FY 2022 Pension Overview

Vermont State Employees' Retirement System (VSERS)
Vermont State Teachers' Retirement System (VSTRS)

Senate Committees on Appropriations and Government Operations

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Joint Fiscal Office

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Pension 101

- **Pension systems are a method of prefunding the cost of future retirement benefits for members and their beneficiaries.**
  - Members/employer both pay into the fund over the course of a member's career **("Normal Cost").** Contributions are invested and grow over time to pay the future cost of the benefits once the member retires. Investment gains typically pay over 60% of pension benefit costs.
  - Future is unknown, so expected future costs (liabilities) and the amounts needed to be contributed to fund those liabilities are based on long-term **actuarial assumptions**.
  - When reality does not meet assumptions, costs are not fully (or over) funded, or assumptions change, the net impacts are reflected in the **unfunded liability**.
  - The unfunded liability represents the funding gap between expected liabilities and assets on hand to pay those liabilities. The unfunded liability is a debt that must be paid off (with interest, currently 7%) over a defined period of time (by FY2038 in VT).
  - Unfunded liability balance is recalculated every year to reflect plan experience, so employer contribution requirements are frequently changing from year to year. Losses cause the unfunded liability and future required payments to increase, and gains cause the reverse.
  - Unfunded liabilities reflect the **"risk"** of reality not meeting assumptions (or assumptions changing), which the employer typically bears.
  - **ADEC** = Actuarially Determined Employer Contribution. Represents the amount the employer should pay to fully fund the normal cost plus an amortization payment on the unfunded liability, based on current actuarial assumptions.
- **VT has 3 major state pension systems (VSERS – state employees, VSTRS - teachers, VMERS - municipal), but only VSERS and VSTRS are directly funded by the state budget.**
- **Benefits are defined by a formula: member's years of service x average final compensation x benefit multiplier rate.**
  - A member's actual annual benefit may be reduced based on their survivorship option elections.
  - Most retirees and beneficiaries in VT receive automatic annual cost of living adjustments (COLAs) tied to inflation/CPI, with limits.

Key Findings – FY 2022

- **Funded ratios for both pension systems improved, and Act 114 resulted in ADEC savings in FY 2024 relative to baseline.**
  - **ADEC** = Actuarially Determined Employer Contribution. ADEC reflects the employer cost to fully fund the normal cost plus an amortization payment on the unfunded liability.
- **Act 114 was the reason that the pension systems gained ground in FY 2022. Absent Act 114, the unfunded liabilities would have increased.**
- **After a *very* strong year in FY 2021, pension investments saw negative returns in FY 2022.**
- **Inflation caused actuarial losses due to higher than assumed salary growth and COLAs.**
- **Benefits of Act 114 (2022):**
  - $200 million one-time payment ($75 million VSERS/$125 million VSTRS) was invested in June and offset some of the losses from inflation and investments.
  - Future ADEC "plus" payments are anticipated to begin in FY 2024 and last until each system is 90% funded (expected in FY 2033 for VSERS and FY 2035 for VSTRS). These "plus" payments will flatten the growth in employer amortization costs in future years.
  - Changes to employee contribution rates reduced employer normal costs and will continue to do so as higher contribution rates are phased in over the next few years.
  - COLA benefit changes (along with benefits of $200M one-time) lowered FY 2024 pension costs below what they would have been without Act 114, and more than offset the additional $18M cost of "plus" payments that year.

Change in Assets and Liabilities

- **Unfunded Liabilities decreased by $144 million and funded ratios improved!**
  - VSERS unfunded liability decreased by $26.0 million and funded ratio improved from 67.6% to 69.9%.
  - VSTRS unfunded liability decreased by $117.9 million and funded ratio improved from 52.9% to 57.3%.
- **The *market value of assets* declined by $232 million. However, the *actuarial value of assets* grew because deferred investment gains from FY 2021 were "smoothed" into the funding calculations. But now, deferred losses exist that will be a drag on the systems as those losses are recognized in future years.**
  - Investment gains and losses are recognized, or "smoothed," into the actuarial value of assets over a 5-year period to reduce the impact of year-to-year market volatility on pension funding requirements. The actuarial value of assets is used to calculate the ADEC.
  - When AVA > MVA, deferred losses are present. When AVA<MVA, deferred gains are present.

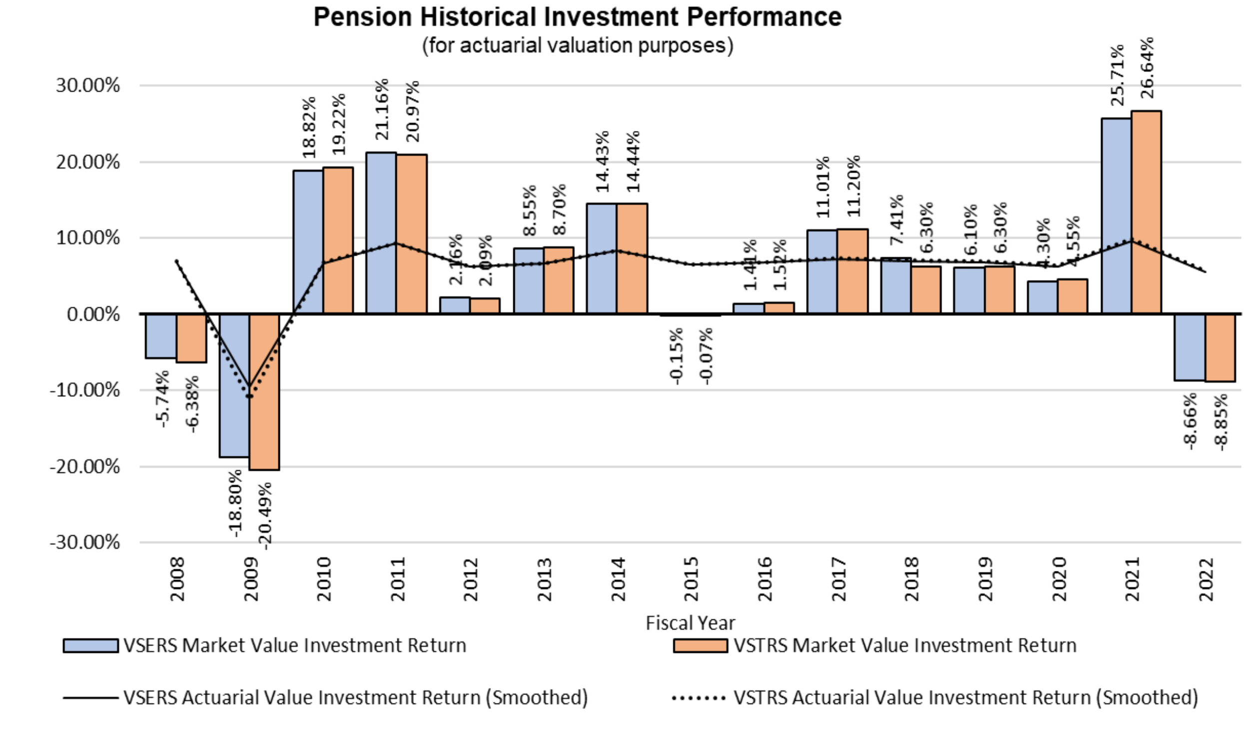
FY 2022 Summary of Key Pension Valuation Metrics

Line	$ millions	State Employees (VSERS)			Teachers (VSTRS)		
		FY 2021	FY 2022	Change	FY 2021	FY 2022	Change
1	Accrued Liability	3,280.87	3,444.13	163.27	4,142.01	4,289.80	147.78
2	Market Value of Assets	2,425.22	2,276.65	(148.58)	2,422.79	2,339.41	(83.38)
3	Actuarial Value of Assets	2,216.50	2,405.80	189.30	2,191.65	2,457.37	265.72
4	AVA as % of MVA (3÷2)	91.39%	105.67%		90.50%	105.04%	
5	Unfunded Liability (AVA) (1-3)	1,064.37	1,038.34	(26.03)	1,950.36	1,832.43	(117.94)
6	Funded Ratio (3÷1)	67.56%	69.85%	2.29%	52.91%	57.28%	4.37%
	Total Covered Active Payroll	552.32	576.95	24.64	657.93	701.57	43.63
	% annual growth			4.46%			6.63%

Source: JFO from FY2022 VSERS and VSTRS Actuarial Valuations

Investment Performance

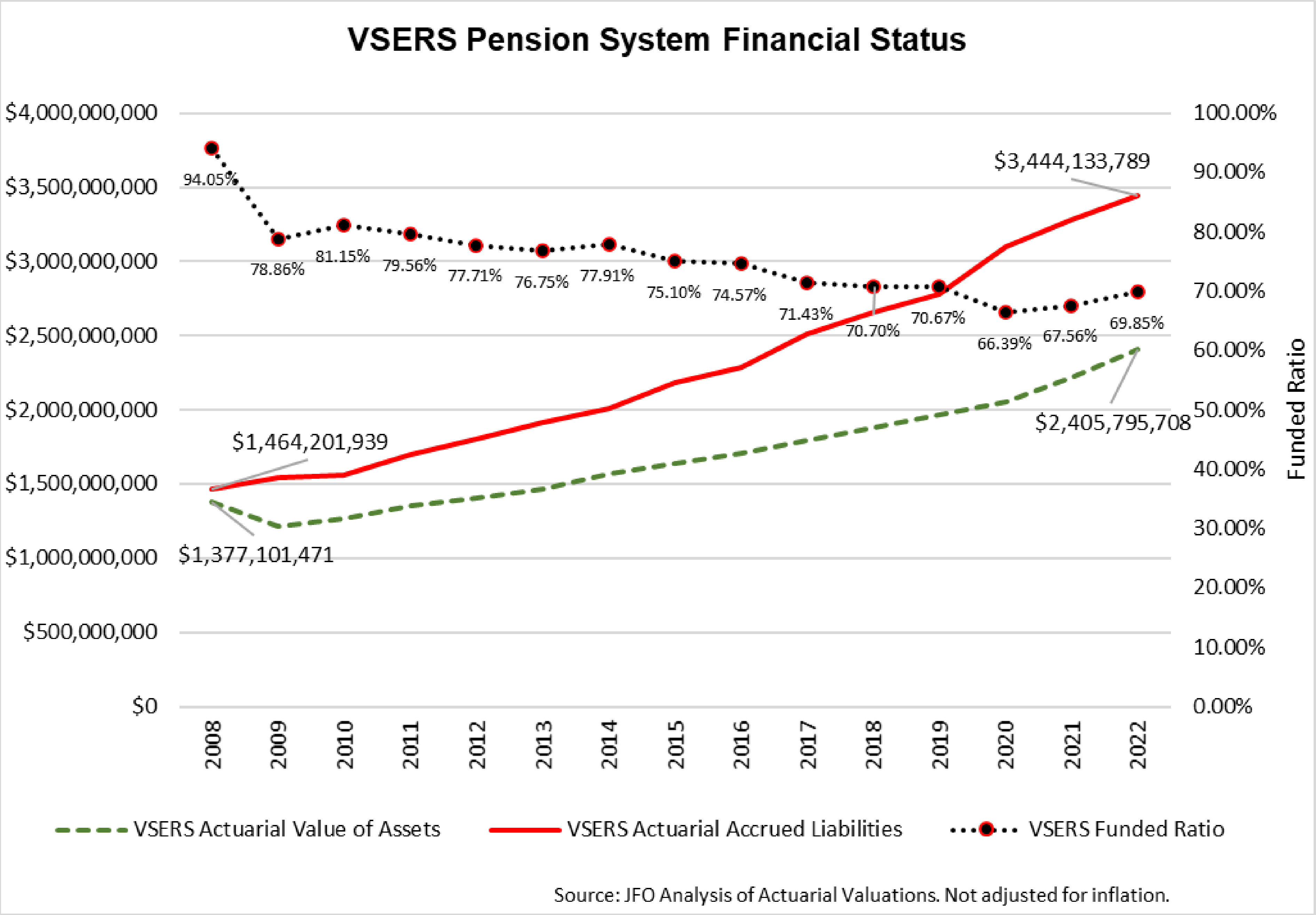
- **Both systems had negative investment returns in FY 2022 due to global market conditions:**
  - VSERS lost $212.8 million (-8.66%)
  - VSTRS lost $220.4 million (-8.85%)
- **Market investment losses are "smoothed" into the actual value over 5 years. Last year, the systems had a combined deferred gain of $440M. Now, they have combined deferred *losses* of -$247M.**
- **When all else is equal, deferred investment losses are expected to result in a lower funded ratio in future years as those losses are smoothed in – unless they are offset by future investment (or other) gains.**
- **The extent to which investments (as reflected in the actuarial value of assets) exceeds or falls short of the assumed rate of investment return (currently 7.0%) determines whether investments cause an actuarial "gain" or "loss" that decreases or increases the unfunded liability.**
  - The FY2021 actuarial investment performance exceeded 7%, causing gains that reduced the unfunded liability.
  - The FY2022 actuarial investment performance fell short of 7%, causing losses that increased the unfunded liability.
  - Positive investment growth can still cause "losses" if investments grow at a rate less than assumed!



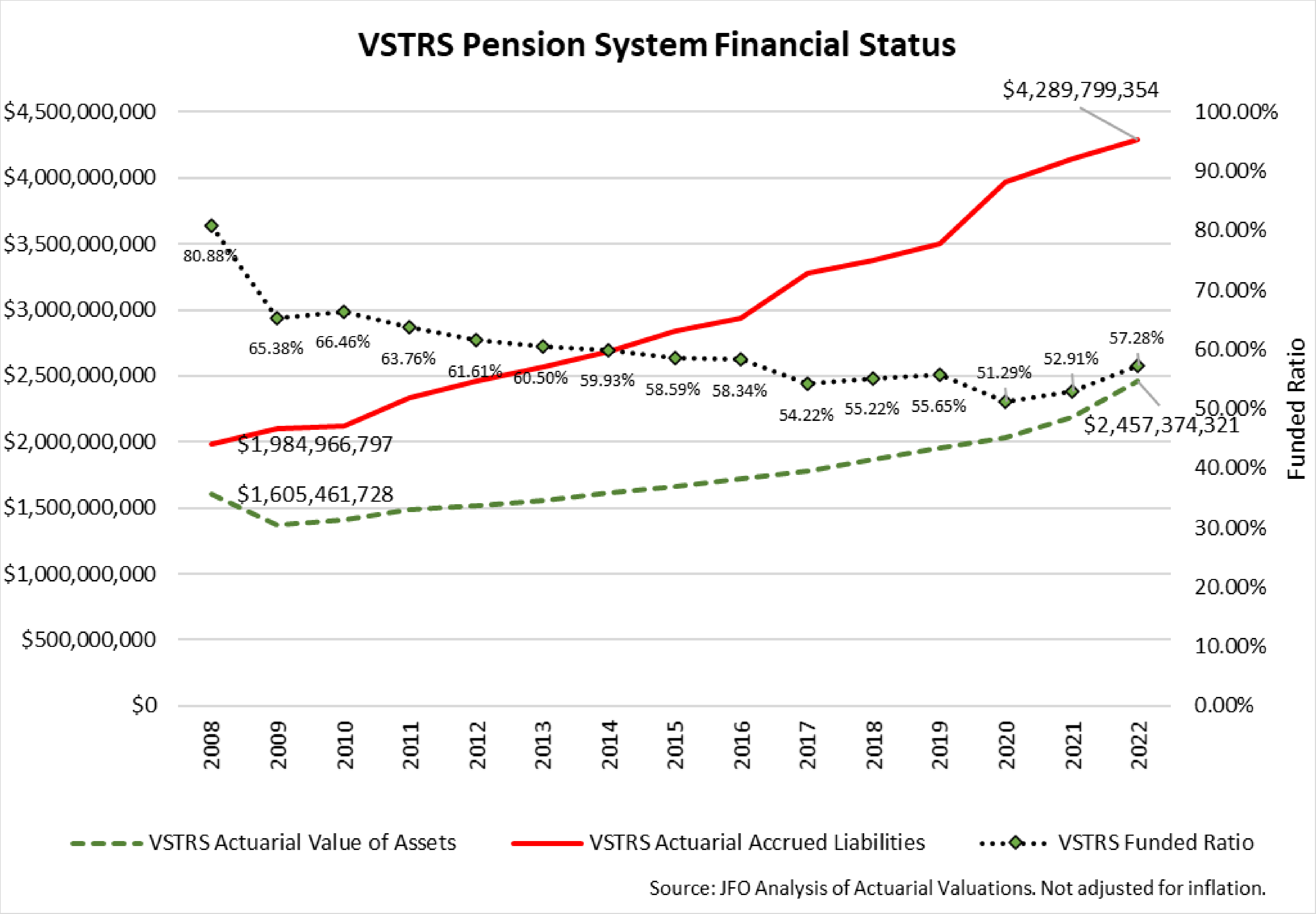
Source: VSERS and VSTRS Actuarial Valuations.

Historical Investment Performance (FY2022)				
	State Employees (VSERS)		Teachers (VSTRS)	
	Actuarial Value	Market Value	Actuarial Value	Market Value
Most Recent 5-Year Average Return	7.00%	6.17%	7.15%	6.35%
Most Recent 10-Year Average Return	7.04%	6.45%	7.14%	6.62%
Most Recent 15-Year Average Return	6.15%	5.38%	6.01%	5.19%
Most Recent 20-Year Average Return	6.44%	6.51%	6.48%	6.55%

Source: VSERS and VSTRS Actuarial Valuations.



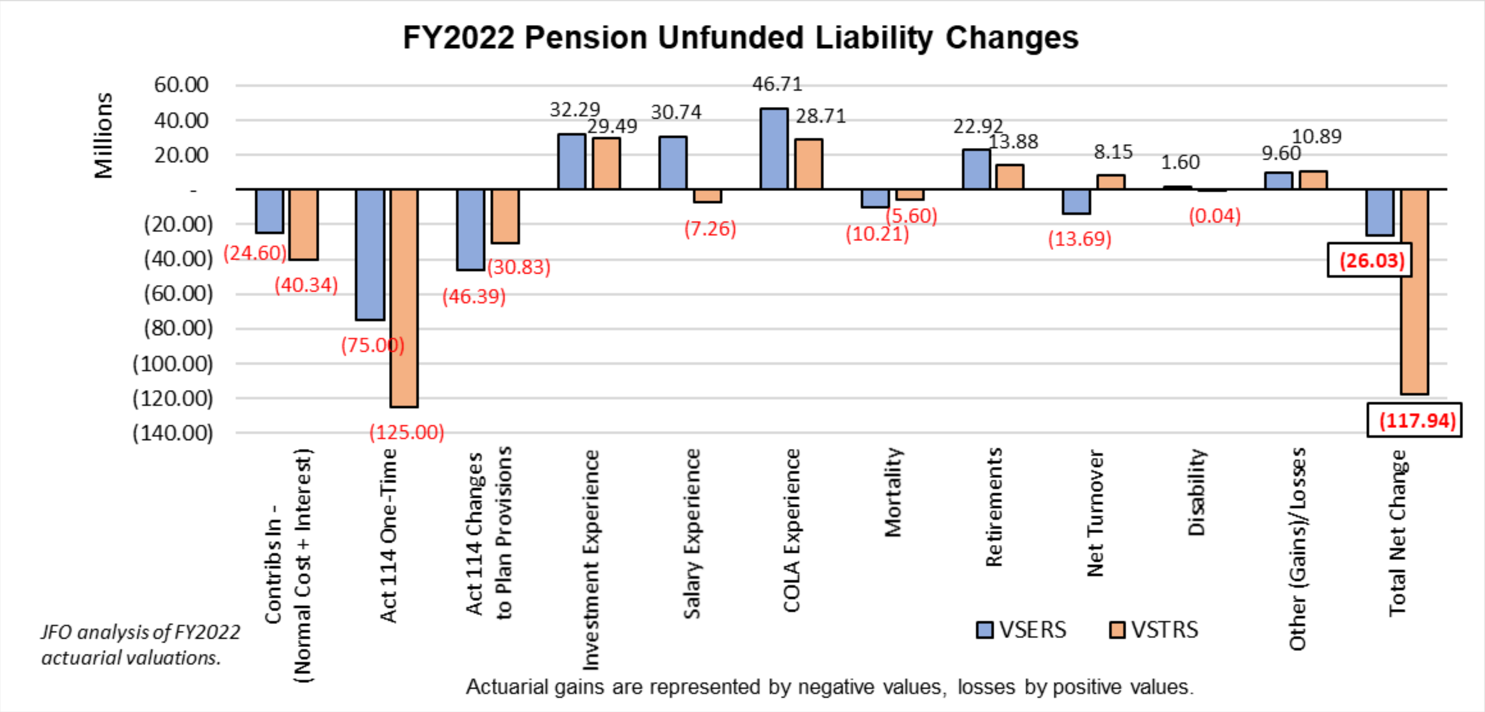
VSERS Pension System Financial Status
$4,000,000,000
$3,500,000,000
$3,000,000,000
$2,500,000,000
$2,000,000,000
$1,500,000,000
$1,000,000,000
$500,000,000
$0
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Funded Ratio
94.05%
78.86%
81.15%
79.56%
77.71%
76.75%
77.91%
75.10%
74.57%
71.43%
70.70%
70.67%
66.39%
67.56%
69.85%
$3,444,133,789
$2,405,795,708
$1,464,201,939
$1,377,101,471
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
VSERS Actuarial Value of Assets
VSERS Actuarial Accrued Liabilities
VSERS Funded Ratio
Source: JFO Analysis of Actuarial Valuations. Not adjusted for inflation.



VSTRS Pension System Financial Status
$4,289,799,354
$4,500,000,000
$4,000,000,000
$3,500,000,000
$3,000,000,000
$2,500,000,000
$2,000,000,000
$1,500,000,000
$1,000,000,000
$500,000,000
$0
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Funded Ratio
80.88%
65.38%
66.46%
63.76%
61.61%
60.50%
59.93%
58.59%
58.34%
54.22%
55.22%
55.65%
51.29%
52.91%
57.28%
$1,984,966,797
$1,605,461,728
$2,457,374,321
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
VSTRS Actuarial Value of Assets
VSTRS Actuarial Accrued Liabilities
VSTRS Funded Ratio
Source: JFO Analysis of Actuarial Valuations. Not adjusted for inflation.

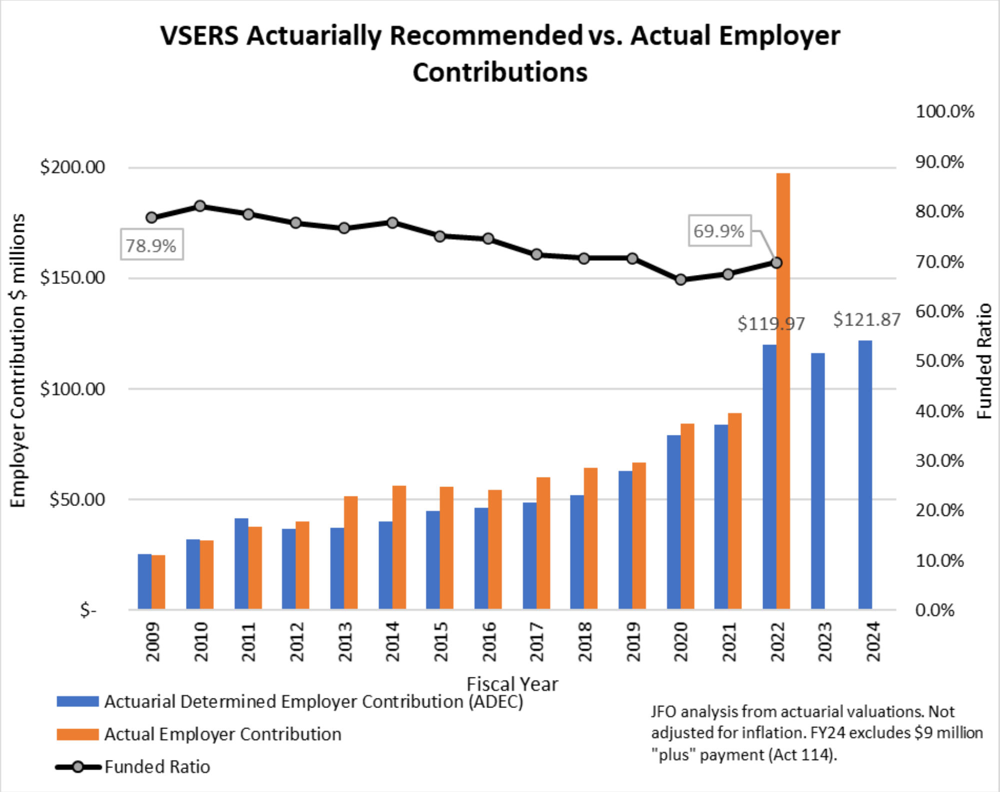
Change to Unfunded Liabilities

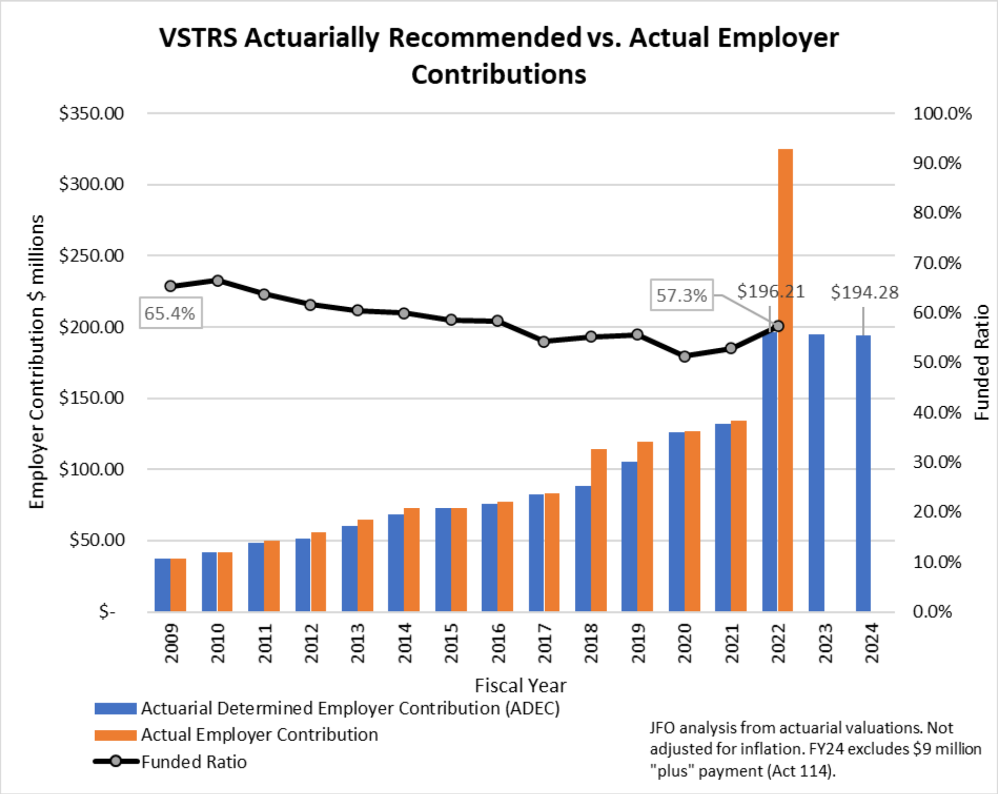
- **VSERS and VSTRS both saw unfunded liabilities decrease due to the plan changes and $200M one-time contributions in Act 114.**
  - **Gains:** One-time contributions (Act 114), changes to plan COLA provisions (Act 114), mortality
  - **Losses:** Inflation increasing COLAs and VSERS salaries, investment performance, retirement behaviors
- **Good news:** Positive amortization now occurring in both systems – payments in are exceeding the accruing normal cost and interest even when excluding the 1x Act 114 contributions. Progress toward paying down principal balance will accelerate in future years.
- All factors net out to progress toward lowering the unfunded liabilities:
  - VSERS: +$26.0 million impact
  - VSTRS: +$117.9 million impact



ADEC

- **FY2022 actual employer contributions exceeded the actuarial recommendation ADEC again (VSERS +$77.6M, VSTRS +$129.0M)**
  - ADEC = Actuarially Determined Employer Contribution. The amount needed to fully fund the normal cost plus the unfunded liability amortization payment for the year.
- **Act 114 responsible for $75 million to VSERS and $125 million to VSTRS – one-time appropriations.**
- **Extra ADEC payments accelerate pay-down of the unfunded liabilities, which saves interest costs and reduces future ADEC costs on a two-year lag (supplemental payments made in FY 2022 lower the ADEC beginning in FY 2024).**
- **FY2024 ADECs are close to level with FY2022.**

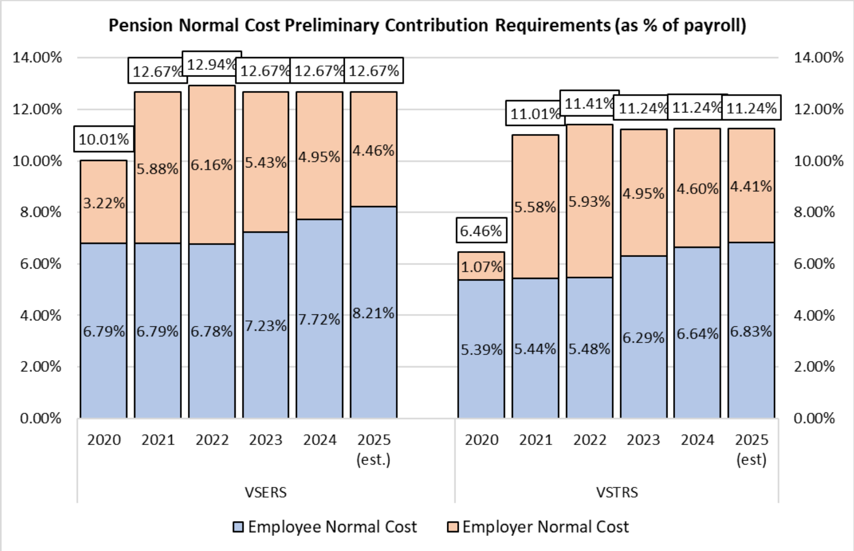




Charts reflect total funding requirements across all funds.

Impact of Act 114

- **Act 114 reduced the unfunded liabilities by $144 million during FY 2022.**
- **If all else was held constant except for the impacts of Act 114, the unfunded liabilities would have increased by approx. $133 million during FY2022:**
  - VSERS: +$95.4 million, to $1,159,730,380
  - VSTRS: +$37.8 million, to $1,988,252,474
- **Act 114 also reduced the employer normal cost (as % of payroll):**
  - Higher employee contributions begin to phase in FY2023, paying larger share of total normal cost.
  - Changes to benefits also reduced total normal cost slightly.



FY 2022 Pension Unfunded Liabilities - Excluding Act 114 Impacts

	State Employees (VSERS)		Teachers (VSTRS)	
	FY 2022 Actual	FY 2022 If No Act 114	FY 2022 Actual	FY 2022 If No Act 114
Starting Unfunded Liability	$ 1,064,368,199	$ 1,064,368,199	$ 1,950,363,905	$ 1,950,363,905
Expected Increases/Reductions:	$ (99,602,769)	$ (24,602,769)	$ (165,340,818)	$ (40,340,818)
Normal Cost	*$ 72,372,072*	*$ 72,372,072*	*$ 76,077,245*	*$ 76,077,245*
Interest	*$ 71,065,410*	*$ 71,065,410*	*$ 128,890,095*	*$ 128,890,095*
Contributions In	*$ (168,040,251)*	*$ (168,040,251)*	*$ (245,308,158)*	*$ (245,308,158)*
Act 114 $200M One-Time	*$ (75,000,000)*	*$ -*	*$ (125,000,000)*	*$ -*
Salary Experience	$ 30,740,425	$ 30,740,425	$ (7,256,908)	$ (7,256,908)
COLA	$ 46,706,996	$ 46,706,996	$ 28,712,344	$ 28,712,344
Net Turnover	$ (13,686,201)	$ (13,686,201)	$ 8,153,540	$ 8,153,540
Investments	$ 32,287,646	$ 32,287,646	$ 29,490,344	$ 29,490,344
Mortality	$ (10,206,668)	$ (10,206,668)	$ (5,596,133)	$ (5,596,133)
Retirements	$ 22,922,279	$ 22,922,279	$ 13,833,165	$ 13,883,165
Disability	$ 1,598,758	$ 1,598,758	$ (44,922)	$ (44,922)
Other gain/loss	$ 9,645,414	$ 9,645,414	$ 11,032,228	$ 11,032,228
Administrative gain/loss	$ (43,700)	$ (43,700)	$ (144,271)	$ (144,271)
Act 114 Changes to Plan Provisions	$ (46,392,299)	$ -	$ (30,827,441)	$ -
Ending Unfunded Liability	**$ 1,038,338,080**	**$ 1,159,730,380**	**$ 1,832,375,033**	**$ 1,988,252,474**
Change in Unfunded Liability	**$ (26,030,119)**	**$ 95,362,181**	**$ (117,988,872)**	**$ 37,888,569**
JFO preliminary estimate subject to actuarial revision. Positive values represent factors that increase the unfunded liability (actuarial losses), and negative values represent factors that decrease the unfunded liability (actuarial gains).				

JFO preliminary estimates hold impact of investments constant in both scenarios for simplicity. The Act 114 one-time contributions would be expected to have a minor impact on this factor because they were invested in June 2022, near the end of the fiscal year, and therefore represent a very small share of the average value of assets for the year.

Impact of Act 114

- **The FY 2023 ADECs were originally based on the FY 2021 valuations, and were revised downward to reflect Act 114's changes to employee contributions and plan design.**
  - VSERS: -$9.9 million of ADEC savings
  - VSTRS: -$10.2 million of ADEC savings
- **The FY 2022 valuations reflect Act 114's changes and the year's plan experience – informs the FY 2024 ADEC.**
- **If all else was held constant in FY 2022 *except for the impacts of Act 114*, the unfunded liabilities would have increased by approx. $133 million during FY2022 and the employer normal cost would be expected to remain approximately 6.16% for VSERS and 5.93% for VSTRS.**
- **JFO preliminary estimates:**
  - Apply the pre-Act 114 normal cost payroll rates to the FY2022 actual (and expected future) payroll to isolate any impacts from plan changes or higher employee contribution rates. *(although the normal cost rate could have otherwise fluctuated a bit due to changes in the active membership – any such changes are not factored into this estimate).*
  - Estimate the amortization payments required to pay off the revised unfunded liability balances, isolating any impacts from plan changes or one-time appropriations.
    - 7% annual interest rate
    - Amortization payment presumed to be made middle of fiscal year.
    - Payments increase in 3% annual increments
    - Estimates are preliminary and subject to change from more precise actuarial modeling, future plan experience, changes to actuarial assumptions, and other factors.
- **In FY2024, total employer pension costs are $25.2 million less than they likely would have been without Act 114 , net of the additional "plus" payments. The additional cost of the "plus" is more than paid for.**

JFO Preliminary Estimate of Act 114 Impacts on Employer Pension Costs

		FY2022	FY2023		FY 2024	
	$ millions	Actual	Original (from FY2021 Valuation)	Revised Post-Act 114	JFO Estimate from FY2022 Valuation - If No Act 114	Actual Post-Act 114, Including "Plus" Payments
State Employees Pension (VSERS)						
	Normal Cost	35.2	36.9	31.3	38.5	31.0
All Funds	Unfunded Liability Payment	84.8	89.1	84.8	102.0	90.9
	Total ADEC	120.0	125.9	116.0	140.5	121.9
	Act 114 Change			*-9.9*		*-18.6*
	Act 114					
GF	One-Time Appropriation	75.0				
	Plus Payment	0.0	0.0	0.0	0.0	9.0
	Total Employer Pension Cost	**195.0**	**125.9**	**116.0**	**140.5**	**130.9**
	Act 114 Change			*-9.9*		*-9.6*
Teachers Pension (VSTRS)						
EF	Normal Cost	38.9	42.1	34.8	44.9	34.8
GF	Unfunded Liability Payment	157.3	163.0	160.1	173.9	159.5
	Total ADEC	196.2	205.2	195.0	218.8	194.3
	Act 114 Change			*-10.2*		*-24.5*
	Act 114					
GF	One-Time Appropriation	125.0	0.0	0.0	0.0	0.0
	Plus Payment	0.0	0.0	0.0	0.0	9.0
	Act 114 Change					
	Total Employer Pension Cost	**321.2**	**205.2**	**195.0**	**218.8**	**203.3**
				-10.2		*-15.5*

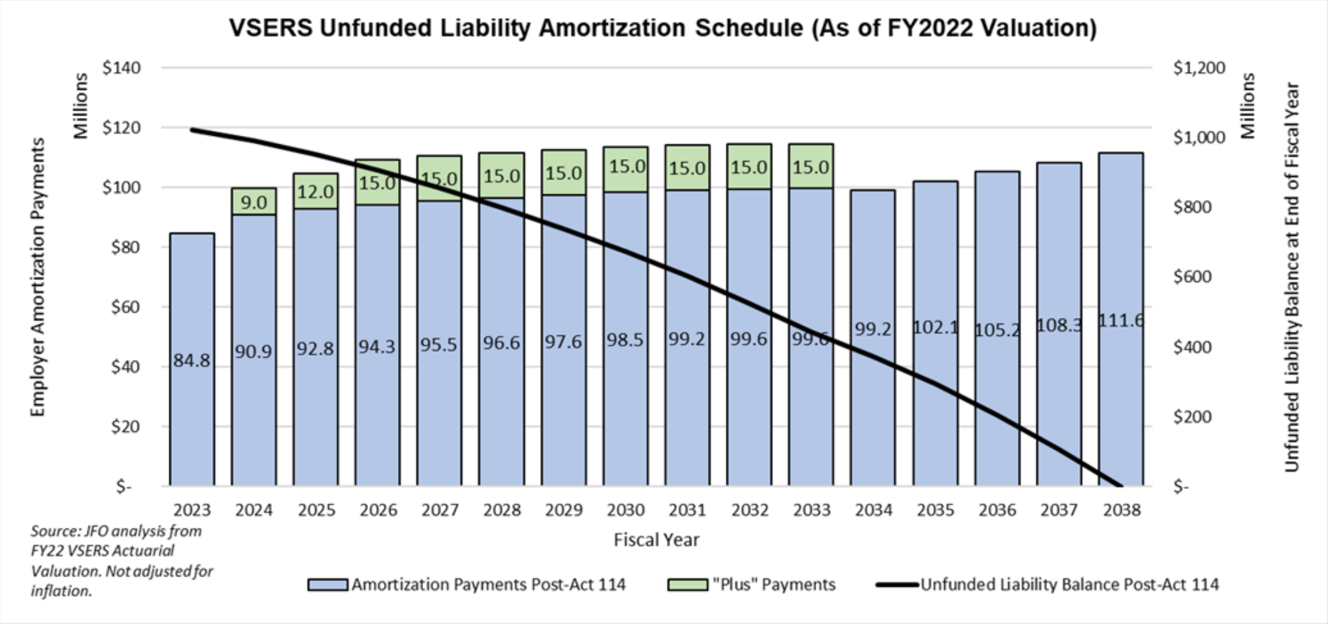
Cost estimates are from actuarial reports and represent total resource needs across all funds, including the contributions paid by local employers. The cost impact to funds of state government, therefore, would be slightly less than the numbers reflected above. The FY24 JFO estimates are preliminary and based on projections from the FY21 and FY22 actuarial valuations, and may be subject to revision by further actuarial analysis.

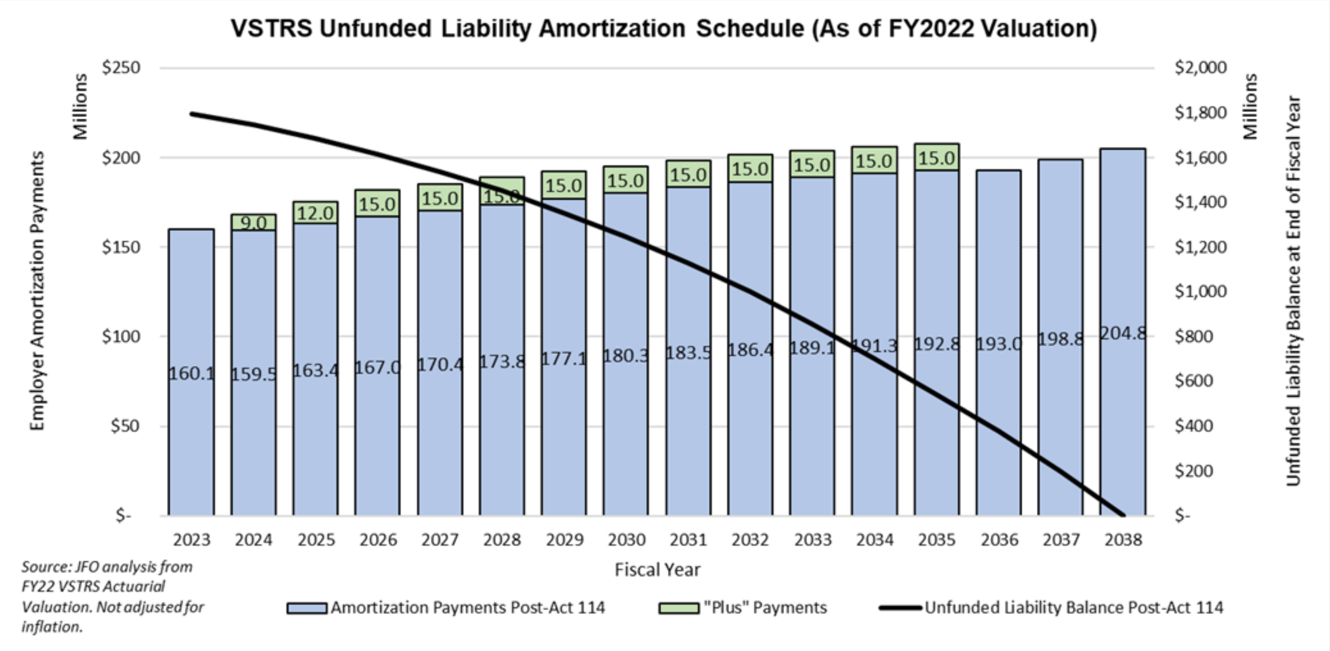
Note: JFO estimate is preliminary and subject to actuarial revision. Estimate is based on applying the same 6.16% employer normal cost rate calculated in the FY21 valuation to the actual and projected payroll as reflected in the FY22 valuations. Estimate subtracts Act 114 one-time payments ($75 million) and impacts from changes to plan provisions ($46.4 million) from the unfunded liability balances reported at the end of FY22, then recalculates an approximate payment schedule to amortize the revised balance ($1.160 billion) with 7 percent interest with payments increasing in 3% annual increments.

Amortization Schedule

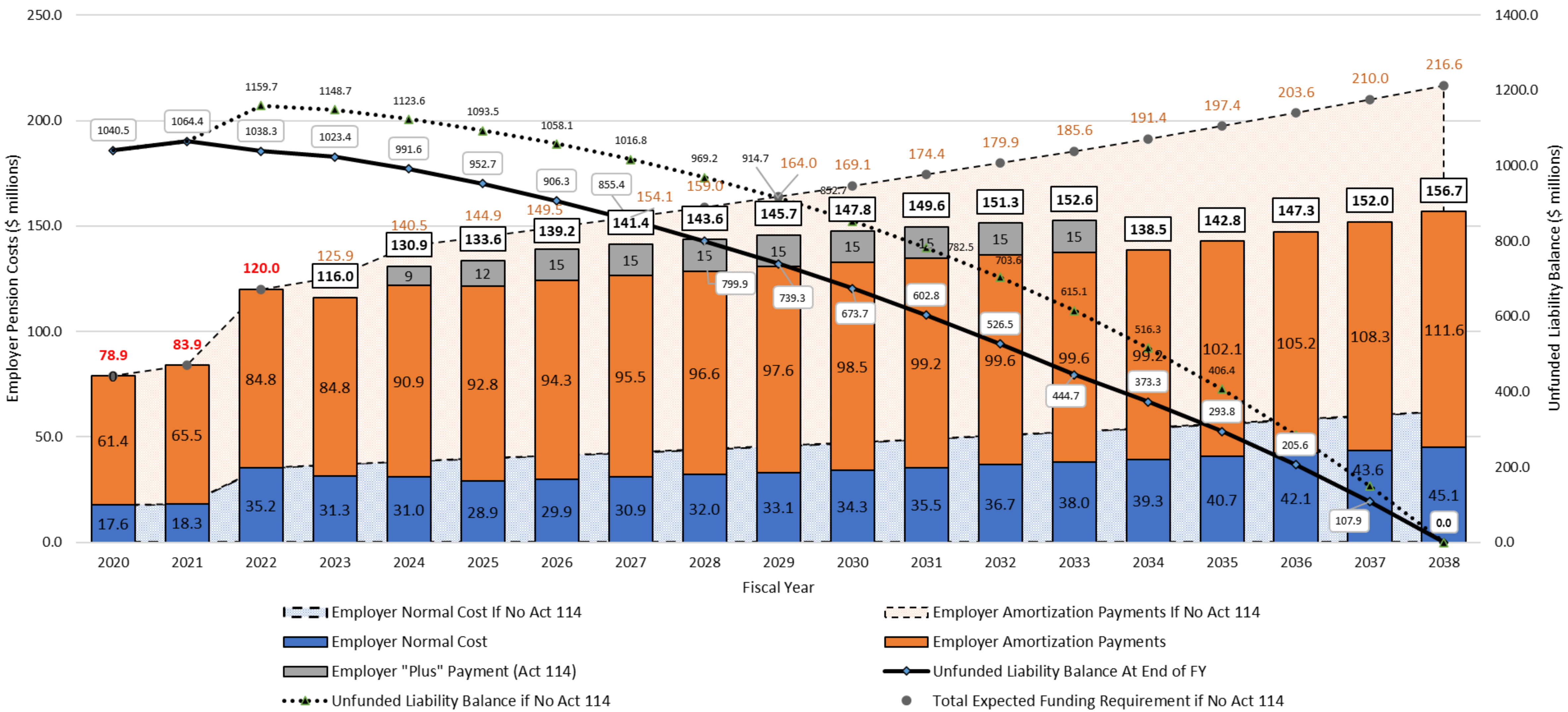
- **Act 114 "plus" payments modeled to begin in FY2024 and last until system reaches 90% funded (FY2033 for VSERS, FY2035 for VSTRS). These payments are in addition to the actuarially determined contribution (ADEC).**
- **"Plus" payments accelerate the pay-down of the unfunded liability balance, resulting in lower interest costs and lower future amortization payments.**
  - Pay more sooner in order to pay less overall and in the future.
  - The impact of paying above and beyond the actuarially determined amortization payment lowers future amortization payments beginning two years in the future.
  - The Act 114 $200 million one-time appropriations made in FY 2022 resulted in relative ADEC savings beginning in FY 2024.
- **"Plus" payments flatten growth in future amortization costs, resulting in significant savings in out years**

Note: The amortization schedule is revised annually to reflect each year's actuarial gains and losses and revised unfunded liability balance. Data as of FY 2022.



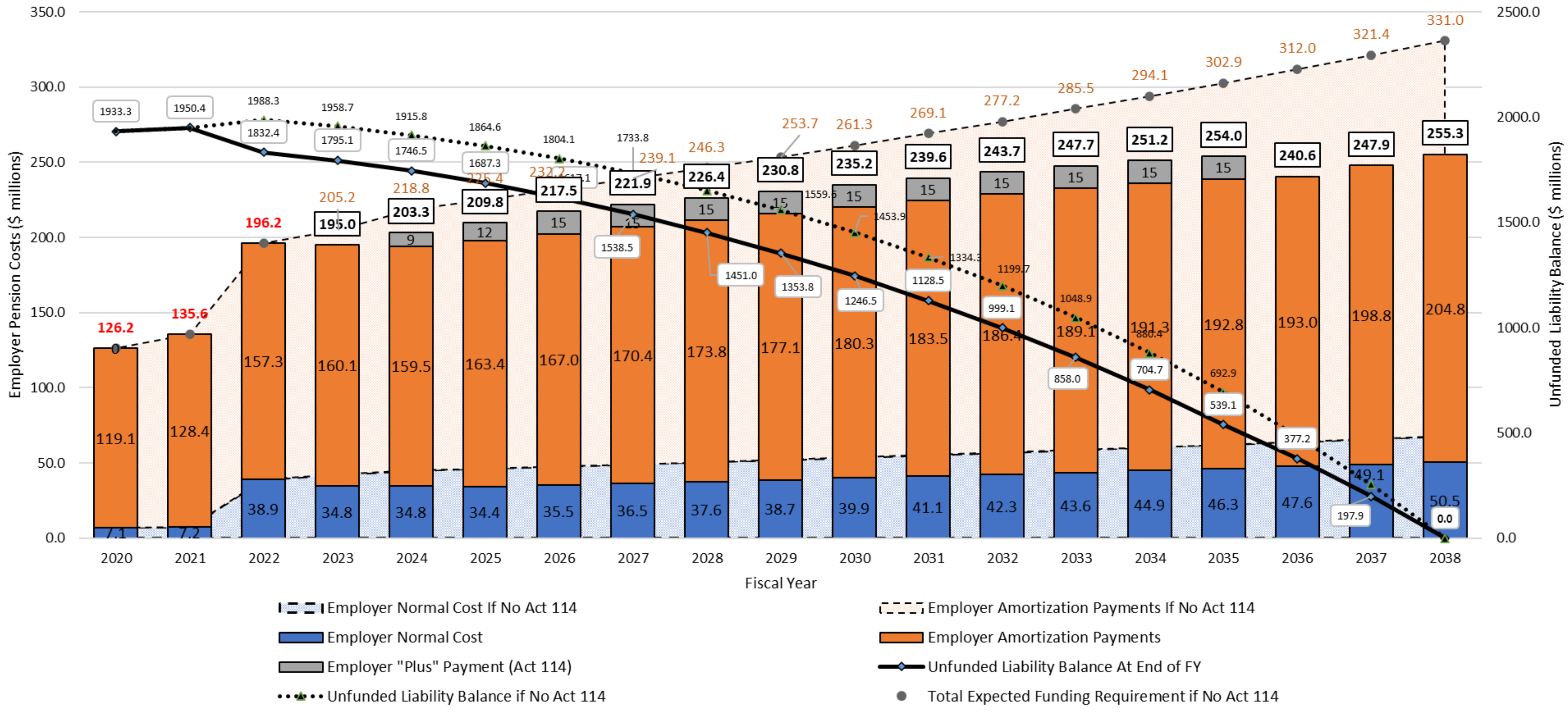


VSERS - Impacts of Act 114 on Expected Future Pension Costs



Source: JFO using data from actuarial valuations. Estimates of impacts if No Act 114 are preliminary and extrapolate the FY2021 normal cost contribution rate against projected future payroll as of FY2022 to isolate impacts of higher member contributions and changes to plan provisions. Unfunded liability projections based on a hypothetical amortization schedule assuming 7.0% interest, contributions paid mid-year, and payments increasing by 3%. A FY 2022 year-end unfunded liability balance of $1.160 billion was amortized, reflecting the plan experience during FY2022 without Act 114's one-time contributions or changes to plan design. Estimates are subject to change with further actuarial revision, changes to assumptions, and future plan experience.

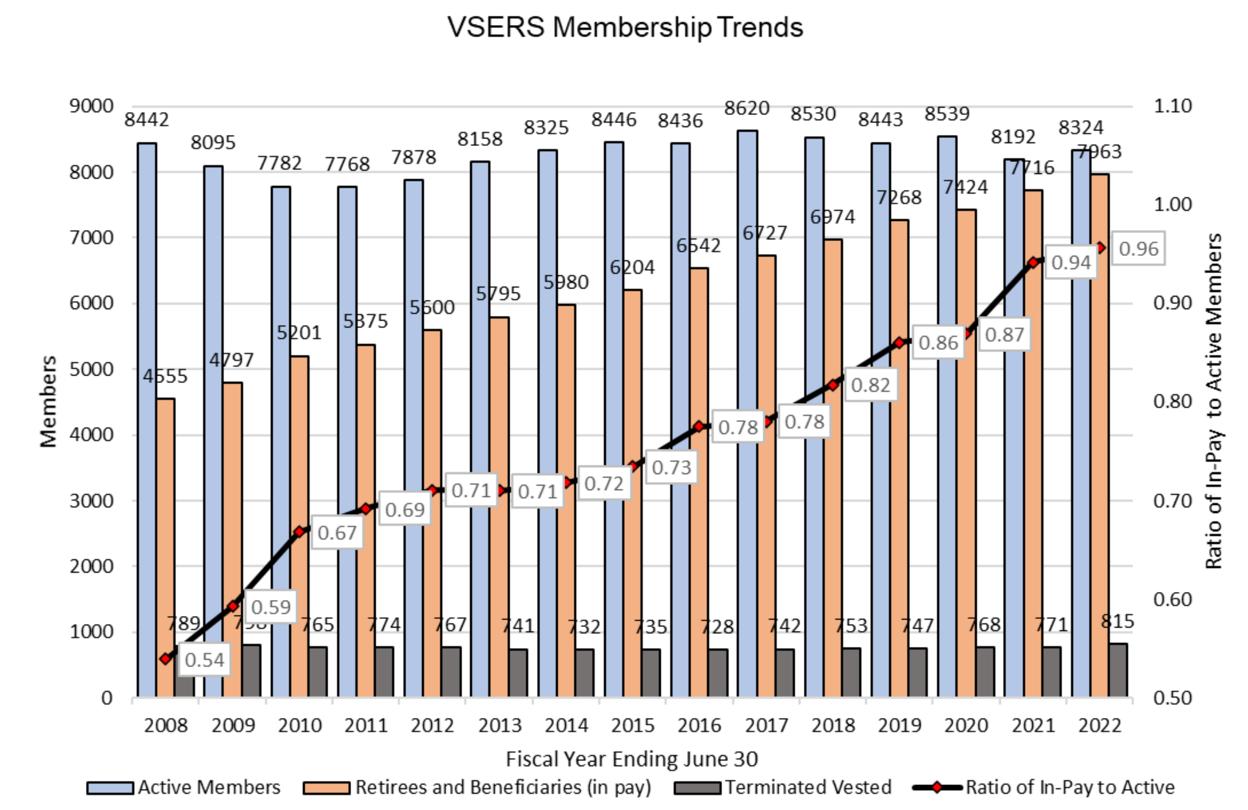
VSTRS - Impacts of Act 114 on Expected Future Pension Costs



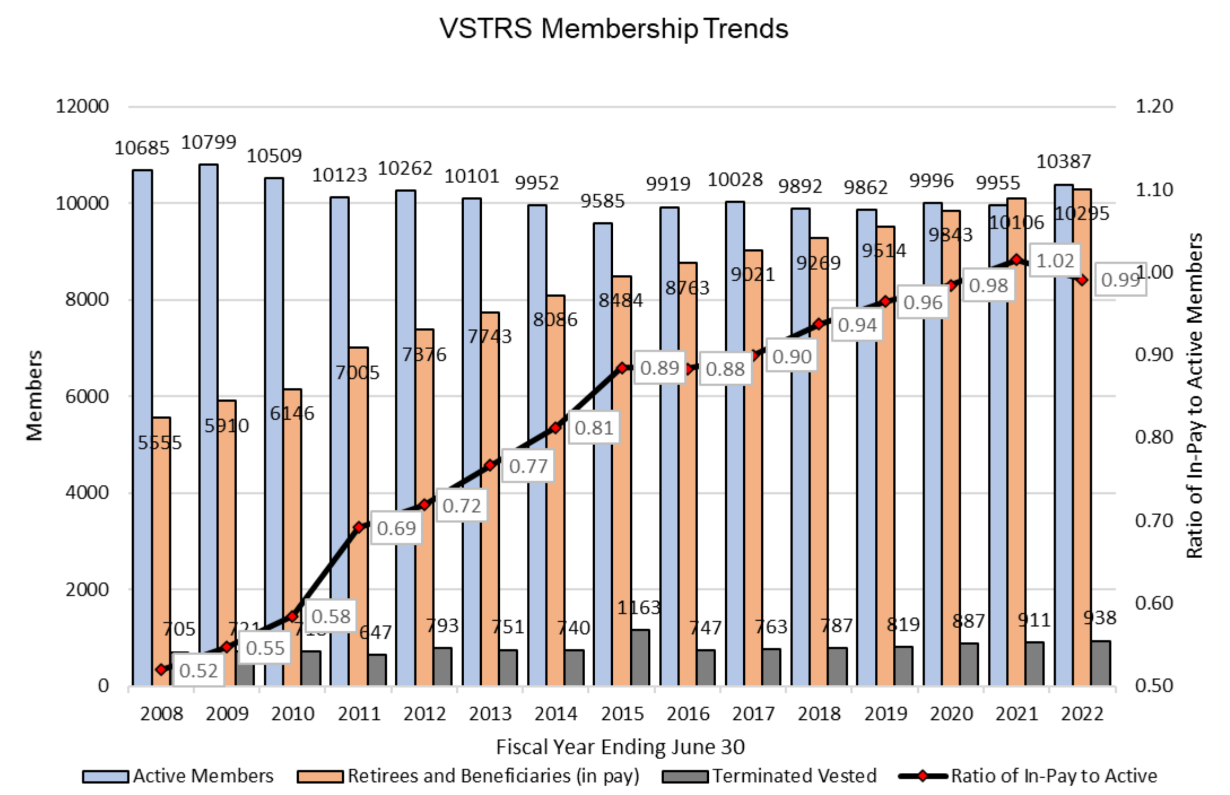
Source: JFO using data from actuarial valuations. Estimates of impacts if No Act 114 are preliminary and extrapolate the FY2021 normal cost contribution rate against projected future payroll as of FY2022 to isolate impacts of higher member contributions and changes to plan provisions. Unfunded liability projections based on a hypothetical amortization schedule assuming 7.0% interest, contributions paid mid-year, and payments increasing by 3%. A FY 2022 year-end unfunded liability balance of $1.988 billion was amortized, reflecting the plan experience during FY2022 without Act 114's one-time contributions or changes to plan design. Estimates are subject to change with further actuarial revision, changes to assumptions, and future plan experience.

Membership Trends

- Both systems continued to “mature” – the number of retirees/beneficiaries have been increasing faster than the rate of active members.
- Both systems increased the number of active members and annuitants (retirees and beneficiaries in pay status) year-over-year.



JFO analysis of data from actuarial valuations.



JFO analysis of data from actuarial valuations.

Average Annual Benefit for All Retirees/Beneficiaries (FY2022):

VSERS: $22,019

VSTRS: $22,868