

VRS Overview

Presented to the Joint Legislative Audit
and Review Commission

July 6, 2020

Presenters:

O'Kelly E. McWilliams III, Esq.,

Chairman, VRS Board of Trustees

Ronald D. Schmitz, Chief Investment Officer

Patricia S. Bishop, Director



VRS Overview

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

Investments Overview

Ronald D. Schmitz
Chief Investment Officer

Administration Overview

Patricia S. Bishop
Director

Remarks

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



Board Members



O'Kelly E. McWilliams III, Esq., *Chairman*
Mintz

Diana F. Cantor, *Vice Chairman*
Alternative Investment Management

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

William H. Leighty
Virginia Commonwealth University

William A. Garrett
Chief, Winchester Fire and Rescue Department

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

Wallace G. "Bo" Harris, Ph.D.
Department of Social Services (Retired)

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

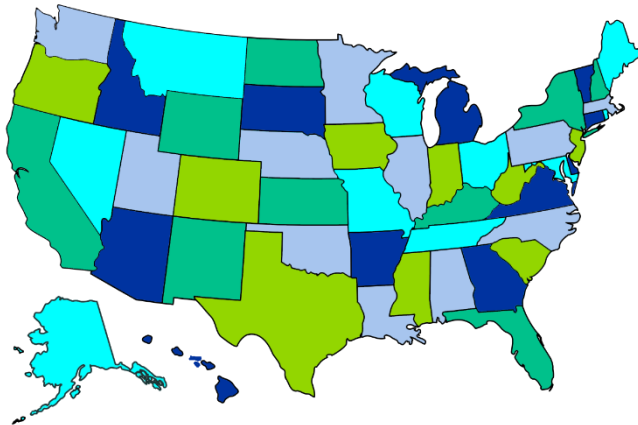
W. Brett Hayes
Wells Fargo Advisors Financial Network



As of March 31, 2020

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

Administration Highlights

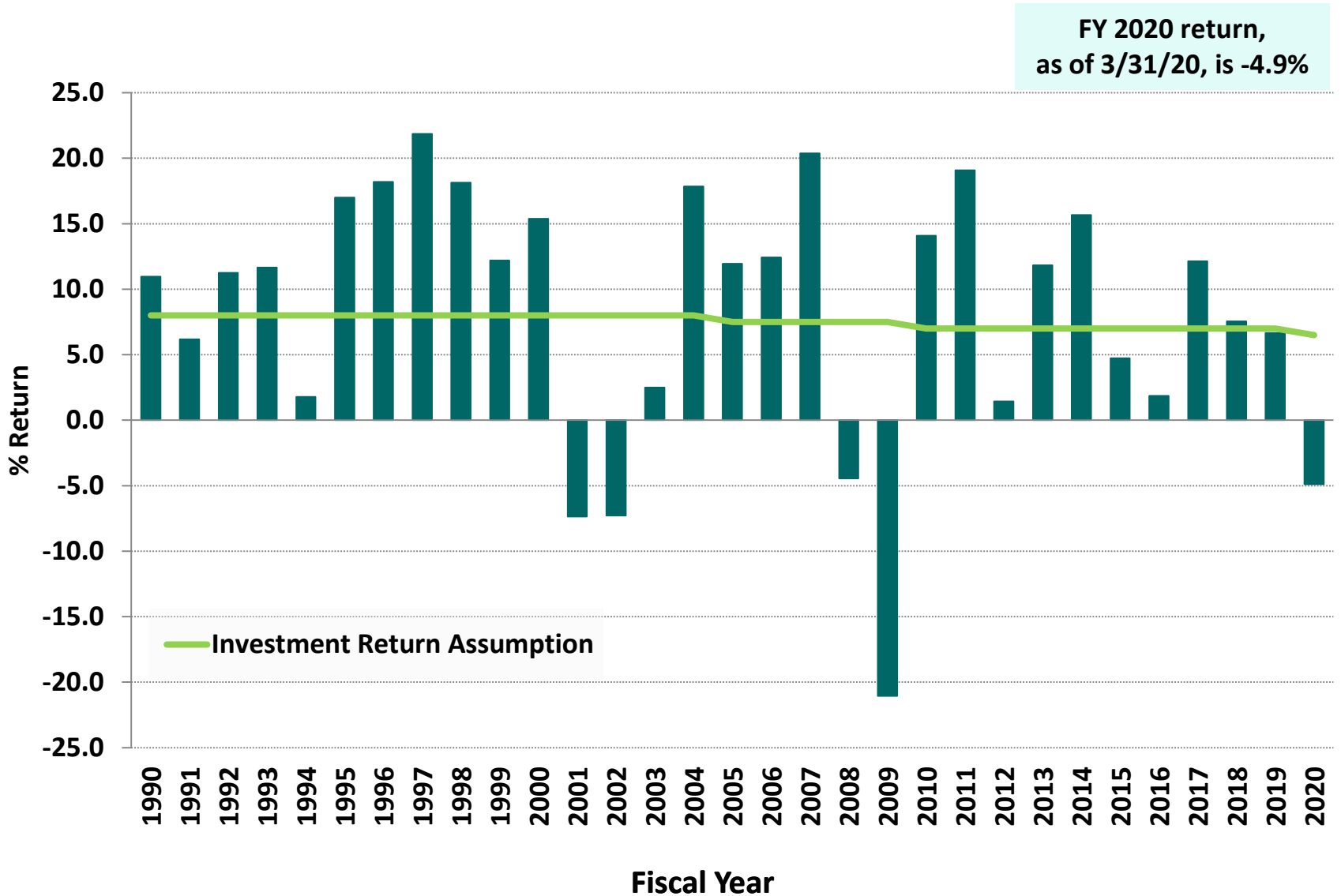
Investment Highlights

Investments



- Total Fund's Recent and Longer Term Investment Performance
- Asset Allocation Overview, Progress to Targets
- Internal Asset Management Overview
- Other Ways of Adding Value
- Market Outlook

VRS Fiscal Year Returns



Total Fund Performance* as of March 31, 2020



	10 Year	5 Year	3 Year	1 Year	Market Value (\$MM)
Total Public Equity Strategies	6.1	1.9	-0.2	-13.9	26,291
<i>Benchmark</i>	5.9	2.2	0.6	-13.0	
Total Investment-Grade Fixed Income	4.3	3.5	4.5	7.2	11,942
<i>Benchmark</i>	3.8	3.0	4.3	7.2	
Total Credit Strategies	5.5	3.6	2.7	-2.3	10,601
<i>Benchmark</i>	4.7	2.9	1.7	-4.7	
Total Real Assets	11.3	8.6	7.3	3.7	11,186
<i>Benchmark</i>	9.5	7.0	5.6	2.2	
Total Private Equity	14.2	14.2	16.4	16.4	10,970
<i>Benchmark</i>	14.2	12.5	15.8	29.0	
Total Private Investment Partnerships	n/a	7.9	8.5	8.0	1,309
<i>Benchmark</i>	n/a	7.7	8.3	12.5	
Total Multi-Asset Public Strategies	n/a	n/a	n/a	-8.0	2,253
<i>Benchmark</i>	n/a	n/a	n/a	-0.7	
Total Fund	6.9	4.6	4.0	-2.2	76,912
<i>VRS Custom Benchmark</i>	6.5	4.4	4.0	-1.4	

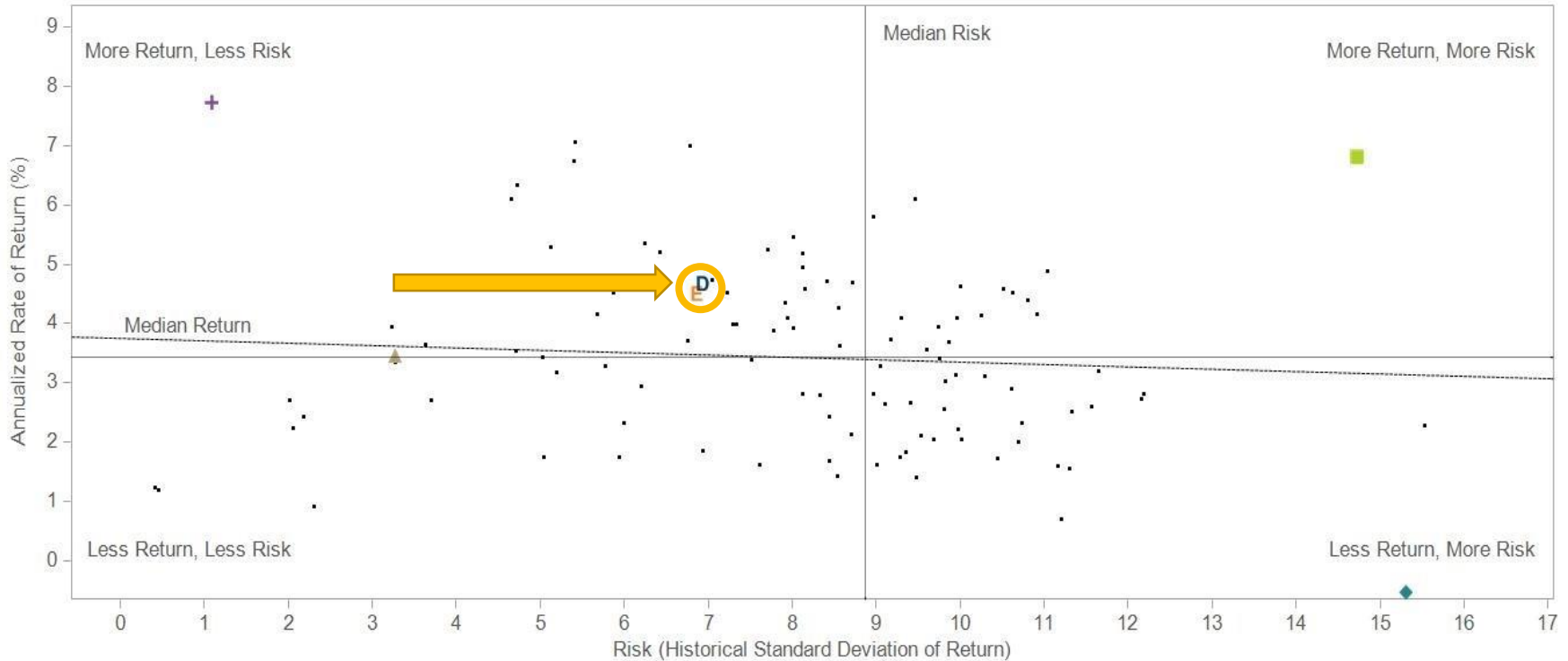
*Percent; net of fees

Source: Bank of New York Mellon

Trust Universe Comparison Services



Risk vs Total Returns of Master Trusts - All Plans 5 Years Ending March 31, 2020



Alpha: 3.74
Beta: -0.04
R-Squared: 0.01

Total Fund Performance* as of April 30, 2020



	10 Year	5 Year	3 Year	1 Year	Fiscal YTD	Market Value (\$MM)
Total Public Equity Strategies	7.1	3.6	2.6	-7.4	-7.2	29,150
<i>Benchmark</i>	6.9	4.0	3.6	-6.4	-6.3	
Total Investment-Grade Fixed Income	4.4	4.1	5.1	9.8	6.5	12,244
<i>Benchmark</i>	3.9	3.5	4.7	9.3	6.1	
Total Credit Strategies	5.7	4.0	3.5	-0.4	-2.4	10,970
<i>Benchmark</i>	5.0	3.6	2.9	-1.7	-3.4	
Total Real Assets	11.2	8.8	7.5	4.7	2.8	11,420
<i>Benchmark</i>	9.5	7.1	5.8	3.1	1.6	
Total Private Equity	14.2	14.1	16.0	16.9	11.2	11,209
<i>Benchmark</i>	14.4	12.4	14.7	19.6	13.9	
Total Private Investment Partnerships	n/a	7.9	8.5	8.0	5.9	1,312
<i>Benchmark</i>	n/a	7.9	8.5	8.9	6.0	
Total Multi-Asset Public Strategies	n/a	n/a	n/a	-5.9	-5.8	2,345
<i>Benchmark</i>	n/a	n/a	n/a	1.5	-0.5	
Total Fund	7.3	5.4	5.3	1.3	-0.3	80,487
<i>VRS Custom Benchmark</i>	7.0	5.3	5.4	1.4	-0.2	

*Percent; net of fees

Source: Bank of New York Mellon

Total Fund Performance* as of March 31, 2020



	VRS Return	Benchmark
1-year	-2.2	-1.4
3-year	4.0	4.0
5-year	4.6	4.4
10-year	6.9	6.5
15-year	6.1	5.7
20-year	5.2	4.7
25-year	7.8	7.3

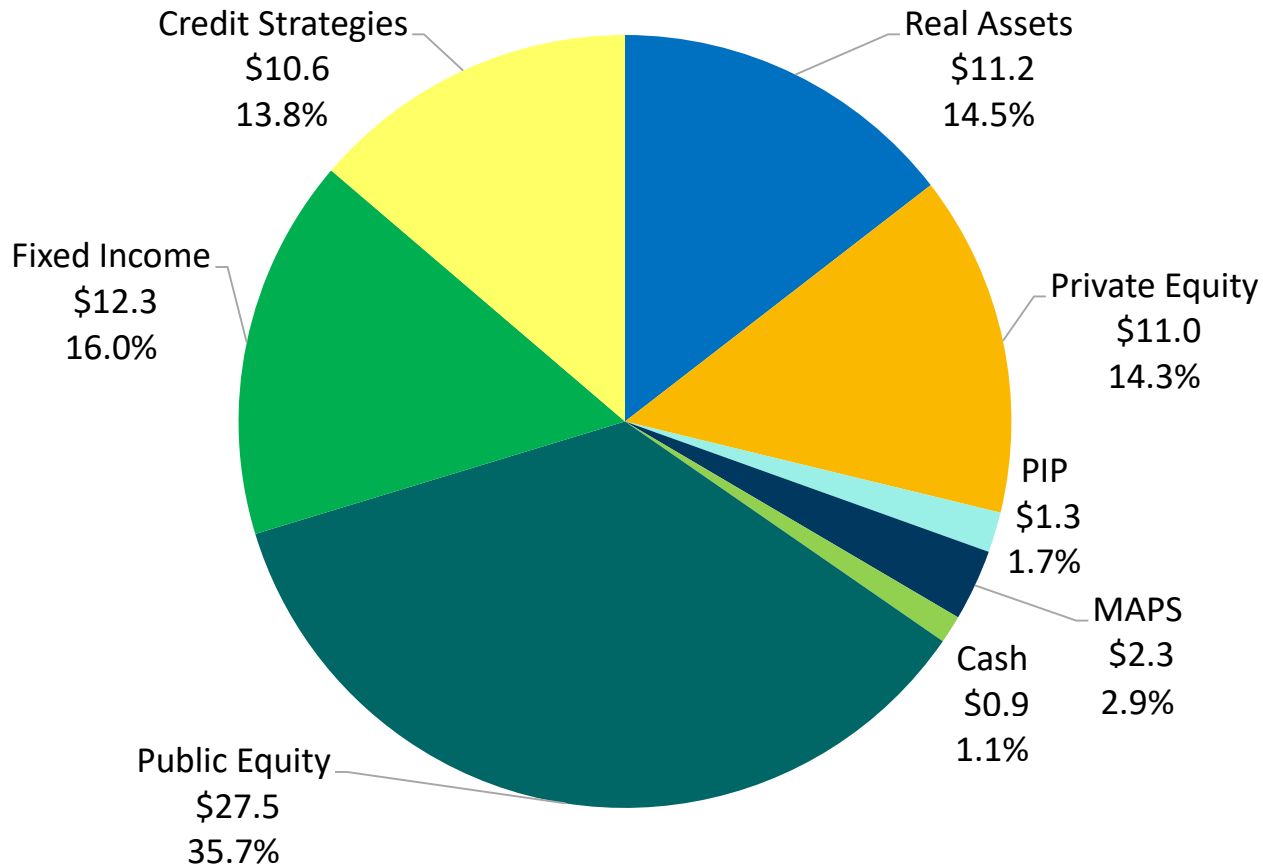
*Percent; net of fees

Source: Bank of New York Mellon

Asset Allocation as of March 31, 2020

Total Fund Market Value = \$76.9 billion

(Dollar Amounts in Billions/Percent of Total Fund)

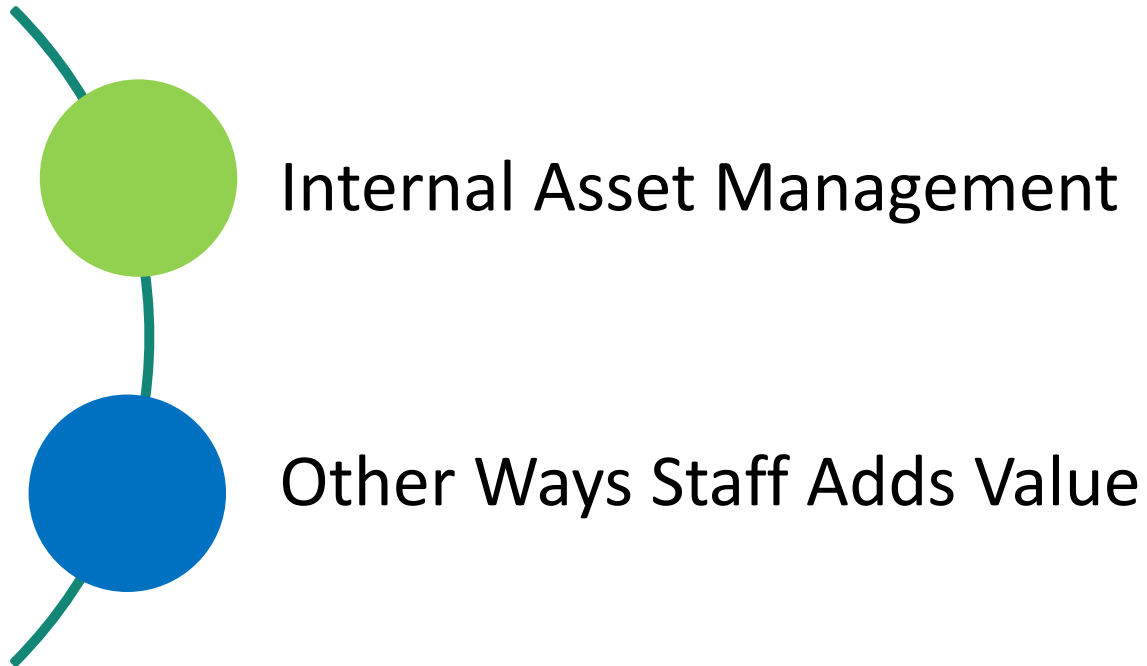


Difference in totals are due to rounding
Source: Bank of New York Mellon

Board Target Asset Mix

	FY 2020 Policy Targets	FY 2021 Policy Targets	Long-Term Policy Targets
Public Equity	40%	37%	34%
Fixed Income	16%	16%	15%
Credit Strategies	14%	14%	14%
Real Assets	14%	14%	14%
Private Equity	11%	13%	14%
PIP	2%	2%	3%
MAPS	3%	3%	6%
Cash	0%	1%	0%

Adding Value to the Total Fund



Internal Asset Management (IAM)

Asset Class	Objective	Assets (\$MM)
Equity	Passive, Non-U.S. Large Cap (Dogwood)	0.2
	Passive, Emerging Market Small Cap (Cardinal)	56.3
	Low Tracking Error, U.S. Large Cap (Potomac)	4,088.1
	Low Tracking Error, Non-U.S. Large Cap (Matoaka)	2,035.6
	Low Tracking Error, U.S. Small Cap (Afton)	463.3
	Low Tracking Error, U.S. REIT (Monroe)	548.4
	Low Tracking Error, Emerging Market Large Cap (Tuckahoe)	511.7
	Low Volatility, U.S. Large Cap (Mobjack)	1,965.5
	Low Volatility, Non-U.S. Large Cap (Piedmont)	1,588.2
	Rebalancing Account	799.4
	Global Passive Energy Overlay	0.0
	Currency Hedge (Overlay)	3,853.5
	Subtotal	15,910.2
Fixed Income	Securitized	5,051.5
	Credit	3,482.7
	Government Related	1,228.2
	Emerging Market Debt	386.5
	High Yield	181.5
	Opportunistic	151.5
	Opportunistic Overlay	27.4
	Rate Overlay	86.6
	Transition	580.0
	Subtotal	11,175.9
Total	27,086.1	

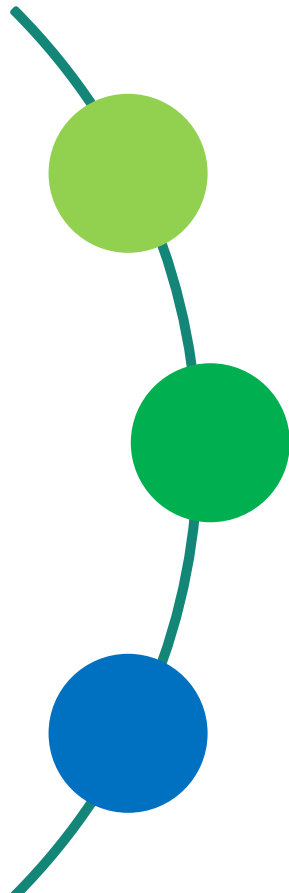
As of March 31, 2020

IAM Track Record as of March 31, 2020



		1 Year	3 Years	5 Years	10 Years	Inception*
Equity	Return	-13.1	1.1	3.3	8.7	6.0
	Benchmark	-10.9	2.3	4.0	7.9	5.4
	Excess	-2.2	-1.2	-0.7	0.8	0.6
	Risk (TE)	0.85	0.78	0.87	1.13	1.01
	Info Ratio	-2.55	-1.53	-0.8	0.65	0.55
Fixed Income	Return	9.0	5.1	3.8	4.2	5.8
	Benchmark	8.9	4.8	3.4	3.9	5.5
	Excess	0.1	0.3	0.4	0.3	0.3
	Risk (TE)	0.45	0.27	0.30	0.33	0.33
	Info Ratio	0.17	1.06	1.36	0.98	0.98

* Equity Inception April 2001, Fixed Income Inception August 1995. These inception dates represent the current team's tenure.



Value added above benchmark over the last 10 years was \$820 million¹

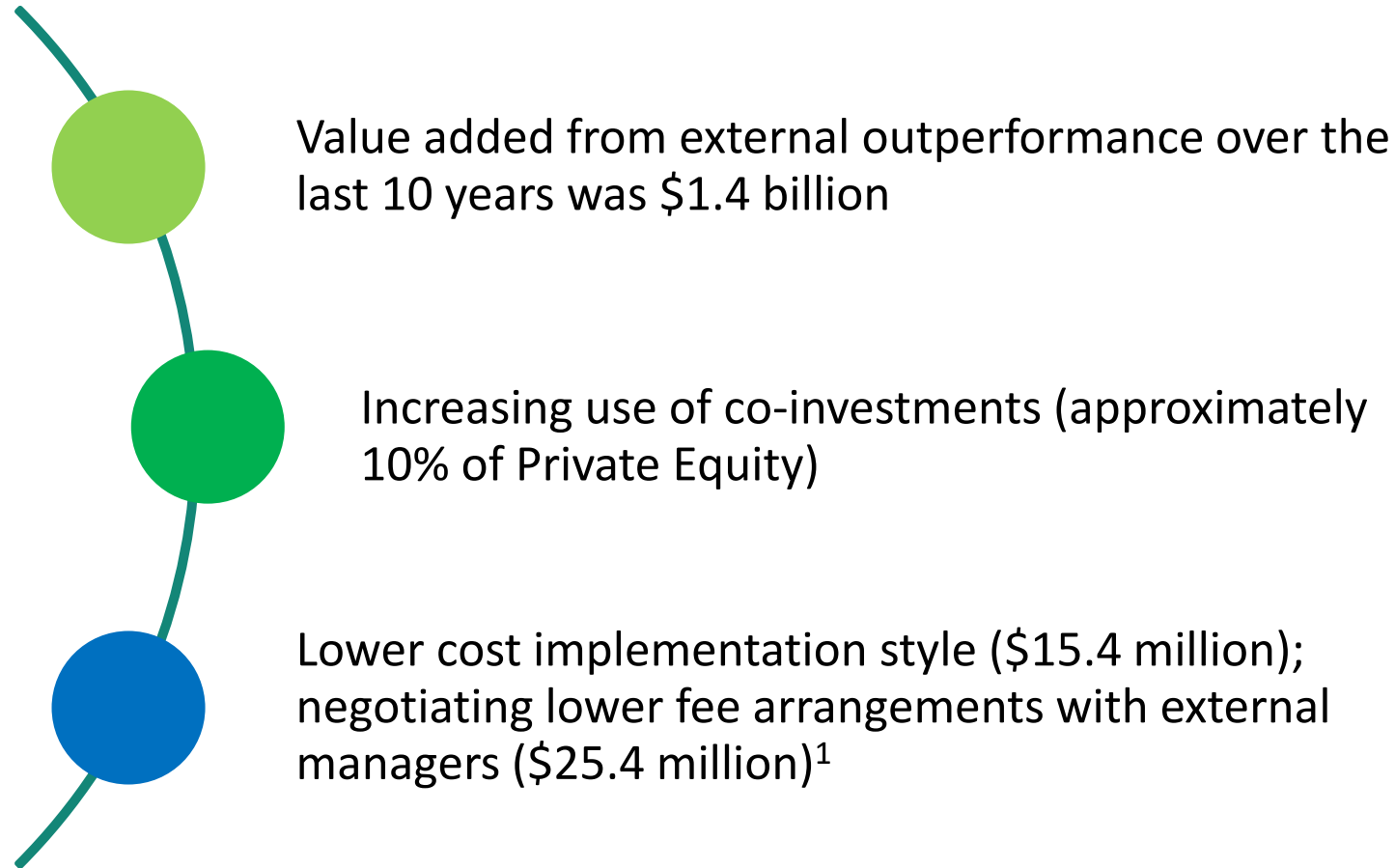
Saving approximately \$58 million in fees annually by managing internally²

Continuing to explore potential new internally managed strategies; collaborating with other teams to increase efficiency in implementing new strategies

¹Annual Internal Investment Management Report

²CEM Benchmarking

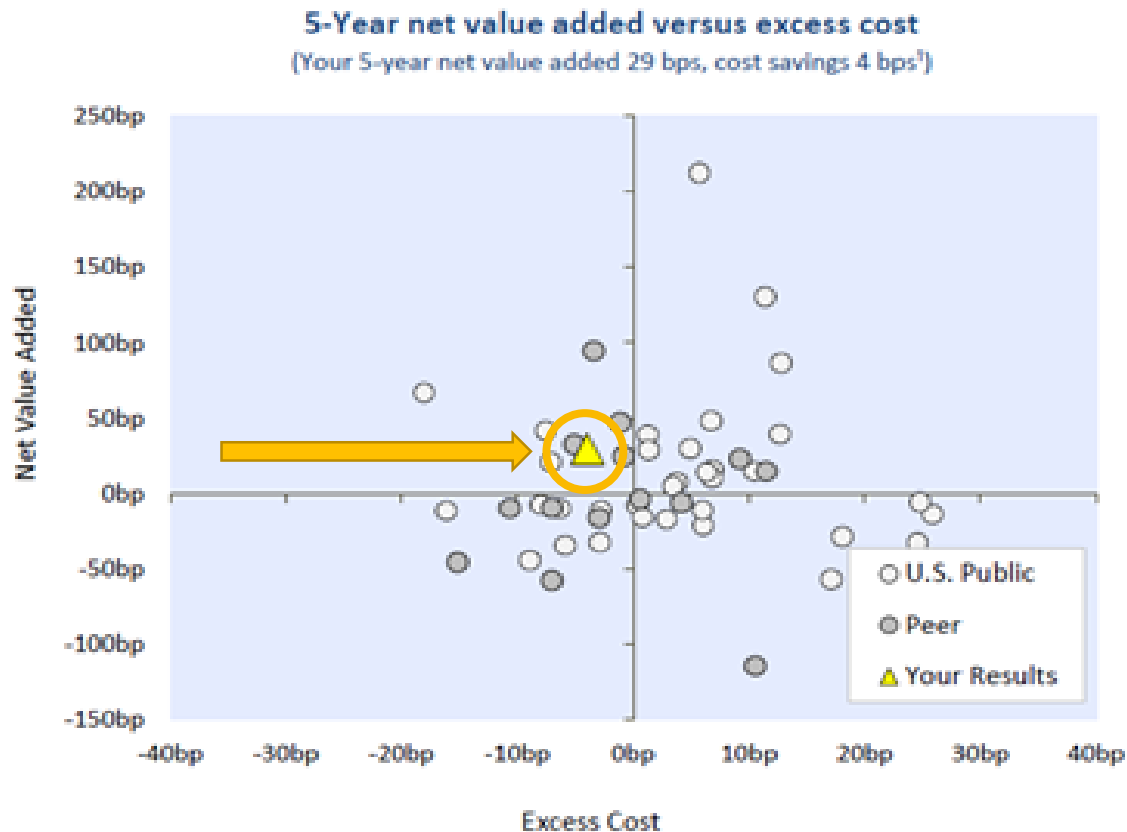
Other Ways of Adding Value



¹CEM Benchmarking

VRS: Positive Value-Added, Low-Cost

Your 5-year performance placed in the positive value-added, low-cost quadrant of the cost effectiveness chart.



Source: CEM Benchmarking

Global Growth, Unemployment and Trade Outlook

IMF Base Case: Pandemic Fades Second Half 2020

Real GDP Growth		
	2020	2021
World	-4.90%	5.40%
G7	-8.00%	4.80%
EU	-10.20%	6.00%
EM	-3.00%	5.90%
US	-8.00%	4.50%

- Unemployment in G7 will remain high: 4.2% (2019), 7.8% (2020) 6.9% (2021).
- Export declines lead to trade imbalances. Current account balances will continue to deteriorate for G7, EU and especially EM.

Trade tensions – The U.S.-China Phase I trade deal is likely to survive through the November election, primarily because both sides are prioritizing economic stability as they recover from the coronavirus shock. Risk will grow if:

- Chinese purchases of U.S. goods disappoint (they are already far behind).
- General trade tension increase between the U.S. and China.
- Hong Kong protests may intensify, sparking more aggressive U.S. action against the Chinese.
- China reacts strongly to U.S. moves against Huawei and the related U.S. efforts to rally Europe to oppose China on the matter.
- Taiwan has success in de-coupling efforts with China and moves more toward the U.S.

Monetary and Fiscal Policy Response Is Unprecedented; Both the Fed and Treasury Are Prepared to Increase Stimulus if Necessary.

Monetary Policy Response

The FED has introduced several facilities to support the flow of credit (Commercial Paper, Primary Dealer and Money Market Mutual Fund Liquidity...) as well as:

- Funds rate lowered by 150 bps in March to 0-0.25 bps.
- Expanded overnight and term repos.
- Purchase of Treasury and Agency securities in amounts as needed.
- Began selective purchases of investment grade corporate bonds.

U.S. Fiscal Policy Responses

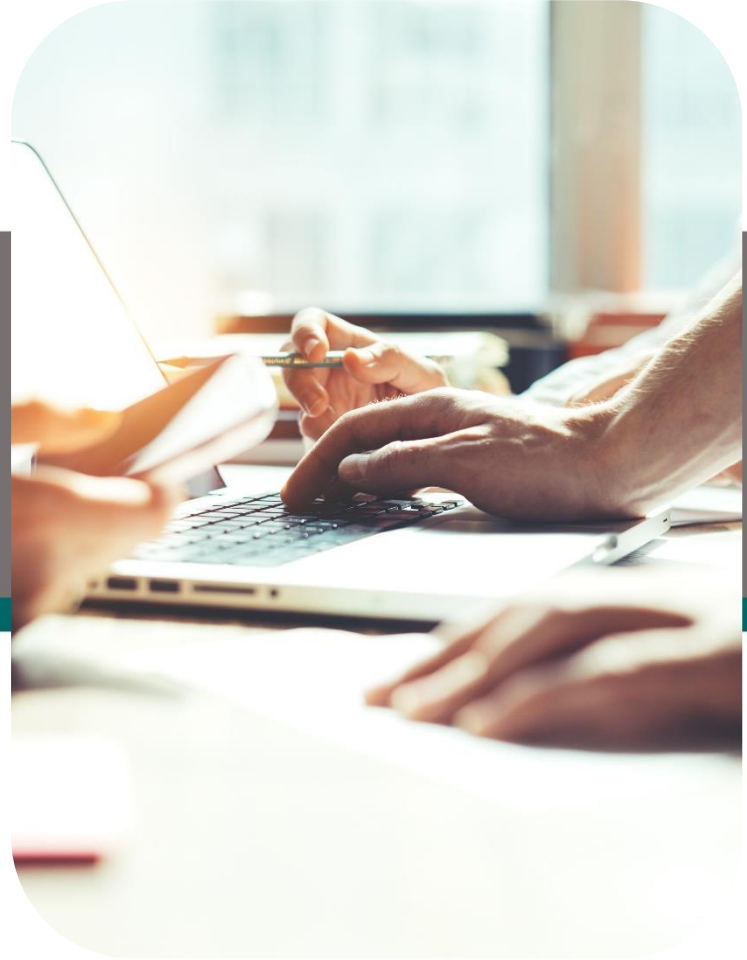
U.S. \$483 Billion Paycheck Protection Program (PPP) and Health Care Enhancement Act. Includes SBA loans and guarantees to retain workers, as well as grants and loans to assist small businesses.

Estimated \$2.3 Trillion (11% of GDP) for “CARES” Act (Coronavirus Aid Relief and Economic Security). Includes one-time tax rebates for expansion of UE benefits, food safety net, loans and guarantees, and transfers to state and local governments.

Estimated \$8.3 Billion on Coronavirus Preparedness and Response.

- The U.S. equity market has discounted a V-shaped recovery path in earnings, perhaps too optimistic.
- Barring a vaccine, the economy will follow a slow recovery path after the initial bounce-back, thereby reducing the ability of corporate earnings to snap back quickly.
- Higher COVID-related operating costs, fewer share buybacks, and potentially higher corporate taxes down the road suggest it will take time for the S&P EPS to recover its 2019 high.
- Elevated valuations leave stocks vulnerable to a protracted recovery in earnings.
- Debt levels have risen quite dramatically but lower expected rates will keep debt service costs low. However, revenue loss due to the lockdown and potentially slower recovery in services and retail (plus higher savings rate) will expose more vulnerable firms.

Administration



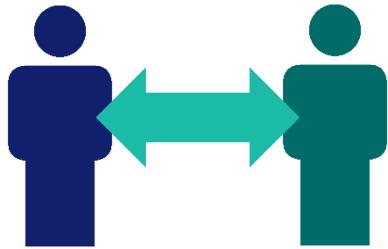
VRS Total Membership as of March 31, 2020



	Plan 1	Plan 2	Hybrid	Total
Teachers	71,029	31,408	53,527	155,964
Political Subdivision Employees	42,582	31,616	37,297	111,495
State Employees	32,312	14,630	28,647	75,589
State Police Officers' Retirement System (SPORS)	1,122	760	—	1,882
Virginia Law Officers' Retirement System (VaLORS)	2,902	5,836	—	8,738
Judicial Retirement System (JRS)	208	47	183	438
Total Active Members	150,155	84,297	119,654	354,106



Hybrid Retirement Plan Impact



Shares risk between
employer/employee



Reduces employer
investment risk



Increases portability



Reduces employer
longevity risk



Lowers future costs
of the plan

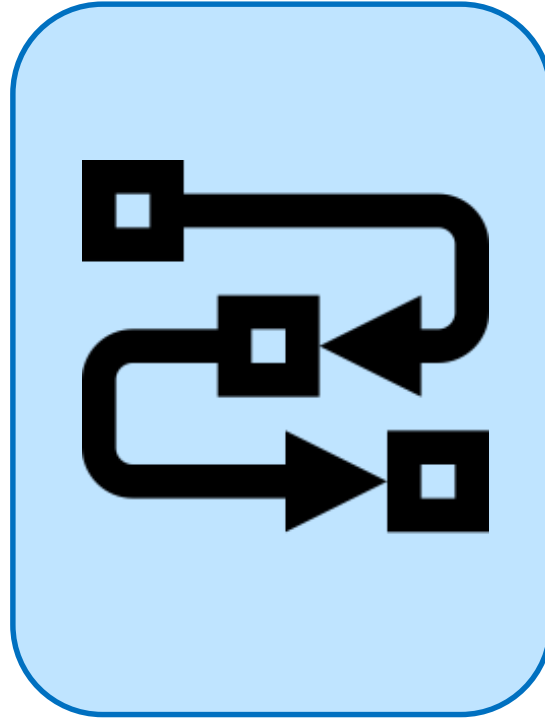
Member Outreach and Support



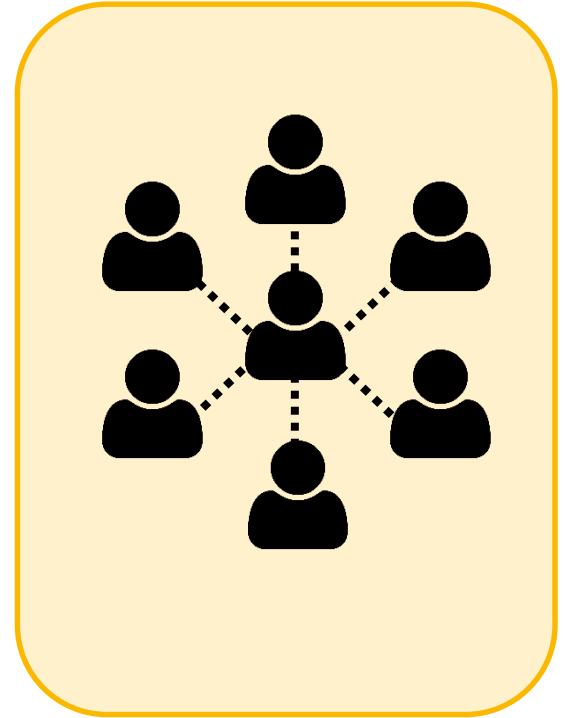
Enhancing Customer Service



Moved nimbly to remote work locations



Continued processing retirements



Conducted outreach supported by technology

Coronavirus and Your Financial Health

Answers, tips, and advice for staying financially well during the COVID-19 pandemic

About This Guide

We're updating this page often daily, so check back soon for the latest answers, advice, and tips. New users please [sign up](#) to receive email updates.



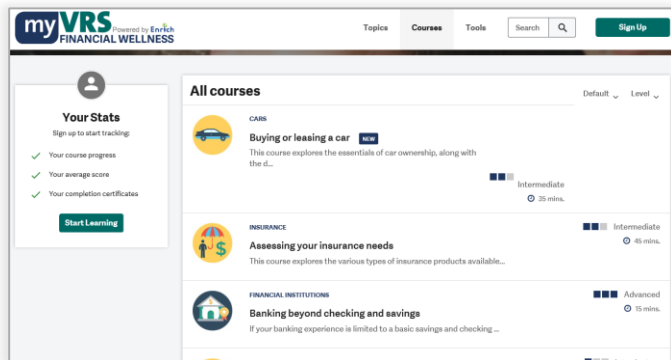
Are you concerned about the effect of the Coronavirus on your personal finances, career, and/or education? We've put together a comprehensive guide with answers, tips, and advice for staying financially well during the COVID-19 pandemic. Stay safe and know that we're here to help in any way that we can.

Please bear in mind, due to the volatility of the COVID-19 pandemic, details about the illness, public response, policy, and more, are subject to change. Please consult your state and local offices for the most accurate and up-to-date information about the COVID-19 pandemic in your area; and for global updates, consult the [World Health Organization](#)



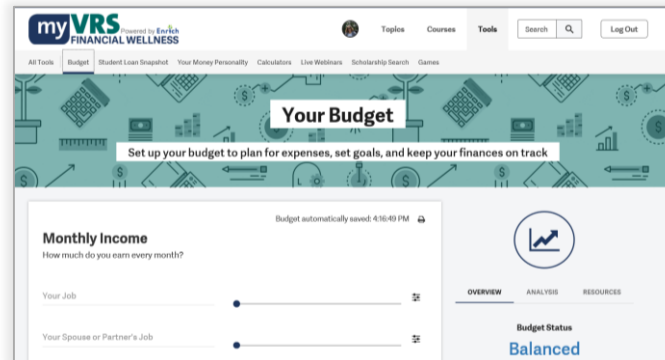
Tools for Every Learning Style

Courses



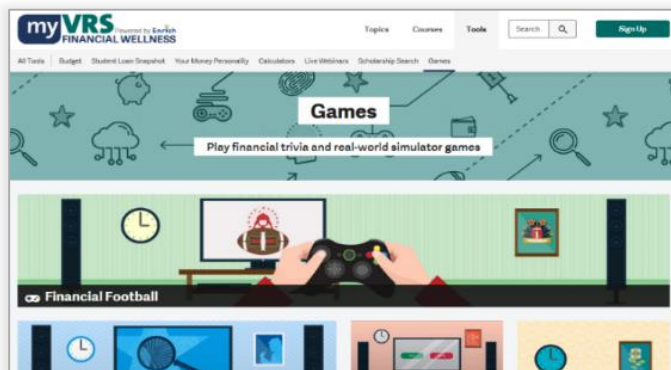
The screenshot shows the 'myVRS' website interface for the 'Courses' section. The header includes 'myVRS FINANCIAL WELLNESS' and navigation tabs for 'Topics', 'Courses', and 'Tools'. A search bar and a 'Sign Up' button are also present. On the left, a 'Your Stats' sidebar shows progress indicators for course tracking, average score, and completion certificates, with a 'Start Learning' button. The main content area, titled 'All courses', lists three courses: 'Buying or leasing a car' (Intermediate, 35 mins), 'Assessing your insurance needs' (Intermediate, 45 mins), and 'Banking beyond checking and savings' (Advanced, 15 mins).

Budgeting Tools



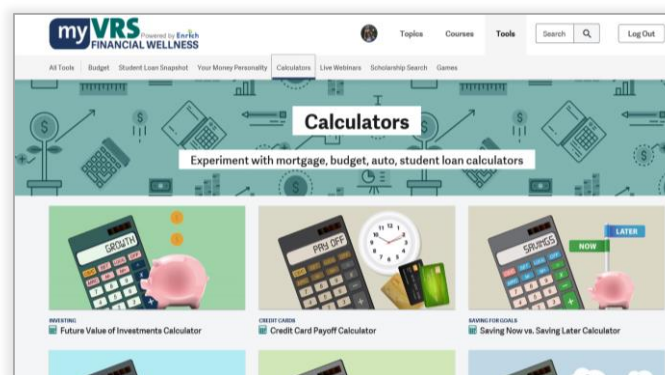
The screenshot displays the 'myVRS' website interface for the 'Budget' tool. The header features 'myVRS FINANCIAL WELLNESS' and navigation tabs for 'All Tools', 'Budget', 'Student Loan Snapshot', 'Your Money Personality', 'Calculators', 'Live Webinars', 'Scholarship Search', and 'Games'. A search bar and a 'Log Out' button are also visible. The main content area is titled 'Your Budget' and includes the text 'Set up your budget to plan for expenses, set goals, and keep your finances on track'. Below this, there is a 'Monthly Income' section with a slider for 'Your Job' and 'Your Spouse or Partner's Job'. A 'Budget Status' indicator shows 'Balanced'.

Educational Games



The screenshot shows the 'myVRS' website interface for the 'Games' section. The header includes 'myVRS FINANCIAL WELLNESS' and navigation tabs for 'All Tools', 'Budget', 'Student Loan Snapshot', 'Your Money Personality', 'Calculators', 'Live Webinars', 'Scholarship Search', and 'Games'. A search bar and a 'Sign Up' button are also present. The main content area is titled 'Games' and includes the text 'Play financial trivia and real-world simulator games'. Below this, there is a 'Financial Football' game preview.

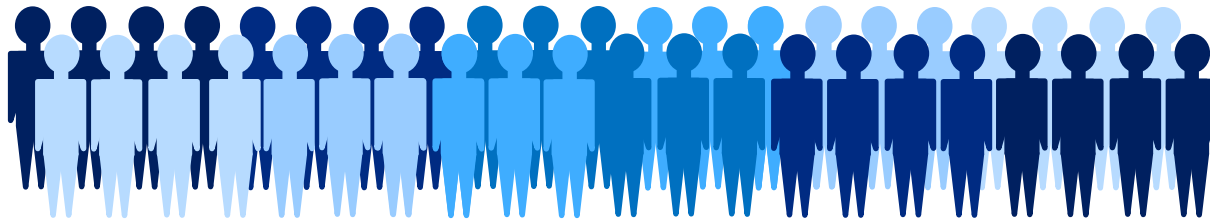
Calculators



The screenshot displays the 'myVRS' website interface for the 'Calculators' section. The header features 'myVRS FINANCIAL WELLNESS' and navigation tabs for 'All Tools', 'Budget', 'Student Loan Snapshot', 'Your Money Personality', 'Calculators', 'Live Webinars', 'Scholarship Search', and 'Games'. A search bar and a 'Log Out' button are also visible. The main content area is titled 'Calculators' and includes the text 'Experiment with mortgage, budget, auto, student loan calculators'. Below this, there are three calculator cards: 'Future Value of Investments Calculator', 'Credit Card Payoff Calculator', and 'Saving Now vs. Saving Later Calculator'.

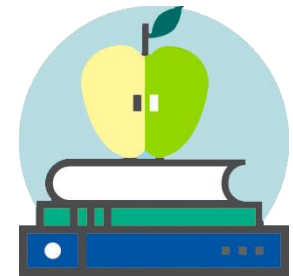
Hybrid Retirement Plan

Hybrid Retirement Plan Member Profile as of April 1, 2020



118,941

**Active Hybrid Retirement
Plan members**



Largest Member Group

Teachers

53,664 members
(45%)



Median Salary
\$43,685

Median Age
37 years old

Average Years in the Plan
2.28

85% of members making voluntary contribution make the **max of 4%**

2020 Auto-Escalation Status



Number of hybrid members auto-escalated* January 2020

79,751

	Final Rates as of January 1, 2020	2017 Historical Rates
Auto-Escalation	93.0%	89.0%
Active Control	2.5%	3.6%
Opt Out	1.0%	3.1%

* Auto-escalated hybrid members hired on or before September 3, 2019, and had a voluntary contribution of less than 4% and did not opt-out.

Notes: Opt-out period was October 1, 2019, through December 16, 2019. Percentages do not equal 100% due to employee separations and job changes.

Communications and Outreach



A **resource toolkit** assists employers in communicating plan provisions and the importance of voluntary contributions



SmartStep allows members to increase their voluntary contributions at a date they choose



The **hybrid paycheck calculator** helps members see the change in their paycheck if making voluntary contributions

Enhanced voluntary contribution messaging on account pages is a reminder for members who are not making a voluntary contribution



is a reminder for members who are not making a voluntary contribution



With **GoHybrid**, employees can elect a voluntary contribution before their hire date or enrollment in VRS



The **VRS DCP mobile app** for iPhones, Android smartphones and tablets allows members to manage their accounts on the go

Hybrid Learning Channel



- Features a video series to educate members
- Employers can use as a tool when onboarding new employees



Optional Retirement Plan for Higher Education (ORPHE)



- Moved to two providers
- Changed investment lineup
- Reduced fees
- Improved performance as noted in most recent JLARC report



Service Delivery and Cost Comparison



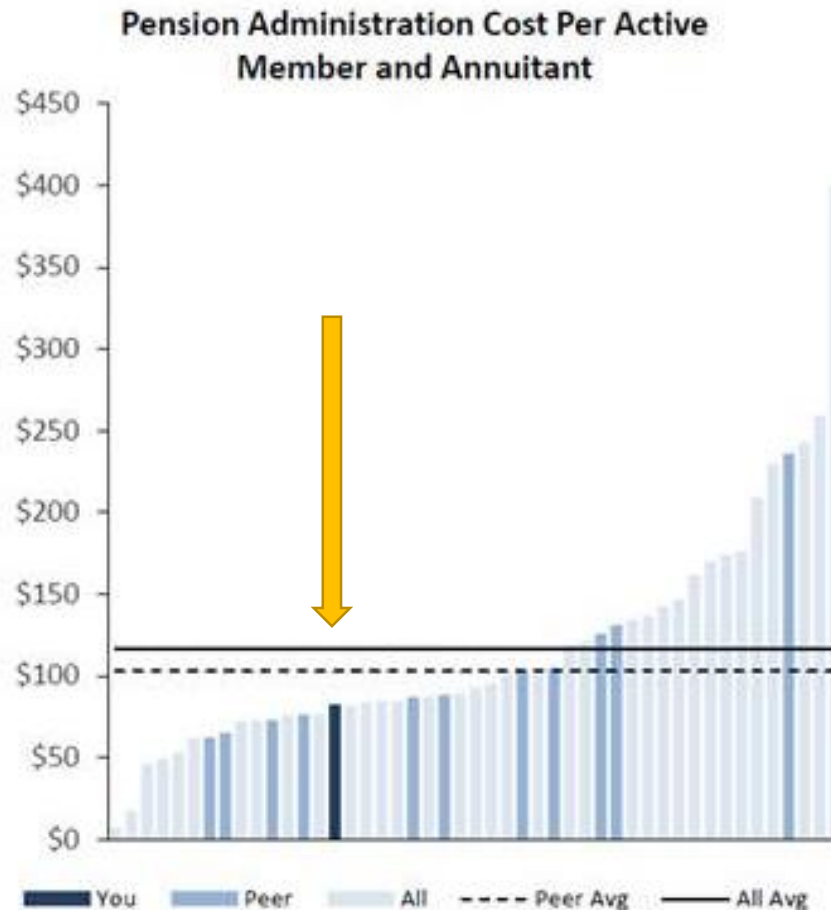
Measurement for Management



CEM Benchmarking helps more than 400 funds worldwide manage costs and optimize performance with objective, actionable benchmarking insight

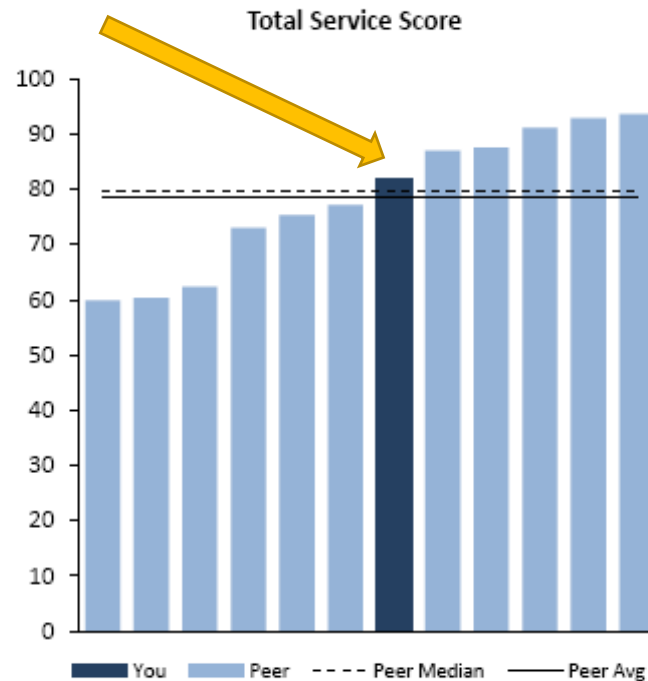
VRS Cost Compared With Peers

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 82. This was above the peer median of 80.

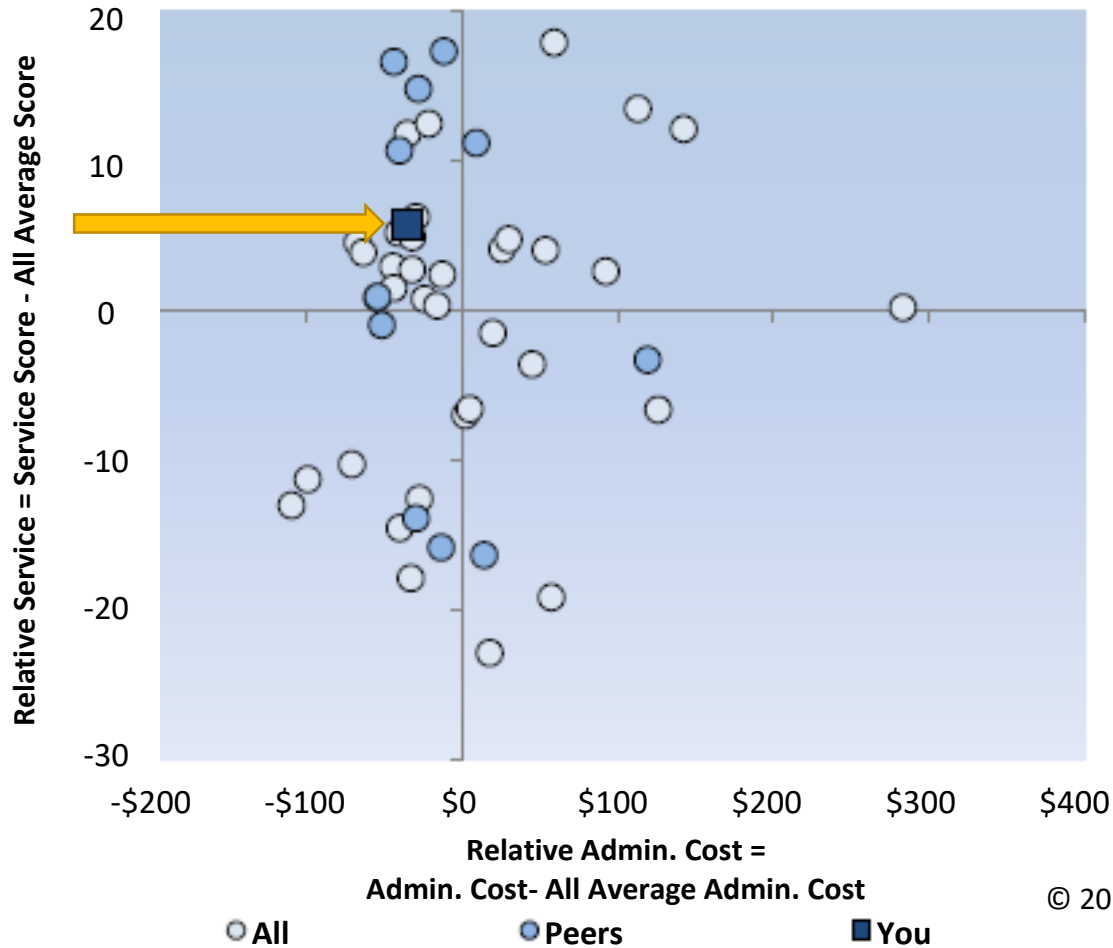


Service is defined from a member's perspective. Higher service means more channels, faster turnaround times, more availability, more choice, better content and higher quality.

Higher service is not necessarily cost-effective. For example, the ability to answer the telephone 24 hours a day is higher service, but not cost effective.

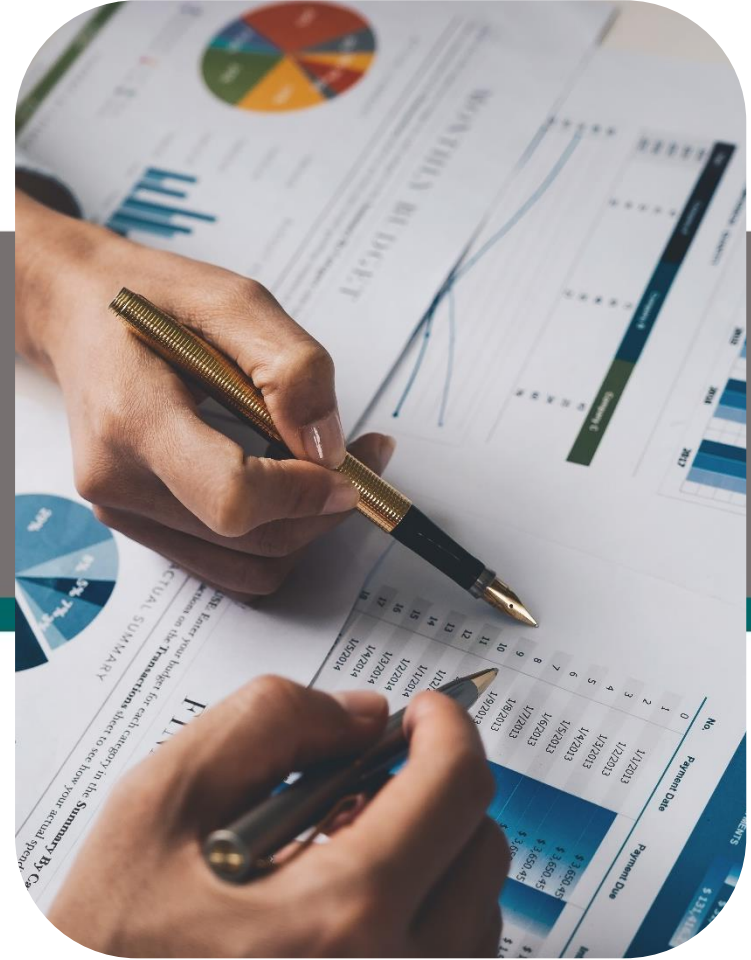
Cost and Service Trends

Relative Service versus Relative Cost

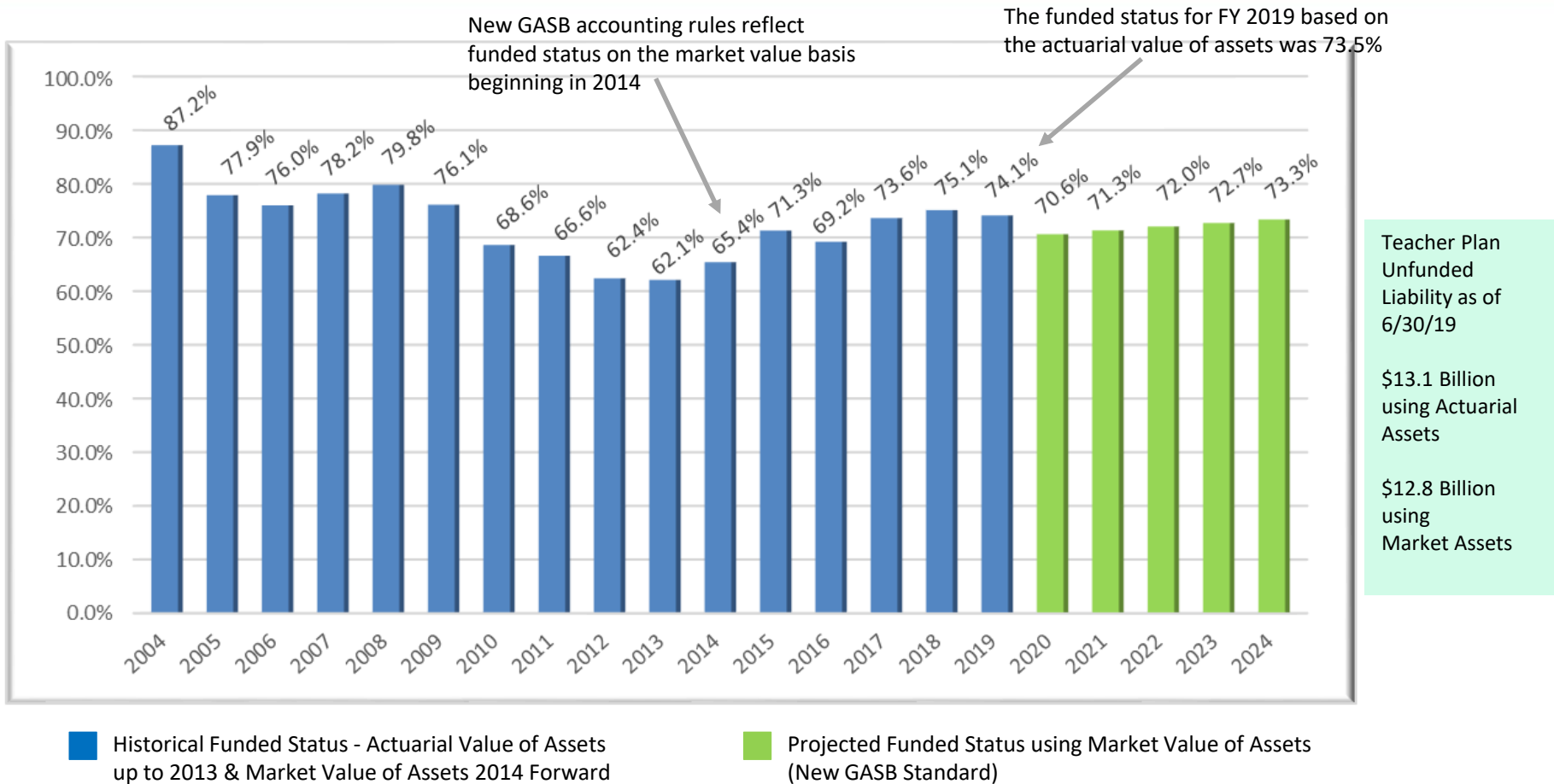


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Funded Status and Contribution Rates



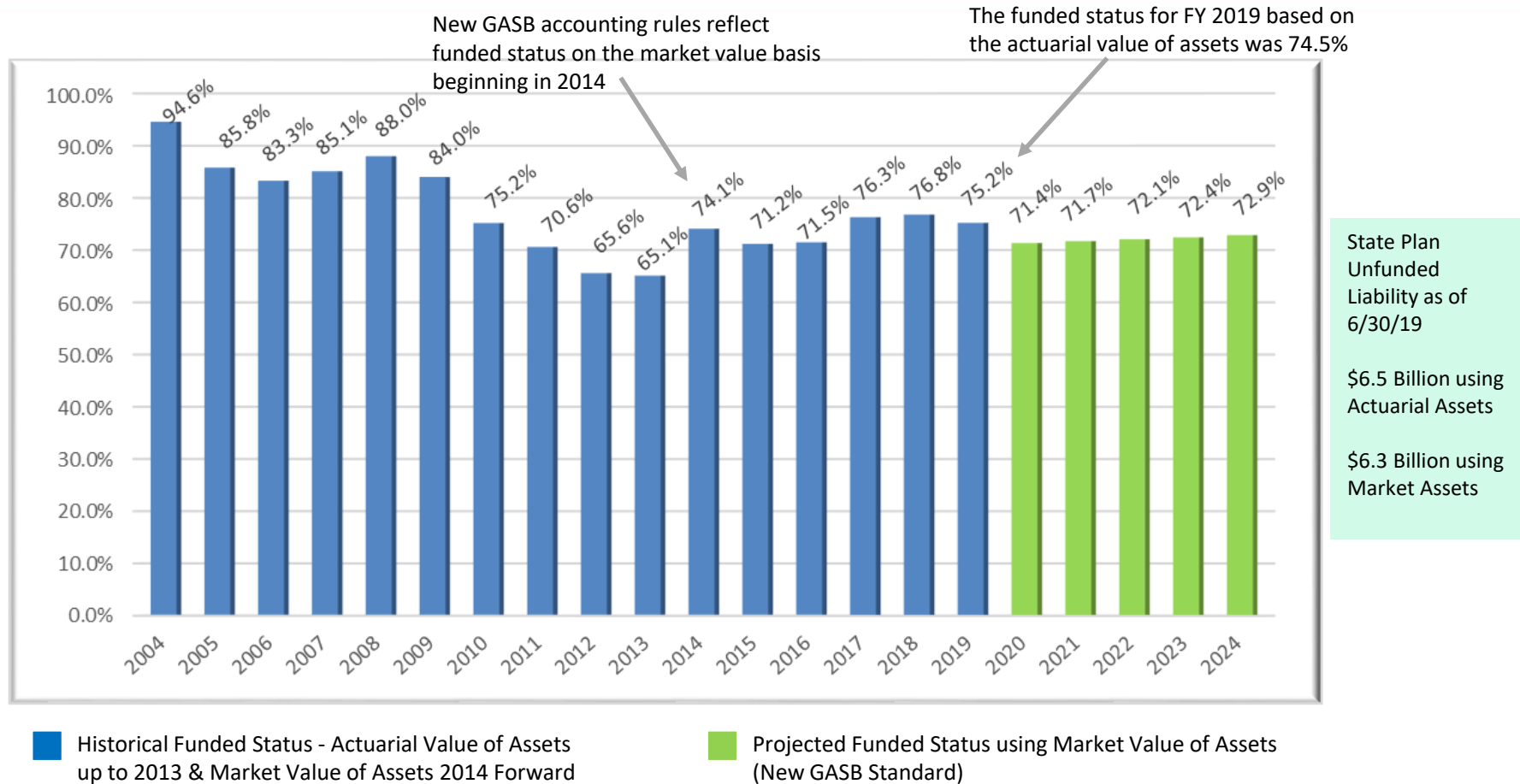
Funded Status: Teachers



Notes:

- Projected years' investment returns assume 1.00% for 2020 and 6.75% thereafter with 2.5% inflation rate.
- New GASB Accounting Rules will reflect funded status using Market Value of Assets effective 6/30/14 for Plan Reporting and 6/30/15 for Employer Reporting.

Funded Status: State



Notes:

- Projected years' investment returns assume 1.00% for 2020 and 6.75% thereafter with 2.5% inflation rate.
- New GASB Accounting Rules will reflect funded status using Market Value of Assets effective 6/30/14 for Plan Reporting and 6/30/15 for Employer Reporting.

Employer Contribution Rates and Funding Requirements for Statewide Plans



Plan	Fiscal Year 2020	Fiscal Year 2021
State	13.52%	14.46%
SPORS	24.88%	26.33%
VaLORS	21.61%	21.90%
JRS	34.39%	29.84%
Teachers		
Teachers	15.68%	16.62%
Total Estimated Employer Contributions		
Total Estimated Employer Contributions	\$2,018,107,000	\$2,196,075,000
General Fund	\$892,433,000	\$966,061,000
Non-General Fund	\$1,125,674,000	\$1,230,014,000

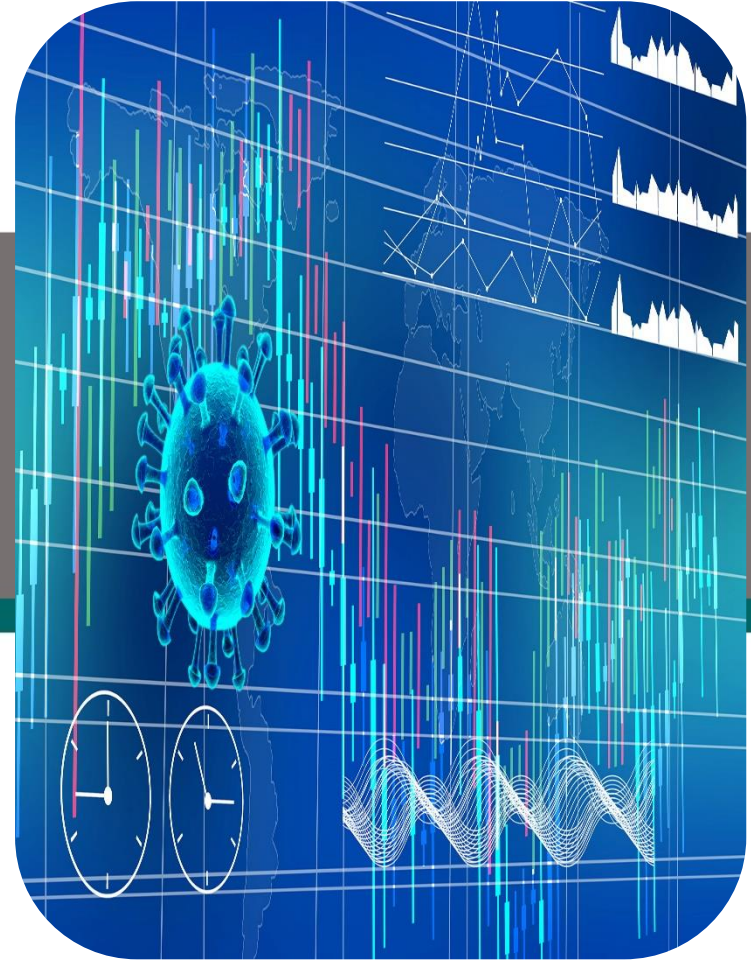
* Estimated funding for FY 2020 is based on payroll from the 2019 valuation, while estimated funding for FY 2021 uses payroll from the 2019 valuation projected forward one year by plan assumptions. Actual funding will be based on payrolls in effect at time of billing.

Other Post-Employment Benefits Contribution Rates by Fiscal Year



		VRS-Certified Rates for 2021 & 2022
Group Life Insurance	Employee	0.80%
	Employer	0.54%
	Total	1.34%
Health Insurance Credit	State Employees	1.12%
	Teachers	1.21%
	Non-Professional Local Employees	Varies by employer
Virginia Sickness & Disability Program (VSDP)	Covered Payroll	0.61%
Virginia Local Disability Program (VLDP)	Teachers	0.47%
	Political Subdivision Employees	0.83%

Stress Testing and Sensitivity Analysis



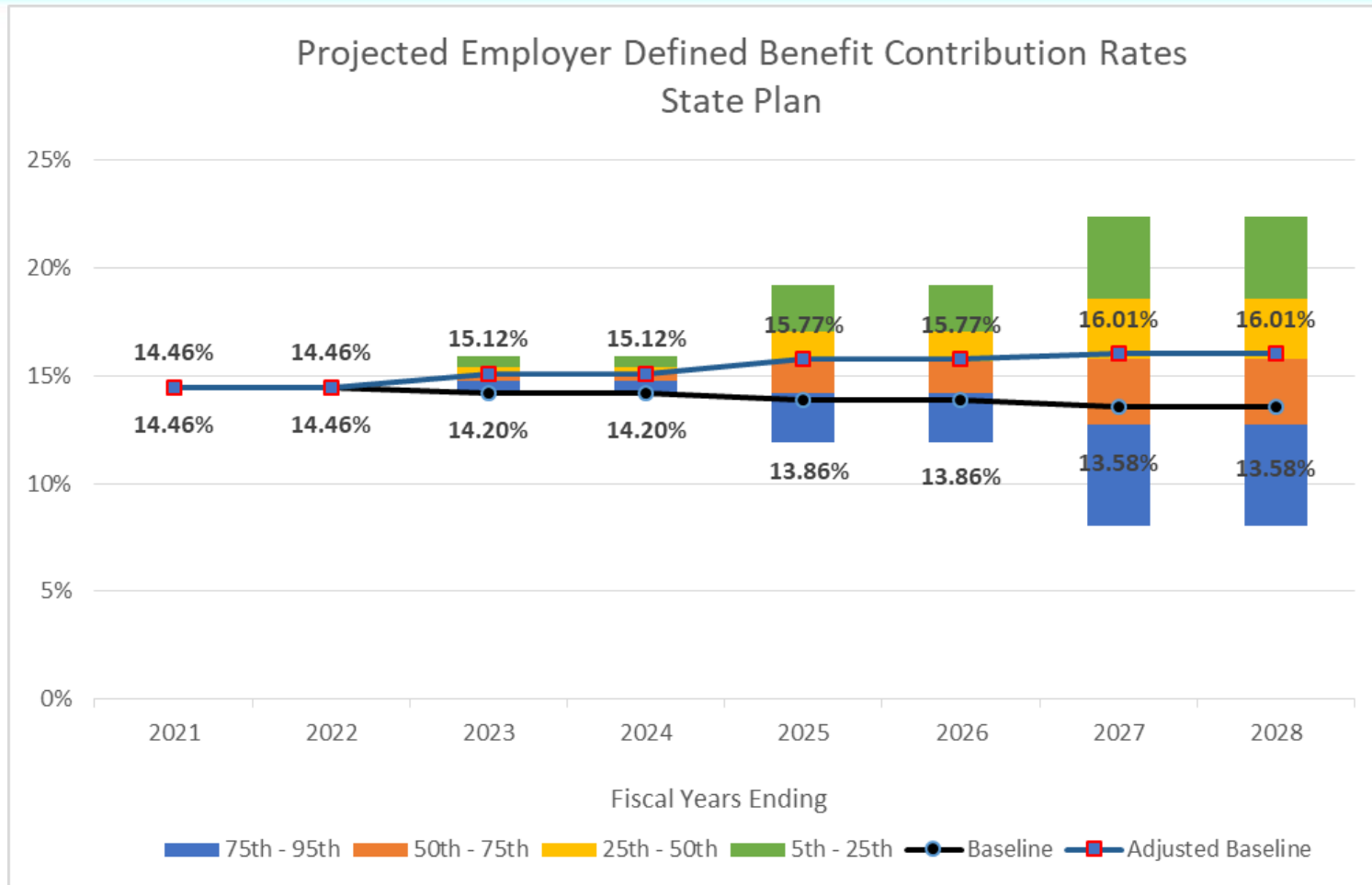
Stress Testing Update



- VRS stress testing reports issued in June 2017, December 2018, June 2020.
- Current report focuses on impacts of COVID-19 and what to expect going forward.
- VRS Stress Test and Sensitivity Analysis focuses primarily on the negative scenarios to identify areas of risk for the plan.

Future Risk Analysis

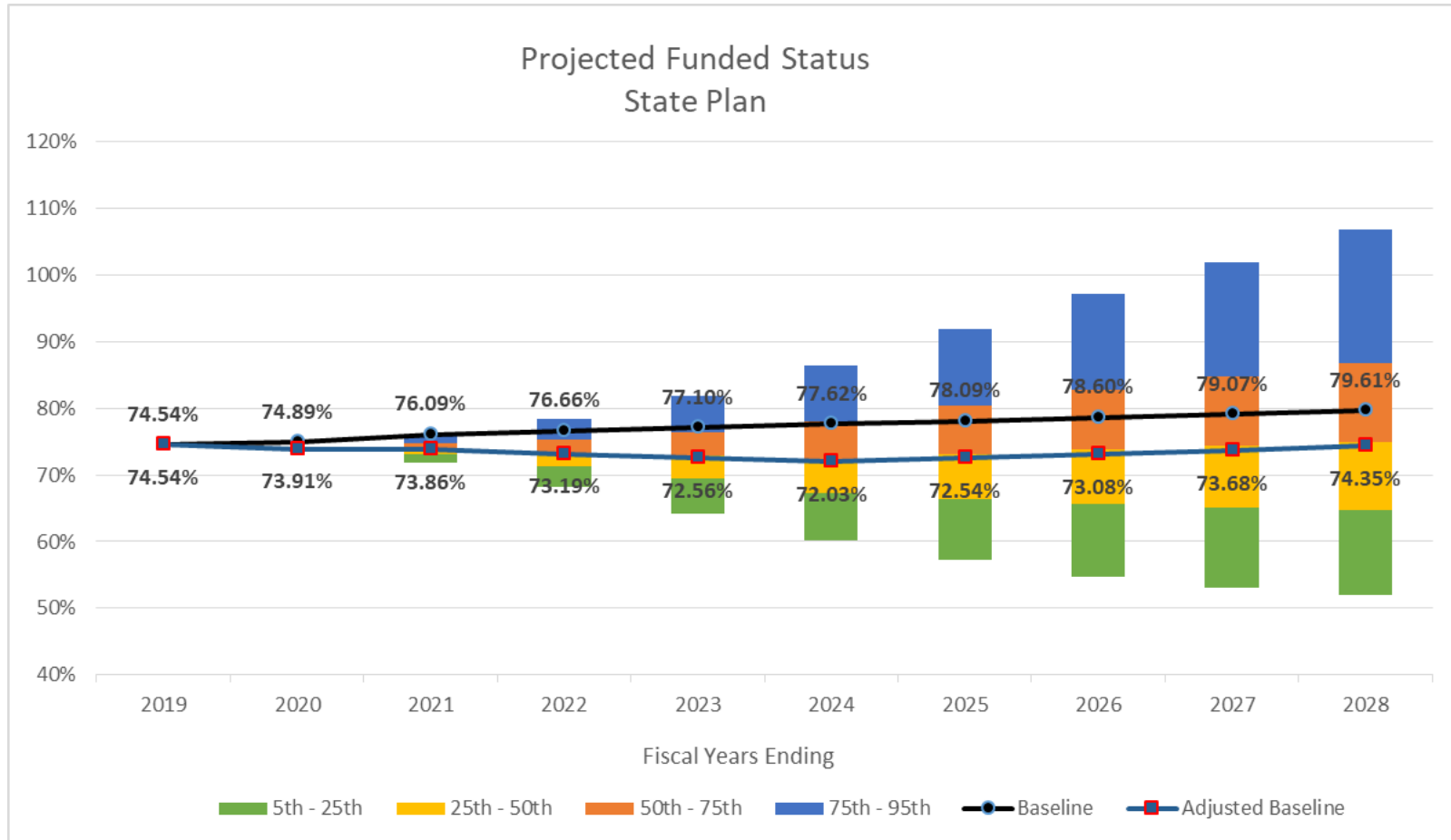
Investment Impacts as of 6/30/20 – Contribution Rates



- Shows impact of a 0% return for fiscal year 2020 on future state contribution rates.
- Due to asset smoothing, impacts of a single year event are recognized over a five-year period; therefore, the employer rate will gradually rise over the next three rate-setting cycles to account for the new unfunded liability created by fund returns being below the assumed rate of 6.75%.

Future Risk Analysis

Investment Impacts as of 6/30/20 – Funded Status



- Shows impact of a 0% return for fiscal year 2020 on state plan funded status.
- Impact on funded status also expected to be blended in over a five-year period.

Serving Those Who Serve Others



**Helping members plan
for tomorrow, today**