post-retirement benefit increases equal to 3% per year multiplied by a fraction, the numerator of which is service through June 30, 2011 and the denominator of which is total service at retirement. Cost-of-Living Adjustments take effect annually on July 1. A pro-rated rate may apply in the initial year of applicability.

(Section 121.101)

Additional Benefit Amount

In addition, members may receive an additional retirement allowance under the pre-1971 existing systems. The benefit is a percentage of average final compensation times the creditable service in that system up to November 30, 1970. The system percentages are:

State and County Officers and Employees' Retirement System:

2.00% for creditable service rendered under Division A prior to Social Security coverage; and 1.50% for creditable service rendered under Division B subsequent to Social Security coverage.

Teachers Retirement System:

Plan E: 2.00%

(Sections 121.091(1)(c), 122.28, 238.07(7)(a))

Minimum Benefit

Eligibility

The month following attainment of age 65 by a pensioner or, in the case of a beneficiary receiving the survivor's portion of a member's benefit, the 65th anniversary of the deceased member's birth. The member must have earned at least 10 years of creditable service and retired under normal retirement.

Benefit Amount

An eligible benefit recipient will receive a benefit adjustment to bring the benefit to the calculated minimum benefit. Effective July 1, 2022, the minimum monthly benefit is $36.34 multiplied by years of creditable service prior to application of the reduction factor for electing an optional form of payment. For retirements on or after July 1, 1987, creditable service for the minimum benefit calculation does not include any service earned on or after that date.

(Section 112.362)

FRS Investment Plan (IP)

The FRS Investment Plan (IP) is a defined contribution plan offered to eligible members as an alternative to the FRS Pension Plan. The plan is qualified under sec. 401(a) of the Internal Revenue Code.

Benefits

Under the IP, benefits accrue in individual member accounts funded by employer and employee contributions made on or after July 1, 2011, and earnings thereon. Benefits are provided through employee-directed investments offered by approved investment providers. Vested benefits are payable upon termination or death as a lump-sum distribution, direct rollover distribution, or periodic distribution. In addition to normal benefits and death benefits, the plan also provides disability coverage as described below.

(Sections 121.4501, 121.591)

Contributions

The employer contributions deposited in each participant's IP account are based upon allocation rates established by law for each membership class. This statutorily prescribed percentage of the participant's gross compensation for the reporting month is deducted from the total amount paid by the employer on behalf of all members in the same class of membership based on the uniform contribution rate established by law. Current IP allocation rates are set forth in the following tables. The allocation rates shown in the first table below do not include the 0.06% charge for FRS Investment Plan administration and education, the separate employer contribution rates assessed to fund the IP disability program and ILOD survivor benefit program, or the contribution of 1.66% for the financing of the Florida Retiree Health Insurance Subsidy program.

(Sections 121.71, 121.72)

Effective July 1, 2022, the employer allocations to the IP accounts are based on contribution rates as follows:

Classification	2022-2023 Plan Year Rates
Regular	6.30%
Special Risk	14.00%
Special Risk Administrative Support	7.95%
Elected Officers'	
- Judicial	13.23%
- Leg/Atty/Cab	9.38%
- Local	11.34%
Senior Management Service	7.67%

The employer contribution rates to fund the disability benefit under the IP are as follows:

Classification	2022-2023 Plan Year Rates
Regular	0.25%
Special Risk	1.33%
Special Risk Administrative Support	0.45%
Elected Officers'	
- Judicial	0.73%
- Leg/Atty/Cab	0.41%
- Local	0.41%
Senior Management Service	0.26%

(Section 121.73)

Effective July 1, 2019 the employer contribution rates to fund the line of duty death benefit under the IP are as follows:

Classification	2022-2023 Plan Year Rates
Regular	0.05%
Special Risk	1.21%
Special Risk Administrative Support	0.03%
Elected Officers'	
- Judicial	0.09%
- Leg/Atty/Cab	0.15%
- Local	0.20%
Senior Management Service	0.05%

(Section 121.735)

Non-Duty Disability Retirement

Eligibility

Investment Plan participants who have completed at least eight years of creditable service (or six years of creditable service if disability retirement is ordered for a judge by the Supreme Court) are eligible for regular disability benefits if they become totally and permanently disabled due to injury or illness suffered while actively employed in an FRS-covered position. Upon approval for disability retirement, the IP participant may choose either to retain his/her IP account balance or to surrender his/her account balance to the FRS Pension Plan and receive guaranteed lifetime monthly disability benefits, assuming the member remains disabled.

Benefit Amount

If the disabled IP participant chooses to retain his/her account balance, he/she may elect to receive the normal benefit payable under the IP. If he/she elects to surrender the account balance and receive lifetime monthly disability benefits, the amount of each monthly payment is calculated in the same manner as provided for regular disability retirement under the FRS Pension Plan and is subject to the same threshold benefit amounts.

(Sections 121.091(4), 121.591(1) and (2))

Line-of-Duty Disability

Eligibility

IP participants are eligible for in-line-of-duty disability benefits if they become totally and permanently disabled due to injury or illness suffered during the actual performance of duty while actively employed in an FRS-covered position. There is no service credit requirement for in-line-of-duty disability benefits. Upon approval for disability retirement, the IP member may choose either to retain his/her IP account balance or to surrender his/her account balance to the FRS Pension Plan and receive guaranteed lifetime monthly disability benefits, assuming the member remains disabled.

Benefit Amount

If the disabled IP participant elects to retain his/her account balance, he/she may elect to receive the normal benefit payable under the IP. If he/she elects to surrender the account balance and receive lifetime monthly disability benefits, the amount of each monthly payment is calculated in the same manner as provided for line-of-duty disability retirement under the FRS Pension Plan and is subject to the same threshold benefit amounts.

(Sections 121.091(4), 121.591(1) and (2))

Line-of-Duty Death

Eligibility

IP participants are eligible for in-line-of-duty death benefits if they die during the actual performance of duty while actively employed in an FRS-covered position. There is no service credit requirement for in-line-of-duty death benefits. The beneficiary of the IP member may choose either to retain the member's IP account balance or to surrender his/her account balance to the FRS Pension Plan and receive guaranteed monthly death benefits, payable for the life of the surviving spouse or, if the spouse dies or there is no spouse, until the 18th birthday of the member's youngest surviving child. Such payments may be extended until the 25th birthday of the youngest child of a Special Risk Class member if the child is unmarried and enrolled as a full-time student.

Benefit Amount

If the beneficiary of the IP participant elects to retain his/her account balance, he/she may elect to receive the normal benefit payable under the IP. If he/she elects to surrender the account balance and receive the annuity from the FRS Pension Plan, the amount of each monthly payment is calculated in the same manner as provided for line-of-duty death benefits under the FRS Pension Plan, and is subject to the same threshold benefit amounts.

(Sections 121.091(7), 121.591(1), (3) and (4))

Teachers' Retirement System (TRS)

The benefit and contribution provisions of the Statutes for this closed system are set forth in Chapter 238 of the Florida Statutes. Certain provisions are from other sections of the Florida Statutes.

Effective Date

The effective date of the Retirement System was July 1, 1939.

(Section 238.02)

Membership

All employees who were teachers in public schools, employees of professional non-profit teachers associations, county superintendents, Department of Education employees and the staff of the Teachers' Retirement System, and who were employed prior to December 1, 1970, are members of the Teachers' Retirement System. The benefit and contribution provisions of the Statutes are set forth in Chapter 238 of the Florida Statutes. Certain provisions are drawn from other sections of the Florida Statutes. TRS retirees are included with the Regular Membership Class in the valuation.

State and County Officers and Employees' Retirement System (SCOERS)

The benefit and contribution provisions of the Statutes are set forth in Chapter 122 of the Florida Statutes. Certain provisions are drawn from other sections of the Florida Statutes. This is a closed system that no longer includes any members in the high hazard or legislative categories. Effective with the July 1, 2013 valuation, there are no longer any actively employed members of this system. SCOERS retirees are included with the Regular Membership Class in the valuation.

Effective Date

The effective date of the Retirement System was July 1, 1955.

(Section 122.01(2))

Membership

All full-time employees of the state and its counties not covered by another system who were employed prior to December 1, 1970.

Institute of Food and Agricultural Sciences Supplemental Retirement Program (IFAS)

The benefit and contribution provisions of the Statutes are set forth in Chapter 121 of the Florida Statutes. Certain provisions are drawn from other sections of the Florida Statutes. This is a closed system. IFAS retirees are included with the Regular Membership Class in the valuation.

Effective Date

The effective date of the Supplemental Retirement Program was July 1, 1985.

(Section 121.40)

Membership

Employees hired on or before July 1, 1983 who:

a. hold both state and federal appointments while employed at the Institute,

b. are not entitled to any benefit from a state-supported retirement system or Social Security based on service as an employee of the Institute, and

c. are participants in the Federal Civil Service Retirement System.

Appendix C: Membership Data

This valuation is based upon the membership of the Pension Plan as of July 1, 2022.

The membership of the FRS Pension Plan includes employees of the State of Florida and participating political subdivisions. The membership is divided into several categories by membership class and subclass.

Tables C-1 through C-5 present distributions of annuitants (including beneficiaries of deceased members), and potential annuitants (terminated vested members). The tables show the numbers of persons receiving benefits and the total annual benefits.

Table C-6 summarizes the DROP membership and provides total annual benefits.

Table C-7 presents a summary by category of active membership, payroll, and accumulated employee contributions.

Tables C-8 through C-17 contain summaries of the active members in each category of membership. Values shown in the tables are the numbers of members and their average annual salaries. Table C-17 is the grand total of active members included in this valuation.

Table C-1
Florida Retirement System Pension Plan
Annuitants at July 1, 2022
Regular and Early Retirement by Age

Age	Number of Persons	Annual Benefits (in Thousands)
Under 50	1,964	$28,474
50 to 54	3,903	133,928
55 to 59	15,381	520,884
60 to 64	46,187	1,231,948
65 to 69	90,882	2,178,788
70 to 74	104,155	2,628,535
75 to 79	81,140	2,076,629
80 & Up	87,072	2,125,387
Total	430,684	$10,924,573

Table C-2
Florida Retirement System Pension Plan
Annuitants at July 1, 2022
Disability Retirement by Age

Age	Number of Persons	Annual Benefits (in Thousands)
Under 50	424	$8,740
50 to 54	805	15,834
55 to 59	1,663	33,505
60 to 64	2,471	43,097
65 to 69	2,740	50,825
70 to 74	2,287	42,139
75 to 79	1,547	28,653
80 & Up	1,033	17,878
Total	12,970	$240,671

Table C-3
Florida Retirement System Pension Plan
Potential Annuitants at July 1, 2022
Vested Terminated Members by Age for the Regular, Senior Management Service, and Elected Officers' Classes

Age	Number of Persons	Annual Benefits (in Thousands)[1]
Under 30	53	$168
30 to 34	1,575	7,118
35 to 39	6,682	38,373
40 to 44	11,747	77,613
45 to 49	14,568	100,317
50 to 54	20,538	142,904
55 to 59	20,709	155,060
60 & Up	23,568	146,651
Total	99,440	$668,204

[1] *Deferred to Age 62 (Tier 1) or Age 65 (Tier 2)*

Table C-4
Florida Retirement System Pension Plan
Potential Annuitants at July 1, 2022
Vested Terminated Members by Age for the Special Risk & Special Risk Administrative Support Classes

Age	Number of Persons	Annual Benefits (in Thousands)[2]
Under 30	11	$117
30 to 34	250	2,991
35 to 39	783	10,432
40 to 44	989	14,263
45 to 49	1,248	17,359
50 to 54	1,502	21,897
55 to 59	522	6,937
60 & Up	296	3,637
Total	5,601	$77,633

[2] *Deferred to Age 55 (Tier 1) or Age 60 (Tier 2)*

Table C-5
Florida Retirement System Pension Plan
Annuitants and Potential Annuitants at July 1, 2022
All Types of Retirement by System

System	Annuitants	Potential Annuitants	Total
		Number of Persons	
Regular	393,308	97,836	491,144
Senior Management Service	5,828	1,301	7,129
Special Risk	41,696	5,588	47,284
Special Risk Administrative	160	13	173
EOC: Judicial	989	47	1,036
EOC: Legislative/Attorneys/Cabinet	227	81	308
EOC: Local	1,446	175	1,621
Total	443,654	105,041	548,695
		Annual Benefits (in Thousands)	
Regular	$8,552,985	$635,031	$9,188,016
Senior Management Service	325,456	26,477	351,933
Special Risk	2,110,466	77,509	2,187,975
Special Risk Administrative	7,136	124	7,260
EOC: Judicial	103,967	2,641	106,608
EOC: Legislative/Attorneys/Cabinet	9,865	1,502	11,367
EOC: Local	55,369	2,553	57,922
Total	$11,165,244	$745,837	$11,911,081

Table C-6
Florida Retirement System Pension Plan
Annuitants at July 1, 2022
DROP Members

Age	Number of Persons	Annual Benefits (in Thousands)
Under 50	268	$21,598
50 to 54	2,238	143,961
55 to 59	7,874	340,833
60 to 64	14,507	397,510
65 to 69	7,013	149,722
70 to 74	209	5,485
75 to 79	33	563
80 & Up	8	208
Total	32,150	$1,059,880

Table C-7
Florida Retirement System Pension Plan
Summary of Active Members at July 1, 2022

System	Number of Persons	Annual Salary (in Thousands)[1]	Accumulated Employee Contributions (in Thousands)
Regular	372,907	$18,917,045	$4,011,404
Senior Management Service	5,123	542,652	117,386
Special Risk	63,237	4,601,265	869,585
Special Risk Administrative	77	3,749	1,030
EOC: Judicial	669	109,113	24,032
EOC: Legislative/Attorneys/Cabinet	88	5,938	1,232
EOC: Local	656	42,615	9,178
Teachers' Retirement System (TRS)	4	410	1,604
Institute of Food and Agricultural Sciences (IFAS)	1	144	0
Total	442,762	$24,222,931	$5,035,451

[1] The salary shown in Tables C-7 through C-17 represents the salaries of the FRS DB plan members on July 1, 2022. The payroll on which normal costs are determined ($24,772,207,000) equals the salaries for these DB plan members (excluding TRS and IFAS), adjusted to the middle of the plan year. The payroll on which UAL costs are charged additionally includes the payroll of certain other groups, and is described in Section 4 of the report.

Table C-8
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2022
Regular Class

Count

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20	754											754
20 to 24	6,941	159										7,100
25 to 29	12,082	5,626	54	1								17,763
30 to 34	11,334	17,310	3,246	119								32,009
35 to 39	9,825	14,909	10,663	4,466	111							39,974
40 to 44	9,015	12,296	8,628	13,930	3,854	83						47,806
45 to 49	7,785	10,719	7,337	11,435	11,422	3,135	54					51,887
50 to 54	7,830	10,740	7,754	11,283	11,466	11,104	2,256	76				62,509
55 to 59	6,626	9,371	7,217	10,750	10,363	9,346	3,996	701	14			58,384
60 to 64	3,835	6,748	5,019	7,412	6,822	5,678	1,558	900	165	3		38,140
65 & Up	1,688	3,466	2,908	3,358	2,085	1,285	767	518	327	123	56	16,581
Total Count	77,715	91,344	52,826	62,754	46,123	30,631	8,631	2,195	506	126	56	372,907

Average Salary ($)

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20	14,714											14,714
20 to 24	27,033	31,838										27,141
25 to 29	36,316	44,009	42,689	40,528								38,772
30 to 34	37,561	48,102	51,838	51,688								44,762
35 to 39	38,575	48,558	55,197	56,215	59,570							48,762
40 to 44	39,052	47,868	54,369	60,275	62,139	65,576						52,175
45 to 49	39,166	46,655	52,033	58,560	65,071	66,796	74,768					54,215
50 to 54	38,332	45,774	50,922	55,447	61,758	71,083	71,855	65,857				55,620
55 to 59	37,694	44,108	48,059	52,461	56,979	64,855	74,881	69,984	62,797			53,434
60 to 64	35,118	42,732	47,628	51,385	54,574	61,124	69,276	76,889	65,926	70,135		51,141
65 & Up	25,122	36,538	44,737	50,693	53,029	58,743	64,990	76,118	82,148	89,887	100,637	47,539
Avg. Annual Salary	36,366	46,176	51,506	55,888	60,074	66,365	72,199	74,120	76,323	89,417	100,637	50,729

Table C-9
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2022
Special Risk Class

Count

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20	139											139
20 to 24	4,167	32	1									4,200
25 to 29	7,157	2,446	10									9,613
30 to 34	4,630	5,371	1,277	43								11,321
35 to 39	2,218	3,124	2,678	1,885	23							9,928
40 to 44	1,170	1,421	1,644	3,341	1,131	14						8,721
45 to 49	753	797	992	2,323	2,544	550	5					7,964
50 to 54	666	671	748	1,654	2,127	1,047	116					7,029
55 to 59	352	464	416	659	476	314	134	16				2,831
60 to 64	118	165	226	269	190	108	47	14	3			1,140
65 & Up	32	46	72	76	59	29	14	12	7	4		351
Total Count	21,402	14,537	8,064	10,250	6,550	2,062	316	42	10	4		63,237

Average Salary ($)

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20	32,413											32,413
20 to 24	45,079	57,446	50,175									45,175
25 to 29	52,441	62,197	65,756									54,937
30 to 34	53,728	68,662	75,107	81,059								63,328
35 to 39	53,633	70,223	81,868	94,375	93,281							74,297
40 to 44	53,970	68,963	81,278	97,371	100,383	95,462						84,274
45 to 49	54,184	66,519	79,342	95,326	103,428	105,418	153,960					89,884
50 to 54	56,606	67,342	78,272	93,581	102,022	99,464	94,742					89,393
55 to 59	51,337	68,649	79,583	90,295	92,384	87,774	92,674	92,499				80,526
60 to 64	47,846	64,856	74,993	87,025	89,895	93,451	88,251	106,377	88,681			78,755
65 & Up	48,158	63,947	72,305	82,234	90,353	88,112	98,159	90,783	85,948	146,029		78,273
Avg. Annual Salary	51,504	67,677	79,613	94,838	101,097	98,770	93,988	96,635	86,768	146,029		72,762

Table C-10
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2022
Special Risk Administrative Support Class

Count

Age	Years of Service: Under 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 & Up	All Years
Under 20												
20 to 24												
25 to 29		2										2
30 to 34		5	4									9
35 to 39		2	5	1								8
40 to 44		1	4	5	3							13
45 to 49			4	4	5	6						19
50 to 54		2	1	4	6	4	2					19
55 to 59			1	1	2	1	1					6
60 to 64					1							1
65 & Up												
Total Count		12	19	15	17	11	3					77

Average Salary ($)

Age	Years of Service: Under 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 & Up	All Years
Under 20												
20 to 24												
25 to 29		43,553										43,553
30 to 34		46,372	46,589									46,468
35 to 39		44,457	45,751	45,056								45,341
40 to 44		42,061	41,306	46,007	43,711							43,727
45 to 49			41,587	45,440	53,647	57,724						50,668
50 to 54		44,220	43,856	46,451	43,664	62,433	79,840					52,079
55 to 59			33,376	61,310	57,342	64,478	42,000					52,641
60 to 64					44,290							44,290
65 & Up												
Avg. Annual Salary		44,865	43,364	46,931	48,254	60,050	67,227					48,686

Table C-11
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2022
Elected Officers' Class: Judicial Subclass

Count

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24												
25 to 29												
30 to 34	1											1
35 to 39	13	8	11									32
40 to 44	18	16	12	11								57
45 to 49	14	24	15	21	20							94
50 to 54	18	20	30	29	32	25	1					155
55 to 59	6	26	21	20	31	23	10					137
60 to 64	3	18	29	25	26	19	9	5				134
65 & Up	2	8	15	12	11	4	2	2	3			59
Total Count	75	120	133	118	120	71	22	7	3			669

Average Salary ($)

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24												
25 to 29												
30 to 34	160,255											160,255
35 to 39	140,572	155,271	157,362									150,018
40 to 44	163,841	168,551	161,853	154,784								162,996
45 to 49	160,416	162,442	167,759	160,709	158,583							161,781
50 to 54	159,976	167,255	156,700	163,568	163,347	165,445	156,377					162,508
55 to 59	160,948	165,811	161,624	159,709	164,589	165,836	161,856					163,505
60 to 64	171,446	166,973	165,472	165,115	164,229	163,951	163,391	163,683				165,077
65 & Up	152,573	168,834	164,291	163,987	177,119	180,936	174,241	160,943	171,330			168,550
Avg. Annual Salary	157,965	165,416	162,013	161,957	164,328	166,045	163,361	162,900	171,330			163,098

Table C-12
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2022
Elected Officers' Class: Legislators/Attorney/Cabinet Subclass

Count

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24												
25 to 29		1										1
30 to 34	2	2										4
35 to 39	5	5	3									13
40 to 44	1	4	1	1								7
45 to 49	3	5	4	2	1	1						16
50 to 54	2	3	1	4	3	2						15
55 to 59	1	2	1	4			3					11
60 to 64	1	3	3	1		1		1	1			11
65 & Up	1	1	2	2	3	1						10
Total Count	16	26	15	14	7	5	3	1	1			88

Average Salary ($)

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24												
25 to 29		29,697										29,697
30 to 34	19,479	29,697										24,588
35 to 39	62,179	29,697	137,969									67,176
40 to 44	29,697	29,697	29,697	29,697								29,697
45 to 49	29,697	29,697	96,085	110,901	192,105	27,222						66,440
50 to 54	29,697	28,472	29,697	151,503	192,105	110,901						105,242
55 to 59	29,697	29,697	29,697	29,697			192,105					73,990
60 to 64	29,697	29,697	29,697	29,697		192,105		192,105	29,697			59,226
65 & Up	29,697	29,697	29,697	29,697	137,969	29,697						62,179
Avg. Annual Salary	38,570	29,556	69,055	76,099	168,904	94,165	192,105	192,105	29,697			67,478

Table C-13
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2022
Elected Officers' Class: Local Subclass

Count

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24												
25 to 29	1	1										2
30 to 34	8	4	2									14
35 to 39	9	10	7	2								28
40 to 44	16	17	11	10	4							58
45 to 49	15	19	13	11	10	5	1					74
50 to 54	11	28	25	16	17	17	9	1				124
55 to 59	11	29	20	12	15	5	11	5				108
60 to 64	7	34	16	12	10	10	5	3				97
65 & Up	17	31	26	28	21	14	4	6	4			151
Total Count	95	173	120	91	77	51	30	15	4			656

Average Salary ($)

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24												
25 to 29	37,215	8,652										22,934
30 to 34	24,961	17,250	76,367									30,101
35 to 39	53,053	27,029	63,235	77,637								48,060
40 to 44	42,096	37,309	88,336	75,094	106,347							59,583
45 to 49	54,868	66,050	52,282	108,084	88,408	102,145	28,406					72,565
50 to 54	62,842	38,362	82,480	77,074	71,254	86,667	125,976	157,647				72,876
55 to 59	32,352	66,494	45,005	99,802	91,706	111,580	102,202	120,194				74,450
60 to 64	47,076	53,367	63,778	69,254	77,451	67,898	100,965	62,594				63,315
65 & Up	35,921	58,172	48,546	55,796	53,336	66,599	92,269	114,664	102,296			57,994
Avg. Annual Salary	44,192	51,199	62,429	76,036	75,207	81,438	105,344	108,959	102,296			64,961

Table C-14
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2022
Senior Management Service Class

Count

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24	2											2
25 to 29	142	11										153
30 to 34	157	209	15	2								383
35 to 39	87	252	177	50	2							568
40 to 44	58	100	145	242	61	2						608
45 to 49	57	88	98	189	255	87	1					775
50 to 54	60	72	85	145	256	321	73	2				1,014
55 to 59	60	77	87	129	153	225	125	15	1			872
60 to 64	39	75	71	87	71	94	38	31	6			512
65 & Up	7	25	38	48	42	27	19	17	8	5		236
Total Count	669	909	716	892	840	756	256	65	15	5		5,123

Average Salary ($)

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24	42,065											42,065
25 to 29	53,166	61,026										53,731
30 to 34	56,168	68,476	85,739	64,389								64,085
35 to 39	64,150	74,641	87,588	86,311	97,611							78,177
40 to 44	91,314	85,842	87,989	99,864	107,578	98,542						94,679
45 to 49	93,778	121,790	112,017	105,440	107,502	100,444	96,054					107,376
50 to 54	119,578	113,064	106,639	112,603	116,324	124,839	124,615	79,818				118,161
55 to 59	119,883	113,058	119,772	115,707	119,032	124,957	135,496	138,692	52,852			122,296
60 to 64	112,662	134,721	125,737	126,311	130,338	126,428	132,497	140,258	109,370			128,109
65 & Up	78,477	135,997	147,809	108,804	135,277	143,160	167,875	136,501	188,556	242,596		137,996
Avg. Annual Salary	77,706	91,798	104,125	107,629	115,592	122,849	134,197	137,054	147,835	242,596		105,925

Table C-15
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2022
TRS – Teachers' Retirement System

Count

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24												
25 to 29												
30 to 34												
35 to 39												
40 to 44												
45 to 49												
50 to 54												
55 to 59												
60 to 64												
65 & Up											4	4
Total Count											4	4

Average Salary ($)

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24												
25 to 29												
30 to 34												
35 to 39												
40 to 44												
45 to 49												
50 to 54												
55 to 59												
60 to 64												
65 & Up											102,431	102,431
Avg. Annual Salary											102,431	102,431

Table C-16
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2022
IFAS – Institute of Food and Agricultural Sciences

Count

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24												
25 to 29												
30 to 34												
35 to 39												
40 to 44												
45 to 49												
50 to 54												
55 to 59												
60 to 64												
65 & Up								1				1
Total Count								1				1

Average Salary ($)

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20												
20 to 24												
25 to 29												
30 to 34												
35 to 39												
40 to 44												
45 to 49												
50 to 54												
55 to 59												
60 to 64												
65 & Up								143,689				143,689
Avg. Annual Salary								143,689				143,689

Table C-17
Florida Retirement System Pension Plan
Member Counts and Average Salaries at July 1, 2022
Grand Totals of All Active Participants

Count

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20	893											893
20 to 24	11,110	191	1									11,302
25 to 29	19,382	8,087	64	1								27,534
30 to 34	16,132	22,901	4,544	164								43,741
35 to 39	12,157	18,310	13,544	6,404	136							50,551
40 to 44	10,278	13,855	10,445	17,540	5,053	99						57,270
45 to 49	8,627	11,652	8,463	13,985	14,257	3,784	61					60,829
50 to 54	8,587	11,536	8,644	13,135	13,907	12,520	2,457	79				70,865
55 to 59	7,056	9,969	7,763	11,575	11,040	9,914	4,280	737	15			62,349
60 to 64	4,003	7,043	5,364	7,806	7,120	5,910	1,657	954	175	3		40,035
65 & Up	1,747	3,577	3,061	3,524	2,221	1,360	806	556	349	132	60	17,393
Total Count	99,972	107,121	61,893	74,134	53,734	33,587	9,261	2,326	539	135	60	442,762

Average Salary ($)

	Years of Service											
Age	**Under 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 to 45**	**45 to 50**	**50 & Up**	**All Years**
Under 20	17,469											17,469
20 to 24	33,804	36,128	50,175									33,845
25 to 29	42,394	49,527	46,293	40,528								44,498
30 to 34	42,381	53,103	58,495	59,544								49,733
35 to 39	41,635	52,643	60,996	67,688	65,830							54,175
40 to 44	41,268	50,426	59,223	67,950	71,272	70,468						57,628
45 to 49	41,058	48,844	56,150	65,497	72,826	73,205	80,848					59,753
50 to 54	40,601	47,637	54,292	61,171	69,186	75,047	74,742	67,372				60,138
55 to 59	39,168	46,162	50,847	55,547	59,715	67,203	77,556	72,212	62,134			55,909
60 to 64	36,371	44,593	50,490	53,837	56,703	63,118	71,871	79,912	67,598	70,135		53,325
65 & Up	26,011	38,067	47,274	52,579	56,308	61,464	68,398	79,123	85,661	97,373	100,756	49,915
Avg. Annual Salary	39,982	49,618	56,037	62,091	66,207	69,862	75,017	76,858	79,142	96,768	100,756	54,709

Appendix D: Projections

Table D-1 presents a projection of total costs of the employers covered by the FRS Pension Plan (exclusive of the Investment Plan) during the five-year period following the actuarial valuation date, July 1, 2022. The contributions shown beginning with plan year 2023-2024 are based on the assumption that the contribution levels calculated in this report are extended throughout the projection period, and that payroll bases on which normal cost and UAL contributions are made both increase annually in line with the valuation assumption. The contributions shown for plan year 2022-2023 are based on the legislated rates (before blending) on page B-3 of this report.

Table D-2 reflects, for each membership class and DROP, the outstanding UAL balance of all amortization bases combined as of July 1, 2022. The table develops the associated duration of the amortization of the combined amortization bases.

Beginning in the July 1, 1998 actuarial valuation with the emergence of the surplus, all UAL bases in existence as that time were considered to be fully amortized. While the Plan was in surplus, the UAL amortization payment or credit was made from the surplus for certain post-1998 benefit increases and the 1998 and 2003 experience studies prior to any use of the surplus for contribution rate reductions or any other FRS uses. Now that the plan is no longer in surplus, the UAL payment is made by employers as part of the contribution rate.

Table D-3 estimates the UAL payment / (available surplus) for the next three plan years based on Florida law. The estimates are projections of the July 1, 2022 valuation results, and assume experience occurs as stated in the July 1, 2022 valuation.

All three tables reflect that no surplus is available for rate reduction. The amortization methodology recognizes the time value of money.

Table D-1
Florida Retirement System Pension Plan
Projection of Retirement Costs (Excluding Member Contributions)
July 1, 2022
Based on Contribution Rates Before Blending

($ in Millions)

	2022 -2023	2023 -2024	2024 -2025	2025 -2026	2026 -2027
A. Employer Normal Cost [1]	$2,128	$2,289	$2,363	$2,440	$2,519
B. UAL Payment / (Surplus Utilization) [2]	$2,284	$2,637 [2]	$2,744 [2]	$2,854 [2]	$2,969 [2]
C. Total	$4,412	$4,926	$5,107	$5,294	$5,488

[1] *Includes DROP contributions on behalf of DROP members.*

[2] *UAL Payment increase is based on assumed increasing payroll, but does not reflect the recognition and funding of deferred investment gains/losses.*

Table D-2
Florida Retirement System Pension Plan
Funding of UAL by Duration of Amortization
July 1, 2022
($ in thousands)

	Regular	Special Risk	Special Risk Administrative	-- Elected Officers' Class -- Judicial	Leg-Atty-Cab	Local	Senior Management	DROP
Valuation Date Outstanding UAL Balance	$22,340,160	$9,009,912	$16,166	$527,271	$74,980	$434,940	$2,648,382	$3,203,735
UAL Contribution Rate (see Table 4-11)	6.27%	12.62%	33.81%	33.52%	76.48%	64.87%	33.53%	10.01%
Projected UAL Payroll PY 2023 - 2024 [1]	$23,957,991	$4,904,404	$3,943	$115,638	$7,270	$50,695	$590,145	$2,396,438
Annual Payment for PY 2023 - 2024	$1,501,970	$618,842	$1,333	$38,758	$5,560	$32,887	$197,879	$239,964
Amortization Period in Years Calculated Assuming								
Level Dollar	43	39	21	29	29	27	28	28
Level Percent of Payroll	20	20	15	17	17	17	17	17

[1] *The UAL payroll shown here includes salaries for defined contribution program members who pay only the UAL contribution rate, but excludes FRS Investment Plan Payroll.*

Table D-3
Florida Retirement System Pension Plan
Projected Annual Payments of UAL Amortization Bases[1]
July 1, 2022

Projected PY 2023-2024 and Forward Based on 07/01/2022 Valuation Results and 07/01/2022 Assets

		2023 - 2024	2024 - 2025	2025 - 2026
1	Estimated Surplus Available Rate Stabilization Mechanism [2]	$0.0	$0.0	$0.0
2	(Increase)/Decrease in Available Surplus from prior year	$0.0	$0.0	$0.0
	UAL Bases			
3	1993 - 1998 Experience Study Assumption Changes [3]	($43.4)	($44.8)	($46.3)
4	Special Risk Minimum In-Line-of-Duty Disability Increased to 65% [4]	($0.3)	($0.3)	($0.3)
5	12% Increase in Special Risk benefits (in pay status before 07/01/2000) [5]	$34.2	$35.3	$36.5
6	1998 - 2003 Experience Study Assumption Changes [5]	($317.9)	($328.2)	($338.9)
7	2003 - 2008 Experience Study Assumption Changes	$531.1	$548.4	$566.2
8	2009 Experience (Gain)/Loss	$1,666.7	$1,720.9	$1,776.8
9	Unrecognized (Gains)/Losses while in Surplus	($487.5)	($503.4)	($519.7)
10	2009 Plan Change (House Bill 479)	($100.8)	($104.1)	($107.4)
11	2010 Experience (Gain)/Loss	$87.7	$90.6	$93.5
12	2010 Plan Change (Senate Bill 2100)	($96.1)	($99.2)	($102.5)
13	2011 Experience (Gain)/Loss	$207.7	$214.5	$221.5
14	2012 Experience (Gain)/Loss	($8.4)	($8.7)	($9.0)
15	2013 Experience (Gain)/Loss	$213.0	$220.0	$227.1
16	2008 - 2013 Experience Study Assumption/Method Changes	$153.6	$158.6	$163.7
17	2014 Experience (Gain)/Loss	($208.3)	($215.1)	($222.1)
18	2015 Experience (Gain)/Loss	$42.8	$44.1	$45.6
19	Special Risk 100% In-Line-Of-Duty Death (2016)	$3.3	$3.4	$3.5
20	2016 Assumption Changes	$86.5	$89.3	$92.2
21	2016 Experience (Gain)/Loss	$95.3	$98.4	$101.6
22	Special Risk 100% In-Line-Of-Duty Death (2017)	$6.8	$7.0	$7.3
23	2017 Assumption Changes	$170.2	$175.7	$181.4
24	2016-2017 Experience (Gains) / Losses	$37.5	$38.8	$40.0
25	2018 Assumption Changes	$174.3	$179.9	$185.8
26	2017-2018 Experience (Gains) / Losses	($58.5)	($60.4)	($62.4)
27	Special Risk Cancer Presumption Disability and Death (2019)	$0.9	$0.9	$0.9
28	2019 Assumption Changes	$313.7	$323.8	$334.4
29	2019 Method Changes	($369.5)	($360.7)	($351.0)
30	2018-2019 Experience (Gains) / Losses	($31.3)	($32.3)	($33.4)
31	2020 Assumption Changes	$299.5	$309.3	$319.3
32	2019-2020 Experience (Gains) / Losses	$124.0	$128.0	$132.2
33	2021 Assumption Changes	$359.0	$370.7	$382.8
34	2020-2021 Experience (Gains) / Losses	($502.9)	($519.3)	($536.2)
35	2022-2023 Plan Changes (HB 5007, HB 689, and SB 838) [6]	$7.3	$7.6	$7.8
36	2022 Assumption Changes	$180.3	$186.2	$192.2
37	2021-2022 Experience (Gains) / Losses	$66.8	$68.9	$71.2
	Subtotal [(3) through (37)]	**$2,637.3**	**$2,743.8**	**$2,854.3**
38	Across the Board Rate Reduction of 0% [7]	$0.0	$0.0	$0.0
	Total [Subtotal + (38)]	**$2,637.3**	**$2,743.8**	**$2,854.3**
39	UAL payment / (Surplus Available) [(1) + Total] =	$2,637.3	$2,743.8	$2,854.3

1 *Numbers exclude contributions to the Investment Plan.*
2 *Projected surplus based on 07/01/2022 valuation results. Using amortization method that reflects interest.*
3 *In the absence of a surplus there is an additional charge or credit to each class. See Tables 4-2 through 4-10 for details.*
4 *In the absence of a surplus there is an additional cost to the Special Risk Administrative Class of 0.14% and an additional cost to the Special Risk Class of -0.01% attributable to the Increase in Minimum ILOD Disability Benefit.*
5 *In the absence of a surplus there is an additional cost to the Special Risk Class of 0.70% attributable to the 12% increase in pre-2000 retired benefits.*
6 *2022 legislated plan changes included: Extension of the maximum length of DROP participation by 36 months for law enforcement officers (HB 5007), PTSD classification for correctional officers (HB 689), and cancer presumption for fire investigators (SB 838).*
7 *No surplus available for rate reduction.*

Appendix E: Comparisons/Reconciliation

This Appendix contains certain comparative information required by the state. Table E-1 compares actual investment return, aggregate payroll growth, and individual salary increases with the actuarial assumptions.

Table E-2 reconciles the flow of participants from the 2021 actuarial valuation to the 2022 actuarial valuation, while Table E-3 cross-references the required sections of 112.64 with this report.

Table E-1
Florida Retirement System Pension Plan
One-Year Comparisons

1. Annual Rate of Investment Return on Actuarial Value of Assets		
Period	Actual	Assumed
July 2019 to June 2020	6.77%	7.20%
July 2020 to June 2021	11.23%	7.00%
July 2021 to June 2022	6.95%	6.80%

2. Annual Rate of Pension Plan Payroll Growth (Excludes IP Payroll)		
Period	Actual [1]	Assumed [1]
July 2019 to June 2020	1.20%	3.25%
July 2020 to June 2021	-0.23%	3.25%
July 2021 to June 2022	1.67%	3.25%

3. Annual Rate of UAL Payroll Growth		
Period	Actual	Assumed
July 2019 to June 2020	3.42%	3.25%
July 2020 to June 2021	1.57%	3.25%
July 2021 to June 2022	3.01%	3.25%

4. Average Rate of Annual Salary Increase for Continuing Active Pension Plan Members

	Rate of Increase During Year					
Year Ended	Regular		Special Risk		Composite Pension Plan	
June 30	Actual	Assumed [2]	Actual	Assumed [2]	Actual	Assumed [2]
2020	6.0%	4.5%	6.0%	5.3%	6.0%	4.6%
2021	4.6%	4.3%	8.1%	5.1%	5.2%	4.4%
2022	6.4%	4.3%	9.5%	5.1%	6.9%	4.4%

[1] *The payroll base compared is used for UAL cost calculations and includes payroll for DROP members and certain defined contribution plan participants for whom only UAL contributions are due, but excludes FRS Investment Plan Payroll.*

[2] *Individual rates of salary increase vary by service and membership class. The most recent experience study was for the period July 1, 2013 through June 30, 2018. The assumptions adopted as a result of that study are effective July 1, 2019 and are reflected for the year ending June 30, 2020. Effective July 1, 2020 the assumption for merit based salary increases were lowered by 0.2% and is first reflected in this table for the year ending June 30, 2021. Assumed rates are weighted by individual member salaries, rather than headcount.*

Table E-2
Florida Retirement System Pension Plan
Data Reconciliation

	Active Participants	Disabled Participants	Retired Participants and Beneficiaries	DROP	Terminated Vested Participants	Total
Number reported as of July 1, 2021	457,249	13,210	422,734	33,770	103,472	1,030,435
New Entrants[1]	51,857	0	0	0	0	51,857
Exits from Active Status[2] or DROP	(58,574)	214	16,665	(9,429)	9,258	(41,866)
DROP Entry	(7,770)	0	0	7,770	0	0
Cessation of benefit payments	NA	(696)	(15,583)	0	0	(16,279)
Other reported status changes, including changes from Terminated Vested status	0	242	6,868	39	(7,689)	(540)
Number reported as of July 1, 2022	442,762	12,970	430,684	32,150	105,041	1,023,607

[1] *Includes rehires*
[2] *Includes retirement, vested termination, IP transfer, non-vested termination and death*

Table E-3
Florida Retirement System Pension Plan
Cross Reference to Section 112.64 Reporting Requirements

Code Ref			Page/Section
	1	**General Information:**	
1.003 (3g)		Includes certification by the enrolled actuary (signed and dated)?	Cover Letter
1.003 (11)		Do procedures follow commonly accepted procedures and determinations?	Cover Letter
1.003 (4g)		Disclosure of events not taken into account by actuary?	Cover Letter
1.003 (4g)		Disclosure of trends not assumed to continue (by actuary)?	Executive Summary
	2	**Assumptions:**	**Page/Section**
1.003 (3e)		Description and explanation of all actuarial assumptions?	Appendix A
1.003 (3f)		Is there a comparison of actual to expected salary increases over the preceding 3-year period?	E-1
1.003 (3f)		Is there a comparison of actual to expected investment returns over the preceding 3-year period?	E-1
1.003 (6)		Do assumptions factor in actual experience?	Appendix A
1.003 (6)		Is impact of inflation considered?	A-3
1.003 (6)		Any consistent experience gains or losses to suggest assumption changes?	No
1.003 (7)		Listing of changed assumptions?	A-18
	3	**Plan Provisions & Funding Method:**	**Section**
1.003 (4c)		Contain a summary of plan provisions?	Appendix B
1.003 (4d)		Contain a detailed summary of funding method?	Appendix A
1.003 (5)		Does funding method provide a contribution sufficient to meet the NC and amortize the UAL?	Section 4
	4	**Assets & Method:**	**Exhibit**
1.003 (3a)		Is the MVA breakdown included (by cash, bonds, stocks, and other)?	2-2
1.003 (3a)		Is the "statement value" breakdown included?	No
1.003 (3a)		Is the derivation of AVA included?	2-3
1.003 (8)		Are administrative expenses being paid on a current basis?	2-1
		Asset reconciliation, including:	**Exhibit**
1.003 (4j)		- contributions by source	2-1
1.003 (4j)		- interest and dividends	2-1
1.003 (4j)		- realized gains / (losses)	2-1
1.003 (4j)		- unrealized appreciation	2-1
1.003 (4j)		- pension payments	2-1
1.003 (4j)		- contribution refunds	2-1
1.003 (4j)		- expenses	2-1
1.003 (4j)		- other receipts (identified)	2-1 (transfer)
1.003 (4j)		- other disbursements (identified)	2-1 (IP)

Code Ref			Page/Section
	5	**UAL & Amortization Schedule:**	**Exhibit**
1.003 (3b)		Include a plan to amortize any UAL?	4-2 & D-3
		Does amortization schedule of UAL exist (as of the valuation date) …	**Page**
1.003 (3c)		- on an annual basis for the next 3-years?	Exhibit D-3
1.003 (3c)		- for the final year?	No
1.003 (3c)		Is a statement as to how method was derived included?	A-2
1.003 (3d)		Is a description of actions taken to reduce the UAL included?	Section 4 Exec Summary
		Reconciliation of UAL (must include items below):	**Exhibit**
1.003 (4h)		- UAL for prior valuation (w/ start date)	Page 6
1.003 (4h)		- Normal Cost, contributions, & accrued interest	Page 6
1.003 (4h)		- Impact of changes (assumption, funding method, amendments, gain/loss)	4-2—4-10
1.003 (4h)		- UAL for current valuation	4-2—4-10
	6	**Results:**	**Exhibit**
1.003 (4a)		Valuation Date clearly indicated?	Page 1
1.003 (4e)		Are results separated by employee group?	3-2 and Sections 4 & 5
1.003 (4f)		Is there disclosure of any benefit and expense provided by and/or paid from plan assets for which no liabilities or current costs have been established?	Cover Letter
1.003 (4i)		Projection of emerging liabilities/cash flow needs for next 10-15 years (optional)	No
1.003 (4l)		Summary of principal results (for current and prior valuation) including:	
		- participant data (counts, total pay, total annual benefits by group)	Appendix C
		- assets (market and actuarial)	2-2, 2-3
		- PVB (split: active by decrement, tv, ret & ben, dis, and total)	3-2
		- PV of future benefit payments	3-2
		- AL and UAL, i.e., including amount, date, amortization period	3-2, 4-2
		- PVVB (by group), non-vested PVAB, Total PVAB	5-1, 5-2
1.003 (4l)		Reconciliation of PVAB, including:	
		- PVAB at beginning of year	5-3
		- changes due to amendment and/or assumptions	5-3
		- change due to decrease in discount period and benefits accrued	5-3
		- Benefits paid	5-3
		- Other changes	5-3
		- Net increase (decrease)	5-3
		- PVAB at end of year	5-3
1.003 (4l)		Pension Cost	
		- Normal cost (shown for each benefit and amount for admin expense)	4-1
		- Payment to amortize UAL	4-2—4-10
		- Expected plan sponsor contribution (i.e. total of above pieces with interest, also as % of pay)	4-11
		- Amount to be contributed by members (total and % of pay)	Pages B-3—B-4
1.003 (4l)		Past Contributions	
		- Required plan sponsor & member contribution	4-12

Code Ref			Page/Section
		- Actual contributions made by plan sponsor, members, other	4-12
1.003 (4k)		Active member accumulated contributions with interest	5-2
1.003 (4l)		Net actuarial gain / loss	4-2—4-10
1.003 (4l)		Other (PVFS & PVFC at attained age and at entry age, PVFC from other sources, PVF Expected BP)	3-2
	7	**Data:**	**Exhibit**
1.003 (4i)		Are membership demographics and financial statistics included?	Appendix C
1.003 (4i)		Age/service table for actives included?	C-7—C-17
1.003 (4i)		Data reconciliation?	E-2
	8	**Contribution Rate:**	**Page**
1.003 (4a)		Applicable beginning and ending dates for recommended contribution indicated?	4
1.003 (4b)		Are ER and EE contribution rates adequate to meet benefits?	4
1.003 (4b)		Are contribution rate changes necessary to achieve or preserve funding?	Yes, Executive Summary and Exhibit 4-11
1.003 (7)		Is the impact of assumption or cost method changes indicated?	7, Exhibit 3-1
1.003 (9)		Were costs to be paid at a later date adjusted for interest and/or salary?	Yes 3—4
1.003 (10)		Is the effective date of recommended changes no later than the next fiscal year?	Yes 3—4

Appendix F: Risk Disclosure

The purpose of this appendix is to identify, assess, and provide illustrations of risks that are significant to the Plan, and in some cases to the Plan's members.

In addition, as plans mature, they accumulate larger pools of assets and liabilities. This increases the potential risk to plan funding and the finances of those who are responsible for plan funding. As shown by the Asset Volatility Ratio discussed later in this section, the System's assets are now much larger compared to UAL payroll than in the past. The Asset Volatility Ratio example shows that because of this, a 10% investment loss on assets today would cost more than two times as much, when measured as a percentage of UAL payroll, than a 10% investment loss would have cost in 1993. Since pension plans make long-term promises and rely on long-term funding, it is important to consider how mature the plan is today, and how mature it may become in the future.

The results of any actuarial valuation are based on one set of assumptions. Although we believe the current assumptions for the System provide a reasonable estimate of future expectations, it is almost certain that future experience will differ from the assumptions to some extent. It is therefore important to consider the potential impacts of these potential differences between assumptions and experience when making decisions that may affect the future financial health of the Plan, or of the Plan's participants.

Actuarial Standard of Practice No. 51 (ASOP 51) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

- Identify risks that may be significant to the plan.
- Assess the risks identified as significant to the plan. The assessment does not need to include numerical calculations.
- Disclose plan maturity measures and historical information that are significant to understanding the plan's risks.

ASOP 51 states that if, in the actuary's professional judgment, a more detailed assessment would be significantly beneficial in helping the individuals responsible for the plan to understand the risks identified by the actuary, then the actuary should recommend that such an assessment be performed.

This Section uses the framework of ASOP 51 to communicate important information about significant risks to the System, the System's maturity, and relevant historical Plan data.

Identification of Risks

There are a number of factors that affect future valuation results. To the extent actual experience for these factors varies from the assumptions, this will likely cause either increases or decreases in the plan's future funding level and calculated contribution rates. Examples of factors that can have a significant impact on valuation results are:

- Investment return as this will impact the level of assets available to pay benefits
- Payroll variation as this will impact the ability to finance unfunded amounts as a percent of future pay
- Salary variation as this will impact the size of benefits members receive as a percent of final earnings
- Mortality as this will impact how long retirees receive benefits

- Service retirement as this will impact how long retirees receive benefits, the size of retiree benefits, the amount of time to receive employer and employee contributions, and the amount of time for investment earnings to accumulate on those contributions
- Termination (members leaving active employment for reasons other than death, disability or service retirement) as this will impact the size of those members benefits

Investment Return

Of the factors listed above, we believe the factor with the greatest potential risk is future investment returns. For this reason, we studied this assumption in the executive summary of this report.

In that section, we performed deterministic projections to study the impact of various investment return scenarios on the UAL compared to the case in which the actual investment rate of return matches the assumed investment rate of return. See our October 20, 2022 presentation materials to the Actuarial Assumption Conference for additional details and discussion regarding the return assumption, including sensitivity analysis showing the impact on the UAL, Funded Status and blended employer contribution rate of changing the investment return assumption.

Demographic Experience

While future investment returns will likely cause the greatest deviation from expected experience, there are many other assumptions made in an actuarial valuation. For these assumptions, differences between actual and assumed experience will also result in actuarial gains and losses. The executive summary of this report provides a look at the impact in the past year of actual experience deviating from assumed.

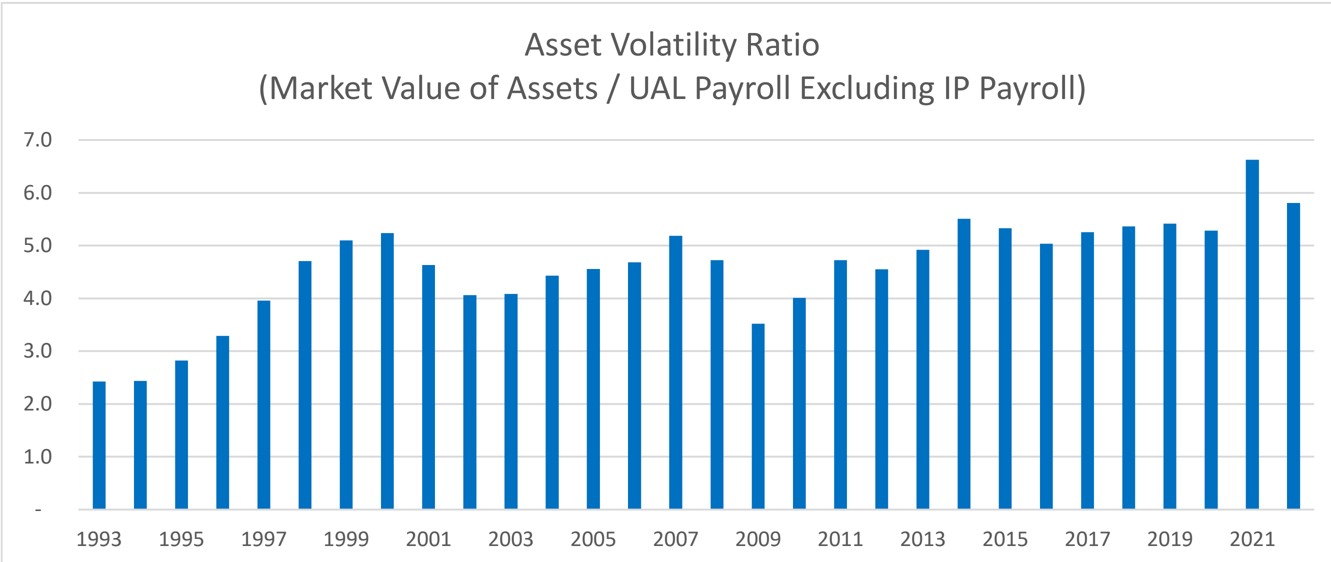
Maturity Measures and Historical Information

The remainder of this section contains historical information concerning the System's Asset Volatility Ratio (AVR) and Liability Volatility Ratio (LVR), plus a forward-looking projection of future benefit payments on behalf of current Plan members. Additional historical information can be found in the Executive Summary.

Asset Volatility Ratios and Liability Volatility Ratios

The magnitude of any contribution rate increase or decrease is affected by the System's maturity level. As systems mature, they accumulate larger pools of assets. Gains and losses on these larger pools of assets create more volatility in the contributions needed to fund the system.

One indicator of this potential volatility is the Asset Volatility Ratio (AVR), which is equal to the Market Value of Assets divided by total UAL payroll. As assets grow compared to UAL payroll, any percentage gain or loss on those assets will be larger compared to UAL payroll. This causes any resulting changes in required contributions from those gains or losses to also be larger when measured as a percentage of UAL payroll. Therefore, plans with a high AVR will be subject to a greater level of volatility in required contributions. The AVR is a current measure since it is based on the current level of assets and will vary from year to year.

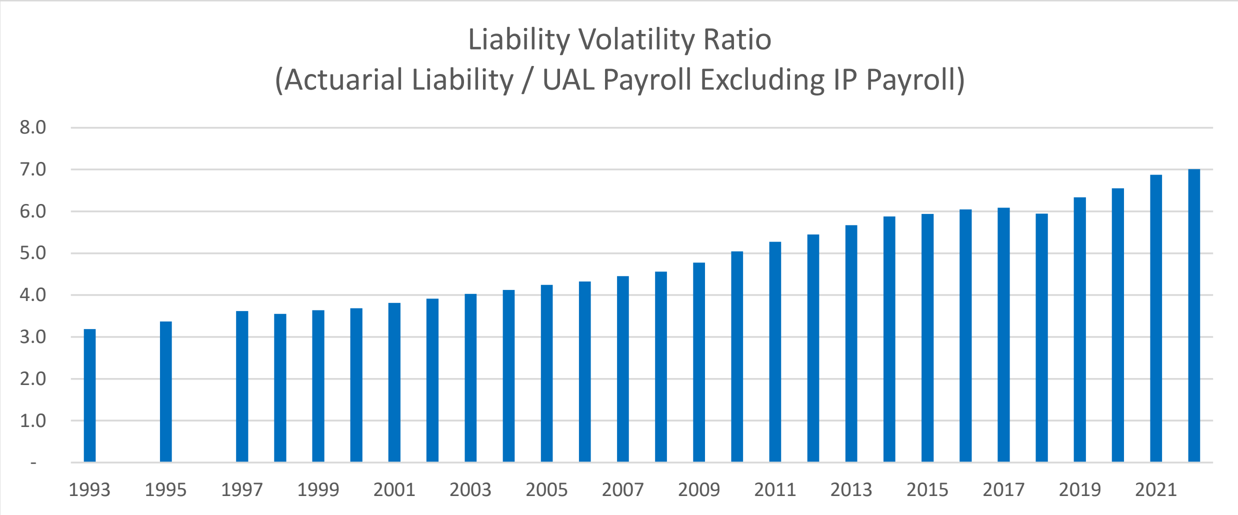


The current AVR for the FRS Pension Plan is 5.8. The AVR grew from 2.4 in 1993 to a high of 6.6 in 2021. The following table provides an illustration of how increases in the AVR increase the volatility of contributions from asset gains and losses.

Approximate eventual increase in contributions for an asset return 10% below the assumption if not offset by future gains	
Asset Volatility Ratio = Assets / Payroll	20-Year Amortization
2.4 (1993)	1.8%
5.8 (current)	4.3%

A return of negative 3.30% is approximately a 10% loss for FRS because it is 10% below the 6.70% investment return assumption. If a return of negative 3.30% were experienced and was not offset by future gains and the AVR was 2.4, the loss would be expected to increase contributions by about 1.8% of pay when amortized over 20 years. However, with the AVR of 5.8, the same return would be expected to increase contributions by about 4.3% of UAL payroll when amortized over 20 years.

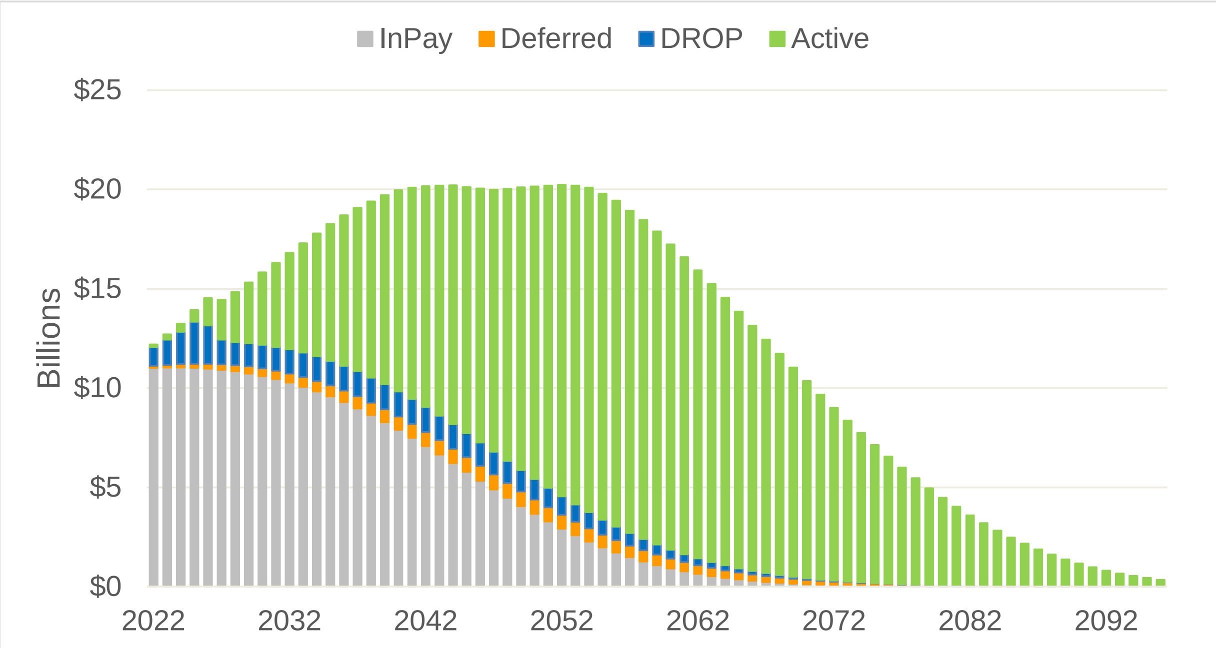
Another measure of a system's maturity is the Liability Volatility Ratio (LVR), which is equal to the AL divided by the total UAL payroll. This ratio provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. In addition, this ratio provides an indication of the potential contribution volatility due to liability experience (gains and losses) and liability re-measurements (assumption changes). For FRS, the current LVR is 7.0.



The graph above shows the historical LVR since 1993[1]. It is a similar pattern to the Asset Volatility Ratio, except the increase is more gradual and the year-to-year variance is significantly less.

Projected Benefit Payments

The graph below shows projected benefit payments based on member status as of July 1, 2022. For example, payments shown in blue are all projected payments for members currently in DROP as of July 1, 2022, including annuity payments to those members after their DROP exit.



[1] *Prior to 1997, actuarial valuations were conducted biennially. Therefore, there was no measure of the Actuarial Liability at July 1, 1994 or July 1, 1996.*

Appendix G:Glossary

The following definitions are largely excerpts from a list adopted in 1981 by the major actuarial organizations in the United States. In some cases, the definitions have been modified for specific applicability to the FRS.

Accrued Benefit

The amount of an individual's benefit (whether or not vested) as of a specific date, determined in accordance with the terms of a pension plan and based on compensation and service to that date.

Accumulated Benefit Obligation (ABO)

The actuarial present value of benefits attributed by the pension benefit formula to employee service rendered before a specified date and based on employee service and compensation prior to that date.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disability, and retirement; changes in compensation, rates of investment earnings, and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.

Actuarial Cost Allocation Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Liability.

Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

Actuarial Gain/Loss

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation Dates, as determined in accordance with a particular Actuarial Cost Method.

Actuarial Liability (AL)

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Actuarial Present Value of Pension Plan Benefits

Total projected benefits include all benefits estimated to be payable to plan members as a result of their service through the valuation date and their expected future service. The actuarial present value of total projected benefits as of the valuation date is the present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.

Actuarial Valuation

The determination, as of a valuation date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

Actuarial Value of Assets (AVA)

The value of cash, investments, and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

Amortization

Paying an interest-bearing liability by gradual reduction through a series of installments, as opposed to one lump-sum payment.

Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Liability.

Level Percent of Pay:	Produces a level series of payments when expressed as a percent of payroll. Cash payment increases in line with payroll growth assumption.
Level Dollar:	Produces a decreasing pattern of payments when expressed as a percent of payroll. Cash payment remains level.

Entry Age Normal Actuarial Cost Method (EAN)

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Liability.

Funded Ratio

Ratio of the assets of a pension plan to its liabilities.

Government Accounting Standards Board (GASB)

This Board sets standards of state and local accounting and financial reporting.

Interest Rate

The rate used to discount projected benefit payments to determine the present value in a valuation.

Market Value of Assets (MVA)

The price for which an asset could be sold at a particular date. May also be referred to as the Fair Value of Assets.

Normal Cost (NC)

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Allocation Method.

Present Value (PV)/ Actuarial Present Value (APV)

The value of an amount or series of amounts of cash flows payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions, including selected interest rate.

Projected Benefits

Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and anticipated future compensation and service credits.

Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets. When the Actuarial Value of Assets exceeds Actuarial Liabilities a point-in-time actuarial surplus exists.

Valuation Date

The date as of which the liabilities are determined.

1455 SW Broadway Street, Suite 1600
Portland, OR 97201
Tel 503 227 0634

1301 Fifth Avenue, Suite 3800
Seattle, WA 98101
Tel 206 624 7940

milliman.com

December 2, 2022

Andrea Simpson
State Retirement Director
Florida Department of Management Services, Division of Retirement

Re: **Blended Proposed Statutory Rates for the 2023-2024 Plan Year Reflecting a Uniform UAL Rate for All Membership Classes and DROP**

Dear Director Simpson:

As requested, we have calculated the uniform or "blended" proposed statutory employer rates for the 2023-2024 plan year based on the statutory contributions for the FRS Investment Plan and the actuarially calculated 2023-2024 rates for the defined benefit FRS Pension Plan, as specified in the FRS 2022 Actuarial Valuation Report. The blended rates reflect a uniform Unfunded Actuarial Liability (UAL) Contribution Rate for all payroll bases on which the Blended UAL Contribution Rate is assessed.

Analysis

We determined the uniform blended 2023-2024 employer rate for each membership class and subclass of the Florida Retirement System by projecting contributions for both the FRS Pension Plan and the FRS Investment Plan. We did this by dividing the projected combined amount that would be contributed for both the FRS Pension Plan and the FRS Investment Plan by the total projected combined payroll for both plans. The uniform blended rate calculation assumes plan year 2023-2024 contributions for the FRS Pension Plan will be made at the actuarially calculated rate levels. The actuarially calculated rate levels are based on the July 1, 2022 actuarial valuation of the FRS Pension Plan, as presented in Table 4-11 of the FRS 2022 Actuarial Valuation Report. The FRS Investment Plan rates are the sum of the rates in Sections 121.72, 121.73, and 121.735 of Florida Statutes and assume those rates continue in effect during plan year 2023-2024. The employer contribution rates shown in the attached table are net of the 3% of payroll employee contribution rate.

The payroll for some employee groups is subject to only the UAL Cost component of the FRS Pension Plan's contribution rate (e.g. participants in SUSORP, SMSOAP, and SCCORP, and reemployed retirees not eligible for renewed membership in a state-sponsored retirement program). The payroll for those employee groups is included in the calculation of the Blended UAL Contribution Rate, but is excluded from the calculation of the Blended Normal Cost Contribution Rate.

Based on the data provided to us for this study, as of July 1, 2022 FRS Investment Plan payroll comprised 24% of total payroll. On a headcount basis, FRS Investment Plan members constitute between 29% and 30% of active FRS membership. Please note, Senate Bill 7022 enacted by the 2017 Florida legislature changed the default plan for initial enrollments on and after January 1, 2018 from the FRS Pension Plan to the FRS Investment Plan for all membership classes other than Special Risk. As a result of the enactment, new entrants who would have defaulted into the FRS Pension Plan under prior statute will now default into the FRS Investment Plan in the absence of an active election. The actual levels of participation in the FRS Pension Plan and the FRS Investment Plan as of July 1, 2022 reflect that Investment Plan payroll comprises an increased percentage of total payroll than it did one year ago.

Results

Table I shows the results of our study based on actual levels of participation in the FRS Pension Plan and the FRS Investment Plan as of July 1, 2022, projected to plan year 2023-2024 using the long-term payroll growth assumption of 3.25%.

Section A of the table includes the Normal Cost Rates developed in the July 1, 2022 funding actuarial valuation of the FRS Pension Plan. Section A does not include the UAL Cost. UAL Cost Rates are applied to a larger total payroll than the Normal Cost Rates and are developed in a later section. Section A, line 3 shows the total employer Normal Cost of the FRS Pension Plan as the product of Normal Cost Rates and projected Normal Cost payroll.

Similarly, Section B calculates the total employer cost of the FRS Investment Plan as the product of applicable employer contribution rates in effect since July 1, 2022 and the projected FRS Investment Plan payroll.

Section C of the table shows the sum of the FRS Pension Plan employer Normal Cost and FRS Investment Plan employer cost as dollars and as a percentage of total projected combined payroll (FRS Pension Plan projected Normal Cost payroll plus FRS Investment Plan projected payroll).

Section D of the table shows the UAL Cost as of July 1, 2022 of the FRS Pension Plan, as shown in Table 4-11 of the FRS 2022 Actuarial Valuation Report.

Section E shows the projected payroll of the FRS Investment Plan. There is no UAL Cost attributable to the FRS Investment Plan.

Section F calculates the “Blended” UAL Cost as dollars and as a percentage of total payroll (FRS Pension Plan projected UAL payroll plus FRS Investment Plan projected payroll).

Section G shows the Total “Blended” Contribution Rates as the sum of the “Blended” Normal Cost Contribution Rates from Line (C3) and the “Blended” UAL Contribution Rates from Line (F3). The employers of employee groups subject to only the UAL Contribution Rate would contribute the “Blended” UAL Contribution Rates shown in Line (G2) of the table on applicable payroll. The Total “Blended” Contribution Rates shown in Line (G3) of the table will be applied to all other payroll subject to employer contributions.

The contribution rates shown in Table I exclude the 0.06% contribution rate for FRS Investment Plan administration and education (applied to all classes except DROP) and the 1.66% contribution rate for the Florida Retiree Health Insurance Subsidy (HIS) program, which apply across the board to the FRS Pension Plan and the FRS Investment Plan.

The calculations are based on census and payroll data provided to us by the Florida Department of Management Services, Division of Retirement for the July 1, 2022 actuarial valuation. We have not audited or verified this data and other information. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete. These calculations are based on the Individual Entry Age actuarial cost allocation method, as described in the FRS 2022 Actuarial Valuation Report for use in developing 2023-2024 actuarially calculated contribution rates for the FRS Pension Plan.

Certification

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

Except where otherwise noted in this letter, this analysis is based on the FRS Pension Plan provisions, actuarial methods and actuarial assumptions as summarized in the FRS 2022 Actuarial Valuation Report published on December 1, 2022. Further, the data used in these calculations were based on FRS Pension Plan data as summarized in the FRS 2022 Actuarial Valuation Report and FRS Investment Plan census data as of July 1, 2022 as provided to us by the Florida Department of Management Services, Division of Retirement. The results of our study depend on future experience conforming to those actuarial assumptions discussed earlier in this letter. Future actuarial measurements may differ significantly from the current measurements presented in this analysis due to many factors, including: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period) and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

Milliman's work product was prepared exclusively for the internal business use of Florida Department of Management Services, Division of Retirement. It is a complex technical analysis that assumes a high level of knowledge concerning the Florida Retirement System's operations, and uses Division data, which Milliman has not audited. To the extent that Milliman's work is not subject to disclosure under applicable public record laws, Milliman's worked may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions:

(a) The Florida Department of Management Services, Division of Retirement may provide a copy of Milliman's work, in its entirety, to the System's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.

(b) The Florida Department of Management Services, Division of Retirement may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The valuation results relied upon for this work were developed using models intended for valuations that use standard actuarial techniques.

The consultants who worked on this assignment are retirement actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board and the *Code of Professional Conduct* and *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* published by the American Academy of Actuaries.

We are consulting actuaries for Milliman, Inc. We are also members of the American Academy of Actuaries and meet their Qualification Standards to render the actuarial opinion contained herein. Please call if you would like to further discuss this project.

Respectfully submitted,

Matt Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary

Daniel Wade, FSA, EA, MAAA
Principal and Consulting Actuary

Kathryn Hunter, FSA, EA, MAAA
Consulting Actuary

Enclosures

FLORIDA RETIREMENT SYSTEM
FISCAL IMPACT ANALYSIS

Blended Proposed Statutory Normal Cost Plus UAL Rates for 2023-2024 Plan Year
Please see the attached letter for details regarding data, assumptions, methodology, and plan provisions used
(Dollars in Thousands)

Blended Proposed Statutory Normal Cost Contribution Rates	Regular	Special Risk	Special Risk Administrative	Elected Officers' Class: Judicial	Elected Officers' Class: Leg-Atty-Cab	Elected Officers' Class: Local	Senior Management	Composite (excluding DROP)	DROP	Composite (including DROP)
A. Defined Benefit FRS Pension Plan Normal Cost										
1. Employer Cost										
a. Normal Cost Rate [1]	5.96%	17.13%	11.57%	14.77%	9.54%	11.63%	7.86%	8.18%	8.18%	8.18%
b. Rate Reduction Techniques	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
c. Total Adjusted Contribution Rate [2] -PYE 2024	5.96%	17.13%	11.57%	14.77%	9.54%	11.63%	7.86%	8.18%	8.18%	8.18%
2. Projected Payroll	$19,960,194	$4,874,192	$3,943	$114,631	$6,231	$44,770	$573,342	$25,577,303	$2,396,438	$27,973,741
3. Total Employer Normal Cost [(1c) x (2)] -PYE 2024	$1,189,628	$834,949	$456	$16,931	$594	$5,207	$45,065	$2,092,830	$196,029	$2,288,859
B. Defined Contribution FRS Investment Plan (IP) Employer Cost										
1. Employer Rates effective July 1, 2022 (Sec 121.72, Sec 121.73 and Sec 121.735)	6.60%	16.54%	8.43%	14.05%	9.94%	11.95%	7.98%	7.58%	0.00%	7.58%
2. Projected Payroll	$7,841,985	$812,015	$1,385	$24,667	$3,884	$23,983	$247,878	$8,955,797	$0	$8,955,797
3. Total Employer Cost [(1) x (2)] -PYE 2024	$517,571	$134,307	$117	$3,466	$386	$2,866	$19,781	$678,494	$0	$678,494
C. Total System Normal Cost (FRS Pension Plan + FRS Investment Plan)										
1. Total Normal Cost Contribution [(A3) + (B3)]	$1,707,199	$969,256	$573	$20,397	$980	$8,073	$64,846	$2,771,324	$196,029	$2,967,353
2. Total System Projected Payroll [(A2) + (B2)]	$27,802,179	$5,686,207	$5,328	$139,298	$10,115	$68,753	$821,220	$34,533,100	$2,396,438	$36,929,538
3. "Blended" Normal Cost Contribution Rate As a Percentage of Total Payroll [(C1) / (C2)] [2]	6.14%	17.05%	10.75%	14.64%	9.69%	11.74%	7.90%	8.03%	8.18%	8.04%

[1] As reported in the July 1, 2022 actuarial valuation report Table 4-11.
[2] Rates shown do not include the Health Insurance Subsidy contribution rate or FRS Investment Plan education and administration assessment.

FLORIDA RETIREMENT SYSTEM
FISCAL IMPACT ANALYSIS

Blended Proposed Statutory Normal Cost Plus UAL Rates for 2023-2024 Plan Year
Please see the attached letter for details regarding data, assumptions, methodology, and plan provisions used
(Dollars in Thousands)

	Regular	Special Risk	Special Risk Administrative	------Elected Officers' Class---- Judicial	Leg-Atty-Cab	Local	Senior Management	Composite (excluding DROP)	DROP	Composite (including DROP)
Blended Proposed Statutory UAL Contribution Rates										
D. Defined Benefit FRS Pension Plan UAL Contribution										
1. Employer UAL Contribution Rate [1 & 2]	6.27%	12.62%	33.81%	33.52%	76.48%	64.87%	33.53%	8.09%	10.01%	8.23%
2. Projected Payroll	$23,957,991	$4,904,404	$3,943	$115,638	$7,270	$50,695	$590,145	$29,630,086	$2,396,438	$32,026,524
3. Total Employer UAL Contribution [(1) x (2)] -PYE 2024	$1,502,166	$618,936	$1,333	$38,762	$5,560	$32,886	$197,876	$2,397,519	$239,883	$2,637,402
E. Defined Contribution FRS Investment Plan Projected Payroll	$7,841,985	$812,015	$1,385	$24,667	$3,884	$23,983	$247,878	$8,955,797	$0	$8,955,797
F. Total System UAL Contribution (FRS Pension Plan + FRS Investment Plan)										
1. Total UAL Contribution [(D3)]	$1,502,166	$618,936	$1,333	$38,762	$5,560	$32,886	$197,876	$2,397,519	$239,883	$2,637,402
2. Total System Projected Payroll [(D2) + (E)]	$31,799,976	$5,716,419	$5,328	$140,305	$11,154	$74,678	$838,023	$38,585,883	$2,396,438	$40,982,321
3. "Blended" UAL Contribution Rate As a Percentage of Total Payroll [(F1) / (F2)] [2]	4.72%	10.83%	25.02%	27.63%	49.85%	44.04%	23.61%	6.21%	10.01%	6.44%
Blended Proposed Statutory Uniform Contribution Rates [3]										
G: Total Employer Contribution Rate (FRS Pension Plan + FRS Investment Plan)										
1. "Blended" Normal Cost Contribution Rate [(C3)]	6.14%	17.05%	10.75%	14.64%	9.69%	11.74%	7.90%	8.03%	8.18%	8.04%
2. "Blended" UAL Contribution Rates [(F3)]	4.72%	10.83%	25.02%	27.63%	49.85%	44.04%	23.61%	6.21%	10.01%	6.44%
3. Total Blended Contribution Rate [2] -PYE 2024 [(G1) + (G2)]	10.86%	27.88%	35.77%	42.27%	59.54%	55.78%	31.51%	14.24%	18.19%	14.48%

[1] As reported in the July 1, 2022 actuarial valuation report Table 4-11.
[2] Rates shown do not include the Health Insurance Subsidy contribution rate or FRS Investment Plan education and administration assessment.
[3] Employers of employee groups subject to only the UAL contribution rate will pay the rates shown in line (G2).

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