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POR Board of Trustees Presentation of the July 1, 2022 Actuarial Valuation Results

Presented by:
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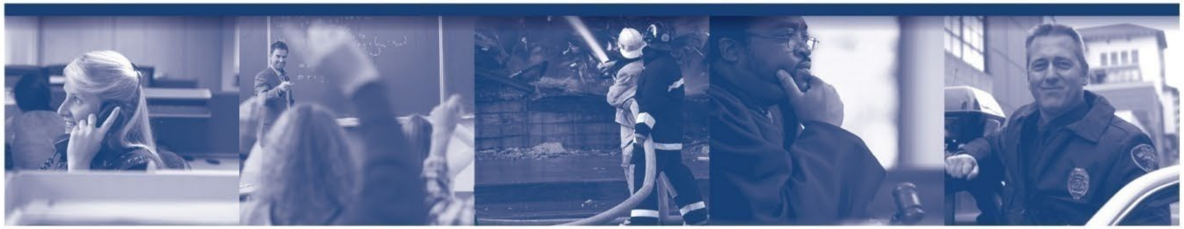
October 17, 2022



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Purpose of the Actuarial Valuation

- Disclose asset/liability measures
  - Funded ratio
  - Unfunded actuarial accrued liability
- Determine actuarial contribution rate
- Evaluate the sufficiency of the current statutory funding of the System
  - Determine if $5 million of supplemental contribution is required
- Assess and disclose key risks
- Analyze experience/report on trends

Actual versus expected experience for FY 2022

- Investment return on market value of assets for FY 2022 was -21.7%
- Return on actuarial (smoothed) value was 7.8% which generated an actuarial gain of $5.5 million
- Net liability loss of $1.0 million largely due to mortality and retirement experience (note this was on “old” assumptions)

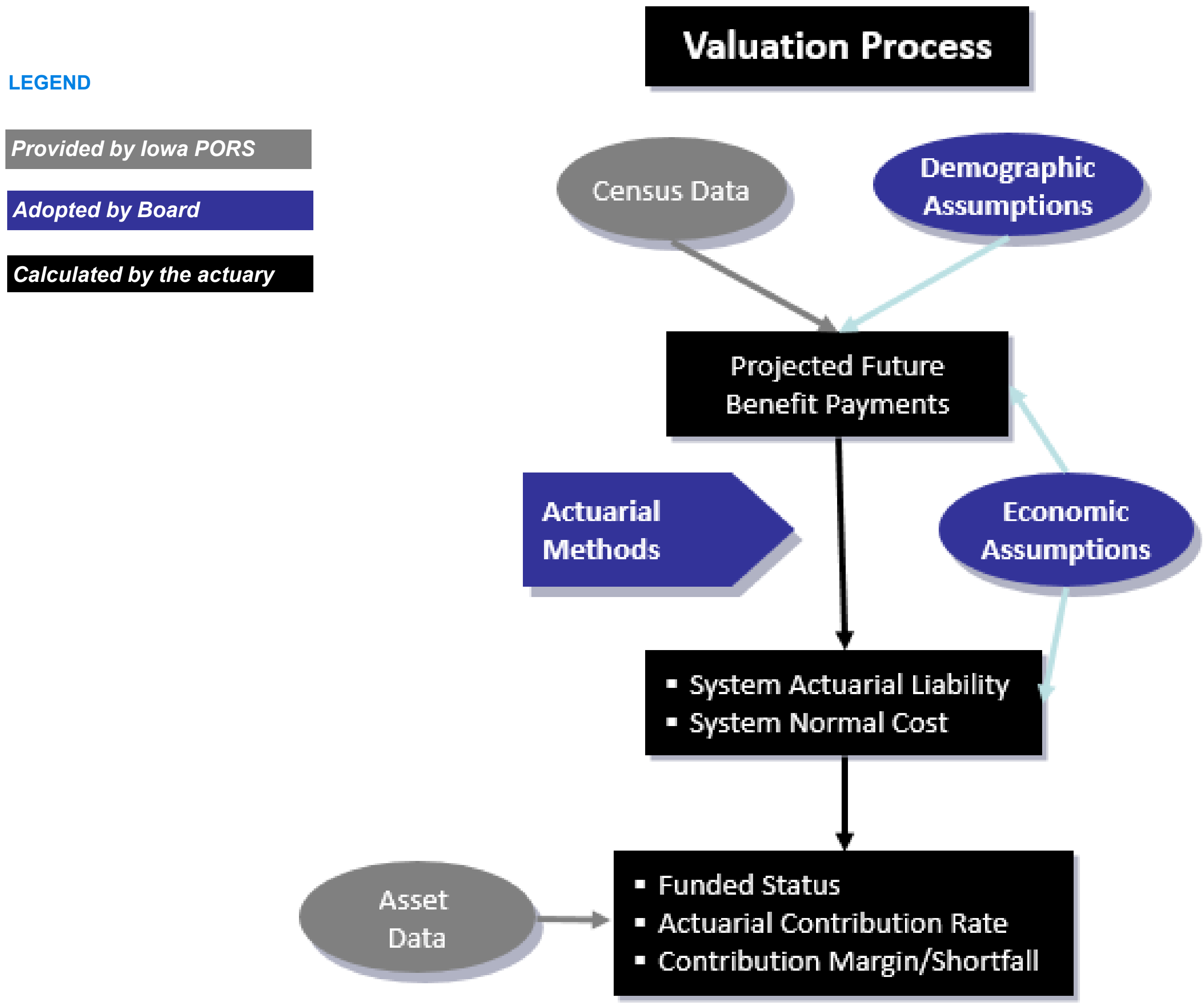
Changes resulting from completion of Experience Study

- Assumption changes increased the actuarial accrued liability by $72.3 million and the actuarial contribution rate by 14.69%.

Experience Study Changes

- Investment return assumption was lowered from 7.00% to 6.50% (most significant change).
- Mortality assumption changed to Pub-2010 Safety Mortality Tables, with a two-year age setback for males and females. Generational mortality improvements are modeled using the MP-2021 scale.
- Retirement rates were changed to service-based rates.
- Accidental and ordinary disability rates were adjusted to better reflect actual experience.
- Termination rates were adjusted to better reflect actual experience.
- Salary increase assumptions were adjusted to better reflect actual experience.

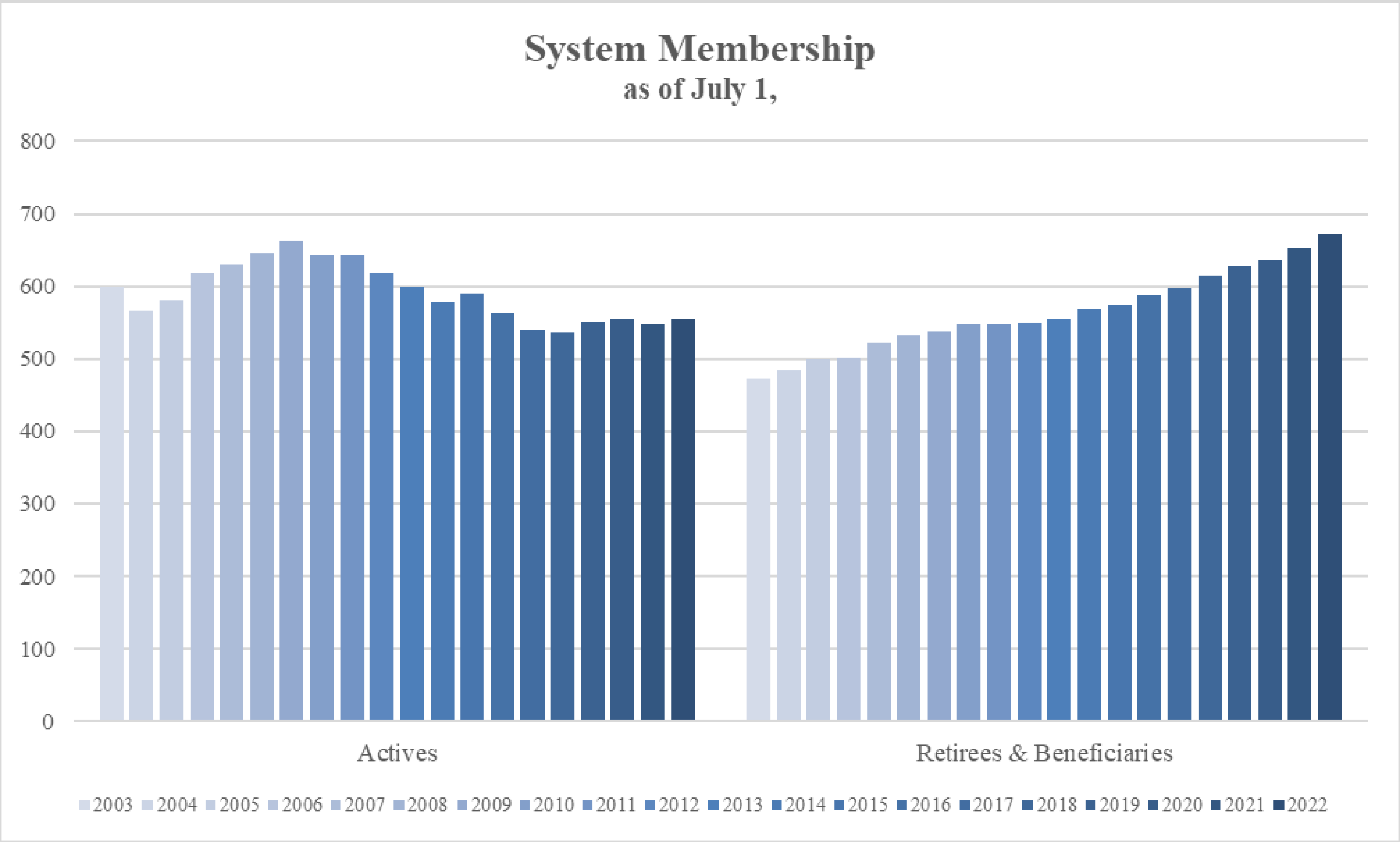
Valuation Process



Membership Data

	July 1 Valuation					
	2022	2021	2020	2019	2018	2017
Active Members						
Count	555	547	555	551	537	540
Average Age	41.6	42.1	42.4	42.3	42.9	42.9
Credited Service	16.2	16.8	17.0	17.0	17.7	17.7
Annual Salary	$91,176	$89,779	$87,302	$85,218	$84,314	$83,001
Retired Members						
Count	673	654	635	629	614	597
Average Age	70.9	71.1	71.7	71.5	71.5	71.3
Annual Benefit	$57,541	$55,847	$54,584	$53,532	$51,823	$50,596
Inactive Vested						
Count	42	41	42	42	46	48

Longer Term Historical Membership Data



The active count has declined over the last 20 years while the number of members receiving a benefit has steadily increased. With fixed contribution rates, the decrease in the active population creates pressure on the funding of the System because covered payroll, and therefore contributions, are lower.

Change in Asset Values ($M)

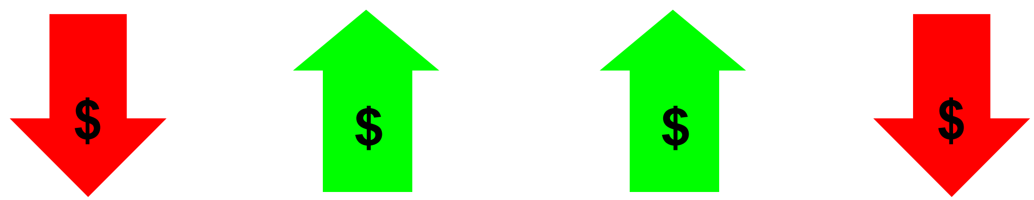
	Market	Actuarial
▪ 7/1/21 Value	$807.6	$658.1
– Contributions	29.1	29.1
– Benefit Payments	(37.4)	(37.4)
– Admin Expenses	(0.4)	(0.4)
– Net Investment Return	(173.9)	51.3
▪ 7/1/22 Value	$625.1	$700.7
▪ Rate of Return	-21.7%	7.8%

Note: numbers may not add due to rounding

Actuarial Assets

Asset Smoothing Method - how and when asset gains/losses are recognized

- Smoothing is based on difference between actual and expected return on market value of assets
- Smoothing period is 5 years
- Net deferred loss yet to be recognized is $75.6 million as shown below compared to net deferred gain of $149.5 million last year.



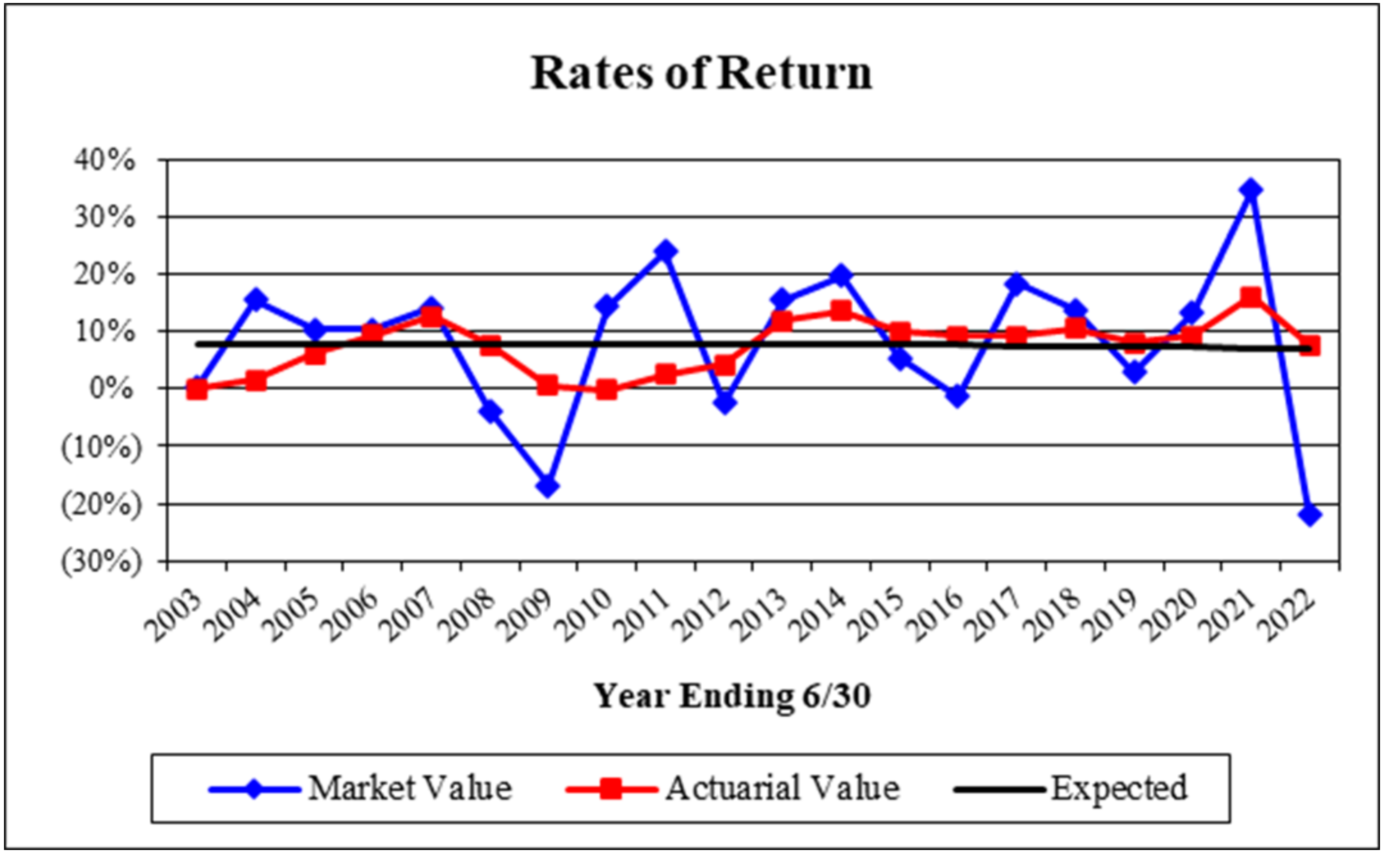
FY Ending:	2022	2021	2020	2019
Millions:	(184)	101	12	(5)

Deferred Actuarial Assets Experience

Plan Year Ended	Gain/(Loss) Deferred to Future Years	Gain/(Loss) to be Recognized in Plan Year Ending			
		2023	2024	2025	2026
6/30/2019	(4,713,115)	(4,713,115)			
6/30/2020	12,297,559	6,148,780	6,148,779		
6/30/2021	100,889,788	33,629,929	33,629,929	33,629,930	
6/30/2022	(184,069,091)	(46,017,273)	(46,017,273)	(46,017,273)	(46,017,272)
Total	($75,594,859)	($10,951,679)	($6,238,565)	($12,387,343)	($46,017,272)

Note: the net deferred experience of $76M is not recognized equally over four years, but rather each year is on its own schedule. Future experience will also impact the net amount recognized in future years.

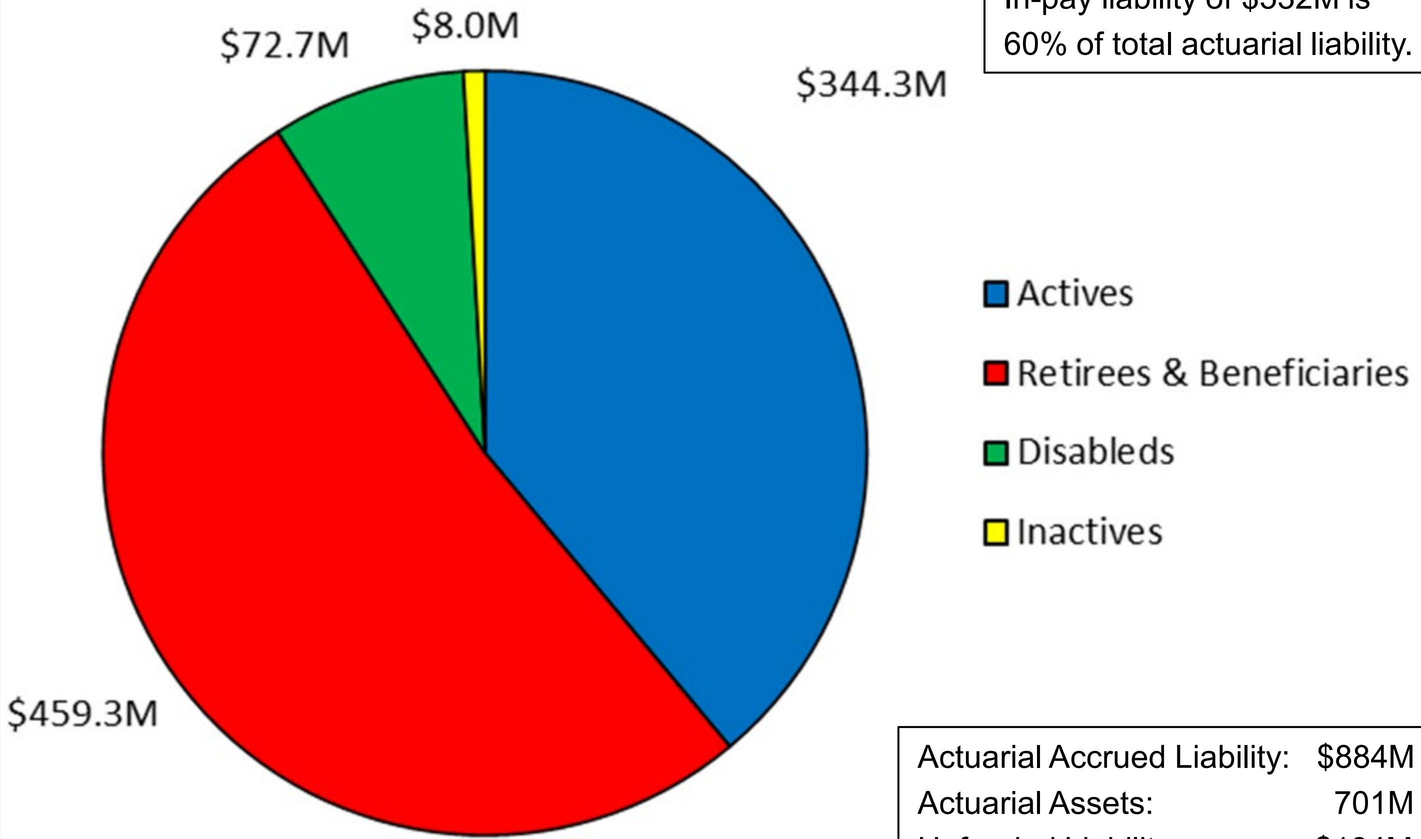
Historical Asset Returns



The volatility in the return on market value is the reason an asset valuation method is used.

Actuarial Accrued Liability (AAL)

In-pay liability of $532M is 60% of total actuarial liability.



Actuarial Accrued Liability:	$884M
Actuarial Assets:	701M
Unfunded Liability:	$184M
Funded Ratio:	79%

Unfunded Actuarial Accrued Liability (UAAL)

UAAL July 1, 2021	$122.1
• Contributions above actuarial rate	(3.4)
• Expected decrease from amortization	(2.2)
• Investment experience	(5.5)
• Liability experience*	1.0
• Assumption changes	72.3
• Other experience	(0.6)
UAAL July 1, 2022	$183.7

*Largely due to mortality and retirement experience less favorable than expected.

Actuarial Contribution Rate

➢ Components:

- Normal Cost
- Administrative Expenses
- Amortization of UAAL

➢ "Layered amortization"

- Legacy UAAL amortized over 30 Years from 2008 (Closed Period) so 16 years remain as of July 1, 2022
- New pieces of UAAL over closed 20-year periods
- UAAL payment is the sum of all bases

Normal Cost Rate

	July 1, 2022 Valuation	July 1, 2021 Valuation
Retirement Benefits	28.71%	23.39%
Withdrawal Benefits	0.68%	0.83%
Death Benefits	0.73%	1.50%
Disability Benefits	5.21%	4.37%
Total	35.33%	30.09%

The change in the normal cost rate was primarily due to the assumption changes.

UAAL Contribution Rate

Amortization Bases	Original Amount	July 1, 2022 Remaining Payments	Date of Last Payment	Outstanding Balance as of July 1, 2022	Annual Contribution*
2017 UAAL Base	$ 182,759,035	16	7/1/2037	$ 176,151,857	$ 14,665,180
2018 Experience Base	(20,775,216)	16	7/1/2037	(20,024,141)	(1,667,071)
2019 Experience Base	(7,599,217)	17	7/1/2038	(7,414,452)	(590,434)
2020 Assumption Change Base	42,755,186	18	7/1/2039	42,088,154	3,216,651
2020 Experience Base	(18,319,662)	18	7/1/2039	(18,033,854)	(1,378,264)
2021 Experience Base	(53,264,638)	19	7/1/2040	(52,917,339)	(3,893,057)
2022 Assumption Change Base	72,348,995	20	7/1/2041	72,348,995	5,137,280
2022 Experience Base	(8,541,603)	20	7/1/2041	(8,541,603)	(606,513)
Total				**$ 183,657,617**	**$ 14,883,772**

* Contribution amount reflects mid-year timing.

1. Total UAAL Amortization Payments	$ 14,883,772
2. Projected Payroll for Plan Year Ending June 30, 2023	$ 50,602,707
3. UAAL Amortization Payment Rate	29.41%

Actuarial Contribution Rate

Normal Cost	35.33%
Administrative Expenses	0.71%
UAAL Contribution *	29.41%
Total Actuarial Contribution Rate	65.45%

* Amortization of UAAL payments are as a level percent of payroll, assuming a 2.75% annual increase in payroll.

Change in Actuarial Contribution Rate

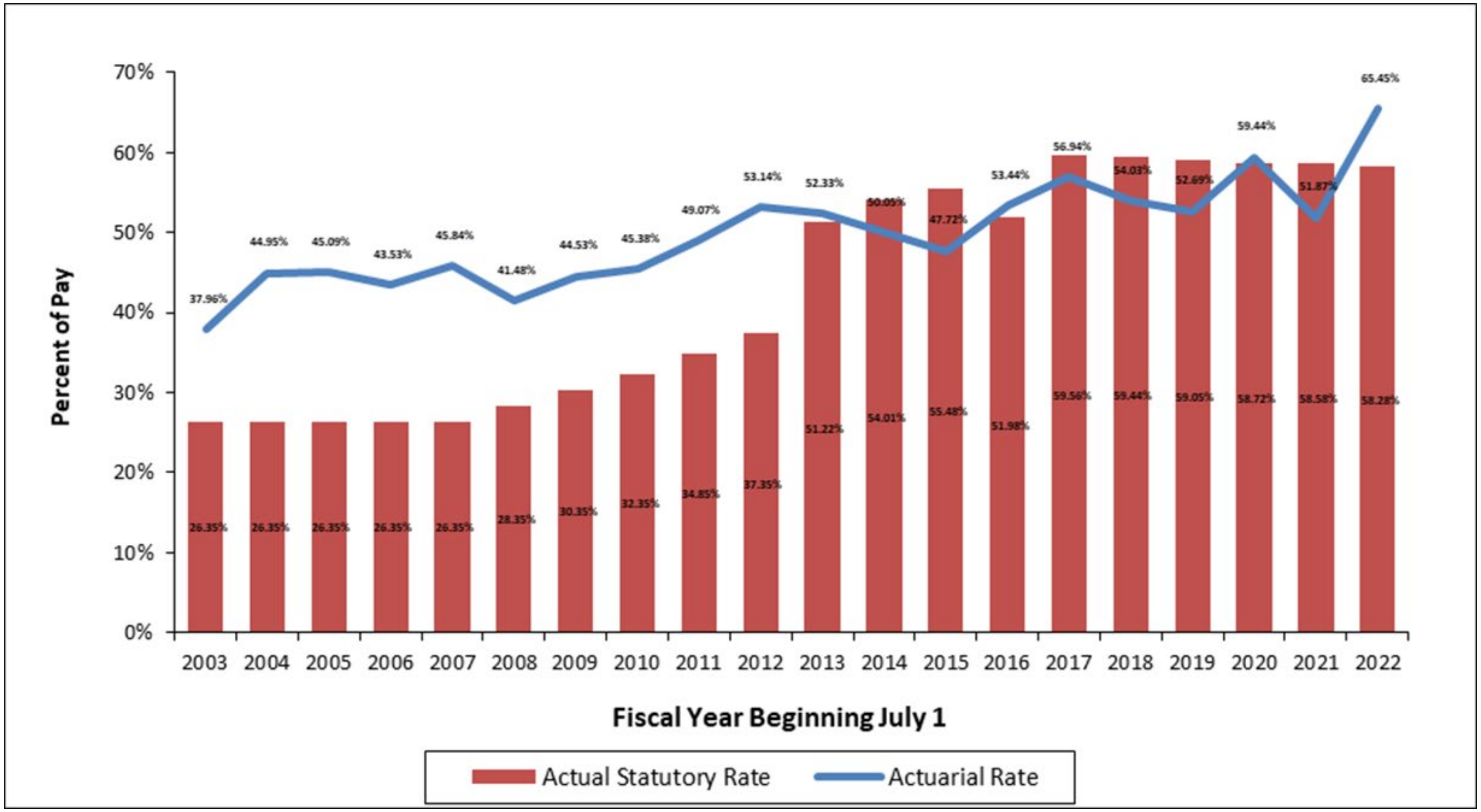
➢ Actuarial Contribution Rate 7/1/21	51.87%
➢ Change due to:	
▪ Asset experience	(0.80%)
▪ Liability experience	0.15%
▪ Other experience	(0.04%)
▪ Assumption changes	14.69%
▪ Change in normal cost rate	0.08%
▪ Contributions more than actuarial rate	(0.50%)
➢ Actuarial Contribution Rate 7/1/22	65.45%

Contribution Rate Analysis

	7/1/2022	7/1/2021
Total Actuarial Contribution Rate	65.45%	51.87%
Member Contribution Rate	(11.40%)	(11.40%)
State Actuarial Contribution Rate	54.05%	40.47%
Statutory State Contribution Rate	(37.00%)	(37.00%)
State Supplemental Contribution*	(9.88%)	(10.18%)
Shortfall/(Margin)	7.17%	(6.71%)
Expected Payroll ($M)	$50.6	$49.1
Estimated Shortfall/(Margin) ($M)	$3.6	($3.3)

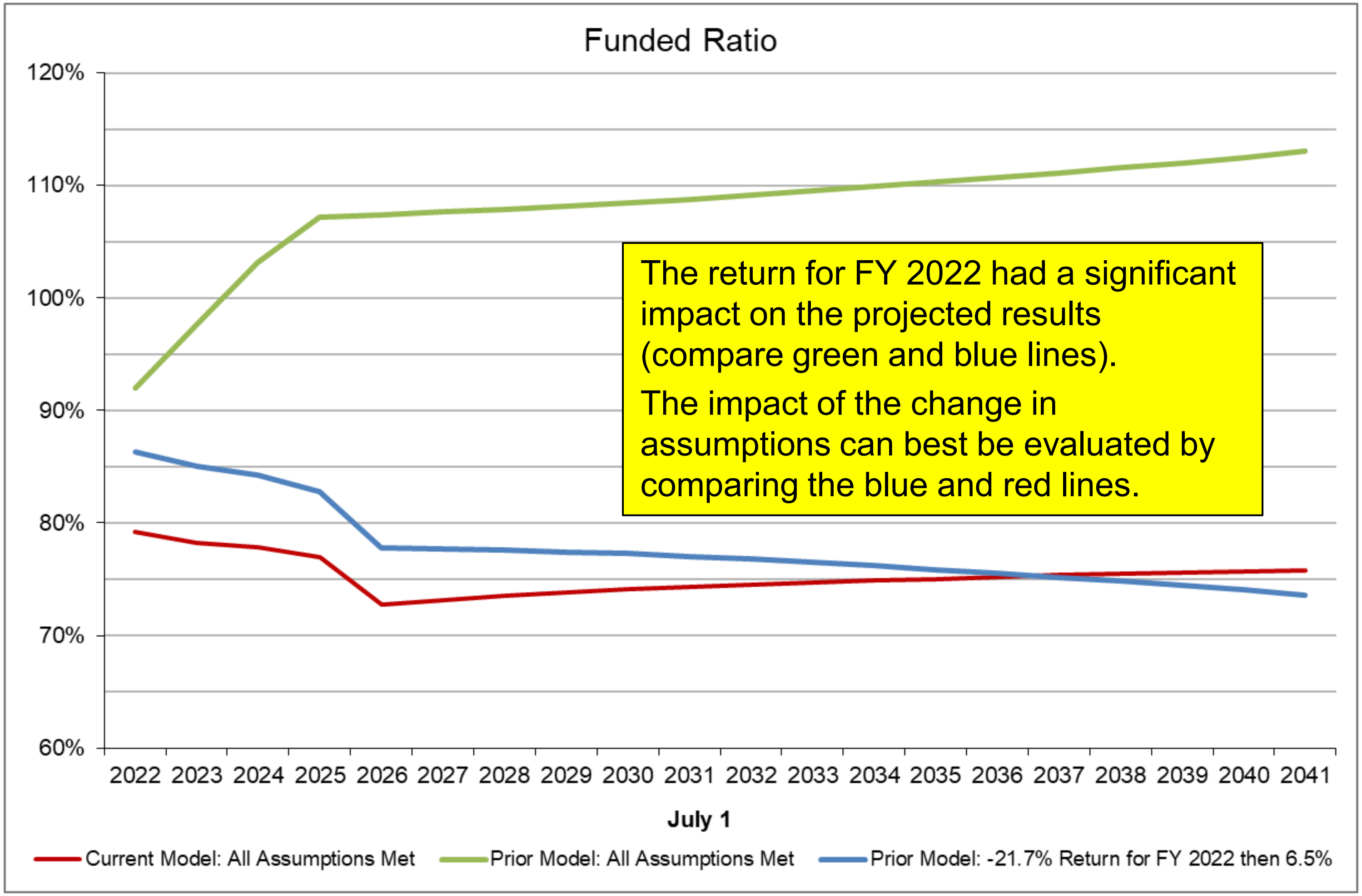
* $5.0 million per year for both FY 2022 and FY 2023.

Historical Contribution Rates



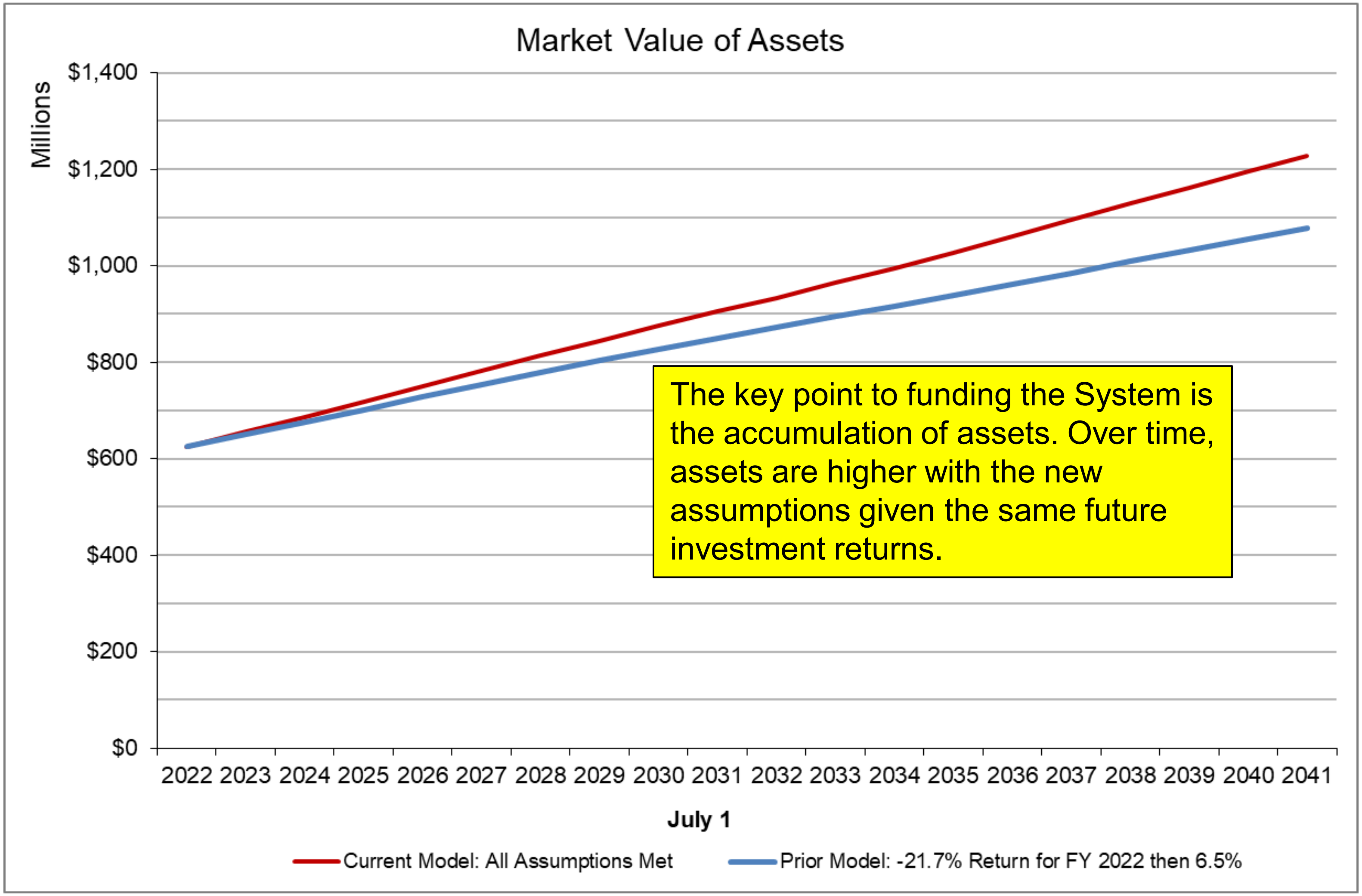
Over the early part of this time period, the statutory rate was significantly below the actuarial rate. With Legislative changes, the statutory contribution rate has been close to or greater than the actuarial rate, a key factor in improving the funded status of the System.

Projected Funded Status: 2021 vs 2022 modeling



Projections assume all actuarial assumptions, other than investment return as noted, are met each year in the future and all contributions are made as scheduled, including the $5 million supplemental contributions until the System is 85% funded.

Projected Market Value of Assets



Risk Analysis: Alternate Investment Returns

The sufficiency of the current statutory contribution rates changes dramatically under different investment return scenarios.

Investment Return Assumption	6.00%	6.25%	6.50%	6.75%	7.00%
Contribution Rates					
Normal Cost	40.65%	37.89%	35.33%	32.97%	30.79%
Administrative Expenses	0.71%	0.71%	0.71%	0.71%	0.71%
Unfunded Actuarial Accrued Liability	36.72%	33.04%	29.41%	25.84%	22.31%
Member Contributions	(11.40%)	(11.40%)	(11.40%)	(11.40%)	(11.40%)
Employer Actuarial Required Contribution	66.68%	60.24%	54.05%	48.12%	42.41%
Statutory State Fixed Contribution Rate	(37.00%)	(37.00%)	(37.00%)	(37.00%)	(37.00%)
State Supplemental Contribution	(9.88%)	(9.88%)	(9.88%)	(9.88%)	(9.88%)
Contribution Shortfall/(Margin)	19.80%	13.36%	7.17%	1.24%	(4.47%)
Actuarial Accrued Liability	$946,242	$914,453	$884,316	$855,723	$828,575
Actuarial Value of Assets	700,658	700,658	700,658	700,658	700,658
Unfunded Actuarial Accrued Liability	$245,584	$213,795	$183,658	$155,065	$127,917
Funded Ratio	74.1%	76.6%	79.2%	81.9%	84.6%

Summary and Comments

- **Contribution shortfall for FY 2023 of 7.17%**
  - Experience study changes resulted in an increase to actuarial accrued liability of $72.3 million and an increase in actuarial contribution rate of 14.69%
  - Return of -21.7% on market value of assets resulted in net deferred asset loss of $75.6 M.
  - State supplemental contribution of $5M is expected in foreseeable future
- Long-term financial health of the System is dependent on future investment returns and scheduled contributions, including receipt of the supplemental payment of $5 million until 85% funded.
  - Closely monitor the projected funded status over the next five year to evaluate whether changes are needed to address long-term funding of the System.

Changes to ASOP 4

- Effective for measurement dates on/after February 15, 2023 (July 1, 2023 valuation for POR)
- Changes Impacting Public Plans
  - Disclose Low-Default Risk Obligation Measure (LDROM)
  - Disclose Reasonable Actuarially Determined Contribution (ADC)
    - New guidance on amortization of the unfunded actuarial accrued liability
- Assess implications of Contribution Allocation Procedure (CAP) or Funding Policy
- Other changes
  - Output Smoothing Methods
  - Addressing contribution lag
  - Gain/loss analysis

Low Default Risk Obligation Measure

- Liability measure that must use a discount rate that reflects low default risk fixed income securities whose cash flows are reasonably consistent with the benefits expected to be paid
- Can be interpreted that the difference in the LDROM and AAL measures the reduction in liability (savings) from investing in a diversified portfolio
- Only the liability measure must be disclosed, not the funded status, unfunded portion of the liability or amortization period
- Communication of the measure may prove challenging
  - Some may call the LDROM the “true cost” of the plan

Reasonable Actuarially Determined Contribution

- With any funding valuation, the actuary should calculate and disclose a reasonable actuarially determined contribution (ADC) except when assumptions/methods are set by law
- New guidance on UAAL amortization states that each individual base must be either:
  - Fully amortized in a reasonable period of time or
  - Reduces outstanding balance by reasonable amount each year
- Fixed contribution rate plans must determine if fixed rate is the ADC or a different ADC is determined
- **Actuarial profession CANNOT force systems to change their funding – these are just disclosures!**

Actuarial Certification

I, Patrice A. Beckham, FSA, am a consulting actuary with Cavanaugh Macdonald Consulting, LLC. I am a member of the American Academy of Actuaries, Fellows of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. I am available to answer any questions or provide additional information as needed.

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Principal and Consulting Actuary