



VRS Overview Presented to the Joint Legislative Audit and Review Commission July 11, 2016

Presenters:

Robert L. Greene, Chairman, VRS Board of Trustees

Ronald D. Schmitz, Chief Investment Officer

Patricia S. Bishop, Director

Agenda



VRS Overview

• Robert L. Greene Chairman, VRS Board of Trustees

Investments Overview

Ronald D. Schmitz
 Chief Investment Officer

Administration Overview

Patricia S. Bishop
 Director





Remarks

Robert L. Greene Chairman VRS Board of Trustees

Board Members



Robert L. Greene, Chairman

National Association of Investment Companies

Diana F. Cantor, Vice Chairman

Alternative Investment Management

The Honorable J. Brandon Bell, II CRPC

Brandon Bell Financial Partners

Wallace G. "Bo" Harris, Ph.D.

University of Richmond

W. Brett Hayes

Wells Fargo Advisors Financial Network

William H. Leighty

Virginia Tech

Joseph W. Montgomery

The Optimal Service Group, Wells Fargo Advisors

Mitchell L. Nason

Prince William County
Department of Fire and Rescue

Troilen Gainey Seward, Ed.S.

Dinwiddie County Public Schools (Retired)





Investments

Ronald D. Schmitz
Chief Investment Officer

VRS Investment Presentation Outline



- Total fund performance ending 3/31/16
- Returns through 4/30/16
- Fiscal year returns for the past 25 years, compared to the actuarially assumed return
- Asset allocation overview
- Update on the new asset allocation policy
- Overview of internally managed assets
- Economic/market outlook

Total Fund Performance as of March 31, 2016



	10 Yr	5 Yr	3 Yr	1 Yr	Market Value (\$MM)
Total Public Equity	4.9	7.0	7.4	-3.2	26,989
Benchmark	4.4	6.1	6.4	-4.1	
Total Investment-Grade Fixed Income	5.5	4.1	2.7	2.2	11,673
Benchmark	5.0	3.9	2.5	2.0	
Total Credit Strategies	5.6	4.5	3.4	-1.5	12,024
Benchmark	4.8	4.2	3.0	-1.3	
Total Real Assets	7.3	12.2	12.2	10.4	8,673
Benchmark	7.2	11.2	10.8	10.7	
Total Private Equity	11.8	12.9	13.8	9.3	5,283
Benchmark	8.8	12.4	13.4	2.6	
Total Strategic Opportunities Portfolio	n/a	n/a	1.1	-5.1	1,232
Benchmark	n/a	n/a	1.0	-2.1	
Total Fund	5.4	6.8	6.7	0.5	67,082
VRS Custom Benchmark	4.8	6.3	6.2	-0.1	

- Total Plan return exceeds benchmark over the past one, three, five and 10 years.
- Outperformance versus benchmark over the past 10 years across all programs.

Total Fund Performance as of April 30, 2016

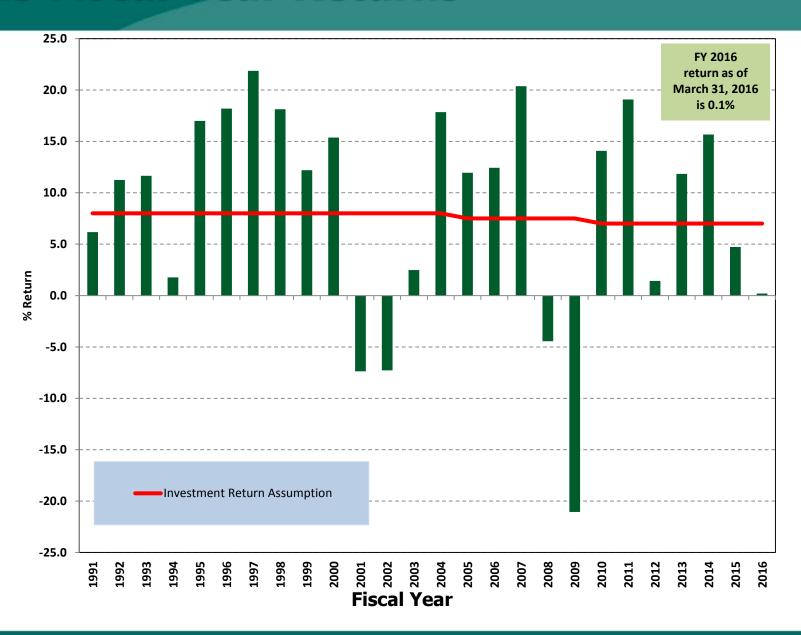


	10 Yr	5 Yr	3 Yr	1 Yr	Fiscal YTD	Market Value (\$MM)
Total Public Equity Benchmark	4.7 4.2	6.5 5.6	6.8 5.9	-3.9 -5.2	-3.1 -3.5	27,202
Total Investment-Grade Fixed Income	5.6	3.9	2.6	3.2	4.5	11,744
Benchmark	5.1	3.7	2.3	2.7	4.1	
Total Credit Strategies Benchmark	5.8 5.0	4.6 4.4	3.6 3.1	-0.8 -0.4	-0.4 0.5	12,216
Total Real Assets Benchmark	7.4 7.3	12.0 10.9	11.9 10.4	10.5 10.7	8.9 9.4	8,662
Total Private Equity Benchmark	11.7 7.9	12.9 10.8	13.8 9.5	8.6 -1.6	6.2 -6.6	5,318
Total Strategic Opportunities Portfolio Benchmark	n/a n/a	n/a n/a	1.0 1.3	-5.1 -2.3	-3.3 -0.7	1,058
Total Fund VRS Custom Benchmark	5.3 4.7	6.5 5.9	6.4 5.6	0.4 -0.6	0.9 0.1	67,157

[•] FYTD returns unlikely to hit the 7% assumed rate.

VRS Fiscal Year Returns





Fund Performance

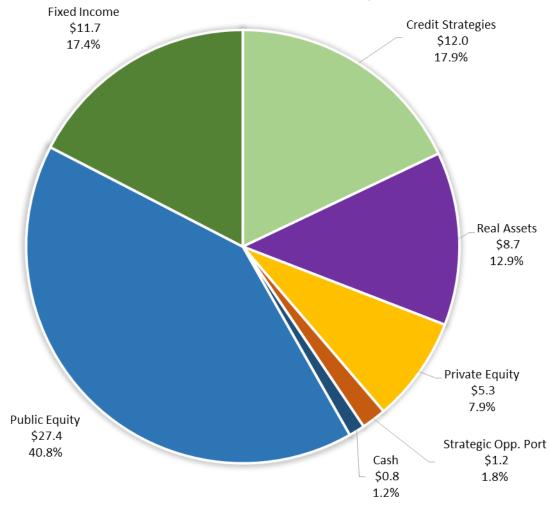


	VRS Return (As of March 31, 2016)
3-year	6.7%
5-year	6.8%
10-year	5.4%
15-year	6.2%
20-year	7.5%
25-year	8.2%

VRS Asset Allocation as of March 31, 2016



Total Fund market value = \$67.1 billion



(Dollar Amounts in Billions/Percent of Total Fund)

2016 Study Board Target Asset Mix



	2013 Study Board Target Asset Mix	2016 Study Board Target Asset Mix	Policy Target % as of July 1, 2016
Public Equity	42%	40%	43%
Fixed Income	15%	15%	17%
Credit Strategies	15%	15%	17%
Real Assets	15%	15%	14%
Private Equity	12%	15%	9%
Cash	1%	0%	0%

The Strategic Opportunities Portfolio has a Policy Target % of 0% and an Allowable Range of 0% - 5%.

Internal Asset Management (IAM) Mandates as of March 31, 2016



Asset Class	Objective		Assets (mm)
	Passive, U.S. Large Cap (Madison)		\$307.0
- - - -	Passive, Non-U.S. Large Cap (Dogwood)		\$138.1
	Passive, Emerging Market Small Cap (Cardinal)		\$51.3
	Low Tracking Error, U.S. Large (Potomac)		\$4,348.1
	Low Tracking Error, Non-U.S. Large (Matoaka)		\$2,491.7
	Low Tracking Error, U.S. Small (Afton)		\$352.4
Fauity	Low Tracking Error, U.S. REIT (Monroe)		\$496.3
Equity	Low Volatility, U.S. Large Cap (Mobjack)		\$1,088.4
	Low Volatility, Non-U.S. Large (Piedmont)		\$1,655.7
	Active Emerging Market Large and Small Cap (Tuckahoe)		\$328.3
	Rebalancing Account		\$518.8
	Energy Overlay		\$108.8
	Currency Hedge (Overlay)		\$4,170.4
		Subtotal	\$16,055.3
	Mortgage and Asset-Backed Securities		\$3,986.5
	Investment Grade Corporates		\$4,225.9
Fixed Income	Treasuries and Agencies		\$3,344.9
rixeu ilicollie	Fixed Income Opportunistic		\$108.8
	Rate Overlay		\$6.4
		Subtotal	\$11,672.5
	Total		\$27,727.8

IAM Track Record as of March 31, 2016



		1 year	3 years	5 years	10 years	Inception*
	Return	-1.51	9.60	10.36	6.60	5.98
	Benchmark	-1.36	8.57	8.52	5.43	5.05
Equity	Excess	-0.15	1.03	1.84	1.17	0.93
	Risk (TE)	1.11	1.04	1.20	1.10	1.04
	Info Ratio	-0.13	1.00	1.54	1.07	0.90
	Return	2.18	2.71	4.08	5.80	6.09
	Benchmark	1.96	2.51	3.79	5.45	5.80
Fixed Income	Excess	0.22	0.20	0.29	0.35	0.29
	Risk (TE)	0.41	0.27	0.34	0.45	0.34
	Info Ratio	0.55	0.75	0.87	0.79	0.87

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

Economic & Market Commentary



- Now seven years into the post-crisis recovery, U.S. economic strength has softened over the past year. Macroeconomic indicators such as GDP, consumer confidence and industrial production are at or near their recent lows.
- The Fed has begun to raise interest rates, but the shape of the U.S. yield curve has flattened and the pace of anticipated rate increases is expected to be slow.
- Outside of the U.S., developed world GDPs have remained below targets with low inflation prevalent in many countries.
- Equity markets have traded down over the past year as global growth forecasts have been reduced and profits have fallen.
- Real Estate remains fundamentally strong, but pricing is at historically high levels.
- Private Equity purchase price multiples continue to be high.

Conclusion: Markets are somewhat expensive across all asset classes.

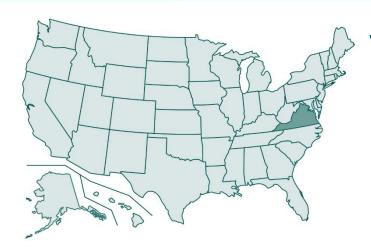




VRS Membership Overview

VRS Overview



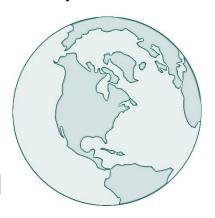


VRS is the

22nd largest

public or private pension system in the U.S.

and the **49th largest**public or private pension system in the world





members, retirees and beneficiaries

VRS Total Membership



	Plan 1	Plan 2	Hybrid	Total
Teachers	89,979	37,571	21,142	148,692
Political Subdivisions	57,605	32,605	15,699	105,909
State Employees	46,408	19,157	12,017	77,582
State Police Officers' Retirement System (SPORS)	1,403	553	_	1,956
Virginia Law Officers' Retirement System (VaLORS)	4,547	4,553	-	9,100
Judicial Retirement System (JRS)	268	69	82	419
Total Active Members	200,210	94,508	48,858	343,658

Total Active Members	Retirees/ Beneficiaries	Inactive/ Deferred Members	VRS Total Population
343,658	191,882	141,971	677,511





Pension Reform

Pension Reform Efforts in Virginia



Year	Reform Effort
2008	General Assembly requests JLARC Compensation Study
2010	General Assembly creates Plan 2 for members hired on or after July 1, 2010: Normal retirement changed to Social Security normal retirement age Unreduced benefits commencing at Rule of 90 Reduced retirement moved to age 60 with at least five years of service Members required to pay 5 percent member contribution COLA formula revised Five-year AFC formula
2011	General Assembly enacted 5/5 program for Plan 1 state employees State employee Plan 1 members pay 5 percent member contribution Offset with 5 percent salary increase JLARC updated study on pension reform

Pension Reform Efforts in Virginia



Year			Reform Effo	ort			
2012	 Local em July 1, 2 Non-vest approxim A hybrid January General As 	neral Assembly requires: Local employees pay 5 percent member contribution, phased in by July 1, 2016, with salary offset Non-vested Plan 1 employees benefit structure change, January 1, 2013; approximately 35,000 active members converted from Plan 1 to Plan 2 A hybrid plan for all general state and local employees hired on or after January 1, 2014 neral Assembly proposes to phase-in contribution rates for the acher and state plans to the VRS board-certified rates:					
		July 1, 2012	July 1, 2014	July 1, 2016	July 1, 2018		
	State	67.02%	78.02%	89.01%	100%		
	Teachers	69.53%	79.69%	89.84%	100%		

Pension Reform Efforts in Virginia

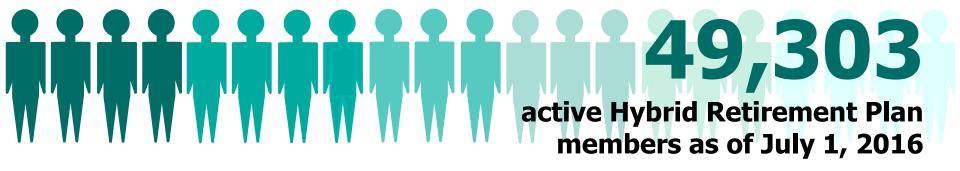


Year	Reform Effort
2013	 VRS modifies funding policy in reaction to new GASB pension reporting requirements: New amortization policy requires closed amortization of unfunded liabilities rather than open/rolling amortization. Legacy unfunded liabilities as of June 30, 2013, will be amortized over 30-year closed period ending in 2043. Future gains/losses after June 30, 2013, will be amortized over explicit 20-year closed periods.
	Pension reforms and new funding policy receive favorable reaction from bond rating agencies
2014	Hybrid Retirement Plan is implemented on January 1, 2014
2015	Purchase of Prior Service (PPS) modifications are enacted to be effective January 1, 2017: Reduces number of months eligible to purchase in certain categories Modified cost structure to make more cost neutral to the plan





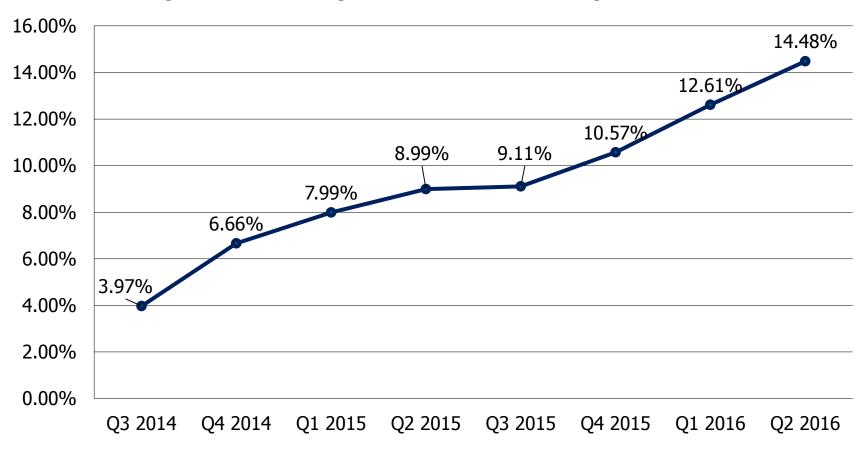




- Total combined balance in the Hybrid 401(a) Cash Match Plan and the Hybrid 457 Deferred Compensation Plan is \$65.7 million as of July 1, 2016.
- Approximately 7,140, or 14.5%, of hybrid plan members are making voluntary contributions.



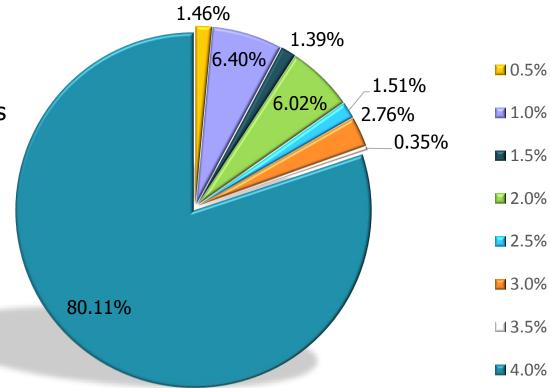
Hybrid Voluntary Contribution Participation Rate





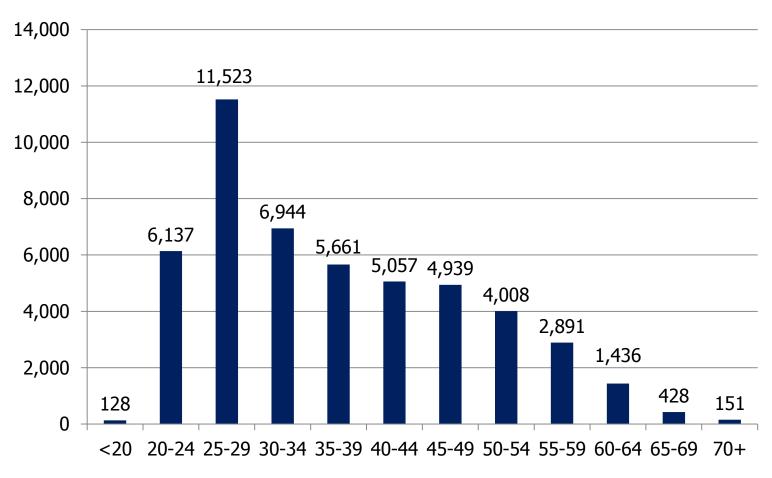
Percent of Voluntary Contribution Members Electing Each Voluntary Contribution Percentage

80% of the 7,140 members electing voluntary contributions chose to maximize their voluntary contributions at 4%



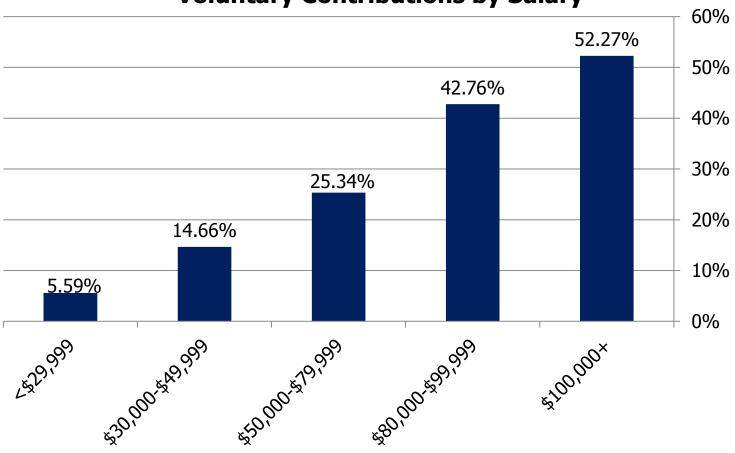


Hybrid Retirement Plan Members by Age



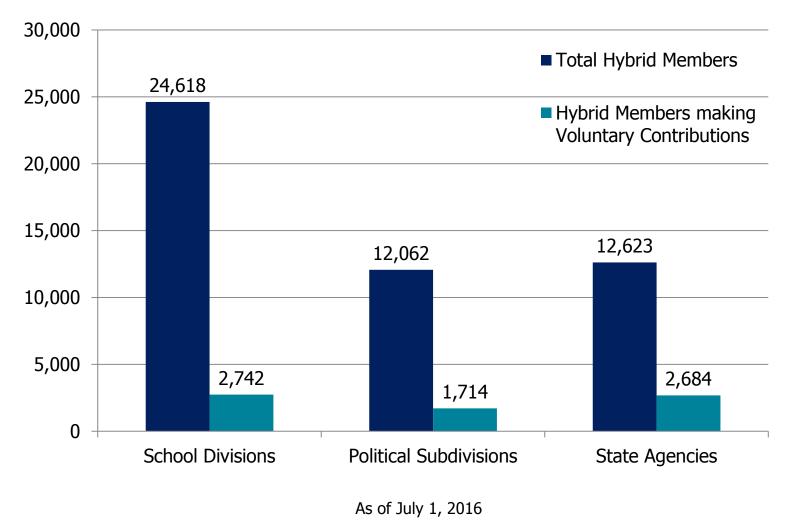








Hybrid Members by Employer Type



Help Hybrid Employees Plan for Tomorrow



Employees can change the amount of their voluntary contributions by logging into <u>Account Access</u>, or by calling ICMA-RC Investor Services at <u>1-888-827-5261</u>, selecting option 1.

VRS' <u>Voluntary Contributions Toolkit</u> can help employers inform employees about the importance of maximizing their contributions.

The <u>Features and Benefits video</u> <u>series</u> highlights the importance of voluntary contributions.

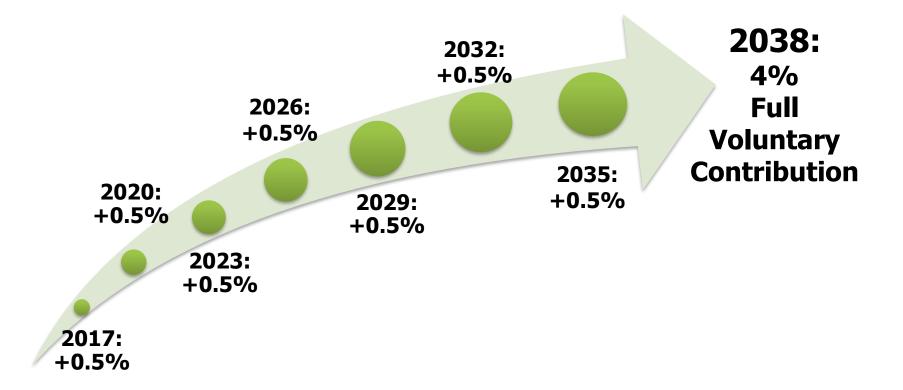
These employer resources are available online at www.varetire.org/hybrid-er.





Auto-Escalation for Hybrid Members





An employee hired prior to September 1, 2016, starting with 0% voluntary contributions, would reach the full voluntary contribution of 4% by 2038, if voluntary contributions only increased every three years as part of auto-escalation.

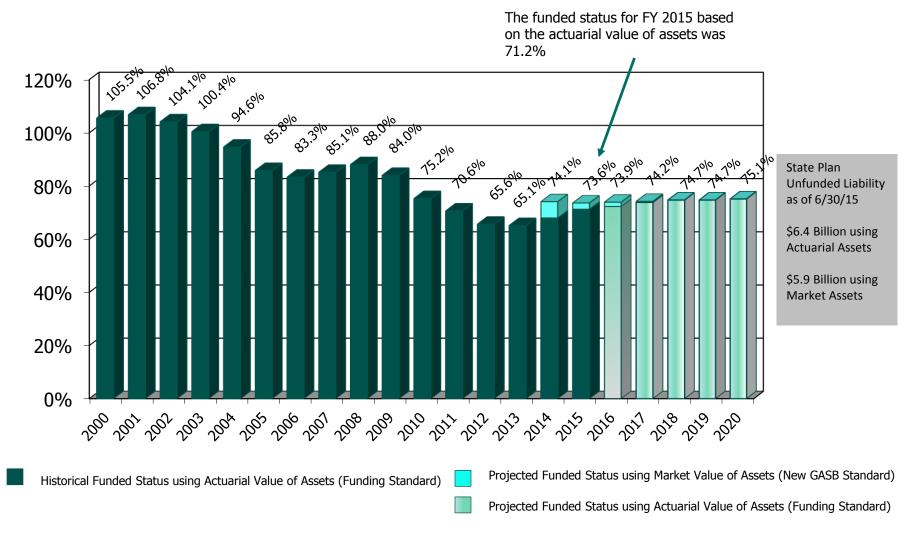




Funded Status and Contribution Rates

Funded Status: State Employees





Notes:

- Projected years' investment returns assume 7.0% 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.

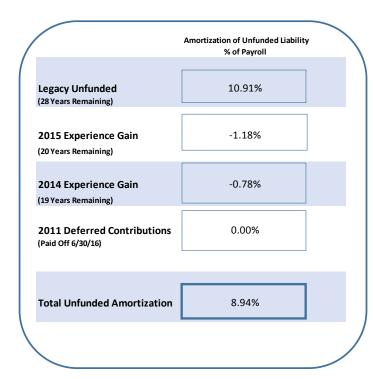
Contribution Rate Development – State Plan

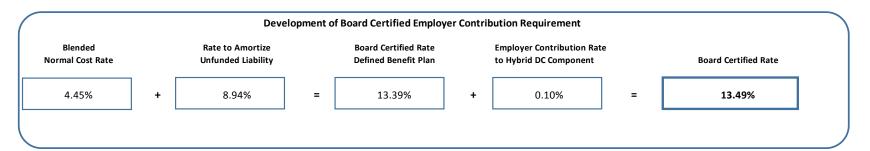


Development of Employer Normal Cost

	Total Normal Cost Rate % of Payroll	2	Member Contribution % of Payroll		Employer Normal Cost % of Payroll
Plan 1	9.64%	-	5.00%	=	4.64%
Plan 2	8.95%	-	5.00%	=	3.95%
Hybrid	5.17%	-	4.00%	=	1.17%
Total Blended	9.10%	_	4.92%	=	4.18%
				Administrative Expense Load	0.27%
				Employer Normal Cost Rate	4.45%

Development of Unfunded Amortization of Liability





State Employer Contribution Rates Reflecting Deferred Contributions Repayment



			FISCAL YEAR		
	2015	2016	2017	2018	Estimated 2019 & 2020
Phase-In of VRS Certified Rates Agreed Upon in 2012 Legislative Session	78.02%	78.02% (Modified to 90% Effective August 2015)	89.01%	89.01%	100%
Expected Employer Rates Based on Phase-In Schedule	12.33%	14.22%	12.87%	12.87%	13.85%
Employer Rates Based on Enrolled Budget	12.33%	14.22%	14.46%	14.46%	TBD
Employer Rates Based on Enrolled Budget & Deferred Contribution Repayment	12.33%	14.22%	13.49%	13.49%	TBD

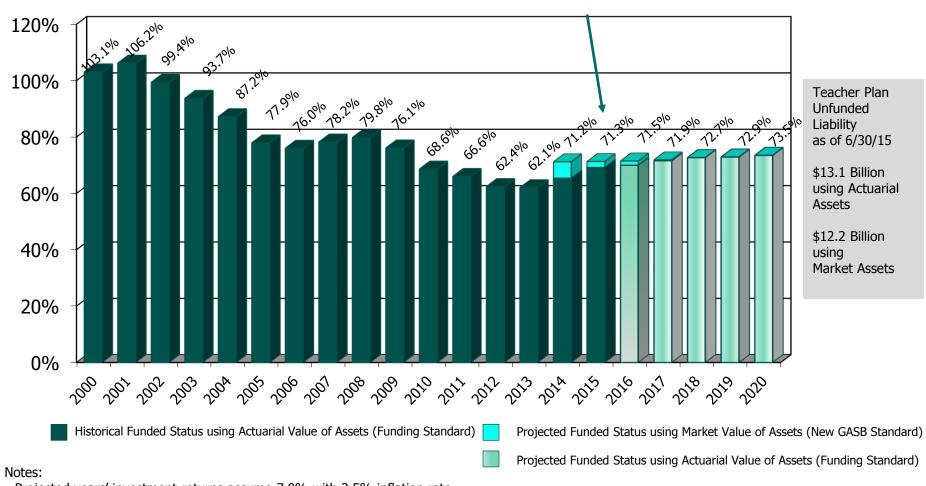
Notes:

- Above contribution rates are net of employee contributions.
- State rate for FY 2016 was increased to 90% of Board certified rate effective August 10, 2015 after favorable State revenues for FY 2015 allowed additional funds to go towards contributions.

Funded Status: Teachers



The funded status for FY 2015 based on the actuarial value of assets was 69.2%.



- Projected years' investment returns assume 7.0% with 2.5% inflation rate.
- Projected funded status reflects additional \$192.9 million contribution to Teacher Plan on 6/30/15.
- New 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.

Contribution Rate Development – Teacher Plan

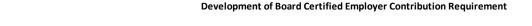


Development of Employer Normal Cost

	Total Normal Cost Rate % of Payroll		Member Contribution % of Payroll		Employer Normal Cost % of Payroll
Plan 1	11.23%	-	5.00%	=	6.23%
Plan 2	9.70%	-	5.00%	=	4.70%
Hybrid	5.68%	-	4.00%	=	1.68%
Total Blended	10.54%	-	4.93%	=	5.61%
				Administrative Expense Load	0.25%
				Employer Normal Cost Rate	5.86%

Development of Unfunded Amortization of Liability





=

Blended Normal Cost Rate

Rate to Amortize
Unfunded Liability

10.39%

+

Board Certified Rate Defined Benefit Plan

16.25%

Employer Contribution Rate to Hybrid DC Component

0.07%

Board Certified Rate

16.32%

Teacher Employer Contribution Rates



	-	FISCAL YEAR				
	2015	2016	2017	2018	Estimated 2019 & 2020	
Phase-In of VRS Board Certified Rates Agreed Upon in 2012 Legislative Session	79.69%	79.69%	89.84%	89.84%	100%	
Expected Employer Rates Based on Phase-In Schedule	14.50%	14.06%	14.66%	14.66%	15.79%	
Employer Rates Based on Enrolled Budget	14.50%	14.06%	14.66%	16.32%*	TBD	

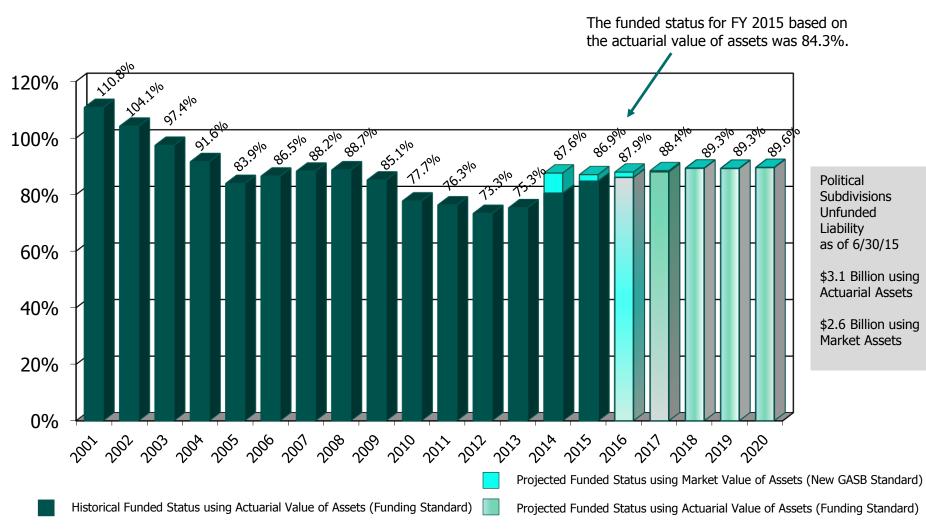
^{*} Teacher contribution rate is increased to 100% of Board-certified rate in second year of biennium.

Notes:

- Above contribution rates are net of employee contributions.
- Teacher rates for FY 2016 decreased due to an additional contribution of \$192.9 million that was applied to the deferred contribution balance in FY 2015. The subsequent rates for FY 2017-20 were also lowered to reflect the accelerated repayment.

Funded Status: Political Subdivisions in Aggregate



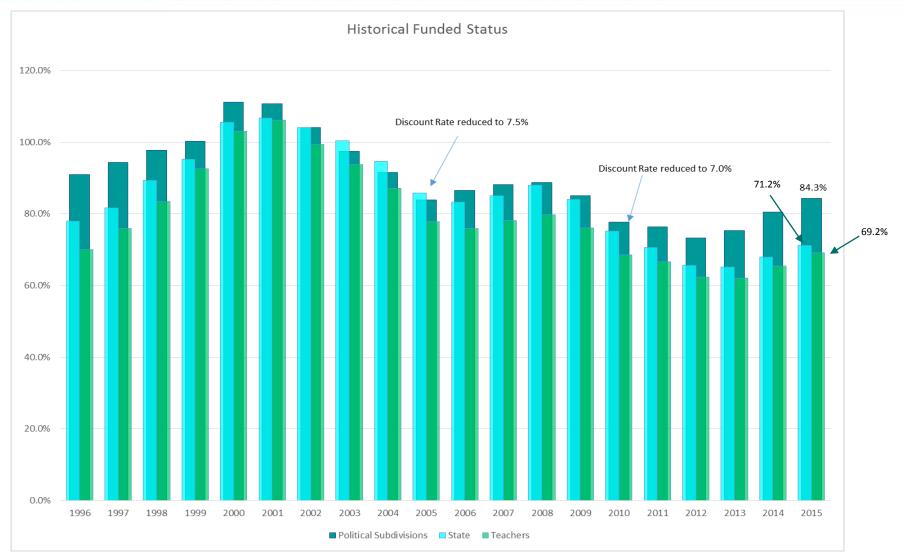


Notes:

- Projected years' investment returns assume 7.0% with 2.5% inflation rate.
- New 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.

K

Funded Status —Comparison of Political Subdivisions to State and Teachers



Political subdivisions are required to contribute 100% of actuarial required contribution which has allowed them to recover more quickly from recent economic downturns.

Funded Ratio — Political Subdivisions



	FY 20	014	FY	2015
	Actuarial Value of Assets	Market Value of Assets	Actuarial Value of Assets	Market Value of Assets
All Pension Plans	80.50%	87.60%	84.30%	86.90%
Danaina Blanca ith an Eabannail				
Pension Plans with no Enhanced				
Hazardous Duty Coverage	87.20%	94.90%	91.50%	94.40%
Pension Plans with Enhanced Hazardous				
Duty Coverage	78.90%	85.70%	82.50%	85.10%

Average Contribution Rates



Enhanced Hazardous Duty Coverage/Non-Enhanced Hazardous Duty Coverage



- Rates net of member contribution rate.
- Rates beginning in 2014 include employer contribution rate for Hybrid defined contribution component.





Impact of Rate and Funding Actions

10-Year Deferred Contribution Schedules



Original Loan Balance on June 30, 2011

Date	State	Teachers	SPORS	VaLORS	JRS	Total Outstanding Balance
6/30/2011	\$ 278,155,318	\$ 741,432,106	\$ 23,086,069	\$ 48,155,379	\$ 14,585,278	\$1,105,414,150

Loan Balance Before 2016 Legislative Action as of June 30, 2016

Date	State	Teachers	SPORS	VaLORS	JRS	Ü	Total Outstanding Balance
6/30/2016	\$ 162,406,371	\$ 269,434,778	\$ 2,118,954	\$ 16,491,559	\$ 8,465,759	\$	458,917,422

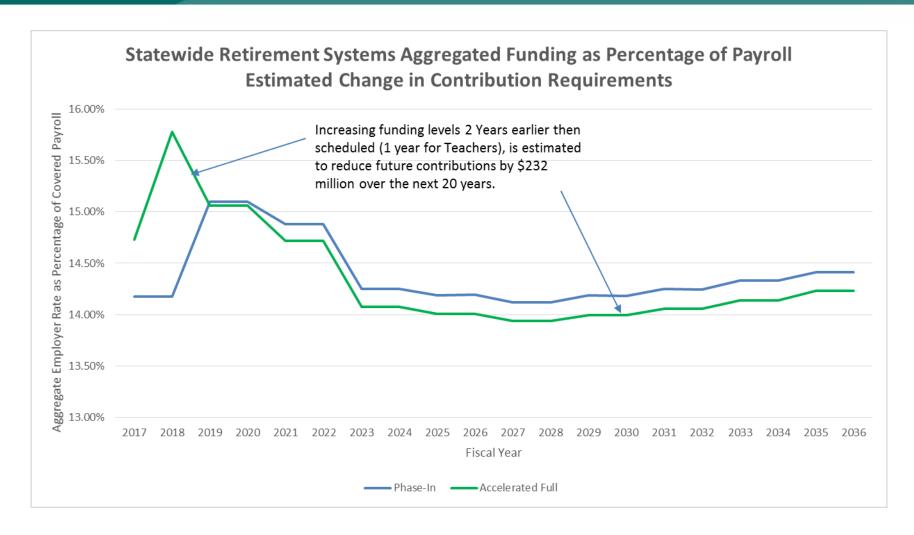
Loan Balance Reflecting 2016 Legislative Action as of June 30, 2016

Date	State	Teachers	SPORS	VaLORS	J	RS	Total Outstanding Balance
6/30/2016	\$ -	\$ 269,434,778	\$ -	\$ -	\$	-	\$ 269,434,778

The \$189 million payment to payoff outstanding balances for State, SPORS, VaLORS, and JRS as of June 30, 2016 is expected to save approximately \$26.5 million in contributions over the next 5 years.

Impact of Increasing Funding of Required Contributions





Moving to 100% of required contribution in 2017 will reduce future contribution requirements by approximately \$232 million over the next 20 years.





ORPHE Update

ORPHE Goals



- Employ industry best practices
- Lower plan administration and investment fees
- Provide for better transparency in fees
- Enhance provider service standards

- Improve plan communications
- Develop ORPHE-specific website and communications
- Where possible, improve plan processes and procedures

ORPHE Status



ORPHE Plan Status Update

2016

- Based on feedback from institutions regarding specific recruitment and retention requirements, VRS is implementing new plan structure
- Engaged in discussions with existing ORPHE providers, TIAA-CREF and Fidelity, as well as ICMA-RC
- Goal to offer three separate investment platforms:
 - TIAA-CREF (bundled)
 - Fidelity (bundled)
 - VRS DC Plans Investment Lineup with ICMA-RC as record keeper (unbundled)

ORPHE Plan Structure Update – Proposed ORPHE Timeline



September 2016

- Revamped ORPHE website released
- Updated communications
 Provider comparison and
 Understanding Plan Fees
- Open enrollment vendor fairs to begin (Sept.-Oct.)

January 2017

- Provider changes become effective
- New hires may select from three providers

October 2017

 Open enrollment in myVRS











October 2016

 Open enrollment -Current faculty may select among three providers

August 2017

 New hires to begin plan/provider elections in myVRS

ORPHE Homepage



VRS Homepage | myVRS

EMPLOYERS



DRAFT

Optional Plan for Higher Education

Investments Plan Details Other Benefits Just Hired?

Just Hired?

Open Enrollment

Provider Options

Understanding Fees & Performance



Qualified employees of Virginia's public colleges and universities have the option to participate in the VRS Optional Retirement Plan for Higher Education (ORPHE).

Provider Options Web Page



VRS Homepage | myVRS

EMPLOYERS



DRAFT

Optional Plan for Higher Education

Investments Plan Details Other Benefits Just Hired?

Home / Provider Options

Provider Options







Provider Comparison	DCP Virginia Retirement System	Fidelity Investments	TIAA
Services	Text Provided by provider	Text Provided by provider	Text Provided by provider
Number of Investments Available	Y/N	Y/N	
Target Date Portfolios	Y/N		Y/N





my VRS Changes

myVRS Rollout: What to Expect





Spring 2016 New for Members:

New myVRS registration process

Online refunds

Winter 2017 New for Members:

Personalized myVRS retirement planner

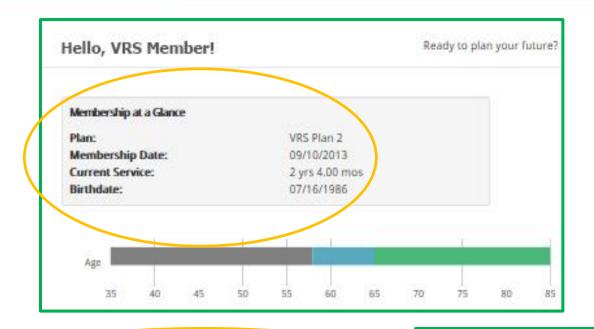
2018 New for Members:

Online retirement application

and beneficiary updates

Meet the new myVRS!







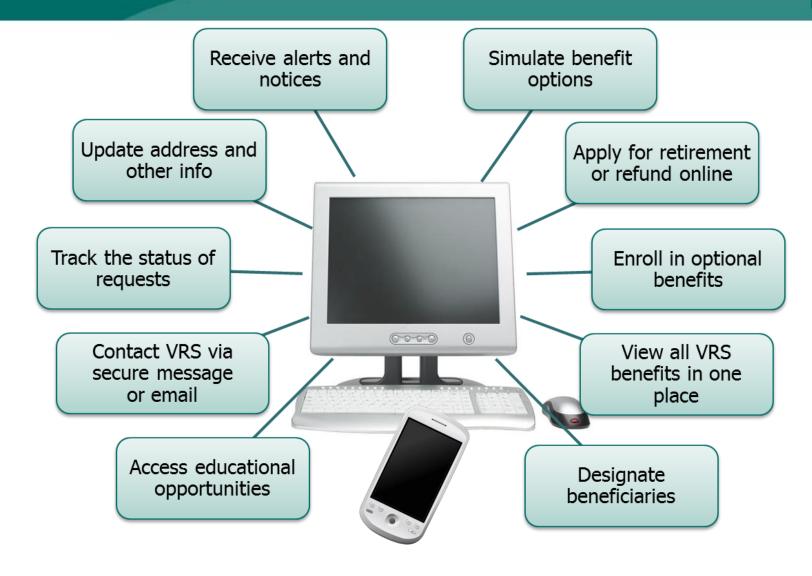
Account Balance as of: 01/31/2016	Details
Member Contribution Account:	\$6,116.15
COV 457 Deferred Comp:	\$2,088.57
VA 401(a) Cash Match:	\$516.56
Total:	\$8,721.28



I Want To
Plan for Retirement
Create a Benefit Estimate
Learn About a Refund
Learn About Purchasing Service
View Annual Statements

In the Future for Members









Summary

Summary



- Gratified by commitment to fully funding contribution rates
 - Moving to 100% of required contribution in 2017 is estimated to reduce future contribution requirements by approximately \$232 million over the next 20 years.
- Accelerating payment of the deferred contribution rates further moderates contribution rates:
 - Saves approximately \$26.5 million in interest for State/SPORS/VaLORS/JRS
 - Saves approximately \$34 million in interest for teacher plan
- The Commonwealth has undertaken a series of pension reform initiatives and addressed plan costs and liabilities by:
 - Implementing plan design changes, including the introduction of the Hybrid Retirement Plan
 - Committing to fully funding the actuarially required contribution rates
 - Accelerating payback of deferred contributions from the 2010-2012 biennium
- VRS has employed a revised funding policy, which requires a closed amortization period



Thank You