# Chief Investment Officer's Letter



Andrew H. Junkin, Chief Investment Officer

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September 30, 2025

Members of the Board of Trustees To: and Participants of the Virginia Retirement System

#### MARKET & ECONOMIC OVERVIEW

Fiscal year 2025 unfolded against a backdrop that looked familiar in several respects: Inflation moderated but remained above the Federal Reserve's 2% target, interest rates stayed elevated even as the Fed began to ease, and geopolitical risks persisted. In the U.S., inflation generally ran in the high 2% to low 3% range, while unemployment hovered near 4%. Balancing its dual mandate – maximum employment and stable prices - the Federal Reserve cut rates during the fiscal year as inflation cooled, seeking to preserve the expansion and guide the economy toward a "soft landing."

A significant development during the fiscal year was President Donald Trump's announcement of new tariffs in early April. Unlike previous, more targeted measures, this round of tariffs was far broader in scope, applying to a wide range of imported goods across multiple regions, including key trading partners in Asia, Europe and the Americas. The announcement surprised financial markets with its breadth and swift implementation schedule, sparking a sharp – though short-lived – sell-off in global equities and a spike in volatility as investors reevaluated earnings expectations. There was also a tariff-driven spike in inflation and supply-chain implications. On April 9, President Trump announced a 90-day "pause" on many of the new tariffs to allow for negotiations and adjustments, which helped stabilize markets and contributed to the recovery seen by the end of the fiscal year.

Geopolitical developments remained a source of uncertainty. The war in Ukraine entered its third year, tensions in the Middle East continued and U.S.-China frictions over trade and technology persisted. Even so, financial markets proved resilient, led by strong gains in public equities and broadly positive returns across most major asset classes.

#### PERFORMANCE OVERVIEW

For the fiscal year ended June 30, 2025, the VRS total fund returned 9.9%, ahead of the custom benchmark's 9.7% and comfortably above the 6.75% long-term assumed rate of return. The portfolio remains deliberately diversified across public and private markets and multiple sources of return, reflecting our emphasis on prudent risk-taking and loss avoidance as required by the Code of Virginia.

### ANNUALIZED RETURN FOR PERIODS ENDED JUNE 30, 2025

	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
<b>VRS Total Fund</b>	9.9%	8.6%	10.4%	8.1%	8.9%	7.4%	6.5%
Benchmark*	9.7%	9.2%	9.0%	7.3%	8.1%	6.7%	5.9%

<sup>\*</sup> Investment return calculations were prepared using a time-weighted return methodology based on market value, net of investment expenses.

Longer-term performance continues to demonstrate the value of diversification and our program architecture. Over five- and 10-year horizons, the total fund outperformed its benchmark, while the three-year period modestly trailed, reflecting the unusual market dynamics of recent years.

#### PERFORMANCE COMMENTARY

- Public Equity returned 17.8%, outpacing the 16.7% benchmark. Non-U.S. equity strategies contributed meaningfully to returns for the year as the program's global diversification and active structure added value.
- Fixed Income gained 6.9%, ahead of the 6.4% benchmark. Positioning across duration, sectors and security selection sustained the investment team's multi-year record of steady outperformance.
- Credit Strategies returned 9.1% versus 8.3% for the benchmark. Elevated interest rates and healthy origination supported private credit. A focus on diversification and manager selection remained central to results.
- Real Assets delivered 3.7%, exceeding the 2.9% benchmark. While commercial real estate remains
  challenged by higher interest rates and tenant demand in certain sectors, infrastructure and other
  inflation-sensitive exposures provided ballast.
- Private Equity returned 5.7% versus 7.4% for the benchmark for the year; however, it continues to be a leading contributor to long-term results 10-year: 14.1% versus 11.1% benchmark; five-year: 16.9% versus 15.8% underscoring the program's importance to total-fund value creation.
- Diversifying Strategies returned 3.6% compared with 7.2% for the benchmark, reflecting the role these strategies play in risk mitigation and liquidity rather than return maximization in strong equity markets.
- Private Investment Partnerships returned 8.8%, outperforming the 6.2% benchmark, contributing incremental alpha and further diversification.

Overall, fiscal-year results were broad-based, with public equity, fixed income, credit strategies, real assets and private investment partnerships all outperforming their respective benchmarks. This mix helped the total fund edge past its benchmark and, more important, sustain meaningful value-add over the five- and 10-year periods.

#### MARKET OUTLOOK

With inflation moderating and the Fed easing policy, the forward backdrop is more balanced than a year ago. We remain mindful of risks – from growth slowdowns to geopolitical shocks and refinancing needs in interest-sensitive sectors – but the portfolio is built to navigate varying scenarios. Our focus remains unchanged: Broad diversification, prudent risk management and selective deployment across public and private markets where we see compelling, risk-adjusted opportunities.

We believe the portfolio is well positioned to continue meeting the commonwealth's benefit obligations over the long term, aiming to deliver returns commensurate with our responsibilities while carefully managing downside risk.

Sincerely,

Andrew H. Junkin

Chief Investment Officer

# The Investment Section provides detailed information regarding the structure of the investment portfolio.

This information includes performance, asset allocations, portfolio highlights, a list of VRS' money managers and public equity commissions for the fiscal year. The section also presents the System's investment management fees and expenses and an investment summary.

# Investment Account

The VRS Board of Trustees has fiduciary responsibility to invest the fund solely in the interest of the beneficiaries of the System. As established by the Code of Virginia, "the Board shall invest the assets of the Retirement System with the care, skill, prudence and due diligence that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of like character and with like aims."

Benefit payments are projected to occur over a long period of time, allowing VRS to adopt a long-term investment horizon and asset allocation policy for the management of fund assets. Asset allocation policy is critical because it defines the basic risk and return characteristics of the VRS investment portfolio. Asset allocation targets are established using an asset-liability analysis designed to assist the Board in determining an acceptable volatility target for the fund and an optimal asset allocation policy mix. The asset-liability analysis considers both sides of the VRS balance sheet in order to estimate the potential impact of various asset class mixes on key measures of total plan risk, including the resulting estimated impact on funded status and contribution rates.

The Board delegates authority to the Chief Investment Officer to allocate the System's investments within the approved asset allocation policy and within the Board-approved active risk budget. The total fund active risk budget describes the degree of tolerance for yearly variation in the fund's performance relative to the Total Fund VRS Custom Benchmark.

The primary risk measure used for this purpose is Total Fund Tracking Error, calculated as the standard deviation of the difference between the fund's return and the return of the Total Fund VRS Custom Benchmark. From this measure, probability estimates can be derived to help the Board estimate the risk of underperforming the benchmark by certain margins.

The investment staff manages the VRS portfolio on a day-to-day basis according to policies and guidelines established by the Board. The staff manages assets on a direct basis and through outside investment managers. Managers employ both active and passive investment strategies. The Board has established various performance benchmarks to serve as tools for measuring progress toward the achievement of long-term investment goals.

The asset allocation mix of the VRS fund as of June 30, 2025, is shown in Figure 3.1.

### FIGURE 3.1: ASSET ALLOCATION MIX

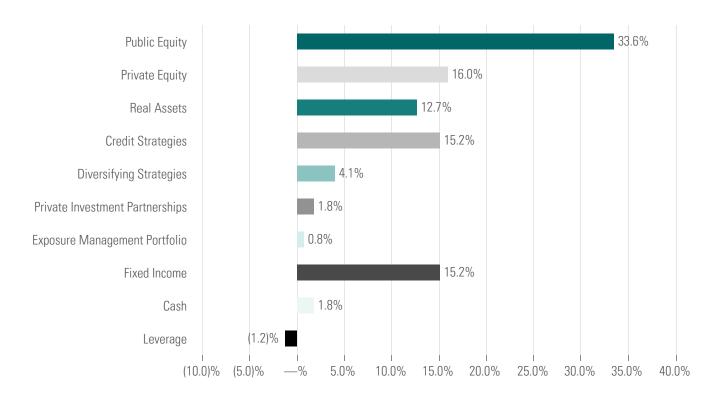


FIGURE 3.2: INVESTMENT PERFORMANCE SUMMARY

ANNUALIZED DATA FOR THE PERIOD ENDING JUNE 30, 2025

	1 Year	3 Years	5 Years	10 Years
1. Total Fund				
VRS	9.9%	8.6%	10.4%	8.1%
VRS Custom Benchmark <sup>1</sup>	9.7%	9.2%	9.0%	7.3%
2. Total Public Equity				
VRS	17.8%	17.9%	14.5%	9.8%
Custom Benchmark <sup>2</sup>	16.7%	17.1%	13.7%	9.8%
3. Total Private Equity				
VRS	5.7%	3.6%	16.9%	14.1%
Custom Benchmark <sup>3</sup>	7.4%	7.3%	15.8%	11.1%
4. Total Real Assets				
VRS	3.7%	0.7%	6.7%	7.4%
Custom Benchmark <sup>4</sup>	2.9%	-1.3%	3.9%	5.4%
5. Total Credit Strategies				
VRS	9.1%	8.8%	9.1%	6.9%
Custom Benchmark <sup>5</sup>	8.3%	9.4%	6.4%	5.6%
6. Total Diversifying Strategies				
VRS	3.6%	7.0%	7.0%	N/A
Custom Benchmark <sup>6</sup>	7.2%	7.9%	6.1%	N/A
7. Total Private Investment Partnerships				
VRS	8.8%	6.3%	12.9%	9.0
Custom Benchmark <sup>7</sup>	6.2%	5.3%	9.3%	7.8
8. Total Fixed Income				
VRS	6.9%	3.7%	0.6	2.7
Custom Benchmark <sup>8</sup>	6.4%	3.2%	-0.3	1.9

Investment return calculations were prepared using a time-weighted return methodology based on market value, net of investment expenses.

<sup>&</sup>lt;sup>1</sup> The VRS Custom Benchmark is a blend of the Asset Class Benchmarks at policy weights.

<sup>&</sup>lt;sup>2</sup> Effective January 2024, the Public Equity Custom Benchmark is a weighted average of the MSCI ACWI IMI Index (net VRS tax rate) (85%) and the MSCI World Min Vol Index (net VRS tax rate) (15%).

<sup>3</sup> Effective January 2024, the Private Equity Custom Benchmark is the regional benchmarks of the MSCI ACWI IMI Index (net VRS tax rate) lagged by three months, weighted to reflect the Private Equity opportunity set (currently 75% North America, 20% Europe, and 5% Asia and Emerging Markets).

<sup>4</sup> Effective January 2023, the Real Assets Custom Benchmark is the market value weighted blend of the NCREIF Private Real Estate Benchmark (ODCE Index (net) lagged by three months) and the Other Real Assets Custom Benchmark (the CPI-U Index plus 400 basis points per annum lagged by three months).

<sup>&</sup>lt;sup>5</sup> Effective July 2023, the Credit Strategies Custom Benchmark is a blend of the Morningstar LSTA Performing Loan Index (50%) and the Bloomberg U.S. HY Ba/B 2% Issuer Cap Index (50%).

<sup>&</sup>lt;sup>6</sup> Effective January 2024, the Diversifying Strategies Custom Benchmark is the ICE BofA U.S. 3-Month Treasury Bill Index plus 250 basis points per annum.

<sup>7</sup> Effective January 2024, the Private Investment Partnerships (PIP) Custom Benchmark is the weighted average of the Private Equity Custom Benchmark (33%), the NCREIF Private Real Estate Benchmark (25%), the Other Real Assets Custom Benchmark (8%), the Bloomberg U.S. HY Ba/B 2% Issuer Cap Index (17%), and the Morningstar LSTA Performing Loan Index (17%).

<sup>&</sup>lt;sup>8</sup> Effective July 2020, the Fixed Income Custom Benchmark is a blend of the Bloomberg U.S. Aggregate Bond Index (90%), Bloomberg U.S. HY Ba/B 2% Issuer Cap Index (5%), and JP Morgan EMBI Global Core Index (5%).

# Portfolio Highlights

### **PUBLIC EQUITY**

Real Estate Utilities

Total

The market value of the Total Public Equity Program as of June 30, 2025, was \$41.3 billion, representing approximately 33.6% of the total fund. The program is dominated by traditional strategies valued at \$35.3 billion, or 85.6%. The program also employs equity-oriented hedge fund strategies valued at \$5.9 billion, or 14.4%. The objective of the portfolio is to exceed the Custom Benchmark over longer-term periods, net of all costs. The current Custom Benchmark is a blended index comprised of 85% Morgan Stanley Capital International All Country World Index (MSCI ACWI) IMI and 15% MSCI World Minimum Volatility Index (both net of VRS tax rates). The Traditional Public Equity portfolio had 61% invested in domestic equity and 39% in international equity. Internal assets represent 51% of Total Public Equity.

At fiscal year-end, the custom benchmark was comprised of 64% U.S. equity, 27% developed non-U.S. equity and 9% emerging markets equity.

FIGURE 3.3: TRADITIONAL EQUITY CUSTOM BENCHMARK SECTORS AND REGIONS\*

Strategic Sectors	VRS	Custom Benchmark	Regions	VRS	Custom Benchmark
Communication Services	9.08%	8.75%	North America	62.84%	66.75%
Consumer Discretionary	11.23%	9.88%	Europe/Middle East/Africa	21.24%	16.42%
Consumer Staples	5.94%	6.50%	Asia Pacific	15.38%	16.25%
Energy	2.30%	3.48%	Latin and South America	0.54%	0.58%
Financials	17.85%	17.16%	Total	100.00%	100.00%
Health Care	9.57%	9.77%			
Industrials	13.48%	11.43%			
Information Technology	21.33%	23.83%			
Materials	4.04%	3.58%			

2.28%

3.34%

100.00%

2.21%

2.97%

100.00%

<sup>\*</sup> Based on Barra's classification of sectors and regions and excludes cash.

The top 10 holdings in the Traditional Public Equity Program comprised 12.4% of the program at fiscal year-end.

Three companies, Berkshire Hathaway, J.P. Morgan and Novo Nordisk, were replaced by 3I Group, Johnson & Johnson and Novartis on this year's schedule.

#### FIGURE 3.4: PUBLIC EQUITY - TOP 10 HOLDINGS\*

AS OF JUNE 30, 2025

Company	Fair Value	Shares
Nvidia	\$ 997,482,759	6,313,181
Microsoft Corp.	977,439,002	1,965,057
Apple Inc.	711,288,075	3,466,823
Amazon.com	577,322,152	2,631,488
Meta Platforms	519,572,551	703,942
Alphabet Inc.	413,079,620	2,337,110
Taiwan Semiconductor Manufacturing Co.	379,910,516	8,129,493
3I Group	184,074,506	3,227,063
Johnson & Johnson	181,517,408	1,188,330
Novartis AG	165,257,030	1,367,834

<sup>\*</sup> Aggregated various share classes based on parent company. Refer to the "More Information" section on page 180 for details on how to request additional information.

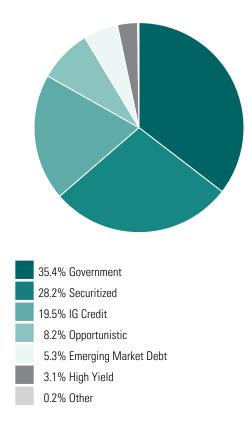
#### **FIXED INCOME**

VRS invests a portion of its portfolio in fixed income investments to reduce total fund volatility, produce income and provide for some protection in the event of a deflationary environment.

The market value of the Fixed Income Program as of June 30, 2025, was \$18.6 billion, representing approximately 15.2% of the total fund.

# FIGURE 3.5: FIXED INCOME PORTFOLIO BY SECTOR ALLOCATION

AS OF JUNE 30, 2025



The Fixed Income Program is invested in a diversified portfolio of debt securities, such as government securities, corporate securities, mortgage-backed securities and emerging market debt. The objective of the program is to exceed the return of the Fixed Income blended benchmark comprised of 90% Bloomberg Barclays U.S. Aggregate Index, 5% JPM EMBI Global Core Index and 5% Bloomberg Barclays U.S. HY Ba/B 2% Issuer Constrained Index, while staying in compliance with risk limits. Approximately 95% of the Fixed Income Program is managed internally. For fiscal year 2025, the return of the program was 6.9% versus a return of 6.4% for the benchmark.

### FIGURE 3.6: FIXED INCOME - TOP 10 HOLDINGS BY MARKET VALUE\*

Security	Par Value	Fair Value
UNIFORM MORTGAGE BACK SECURITY (UMBS)	\$966,500,000	\$765,285,332
GINNIE MAE TBA	446,000,000	446,521,820
UNIFORM MORTGAGE BACK SECURITY (UMBS)	411,000,000	340,963,134
GINNIE MAE TBA	340,000,000	333,953,780
UNIFORM MORTGAGE BACK SECURITY (UMBS)	300,000,000	291,140,625
FANNIE MAE UNIFORM MORTGAGE BACK SECURITY (UMBS)	254,605,740	237,343,181
TREASURY NOTE	215,000,000	214,850,360
GINNIE MAE TBA	202,000,000	204,676,500
UNIFORM MORTGAGE BACK SECURITY (UMBS)	200,000,000	201,374,000
TREASURY NOTE	165,000,000	153,926,952

<sup>\*</sup> Refer to the "More Information" section on page 180 for details on how to request additional information.

### SHORT-TERM INVESTMENTS AND TRANSITION ACTIVITY

Generally, VRS desires to remain fully invested at all times and seeks to optimize its holdings of cash investments. Temporary cash balances are invested in short-term money market instruments with the goal of maintaining high credit quality and liquidity, as well as synthetically replicating exposure to equity and/or fixed income.

#### PRIVATE EQUITY

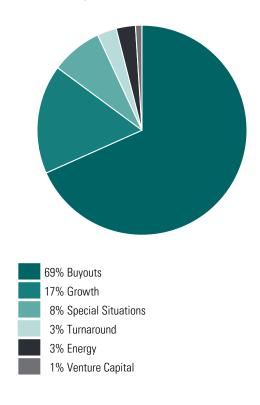
VRS invests in private equity to achieve returns greater than those available in the public equity markets. Specifically, the program seeks to outperform a custom region-weighted Morgan Stanley Capital International All Country World Index (MSCI ACWI). Program returns are calculated on both a time-weighted basis and a dollar-weighted, or internal rate-of-return (IRR) basis.

On a time-weighted basis, the program return for fiscal year 2025 was 5.7%. On a dollar-weighted, or IRR basis, the private equity one-year return was 5.1% as of March 31, 2025.

As of June 30, 2025, the carrying value of the program was approximately \$19.6 billion. Most of the program is invested in limited partnerships.

Sectors in which the program invests include leveraged buyouts, venture capital, growth, subdebt, turnaround, energy and special situations. The Private Equity Program's market value by subclass was as follows:

FIGURE 3.7: PRIVATE EQUITY PROGRAM



#### **REAL ASSETS**

A portion of the VRS portfolio is invested in real assets to diversify the Total Fund, reduce correlation with public markets, while aiming for competitive risk-adjusted returns, significant cash flows, and inflation linkages. The size of the portfolio increased by approximately \$1.5 billion in fiscal year 2025, after posting a modest 3.7% return. The Real Assets portfolio outperformed its blended benchmark by approximately 80 basis points. The private real estate portfolio delivered a 2.4% return versus its benchmark of 1.2%. Investments in infrastructure, natural resources, timberland and farmland produced a 6.4% return for the fiscal year, exactly matching the other real assets benchmark of 6.4%.

The percentage of the Total Fund represented by the Real Assets portfolio fluctuated over the course of the year and stood at 12.7% at fiscal year-end. In dollar terms, the real asset portfolio increased rather significantly by \$1.5 billion to end the fiscal year at \$15.6 billion. This increase was due primarily to contributions to new investments outpacing distributions from existing investments by approximately \$965 million, as well as income and appreciation.

At fiscal year-end, the portfolio strategy composition was approximately 67% private real estate, 20% infrastructure, 7% energy and mining, 4% timberland and 2% farmland. Portfolio leverage as a percentage of total real assets was 33.8% as of June 30, 2025.

#### FIGURE 3.8: REAL ASSETS BY SECTOR

AS OF JUNE 30, 2025

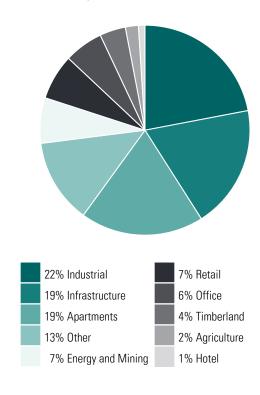
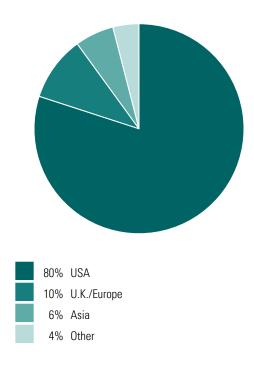


FIGURE 3.9: REAL ASSETS BY GEOGRAPHIC REGION

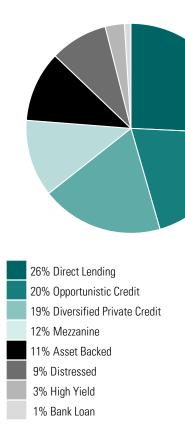


#### **CREDIT STRATEGIES**

The Credit Strategies program generates returns through income and capital appreciation from a diversified portfolio of credit and credit-related investments. The objective of the program is to provide an attractive risk/return profile relative to the Custom Credit Strategies benchmark. For the fiscal year, the program returned 9.1%, while the program's custom benchmark returned 8.3%.

#### FIGURE 3.10: CREDIT STRATEGIES PROGRAM

AS OF JUNE 30, 2025



#### **DIVERSIFYING STRATEGIES**

The Diversifying Strategies program seeks to diversify the VRS return and risk exposures across market cycles and investment environments. It consists of an actively managed mix of risk responding and return enhancing strategies. An additional goal of the program is to provide actionable knowledge transfer to the overall Plan. As of June 30, 2025, the total program had a market value of \$5.0 billion and was invested with ten multi-asset class public investments managers. During the fiscal year, it returned 3.6% against the program's custom benchmark, which returned 7.2%.

#### PRIVATE INVESTMENT PARTNERSHIPS

Beginning July 1, 2018, the VRS Board approved a strategic allocation to Private Investment Partnerships (PIP). These investments had previously been part of the Strategic Opportunities Portfolio. The objective of the program is to provide an attractive risk/return profile relative to the Private Investment Partnerships benchmark.

Managers in this program invest broadly across the private and less liquid components of the credit, private equity, real asset and real estate markets. During the fiscal year, the program returned 8.8% while its custom benchmark returned 6.2%.

#### **LEVERAGE**

The long-term strategic asset allocation (SAA) approved by the VRS Board of Trustees in June 2023 incorporates a prudent amount of leverage to enhance diversification and improve risk-return efficiency for the Fund. The Board also approved rebalancing leverage. Staff plans to transition to this SAA over the next few years.

#### MORE INFORMATION

A complete list of the investment portfolio is available upon request. Address requests to the VRS FOIA Coordinator, Virginia Retirement System, P.O. Box 2500, Richmond, VA 23218-2500. More information is available at <a href="mailto:varetire.org/web-policy/foia">varetire.org/web-policy/foia</a>.

# **VRS Money Managers**

The diversified investment structure as of June 30, 2025, is reflected in the following tables, which list VRS managers by investment program and style.

# PUBLIC EQUITY MONEY MANAGERS

External Managers	Style Description	
Acadian Asset Management	Emerging, Non-U.S. Small Cap	
Ariel	Global	
Arrowstreet Capital	Global	
Baillie Gifford	Emerging, Global	
J.P. Morgan	Global	
Lansdowne	Global	
LSV Asset Management	Global, Non-U.S. Small Cap, U.S. Small Cap	
WCM Investment Management	Global	
Internal Portfolios	Style Description	
Afton	U.S. Small Cap	
Amherst	U.S. Large Cap	
Bearfence	Global	
Rivanna	Global	
Tuckahoe	Emerging	
Equity Hedge Funds	Style Description	
CET Energy Dynamics	Long/Short	
Cevian	Activist	
Coatue	Long/Short Extension	
Eminence	Long/Short Extension	
Farallon	Long/Short, Multi-Strat	
Maverick Capital	Long/Short Extension	
Select	Long/Short	
Theleme	Long/Short	
ValueAct Capital	Activist	
FIXED INCOME		
Internal Portfolios	Style Description	
VRS Investment Grade Credit	High-Quality Corporates	
VRS Securitized	Mortgage and Other Asset-Backed Securities	
VRS Government	U.S. and Other Government-Related Debt	
VRS Emerging Market Debt	EM Sovereign and Quasi-Sovereign Debt	
VRS Systematic High Yield	High-Yield Corporates	
VRS Fixed-Income Opportunistic	Various Fixed-Income Related Assets	
	1000	atinuadl

(Continued)

# VRS Money Managers, cont.

# FIXED INCOME, cont.

External Portfolios	Style Description
FI Man Numeric High Yield	High-Yield Corporates
FI Payden & Rygel EMD	Emerging Market Debt
FI PIMCO EMD	Emerging Market Debt
PRIVATE EQUITY – TOP 10 MANAGERS	Style Description
Apax Partners	Buyout
Bain Capital	Buyout
CVC Capital	Buyout
General Atlantic	Growth
GTCR	Buyout
Grosvenor	Customized Separate Account
Hellman and Friedman	Buyout
Stone Point Capital	Buyout
TA Associates	Growth
Veritas Capital	Buyout
CREDIT STRATEGIES – TOP 10 MANAGERS	Style Description
Ares Management	Direct Lending, Mezzanine, Opportunistic, Asset Backed
Beach Point Capital Management	Distressed, Opportunistic
HPS Investment Partners	Direct Lending, Mezzanine, Asset Backed
BlackRock	Direct Lending
Carlyle	Diversified Private Credit
Sixth Street Partners	Distressed, Opportunistic
Magnetar Financial	Diversified Private Credit
Aksia	Diversified Private Credit
Solus	Opportunistic, Broadly Syndicated Loans
KKR	Direct Lending, Asset Backed, Distressed
PRIVATE INVESTMENT PARTNERSHIPS	Style Description
Carlyle	Multi-Asset Class Private Investments
KKR	Multi-Asset Class Private Investments

# VRS Money Managers, cont.

#### **REAL ASSETS - TOP 10 MANAGERS** Style Description

Blackstone Real Estate Partners Core, Enhanced Core & Opportunistic Real Estate

Carson Companies Core Real Estate

Clarion Partners **Enhanced Core Real Estate** 

Harrison Street Core & Core Enhanced Real Estate

**Industry Funds Management** Global Infrastructure

J.P. Morgan Investment Management Mixed Core

Morgan Stanley Core Real Estate, Global Infrastructure

Pantheon Ventures Global Infrastructure, Global Natural Resources

**PGIM** Core & Enhanced Core Real Estate Core & Enhanced Core Real Estate Pritzker Realty Group

#### **DIVERSIFYING STRATEGIES** Style Description

Multi-Asset Class Public Investments Aksia AOR. Multi-Asset Class Public Investments BlackRock Multi-Asset Class Public Investments Brevan Howard Multi-Asset Class Public Investments Capstone Multi-Asset Class Public Investments Multi-Asset Class Public Investments Internal Portfolio Strategy J.P. Morgan Multi-Asset Class Public Investments Man Group Multi-Asset Class Public Investments Neuberger Berman Multi-Asset Class Public Investments NISA Multi-Asset Class Public Investments PineBridge Multi-Asset Class Public Investments

# **Public Equity Commissions**

AS OF JUNE 30, 2025

Broker	Commission	Shares	Co	Average mmission er Share
Bank of America Corp., Charlotte	\$ 1,567,112.64	129,533,984	\$	0.0121
Goldman Sachs & Co., New York	1,382,779.78	134,039,888		0.0103
UBS Equities, London	631,301.48	177,502,248		0.0036
Morgan Stanley and Co., LLC, New York	227,894.61	133,344,630		0.0017
UBS Warburg Asia Ltd., Hong Kong	223,712.49	85,011,912		0.0026
Societe Generale, Paris	217,924.97	46,897,828		0.0046
Pershing LLC, Jersey City	210,754.50	13,704,422		0.0154
National Financial Services Corp., New York	207,970.21	7,007,647		0.0297
UBS Securities LLC, Stamford	177,196.02	30,973,083		0.0057
Barclays Capital, London	164,698.51	172,388,962		0.0010
Other Brokers	2,689,044.08	966,212,205		0.0028
Total FY 2025	\$ 7,700,399.29	1,896,616,809	\$	0.0041

# SCHEDULE OF INVESTMENT EXPENSES

FOR THE YEAR ENDED JUNE 30, 2025

(EXPRESSED IN THOUSANDS)

	 ssets Under Nanagement	gement Fees Expenses
External Management:		
Public Equity Managers	\$ 13,671,180	\$ 58,850
Fixed Income Managers	3,823,928	4,215
Credit Strategies Managers	18,368,041	156,712
Real Assets Managers	16,991,537	148,133
Alternative Investment (Private Equity) Managers	19,731,284	169,072
Hedge Funds Managers	8,183,426	59,103
Multi-Asset Class/Other Managers	6,365,004	36,873
Subtotal: External Management	87,134,400	632,958
Internal Management	40,954,564	58,509
Miscellaneous Fees and Expenses:		
Custodial Fees	_	4,500
Legal Fees	_	1,811
Other Fees and Expenses	_	103,828
Subtotal: Miscellaneous Fees and Expenses	 _	 110,139
Total	\$ 128,088,964	\$ 801,606

# **Investment Summary**

In accordance with Section 51.1-124.31 of the Code of Virginia (1950), as amended, the Board of Trustees has pooled substantially all defined benefit plan assets of the Virginia Retirement System, the State Police Officers' Retirement System, the Judicial Retirement System, the Group Life

Insurance Fund and the Retiree Health Insurance Credit Fund into a common investment pool. The common investment pool of the pension trust funds, other trust funds and custodial funds held the following composition of investments at June 30, 2025 and 2024:

(EXPRESSED IN THOUSANDS)

	2025 Fair Value	Percent of Total Value	2024 Fair Value	Percent of Total Value
Bonds and Mortgage Securities:				
U.S. Government and Agencies	\$ 10,212,909	7.94%	\$ 7,811,767	6.71%
Mortgage Securities	5,969,560	4.64%	5,736,229	4.92%
Corporate and Other Bonds	7,829,572	6.09%	8,251,049	7.08%
<b>Total Bonds and Mortgage Securities</b>	24,012,041	18.67%	21,799,045	18.71%
Common and Preferred Stocks	31,555,655	24.54%	27,035,632	23.21%
Index and Pooled Funds:				
Equity Index and Pooled Funds	15,397,921	11.98%	14,484,488	12.43%
Fixed-Income Commingled Funds	2,836	0.00%	0	0.00%
Total Index and Pooled Funds	15,400,757	11.98%	14,484,488	12.43%
Real Assets	15,735,405	12.24%	14,153,874	12.15%
Private Equity	41,346,341	<b>32.16</b> %	38,502,907	33.06%
Short-Term Investments:				
Treasurer of Virginia – LGIP Investment Pool	490,417	0.38%	482,233	0.42%
Foreign Currencies	38,765	0.03%	24,562	0.02%
Total Short-Term Investments	529,182	0.41%	506,795	0.44%
Total Investments	\$ 128,579,381	100.00%	\$ 116,482,741	100.00%

# **Description of Hybrid Defined Contribution Plan**

Defined contribution plan assets for Hybrid Retirement Plan members are maintained in two separate accounts. The Hybrid 401(a) Cash Match Plan account contains the hybrid plan member and employer mandatory contributions and the employer match on the voluntary member

contributions. The Hybrid 457 Deferred Compensation Plan account contains the hybrid plan member's voluntary contributions. The schedule below shows the assets in each investment option and the accumulated plan assets in each option.

#### HYBRID PARTICIPANT ACCOUNT PLAN ASSETS BY FUND OPTION

Fund Name	Hybrid 401(a)	Hybrid 457	Total
Retirement Portfolio	\$ 142,010,593	\$ 83,876,309	\$ 225,886,902
Target Date 2030 Portfolio	163,906,992	99,964,652	263,871,644
Target Date 2035 Portfolio	215,437,427	126,728,036	342,165,464
Target Date 2040 Portfolio	229,206,966	129,721,542	358,928,508
Target Date 2045 Portfolio	267,127,589	146,853,356	413,980,945
Target Date 2050 Portfolio	317,266,118	163,674,421	480,940,538
Target Date 2055 Portfolio	451,012,455	209,896,895	660,909,350
Target Date 2060 Portfolio	296,231,679	128,039,762	424,271,441
Target Date 2065 Portfolio	77,783,343	24,622,718	102,406,061
Target Date 2070 Portfolio	1,406,855	424,738	1,831,593
Money Market Fund	13,675,883	8,648,771	22,324,654
Stable Value Fund	5,108,523	5,448,773	10,557,296
Bond Fund	5,377,540	6,156,253	11,533,793
Inflation-Protected Bond Fund	1,937,745	1,908,330	3,846,075
High-Yield Bond Fund	3,084,657	3,842,347	6,927,003
Stock Fund	81,404,756	79,124,770	160,529,526
Small/Mid-Cap Stock Fund	17,274,166	17,913,457	35,187,623
International Stock Fund	13,614,699	13,238,971	26,853,670
Global Real Estate Fund	4,052,416	4,219,819	8,272,236
VRS Investment Portfolio – PIPVRSIP	57,655	38,791	96,446
VRS Investment Portfolio	668,255	790,757	1,459,012
Self-Directed Brokerage	4,888,934	4,885,256	9,774,190
Total Plan Assets*	\$ 2,312,535,245	\$ 1,260,018,723	\$ 3,572,553,969

<sup>\*</sup> Fund totals have been rounded to the nearest dollar amount and may not foot due to rounding.

# **Description of Defined Contribution Plans Investment Options**

Participants in the System's Hybrid Retirement Plan benefit structure have access to a number of core investment options for contributions to their defined contribution plan. These options are intended to provide participants with a variety of investment choices while controlling the associated costs. In addition to the option-specific annual operating expense detailed in the Investment Option Performance Summary, participants pay an annual record-keeping fee of \$35.50 that is deducted from their accounts on a monthly basis (approximately \$2.96 per month).

Participants with more than one account in the Plan pay only one annual fee of \$35.50. At June 30, 2025, the plans provided the following core investment options to participants.

#### **DO-IT-FOR-ME FUNDS**

Retirement Portfolio: Seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. In pursuit of that object, the portfolio will be broadly diversified across global asset classes.

```
U.S. Bonds: 49.8% U.S. Large/Mid-Cap Stocks: 22.8% International Stocks: 12.8%
U.S. Inflation-Index Bonds: 10.0% Commodities: 2.2%
                                                      Global Infrastructure: 1.4%
                 Real Estate: 0.6% U.S. Small-Cap Stocks: 0.5%
```

**Target Date 2030 Portfolio:** Seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. In pursuit of that objective, the portfolio will be broadly diversified across global asset classes, with asset allocations becoming more conservative over time.

```
U.S. Bonds: 39.6% U.S. Large/Mid-Cap Stocks: 29.7% International Stocks: 18.0%
 U.S. Inflation-Index Bonds: 7.9% Real Estate: 1.9% Global Infrastructure: 1.5%
                Commodities: 0.9% U.S. Small-Cap Stocks: 0.6%
```

**Target Date 2035 Portfolio:** Seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. In pursuit of that objective, the portfolio will be broadly diversified across global asset classes, with asset allocations becoming more conservative over time.

```
U.S. Large/Mid-Cap Stocks: 36.1% U.S. Bonds: 35.1% International Stocks: 22.8%
                  Real Estate: 2.7% Global Infrastructure: 1.8%
          U.S. Small-Cap Stocks: 1.2% U.S. Inflation-Index Bonds: 0.4%
```

Target Date 2040 Portfolio: Seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. In pursuit of that objective, the portfolio will be broadly diversified across global asset classes, with asset allocations becoming more conservative over time.

```
U.S. Large/Mid-Cap Stocks: 41.7% International Stocks: 27.2% U.S. Bonds: 23.6%
                  Real Estate: 3.3% Global Infrastructure: 2.0%
          U.S. Small-Cap Stocks: 1.9%
                                       U.S. Inflation-Index Bonds: 0.3%
```

**Target Date 2045 Portfolio:** Seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. In pursuit of that objective, the portfolio will be broadly diversified across global asset classes, with asset allocations becoming more conservative over time.

```
U.S. Large/Mid-Cap Stocks: 47.3% International Stocks: 32.1% U.S. Bonds: 13.4% Real Estate: 4.1% U.S. Small-Cap Stocks: 2.8% Global Infrastructure: 0.4%
```

**Target Date 2050 Portfolio:** Seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. In pursuit of that objective, the portfolio will be broadly diversified across global asset classes, with asset allocations becoming more conservative over time.

```
U.S. Large/Mid-Cap Stocks: 52.7% International Stocks: 36.1% U.S. Bonds: 5.3% U.S. Small-Cap Stocks: 3.6% Real Estate: 2.3%
```

**Target Date 2055 Portfolio:** Seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. In pursuit of that objective, the portfolio will be broadly diversified across global asset classes, with asset allocations becoming more conservative over time.

```
U.S. Large/Mid-Cap Stocks: 55.5% International Stocks: 37.9% U.S. Small-Cap Stocks: 3.9% U.S. Bonds: 1.5% Real Estate: 1.1%
```

**Target Date 2060 Portfolio:** Seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. In pursuit of that objective, the portfolio will be broadly diversified across global asset classes, with asset allocations becoming more conservative over time.

```
U.S. Large/Mid-Cap Stocks: 56.0% International Stocks: 38.2% U.S. Small-Cap Stocks: 3.9% U.S. Bonds: 1.0% Real Estate: 0.9%
```

**Target Date 2065 Portfolio:** Seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. In pursuit of that objective, the portfolio will be broadly diversified across global asset classes, with asset allocations becoming more conservative over time.

```
U.S. Large/Mid-Cap Stocks: 56.0% International Stocks: 38.2% U.S. Small-Cap Stocks: 3.9% U.S. Bonds: 1.0% Real Estate: 0.9%
```

**Target Date 2070 Portfolio:** Seeks to provide for retirement outcomes consistent with investor preferences throughout the savings and drawdown phase based on quantitatively measured risk that investors, on average, may be willing to accept. In pursuit of that objective, the portfolio will be broadly diversified across global asset classes, with asset allocations becoming more conservative over time.

```
U.S. Large/Mid-Cap Stocks: 56.0% International Stocks: 38.2% U.S. Small-Cap Stocks: 3.9% U.S. Bonds: 1.0% Real Estate: 0.9%
```

### **HELP-ME-DO-IT FUNDS**

**Money Market Fund:** Seeks to provide a high level of current income as is consistent with liquidity and stability of principal.

Other Repurchase Agreement: 56.9% Asset-Backed Commercial Paper: 11.1%

Certificate of Deposit: 10.2% Financial Company Commercial Paper: 10.0%

Non-Financial Company Commercial Paper: 7.0% U.S. Treasury Debt: 1.7%

U.S. Treasury Repurchase Agreement: 1.7% U.S. Government Agency Repurchase Agreement: 1.3%

**Stable Value Fund:** Seeks to provide safety of principal, while earning a level of interest income consistent with an underlying portfolio of short- to intermediate-duration high-quality fixed income (bond) securities and cash or cash equivalents, and liquidity to accommodate participant transactions.

Corporates: 25.6% Asset-Backed: 20.2% Agency MBS: 15.7% Other U.S. Government: 11.8% U.S. Treasury/Agency: 10.0% CMBS: 8.3% Cash/Equivalents: 4.5% Taxable Municipals: 3.4% Non-Agency MBS: 0.4%

**Bond Fund:** Seeks to track the performance of the Bloomberg U.S. Aggregate Bond Index. The index is an unmanaged index that represents the broad U.S. investment-grade bond market and is comprised of U.S. treasury securities, government agency bonds, corporate bonds, mortgage-backed securities, assetbacked securities and a small amount of foreign bonds traded in the U.S.

Treasury: 44.6% Mortgages: 24.5% Industrials: 13.6% Financials: 8.0% Non-U.S. Credit: 3.1% Utilities: 2.3% CMBS: 1.5% Cash: 0.8% Agencies: 0.7% Taxable Municipals: 0.5% Asset-Backed Securities: 0.4%

**Inflation-Protected Bond Fund:** Seeks to track the performance of the Bloomberg U.S. Treasury Inflation-Protected Securities Index. The index is an unmanaged index that represents the U.S. Treasury Inflation-Protection Securities (TIPS) market. The index includes investment-grade TIPS with one or more years to final maturity.

U.S. Treasury: 100.0%

**High-Yield Bond Fund:** Seeks to achieve returns that exceed, over time, its benchmark, the ICE BofA U.S. High-Yield BB-B Constrained Index. The index is an unmanaged index of BB-B rated securities that caps any single issuer exposure to 2.0%. The index is indicative of the higher quality high-yield bond market.

Consumer Cyclical: 19.6% Communications: 17.8% Consumer Non-Cyclical: 15.0% Energy: 12.2% Capital Goods: 12.1% Technology: 8.1% Basic Industry: 4.3% Transportation: 3.5% Finance: 2.8% Utilities: 1.8% Other/Cash: 1.5% Other Industrial: 1.2%

**Stock Fund:** Seeks to track the performance of the Standard & Poor's 500 Index. The index is an unmanaged index that represents the broad large-capitalization U.S. stock market and is comprised of 500 widely held U.S. stocks chosen by Standard & Poor's.

Information Technology: 33.1% Financials: 14.0% Consumer Discretionary: 10.4% Communication Services: 9.8% Health Care: 9.3% Industrials: 8.6% Consumer Staples: 5.5% Energy: 3.0% Utilities: 2.4% Real Estate: 2.0% Materials: 1.9%

**Small/Mid-Capitalization Stock Fund:** Seeks to track the performance of the Russell 2500 Index. The index is an unmanaged index that represents the broad middle- to smaller-capitalization U.S. stock market.

Industrials: 19.8% Financials: 17.9% Information Technology: 13.7% Consumer Discretionary: 12.0% Health Care: 11.4% Real Estate: 6.7% Materials: 5.0% Consumer Staples: 3.8% Energy: 3.7% Communication Services: 3.1% Utilities: 2.9%

**International Stock Fund:** Seeks to track the performance of the MSCI ACWI ex-U.S. IMI Index. The index is an unmanaged index that represents the equity performance of large, mid- and small-cap segments of developed and emerging markets, excluding the U.S.

Financials: 23.3% Industrials: 15.7% Information Technology: 13.0%

Consumer Discretionary: 10.4% Health Care: 7.8% Materials: 6.9% Consumer Staples: 6.5%

Communication Services: 6.1% Energy: 4.4% Utilities: 3.2% Real Estate: 2.8%

**Global Real Estate Fund:** Seeks to track the performance of the FTSE EPRA/NAREIT Developed Index. The index is an unmanaged index that is designed to reflect the performance of listed real estate companies worldwide, including the U.S.

Specialized REITs: 18.2% Retail REITs: 16.0% Industrial REITs: 13.9%

Real Estate Management & Development: 13.4% Residential REITs: 12.0% Health Care REITs: 11.6%

Diversified REITs: 7.1% Office REITs: 5.4% Hotel & Resort REITs: 2.1%

**VRS Investment Portfolio (VRSIP):** Seeks to maximize return while managing risk within an acceptable range. Due to the long-term nature of the defined benefit plan's liabilities, the horizon for investment decisions is generally defined as 10 years or longer.

Public Equity: 33.6% Private Equity: 16.0% Fixed Income: 15.2% Credit Strategies: 15.2% Real Assets: 12.7% Diversified Strategies: 4.1% PIP: 1.8% EMP: 0.8% Cash: 1.8% Leverage: -1.2%

#### DO-IT-MYSELF FUNDS

**Self-Directed Brokerage Account (SDBA):** Allows investors to select from thousands of publicly traded mutual funds, exchange-traded funds (ETFs) and individual securities in addition to the available core investment options. The SDBA option is offered through Charles Schwab & Co. The SDBA option is for knowledgeable investors who acknowledge and understand the risks and costs associated with the investments contained in this option.

In addition to the annual record-keeping fee and operating expenses, this option is subject to transaction fees charged by Charles Schwab & Co. and investment management-related fees and expenses for the funds or investments selected.

# **Investment Option Performance Summary: Defined Contribution Plans**

AS OF JUNE 30, 2025

(RETURNS GREATER THAN ONE YEAR ARE ANNUALIZED)

# DO-IT-FOR-ME PATH: TARGET DATE PORTFOLIOS

Total Annual Operating Expenses

						oporating	Емропооо
Investment Options	Inception Date	1 Year	3 Years	5 Years	10 Years or Since Inception	As a %	Per \$1,000
Retirement Portfolio	08/01/05	9.85%	7.73%	5.04%	5.14%	0.06%	\$0.60
Custom Benchmark <sup>1</sup>		9.82%	7.75%	5.05%	5.12%		
Target Date 2030 Portfolio	08/01/05	11.16%	10.01%	7.72%	6.85%	0.06%	\$0.60
Custom Benchmark <sup>1</sup>		11.09%	10.02%	7.71%	6.79%		
Target Date 2035 Portfolio	07/05/06	12.37%	11.73%	9.36%	7.76%	0.06%	\$0.60
Custom Benchmark <sup>1</sup>		12.26%	11.72%	9.33%	7.68%		
Target Date 2040 Portfolio	08/01/05	13.49%	13.39%	10.89%	8.58%	0.06%	\$0.60
Custom Benchmark <sup>1</sup>		13.36%	13.37%	10.83%	8.48%		
Target Date 2045 Portfolio	07/05/06	14.55%	14.95%	12.20%	9.26%	0.06%	\$0.60
Custom Benchmark <sup>1</sup>		14.42%	14.92%	12.13%	9.14%		
Target Date 2050 Portfolio	09/30/07	15.60%	16.09%	13.06%	9.69%	0.06%	\$0.60
Custom Benchmark <sup>1</sup>		15.47%	16.06%	12.98%	9.56%		
Target Date 2055 Portfolio	05/19/10	16.14%	16.55%	13.35%	9.82%	0.06%	\$0.60
Custom Benchmark <sup>1</sup>		16.01%	16.53%	13.28%	9.70%		
Target Date 2060 Portfolio	11/17/14	16.20%	16.58%	13.36%	9.82%	0.06%	\$0.60
Custom Benchmark <sup>1</sup>		16.10%	16.57%	13.30%	9.71%		
Target Date 2065 Portfolio	09/23/19	16.22%	16.60%	13.35%	11.48%	0.06%	\$0.60
Custom Benchmark <sup>1</sup>		16.10%	16.57%	13.29%	11.45%		
Target Date 2070 Portfolio	09/27/24	N/A	N/A	N/A	8.51%	0.06%	\$0.60
Custom Benchmark <sup>1</sup>		N/A	N/A	N/A	8.07%		

(Continued)

# Investment Option Performance Summary: Defined Contribution Plans, cont. HELP-ME-DO-IT PATH: INDIVIDUAL OPTIONS

Total Annual **Operating Expenses** 10 Years Inception or Since Per **Investment Options** Date 1 Year 3 Years 5 Years Inception \$1,000 As a % 3.04% \$0.80 **Money Market Fund** 11/01/99 4.98% 4.93% 2.19% 0.08% Benchmark: FTSE 3-Month Treasury Bill Index Yield as of June 30, 2025, was 4.55% 4.88% 4.75% 2.88% 2.01% 02/01/95 **Stable Value Fund** 3.50% 2.92% 2.42% 2.22% 0.24% \$2.40 Custom Benchmark<sup>2</sup> 4.48% 2.48% Yield as of June 30, 2025, was 3.57% 4.28% 3.08% **Bond Fund** 11/01/99 2.58% 0.03% \$0.30 6.09% -0.69% 1.80% Benchmark: Bloomberg U.S. Aggregate **Bond Index** 6.08% 2.55% -0.73% 1.76% 07/30/02 Inflation-Protected Bond Fund 5.89% 2.40% 1.66% 2.76% 0.03% \$0.30 Benchmark: Bloomberg U.S. Treasury Inflation-Protected Securities Index 5.84% 2.34% 1.61% 2.67% 05/31/04 6.27% **High-Yield Bond Fund** 10.47% 9.12% 5.45% 0.40% \$4.00 Benchmark: ICE BofA U.S. High-Yield **BB-B Constrained Index** 9.08% 9.24% 5.36% 5.07% Stock Fund 11/01/99 15.15% 19.70% 16.64% 13.66% 0.01% \$0.10 15.16% 16.64% Benchmark: S&P 500 Index 19.71% 13.65% Small/Mid-Cap Stock Fund 11/01/99 9.98% 11.41% 11.53% 8.47% 0.02% \$0.20 Benchmark: Russell 2500 Index 9.91% 11.31% 11.44% 8.39% International Stock Fund 11/01/99 18.39% 14.04% 10.43% 6.40% 0.06% \$0.60 Benchmark: MSCI ACWI ex-U.S. IMI Index3 17.83% 13.92% 10.20% 6.14% 10/01/02 **Global Real Estate Fund** 12.30% 4.57% 6.06% 0.08% \$0.80 4.10% Benchmark: FTSE EPRA/NAREIT Developed Index 11.18% 3.52% 5.10% 3.17% VRS Investment Portfolio (VRSIP) 07/01/08 9.88% 8.60% 10.44% 8.12% 0.62% \$6.20 VRS Custom Benchmark<sup>4</sup> 9.75% 9.19% 9.04% 7.32%

<sup>&</sup>lt;sup>1</sup> Benchmarks are calculated using blended returns of third-party indices that proportionately reflect the respective weightings of the Portfolios' asset classes. Weightings are adjusted quarterly to reflect the Portfolios' asset allocation shifts over time. Indices currently used to calculate the custom benchmarks are Russell 1000 Index, Russell 2000 Index, MSCI ACWI ex-U.S. IMI Net Dividend Return Index, Bloomberg U.S. Long Credit Bond Index, Bloomberg U.S. Intermediate Credit Bond Index, Bloomberg U.S. Long Government Bond Index, Bloomberg U.S. Intermediate Government Bond Index, Bloomberg U.S Securitized: MBS, ABS, and CMBS Index, Bloomberg U.S Treasury Inflation Protection Securities 0-5 (TIPS) Index, FTSE EPRA NAREIT All Equity REITS Index, FTSE Global Core Infrastructure 50/50, and the Bloomberg Enhanced Roll Yield Index

<sup>&</sup>lt;sup>2</sup> Effective August 2016, the benchmark represents a hypothetical return generated by the monthly yields of actively traded U.S. Treasuries based on [50% two-year maturity + 50% three-year maturity] plus an annualized spread of 0.25% and is representative of the Fund's expected return profile, given how the Fund is managed and book value accounting treatment. Prior to August 2016, the custom benchmark was based on the monthly yield of actively traded U.S. Treasuries with a three-year maturity plus an annualized spread of 0.50%. The benchmark returns are linked.

<sup>&</sup>lt;sup>3</sup> Effective August 2016, the performance benchmark is the MSCI ACWI ex-U.S. IMI Index. It was the MSCI World ex-U.S. Index from July 2012 through July 2016. The benchmark returns are linked.

<sup>&</sup>lt;sup>4</sup> The VRS Custom Benchmark is a blend of the asset class benchmarks at policy weights.