

VRS Overview

Presented to the Joint Legislative Audit
and Review Commission

July 6, 2021

Presenters:

O'Kelly E. McWilliams III, Esq., Chair, VRS Board of Trustees

Ronald D. Schmitz, Chief Investment Officer

Patricia S. Bishop, Director



Agenda

VRS Overview

O'Kelly E. McWilliams III, Esq.
Chair, VRS Board of Trustees

Investments Overview

Ronald D. Schmitz
Chief Investment Officer

Administration Overview

Patricia S. Bishop
Director

VRS Overview



Board Members



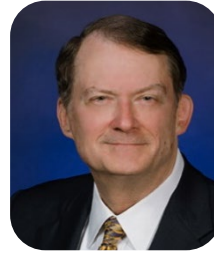
O'Kelly E. McWilliams III, Chair
Mintz



Joseph W. Montgomery, Vice Chair
The Optimal Service Group, Wells Fargo Advisors



The Hon. J. Brandon Bell II, CRPC
Brandon Bell Financial Partners



John M. Bennett
VCU (Retired)



Michael P. Disharoon
Principal, Palladium Registered Investment Advisors



William A. Garrett
Chief, Manassas Fire
and Rescue Department



Susan T. Gooden, Ph.D.
Dean, L. Douglas Wilder School
of Government and Public Affairs, VCU



W. Brett Hayes
Wells Fargo Advisors
Financial Network



Troilen Gainey Seward, Ed.S.
Dinwiddie County
Public Schools (Retired)

772,004

active and retired members

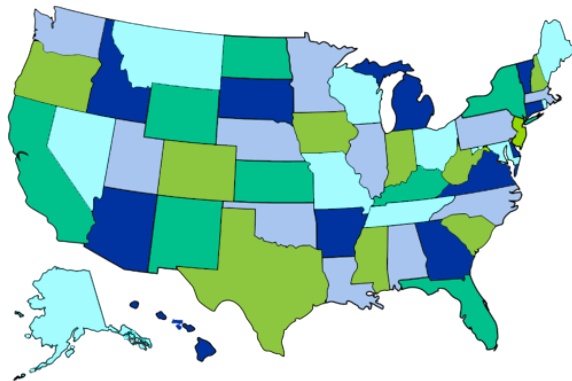
As of March 31, 2021



18th

largest

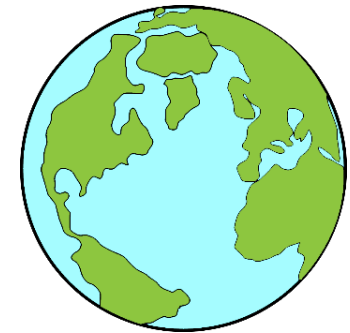
public or private pension system
in the United States*



41st

largest

public or private pension system
in the world*



* As ranked by *Pensions & Investments* in 2020

Serving Those Who Serve Others



Employers



Members

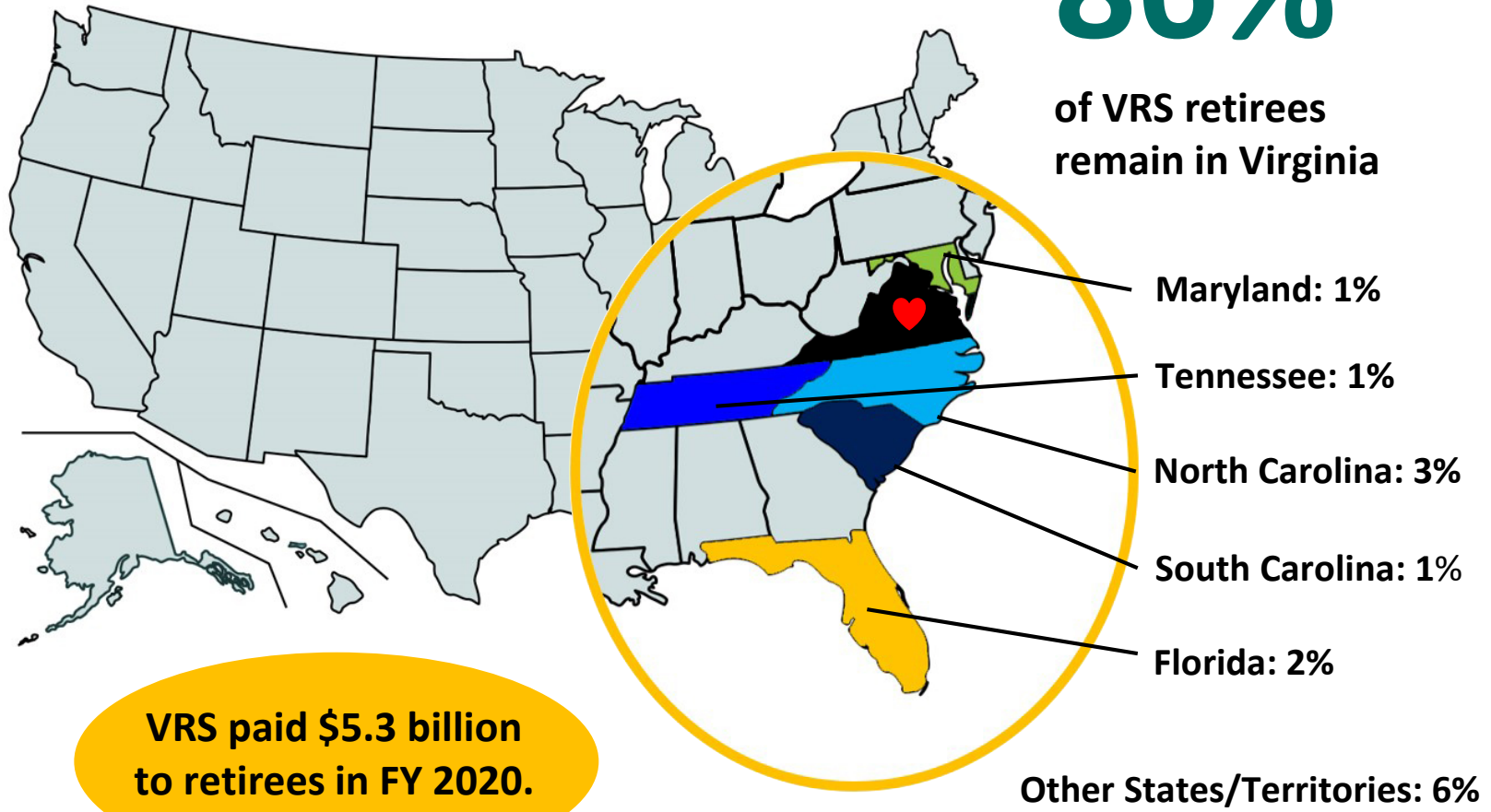


Retirees

Where VRS Retirees Live

86%

of VRS retirees
remain in Virginia



Employers

Members

Retirees

Investments

Administration



Virginia
Retirement
System

Investments



- **Performance**
 - Long-term results
 - Second quarter update

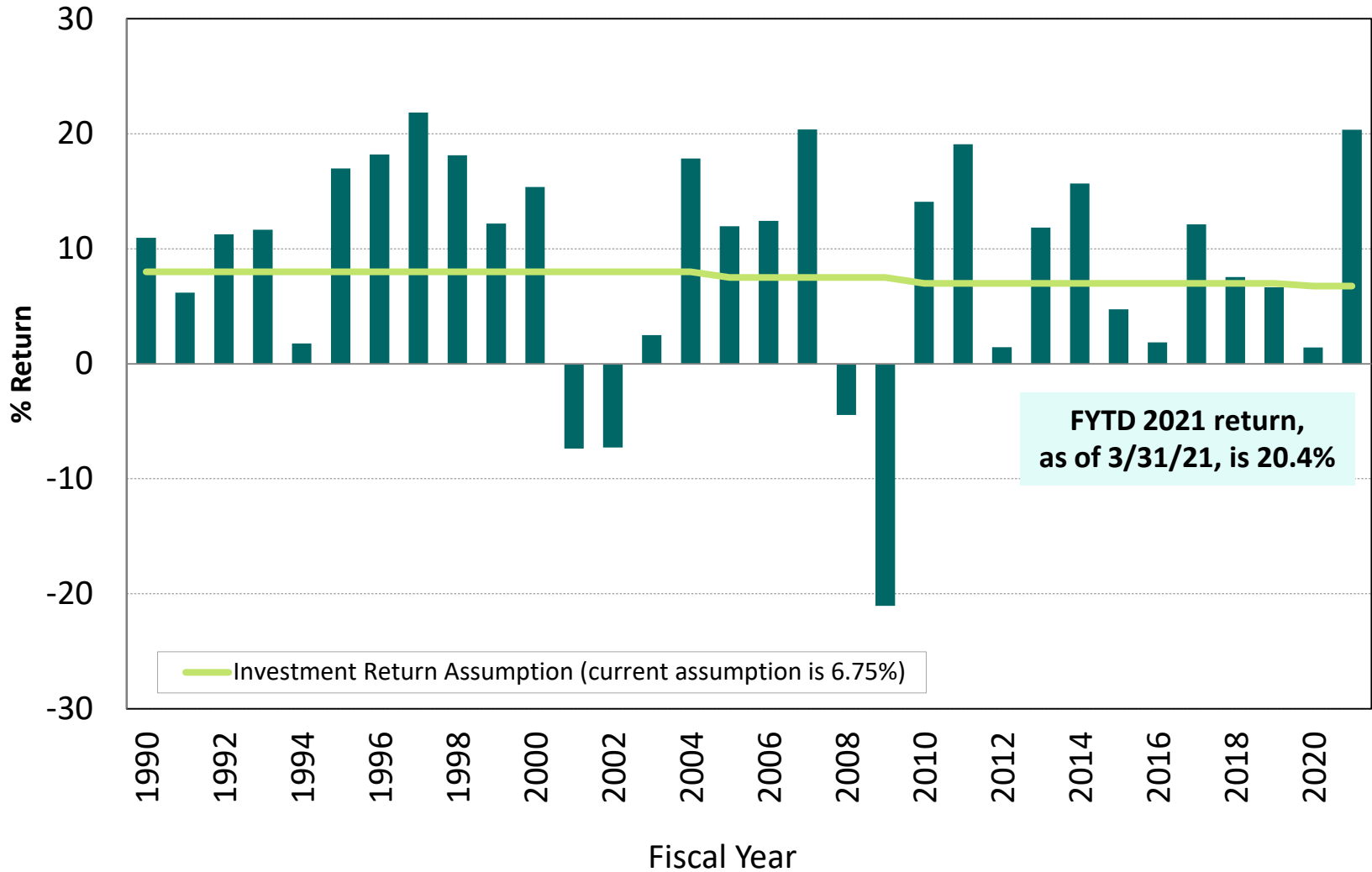
- **Asset Allocation**
 - As of 3/31/21
 - Importance of diversification

- **Board Policy Changes**

- **Staff Value Add**
 - Internal management
 - Cost-effective implementation

- **Market & Economy: A Look Ahead**

VRS Fiscal Year Returns



Total Fund Performance* as of March 31, 2021



	VRS Return	Benchmark	
1-year	28.3	27.5	+
3-year	9.5	9.3	+
5-year	9.8	9.6	+
10-year	8.3	7.9	+
15-year	6.8	6.4	+
20-year	7.1	6.7	+
25-year	8.0	7.4	+

*Percent; net of fees

Source: Bank of New York Mellon

Total Fund Performance* as of March 31, 2021



	10 Year	5 Year	3 Year	1 Year	Market Value (\$MM)
Total Public Equity Strategies	9.5	12.1	11.1	56.5	37,933
<i>Benchmark</i>	9.5	13.0	12.4	58.2	
Total Investment-Grade Fixed Income	4.2	4.3	6.1	6.3	11,357
<i>Benchmark</i>	3.5	3.1	4.7	2.4	
Total Credit Strategies	6.2	7.9	7.0	20.7	13,073
<i>Benchmark</i>	5.6	6.9	6.0	19.7	
Total Real Assets	9.9	7.7	6.5	6.0	11,795
<i>Benchmark</i>	8.5	5.9	5.1	5.2	
Total Private Equity	15.0	17.1	17.1	23.6	14,106
<i>Benchmark</i>	14.2	16.0	14.3	19.7	
Total Private Investment Partnerships	n/a	7.5	7.1	6.2	1,789
<i>Benchmark</i>	n/a	8.7	9.1	13.0	
Total Multi-Asset Public Strategies	n/a	n/a	n/a	24.3	2,911
<i>Benchmark</i>	n/a	n/a	n/a	21.5	
Total Fund	8.3	9.8	9.5	28.3	96,421
<i>VRS Custom Benchmark</i>	7.9	9.6	9.3	27.5	

*Percent; net of fees

Source: Bank of New York Mellon

Total Fund Performance* as of April 30, 2021



	10 Year	5 Year	3 Year	1 Year	Fiscal YTD	Market Value (\$MM)
Total Public Equity Strategies	9.6	12.8	12.2	47.3	37.7	39,417
<i>Benchmark</i>	9.6	13.8	13.5	48.7	37.6	
Total Investment-Grade Fixed Income	4.1	4.4	6.7	4.8	1.9	11,509
<i>Benchmark</i>	3.4	3.2	5.3	1.3	-0.4	
Total Credit Strategies	6.1	7.7	7.3	18.0	14.8	13,192
<i>Benchmark</i>	5.5	6.6	6.4	15.3	10.0	
Total Real Assets	9.9	7.9	6.7	6.1	8.0	11,847
<i>Benchmark</i>	8.5	6.1	5.3	5.4	4.7	
Total Private Equity	15.1	17.4	17.7	25.5	38.5	14,342
<i>Benchmark</i>	13.9	17.1	12.7	20.6	49.3	
Total Private Investment Partnerships	n/a	7.5	7.1	6.2	20.2	1,819
<i>Benchmark</i>	n/a	8.8	8.7	12.6	21.4	
Total Multi-Asset Public Strategies	n/a	n/a	n/a	21.7	18.4	2,966
<i>Benchmark</i>	n/a	n/a	n/a	19.7	14.6	
Total Fund	8.3	10.1	10.2	25.1	23.0	97,972
<i>VRS Custom Benchmark</i>	7.9	10.0	9.7	23.8	22.3	

*Percent; net of fees

Source: Bank of New York Mellon

▪ **December JLARC Meeting**

- September 2020 returns showed a portfolio still enduring the economic impacts of the pandemic.
- Conditions contributing to short-term underperformance relative to benchmarks were discussed; setbacks were noted as likely temporary.

▪ **June 2021**

- Conditions in several markets have improved, tilting in our favor.
- Absolute and/or relative returns for Public Equity, Credit Strategies and Real Assets have improved dramatically.
- Total Fund return of 28.3% for the year ended 3/31/21 is 0.8% ahead of benchmark (Board-established target is 0.3%).

Market Rotation

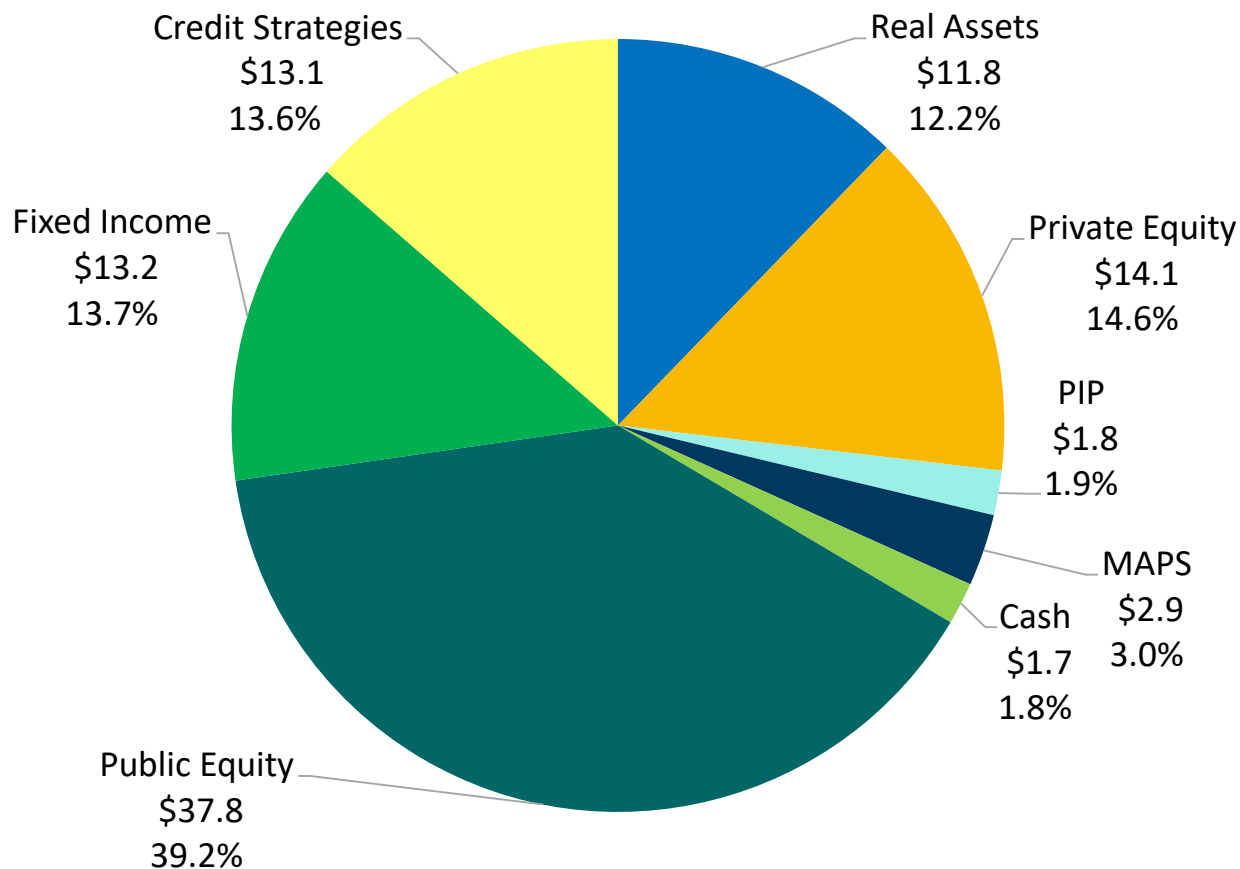
Description	2020	1Q 2021	Post Vaccine Efficacy Announcement (11/9/20-3/31/21)
S&P 500	18.4	6.2	12.6
Russell 1000 Growth	38.5	0.9	8.4
Russell 1000 Value	2.8	11.3	19.3
NYSE FANG+*	103.1	2.6	16.6

*Index of several prominent American technology companies including Facebook, Amazon, Netflix and Google.

Asset Allocation as of March 31, 2021

Total Fund Market Value = \$96.4 billion

(Dollar Amounts in Billions/Percent of Total Fund)



Difference in totals are due to rounding
Source: Bank of New York Mellon

Importance of Diversification

VRS uses stocks, bonds, real estate, cash and other investment strategies to diversify the fund portfolio.

Diversification

- Combines different investments to limit exposure to a single asset or strategy, lowering risk or exposure to a single investment.
- Creates a stable foundation that helps moderate highs/lows in the stock market.
- Follows the mandate of the *Code of Virginia* (51.1-124.30(C)), helping prevent frequent shifts in participating employers' contribution rates and providing rate consistency from year to year.



Asset Class Returns Fluctuate

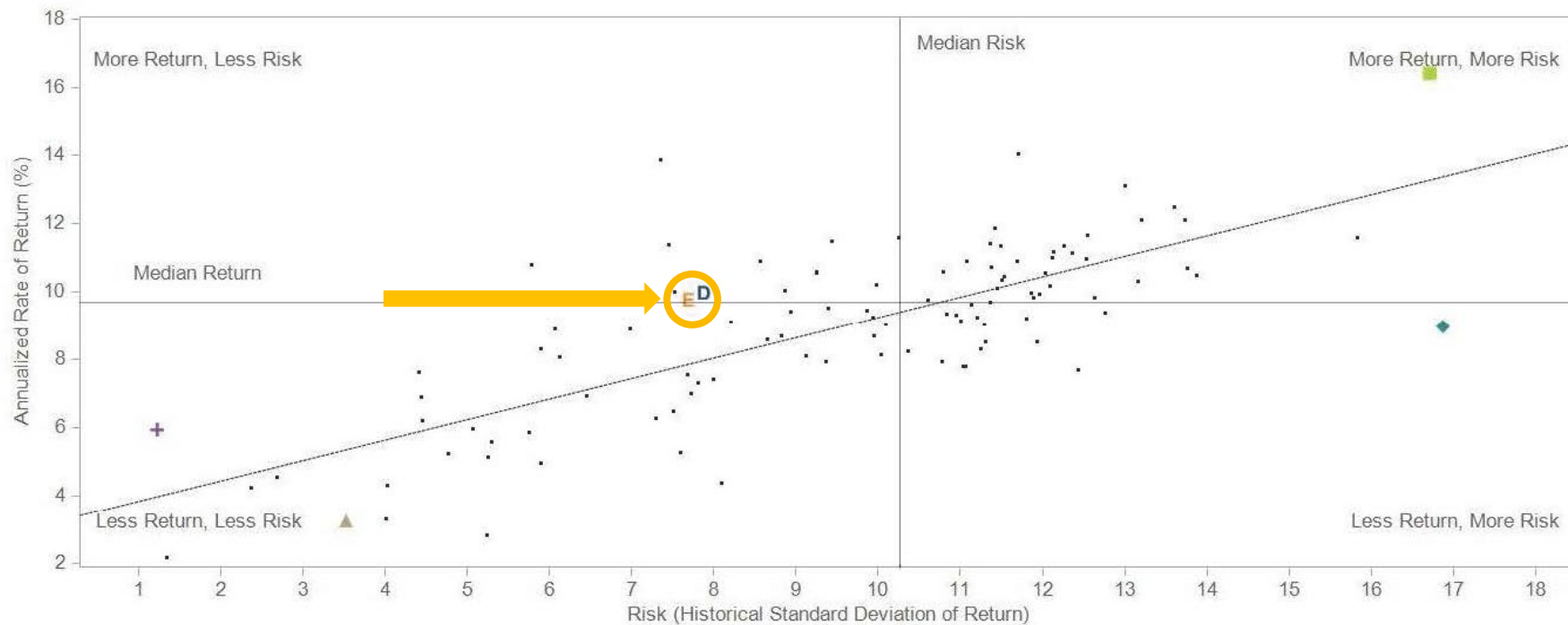
2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sm Cap Equity 27%	Real Estate 16%	Emerging Mkt Eq 18%	Sm Cap Equity 39%	Large Cap Eq 13%	Real Estate 15%	Sm Cap Equity 21%	Emerging Mkt Eq 37%	Real Estate 8%	Large Cap Eq 16%
Emerging Mkt Eq 19%	US Fixed Income 8%	Non-US Eq 17%	Large Cap Eq 33%	Real Estate 13%	Large Cap Eq 1%	Large Cap Eq 12%	Non-US Eq 27%	Cash Equivalent 2%	Emerging Mkt Eq 11%
Real Estate 16%	Private Debt 2%	Large Cap Eq 16%	Non-US Eq 15%	US Fixed Income 6%	US Fixed Income 1%	Emerging Mkt Eq 11%	Large Cap Eq 22%	Private Debt 1%	US Fixed Income 7%
Large Cap Eq 16%	Large Cap Eq 2%	Sm Cap Equity 16%	Real Estate 14%	Sm Cap Equity 5%	Cash Equivalent 0%	Private Debt 10%	Sm Cap Equity 15%	US Fixed Income 0%	Hedge Funds 6%
Non-US Eq 11%	Cash Equivalent 0%	Real Estate 11%	Hedge Funds 9%	Hedge Funds 3%	Hedge Funds 0%	Real Estate 9%	Hedge Funds 8%	Hedge Funds -4%	Non-US Eq 3%
Private Debt 10%	Sm Cap Equity -4%	Private Debt 9%	Private Debt 6%	Private Debt 2%	Private Debt 0%	Non-US Eq 5%	Real Estate 8%	Large Cap Eq -5%	Real Estate 1%
US Fixed Income 7%	Hedge Funds -6%	Hedge Funds 5%	Cash Equivalent 0%	Cash Equivalent 0%	Sm Cap Equity -4%	US Fixed Income 3%	Private Debt 4%	Sm Cap Equity -11%	Cash Equivalent 1%
Hedge Funds 7%	Non-US Eq 14%	US Fixed Income 4%	US Fixed Income -2%	Emerging Mkt Eq -2%	Non-US Eq -6%	Hedge Funds 1%	US Fixed Income 4%	Non-US Eq -14%	Private Debt 1%
Cash Equivalent 0%	Emerging Mkt Eq -18%	Cash Equivalent 0%	Emerging Mkt Eq -3%	Non-US Eq -4%	Emerging Mkt Eq -15%	Cash Equivalent 0%	Cash Equivalent 1%	Emerging Mkt Eq -15%	Sm Cap Equity 0%

Source: The Callan Periodic Table of Investment Returns

Trust Universe Comparison Services

Risk vs Total Returns of Master Trusts - All Plans

5 Years Ending March 31, 2021



D: Total VRS Fund
E: Total Fund Benchmark

Board Target Asset Mix

	FY 2021 Policy Targets	FY 2022 Policy Targets	Long-Term Policy Targets
Public Equity	37%	36%	34%
Fixed Income	16%	15%	15%
Credit Strategies	14%	14%	14%
Real Assets	14%	14%	14%
Private Equity	13%	14%	14%
Private Investment Partnerships (PIP)	2%	2%	3%
Multi-Asset Public Strategies (MAPS)	3%	4%	6%
Cash	1%	1%	0%

Internal Asset Management (IAM)

Asset Class	Objective	\$MM
Fixed Income	Core	9,609.2
	Non-Core	862.9
	Subtotal	10,472.1
Equity	Low Tracking Error	10,812.8
	Low Volatility	4,433.7
	Other	3,557.3
	Subtotal	18,803.8
	Total	29,275.9

As of March 31, 2021

IAM Track Record as of March 31, 2021



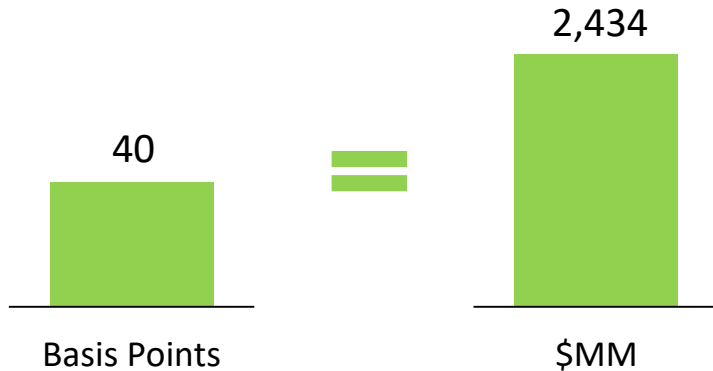
		1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs
Fixed Income*	Return	4.3%	6.0%	4.2%	4.1%	5.3%	5.1%
	Benchmark	0.7%	4.7%	3.1%	3.4%	4.7%	4.6%
	Excess	3.6%	1.3%	1.1%	0.7%	0.6%	0.5%
Equity	Return	48.3%	10.8%	12.1%	11.2%	8.4%	7.8%
	Benchmark	50.1%	12.7%	13.1%	10.8%	7.9%	7.3%
	Excess	-1.8%	-1.9%	-1.0%	0.4%	0.5%	0.5%

*Core only

Adding Value Multiple Ways

Total Fund 10-Year Value Add

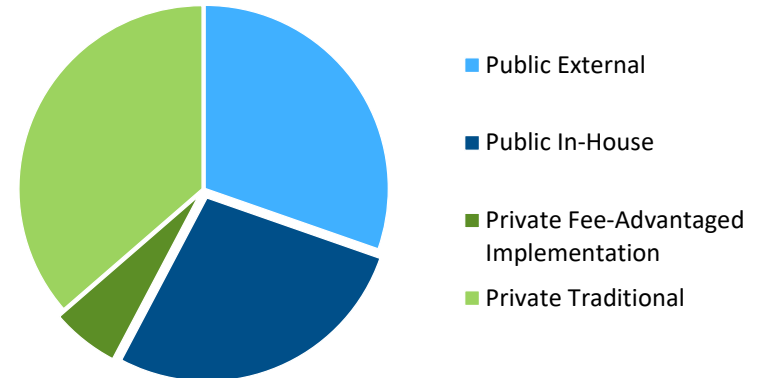
As of 3/31/2021



Source: BNY Mellon Data, 3/31/21

Cost Savings Implementation

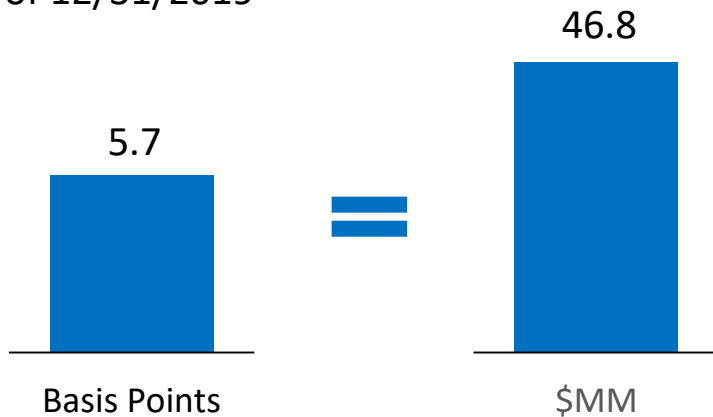
As of 3/31/2021



Source: BNY Mellon Data, 3/31/21

Effective Cost Management

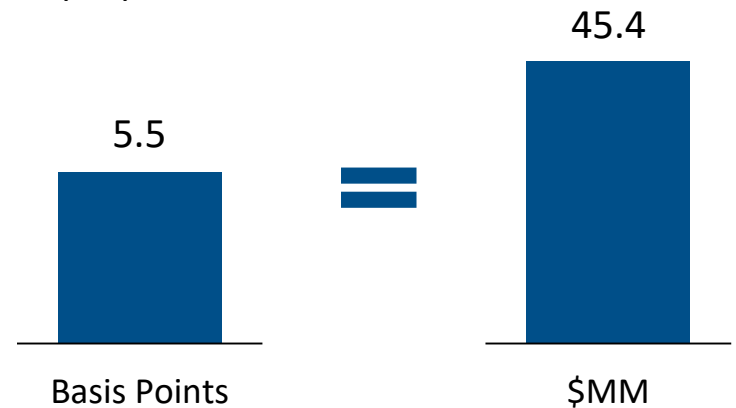
As of 12/31/2019



Source: CEM, CY2019

In-House Management Fee Savings

As of 12/31/2019

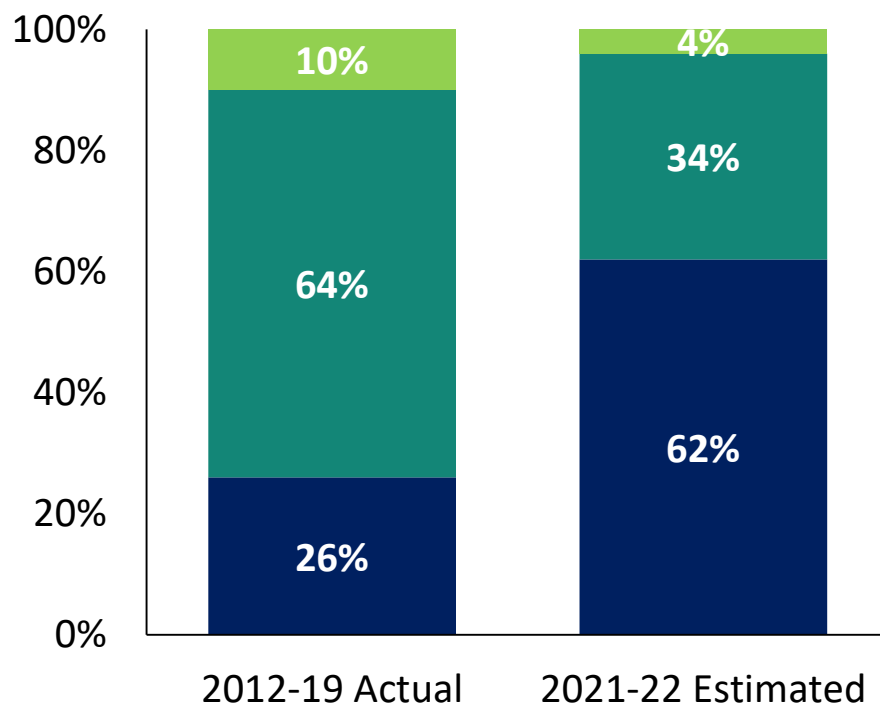


Source: CEM, CY2019

- **The US and global economies are emerging from the pandemic with considerable speed, but this won't be a simple V-shaped recovery that gets us back to February 2020.**
 - Prices and wages are in flux
 - Millions of unemployed AND millions of vacant jobs exist at the same time
 - Supply chains are disrupted and under review
 - Numerous technical innovations help speed recovery
 - Uncertainty of return to office/hybrid work

- **Current focus points:**
 - Asset class valuation levels
 - Equity market rotation
 - Inflation

Earnings: Cyclicals Expected to Take the Lead



■ Cyclicals* ■ Secular Growth^ ■ Defensive^^

* Cyclicals include industrials, energy, materials, financials and discretionary

^ Secular growth includes technology, communications and healthcare

^^ Defensive includes staples, utilities and REITs

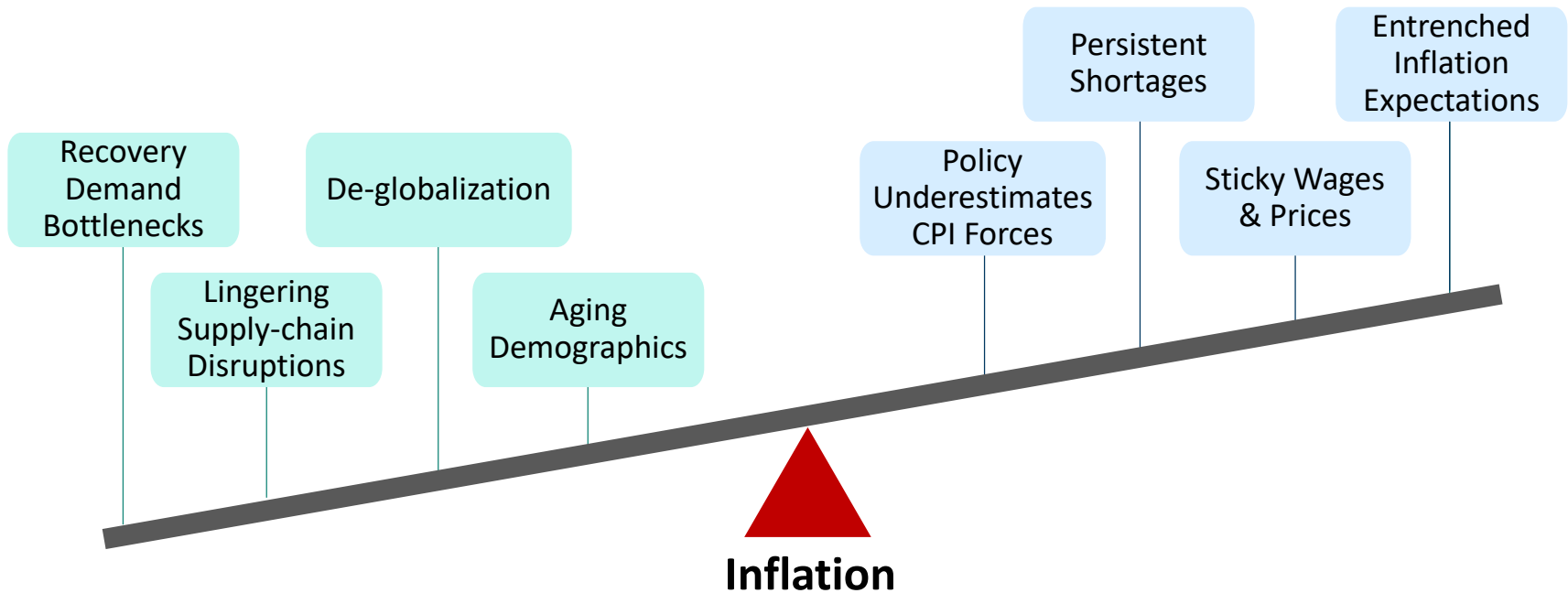
Overall, the very same exposures that negatively impacted the portfolio in 2020 are the biggest contributors thus far in 2021; this reversal is expected to continue.

Source: KKR

Inflation Uncertainty: Potential Outcomes

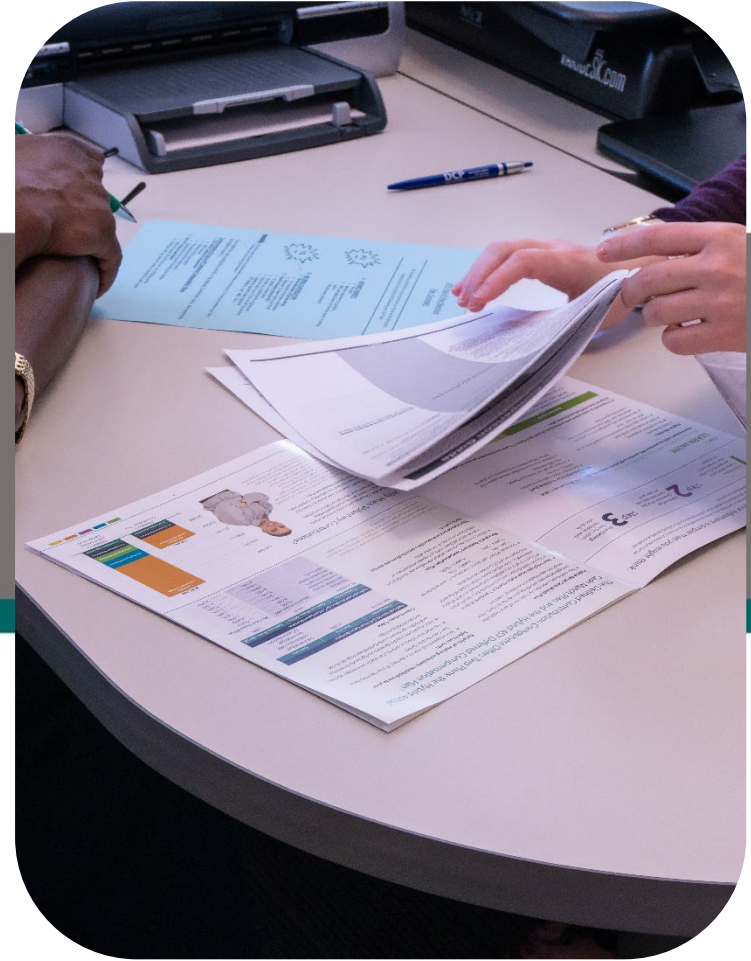
Short-term Uptick With Moderate
Longer –Term Pressure

Sustained Inflation At Higher
Levels Than Recent History



- U.S. and global economies are rapidly emerging from the pandemic.
- Several market forces rotated in our favor in the post-pandemic period.
- The Board continues a measured phase-in of long-term policy.
- The Fund continues to benefit through staff's cost-effective implementation.
- With a strong risk-mitigation structure, the fund continues to be well positioned to serve its members, even during uncertain times.

Administration Overview



VRS Total Membership as of March 31, 2021



	Plan 1	Plan 2	Hybrid	Total
Teachers	66,581	30,399	59,239	156,219
Political Subdivision Employees	38,952	31,145	38,701	108,798
State Employees	29,765	13,948	30,347	74,060
State Police Officers' Retirement System (SPORS)	1,025	859	—	1,884
Virginia Law Officers' Retirement System (VaLORS)	2,580	5,490	—	8,070
Judicial Retirement System (JRS)	183	47	207	437
Total Active Members	139,086	81,888	128,494	349,468

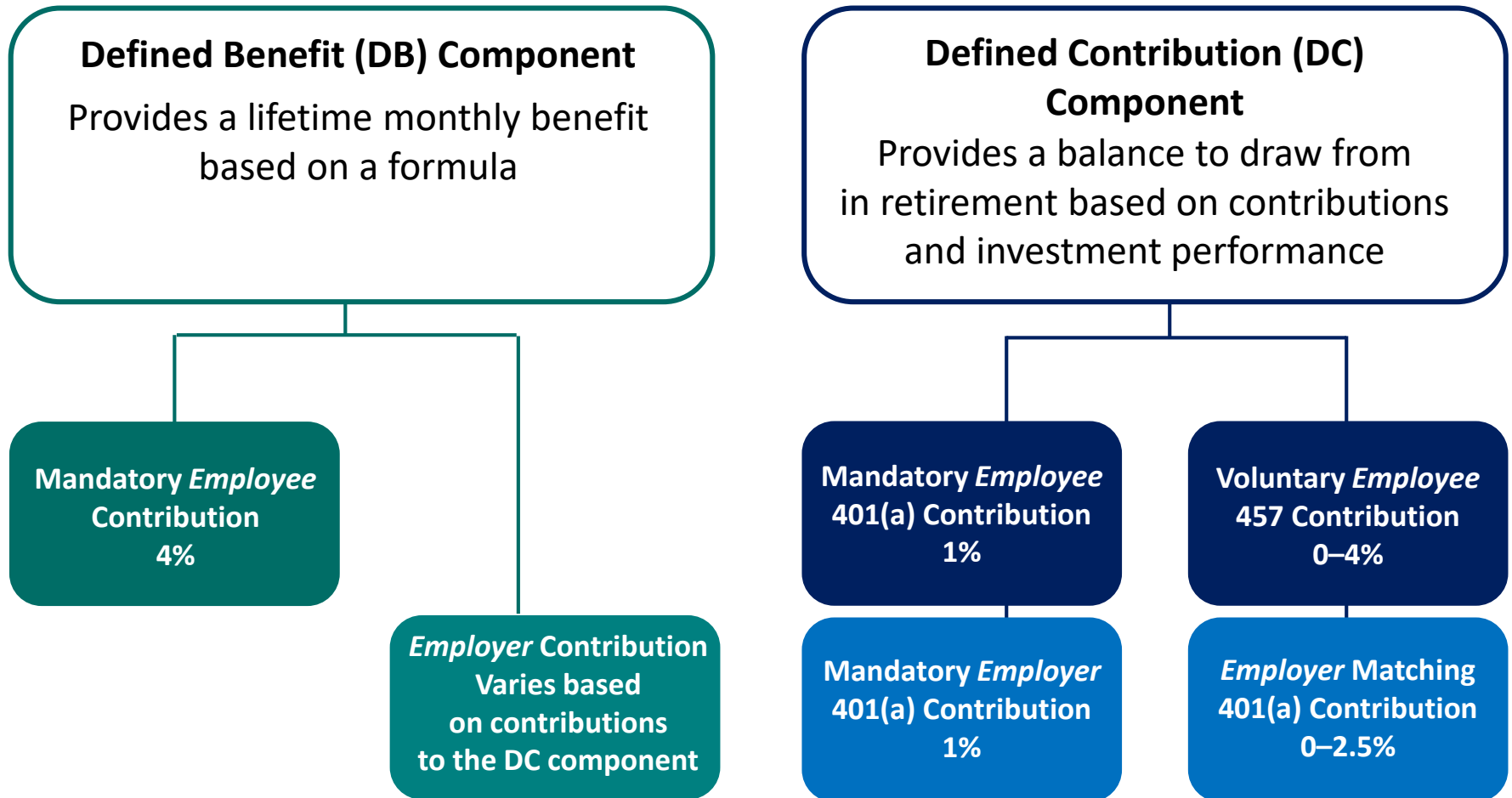
Total Active Members
349,468

Retirees/ Beneficiaries
227,025

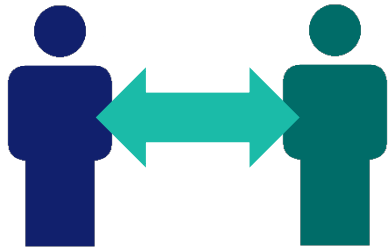
Inactive/Deferred Members
195,511

VRS Total Population
772,004

Hybrid Retirement Plan



Hybrid Retirement Plan Impact



Shares risk between
employer/employee



Increases portability



Reduces employer
investment risk



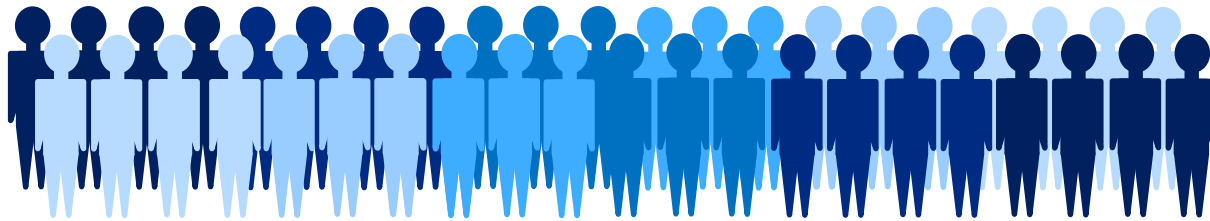
Reduces employer
longevity risk



Lowers future costs
of the plan

Hybrid Retirement Plan

Hybrid Retirement Plan Member Profile as of April 1, 2021



128,017

**Active Hybrid Retirement
Plan members**



Largest Member Group

Teachers

59,518 members
(47%)



Median Salary
\$44,930

Median Age
37 years old

Average Years in the Plan
2.71

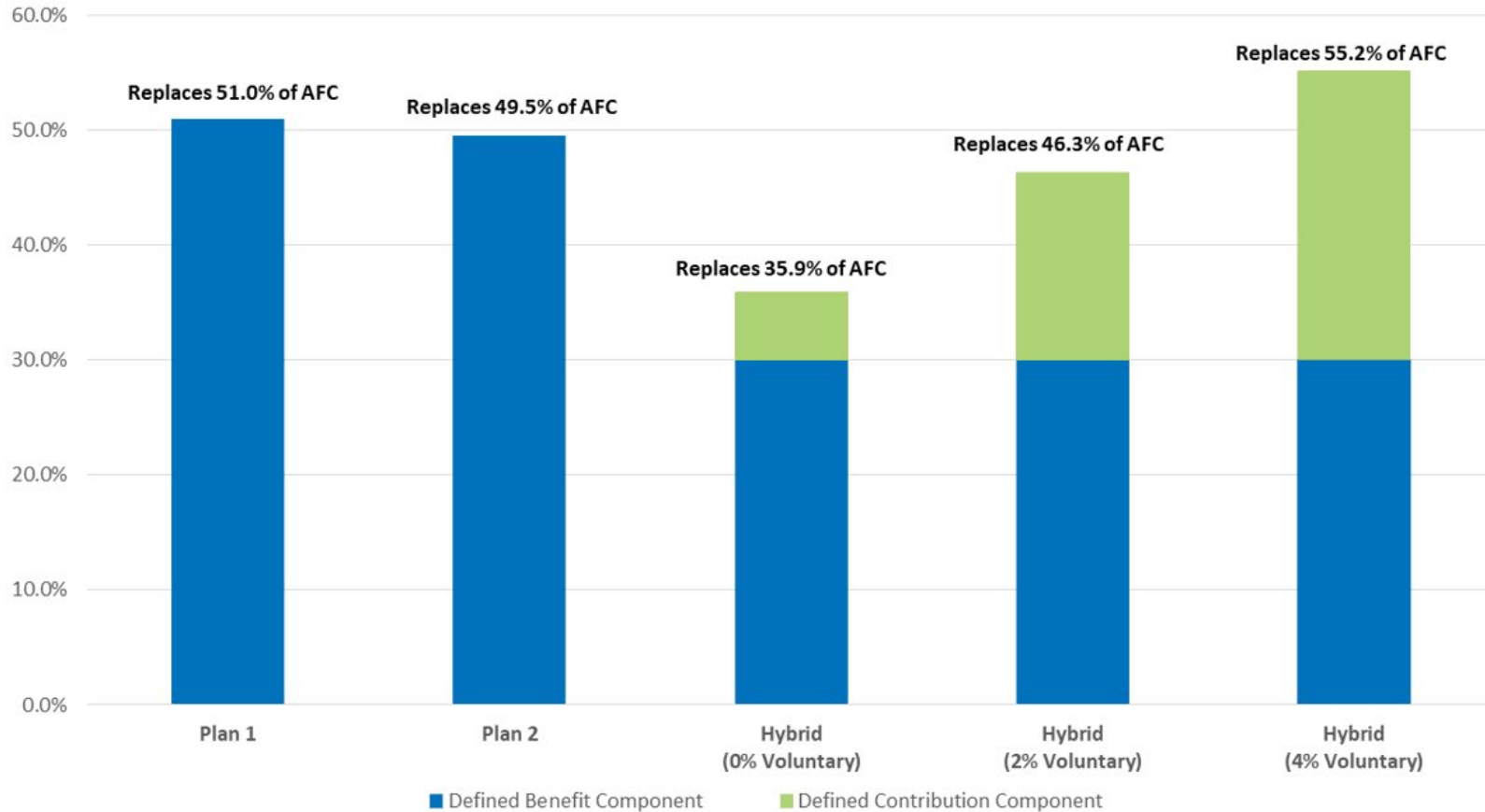
Estimated Replacement Ratios

State Plan by Benefit Tier

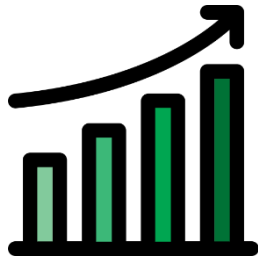


VRS State Plan

Estimated Replacement Ratio for Member Retiring with 30 Years of Service at age 65
5.0% Pre-Retirement Investment Return on Defined Contributions



- Investment return for defined contribution investments is assumed to be 5.0% per year and converted to annuity assuming 4% post-retirement discount rate and 2.25% COLA.
- Income replacement percentage, based on final average final compensation (AFC).
- For "Hybrid Max Contribution," employees must contribute 9% of their salary throughout their career.



- Accelerate auto-escalation to 0.5% increase in voluntary contributions every two years for members not at the maximum voluntary level.



- Auto-enroll with voluntary contribution at 0.5% upon date of hire, with ability to opt-out.



- Change allocation of member contribution.
 - Current 4% DB and 1% DC.
 - Proposed 3% DB and 2% DC.

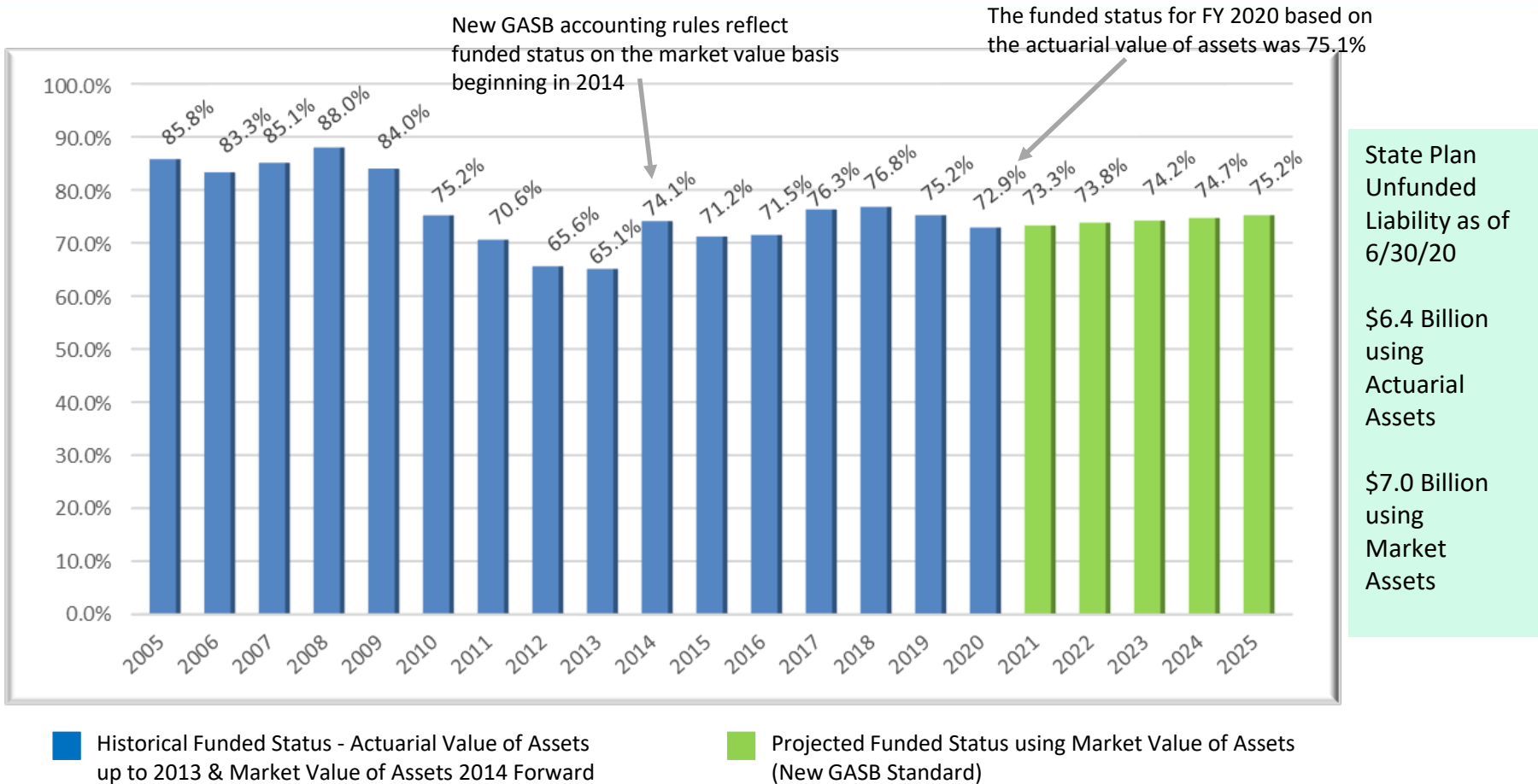


Virginia
Retirement
System

Funded Status and Contribution Rates



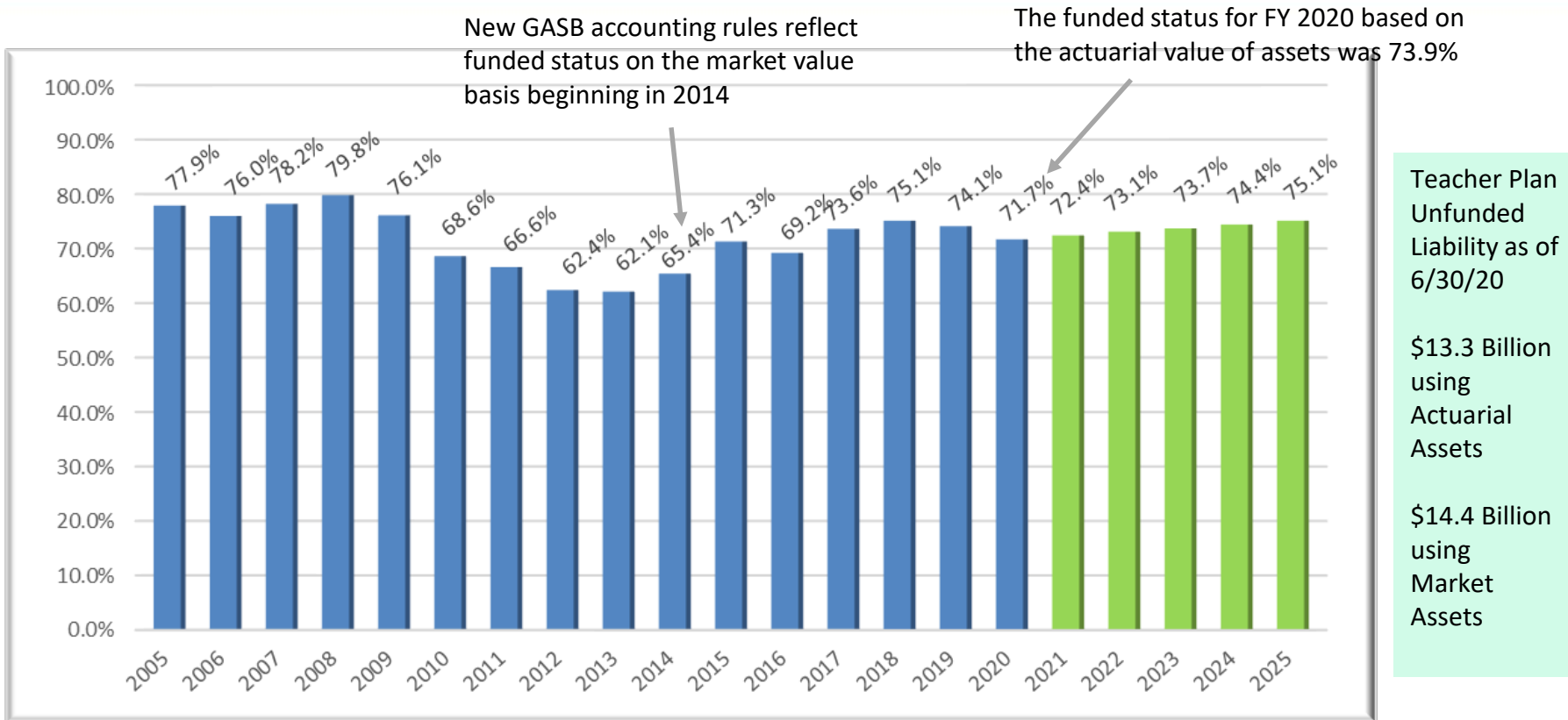
Funded Status: State



Notes:

- Projected funded status based on assumed investment returns of 6.75% and inflation of 2.5%.
- Projected funded status does not reflect impacts of recent Experience Study.
- GASB Accounting rules reflect funded status using Market Value of Assets effective 6/30/14 for Plan Reporting and 6/30/15 for Employer Reporting.

Funded Status: Teachers



■ Historical Funded Status - Actuarial Value of Assets up to 2013 & Market Value of Assets 2014 Forward

■ Projected Funded Status using Market Value of Assets (New GASB Standard)

Notes:

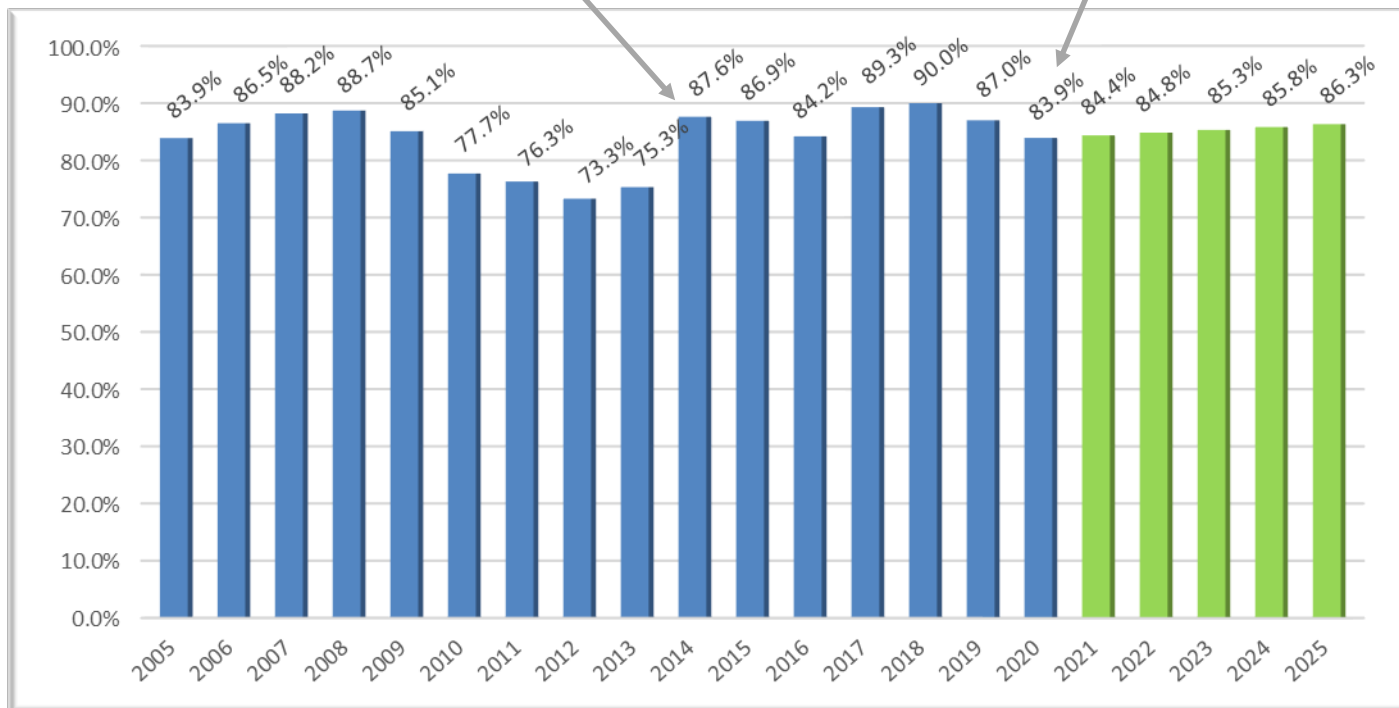
- Projected funded status based on assumed investment returns of 6.75% and inflation of 2.5%.
- Projected funded status does not reflect impacts of recent Experience Study.
- GASB Accounting rules reflect funded status using Market Value of Assets effective 6/30/14 for Plan Reporting and 6/30/15 for Employer Reporting.

Funded Status: Political Subdivisions in Aggregate



New GASB accounting rules reflect funded status on the market value basis beginning in 2014

The funded status for FY 2020 based on the actuarial value of assets was 86.4%



Political Subdivisions in Aggregate Unfunded Liability as of 6/30/20

\$3.4 Billion using Actuarial Assets

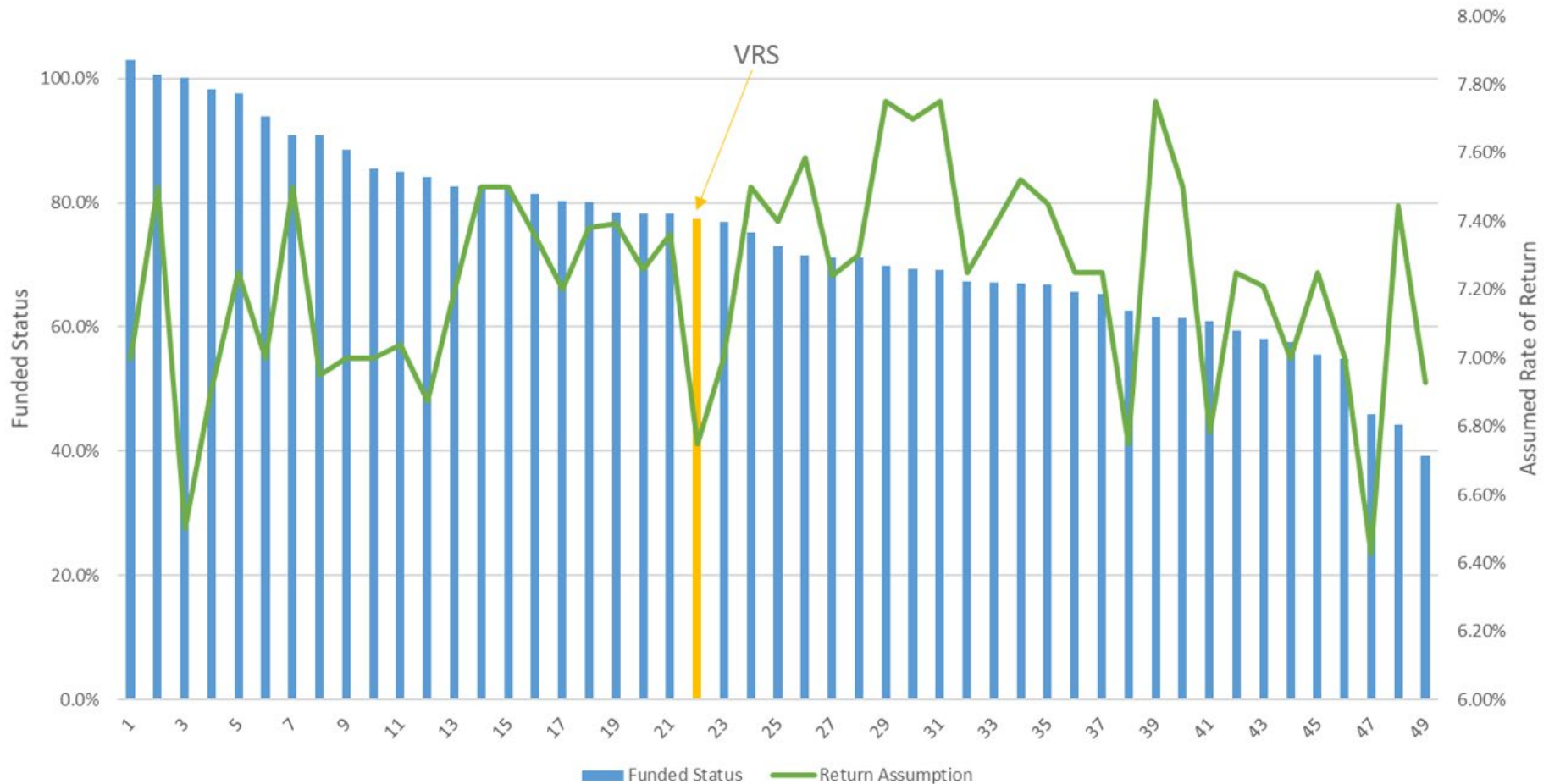
\$4.1 Billion using Market Assets

■ Historical Funded Status - Actuarial Value of Assets up to 2013 & Market Value of Assets 2014 Forward
 ■ Projected Funded Status using Market Value of Assets (New GASB Standard)

- Notes:
- Projected funded status based on assumed investment returns of 6.75% and inflation of 2.5%.
 - Projected funded status does not reflect impacts of recent Experience Study.
 - GASB Accounting rules reflect funded status using Market Value of Assets effective 6/30/14 for Plan Reporting and 6/30/15 for Employer Reporting.

VRS Assumed ROR vs. Peer Funds

State Pension Plans - Funded Status and Assumed Rate of Return
2019 Comprehensive Annual Financial Report Information



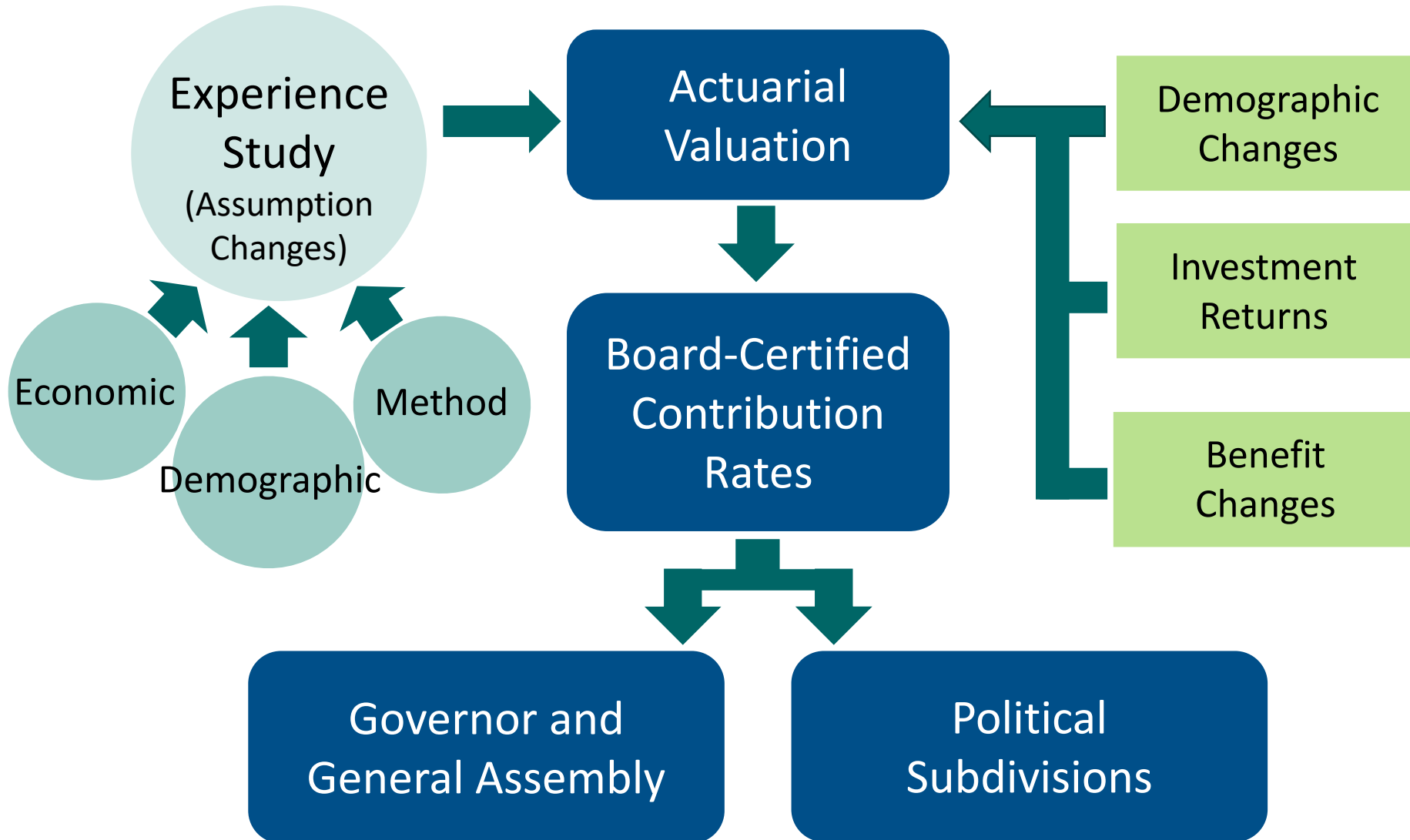
Employer Contribution Rates and Funding Requirements for Statewide Plans



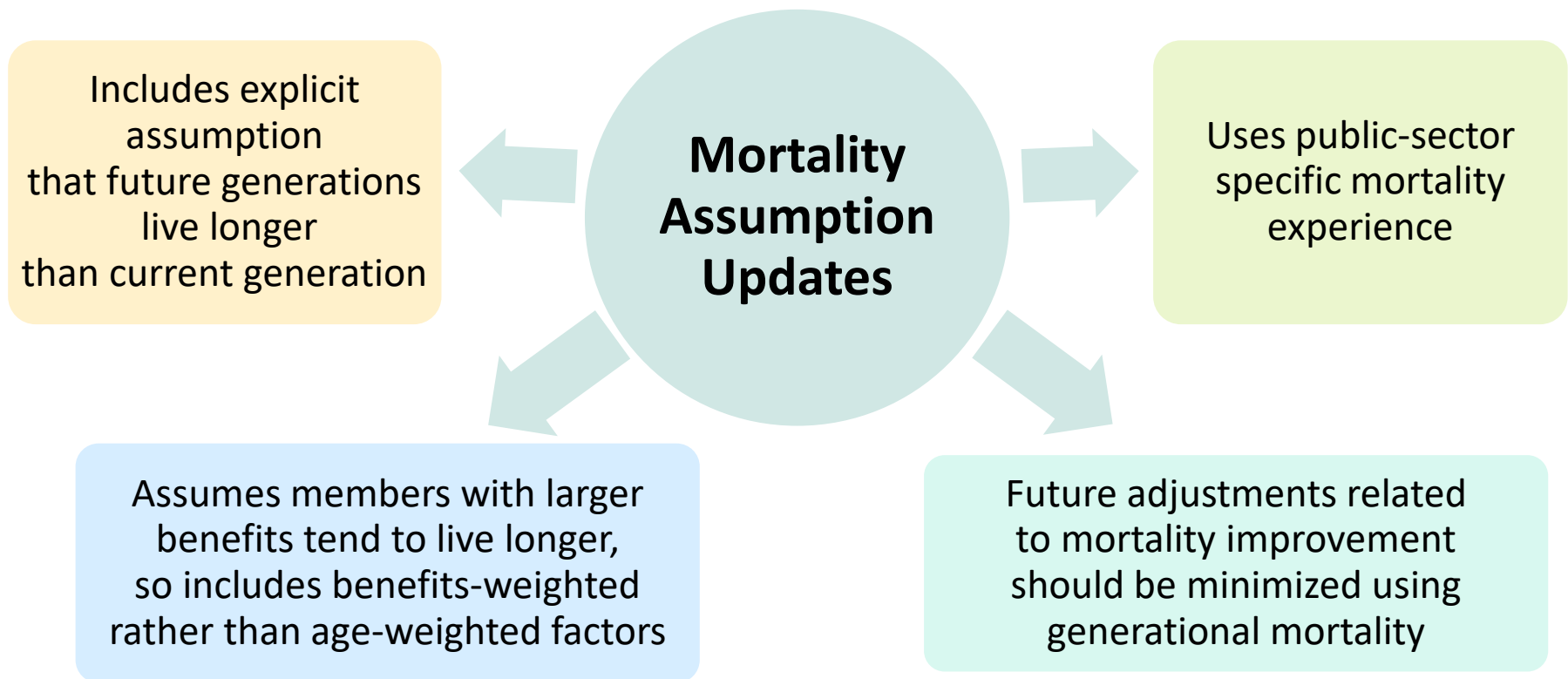
Plan	Fiscal Year 2021	Fiscal Year 2022
State	14.46%	14.46%
SPORS	26.33%	26.33%
VaLORS	21.90%	21.90%
JRS	29.84%	29.84%
Teachers		
	16.62%	16.62%
Total Estimated Employer Contributions	\$2,314,689,000	\$2,431,470,000
General Fund	\$1,011,982,000	\$1,063,483,000
Non-General Fund	\$1,302,707,000	\$1,367,987,000

- Estimated funding for fiscal year 2021 is based on payroll from the 2020 valuation projected forward one year using plan assumptions.
- Estimated payroll for fiscal year 2022 includes the impact of payroll increases approved during the 2021 legislative session.
- Actual funding will be based on payrolls in effect at the time of billing.

Contribution Rate Development



The most significant change to come from the study was the mortality assumption.



Virginia Retirement System Unfunded Pension Liabilities by Plan (Dollars in Thousands)

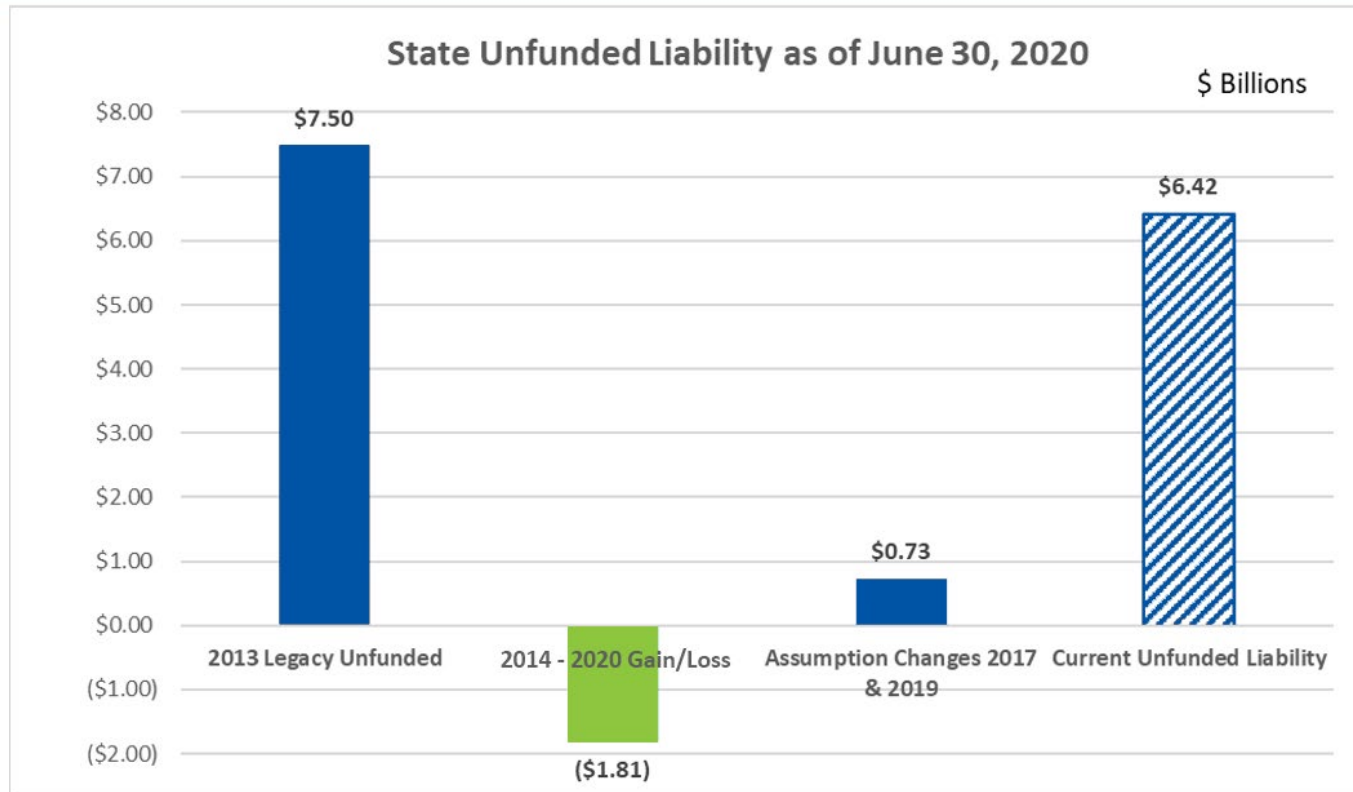


System	UAAL based on AVA (Dollars in Thousands)	
	2019	2020
State	\$ 6,466,084	\$ 6,417,661
Teachers	\$ 13,070,163	\$ 13,278,662
SPORS	\$ 322,488	\$ 325,590
VaLORS	\$ 726,243	\$ 712,025
Judicial	\$ 116,605	\$ 111,633
Total State-Wide Systems	\$ 20,701,583	\$ 20,845,571
Political Subdivisions	\$ 3,357,268	\$ 3,441,151
Total Fund	\$ 24,058,851	\$ 24,286,722

System	UAAL based on Market (Dollars in Thousands)	
	2019	2020
State	\$ 6,308,078	\$ 6,981,267
Teachers	\$ 12,781,190	\$ 14,385,554
SPORS	\$ 315,847	\$ 351,662
VaLORS	\$ 715,248	\$ 758,084
Judicial	\$ 112,200	\$ 128,417
Total State-Wide Systems	\$ 20,232,563	\$ 22,604,984
Political Subdivisions	\$ 3,176,545	\$ 4,076,749
Total Fund	\$ 23,409,108	\$ 26,681,733

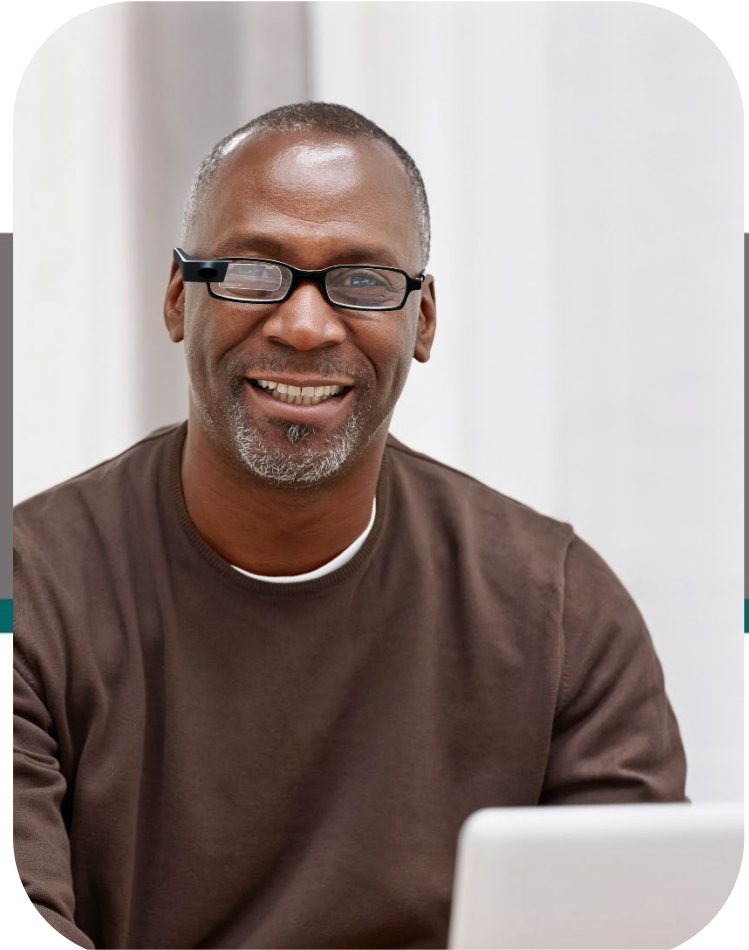
The Political Subdivisions in Aggregate unfunded liabilities do not include political subdivisions with no active members.

Unfunded Liabilities by Source State Plan

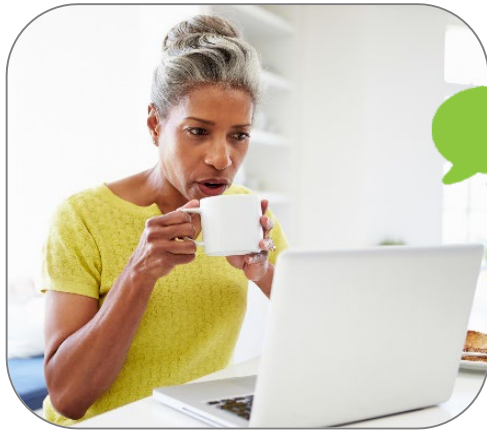


- Unfunded liability of State plan was \$6.4 billion as of June 30, 2020.
- Legacy unfunded liabilities established as of 2013 remain the main source of unfunded which is expected to be paid off by 2044.
- Since 2013, plan experience has provided net gain of \$1.8 billion to State plan.
- Approximately \$730 million additional liability added due to assumption changes and lowering of plan discount rate in 2019.

Enhancing the Customer Service Experience



Major Milestone Accomplished: Online Retirement for VRS Members



Pre-Retirement
Counseling

About
You

Retirement Date
and Options

Payment
Destination

Tax
Withholding

Health
Insurance Credit

Review and
Submit

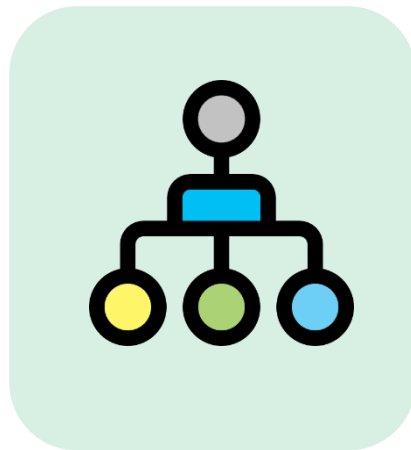


More Enhancements to myVRS

Additional self-service features in myVRS are planned for members and retirees:



Direct deposit management



Online beneficiary management



Health insurance credit management



Survivor accounts



Topics

Courses

Tools

COVID-19

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See More



1 MIN

Joint Checking Account Notions for the Faint of Heart

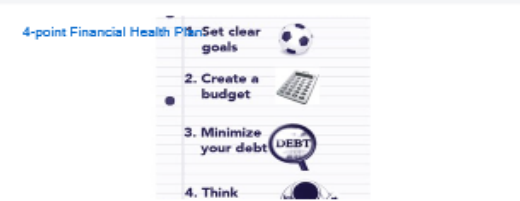


7 MIN

Coronavirus and Your Financial Health



Personal finances are the No. 1 stressor on employees during the workday*



5 MIN

Financial Capability: Your Financial Health



BENEFITS

1 MIN

Employee Benefits in Context



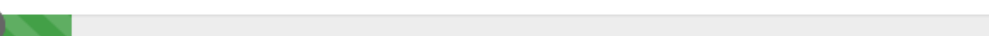
BENEFITS

10 MIN

Everything You Need to Know About Benefits and Compensation



Start here



Get Recommendations

Complete your financial wellness checklist to see even more personalized recommendations.

* Willis Towers Watson 2019/2020 Global Benefits Attitudes Survey.

VRS Honored With Awards



Pensions&Investments

First Place, Financial Wellness
Public Plans
With More Than 5,000 Participants

**First Place,
Conversions/Consolidations**
Public Plans
With 1,000 to 5,000 Participants



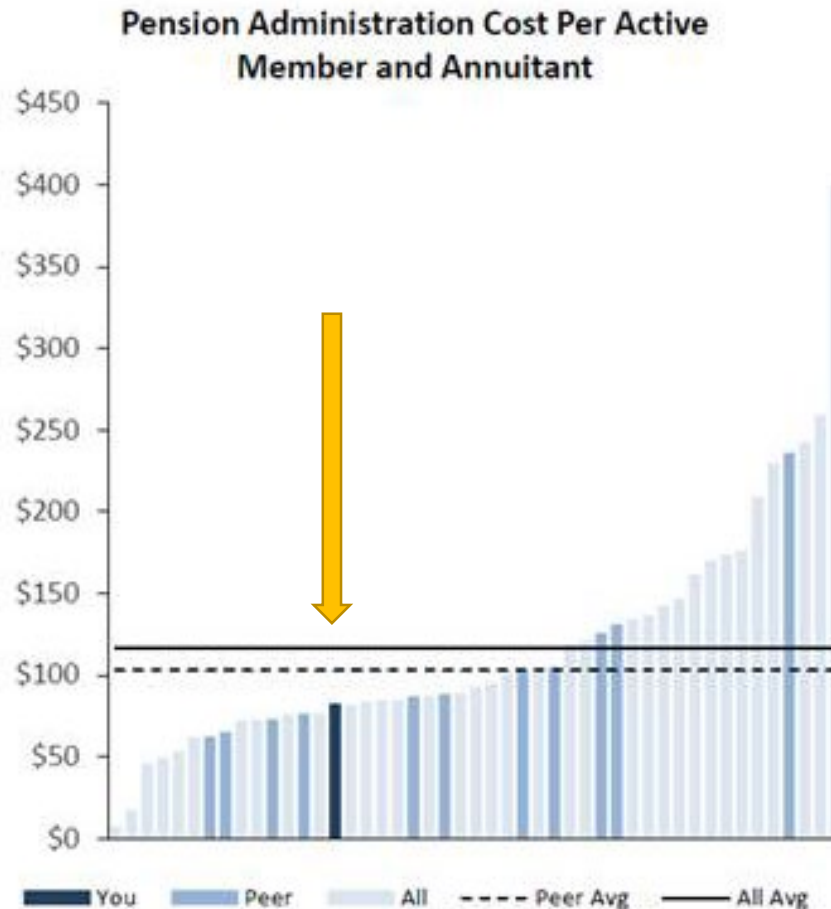
**2021 Communicator Award
of Distinction**
VRS Virtual Pandemic Response:
Content Marketing
for Marketing Effectiveness

Peer Comparison



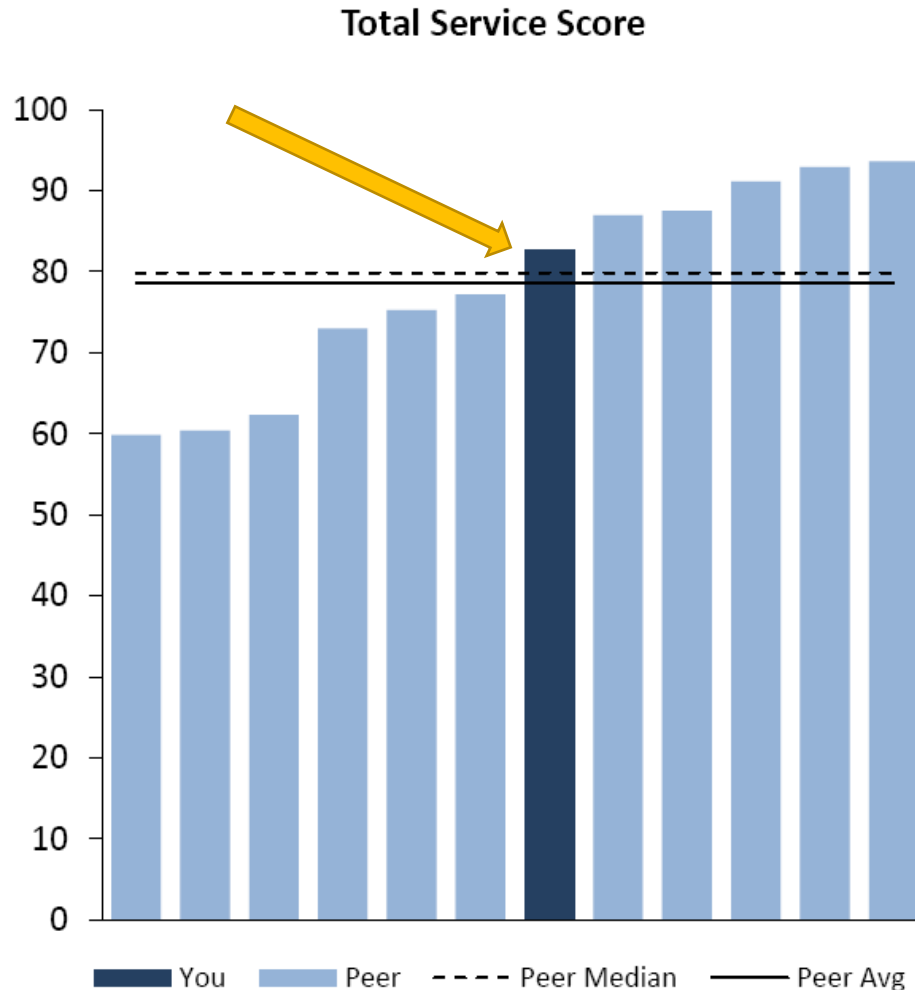
VRS Cost Compared With Peers

Your total pension administration cost of \$81 per active member and annuitant was \$22 below the peer average of \$103.



VRS Service Among Peers

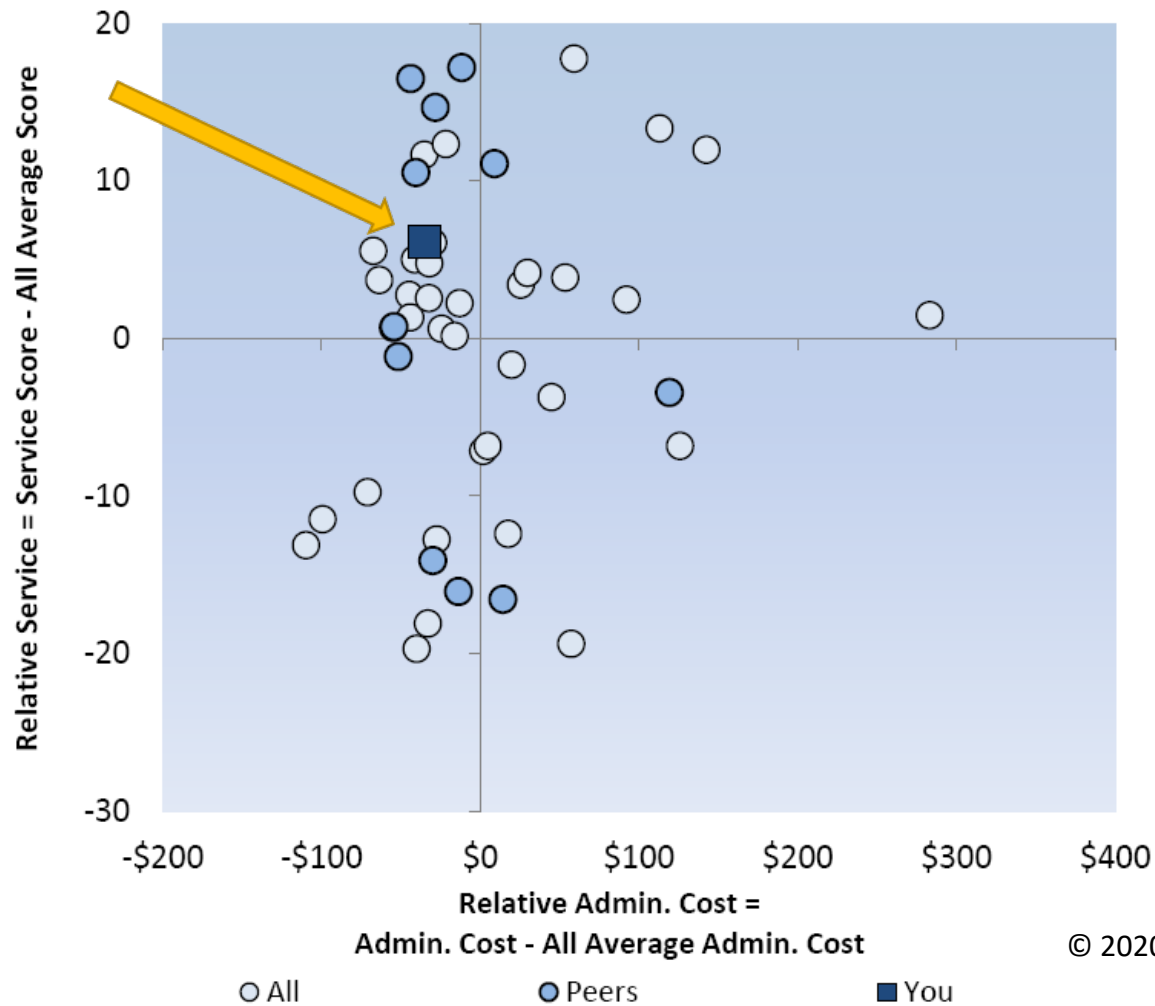
Your total service score was 83. This was above the peer median of 80.



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Cost and Service Trends

Relative Service versus Relative Cost



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**Serving those who serve others.
Helping members plan for tomorrow, today.**